Section 16 Planning Application

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

(*Master Layout Plan Submission*)

Planning Statement

June 2024

Applicant:

Capital Asian Limited

Consultants:

Masterplan Limited

AECOM

AXXA Group Limited

LWK & Partners (HK) Ltd

MVA Hong Kong Limited

WSP Hong Kong Limited

Ramboll Hong Kong Limited

MASTERPLAN
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EXECUTIVE SUMMARY

S1. This section 16 application is submitted on behalf of Capital Asian Limited (i.e. the Applicant), to seek approval from the Town Planning Board ("TPB") under section 16 of the Town Planning Ordinance for the proposed comprehensive development including Flat, Shop and Services, Eating Place, and minor relaxation of Building Height Restriction (BHR) to adopt Modular Integrated Construction (MiC) at Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (the "Application Site" or "the Site"). A Master Layout Plan ("MLP") is included in this submission to demonstrate the comprehensiveness of the development proposal in meeting the Planning Brief requirements, and its integration with Lung Tsun Stone Bridge Preservation Corridor ("LTSBPC").

S2. The Application Site is zoned "Comprehensive Development Area (4)" (i.e. "CDA(4)") on the approved Kai Tak Outline Zoning Plan no. S/K22/8 (the "OZP"). It is situated in the Kai Tak Development Area, which is a major urban area undergoing major transformation with new buildings and infrastructure being built.

S3. The Proposed Scheme is a high-quality, private residential (Flat) development with ancillary clubhouse and outdoor landscaping facilities. It is complimented by commercial facilities (Shop & Services and Eating Place) at its podium, retail belt, and Underground Shopping Street. The Proposed Scheme contains a minor relaxation of the BHR from +125mPD to +129.035mPD, i.e. an increase of about 4.035m or about 3.2%, solely for the purpose of adopting MiC into its residential tower portion. It supports the Government's policy initiative to promote green and innovative buildings of enhanced facilitation measures for buildings adopting MiC. It would enable better quality control, simplify the construction process, reduces disturbance and nuisance to the neighbourhood, and reduce waste.

S4. The Proposed Scheme complies with the planning intention of the "CDA(4)" zone, and will be compatible and congruous with the surrounding developments and the LTSBPC. It would preserve the ambience of LTSBPC and enhance the pedestrian walking environment. It contains ground level extension of the retail belt to the south-eastern boundary of the Site, to further enhance vibrancy and amenity for visitors. The proposed pedestrian facilities and connectivity in the Site, especially the USS, will complete and complement the surrounding pedestrian network and developments. Technical assessments have been carried out to demonstrate that there will be no substantial technical issues with the Proposed Scheme.

S5. The scheme generally complies with the Planning Brief requirements and Harbour Planning Principles. It would fulfill its mandate to contribute to the long-term private

housing supply. The minor relaxation of BHR, solely to adopt MiC, is insignificant and negligible from the visual appraisal. It complies with the Joint Practice Note No. 8 on the adoption of MiC in developments. Therefore, the TPB is requested to consider this application favorably.

行政摘要

(聲明：此中文譯本僅供參考，如中文譯本和英文原文有差異時，應以英文原文為準。)

S1. 申請人金得誠有限公司（下稱「申請人」）擬就城市規劃條例第 16 條向城市規劃委員會（下稱「城規會」）申請將位於九龍啟德新發展區第 2A 區 2 號地盤（下稱「申請地點」）發展為包括「分層住宅」、「商店及服務行業」 及「食肆」的綜合發展，以及略為放寬建築物高度限制以便採用「組裝合成」的建築法。本文件中所提交的總綱發展藍圖可見擬議的綜合發展符合規劃大綱的要求，並能與龍津石橋保育長廊互相融合。

S2. 申請地點位於《啟德分區計劃大綱核准圖編號 S/ K22/ 8》 (下稱「大綱核准圖」)上的「綜合發展（4）」地帶。該地帶位於啓德發展區，此區正進行多項大型基建及新樓建設以發展成為重點城區。

S3. 擬議發展方案為一個私人住宅項目（「分層住宅」），連附屬會所及户外景觀設施，並於平台、零售帶及地下購物街內輔以商業設施（「商店及服務行業」 及「食肆」）。方案包括了擬議略為放寬建築物高度限制，由主水平基準上 125 米增至主水平基准上 129.035 米，即增加約 4.035 米或約 3.2%，以採用「組裝合成」的建築法。此建築法能更好地控制質量，簡化施工過程，減少對周邊居民的干擾，並減少產生建築廢料。

S4. 擬議發展符合「綜合發展（4）」地帶的規劃意向，並與附近的發展及龍津石橋保育長廊相容。 擬議方案會保留龍津石橋保育長廊的氛圍，並改善附近的步行環境。擬議發展包含位於申請地點東南方的地面零售帶，以進一步營造有活力和適意的步行環境。申請地點內（特別是地下購物街內）的擬議行人設施及連接性，將有助完善周邊的行人網絡和發展。同時，本文件中所提交的各項的技術評估亦證明擬議發展不會引致重大的技術問題。

S5. 擬議發展符合規劃大綱的要求及海港規劃原則，亦能為長遠私人住房供應做出貢獻。為配合採用組裝合成的建築法，擬議發展需要略為放寬建築物高度限制。根據視覺景觀評估，相關改動影響不大。擬議發展符合進一步促進建築物採用「組裝合成」建築法的《聯合作業備考第八號》。基於以上各點，懇請城規會從優考慮是次規劃申請。

1. Introduction

1.1 This section 16 application is submitted on behalf of Capital Asian Limited (the "Applicant") to seek approval from the Town Planning Board ("TPB") under section 16 of the Town Planning Ordinance for the proposed comprehensive development including Flat, Shop and Services, Eating Place, and minor relaxation of Building Height Restriction (BHR) to adopt Modular Integrated Construction (MiC) at Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (i.e. Pecked Green Area of Lot NKIL 6590) (the "Application Site" or "the Site"). A Master Layout Plan ("MLP") is included in this submission to demonstrate the comprehensiveness of the development proposal in meeting the Planning Brief requirements, and its integration with Lung Tsun Stone Bridge Preservation Corridor ("LTSBPC").

1.2 Prior to this application submission, two rounds of pre-submission consultations were made to the Planning Department (PlanD), to address departmental concerns and to streamline the statutory application process. The Applicant's response-to-departmental comments of the pre-submission document (dated 15 April 2024) is included in this statement, and forms part of the Proposed Scheme for the consideration of relevant departments and of the Town Planning Board. (**Appendix 1**)

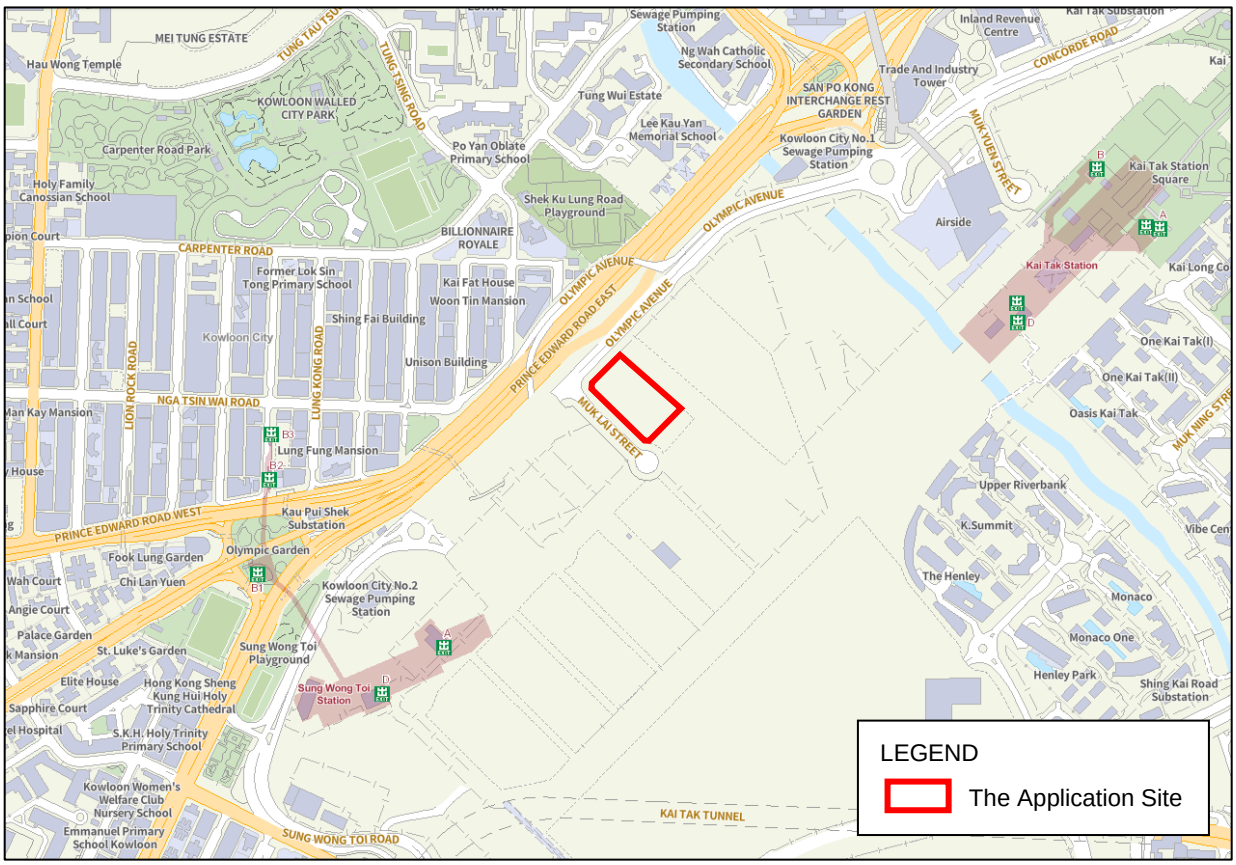

Figure 1: The Location of the Application Site

2. The Application Site and Its Surroundings

The Application Site

2.1 The Application Site – Kai Tak Area 2A Site 2, Kai Tak, Kowloon, being portion of Lot NKIL 6590, purchased by the applicant under Conditions of Sale no. 20426, is zoned "Comprehensive Development Area (4)" (i.e. "CDA(4)") on the approved Kai Tak Outline Zoning Plan no. S/K22/8 (the "OZP"). It is located at the western portion of the Kai Tak City Centre area and accessible from Olympic Avenue and Muk Lai Street. It is bounded by an area zoned "Open Space (3)" (i.e. "O(3)") intended for the LTSBPC to its northeast and southeast, Muk Lai Street to its southwest and Olympic Avenue to its northwest. (**Figure 2**) The existing condition of the Site is a piece of vacant land. (**Figure 3**)

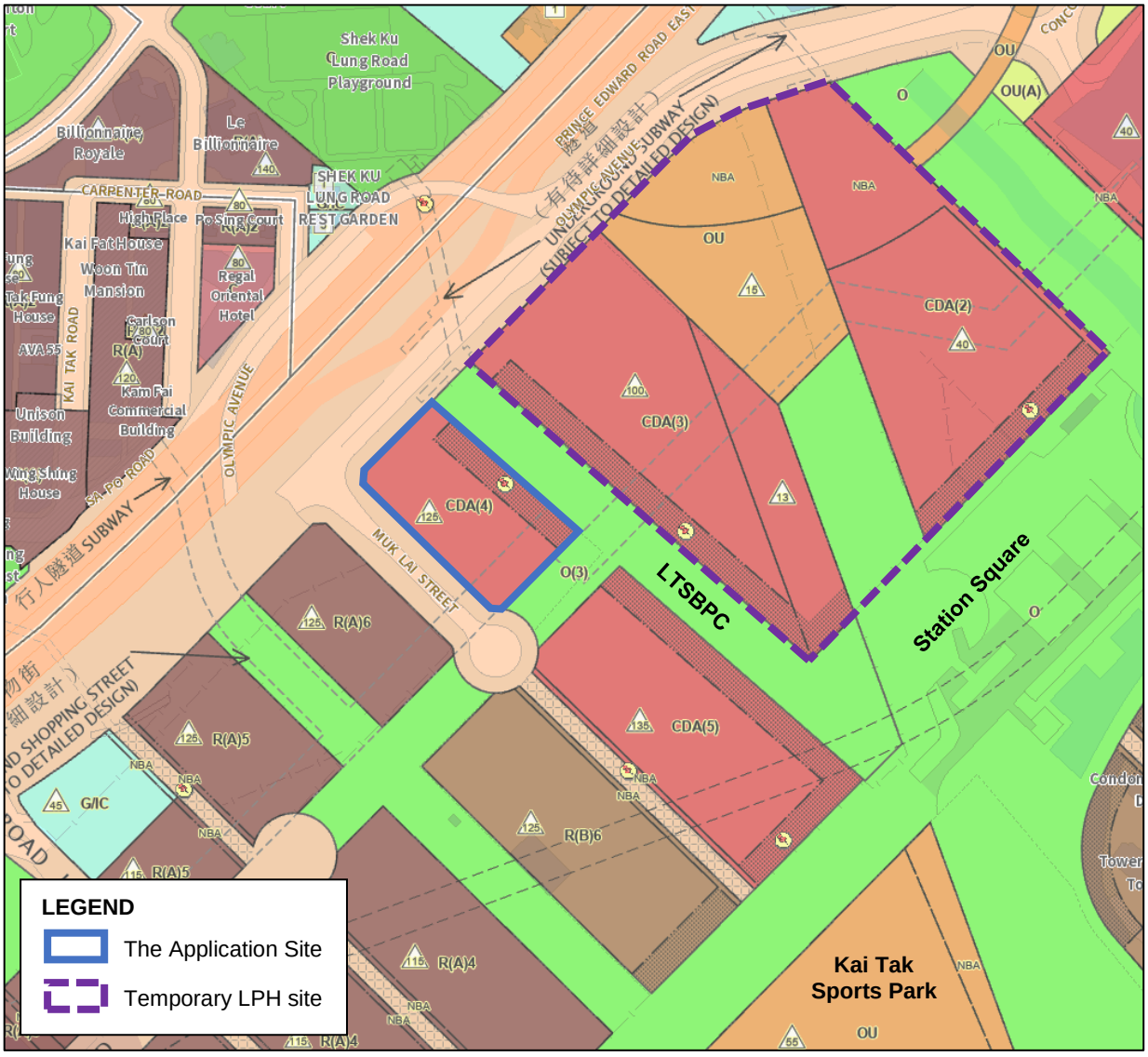

Figure 2: The Application Site and Zoning Context Plan (Extracted from the OZP no. S/K22/8)

Figure 3: The Existing Site Conditions

Surrounding Developments

2.2 The Site is situated in the Kai Tak Development Area, which is a major urban area undergoing major transformation with new buildings and infrastructure being built. The Site is surrounded by a mix of existing and future developments of commercial, residential, open space, sports and cultural uses. The adjacent "O(3)" zone is intended for the LTSBPC. The "CDA(3)", "CDA(2)", "O" and "OU (Arts and Performance related uses)" zones to the northeast are intended for a mix of commercial and cultural arts developments; however, the Government has plans to build a Light Public Housing (LPH) at this location on a temporary basis. (**Figure 2**) The "CDA(5)" site to the southeast is intended for residential developments, being a public housing development to be implemented by the Hong Kong Housing Society. A large open space to the further northeast of the Site, i.e. Station Square will circumscribe Kai Tak Station and associated commercial facilities. To the southwest of the Site across Muk Lai Street is a site zoned "Residential (Group A) 6". Kai Tak Sports Park is located to the further south.

The Application Site and Public Open Space outside the "CDA(4)" zone

2.3 A strip of Public Open Space (POS) with an area of about 1,100m^2, abutting the south-eastern boundary of the Site at G/F adjoining the LTSBPC, is not included in the Application Site boundary. There is no requirement in the Planning Brief to include the POS into the Application Site, and the proposed uses in the POS are already permitted uses under the "O(3)" zone. There is no need to complicate the vetting process with relevant departments at the planning stage, which could be addressed at the detailed design stage and under the lease conditions. This practice of excluding adjacent POS that are to be designed and constructed by the developer of the adjacent residential development has been done in other similar planning applications, such as the Cheung Sha Wan "CDA" site (Application No. A/K20/130).

2.4 Nonetheless, the POS design is shown side-by-side in the Landscape Master Plan to provide a reference of the possible landscaping and interface design that would fall in line with the lease specifications.

2.5 The POS will be constructed by the developer and handed over to the Government for management and maintenance upon completion. It will be open to the public on a 24-hour basis, subject to government arrangement.

The Application Site and Underground Shopping Street outside the "CDA(4)" zone

2.6 The Underground Shopping Street (USS) Portion A and B (**Figure 4**) stipulated under the same Land Grant of the Application Site, are not included in the Application Site boundary. There is no requirement in the Planning Brief to include those portions of USS into the Application Site, and the proposed uses in the USS are already permitted uses under the "O(3)" and Road zones. There is no need to complicate the vetting process with relevant departments at the planning stage, which could be addressed at the detailed design stage and under the lease conditions. The Land Grant stipulated a maximum GFA of 6,670 m^2 for non-industrial use (excluding residential, office, go-down, hotel, Government Accommodation, and petrol filling station), with the flexibility in distribution of the GFA among the Application Site, USS portion A and USS portion B, while the Planning Brief stipulated a maximum commercial GFA of 6,270m^2 (maximum of plot ratio of 1.0) for the Application Site. The proposed GFA of development would comply with both the requirements under the lease and Planning Brief. (**Figure 4**)

2.7 The Applicant proposes two phases of General Building Plan (GBP) submissions to cover all "colored areas" of the entire lot NKIL 6590 (excluding POS) which includes the Application Site: (i) First Phase – "R(A)6" site with USS portion A; (ii) Second Phase – "CDA(4)" site with the USS portion B (after approval of the MLP). The information of section of USS portion A submitted under GBP submission would be reflected on the Second Phase GBP submission and vice versa, including the approved GFA, corresponding GBP version and approval date by the Building Authority to provide PlanD with an overview of the USS GFA split outside the zones.

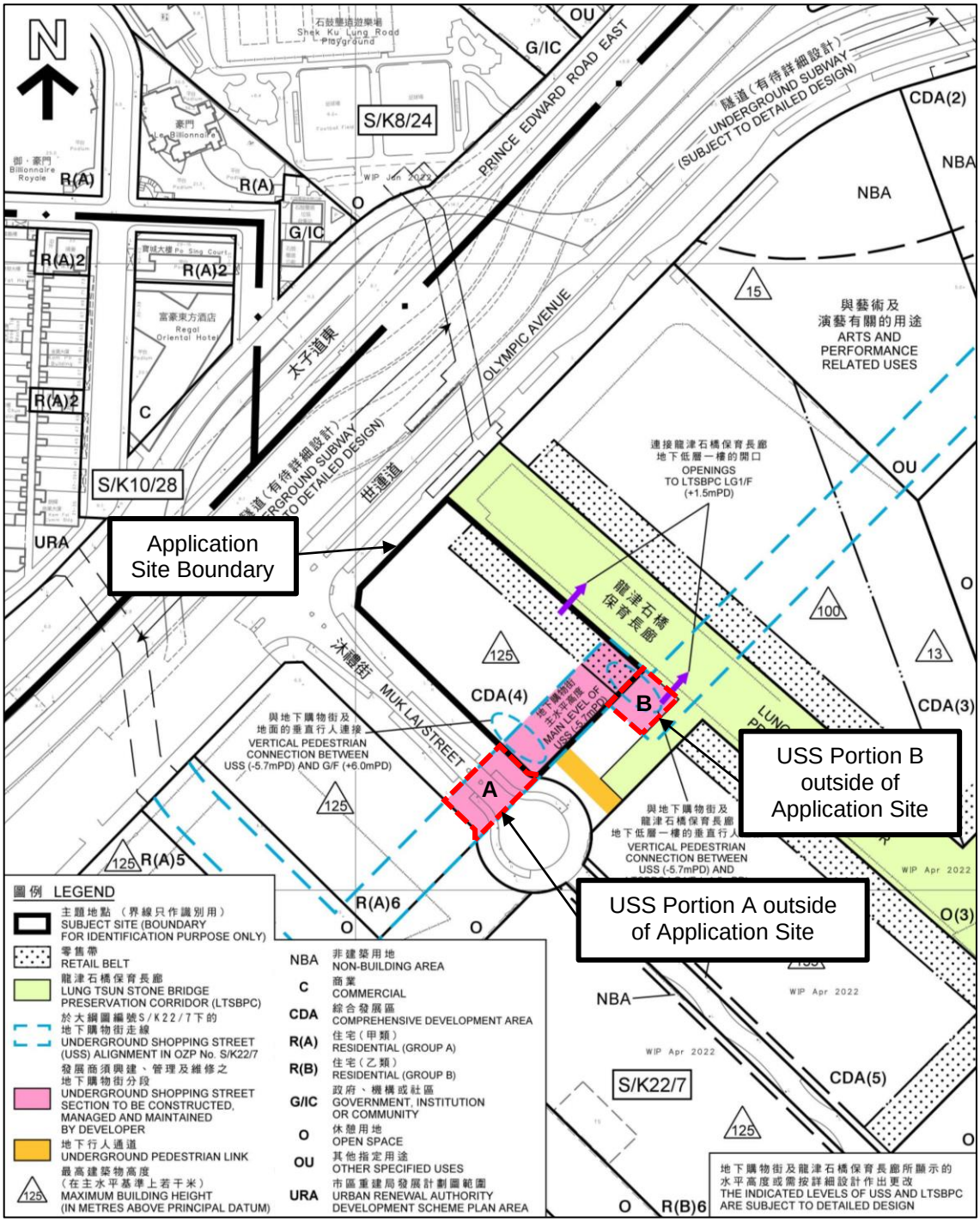

Figure 4: The USS outside of the Application Site as shown on the Planning Brief

3. Planning Context

Statutory Planning Context

3.1 The Application Site is zoned "Comprehensive Development Area (4)" ("CDA(4)") on the Approved Kai Tak Outline Zoning Plan No. S/K22/8 ("OZP"), and was one of the three development sites abutting the LTSBPC that was rezoned to "CDA" in 2011.

3.2 According to the Notes of the OZP, the planning intention of the CDA zone is as follows:

"*This zoning is to facilitate appropriate planning control over the development mix, scale, design and layout of development, taking account of various environmental, traffic, infrastructure and other constraints.*"

3.3 To be more specific, the planning intention of 'CDA(4)', as well as 'CDA(3)' and 'CDA(5)' is "to ensure their disposition and design would be in harmony with the Preservation Corridor for Lung Tsun Stone Bridge". The 'CDA(4)' zone is intended for residential use.

3.4 The provision for 'Flat', 'Shop and Services' and 'Eating Place' uses are included under Column 2 of the schedule of notes of the "CDA" zone, which requires planning permission from the TPB. The Building Height Restriction ("BHR") for the Site in the OZP is +125mPD. The restrictions over the maximum plot ratio is 7.5 and maximum site coverage (excluding basements) is 65% of any new development.

3.5 In Remarks (12) of the Notes of the CDA zone, it states:

"*Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio, site coverage and building height restrictions … may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.*"

3.6 As such, the proposed minor relaxation of the BHR, in order to adopt MiC into the proposed development, requires planning permission from the TPB.

4. Master Layout Plan

Schematic Master Layout Plan

4.1 The Schematic Master Layout Plan (MLP) is shown in **Figure 5**, and the MLP package containing all the floor layouts and sections are provided in **Appendix 2**.

4.2 The Proposed Scheme is a high-quality, comprehensive private residential (Flat) development with ancillary clubhouse and outdoor landscaping facilities. It is complimented by commercial facilities (Shop & Services and Eating Place) at its podium, retail belt, and Underground Shopping Street at the basement level. The Proposed Scheme contains a minor relaxation of the BHR from +125mPD to +129.035mPD, i.e. an increase of about 4.035m or about 3.2%, solely for the purpose of adopting MiC into its residential tower portion.

4.3 All the traffic facilities (including private carparking spaces, loading/unloading bays, motorcycle parking spaces, and bicycle parking spaces) will be provided in the basement levels, and comply with the requirements under the Hong Kong Planning Standards and Guidelines (HKPSG). The Proposed Scheme will comply with the Sustainable Building Design Guidelines (SBDG), subject to detailed design stage. The proposed floor uses are provided in **Table 1**.

Table 1: Proposed Floor Uses

Floor	**Proposed Uses**
Residential *	
B3/F – B1/F	Carpark (including private carparking spaces, L/UL bays, bicycle parking spaces, and motorcycle parking spaces), E&M facilities, USS and commercial facilities (i.e. Shop and Services and Eating Place)
G/F	Residential Entrance, Private Open Space, Clubhouse facilities, E&M facilities, EVA
1/F – 2/F	Clubhouse facilities, E&M facilities, Private Open Space
3/F – 34/F	Residential Flats
R/F	E&M facilities
Retail Belt	
G/F – 1/F	Shop and Services and Eating Place
R/F	Landscaped Areas

* Excluding transfer plate.

Indicative Development Parameters

4.4 The indicative development parameters are provided in **Table 2** below. The floor space of the required social welfare facilities as required by Government will all be accommodated within the development in the "R(A)6" site, including one Neighbourhood Elderly Centre; one Hostel for Severely Mentally Handicapped Persons; one Day Activity Centre; one District Support Centre for Persons with Disabilities; one Boys' Home; and one Centre for Cyber Youth Support Team.

Green Building Design and Smart Requirements

4.5 The proposed development is targeted to achieve BEAM Plus Gold rating for green building design and meet all pre-requisites. The proposed development will adopt Automatic Meter Reading (AMR) System for fresh water supplies. And the proposed development will feature 7kW electric vehicle (EV) charging facilities covering 30% of total no. of car parking and Parking Information System as per "Guidelines for Provision of Parking Information" issued by Transport Department. Consideration on other Smart City Proposals and green building design elements may be considered in the detailed design stage.

Implementation Program

4.6 The proposed development would be constructed in a single phase of implementation. The target year for commencement is tentatively on Q3 2024. The site possession and land grant have been completed. The construction will then commence and last until Q4 2029. The completion and the population intake of the development is anticipated to be in 2029. Please refer to **Appendix 3** for the tentative implementation program.

Table 2: Key Development Parameters

Key Development Parameters	**Particulars**
Application Site Area (about)	6,270 m^2
Total Plot Ratio (Maximum) • Domestic • Non-domestic o Retail Belt	7.5 6.5 1.0 0.2
Total GFA (Maximum) • Domestic • Non-domestic o Retail Belt	47,025 m^2 (about) 40,755 m^2 (about) 6,270 m^2 (maximum) (1) 1,254 m^2 (minimum)
Maximum Site Coverage	Not more than 65% [excluding basements]
No. of Blocks • Residential tower on podium (including Retail Belt)	1
No. of Storeys • Residential Tower	**32 nos.** of domestic floors (above 3 levels of podium)
• Podium	**3 nos.** with clubhouse, covered landscape area, residential lobbies, E&M, shops and services and eating place (on G/F and 1/F only), above 3 levels of basement for use of shops and services and eating place, and car park
Maximum Building Height (adopting MiC)	**+129.035 mPD** (at main roof) (i.e. 3.2% minor relaxation of the BHR); and **+15 mPD** (at main roof and not exceeding 2-storeys above ground within Retail Belt)
No. of Flats	930 (not more than)
Average Flat Size	44m^2
Design Population (2)	2,232
Completion Year	2029
Private Open Space (3)	2,232

Key Development Parameters	**Particulars**
Public Open Space [in Open Space (3) zone outside of application site] • Site Area • Greenery Site Coverage	 1,100 m^2 (about) 30%
Private Carparking Spaces • Residential • Visitor • Non-domestic	240 nos. (not more than) 191 nos. (not more than) 5 nos. (not more than) 44 nos. (not more than)
Loading/ Unloading Bays • Residential • Non-domestic	 2 nos. 8 nos.
Motorcycle Parking Spaces • Residential • Non-domestic	 10 nos. 5 nos.
Bicycle Parking Spaces	60 nos.(not more than)

Remarks:

(1) The approximate total GFA (i.e. commercial GFA) in USS portion A and B is tentatively at about 1,100 m^2, and the commercial GFA in our Application Site is tentatively at about 5,570 m^2 (i.e. below the max. 6,270 m^2 – including retail belt's GFA of minimum 1,254 m^2, and at the FFL -5.7mPD of the USS GFA would be not less than 4,000m^2), complying with the requirements under lease and the Planning Brief, while the exact number is subject to detail design, and further liaisons and justifications in future GBP submissions to Buildings Department, and discharge of lease conditions to Lands Department.

(2) Based on a person per flat ratio of 2.4

(3) Based on the minimum standard of 1 m^2 per person as stipulated in the Hong Kong Planning Standards and Guidelines.

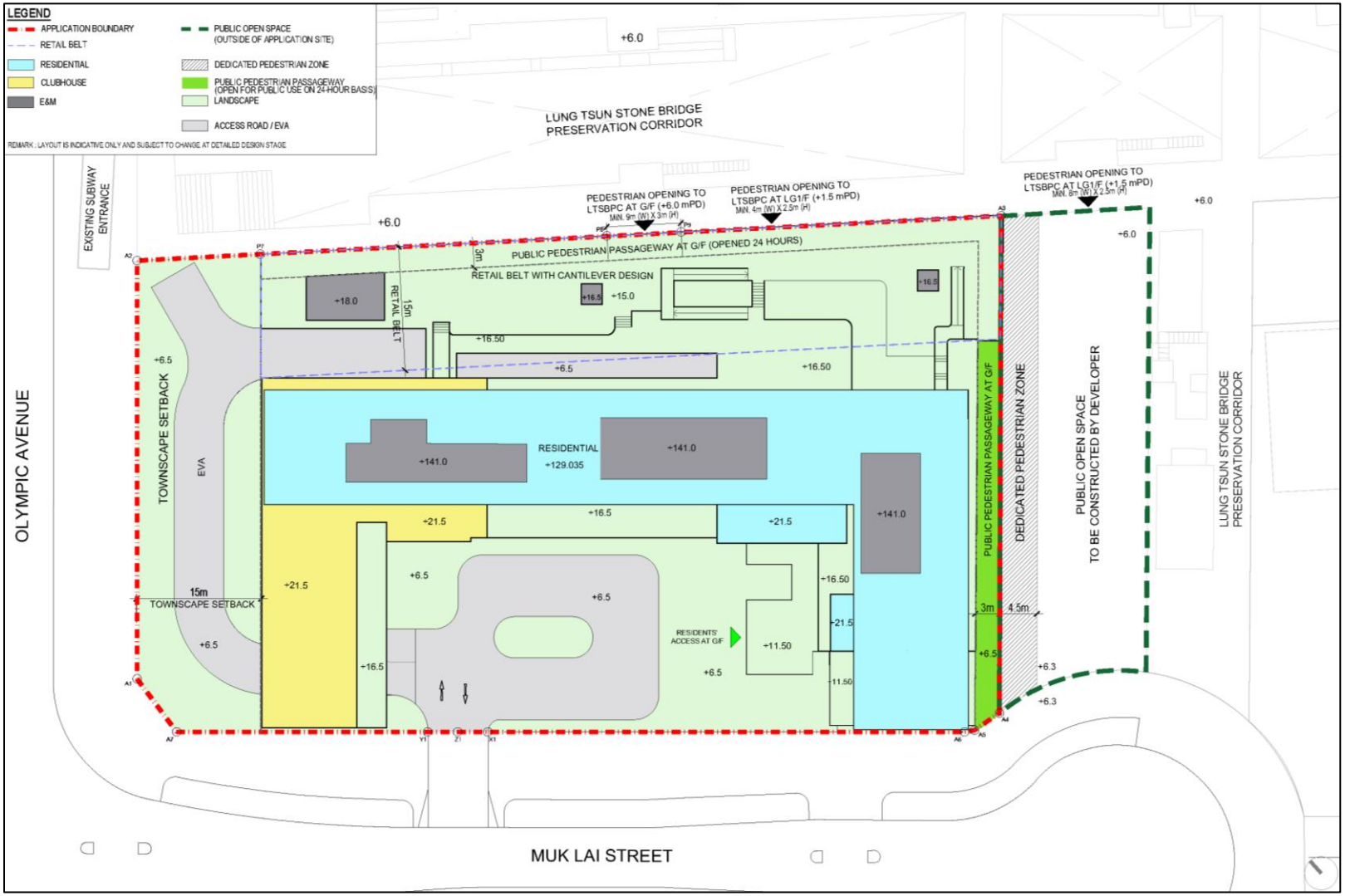

Figure 5: Master Layout Plan of the Proposed Comprehensive Development

5. Urban Design Proposal

5.1 The Application Site is located at a prime location in the Kai Tak City Centre, and abutting the LTSBPC which is of significant tourism and heritage value. The Site is only about 400m from the Kai Tak MTR Station and about 300m from Sung Wong Toi MTR Station, and is easily accessible from the major public open space of Station Square via LTSBPC. A comprehensive USS system connecting Kowloon City and San Po Kong at a district gateway with the KTD and the Kai Tak Station and Sung Wong Toi Station, is proposed by the Government to improve connectivity of the area as well as the Site with the surrounding district. The Site is accessible to a heritage trail, which traverses through the LTSBPC and along Olympic Avenue. A secondary activity node for arts and performance related uses is located at a nearby site to the north. The retail belt in the Site forms part of a whole network of retail belt commercial uses fronting on major public open spaces. (**Figure 6**)

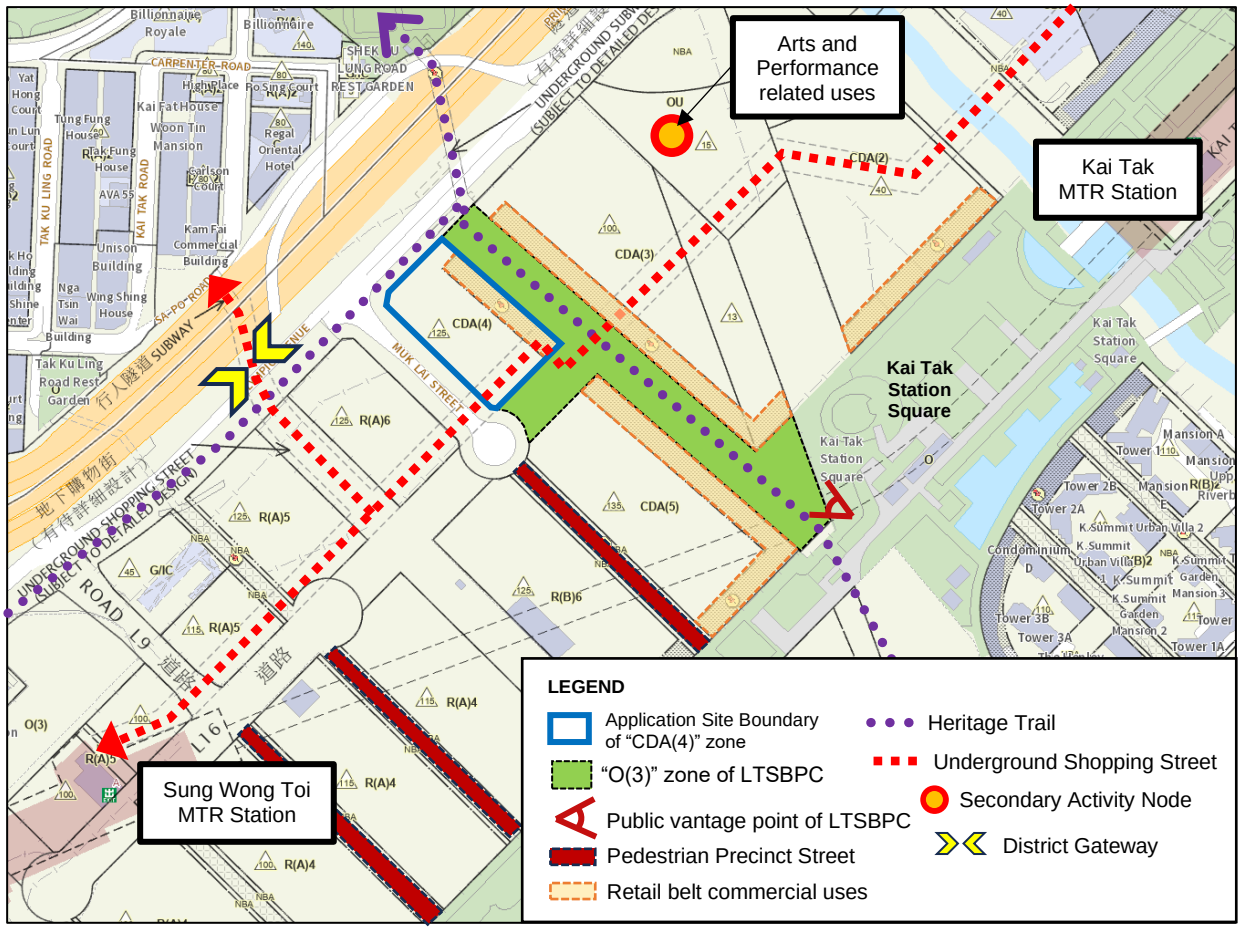

Figure 6: The Kai Tak Urban Design Framework in the vicinity of the Application Site

5.2 The Proposed Scheme in the Site follows the Kai Tak Development Urban Design Guidelines and Manual (KTUDGM) for the Domestic Sites, outlining a set of control parameters to ensure compatible scale, form, and design of the buildings to respect the

overall urban design framework for Kai Tak. The Proposed Scheme will adopt the Kai Tak Brand Identity Manual and Public Creatives Guidelines (BIMPG) in creating visually cohesive design elements, colours and patterns, in the public areas to match with the overall branding of Kai Tak.

Compliance with the Stepped Building Height Profile of the District

5.3 The proposed building height of +129.035mPD of the residential tower in the Site, is a minor increase of the BHR as stipulated on the Approved OZP, and falls in line with the KTUDGM to respect the building height profile. According to the OZP, the building heights for the district rise gradually from the waterfront towards the inland areas to the commercial belt in the Kai Tak City Centre, where a landmark building at "CDA(1)" zone (i.e. AIRSIDE) marks the highest level. (**Figure 7**) The building height of the Proposed Scheme forms part of the building height profile that descends in a south-west direction from the landmark building (+200mPD), to the "CDA(3)", "CDA(4)" and "CDA(5)" sites that frame the public open space of the LTSBPC at +100, 125 and 135mPD respectively, then descends further to the "R(A)" sites (+125 and +100mPD) towards the waterfront. (**Figure 7**)

5.4 The Proposed Scheme with a building height of +129.035mPD will respect the intended stepped building height profile for Kai Tak Development Area, and ensure that the residential tower is compatible and congruous with the surrounding developments, while integrity of the urban design framework at the LTSBPC is maintained.

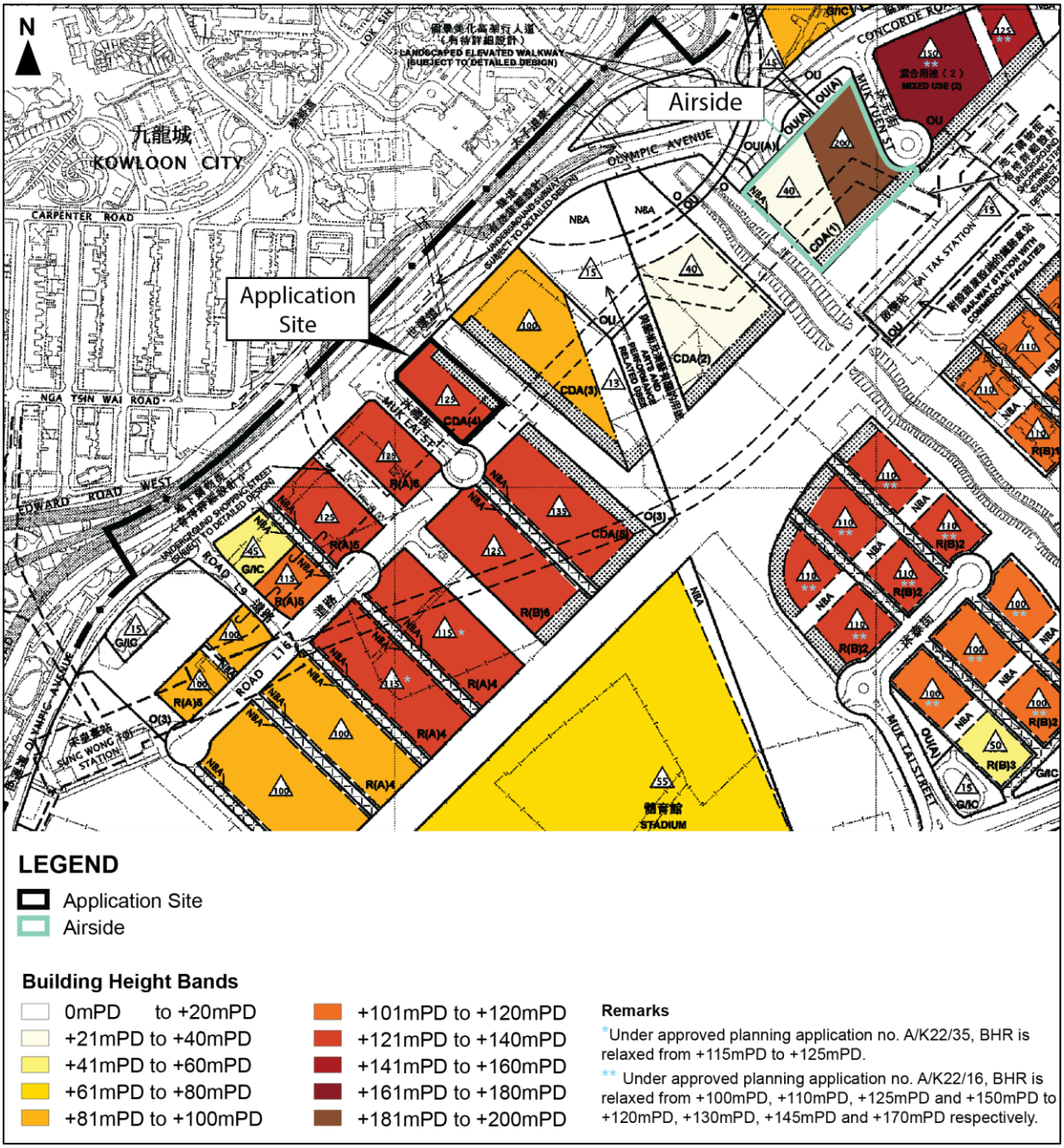

Figure 7: Compliance with the Stepped Building Height Profile of the District

Compliance with the Joint Practice Note No. 8 to adopt MiC

5.5 The proposed minor relaxation of BHR complies with the Joint Practice Note No. 8 (JPN8), in that the proposed increase in building height is within the acceptable 4% range of the total storey height of all MiC floors of the residential tower portion. It supports the Government's policy initiative to promote green and innovative buildings of enhanced facilitation measures for buildings adopting MiC. It would enable better quality control, simplify the construction process, reduces disturbance and nuisance to the neighbourhood, and reduce waste. [1]

Residential Tower and Podium Design Response to the LTSBPC

5.6 The configuration and form of the residential tower and podium in the Proposed Scheme are seriously restricted by site constraints, the need to accommodate the permitted maximum development intensity within the buildable area, and to provide quality private spaces for the enjoyment of residents.

5.7 The building height of the residential tower and podium complements the building height profile in the neighbourhood. There is very limited scope to manipulate the building height of the residential tower, as the proposed minor relaxation is solely to adopt the MiC in the residential tower portion, and the Site itself is highly constrained and small-scale.

5.8 The site constraints are made up of the following (**Figure 8**):

(i) Townscape setback of 15m-wide at the north-west boundary;
(ii) Retail belt setback of 15m-wide at the north-east boundary;
(iii) Public pedestrian passageway setback of 3m-wide at the south-east boundary;
(iv) Fixed vehicular access points at the south-west boundary;
(v) A maximum site coverage of 65%;
(vi) A maximum BHR of +125mPD;
(vii) A maximum plot ratio of 7.5, including a maximum domestic plot ratio of 6.5 and non-domestic plot ratio of 1.0;
(viii) Adjacent POS located at the south-east boundary;
(ix) The LTSBPC is located at the north-east boundary.
(x) The heavily-trafficked Olympic Avenue and Prince Edward Road East is located at the north;
(xi) Vertical pedestrian connections to be designated at the east and south corners of the Site;

[1] Source: https://www.pland.gov.hk/pland_en/tech_doc/joint_pn/index.html

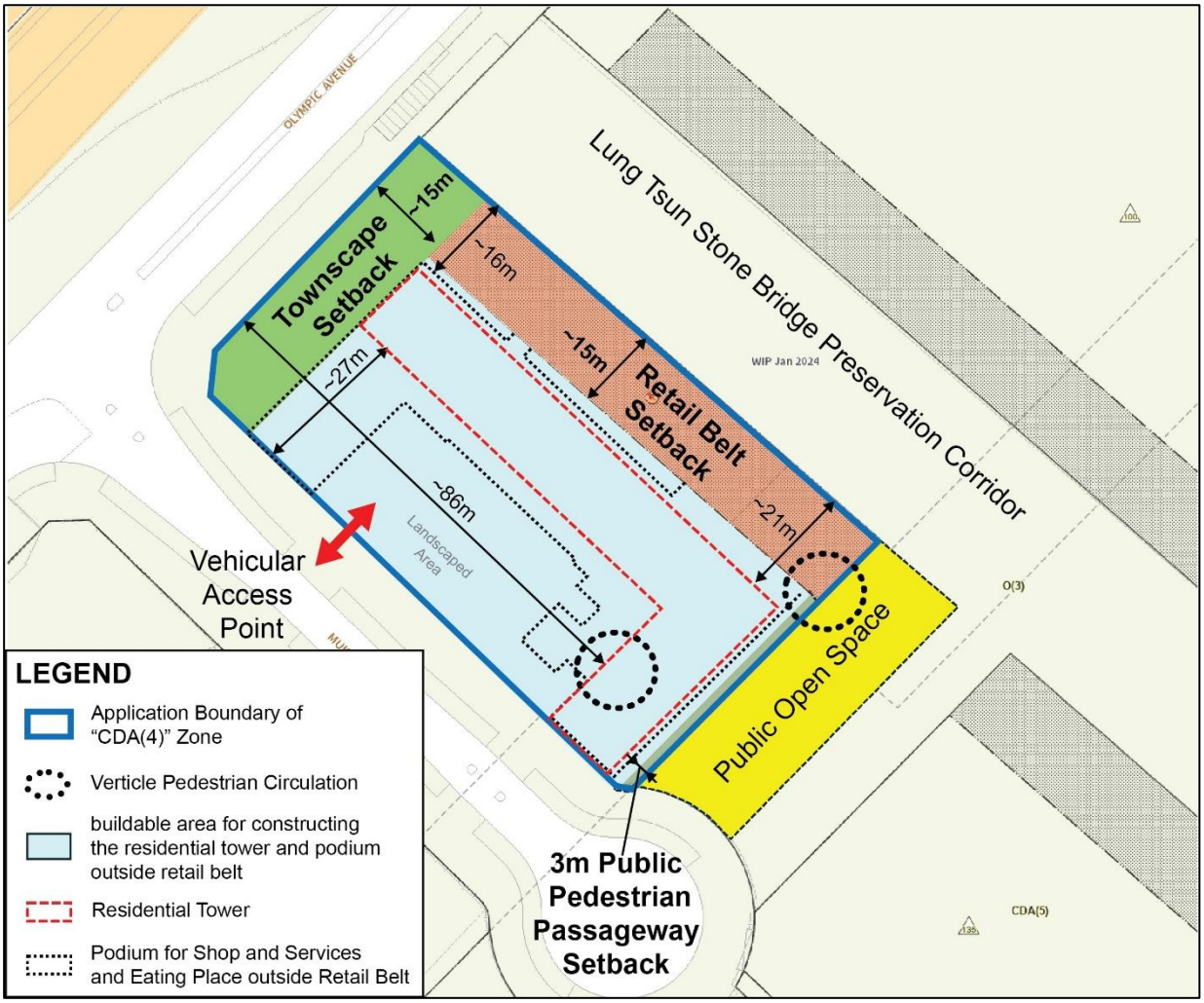

Figure 8: Stringent site constraints of the "CDA(4)" zone

5.9 Furthermore, the site area of the "CDA(4)" site is a lot smaller than the "CDA(3)" and "CDA(5)" sites, which are the only three CDA sites that are assigned with stringent control parameters to closely relate to and frame the LTSBPC. (**Figure 9**)

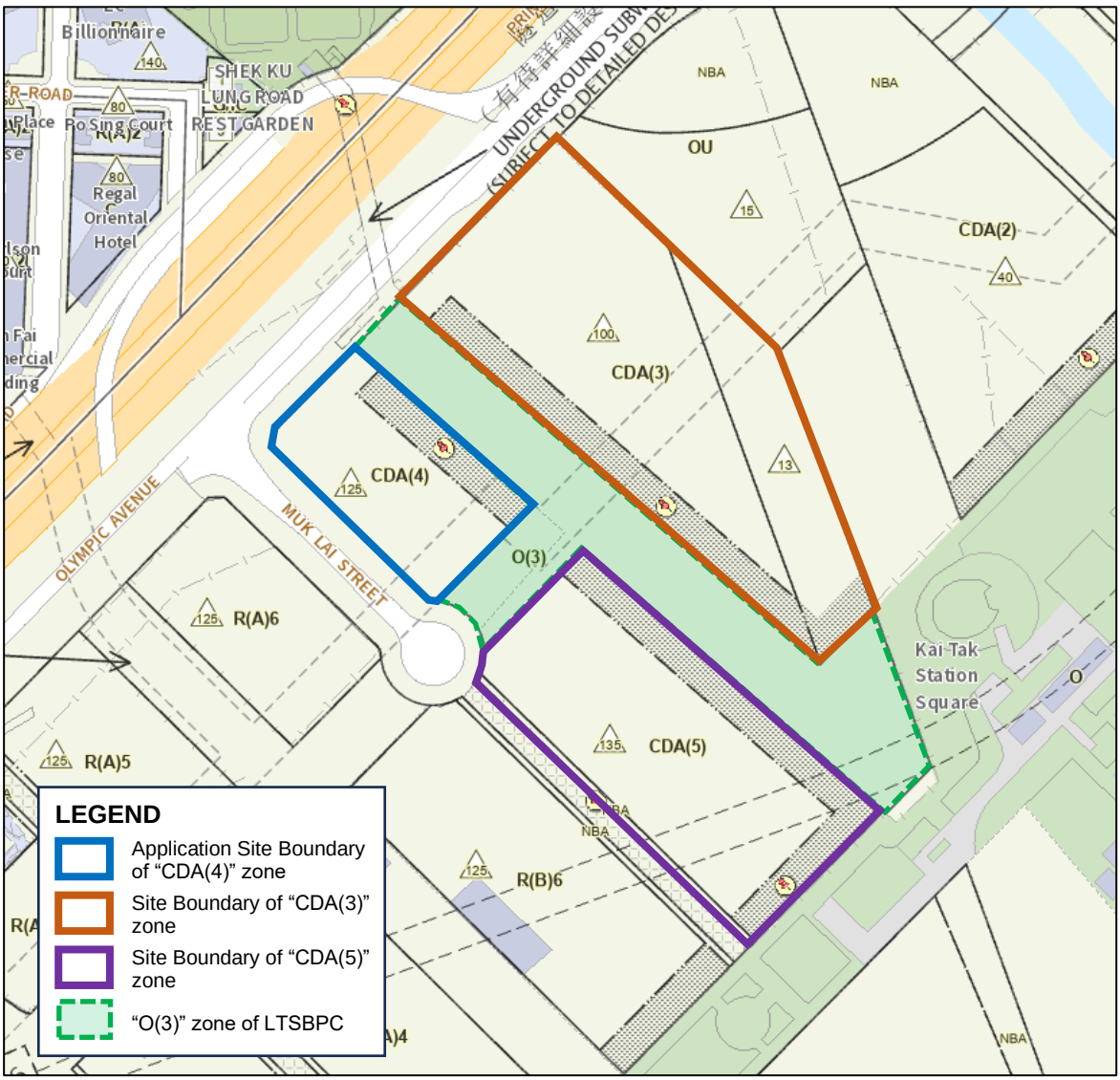

Figure 9: The relatively small size of "CDA(4)" zone compared to the "CDA(3)" and "CDA(5)" zones that frame the LTSBPC

Modulation of Residential Tower and Podium

5.10 The site constraints of the setback requirements within the "CDA(4)" site have rendered the buildable area for constructing the residential tower and podium outside retail belt, to be only about 3,940m^2 or about 63% of the total site area. Such a small buildable area that needs to accommodate the permitted development intensity (including site coverage, BHR and plot ratio), makes the design flexibility of the blocks to be seriously restricted. In addition, the fixed vehicular access points have also confined the access driveway and residents' entrance hallway of the podium at the south-west boundary, facing Muk Lai Street. G/F landscaping is reserved to soften the impact of vehicular access for the convenience and enjoyment of residents. Likewise, the designated locations of the vertical pedestrian connections have confined the podium to align on the south-east boundary, to allow integration and connection with the adjacent POS. To minimise overlooking effect on the residential units from adjacent sites, the residential tower is placed at a relatively centred position at the site with an "L" shape to minimise residential units locating near Olympic Avenue and Muk Lai Street to minimise noise and air quality nuisance to residents.

5.11 In fact, modulation of building form has been optimized with a setback of the residential tower by 16m to 21m at the north-west boundary facing LTSBPC, and 4m at the south-east boundary facing POS. At the access driveway side, a setback of 27m is provided at the south-west boundary to enable an open and comfortable entrance area for the enjoyment of residents. (**Figure 8**) Setback from LTSBC allowed good screening of residential tower (especially for lower parts nearer to LTSBC) by retail belt for public walking along LTSBC. The building configuration of the Proposed Scheme complies with the Sustainable Building Design Guidelines.

5.12 Based on the VIA (**Appendix 10**), the viewpoints at street-levels of VP2, VP3, VP4 and VP5 show that the L-shaped configuration of the residential tower (Proposed Scheme), would be compatible and congruous with the built form of the urban context, including the LTSBPC. It would not appear to be lengthy when viewed in the future context of the high-rise urban environment. The VIA has demonstrated that the configuration of the residential tower and podium would not obstruct any visual corridors.

5.13 To achieve "podium-free" design as much as practical, footprint of podium outside retail belt has been put to coincide with residential tower as much as practical under the allowable site coverage 65%.

5.14 According to the AVA (**Appendix 8**), the air ventilation around the podium at the ground level, is at an optimal with sufficient airflow to create a comfortable and healthy environment for pedestrians.

Retail Belt Design Response to LTSBPC

5.15 The retail belt block would comply with the dimensions, setback specifications, and façade treatment as set out in the Planning Brief, lease conditions and KTUDGM. It would not exceed two storeys above ground and +15mPD (at main roof) BHR, and full length of the retail belt will front onto the LTSBPC and adopt a cantilever form, to serve as appropriate design responses to the LTSBPC. The low-rise block for shops and services and eating place would be compatible and congruous in size and form with the surrounding developments and setting.

5.16 The retail belt block would contain a building setback of 3m from the site boundary with minimum clear headroom of 4.2m at the G/F frontage for covered unobstructed public pedestrian passageway, which will be opened to public on a 24-hour basis and provide physical connection with the adjacent LTSBPC. The shopfront on G/F and 1/F will adopt open and transparent façade design to enhance visual connection with the LTSBPC. The shop units on G/F will have frontage abutting and direct access to and from the public pedestrian passageway. The 3m-wide covered pedestrian passageway, and welcoming entrance space at G/F of the retail belt, will serve as public spaces to connect with the adjacent open spaces visually and physically at LTSBPC. The landscaped roof at the retail block would be accessible for the use of occupiers of the site.

5.17 Designated pedestrian openings will be provided at G/F and B1/F levels of LTSBPC. The pedestrian opening at G/F will connect onto the public pedestrian passageway of the retail belt, and two pedestrian openings will be provided at B1/F will connect onto the same level of LTSBPC. The pedestrian openings will be designed with a permeable and welcoming entrance space to ensure an attractive and vibrant interface between LTSBPC and the Site. (**Figure 12**, **Figure 13**, **Figure 14**, and **Figure 15**)

5.18 For the façade treatment of the retail belt block, the colour of architectural steel frame will be in dark grey tones and colour of external finishes of Retail Belt structure will be in grey tones to complement the colour scheme in the Kai Tak Brand Identity Manual and Public Creatives Guideline (KTBMPC). There will be thick shrubs and greenery lining the entire length of the retail belt block roof-edge, to soften the building mass and create visual interest. (**Figure 12**) The at-grade public passageways within the proposed development will be built with high quality pavement coherent with timber deck paving of the LTSBPC subject to detailed design. The permeable and welcoming entrance spaces at pedestrian connections between the Site and LTSBPC would ensure attractive interface and blending of the two environments. Overall, the above design treatments will enhance the integration of LTSBPC and the Site with a strong sense of place.

5.19 The retail belt design will be in harmony and ensure visual continuity of design with that under the "CDA(5)" site to its southeast. The dimensions, cantilever design, setback specifications and façade treatment (including roof-edge greenery lining) of the proposed retail belt will be coherent with that in the "CDA(5)" site. The low-rise building

height with cantilever form will be strictly followed, and the retail belt will make up the entire frontage on the LTSBPC. The 3m-wide setback for the public pedestrian passageway at the G/F onto the LTSBPC will be followed and ensure there is a continuous corridor that would align with that in the "CDA(5)" site. The similar retail belt designs in the two sites will ensure a holistic and coherent design language and streetscape to frame the LTSBPC, and create a harmonious and continuity of design as well as respecting the cultural and heritage character of the LTSBPC.

G/F Commercial Extension from Retail Belt to Enhance Vibrancy and Amenity for Visitors

5.20 The available commercial GFA that is allocated outside of the retail belt, is proposed to form a commercial extension along the G/F of the south-eastern boundary of the Site for shops and services and eating place (G/F plan of **Appendix 2**, and **Figure 14**). This would offer additional G/F commercial activities that fronts on the south-eastern boundary where the POS is located, and enhance the vibrancy and selection of ambience for visitors there. A 3m-wide setback at the south-eastern boundary is also provided for a public pedestrian passageway at G/F that links with the passageway at the retail belt side. The open and transparent façade treatment, paving design and character of the retail extension would be coherent with the retail belt block. Pedestrian openings provided in the commercial extension, connecting to the public pedestrian passageway and fronting onto the POS would be designed to be permeable and welcoming to visitors. Overall, this commercial extension adds to the enjoyment of visitors, and enhance the streetscape vibrancy of the LTSBPC at the dedicated POS location on G/F.

Preserving the Ambience of LTSBPC and Enhancing Pedestrian Walking Environment

5.21 Appropriate lighting to enhance the design of the retail belt as well as to complement the design of LTSBPC will be considered in detailed design stage. All boundary walls and fences, particularly fronting the pedestrian walkway on Olympic Avenue and parts of LTSBPC at the north-west boundary (**Figure 10**) and partly fronting Muk Lai Street at the south-west boundary of the Site, will be designed to achieve visual and physical porosity of not less than 50% of the surface area across their entire length per linear metre from not more than 1 metre above the general formation level of adjacent pedestrian street, footpaths or land. Potential design of such fence is illustrated in **Figure 12**.

5.22 The ambience and walking environment for pedestrians of the LTSBPC will be preserved by not placing any kitchen exhaust from restaurants, air conditioning and mechanical ventilation systems and toilets to emit directly onto the pedestrian walkways and remnants of the LTSBPC. This arrangement will foster a pleasant walking environment for visitors to appreciate the LTSBPC, and eliminate any nuisance generated from the louvres or exhausts.

Townscape Setback

5.23 The townscape setback will comply with the 15m-wide full-height setback at the north-western boundary within the Site. This would respect the visual context and heritage significance of the LTSBPC. It would enhance the visual openness and highlight the entry point of the northern LTSBPC, for the enjoyment of pedestrians while walking along the heritage trail on Olympic Avenue (**Figure 6** and **Figure 12**), and as outlined in the KTUDGM. Within the townscape setback, there will not be any structures that would impinge the purpose or function of the townscape setback nor create adverse visual impact. In general, the townscape setback will contain soft and hard landscaping of trees, lawns and shrubs with design incorporating necessary EVA for the use of residents and their visitors. For more descriptions and illustrations, please refer to the Landscape Master Plan in **Appendix 11**.

Public Open Space at the South-East Boundary of Site

5.24 The POS will be designed and constructed by the Applicant and handed over to the Government upon completion as stipulated under Land Grant. The POS shall be designed and constructed to the satisfaction of relevant government Bureax/departments. It will be open to the public on a 24-hour basis, subject to government arrangement. The design of the POS will follow the standards in the Public Open Space in Private Developments Design and Management Guidelines (POSPD). For more descriptions and illustrations, please refer to the Landscape Master Plan in **Appendix 11**.

Maximize at-grade public spaces

5.25 The proposed development would comply with the requirements of providing at-grade public spaces. There will be a 3m-wide setback for the public pedestrian passageway at G/F of the retail belt, fronting the LTSBPC; and the POS with a site area of 1,100m^2 will be provided. In addition, there will be a 3m-wide setback for public pedestrian passageway in front of the G/F commercial extension, fronting the POS at the south-eastern boundary of the Site.

Pedestrian Facilities and Connectivity of the Site with Surrounding Uses

5.26 The LTSBPC comprises G/F and B1/F with linked walkways, footbridges and resting and viewing spaces for visitors to appreciate the remnants. According to the Planning Brief, the Site is to provide convenient pedestrian connections both internally and with its surrounding areas (particularly LTSBPC) and developments.

5.27 The Proposed Scheme will comply with the requirements of providing three designated pedestrian openings to enhance connectivity of the development with the LTSBPC. (**Figure 11** and **Appendix 4**) The pedestrian opening at G/F of the retail belt will comply

with a minimum width of 9m and minimum height of 3m, and will be provided at FFL of +6.0mPD. It will allow smooth and unobstructed connection with the LTSBPC at the FFL of +6.0mPD, without any level difference. (**Figure 13** and G/F plan of MLP in **Appendix 2**) The pedestrian opening at the B1/F (within the Application Site) will comply with a minimum width of 4m and minimum height of 2.5m, and will be provided at FFL of +1.5mPD. It will allow smooth and unobstructed connection with the LTSBPC at the FFL +1.5mPD, without any level difference. (**Figure 14** and B1/F plan of MLP **in Appendix 2**) The pedestrian opening at the B1/F (outside of the Application Site and within the USS) will comply with a minimum width of 8m and minimum height of 2.5m, and will be provided at FFL of +1.5mPD. It will allow smooth and unobstructed connection of the USS and our Site with the LTSBPC at the FFL +1.5mPD, without any level difference. (**Figure 15** and B1/F plan of MLP in **Appendix 2**) The dimensions and locations of the pedestrian openings will comply with the specifications under the PB and lease conditions.

5.28 There will be a 3m-wide public pedestrian passageway within the Site, that would border the north-east and south-east boundary, and allow pedestrian circulation and enhance connectivity with the adjacent LTSBPC.

Underground Shopping Street

5.29 The Underground Shopping Street (USS) will provide commercial (shops & services and eating place) use and a 24-hour barrier-free unobstructed pedestrian passage at the underground levels of land within the Site, area zoned "O(3)" to the southeast of the Site, and area shown as 'Road' to the southwest of the Site. (**Figure 11**, **Appendix 4**, and B1/F and B3/F plans of MLP **Appendix 2**) The USS will comply with the overall width of about 20m in general, with a minimum clear width of 8m and a minimum clear height of 3m for the unobstructed pedestrian passage. This major section of the USS, predominantly within the "CDA(4)" zone will be constructed, managed and maintained by the developer, and will be provided at a general FFL of -5.7mPD. (B3/F plan of MLP **Appendix 2**)

5.30 The USS section in the area shown as 'Road' to the southwest of the Site, will continue with the next USS section within the "R(A)6" or Site 2A3 to its southwest. (B3/F plan of MLP in **Appendix 2**) A 24-hour barrier-free underground pedestrian link (outside of the Application Site and in the "O(3)" zone) at the B3/F, with a minimum clear width of 4m, will be provided at the same FFL -5.7mPD as the USS, and link up the USS with the lot boundary of the "CDA(5)" or Site 2B1 to the southeast, to facilitate residents of the "CDA(5)" site to access the USS. (B3/F plan of MLP in **Appendix 2**) Commercial floor space will be provided within the "CDA(4)" zone adjoining the same FFL -5.7mPD of the USS, so that the total commercial GFA at such level would not be less than 4,000m^2. (**Figure 11** and **Appendix 4**)

5.31 Vertical pedestrian connection in the form of a lift and 2-way escalators and a pedestrian opening (minimum clear width of 8m and minimum clear height of 2.5m), with 24-hour barrier-free access, will be provided at the north-eastern end of the USS section to link up the USS at FFL -5.7mPD with B1/F of the LTSBPC at FFL +1.5mPD, via the USS pedestrian walkway within the Site. This would allow pedestrian connectivity of the USS section in our Site to continue north-eastwards to the other side of the LTSBPC via LTSBPC. (**Figure 11**, B1/F and B3/F plans of MLP in **Appendix 2**)

5.32 Vertical pedestrian connection in the form of a lift and 2-way escalators, with 24-hour barrier-free access, will be provided at the south-western end of the USS section to link up the USS at FFL -5.7mPD with G/F of the Site at FFL +6.3mPD, via the USS pedestrian walkway within the Site. The G/F level at this portion of the Site will align with adjacent POS land formation at +6.3mPD. This would allow pedestrian connectivity between the USS and the adjoining POS and public road at ground level. (B1/F and B3/F plans of MLP in **Appendix 2**)

5.33 The dimensions and locations of the USS, underground pedestrian linkage, and vertical pedestrian connections will generally comply with the specifications under the PB and lease conditions.

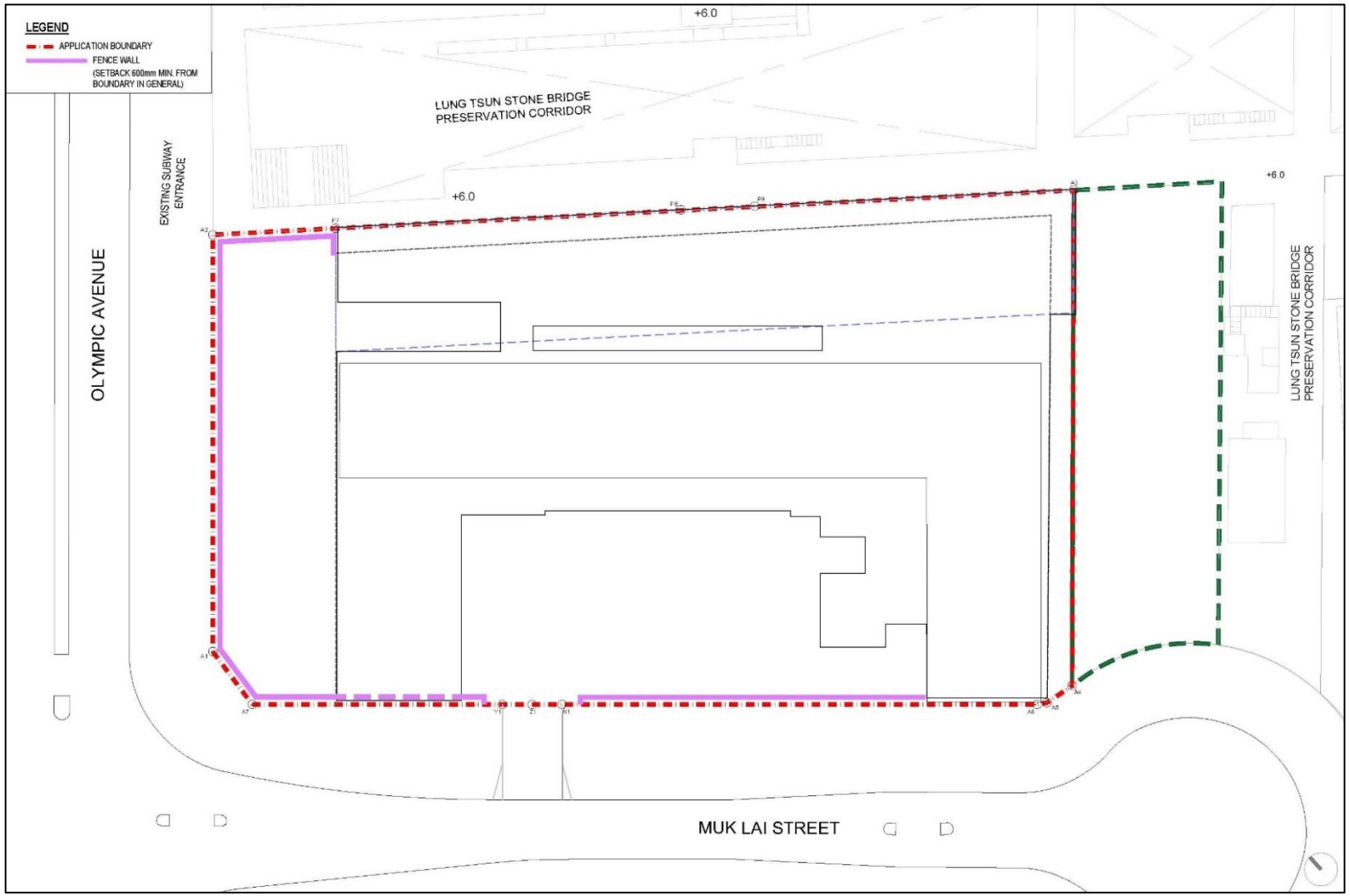

Figure 10: Distribution of Boundary Walls and Fences

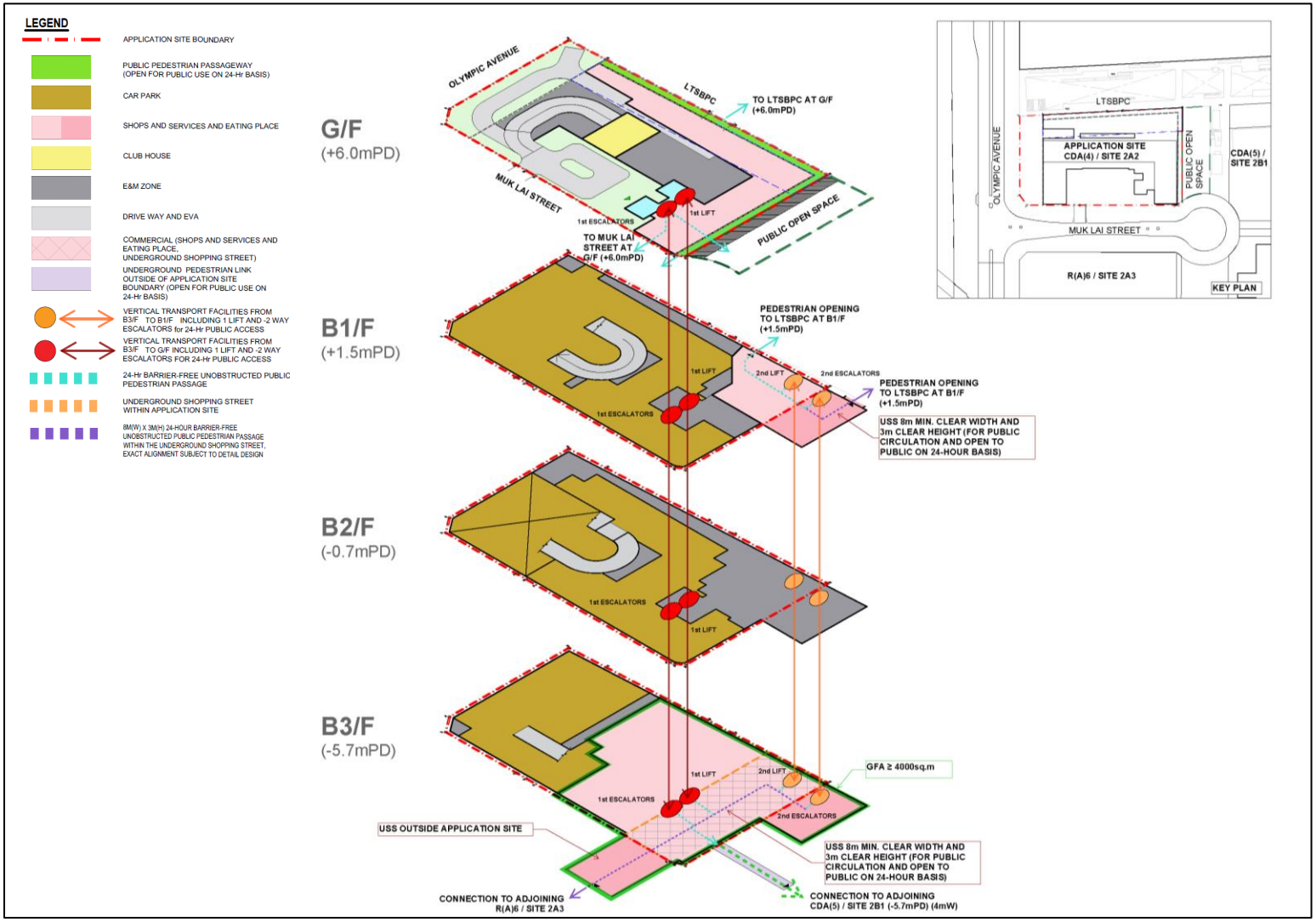

Figure 11: Pedestrian Facilities and Connectivity of the Proposed Scheme

Figure 12: Artist's Impression of the Retail Belt and LTSBPC on G/F level from Olympic Avenue

Figure 13: Artist's Impression of the Retail Belt and three pedestrian connections to the LTSBPC on G/F and B1/F at the north-western boundary of the Site

Figure 14: Artist's Impression of the Retail Belt and the LTSBPC on G/F at the eastern corner of the Site

Figure 15: Artist's Impression of the Connection between Retail Belt and LTSBPC on B1/F at the eastern corner of the Site

6. Technical Assessments

Environmental Assessment

6.1 An Environmental Assessment (EA) is provided in **Appendix 5**. The EA contains assessment on the impact of road traffic noise, fixed noise, qualitative air quality, and cultural heritage. Potential environmental impacts from the sources to the sensitive uses have been assessed with mitigation measures proposed as appropriate to minimize the potential environmental impacts. With the recommended mitigation measures, it is concluded that no adverse environmental impacts are anticipated from the construction and operation of the proposed development.

Drainage Impact Assessments

6.2 A Drainage Impact Assessment is provided in **Appendix 6** to demonstrate the Proposed Scheme would not create adverse impact to the drainage infrastructure in the vicinity.

Sewerage Impact Assessments

6.3 A Sewerage Impact Assessments is provided in **Appendix 7** to demonstrate the Proposed Scheme would not create adverse impact to the sewerage infrastructure in the vicinity.

Air Ventilation Assessment

6.4 Air Ventilation Assessment (AVA) is provided in **Appendix 8**. From the AVA, it is concluded that the proposed building design would not induce significant adverse impact in terms of air ventilation to the nearby environment.

Traffic Impact Assessment

6.5 A Traffic Impact Assessment (TIA) is provided in **Appendix 9**. It has demonstrated that the traffic generated by the proposed developments can be absorbed by the nearby future road network and would not cause any adverse traffic impact. Hence it can be concluded that the proposed developments are acceptable in traffic terms.

Visual Impact Assessment

6.6 A Visual Impact Assessment (VIA) for pre-submission purpose is provided in **Appendix 10**. A total of six viewpoints of public locations have been identified and a preliminary visual impact assessment is provided. The comparison between the Notional Scheme by the Civil Engineering and Development Department (CEDD) in Attachment V of MPC paper no. 9/21 and the proposed scheme are summarized and assessed for each viewing point (VP). The overall visual impact arising from the proposed development will be from "negligible" to "slightly to moderately adverse". Assuming that full and

appropriate implementation of mitigation measures are carried out during operation phase, the visual impacts are perceived to be acceptable with mitigation measures.

Landscape Master Plan

6.7 A Landscape Master Plan report, including the open space provision, greenery provision and pedestrian circulation diagrams is provided in **Appendix 11**.

7. Planning Justifications

Falls in line with Government's Policy on Increasing Housing Land Supply

7.1 The Application Site forms part of a government land sale tender (NKIL 6590) that was awarded to the Applicant in September 2023. The Proposed Scheme is earmarked to contribute to, and alleviate the long-term housing supply of private flats.

Acute Demand of Private Housing Supply in the coming decade

7.2 The Policy Address 2022 emphasized that land and housing is the Government's top priority and the Long-Term Housing Strategy (LTHS) recommended a multi-pronged supply-led strategy. The latest LTHS projected the demand for private housing in the next 10 years will be 129,000 units and the basic target is to achieve 72,000 units in the next five years. However, a report published by the Our Hong Kong Foundation found that the private housing supply in the coming decade would tail off and there may not be sufficient supply to meet the target demand.[2] In addition, recent default of several Government land sale tenders has been commentated by experts that there is a declining trend in the outlook of private housing supply. As such, the Proposed Scheme would contribute to the acute demand of private housing supply in the coming decade.

Complies with the Planning Intention of the "CDA(4)" Zone

7.3 The Proposed Scheme fully complies with the planning intention of the "CDA(4)" zone. It complies with the development intensity and the use for comprehensive residential development as stipulated under the zoning. A MLP is provided to demonstrate that the disposition, design, and scale of the proposed development is in harmony with the Preservation Corridor and compatible with the surrounding land uses.

[2] Our Hong Kong Foundation. (2023). 10-Year Housing Supply Forecast 2023. [Accessed on 2 November 2023] Available at: https://ourhkfoundation.org.hk/sites/default/files/media/pdf/OHKF_2023_Land&Housing_Report_fullset_EN.pdf

Complies with the Joint Practice Note No. 8 to adopt MiC

7.4 The minor relaxation of BHR in the Proposed Scheme is solely for the adoption of MiC to enable better quality control, shortens construction period, reduce disturbance and nuisances to the neighbourhood, and reduce waste. The visual appraisal in the VIA has demonstrated that the visual impact of increasing the building height by (about) 4m or not more than 4% (of the residential tower MiC) is negligible from all the viewpoints. The adoption of MiC in the Proposed Scheme fully complies with the requirements of adopting MiC in JPN No. 8.

Urban Design Merits

7.5 The Proposed Scheme contains the following design merits:

(i) The building height of the residential tower and podium complements the building height profile of the neighbourhood;
(ii) Slightly increased building height to adopt MiC and the benefits that come with this;
(iii) Mitigating the stringent site constraints by optimizing the setbacks of the residential tower, and ensuring there is sufficient space for quality design of the entrance area, townscape setback and landscape areas at G/F for future residents;
(iv) An L-shaped configuration of the residential tower would be compatible and congruous with the built form of the urban context, including LTSBPC;
(v) Optimizing podium-free design of the retail belt;
(vi) Comply with the dimensions, setback specifications and façade treatment to be compatible and congruous with the LTSBPC and surrounding developments;
(vii) G/F commercial extension from retail belt to enhance vibrancy and amenity for visitors;
(viii) Maximize at-grade public spaces by 3m-wide setback for public pedestrian passageway, and the POS;
(ix) Provision of the POS and the landscaping and public amenities at the south-east boundary of site;
(x) Providing pedestrian facilities, underground shopping street and connectivity of the site with surrounding uses;

Technically Feasible

7.6 The accompanying technical assessments has demonstrated that the proposed comprehensive development is technically feasible and complies with the relevant Government standards in terms of environmental, drainage, sewerage, air ventilation, traffic, visual, and landscape aspects.

Satisfies the Harbour Planning Principles

7.7 The Application Site is located within the waterfront area of Kai Tak development, and the Proposed Scheme will form part of the cityscape. The Proposed Scheme and supporting facilities at its strategic location would contribute to the Harbour Vision Statement to "make Victoria Harbour attractive, vibrant, accessible and symbolic of Hong Kong: a harbour for the people and a harbour of life."

Table 3: The Proposed Scheme satisfies the Harbour Planning Principles

The Harbour Planning Principles	**Proposed Scheme**
Preserving Victoria Harbour	The Proposed Scheme does not involve any reclamation nor destruction to the harbour. Victoria Harbour is preserved as a natural asset to the public. The Proposed Scheme is considered visually compatible with the existing developments when viewed from the harbourfront area.
Stakeholder Engagement	All relevant stakeholders will be consulted on the section 16 planning application during the 3-week statutory public consultation period. Any comments received will be consider by the Applicant and updated in the development proposal as far as practicable.
Sustainable Development and Integrated Planning	The proposed development aims to cater for the economic, social and environmental needs of society and are compatible with the harbourfront setting. The retail facilities at the 2-storey retail belt would help to achieve a balanced mix of land uses in the pre-dominantly residential neighbourhood and provide local job opportunities. The proposed retail facilities will also promote the vibrancy and liveliness of the area, especially along the LTSBPC. Various technical assessments will be conducted and the results will reveal that the proposed development is technically feasible and

The Harbour Planning Principles	**Proposed Scheme**
	compatible with the surrounding development to form a stepped building height profile.
Proactive Harbour Enhancement	The proposed building height will be in keeping with the building height profile of the surrounding buildings. A stepped height profile will be formed from the landmark tower at "CDA(1)" site, the proposed scheme, and adjacent public housing sites, and contribute to the visual interest and harbour image.
Vibrant Harbour and Public Enjoyment	The proposed shops and services and eating place facilities at the proposed scheme will enhance the liveliness and vibrancy of the waterfront area. The proposed scheme will bring diversity in land uses and offer opportunities for on-street pedestrian activities and add life and vitality to the harbour.
Accessible Harbour	The proposed scheme will contribute to make of a better pedestrian walking environment along LTSBPC by the provision of a variety of commercial activities, and enhance the connectivity between the inner Kowloon City Area to the Kai Tak waterfront promenade. The proposed scheme will contribute to the underground shopping street ambience and vibrancy in providing shops and services and eating place and a connection between the surrounding underground shopping streets and pedestrian linkages.

Meeting the Planning Requirements in the Planning Brief

7.8 The MLP and LMP has been reviewed in conjunction with the planning requirements of the Planning Brief. In this respect, the Proposed Scheme generally complies with the broad development parameters, planning and development requirements.

Table 4: Planning Brief and the Proposed Comprehensive Development

	Item	**Particulars "CDA(4)"**	**Compliance (Yes/ No)**
1.	Site Area	About 0.63 ha	☑ Yes. Please refer to **Table 2** and the adopted site area.
2.	OZP Zoning and Planning Intention	– "CDA(4)": intended for comprehensive residential development with a low-rise retail block fronting the LTSBPC. This zoning is to ensure the disposition and design of the development would be in harmony with the LTSBPC.	☑ Yes.
		– A MLP shall be prepared in accordance with the format under the Town Planning Board Guidelines on Submission of MLP (TPB PG-No. 18B).	☑ Yes.
3.	Proposed Uses	– Primarily for residential use with complementary commercial uses	☑ Yes
		– 'Shop and Services' and 'Eating Place' uses shall be provided within the retail belt portion of the Site abutting the LTSBPC.	☑ Yes
		– Social Welfare Facilities (SWF), as required by the Government, shall be provided in the land sale site covering the Site and the "R(A)6" site to its southwest. The facilities could be provided within the Site, or the "R(A)6" site, or both. The types of social welfare facilities to be provided include: (i) one neighbourhood elderly centre (NEC) with a minimum net operating floor area (NOFA) of 302.8m^2; (ii) one 100-place hostel for severely mentally handicapped persons (HSMH) with a minimum NOFA of 1,381.6m^2;	☑ Yes. All of the SWF are provided in the "R(A)6" site and listed in para. 4.4 of this statement.

	Item	**Particulars "CDA(4)"**	**Compliance (Yes/ No)**
		(iii) one 100-place day activity centre (DAC) with a minimum NOFA of 638.1m^2; (iv) one district support centre for persons with disabilities (DSC) with a minimum NOFA of 334.4m^2; (v) one boys' home (BH) with a minimum NOFA of 1,116.9m^2; and – one cyber youth support team (CYST) with a minimum NOFA of 123.3m^2.	
4.	PR / GFA	– Maximum PR of 7.5 or maximum GFA of 47,250m^2 - Residential (maximum PR of 6.5 or maximum GFA of 40,950m^2) - Commercial (maximum PR of 1.0 or maximum GFA of 6,300m^2), which shall include PR/GFA of retail belt - Retail belt (minimum PR of 0.2 or minimum GFA of 1,260m^2) (refer to Item 8 below) - Floor space for social welfare facilities, as required by the Government, are to be disregarded in calculation of maximum PR/GFA	☑ Yes. Please refer to **Table 2**.
		– The GFA of the public pedestrian passageway on G/F of the retail belt may be disregarded in the calculation of maximum PR/GFA, subject to the approval/agreement of the Building Authority.	☑ Yes
5.	SC	– Maximum 65% (excluding basement(s))	☑ Yes
6.	BH	– Maximum 125mPD (except for land designated townscape setback)	☒ No. Please refer our justifications in para. 4.2 and 7.4, Chapter 5 Urban Design Proposal, **Appendix 10** VIA, and MLP **Appendix 2**, Sections AA and BB.
		– On land designated 'Shop and Services' and 'Eating Place' uses only (i.e. retail belt): not exceeding two storeys above ground and 15mPD	☑ Yes. Pleaser efer to MLP **Appendix 2**, Sections AA and BB.

	Item	**Particulars "CDA(4)"**	**Compliance (Yes/ No)**
7.	Disposition of Buildings	– Disposition of buildings shall be arranged in such a way to avoid any visual intrusion that may affect the ambience of the LTSBPC.	☑ Yes. Please refer to para. 5.3 to 5.8, and 5.14 of this statement.
8.	Retail Belt	– Building with a minimum PR of 0.2 (i.e. a minimum GFA of 1,260m^2) and not exceeding two storeys above ground and 15mPD shall be provided in the retail belt abutting the LTSBPC to accommodate 'Shop and Services' and 'Eating Place' uses.	☑ Yes. Please refer to para. 5.14 of this Planning Statement.
		– Basement development underneath the retail belt is allowed.	☑ Yes. MLP **Appendix 2**, B1/F to B3/F.
		– The key design requirements for the retail belt are: <u>Cantilever Design fronting the LTSBPC</u> (i) full length of retail belt fronting the LTSBPC shall be provided with cantilever;	☑ Yes. Please refer to para. 5.15 to 5.19 of this Planning Statement, **Figure 13**, and MLP **Appendix 2.**
		(ii) a building setback of 3m from the site boundary abutting the LTSBPC with a minimum clear headroom of 4.2m at the G/F frontage for a covered unobstructed public pedestrian passageway;	
		(iii) the shopfront on G/F and 1/F shall adopt open/transparent façade design as far as possible;	
		(iv) the shop units on G/F of the retail belt shall have frontage abutting and direct access to and from the public pedestrian passageway which is to be open on a 24-hour basis; and	
		(v) based on individual design merits, moderate variations to the design elements of the retail belt may be considered.	

	Item	Particulars "CDA(4)"	Compliance (Yes/ No)
		Any kitchen exhaust from the 'Eating Place' uses, exhaust from all air conditioning and mechanical ventilation systems and toilets shall not emit directly onto the pedestrian walkways and remnants of the LTSBPC.	☑ Yes. Please refer to para. 5.22 of this Planning Statement.
9.	Townscape Setback	– A 15m-wide full-height townscape setback is designated within the Site along its north-western boundary that abuts Olympic Avenue for respecting the visual context and heritage significance of the LTSBPC.	☑ Yes. Please refer to **Figure 12**, and para. 5.22 of this Planning Statement.
		– Underground structures, planting and street furniture (such as hard paved walkway, lawn, trees, scrubs and seating) will generally be permitted within the townscape setback. Structures such as covered walkways and rainshelters will also be permitted generally provided that they do not impinge the purpose or function of the townscape setback nor create adverse visual impact. The landscaping design of the townscape setback should be included as part of the Landscape Master Plan (refer to Item 14 below) for the consideration and approval by the Board.	☑ Yes. Please refer to the LMP **Appendix 11**.
10.	Connections with LTSBPC	– A pedestrian opening, with a minimum clear width of 9m and a minimum clear height of 3m and opened onto the public pedestrian passageway of the retail belt, shall be provided at the north-eastern site boundary at the G/F level for connection with G/F of the LTSBPC (FFL at +6.0mPD) without any level difference. A permeable and welcoming entrance space shall be designed within the Site at the opening for ensuring an attractive interface between the LTSBPC and the Site.	☑ Yes. Please refer to MLP **Appendix 2**, G/F and B1/F. Please refer to para. 5.26 to 5.28 in the Planning Statement.
		– A pedestrian opening, with a minimum clear width of 4m and a minimum clear height of 2.5m, shall be provided at the north-eastern site boundary at basement level for connection with LG1/F of the LTSBPC (FFL at +1.5mPD) without any level difference.	
		– A pedestrian opening shall be provided within USS for connection with LG1/F of the	

	Item	Particulars "CDA(4)"	Compliance (Yes/ No)
		LTSBPC (FFL at +1.5mPD) (refer to Item 11 below)	
11.	USS (under CDA(4)) / Connection with USS (under CDA(5))	– Provision of retail use and a 24-hour barrier-free unobstructed public pedestrian passage at the underground level of land within the Site, area zoned "O(3)" to the southeast of the Site and the area shown as 'Road' to the southwest of the Site as part of the USS system (overall width of the USS of about 20m in general, with a minimum clear width of 8m and a minimum clear height of 3m for the unobstructed pedestrian passage). This section of the USS predominantly within the "CDA(4)" zone shall be constructed, managed and maintained by the developer, and shall be provided at a general FFL of -5.7mPD. – This USS section shall continue with the next USS section within the "R(A)6" site to its southwest (which is also to be delivered by the developer as part and parcel of the same land sale site). – 24-hour barrier-free vertical pedestrian facilities (lift and 2-way escalators) and a pedestrian opening, with a minimum clear width of 8m and a minimum clear height of 2.5m, shall be provided at the north-eastern end of the USS section to link up the USS (FFL at –5.7mPD) with LG1/F of the LTSBPC (FFL at +1.5mPD) via the 24-hour pedestrian walkway within the Site, so as to allow the continuation of the USS north-eastwards to the other side of the LTSBPC via LTSBPC. – 24-hour barrier-free vertical pedestrian facilities (lift and 2-way escalators) shall be provided at the south-western end of the USS section to link up the USS (FFL at –5.7mPD) with G/F of the Site (FFL at +6.0mPD) via the 24-hour pedestrian walkway within the Site, so as to allow pedestrian connectivity between the USS and the adjoining POS and public road at ground level. – A 24-hour barrier-free underground pedestrian link, with a minimum clear width of 4m, shall be provided at the same FFL of the USS (i.e. at –5.7mPD) to link up the USS with the lot boundary of the "CDA(5)" site to the southeast to facilitate residents of the "CDA(5)" site to access the USS.	☑ Yes. Please refer to **Figure 11** and **Appendix 4**, para. 5.2, 5.29 and 5.30 of this Planning Statement. Please refer to **Appendix 2**, B1/F and B3/F Floor Plan.

	Item	Particulars "CDA(4)"	Compliance (Yes/ No)
		– Additional retail floor space shall be provided within the "CDA(4)" zone adjoining the same FFL of the USS so that the total retail GFA at such level would not be less than 4,000m^2.	
12.	POS	– A strip of POS, with an area of about 1,100m^2, abutting the south-eastern boundary of the Site at G/F adjoining the LTSBPC shall be designed and constructed by the developer and handed over to the Government for management and maintenance upon completion. The developer should observe the opening hour of the POS, which is intended to open to the public on a 24-hour basis subject to government arrangement.	☑ Yes. Please refer to para. 5.23 of this planning statement. Please refer to the LMP **Appendix 11**.
		– The POS shall have a minimum site coverage of greenery of 30%.	☑ Yes. Please refer to the LMP **Appendix 11**.
13.	Urban Design Considerations	– An urban design proposal should be prepared and submitted as part of the MLP submission. – The MLP should take into account the following urban design considerations, where appropriate: (i) ensure the development, especially within the low-rise retail belt area, be compatible and congruous with the surrounding developments and settings, with emphasis on achieving harmony and continuity of design as well as respecting the cultural and heritage character of the LTSBPC;	☑ Yes. Please refer to Chapter 5 on the Urban Design Proposal, para. 5.15 to 5.19 of this Planning Statement.
		(i) provide appropriate design responses to the LTSBPC by modulation of built form and/or manipulation of BHs, and integration with the ambience of the surrounding public spaces;	☑ Yes. Please refer to Chapter 5 on the Urban Design Proposal, para. 5.10 to 5.14 of this Planning Statement.
		(ii) arrange disposition of building in a way to promote visual and air permeability;	☑ Yes. Please refer to **Appendix 8** AVA, **Appendix 10** VIA, and Chapter 5 on the Urban

	Item	Particulars "CDA(4)"	Compliance (Yes/ No)
			Design Proposal, para. 5.10 to 5.14 of this Planning Statement.
		(iii) adopt façade design that responds to the ambience of the LTSBPC in the lower levels of the commercial block(s);	☑ Yes. Please refer to Chapter 5 on the Urban Design Proposal, para. 5.18 of this Planning Statement.
		(iv) maximise at-grade public spaces; and	☑ Yes. Please refer to Chapter 5 on the Urban Design Proposal, para. 5.25 of this Planning Statement.
		(v) improve streetscape and amenity with high quality paving, street furniture, lighting, tree planting and greening at street level, with due consideration to the design of the LTSBPC.	☑ Yes. Please refer to **Figure 12**, **Figure 13**, and Chapter 5 on the Urban Design Proposal, para. 5.18 of this Planning Statement.
		All boundary walls and fences fronting pedestrian streets and open space shall be designed to achieve visual and physical porosity of not less than 50% of the surface area across their entire length per linear metre from 1 metre above the general formation level of adjacent pedestrian street, footpaths or land.	☑ Yes. Please refer to **Figure 10** and para. 5.18 of this Planning Statement.
14.	Landscape Design Considerations	– A Landscape Master Plan (LMP) for the Site shall be prepared and submitted as part of the MLP submission, and with incorporation of the following landscaping requirements: (i) create a comprehensive landscaping proposal to integrate the development with the surrounding environment, especially the LTSBPC, to soften the building mass;	☑ Yes. Please refer to the LMP in **Appendix 11**.
		(ii) every possible effort shall be made to preserve the existing trees, if any, on the Site and minimise the adverse impact on them during the works period;	☐ N/A. The Site does not contain any existing trees.

	Item	Particulars "CDA(4)"	Compliance (Yes/ No)
		(iii) achieve a minimum site coverage of greenery of 30% of the site area of the "CDA(4)" zone, including a minimum greening at the pedestrian zone (i.e. the 15m vertical zone from the ground level) of 20% of the site area and a minimum roof greening of 20% of the total roof area. The minimum site coverage of greenery of 30% of the POS in the "O" zone (refer to Item 12 above) shall not be counted towards the overall site coverage of greenery of 30% for the "CDA(4)" zone as mentioned above;	☑ Yes. Please refer to the LMP in **Appendix 11**.
		(iv) provide at-grade amenity treatment (e.g. high-quality streetscape with roadside trees and street furniture) to create a pedestrian/elderly/ disabled friendly environment and create a strong sense of place; and	☑ Yes. Please refer to the LMP in **Appendix 11**.
		(v) properly landscape the uncovered areas of the Site to enhance greening quality.	☑ Yes. Please refer to the LMP in **Appendix 11**.
		– The LMP shall illustrate: (i) conceptual and detailed landscape proposals including hard and soft landscape;	☑ Yes. Please refer to the LMP in **Appendix 11**.
		(ii) other amenities, street furniture and facilities to be provided;	
		(iii) the relationship of the development with the surroundings, especially the LTSBPC; and	
		(iv) pedestrian/elderly/disabled friendly environment layout, location and landscape design of open spaces including pedestrian circulation in	

	Item	Particulars "CDA(4)"	Compliance (Yes/ No)
		relation to adjoining developments and areas.	
15.	Car Parking and Loading/ Unloading Provision and Vehicular Access	– Vehicular access from Muk Lai Street and ancillary parking spaces and loading/unloading facilities (to be provided at basement level) and vehicular access shall be provided in accordance with the HKPSG and subject to the traffic impact assessment (TIA) to be carried out by the applicant to the satisfaction of the Commissioner for Transport (C for T).	☑ Yes. Please refer to **Appendix 2**, B1/F, B2/F and B3/F.
16.	Pedestrian Facilities/ Connectivity	– The Site shall provide convenient pedestrian connections both internally and with its surrounding areas/ developments, including but not limited to: (i) at the G/F level (+6.0mPD), connections with: - G/F of the LTSBPC via the pedestrian opening; - the POS; and - the pedestrian passageway on G/F of the retail belt;	☑ Yes. The G/F level at this portion of the Site is proposed to be at FFL +6.0mPD to +6.5mPD, to align with the level of the adjacent POS and LTSBPC land formation. Please refer to **Appendix 2**, G/F.
		(ii) at the basement level of +1.5mPD (Plans 4b and 5), connection with LG1/F of the LTSBPC via the pedestrian openings (including one from the USS); and	☑ Yes. Please refer to **Appendix 2**, B1/F.
		(iii) at the basement level of –5.7mPD, connections with: - the next USS section to the southwest abutting the "R(A)" site; and - the "CDA(5)" site via the underground pedestrian link.	☑ Yes. Please refer to **Appendix 2**, B3/F.
		– For vertical pedestrian connection of different levels, (i) lift and 2-way escalators to connect the USS (–5.7mPD) with LG1/F of the LTSBPC (+1.5mPD) via the 24-hour pedestrian walkway; and	☑ Yes. Please refer to **Appendix 2**, B1/F Floor Plan.

	Item	**Particulars "CDA(4)"**	**Compliance (Yes/ No)**
		(ii) lift and 2-way escalators to connect the USS (-5.7mPD) with G/F of the Site (+6.0mPD) at the south-western end of the USS section to the adjoining POS and public road at ground level via the 24-hour pedestrian walkways shall be provided.	☑ Yes. Please refer to **Appendix 2**, B1/F and B3/F.
		– The following facilities of the Site shall be open to the public on a 24-hour basis: - the unobstructed pedestrian passage on G/F of the retail belt; - the pedestrian passageway of the USS (together with its vertical connections with LG1/F of the LTSBPC and G/F of the Site); - the 24-hour pedestrian walkway within the Site; and - the underground pedestrian link of the USS to the "CDA(5)" site.	☑ Yes. Please refer to **Appendix 2**, G/F and B1/F.
DEVELOPMENT REQUIREMENTS			
17.	Traffic and Transport Aspects	- A TIA should be carried out to examine any possible traffic problems that may be caused by the proposed development and the proposed mitigation measures to tackle them. It is advisable that the requirements and methodology of the TIA are agreed with C for T before its commencement. - The TIA should be completed to the satisfaction of the C for T, and submitted as part of the MLP submission. - Any road/ junction improvement measures/ works proposed in the TIA should be funded, designed and implemented by the applicant to the satisfaction of C for T and the Director of Highways.	☑ Yes. Please refer to **Appendix 9**
18.	Environmental Aspect	- An environmental assessment (EA) should be carried out to address any possible environmental problems such as impact on cultural heritage particularly remnants of the LTSB, parts of the former Kowloon City Pier, parts of the excavated 1924 seawall and 1933 causeway preserve in-situ within the LTSBPC that may be caused to or by the proposed development during site investigation, construction and operational	☑ Yes. Please refer to **Appendix 5**.

	Item	Particulars "CDA(4)"	Compliance (Yes/ No)
		phases and the proposed mitigation measures to tackle them. The EA should be completed to the satisfaction of the Director of Environmental Protection (DEP), and submitted as part of the MLP submission.	
19.	Drainage and Sewerage Aspects	- A drainage impact assessment (DIA) and a sewerage impact assessment should be carried out to examine any possible drainage and sewerage problems that may be caused by the proposed development and the proposed mitigation measures to tackle them. The DIA and SIA should be completed to the satisfaction of the Director of Drainage Services and DEP respectively, and submitted as part of the MLP submission.	☑ Yes. Please refer to **Appendix 6** and **Appendix 7**
20.	Visual Aspect	- A visual impact assessment (VIA) should be carried out to examine any visual problems/ issues/ concerns that may be caused to or by the proposed development and the proposed mitigation measures to tackle them. Some visual materials, such as artist's renderings should be provided to illustrate how the proposed development may be perceived at pedestrian level. The VIA should be submitted as part of the MLP submission.	☑ Yes. Please refer to **Appendix 10**
21.	Air Ventilation Aspect	- A quantitative air ventilation assessment (AVA) for the Site should be carried out to examine any air ventilation problems that may be caused to or by the proposed development and the proposed mitigation measures to tackle them. The AVA should be submitted as part of the MLP submission. - Good design features and possible air ventilation problem areas should be identified and effective mitigation measures should be proposed to minimize the possible adverse air ventilation impacts within the Site and on nearby areas.	☑ Yes. Please refer to **Appendix 8**
22.	Green Building Design and Smart Requirements	– BEAM Plus certification with Provisional Gold Rating or above should be achieved. – Smart Water Meters – Electric Vehicle (EV) Charging	☑ Yes. Please refer to **Para 4.5** of this statement.

	Item	Particulars "CDA(4)"	Compliance (Yes/ No)
		– Parking Information System	

8. Conclusion

8.1 The Proposed Scheme is for a quality private residential development with a retail belt and commercial facilities, which would be compatible and congruous with the surrounding developments and the LTSBPC. It would preserve the ambience of LTSBPC and enhance pedestrian walking environment. The G/F extension from retail belt would enhance vibrancy and amenity for visitors. The site would complete a portion of the pedestrian facilities and connectivity, especially the USS, with the surrounding pedestrian network and developments.

8.2 The Proposed Scheme generally complies with the PB requirements and Harbour Planning Principles. The minor relaxation of BHR, solely to adopt MiC, is insignificant and unnoticeable from the visual appraisal. The scheme would contribute to the long-term private housing supply. The Town Planning Board is requested to consider this application favourably.

Appendix 1: Response to Departmental Comments of Pre-submission (2)

s.16 Planning Application - Kai Tak "CDA(4)"
Response to Comments

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A2, Kai Tak Development Area, Kowloon

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Appendices

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Appendix 6: Drainage Impact Assessment

Appendix 7: Sewerage Impact Assessment

Appendix 8: Air Ventilation Assessment

Appendix 9: Traffic Impact Assessment

Appendix 10: Visual Impact Assessment

Appendix 11: Landscape Master Plan

Table R1: Response to Departmental Comments of CEDD, C of P, HyD, SWD, KDPO, AMO, UD&L, LandsD, EPD, TD, DSD, LCSD, DEVB, EMSD and BD

Comments from Civil Engineering and Development Department (Geotechnical Engineering Office)

	Comments from CEDD (GEO) (Contact: Ms. Y H LAM; Tel.: 2762 5389)	Response
1	The Geotechnical Engineering Office has no adverse geotechnical comment on the application.	Noted.

Comments from Commissioner of Police

	Comments from C of P (Contact: Mr. Elton LAM; Tel. 3661 0345)	Response
1	Our Formation would have no comment on the matters.	Noted.

Comments from Highways Department

	Comments from HyD (Contact: Ms. Jenny LI; Tel.: 2707 7411)	Response
1	This Office has no adverse comment on further information and pre-submission from highway maintenance point of view.	Noted.
2	Please note that my previous comment on the presubmission provided on 22 February 2024 remains valid: It is noted that the underground shopping street will be constructed under the existing public road. The proposed works shall not cause severe settlement to the existing highway features and pavement. Detailed design of the proposed works shall be submitted to this Office for comments when available.	Noted.

Comments from East Development Office, Civil Engineering and Development Department

	Comments from East Development Office, CEDD (Contact: Eric YUNG; Tel.: 3579 2124)	Response
1	The responses to comments by the applicant are noted with thanks. Please be advised that we have no further adverse comment on the pre-submission. Please also remind the applicant that our reminders remain valid.	Noted.

Comments from Energizing Kowloon East Office, Development Bureau

	Comments from East Development Office, CEDD (Contact: Mr. Li Wai Kit; Tel.: 3904 1364)	Response
1	Please note that EKEO has no further comment on the MLP.	Noted.

Comments from Social Welfare Department

Comments from SWD (Contact: Mr. Michael PANG; Tel.: 2116 5939)		Responses
1	On the understanding that there will be ongoing liaison among us and the developer to ensure all requirements regarding our welfare facilities, which are said to be provided in the "R(A)6" site, as stipulated in the relevant documents of the Conditions of Sale (including basic provision schedules, schedule of accommodation, etc.) and all current and prevailing ordinances and regulations (if applicable) will be fulfilled, we generally have no comment in-principle on your pre-submission. Meanwhile, our textual amendments on paragraph 4.4 and Table 4 of the planning statement as well as on Table 2 of the Sewerage Impact Assessment (SIA) are marked in the attachment for your rectification.	Noted. Suggested amendments are reflected in the latest Planning Statement and SIA.

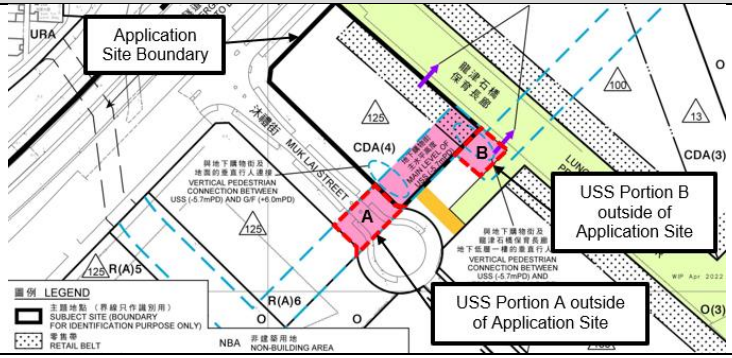
Comments from Kowloon District Planning Office, Planning Department

Comments from KDPO, Planning Department dated 2.5.2024 (Contact: Ms. Peggy TSUI; Tel.: 2231 4973)		Response
1	Please see our comments on the AVA IS report in relation to (i) building height, (ii) noise barriers, elevated structures, planned and committed developments and (iii) baseline scheme below: <u>Existing development</u> (a) Figure 2a refers. In comparison to the existing building height (BH) profile of surrounding buildings, some BHs indicated on the plan are noticeably incorrect. For example, AVA 55 and MW Easton are visibly taller than their adjacent buildings. Please review the BHs thoroughly to ensure accuracy. (b) Figure 2b refers. Building heights (BHs) of (i) the western part and (ii) the lower block of the eastern part of the existing development at Site 1F2 (i.e. Airside) was not reflected. (c) Figure 2d refers. BHs of low-rise residential blocks if the existing development at Site 1L2 (i.e. Monaco One) was wrongly marked as '120mPD'. BH of a residential tower at the south-eastern portion of the Site was not indicated. <u>Planned and committed development</u> (d) Figure 2a refers. It is noted that certain BHs are absent on the plan. For instance, no BHs are indicated for residential tower blocks T5 and T7 from the development scheme of the	The building heights for AVA 55, MW Easton and other surrounding buildings are checked and updated in both model and figures (**Appendix 8**). The BHs of all parts of Airside is updated in Figure 2b (**Appendix 8**). The BHs of low-rise residential blocks are updated and the south-eastern portion are supplemented (**Appendix 8**). The absent BHs in Figure 2a are supplemented. Please refer to the updated report (**Appendix 8**).

Comments from KDPO, Planning Department dated 2.5.2024 (Contact: Ms. Peggy TSUI; Tel.: 2231 4973)		Response
	approved URA Nga Tsin Wai Road / Carpenter Road Development Scheme Plan No. S/K10/URA3/2. The consultant should ensure that all BHs are included on the plan for consistency sake.	
	(e) Figure 2b refers. The consultant should note that Site 1F1 (i.e. mixed use development by SHK) is the subject of an approved s.16 planning application (No. A/K22/16), which involves minor relaxation of BHs from 125/150mPD to 145/170mPD. Such information was not reflected.	The buildings heights of each block in Planning Application No. A/K22/16 are supplemented in Figure 2b (**Appendix 8**).
	<u>Baseline scheme</u>	
	(f) Para. 1.5.1 of AVA report refers. We have no comment on the consultant to adopt the latest OZP compliance scheme as the baseline scheme for Site 2A2, which is extracted from Figure 5b of Attachment V of MPC Paper No. 9/21.	Noted.
	(g) Paras. 1.5.2 and 1.5.3 of AVA report concerning the development layout of Site 2A3 refer. It appears that two different sets of development layout of Site 2A3 have been adopted under baseline scheme and proposed scheme. Our comments to the consultant dated 18.3.2024 (paras. 2 and 9) and 20.3.2024 remain valid.	The OZP compliance scheme extracted from Attachment V of MPC Paper No. 9/21 for Site 2A3 is adopted in the model for both Baseline Scheme and Proposed Scheme. Please refer to the revised report (**Appendix 8**).
	Detailed comments from UD&L/PlanD on the submitted AVA report would be provided in due course.	

Comments from KDPO, Planning Department dated 8.5.2024 (Contact: Ms. Peggy TSUI; Tel.: 2231 4973)		Response
1	*Response-to-Comment (R-to-C) Table* ***R-to-C Table Item 4 (d)(iii), Annex 1 Planning Statement Figure 13 and Figure 14***- Based on our understanding with ArchSD, the solid wall as shown on 'Typical Section AA' in Annex 2 should be the feature wall with display of information on LTSBPC. The Applicant is advised to liaise with ArchSD to reflect such details in the artist's impression. The Applicant may also make reference to Drawing A-17 of a similar s.16 application No. A/K22/30.	Liaison is on-going with ArchSD regarding the display of LTSBPC information on the solid wall, including the location and the detailed information to be displayed. Nonetheless, Figure 13 in the Planning Statement is updated with reference to Drawing A-17 of a similar s.16 application No. A/K22/30.

Comments from KDPO, Planning Department dated 8.5.2024 (Contact: Ms. Peggy TSUI; Tel.: 2231 4973)		Response
2	***R-to-C Table Item 4 (g)(ii)*** - Based on a recent GBP submission concerning Site 2A3 of NKIL 6590, retail floor space at a section of USS falls within area shown as 'Road' is about 645 sq.m as proposed by the AP, rather than about 400 sq.m for two sections of USS outside Sites 2A2 and 2A3 as stated in the R-to-C. The Applicant is advised to review and double check the proposed GFA for the concerned sections of USS. The Applicant is also reminded to observe relevant requirement under lease (i.e. Special Condition No. (10)(c)(i)(I)).	Please note that there are also other relevant requirements under lease with regard to the concerned section of USS including provision of minimum internal width, which will result in GFA of about 645 sqm in portion A as submitted in GBP in March 2024. Nevertheless, it would not induce the non-compliance of the maximum GFA stipulated under lease or under planning brief for the Site 2A2. The concerned GFA in USS portion A may be reduced if Buildings Department were to exclude certain portions of the unobstructed pedestrian access within the concerned Section of USS, which is subject to further liaisons and justifications in future GBP submissions to Buildings Department. The approximate total GFA (i.e. commercial GFA) in portion A and B is tentatively at about 1,100m^2, and the commercial GFA at our site is tentatively at about 5,570 m^2 (i.e. under the max. 6,270 m^2 stated in our proposed development parameters, including retail belt's GFA of minimum 1,254 m^2), complying with the requirement under lease and the planning brief, while the exact number is subject to detail design, and further liaisons and justifications in future GBP submissions to Buildings Department, and discharge of lease conditions to Lands Department. Also, as required under the Planning Brief, please note that commercial floor space will be provided within the "CDA(4)" zone adjoining the same FFL -5.7mPD of the USS, so that the total GFA for "Shops and Services and Eating place" at such level would not be less than 4,000m^2 (**Table 2 and Para 5.30 of the Planning Statement**).

Comments from KDPO, Planning Department dated 8.5.2024 (Contact: Ms. Peggy TSUI; Tel.: 2231 4973)		Response
		
3	***R-to-C Table Item 1 (email on 18.3.2024), Annex 2 MLP Drawing No. MLP-01, P-03 and ELE01*** - It is noted that E&M roof-top structures (RTS) with BH up to +20.0mPD and +21.0mPD are proposed within the retail belt. The Applicant is advised to observe the practice of administering BH restriction under Para. 10 of JPN No.5, which stipulates that the height of RTS should not exceed 3m (or 5.2m for lift provision) for building with height of not more than 30m.	Noted, the roof top structures are revised to meet building height restriction requirements (**Appendix 2**).
4	***R-to-C Table Item 9 (email on 18.3.2024) and R-to-C Table Item 2 (email on 20.3.2024)*** - The Applicant is advised that the building layout of Site 2A3 as per submitted GBP to BD on 28.3.2024 could be incorporated for AVA only when the submitted GBP has been approved by the Building Authority (BA). If the submitted GBP for Site 2A3 has not been approved by the BA by the time of formal s.16 application submission, the Applicant should make reference to the notional scheme of Site 2A3 under Agreement No. CE 35/2006 (CE) Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction Further Review of Land Use in Kai Tak Development (i.e. Attachment V of MPC Paper No. 9/21). Our previous comment provided on 20.3.2024 is still valid.	Noted. The OZP compliance scheme extracted from Attachment V of MPC Paper No. 9/21 for Site 2A3 is adopted in the model for both Baseline Scheme and Proposed Scheme. Please refer to the revised report (**Appendix 8**).
5	*Revised Planning Statement* ***Annex 1 Planning Statement Para. 2.6*** - Our comments at Para. 2 above concerning proposed retail GFA at sections of USS outside Site 2A2 are relevant.	Our response for item(2) above is relevant.

Comments from KDPO, Planning Department dated 8.5.2024 (Contact: Ms. Peggy TSUI; Tel.: 2231 4973)		Response
6	***Annex 1 Planning Statement Figure 13*** - A solid wall is observed behind the required pedestrian connection to LTSBPC (9m(W) x 3m(H)) at G/F, which does not ally with the MLP and serve the function as pedestrian connection between the Application Site and the LTSBPC. Besides, only one pedestrian connection is shown on the artist's impression, which does not tally with the descriptions by showing three pedestrian connections to the LTSBPC. Please review.	Pedestrian from LTSBPC can enter the application site (Retail Belt) via the 9m x 3m opening. All pedestrian connections (3 nos.) shown in Figure 13 in the Planning Statement are annotated with their respective dimensions.
7	*Revised Master Layout Plan (MLP)* ***Annex 2 MLP Drawings No. MLP-01 and P-03*** - The Planning Brief stipulates that the maximum BH for building structures proposed within area designated 'Shop and Services' and 'Eating Place' uses only on the OZP (i.e. the retail belt) is 15mPD, the Applicant should clarify whether the part of the proposed development that falls within the 15m-wide retail belt with BH marked as +16.50mPD would result incompliance with the BH restriction.	The part within the 15m-wide retail belt marked with +16.5mPD is part of a landscape feature (i.e. a landscaped walkway on the main roof). As such, it still complies with the +15mPD maximum BH restriction at main roof under the Planning Brief.
8	***Annex 2 MLP Drawing No. P-08*** - It is suggested to revise the description as "CONNECTION TO ADJOINING R(A)6 ~~***OR***~~ ***(i.e.*** SITE 2A3 ***of NKIL 6590)***"	MLP Drawing No. P-08 is revised (**Appendix 2**).
9	*Revised Air Ventilation Assessment (AVA)* Please observe our comments on the existing, planned and committed development featured in the AVA-IS Study, which has been provided on 2.5.2024.	Our response above to the KDPO's comments dated 2.5.2024 is relevant.
10	*Revised Visual Impact Assessment (VIA)* ***VP1*** - BH of Kai Tak Public Sports Ground was marked as 31.00mPD under an approved s.16 Application (No. A/K22/17). Please advise the source of '+34.37mPD' as indicated on VP1.	Related annotation in VP1 is revised to +31mPD (**Appendix 10**).
11	***VP2 and VP3*** - Regarding the notional scheme for Site 2A3, comments at Para. 4 above are relevant.	Photomontages in both cases that GBP of 2A3 submitted on 28.3.2024 is (1) approved or (2) not approved are simulated in the VIA for consideration (**Appendix 10**).
12	*Revised Landscape Master Plan*	

Comments from KDPO, Planning Department dated 8.5.2024 (Contact: Ms. Peggy TSUI; Tel.: 2231 4973)		Response
	Blow up section across retail belt - BH of RTS (i.e. +18.00mPD) does not tally with that as shown on MLP (i.e. +20.0mPD). The Applicant should also review the proposed 'elevated walk' at the roof of the retail belt with a BH of +16.50mPD. Comments at Para. 7 above are relevant.	Noted. The BH of RTS to be revised to tally with the level shown on MLP (i.e. +16.5 mPD). The overall layout and levels shown on the landscape path at the roof of the retail belt are revised based on the KDPO's comments. Further details refer to the revised Landscape Section-Blow Up Section across Retail Belt (**Appendix 11**).
13	Other revised/updated technical assessments (i.e. Environmental Assessment, Sewerage Impact Assessment, AVA, Traffic Impact Assessment, VIA, Landscape Master Plan and Drainage Impact Assessment as included in pre-submission package No.2) would be subject to comments from relevant government departments.	Noted.

Comments from KDPO, Planning Department dated 21.5.2024 (Contact: Ms. Peggy TSUI; Tel.: 2231 4973)		Response
1	**Figure 6 (VP4 Photomontage)** – (a) Please review if the BH of Billionaire Royale and Le Billionaire are 170mPD and 144.4mPD respectively.	They are revised as suggested respectively (**Appendix 10**).
	(b) Please review the layout/BH of the modelled blocks simulated for "CDA(5)", which appears that its bulk would be larger and extend to screen of the rest of the sky view to its left.	The modelled is built based on the scheme proposed in approved planning application no. A/K22/30 (**Appendix 10**).
2	Figure 8 (VP6 Photomontage) – (a) Please review if the annotation for "R(A)4" and "R(B)6" should be Sites 2B2 to 2B6 instead of "2B1 to 2B6". (b) Developments at Sites 1K and 1L have been completed. Please review if they are necessary to be modelled, should the base photo of the photomontages be reflecting the existing condition.	VP6 photomontage is revised with base photo of existing developments in the foreground (including the Kai Tak Sports Park and Sites 4A2, 4C1 to 4C3). Sites 1K and 1L are screened behind them (**Appendix 10**).
3	Our comments provided on 8.5.2024 (i.e. Paras. 10 and 11 on revised VIA) remain valid.	Noted. Our responses to comments provided on 8.5.2024 (i.e. Paras. 10 and 11 on revised VIA) is relevant.

Comments from Antiquities and Monuments Office

Comments from Antiquities and Monuments Office (Contact: April YIP; Tel: 2208 4418)		Response
1	Section 5.2.17 of the Annex 3 Environmental Assessment Please revise the typo "Comprehensive review on the potential effects due to proposed construction works to the ~~LTAB SA1~~ LTSB SAI will be submitted with monitoring proposal and precautionary measures for AMO's separate consideration. Corresponding Mitigation Measures should be implemented to the satisfaction of AMO."	LTSB SAI is adopted in Section 5.2.17 of the Annex 3 of revised EA (**Appendix 5**).

Comments from Urban Design and Landscape Section (Urban Design Unit) on AVA

Comments from UD&L (Urban Design Unit) on AVA (Contact: Ms. Rachel Yiu; Tel: 3565 3944)		Response
1	While this is already the second pre-submission of the AVA IS report, the consultant has not properly addressed our comments. We consider that it is the consultant's due diligence to address our comments in a proper manner to avoid abortive work.	Noted.
2	**"Future Residential Site 2A3"** – The simulation results still show that layouts of the proposed future residential development at Site 2A3 was not kept consistent under Baseline and Proposed Scheme. This approach is deviated from the general practice and therefore we could not ascertain whether the potential air ventilation impact was created solely by the proposed developments within the application site.	The OZP compliance scheme extracted from Attachment V of MPC Paper No. 9/21 for Site 2A3 is adopted in the model for both Baseline Scheme and Proposed Scheme. Please refer to the revised report (**Appendix 8**).
3	**Baseline Scheme** (section 1.5 and Appendix 1) – In view of the paragraph 2 above, the consultant should seek DPO's confirmation whether it is required to adopt the latest OZP compliance scheme of future residential at Site 2A3 as Baseline Scheme in this AVA IS.	Noted. Please refer to the response to comment no.2 (**Appendix 8**).
4	**Building heights of the existing developments** (section 1.3, section 2.2 and Figure 1) – We would reiterate than the consultant should clearly indicated all mentioned places / developments on plan for checking.	Noted. Figure 1 is updated with indication of the mentioned developments on the plan (**Appendix 8**).
5	Figure 1 – We would reiterate that the consultant should correct the figure number which should be consistent with the reference in paragraph 1.3.4.	Noted. Please refer to the revised report (**Appendix 8**).

Comments from UD&L (Urban Design Unit) on AVA (Contact: Ms. Rachel Yiu; Tel: 3565 3944)		Response
6	**Topography** (Appendix 3) – The consultant should provide the north arrow in the figures showing the computational model.	Noted. Appendix 3 is updated in the report (**Appendix 8**).
7	**Mitigation Measures/Good Design Features under both Baseline and Proposed Schemes** (sections 1.5 and 1.6) – We would reiterative that the consultant should indicate all the mitigation measures/good design measures on plan and illustrate such measures in the computational model. Sufficient special test should be placed along / around these mitigation measures/good design measure for demonstrating their performances based on the simulation results and VR data. The consultant should also cover the implementation of these measures in the report.	The mitigation measures for both schemes are supplemented in Sections 1.5 and 1.6. Also, special test points are extracted and discussed in the revised report (**Appendix 8**).
8	**Directional Analysis** (section 4.2) and Conclusion (section 5) – Considering our comments above, we would not provide comment on these sections at this juncture**.**	Directional analysis and the conclusion are revised based on the updated model (**Appendix 8**).

Comments from Urban Design and Landscape Section (Landscape Unit)

Comments from UD&L (Landscape Unit) (Contact: Ms. Isabella TSUI; Tel.: 3565 3951)		Response
1	Landscape Master Plan (Annex 10) (a) Landscape Master Plan -1/F & 2/F (Dwg No. 2023208-LMP-03a) – It is noted that no tree planting is proposed on the terraced landscape area at 2/F, which is the major landscape area of the proposed development. Please consider additional tree planting as appropriate.	Although no compensatory trees are required for this site, our applicant is committed to strengthen the existing greenery and landscape quality by planting a total of 25 nos. new trees with high aesthetic and ecological value. Among them, 7 nos. of new trees are newly proposed in the landscape terrace at 2/F for overall landscape enhancement. Please refer to revised Landscape Master Plan - 1/F (+11.5 mPD) & 2/F (+15.00 mPD & +16.00 mPD) for illustration (**Appendix 11**).
	(b) Noting in R-to-C *"The landscape path provides an elevated open view at +16.5mPD of the LTSBPC scenery which merges with the retail belt landscape".* However according to the "Landscape Section" (Dwg. No. 2023208-SEC-01a) and "Blow Up Section Across the Retail Belt' (Dwg. No.: 202308-SEC-03a), it is obvious	Justification is explained as follow: 1. **3m parapet wall setback** – With reference to the "Planning Brief for the "Comprehensive Development Area (4)" Zone in Kai Tak Development" – Plan 6 of Reference No. M/K22/22/62, 3m parapet wall setback is required on retail belt at the level of +15.00 mPD. Stipulated by this requirement, the nearest point that the future users of the proposed development can

Comments from UD&L (Landscape Unit) (Contact: Ms. Isabella TSUI; Tel.: 3565 3951)		Response
	that the view at +16.5mPD towards the LTSBPC which is sunken below ground is blocked by the building structure. Please further review the layout of the landscape terrace at 2/F as appropriate.	get access for visual connection to LTSBPC will be at least 3m away from the podium edge. 2. **Terraced landscape design –** Despite the technical constraints as mentioned above, taking advantage the level difference between the retail belt and proposed development, a terraced landscape is proposed to create a cascade lookout to LTSBC. Generous lawn area is provided at the northeast corner of the site not only for leisure and relaxation, but providing a wider view to the surroundings. Outdoor seatings and benches are provided to serve as gathering spots or simply for rest and comfort. Please refer to revised Landscape Master Plan - 1/F (+11.5 mPD) & 2/F (+15.00 mPD & +16.00 mPD (**Appendix 11**).
	(c) Please indicate on the Landscape Master Plan any fence wall/structure (within and along site boundary) and its relevant height with proper legends.	The top level of the fence wall and the legends are indicated in the revised Landscape Master Plan (**Appendix 11**).
2	Approval of the application under Town Planning Ordinance does not imply approval of the site coverage of greenery requirements under PNAP APP-152. The site coverage of greenery calculation should be submitted separately to BD for approval as appropriate.	Noted.
3	We reserve our further comments from landscape planning perspective upon receipt of formal submission in future.	Noted.

Comments from District Lands Office/ Kowloon East, Lands Department

Comments from District Lands Office/ Kowloon East, Lands Department (Contact: Ms. Winnie WAN; Tel: 3842 7610)		Response
1	Noting that our comments on site area and maximum domestic GFA as provided in para. 3(a) of our memo dated 21.3.2024 have been addressed in the revised development parameters, this office has no further comment.	Noted.
2	Please note that our comments in paras. 3(b) and 5 of our memo dated 21.3.2024 are still valid.	Noted.

Comments from District Lands Office/ Kowloon East, Lands Department (Contact: Ms. Winnie WAN; Tel: 3842 7610)		Response
	Para 3(b) - The applicant is reminded to ensure that the proposed development parameters including but not limited to the parking and loading/ unloading spaces in the proposed scheme would comply with the requirements under the Conditions. Comments on the detail design of the proposed development are hereby reserved. *Para 5 - Detailed design of the development proposal would be examined under lease by our Building Plan Unit (BPU) during the building plan submission stage. It is noted that our BPU has already provided comments to your office vide memo dated 1.3.2024 under ref.(21) in LD DLOKE L/M(P) 375/KPA/KE.*	

Comments from Environmental Protection Department

Comments from Environmental Protection Department on EA (Contact: Ms. Alice HSU; Tel: 2835 1151)		Response
1	**Comments on Annex 3 Environmental Assessment** Section 1.4.1 and 4 It is not necessary to emphasis that is "qualitative" air quality impact assessment. Please consider to remove it.	Noted. The wording has been removed (**Appendix 5**).
2	Section 4.3 Please add a section to discuss the air quality impact of the basement carpark and ensure that the design of the carpark will follow "ProPECC PN 2/96 - Control of Air Pollution in Car Park". Please indicate the location of the exhaust air which should be discharged to the atmosphere in such a manner and at such a location as not to cause a nuisance to ASR in the building or of neighbouring buildings' or to the public.	Noted. An additional section to discuss the air quality impact of the basement carpark has been added in **S4.3.5** (**Appendix 5**).
3	Section 2.3.3. The TD's endorsement of the road traffic data should be included.	Noted. TD's endorsement will be supplemented once available.
4	Section 2.8.13-14 Please review the description of the enhanced acoustic balcony (baffle type) as it does not match with the design stated in Appendix 2.4.	Noted. **Appendix 2.4** has been revised (**Appendix 5**).
5	Section 2.8.17 Please clarify if AB(BT) will be equipped in bedrooms.	Please be noted that the AB(BT) will not be equipped in bedroom.
6	Appendix 2.6 Two 1.5m fins are shown in Appendix 2.6 but no description found in the main text. Please clarify.	Noted. An addition description on vertical fin has been added in **S2.8.4**- **S2.8.5** (**Appendix 5**).
7	Table 3.1 Please review the ANL at night in Table 3.1.	Noted. The ANL at nighttime has been reviewed (**Appendix 5**).

Comments from Environmental Protection Department on EA (Contact: Ms. Alice HSU; Tel: 2835 1151)		Response
8	Appendix 2.3 & 2.7 Please refer to item (9) and update the predicted road traffic noise results in Appendix 2.3 and Appendix 2.7.	Noted. **Appendix 5** has been updated accordingly.
9	Section 3.4.1 This is not a designated project under the EIAO, the consultant should refer to the requirements under the HKPSG.	Noted. The sentence has been revised (**Appendix 5**).
10	**Noise Model** The fins shown in Appendix 2.6 are missing in the noise model.	Noted. Fin case model has been supplemented in this submission (**Appendix 5**).
11	According to the submitted noise model, it is found that the predicted noise level shown in Appendix 2.3 are predicted at-grade roads only. A complete predicted noise levels should include noise from at-grade roads & flyovers.	Noted. **Appendix 2.3** has been revised and updated (**Appendix 5**).

Comments from Environmental Protection Department on SIA (Contact: Ms. Alice HSU; Tel: 2835 1151)		Response
1	**Comments on Annex 4 Sewerage Impact Assessment** Section 1.4.6 - Please confirm the party responsible for the maintenance of the newly proposed sewer (i.e. between manholes TFMH-1 and FTH4011138) for the sake of clarity.	Noted. The newly proposed sewer within the site boundary is maintained by the owner and outside the site boundary will be handover to DSD for operation and maintenance (**Appendix 7).**
2	Table 2-1 Note 1, given the average household size of adjacent public housing development may not represent that of the proposed development, it is suggested to adopt a district specific factor based on the latest population census data specific to the corresponding district or tertiary planning unit, for a more representable assumption.	Noted and revised. An average domestic household size of 2.4 according to the Household Characteristics of Population in Kai Tak Central & South District Council Constituency Area, 2021 is adopted to estimate the residential population (**Appendix 7)**. Reference source: https://www.census2021.gov.hk/en/district_profiles.html
3	Table 2-1 (Note 3), Table 2-2, Table 2-5, Appendix A, Appendix B (Estimated Sewage Flow from Neighbouring Development, Estimated Sewage Flow from Catchment 1) For the estimation of backwash flow of the swimming pool filtration system, please advise whether the backwash flow will be discharged instantaneously during the backwash period without retention. If affirmative, the discharge shall be completed in 10 minutes as stated in the assumption instead of 24 hours. Please review and revise the	Noted and revised. In our updated swimming pool design, a retention tank will be introduced for temporary storage use in order to reduce the instantaneous flow. The updated instantaneous flow will be 2.0L/s. The relevant calculations have been updated in the revised SIA report (**Appendix 7)**.

Comments from Environmental Protection Department on SIA (Contact: Ms. Alice HSU; Tel: 2835 1151)		Response
	estimated peak flow (L/s) arising from the backwash of swimming pool filtration system, and revise the corresponding calculations accordingly.	
4	Table 2-6, Appendix B (Sewerage System After Proposed Development) and Appendix B (Estimated Sewage Flow from Catchment 3) The ADWF adopted for Catchment 3 (Block A) and Catchment 3 (Block A+B) are inconsistent with Appendix B. Please review.	Noted and revised (**Appendix 7).**.
5	Section 2.5.3 For the avoidance of doubt, it is suggested to revise the sentence "In addition to comparing the peak flow of each pipe to its capacity , the peak flow is also compared to the capacity of each pipe" to better suit the need.	Noted. Please see Section 2.5.3 of the revised SIA report (**Appendix 7)**. The sentence has been revised "The sewerage impact on various segments of the sewer was evaluated by comparing the estimated peak flow against the capacity of the respective sewer segments."
6	Section 2.5.4 When assessing the sewer capacity, the full bore capacity is recommended to be taken as the design capacity of sewer instead of the arithmetical value. DSD's Sewerage Manual shall be considered in the assessment.	Noted.
7	Appendix B (Sewerage System After Proposed Development) For the sake of clarity, please indicate the pipe material and velocity of existing public sewers under concern in the assumption of roughness coefficient adopted.	Noted and revised. Please see *Appendix B (Sewerage System After Proposed Development)* of the revised SIA report (**Appendix 7)**.
8	Appendix B (Sewerage System After Proposed Development), (Estimated Sewage Flow from Catchment 2) For Catchment 2, please advise the source(s) of sewage generation in the catchment, and provide relevant reference source(s) of the estimated number of employee to justify the sewage flow estimation.	Noted and revised. Please see *Appendix B (Sewerage System After Proposed Development), (Estimated Sewage Flow from Catchment 2)* of the revised SIA report(**Appendix 7).**
9	Appendix B (Estimated Sewage Flow from Catchment 3) Please provide relevant reference source(s) for the estimated number of units and management staff for reference.	Noted and revised (**Appendix 7)**. For Catchment 3 (Kai Yan Court), reference website information that there are 2 Blocks (block A and block B). The total number of residential properties is 1,840 units,1040 units in Block A and 800 units in Block B. *Source: https://hk.centanet.com/estate/en/Kai-Yan-Court/2-EYSPWPPVPG*

Comments from Environmental Protection Department on SIA (Contact: Ms. Alice HSU; Tel: 2835 1151)		Response
		With reference to the data on cleaning and guarding service contracts for nearby public housing estates with similar block scale under the Housing Authority, Tak Long Estate and Kai Ching Estate are referred. There are total management staff number of 177 of these two estates. Given that the total units numbers are 13400, the management staff number is about 1.3 management staff per 100 units. The same ratio of management staff numbers: 100 units (i.e. 1.3) is adopted for estimating the Kai Yan Court management staff numbers. *Source:*https://gia.info.gov.hk/general/202004/22/P2020042200572_339981_1_1587554442989.pdf 附件五 **房委會轄下公共屋邨物業管理服務合約（截至 2020 年 2 月 29 日）** 序號 | 屋邨名稱 | 承辦商名稱 | 合約生效日期 (日/月/年) | 合約屆滿日期 (日/月/年) | 合約金額 (百萬元) | 非技術員工數目 | | 現時每月工資總額 (百萬元) | 平均工時[1] | | | | | | | | | 清潔工 (人數) | 護衛員 (人數) | | 清潔工 | 護衛員 | 38 | 柴灣邨，愛東邨 | 新恆基國際物業管理有限公司 | 1/10/2017 | 30/9/2020 | 80.41 | 33 | 59 | 1.11 | 8.0 | 8.0 | 39 | 牛頭角下邨 | 佳富物業服務有限公司 | 1/4/2018 | 31/3/2021 | 58.99 | 28 | 34 | 0.74 | 7.0 | 8.0 | 40 | 清河邨，祥龍圍邨 | 創毅物業服務顧問有限公司 | 1/4/2018 | 31/3/2021 | 114.38 | 66 | 83 | 1.79 | 8.0 | 8.0 | 41 | 啟晴邨，德朗邨 | 卓安物業顧問有限公司 | 1/4/2018 | 31/3/2021 | 162.13 | 68 | 109 | 2.17 | 8.0 | 8.0 |

Comments from Architectural Services Department

Comments from ArchSD (Contact: Ms. Alice HSU; Tel: 2835 1151)		Response
1	Please find below comments from Lung Tsun Stone Bridge Preservation Corridor (LTSB)'s project team for your consolidation:- Architectural aspect: No adverse comment in principle but minor advise/observation as follow for future coordination:	It is noted that your comments are made on the submission documents to DLO under the lease conditions, which details the Public Open Space (POS) design. The relevant comments will therefore be addressed in more detail at the subsequent submissions to DLO for vetting. In para 2.3 of the submitted planning statement to PlanD, POS is not included in the application boundary of this planning application, considering that the vetting process of POS with relevant departments could be addressed under the lease

Comments from ArchSD (Contact: Ms. Alice HSU; Tel: 2835 1151)		Response
	• Alignment of the pavement/landscape/pavilion to be minor adjusted to fit the updated layout at LTSB side; • Other comments marked on the copy of the submission attached.	conditions. Nonetheless, the POS design is shown side-by-side to the Landscape Master Plan in this planning application, as an illustrative reference of the possible landscaping and interface design that would fall in line with the lease specifications (**Appendix 11**). The final design of the POS would be the version that is accepted under the lease conditions, and will be reflected in the planning application as an illustrative reference, when applicable.

Comments from Transport Department

Comments from Chief Traffic Engineer/Kowloon, Transport Department (Contact: Mr. Alvin CHAN; Tel.: 2399 2772)		Response
1	Para 3.1.3: The 2nd sentence "Its eastern end connects to Sung Wong Toi Road and its western end connects to Concorde Road" looks incorrect.	Please be clarified that the sentence should be read as "Its eastern end connects to Concorde Road and its western end connects to Sung Wong Toi Road". The sentence has been amended (**Appendix 9**).
2	Para 3.3: The traffic consultant is approaching our Transport Operations (Urban) division for the Public Transport (PT) assumptions/issues in the TIA.	Please be advised that the PT assumptions/issues have been clarified with Transport Operation (Urban) division. The relevant traffic forecast, assessment and the content of the TIA report have been updated (**Appendix 9**).
3	Table 4.4: Should the "2016" in the table read "2019"?	Please be clarified that it should be read as "2019". The typo in Table 4.4 has been corrected (**Appendix 9**).
4	Para 4.3.3: The location of Junction R should be Olympic Avenue/Dakota Drive, please update throughout the whole report.	Noted. It has been updated in the TIA report (**Appendix 9**).
5	Para 4.3.8: We note that the traffic consultant compared the potential traffic induced under Light Public Housing (LPH) scenario with the long-term planning scenario and considered the long-term planning scenario would be more critical. However, the potential PT demand and the committed PT services for LPH appear to be higher than those accounted for in the long-term planning scenario. Would the traffic impact of LPH scenario being underestimated?	It has been further reviewed that the traffic induced by the concerned sites under the long-term planning scenario would be still considered more critical than the LPH scenario with accounting the potential additional PT traffic for LPH. The details have been included in paragraphs 4.3.9 – 4.3.12 of the TIA report (**Appendix 9**).
6	Para 4.5.1: Should "Table 4.3" read Table 4.10"?	The table number has been corrected (**Appendix 9**).
7	Chapter 5: Queue Length Assessment at junctions under both reference and design scenarios should be included in the TIA report.	The queue length assessments have been conducted and included in the TIA report (**Appendix 9**).
8	Table 5.2: We note from the traffic consultant that there will be minor adjustment on the Year 2032 Junction Operation Performance. We	The results of assessment for year 2032 junction operation performance have been updated in Table 5.2 of the TIA report (**Appendix 9**).

Comments from Chief Traffic Engineer/Kowloon, Transport Department (Contact: Mr. Alvin CHAN; Tel.: 2399 2772)		Response
	reserve the right to provide comments on the updated table, once available.	
9	Table 5.4: Please clarity whether the responsible project proponent for the proposed junction improvement scheme at Junction No. R is CEDD. Please also indicate the proposed completion year of each junction improvement schemes in the table.	The responsible project proponent has been updated while the planned completion years of the junction improvement schemes have also been included in the Table 5.4 of the TIA report (**Appendix 9**).
10	Chapter 5.3: How about the "double peak" traffic impact upon event dispersal (i.e. event peak plus general peak, say PM)?	The "double peak" traffic impact upon event dispersal has also been assessed and included in the Chapter 5.4 of the TIA report (**Appendix 9**).
11	Chapter 6: We note that your "very long-term" traffic figures for Noise Impact Assessment (NIA) are only projected on top of your 2032 forecast figures in a simplified approach, which may not be comprehensive. Please be reminded that this simple forecast methodology should only be used for conduction the captioned NIA, subject to the consent/agreement of EPD.	Noted. Please be advised that the forecast methodology for the long-term 2044 traffic figures and the forecasted results are solely used for NIA purpose only (**Appendix 9**).
12	Para 6.3: Please elaborate on how you convert the traffic forecast from PCU to vehicles for each vehicle class, for clarity.	The conversion of traffic forecast from PCU to vehicles has been further elaborated in Chapter 6.2 of the TIA report (**Appendix 9**).
13	Appendix C: Please elaborate the methodology in working out the Heavy Vehicles %, and supplement with details.	The methodology for deriving Heavy Vehicles % has been further elaborated in Chapters 6.2 and 6.3 of the TIA report (**Appendix 9**).

Comments from Urban Design and Landscape Section (Urban Design Unit) on Planning Statement and VIA

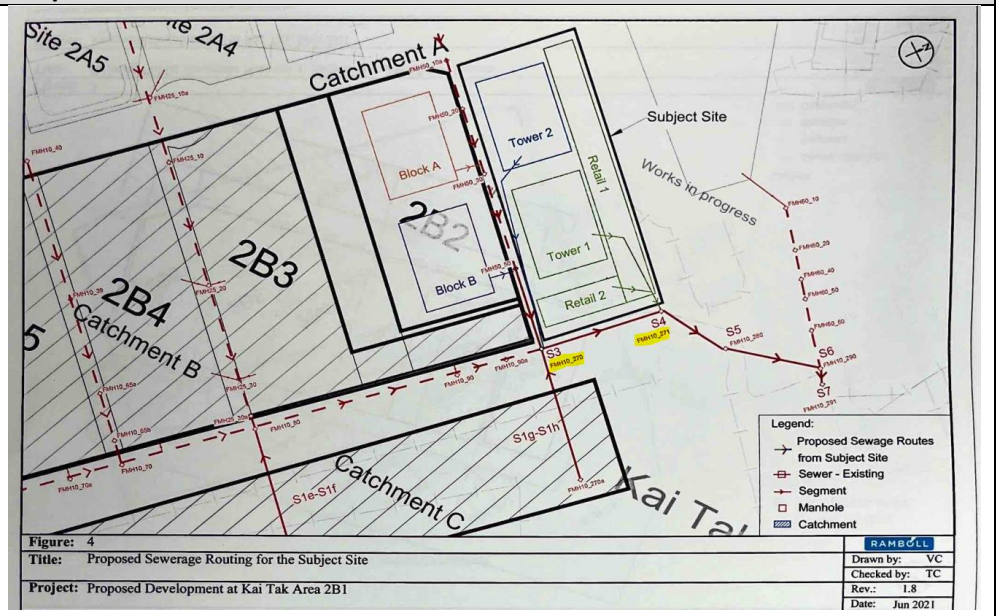
Comments from UD&L (Urban Design Unit) (Contact: Ms. Rachel Yiu; Tel: 3565 3944)		Response
1	Our observations/comments via email dated 18.3.2024 from urban design and visual perspectives (Paras. 2 and 3) would generally remain valid. It is noted that there is a 16m to 21m-wide setback of the residential tower from the northeastern boundary *(subject to clarification from the Consultant)* facing the Lung Tsun Stone Bridge Preservation Corridor (LTSBPC) and 4m-wide setback of the residential tower from the southeastern boundary facing the public open space.	Noted. The description of setback is in line with that shown on "Building Setback Diagram" (**Appendix 2**).
2	**Re. R-to-C Item 4(d), PS, Paras. 4.3 and 5.10** – It is noted from the applicant's responses and the subject paragraphs that the proposed development complies with SBDG subject to detailed design.	Noted.
3	**Re**. **R-to-C Item 4(e), PS, Para. 5.2** – It is noted from the applicant's responses and the subject paragraph that the proposed development would adopt the applicable design elements in the Kai Tak Development Urban Design Guidelines and Manual for the Domestic Sites and the Kai Tak Brand Identity Manual and Public Creatives Guidelines.	Noted.

Comments from UD&L (Urban Design Unit) (Contact: Ms. Rachel Yiu; Tel: 3565 3944)		Response
4	**Re. R-to-C Item 4(f), PS, Para. 5.17** – It is noted that the colour of architectural steel frame will be in dark grey tones and colour of external finishes of retail belt structure will be in grey tones as per No. 8 under the Notes of Plan 6 of the PB.	Noted.
5	**Re**. **R-to-C Item 4(g), PS, Para. 5.17** – It is noted that the design of the retail belt would be in harmony and coherent with the "CDA(5)" site to its southeast in terms of the dimensions, cantilever design, setback specifications and façade treatment (including rooftop edge greenery).	Noted.
6	**PS, Table 1 and Para. 5.15** – It is noted that the landscaped roof of the retail block would be accessible for the use of residents only.	Noted.
7	**Re. R-to-C Item 5, PS, Para. 5.20 and Figure 12 –** (a) It is noted that there are boundary walls/fences along the southwestern, northwestern and a small portion of the northeasten boundary along the LTSBPC, and all boundary walls/fences will be designed to achieve visual and physical porosity of not less than 50% of the surface area across their entire length per linear metre from not more than 1 m above the general formation level of adjacent pedestrian street, footpaths or land as per the requirements under Item 13 of the PB.	Noted.
	(b) Please indicate the extent of the proposed boundary wall/fences on the MLP and ensure consistency across the entire submission.	Noted. Please find the boundary wall/fences in "Master Layout Plan with Schematic Architectural Layouts" **(Appendix 2).**
8	**Para. 5.10** – Please review if the 16m to 21m setback at the "north-west" boundary facing LTSBPC should be at the northeastern boundary instead.	Para 5.10 of Planning Statement is revised.
9	**Paras. 5.23 and 5.24, Public Open Space** – Please elaborate that the "Public Open Space at the South-East Boundary of Site" and the "POS with a site area of 1,100m^2" is located outside of the site boundary.	Suggested description added to para 5.23 and 5.24 of Planning Statement.
10	**PS, Table 1** – The floor levels for residential flats are indicated as 3/F to 32/F in the table, which does not tally with that of the section plans in the MLP (i.e. up to 34/F). Please clarify/rectify, and ensure consistency across the whole submission.	Table 1 of the Planning Statement is revised accordingly.
11	**PS, Table 2 and Annex 2 (MLP) –** (a) Please indicate the floor-to-floor height of the proposed development in the text and relevant plan(s).	Noted. Please refer to the revised Sections AA and BB (**Appendix 2**).
	(b) **Annex 2, Dwg No. MLP-01, P-01, S-01 and S-02** – It seems that the top roof level indicated in the Master Layout Plan and Typical Sections AA and BB (i.e. +136.8mPD) are not tallied with that of the R/F Plan (i.e. +136.85mPD). Please clarify/rectify, and ensure consistency across the whole submission.	Please refer to revised Sections AA and BB (**Appendix 2**).

Comments from UD&L (Urban Design Unit) (Contact: Ms. Rachel Yiu; Tel: 3565 3944)		Response
12	**Annex 2 (MLP), Building Setback Diagram (Dwg No. SK-01)** – Please include appropriate legends to differentiate the annotated dimensions in red and black, and annotate the levels from which the setbacks are measured from for the sake of clarity.	The Building Setback Diagram has been updated (**Appendix 2**).
13	**Paras. 5.13 and 6.4, AVA** – We reserve our comments on the paragraphs subject to receipt of a revised AVA taking into account our comments.	Noted.
14	**VIA** **Para. 4.1** – Please revise the last sentence to read as '...by other future developments around the KTDA**, ~~and there will be just~~. In gist, the overall visual impact arising from the proposed development will be from** "negligible" to "slightly to moderately adverse" **~~visual impact~~**.'	Para. 4.1 of VIA revised accordingly (**Appendix 10**).
15	**Visual Impact Summary Table, VP5, Magnitude of Visual Change on Public Viewers** – The magnitude of change at VP5 is indicated as "negligible", which does not tally with Para. 2.3.11. Please rectify.	Visual Impact Summary Table of VIA revised accordingly (**Appendix 10**).
16	**Figure 8 (VP6 Photomontage, Quarry Bay Park)** – It is noted that the adopted view angle is slightly different from that of Strategic View Point 4 on the Planning Department website.	It taken reference to that used in the VIA in adjacent site (i.e. "CDA(5)"), which slight difference with that on PlanD website is observed but is in largely in line with that in Strategic View Point 4.
17	The comments provided herein are not intended to be exhaustive. Further comments may be provided upon receipt of formal submission.	Noted.

Comments from Drainage Services Department

Comments from DSD (Contact: Mr. CHEN Ka Yin; Tel: 2300 1425)		Response
1	**SIA(Rev 1)** 1/ Please consider the sewage flow discharged to FMH4095866 from Site 2B1. 2/ Please consider to up size the connection pipes as the utilization is near its capacity.	1/ According to the SIA information of Site 2B1, the sewage flow would be planned discharge into FSH4007752(FMH50_270) and FSH4007753 (FMH50_271) (**Appendix 12**).

Comments from DSD (Contact: Mr. CHEN Ka Yin; Tel: 2300 1425)		Response
		 2/ Noted. The proposed mitigation measures are described in Section 2.6 the revised SIA report (**Appendix 13**).
2	**DIA(Rev 1)** 1/ Stormwater Drainage Manual Corrigendum No. 1/2022 and 1/2024 should be adopted in the assessment and design. 2/ Para 3.1.11 - The freeboard should be the difference between the cover level and the design flood level instead of the proposed invert level. Please review. 3/ Figures 1-3: The colour representing the existing, proposed (under other development) and proposed terminal manhole are too similar. Please review the presentation. This is a coordinated reply of Land Drainage Division and Mainland South Division.	1/ Noted. Stormwater Drainage Manual Corrigendum No. 1/2022 and 1/2024 are adopted in this report. Please find the revised calculation in Table 3-3 and Table 3-4 (**Appendix 6**). 2/ Please see the revised Section 3.1.11 (**Appendix 6**). 3/ Please see the revised Figure 3. The proposed pipeline and proposed manhole are shown in blue (**Appendix 6**).
3	This is a coordinated reply of Land Drainage Division and Mainland South Division.	Noted.

Comments from Building Plan Unit, Lands Department

Comments from BPU, LandsD (Contact: Ms. Priscilla TSO; Tel.: 3793 4205)		Response
1	Under Special Condition No. (7)(b) the lease, the Retail Building Area (i.e. the 15m-wide strip of land within the lot facing Lung Tsun Stone Bridge Preservation Corridor) shall not be used for any purpose other than non-industrial (excluding residential, office...) purposes. My comments are reserved on whether the proposed designation of the roof of the retail belt block for use by residents only (as stated in the last sentence of para. 5.15 of the revised draft Planning Statement at Annex I) is acceptable under the aforesaid Special Condition. Would PlanD and CEDD please advise whether you have any comments in this regard.	Please note a clarification that the roof of the retail belt block is for use by occupiers of the development. Relevant description is updated in para. 5.16 of the Planning Statement in this submission.
2	Detailed design of the proposed development will be examined at building plans submission stage and I shall reserve my comments on such.	Noted.
3	I shall defer to DLO/KE to provide their comments from district's perspective.	Noted.

Comments from Fire Services Department

Comments from FSD (Contact: Mr. Wah Herbert Chi-lut ;Tel.: 2733 5844	Response
Please be informed that I have no further comment.	Noted.

Comments from Leisure and Cultural Services Department

Comments (Batch 1) from LCSD dated 24.5.2024 (Contact: Ms. Vicki CHAK; Tel.: 2601 8039)		Response
1	I refer to your preceding email and the reminder dated 10.5.2024 (Ref. ( ) in K-22/42) on the captioned. Comments from project management angle, tree management angle and landscape management angle are attached for your consideration please. Please also be informed that our district colleagues are still studying the plan, their comment will be further supplemented once it is available.	Noted.
2	**Project Management angle (Lung Tsun Stone Bridge Preservation Corridor)** Architectural aspect: No adverse comment in principle but minor advise/observation as follow for future coordination:	It is noted that your comments are made on the submission documents to DLO under the lease conditions, which details the Public Open Space (POS) design. The relevant comments will

Comments (Batch 1) from LCSD dated 24.5.2024 (Contact: Ms. Vicki CHAK; Tel.: 2601 8039)		Response
	- Alignment of the pavement/landscape/pavilion to be minor adjusted to fit the updated layout at LTSB side; - Other comments marked on the copy of the submission attached.	therefore be addressed in more detail at the subsequent submissions to DLO for vetting. In para 2.3 of the submitted planning statement to PlanD, POS is not included in the application boundary of this planning application, considering that the vetting process of POS with relevant departments could be addressed under the lease conditions. Nonetheless, the POS design is shown side-by-side to the Landscape Master Plan in this planning application, as an illustrative reference of the possible landscaping and interface design that would fall in line with the lease specifications. The final design of the POS would be the version that is accepted under the lease conditions and will be reflected in the planning application as an illustrative reference, when applicable.
3	**Tree Management angle -** Nil return.	Noted.
4	**Landscape Management angle -** We have no specific comments at this juncture, but reserve the right to provide comment on the detailed planting plan if there is any landscape works to be handed over to LCSD in future.	Noted.

Comments (Batch 2) from LCSD dated 27.5.2024 (Contact: Ms. Vicki CHAK; Tel.: 2601 8039)		Response
1	**<u>District Management angle (Kowloon City)</u>** To promote bio-diversity and meet public expectations for planting trees and shrubs with conspicuous flowers in different seasons. Apart from Tabebuia chrysantha that has been chosen to plant at the captioned site, please replace other selected species by the flowering trees as list below. **<u>Trees</u>** Cassia bakeriana (花旗木), Chorisia speciosa(美人樹), Crateva unilocularis(樹頭菜), Bauhinia variegata(宮粉羊蹄甲), Barringtonia racemosa(穗花棋盤腳), Pyrus calleryana(豆梨), Chionanthus retusus(流蘇樹), Liquidambar formosana(楓	It is noted that your comments are made on the submission documents to DLO under the lease conditions, which details the Public Open Space (POS) design. The relevant comments will therefore be addressed in more detail at the subsequent submissions to DLO for vetting.

Comments (Batch 2) from LCSD dated 27.5.2024 (Contact: Ms. Vicki CHAK; Tel.: 2601 8039)		Response
	香), Sterculia lanceolata(假蘋婆), Ilex rotunda var. microcarpa(小果鐵冬青), Pongamia pinnata(水黃皮), Reevesia thyrsoidea(梭羅樹), Sapium discolor(山烏桕), Schima superba(木荷), etc.;	
2	Please provide list of species for shrubs and groundcover for comment.	Our response for item (1) above is relevant.

Comments from Development Bureau (Harbour Office)

Comments from DevB (Harbour Office) (Contact: Ms. Flora NG; Tel.: 3679 3545)		Response
1	The concerned site is zoned Comprehensive Development Area (4), which is intended for residential use as per the approved Kai Tak Outline Zoning Plan (OZP) No. S/K22/8. The Planning Department and the Civil Engineering and Development Department have consulted the Harbourfront Commission's (HC's) Task Force on Kai Tak Harbourfront Development (KTTF) on the planning use of the site concerned in previous round of OZP amendment on 1 November 2021. We also submitted our comments on the same subject on 11 March 2024.	Noted.
2	Noting that the applicant stated in the R-to C table addressing our comments dd 11 March 2024 that it will consult KTTF on the design of the POS in due course, the project team is reminded to take into account the comments from KTTF members, if any, when proceeding with the project. That said, please promptly inform the proponent to liaise with the KTTF Secretariat, Ms Flora NG (Tel: 3679 3545 and email: florang@devb.gov.hk), for the logistics arrangement concerning the KTTF consultation. Please also be reminded to highlight our previous comments. Thank you.	Noted.

Comments from Electrical and Mechanical Services Department

Comments from EMSD (Contact: Mr Stanley SIU Tel: 3757 6231)		Response
1	**Electricity Safety** Please be advised that we have no particular comment on the document from electricity supply safety aspect. However, in the interests of public safety and ensuring the continuity of electricity supply, the parties concerned with planning,	Noted.

Comments from EMSD (Contact: Mr Stanley SIU Tel: 3757 6231)		Response
	designing, organizing and supervising any activity near the underground cable under the mentioned application should approach the electricity supplier (i.e. CLP Power) for the requisition of cable plans to find out whether there is any underground cable within and/or in the vicinity of the concerned site. They should also be reminded to observe the Electricity Supply Lines (Protection) Regulation and the "Code of Practice on Working near Electricity Supply Lines" established under the Regulation when carrying out works in the vicinity of the electricity supply lines.	
2	We have no particular comment on the document as far as electricity supply safety is concerned.	Noted.

Comments from Buildings Department

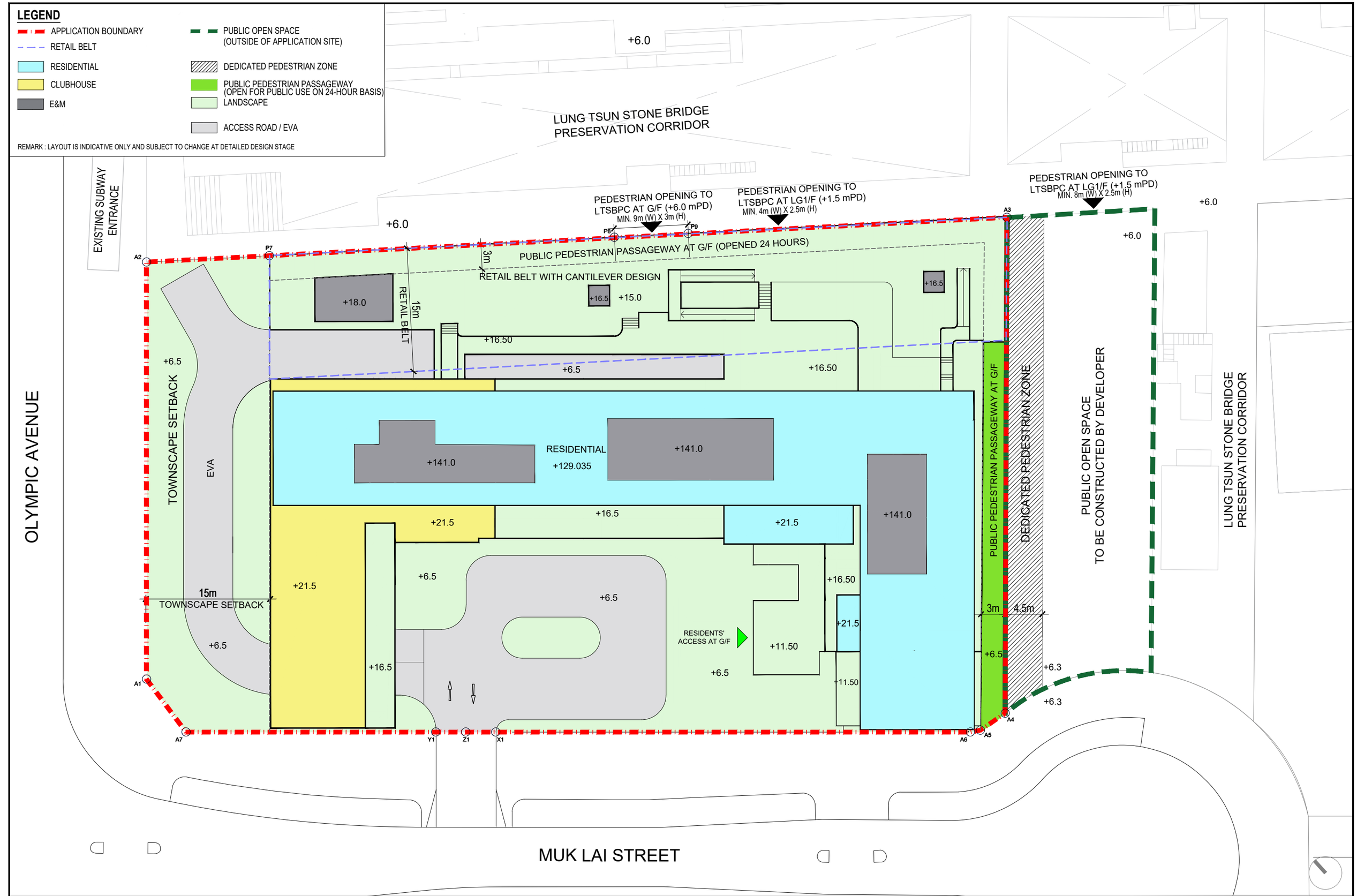
Comments from BD (Contact: Ms. Lam Wan-ching; Tel: 3106 3077)		Response
1	No objection in principle to the application subject to comments below: The applicant's reply in response to our memo dated 11 April 2024 under ref.(37) in the same series is noted.	Noted.
2	Detailed comments under the Buildings Ordinance (BO) on individual sites for private developments such as permissible plot ratio, site coverage, means of escape, emergency vehicular access, private streets, and/or access roads, barrier free access and facilities, open space, compliance with the sustainable building design guidelines, etc. will be formulated at the building plan submission stage. All building works are subject to compliance with the BO.	Noted.

Appendix 2: Master Layout Plan with Schematic Architectural Layouts

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- CLUBHOUSE
- E&M
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- DEDICATED PEDESTRIAN ZONE
- PUBLIC PEDESTRIAN PASSAGEWAY (OPEN FOR PUBLIC USE ON 24-HOUR BASIS)
- LANDSCAPE
- ACCESS ROAD / EVA

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: MASTER LAYOUT PLAN			
		Drawing No. MLP-01	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK + PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- E&M

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

+6.0

A2 P7 P8 P9 A3

+6.0

RETAIL BELT

RESIDENTIAL TOWER

+141.0

+129.035

+141.0

+141.0

15m TOWNSCAPE SETBACK

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: R/F PLAN			
		Drawing No. P-01	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

+6.0

+6.0

A2 P7 P8 P9 A3

RETAIL BELT

RESIDENTIAL TOWER

15m TOWNSCAPE SETBACK

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: 3/F TO 34/F PLAN			
		Drawing No. P-02	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL LOBBIES
- CLUBHOUSE
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- LANDSCAPE
- E&M

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

OLYMPIC AVENUE

+6.0

+6.0

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

LANDSCAPED ROOF

+15.00

+18.0

+16.5

+16.5

+16.50

CLUBHOUSE

+16.50

+16.50

15m
TOWNSCAPE SETBACK

MUK LAI STREET

Project	Job No.	Drawing Title					
PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	01864	2/F PLAN					
		Drawing No.	Revision No.	Scale	Date		LWK +PARTNERS
		P-03	B	1:400	6 Jun 2024		

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- CLUBHOUSE
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- E&M
- LANDSCAPE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

OLYMPIC AVENUE

+6.0

+6.0

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

PUBLIC PEDESTRIAN PASSAGEWAY AT G/F (OPENED 24 HOURS)

COMMERCIAL
+11.00

CLUBHOUSE
+11.50

E&M

E&M

15m
TOWNSCAPE SETBACK

+11.50

PODIUM
LANDSCAPED ROOF
+11.50

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: 1/F PLAN		
		Drawing No. P-04	Revision No. B	Scale 1:400 / Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- LANDSCAPE
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- DEDICATED PEDESTRIAN ZONE
- PUBLIC PEDESTRIAN PASSAGEWAY (OPEN FOR PUBLIC USE ON 24-HOUR BASIS)
- ACCESS ROAD / EVA
- E&M
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND 2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

PEDESTRIAN OPENING TO LTSBPC
(MIN. 9M(W) X 3M (H) AT G/F (+6.0mPD))

P8 P9 P7 A2 A3

PUBLIC PEDESTRIAN PASSAGEWAY

+6.0 +6.15 +6.0

15 M

CLUBHOUSE

E&M

E&M

EVA

TOWNSCAPE SETBACK

15m
TOWNSCAPE SETBACK

+6.2
RAMP DN
TO LG1/F

+6.5

RESIDENTS' ACCESS AT G/F

+6.5

PUBLIC PEDESTRIAN PASSAGEWAY

DEDICATED PEDESTRIAN ZONE

3m 4.5m

PUBLIC OPEN SPACE
TO BE CONSTRUCTED BY DEVELOPER

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: G/F PLAN			
		Drawing No. P-05	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION SITE BOUNDARY
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE) (UNDERGROUND SHOPPING STREET OUTSIDE OF APPLICATION SITE BOUNDARY)
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- ACCESS POINT
- DRIVEWAY
- E&M
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE
- 8M(W) X 3M(H) 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE WITHIN THE UNDERGROUND SHOPPING STREET, EXACT ALIGNMENT SUBJECT TO DETAIL DESIGN

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

ONE BRIDGE
N CORRIDOR

PEDESTRIAN OPENING TO LTSBPC AT LG1/F (+1.5 mPD)
4m(W) 2.5m(H)

PEDESTRIAN OPENING TO LTSBPC AT LG1/F (+1.5 mPD)
8m(W)
2.5m(H)

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

E&M
COMMERCIAL +1.5
COMMERCIAL +1.5
DRIVEWAY TO LG2/F
CARPARK
CARPARK +3.05

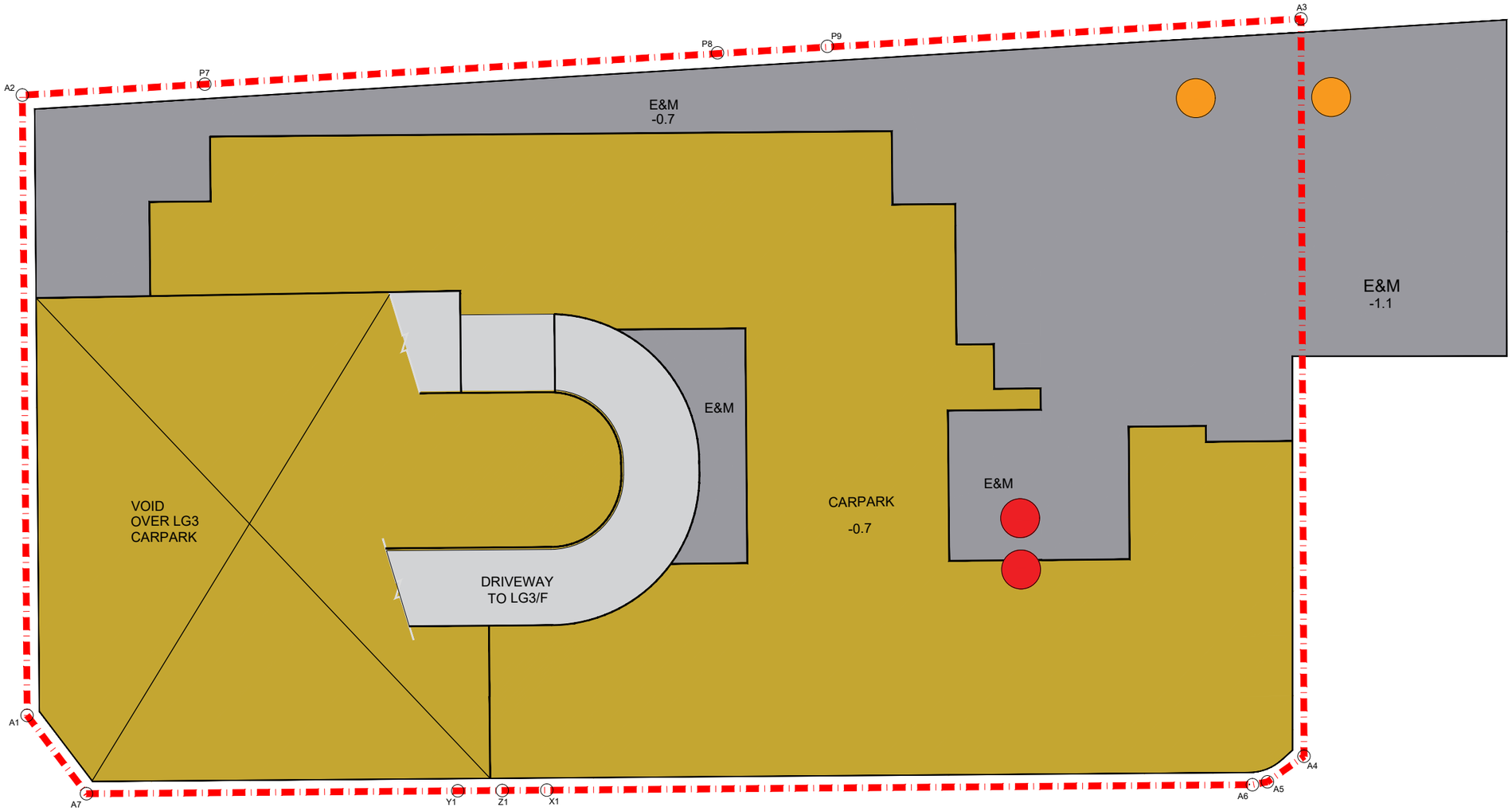
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B1/F PLAN			
		Drawing No. P-06	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION SITE BOUNDARY
- DRIVEWAY
- E&M
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

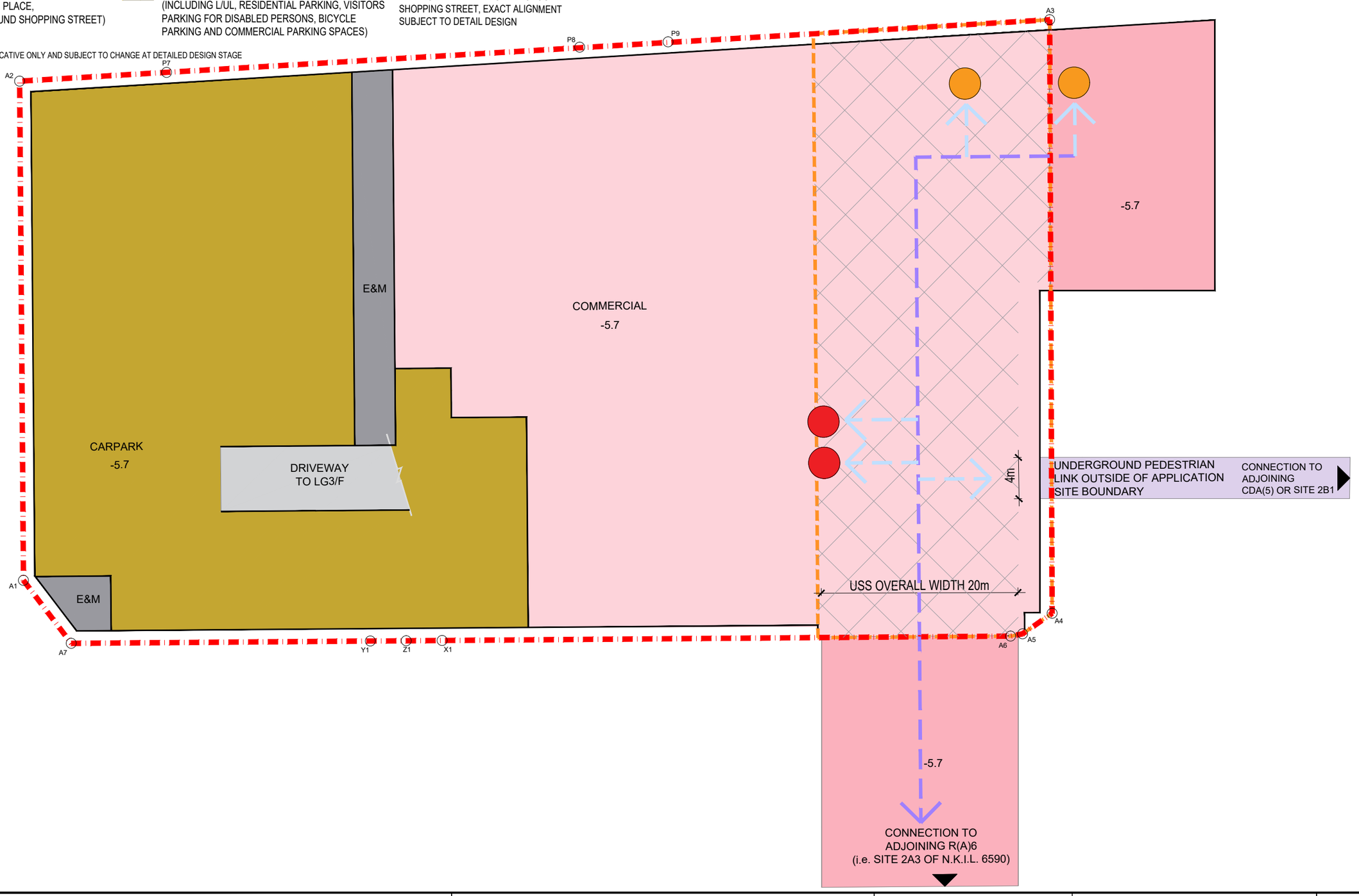


Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B2/F PLAN				LWK +PARTNERS
		Drawing No. P-07	Revision No. B	Scale 1:400	Date 6 Jun 2024	

LEGEND

- APPLICATION SITE BOUNDARY
- UNDERGROUND SHOPPING STREET (WITHIN APPLICATION SITE)
- ACCESS POINT
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE) (UNDERGROUND SHOPPING STREET OUTSIDE OF APPLICATION SITE BOUNDARY)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE, UNDERGROUND SHOPPING STREET)
- DRIVEWAY
- E&M
- UNDERGROUND PEDESTRIAN LINK OUTSIDE OF APPLICATION SITE BOUNDARY FOR 24-Hr PUBLIC ACCESS
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE
- 8M(W) X 3M(H) 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE WITHIN THE UNDERGROUND SHOPPING STREET, EXACT ALIGNMENT SUBJECT TO DETAIL DESIGN

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



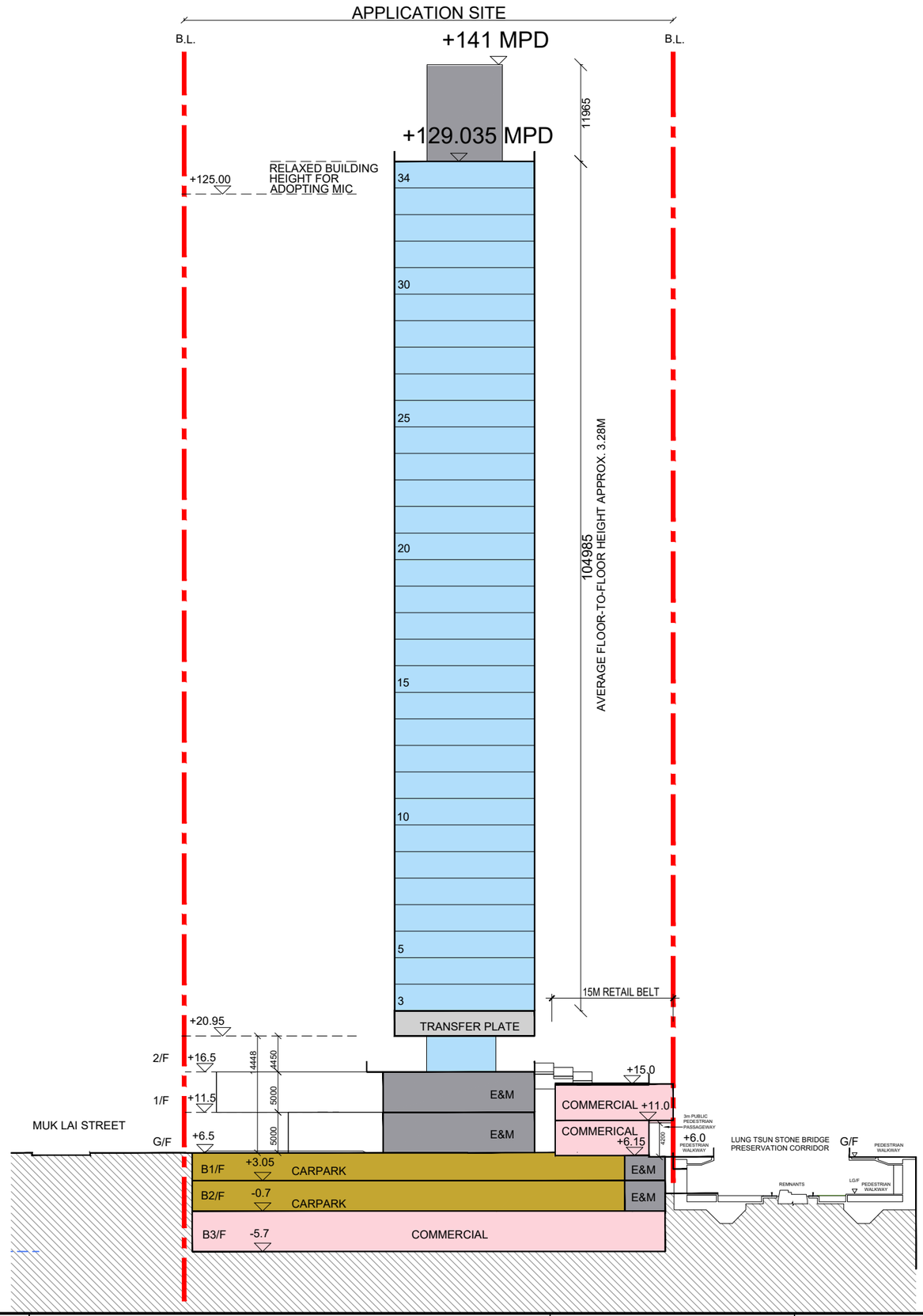
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B3/F PLAN			
		Drawing No. P-08	Revision No. B	Scale 1:400	Date 6 Jun 2024

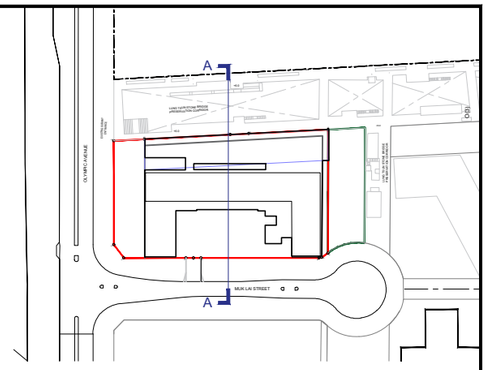
LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- CARPARK
- E&M
- TRANSFER PLATE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE





KEY PLAN
1:3000

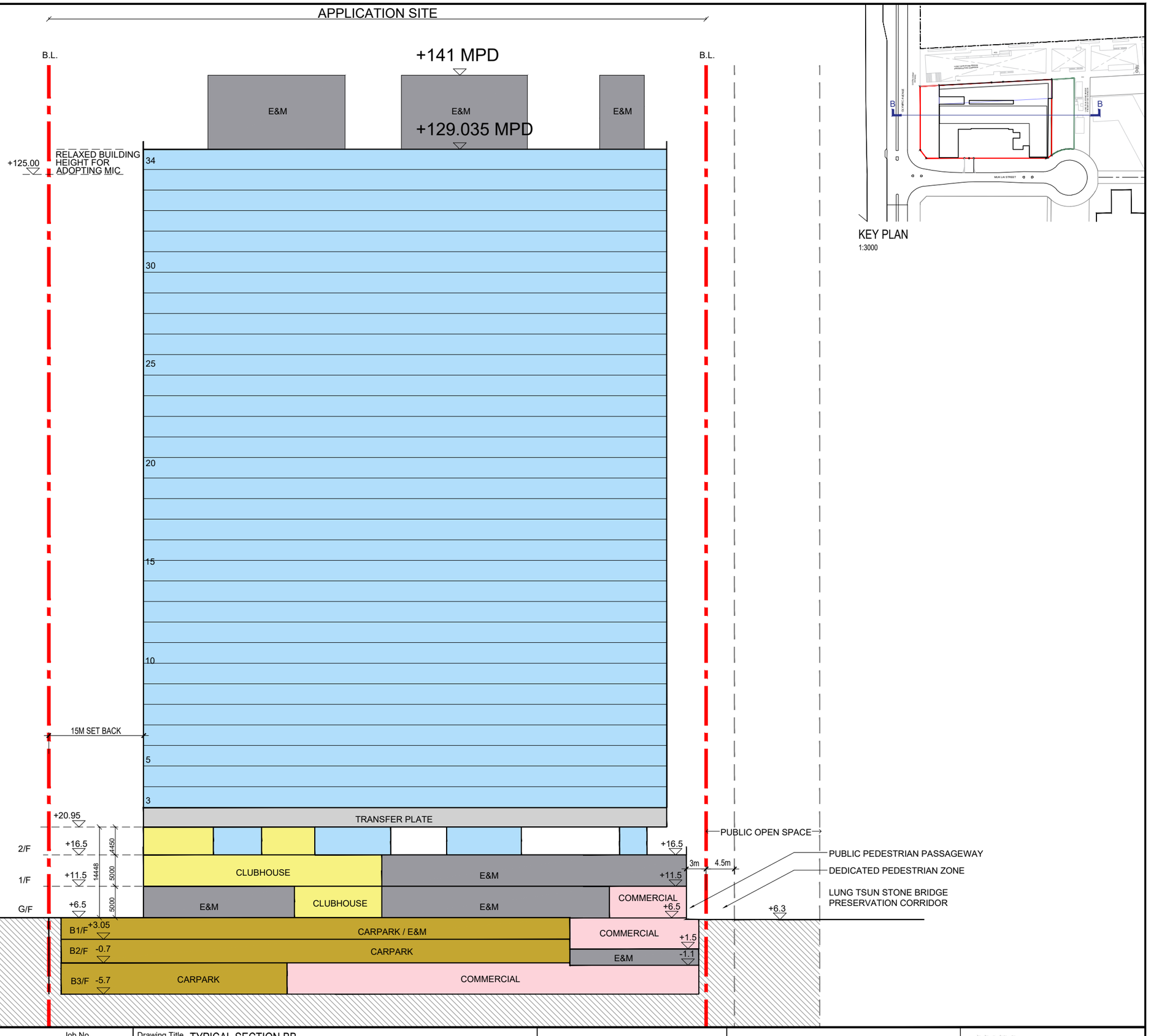
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: TYPICAL SECTION AA		
		Drawing No. S-01	Revision No. A	Scale 1:600 / Date 6 Jun 2024

LWK + PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- CARPARK
- E&M
- TRANSFER PLATE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



KEY PLAN
1:3000

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: TYPICAL SECTION BB		
		Drawing No. S-02	Revision No. A	Scale 1:600 / Date 6 JUN 2024

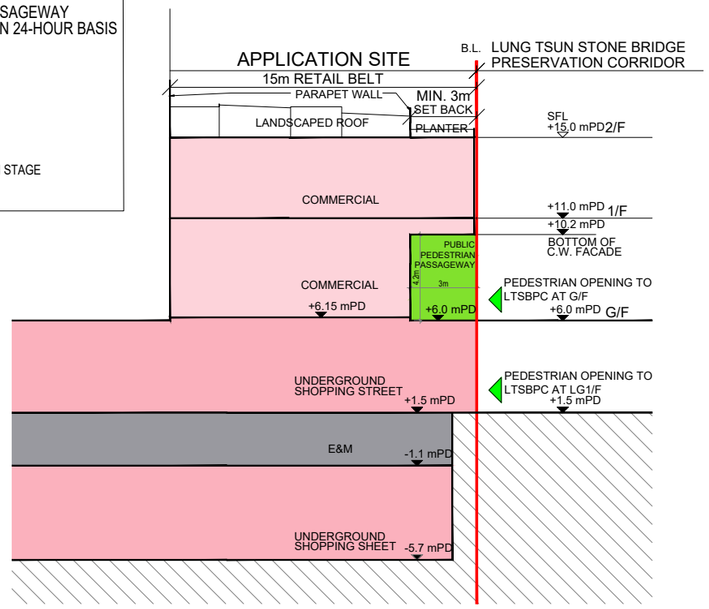
LWK + PARTNERS

LEGEND

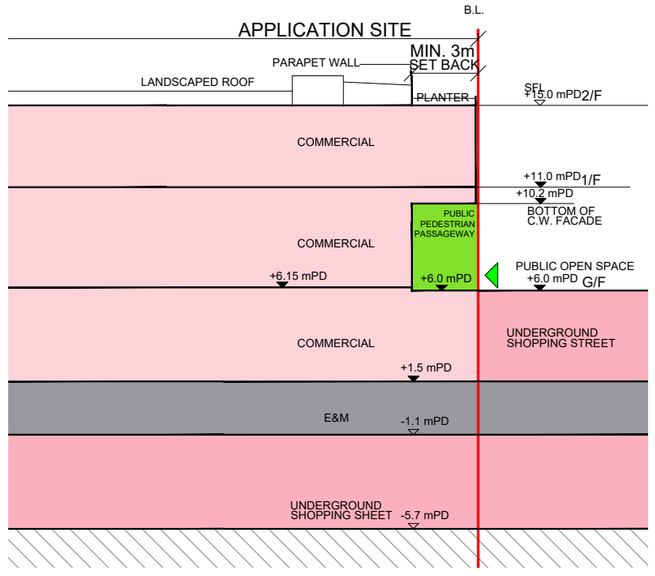
- APPLICATION BOUNDARY
- PUBLIC PEDESTRIAN PASSAGEWAY OPEN FOR PUBLIC USE ON 24-HOUR BASIS
- ACCESS PEDESTRIAN POINT
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- E&M

SFL - STRUCTURAL FLOOR LEVEL

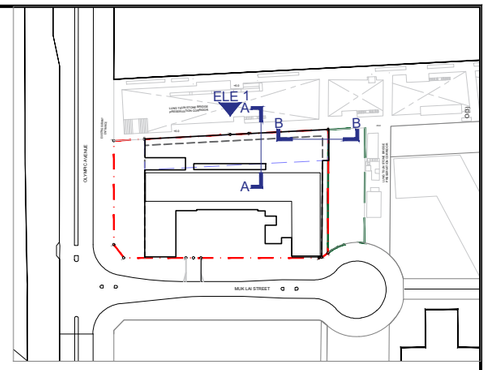
REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



TYPICAL SECTION ACROSS RETAIL BELT BLOCK A

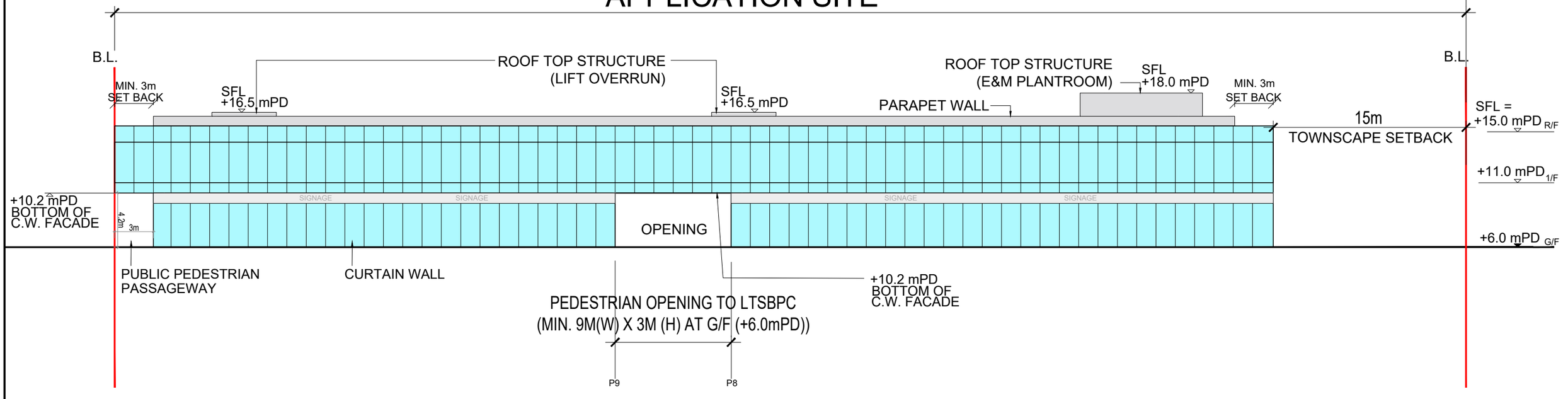


TYPICAL SECTION ACROSS RETAIL BELT BLOCK B



KEY PLAN
1:3000

APPLICATION SITE



ELEVATION 1

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: ELEVATION AND SECTIONS OF RETAIL BELT BLOCK			
		Drawing No. ELE-01	Revision No. -	Scale 1:300	Date 6 JUN 2024

LWK + PARTNERS

LEGEND

- TOWNSCAPE SETBACK (G/F TO 34/F)
- RESIDENTIAL TOWER SETBACK (2/F TO 34/F)
- RETAIL BELT (G/F TO 1/F)
- PUBLIC PEDESTRIAN PASSAGEWAY (G/F)

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

EXISTING SUBWAY ENTRANCE

OLYMPIC AVENUE

PUBLIC PEDESTRIAN PASSAGEWAY AT G/F

RETAIL BELT WITH CANTILEVER DESIGN

APPROX. 16m

15m RETAIL BELT

3m

15m

APPROX. 21m

15m

APPROX. 27m

APPROX. 86m

15m TOWNSCAPE SETBACK

APPROX. 4m PUBLIC PEDESTRIAN PASSAGEWAY AT G/F

DEDICATED PEDESTRIAN ZONE

3m

4.5m

PUBLIC OPEN SPACE TO BE CONSTRUCTED BY DEVELOPER

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

+6.0

+6.0

+6.0

+6.3

+6.3

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: BUILDING SETBACK DIAGRAM		
		Drawing No. SK-01	Revision No. -	Scale 1:400	Date 16 May 2024

LWK + PARTNERS

LEGEND

APPLICATION BOUNDARY

FENCE WALL
(SETBACK 600mm MIN. FROM BOUNDARY IN GENERAL)

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY
ENTRANCE

OLYMPIC AVENUE

+6.0

+6.0

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR

A1
A2
A3
A4
A5
A6
A7
P7
P8
P9
Y1
Z1
X1

MUK LAI STREET

Project PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title FENCE WALL DIAGRAM			
		Drawing No. SK-03	Revision No. -	Scale 1:400	Date 28 MAR 2024

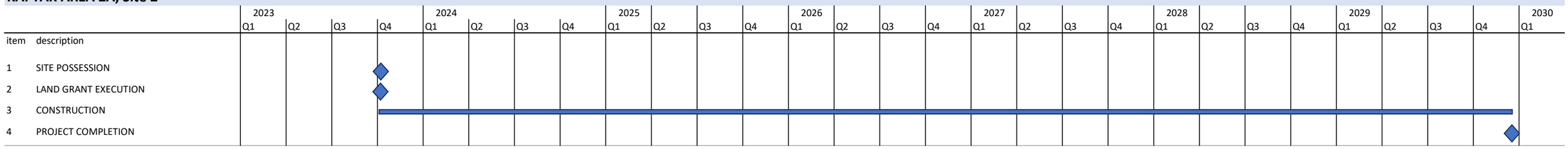
LWK + PARTNERS

Appendix 3: Tentative Implementation Program

NKIL6590 Comprehensive Development

TENTATIVE IMPLEMENTATION PROGRAMME FOR COMPREHENSIVE DEVELOPMENT IN CDA (4)

KAI TAK AREA 2A, Site 2

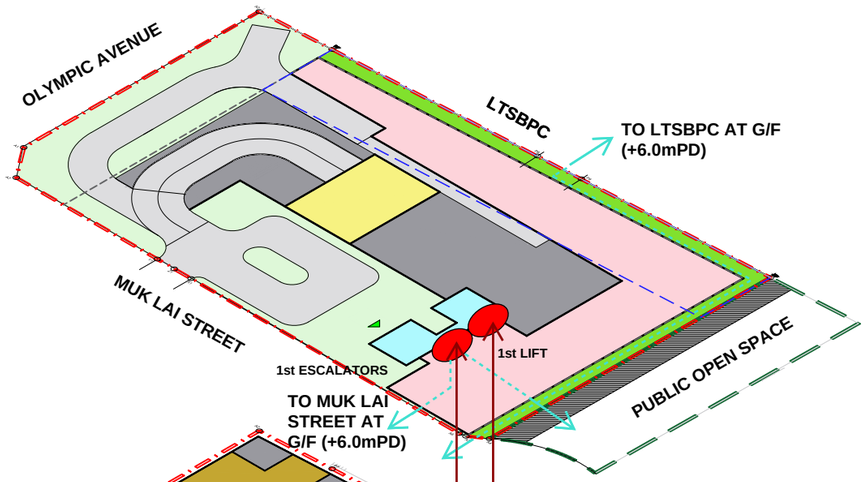


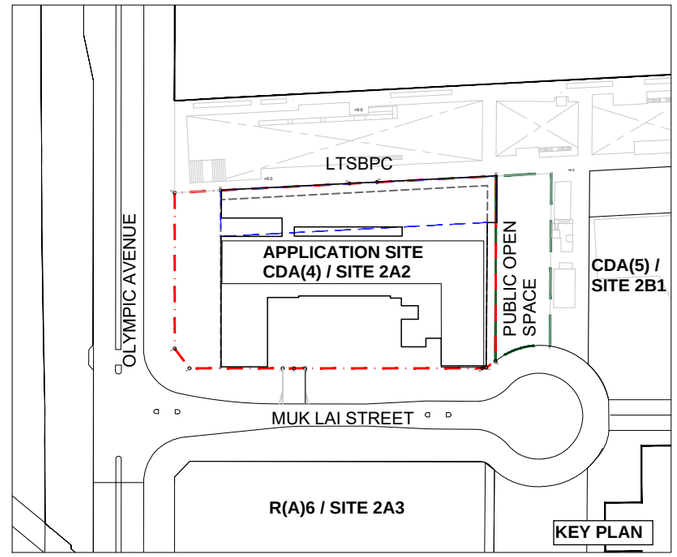
Appendix 4: Pedestrian Facilities and Connectivity of the Proposed Scheme

LEGEND

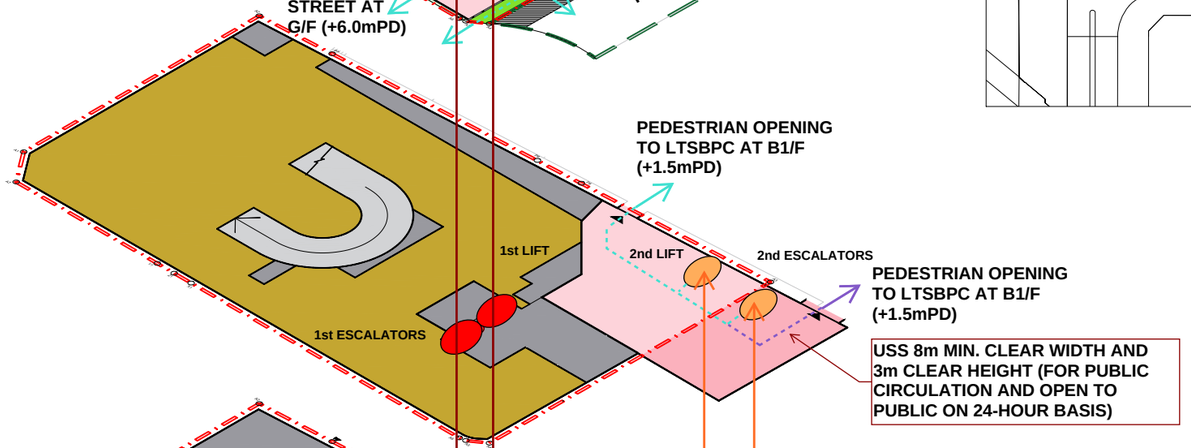
- APPLICATION SITE BOUNDARY
- PUBLIC PEDESTRIAN PASSAGEWAY (OPEN FOR PUBLIC USE ON 24-Hr BASIS)
- CAR PARK
- SHOPS AND SERVICES AND EATING PLACE
- CLUB HOUSE
- E&M ZONE
- DRIVE WAY AND EVA
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE, UNDERGROUND SHOPPING STREET)
- UNDERGROUND PEDESTRIAN LINK OUTSIDE OF APPLICATION SITE BOUNDARY (OPEN FOR PUBLIC USE ON 24-Hr BASIS)
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS for 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-Hr BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE
- UNDERGROUND SHOPPING STREET WITHIN APPLICATION SITE
- 8M(W) X 3M(H) 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE WITHIN THE UNDERGROUND SHOPPING STREET, EXACT ALIGNMENT SUBJECT TO DETAIL DESIGN

G/F
(+6.0mPD)

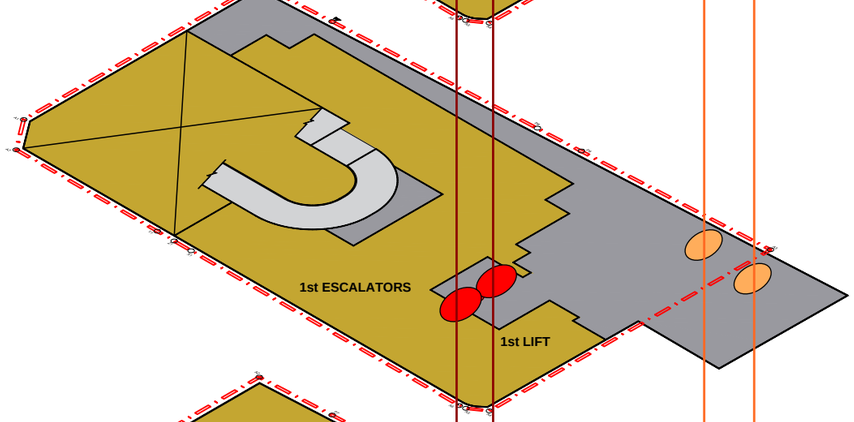




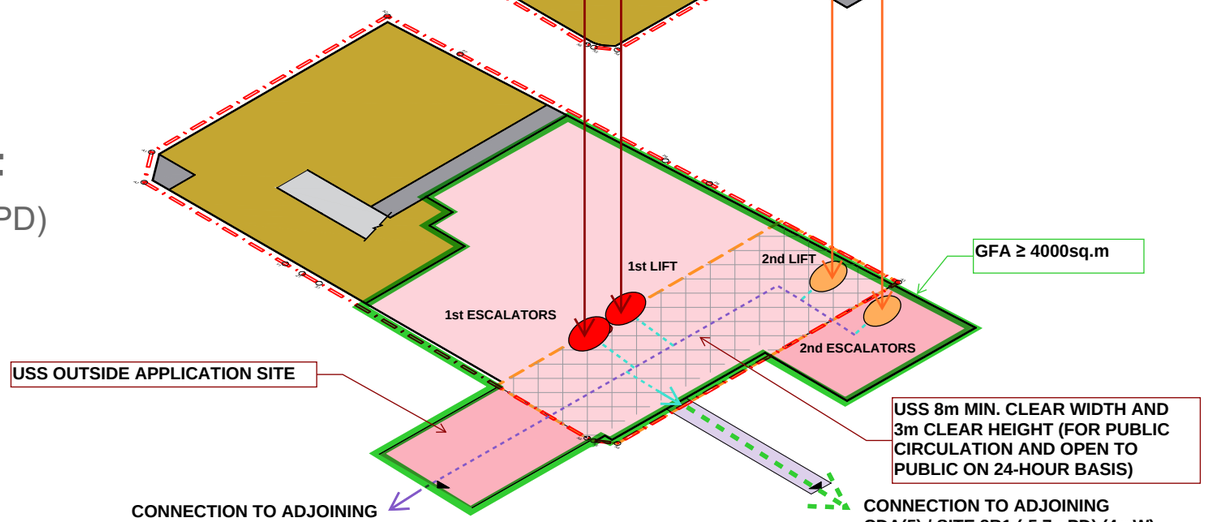
B1/F
(+1.5mPD)



B2/F
(-0.7mPD)

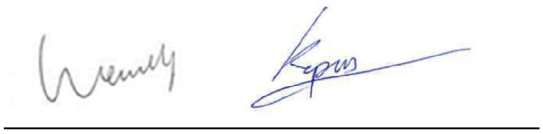


B3/F
(-5.7mPD)



Appendix 5: Environmental Assessment

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON (MASTER LAYOUT PLAN SUBMISSION)
ENVIRONMENTAL ASSESSMENT

Date	June 2024
Prepared by	Wendy Tin / Kyle Kam Environmental Consultant / Assistant Environmental Consultant
Signed	
Approved by	Tony Cheng Senior Manager
Signed written permission of Ramboll Hong Kong Ltd, application for which shall be made to Ramboll Hong Kong Ltd,	
Project Reference	SNOKAITAEI00
Document No.	R9315_v1.1

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CHAPTERS

TABLES

FIGURES

APPENDICES

1. INTRODUCTION

1.1 Background

1.1.1 The Application Site is located on Muk Lai Street and adjacent to Olympic Avenue, at Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon. The Site is zoned "Comprehensive Development Area (4)" (CDA(4)) on the Approved Kai Tak Outline Zoning Plan No. S/K22/8. Under the Town Planning Ordinance, a section 16 planning application is required to be submitted by the Applicant to obtain permission from the Town Planning Board, for a comprehensive development, including flat, shop & services and eating place. A Master Layout Plan is included in the application submission to demonstrate the comprehensiveness of the development proposal and its integration with the adjacent Lung Tsun Stone Bridge Preservation Corridor. In addition, there is a minor height relaxation of Building Height Restriction to adopt Modular Integrated Construction (MIC) in this planning application. This Environmental Assessment is prepared in support of this planning application.

1.2 Subject Site and its Environ

1.2.1 According to the Approved Kai Tak Outline Zoning Plan (OZP) No. S/K22/8, the Subject Site fall within the CDA(4) zone.

1.2.2 The Subject Site has an area of about 6,300 m^2. It is bounded by Muk Lai Street to the southwest, Prince Edward Road East and Olympic Avenue to the northwest. Planned Light Public Housing and Proposed Comprehensive Development (i.e., Kai Tak Area 2B Site 1) are located in the east and southeast of the Subject Site, respectively. Figure 1.1 shows the location of the Subject Site and its environ.

1.3 Proposed Development

1.3.1 The proposed residential development consists of consists of 1 residential building block providing not more than 930 residential units, and a retail belt. The retail belt is a 2 storeys commercial block, same as that along other Kai Tak Area. The tentative operation year of the project is year 2029.

1.3.2 The master layout plan and section of the Proposed Development are shown in Appendix 1.1.

1.4 Environmental Appraisal of the Proposed Developments

1.4.1 Assessment on road traffic noise impact, fixed noise impact, air quality impact and impact on cultural heritage will be discussed in Sections 2, 3, 4 and 5, respectively.

1.4.2 As shown in the Environmental Impact Assessment (EIA) Report for "Kai Tak Multi-purpose Sports Complex" (MPSC) (Register No.: AEIAR-204/2017) as excerpted in Appendix 1.2, the part of Shatin to Central Link (SCL), Sung Wong Toi Station, will be located underneath the Subject Site. It will be underground and hence operational railway noise impact is not expected.

2. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

2.1 Introduction

2.1.1 This section is prepared to address road traffic noise impact on the noise sensitive uses of the Proposed Development and to recommend mitigation measures where practicable to attenuate the impact.

2.2 Assessment Criteria

2.2.1 Noise standards are recommended in the HKPSG for planning against possible noise impact from road traffic.

2.2.2 The Proposed Development includes domestic dwellings and clubhouse. Clubhouse will be provided with centralized air conditioning system with proper insulation and will not rely on openable window for ventilation. Domestic dwellings will rely on openable window for ventilation. According to the guidelines, the maximum noise level from road traffic, measured in terms of L_{10} (1-hr), is recommended to be 70 dB(A) at typical facades of new dwellings.

2.3 Assessment Methodology

2.3.1 The methodology involves the prediction of future noise impacts on Noise Sensitive Receivers (NSRs) arising from traffic flows on existing and future road carriageways in the vicinity of the Subject Site.

2.3.2 The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" was applied to predict the hourly L_{10} noise level generated from road traffic at selected representative facades (NSRs) of the Proposed Development. The predicted noise levels were then compared with the HKPSG noise criterion for assessing the impact.

2.3.3 Based on the tentative completion year of the development (Year 2029), traffic forecast for the Year 2044 on the road carriageways in the vicinity of the proposed development, which has the maximum traffic projection within 15 years from the completion of the Proposed Development, was provided by MVA (the project traffic consultant) for prediction of the worst-case traffic noise impact. The projected traffic flows and vehicle composition of the road carriageways provided by the project traffic consultant are shown in Appendix 2.1. It has been checked that the a.m. flow is the peak hour flow in comparing with the p.m. flow, so only the a.m. flow is assessed in this submission.

2.4 Road Characteristics

2.4.1 Prince Edward Road East and Olympic Avenue are considered as the dominant sources which contribute traffic noise impact on the NSRs. In this assessment, all roads are assumed as impervious surface. The information on traffic volume and percentage of heavy vehicle using these roads is shown in Appendix 2.1.

2.5 Consideration of Surrounding Developments

2.5.1 The following future/ committed developments have been considered in the assessment. (See Figure 1.1)

a) Future CDA Site 2A1, 1M1 & 1M2 (i.e., Light Public Housing)

b) Future Residential Site 2A3, 2A4 & 2A5(B)

c) Future Site 2A5(A) for G/IC Use

d) Future Housing Society Site 2B1

e) Future Housing Site 2B2-2B6

f) Future Residential Site 2A10(A)

2.6 Noise Sensitive Receivers

2.6.1 Residential dwellings with openable windows / doors for prescribed ventilation purposed, are selected as noise sensitive receivers (NSRs). The assessment points of NSRs are taken 1.2m above the floors and 1m away from the facades of openable windows (which would be used for ventilation purpose). Locations of Planned NSRs for the road traffic noise impact assessment are to be provided.

2.6.2 Appendix 2.2 shows the location of the NSRs of dwellings for road traffic noise impact assessment.

2.7 Assessment Results under Base-case Scenario

2.7.1 The assessment result for dwelling under base case scenario is presented in Detailed result is presented in Appendix 2.3 and summarised below.

Table 2.1 Assessment Result under Base Case Scenario

Scenario	Max Predicted Noise Level	Total Number of Exceedances	Compliance Rate
Peak Flow	81	736	21%

2.8 Consideration of Noise Mitigation Measures for Proposed Development

2.8.1 Noise mitigation measures have been duly studied and applied where practicable.

a. Façade orientation

2.8.2 As mentioned in section 2.4, the major traffic noise sources (Prince Edward Road East and Olympic Avenue) are located northwest to the subject site. Most of the façade are located perpendicular to the mentioned major roads such that the angle of view to these major noise sources are reduced.

b. Fixed Glazing with/without Maintenance Window

2.8.3 For those window façades that are not necessary to serve ventilation purpose yet exposed to adverse road traffic noise, fixed glazing with/without maintenance window is proposed. The fixed glazing is not less than 8 mm. It will be equipped with well gasketed maintenance window with a removable handle or key lock system to ensure the maintenance window remains locked except for cleaning and maintenance purpose.

c. Vertical Fin

2.8.4 Vertical acoustic fins of various lengths have been proposed at strategic locations to further reduce the view angle to nearby noise source. It is understood that erection of vertical fins near NSRs would possibly create a semi-enclosure area and hence induce multi-reflection effect. To minimize the possible effect, sound absorptive material (SAM) is proposed at the surface and tip of all vertical fins.

2.8.5 Some of the vertical acoustic fins were applied in the form of enhanced acoustic windows. Appendix 2.7 indicates the locations of the vertical acoustic fins recommended for the Proposed Development under consideration of satisfying relevant prescribed window requirements.

d. Enhanced Acoustic Window (Baffle Type)-Kam Sheung Road [EAW(BT)-KSR]

2.8.6 Please be noted the reference case in EPD-Practice note (ProPECC 5/23) [EPD-PN] have been made to adopt in first place for the Proposed Development. However, some major parameters in EPD-PN cannot be followed (i.e., outer/inner opening is much larger than the EPD-PN, full height side wall near the outer opening cannot be provided at the balcony etc.), reference cases from other developments are therefore adopted.

2.8.7 Enhanced acoustic window (Baffle Type) [EAW(BT)] are proposed and the noise attenuation performance are referenced to a development project at Kam Sheung Road (hereafter referred as "KSR"), which was previously proposed in an approved NIA report and the KSR is under construction. The project owner of KSR and this project are the same. The noise attenuation performance provided by the EAW(BT) is obtained via laboratory testing which has been approved by EPD.

2.8.8 The EAW(BT) in KSR refers to the type of window that has an inner sliding panel behind the outer opening, both readily openable, for creating an air gap for the supply of fresh air with noise mitigation effect. It comprises two glazing:

i. The outer window system with side hung openable window; and

ii. The inner sliding panel.

For all cases, the air gap will be maintained at 100mm.

2.8.9 The "designed setting" to reduce noise entering indoor area is achieved by placing the inner sliding panel behind the outer openable window, so that noise from outside cannot pass through the opening enter indoor area directly. As there is no gap at top and bottom of the sliding panel, direct transmission of sound energy into the habitable room is avoided. Instead, outdoor noise has to pass through the gap between the inner sliding panel and outer façade aside the opening in order to enter indoor area. The design allows natural ventilation through the aforementioned gap (although extent of natural ventilation may be inferior to the case without the inner sliding panel behind) and prevent most noise from entering indoor environment. According to the latest PNAP APP-130: "Lighting and Ventilation Requirements – Performance-based Approach", the proposed EAW(BT) are considered complying with prescribed ventilation requirement if the net opening when the inner sliding panel is moved to another side with least obstruction to the openable window at the outer façade.

2.8.10 Micro-perforated absorber (MPA) panel and sound absorptive material (SAM) will be provided to improve the performance of the proposed acoustic window (baffle type):

- MPA is applied to the inner sliding panel of acoustic window (baffle type); and
- SAM is adopted on the top and one vertical window frames between the outer facade and inner sliding panel to absorb sound energy during it propagation to indoor area.

2.8.11 A road traffic noise sound attenuation of the EAW(BT)-KSR for a room with ~ 4.3 m^2 can reach 6 dB(A). When there is a vertical fin next to the EAW(BT)-KSR (i.e., T2-03, T2-04, T2-86 and T2-87), the reduction will be increased to 9.3 - 9.4 dB(A). Absorption material is adopted at the surface of the vertical fin that faces towards the EAW(BT)-KSR. The above noise attenuation performance is obtained via laboratory testing which has been approved by EPD.

2.8.12 The configurations of EAW(BT) design are shown in Appendix 2.4. The configurations will be followed and optimized to suit the Proposed Development. The noise reduction effectiveness of the proposed EAW(BT) should not be worse than the reference cases. It is anticipated the proposed EAW(BT) should have at least the same sound

transmission loss performance as the reference case. Further, if the room size of the Proposed Development is lower than the reference case in KSR, room size adjustment is conducted (shown in Appendix 2.5) so that the noise reduction will be lowered. Lastly, in case the noise reduction of the proposed EAW(BT) is higher than the residual exceedance, it is assumed that the noise reduction is equal to the residual exceedance.

e. Enhanced Acoustic Balcony (Baffle Type)- Kam Sheung Road [EAB(BT)-KSR]

2.8.13 Again, the reference case in EPD-PN has been made to adopt in the first place for the Proposed Development. However, some major parameters in EPD-PN cannot be followed (i.e., outer/inner opening is much larger than the EPD-PN, full height side wall near the outer opening cannot be provided at the balcony etc.), reference cases from other developments are therefore adopted.

2.8.14 Enhanced baffle-type acoustic balcony [EAB(BT)] is proposed and the noise attenuation performance is referenced to a redevelopment project at Kam Sheung Road (hereafter referred to as “KSR”), which was previously proposed in an approved noise impact report and the KSR is under construction. The project owner of KSR is the same as that of this project. The noise attenuation performance provided by the EAB(BT) is obtained via laboratory testing which has been approved by EPD.

2.8.15 The EAB(BT) in KSR refers to the type of window that has an inner sliding panel behind the outer opening, both readily openable, for creating an air gap for the supply of fresh air with noise mitigation effect. It comprises two glazing:

iii. The outer window system with side hung openable window; and

iv. The inner sliding panel.

For all cases, the air gap will be maintained at 100mm.

2.8.16 The “designed setting” to reduce noise entering indoor area is achieved by placing the inner sliding panel behind the outer openable window, so that noise from outside cannot pass through the opening enter indoor area directly. As there is no gap at top and bottom of the sliding panel, direct transmission of sound energy into the habitable room is avoided. Instead, outdoor noise has to pass through the gap between the inner sliding panel and outer façade aside the opening in order to enter indoor area. The design allows natural ventilation through the aforementioned gap (although extent of natural ventilation may be inferior to the case without the inner sliding panel behind) and prevent most noise from entering indoor environment. According to the latest PNAP APP-130: “Lighting and Ventilation Requirements – Performance-based Approach”, the proposed EAW(BT) are considered complying with prescribed ventilation requirement if the net opening when the inner sliding panel is moved to another side with least obstruction to the openable window at the outer façade.

2.8.17 In this study, the use of various sound absorption enhancements, including micro-perforated absorber (MPA) panel and sound absorptive material (SAM) have been proposed.

- MPA is applied to the inner sliding panel of the acoustic window (baffle type);
- SAM is adopted on the top and one vertical door frame between the outer facade and inner sliding panel to absorb sound energy during its propagation to the indoor area;
- SAM is adopted on the balcony ceiling aiming to reduce the sound energy reflected into the indoor area by the ceiling, and;
- SAM is adopted at the balcony sidewall aiming to reduce the sound energy reflected into the indoor area by the sidewall (if present). The extent of the

SAM at the sidewall will be shown in the drawing once the detailed design is available.

2.8.18 The noise attenuation performance without sidewall can reach 7.5 dB(A) with reference to the KSR case (EAB(BT)- KSR 1). When there is an additional sidewall at one side of the balcony where the A/C unit is not located, the traffic noise sound attenuation can be increased to 10dB(A) (EAB(BT) – KSR 2) (i.e.,T2-01 and T2-89) when it parallel to the road. The above noise attenuation performance is obtained via laboratory testing which has been approved by EPD.

2.8.19 The configurations of EAB(BT) design are shown in Appendix 2.4. The configurations will be followed and optimized to suit the Proposed Development. The noise reduction effectiveness of the proposed EAB(BT) should not be worse than the reference cases. It is anticipated the proposed EAB(BT) should have at least the same sound transmission loss performance as the reference case. Further, if the room size of the Proposed Development is lower than the reference case in KSR, room size adjustment is conducted (shown in Appendix 2.5), so that the noise reduction will be lowered. Lastly, in case the noise reduction of the proposed EAB(BT) is higher than the residual exceedance, it is assumed that the noise reduction is equal to the residual exceedance. However, after checking the room size of this project, it is noted that there are no bedrooms having the room size is smaller than the reference case, and so no room size adjustment correction is adopted in this project.

f. Acoustic Window / Acoustic Balcony (Baffle Type)- ex-North Point Estate [AW(BT) / AB(BT) -NPE]

2.8.20 Another type of baffle type acoustic window and balcony are proposed and the noise attenuation performance for AW(BT) and AB(BT) are referenced to the redevelopment project of ex-North Point Estate (hereafter referred as “NPE”), which was previously proposed in the Approved EA report. The AW(BT) and AB(BT) are adopted at the locations where less traffic noise exceedance is located.

2.8.21 The AW(BT) and AB(BT) in NPE are also referring to the type of window/ balcony that has an inner sliding panel behind the outer opening, both readily openable, for creating an air gap for the supply of fresh air with noise mitigation effect. Its acoustic reduction mechanism is generally same as the above-mentioned acoustic window and balcony.

2.8.22 A road traffic noise sound attenuation of acoustic window with MPA applied in bedrooms of NPE reaches 6.8dB(A), and acoustic door without MPA applied in living room can reaches 8.8dB(A) for living rooms with reference to NPE determined based on onsite field test.

2.8.23 The configurations of AW(BT) and AB(BT) design are shown in Appendix 2.4. The configurations will be followed and optimized to suit the Proposed Development. The noise reduction effectiveness of the proposed AW(BT) and AB(BT) should not be worse than the reference cases. It is anticipated the proposed AW(BT) and AB(BT) should have at least the same sound transmission loss performance as the reference case. Further, if the room size of the Proposed Development is lower than the reference case in NPE, room size adjustment is conducted so that the noise reduction will be lowered. Lastly, in case the noise reduction of the proposed AW(BT) and AB(BT) is higher than the residual exceedance, it is assumed that the noise reduction is equal to the residual exceedance.

g. Noise Reducer

2.8.24 According to a review conducted in Japan by *P.A. Morgan under the Dutch Innovation Programme called IPG1*, the effectiveness of applying noise reducers has been studied under different situations. Referring to the findings, the addition of a mushroom-profile

noise reducer (without increasing the height of barrier) can help to reduce noise by 1.4 to 2.3dB(A). Meanwhile, this noise reducer has been adopted in a residential development project at TPTL No. 225 (St. Martin) and was completed in the year 2019.

2.8.25 In the Proposed Development, it is noted some NSRs (i.e., T2-01, T2-05 and T2-89) would still have exceedance after applying the provision of acoustic windows/ balconies. In order to further mitigate these exceedances, the noise reducers in the above-mentioned development project were referenced and to be applied in the proposed development. For conservative approach, it is assumed that the noise reducer can reduce noise by an extra 1.4 dB(A) as maximum in this assessment. The configurations of the Nosie Reducer design are shown in Appendix 2.4.

2.9 Assessment Results under Mitigated Scenario

2.9.1 The predicted road traffic noise impact on the representative NSRs based on the noise mitigation measures discussed above has been assessed.

2.9.2 With practical noise mitigation measures considered and incorporated for implementation as described in Appendix 2.7, all dwellings would have the predicted noise level complying with relevant standard (i.e., $L_{10(1\text{-hour})}$ 70 dB(A)), Appendix 2.6 shows the assessment result under mitigation scenario.

2.10 Conclusion

2.10.1 Road traffic noise impact assessment has been carried out for the Proposed Development.

2.10.2 All practical and effective noise mitigation measures have been explored, which include façade orientation, vertical fin, enhanced acoustic window and balcony (baffle type)-KSR, acoustic window and balcony (baffle type)-NPE, noise reducer, and fixed glazing with/ without maintenance window.

2.10.3 After mitigation, no adverse road traffic noise impact is anticipated for the Proposed Development. Appendix 2.7 and Appendix 2.8 show the consolidated noise mitigation measures and schedule.

3. FIXED NOISE IMPACT ASSESSMENT

3.1 Introduction

3.1.1 The aim of this study is to assess potential noise impacts arising from nearby fixed noise source of the industrial buildings and activities on the Proposed Development. Practicable noise mitigation measures would be recommended, where necessary.

3.2 Assessment Criteria

3.2.1 In accordance with the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (herein referred as TM), the area sensitive rating (ASR) depends on the location of NSR (e.g. whether within urban or rural area) and the degree of impact that the Influencing Factors (IFs) have on the NSRs. Any industrial area, major road or the area within the boundary of Hong Kong International Airport shall be considered to be IFs.

3.2.2 The Subject Site is located in close proximity to well-developed urban areas. With the reference to the traffic census of Year 2022 published by Transport Department (TD), Prince Edward Road East is 134,576 vehicles per day, which is over 30,000 vehicles per day. In accordance with the Technical Memorandum on Noise from places other than Domestic Premises, Public Places or Construction Sites (IND-TM) and the approved EIA report of Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction (Agreement No. CE 35/2006(CE)) (approved EIA), an ASR of C is therefore assigned.

3.2.3 The Acceptable Noise Levels (ANLs), in L_{eq}(30mins) dB(A), regarding to the ASR for both daytime and night-time are shown in Table 3.1.

Table 3.1 Acceptable Noise Level (ANL), dB(A)

Area Sensitivity Rating (ASR) In Relevant Time Periods	Acceptable Noise Level (ANL), L_{eq}(30mins) dB(A)
	ASR C
Day (0700 to 1900 hours)	70
Evening (1900 to 2300 hours)	
Night (2300 to 0700 hours)	60

3.3 Potential Fixed Noise Sources in the vicinity of the Subject Site

3.3.1 With reference of the approved EIA report and desktop review, the potential fixed noise sources in the vicinity of the Subject Site are identified and listed below. The 300m assessment area from the site boundary of Subject Site and the potential fixed noise sources in the vicinity of the Subject Site are shown in Figure 3.1.

a) Sewage Pumping Station (SPS) Pumping Station 3 (PS3) (S1)

b) Electrical Substation (ESS) (S2)

c) Shatin to Central Link (SCL) Ventilation Building (S3)

d) Ventilation Shaft of SCL To Kwa Wan (TKW) Station (North) (S4)

e) Ventilation Shaft of SCL TKW Station (South) (S5)

f) Sports Complex – Secondary Stadium (S6)

3.3.2 As shown in Figure 3.1, no potential fixed noise source is observed within the 300m assessment area from the site boundary of Subject Site. Therefore, the Proposed Development is not subject to adverse fixed noise impact.

3.4 Potential Fixed Noise Sources of Proposed Development

3.4.1 As per the HKPSG, the following requirement are adopted as further specification to the noise criteria.

(1) 5 dB(A) below the appropriate ANLs in the IND-TM (see Table 3.1)

(2) The prevailing background noise levels

3.4.2 More details of the proposed development shall be available during detailed design stage. Nevertheless, in order to ensure the fixed noise generated by the Proposed Development would not cause excessive impact to neighbouring noise sensitive uses, potential noise sources from the proposed development (e.g. plant room, the ventilation and air conditioning systems for the carpark, pump rooms, transformer rooms, lift machine room, emergency set rooms, etc.), will be designed to meet the relevant noise criteria as stipulated in the HKPSG.

3.4.3 Provisions shall be made to control the noise sources by suitable silencers, acoustic louvers and enclosures, if necessary. As such, it is anticipated that the fixed noise impact on the surrounding NSRs due to the operation of the Proposed Development will not exceed the relevant noise standard of the HKPSG.

4. AIR QUALITY IMPACT ASSESSMENT

4.1 Introduction

4.1.1 This Section presents an assessment of the potential air quality impact that could arise from the construction of the Project. It is also indicated the potential air quality impacts arising from the traffic emissions along the road carriageways and chimney emission (if any) from the industrial stack surrounding the Proposed Development Sites during the operation phase.

4.2 Relevant Legislations, Standards and Guidelines

4.2.1 The following legislation and regulations provide the standards and guidelines for evaluation of air quality impacts and the type of works that are subject to air pollution control:

- Air Pollution Control Ordinance (APCO) (Cap. 311) and the Air Quality Objectives (AQO)
- Air Pollution Control (Construction Dust) Regulation
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation
- Air Pollution Control (Fuel Restriction) Regulation
- Recommended Pollution Control Clauses for Construction Contracts
- Control of Air Pollution in Car Parks (ProPECC PN 2/96)
- Hong Kong Planning Standards and Guidelines (HKPSG)

Air Pollution Control Ordinance (CAP 311)

4.2.2 To achieve as soon as reasonably practicable and to maintain thereafter to safeguard the health of the community, a set of Air Quality Objectives (AQOs) is established under the Air Pollution Control Ordinance (Cap. 311). The latest set of AQOs that came into effect on 1 January 2022 is presented in Table 4.1.

Table 4.1 Hong Kong Air Quality Objectives

Pollutants	Average Time	Standard [i] ($\mu g/m^3$)	No. of exceedances allowed
SO_2	10-min	500	3
	24-Hour	50	3
RSP (PM_{10}) [ii]	24-Hour	100	9
	Annual	50	NA
FSP ($PM_{2.5}$) [iii]	24-Hour	50	35
	Annual	25	NA
NO_2	1-Hour	200	18
	Annual	40	NA
Ozone (O_3)	8-Hour	160	9
Carbon Monoxide (CO)	1-Hour	30,000	0
	8-Hour	10,000	0
Lead (Pb)	Annual	0.5	NA

Notes:

[i] All measurements of the concentration of gaseous air pollutants, i.e. sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.

[ii] Respirable suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 10 µm or less.

[iii] Fine suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 2.5 µm or less.

Air Pollution Control (Construction Dust) Regulation

4.2.3 Made under Section 43 of the APCO, this Regulation defines notifiable and regulatory works for achieving the purpose of dust control for a number of activities. The Regulation requires that any notifiable work shall give advance notice to EPD, and the Contractors shall ensure that the notifiable and regulatory works are carried out in accordance with the Schedule of the Regulation. Dust control and suppression measures are also provided in the Schedule.

4.2.4 The proposed construction works for the proposed Project are both regulatory and notifiable works due to activities including material stockpiling and dusty material handling as potential sources of fugitive dust emissions as detailed under Parts I to IV of the Schedule on Dust Control Requirements.

Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation

4.2.5 The Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, which aims to control emissions from non-road mobile machinery (NRMMs) to improve air quality, became effective on 1 June 2015. NRMMs include non-road vehicles, as well as mobile machines and equipment (regulated machines) such as crawler cranes, excavators and air compressors.

4.2.6 Under the regulation, regulated machines have to comply with the Stage IIIA emission standards of the European Union (EU). It also requires all regulated machines sold or leased for use in Hong Kong to bear an approval or exemption label issued to them by the EPD, started from 1 September 2015. It restricts specified activities and locations including construction sites, designed waste disposal facilities and specified processes to use only NRMMs that bear an approval or exemption label issued to them by the EPD, with effect from 1 December 2015.

Air Pollution Control (Fuel Restriction) Regulation

4.2.7 The Air Pollution Control (Fuel Restriction) Regulation was enacted in 1990 to impose legal control on the type of fuels allowed for use and their sulphur contents in commercial and industrial processes to reduce sulphur dioxide (SO2) emissions. In June 2008, the Regulation was amended to tighten the control requirements of liquid fuels. The Regulation does not apply to any fuel-using equipment that is used or operated in premises used solely as a dwelling, or is used or operated in or on a vessel, motor vehicle, railway locomotive or aircraft.

Practice Note on Control of Air Pollution in Car Parks

4.2.8 This practice notes include air quality guidelines required for the protection of public health and factors that should be considered in the design and operation of car parks in order to achieve the required air quality. The limits for air pollutants as recommended by the practice notes are summarised in Table 4.2.

Table 4.2 Limits of Air Pollutant Concentrations Inside Car Parks

Air Pollutant	Average Time	Maximum Concentration (µg/m3) [i]	Parts Per Million (ppm)
Carbon Monoxide (CO)	5 minutes	115,000	100
Nitrogen Dioxide (NO_2)	5 minutes	1,800	1

Notes:

*[i] *All limits are expressed as at reference conditions of 298K and 101.325kPa.*

Hong Kong Planning Standards and Guidelines (HKPSG)

4.2.9 Potential air quality impacts associated with the surrounding road carriageways and chimney emission from industrial stack shall be evaluated in accordance with the guidelines set out in the HKPSG.

4.2.10 Table 3.1 of the HKPSG provides the broad guidelines for locating active open spaces close to potentially polluting uses, viz. road traffic. The recommended buffer distances are reproduced in Table 4.3.

Table 4.3 Recommended Minimum Buffer Distance from Roads

Pollution Source	Parameter	Buffer Distance	Permitted Uses
Road and Highways	Type of Road		
	Trunk Road and Primary Distributor	> 20 m	Active and passive recreation uses
		3 – 20 m	Passive recreational uses
		< 3 m	Amenity areas
	District Distributor	> 10 m	Active and passive recreational uses
		< 10 m	Passive recreational uses
	Local Distributor	> 5 m	Active and passive recreational uses
		< 5 m	Passive recreational uses
	Under Flyovers	-	Passive recreational uses

Source: HKPSG Table 3.1: Guidelines on Usage of Open Space Site

4.2.11 Table 3.1 of the HKPSG also provides the broad guidelines for locating active open spaces close to potentially polluting uses, viz. industrial chimneys emissions. The recommended buffer distances are reproduced in Table 4.4.

Table 4.4 Recommended Minimum Buffer Distance from Industrial Chimneys

Pollution Source	Parameter	Buffer Distance	Permitted Uses
Industrial Areas	Difference in Height between Industrial Chimney Exit and the Site		
	< 20 m	> 200 m	Active and passive recreation uses
		5 – 200 m	Passive recreational uses

Pollution Source	Parameter	Buffer Distance	Permitted Uses
	20 m – 30 m (*)	> 100 m	Active and passive recreational uses
		5 – 100 m	Passive recreational uses
	30 m – 40 m	> 50 m	Active and passive recreational uses
		5 – 50 m	Passive recreational uses
	> 40 m	10 m	Active & Passive recreational uses

Notes:

(i) In situations where the height of chimneys is not known, use the set of guidelines marked with an asterisk for preliminary planning purpose and refine as and when more information is available.

(ii) The buffer distance is the horizontal, shortest distance from the boundary of the industrial lot, the position of existing chimneys or the edge of road kerb, to the boundary of open space sites.

(iii) The guidelines are generally applicable to major industrial areas but NOT individual large industrial establishment which are likely to be significant air pollution sources. Consult EPD when planning open spaces close to such establishments.

(iv) Amenity areas are permitted in any situation.

Source: HKPSG Table 3.1: Guidelines on Usage of Open Space Site

4.3 Potential Impacts On Proposed Development – Operation Phase

Review on Industrial Emission

4.3.1 The assessment area of 200m from the Subject Site is shown in Figure 4.1. On site survey was conducted in Dec 2023 to verify the presence of chimneys. There were no chimney or industrial activities identified within 200m from the Subject Site. As such, it is anticipated that the Subject Site would not be subject to unacceptable industrial emission impact.

Review on Vehicular Emission

4.3.2 The Proposed Development is bounded by Muk Lai Street to the southwest; Prince Edward Road East and Olympic Avenue to the northwest. According to the Annual Traffic census 2022 published by Transport Department, the road type of Prince Edward Road East is classified as Primary Distributor (PD) while Olympic Avenue is classified as District Distributor (DD). The extracted Annual Traffic Census 2022 showing the road type of concerned road links is given in Appendix 4.1. For the road type of Muk Lei Street, it is classified as Local Distributor (LD).

4.3.3 In accordance with above table as stipulated in the HKPSG, the minimum buffer distance required for separation from Prince Edward Road East is >20m; >10m away from Olympic Avenue and >5m away from Muk Lai Street. Figure 4.2 shows the buffer distance from the kerb side of roads to the Proposed Development. The buffer distances between the kerb side of concerned road links and permitted uses are tabulated in Table 4.5.

Table 4.5 Buffer Distances between Kerb Side of Concerned Road Links and Proposed Uses

Road Name	Road Type	Recommended Buffer Distance	Shortest Horizontal Distances between Kerb Side of Concerned Road Links and Proposed Uses
			Clubhouse & Lobby/ Residential Floor
Prince Edward Road East	PD	>20m	48m
Olympic Avenue	DD	>10m	25m
Muk Lei Street	LD	>5m	12m

4.3.4 As shown in Figure 4.2 and above table, the recommended requirement in the HKPSG would be complied. Furthermore, there would be no air sensitive uses within the above-mentioned buffer zones. Since the recommended minimum buffer distance of the vehicular emission in the HKPSG can be met, the future occupants of the Proposed Development and the existing sensitive receivers will not be subjected to insurmountable vehicular emission impact.

4.3.5 Car parks proposed will satisfy the requirements, including design, maintenance and operation of the ventilation systems, as stipulated in the "ProPECC PN 2/96 - Control of Air Pollution in Car Park". Exhaust air from the proposed car parks will be discharged to the atmosphere in such a manner and at such a location as not to cause a nuisance to occupants in the building or of neighbouring buildings' or to the public, and archiving the required air quality.

4.4 Potential Impact Arising from Proposed Development – Construction Phase

Identification of Potential Emissions

4.4.1 Fugitive dust will be the potential major source of air quality impact during the construction phase. Significant emissions are not anticipated from the criteria pollutants – NO_2, SO_2, and CO, etc. as only a limited number of diesel/ petroleum fuelled machinery would be operated at the Subject Site when compared to the traffic volume on the local road network. Besides, the Subject Site is located at developed urban area where supply of electricity is available for the Subject Site. Therefore, it is anticipated that the number of diesel/ petroleum fuelled machinery operated at the Subject Site can be minimized as practically as possible with the availability of the supply of electricity. Moreover, under the Air Pollutant Control (Non-road Mobile Machinery) (Emission) Regulation, only approved or exempted non-road mobile machineries (including mobile generator, air compressor, crawler crane, bulldozer, etc.) with a proper label are allowed to be used in the construction site, which would meet the prescribed emission standards and requirement. According to the requirements stipulated in the Air Pollution Control (Fuel Restriction) Regulation and its amendment, using liquid fuel with a sulphur content of less than 0.005% by weight

(such as Ultra Low Sulphur Diesel) for the equipment should be fulfilled to control the SO_2 and PM emissions. Travelling of the dump trucks is another potential source of construction dust. At this planning application stage, there is no detailed information on the construction program or amount of excavated material to be handled; however, with reference to other similar scale projects, there is likely to be around 2 - 3 dump trucks per hour during the site formation stage of the Proposed Development. Watering the haul road and the site once per hour would be implemented to minimize the potential dust emission during the travelling of the dump trucks within the site.

Mitigation Measures for Fugitive Dust Emission

4.4.2 Since paved roads are already existing within the Subject Site, it is expected that the construction dust to be generated by vehicle movement within the Subject Site are limited. Fugitive dust emission mostly arises from construction activities and can be effectively suppressed by incorporating proper mitigation measures into work procedures through contractual clauses with reference to EPD's Recommended Pollution Control Clauses for Construction Contracts, where applicable, good site management, and close monitoring by the resident engineers. The contractor shall be required to follow the requirements of the Air Pollution Control (Construction Dust) Regulations for demolition and construction of the project. With the adaptation of good practices, it is expected that emission of construction dust can be kept at an acceptable level. Mitigation measures including but not limited to the followings with respect to demolition, infrastructure construction of a building should be implemented as appropriate.

In the case of demolition works:

- The area at which demolition work takes place shall be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the demolition activities so as to maintain the entire surface wet;
- For any wall of the building to be demolished that abuts or fronts upon a street, service lane or other open area accessible to the public, impervious dust screens or sheeting shall be used to enclose the whole wall to a height of at least 1m higher than the highest level of the structure being demolished;
- Any dusty materials remaining after a stockpile is removed shall be wetted with water and cleared from the surface of roads or streets.

In the case of infrastructure construction works:

- Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting shall be provided to enclose the scaffolding from the ground floor level of the building;
- Any skip hoist for material transport shall be totally enclosed by impervious sheeting;
- Any relevant requirements set outs in Parts III and IV of Air Pollution Control (Construction Dust) Regulations shall be met;
- Vehicle washing facilities including a high pressure water jet shall be provided at every discernible or designated vehicle exit point;
- Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4 m high from ground level shall be provided along the entire length of that portion of the site boundary except for a site entrance or exit;

- Locate all the dusty activities away from any nearby ASRs as far as practicable;
- Erect higher hoarding at the locations with ASRs in immediate proximity to the project site boundary;
- Avoid using exempted non-road mobile machineries;
- Consider connecting construction plant and equipment to mains electricity supply and avoid use of diesel generators and diesel-powered equipment as far as practicable.

The recommended dust mitigation measures are described below:

Monitoring and Auditing

4.4.3 Monitoring and auditing program will be implemented to ensure that mitigation measures are in place and there is no adverse air quality impact arising from the construction activities of the Proposed Redevelopment on the nearby ASRs during the construction phase.

General Site Management

4.4.4 Appropriate working methods should be devised and arranged to minimise dust emissions and to ensure any installed control system and/or measures are operated and/or implemented in accordance with their design merits. No free falling of construction debris should be allowed, which should be let down by hoist or enclosed tunnel to the ground.

4.4.5 A high standard of housekeeping shall be maintained. Any piles of materials accumulated on or around the work areas shall be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas shall be carried out in a manner that does not generate fugitive dust emissions. Prior to cleaning, the materials should be handled properly to prevent fugitive dust emission. Any exposed earth shall be properly treated by compacting or hydro seeding, within 6 months after the last construction activity.

4.4.6 Frequent mist/ water spraying should be applied on dusty areas. The frequency of spraying will depend upon local conditions such as rainfall, temperature, wind speed and humidity. The amount of water spraying should be just enough to dampen the material without over-watering which could result in surface water runoff.

Vehicles

4.4.7 Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4 m high from ground level shall be provided along the entire length of that portion of the site boundary except for a site entrance or exit.

Material Stockpiling and Handling

4.4.8 The amount of stockpiling should be minimised where possible. Construction material or debris should be covered and stored inside enclosed areas. Other control measures such as enclosed or semi-enclosed windboard should be used, where applicable, to minimise dust emission. Regular watering is needed at areas such as storage piles, where there could be potential dust emission.

Dust Emissions from Site Traffic

4.4.9 Dust emission from construction traffic is generated predominantly from the travelling of waste removal lorries. Areas within the Subject Site where there are regular vehicle

movements should have a hard surface. Speed controls at an upper limit of 10km/hr should be imposed and their movements should be confined to designated roadways within the Subject Site. All dusty vehicle loads should have side and tail boards covered by tarpaulin extending at least 300mm over the edges. Wheel-wash troughs and hoses should be provided at exit points of the Subject Site.

4.4.10 "Recommended Pollution Control Clauses for Construction Contracts" is available on the EPD website which set out the recommended air pollution control measures to be implemented by the contractor(s) during the construction stage of the Project.

4.4.11 With the adoption of good practices, it is expected that emission of construction fugitive dust can be kept to an acceptable level.

5. IMPACT ASSESSMENT ON CULTURAL HERITAGE

5.1 Lung Tsun Stone Bridge and Lung Tsun Stone Bridge Preservation Corridor

Background

5.1.1 The Lung Tsun Stone Bridge ("LTSB") is a site of Archaeological Interest recorded by Antiquities and Monuments Office ("AMO"). In April 2008, the remnants of the LTSB were first identified during an archaeological investigation under the Environmental Impact Assessment ("EIA") study for the Kai Tak Development ("KTD"). Apart from the extant sections of the LTSB, the remnants of the Former Kowloon City Pier, segments of 1924-built seawall and 1933 built causeway were identified by the 2008 investigation, the 2008-2009 further archaeological excavation and the 2011-2012 full archaeological excavation. A Lung Tsun Stone Bridge Preservation Corridor ("LTSBPC") is planned for in-situ preservation of remnants of LTSB as well as parts of the Former Kowloon City Pier, parts of the excavated 1924 seawall and 1933 causeway within a 30-m wide landscape open space for integration with the Kai Tak Development. Interpretive displays and related activities would be accommodated with convenient access for public enjoyment and appreciation of the remnants. It is stated in the "Heritage Impact Assessment for Lung Tsun Stone Bridge Preservation Corridor at Kai Tak" that the LTSB site is "a heritage site that embodies archaeological, historic, architectural, social, contextual, townscape as well as landscape significance". It is also stated that "the LTSB was one of the visual landmarks of Kowloon City since late 19th century and it is highly significant in the history of Hong Kong because its strategic position epitomized the important history of diplomatic exchanges between the Qing government and British colonial government in the early colonial period".

5.2 Potential Impact to the Remnants of LTSBPC and Mitigation Measures

a. Site Investigation Stage

Potential Impact

5.2.1 The GI work include drilling of boreholes for collecting soil and rock samples for on-site logging and testing in laboratory, the results of which will be used for the subsequent foundation, ELS and substructure design as well as for the assessment for the major works to the surroundings.

5.2.2 The proposed boreholes will be carried out by drilling rigs with casing support. The maximum size of casing will be less than 150mm in diameters, while the major casing will be from 101mm to 75mm. This ground investigation method is the well-established, most common method of subsurface exploration used in Hong Kong. Water will be used as flashing media. No dewatering will be carried out during the GI work. The borehole will be backfilled completely with cement-bentonite grout after completed. The nearest borehole to LTSB (i.e. BH32) is about 15m away from the remnants. So, the proposed GI works will only cause minimal impact to the remnants.

Mitigation Measures

5.2.3 TCP-T3 (Technical Competent Person) will carry out full time supervision to the works and monitor the adjacent Lung Tsun Stone Bridge. In addition, TCP-T5 will carry out periodic supervision to the works. Pre-GI/hoarding work condition survey will be carried out by the contractor and the site staff. Proper conditional survey with photo records in the surroundings of the project site, and along the perimeter between the

site boundary and LTSBPC will be prepared to review if there is any adverse effect to surrounding so that timely mitigation, if found necessary, can be carried out.

b. Construction Stage

Potential Impact

i. Foundation Work, ELS Work & Substructure Work

5.2.4 Due to the closed proximity of the construction works including foundation, ELS and substructure works, it is observed that potential vibration and settlement during foundation and ELS and substructure work may pose potential impact on the remnants of LTSBPC. The proposed works are in proximity to the Lung Tsun Stone Bridge Site of Archaeological Interest (SAI). Special attention should be paid to avoid adverse physical impact arising from the proposed works to the heritage site. Design proposal, method of works and choice of machinery should be targeted to minimize adverse impacts to the heritage site. Suitable mitigation measures should be proposed if needed.

5.2.5 On the other hand, fugitive dust and debris may pose potential air quality impact during the foundation, ELS and substructure works of the proposed development.

ii. Hoarding Work

5.2.6 The hoarding work consists of hoarding and gantry built of structural steel members that are supported by concrete plinth resting on the existing ground or pavement.

5.2.7 The hoarding are the preventive measures in the purpose of safeguarding the safety of the local public against the hazard that may induced from any site works and operations being carried out within the lot. All the hoarding members will be erected above ground level. There will be no earth-drilling, boring or soil excavation work involved because the footing of hoarding is of concrete plinth to be built on top of the existing ground.

5.2.8 The potential impact, such as ground movement and vibration, on the remnant of LTSBPC arising from the hoarding work is considered negligible. Therefore, the work shall not jeopardize the stability of the historic remnants, undermine or cause damage to the foundation of the historic structures.

Mitigation Measures

i. ELS Work

5.2.9 Due to the fact that ELS wall installation operation such as sheet pile, pipe pile wall, diaphragm wall etc. would generate ground-borne vibrations and settlements, which may cause different degrees of potential impacts on the close proximity to the remnants of LTSBPC. The pipe wall along the boundary line facing LTSBPC is proposed to be the temporary retaining structure during the excavations except that diaphragm wall could be used as permanent basement wall as well. In addition, grout curtain to seal off the ground water and strengthening grout e.g. jet grout etc. will be carried out in order to reduce the risk of undue settlement due to the drawdown of ground water table within the project site during the excavation and minimize the soil movement respectively. Preloading at the shoring system during ELS would be carried out to control the lateral movement of the wall and thus reduce the ground movement as well. The aforesaid measures are to limit the movement at the LTSBPC within its tolerable limits.

ii. Foundation Work

5.2.10 Due to the same reasons as mentioned in ELS work above, driven type foundation system (i.e. driven steel H-pile) will not be used due to the vibration and underground boulder. Bored pile and pre-bored socketed H-pile will be proposed to minimize the possible adverse effect to the remnants of LTSBPC. In addition, the piles within 10m along the site boundary facing LTSBPC will not be carried out until the water cut-off wall and grout curtain are completed to avoid excessive settlement as a result of the possible ground loss due to pile shaft excavation.

iii. Substructure Work

5.2.11 Substructure work will be commenced after all the vertical ELS walls and horizontal temporary supports are properly installed, and it only involves reinforced concrete works constructed by bottom-up method, Ground movement and vibration caused by substructure works to the remnants of LTSBPC will be negligible.

iv. Monitoring

5.2.12 Any vibration and movement induced from the proposed works should be strictly monitored to ensure no disturbance and physical damages made to the heritage site during the course of works. Monitoring proposal, including checkpoint locations, installation details, response actions for each of the Alert/ Alarm/ Action (3As) levels and frequency of monitoring should be submitted for AMO's consideration. Recommended 3As levels for Lung Tsun Stone Bridge SAI are as below:

	Alert Limit	Alarm Limit	Action Limit
Vibration checkpoints (in pps)	5 mm/s	6 mm/s	7.5 mm/s
Settlement checkpoints	6 mm	8 mm	10 mm
Tilting checkpoints	1/2000	1/1500	1/1000

5.2.13 Installation of settlement monitoring devices should be avoided at any features of heritage significance of the LTSBPC. The Contractor shall be responsible for making good any affected areas upon completion of works. If any abnormal conditions/monitoring readings exceed the limits of the remnants of LTSBPC as mentioned in the above table were found during the course of works, corresponding agreed/approved actions plans will be implemented respectively. If the monitoring results trigger the Action Limit, works will be ceased and the relevant Government Departments would be notified.

v. Site Supervision by Technical Competent Persons

5.2.14 The Site Supervision will be carried out in compliance with Site Safety Supervision Plan as stipulated by BD. It will be carried out by qualified Technical Competent Person (TCP). Authorized Person (AP), Registered Structural Engineer (RSE), Registered Geotechnical Engineer (RGE) and Authorized Signatory (AS) will have their supervision teams to carry out site supervisions for with respect to different natures of works which include full time supervisions by TCP T1/T2/T3 and part time supervision by TCP T4/T5 for the foundation, ELS and substructure works and monitor effects on the adjacent Lung Tsun Stone Bridge.

vi. Condition Survey to LTSBPC

5.2.15 Condition survey will be carried out by the contractor and the site staff before commencement of foundation, ELS and substructure works. Proper conditional survey with photo records in the surroundings of the project site, and to the remnants of LTSBPC will be prepared to review if there is any adverse effect to surrounding so that timely mitigation, if found necessary, can be carried out. Condition survey to the

remnants of LTSTPC would be carried out after the remnants are unearthed and with the permission of ArchSD.

vii. Dust Suppression during the Works

5.2.16 With the implementation of sufficient suppression measures as stipulated under the Air Pollution Control Ordinance, Air Pollution Control (Construction Dust) Regulation and good site practice, fugitive dust emission and debris arising from excavation, foundation and substructure works can be effectively suppressed through contractual clauses and closed enforcement of the resident site staffs. Some dust control measures recommended in the Air Pollution Control (Construction Dust) Regulation, where applicable, shall be implemented, including:

- The works area for site clearance shall be sprayed with water before, during and after the operation so as to maintain the entire surface wet;
- Restricting heights from which materials are to be dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading;
- Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from the bodies and wheels;
- Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials will not leak from the vehicle;
- Erection of hoarding of not less than 2.4m high from ground level along the site boundary, where appropriate;
- Any stockpile of dusty materials shall be covered entirely by impervious sheeting; and/or placed in an area sheltered on the top and 4 sides;
- All dusty materials shall be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet;
- To reduce the traffic induced dust dispersion and re-suspension, the travelling speed of vehicles within the site should be controlled.

5.2.17 Comprehensive review on the potential effects due to proposed construction works to the LTSB SAI will be submitted with monitoring proposal and precautionary measures for AMO's separate consideration. Corresponding Mitigation Measures should be implemented to the satisfaction of AMO.

c. <u>During Operation Stage</u>

<u>Potential Impact</u>

5.2.18 Completion of construction works of LTSBC is targeted in 2024, i.e., before the operation of the proposed Comprehensive Development. During the operation stage, design of the proposed Comprehensive Development (upper and lower levels) may cause visual change to the area which may affect the ambience of the LTSBC. Potential exhaust from the retail belt might also affect the experience of visitors.

<u>Mitigation Measures</u>

5.2.19 To mitigate the potential visual impact, due consideration has been given to the building disposition of the proposed Comprehensive Development. On one hand, the proposed design at the lower and upper levels allows better visual and air permeability through the development and on the other hand, it facilitates better integration between the proposed Comprehensive Development and the adjoining LTSBPC. A 15m-

wide townscape setback is designated within the Site along its north-western boundary that abuts Olympic Avenue for respecting the visual context and heritage significance of the LTSBPC. The low-rise retail belt design (i.e. cantilever and continuous architectural facade design) is in strict compliance with the design requirements in the Planning Brief to ensure a continuous and responsive design that is in harmony with the LTSBPC. The 3m-wide setback at ground level for a public pedestrian passageway of the retail belt, allows a seamless integration with the public walkway and open space alongside the LTSBPC. The green roof of the retail belt will soften the building edge and enhance the visual amenity of the proposed development at lower pedestrian level. The above design elements would contribute to achieving a coherent overall design of high quality which is congruous and compatible with the surrounding settings and ambience of the LTSBPC.

5.2.20 The kitchen exhaust/louvres from the restaurants, exhaust from air-conditioning and mechanical ventilation systems and toilets will not emit directly on to the LTSBPC. Together with the improved streetscape and amenity along the LTSBPC, the proposed development will help foster a pleasant walking environment for visitors to appreciate the remnants of LTSBC.

6. CONCLUSION

6.1.1 Environmental sensitive uses and sources of environmental impacts have been identified. Potential environmental impacts from the sources to the sensitive uses have been assessed with mitigation measures proposed as appropriate to minimize the potential environmental impacts.

6.1.2 With the recommended mitigation measures, no adverse environmental impacts are anticipated from the construction and operation of the Project.

Figures

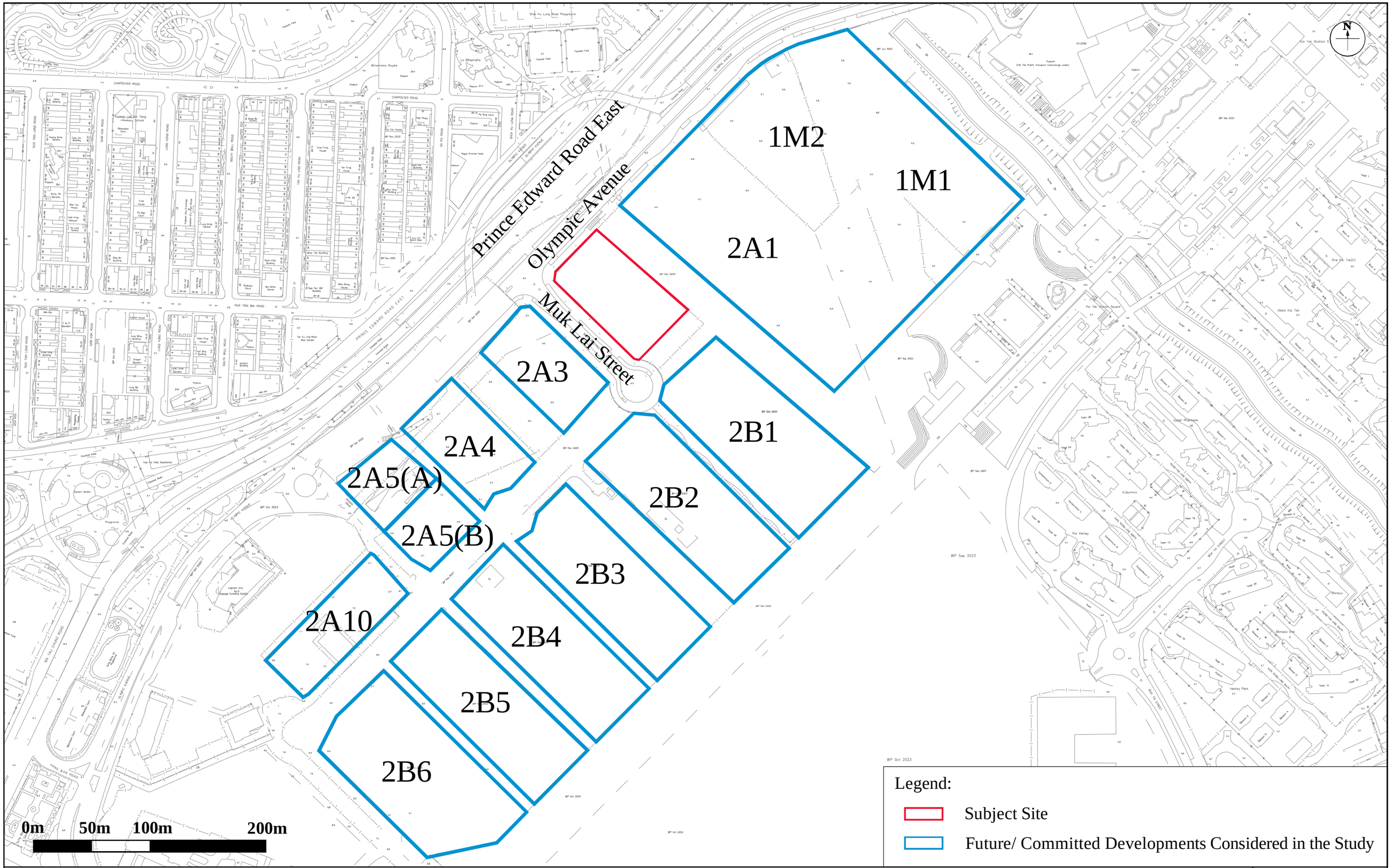

Figure: 1.1

Title: Location of Subject Site and its Environ

Project: Proposed Comprehensive Development including Flat, Shop & Service and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Koloon (Master Layout Plan Submission)

RAMBOLL

Drawn by:	WT
Checked by:	TC
Rev.:	1.0
Date:	Jan 2024

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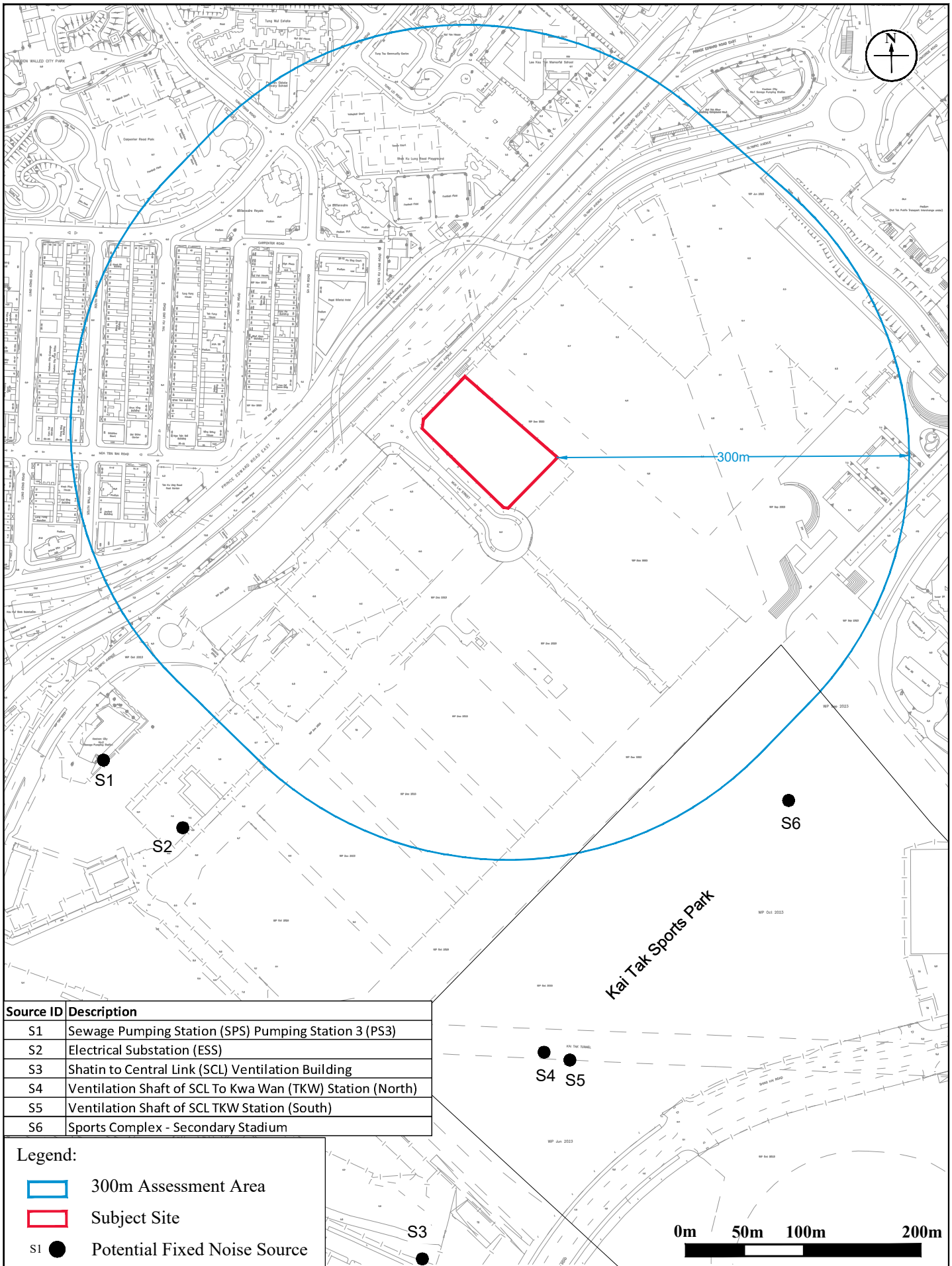


Source ID	Description
S1	Sewage Pumping Station (SPS) Pumping Station 3 (PS3)
S2	Electrical Substation (ESS)
S3	Shatin to Central Link (SCL) Ventilation Building
S4	Ventilation Shaft of SCL To Kwa Wan (TKW) Station (North)
S5	Ventilation Shaft of SCL TKW Station (South)
S6	Sports Complex - Secondary Stadium

Legend:

- 300m Assessment Area
- Subject Site
- S1 Potential Fixed Noise Source

Figure: 3.1

Title: Location of Potential Fixed Noise Sources and 300m Assessment Area from the Site Boundary of Subject Site

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

RAMBOLL

Drawn by: WT
Checked by: TC
Rev.: 1.0
Date: Jan 2024

Q:\Projects\SNOKAITAEI00\05 Assessments\02 Noise\01 Industrial\240125_INIA.dwg

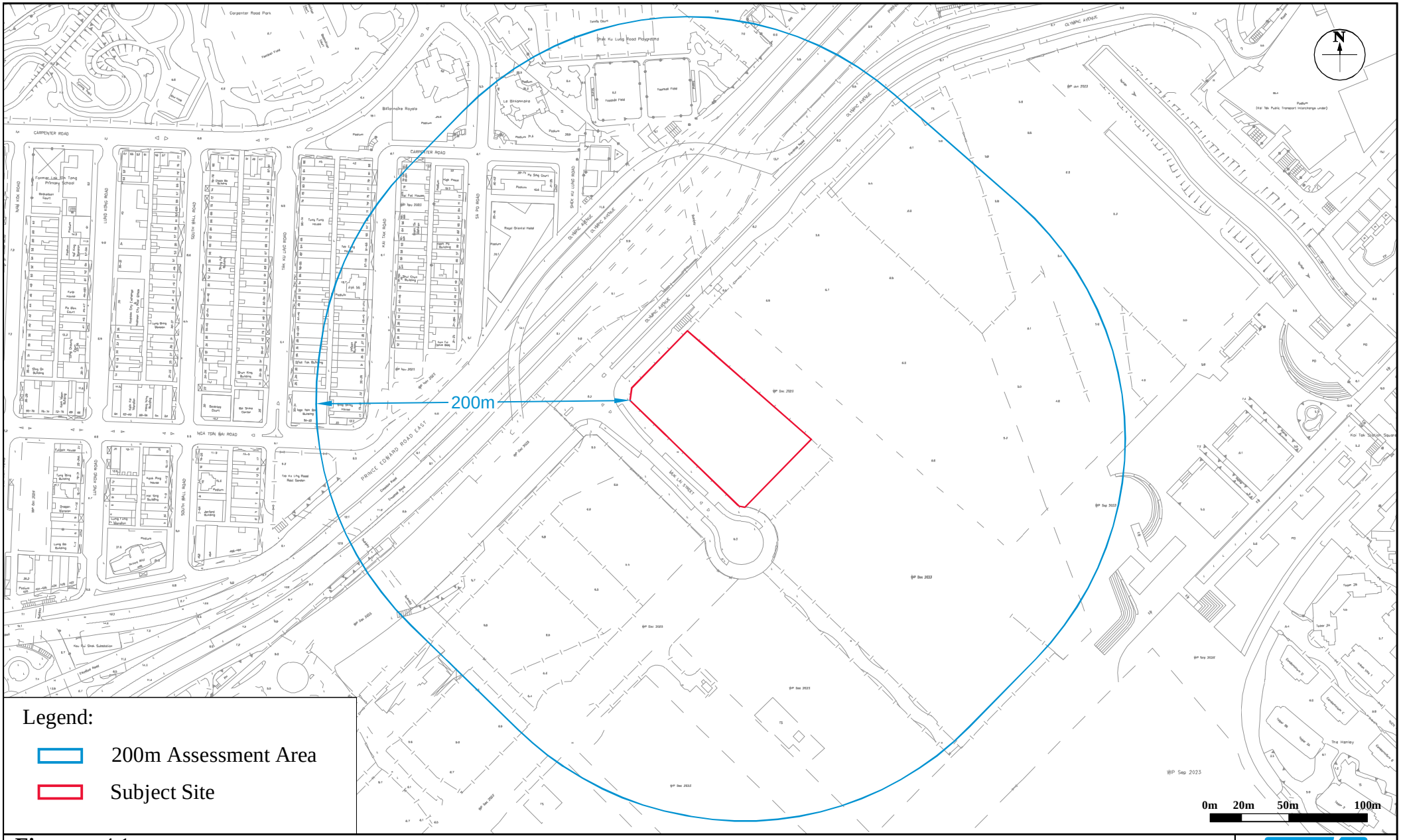


Figure: 4.1

Title: 200m Assessment Area from the Site Boundary of Subject Site for Qualitative Air Quality Impact Assessment

Project: Proposed Comprehensive Development including Flat, Shop & Service and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

RAMBOLL

Drawn by:	WT
Checked by:	TC
Rev.:	1.0
Date:	Jan 2024

Q:\Projects\SNOKAITAEI00\05 Assessments\01 Air\240125_AQIA.dwg

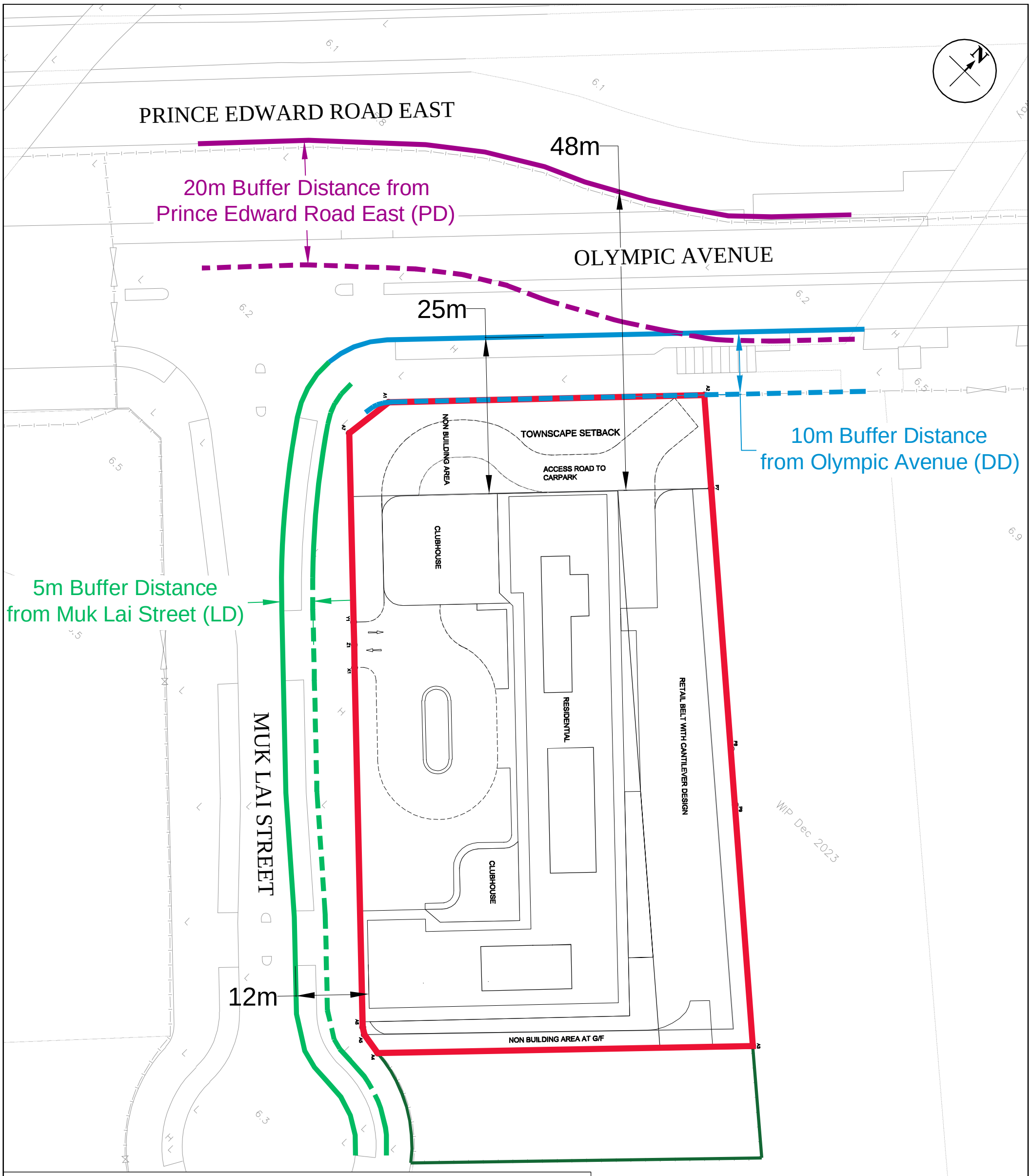


Figure: 4.2	RAMBOLL
Title: Buffer Distance between the Proposed Development and Kerb Side of the Nearest Carriageways	Drawn by: WT Checked by: TC
Project: Proposed Comprehensive Development including Flat, Shop & Service and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)	Rev.: 1.0 Date: Jan 2024

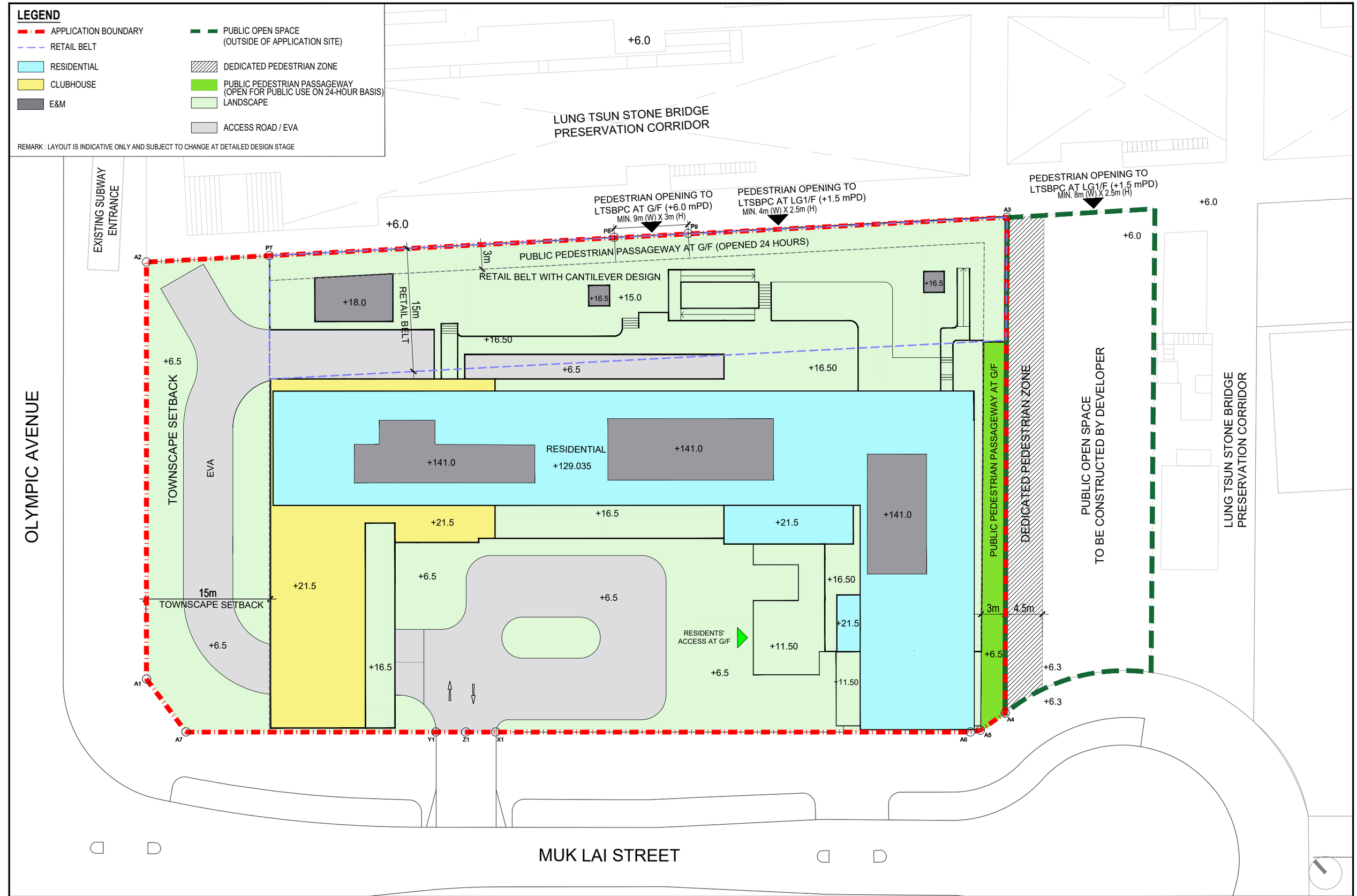
Q:\Projects\SNOKAITAEI00\05 Assessments\01 Air\240125_AQIA.dwg

Appendix 1.1 Master Layout Plan and Section of the Proposed Development

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- CLUBHOUSE
- E&M
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- DEDICATED PEDESTRIAN ZONE
- PUBLIC PEDESTRIAN PASSAGEWAY (OPEN FOR PUBLIC USE ON 24-HOUR BASIS)
- LANDSCAPE
- ACCESS ROAD / EVA

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: MASTER LAYOUT PLAN			
		Drawing No. MLP-01	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK + PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- E&M

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

+6.0

A2 P7 P8 P9 A3

+6.0

RETAIL BELT

RESIDENTIAL TOWER

+141.0

+129.035

+141.0

+141.0

15m TOWNSCAPE SETBACK

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: R/F PLAN			
		Drawing No. P-01	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

+6.0

+6.0

A2 P7 P8 P9 A3

RETAIL BELT

RESIDENTIAL TOWER

15m TOWNSCAPE SETBACK

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: 3/F TO 34/F PLAN			
		Drawing No. P-02	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL LOBBIES
- CLUBHOUSE
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- LANDSCAPE
- E&M

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

OLYMPIC AVENUE

+6.0

+6.0

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

LANDSCAPED ROOF

+15.00

+18.0

+16.5

+16.5

+16.50

CLUBHOUSE

+16.50

+16.50

15m
TOWNSCAPE SETBACK

MUK LAI STREET

Project	Job No.	Drawing Title					
PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	01864	2/F PLAN					
		Drawing No.	Revision No.	Scale	Date		LWK +PARTNERS
		P-03	B	1:400	6 Jun 2024		

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- CLUBHOUSE
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- E&M
- LANDSCAPE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

OLYMPIC AVENUE

+6.0

+6.0

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

PUBLIC PEDESTRIAN PASSAGEWAY AT G/F (OPENED 24 HOURS)

COMMERCIAL
+11.00

CLUBHOUSE
+11.50

E&M

E&M

15m
TOWNSCAPE SETBACK

+11.50

PODIUM
LANDSCAPED ROOF
+11.50

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: 1/F PLAN		
		Drawing No. P-04	Revision No. B	Scale 1:400 / Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- LANDSCAPE
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- DEDICATED PEDESTRIAN ZONE
- PUBLIC PEDESTRIAN PASSAGEWAY (OPEN FOR PUBLIC USE ON 24-HOUR BASIS)
- ACCESS ROAD / EVA
- E&M
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND 2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

PEDESTRIAN OPENING TO LTSBPC
(MIN. 9M(W) X 3M (H) AT G/F (+6.0mPD))

P8 P9 P7 A2 A3

PUBLIC PEDESTRIAN PASSAGEWAY

+6.0 +6.15 +6.0

15 M

CLUBHOUSE

E&M

E&M

EVA

TOWNSCAPE SETBACK

15m
TOWNSCAPE SETBACK

+6.2
RAMP DN
TO LG1/F

+6.5

RESIDENTS' ACCESS AT G/F

+6.5

PUBLIC PEDESTRIAN PASSAGEWAY

DEDICATED PEDESTRIAN ZONE

3m 4.5m

PUBLIC OPEN SPACE
TO BE CONSTRUCTED BY DEVELOPER

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: G/F PLAN			
		Drawing No. P-05	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION SITE BOUNDARY
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE) (UNDERGROUND SHOPPING STREET OUTSIDE OF APPLICATION SITE BOUNDARY)
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- ACCESS POINT
- DRIVEWAY
- E&M
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE
- 8M(W) X 3M(H) 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE WITHIN THE UNDERGROUND SHOPPING STREET, EXACT ALIGNMENT SUBJECT TO DETAIL DESIGN

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

ONE BRIDGE
N CORRIDOR

PEDESTRIAN OPENING TO LTSBPC AT LG1/F (+1.5 mPD)
4m(W) 2.5m(H)

PEDESTRIAN OPENING TO LTSBPC AT LG1/F (+1.5 mPD)
8m(W)
2.5m(H)

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

E&M
COMMERCIAL +1.5
COMMERCIAL +1.5
DRIVEWAY TO LG2/F
CARPARK
CARPARK +3.05

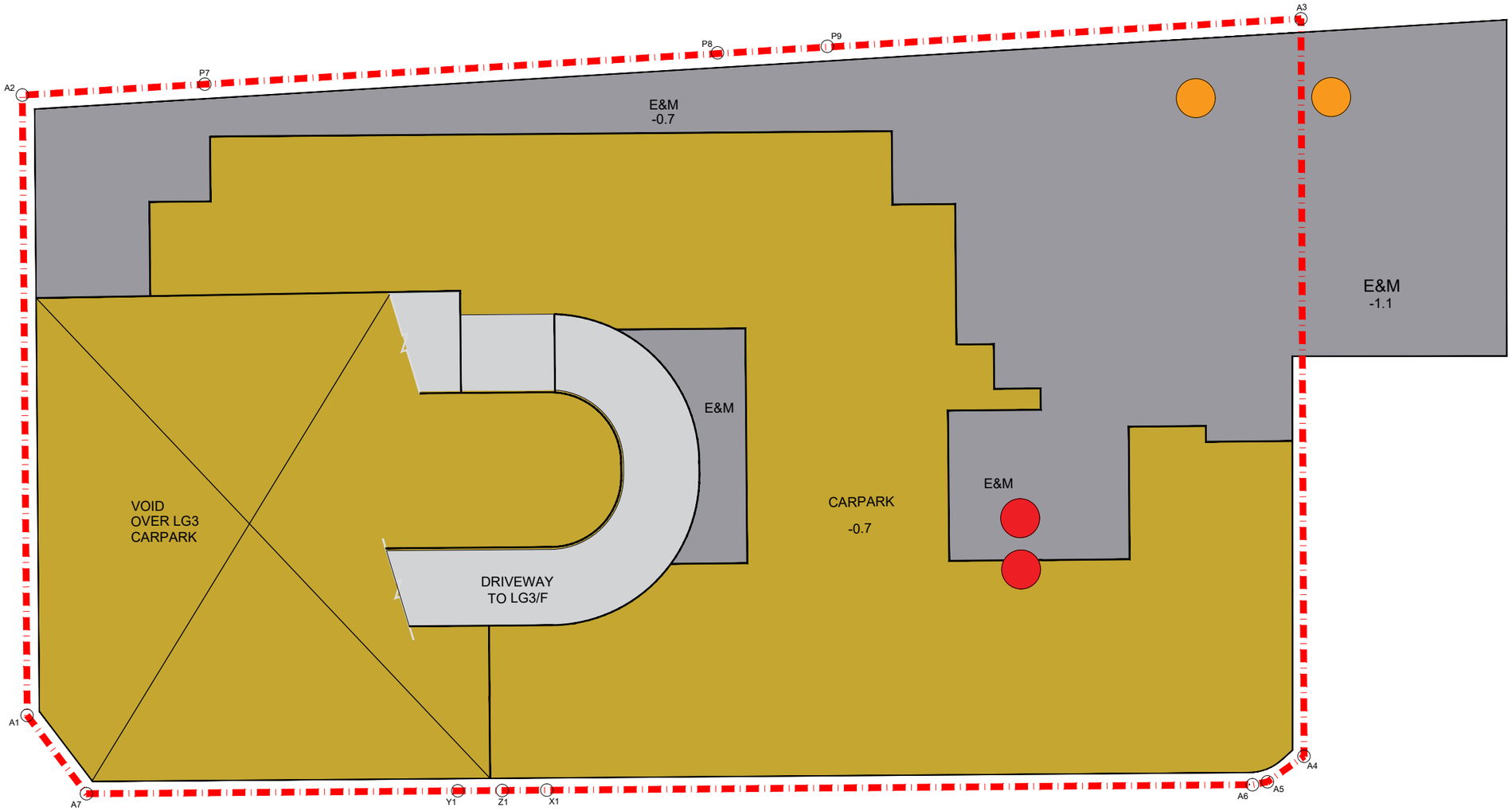
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B1/F PLAN			
		Drawing No. P-06	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION SITE BOUNDARY
- DRIVEWAY
- E&M
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

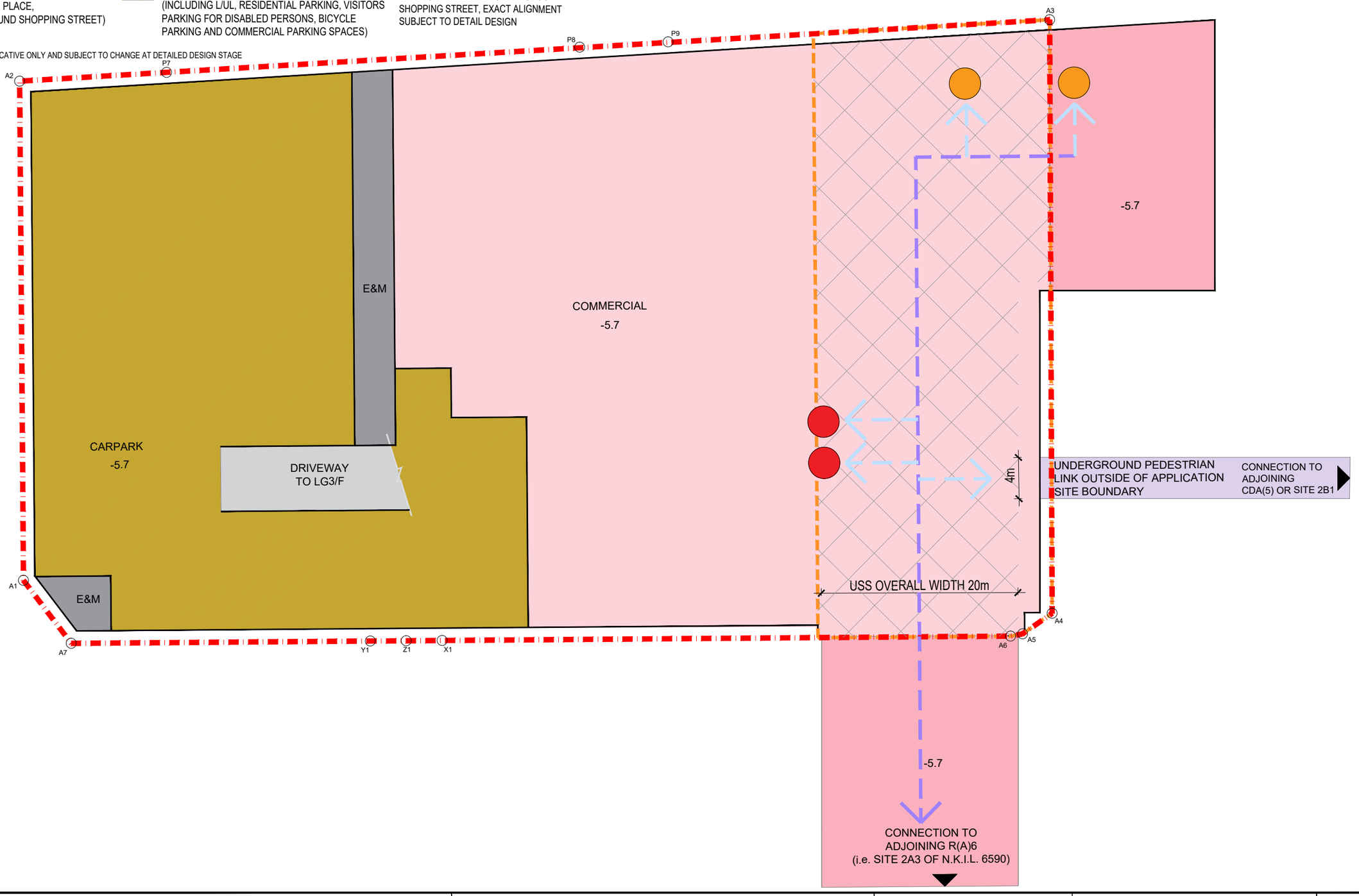


Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B2/F PLAN				LWK +PARTNERS
		Drawing No. P-07	Revision No. B	Scale 1:400	Date 6 Jun 2024	

LEGEND

- APPLICATION SITE BOUNDARY
- UNDERGROUND SHOPPING STREET (WITHIN APPLICATION SITE)
- ACCESS POINT
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE) (UNDERGROUND SHOPPING STREET OUTSIDE OF APPLICATION SITE BOUNDARY)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE, UNDERGROUND SHOPPING STREET)
- DRIVEWAY
- E&M
- UNDERGROUND PEDESTRIAN LINK OUTSIDE OF APPLICATION SITE BOUNDARY FOR 24-Hr PUBLIC ACCESS
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE
- 8M(W) X 3M(H) 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE WITHIN THE UNDERGROUND SHOPPING STREET, EXACT ALIGNMENT SUBJECT TO DETAIL DESIGN

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



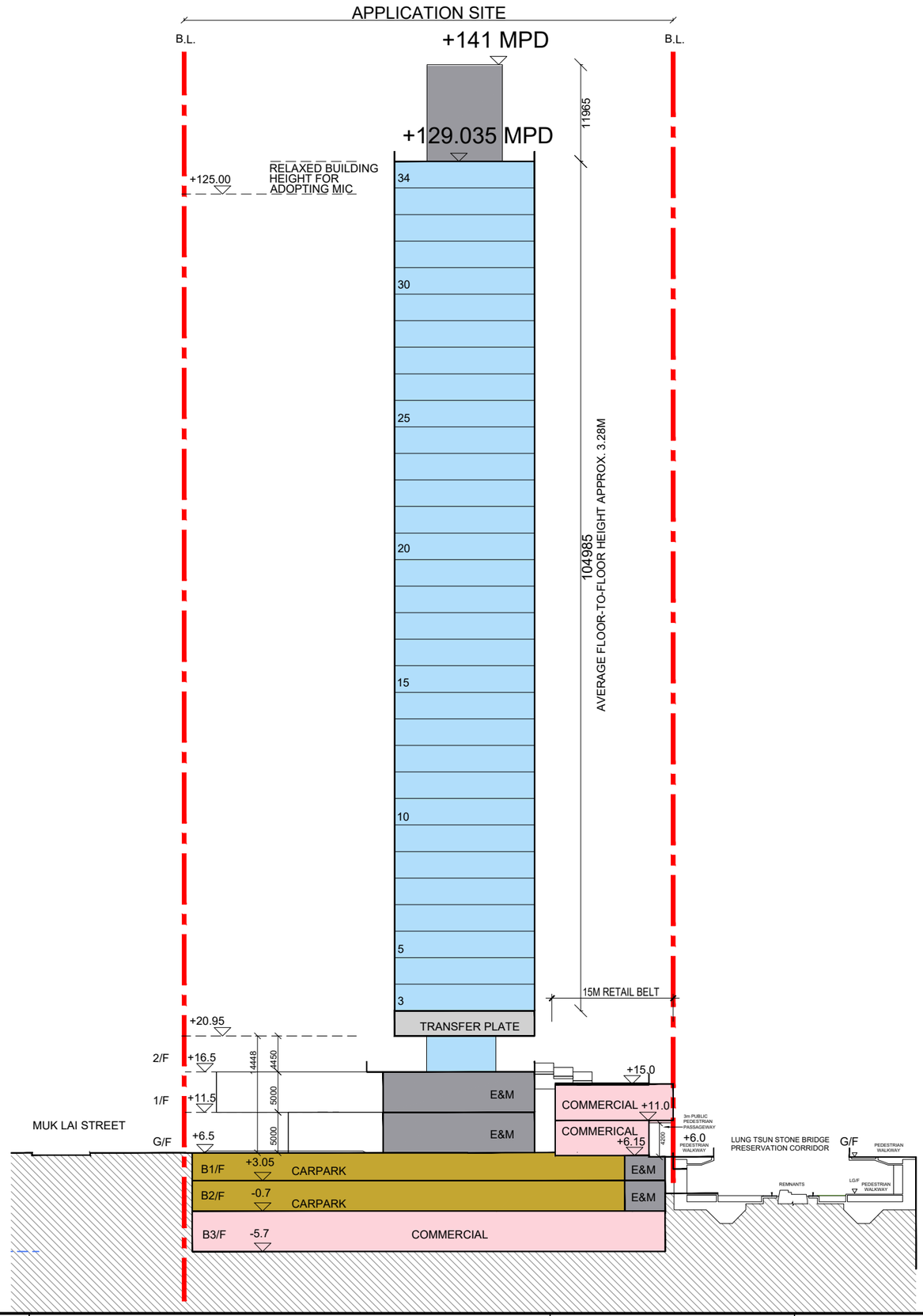
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B3/F PLAN			
		Drawing No. P-08	Revision No. B	Scale 1:400	Date 6 Jun 2024

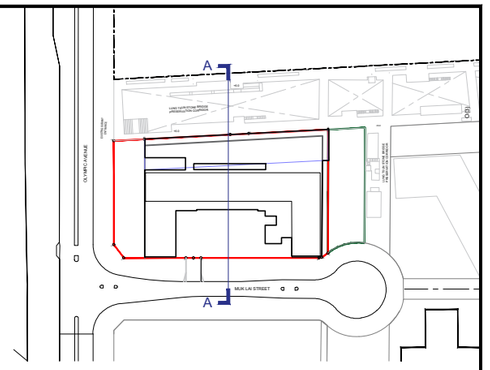
LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- CARPARK
- E&M
- TRANSFER PLATE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE





KEY PLAN
1:3000

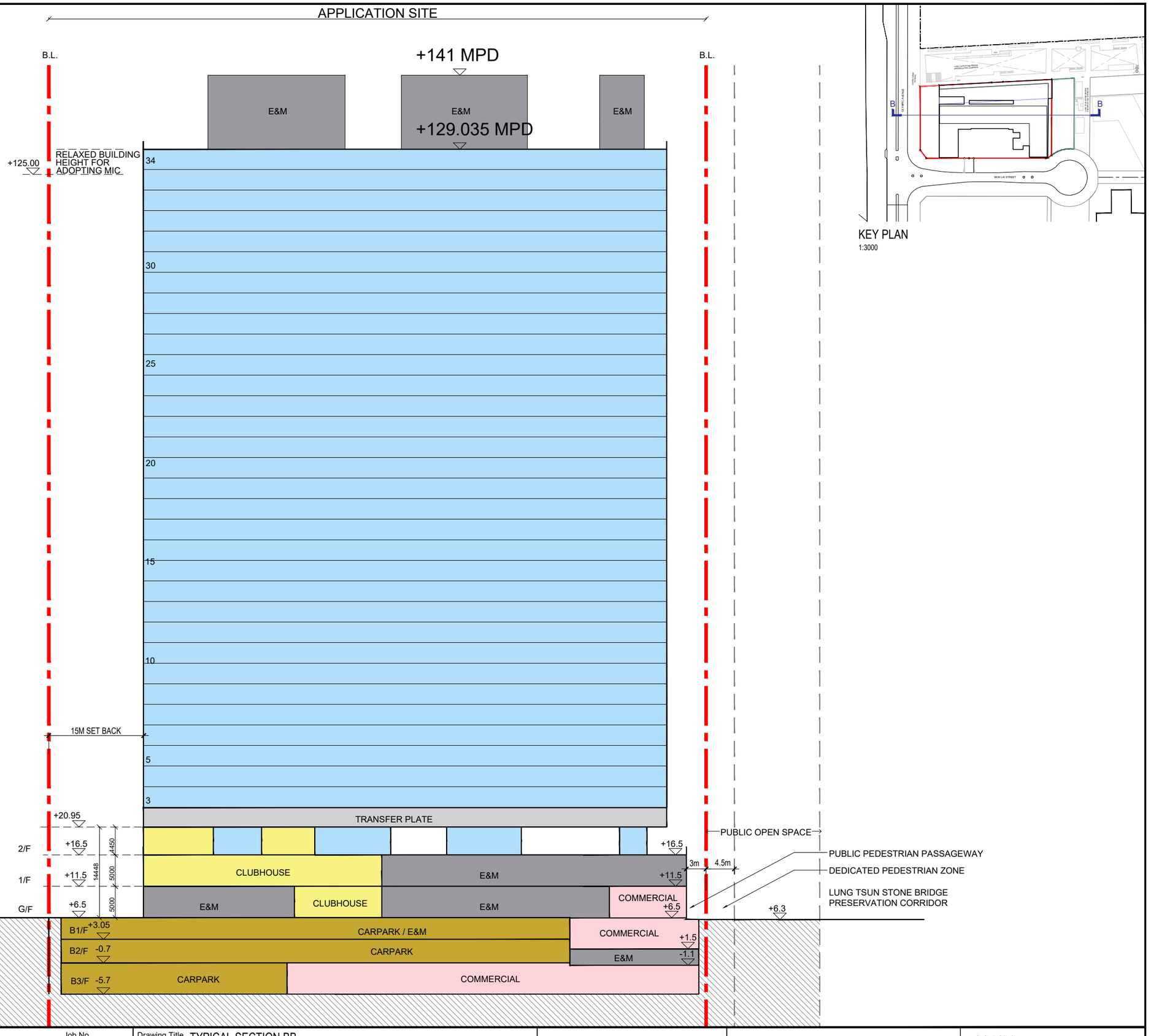
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: TYPICAL SECTION AA		
		Drawing No. S-01	Revision No. A	Scale 1:600 / Date 6 Jun 2024

LWK + PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- CARPARK
- E&M
- TRANSFER PLATE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



KEY PLAN
1:3000

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: TYPICAL SECTION BB		
		Drawing No. S-02	Revision No. A	Scale 1:600 / Date 6 JUN 2024

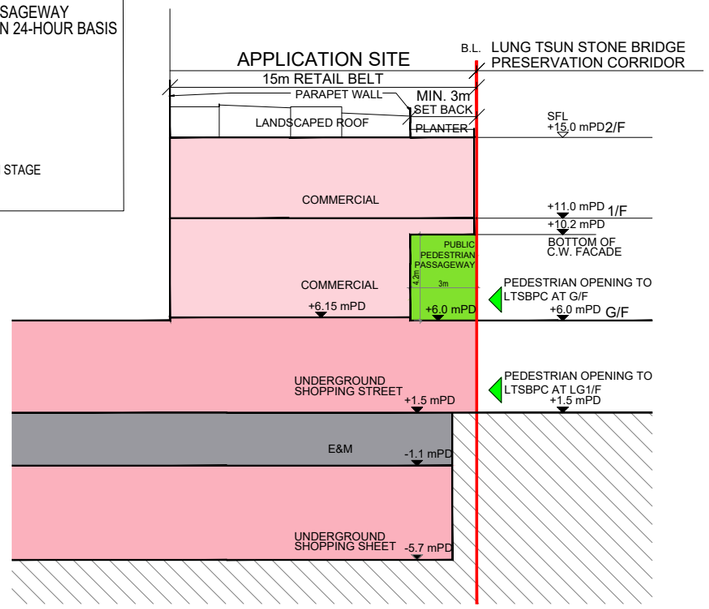
LWK + PARTNERS

LEGEND

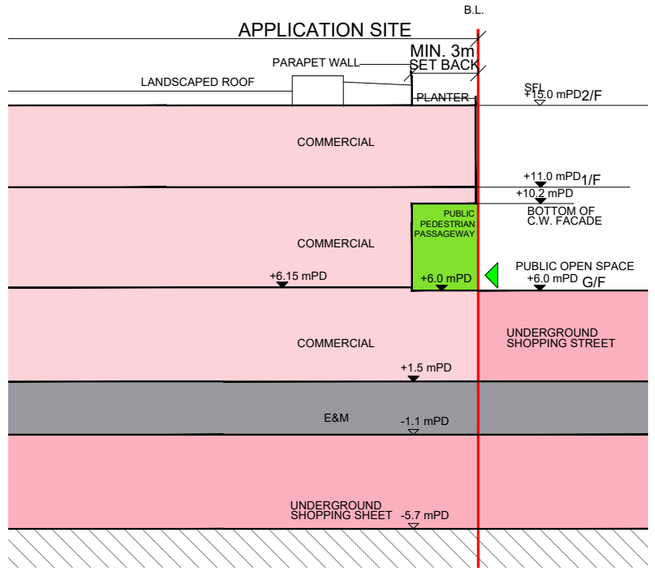
- APPLICATION BOUNDARY
- PUBLIC PEDESTRIAN PASSAGEWAY OPEN FOR PUBLIC USE ON 24-HOUR BASIS
- ACCESS PEDESTRIAN POINT
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- E&M

SFL - STRUCTURAL FLOOR LEVEL

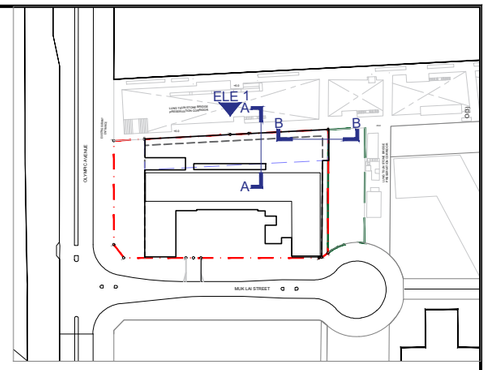
REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



TYPICAL SECTION ACROSS RETAIL BELT BLOCK A

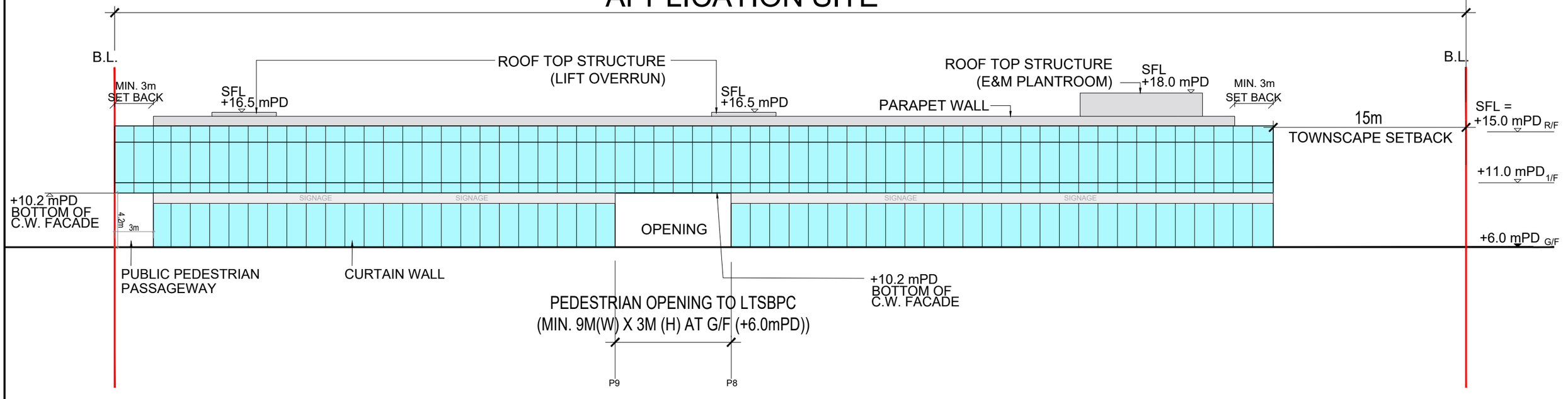


TYPICAL SECTION ACROSS RETAIL BELT BLOCK B



KEY PLAN
1:3000

APPLICATION SITE



ELEVATION 1

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: ELEVATION AND SECTIONS OF RETAIL BELT BLOCK			
		Drawing No. ELE-01	Revision No. -	Scale 1:300	Date 6 JUN 2024

LWK + PARTNERS

Appendix 1.2 Extracts from Environmental Impact Assessment (EIA) Report for “Kai Tak Multi-purpose Sports Complex” (MPSC) (Register No.: AEIAR-204/2017) regarding the Railway Noise Impact

Noise from Open Air Entertainment Activities

7.6.29 Site 2D is reserved for the development of a Stadium Complex. The location of the Stadium Complex has been planned with considerations of protection of view corridor, accessibility by public transport and provision of sufficient buffer distance to the nearby NSRs.

7.6.30 The major noise sources associated with the Stadium Complex include the use of loudspeakers and the crowd. With reference to the findings of SEKDCFS EIA report, there will be no significant noise impact on NSRs if the main stadium incorporated the retractable roof design. The retractable roof of the main stadium could provide screening effect on noise impact, nearby NSRs without direct line-of-sight of the spectator area of the main stadium could be benefited from this.

7.6.31 As discussed in **Section 1.5** of this report, the outdoor sporting facility of the proposed Stadium Complex is a Schedule 2 designated project under the EIAO. The proposed Stadium Complex will be designed, constructed and operated by the others. The associated environmental impacts will be adequately addressed in a further detailed EIA study to be prepared and submitted under the EIAO by the respective project proponent.

Heliport Noise

7.6.32 A heliport is proposed at the tip of the former Kai Tak Airport runway. The closest NSR to the heliport is located at a distance of more than 700 m in Site 4B5. With reference to the *CFS for the Revised Scheme of SEKD (2001)*, a 300 m setback of the heliport from the NSR is required. Hence the current buffer distance of 700 m allowed in the RODP should be sufficient to attenuate the noise impact generated by the operation of the heliport to meet the HKPSG noise criteria of Lmax 85 dB(A). The flight path should be so designated to reduce noise impacts. However, as the proposed heliport is located adjacent to the proposed Runway Park, some forms of barrier could be considered to minimise the potential noise impacts of heliport operation on the pedestrians / visitors at the Runway Park despite the Runway Park is not considered as a NSR.

7.6.33 For the helicopter landing/take-off at Hong Kong Aviation Club (HKAC), according to the latest development schedule of KTD, the helipad should cease operation prior to occupation of the residential site (i.e. on or before 2012). Therefore, no helicopter noise impact arising from HKAC during operational phase of the Project.

Rail Noise

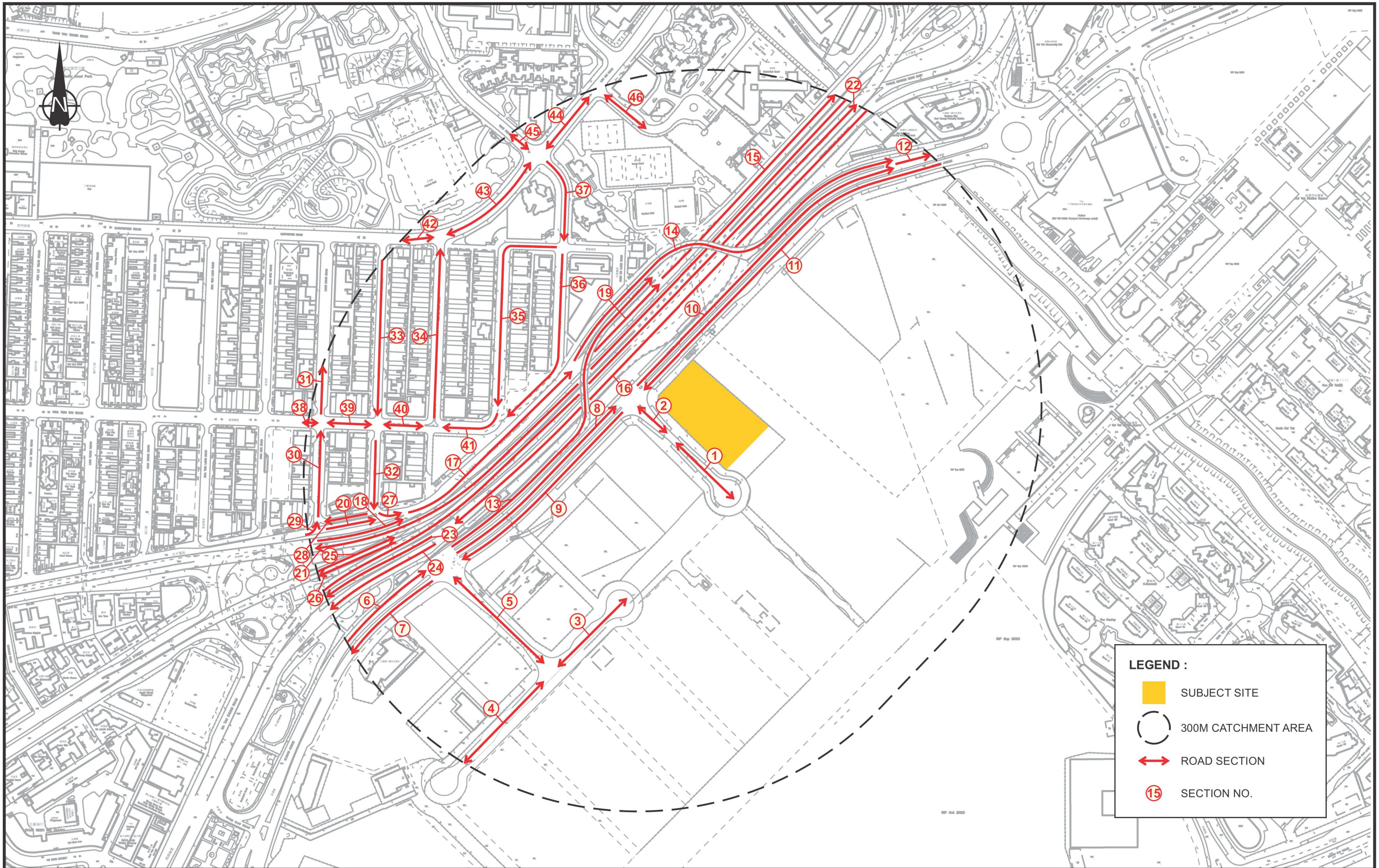
7.6.34 The proposed Shatin to Central Link (SCL) and its stations would be at Site 1F (Kai Tak Station) and Site 2D (To Kwan Wan Station). The SCL line would be underground and hence operational railway noise impact is not expected.

7.6.35 EFTS is proposed to be introduced to operate as a major internal mode of transport within Kai Tak Development. It is proposed to provide feeder services between SCL Kai Tak Station, SCL To Kwa Wan Station and the Tourism Node. As discussed in Section 2, two options of alignment of EFTS were studied. The alignment of EFTS for both options are shown in **Figure 7.2**.

7.6.36 Several modes of EFTS, including light rail transit (LRT), trolley bus, automatic people mover (APM), monorails, and electric / LPG bus, were investigated during feasibility study. For conservative noise assessment, the rail based EFTS was assumed for rail noise assessment. The tentative train operation mode is listed below.

- Operation Hour: 6am to 12mid-night
- Train frequency: 14 train/hr for peak hour and 4 train/hr for non-peak hour for each direction

Appendix 2.1 Traffic Forecast data for Year 2044



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

INDEX PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JAN 2024	SK1	-

SYSTRA MVA

CHK50786310/NIA/SK1.CDR/LLH/25JAN24

Original Size : A3

Year 2044 Traffic Forecast

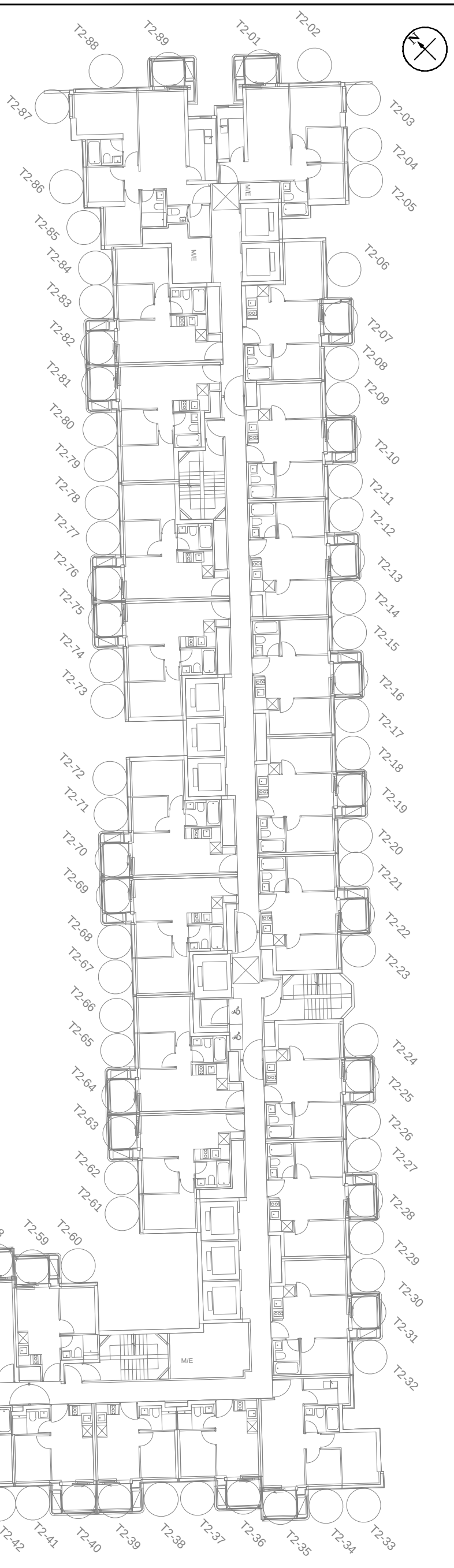
Road Index (1)	Road	Road Type	Speed Limit (km/hr)	2044 Traffic (2) Flows (veh/hr)		HV %	
				AM	PM	AM	PM
1	Muk Lai Street	Local Distributor	50	430	320	27%	7%
2	Muk Lai Street	Local Distributor	50	670	520	27%	7%
3	Proposed Road L16	Local Distributor	50	420	320	20%	21%
4	Proposed Road L16	Local Distributor	50	520	350	18%	22%
5	Dakota Drive	Local Distributor	50	920	670	20%	21%
6	Olympic Avenue	District Distributor	50	700	610	27%	10%
7	Olympic Avenue	District Distributor	50	780	670	11%	13%
8	Olympic Avenue	District Distributor	50	280	280	23%	14%
9	Olympic Avenue	District Distributor	50	800	730	11%	13%
10	Olympic Avenue	District Distributor	50	510	350	22%	15%
11	Olympic Avenue	District Distributor	50	890	880	13%	12%
12	Olympic Avenus	District Distributor	50	1400	990	13%	10%
13	Slip Road from Olympic Avenue to Prince Edward Road East	District Distributor	50	540	320	27%	10%
14	Slip Road from Prince Edward East to Olympic Avenus	District Distributor	50	880	650	22%	17%
15	Prince Edward Road East	Primary Distributor	70	3960	3800	23%	24%
16	Prince Edward Road East	Primary Distributor	70	3460	3230	29%	24%
17	Prince Edward Road East	Primary Distributor	70	4090	4090	23%	23%
18	Prince Edward Road East	Primary Distributor	70	1710	1500	14%	14%
19	Prince Edward Road East	Primary Distributor	70	3240	3480	23%	24%
20	Prince Edward Road West	Primary Distributor	50	1190	1230	35%	37%
21	Prince Edward Road West	Primary Distributor	70	2030	1860	27%	21%
22	Ma Tau Chung Road	Primary Distributor	70	1070	2350	28%	21%
23	Ma Tau Chung Road	Primary Distributor	70	930	650	22%	21%
24	Ma Tau Chung Road	Primary Distributor	50	1350	1310	48%	44%
25	Argyle Street	Primary Distributor	70	1170	1250	22%	27%
26	Argyle Street	Primary Distributor	70	1270	1290	7%	8%
27	From South Wall Road to Prince Edward Road West	Local Distributor	50	350	310	26%	19%
28	From South Wall Road to Lung Kong Road	Local Distributor	50	30	30	25%	19%
29	From Prince Edward Road West to Lung Kong Road	Local Distributor	50	560	680	25%	16%
30	Lung Kong Road	Local Distributor	50	540	760	23%	14%
31	Lung Kong Road	Local Distributor	50	230	310	27%	16%
32	South Wall Road	Local Distributor	50	390	340	26%	19%
33	South Wall Road	Local Distributor	50	120	210	28%	13%
34	Tak Ku Ling Road	Local Distributor	50	230	300	41%	30%
35	Kai Tak Road	Local Distributor	50	30	70	27%	25%
36	Sa Po Road	Local Distributor	50	300	300	27%	21%
37	Sa Po Road	Local Distributor	50	320	370	30%	23%
38	Nga Tsin Wai Road	Local Distributor	50	530	680	27%	20%
39	Nga Tsin Wai Road	Local Distributor	50	450	550	32%	22%
40	Nga Tsin Wai Road	Local Distributor	50	450	500	33%	25%
41	Nga Tsin Wai Road	Local Distributor	50	300	370	30%	22%
42	Carpenter Road	Local Distributor	50	350	380	30%	17%
43	Lok Sin Road	Local Distributor	50	470	470	32%	22%
44	Lok Sin Road	Local Distributor	50	360	310	40%	36%
45	Tung Tsing Road	Local Distributor	50	370	380	27%	17%
46	Tung Lei Road	Local Distributor	50	40	40	32%	21%

Note:

(1) Road index refer to Drawing No. SK1

(2) Figures are rounded to the nearest 10

Appendix 2.2 Location of Representative Noise Sensitive Receivers for Road Traffic Noise Impact Assessment



Legend

Noise Sensitive Receivers

Appendix: 2.2

Title: Location of Representative Noise Sensitive Receivers for Road Traffic Noise Impact Assessment

Project: Proposed Comprehensive Development including Flat, Shop, Services and Eating Place in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

RAMBOLL

Drawn by:	KK
Checked by:	TC
Rev.:	1.0
Date:	Apr 2024

Appendix 2.3 Road Traffic Noise Impact Assessment Result (Base Case)

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Base Case

Floor	mPD	T2-01	T2-02	T2-03	T2-04	T2-05	T2-06	T2-07	T2-08	T2-09	T2-10	T2-11	T2-12	T2-13	T2-14	T2-15	T2-16	T2-17	T2-18	T2-19	T2-20	T2-21	T2-22	T2-23	T2-24	T2-25	T2-26	T2-27	T2-28	T2-29
3	25.3	81	81	79	78	78	76	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72
4	28.6	81	81	79	78	78	76	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72
5	31.8	80	80	79	78	77	76	76	76	76	76	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72
6	35.1	80	80	79	78	77	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72
7	38.4	80	80	79	78	77	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72
8	41.7	80	80	79	78	77	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72
9	45.0	80	80	79	78	77	76	76	76	76	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72
10	48.2	80	80	79	77	77	76	76	76	76	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72
11	51.5	80	80	79	77	77	76	76	76	76	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72
12	54.8	80	80	79	77	77	76	76	76	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72
13	58.1	80	80	79	77	77	76	76	76	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72
14	61.4	80	80	78	77	77	76	75	75	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72
15	64.6	80	80	78	77	77	75	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72
16	67.9	79	79	78	77	77	75	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72	72
17	71.2	79	79	78	77	76	75	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72	72
18	74.5	79	79	78	77	76	75	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72	72
19	77.8	79	79	78	77	76	75	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72	72
20	81.0	79	79	78	77	76	75	75	75	75	75	75	75	75	74	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72
21	84.3	79	79	78	76	76	75	75	75	75	75	75	75	75	74	74	74	74	74	74	74	73	73	73	73	73	72	72	72	72
22	87.6	79	79	78	76	76	75	75	75	75	75	75	75	75	74	74	74	74	74	74	74	74	73	73	73	73	72	72	72	72
23	90.9	79	79	78	76	76	75	75	75	75	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	72	72	72
24	94.2	79	79	78	76	76	75	75	75	75	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	72	72
25	97.4	79	79	77	76	76	75	75	75	75	75	75	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	72	72
26	100.7	78	78	77	76	76	75	75	75	75	75	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	72
27	104.0	78	78	77	76	76	75	74	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73
28	107.3	78	78	77	76	76	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73
29	110.6	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73
30	113.8	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73
31	117.1	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73
32	120.4	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73
33	123.7	78	78	77	75	75	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73	73	73
34	127.0	78	78	77	75	75	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73	73	73	73
Max Noise Level		81	81	79	78	78	76	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	73	73	73
Exceedance		32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
No. of Exceedance				32				32			32			32			32			32			32			32			32	

Floor	mPD	T2-30	T2-31	T2-32	T2-33	T2-34	T2-35	T2-36	T2-37	T2-38	T2-39	T2-40	T2-41	T2-42	T2-43	T2-44	T2-45	T2-46	T2-47	T2-48	T2-49	T2-50	T2-51	T2-52	T2-53	T2-54	T2-55	T2-56	T2-57	T2-58
3	25.3	72	72	72	59	60	60	60	61	61	61	62	62	62	63	63	64	64	65	73	73	73	75	74	74	74	74	74	74	74
4	28.6	72	72	72	59	60	60	60	61	61	61	61	62	62	63	63	63	64	65	73	73	73	75	74	74	74	74	74	74	74
5	31.8	72	72	72	59	60	60	60	61	61	61	61	62	62	62	63	63	64	65	73	73	73	74	74	74	74	74	74	74	74
6	35.1	72	72	72	59	59	60	60	60	61	61	61	62	62	62	63	63	64	64	73	73	73	74	74	74	74	74	74	74	74
7	38.4	72	72	71	59	59	60	60	60	60	61	61	61	62	62	62	63	63	64	73	72	72	74	74	74	74	74	74	74	73
8	41.7	72	72	71	59	59	59	60	60	60	61	61	61	61	62	62	62	63	64	72	72	72	74	74	74	74	74	74	74	73
9	45.0	72	72	71	59	59	59	60	60	60	60	61	61	61	62	62	62	63	63	72	72	72	74	74	74	74	74	74	73	73
10	48.2	72	72	71	59	59	59	59	60	60	60	61	61	61	61	62	62	63	63	72	72	72	74	74	74	74	74	74	73	73
11	51.5	72	72	71	59	59	59	59	60	60	60	60	61	61	61	62	62	62	63	72	72	72	74	74	74	74	74	74	73	73
12	54.8	72	72	71	59	59	59	59	59	60	60	60	60	61	61	61	62	62	63	72	72	72	74	74	74	74	74	73	73	73
13	58.1	72	71	71	58	58	59	59	59	59	60	60	60	60	61	61	61	62	62	72	72	72	74	74	74	74	74	73	73	73
14	61.4	72	71	71	58	58	59	59	59	59	60	60	60	60	61	61	61	62	62	72	72	72	74	74	74	74	73	73	73	73
15	64.6	72	71	71	58	58	59	59	59	59	59	60	60	60	61	61	61	62	62	72	72	71	74	74	74	74	73	73	73	73
16	67.9	72	71	71	58	58	58	59	59	59	59	59	60	60	60	61	61	61	62	72	72	71	74	74	74	74	73	73	73	73
17	71.2	72	71	71	58	58	58	58	59	59	59	59	60	60	60	60	61	61	62	72	71	71	74	74	74	73	73	73	73	73
18	74.5	72	71	71	58	58	58	58	59	59	59	59	59	60	60	60	60	61	61	71	71	71	74	74	73	73	73	73	73	73
19	77.8	72	71	71	58	58	58	58	58	59	59	59	59	60	60	60	60	61	61	71	71	71	74	73	73	73	73	73	73	73
20	81.0	72	71	71	59	57	58	58	58	58	59	59	59	59	60	60	60	61	61	71	71	71	74	73	73	73	73	73	73	73
21	84.3	72	71	71	59	57	58	58	58	58	59	59	59	59	59	60	60	60	61	71	71	71	74	73	73	73	73	73	73	73
22	87.6	72	72	71	59	57	58	58	58	58	58	59	59	59	59	60	60	60	61	71	71	71	73	73	73	73	73	73	73	73
23	90.9	72	72	71	60	57	57	58	58	58	58	58	59	59	59	59	60	60	61	71	71	71	73	73	73	73	73	73	73	73
24	94.2	72	72	72	62	57	57	58	58	58	58	58	59	59	59	59	60	60	60	71	71	71	73	73	73	73	73	73	73	73
25	97.4	72	72	72	63	57	57	57	58	58	58	58	59	59	59	59	59	60	60	71	71	71	73	73	73	73	73	73	73	73
26	100.7	72	72	72	64	57	57	57	58	58	58	58	58	59	59	59	59	60	60	71	71	71	73	73	73	73	73	73	73	73
27	104.0	72	72	72	64	57	57	57	57	58	58	58	58	58	59	59	59	60	60	71	71	71	73	73	73	73	73	73	73	72
28	107.3	72	72	72	65	57	57	57	57	58	58	58	58	58	59	59	59	59	60	71	71	71	73	73	73	73	73	73	73	72
29	110.6	72	72	72	65	57	57	57	57	57	58	58	58	58	58	59	59	59	60	71	71	71	73	73	73	73	73	73	72	72
30	113.8	73	72	72	66	57	57	57	57	57	57	58	58	58	58	59	59	59	60	71	71	71	73	73	73	73	73	73	72	72
31	117.1	73	72	72	66	56	57	57	57	57	57	58	58	58	58	58	59	59	60	71	71	70	73	73	73	73	73	72	72	72
32	120.4	73	72	72	66	56	57	57	57	57	57	58	58	58	58	58	58	59	60	71	70	70	73	73	73	73	72	72	72	72
33	123.7	73	73	72	66	57	57	57	57	57	58	58	58	58	58	58	59	59	60	70	70	70	73	73	73	73	72	72	72	72
34	127.0	73	73	72	66	58	58	58	58	58	58	58	58	58	58	59	59	59	60	70	70	70	73	73	73	73	72	72	72	72
Max Noise Level		73	73	72	66	60	60	60	61	61	61	62	62	62	63	63	64	64	65	73	73	73	75	74	74	74	74	74	74	74
Exceedance		32	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	29	28	32	32	32	32	32	32	32	32
No. of Exceedance			32			0			0		0		0		0			0			30			32			32			

Floor	mPD	T2-59	T2-60	T2-61	T2-62	T2-63	T2-64	T2-65	T2-66	T2-67	T2-68	T2-69	T2-70	T2-71	T2-72	T2-73	T2-74	T2-75	T2-76	T2-77	T2-78	T2-79	T2-80	T2-81	T2-82	T2-83	T2-84	T2-85	T2-86	T2-87	T2-88	T2-89
3	25.3	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	77	77	77	77	77	78	80	81	81
4	28.6	73	73	74	73	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	77	77	77	77	77	78	80	81	81
5	31.8	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	77	77	77	77	78	80	81	80
6	35.1	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	77	77	77	77	78	80	80	80
7	38.4	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	76	77	77	79	80	80
8	41.7	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	76	77	77	79	80	80
9	45.0	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	76	76	76	76	76	76	76	76	76	77	77	79	80	80
10	48.2	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	76	77	79	80	80
11	51.5	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	77	79	80	80
12	54.8	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	77	79	80	80
13	58.1	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	77	79	80	80
14	61.4	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	77	79	80	80
15	64.6	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	76	76	76	76	76	76	76	76	77	79	80	80
16	67.9	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	76	76	76	76	76	76	77	79	79	79
17	71.2	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	76	76	76	76	76	76	77	79	79	79
18	74.5	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	76	76	76	76	76	78	79	79	79
19	77.8	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	76	76	78	79	79	79
20	81.0	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	75	76	76	78	79	79
21	84.3	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	76	76	78	79	79
22	87.6	73	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	76	78	79	79	79
23	90.9	73	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	76	78	79	79	79
24	94.2	73	72	72	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	76	78	79	79	79
25	97.4	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	75	75	76	78	79	79	79
26	100.7	72	72	72	72	73	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	75	75	76	78	79	79	79
27	104.0	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	75	75	76	78	78	78	78
28	107.3	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	75	75	75	77	78	78	78
29	110.6	72	72	72	72	73	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	74	75	75	77	78	78	78
30	113.8	72	72	72	72	73	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	74	75	75	77	78	78
31	117.1	72	72	72	72	72	73	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	75	75	77	78	78
32	120.4	72	72	72	72	72	72	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	75	75	77	78	78
33	123.7	72	72	72	72	72	72	72	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	74	75	77	77	78	78
34	127.0	72	72	72	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	75	77	78	78	78
Max Noise Level		73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	77	77	77	77	77	78	80	81	81
Exceedance		32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
No. of Exceedance			32			32			32			32			32			32			32			32			32			32		

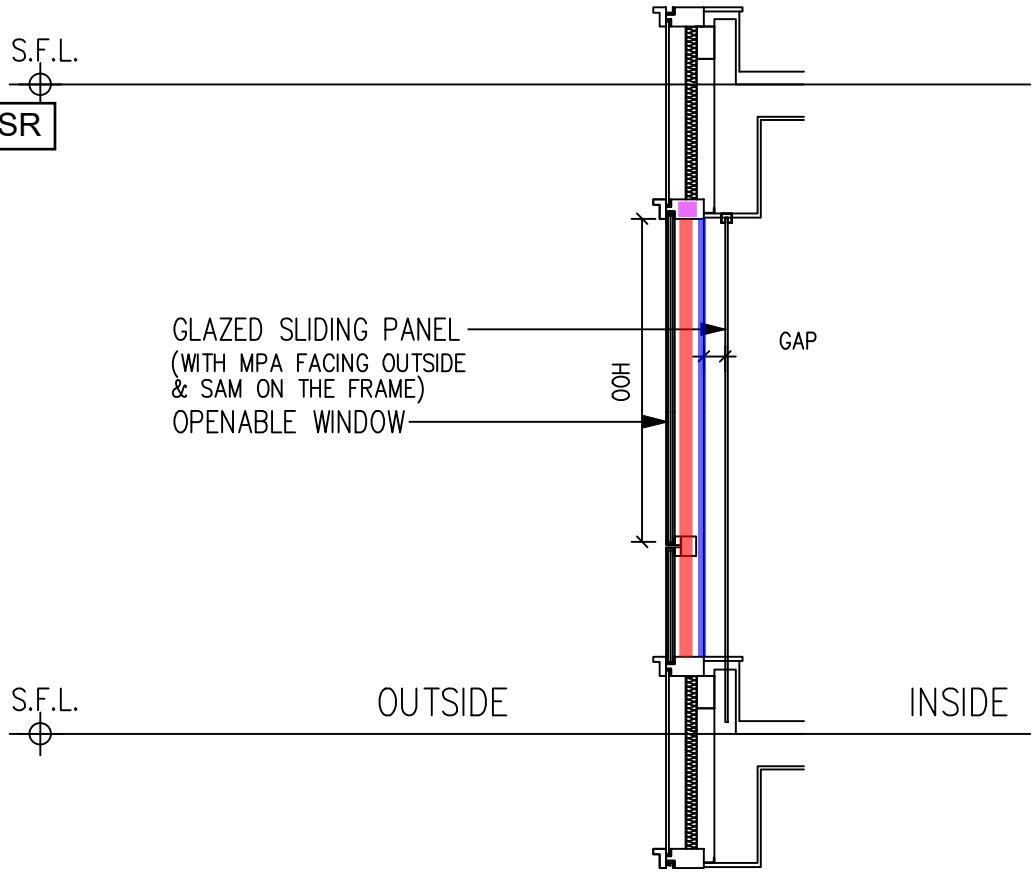
No. of Units:	928
No. of Units with Exceedance:	734
Compliance Level:	21%
Max. Noise Level:	81

Noted:

Noise level exceed stardand of 70 dB(A)

Appendix 2.4 Indicative Design of All Mitigation Measures Adopted in the Proposed Development

EAW(BT)-KSR

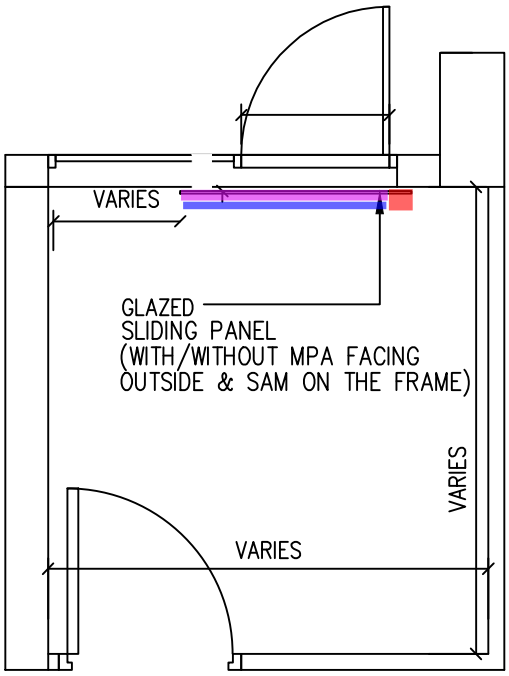


TYPICAL SECTION

MPA on sliding panel

Sound absorption material on top window frame

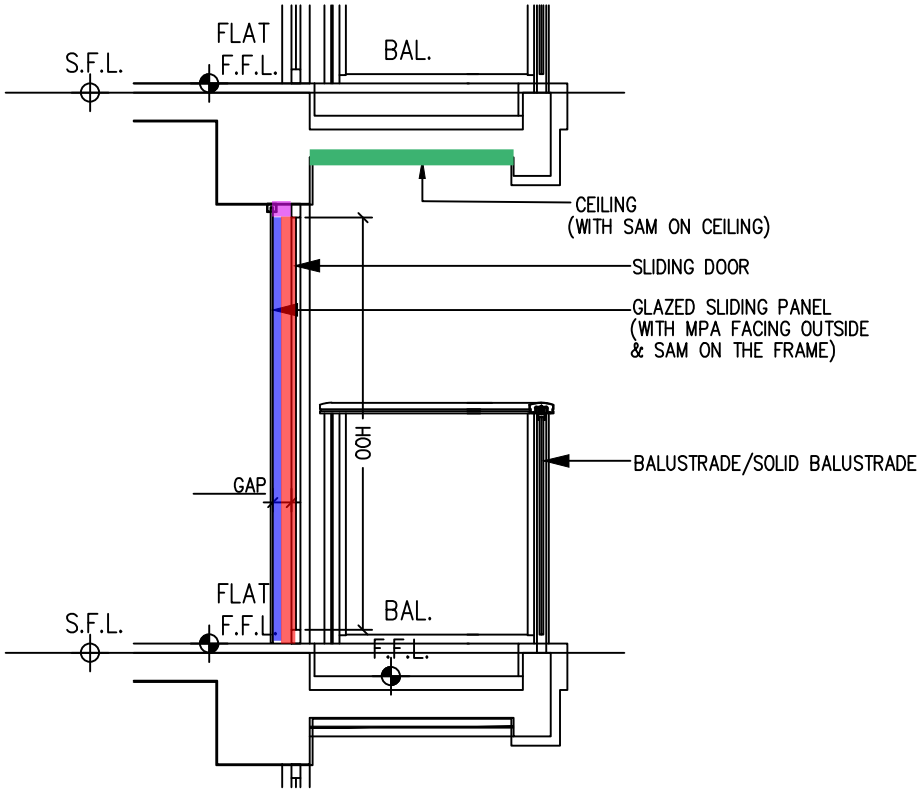
Sound absorption material on vertical window frame



TYPICAL PLAN

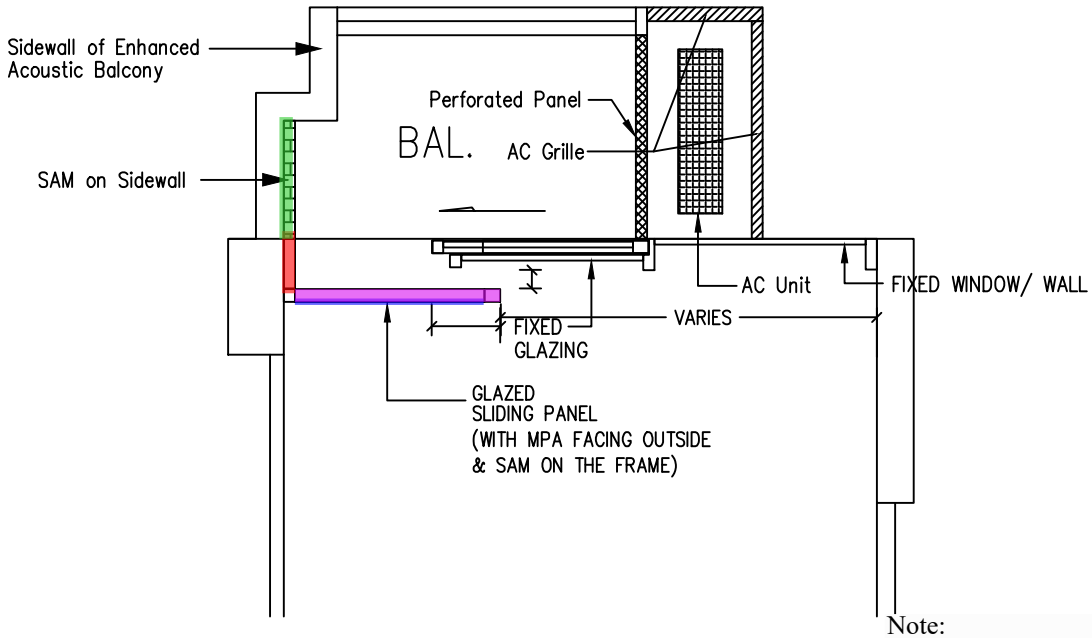
Note:
OOW Outer Opening Width
OOH Outer Opening Height

EAB(BT)-KSR



TYPICAL SECTION

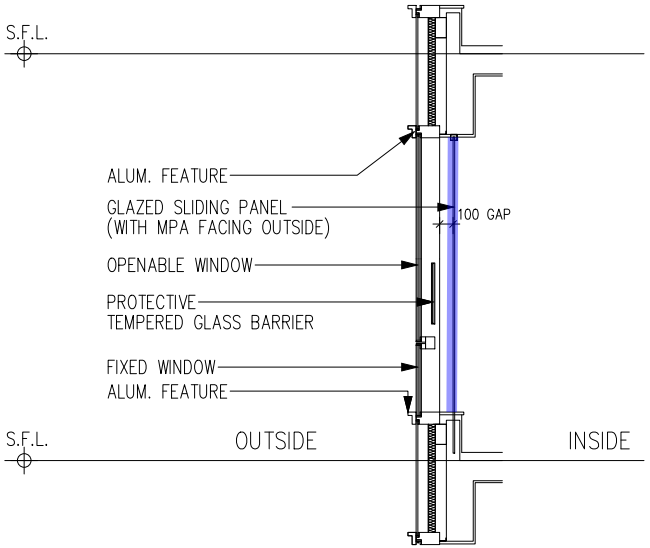
- MPA on inner sliding panel
- Sound absorptive material on top door frame
- Sound absorptive material on vertical door frame
- Sound absorptive material at ceiling and sidewall



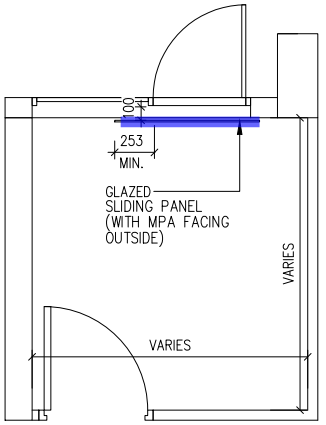
TYPICAL PLAN

Note:
OOW Inner Opening Width
OOH Outer Opening Height

AW(BT)-NPE



TYPICAL SECTION

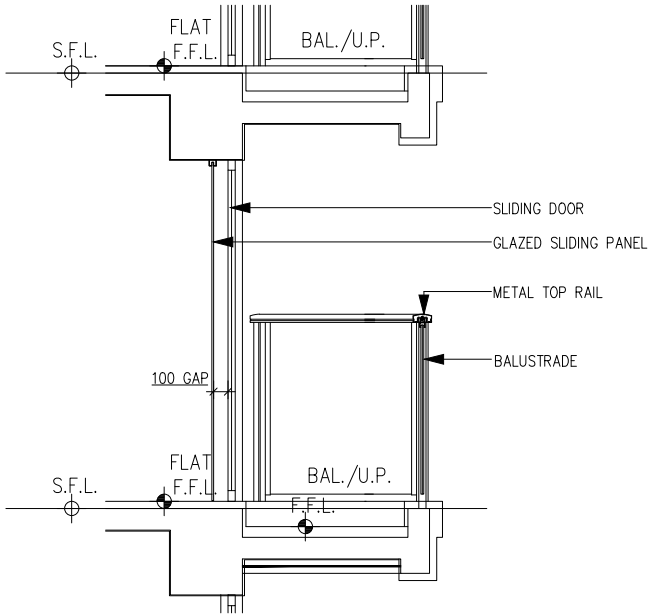


TYPICAL PLAN
AW1–NPE

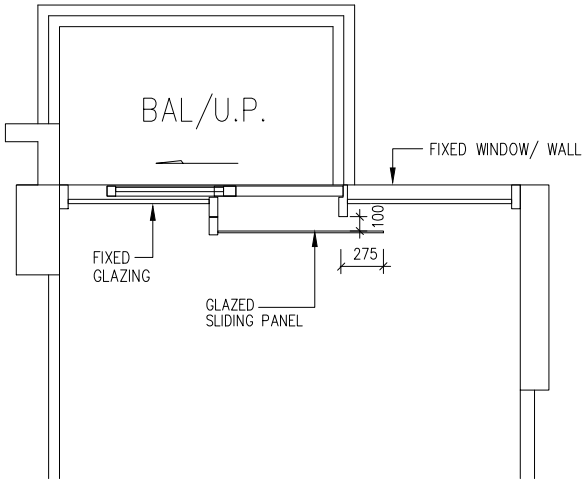
MPA on inner sliding panel

Note:
The design is made reference to the reference case, it will be subject to further refinement at the detailed design stage.

AB (BT)-NPE



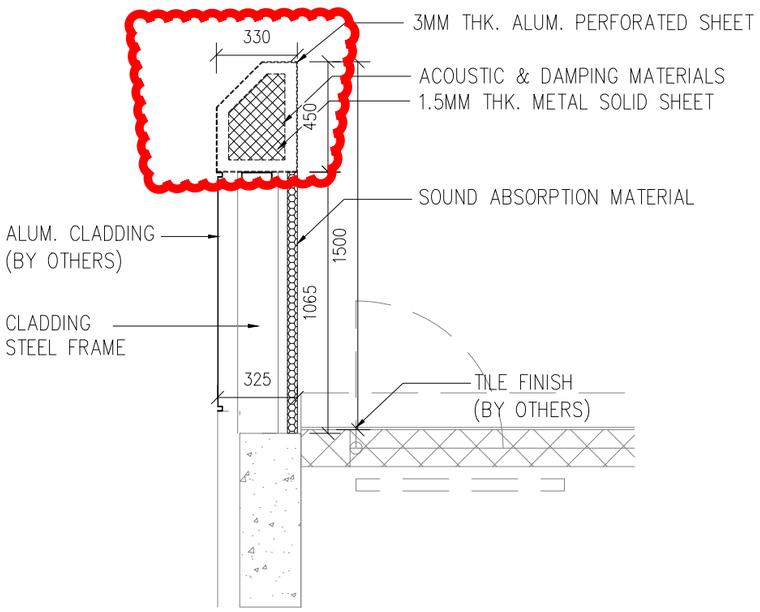
TYPICAL SECTION



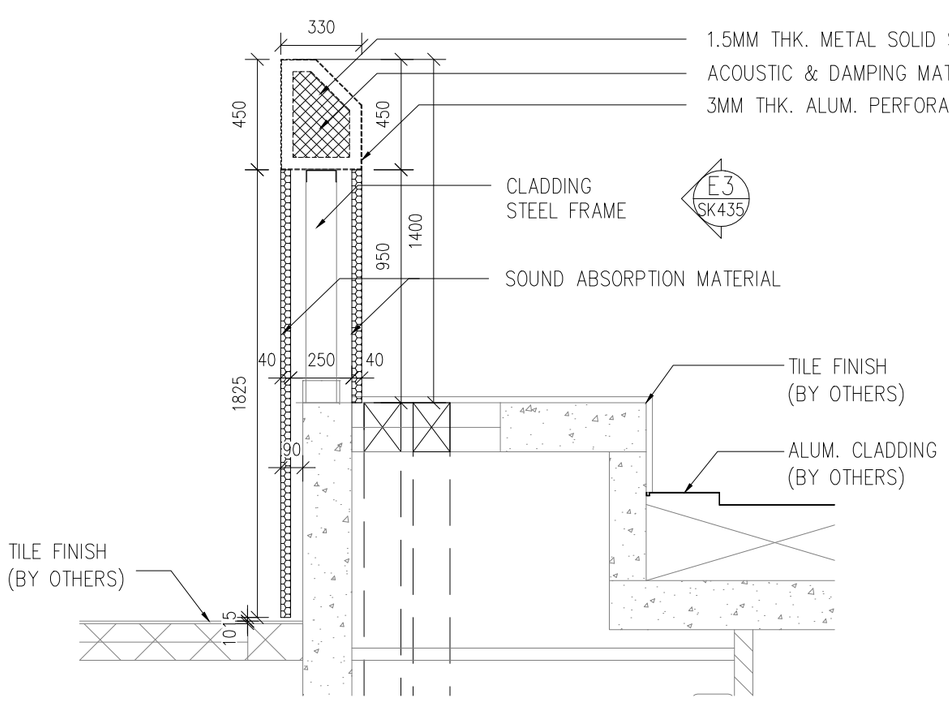
TYPICAL PLAN

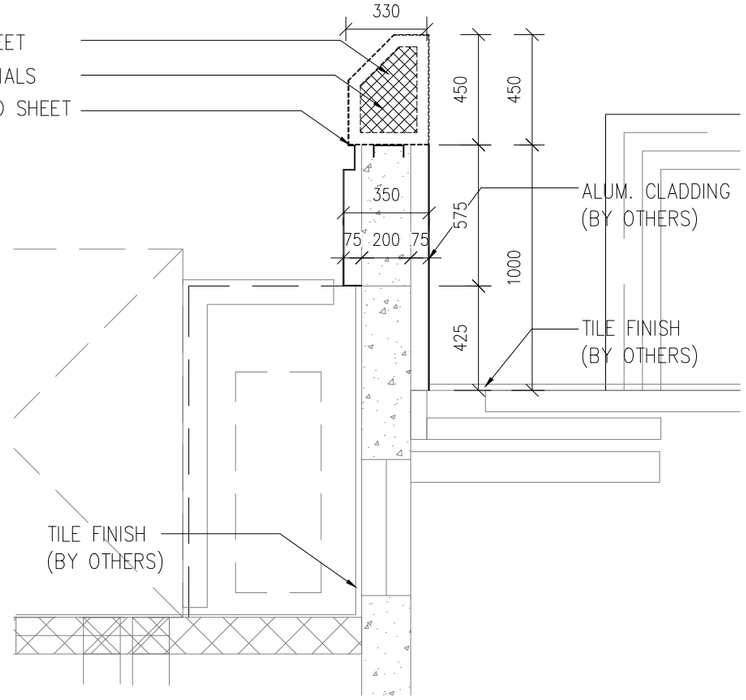
Note:
The design is made reference to the reference case, it will be subject to further refinement at the detailed design stage.

Noise Reducer



Note:
The design is made reference to the reference case, it will be subject to further refinement at the detailed design stage.





Appendix 2.5 Sound Attenuation Adjustment of AW(BT) & AB(BT) Adopted in the Proposed Development

Adjustment of Sound Attenuation for Traffic Noise Impact Assessment

Reference Case

Case ID	Acoustic Window/ Door System	SAM	MPA	Air Gap, mm	Overlapping length, mm	Room area (RAref), m^2	Ref. sound attenuation, dB(A)
BAL	EAB (BT)-KSR 1	Yes	Yes	100	500	7.6	7.5
BAL1	EAB (BT) (with side wall) -KSR 2	Yes	Yes	100	500	7.6	10.0
BAL2	AB (BT)-NPE	No	No	100	253	38.8	8.8

Case ID	Acoustic Window/ Door System	SAM	MPA	Air Gap, mm	Overlapping length, mm	Room area (RAref), m^2	Ref. sound attenuation, dB(A)
W	EAW (BT)-KSR	Yes	Yes	100	300	4.3	6.0
W1	EAW (BT)+ Fin-KSR	Yes	Yes	100	300	4.3	9.4
W2	EAW (BT)+ Fin-KSR	Yes	Yes	100	300	4.3	9.3
W3	AW (BT)-NPE	Yes	No	100	275	6.8	6.8

Proposed Development							Reference Case					
NSRs with Acoustic Window / Balcony (Baffle Type)	Tower	Room	Referred Case ID	Max. Noise Level, dB(A)	Required Max. Sound Attenuation, dB(A)	Room area (RA), m^2	Air Gap, mm	Overlapping length (Mullion Included), mm	Room area (RAref), m^2	Ref. sound attenuation, dB(A)	Adjustment: 10xlog(RA/RA ref)	Adjusted sound attenuation, dB(A)
T2-01	N2	LIV/DIN	BAL1	80.7	10.3	15.2	100	500	7.6	10.0	0.0	10.0
T2-03	N2	MBR	W1	79.3	8.9	7.8	100	300	4.3	9.4	0.0	9.4
T2-04	N2	BR1	W2	77.9	7.5	5.5	100	300	4.3	9.3	0.0	9.3
T2-05	N2	BR1	W	77.1	6.7	5.5	100	300	4.3	6.0	0.0	6.0
T2-06	N2	MBR	W	76.1	5.7	8.1	100	300	4.3	6.0	0.0	6.0
T2-07	N2	LIV/DIN	BAL	76.0	5.6	10.1	100	500	7.6	7.5	0.0	7.5
T2-08	N2	BR1	W3	75.9	5.5	5.6	100	275	6.8	6.8	-0.8	6.0
T2-09	N2	MBR	W3	75.7	5.3	8.1	100	275	6.8	6.8	0.0	6.8
T2-10	N2	LIV/DIN	BAL	75.6	5.2	9.9	100	500	7.6	7.5	0.0	7.5
T2-11	N2	BR1	W3	75.4	5.0	5.6	100	275	6.8	6.8	-0.8	6.0
T2-12	N2	BR1	W3	75.2	4.8	5.6	100	275	6.8	6.8	-0.8	6.0
T2-13	N2	LIV/DIN	BAL	75.0	4.6	9.9	100	500	7.6	7.5	0.0	7.5
T2-14	N2	MBR	W3	74.9	4.5	8.1	100	275	6.8	6.8	0.0	6.8
T2-15	N2	BR1	W3	74.7	4.3	5.6	100	275	6.8	6.8	-0.8	6.0
T2-16	N2	LIV/DIN	BAL	74.5	4.1	9.9	100	500	7.6	7.5	0.0	7.5
T2-17	N2	MBR	W3	74.3	3.9	8.1	100	275	6.8	6.8	0.0	6.8
T2-18	N2	MBR	W3	74.1	3.7	8.1	100	275	6.8	6.8	0.0	6.8
T2-19	N2	LIV/DIN	BAL	73.9	3.5	9.9	100	500	7.6	7.5	0.0	7.5
T2-20	N2	BR1	W3	73.7	3.3	5.6	100	275	6.8	6.8	-0.8	6.0
T2-21	N2	BR1	W3	73.6	3.2	5.6	100	275	6.8	6.8	-0.8	6.0
T2-22	N2	LIV/DIN	BAL	73.5	3.1	9.9	100	500	7.6	7.5	0.0	7.5
T2-23	N2	MBR	W3	73.4	3.0	8.1	100	275	6.8	6.8	0.0	6.8
T2-24	N2	MBR	W3	73.1	2.7	8.1	100	275	6.8	6.8	0.0	6.8
T2-25	N2	LIV/DIN	BAL2	73.0	2.6	9.9	100	253	38.8	8.8	-5.9	2.9
T2-26	N2	BR1	W3	72.9	2.5	5.6	100	275	6.8	6.8	-0.8	6.0
T2-27	N2	BR1	W3	72.8	2.4	5.6	100	275	6.8	6.8	-0.8	6.0
T2-28	N2	LIV/DIN	BAL2	72.7	2.3	9.9	100	253	38.8	8.8	-5.9	2.9
T2-29	N2	MBR	W3	72.6	2.2	8.1	100	275	6.8	6.8	0.0	6.8
T2-30	N2	MBR	W3	72.5	2.1	8.1	100	275	6.8	6.8	0.0	6.8
T2-31	N2	LIV/DIN	BAL2	72.4	2.0	9.9	100	253	38.8	8.8	-5.9	2.9
T2-32	N2	BR1	W3	72.3	1.9	5.6	100	275	6.8	6.8	-0.8	6.0
T2-48	N2	MBR	W3	73.2	2.8	6.9	100	275	6.8	6.8	0.0	6.8
T2-49	N2	BR1	W3	73.1	2.7	4.2	100	275	6.8	6.8	-2.1	4.7
T2-50	N2	LIV/DIN	BAL2	73.1	2.7	13.8	100	253	38.8	8.8	-4.5	4.3
T2-51	N2	MBR	W3	74.7	4.3	9.9	100	275	6.8	6.8	0.0	6.8
T2-52	N2	BR1	W3	74.5	4.1	4.4	100	275	6.8	6.8	-1.9	4.9
T2-53	N2	BR1	W3	74.4	4.0	4.4	100	275	6.8	6.8	-1.9	4.9
T2-54	N2	LIV/DIN	BAL2	74.3	3.9	16.4	100	253	38.8	8.8	-3.7	5.1
T2-55	N2	MBR	W3	74.0	3.6	9.9	100	275	6.8	6.8	0.0	6.8
T2-56	N2	BR1	W3	73.8	3.4	4.4	100	275	6.8	6.8	-1.9	4.9
T2-57	N2	BR1	W	73.7	3.3	3.0	100	300	4.3	6.0	-1.6	4.4
T2-58	N2	LIV/DIN	BAL2	73.6	3.2	14.7	100	253	38.8	8.8	-4.2	4.6
T2-59	N2	LIV/DIN	BAL2	73.4	3.0	10.2	100	253	38.8	8.8	-5.8	3.0
T2-60	N2	MBR	W3	73.2	2.8	5.5	100	275	6.8	6.8	-0.9	5.9
T2-61	N2	MBR	W3	73.3	2.9	6.9	100	275	6.8	6.8	0.0	6.8
T2-62	N2	BR1	W3	73.4	3.0	4.2	100	275	6.8	6.8	-2.1	4.7
T2-63	N2	LIV/DIN	BAL2	73.6	3.2	13.2	100	253	38.8	8.8	-4.7	4.1
T2-64	N2	LIV/DIN	BAL2	73.8	3.4	13.2	100	253	38.8	8.8	-4.7	4.1
T2-65	N2	BR1	W3	73.9	3.5	4.2	100	275	6.8	6.8	-2.1	4.7
T2-66	N2	MBR	W3	74.0	3.6	6.9	100	275	6.8	6.8	0.0	6.8
T2-67	N2	MBR	W3	74.2	3.8	6.9	100	275	6.8	6.8	0.0	6.8
T2-68	N2	BR1	W3	74.3	3.9	4.2	100	275	6.8	6.8	-2.1	4.7
T2-69	N2	LIV/DIN	BAL2	74.4	4.0	13.2	100	253	38.8	8.8	-4.7	4.1
T2-70	N2	LIV/DIN	BAL	74.6	4.2	13.2	100	500	7.6	7.5	0.0	7.5
T2-71	N2	BR1	W3	74.7	4.3	4.2	100	275	6.8	6.8	-2.1	4.7
T2-72	N2	MBR	W3	74.9	4.5	6.9	100	275	6.8	6.8	0.0	6.8
T2-73	N2	MBR	W3	75.2	4.8	6.9	100	275	6.8	6.8	0.0	6.8
T2-74	N2	BR1	W	75.4	5.0	4.2	100	300	4.3	6.0	-0.1	5.9
T2-75	N2	LIV/DIN	BAL	75.6	5.2	13.2	100	500	7.6	7.5	0.0	7.5
T2-76	N2	LIV/DIN	BAL	75.7	5.3	13.2	100	500	7.6	7.5	0.0	7.5
T2-77	N2	BR1	W	75.9	5.5	4.2	100	300	4.3	6.0	-0.1	5.9
T2-78	N2	MBR	W	75.9	5.5	6.9	100	300	4.3	6.0	0.0	6.0
T2-79	N2	MBR	W	76.1	5.7	6.9	100	300	4.3	6.0	0.0	6.0
T2-80	N2	BR1	W	76.1	5.7	4.2	100	300	4.3	6.0	-0.1	5.9
T2-81	N2	LIV/DIN	BAL	76.2	5.8	13.2	100	500	7.6	7.5	0.0	7.5
T2-82	N2	LIV/DIN	BAL	76.2	5.8	13.2	100	500	7.6	7.5	0.0	7.5
T2-83	N2	BR1	W	76.1	5.7	4.2	100	300	4.3	6.0	-0.1	5.9
T2-84	N2	MBR	W	75.8	5.4	6.9	100	300	4.3	6.0	0.0	6.0
T2-85	N2	BR1	W	75.6	5.2	5.4	100	300	4.3	6.0	0.0	6.0
T2-86	N2	BR1	W2	77.8	7.4	4.2	100	300	4.3	9.3	-0.1	9.2
T2-87	N2	MBR	W1	79.8	9.4	10.4	100	300	4.3	9.4	0.0	9.4
T2-89	N2	LIV/DIN	BAL1	80.7	10.3	19.3	100	500	7.6	10.0	0.0	10.0

Appendix 2.6 Road Traffic Noise Impact Assessment Result (Mitigated Case)

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Fin Case

Floor	mPD	T2-01*	T2-02	T2-03*	T2-04*	T2-05	T2-06	T2-07	T2-08	T2-09	T2-10	T2-11	T2-12	T2-13	T2-14	T2-15	T2-16	T2-17	T2-18	T2-19	T2-20	T2-21	T2-22	T2-23	T2-24	T2-25	T2-26	T2-27	T2-28	T2-29
3	25.3	81	81	79	78	77	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72
4	28.6	81	81	79	78	77	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72
5	31.8	80	80	79	78	77	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72
6	35.1	80	80	79	78	77	76	76	76	76	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72
7	38.4	80	80	79	78	77	76	76	76	76	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72
8	41.7	80	80	79	78	77	76	76	76	76	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72
9	45.0	80	80	79	78	77	76	76	76	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72
10	48.2	80	80	79	77	77	76	76	75	75	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	72	72	72	72	72
11	51.5	80	80	79	77	76	76	76	75	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72
12	54.8	80	80	79	77	76	76	75	75	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72
13	58.1	80	80	79	77	76	75	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72	72
14	61.4	80	80	79	77	76	75	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72	72
15	64.6	80	80	78	77	76	75	75	75	75	75	75	75	75	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72	72
16	67.9	79	79	78	77	76	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72	72
17	71.2	79	79	78	77	76	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72	72
18	74.5	79	79	78	77	76	75	75	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	73	72	72	72	72	72	72
19	77.8	79	79	78	77	76	75	75	75	75	75	75	75	74	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72	72
20	81.0	79	79	78	77	76	75	75	75	75	75	75	75	74	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72	72
21	84.3	79	79	78	77	76	75	75	75	75	75	75	75	74	74	74	74	74	74	74	74	73	73	73	73	72	72	72	72	72
22	87.6	79	79	78	76	76	75	75	75	75	75	75	75	74	74	74	74	74	74	74	74	73	73	73	73	73	72	72	72	72
23	90.9	79	79	78	76	75	75	75	75	75	75	75	74	74	74	74	74	74	74	74	74	73	73	73	73	73	72	72	72	72
24	94.2	79	79	78	76	75	75	75	75	75	75	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	72	72
25	97.4	79	79	78	76	75	75	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	72	72
26	100.7	79	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	72
27	104.0	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	72
28	107.3	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73
29	110.6	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73	73
30	113.8	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73	73
31	117.1	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73	73
32	120.4	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73	73	73
33	123.7	78	78	77	76	75	74	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73	73	73	73
34	127.0	78	78	77	75	75	74	74	74	74	74	74	74	74	74	74	74	73	73	73	73	73	73	73	73	73	73	73	73	73
Max Noise Level		81	81	79	78	77	76	76	76	76	76	75	75	75	75	75	74	74	74	74	74	74	73	73	73	73	73	73	73	73
Exceedance		32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
No. of Exceedance				32				32			32			32			32			32			32			32			32	

Floor	mPD	T2-30	T2-31	T2-32	T2-33	T2-34	T2-35	T2-36	T2-37	T2-38	T2-39	T2-40	T2-41	T2-42	T2-43	T2-44	T2-45	T2-46	T2-47	T2-48	T2-49	T2-50	T2-51	T2-52	T2-53	T2-54	T2-55	T2-56	T2-57	T2-58
3	25.3	72	72	71	59	60	60	60	61	61	61	62	62	62	63	63	64	64	65	73	73	73	75	74	74	74	74	74	74	74
4	28.6	72	72	71	59	60	60	60	61	61	61	61	62	62	63	64	63	64	65	73	73	73	75	74	74	74	74	74	74	74
5	31.8	72	72	71	59	60	60	60	61	61	61	61	62	62	62	63	63	64	65	73	73	73	74	74	74	74	74	74	74	74
6	35.1	72	72	71	59	59	60	60	60	61	61	61	62	62	62	63	63	64	64	73	73	73	74	74	74	74	74	74	74	73
7	38.4	72	72	71	59	59	60	60	60	60	61	61	61	62	62	62	63	63	64	73	72	72	74	74	74	74	74	74	74	73
8	41.7	72	72	71	59	59	59	60	60	60	61	61	61	61	62	62	62	63	64	72	72	72	74	74	74	74	74	74	74	73
9	45.0	72	72	71	59	59	59	60	60	60	60	61	61	61	62	62	62	63	63	72	72	72	74	74	74	74	74	74	73	73
10	48.2	72	72	71	59	59	59	59	60	60	60	61	61	61	61	62	62	63	63	72	72	72	74	74	74	74	74	74	73	73
11	51.5	72	71	71	59	59	59	59	60	60	60	60	61	61	61	62	62	62	63	72	72	72	74	74	74	74	74	74	73	73
12	54.8	72	71	71	59	59	59	59	59	60	60	60	60	61	61	61	62	62	63	72	72	72	74	74	74	74	73	73	73	73
13	58.1	72	71	71	58	58	59	59	59	59	60	60	60	60	61	61	61	62	62	72	72	72	74	74	74	74	73	73	73	73
14	61.4	72	71	71	58	58	59	59	59	59	60	60	60	60	61	61	61	62	62	72	72	72	74	74	74	74	73	73	73	73
15	64.6	72	71	71	58	58	59	59	59	59	60	60	60	60	61	61	61	62	62	72	72	71	74	74	74	74	73	73	73	73
16	67.9	71	71	71	58	58	58	59	59	59	59	59	60	60	60	61	61	61	62	72	72	71	74	74	74	74	73	73	73	73
17	71.2	71	71	71	58	58	58	58	59	59	59	59	60	60	60	60	61	61	62	72	71	71	74	74	74	73	73	73	73	73
18	74.5	71	71	71	58	58	58	58	59	59	59	59	59	60	60	60	60	61	61	71	71	71	74	74	73	73	73	73	73	73
19	77.8	71	71	71	58	58	58	58	58	59	59	59	59	60	60	60	60	61	61	71	71	71	74	73	73	73	73	73	73	73
20	81.0	71	71	71	59	57	58	58	58	58	59	59	59	59	60	60	60	61	61	71	71	71	74	73	73	73	73	73	73	73
21	84.3	71	71	71	59	57	58	58	58	58	59	59	59	59	59	60	60	60	61	71	71	71	74	73	73	73	73	73	73	73
22	87.6	72	71	71	59	57	58	58	58	58	58	59	59	59	59	60	60	60	61	71	71	71	73	73	73	73	73	73	73	73
23	90.9	72	72	71	60	57	57	58	58	58	58	58	59	59	59	59	60	60	61	71	71	71	73	73	73	73	73	73	73	73
24	94.2	72	72	72	62	57	57	58	58	58	58	58	59	59	59	59	60	60	60	71	71	71	73	73	73	73	73	73	73	73
25	97.4	72	72	72	63	57	57	57	58	58	58	58	59	59	59	59	59	60	60	71	71	71	73	73	73	73	73	73	73	73
26	100.7	72	72	72	64	57	57	57	58	58	58	58	58	59	59	59	59	60	60	71	71	71	73	73	73	73	73	73	73	72
27	104.0	72	72	72	64	57	57	57	57	58	58	58	58	58	59	59	59	60	60	71	71	71	73	73	73	73	73	73	73	72
28	107.3	72	72	72	65	57	57	57	57	57	58	58	58	58	59	59	59	59	60	71	71	71	73	73	73	73	73	73	72	72
29	110.6	72	72	72	65	57	57	57	57	57	58	58	58	58	58	59	59	59	60	71	71	71	73	73	73	73	73	72	72	72
30	113.8	72	72	72	66	57	57	57	57	57	57	58	58	58	58	59	59	59	60	71	71	71	73	73	73	73	73	72	72	72
31	117.1	72	72	72	66	56	57	57	57	57	57	58	58	58	58	58	58	59	60	71	71	70	73	73	73	73	73	72	72	72
32	120.4	73	72	72	66	56	57	57	57	57	57	58	58	58	58	58	58	59	60	71	70	70	73	73	73	73	72	72	72	72
33	123.7	73	72	72	66	57	57	57	57	57	58	58	58	58	58	58	59	59	60	70	70	70	73	73	73	73	72	72	72	72
34	127.0	73	72	72	66	58	58	58	58	58	58	58	58	58	58	59	59	59	60	70	70	70	73	73	73	73	72	72	72	72
Max Noise Level		73	72	72	66	60	60	60	61	61	61	62	62	62	63	63	64	64	65	73	73	73	75	74	74	74	74	74	74	74
Exceedance		32	32	32	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	29	28	32	32	32	32	32	32	32	32
No. of Exceedance			32			0			0		0		0		0			0			30			32			32			

Floor	mPD	T2-59	T2-60	T2-61	T2-62	T2-63	T2-64	T2-65	T2-66	T2-67	T2-68	T2-69	T2-70	T2-71	T2-72	T2-73	T2-74	T2-75	T2-76	T2-77	T2-78	T2-79	T2-80	T2-81	T2-82	T2-83	T2-84	T2-85	T2-86*	T2-87*	T2-88	T2-89*
3	25.3	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	76	76	78	80	81	81
4	28.6	73	73	74	74	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	76	76	78	80	81	81
5	31.8	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	76	76	76	76	76	76	76	76	76	76	78	80	81	81
6	35.1	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	75	78	80	80	80
7	38.4	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	75	77	80	80	80
8	41.7	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	75	75	77	79	80	80
9	45.0	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	76	76	76	76	76	76	76	76	75	75	77	79	80	80
10	48.2	73	73	73	73	74	74	74	74	74	74	74	74	74	75	75	75	75	75	75	76	76	76	76	76	76	75	75	77	79	80	80
11	51.5	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	75	76	76	76	76	76	75	75	77	79	80	80
12	54.8	73	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	75	75	75	76	76	76	75	75	75	77	79	80	80
13	58.1	73	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	75	76	76	76	75	75	75	77	79	80	80
14	61.4	73	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	75	75	75	77	79	80	80
15	64.6	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	75	75	75	77	79	80	80
16	67.9	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	75	75	74	77	79	79	79
17	71.2	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	75	74	77	79	79	79
18	74.5	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	75	74	74	77	78	79	79
19	77.8	73	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	74	74	76	78	79	79
20	81.0	73	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	74	74	76	78	79	79
21	84.3	73	72	72	73	73	73	73	73	73	73	74	74	74	74	74	74	75	75	75	75	75	75	75	75	75	74	74	76	78	79	79
22	87.6	73	72	72	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	75	75	75	74	74	76	78	79	79
23	90.9	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	75	74	74	74	76	78	79	79
24	94.2	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	75	75	75	75	74	74	74	76	78	79	79
25	97.4	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	76	78	79	79
26	100.7	72	72	72	72	73	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	74	73	76	78	79	79
27	104.0	72	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	74	74	73	76	78	78	79
28	107.3	72	72	72	72	72	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	74	73	76	78	78	78
29	110.6	72	72	72	72	72	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	73	73	75	77	78	78
30	113.8	72	72	72	72	72	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	73	73	75	77	78	78
31	117.1	72	72	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	74	73	73	75	77	78	78
32	120.4	72	72	72	72	72	72	73	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	74	73	73	75	77	78	78
33	123.7	72	72	72	72	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	73	73	75	77	78	78
34	127.0	72	72	72	72	72	72	72	72	73	73	73	73	73	73	73	73	74	74	74	74	74	74	74	74	74	73	73	75	77	78	78
Max Noise Level		73	73	73	73	74	74	74	74	74	74	74	75	75	75	75	75	76	76	76	76	76	76	76	76	76	76	76	78	80	81	81
Exceedance		32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
No. of Exceedance			32			32			32			32			32			32			32			32			32			32		

No. of Units:	928
No. of Units with Exceedance:	734
Compliance Level:	21%
Max. Noise Level:	81

Noted:

Noise level exceed stardand of 70 dB(A)

* In TNIA, Enhanced Acoustic Window (Baffle Type) is adopted in this NSR location. Determination of sound attenuation performance of the AW(BT)/EAB(BT) at this NSR location has included the combined effect of the adoption of EAW(BT) and the adjacent vertical fin during the mock-up test. Thus, the predicted noise level with the adoption of vertical fin only was not calculated.

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs)

Mitigated Case_with Fins& Acoustic Window& Acoustic Balcony

Floor	mPD	T2-01	T2-02	T2-03	T2-04	T2-05	T2-06	T2-07	T2-08	T2-09	T2-10	T2-11	T2-12	T2-13	T2-14	T2-15	T2-16	T2-17	T2-18	T2-19	T2-20	T2-21	T2-22	T2-23	T2-24	T2-25	T2-26	T2-27	T2-28	T2-29
3	25.3	71	-	70	69	71	70	69	70	69	68	69	69	68	68	69	67	67	67	66	68	68	66	66	66	70	66	66	69	65
4	28.6	71	-	70	69	71	70	68	70	69	68	69	69	68	68	69	67	67	67	66	68	68	66	66	66	70	66	66	69	65
5	31.8	70	-	70	69	71	70	68	70	69	68	69	69	67	68	69	67	67	67	66	68	68	66	66	66	70	66	66	69	65
6	35.1	70	-	70	68	71	70	68	70	69	68	69	69	67	68	69	67	67	67	66	68	68	66	66	66	70	66	66	69	65
7	38.4	70	-	70	68	71	70	68	70	69	68	69	69	67	68	69	67	67	67	66	68	67	66	66	66	70	66	66	69	65
8	41.7	70	-	70	68	71	70	68	70	69	68	69	69	67	68	69	67	67	67	66	68	67	66	66	66	70	66	66	69	65
9	45.0	70	-	70	68	71	70	68	70	69	68	69	69	67	68	68	67	67	67	66	68	67	66	66	66	70	66	66	69	65
10	48.2	70	-	70	68	71	70	68	69	69	68	69	69	67	68	68	67	67	67	66	68	67	66	66	66	70	66	66	69	65
11	51.5	70	-	69	68	70	70	68	69	69	68	69	69	67	68	68	67	67	67	66	67	67	66	66	66	70	66	66	69	65
12	54.8	70	-	69	68	70	69	68	69	69	68	69	69	67	68	68	67	67	67	66	67	67	66	66	66	69	66	66	69	65
13	58.1	70	-	69	68	70	69	68	69	69	68	69	69	67	68	68	67	67	67	66	67	67	66	66	66	69	66	66	69	65
14	61.4	70	-	69	68	70	69	68	69	68	68	69	69	67	68	68	67	67	67	66	67	67	66	66	66	69	66	66	69	65
15	64.6	70	-	69	68	70	69	68	69	68	67	69	69	67	68	68	67	67	67	66	67	67	65	66	66	69	66	66	69	65
16	67.9	69	-	69	68	70	69	68	69	68	67	69	69	67	68	68	66	67	67	66	67	67	65	66	66	69	66	66	69	65
17	71.2	69	-	69	68	70	69	68	69	68	67	69	69	67	67	68	66	67	67	66	67	67	65	66	66	69	66	66	69	65
18	74.5	69	-	69	67	70	69	67	69	68	67	69	69	67	67	68	66	67	67	66	67	67	65	66	66	69	66	66	69	65
19	77.8	69	-	69	67	70	69	67	69	68	67	69	69	67	68	68	67	67	67	66	67	67	65	66	66	69	66	66	69	65
20	81.0	69	-	69	67	70	69	67	69	68	67	69	69	67	68	68	67	67	67	66	67	67	66	66	66	69	66	66	69	65
21	84.3	69	-	68	67	70	69	67	69	68	67	69	69	67	68	68	67	67	67	66	68	67	66	66	66	70	66	66	69	65
22	87.6	69	-	68	67	70	69	67	69	68	67	69	69	67	68	68	67	67	67	66	68	67	66	66	66	70	66	66	69	65
23	90.9	69	-	68	67	69	69	67	69	68	67	69	68	67	68	68	67	67	67	66	68	67	66	66	66	70	66	66	69	65
24	94.2	69	-	68	67	69	69	67	69	68	67	68	68	67	67	68	67	67	67	66	68	68	66	66	66	70	67	67	69	65
25	97.4	69	-	68	67	69	69	67	69	68	67	68	68	67	67	68	67	67	67	66	68	68	66	67	66	70	67	67	70	65
26	100.7	69	-	68	67	69	68	67	68	68	67	68	68	67	67	68	67	67	67	66	68	68	66	67	66	70	67	67	70	66
27	104.0	68	-	68	67	69	68	67	68	68	67	68	68	67	67	68	66	67	67	66	68	68	66	67	66	70	67	67	70	66
28	107.3	68	-	68	67	69	68	67	68	67	67	68	68	67	67	68	66	67	67	66	68	67	66	66	66	70	67	67	70	66
29	110.6	68	-	68	67	69	68	67	68	67	67	68	68	67	67	68	66	67	67	66	67	67	66	66	66	70	67	67	70	66
30	113.8	68	-	68	67	69	68	67	68	67	67	68	68	66	67	68	66	67	67	66	67	67	66	66	66	70	67	67	70	66
31	117.1	68	-	68	66	69	68	67	68	67	67	68	68	66	67	68	66	67	67	66	67	67	66	66	66	70	67	67	70	66
32	120.4	68	-	68	66	69	68	66	68	67	66	68	68	66	67	68	66	67	67	66	67	67	66	66	66	70	67	67	70	66
33	123.7	68	-	67	66	69	68	66	68	67	66	68	68	66	67	68	66	67	67	66	67	67	66	66	66	70	67	67	70	66
34	127.0	68	-	67	66	69	68	66	68	67	66	68	68	66	67	68	66	67	67	66	67	67	66	66	66	70	67	67	70	66
Max Noise Level		71	0	70	69	71	70	68	70	69	68	69	69	68	68	69	67	67	67	66	68	68	66	67	66	70	67	67	70	66
Exceedance		2	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Exceedance		8					0			0			0				0			0			0			0			0	

Floor	mPD	T2-30	T2-31	T2-32	T2-33	T2-34	T2-35	T2-36	T2-37	T2-38	T2-39	T2-40	T2-41	T2-42	T2-43	T2-44	T2-45	T2-46	T2-47	T2-48	T2-49	T2-50	T2-51	T2-52	T2-53	T2-54	T2-55	T2-56	T2-57	T2-58
3	25.3	65	69	65	59	60	60	60	61	61	61	62	62	62	63	63	64	64	65	66	68	69	68	70	69	69	67	69	69	69
4	28.6	65	69	65	59	60	60	60	61	61	61	62	62	62	63	63	63	64	65	66	68	69	68	70	69	69	67	69	69	69
5	31.8	65	69	65	59	60	60	60	60	61	61	61	62	62	62	63	63	64	65	66	68	68	68	69	69	69	67	69	69	69
6	35.1	65	69	65	59	59	60	60	60	61	61	61	62	62	62	63	63	64	64	66	68	68	68	69	69	69	67	69	69	69
7	38.4	65	69	65	59	59	60	60	60	60	61	61	61	62	62	62	63	63	64	66	68	68	68	69	69	69	67	69	69	69
8	41.7	65	69	65	59	59	59	60	60	60	61	61	61	61	62	62	62	63	64	66	68	68	68	69	69	69	67	69	69	69
9	45.0	65	69	65	59	59	59	60	60	60	61	61	61	61	62	62	62	63	63	65	67	68	67	69	69	69	67	69	69	69
10	48.2	65	69	65	59	59	59	59	60	60	60	61	61	61	61	62	62	62	63	65	67	68	67	69	69	69	67	69	69	69
11	51.5	65	69	65	59	59	59	59	59	60	60	60	61	61	61	62	62	62	63	65	67	68	67	69	69	69	67	68	69	69
12	54.8	65	69	65	59	59	59	59	59	59	60	60	60	61	61	61	62	62	63	65	67	68	67	69	69	69	67	68	69	69
13	58.1	65	69	65	58	58	59	59	59	59	60	60	60	60	61	61	61	62	62	65	67	67	67	69	69	69	67	68	69	68
14	61.4	65	68	65	58	58	59	59	59	60	60	60	60	61	61	61	62	62	65	67	67	67	69	69	69	67	68	69	68	68
15	64.6	65	68	65	58	58	59	59	59	59	59	60	60	60	61	61	61	61	62	65	67	67	67	69	69	68	67	68	69	68
16	67.9	65	68	65	58	58	58	59	59	59	59	59	60	60	60	61	61	61	62	65	67	67	67	69	69	68	67	68	69	68
17	71.2	65	68	65	58	58	58	58	59	59	59	59	60	60	60	60	61	61	62	65	67	67	67	69	69	68	66	68	69	68
18	74.5	65	68	65	58	58	58	58	59	59	59	59	59	60	60	60	60	61	61	65	67	67	67	69	69	68	66	68	69	68
19	77.8	65	68	65	58	58	58	58	59	59	59	59	59	60	60	60	60	61	61	65	67	67	67	69	69	68	66	68	69	68
20	81.0	65	68	65	59	57	58	58	58	58	59	59	59	59	60	60	60	61	61	64	67	67	67	69	68	68	66	68	69	68
21	84.3	65	68	65	59	57	58	58	58	58	59	59	59	59	59	60	60	60	61	64	66	67	67	69	68	68	66	68	68	68
22	87.6	65	69	65	59	57	58	58	58	58	58	59	59	59	59	60	60	60	61	64	66	67	67	68	68	68	66	68	68	68
23	90.9	65	69	65	60	57	57	58	58	58	58	58	59	59	59	59	60	60	61	64	66	67	67	68	68	68	66	68	68	68
24	94.2	65	69	66	62	57	57	58	58	58	58	58	59	59	59	59	60	60	60	64	66	67	67	68	68	68	66	68	68	68
25	97.4	65	69	66	63	57	57	57	58	58	58	58	59	59	59	59	59	60	60	64	66	67	66	68	68	68	66	68	68	68
26	100.7	65	69	66	64	57	57	57	58	58	58	58	58	59	59	59	59	60	60	64	66	66	66	68	68	68	66	68	68	68
27	104.0	66	69	66	64	57	57	57	57	58	58	58	58	58	59	59	59	60	60	64	66	66	66	68	68	68	66	68	68	68
28	107.3	66	69	66	65	57	57	57	57	57	58	58	58	58	59	59	59	59	60	64	66	66	66	68	68	68	66	68	68	68
29	110.6	66	69	66	65	57	57	57	57	57	58	58	58	58	58	59	59	59	60	64	66	66	66	68	68	68	66	68	68	68
30	113.8	66	69	66	66	57	57	57	57	57	57	58	58	58	58	58	59	59	60	64	66	66	66	68	68	68	66	68	68	68
31	117.1	66	69	66	66	56	57	57	57	57	57	58	58	58	58	58	59	59	60	64	66	70	66	68	68	68	66	68	68	68
32	120.4	66	70	66	66	56	57	57	57	57	58	58	58	58	58	58	58	59	60	64	70	70	66	68	68	68	66	67	68	68
33	123.7	66	70	66	66	57	57	57	57	57	58	58	58	58	58	58	59	59	60	70	70	70	66	68	68	68	66	67	68	67
34	127.0	66	70	66	66	58	58	58	58	58	58	58	58	58	58	59	59	59	60	70	70	70	66	68	68	67	66	67	68	67
Max Noise Level		66	70	66	66	60	60	60	61	61	61	61	62	62	63	63	63	64	65	70	70	70	68	70	69	69	67	69	69	69
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Exceedance		0				0		0		0		0			0		0			0			0			0			0	

Floor	mPD	T2-59	T2-60	T2-61	T2-62	T2-63	T2-64	T2-65	T2-66	T2-67	T2-68	T2-69	T2-70	T2-71	T2-72	T2-73	T2-74	T2-75	T2-76	T2-77	T2-78	T2-79	T2-80	T2-81	T2-82	T2-83	T2-84	T2-85	T2-86	T2-87	T2-88	T2-89
3	25.3	70	67	66	69	69	70	69	67	67	70	70	67	70	68	68	69	68	68	70	70	70	70	69	69	70	70	70	69	70	-	71
4	28.6	70	67	66	69	69	70	69	67	67	70	70	67	70	68	68	69	68	68	70	70	70	70	69	69	70	70	69	69	70	-	71
5	31.8	70	67	66	69	69	70	69	67	67	70	70	67	70	68	68	69	68	68	70	70	70	70	69	69	70	70	69	68	70	-	71
6	35.1	70	67	66	69	69	69	69	67	67	69	70	67	70	68	68	69	68	68	70	70	70	70	69	69	70	70	69	68	70	-	70
7	38.4	70	67	66	69	69	69	69	67	67	69	70	67	70	68	68	69	68	68	70	70	70	70	68	68	70	70	69	68	70	-	70
8	41.7	70	67	66	69	69	69	69	67	67	69	70	67	70	68	68	69	68	68	70	70	70	70	68	68	70	69	69	68	70	-	70
9	45.0	70	67	66	69	69	69	69	67	67	69	70	67	70	68	68	69	68	68	70	70	70	70	68	68	70	69	69	68	70	-	70
10	48.2	70	67	66	68	69	69	69	67	67	69	70	67	70	68	68	69	68	68	70	70	70	70	68	68	70	69	69	68	70	-	70
11	51.5	70	67	66	68	69	69	69	67	67	69	70	67	70	68	68	69	68	68	69	69	70	70	68	68	70	69	69	68	70	-	70
12	54.8	70	67	66	68	69	69	69	67	67	69	70	67	70	68	68	69	68	68	69	69	69	70	68	68	69	69	69	68	70	-	70
13	58.1	70	67	66	68	69	69	69	67	67	69	70	67	70	68	68	69	68	68	69	69	69	70	68	68	69	69	69	68	70	-	70
14	61.4	70	67	66	68	69	69	69	67	67	69	70	67	70	68	68	69	67	68	69	69	69	69	68	68	69	69	69	68	69	-	70
15	64.6	70	67	66	68	69	69	69	67	67	69	70	67	69	68	68	69	67	67	69	69	69	69	68	68	69	69	69	68	69	-	70
16	67.9	70	67	66	68	69	69	69	67	67	69	70	66	69	67	68	69	67	67	69	69	69	69	68	68	69	69	68	67	69	-	69
17	71.2	70	67	66	68	69	69	69	67	67	69	70	66	69	67	68	69	67	67	69	69	69	69	68	68	69	69	68	67	69	-	69
18	74.5	70	67	66	68	69	69	68	66	67	69	70	66	69	67	68	69	67	67	69	69	69	69	68	68	69	68	68	67	69	-	69
19	77.8	70	67	66	68	69	69	68	66	67	69	70	66	69	67	68	69	67	67	69	69	69	69	67	67	69	68	68	67	69	-	69
20	81.0	70	67	66	68	69	69	68	66	66	69	69	66	69	67	67	68	67	67	69	69	69	69	67	67	69	68	68	67	69	-	69
21	84.3	70	67	66	68	69	69	68	66	66	69	69	66	69	67	67	68	67	67	69	69	69	69	67	67	69	68	68	67	69	-	69
22	87.6	70	67	66	68	69	69	68	66	66	69	69	66	69	67	67	68	67	67	69	69	69	69	67	67	69	68	68	67	69	-	69
23	90.9	69	66	66	68	69	69	68	66	66	69	69	66	69	67	67	68	67	67	69	69	69	69	67	67	69	68	68	67	69	-	69
24	94.2	69	66	66	68	69	69	68	66	66	69	69	66	69	67	67	68	67	67	69	68	69	69	67	67	68	68	68	67	69	-	69
25	97.4	69	66	66	68	68	69	68	66	66	68	69	66	69	67	67	68	67	67	68	68	68	69	67	67	68	68	68	67	68	-	69
26	100.7	69	66	65	68	68	68	68	66	66	68	69	66	69	67	67	68	67	67	68	68	68	68	67	67	68	68	67	67	68	-	68
27	104.0	69	66	65	68	68	68	68	66	66	68	69	66	69	67	67	68	66	67	68	68	68	68	67	67	68	68	67	66	68	-	69
28	107.3	69	66	65	68	68	68	68	66	66	68	69	66	69	67	67	68	66	67	68	68	68	68	67	67	68	68	67	66	68	-	68
29	110.6	69	66	65	67	68	68	68	66	66	68	69	66	69	67	67	68	66	66	68	68	68	68	67	67	68	67	67	66	68	-	68
30	113.8	69	66	65	67	68	68	68	66	66	68	69	66	69	67	67	68	66	66	68	68	68	68	67	67	68	67	67	66	68	-	68
31	117.1	69	66	65	67	68	68	68	66	66	68	69	66	69	67	67	68	66	66	68	68	68	68	67	67	68	67	67	66	68	-	68
32	120.4	69	66	65	67	68	68	68	66	66	68	69	66	69	67	67	68	66	66	68	68	68	68	67	67	68	67	67	66	68	-	68
33	123.7	69	66	65	67	68	68	68	66	66	68	69	65	68	66	67	67	68	66	66	68	68	68	66	66	68	67	67	66	68	-	68
34	127.0	69	66	65	67	68	68	68	66	66	68	69	65	68	66	67	67	66	66	68	68	68	68	66	66	68	67	67	66	68	-	68
Max Noise Level		70	67	66	69	69	70	69	67	67	70	70	67	70	68	68	69	68	68	70	70	70	70	69	69	70	70	69	69	70	0	71
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
No. of Exceedance		0			0			0			0			0			0			0			0			0			3		

No. of Units:	928
No. of Units with Exceedance:	11
Compliance Level:	98.8%
Max. Noise Level:	71

Noted:

- Noise level exceed stardand of 70 dB(A)
- EAB (BT) (with side wall) -KSR 2
- EAW(BT)+ Fin-KSR1
- EAW(BT)+ Fin-KSR2
- EAW (BT)-KSR
- EAB (BT)-KSR 1
- AW (BT)-NPE
- AB (BT)-NPE
- \- Fixed Glazing with/ without Maintenance Window

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Mitigated Case_with Fins& Acoustic Window& Acoustic Balcony & Noise Reducer

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Floor	mPD	T2-01	T2-02	T2-03	T2-04	T2-05	T2-06	T2-07	T2-08	T2-09	T2-10	T2-11	T2-12	T2-13	T2-14	T2-15	T2-16	T2-17	T2-18	T2-19	T2-20	T2-21	T2-22	T2-23	T2-24	T2-25	T2-26	T2-27	T2-28	T2-29
3	25.3	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
4	28.6	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
5	31.8	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
6	35.1	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
7	38.4	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
8	41.7	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
9	45.0	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
10	48.2	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
11	51.5	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
12	54.8	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
13	58.1	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
14	61.4	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
15	64.6	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
16	67.9	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
17	71.2	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
18	74.5	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
19	77.8	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
20	81.0	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
21	84.3	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
22	87.6	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
23	90.9	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
24	94.2	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
25	97.4	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
26	100.7	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
27	104.0	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
28	107.3	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
29	110.6	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
30	113.8	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
31	117.1	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
32	120.4	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
33	123.7	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
34	127.0	70	-	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Exceedance		0				0		0			0			0			0			0			0			0			0	

Floor	mPD	T2-30	T2-31	T2-32	T2-33	T2-34	T2-35	T2-36	T2-37	T2-38	T2-39	T2-40	T2-41	T2-42	T2-43	T2-44	T2-45	T2-46	T2-47	T2-48	T2-49	T2-50	T2-51	T2-52	T2-53	T2-54	T2-55	T2-56	T2-57	T2-58
3	25.3	70	70	70	59	60	60	60	61	61	61	62	62	62	63	63	64	64	65	70	70	70	70	70	70	70	70	70	70	70
4	28.6	70	70	70	59	60	60	60	61	61	61	61	62	62	63	63	63	64	65	70	70	70	70	70	70	70	70	70	70	70
5	31.8	70	70	70	59	60	60	60	60	61	61	61	62	62	62	63	63	64	65	70	70	70	70	70	70	70	70	70	70	70
6	35.1	70	70	70	59	59	60	60	60	61	61	61	62	62	62	63	63	64	64	70	70	70	70	70	70	70	70	70	70	70
7	38.4	70	70	70	59	59	60	60	60	60	61	61	61	62	62	62	63	63	64	70	70	70	70	70	70	70	70	70	70	70
8	41.7	70	70	70	59	59	59	60	60	60	61	61	61	61	62	62	62	63	64	70	70	70	70	70	70	70	70	70	70	70
9	45.0	70	70	70	59	59	59	60	60	60	60	61	61	61	62	62	62	63	63	70	70	70	70	70	70	70	70	70	70	70
10	48.2	70	70	70	59	59	59	59	60	60	60	61	61	61	61	62	62	63	63	70	70	70	70	70	70	70	70	70	70	70
11	51.5	70	70	70	59	59	59	59	60	60	60	60	61	61	61	62	62	62	63	70	70	70	70	70	70	70	70	70	70	70
12	54.8	70	70	70	59	59	59	59	60	60	60	60	60	61	61	61	62	62	63	70	70	70	70	70	70	70	70	70	70	70
13	58.1	70	70	70	58	58	59	59	59	59	60	60	60	60	61	61	61	62	62	70	70	70	70	70	70	70	70	70	70	70
14	61.4	70	70	70	58	58	59	59	59	59	60	60	60	60	61	61	61	62	62	70	70	70	70	70	70	70	70	70	70	70
15	64.6	70	70	70	58	58	58	59	59	59	59	60	60	60	61	61	61	61	62	70	70	70	70	70	70	70	70	70	70	70
16	67.9	70	70	70	58	58	58	59	59	59	59	59	60	60	60	61	61	61	62	70	70	70	70	70	70	70	70	70	70	70
17	71.2	70	70	70	58	58	58	58	59	59	59	59	60	60	60	60	61	61	62	70	70	70	70	70	70	70	70	70	70	70
18	74.5	70	70	70	58	58	58	58	59	59	59	59	59	60	60	60	60	61	61	70	70	70	70	70	70	70	70	70	70	70
19	77.8	70	70	70	58	58	58	58	58	59	59	59	59	60	60	60	60	61	61	70	70	70	70	70	70	70	70	70	70	70
20	81.0	70	70	70	59	57	58	58	58	58	58	59	59	59	60	60	60	61	61	70	70	70	70	70	70	70	70	70	70	70
21	84.3	70	70	70	59	57	58	58	58	58	59	59	59	59	59	60	60	60	61	70	70	70	70	70	70	70	70	70	70	70
22	87.6	70	70	70	59	57	58	58	58	58	58	59	59	59	59	60	60	60	61	70	70	70	70	70	70	70	70	70	70	70
23	90.9	70	70	70	60	57	57	58	58	58	58	58	59	59	59	59	60	60	61	70	70	70	70	70	70	70	70	70	70	70
24	94.2	70	70	70	62	57	57	58	58	58	58	58	59	59	59	59	60	60	60	70	70	70	70	70	70	70	70	70	70	70
25	97.4	70	70	70	63	57	57	57	58	58	58	58	59	59	59	59	59	60	60	70	70	70	70	70	70	70	70	70	70	70
26	100.7	70	70	70	64	57	57	57	58	58	58	58	58	59	59	59	59	60	60	70	70	70	70	70	70	70	70	70	70	70
27	104.0	70	70	70	64	57	57	57	57	58	58	58	58	58	59	59	59	60	60	70	70	70	70	70	70	70	70	70	70	70
28	107.3	70	70	70	65	57	57	57	57	57	58	58	58	58	58	59	59	59	59	60	70	70	70	70	70	70	70	70	70	70
29	110.6	70	70	70	65	57	57	57	57	57	58	58	58	58	58	58	59	59	59	60	70	70	70	70	70	70	70	70	70	70
30	113.8	70	70	70	66	57	57	57	57	57	57	58	58	58	58	58	59	59	60	70	70	70	70	70	70	70	70	70	70	70
31	117.1	70	70	70	66	56	57	57	57	57	57	58	58	58	58	58	59	59	60	70	70	70	70	70	70	70	70	70	70	70
32	120.4	70	70	70	66	56	57	57	57	57	57	58	58	58	58	58	58	59	60	70	70	70	70	70	70	70	70	70	70	70
33	123.7	70	70	70	66	57	57	57	57	57	58	58	58	58	58	58	59	59	60	70	70	70	70	70	70	70	70	70	70	70
34	127.0	70	70	70	66	58	58	58	58	58	58	58	58	58	58	59	59	59	60	70	70	70	70	70	70	70	70	70	70	70
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Exceedance		0			0			0		0		0			0			0			0			0			0			0	

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Floor	mPD	T2-59	T2-60	T2-61	T2-62	T2-63	T2-64	T2-65	T2-66	T2-67	T2-68	T2-69	T2-70	T2-71	T2-72	T2-73	T2-74	T2-75	T2-76	T2-77	T2-78	T2-79	T2-80	T2-81	T2-82	T2-83	T2-84	T2-85	T2-86	T2-87	T2-88	T2-89
3	25.3	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
4	28.6	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
5	31.8	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
6	35.1	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
7	38.4	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
8	41.7	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
9	45.0	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
10	48.2	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
11	51.5	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
12	54.8	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
13	58.1	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
14	61.4	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
15	64.6	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
16	67.9	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
17	71.2	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
18	74.5	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
19	77.8	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
20	81.0	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
21	84.3	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
22	87.6	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
23	90.9	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
24	94.2	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
25	97.4	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
26	100.7	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
27	104.0	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
28	107.3	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
29	110.6	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
30	113.8	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
31	117.1	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
32	120.4	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
33	123.7	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
34	127.0	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	-	70
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No. of Exceedance		0			0			0			0			0			0			0			0			0			0			

No. of Units:	928
No. of Units with Exceedance:	0
Compliance Level:	100.0%
Max. Noise Level:	0

Noted:

- Noise level exceed standard of 70 dB(A)
- EAB (BT) (with side wall) -KSR 2
- EAW(BT)+ Fin-KSR1
- EAW(BT)+ Fin-KSR2
- EAW (BT)-KSR
- EAB (BT)-KSR 1
- AW (BT)-NPE
- AB (BT)-NPE

*** Noise Reducer

- Fixed Glazing with/ without Maintenance Window

Appendix 2.7 Proposed Road Traffic Noise Mitigation Measures

Legend

- Enhanced Acoustic Balcony (Baffle Type) (with Sidewall) - KSR 2
- Enhanced Acoustic Window (Baffle Type) (with Fin)- KSR 1
- Enhanced Acoustic Window (Baffle Type) (with Fin)- KSR 2
- Enhanced Acoustic Window (Baffle Type) - KSR
- Enhanced Acoustic Balcony (Baffle Type) - KSR 1
- Acoustic Balcony (Baffle Type) - NPE
- Acoustic Window (Baffle Type) - NPE
- Noise Reducer
- Fixed Glazing with/ without Maintenance Window
- Sound Absorptive Material (SAM)

Appendix: 2.7

Title: Propose Road Traffic Noise Mitigation Measures

Project: Proposed Comprehensive Development including Flat, Shop, Services and Eating Place in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

RAMBOLL

Drawn by: KK

Checked by: TC

Rev.: 1.1

Date: Jun 2024

Appendix 2.8 Proposed Overall Noise Mitigation Measures Schedule

Schedule of Noise Mitigation Measures

NSR	Room	Floor	Noise Mitigation Measures
T2-01	LIV/DIN	3/F - 34/F	EAB (BT) (with side wall) -KSR 2 + Nosie Reducer
T2-03	MBR	3/F - 34/F	EAW (BT)+ 1000mm Fin-KSR1
T2-04	BR1	3/F - 34/F	EAW (BT)+ 1800mm Fin-KSR2
T2-05	BR1	3/F - 34/F	EAW (BT)-KSR + Noise Reducer
T2-06	MBR	3/F - 34/F	EAW (BT)-KSR
T2-07	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-08	BR1	3/F - 34/F	AW (BT)-NPE
T2-09	MBR	3/F - 34/F	AW (BT)-NPE
T2-10	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-11	BR1	3/F - 34/F	AW (BT)-NPE
T2-12	BR1	3/F - 34/F	AW (BT)-NPE
T2-13	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-14	MBR	3/F - 34/F	AW (BT)-NPE
T2-15	BR1	3/F - 34/F	AW (BT)-NPE
T2-16	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-17	MBR	3/F - 34/F	AW (BT)-NPE
T2-18	MBR	3/F - 34/F	AW (BT)-NPE
T2-19	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-20	BR1	3/F - 34/F	AW (BT)-NPE
T2-21	BR1	3/F - 34/F	AW (BT)-NPE
T2-22	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-23	MBR	3/F - 34/F	AW (BT)-NPE
T2-24	MBR	3/F - 34/F	AW (BT)-NPE
T2-25	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-26	BR1	3/F - 34/F	AW (BT)-NPE
T2-27	BR1	3/F - 34/F	AW (BT)-NPE
T2-28	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-29	MBR	3/F - 34/F	AW (BT)-NPE
T2-30	MBR	3/F - 34/F	AW (BT)-NPE
T2-31	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-32	BR1	3/F - 34/F	AW (BT)-NPE
T2-48	MBR	3/F - 32/F	AW (BT)-NPE
T2-49	BR1	3/F - 31/F	AW (BT)-NPE
T2-50	LIV/DIN	3/F - 30/F	AB (BT)-NPE
T2-51	MBR	3/F - 34/F	AW (BT)-NPE
T2-52	BR1	3/F - 34/F	AW (BT)-NPE
T2-53	BR1	3/F - 34/F	AW (BT)-NPE
T2-54	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-55	MBR	3/F - 34/F	AW (BT)-NPE
T2-56	BR1	3/F - 34/F	AW (BT)-NPE
T2-57	BR1	3/F - 34/F	EAW (BT)-KSR
T2-58	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-59	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-60	MBR	3/F - 34/F	AW (BT)-NPE
T2-61	MBR	3/F - 34/F	AW (BT)-NPE
T2-62	BR1	3/F - 34/F	AW (BT)-NPE
T2-63	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-64	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-65	BR1	3/F - 34/F	AW (BT)-NPE
T2-66	MBR	3/F - 34/F	AW (BT)-NPE
T2-67	MBR	3/F - 34/F	AW (BT)-NPE
T2-68	BR1	3/F - 34/F	AW (BT)-NPE
T2-69	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-70	LIV/DIN	3/F - 34/F	AB (BT)-NPE
T2-71	BR1	3/F - 34/F	AW (BT)-NPE
T2-72	MBR	3/F - 34/F	AW (BT)-NPE
T2-73	MBR	3/F - 34/F	AW (BT)-NPE
T2-74	BR1	3/F - 34/F	AW (BT)-NPE
T2-75	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-76	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-77	BR1	3/F - 34/F	EAW (BT)-KSR
T2-78	MBR	3/F - 34/F	EAW (BT)-KSR
T2-79	MBR	3/F - 34/F	EAW (BT)-KSR
T2-80	BR1	3/F - 34/F	EAW (BT)-KSR
T2-81	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-82	LIV/DIN	3/F - 34/F	EAB (BT)-KSR 1
T2-83	BR1	3/F - 34/F	EAW (BT)-KSR
T2-84	MBR	3/F - 34/F	EAW (BT)-KSR
T2-85	BR1	3/F - 34/F	EAW (BT)-KSR
T2-86	BR1	3/F - 34/F	EAW (BT)+ 2000mm Fin-KSR2
T2-87	MBR	3/F - 34/F	EAW (BT)+ 1000mm Fin-KSR2
T2-89	LIV/DIN	3/F - 34/F	EAB (BT) (with side wall) -KSR 2 + Nosie Reducer

Appendix 4.1 Extracts from Annual Traffic Census 2022 showing the Road Type of Concerned Road Links

Appendix C - AADT of Counting Stations - ordered by Road Names

Road Name	From	To	Stn. No.	Road Type	Stn. Type	AADT 2021	AADT 2022	Change of 2022 as % of 2021
Oi Shun Rd	Aldrich Bay Rd	Tai On St	2653	LD	C	4,250	4,570	+7.5
Olympic Ave	Concorde Rd	Slip rd next to Sung Wong Toi Garden	3674	DD	C	3,030	2,890 *	-4.7
Olympic Ave	Hang Wan Rd	Sung Wong Toi Rd	3471	DD	C	8,710 *	8,300 *	-4.7
On Cheung Rd	Tai Po Tai Wo Rd	On Chee Rd	6620	LD	C	13,680	13,160	-3.8
On Chiu St	On Chun St	Sai Sha Rd	5275	DD	C	10,360 *	9,900 *	-4.4
On Chun St	On Yuen St	End	6072	LD	C	6,990 *	6,160	-11.9
On Fu Rd	Kwong Fuk Rd	End	6660	LD	C	-	6,260	-
On Kui St	Lok Yip Rd	Sha Tau Kok Rd - Lung Yuek Tau	5246	DD	C	6,900 *	6,690 *	-3.0
On Lok Mun St	Lok Yip Rd	Lok Ming St	6622	LD	C	3,320	2,740	-17.7
On Luk St	Sai Sha Rd	On Shing St	6078	DD	C	12,870 *	11,380	-11.6
On Ming St	On Muk St	Siu Lek Yuen Rd	6102	LD	C	8,180 *	9,450	+15.5
On Sau Rd	Clear Water Bay Rd	Po Lam Rd	3902	DD	C	14,840	13,460	-9.3
On Tin St	Ping Tin St	Ping Tin St	3885	LD	C	4,540	4,710	+3.8
On Tin St	Ping Tin St	Tak Tin St	3694	LD	C	3,280	3,130 *	-4.7
On Yuen St	Sai Sha Rd	On Chun St	5883	DD	C	12,520	10,570	-15.6
Ormsby St	Tung Lo Wan Rd	Sun Chun St	2630	LD	C	500	480	-5.0
Pak Kong Rd	Hiram's Highway	Pak Kong	6647	LD	C	1,690	1,830	+8.7
Pak Tai St	Ma Hang Chung Rd	Sung Wong Toi Rd	4630	LD	C	5,630	5,230	-7.0
Pak Wo Rd	Pak Wo Rd RA	Yu Tai Rd	5294	DD	C	16,390 *	15,890 *	-3.0
Pak Wo Rd	Po Kin Rd	Choi Yuen Rd RA	5897	DD	C	9,210	9,170	-0.4
Pak Wo Rd	Po Kin Rd	Slip rd to So Kwun Po INT	5697	DD	C	13,440	13,030 *	-3.0
Pak Wo Rd	Wah Ming Rd	Pak Wo Rd RA	6092	DD	C	13,820 *	14,740	+6.7
Pak Wo Rd	Wah Ming Rd	Wai Ming St	5896	DD	C	9,950	8,850	-11.0
Pak Wo Rd	Yat Ming Rd	Wai Ming St	5696	DD	C	10,080	9,780 *	-3.0
Pak Wo Rd	Yat Ming Rd	Wo Hop Shek INT	5501	DD	C	19,820 *	19,210 *	-3.0
Pak Wo Rd	Yu Tai Rd	Slip rd to So Kwun Po INT	5502	DD	C	21,270 *	20,620 *	-3.0
Pak Wo Rd W-B slip rd	Fanling Highway	Pak Wo Rd	5280	PD	C	6,120 *	5,850 *	-4.4
Park Rd & Robinson Rd	Bonham Rd	Castle Rd	1429	DD	C	11,010 *	10,370 *	-5.8
Peak Rd	Magazine Gap Rd	Wan Chai Gap Rd	1629	DD	C	9,490	8,710 *	-8.3
Peak Rd	Mt. Austin Rd	Magazine Gap Rd	1014	DD	A	11,340	10,430	-8.0
Pedder St	Connaught Rd C	Des Voeux Rd C	1842	DD	C	14,090	13,130	-6.8
Pedder St	Des Voeux Rd C	Queen's Rd C	1625	DD	C	14,340	13,590 *	-5.2
Pei Ho St	Lai Chi Kok Rd	Apliu St	4631	LD	C	2,050	2,180	+6.5

*** AADT estimated by Growth Factor**

Appendix C - AADT of Counting Stations - ordered by Road Names

Road Name	From	To	Stn. No.	Road Type	Stn. Type	AADT 2021	AADT 2022	Change of 2022 as % of 2021
Prince Edward Rd E & FO <K10A>	Kai Tak River	Prince Edward Rd W. #456	3639	PD	C	141,230	134,570 *	-4.7
Prince Edward Rd INT <K78> S-B slip rd C	Kwun Tong Bypass	Kwun Tong Rd	4089	PD	C	2,500 *	3,240	+29.7
Prince Edward Rd INT <K78> slip rd E	Kwun Tong Rd N-B	Kwun Tong Bypass	3892	PD	C	4,200	3,790	-9.9
Prince Edward Rd INT <K78> slip rd F	Choi Hung Rd	Prince Edward Rd E	3703	PD	C	5,140	5,080 *	-1.2
Prince Edward Rd INT <K78> slip rds A & B	Prince Edward Rd	Kwun Tong Bypass	3295	PD	C	18,880 *	17,880 *	-5.3
Prince Edward Rd W	Embankment Rd	Kadoorie Ave	3635	PD	C	56,570	53,590 *	-5.3
Prince Edward Rd W	Embankment Rd	Yuen Ngai St	4203	PD	B	45,760	42,480	-7.2
Prince Edward Rd W	Knight St	Kadoorie Ave	3828	PD	C	53,820	45,670	-15.1
Prince Edward Rd W	La Salle Rd	Waterloo Rd	3010	PD	A	38,720	36,350	-6.1
Prince Edward Rd W	Lai Chi Kok Rd	Tong Mi Rd	3827	PD	C	29,300	27,830	-5.0
Prince Edward Rd W	Waterloo Rd	Knight St	4024	PD	C	44,670 *	41,090	-8.0
Prince Edward Rd W & FO <K11A>	Junction Rd	Lomond Rd	3434	PD	C	43,840 *	41,770 *	-4.7
Prince Edward Rd W & FO <K11A>	Lomond Rd	La Salle Rd	3231	PD	C	34,960 *	33,310 *	-4.7
Prince Edward Rd W & FO <K11A>	Nga Tsin Long Rd	Junction Rd	3636	PD	C	63,240	60,260 *	-4.7
Prince Edward Rd W & FO <K11A>	Prince Edward Rd W FO <K11A> eastern tip	Nga Tsin Long Rd	3829	PD	C	83,320	75,110	-9.9
Prince Edward Rd W (GL)	Lai Chi Kok Rd	Nathan Rd	4023	PD	C	19,000 *	20,550	+8.1
Prince Edward Rd W (GL)	Nathan Rd	Fa Yuen St	3230	PD	C	25,680 *	24,320 *	-5.3
Prince Edward Rd W (GL)	Sai Yee St	Fa Yuen St	3433	PD	C	25,250 *	23,910 *	-5.3
Prince Edward Rd W (GL)	Sai Yee St	Yuen Ngai St	3634	PD	C	24,420	23,130 *	-5.3
Princess Margaret Rd	Chatham Rd FO <K20>	Chatham Rd N	3601	UT	C	45,900	42,780 *	-6.8
Princess Margaret Rd	Chatham Rd FO <K20>	Wylie Rd	3801	UT	C	71,820	66,310	-7.7
Princess Margaret Rd	Wylie Rd	Pui Ching Rd	3001	UT	A	72,600	69,130	-4.8
Princess Margaret Rd & FO <K12>	Pui Ching Rd FO <K14>	Argyle St	4001	UT	C	88,750 *	88,710	0.0
Princess Margaret Rd Link	Hung Luen Rd	Chatham Rd S	4097	UT	C	29,420 *	29,220	-0.7
Public Square St	Ferry St	Canton Rd	3447	DD	C	3,760 *	3,580 *	-4.7

*** AADT estimated by Growth Factor**

Appendix 6: Drainage Impact Assessment

DRAINAGE IMPACT ASSESSMENT (DIA)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Subject: Drainage Impact Assessment (DIA) Report

Report Date: 7 June 2024

Issue/Revision: REVISION 2

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LIST OF FIGURES

1 INTRODUCTION

1.1 BACKGROUND

The Application Site is located on Muk Lai Street and adjacent to Olympic Avenue, at Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon. The Site is zoned "Comprehensive Development Area (4)" on the Approved Kai Tak Outline Zoning Plan No. S/K22/8. Under the Town Planning Ordinance, a section 16 planning application is required to be submitted by the Applicant to obtain permission from the Town Planning Board, for a comprehensive development, including flat, shop & services and eating place. A Master Layout Plan is included in the application submission to demonstrate the comprehensiveness of the development proposal and its integration with the adjacent Lung Tsun Stone Bridge Preservation Corridor.

A Drainage Impact Assessment is provided in this report in support of the s16 planning application.

1.2 OUTLINE DESCRIPTION OF THE PROJECT

Project Title	:	Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)
Location	:	Located on Muk Lai Street, adjacent to Olympic Avenue and Muk Wo Street (Refer to Figure 1)
Area	:	About 6300 m^2

1.3 SCOPE OF REPORT

The drainage impact assessment includes a catchment study of the application site; capacity checking of existing stormwater pipes; estimation of surface runoff induced by the new development; proposing discharge points connecting to the existing channels and pipes in compliance with DSD's design requirements; discussing potential drainage impacts on the existing drainage system; and recommending feasible mitigation measures.

1.4 STRUCTURE OF THE REPORT

This DIA report consists of the following Sections:

Section 1	-	Outlines the project background and the scope of work.
Section 2	-	Presents the site conditions and existing drainage conditions.
Section 3	-	Describes the methodology and design criteria of surface runoff calculation and drainage impact assessment.
Section 4	-	Conclusions

2 OUTLINE OF EXISTING SITE CONDITIONS AND DRAINAGE CHARACTERISTICS

2.1 EXISTING SITE CONDITIONS

Application site will be built in undeveloped areas, which consists entirely of paved area.

2.2 EXISTING DRAINAGE CONDITIONS

Based on the DSD drainage record drawings provided in Figure 1, there are some existing public drainage systems surrounding the NKIL 6950 Kai Tak. Along the Olympic Avenue in the northeast of the application site, there are several manholes connected with pipes' diameters ranging from 225 to 600 mm. On the west side of the application site, there is a manhole with a 600mm diameter pipe. And on the east side of the application site, there are some manholes with 1050mm diameter pipe. Additionally, at the southern end of the application site, precisely close to the Muk Lai Street roundabout, there are some manholes, connecting to the existing drainage system with pipe diameters of 1200mm.

2.3 PROPOSED CONDITIONS

It is proposed to construct one terminal manhole to collect the rainwater from Area 2A Site 2. The terminal manhole named SLMH-2A2, is proposed to be installed at the southeast corner of Area 2A Site 2. And it will be connected to the existing manhole SMH4112584 by a newly constructed 600mm diameter pipe. The proposed layout is shown in Figure 3.

3 PROPOSED SURFACE RUNOFF AND DRAINAGE IMPACT ASSESSMENT

3.1 ASSESSMENT METHODOLOGY

3.1.1 Catchment Area

The catchment areas before and after the proposed development are identified based on the geographical characteristics of the site and DSD's record drawings, which are shown in Figure 2 and 3, respectively.

3.1.2 Storm Return Period

According to the *Stormwater Drainage Manual (SDM) – Fifth Edition January 2018*, the category of stormwater drainage system of the site is classified as "Urban Drainage Branch Systems", so 1 in 50-year storm return period was adopted in this assessment.

3.1.3 Sea Tidal Effect

The proposed project site is not close to sea and therefore sea level and sea tidal effect are not considered in the DIA.

3.1.4 Basic Formulation of Rational Method

Rational method is used for calculation of the peak runoff. The formula is extracted from Section 7.5.2(a) of SDM which is to estimate the stormwater runoff as shown below:

$$Q_p = 0.278CiA$$

where Q_p = Peak runoff in m^3/s
C = Runoff coefficient (dimensionless)
i = Rainfall intensity in mm/hr
A = Catchment area in km^2

3.1.5 Time of Concentration

The time of concentration used for determining the duration of the design storm is considered by the time of entry and the time of flow.

$$t_c = t_0 + t_f$$

where t_0 = inlet time (time taken for flow the remotest point to reach the most upstream point of the urban drainage system)
t_f = flow time

For Kai Tak Development is urban area, the inlet time of 5 minutes is adopted. As such, the time of concentration is assumed to be 5 minutes for this assessment.

3.1.6 **Runoff Intensity**

The rainfall intensity is extracted from the Section 4.3.2 of SDM which is to estimate the Intensity-Duration-Frequency (IDF) Relationship. According to the Stormwater Drainage Corrigendum No.1/2024, when design storm return period is 50 years, the values of a, b and c are 505.5, 3.29 and 0.355, respectively.

$$i = \frac{a}{(t_d + b)^c}$$

where i = Extreme mean intensity in mm/hr
t_d = Duration in minutes ($t_d < 240$)
a, b, c = Storm constants given in SDM Table 3a.

3.1.7 **Runoff Coefficient**

According to the Section 7.5.2(b) of SDM and surface characteristics of the four catchments, the runoff coefficient for paved area is 0.9, and the runoff coefficient for unpaved area is 0.4.

3.1.8 **Hydraulic Equation**

Colebrook-White Equation is used in hydraulic design for pipe flow.

$$V = -\sqrt{32gRs}\, log\left(\frac{k_s}{14.8R} + \frac{1.255v}{R\sqrt{32gRs}}\right)$$

where V = Mean velocity (m/s)
g = Gravitational acceleration (m/s^2)
R = Hydraulic radius (m)
D = Pipe diameter (m)
k_s = Equivalent sand roughness (m)
v = Kinematic viscosity of fluid (m^2/s)
s = Frictional slope (energy gradient due to frictional loss)

Manning's Equation is used in hydraulic design for open channel flow.

$$V = \frac{Ar^{1/6}(rs)^{1/2}}{n}$$

where V = Mean velocity (m/s)
A = Cross sectional area of flow (m^2)
s = Frictional slope (Energy gradient due to frictional loss)
r = Hydraulic radius (m)
n = Manning coefficient of roughness

3.1.9 **Materials and Roughness**

The following roughness coefficients shall be adopted:

- Ks value of 0.6mm for proposed precast concrete pipes in accordance with Table 14 of DSD's SDM.

3.1.10 **Siltation**

In accordance with DSD's SDM Section 9.3, 10% reduction in flow area due to siltation is adopted. The calculation is shown in Section 3.2.4.

3.1.11 **Backwater Effect**

In accordance with DSD's SDM Corrigendum No, 1/2022 Table 8 – Design Extreme Sea Levels, +3.66mPD at North Point / Quarry Bay for 50 return period is adopted. Based on the design proposal, the ground level is approximately +6.0mPD, so there is a freeboard of 2.34m at least which is adequate to prevent backwater.

3.2 DRAINAGE IMPACT ASSESSMENT

3.2.1 According to the application site situation and DSD's record drawings, a manhole is proposed for delivering the surface runoff as shown in Figure 3. The assessment of the existing storm pipe in this report covers the extent from the existing tapping point STH4004758 to the existing manhole SMH4114194.

3.2.2 The existing DN600 storm pipe (from the existing tapping point STH4004758) to be connected by the proposed development is considered in this assessment. Before development, three catchments are identified in this project which are shown in Figure 2. After development, also three catchments are identified. The catchment characteristic to be collected before and after development is unchanged, thus the runoff arising from the development will remain the same as that of the existing condition. Detailed information of the catchments before and after development is summarized in Table 3-1 and Table 3-2.

Table 3-1 Catchment Areas and Discharge Points – Before Development

Catchment	Paved Area (m^2)	Unpaved Area (m^2)	Discharge Points
i	5968	-	Existing Tapping Point STH4004757
ii	3167	1440	Existing Manhole SMH4114191
iii (Site)	6270	-	Existing Tapping Point STH4004758
Total	38244		Existing Manhole SMH4114191

Table 3-2 Catchment Areas and Discharge Points – After Development

Catchment	Paved Area (m^2)	Unpaved Area (m^2)	Discharge Points
i	5968	-	Existing Tapping Point STH4004757

Catchment	Paved Area (m^2)	Unpaved Area (m^2)	Discharge Points
ii	3167	1440	Existing Manhole SMH4114191
iii (Site)	6270	-	Existing Tapping Point STH4004758
Total	38244		Existing Manhole SMH4114191

3.2.3 It is conservatively assumed that the proposed development of the application Site (Catchment iii) will be paved consistently, while the paved and unpaved area of the remaining Catchment ii is unchanged. As for the Catchment i, it is also an under-development area, and its paved and unpaved area will not change.

3.2.4 The drainage system capacity before and after development are shown in Table 3-3 and Table 3-4 respectively which show that the proposed 600 mm diameter pipe and existing 1200 mm diameter pipe are within capacity.

Table 3-3 Surface Runoff of Identified Catchment Areas and Capacity of Existing Public Drainage System – Before Development

Catchment	Manhole		Paved Catchment Area (0.90)		Unpaved Catchment Area (0.40)		50 years Runoff (m^3/s)	Capacity (%)	Check
	From	To	Increment (m^2)	Accu. (m^2)	Increment (m^2)	Accu. (m^2)			
iii (Site)	STH4004758	SMH4114191	6270	5643	-	-	0.4342	85.9	<90%, OK
i + ii + iii	SMH4114191	SMH4114192	24159	21743.1	1847	738.8	1.1098	35.7	<90%, OK
i + ii + iii	SMH4114192	SMH4114193	-	-	-	-	1.1098	35.7	<90%, OK
i + ii + iii	SMH4114193	SMH4114194	-	-	-	-	1.1098	35.7	<90%, OK

- 10% of capacity is reserved for potential siltation issues. Thus, the maximum capacity allowed for checking is 90%.

Table 3-4 Proposed Surface Runoff of Identified Catchment Areas and Capacity of Existing Public Drainage System – After Development

Catchment	Manhole		Paved Catchment Area (0.90)		Unpaved Catchment Area (0.40)		50 years Runoff (m^3/s)	Capacity (%)	Check
	From	To	Increment (m^2)	Accu. (m^2)	Increment (m^2)	Accu. (m^2)			
iii (Site)	Proposed SLMH-2A3	STH4004758	6270	5643	-	-	0.4342	85.9	<90%, OK
iii (Site)	STH4004758	SMH4114191	-	-	-	-	0.4342	85.9	<90%, OK
i + ii + iii	SMH4114191	SMH4114192	24159	21743.1	1847	738.8	1.1098	35.7	<90%, OK
i + ii + iii	SMH4114192	SMH4114193	-	-	-	-	1.1098	35.7	<90%, OK
i + ii + iii	SMH4114193	SMH4114194	-	-	-	-	1.1098	35.7	<90%, OK

- 10% of capacity is reserved for potential siltation issues. Thus, the maximum capacity allowed for checking is 90%.

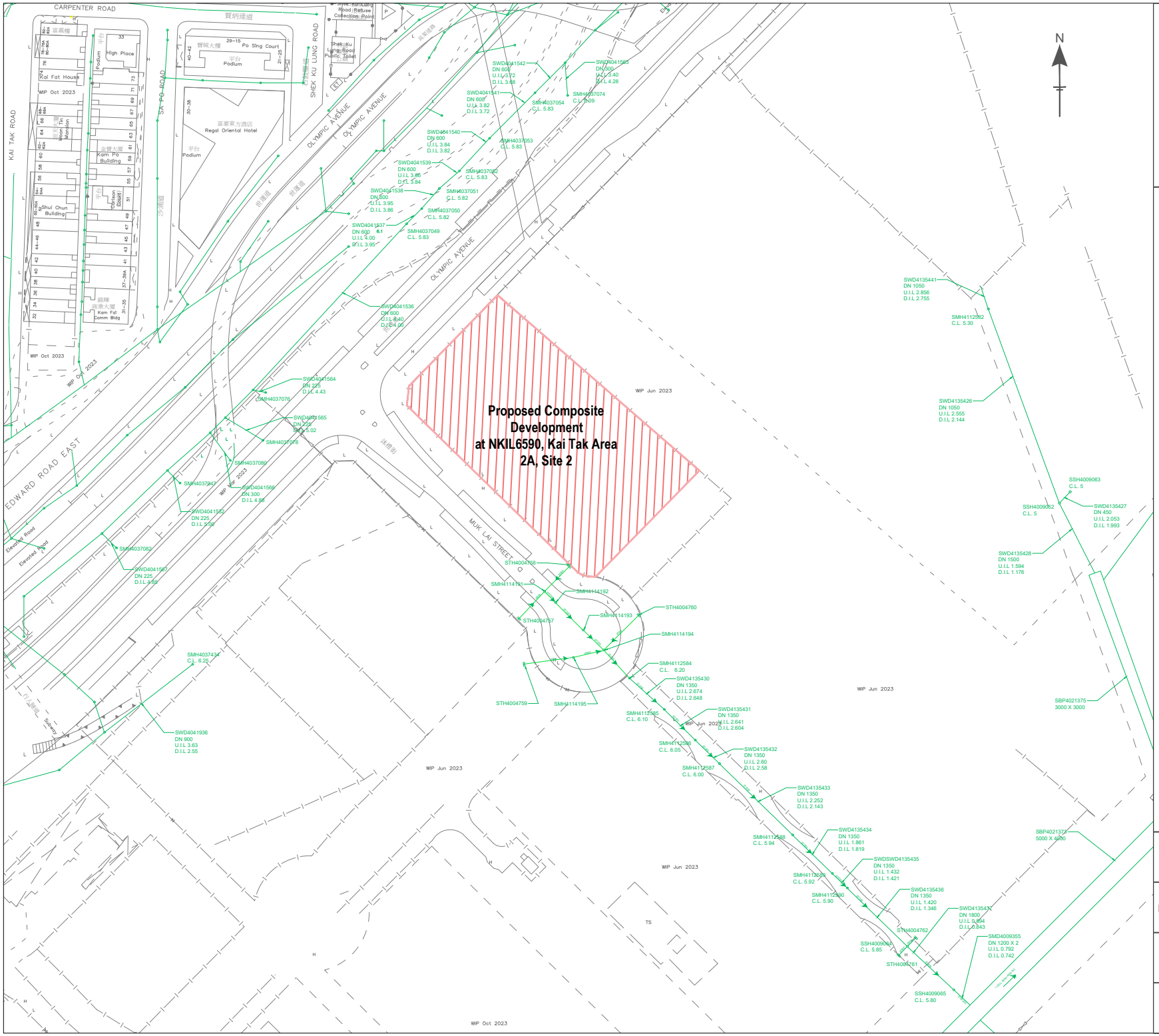
4 CONCLUSION

4.1 The surface runoff from the application site will be discharged to the existing public drainage system via the proposed terminal manhole which is SLMH-2A2. The proposed pipe's (connecting the terminal manhole SLMH-2A2 and the public taping point STH4004758) diameter is 600mm. As shown in **Table 3-4** in this report, the proposed pipe has sufficient capacity to cater to the site stormwater runoff.

4.2 As the development sites will not change the catchment characteristic, thus the runoff arising from the development will remain the same as that of the existing condition. The hydraulic loading to the drainage system will not be increased. Therefore, no adverse drainage impact is anticipated due to the proposed development.

4.3 Based on the results of the hydraulic analysis, it is concluded that the proposed development will have no adverse impact on the existing public drainage system.

Figure



PROJECT TITLE:

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Drainage Impact Assessment

LEGENDS:

Proposed Development

Existing Drainage Pipe

Exiting Public Drainage Manhole

SWD4019796 — Drainage Pipe Number
DN 900 — Pipe diameter
U.I.L 2.72 — Upstream insert level (mPD)
D.I.L 2.51 — Downstream insert level (mPD)

SMH4095864 — Drainage Manhole Number
C.L. 6.30 — Cover level (mPD)

SBP4021373 — Box Culvert Number
5000 X 4000 — Width (mm) X Height (mm)

FIGURE NO.	Figure 1		
FIGURE TITLE	Site Layout Plan and Existing Public Drainage System		
SCALE	A4 1:2000	DATE	Jan.2024

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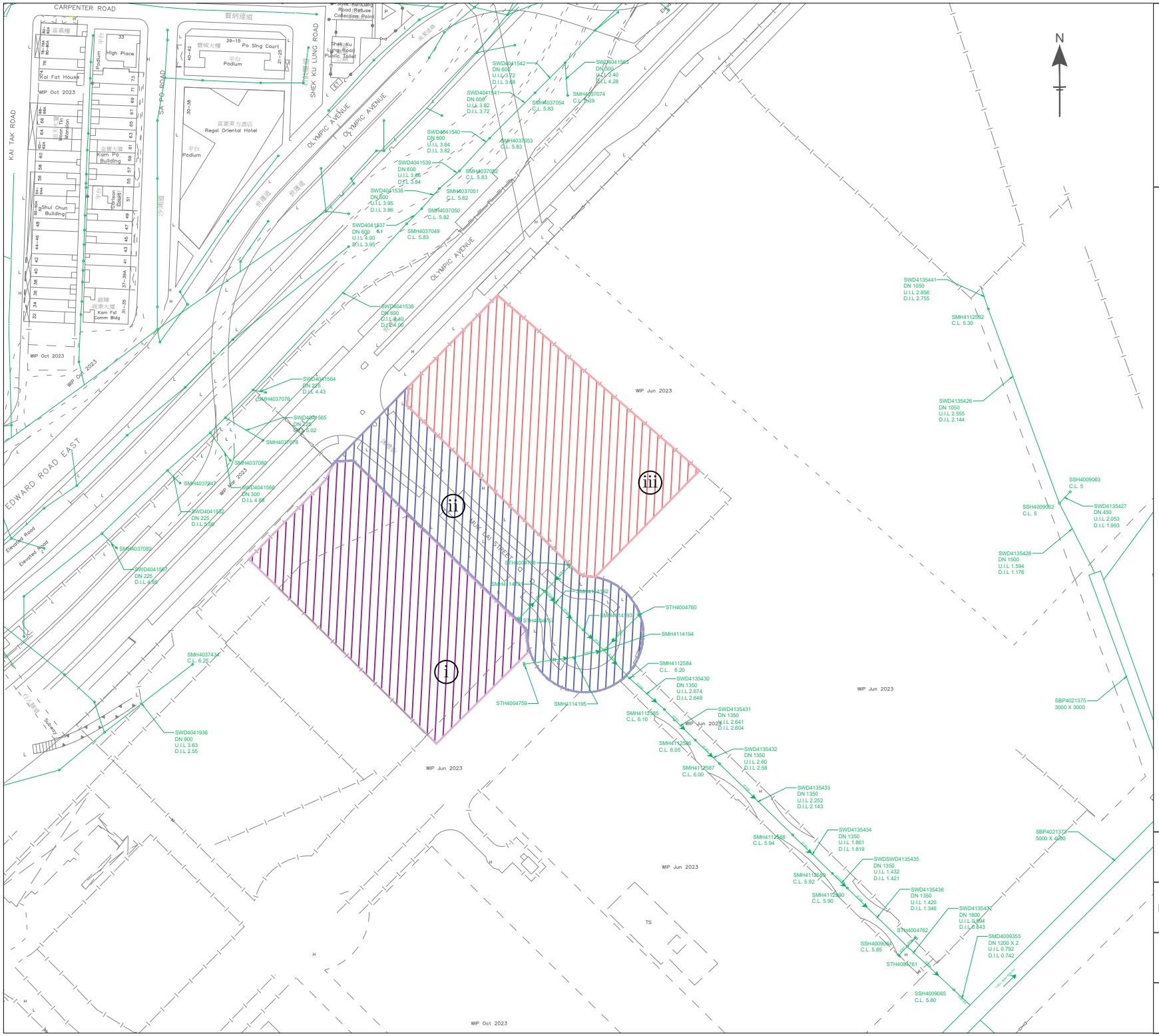

PROJECT TITLE:

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Drainage Impact Assessment

LEGENDS:

- Catchment Area i
- Catchment Area ii
- Catchment Area iii
- Existing Public Drainage Manhole
- Existing Drainage Pipe

SWD4019796 — Drainage Pipe Number
DN 900 — Pipe diameter
U.I.L 2.72 — Upstream insert level (mPD)
D.I.L 2.51 — Downstream insert level (mPD)

SMH4095864 — Drainage Manhole Number
C.L. 6.30 — Cover level (mPD)

SBP4021373 — Box Culvert Number
5000 X 4000 — Width (mm) X Height (mm)

FIGURE NO.	Figure 2		
FIGURE TITLE	Catchment Area Before Development		
SCALE	A4 1:2000	DATE	Jan.2024

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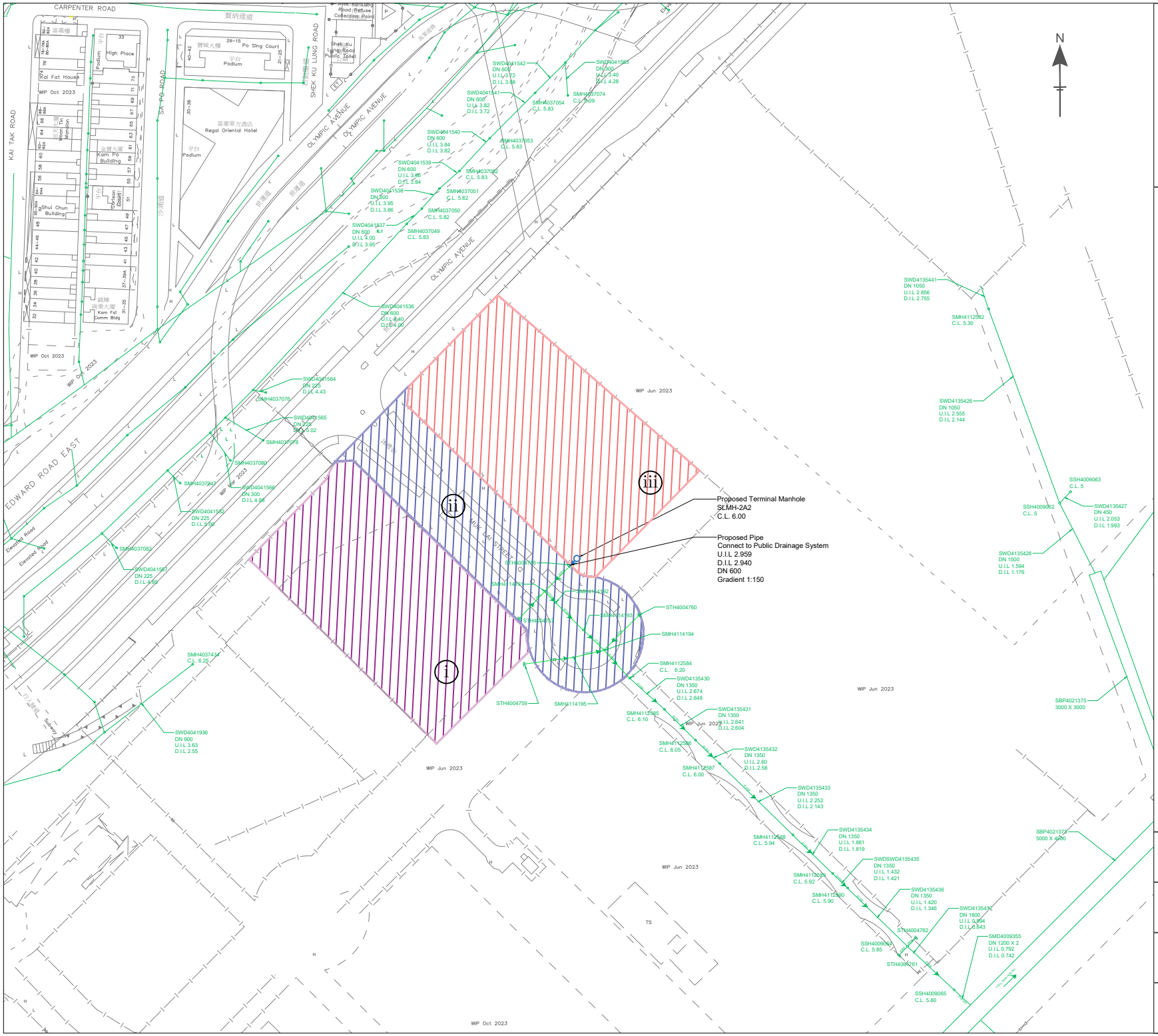

PROJECT TITLE:

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site2, Kai Tak Development Area, Kowloon (Master Lay-out Plan Submission)

Drainage Impact Assessment

LEGENDS:

- Catchment Area i
- Catchment Area ii
- Catchment Area iii
- Proposed Drainage Manhole
- Proposed Drainage Pipe
- Existing Public Drainage Manhole
- Existing Drainage Pipe

SWD4019796 — Drainage Pipe Number
DN 900 — Pipe diameter
U.I.L 2.72 — Upstream insert level (mPD)
D.I.L 2.51 — Downstream insert level (mPD)

SMH4095864 — Drainage Manhole Number
C.L. 6.30 — Cover level (mPD)

SBP4021373 — Box Culvert Number
5000 X 4000 — Width (mm) X Height (mm)

FIGURE NO.	Figure 3		
FIGURE TITLE	Catchment Area After Development		
SCALE	A4 1:2000	DATE	Jan.2024

wsp

Appendix - Calculation

Capacity Checking

$i=a/(t_d+b)^c$					
Return period	T =	50	years	a=	505.5
Time of entry	t_o =	5	min	b=	3.29
Runoff coefficient (Paved Area)	C =	0.9		c=	0.355
Runoff coefficient (UnPaved Area)	C =	0.35	Rainfall Increase=		16.0%

Colebrook-White Equation:

$$V = -2\left(2gDS\right)^{0.5}\log\left(\frac{k}{3.7D}+\frac{2.5\nu}{D\left(2gDS\right)^{0.5}}\right)$$

k = Colebrook-White roughness coefficient, in metres
V = velocity, in metres per second
D = circular cross-section pipe, inside diameter, in metres
S = slope, in metres per metre
ν = kinematic viscosity of water, in square metres per second.

Gravity	g =	9.80665	m^2/s	
kinematic viscosity of water	n =	1.01E-06	m^2/s	
Colebrook-White roughness coefficient	k =	0.6	mm	= 0.0006 m

Table 1 - Before Development

		Catchment area A(m^2) with corresponding runoff coefficient C																									
Catchment Area	Channel/ Pipe	A_u	C_u	A_p	C_p	A_0	C_0	∑(C*A)	from banch	cum. ∑(C*A)	L (m)	t_f (min)	t_c (min)	i (mm/hr)	i*1.16 (mm/hr)	**Q_{peak} (m^3/s)**	Size/Dia. (mm)	Size/Dia. (m)	Slope (1 in)	Slope (%)	Water Depth y	Area (m^2)	P (m)	R = A/P (m)	Velocity (m^2/s)	Reducted Area (m^2)	**Q_{cap} (m^3/s)**	cap. %	check
i	Pipe	-	0.40	5968	0.90	-	0.90	5371	-	5,371	2.8	0.02	5.02	239	277	**0.4132**	600	0.6	150	0.67%	N/A	0.2827	N/A	N/A	1.9857	0.2545	**0.5053**	81.8%	OK
ii	Pipe	1400	0.40	3167	0.90	-	0.90	3410	-	3,410	16.67	0.14	5.14	239	277	**0.2624**	600	0.6	150	0.67%	N/A	0.2827	N/A	N/A	1.9857	0.2545	**0.5053**	51.9%	OK
iii	Pipe	-	0.40	6270	0.90	-	0.90	5643	-	5,643	13.32	0.11	5.11	239	277	**0.4342**	600	0.6	150	0.67%	N/A	0.2827	N/A	N/A	1.9857	0.2545	**0.5053**	85.9%	OK
i+ii+iii	Pipe	1400	0.40	3167	0.90	-	0.90	3410	**11014**	14,425	5.4857	0.03	5.03	239	277	**1.1098**	1200	1.2	150	0.67%	N/A	1.1310	N/A	N/A	3.0520	1.0179	**3.1066**	35.7%	OK
i+ii+iii	Pipe	-	0.40	-	0.90	-	0.90	0	-	14,425	14.72	0.08	5.11	239	277	**1.1098**	1200	1.2	150	0.67%	N/A	1.1310	N/A	N/A	3.0520	1.0179	**3.1066**	35.7%	OK
i+ii+iii	Pipe	-	0.40	-	0.90	-	0.90	0	-	14,425	10.67	0.06	5.17	239	277	**1.1098**	1200	1.2	150	0.67%	N/A	1.1310	N/A	N/A	3.0520	1.0179	**3.1066**	35.7%	OK

Table 2 - After Development

		Catchment area A(m^2) with corresponding runoff coefficient C																									
Catchment Area	Channel/ Pipe	A_u	C_u	A_p	C_p	A_0	C_0	∑(C*A)	from banch	cum. ∑(C*A)	L (m)	t_f (min)	t_c (min)	i (mm/hr)	i*1.16 (mm/hr)	**Q_{peak} (m^3/s)**	Size/Dia. (mm)	Size/Dia. (m)	Slope (1 in)	Slope (%)	Water Depth y	Area (m^2)	P (m)	R = A/P (m)	Velocity (m^2/s)	Reducted Area (m^2)	**Q_{cap} (m^3/s)**	cap. %	check
i	Pipe	-	0.40	5968	0.90	-	0.90	5371	-	5,371	14.22	0.12	5.12	239	277	**0.4132**	600	0.6	150	0.67%	N/A	0.2827	N/A	N/A	1.9857	0.2545	**0.5053**	81.8%	OK
i	Pipe	-	0.40	-	0.90	-	0.90	0	-	5,371	3.25	0.03	5.15	239	277	**0.4132**	600	0.6	150	0.67%	N/A	0.2827	N/A	N/A	1.9857	0.2545	**0.5053**	81.8%	OK
ii	Pipe	1400	0.40	3167	0.90	-	0.90	3410	-	3,410	16.67	0.14	5.14	239	277	**0.2624**	600	0.6	150	0.67%	N/A	0.2827	N/A	N/A	1.9857	0.2545	**0.5053**	51.9%	OK
iii	Pipe	-	0.40	6270	0.90	-	0.90	5643	-	5,643	13.32	0.11	5.11	239	277	**0.4342**	600	0.6	150	0.67%	N/A	0.2827	N/A	N/A	1.9857	0.2545	**0.5053**	85.9%	OK
iii	Pipe	-	0.40	-	0.90	-	0.90	0	-	5,643	2.8	0.02	5.14	239	277	**0.4342**	600	0.6	150	0.67%	N/A	0.2827	N/A	N/A	1.9857	0.2545	**0.5053**	85.9%	OK
i+ii+iii	Pipe	1400	0.40	3167	0.90	-	0.90	3410	**11014**	14,425	5.4857	0.03	5.03	239	277	**1.1098**	1200	1.2	150	0.67%	N/A	1.1310	N/A	N/A	3.0520	1.0179	**3.1066**	35.7%	OK
i+ii+iii	Pipe	-	0.40	-	0.90	-	0.90	0	-	14,425	14.72	0.08	5.11	239	277	**1.1098**	1200	1.2	150	0.67%	N/A	1.1310	N/A	N/A	3.0520	1.0179	**3.1066**	35.7%	OK
i+ii+iii	Pipe	-	0.40	-	0.90	-	0.90	0	-	14,425	10.67	0.06	5.17	239	277	**1.1098**	1200	1.2	150	0.67%	N/A	1.1310	N/A	N/A	3.0520	1.0179	**3.1066**	35.7%	OK

Appendix 7: Sewerage Impact Assessment

SEWERAGE IMPACT ASSESSMENT (SIA)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Subject: Revised Sewerage Impact Assessment (SIA) Report

Report Date: 07 Jun.2024

Issue/Revision: REVISION 2

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List of Appendixes

1. INTRODUCTION

1.1 Background and Objectives

1.1.1 The Application Site is located on Muk Lai Street and adjacent to Olympic Avenue, at Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon. The Site is zoned "Comprehensive Development Area (4)" on the Approved Kai Tak Outline Zoning Plan No. S/K22/8. Under the Town Planning Ordinance, a section 16 planning application is required to be submitted by the Applicant to obtain permission from the Town Planning Board, for a comprehensive development, including flat, shop & services and eating place. A Master Layout Plan is included in the application submission to demonstrate the comprehensiveness of the development proposal and its integration with the adjacent Lung Tsun Stone Bridge Preservation Corridor.

1.1.2 This Sewerage Impact Assessment is provided in this report in support of the s16 planning application.

1.2 Site Location and Surroundings

1.2.1 The location and the environ of the Site is shown in **Figure 1-1**.

1.3 Proposed Development

1.3.1 The Site area is approximately 6270 m^2. The proposed development is proposed to construct a complex building with flat, shop & services and eating place , providing 930 residential units. Other facilities to be constructed include carpark and clubhouse with swimming pool. The population intake year of the proposed development is 2029.

1.4 Existing and Proposed Sewerage System

Existing Sewerage System

1.4.1 The As-built Drainage Record (DRG.No: 60102100/5A/1341Z, 60102100/5A/1344-1Z and 60102100/5A/1348Z) obtained from the Civil Engineering and Development Department (CEDD) and Drainage Record Plan (DRG.No:11-NE-11A-4A and 11-NE-11C-2) obtained from Drainage Services Department (DSD) have clearly provided the background information on sewerage infrastructure in the vicinity of the Site.

1.4.2 The relevant drainage data are extracted from these records for the purpose of this SIA and the existing public sewerage system around the Site is presented in **Figure 1-2**. Relevant record drawings are attached in **Appendix C** for easy reference.

1.4.3 According to DSD's Drainage Record Plan and the As-built Drainage Record from CEDD, an existing sewer tapping point FTH4011138 (2A2_1) with 300 mm diameter located at the Muk Lai Street, connected to the existing public sewer manhole FMH4099003 (FMH50_10), which could be used to serve the development of the Site.

Proposed Sewerage System

1.4.4 The Proposed Sewerage System for the Site is shown in **Figure 1-3.**

1.4.5 One terminal manhole (TFMH-1) is proposed to receive all sewage flow generated from the Site, which will be connected to the existing sewer tapping point FTH4011138 by the proposed sewerage pipe with 250 mm diameter.

1.4.6 The collected sewage flow would then be conveyed through the existing sewerage pipe with 300 mm diameter (FTH4011138 to FMH4099003) and finally be discharged to the public sewerage system located at Muk Lai Street by the existing sewerage pipe with 375 mm diameter(FMH4099003 to FMH4099004).

2. SEWAGE FLOWS AND LOADS GENERATED BY THE PROPOSED DEVELOPMENT

2.1 Population

2.1.1 Referring to EPD's Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning, different unit flow factors have been stipulated for the following 2 different types of the Proposed Development:

- Domestic Flows (EPD's Guidelines Section 7, Table T-1)
- Commercial and Institutional Flows (EPD's Guidelines Section 8, Table T-2)

2.1.2 The estimated population of the Proposed Development is summarized and presented in the following Table 2-1. The detailed calculations are shown in **Appendix A**.

Table 2-1 Estimated Population Summary of the Proposed Development

Development	Name	Type	Population
Proposed Development	Resident	Domestic Private R2	2232[1]
	Employee for the clubhouse	Commercial Employee and Community, Social and Personal Services (J11)	48[2]
	Swimming pool[3]	-	-
	Employee for the F&B	Commercial Employee and Restaurants & Hotels (J10)	124[4]
	Employee for the Retail	Commercial Employe and Wholesale & Retail (J4)	46[5]
		Total	**2450**

Notes:

1. *Data from project proponent, there are about 930 residential units of the Site. An average domestic household size of 2.4 according to the Household Characteristics of Population in Kai Tak Central & South District Council Constituency Area, 2021 is adopted to estimate the residential population . The resident is 2.4x930=2232ppl.*
2. *Data from project proponent, the Clubhouse area be 1450m^2. Worker density is refer to Table 8 of "Commercial and Industrial Floor Space Utilization Survey (CIFSUS)" conducted by the Planning Department during November 2004 to March 2005. Worker density for Community, Social and Personal Services is 3.3 persons per 100 m^2. Employee for the clubhouse is 1450/100x3.3=48ppl.*
3. *The estimated sewage flow from swimming pool is considered as instant peak flow. The calculation is shown in Table 2-2.*
4. *Data from project proponent, the total F&B Area be 2428.4m^2. Worker density is refer to Table 8 of CIFSUS. Worker density for Restaurants is 5.1 persons per 100 m^2. Employee for the F&B is 2428.4/100 x5.1=124ppl.*
5. *Data from project proponent, the total Retail Area be 1307.6m^2. Worker density is refer to Table 8 of CIFSUS. Worker density for Retail Trade is 3.5 persons per 100 m^2. Employee for the Retail is 1307.6/100 x3.5=46ppl.*

Table 2-2 Estimated Sewage Flow from Swimming Pool (With Swimming Pool Backwash) of the Proposed Development

***Swimming Pool (Indoor)**			**Unit**
Pool area [1]	=	350	m^2
Pool depth[1]	=	1.5	m
Pool volume [2]	=	525	m^3
Turnover rate [3]	=	4	hours
Circulation rate	=	525m^3/4hours=36.5	L/s
Pump filtration flowrate [4]	=	37	L/s
Filtration rate [4]	=	48	$m^3/m^2/hr$
Filter areas required	=	525m^3/48 m^3/m^2/hr /4hours=2.73	m^2
No. of Sand Filter Assume using 900mm dia. sand filter	=	5	nos.
Backwashing water flowrate	=	37/5=7.4	L/s
Required min. retention water tank volume [5]	=	7.4×5×60=2220=2.22	m^3
Provided retention water tank volume	=	2.5	m^3
The reduced instant discharge flowrate from swimming pool backwashing	=	**2.0**	L/s

Notes:

1. *Data from project proponent. There is an indoor swimming pool area with 350m^2 and depth 1.5m.*
2. *Pool volume= Total Pool area x* Pool depth
3. *According to General Specification for Swimming Pool Water Treatment Installation in Government Buildings of the Hong Kong Special Administrative Region (HKSAR)issued by ArchSD (2017 edition), the pool water turnover rate shall be not less than once in every 4 hours in the case of an indoor swimming pool. Assume the turnover rate of the indoor pool in the Site is once in every 4 hours.*
4. *The values of "Filtration rate of filter" and "Backwash flow rate" are from project proponent.*
5. *Data from project proponent, the duration of backwash is around 5 minutes for one sand filter. The calculation is considering the 5 minutes backwash which is the most conservative scenario. There will be only one filter in operation for each time of backwash. The frequency of backwash is 4 - 7 days per one time. A retention water tank is provided to hold the backwashing water for the purpose of not to overload the drainage system during backwashing. The capacity of the tank shall be not less than the volume of the backwashing water of one backwashing cycle of one sand filter. The reduced instant discharge flowrate will be 2 L/s control by independent pump set.*
6. *The estimated sewage flow from swimming pool backwash retention water tank is considered as instant peak flow instead of ADWF. The retention water tank discharge water flow (2 L/s) will be directly added to the total peak flow from residential unit and employee.*

2.2 Average Dry Weather Flow (ADWF)

2.2.1 The unit flow factors are extracted from Table T-1 "Unit Flow Factors for Domestic Flows" and Table T-2 "Unit Flow Factors – Commercial and Institutional Flows" of the Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning. For domestic flows, the relevant private R2 unit flow factor is adopted. In accordance with the EPD Guideline, for the commercial flows, the total unit flow generated from an "employee" in a particular trade is the sum of the unit flow factor of the employee and the unit flow factor of commercial activities of a particular trade. The parameters adopted are:

- Domestic Private R2 = 0.27 m^3/d/person
- Commercial: Wholesale and Retail (J4) = 0.28 m^3/d/person
- Commercial: Restaurants and Hotels (J10) = 1.58 m^3/d/person
- Commercial: Community, Social and Personal Services (J11) = 0.28 m^3/d/person

2.2.2 Table 2-3 below presents the estimated average dry weather flow generated from the Proposed Development. The detailed calculations are shown in **Appendix A .**

Table 2-3 Estimated ADWF Summary of the Proposed Development

Development	Name	Estimated Population	Unit Flow Factor (m^3/d/person)	ADWF (m^3/day)
Proposed Development	Resident	2232	0.27	602.64
	Employee for the clubhouse	48	0.28	13.44
	Swimming pool	-	-	-
	Employee for the F&B	124	1.58	195.92
	Employee for the Retail	46	0.28	12.88
	Total	**2450**		**824.88**

2.3 Catchment Inflow Factors

2.3.1 Catchment Inflow Factors (P_{CIF}) refer to Table T-4 "Catchment Inflow Factors, P_{CIF}" of the Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning. Inflow Factor of 1.0 for Central Kowloon area has been considered in the assessment.

2.4 Peak Flow

2.4.1 The peak flows for the catchment areas are then estimated for the assessment and design of the sewers. Peaking factors are catered to the seasonal/diurnal fluctuation

and the typical amount of infiltration and inflow. The peaking factors shall be following EPD's GESF and are shown in Table 2-4.

2.4.2 Reference the Further Review of Land Use in Kai Tak Development -Technical Assessment Report (Final) of Agreement No.CE 35/2006(CE), the Peaking Factors (excluding Stormwater Allowance) are adopted in the assessment.

Table 2-4 Peaking Factors for Various Population Ranges

Population Range for Sewers [1] [2]	Peaking Factor (including storm water allowance) for facility with existing upstream sewerage	Peaking Factor (excluding storm water allowance) for facility with new upstream sewerage
< 1000	8	6
1000 - 5000	6	5
5000 - 10000	5	4
10000 - 50000	4	3
> 50000	Max (7.3 / $N^{0.15}$, 2.4)	Max (6 / $N^{0.175}$, 1.6)

Notes:
[1] N is the contributing population in thousands.
[2] According to Section 12.1 of GESF,
Contributing Population = Calculated Total Average Flow (m^3/day) ÷ 0.27 (m^3/person/day)

2.4.3 As shown in **Figure 1-3** and **Appendix B**, sewage flow generated from the Site will pass through an existing sewerage pipe with 300 mm diameter (FTH4011138 to FMH4099003) and finally be discharged to the public sewerage system located at Muk Lai Street. The total sewage flow generated from the Proposed Development is summarized in Table 2-5.

Table 2-5 Total sewage flow generated from the Proposed Development

Development	Population	ADWF (m^3/day)	P_{CIF}	Peak Flow Factor	Peak Flow (m^3/s)	Swimming Pool	Total Peak Flow (m^3/s)
					A	B	C=A+B
Proposed Development	2450	824.88	1.0	5	0.04774	0.002m^3/s(2.0L/s)	0.04974

2.4.4 Refer to **Figure 1-3**, the existing sewerage system will also receive sewerage flow generated from future neighbouring developments (Catchment1, Catchment2 and Catchment3). The detailed calculation of estimated sewage flow from the neighbouring developments is shown in **Appendix B**.

2.4.5 The peak flows of the sewerage system after the Proposed Development as shown in Table 2-6. The detailed calculations are presented in **Appendix B**.

Table 2-6 Summary of Peak Flow after Proposed Development

Catchment	US Manhole	DS Manhole	ADWF (m^3/day)		[1]$Q_{AVERAGE}$ (m^3/day)	[2]Contri. Popul.	Peak Flow Factor	[3] Total Peak Flow (m^3/s)
			Incr.	Accu.				
Cacthment1(Residential Tower)	FTH4011139 (2A3_1)	FMH4099003 (FMH50_10)	802.94	802.94	802.94	2974	5	0.04847
Proposed Development	TFMH-1	FTH4011138 (2A2_1)	824.88	824.88	824.88	3055	5	0.04974
Proposed Development	FTH4011138 (2A2_1)	FMH4099003 (FMH50_10)	0.00	824.88	824.88	3055	5	0.04974
Proposed Development+ Cacthment1(Residential Tower) +Cacthment1(GIC area)	FMH4099003 (FMH50_10)	FMH4099004 (FMH50_10a)	82.53	1710.35	1710.35	6335	4	0.08318
Proposed Development+ Catchment1+Catchment2	FMH4099004 (FMH50_10a)	FMH4095864 (FMH50_20)	0.00	1710.35	1710.35	6335	4	0.08563
Proposed Development +Catchment1+Catchment2	FMH4095864 (FMH50_20)	FMH4095865 (FMH50_30)	0.00	1710.35	1710.35	6335	4	0.08563
Proposed Development +Catchment1+Catchment2+ Cathment3 (Block A)	FMH4095865 (FMH50_30)	FMH4095866 (FMH50_50)	677.84	2388.19	2388.19	8845	4	0.11701
Proposed Development +Catchment1+Catchment2+ Cathment3 (Block A+B)	FMH4095866 (FMH50_50)	FSH4007752 (FMH50_270)	521.48	2909.67	2909.67	10777	3	0.10748

Notes:

1. $Q_{AVERAGE}$ = Catchment Inflow Factors (P_{CIF})* ADWF. The project site is located in Central Kowloon, so the catchment factor P_{CIF} is 1.00.
2. *Contri. Popul.= Accu. ADWF/0.27, the peak flow factor refers to contributing population.*
3. *The value of backwash flow for swimming pool is directly added in the peak flow.*

2.5 Velocity and Capacity of Pipe

2.5.1 The Colebrook-White Equation is used in the hydraulic design and analysis:

$$V = -\sqrt{(8gDs)}\, log\left(\frac{k_s}{3.7D} + \frac{2.51v}{D\sqrt{(2gDs)}}\right)$$

Where,

V = mean velocity (m/s)
g = gravitational acceleration (m/s^2)
R = hydraulic radius (m)
D = pipe diameter (m)
k_s = roughness (m)
v = kinematic viscosity of fluid (m^2/s)
s = frictional slope (energy gradient due to frictional loss)

2.5.2 The capacity of a pipe is based on the cross-sectional area and mean flow velocity. The mean flow velocity is calculated by Colebrook – White equation and the capacity is calculated using the following formula:

$$\text{Capacity} = \text{Velocity} \times \pi \times (\text{Diameter of pipe})^2/4$$

2.5.3 The sewerage impact on various segments of the sewer was evaluated by comparing the estimated peak flow against the capacity of the respective sewer segments. The detailed calculation is shown in **Appendix B**. The summary is listed in the following Table 2-7.

Table 2-7 Summary of Capacity of Pipe after Proposed Development

US Manhole	DS Manhole	Capacity (m^3/s)	Total Peak Flow (m^3/s)	Total Peak Flow / Capacity	Total Peak Flow/ Capacity < 93%, OK
FTH4011139 (2A3_1)	FMH4099003 (FMH50_10)	0.050	0.04847	96.7%	Not OK
TFMH-1	FTH4011138 (2A2_1)	0.060	0.04974	82.3%	OK
FTH4011138 (2A2_1)	FMH4099003 (FMH50_10)	0.050	0.04974	99.3%	Not OK
FMH4099003 (FMH50_10)	FMH4099004 (FMH50_10a)	0.091	0.08318	91.2%	OK
FMH4099004 (FMH50_10a)	FMH4095864 (FMH50_20)	0.143	0.08563	60.0%	OK
FMH4095864 (FMH50_20)	FMH4095865 (FMH50_30)	0.124	0.08563	69.1%	OK
FMH4095865 (FMH50_30)	FMH4095866 (FMH50_50)	0.109	0.11701	107.0%	Not OK
FMH4095866 (FMH50_50)	FSH4007752 (FMH50_270)	0.070	0.10748	153.2%	Not OK

2.5.4 As indicated in Table 2-7, the utilization of rates of four sections pipes (highlighted in red) are insufficient (over 93%). That means proposed mitigation measures need be conducted for these pipes to provide sufficient flow capacity. The proposed mitigation measures are described in Section 2.6.

2.6 Proposed Mitigation Measures

2.6.1 Based on hydraulic calculation, proposed mitigation measures for those pipes with utilization over 93%. The proposed mitigation measures are shown in Table 2-8.

Table 2-8 Proposed Mitigation Measures

Proposed Mitigation Measures: Pipe lining method under Site 2A2 (Proposed development under this submission)					
Form	To	Existing		Rehabilitation	
		Existing Pipe Material	Existing Pipe Size(mm)	Rehabilitation measures	* Pipe diameter after rehabilitation (mm)
FTH4011138 (2A2_1)	FMH4099003 (FMH50_10)	Concrete	300	Pipe lining	291
Proposed Mitigation Measures: Pipe lining method under Site 2A3					
Form	To	Existing		Rehabilitation	
		Existing Pipe Material	Existing Pipe Size(mm)	Rehabilitation measures	* Pipe diameter after rehabilitation (mm)
FTH4011139 (2A3_1)	FMH4099003 (FMH50_10)	Concrete	300	Pipe lining	291
Proposed Mitigation Measures: Replaced by PE pipe and upgraded to 450 diameters under Site 2A3					
Form	To	Existing		Replaced and upgraded	
		Existing Pipe Material	Existing Pipe Size(mm)	Replaced Pipe Material	Upgraded Pipe diameter(mm)
FMH4095865 (FMH50_30)	FMH4095866 (FMH50_50)	Concrete	375	PE	450
FMH4095866 (FMH50_50)	FSH4007752 (FMH50_270)	Concrete	375	PE	450

*Notes：*Based on the supplier information(Appendix E),2% reduction on diameter after rehabilitation generally. For the assessment under this proposed development,3% reduction on diameter is assumed conservatively.*

2.6.2 For two existing DN300 concrete public sewage pipes (FTH4011139 to FMH4099003,FTH4011138 to FMH4099003), which are only used to service sewage generated form Cacthment1 and Proposed Development, respectively. Proposed mitigation measure is the use of pipe lining method to repair. After rehabilitation, the pipe inwall will be smooth and the capacity of pipe will increase.

2.6.3 For downstream two existing DN375 concrete public sewage pipes (FMH4095865 to FSH4007752), which will also receive additional sewage generated from Catchment 3. Proposed mitigation measure is replaced by PE pipe and upgraded to 450 diameters for providing sufficient flow capacity. The mitigation measure will be carried out project Site2A3 works.

2.6.4 As indicated in Table 2-9 for the summary of calculation, after proposed mitigation measures, the utilization rates of all segments are within capacity (well below 93%). The detailed calculation is shown in **Appendix B**.

Table 2-9 Summary of Capacity of Pipe after Proposed Mitigation Measures

US Manhole	DS Manhole	Capacity (m^3/s)	Total Peak Flow (m^3/s)	Total Peak Flow / Capacity	Total Peak Flow/ Capacity < 93%, OK
FTH4011139 (2A3_1)	FMH4099003 (FMH50_10)	0.058	0.04847	83.2%	OK

US Manhole	DS Manhole	Capacity (m^3/s)	Total Peak Flow (m^3/s)	Total Peak Flow / Capacity	Total Peak Flow/ Capacity < 93%, OK
TFMH-1	FTH4011138 (2A2_1)	0.060	0.04974	82.3%	OK
FTH4011138 (2A2_1)	FMH4099003 (FMH50_10)	0.058	0.04974	85.5%	OK
FMH4099003 (FMH50_10)	FMH4099004 (FMH50_10a)	0.091	0.08318	91.2%	OK
FMH4099004 (FMH50_10a)	FMH4095864 (FMH50_20)	0.143	0.08563	60.0%	OK
FMH4095864 (FMH50_20)	FMH4095865 (FMH50_30)	0.124	0.08563	69.1%	OK
FMH4095865 (FMH50_30)	FMH4095866 (FMH50_50)	0.178	0.11701	65.6%	OK
FMH4095866 (FMH50_50)	FSH4007752 (FMH50_270)	0.142	0.10748	75.7%	OK

3. SEWERAGE IMPACT ASSESSMENT

3.1.1 The existing sewerage system is discussed in Section 1.4 and 2 of this report. In general, the existing sewerage system near the Site receives the flow to be generated from the Proposed Development, future neighbouring developments Catchment 1, Catchment 2 and Catchment 3.

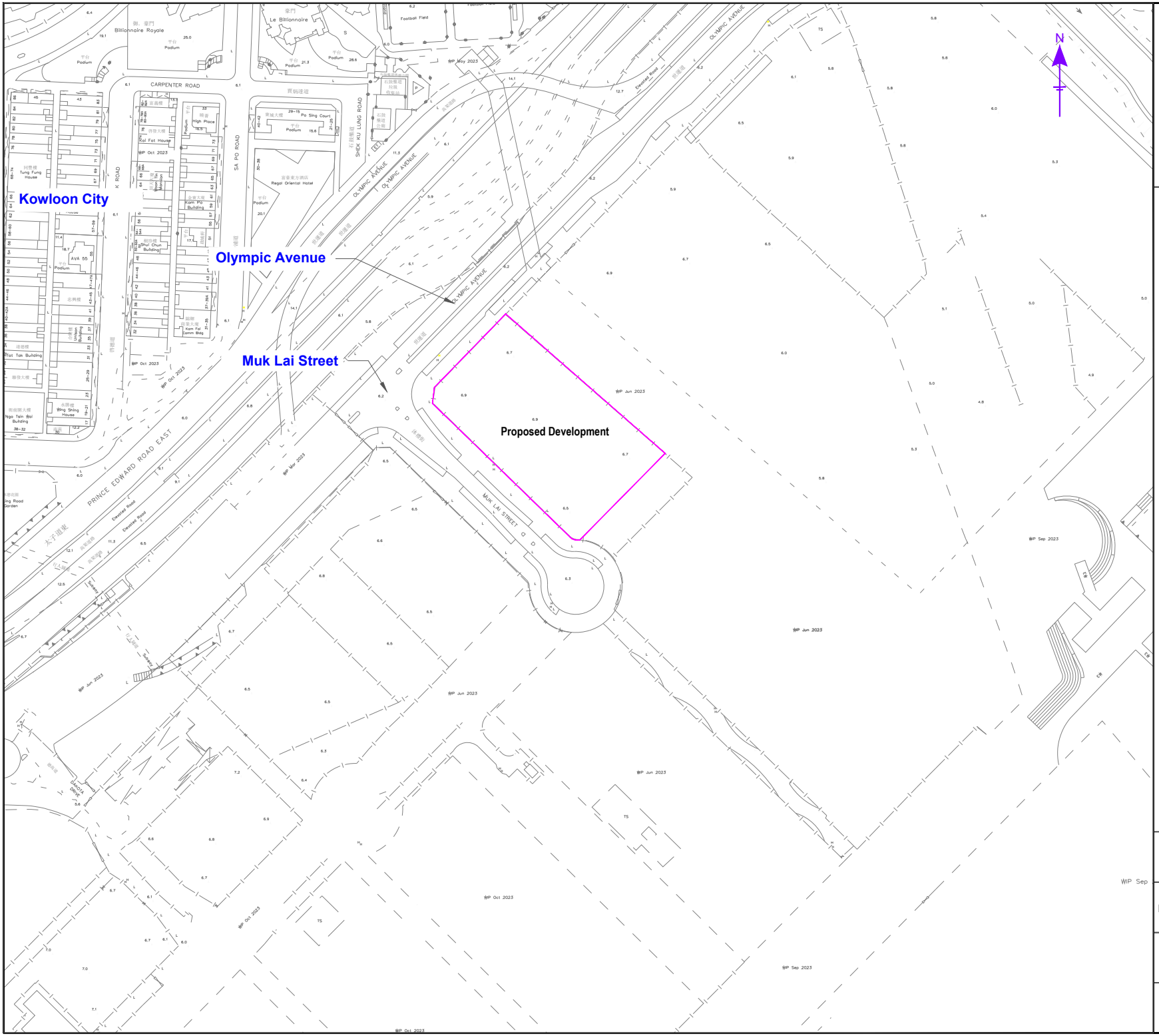
3.1.2 The total average dry weather flow (ADWF) generated from the Proposed Development is estimated to be 824.88 m^3/day. The detail calculations are attached in **Appendix A**.

3.1.3 The proposed mitigation measures are described in Section 2.6 of this report. The hydraulic checking result reveals that the flow capacity of the pipe is sufficient after proposed mitigation measures. The assessment result is shown in **Appendix B**.

4. CONCLUSION

4.1.1 Based on the results of the hydraulic analysis, it is concluded that after proposed mitigation measures there will be sufficient pipe capacity for the additional sewerage flows and will not cause any adverse impacts on the public sewerage system.

Figures



PROJECT TITLE:

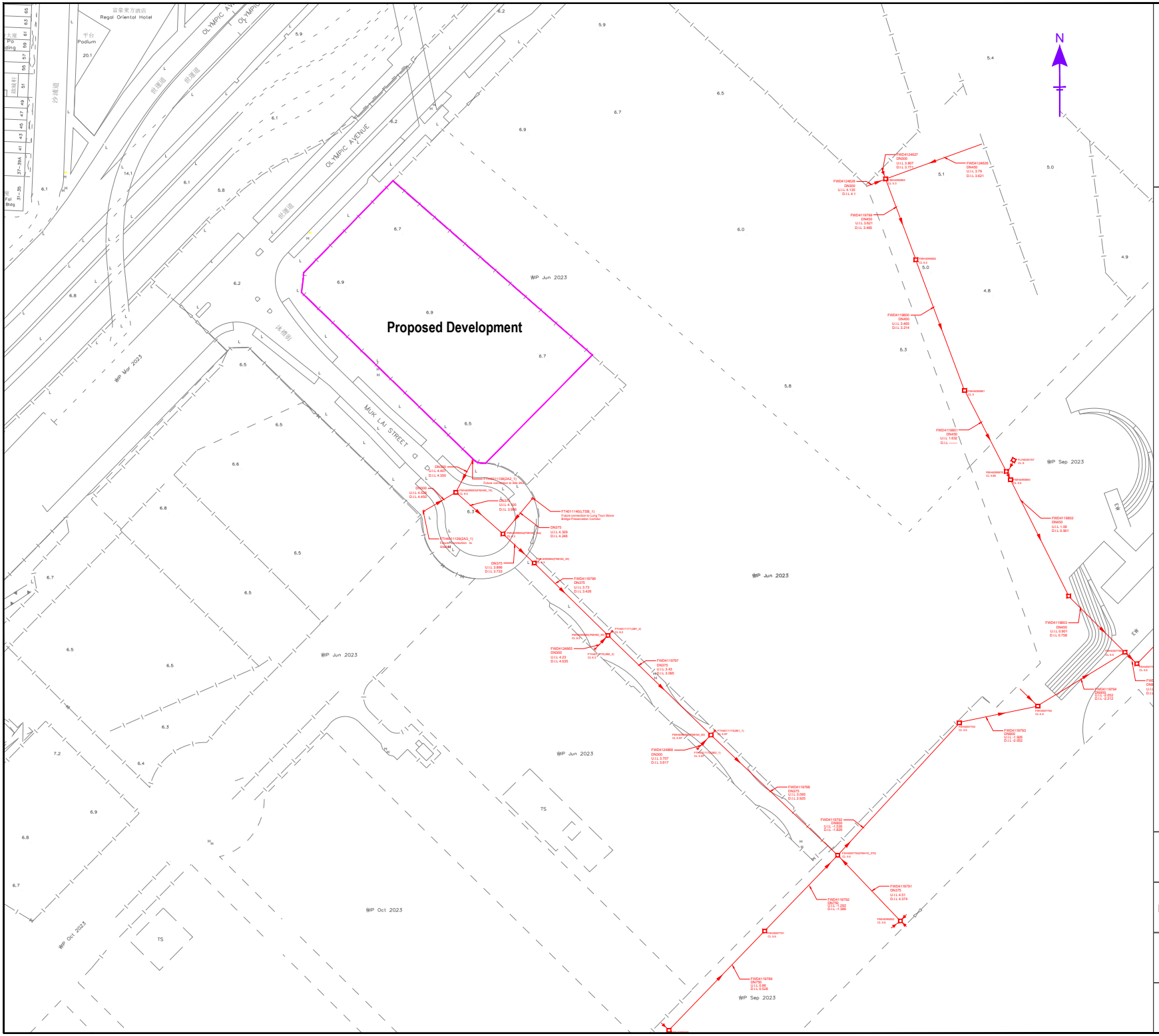
Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon(Master Layout Plan Submission)

Sewerage Impact Assessment

LEGENDS:

Proposed Development

FIGURE NO.	Figure 1-1		
FIGURE TITLE	Site Location and Surroundings		
SCALE	1:2500	DATE	Jun.2024



PROJECT TITLE:

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon(Master Layout Plan Submission)

Sewerage Impact Assessment

LEGENDS:

- Proposed Development
- Existing Public Sewage Pipe
- Exiting Sewage Tapping Point
- Exiting Public Sewage Manhole

FWD4119796	Sewage Pipe Name
DN 375	Pipe diameter
U.I.L 3.73	Upstream insert level (mPD)
D.I.L 3.426	Downstream insert level (mPD)
FMH4095864	Sewage Manhole Name
CL 6.30	Cover level (mPD)

FIGURE NO.	Figure 1-2		
FIGURE TITLE	Existing Public Sewerage System around the Site		
SCALE	1:2000	DATE	Jun.2024

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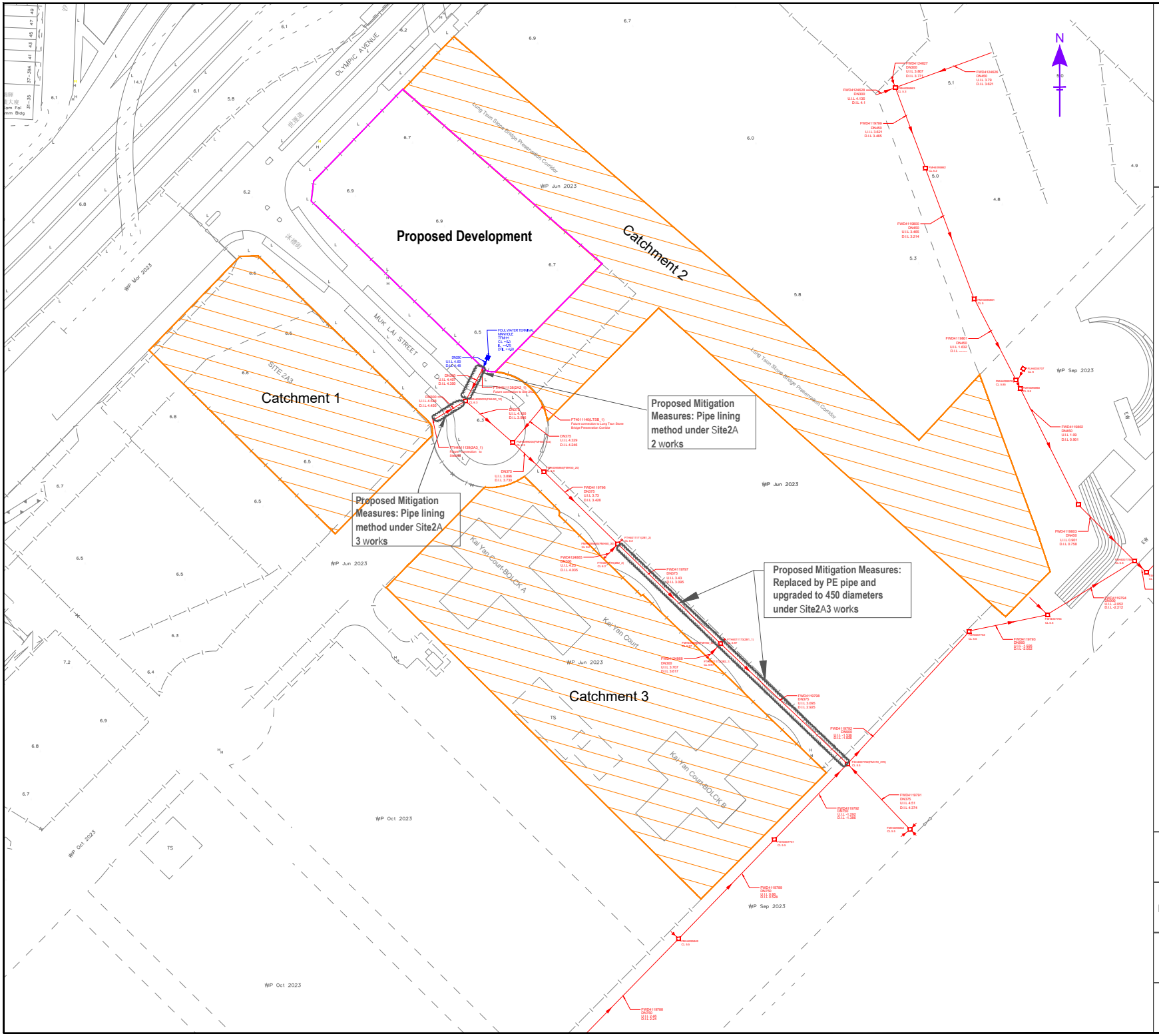

PROJECT TITLE:

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon(Master Layout Plan Submission)

Sewerage Impact Assessment

LEGENDS:

- Proposed Development
- Catchments
- Existing Public Sewage Pipe
- Exiting Sewage Tapping Point
- Exiting Public Sewage Manhole
- Proposed Sewage Pipe
- Proposed Foul Water Terminal Manhole

FWD4119796 Sewage Pipe Name
DN 375 Pipe diameter
U.I.L 3.73 Upstream insert level (mPD)
D.I.L 3.426 Downstream insert level (mPD)

FMH4095864 Sewage Manhole Name
CL 6.30 Cover level (mPD)

Remark: The details of the proposed sewerage system illustrated in this figure are for reference only, and are subject to the detailed design of the Project.

FIGURE NO.	Figure 1-3		
FIGURE TITLE	Proposed Sewerage System for the Site		
SCALE	1:2000	DATE	Jun.2024

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Appendix A

Population and Flow Data from the Proposed Development

Appendix A- Population and Flow Data from the Proposed Development

Estimated Sewage Flow from the Proposed Development

Upstream manhole: **TFMH-1**

Downstream manhole: **FTH4011138(2A2_1)**

Development	Name	Type	Population	Unit Flow Factor (m^3/d/person)	ADWF (m^3/day)	Remarks
Proposed Development	Resident	Domestic Private R2	2232	0.27	602.64	Total number of residential units of SITE 2A2 is 930 units. An average domestic household size of 2.4 according to the Household Characteristics of Population in Kai Tak Central & South District Council Constituency Area, 2021 is adopted to estimate the residential population. The resident is 2.4x930=2232ppl. Reference source: https://www.census2021.gov.hk/en/district_profiles.html
	Employee for the clubhouse	Commercial Employee and Community, Social and Personal Services (J11)	48	0.28	13.44	Aussemed the Clubhouse area be 1450m^2. Worker density is refer to Table 8 of "Commercial and Industrial Floor Space Utilization Survey (CIFSUS)" conducted by the Planning Department during November 2004 to March 2005. Worker density for Community, Social and Personal Services is 3.3 persons per 100 m^2. Employee for the clubhouse is 1450/100x3.3=48ppl
	Swimming pool	-	-	-	-	The estimated sewage flow from swimming pool is considered as instant peak flow.The total peak discharge of the swimming pool is calculated in below Table.
	Employee for the F&B	Commercial Employee and Restaurants & Hotels (J10)	124	1.58	195.92	The total F&B Area be 2428.4m^2. Worker density is refer to Table 8 of CIFSUS. Worker density for Restaurants is 5.1 persons per 100 m^2. Employee for the F&B is 2428.4/100 x5.1=124ppl.
	Employee for the Retail	Commercial Employe and Wholesale & Retail (J4)	46	0.28	12.88	The total Retail Area be 1307.6m^2. Worker density is refer to "Commercial and Industrial Floor Space Utilization Survey (CIFSUS)" conducted by the Planning Department during November 2004 to March 2005. Worker density for Retail Trade is 3.5 persons per 100 m^2. Employee for the Retail is 1307.6/100 x3.5=46ppl.
	Total		**2450**		**824.88**	

Summary Sewage Flow of the Proposed Development

Development	Population	ADWF (m^3/day)	Catchment Factor Pcif	Peak Flow Factor	Peak Flow (m^3/s) A	Swimming Pool B	Total Peak Flow (m^3/s) C=A+B
Proposed Development	2450	824.88	1.0	5	0.04774	0.002 m^3/s(2.0L/s)	**0.04974**

Table-Calculation of sewage flow generated from swimming pool backwash

Swimming Pool(Indoor)		**Unit**
Pool area[1]	350	m^2
Pool depth[1]	1.5	m
Pool volume[2]	525	m^3
Turn over rate [3]	4	hours
Circulation rate	36.5	L/s
Pump filtration flowrate [4]	37	L/s
Filtration rate[4]	48	m^3/m^2/hr
Filter areas required	2.73	m^2
No. of Sand Filter Assume using 900mm dia. sand filter	5	nos.
Backwashing water flowrate	7.4	L/s
Required min. retention water tank volume [5]	2.22	m^3
Provided retention water tank volume	2.5	m^3
The reduced instant discharge flowrate from swimming pool backwashing	**2.00**	L/s

Notes :

1.Data from project proponent. There is an indoor swimming pool area with 350 m^2 and depth 1.5m.

2.Pool volume = Total Pool area x Pool depth

3.According to General Specification for Swimming Pool Water Treatment Installation in Government Buildings of the Hong Kong Special Administrative Region (HKSAR)issued by ArchSD (2017edition), the pool water turnover rate shall be not less than once in every 4 hours in the case of an indoor swimming pool. Assume the turnover rate of the indoor pool in the Site is once in every 4 hours.

4. The values of "Filtration rate of filter" and "Backwash flow rate" are from project proponent.

5. Data from project proponent, the duration of backwash is around 5 minutes for one sand filter. The calculation is considering the 5 minutes backwash which is the most conservative scenario. There will be only one filter in operation for each time of backwash. The frequency of backwash is 4 - 7 days per one time. A retention water tank is provided to hold the backwashing water for the purpose of not to overload the drainage system during backwashing. The capacity of the tank shall be not less than the volume of the backwashing water of one backwashing cycle of one sand filter. The reduced instant discharge flowrate will be 2 l/s control by independent pump set.

6. The estimated sewage flow from swimming pool backwash retention water tank is considered as instant peak flow instead of ADWF. The retention water tank discharge water flow (2 l/s) will be directly added to the total peak flow from residential unit and employee.

Appendix B

Sewerage Impact Assessment

Appendix B- Sewerage Impact Assessment

Sewerage System After Proposed Development

Roughness Coefficient, K_S = 6.0 mm *The existing public sewerage pipe materials is concrete. The value of ks= 6 mm is used to conservatively calculate the slimed concrete sewer at " Poor" condition for the existing public sewerage pipe (based on Table 5: Recommended roughness values in Sewerage Manual).*

1.5 mm *The proposed pipe materials is polyethylene.The value of ks=1.5mm is used for the calculation of slimed polyethylene sewer at " Poor" condition for the proposed sewerage pipe*

Kinematic Viscosity, n = 0.0000010 m^2/sec @ 20^oC

Catchment	US Manhole	DS Manhole	Pipe Size (mm)	Approx. Length (m)	US I.L. (mPD)	DS I.L. (mPD)	Gradient	ADWF (m^3/day)		Catchment Factor Pcif	$Q_{AVERAGE}$ (m^3/day)	Contributing Population	Peak Flow Factor	Total Peak Flow (m^3/s)	Area of Flow (m^2)	Slope	Ks(mm)	Velocity (m/s)	Capacity (m^3/s)	Total Peak Flow/ Capacity	Total Peak Flow/ Capacity<93%?	Remarks
							1 in	Incr.	Accu.													
Cacthment1(Residential Tower)	FTH4011139(2A3_1)	FMH4099003(FMH50_10)	300	18.7	4.528	4.450	239.7	802.94	802.94	1.0	802.94	2974	5	0.04847	0.071	0.004	6.0	0.709	0.050	96.7%	Not Ok	
Proposed Development	TFMH-1	FTH4011138(2A2_1)	250	12.0	4.600	4.480	100.0	824.88	824.88	1.0	824.88	3055	5	0.04974	0.049	0.010	1.5	1.231	0.060	82.3%	OK	The proposed newly sewerage pipe materials is polyethylene.
Proposed Development	FTH4011138(2A2_1)	FMH4099003(FMH50_10)	300	13.7	4.407	4.350	240.4	0.00	824.88	1.0	824.88	3055	5	0.04974	0.071	0.004	6.0	0.708	0.050	99.3%	Not Ok	
Proposed Development+ Cacthment1(Residential Tower)+Cacthment1(GIC area)	FMH4099003(FMH50_10)	FMH4099004(FMH50_10a)	375	25.0	4.100	3.996	240.4	82.53	1710.35	1.0	1710.35	6335	4	0.08318	0.110	0.004	6.0	0.826	0.091	91.2%	OK	
Proposed Development+Catchment1+Catchment2	FMH4099004(FMH50_10a)	FMH4095864(FMH50_20)	375	16.0	3.896	3.733	98.2	0.00	1710.35	1.0	1710.35	6335	4	0.08563	0.110	0.010	6.0	1.293	0.143	60.0%	OK	
Proposed Development+Catchment1+Catchment2	FMH4095864(FMH50_20)	FMH4095865(FMH50_30)	375	40.0	3.733	3.426	130.3	0.00	1710.35	1.0	1710.35	6335	4	0.08563	0.110	0.008	6.0	1.122	0.124	69.1%	OK	
Proposed Development+Catchment1+Catchment2+ Cathment3 (Block A)	FMH4095865(FMH50_30)	FMH4095866(FMH50_50)	375	56.0	3.430	3.095	167.2	677.84	2388.19	1.0	2388.19	8845	4	0.11701	0.110	0.006	6.0	0.991	0.109	107.0%	Not Ok	
Proposed Development+Catchment1+Catchment2+ Cathment3 (Block A+B)	FMH4095866(FMH50_50)	FSH4007752(FMH50_270)	375	69.0	3.095	2.925	405.9	521.48	2909.67	1.0	2909.67	10777	3	0.10748	0.110	0.002	6.0	0.635	0.070	153.2%	Not Ok	

Notes:About the estimated sewage flow form Catchment 1 to Catchment 3,the detailed calculation is shown in the Table "Estimated Sewage Flow from Neighbouring Developments".

Appendix B- Sewerage Impact Assessment

Estimated Sewage Flow from Neighbouring Developments

1.Estimated Sewage Flow from Cacthment1

Development		Name	Type	Population	Unit Flow Factor (m^3/d/person)	ADWF (m^3/day)	Remarks
SITE 2A3	Residential Tower	Resident	Domestic Private R2	2232	0.27	602.64	Total number of residential units of SITE 2A3 is 930 units. An average domestic household size of 2.4 according to the Household Characteristics of Population in Kai Tak Central & South District Council Constituency Area, 2021 is adopted to estimate the residential population. The resident is 2.4x930=2232ppl. Reference source: https://www.census2021.gov.hk/en/district_profiles.html
		Employee for the clubhouse	Commercial Employee and Community, Social and Personal Services (J11)	48	0.28	13.44	Aussemed the Clubhouse area be 1450m^2. Worker density is refer to Table 8 of "Commercial and Industrial Floor Space Utilization Survey (CIFSUS)" conducted by the Planning Department during November 2004 to March 2005. Worker density for Community, Social and Personal Services is 3.3 persons per 100 m2. Employee for the clubhouse is 1450/100x3.3=48ppl
		Swimming pool	-	-	-	-	The estimated sewage flow from swimming pool is considered as instant peak flow.The total peak discharge of the swimming pool is calculated in below Table 1.
		Employee for the F&B	Commercial Employee and Restaurants & Hotels (J10)	111	1.58	175.38	The total F&B Area be 2173 m^2.Worker density is refer to Table 8 of CIFSUS. Worker density for Restaurants is 5.1 persons per 100 m^2. Employee for the F&B is 2173/100 x5.1=111ppl.
		Employee for the Retail	Commercial Employe and Wholesale & Retail (J4)	41	0.28	11.48	The total Retail Area be 1170 m^2.Worker density is refer to "Commercial and Industrial Floor Space Utilization Survey (CIFSUS)" conducted by the Planning Department during November 2004 to March 2005. Worker density for Retail Trade is 3.5 persons per 100 m2. Employee for the Retail is 1170/100 x3.5=41ppl.
		Sub-Total		**2432**	-	**802.94**	**For the sewage flow from Residential Tower will be discharged into manhole FTH4011139**
	GIC area	Employee for GIC	Commercial Employee and Community, Social and Personal Services (J11)	176	0.28	49.28	Notional Staffing Establishments Data from Social Welfare Department (SWD) is referred. The estimated total employee and resident of the GIC is shown in below Table 2.
		Resident of GIC	Domestic Private R1	175	0.19	33.25	
		Sub-Total		**351**	-	**82.53**	**For the sewage flow from GIC area will be discharged into manhole FMH4099003**
		Total		**2783**		**885.47**	

Table 1：Calculation of sewage flow generated from swimming pool backwash

Swimming Pool (Outdoor)		**Unit**
Pool area[1]	500	m^2
Pool depth[1]	1.5	m
Pool volume	750	m^3
Turn over rate [1]	6	hours
Circulation rate	34.72	L/s
Pump filtration flowrate[4]	35	L/s
Filtration rate	48	m3/m2/hr
Filter areas required	2.6	m^2
No. of Sand Filter Assume using 900mm dia. sand filter	5.0	nos.
Backwashing water flowrate	7	L/s
Required min. retention water tank volume[5]	2.1	m^3
Provided retention water tank volume	2.5	m^3
The reduced instant discharge flowrate from swimming pool backwashing	**2.00**	L/s

Notes：

1.Data from project proponent. There is an outdoor swimming pool area with 500 m^2 and depth 1.5m.

2.Pool volume = Total Pool area x Pool depth

3.According to General Specification for Swimming Pool Water Treatment Installation in Government Buildings of the Hong Kong Special Administrative Region (HKSAR)issued by ArchSD (2017edition), the pool water turnover rate shall be not less than once in every 6 hours in the case of an outdoor swimming pool. Assume the turnover rate of the outdoor pool in the Site 2A3 is once in every 6 hours.

4. The values of "Filtration rate of filter" and "Backwash flow rate" are from project proponent.

5. Data from project proponent, the duration of backwash is around 5 minutes for one sand filter. The calculation is considering the 5 minutes backwash which is the most conservative scenario. There will be only one filter in operation for each time of backwash. The frequency of backwash is 4 - 7 days per one time. A retention water tank is provided to hold the backwashing water for the purpose of not to overload the drainage system during backwashing. The capacity of the tank shall be not less than the volume of the backwashing water of one backwashing cycle of one sand filter. The reduced instant discharge flowrate will be 2 l/s control by independent pump set.

6. The estimated sewage flow from swimming pool backwash retention water tank is considered as instant peak flow instead of ADWF. The retention water tank discharge water flow (2 l/s) will be directly added to the total peak flow from residential unit and employee.

Table2：Estimated Population Summary of GIC

***Proposed Social Welfare Facilities of SITE 2A3**	**No.of staff**	**No.of place**	**Remarks**
Cyber Youth Support Teams	7	-	Refer to Notional Staffing Establishments Data from SWD.
100-place Day Activity Centre	36	-	Refer to Notional Staffing Establishments Data from SWD, 50 places Day Activity Centre the No.of staff is18,so the 100-place day activity centre No.of staff is 2X18=36.
1 Neighborhood Elderly Centre	11	-	Refer to Notional Staffing Establishments Data from SWD.
100-place Hostel for Severely Mentally Handicapped Persons	68	100	Refer to Notional Staffing Establishments Data from SWD, 50 places Hostel for Severely Mentally Handicapped Persons the No.of staff is 34,so the 100-place day activity centre No.of staff is 2X34=68.
1 District Support Centre for Persons with Disabilities	29	-	Refer to Notional Staffing Establishments Data from SWD.
75-place Boys' Home	25	75	Refer to Notional Staffing Establishments Data from SWD, 15 places Boys' Home the No.of staff is 5,so the 75-place Boys' Home No.of staff is 5X5=25.
Total	**176**	**175**	

*Note:*Reference the Further Review of Land Use in Kai Tak Development -Technical Assessment Report (Final) of Agreement No.CE 35/2006(CE).*

Summary Sewage Flow of Cacthment 1(SITE 2A3)

Development	Population	ADWF (m^3/day)	Catchment Factor Pcif	Peak Flow Factor	Peak Flow (m^3/s) A	Swimming Pool B	Total Peak Flow (m^3/s) C=A+B
SITE 2A3-Residential Tower	2432	802.94	1.0	5	0.04647	0.002m^3/s(2.0L/s)	0.04847
SITE 2A3-GIC area	351	82.53	1.0	6	0.00573	-	0.00573

Appendix B- Sewerage Impact Assessment

Estimated Sewage Flow from Neighbouring Developments

2.Estimated Sewage Flow from Cacthment 2(Lung Tsun Stone Bridge Preservation Corridor)

Upstream manhole: FMH4099004(FMH50_10a)

Downstream manhole FMH4095864(FMH50_20)

Sanitary Fitments Smmary

Sewage source	No.of toilet	No.of wash basin
Universal toilet	2	1
Baby Care room	-	1
Accessible toilet	1	1
Total	**3**	**3**

Notes： According to the ArchSD drawing layout plan of the LTSBP, there are 3 toilets and 3 basins. The sources of sewage generation are from sanitary fitments. The drawing is attached in Appendix D for easy reference.

Calculation of Sewage Discharge Flow Rate

Sanitary Fitments	Quanity	DU per Fitments(L/s)	Sub-Total	Totol DU	Usage K	Calculation	Total peak discharge flow rate(L/s)
Toilet	3	1.7	5.1	6	1.0	=1.0x(6^0.5)	2.45
Wash basin	3	0.3	0.9				

Notes:

1. Refer to the Drainage calculation method at Plumbing Engineering Services Design Guide issued by the Institute of Plumbing (IOP), UK. The relevant extract of the referred reference source is shown in Appendix D.

2. Usage of appliance of the LTSBP refers to “public” type at Table 6, IOP Design Guide. For toilet and wash basin, K factor is 1.0 as it will be Congested use.

3. The estimated peak discharge flow rate of Catchment 2 is 2.45L/s and will be directly added to the total peak flow in hydraulic checking.

Appendix B- Sewerage Impact Assessment

Estimated Sewage Flow from Neighbouring Developments

3.Estimated Sewage Flow from Cacthment 3

3.1-Estimated Sewage Flow from the Kai Yan Court of BOLCK A

Upstream manhole: FMH4095865(FMH50_30)
Downstream manhole: FMH4095866(FMH50_50)

Development	Name	Type	Estimated Population	Unit Flow Factor (m^3/d/person)	ADWF (m^3/day)	Remarks
Kai Yan Court-BOLCK A	Resident	Domestic Private R2	2496	0.27	673.92	For Kai Yan Court, there are 2 Blocks(block A and block B).The total number of residential properties is 1,840 units,1040 units in Block A and 800 units in Block B.(Source: https://hk.centanet.com/estate/en/Kai-Yan-Court/2-EYSPWPPVPG) An average domestic household size of 2.4 according to the Household Characteristics of Population in Kai Tak Central & South District Council Constituency Area, 2021 is adopted to estimate the residential population. The estimated resident of Kai Yan Court-BOLCK A is 2.4x1040=2496ppl.
	Residential Management Staff	Commercial Employee and Community, Social and Personal Services (J11)	14	0.28	3.92	With reference to the data on cleaning and guarding service contracts for nearby public housing estates with similar block scale under the Housing Authority, Tak Long Estate and Kai Ching Estate are referred. There are total management staff number of 177 of these two estates. Given that the total units numbers are 13400, the management staff number is about 1.3 management staff per 100 units. The same ratio of management staff numbers: 100 units (i.e. 1.3) is adopted for estimating the Kai Yan Court management staff numbers. The estimated management staff of Kai Yan Court-BOLCK A is (1040/100)*1.3=14ppl. Source:https://gia.info.gov.hk/general/202004/22/P2020042200572_339981_1_1587554442989.pdf
	Total		**2496**		**677.84**	

3.2-Estimated Sewage Flow from the Kai Yan Court of BOLCK B

Upstream manhole: FMH4095866(FMH50_50)
Downstream manhole: FSH4007752(FMH50_270)

Development	Name	Type	Estimated Population	Unit Flow Factor (m^3/d/person)	ADWF (m^3/day)	Remarks
Kai Yan Court-BOLCK B	Resident	Domestic Private R2	1920	0.27	518.40	For Kai Yan Court, there are 2 Blocks(block A and block B).The total number of residential properties is 1,840 units,1040 units in Block A and 800 units in Block B.(Source: https://hk.centanet.com/estate/en/Kai-Yan-Court/2-EYSPWPPVPG) An average domestic household size of 2.4 according to the Household Characteristics of Population in Kai Tak Central & South District Council Constituency Area, 2021 is adopted to estimate the residential population. The estimated resident of Kai Yan Court-BOLCK B is 2.4x800=1920ppl.
	Residential Management Staff	Commercial Employee and Community, Social and Personal Services (J11)	11	0.28	3.08	With reference to the data on cleaning and guarding service contracts for nearby public housing estates with similar block scale under the Housing Authority, Tak Long Estate and Kai Ching Estate are referred. There are total management staff number of 177 of these two estates. Given that the total units numbers are 13400, the management staff number is about 1.3 management staff per 100 units. The same ratio of management staff numbers: 100 units (i.e. 1.3) is adopted for estimating the Kai Yan Court management staff numbers. The estimated management staff of Kai Yan Court-BOLCK B is (800/100)*1.3=11ppl. Source:https://gia.info.gov.hk/general/202004/22/P2020042200572_339981_1_1587554442989.pdf
	Total		**1920**		**521.48**	

Appendix B- Sewerage Impact Assessment

Sewerage System After Proposed Mitigation Measures

Roughness Coefficient, K_S =	6.0	mm	*The existing public sewerage pipe materials is concrete. The value of ks= 6 mm is used to conservatively calculate the slimed concrete sewer at " Poor" condition for the existing public sewerage pipe (based on Table 5: Recommended roughness values in Sewerage Manual).*
	1.5	mm	*The proposed pipe materials is polyethylene.The value of ks=1.5mm is used for the calculation of slimed polyethylene sewer at " Poor" condition for the proposed sewerage pipe*
	1.5	mm	*See remarks.*
Kinematic Viscosity, n =	0.0000010	m^2/sec @ 20°C	

Catchment	US Manhole	DS Manhole	Pipe Size (mm)	Approx. Length (m)	US I.L. (mPD)	DS I.L. (mPD)	Gradient	ADWF (m^3/day)		Catchment Factor Pcif	$Q_{AVERAGE}$ (m^3/day)	Contributing Population	Peak Flow Factor	Total Peak Flow (m^3/s)	Area of Flow (m^2)	Slope	Ks(mm)	Velocity (m/s)	Capacity (m^3/s)	Total Peak Flow/ Capacity	Total Peak Flow/ Capacity＜93%?	Remarks
							1 in	Incr.	Accu.													
Cacthment1(Residential Tower)	FTH4011139(2A3_1)	FMH4099003(FMH50_10)	291	18.7	4.528	4.450	239.7	802.94	802.94	1.0	802.94	2974	5	0.04847	0.067	0.004	1.5	0.876	0.058	83.2%	OK	See Note 1. (Under Site 2A3 work)
Proposed Development	TFMH-1	FTH4011138(2A2_1)	250	12.0	4.600	4.480	100.0	824.88	824.88	1.0	824.88	3055	5	0.04974	0.049	0.010	1.5	1.231	0.060	82.3%	OK	The proposed newly sewerage pipe materials is polyethylene.
Proposed Development	FTH4011138(2A2_1)	FMH4099003(FMH50_10)	291	13.7	4.407	4.350	240.4	0.00	824.88	1.0	824.88	3055	5	0.04974	0.067	0.004	1.5	0.875	0.058	85.5%	OK	See Note 1. (Under Site 2A2 work)
Proposed Development+ Cacthment1(Residential Tower)+Cacthment1(GIC area)	FMH4099003(FMH50_10)	FMH4099004(FMH50_10a)	375	25.0	4.100	3.996	240.4	82.53	1710.35	1.0	1710.35	6335	4	0.08318	0.110	0.004	6.0	0.826	0.091	91.2%	OK	
Proposed Development+Catchment1+Catchment2	FMH4099004(FMH50_10a)	FMH4095864(FMH50_20)	375	16.0	3.896	3.733	98.2	0.00	1710.35	1.0	1710.35	6335	4	0.08563	0.110	0.010	6.0	1.293	0.143	60.0%	OK	
Proposed Development+Catchment1+Catchment2	FMH4095864(FMH50_20)	FMH4095865(FMH50_30)	375	40.0	3.733	3.426	130.3	0.00	1710.35	1.0	1710.35	6335	4	0.08563	0.110	0.008	6.0	1.122	0.124	69.1%	OK	
Proposed Development+Catchment1+Catchment2+ Cathment3 (Block A)	FMH4095865(FMH50_30)	FMH4095866(FMH50_50)	450	56.0	3.430	3.095	167.2	677.84	2388.19	1.0	2388.19	8845	4	0.11701	0.159	0.006	1.5	1.122	0.178	65.6%	OK	See Note 2.
Proposed Development+Catchment1+Catchment2+ Cathment3 (Block A+B)	FMH4095866(FMH50_50)	FSH4007752(FMH50_270)	450	69.0	3.095	2.925	405.9	521.48	2909.67	1.0	2909.67	10777	3	0.10748	0.159	0.002	1.5	0.893	0.142	75.7%	OK	See Note 2.

Notes:

1.Exsting DN300 concrete sewerage pipe. Proposed Mitigation measures: Pipe lining method.
Based on the supplier information(Appendix D),2% reduction on diameter after rehabilitation generally. For the assessment under this proposed development,3% reduction on diameter is assumed conservatively.Thus,after rehabilitation the pipe diameter is 291mm and the ks=1.5mm(slimed polyethylene sewer at " Poor" condition) is adopted in hydraulic assessment.

2.Exsting DN375 concrete sewerage pipe.Proposed Mitigation measures: Replaced by PE pipe and upgraded to 450 diameters.Thus,the pipe diameter is 450mm and the ks=1.5mm(slimed polyethylene sewer at " Poor" condition) is adopted in hydraulic assessment. The proposed mitigation measure will be carried out under Site2A3 works.

Appendix C

Sewerage record drawings

821100 N
821200 N
821300 N
837900 E
838000 E
PRINCE EDWARD ROAD EAST
ROAD D1
ROAD L7
EXISTING FLYOVER
Elevated Road
Elevated Road
LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR
CUT LINE A-A
SEE DRAWING NO. 60102100/5A/1342
CUT LINE B-B
SEE DRAWING NO. 60102100/5A/1344
FUTURE CONNECTION TO SITE 2A3
FUTURE CONNECTION TO SITE 2A2
FUTURE CONNECTION TO SITE 2A1
FUTURE CONNECTION TO LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR
2A3_1
2A2_1
2A1_1
FMH50_10
FMH50_10a
FMH50_20
TSB1_1
Ø300
Ø375
Ø225
Ø150
Apr 2011
Shek Kip Mei Estate
Regal Oriental Hotel Hong Kong
Shek Ku Lung Public Rental Housing Estate
Shek Kip Mei Estate Complex
Footballpitch
Podium
Kam Fung Building
Kam Fung Court
Sing Ka House
Sing Yip House
Sing Mo House
SHEK KU LUNG ROAD
沙浦道
石鼓壟道
石鼓壟公共租住房屋
石鼓壟邨
定球場
SAN PO KONG
KOWLOON CITY
KOWLOON BAY
TO KWA WAN
N

KEY PLAN
SCALE A1 1 : 25000
A3 1 : 50000

NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS SEE DRAWING NO. 60102100/5A/1340.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60102100/5A/1342 TO 1345.

LEGEND:

- SITE BOUNDARY
- FOUL SEWER MANHOLE
- Ø300 FOUL SEWER
- TEMPORARY PLUG AT END OF PIPE FOR FUTURE PIPE CONNECTION
- EXISTING FOUL SEWER AND MANHOLE FROM DSD
- RM EXISTING FOUL SEWER MAIN FROM DSD
- EXISTING FOUL SEWER AND MANHOLE FROM HKIA
- EXISTING FOUL SEWER AND MANHOLE FROM DSD TO BE ABANDONED
- EXISTING FOUL SEWER AND MANHOLE FROM HKIA TO BE ABANDONED
- RM EXISTING RISING MAIN

REV. 修訂	DESCRIPTION 內容摘要	DES.	P.I.C. CHECKED 審核	DATE 日期
Z	PRE-HANDOVER AS-BUILT DRAWING	WKL	SLYY	AUG.21
A	WORKING DRAWING	ALCP	CYRC	SEP.16
-	TENDER DRAWING	ALCP	CYRC	MAY.16

CEDD 土木工程拓展署 Civil Engineering and Development Department

KAI TAK DEVELOPMENT

KAI TAK DEVELOPMENT –
STAGE 5A INFRASTRUCTURE AT FORMER NORTH APRON AREA

SEWERAGE - LAYOUT PLAN

SHEET 1 OF 5

AECOM

DRG.NO. 圖紙編號 60102100/5A/1341Z

DESIGNED BY 設計	ALCP	CONTRACT NO. 合約編號	KL/2015/02
P. Dir. APPROVED 監理人	IWLH		
DRAWN BY 繪圖	CRH	STATUS 狀態	AS-CONSTRUCTED DRAWING
SCALE 比例	A1 1 : 500 A3 1 : 1000		
DIMENSIONS ARE IN 尺寸單位	METRES		

For Information Only

Plot File by : 17-Aug-21 TOC3

T:\KL201502\AS-BUILT DRAWING\DRAINAGE & SEWERAGE\5A_1341Z.dgn

KEY PLAN

SCALE A1 1 : 25000
A3 1 : 50000

NOTES:

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING NO. 60102100/5A/1340Z.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60102100/5A/1349-1Z.

LEGEND:

- SITE BOUNDARY
- FOUL SEWER MANHOLE
- Ø300 FOUL SEWER
- TEMPORARY PLUG AT END OF PIPE FOR FUTURE PIPE CONNECTION
- EXISTING FOUL SEWER AND MANHOLE FROM DSD
- RM EXISTING FOUL SEWER MAIN FROM DSD
- EXISTING FOUL SEWER AND MANHOLE FROM HKIA
- EXISTING FOUL SEWER AND MANHOLE FROM DSD TO BE ABANDONED
- EXISTING FOUL SEWER AND MANHOLE FROM HKIA TO BE ABANDONED
- RM EXISTING RISING MAIN

REV. 修訂	DESCRIPTION 內容摘要	D.C. CHECKED 實核	P.C.	DATE 日期
Z	AS-CONSTRUCTED DRAWING	WKL	SLYY	JUN.19
B	WORKING DRAWING	ALCP	CYRC	SEP.16
A	TENDER ADDENDUM NO.1	ALCP	CYRC	JUN.16
–	TENDER DRAWING	ALCP	CYRC	MAY.16

土木工程拓展署
Civil Engineering and Development Department

KAI TAK DEVELOPMENT

KAI TAK DEVELOPMENT –
STAGE 5A INFRASTRUCTURE AT FORMER NORTH APRON AREA

SEWERAGE – LAYOUT PLAN FOR PEDESTRIAN STREET

AECOM

DRG.NO. 圖紙編號 60102100/5A/1344-1Z

DESIGNED BY 設計 ALCP	CONTRACT NO. 合約編號 KL/2015/02	P. Dir. APPROVED 批准人 IWLH
DRAWN BY 繪圖 AHL	STATUS 指示 AS-CONSTRUCTED DRAWING	
SCALE 比例 A1 1 : 500 A3 1 : 1000		
DIMENSIONS ARE IN 尺寸單位 METRES		

For Information Only

Plot File by : 05-Aug-21 TOC3

T:\KL201502\AS-BUILT DRAWING\PEDESTRIAN STREET\5A_1344-1Z.dgn

MANHOLE SCHEDULE

U/S M.H.	D/S M.H.	U/S G.L. (mPD)	D/S G.L. (mPD)	GRADIENT 1 IN	U/S I.L. (mPD)	D/S I.L. (mPD)	PIPE SIZE (mm)	U/S M.H.TYPE	PIPE MATERIAL	BEDDING TYPE	PIPE CLASS
FMH10_74	FMH10_73	5.500*	5.500*	400	4.757	4.665	450	D1	CONCRETE	CLASS B	120
FMH10_73	FMH10_72	5.500*	5.500*	600	4.665	4.616	450	D1	CONCRETE	CLASS B	120
FMH10_72	FMH10_71	5.500*	5.500*	400	4.616	4.540	450	D1	CONCRETE	C.S.	120
FMH10_71	FMH10_70a	5.500*	5.500*	550	4.540	4.415	450	D1	CONCRETE	C.S.	120
FMH10_70a	FMH10_70	5.500*	5.500*	550	4.415	4.382	450	E1	CONCRETE	C.S.	120
FMH10_70	FMH10_80	5.500*	5.500*	400	2.976	2.800	600	E1/BACKDROP2	CONCRETE	CLASS B	120
FMH10_80	FMH10_90	5.500*	5.500*	250	2.460	2.240	750	H/BACKDROP2	CONCRETE	CLASS B	120
FMH10_90	FMH10_90a	5.500*	5.500*	250	0.860	0.528	750	L/BACKDROP2	CONCRETE	CLASS B	120
FMH10_90a	FMH10_270	5.500*	5.500*	350	-1.292	-1.386	750	S1/BACKDROP2	CONCRETE	CLASS B	120
FMH10_270	FMH10_271	5.500*	5.500*	250	-1.536	-1.826	900	S1/BACKDROP3	CONCRETE	CLASS B	120
FMH10_271	FMH10_280	5.500*	5.500*	250	-1.926	-2.052	900	S1	CONCRETE	CLASS B	120
FMH10_280	FMH10_290	5.500*	5.500*	250	-2.052	-2.212	900	S1/BACKDROP3	CONCRETE	CLASS B	120
FMH10_292	FMH10_300	5.500*	5.000	250	-2.430	-2.496	2x750	S3	CONCRETE	C.S.	120
FMH10_300	FMH10_310	5.000	5.000	140	-2.496	-2.810	2x750	S4/BACKDROP3	CONCRETE	C.S.	120
SWTP1_2	FMH10_74	5.000	5.500*	240	4.827	4.798	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
2D1_1	FMH10_71a	5.500*	5.500*	165	4.635	4.613	225	TEMPORARY PLUG	CONCRETE	C.S.	120
2D1_1b	FMH10_71a	5.500*	5.500*	165	4.635	4.613	225	TEMPORARY PLUG	CONCRETE	C.S.	120
2D1_1a	FMH10_71a	5.500*	5.500*	240	4.665	4.650	300	TEMPORARY PLUG	CONCRETE	C.S.	120
FMH10_71a	FMH10_71	5.500*	5.500*	400	4.613	4.540	450	D1	CONCRETE	C.S.	120
2B6_1	FMH10_71	5.500*	5.500*	220	4.702	4.643	300	TEMPORARY PLUG	CONCRETE	C.S.	120
-	FMH10_70a	5.500*	5.500*	240	4.420	4.416	300	TEMPORARY PLUG	CONCRETE	C.S.	120
2D1_2	FMH10_80a	5.500*	5.500*	150	4.784	4.760	225	TEMPORARY PLUG	CONCRETE	C.S.	120
2D1_2b	FMH10_80a	5.500*	5.500*	150	4.784	4.760	225	TEMPORARY PLUG	CONCRETE	C.S.	120
2D1_2a	FMH10_80a	5.500*	5.500*	150	4.784	4.760	300	TEMPORARY PLUG	CONCRETE	C.S.	120
FMH10_80a	FMH10_80	5.500*	5.500*	100	4.750	4.440	375	D1	CONCRETE	C.S.	120
2D1_3	FMH10_270a	5.500*	5.500*	150	4.544	4.520	225	TEMPORARY PLUG	CONCRETE	C.S.	120
2D1_3b	FMH10_270a	5.500*	5.500*	150	4.544	4.520	225	TEMPORARY PLUG	CONCRETE	C.S.	120
2D1_3a	FMH10_270a	5.500*	5.500*	150	4.544	4.520	300	TEMPORARY PLUG	CONCRETE	C.S.	120
FMH10_270a	FMH10_270	5.500*	5.500*	300	4.510	4.374	375	D1	CONCRETE	C.S.	120
LTSB1_2	FMH10_280	5.500*	5.500*	240	2.788	2.700	225	TEMPORARY PLUG	CONCRETE	CLASS B	120
SS1_2	FMH10_300	5.000	5.000	100	2.018	2.000	225	TEMPORARY PLUG	CONCRETE	CLASS B	120
-	FMH 10_70	5.500*	5.500*	240	3.417	3.376	600	TEMPORARY PLUG	CONCRETE	CLASS B	120
-	FMH 10_90	5.500*	5.500*	300	1.541	1.456	450	TEMPORARY PLUG	CONCRETE	CLASS B	120
-	FMH 10_80	5.500*	5.500*	300	2.545	2.460	450	TEMPORARY PLUG	CONCRETE	CLASS B	120

* COVER LEVEL = +5.5mPD WHILE GROUND LEVEL = +4.8mPD

MANHOLE SCHEDULE

U/S M.H.	D/S M.H.	U/S G.L. (mPD)	D/S G.L. (mPD)	GRADIENT 1 IN	U/S I.L. (mPD)	D/S I.L. (mPD)	PIPE SIZE (mm)	U/S M.H.TYPE	PIPE MATERIAL	BEDDING TYPE	PIPE CLASS
FMH50_10	FMH50_10a	6.040	6.300	240	4.100	3.996	375	E1	CONCRETE	CLASS B	120
FMH50_10a	FMH50_20	6.300	6.300	240	3.896	3.733	375	E1	CONCRETE	CLASS B	120
FMH50_20	FMH50_30	6.300	6.200	240	3.733	3.429	375	E1	CONCRETE	CLASS B	120
FMH50_30	FMH50_50	6.200	5.970	240	3.429	3.095	375	E1	CONCRETE	CLASS B	120
FMH50_50	FMH10_270	5.970	5.500*	150	3.095	2.925	375	E1	CONCRETE	CLASS B	120
2A2_1	FMH50_10	6.040	6.040	240	4.407	4.350	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
2A3_1	FMH50_10	6.040	6.040	240	4.528	4.450	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
LTSB1_1	FMH50_10a	6.300	6.300	240	4.329	4.246	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
2B1_1	FMH50_50	5.970	5.970	120	3.661	3.618	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
2B1_2	FMH50_30	6.200	6.200	120	3.943	3.900	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
2B2_1	FMH50_50	5.970	5.970	120	3.709	3.618	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
2B2_2	FMH50_30	6.200	6.200	60	4.209	4.028	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
-	FMH10_90	4.800	5.500*	120	1.480	1.450	450	TEMPORARY PLUG	CONCRETE	CLASS B	120
FMH60_10	FMH60_20	5.300	5.200	220	3.621	3.465	450	E1	CONCRETE	CLASS B	120
FMH60_20	FMH60_40	5.200	5.000	220	3.465	3.214	450	E1	CONCRETE	CLASS B	120
FMH60_40	FMH60_50	5.000	5.500*	220	1.632	1.136	450	L/BACKDROP3	CONCRETE	CLASS B	120
FMH60_50	FMH60_60	5.500*	5.500*	220	1.136	0.901	450	L	CONCRETE	CLASS B	120
FMH60_60	FMH10_290	5.500*	5.500*	220	0.901	0.758	450	L	CONCRETE	CLASS B	120
FMH10_290	FMH10_291	5.500*	5.500*	250	-2.212	-2.242	900	S5/BACKDROP3	CONCRETE	CLASS B	120
FMH10_291	FMH10_292	5.500*	5.500*	250	-2.242	-2.430	2x750	S6	CONCRETE	CLASS B	120
2A1_1	FMH60_10	5.300	5.300	240	4.135	4.100	300	TEMPORARY PLUG	CONCRETE	CLASS B	120
1M1_1	FMH60_10	5.300	5.300	240	3.790	3.621	450	TEMPORARY PLUG	CONCRETE	CLASS B	120
1M2_1	FMH60_10	5.300	5.300	240	3.807	3.771	300	TEMPORARY PLUG	CONCRETE	CLASS B	120

NOTES:

1. FOR GENERAL NOTES AND ABBREVIATION SEE DRAWING NO. 60102100/5A/1340.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWING NOS. 60102100/5A/1341 TO 1345.
3. FOR DETAILS OF STANDARD MANHOLE, SEE DSD STANDARD DRAWINGS.
4. FOR DETAILS OF SPECIAL MANHOLES, SEE DRAWING NOS. 60102100/5A/1350 TO 1353.
5. FOR DETAILS OF CONCRETE SURROUND FOR PIPES, SEE DRAWING NO. 60102100/5A/1349.
6. THE EXACT INVERT LEVELS OF FMH10_310, U/S AND D/S SHOULD MATCH WITH THE INVERT LEVELS OF UPSTREAM OR DOWNSTREAM SEWER AND SHOULD BE DETERMINED ON SITE.

For Information Only

REV. 修訂	DESCRIPTION 內容摘要	D.E.	CHECKED 覆核 P.E.	DATE 日期
Z	AS-CONSTRUCTED DRAWING	WKL	SLYY	DEC.21
B	WORKING DRAWING	ALCP	CYRC	SEP.16
A	TENDER ADDENDUM NO.1	ALCP	CYRC	JUN.16
-	TENDER DRAWING	ALCP	CYRC	MAY.16

CEDD 土木工程拓展署 Civil Engineering and Development Department

KAI TAK DEVELOPMENT

KAI TAK DEVELOPMENT -
STAGE 5A INFRASTRUCTURE AT FORMER NORTH APRON AREA

SEWERAGE - MANHOLE SCHEDULE

AECOM

DRG.NO. 圖紙編號 60102100/5A/1348Z

DESIGNED BY 設計	CONTRACT NO. 合約編號	P. Dir. APPROVED 批准人
ALCP	KL/2015/02	IWLH
DRAWN BY 繪圖 CRH	STATUS 報告 AS-CONSTRUCTED DRAWING	
SCALE 比例 N.T.S.		
DIMENSIONS ARE IN 尺寸單位 METRES		

For Information Only

N

SMH4037051
CL 5.82
A1 3.86-600
X1 3.86-600

Air Valve
FVH4001660

SMH4037050
CL 5.82
A1 3.95-600
X1 3.95-600

FCH4001883
CL 6.40
A1 2.37-900
A2 2.37-900
X1 2.37-900

AIR VALVE CHAMBER

Air Valve
FVH4001661

PIC AVENUE

6.9
6.7
6.5

WIP Dec 2022

L
H

MUK LAI STREET

TS

STH4004758
X1 600

FTH4011138
X1 300

SMH4114191
A1 600
A2 600
X1 1200

FMH4099003
A1 300
A2 300
X1 375

STH4004760

FTH4011140

STH4004757
X1 600

SMH4114192
A1 1200
X1 1200

FTH4011139
X1 300

SMH4114193
A1 1200
X1 1200

SMH4114194
A1 450
A2 1200
A3 750
X1 1350

FMH4099004
A1 375
X1 375

STH4004759

SMH4114195
A1 300
X1 450

SMH4112584
CL 6.20
A1 1350
X1 2.67-1350

FMH4095864
CL 6.50
A1 375
X1 3.73-375

EXISTING SEWER
EXISTING S.W.D.
SEWER ALIGNMENT AND LEVELS SHOWN ARE SUBJECT TO SITE VERIFICATION
PART OF DRG NO.: 11-NE-11A 4
SCALE 1 : 500

17 JAN 2024

8381005

838000E

838100E

N

WIP Dec 2022

SMH4112585
CL 6.10
A1 2.65-1350
X1 2.64-1350

1350

375

1350

FMH4095865
CL 6.20
A1 4.04-300
A2 3.43-375
A3 3.90-300
X1 3.43-375

FTH4
X1 3.9

380

135

300

SMH4112586
CL 6.05
A1 2.60-1350
X1 2.60-1350

FTH4011170
X1 4.23-300

SMH4112587
CL 6.00
A1 2.58-1350
X1 2.25-1350

L

L

H

WIP Dec 2022

TS

WIP Dec 2022

EXISTING SEWER
EXISTING S.W.D.
SEWER ALIGNMENT AND LEVELS SHOWN ARE SUBJECT TO SITE VERIFICATION
PART OF DRG NO.: 11-NE-11C-2
SCALE 1 : 500

17 JAN 2024

For Information Only

For Information Only

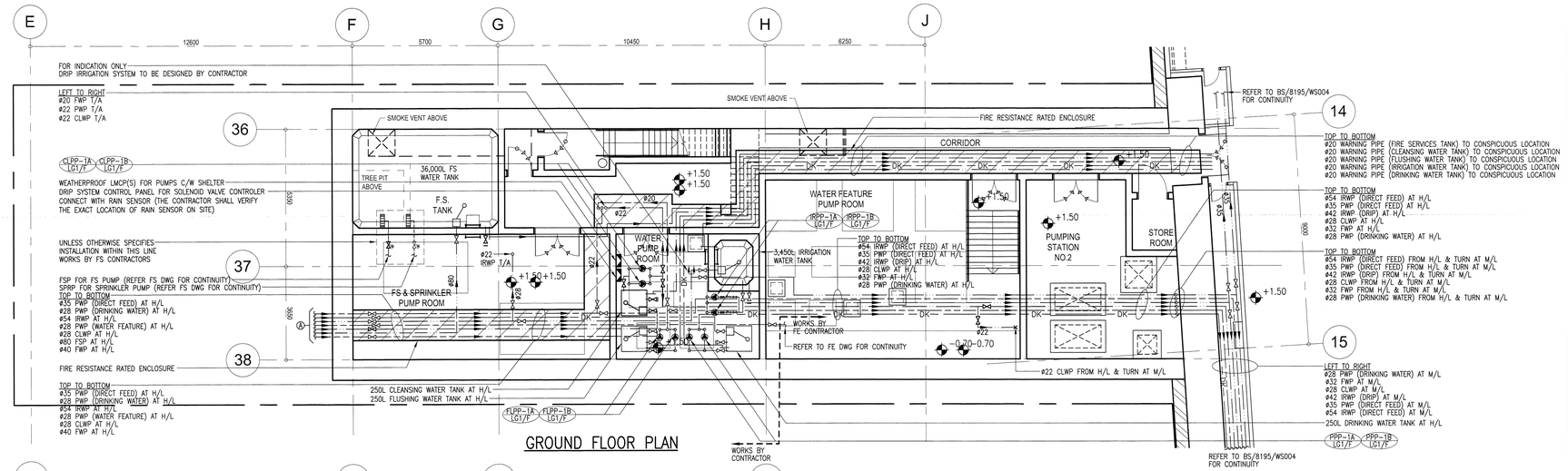
838200E
838250E
821000N
820900N
N
FMH4095865
CL 6.20
A1 4.04-300
A2 3.43-375
A3 3.90-300
X1 3.43-375
FTH4011171
X1 3.98-300
FMH4095866
CL 5.97
A1 3.62-300
A2 3.10-375
A3 3.62-300
X1 3.10-375
SMH4112588
CL 5.94
A1 2.14-1350
X1 1.86-1350
FTH4011173
X1 3.66-300
FTH4011172
X1 3.71-300
SMH4112589
CL 5.92
A1 1.82-1350
X1 1.43-1350
SMH4112590
CL 5.90
A1 1.42-1350
X1 1.42-1350
STH4004762
X1 1.55-900
Sp M/H
FSH4007752
CL 5.50
A1 -1.54-225
A2 4.37-375
A3 -1.54-225
A4 -1.39-750
A5 2.93-375
X1 -1.54-900
SGJ4045697
IL 2.35
SLH4027428
CL 6.00
DTL 2.40-450
Sp M/H
SSH4009064
CL 5.85
A1 1.49-900
A2 1.35-1350
A3 1.50-900
X1 0.89-1800
STH4004761
X1 1.52-900
FLH4035711
CL 6.00
DTL 4.45-225
Sp M/H
SSH4009065
CL 5.80
A1 0.84-1800
X1 0.79-2 x 1200
FLH4035710
CL 6.00
DTL 4.32-225
SLH4027424
CL 6.10
DTL 2.70-450
SGJ4045695
IL 2.65
SGJ4045696
IL 2.35
SLH4027427
CL 6.00
DTL 2.40-525
Sp M/H
FSH4007751
CL 5.50
A1 0.53-750
X1 -1.29-750
SMH4115130
CL 5.95
A1 0.50-450
X1 0.50-450
SLH4027425
CL 5.95
DTL 3.38-450
SMH4112581
CL 5.50
A1 0.49-1200
A2 0.50-450
X1 0.56-1350
ZIA4005889
ZDA4006657
FMH4095849
CL 5.50
A1 2.24-750
A2 1.46-450
X1 0.86-750
1 CELL 5000x4000 B.C.
22
11-NE-11D-1

EXISTING SEWER
EXISTING S.W.D.
SEWER ALIGNMENT AND LEVELS SHOWN ARE SUBJECT TO SITE VERIFICATION
PART OF DRG NO.: 11-NE-11C-2
SCALE 1 : 500

Appendix D

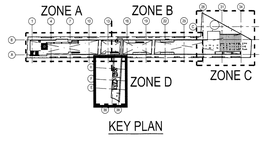
Reference

For Information Only
ArchSD drawing layout plan of the Lung Tsun Stone Bridge Preservation Corridor



Accessible toilet(including 1 toilet and 1 wash basin)

NOTES:



REVISION			
no.	date	description	initial

	name	date
designed		
drawn	W.P. LEE	10/2019
checked	W.P. LEE	10/2019
approved		
Chief Building Services Engineer	W.H. LEUNG	19/11/19
Atg. Senior Building Services Engineer	S.C. LEUNG	12/11/2019
Project Building Services Engineer	K.C. KUO	12/11/2019
	Sig.	Date
contract no.	SS H506	
file no.	ASD/8195/SSH506/C50/530	
project no.	470RO	

contract
LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR AT KAI TAK

drawing title
PLUMBING INSTALLATION LAYOUT AT LG1/F & G/F (BLOCK A)

drawing no.
BS/8195/WS003

scale
1:100

office
BUILDING SERVICES BRANCH

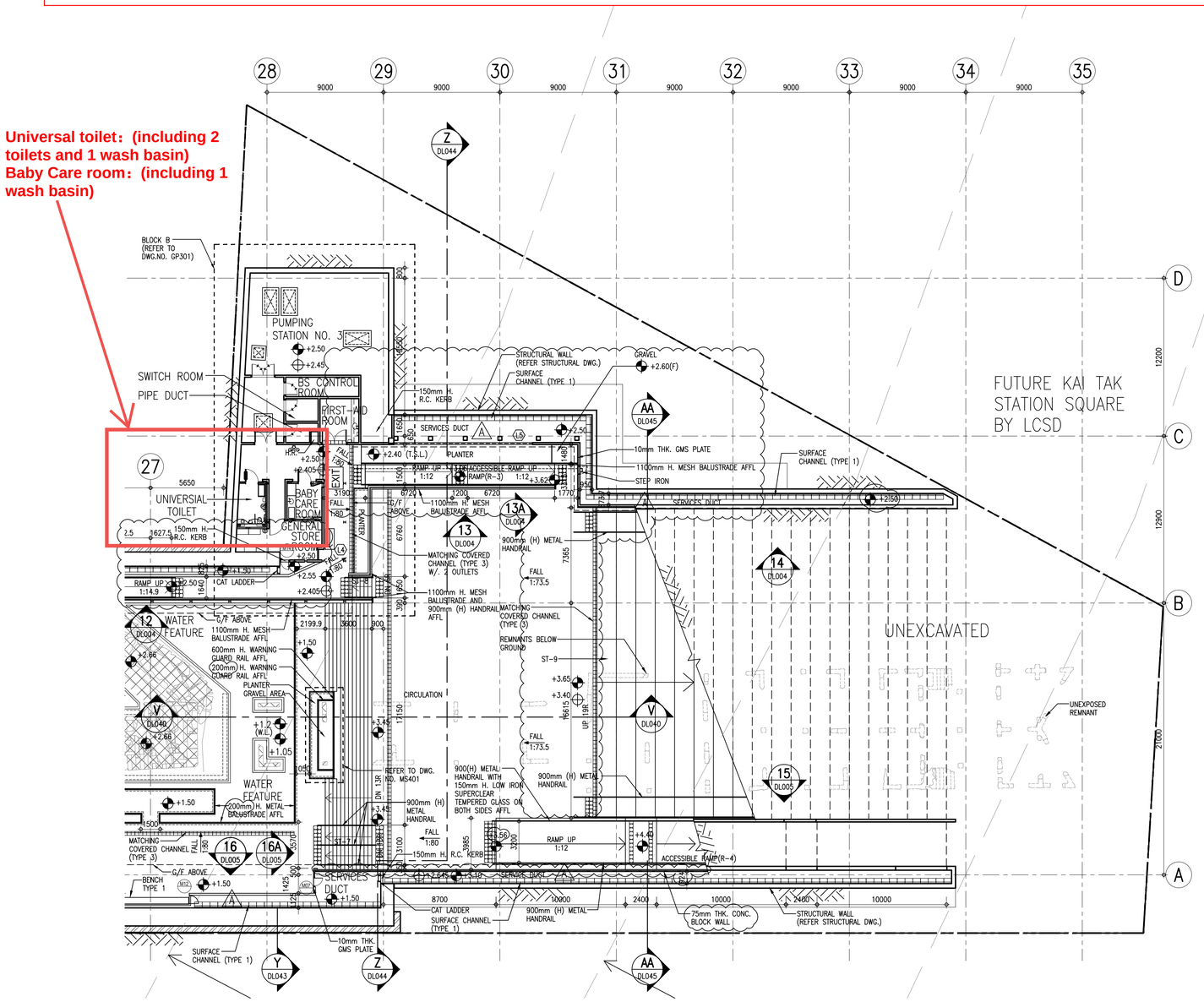
ARCHITECTURAL SERVICES DEPARTMENT

Section: 2M Division: 2

A1 841 x 594

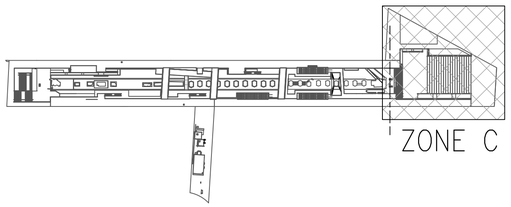
Drawing filename: A0881958WS003.dwg Xref drawings: A08-8195-P-WSBKA-N, A08-8195-P-LPWS41-N, GP201, KEY PLAN

For Information Only
ArchSD drawing layout plan of the Lung Tsun Stone Bridge Preservation Corridor



1 LG1/F PLAN ZONE C
1 : 200

NOTES



KEY PLAN

no.	date	description	initial
a	10.2022	1. PLANTER AND GRAVEL AREA LAYOUT REVISED. 2. TYPE 1 CHANNEL COVER REVISED. 3. LEVEL REVISED. 4. ST-7 AND ST-8 REVISED.	S.A. S.A. B. WAN P.A. P.A. S. YUEN
A-005			
b	01.2023	1. GRID B, 24-28 SERVICES DUCT ADDED. 2. RAMP (R-3) REVISED. 3. LEVEL OF SERVICES DUCT REVISED. 4. LAYOUT PLAN REVISED.	S.A. B. WAN P.A. S. YUEN
A-007			

REVISION

	name	date
designed	L. LIU	10/2020
drawn	W.Y. YIP	10/2020
checked	W.H. LAW	10/2020

approved
Chief Architect (ORIGINAL SIGNED) T. WAN CA/1 10/2020
Senior Architect (ORIGINAL SIGNED) E. WONG SA/12 10/2020
Project Architect (ORIGINAL SIGNED) L. LIU A/102 10/2020
signed date

contract no. SS H506
file no. ASD 51/8195G/RA/DEVB/001
project no. 470RO

contract
CONSTRUCTION OF LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR AT KAI TAK

drawing title
SITE A – LOWER GROUND 1 FLOOR PLAN (ZONE C)

drawing no.
AB/8195/GP104a
(CAD)

scale
1:200 (A1)

office
ARCHITECTURAL BRANCH

ARCHITECTURAL SERVICES DEPARTMENT

CAD Ref. - ada-8195-p-dlg1-n.dwg—1:1

Not all sanitary appliances will be in simultaneous use. The peak design flow can be assessed by applying a frequency of use K factor (see Table 6) to the total sum of the discharge units, and by using the following equation:

$$Qww = K \sqrt{\sum DU}$$

Where:

Q_{ww} = Wastewater flow rate (l/s)

K = Frequency of use

$\sum DU$ = Sum of discharge units

Before the stack selection can be made, any other continuous or fixed flow must be added to the Qww value. The following equation explains further:

$$Q_{tot} = Q_{ww} + Q_c + Q_p$$

Where:

Q_{tot} = Total flowrate (l/s)

Q_{ww} = Wastewater flowrate (l/s)

Q_c = Continuous flowrate (l/s)

Q_p = Pumped flowrate (l/s)

Once the Q_{tot} value has been obtained, a decision about the stack size, and ventilation principle can be made by referring to Table 7 and 8. The pipe sizes relate to the pipe bores which have traditionally been used in the UK. The theoretical minimum bore for 50, 75, 100 and 150 sizes is 44, 75, 96, and 146mm respectively. Both Table 4 and 5 are based on 'swept entry' equal branches, which are required in the UK.

Table 5

Appliance	DU (L/s)
Wash basin or bidet	0.3
Shower without plug	0.4
Shower with plug	1.3
Single urinal with cistern	0.4
Slab urinal (per person)	0.2
Bath	1.3
Kitchen sink	1.3
Dishwasher (household)	0.2
Washing machine (6kg)	0.6
Washing machine (12kg)	1.2
WC with 6l cistern	1.2 – 1.7
WC with 7.5l cistern	1.4 – 1.8
WC with 9l cistern	1.6 – 2.0

The Water Regulations & Byelaws in the UK do not allow the use of 7.5 or 9 litre WC flushing cisterns on new installations, the information is provided for use in connection with existing systems.

Table 6

Usage of appliances	K
Intermittent use, e.g. dwelling, guesthouse, office	0.5
Frequent use, e.g. hotel, restaurant, school, hospital	0.7
Congested use, e.g. toilets and/or showers open to the public	1.0
Special use, e.g. laboratory	1.2

***Table 7** Maximum capacity of PRIMARY ventilated discharge stacks*

Min. stack & vent I.D.	Litres/sec
75mm*	2.6
100mm	5.2
150mm	12.4

** No WC's allowed on 75mm stacks*

***Table 8** Maximum capacity of SECONDARY ventilated discharge stacks*

Min. stack & vent I.D.		Litres/sec
Stack & vent	Vent	
75mm*	50mm	3.4
100mm	50mm	7.3
150mm	50mm	18.3

** No WC's allowed on 75mm stacks*

Example 1

Determine total design flowrate and stack requirements for an 11-storey block of apartments. The each stack will serve one apartment per floor, comprising of bathroom, en-suite shower room and fully fitted kitchen.

DU per flat:

2 WC's × 1.7 =	3.4
2 wash basins × 0.3 =	0.6
1 bath =	1.3
1 shower =	0.4
1 kitchen sink =	1.3
1 washing machine =	0.6
1 dishwasher =	0.2
	7.8

Assume a primary ventilated stack is adequate; therefore the bottom storey must connect separately to drain (see Figure 5).

For 10 storeys, $\sum DU$: 7.8 x 10 = 78

K = 0.5, so $Q_{ww} = 0.5 \sqrt{78} = 4.42$l/s

Q_c & Q_p = zero, so $Q_{tot} = 4.42$l/s

From Table 7, a 100mm primary ventilated stack has a limit of 5.2l/s, so this size is adequate. Secondary ventilation is not required.

Example 2

Determine total design flowrate and stack requirements for an 11-storey hotel. The stack will serve two en-suite bathrooms on each floor; there will be air conditioning units on the roof with a peak discharge of 0.2L/s, and laundry equipment on the 5th floor with a peak discharge of 0.5l/s.

DU per typical floor:

2 WC's × 1.7 =	3.4
2 wash basins x 0.3 =	0.6
2 baths × 1.3 =	2.6
	6.6

Assume a primary ventilated stack is adequate; therefore the bottom storey must connect separately to drain (see Figure 5).

For 10 storeys, $\sum DU$: 6.6 x 10 = 66

K = 0.7, so $Q_{ww} = 0.7 \sqrt{66} = 5.7$l/s

Q_{tot}: 5.7 + 0.2 + 0.5 = 6.4l/s

There are two options; a 150mm primary ventilated stack, or a 100mm secondary ventilated stack and 50mm secondary vent. Practical considerations would dictate the best choice, for example a proprietary fitting such as the collar boss (see Figure 19) is only available in the 100mm size.

Self-sealing waste valves

The recent introduction to the plumbing market of waste valves to replace the water seal trap offers the installer an opportunity to reconsider his system design, often reducing the amount of pipework required, whilst still meeting the mandatory requirement of Building Regulation ADH.1. These valves and their function are described in Figures 22 to 26.

As the name suggests, these valves open to allow the flow of water from the appliance, or to allow air to enter the pipework system in the case of negative pressure, then closes automatically when the flow stops or the pipework system pressure reaches eqilibrium with atmosphere.

This means that a system fitted with valves in place of water seal traps would be self-ventilating.

The valves are designed to open between 3 and 6mb and will remain sealed against 400+mb back pressure.

These valves are particularly useful for situations where water seals would be lost by evaporation – for example, holiday homes, condensate drains from chillers and air conditioning units. (See manufacturers' detailed instructions.)

The valves are available in 32mm (1¼") and 40mm (1½") body size, together with 87½° knuckle elbow and running adaptor. Universal compression outlets are used for making connections to either push fit BS 5254 or solvent weld BS 5255 waste systems.

Supplier information on on pipe property after Lining works for reference.

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XIAMEN ANYUE

FIPP原位热塑成型修复技术

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2.修复后管道过流能力增加

Based on the supplier information,2% reduction on diameter after rehabilitation generally. For the assessment under this proposed development,3% reduction on diameter is assumed conservatively.

修复完成后管壁光滑，虽然管径有略微减小（约2%），但流量可以增加20%以上。

内衬管过流比计算 (以DN400为例)	插管过流比计算 (以PE100级 DN355 SDR21管材为例)
$B=\left(\frac{0.013}{0.009}\right)\times\left(\frac{388}{400}\right)^{\frac{8}{3}}\times 100\%\approx 133\%$	$B=\left(\frac{0.013}{0.009}\right)\times\left(\frac{321.2}{400}\right)^{\frac{8}{3}}\times 100\%\approx 80.4\%$

Appendix 8: Air Ventilation Assessment

Prepared for

Capital Asian Limited

Prepared by

Ramboll Hong Kong Limited

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

AIR VENTILATION ASSESSMENT

Date	**13 June 2024**
Prepared by	**Echo Cao** **Environmental Consultant**
Signed	
Approved by	**Tony Cheng** **Senior Manager**
Signed	
Project Reference	**SNOKAITAEI00**
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CHAPTERS

TABLES

FIGURES

APPENDICES

1. INTRODUCTION

1.1 Project Background

1.1.1 The Subject Site is located on Muk Lai Street and adjacent to Olympic Avenue, at Kai Tak Site 2A2, Kowloon. The Site is zoned "Comprehensive Development Area (4)" on the approved Kai Tak Outline Zoning Plan No. S/K22/8 gazetted on 28 Oct 2022.

1.1.2 A S.16 planning application is submitted to seek approval from the Town Planning Board for a comprehensive development, including flat, shop & services, eating place, and minor relaxation of Building Height Restriction (BHR) to adopt Modular Integrated Construction (MiC).

1.1.3 Ramboll Hong Kong Limited has been commissioned by the project proponent to undertake an Air Ventilation Assessment (AVA) for the Subject Sites in support of the lease application.

1.2 Objectives

1.2.1 This AVA contains a quantitative Computational Fluid Dynamics (CFD) assessment of the potential ventilation impact of the proposed building design on the future pedestrian wind environment.

1.3 Subject Sites and its Environs

1.3.1 The Subject Site is zoned "Comprehensive Development Area (4)" on the approved Kai Tak Outline Zoning Plan No. S/K22/8.

1.3.2 Site 2A2, with a gross area of about 6,270 s.m., is generally flat and currently the surroundings are vacant. To the southwest of the Subject Site is Muk Lai Street. To the northwest of the Site is the existing Olympic Road and Prince Edward Road East. Site 2A3, zoned "Residential (A) 6" is abutting to the southwest with Muk Lai Street lying between. A subsidized Sales Flats development at Site 2B1 is located to the southeast of the Subject Site. Lung Tsun Stone Bridge Preservation Corridor is situated to the northeast of the Site.

1.3.3 To enhance the vibrancy for the nearby area, a retail belt was proposed along the north-eastern boundary and south-eastern boundary within the Subject Site.

1.3.4 **Figure 1** shows the location and the environs of the Subject Site.

1.4 Future/ Committed Development

1.4.1 The future residential developments at Kai Tak area were referenced to the indicative layout plan extracted from the "Planning Review Report of Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction, Further Review of Land Use in Kai Tak Development" (by AECOM Asia Co. Ltd, November 2021).

1.4.2 On the other hand, the following future/ committed developments have been considered in this study.

1. Kai Yan Court
2. a: Future Residential Site 2B1

   b: Public Housing Development Sites 2B3-2B4

   c: Public Housing Development Sites 2B5-2B6

3. Future CDA (2) Site Application No. A/K10/256 and A/K10/259
4. Approved Application No. A/K10/265
5. a: Future Kai Tak Sports Park (Application No. A/K22/17);

   b: Future Office and Hotel Development of Kai Tak Sports Park (Application No. A/K22/28)
6. Proposed Dedicated Rehousing Estate at Ma Tau Kok
7. URA Project KC-018 & KC-019
8. Public Housing Site at To Kwa Wan Road
9. Approved Application No. A/K22/23
10. Curvilinear Elevated Walkway Connecting Mikiki & Site 1M2
11. Future CDA 1M1 (Commercial Use)
12. Future Site 1M2 for Arts and Performance Related Use
13. Future CDA Site 2A1 (Commercial Use)
14. Future Lung Tsun Stone Bridge Preservation Corridor
15. URA Project KC-015
16. Approved Planning Application (No. Y/K10/4)
17. URA Project KC-017
18. a: Future Residential Site 2A2-2A4 & 2A5(B)

    b: Future Site 2A5(A) for G/IC Use
19. 4-24 Nam Kok Road
20. Approved Application A/K10/249-1
21. Future Residential Site 2A10

1.5 Baseline Scheme

1.5.1 The Baseline Scheme is referenced to the layout of the Proposed Scheme identified in the Figure 5.6b of "Planning Review Study of Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction, Further Review of Land Use in Kai Tak Development" (by AECOM Asia Co. Ltd, November 2021) under MPC Paper No. 9/21.

1.5.2 The Subject Site contains one L-shaped domestic tower. The tower has a building height of +125 mPD, with 31 residential storeys atop a 4-storey podium.

1.5.3 Along the northeast and southeast boundaries of the Subject Site, there is a retail belt elevated at +15 mPD. There is a 15m setback from the retail belt to the northwest boundary. **Appendix 1** show the Master Layout Plan (MLP) of the Baseline Scheme.

1.5.4 The development parameters of the Baseline Scheme in the abovementioned study is listed in **Table 1.1**.

Table 1.1 Development Parameters of the Baseline Scheme

Site	Zoning	Site Area (sqm)	Domestic Plot Ratio	GFA			No. of Flats
				Retail	G/IC	Residential	
2A2	CDA	6,270	6.5	6,270	4,269	40,755	679

1.6 Proposed Scheme

1.6.1 **Appendix 2** shows the Master Layout Plan (MLP) of the Proposed Scheme.

1.6.2 The Subject Site features a domestic tower, similar to the Baseline Scheme. The tower has a building height of +129.035 mPD. The plot ratio is 6.5 for domestic use and 1.0 for non-domestic use. However, the Proposed Scheme includes 930 units, which is a higher number than the Baseline Scheme.

1.6.3 Along the northeast and southeast boundaries of the Subject Site, there is a 2-storey retail belt elevated at +15 mPD.

1.6.4 The tower in the Subject Site is 32 storeys tall, rising from a 3-storey podium. The tower takes on an L-shape configuration.

1.6.5 There is a 15m townscape setback from the retail belt and clubhouse/ tower to the northwest boundary.

1.6.6 The development parameters of the Baseline Scheme in the abovementioned study are listed in **Table 1.2**.

Table 1.2 Development Parameters of the Proposed Scheme

Overall Development	
Application Site Area	6,270 m^2 (about)
Total Plot Ratio (Maximum) • Domestic • Non-domestic ○ Retail Belt	7.5 6.5 1.0 0.2
Total GFA (Maximum) • Domestic • Non-domestic ○ Retail Belt	47,025 m^2 (about) 40,755 m^2 (about) 6,270 m^2 (about) (1) 1,254 m^2 (minimum)
Maximum Site Coverage	Not more than 65% [excluding basements]
No. of Blocks • Residential tower on podium (including Retail Belt)	1

No. of Storeys • Residential Tower	**32 nos.** of domestic floors (above 3 levels of podium)
• Podium	**3 nos.** with clubhouse, covered landscape area, residential lobbies, E&M, shops and services and eating place (on G/F and 1/F only), above 3 levels of basement for use of shops and services and eating place, and car park
Maximum Building Height	**+129.035 mPD** (at main roof) and **+15 mPD** (at main roof and not exceeding 2-storeys above ground within Retail Belt)
No. of Flats	930
Average Flat Size	44 m^2 (about)
Design Population (2)	2,232
Completion Year	2029
Private Open Space (3)	2,232m^2
Public Open Space [in Open Space (3) zone] • Site Area • Greenery Site Coverage	 1,100 m^2 (about) 30%
Private Carparking Spaces • Residential • Visitor • Non-domestic	240 nos. (not more than) 191 nos. (not more than) 5 nos. (not more than) 44 nos. (not more than)
Loading/ Unloading Bays • Residential • Non-domestic	 2 nos. 8 nos.
Motorcycle Parking Spaces • Residential • Non-domestic	 10 nos. 5 nos.
Bicycle Parking Spaces	60 nos. (not more than)

Remarks:

(1) The approximate total GFA (i.e. commercial GFA) in USS portion A and B is tentatively at about 1,100 m^2, and the commercial GFA in our Application Site is tentatively at about 5,570 m^2 (i.e. below the max. 6,270 m^2 – including retail belt's GFA of minimum 1,254 m^2, and at the FFL -5.7mPD of the USS GFA would be not less than 4,000m^2), complying

with the requirements under lease and the Planning Brief, while the exact number is subject to detail design, and further liaisons and justifications in future GBP submissions to Buildings Department, and discharge of lease conditions to Lands Department.

(2) Based on a person per flat ratio of 2.4

(3) Based on the minimum standard of 1 m^2 per person as stipulated in the Hong Kong Planning Standards and Guidelines.

2. SITE WIND AVAILABILITY

2.1 Site Wind Availability Data

2.1.1 According to the Planning Department's website, a meso-scale Regional Atmospheric Modeling System (RAMS) was used to produce a simulated 10-year wind climate at the horizontal resolution of 0.5 km x 0.5 km covering the whole territory of Hong Kong. The simulated wind data represents the annual, winter and summer wind conditions at various levels, i.e. 200 m, 300 m, and 500 m above terrain.

2.1.2 It is considered an acceptable starting point to use the simulated RAMS data for Site wind availability. The use of RAMS data (grid: X;084, Y:044) is preferred over measurement data at Waglan Island as it can reflect the effect of topography to wind availability.

2.1.3 The relevant annual windrose for the district under concern has been extracted from the Planning Department's website for Subject Sites wind availability data. **Figure 2** shows the relevant windrose diagram (at 500 m) representing the frequency and wind speed distribution of the district concerned for both summer and annual conditions. The simulated windroses show that the annual prevailing is coming from E direction (21.1%) with contributions from ENE (11.4%); while the summer prevailing is coming from SW direction (15.8%) with contributions from SSW (13.3%). In this quantitative AVA, a CFD software has been used. According to the *Technical Guide*, simplification of wind data for the initial study has been adopted. The wind directions with highest probability of occurrence are selected for AVA purposes. 8 most frequently occurred prevailing wind directions were selected for both annual and summer conditions with overall frequency of occurrence equivalent to 78.4% and 82.2% respectively of the time in a year.

2.1.4 **Table 2.1** summarizes the simulated wind availability data including probability of occurrence.

Table 2.1 Summary of RAMS Data and Wind Direction

Wind Direction	Probability for Annual Condition (%)	Probability for Summer Condition (%)
N	2.6	0.8
NNE	6.6	1.2
NE	8.4	1.4
ENE	11.4	2.5
E	21.1	8.5
ESE	12	10.2
SE	6.5	7.8
SSE	4.2	7.7
S	4.4	9.1
SSW	5.9	13.3
SW	6.5	15.8
WSW	3.9	9.8
W	2.6	5.5
WNW	1.4	2.8
NW	1.2	2.1

Wind Direction	Probability for Annual Condition (%)	Probability for Summer Condition (%)
NNW	1.2	1.2

2.2 Topography and Building Morphology

Topography

2.2.1 According to the "Air Ventilation Assessment – Initial Study for Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction, Additional Services for Technical Study on Increasing the Development Density in Kai Tak Area", the topography at the Kai Tak area (including the Subject Sites) is relatively flat with slightly raised terrain in San Po Kong area and Kowloon Bay area. Also, the topography is generally flat within the Kai Tak area around the Subject Sites.

2.2.2 Lion Rock Country Park (with the hill-top around 490 mPD located around 2.8 km to the north), Fei Ngo Shan (with the hill-top around 600 mPD located around 3.3 km to the northeast) and Braemar Hill (with the hill-top around 300 mPD located around 5.7 km to the south) would impact the winds approaching the Subject Sites from north, northeast and south direction respectively.

Building Morphology

2.2.3 The Subject Sites will be surrounded by mid- to high-rise developments. The building height information of these identified developments are referenced from "Planning Review Report of Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction, Further Review of Land Use in Kai Tak Development" (by AECOM Asia Co. Ltd, November 2021)" and the Approved Kai Tak Outline Zoning Plan (OZP No. S/K22/8, gazetted in October 2022).

2.2.4 **Table 2.2** highlights the building height of the nearby developments.

Table 2.2 Building Height of the Surrounding Developments

Name of Development	Max. Building Height (mPD)	Location from Site
Future CDA Site 1M1and 1M2	15 – 40	Northeast
Future CDA (3)	100	Northeast
Future Kai Tak Sports Park	31 - 70	Southeast
Future Housing Society Site 2B1	135	Southeast
Future Public Housing Sites 2B2, 2B3 & 2B4	125	South
Future Residential Site 2A4	125	Southwest
Future Residential Site 2A5(B)	115	Southwest
Future G/IC Site 2A5(A)	45	Southwest
Future Residential Site 2A10	100	Southwest
Future Public Housing Development at To Kwa Wan Road	125	South
Pumping Station at Site 2A9	13.9	Southwest
Prince Ritz	126.1	West

Name of Development	Max. Building Height (mPD)	Location from Site
KC-017	20 to 160	West
Low to medium existing buildings along Tak Ku Ling Road, South Wall Road and Lund Kong Road	~ 18 to 40	Northwest
Regal Oriental Hotel	51	Northwest
KC-015 Kai Tak Road	120	Northwest
Le Billionnaire	144.4	North
Billionnaire Royale	170	North
K Summit	15 - 130	Southeast
The Henley	25 - 130	Southeast
Upper River Bank	15 – 130	Southeast

3. QUANTITATIVE ASSESSMENT METHODOLOGY

3.1 Atmospheric Conditions

3.1.1 Simulated wind profile curves are extracted from the Planning Department's website using RAMS site wind availability data and is directly adopted for this quantitative AVA.

3.1.2 Wind profile curves (i.e. approach condition from the detail study) A, B, and C would be utilized for quantitative AVA according to the selected wind directions in **Table 2.1**.

3.1.3 For elevation from 0 to 10 m where wind profile information is not available, the wind speed is assumed based on fitted Log Law and measured wind speed value at 10 m from the RAMS Site wind availability data for each wind profile curve.

3.1.4 According to Log Law, $Uz = U^* \div k \times \ln (Z \div Z_0)$ where

Uz = wind speed at height z from ground;

K = von Karman constant = 0.4

Z_0 = roughness length

U^* = friction velocity

Z = height z from ground

3.1.5 The roughness length assumed in the simulation is 2m to present city centres.

3.1.6 The wind profile of 0 m to 10 m is interpolated and then combined with the wind profile curves on RAMS site wind availability data.

3.2 CFD Code and Major Parameters

3.2.1 A quantitative assessment based on the requirement for Initial Study stipulated in the relevant Technical Guide has been conducted for the purpose of comparing the air ventilation performance between the Proposed and the Baseline Schemes.

3.2.2 The quantitative assessment is conducted by using a commercial CFD code, FLUENT. FLUENT model has been widely applied for various AVA research and studies worldwide. The accuracy level of the FLUENT model is well-accepted by the industry for AVA application.

3.2.3 Realizable K-epsilon turbulence providing better prediction of separation and vortexes has been adopted for air ventilation assessment as recommended in COST action C14.

3.2.4 Generally, the assessment area is determined by the height (H) of the highest building within the surrounding area (i.e. Airside with a building height of around 200mPD).

3.2.5 The domain covers the model area of over 400m. The surrounding area is determined by 2 times the height of the highest building within the model area which is equivalent to at least 2H of the highest building (i.e. >2H where H=200 m) from the project Site boundary. It is confirmed that all major noise barriers, elevated structures, and planned / committed / existing developments in the model area have been modelled in the simulation. **Figure 1** indicates the assessment area and the surrounding area of the CFD model.

3.2.6 The domain dimension is about 6000m x 5900m and with an elevation of 1700m. More than 18,200,000 grid cells have been defined to simulate the air flow. Given the large domain adopted in this assessment and the physical limitation on the computational resources of the CFD model, the horizontal and vertical grid size employed in the CFD model in the vicinity of the Project Area is taken as a global minimum size of 2m, and

the size of the grid cells further away from the Project Area is increased by a growth ratio of 1.3. The global maximum size of cells is 32m while smaller cells size of 0.5m were used. Besides, four layers of prism cells (each layer of 0.5m thickness) are employed above the terrain of Subject Sites. The blockage ratio is less than 3%.

3.2.7 The windward boundary is defined as inflow with the wind profile defined. The leeward boundary is defined as outflow. The sky and lateral boundaries are defined as a symmetric boundary condition.

3.2.8 **Appendix 3** shows the domain size and the CFD model in different views.

3.2.9 The advection terms of the momentum and viscous terms are resolved with the second order numerical schemes. The scaled residuals are converged to an order of magnitude of at least 1 x 10-4 as recommended in COST action C14.

3.3 Important Areas

3.3.1 For the proposed development, important surrounding areas that the public would often access have been identified as follows:

(1) Olympic Avenue

(2) Future Site 1M2 for Arts and Performance Related Use

(3) CDA (3)

(4) Open Space (3)

(5) Lung Tsun Stone Bridge

(6) Open Space (2)

(7) Kai Tak Site 2B1

(8) Pedestrian Walkway between Kai Tak 2B1 & Kai Yan Court

(9) Kai Yan Court

(10) Open Space (1)

(11) Kai Tak Site 2B3

(12) MTR Buffer Zone

(13) Muk Shun Street

(14) Site 2A4 & 2A5

(15) Site 2A3

(16) Muk Lai Street

(17) Prince Edward Road East

(18) Proposed Open Space under URA Project KC-017 and KC-015

(19) Kai Tak Road

(20) Carpenter Road & Shek Ku Lung Road

(21) Sa Po Road

(22) Shek Ku Lung Road Playground

3.4 Test Point Location

3.4.1 A total of 162 test points (including 30 numbers of perimeter test points defined along the boundary of the Subject Sites, 126 numbers of overall test points and 6 numbers of special test points within the assessment area) have been selected. The overall test point generally represents important pedestrian areas which are listed in **Section 3.3** above. All test points are located at 2 m above ground level. **Figure 6** shows the test points selected for quantitative air ventilation assessment.

4. KEY FINDINGS

4.1 Spatial Average Wind Velocity Ratios

4.1.1 The velocity ratio under a specific wind direction at a test point is calculated by dividing the simulated wind speed at the test point under a certain wind direction by the velocity at gradient height under the same wind direction. All test points are located at 2 m above ground level.

4.1.2 **Table 4.1** shows the Subject Sites spatial average velocity ratio (SVR), local spatial average velocity ratio (LVR), and average wind velocity ratio along surrounding sensitive area during annual condition and summer condition (for the Proposed Scheme (PS) and Baseline Scheme (BS)).

4.1.3 **Appendix 6** shows the detailed simulation results of the Proposed Scheme and the Baseline Scheme.

Table 4.1 Summary of Spatial Average Wind Velocity Ratios (VR) – Annual and Summer Condition

Location	Test Point	Annual Condition		Summer Condition	
		BS	PS	BS	PS
SVR	P01-P30	0.13	0.13	0.11	**0.13**
LVR	P01-P30, T001-T126	0.15	**0.16**	0.14	**0.15**
Olympic Avenue	P01,P03,P05,T001-T022	0.20	**0.22**	0.18	0.18
Future Site 1M2 for Arts and Performance Related Use	T023-T027	0.17	0.17	0.17	0.17
CDA (3)	T028-T032	0.14	0.14	**0.09**	0.06
Open Space (3)	T033-T043	0.21	0.21	0.22	**0.23**
Lung Tsun Stone Bridge	T044-T052	0.11	0.11	0.12	**0.13**
Open Space (2)	P18,T053-T054	0.12	**0.13**	0.11	**0.13**
Kai Tak 2B1	T055-T59	0.11	0.11	**0.12**	0.10
Pedestrian Walkway between Kai Tak 2B1 and Kai Yan Court	T060-T063	0.16	0.16	0.19	**0.20**
Kai Yan Court	T064-T069	**0.18**	0.17	0.18	0.18
Open Space (1)	T070-T081	0.17	0.17	0.18	0.18
Kai Tak 2B3	T082-T085	**0.16**	0.15	**0.17**	0.16
MTR Buffer Zone	T058-T059,T062,T066-T069,T079-T080,T082-T085	0.17	0.17	**0.19**	0.18
Muk Shun Street	T086-T088	**0.12**	0.11	**0.10**	0.09
Site 2A4 and 2A5	T089-T092	0.11	0.11	0.10	0.10
Site 2A3	T093-T094,T125	**0.09**	0.08	**0.11**	0.10
Muk Lai Street	P01,P22,P24,P29,T009, T095-T098,T126	0.13	0.13	0.12	**0.15**
Prince Edward Road East	T099-T102	**0.21**	0.19	0.14	0.14

Location	Test Point	Annual Condition		Summer Condition	
		BS	PS	BS	PS
Proposed Open Space under URA Project KC-015 and KC-017	T103-T107	**0.12**	0.10	0.11	0.11
Kai Tak Road	T105-T106,T108-T109	**0.12**	0.11	0.11	0.11
Carpenter Road and Shek Ku Lung Road	T110-T113	0.10	**0.12**	0.10	0.10
Sa Po Road	T111,T114-T116	0.15	0.15	0.12	**0.13**
Shek Ku Lung Road Playground	T117-T124	0.17	0.17	0.14	**0.15**
Special Test Points	S01-S06	**0.14**	0.12	**0.14**	0.13
15m setback	S01-S03	0.16	0.16	0.13	**0.15**

Note: Highlighted in **red** where VR is higher in the Proposed Scheme

Highlighted in **blue** where VR is higher in the Baseline Scheme

4.2 Discussion on Air Ventilation Performance

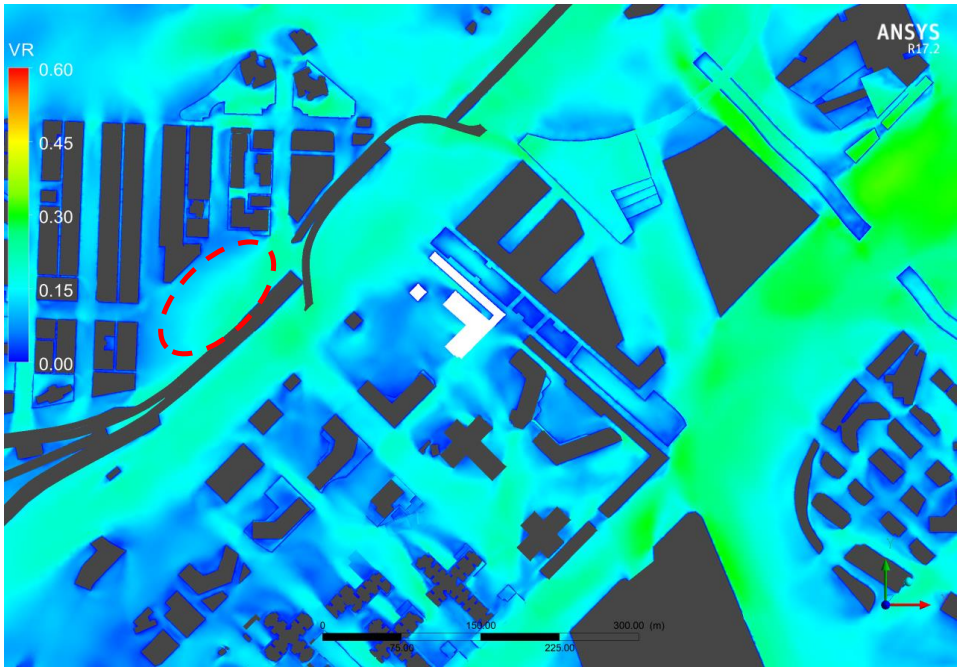
Discussion for VR Table

4.2.1 According to **Table 4.1** above, it is noted that the SVR is better in the Proposed Scheme in summer condition. On the other hand, for the LVR, the Proposed Scheme demonstrates slightly better performance to the Baseline Scheme under both annual and summer wind conditions. The increased SVR in the Proposed Scheme under summer condition may be attributed to the presence of the enlarged podium along southwest boundary and the northwestern boundary which are likely to divert more wind along the site boundary. On the other hand, as for LVR, with an elongated podium and tower, the Proposed Scheme may divert more of the wind towards the surrounding streets, and this would improve the wind environment in those areas.

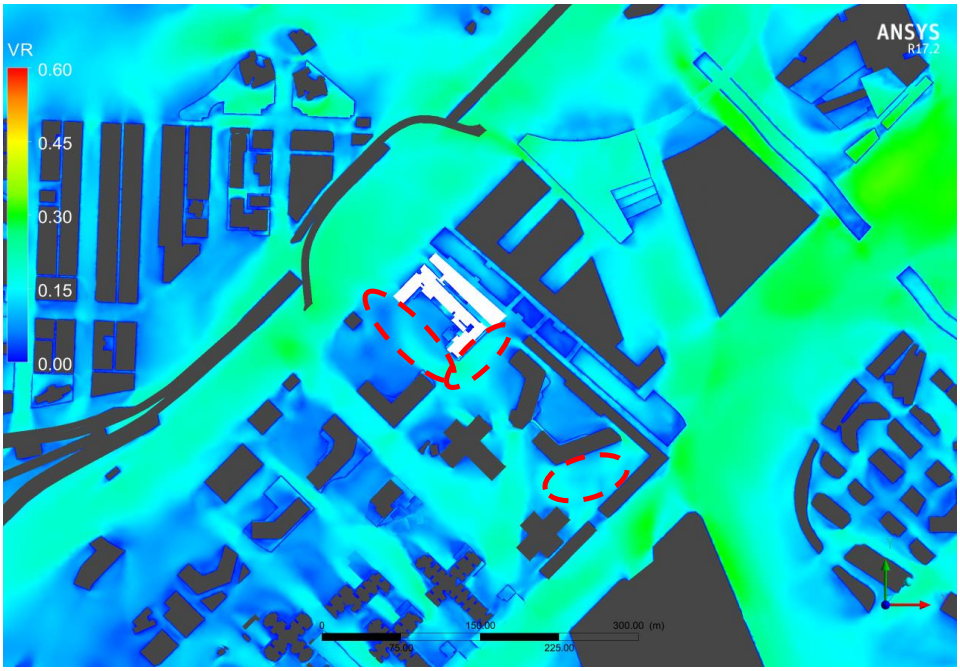
4.2.2 There are some variations between the Baseline Scheme and Proposed Scheme. The VR is higher under the Proposed Scheme at Olympic Avenue (annual condition), Open Space (3) (summer condition), Lung Tsun Stone Bridge (summer condition), Open Space (2) (annual and summer condition), Pedestrian Walkway between Kai Tak 2B1 and Kai Yan Court (summer condition), Muk Lai Street (summer condition), Carpenter Road and Shek Ku Lung Road (annual condition), Sa Po Road (summer condition) and Shek Ku Lung Road Playground (summer condition).

4.2.3 On the other hand, the VR is higher under the Baseline Scheme at CDA (3) (summer condition), Kai Tak 2B1 (summer condition), Kai Yan Court (annual condition), Kai Tak 2B3 (annual and summer conditions), MTR Buffer Zone (summer condition), Muk Shun Street (annual and summer conditions), Site 2A3 (annual and summer conditions), Prince Edward Road East (annual condition), Proposed Open Space under URA Project KC-015 and KC-017 (annual condition) and Kai Tak Road (annual condition).

4.2.4 Discussion for Weighted Average contour Plot



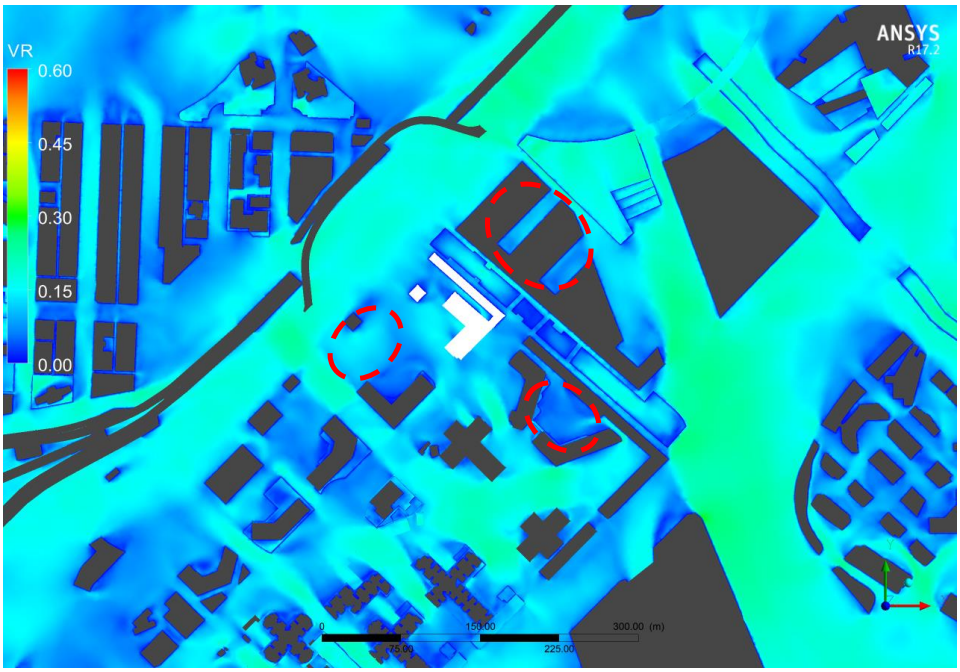
Annual Weighted Average Contour plot for Baseline Scheme



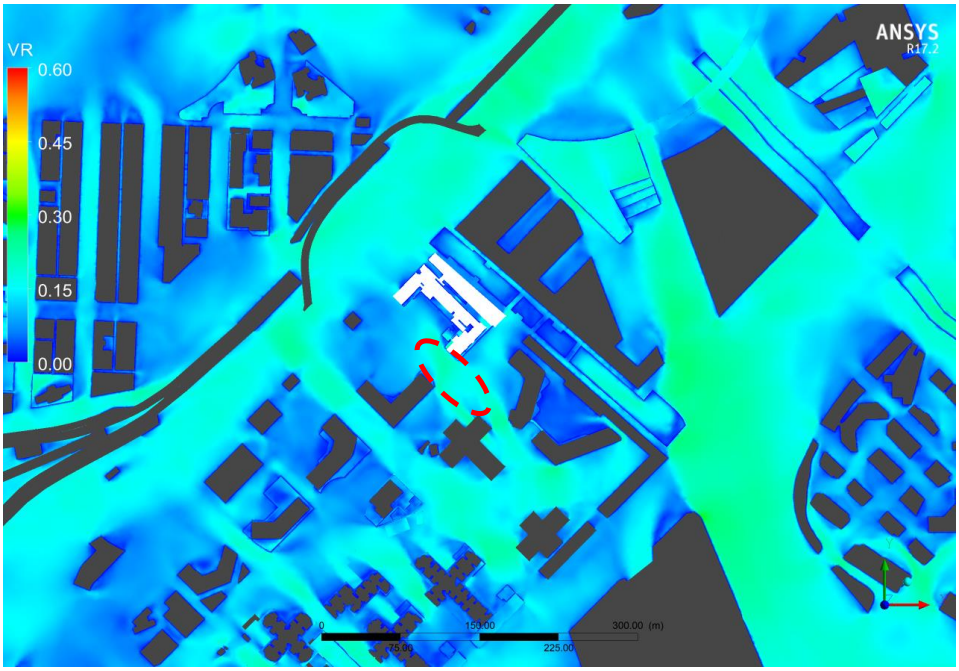
Annual Weighted Average Contour plot for Proposed Scheme

4.2.5 According to the weighted average contour plot, the ventilation performance is likely to be similar between two design options in annual condition with a slightly better performance at the area immediate south of the Subject Site under the Proposed Scheme. As observed, Proposed Scheme would have lower VR at Proposed Open Space under URA Project KC-017 and KC-015, northwest of the Subject Site when compared with the Baseline Scheme under the annual condition; however, there is a slightly

better VR at Open Space (2), Muk Lai Street and southern portion of Site 2B1 under the Proposed Scheme, south of the Subject Site.



Summer Weighted Average Contour plot for Baseline Scheme

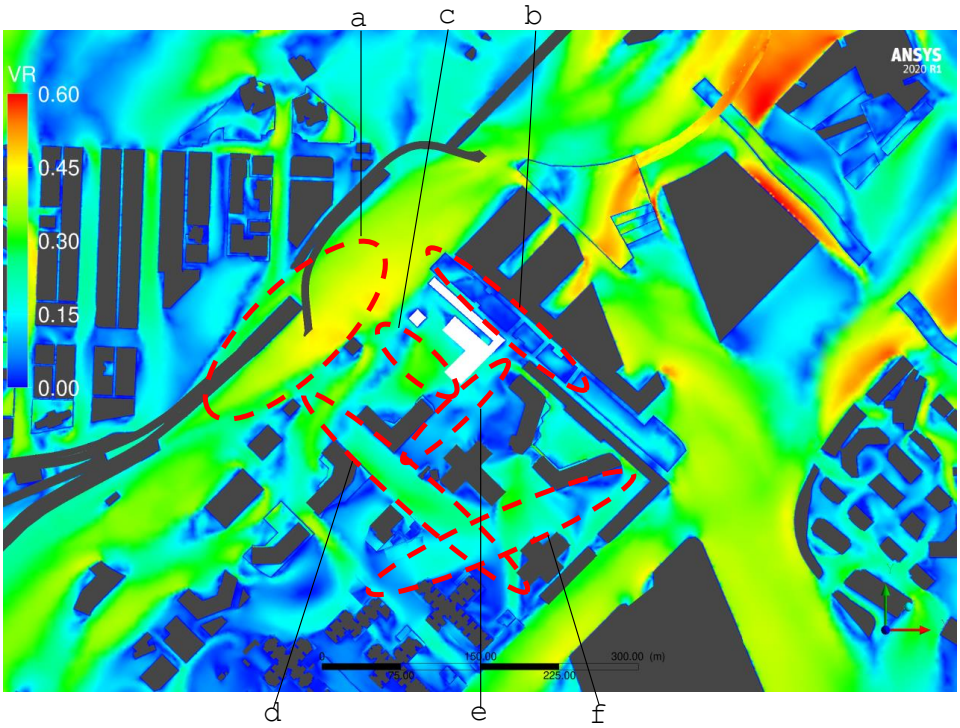


Summer Weighted Average Contour plot for Proposed Scheme

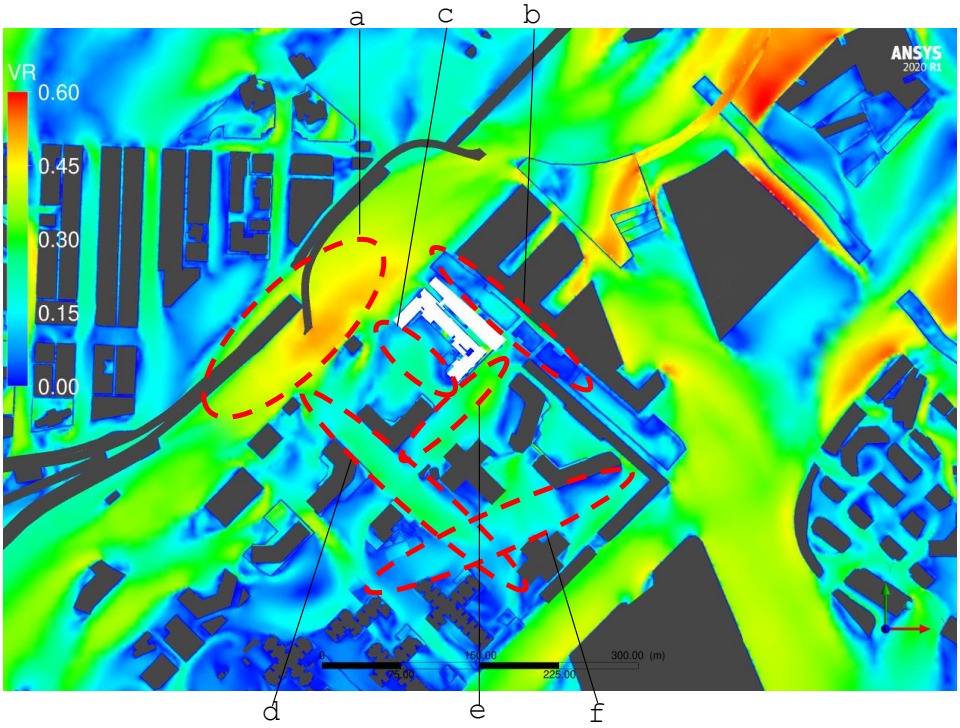
4.2.6 Under the summer condition, Site 2A1, Site 2B1 as well as the northern portion of Site 2A3 display a decline in wind performance in the Proposed Scheme. However, an improved wind environment is observed at the area to the south of the Subject Site.

4.3 Directional Analysis

Wind performance under wind direction of NNE



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.1 According to the contour plots under NNE wind,

a. The upcoming NNE wind flows along Prince Edward Road East and Olympic Avenue from the northeast towards the southwest. Under the Baseline Scheme, a portion of this wind is diverted towards Site 2A3, however, the elongated podium along the northwestern boundary divert more of the wind towards Prince Edward Road East and Olympic Avenue. Therefore, the proposed layout of the Subject Site contributes to an improved wind environment along this route.

b. The elongated façade of the tower in the Proposed Scheme collects the upcoming wind at higher level and direct the flow towards pedestrian levels at Lung Tsun Bridge Corridor due to the downwash effect. As a result, improved wind performance is observed at the northern portion of Lung Tsun Bridge Corridor under the Proposed Scheme. Similarly, Site 2B1 benefits the southern portion of Lung Tsun Bridge Corridor by creating a downwash effect. However, the stronger wind flow from the northern portion may counteract with the wind flow from the southern portion, leading to a decrease in the wind speed at the middle portion as shown in the vector plot.

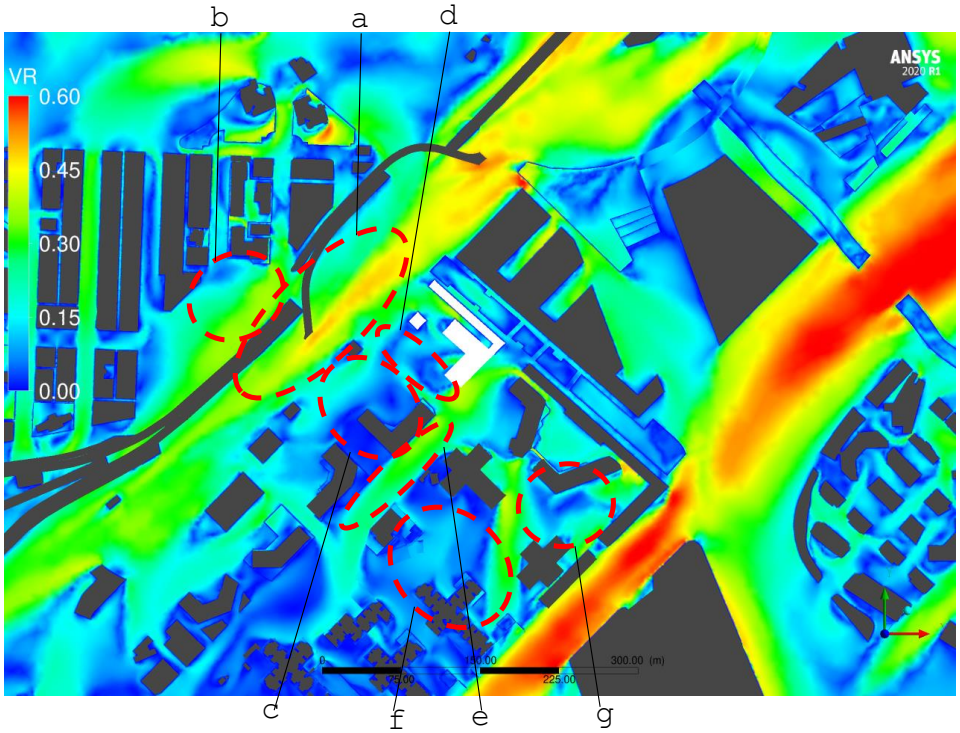
c. In the Baseline Scheme, the tower located at Site 2A3 captures higher-level wind and redirects it towards the northeast at pedestrian level. This wind flow crosses Muk Lai Street and reaches Site 2A2. However, in the Proposed Scheme, the elongated podium along the northwestern boundary and the longer facades on the tower may lead to a reduction of the incoming wind to reach Site 2A3 and be redirected towards Muk Lai Street. As a result of the layout change, a slightly lower VR is observed at Muk Lai Street under the Proposed Scheme.

d. The tower in the Baseline Scheme features a shorter facade, allowing more upcoming wind from Prince Edward Road East to pass through. This wind then flows towards the southeast along Open Space (1). However, in the Proposed Scheme, the longer facades on the tower and the inclusion of additional rectangular block along the northwestern boundary leads to a reduction of the incoming wind to come across Site 2A3 and flow towards Open Space (1). Consequently, the VR at Open Space (1) in the northwest to southeast direction is slightly lower in the Proposed Scheme.

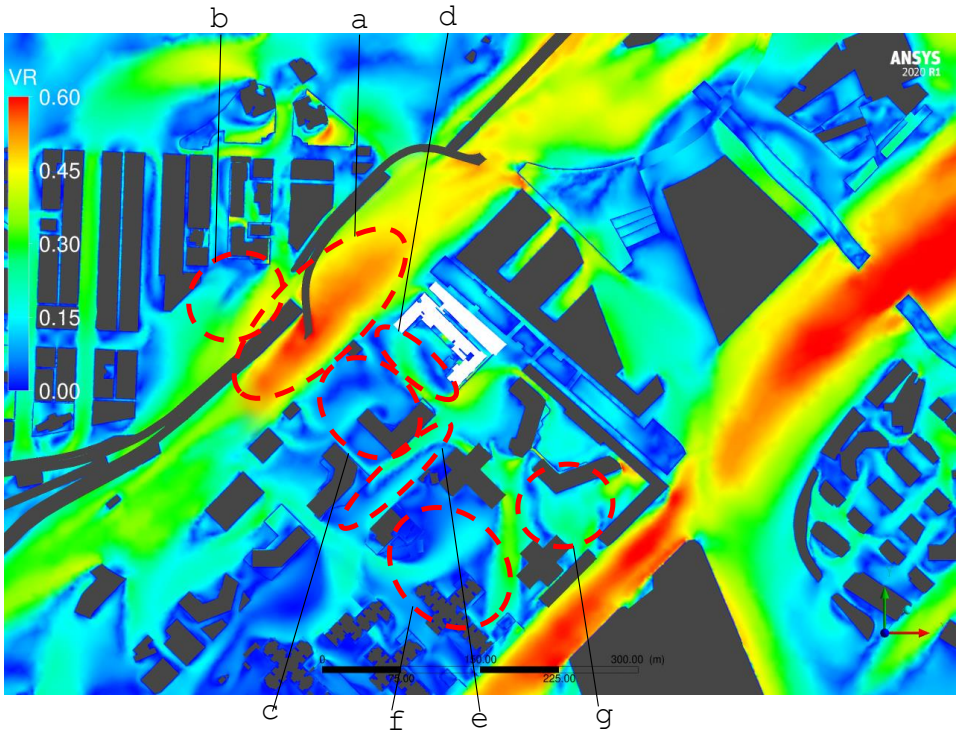
e. Compared to the Baseline Scheme, the elongated building façade of the tower could divert more upcoming NNE wind to flow towards Open Space (2) as well as the roundabout of Muk Lai Road.

f. The shorter facade of the tower in the Baseline Scheme facilitates more of incoming wind from Prince Edward Road East to reach Site 2A4 and pass through the building separation between Sites 2A4 and 2A5, creating a continuous flow towards Site 2B3. Compared to the Baseline Scheme, the Proposed Scheme results in a weaker wind flow between the two blocks within Site 2B2. This is likely due to the increased footprint of the development in the Proposed Scheme. These factors contribute to a less favourable wind environment observed in the western portion of the MTR buffer area under the Proposed Scheme.

Wind performance under wind direction of NE



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

According to the contour plots under NE wind,

a. The upcoming NE wind flows along Prince Edward Road East and Olympic Avenue from the northeast towards the southwest. Under the Baseline Scheme, a portion of this wind is diverted towards Site 2A3, however, the elongated

podium along the northwestern boundary may divert more of the wind towards Prince Edward Road East and Olympic Avenue. Therefore, the Proposed Scheme may contribute to an improved wind environment along this route.

b. According to the vector plots, the upcoming NE wind along South Wall Road would be diverted eastward along Nga Tsin Wai Road. Under the Proposed Scheme, the stronger flow along Olympic Avenue would counter this flow from Nga Tsin Wai Road. As a result, a larger wake zone is observed at the proposed open space under URA projects KC-017 and KC-015.

c. Due to the elongated facade on the tower and elongated podium along the northwestern boundary in the Proposed Scheme, less of the upcoming wind along Olympic Avenue can be diverted towards Site 2A3. Therefore, the air ventilation performance at the northern portion of Site 2A3 is reduced under the Proposed Scheme. However, according to the vector plots, a portion of the wind flow along Open Space (1) to the south of Site 2A2 under the Proposed Scheme could be diverted towards the area of the Open Space (1) between the two blocks of Sites 2A3 & 2A4. This wind flow would improve the air ventilation performance at this area under the Proposed Scheme.

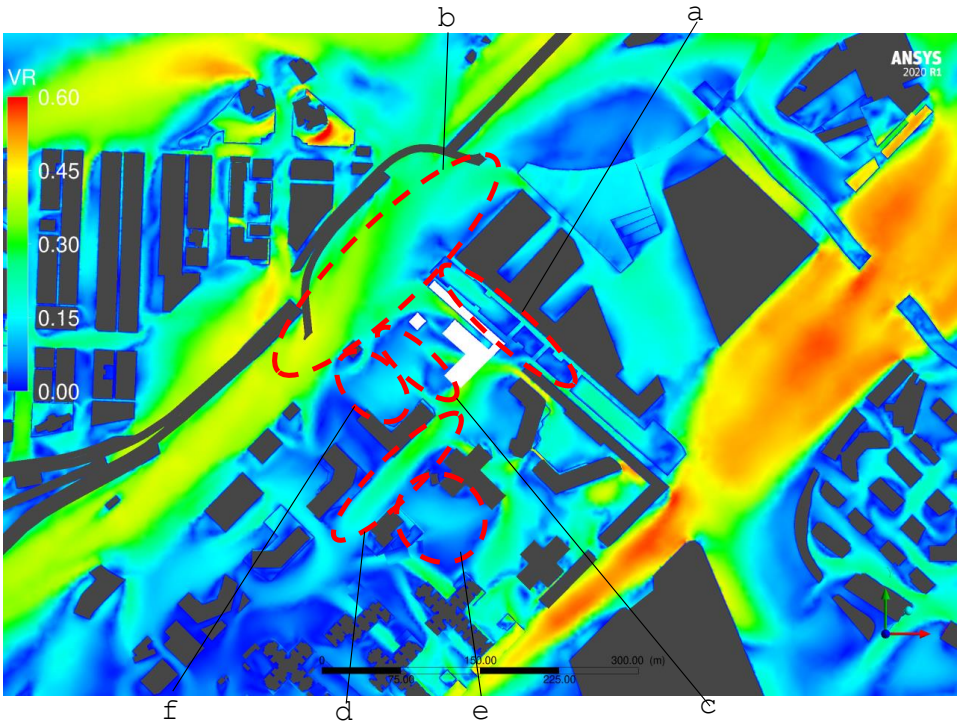
d. From the vector plot, under the Proposed Scheme, there are more wind flowing from the Open Space (2) towards the Muk Lai Road from south to north in comparing with the Baseline Scheme. This may be due to the presence of the longer tower and elongated podium of the Proposed Scheme which reduce the upcoming NE wind from the Prince Edward Road East passing through the northern portion of the Subject Site. With less wind to counter the above-mentioned wind flow from the Open Space (2), the wind performance at Muk Lai Road is better in the Proposed Scheme.

e. As mentioned previously, under the Proposed Scheme, more wind is diverted towards the northwest along Muk Lai Road from the Open Space (2). As a result, relatively less wind flows towards the southwest along Open Space (1), and a low VR is observed at this area under the Proposed Scheme.

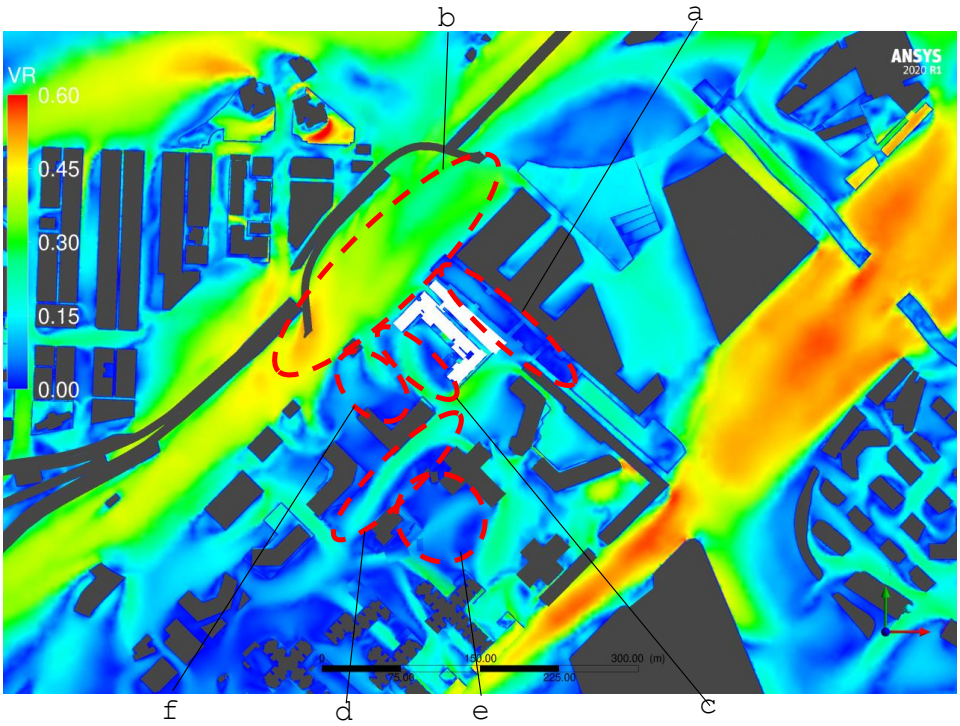
f. According to the vector plots, under both schemes, upcoming NE wind flows along the building separation between Sites 2A4 & 2A5. Under the Baseline Scheme, the stronger flow along Open Space (1) from east to west counters this upcoming flow away from Site 2B3. However, under the Proposed Scheme, with a lower wind flow along the Open Space, this upcoming wind flow could continue towards further south area, flowing to the area between the ancillary block and residential block in Site 2B3. As a result, a higher VR is observed in this area under the Proposed Scheme.

g. According to the vector plots, the stronger downwash wind caused by the southern block of Kai Yan Court is diverted towards the area between the southern block of Site 2B1 and Kai Yan Court under the Proposed Scheme. This is likely due to the larger building footprint of the Proposed Scheme, which diverts high-level wind to its two sides, causing more wind to hit the towers of Kai Yan Court.

Wind performance under wind direction of ENE



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.2 According to the contour plots under ENE wind,

a. The elongated façade of the tower in the Proposed Scheme collects the incoming wind at higher levels and directs the flow towards the pedestrian

levels at the Lung Tsun Bridge Corridor due to the downwash effect. This stronger downwash wind counters the upcoming wind from the southeast along the Lung Tsun Bridge Corridor, resulting in reduced wind performance at the northern portion of the Lung Tsun Bridge Corridor under the Proposed Scheme.

b. The stronger wind flow along Lung Tsun Bridge Corridor under the Baseline Scheme continuously flows towards Olympic Avenue, which counters the upcoming wind from windward area, thus, a wake zone is observed to the northwest of Site 1M2. However, as mentioned in above, there is a lower wind flow along the northern portion of the Lung Tsuen Bridge in the Proposed Scheme, and so this counter effect is reduced. In addition, the Proposed Scheme features an elongated podium along the northwestern boundary, which create a channelized effect on the incoming wind from Olympic Avenue. As a result, increased wind performance is observed at Olympic Avenue section to the northwest of Site 2A2 under the Proposed Scheme.

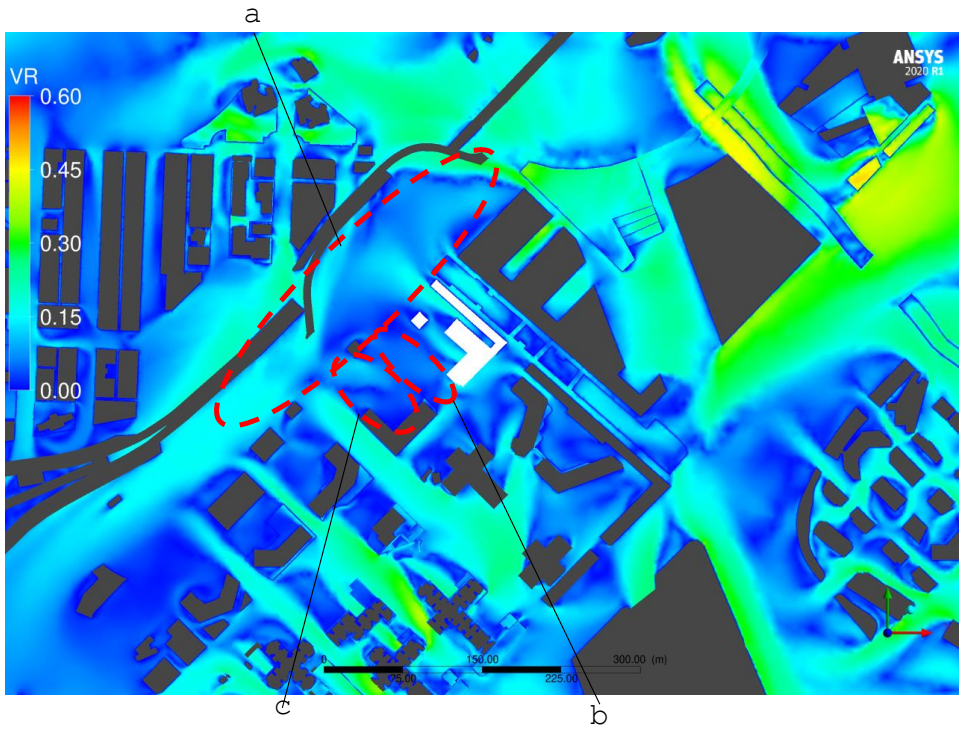
c. From contours, the ENE flow along the Open Space (2) towards west and part of it would flow along the Muk Lai Street from southeast to northwest. Under the Baseline Scheme which no building at the northern portion of the Subject Site, the ENE wind could pass the northern portion of the Subject Site and counter the above- mentioned wind flow along Muk Lai Street, resulting a lower wind performance at this area. However, under the Proposed Scheme, the longer tower façade and elongated podium reduce the ENE flow passing through the northern portion of the Subject Site from Prince Edward East. With the counter wind flow being reduced, there could be a stronger wind flow along the Muk Lai Street from south to north. As such, a better wind performance at Muk Lai Street is observed under the Proposed Scheme.

d. The upcoming flow hit on the towers of Site 2B1 and is diverted along the building separation between the northern block and the retail belt. From there, the wind is further redirected towards the southwest along Open Space (2). As mentioned previously, under the Proposed Scheme, more wind is diverted towards the northwest along Muk Lai Road. As a result, relatively less wind flows towards the southwest along Open Space (1).

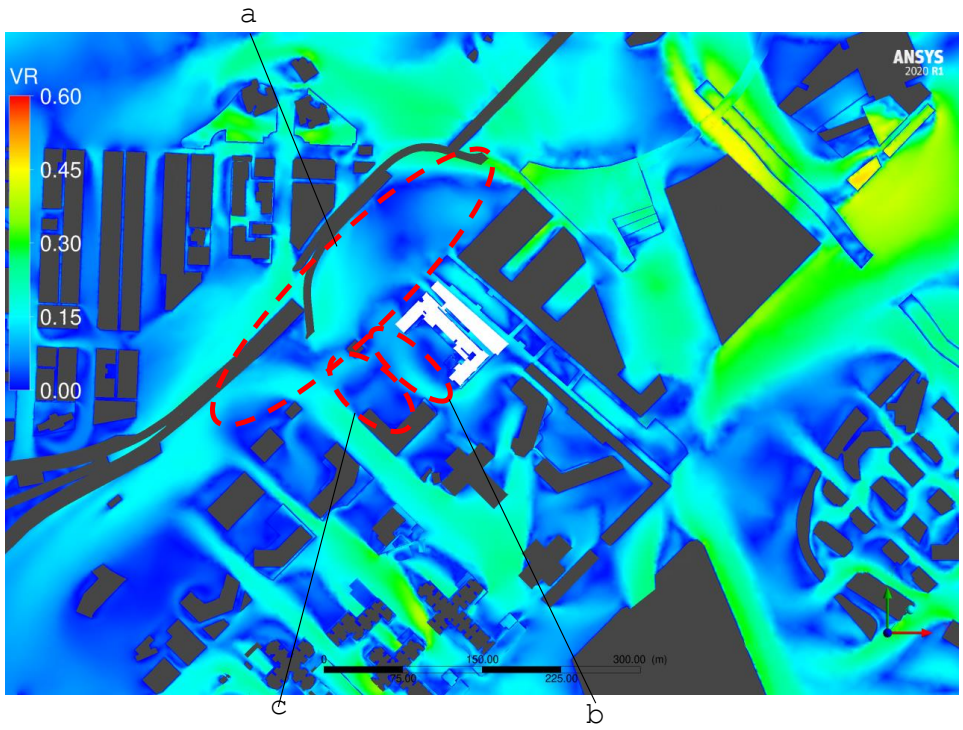
e. According to the vector plots, the stronger wind along Open Space (1) in southwest-northeast direction under the Baseline Scheme is diverted towards Site 2B2. Compared to the Baseline Scheme, lower VR is observed in this area due to the weaker wind flow along Open Space (1) in the Proposed Scheme.

f. Due to the elongated podium along the northwestern boundary and the longer footprint of the tower in the Proposed Scheme, less of the upcoming wind along Olympic Avenue can be diverted towards Site 2A3. A lower wind performance is observed in this area under the Proposed Scheme.

Wind performance under wind direction of E



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.3 According to the contour plots under E wind,

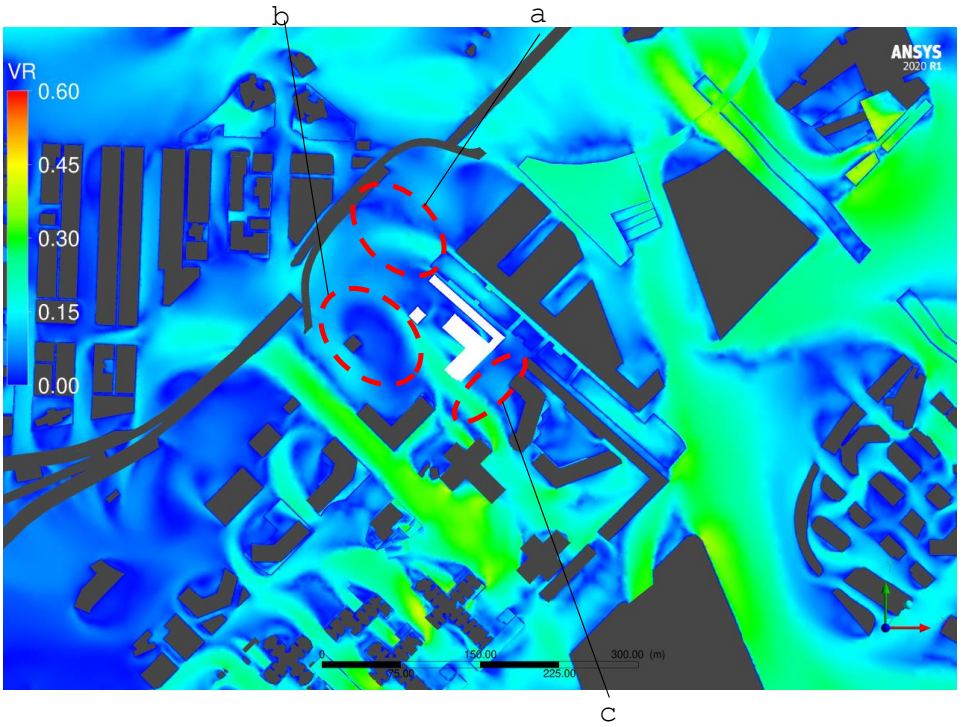
a. Under the E wind, the building block at Site CDA block the upcoming E wind reaching the Subject Site. According to the vector plots, under both schemes,

the upcoming E wind flows along the Lung Tsun Stone Bridge and the roof of the retail belt to reach Olympic Avenue. In the baseline scheme, there is no tower at the northern portion and the E wind would pass through the Subject Site and reach the downwind area at Olympic Avenue. However, with the elongated building façade the Proposed Scheme, this wind flow is reduced and the wind performance at the area immediate northwest of the Subject Site is worse than the Baseline Scheme. From the contour, the wind performance at the Prince Edward Road East west of the Subject Site is better in the Proposed Scheme. This may be due to the lower upcoming wind from Lung Tsun Stone Bridge in the Proposed Scheme provide less counter wind flow to the upcoming E wind along the Prince Edward Road East. As such, more E wind can reach this area as less interruption wind present in the Proposed Scheme. On the other hand, located in the downwind area of the Subject Site, the area to the north of Sites 2A3 and 2A4 shows a larger wake zone due to the increased building footprint under the Proposed Scheme.

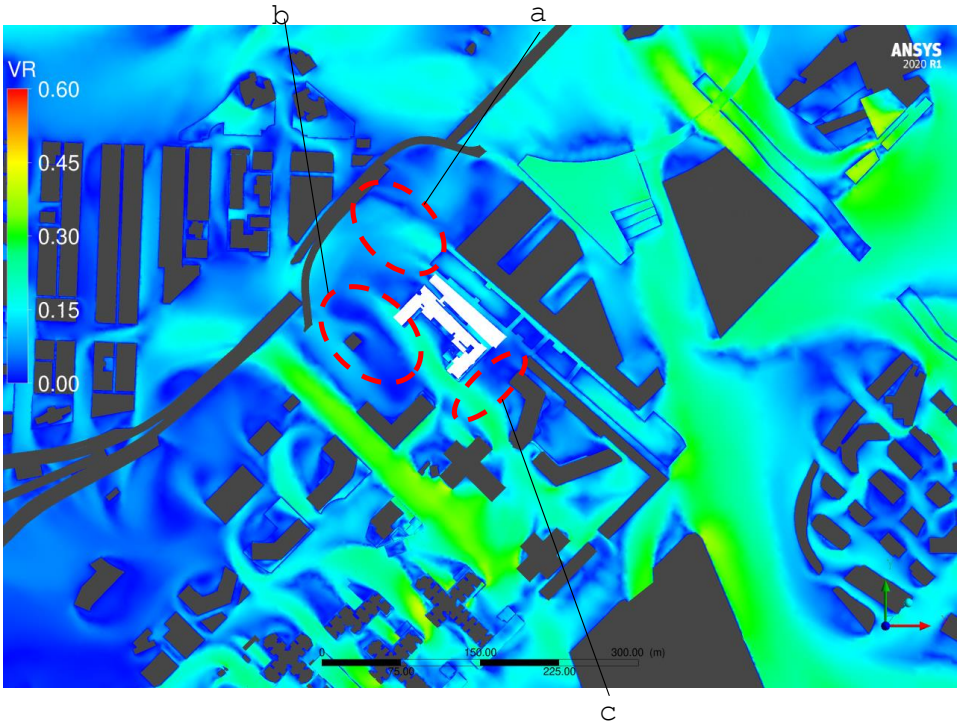
b. The upcoming E wind hits the towers of Site 2B1 and flow along the towers towards north and reach the Open Space (2). From there, the wind is further flow along the building of the Subject Site towards the southwest, and part of the E wind will be diverted into the Muk Lai Road flowing from south to north under both Schemes. In the Proposed Scheme, the elongated tower and podium reduce the E wind flowing from Olympic Avenue to the Muk Lai Road, resulting less countering flow from north to south along the Muk Lai Road, as shown in the vector plot. With less counter flow, more above-mentioned E wind from Open Space can flow towards the Muk Lai Road, and so the wind performance at this area is better under the Proposed Scheme.

c. According to the vector plots, in the Baseline Scheme, the wind from Prince Edward East is redirected by inclined building façade of Regal Oriental Hotel to reach Site 2A3. However, in the Proposed Scheme, the incoming wind along the southeast-northwest direction of Open Space (1) is directed towards Site 2A3, as mentioned in bullet point b above. Thus, the wind pattern at Site 2A3 is different between the two schemes. From the contour, a slightly lower VR is observed at Site 2A3 in the Proposed Scheme compared to the Baseline Scheme as the wind flow along Muk Lai Road in the Proposed Scheme hit the building at Site 2A3 and bound towards the northern portion of Site 2A2 instead of passing into Site 2A3, as shown in the vector plot.

Wind performance under wind direction of ESE



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.4 According to the contour plots under ESE wind,

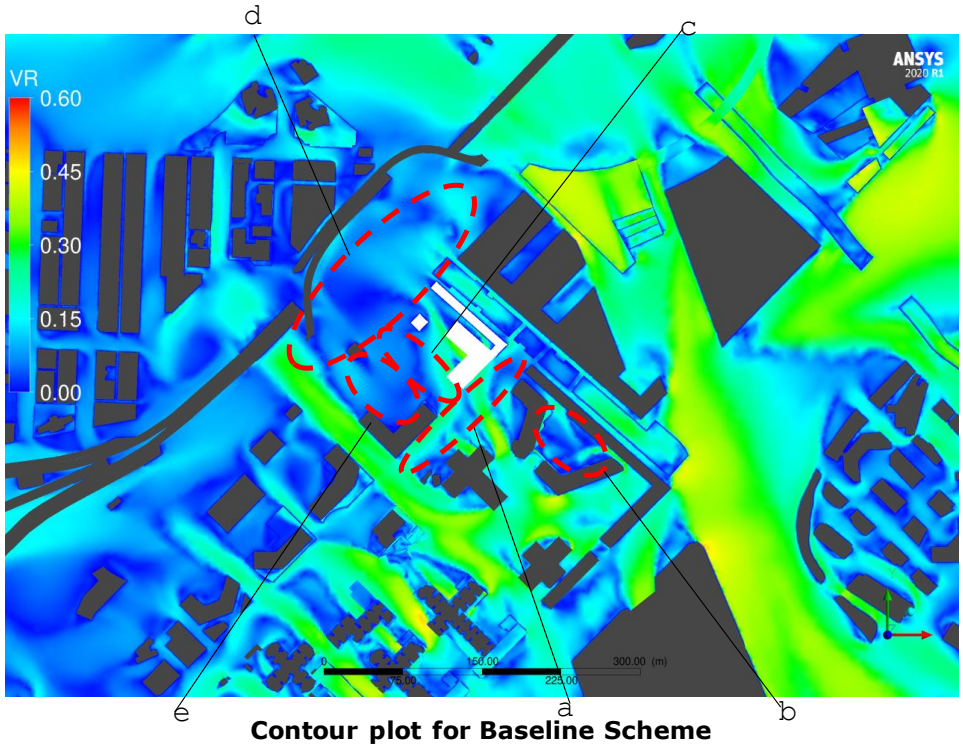
a. According to the vector plots, under both schemes, the upcoming wind skims over Lung Tsun Stone Bridge and is then diverted towards the northwest and rebounded by the inclined building façade of Regal Oriental Hotel the towards

Site CDA (3). However, due to the elongated building façade and podium in the Proposed Scheme, the wind from Lung Tsun Bridge flowing towards Olympic Avenue is diverted at a different angle. With a longer façade, the ESE wind will flow straight towards northwest, while this ESE wind will slightly diverted towards west under the Baseline Scheme. This change in the channelized wind will slightly affect the wind pattern to the northwest of CDA (3). As a result, a slightly lower VR is observed in this area under the Proposed Scheme compared to the Baseline Scheme.

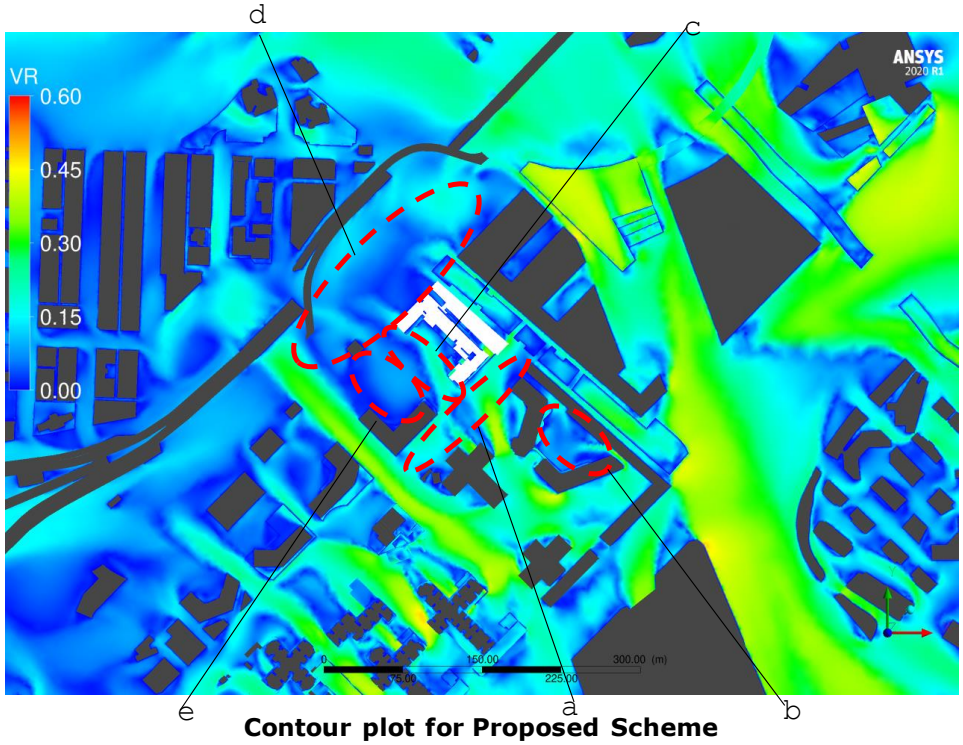
b. Under both schemes, the upcoming wind from Muk Lai Road flowing from southeast to northwest, and these winds will be rebounded by the inclined building façade of Regal Oriental Hotel and redirected towards Site 2A3. However, due to the elongated building façade and podium along the northwestern boundary in the Proposed Scheme, the wind flow along Muk Lai Road is slightly increased due to the channelizing effect. As a result, the wind pattern at Site 2A3 is slightly different between the two schemes, with a slightly better wind performance observed under the Proposed Scheme.

c. The larger building footprint under the Proposed Scheme may cause stronger downwash wind at the immediate upwind area, i.e. Open Space (2), which counters with the upcoming wind. Therefore, slightly lower VR is observed at Open Space (2) in the Proposed Scheme.

Wind performance under wind direction of SE



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.5 According to the contour plots under SE wind,

a. The increased building footprint and building height in the Proposed Scheme may capture slightly more high-level wind and direct it to Open Space (2) as

well as the area between Sites 2A3 and Kai Yan Court. Therefore, slightly higher VR is observed in this area in the Proposed Scheme.

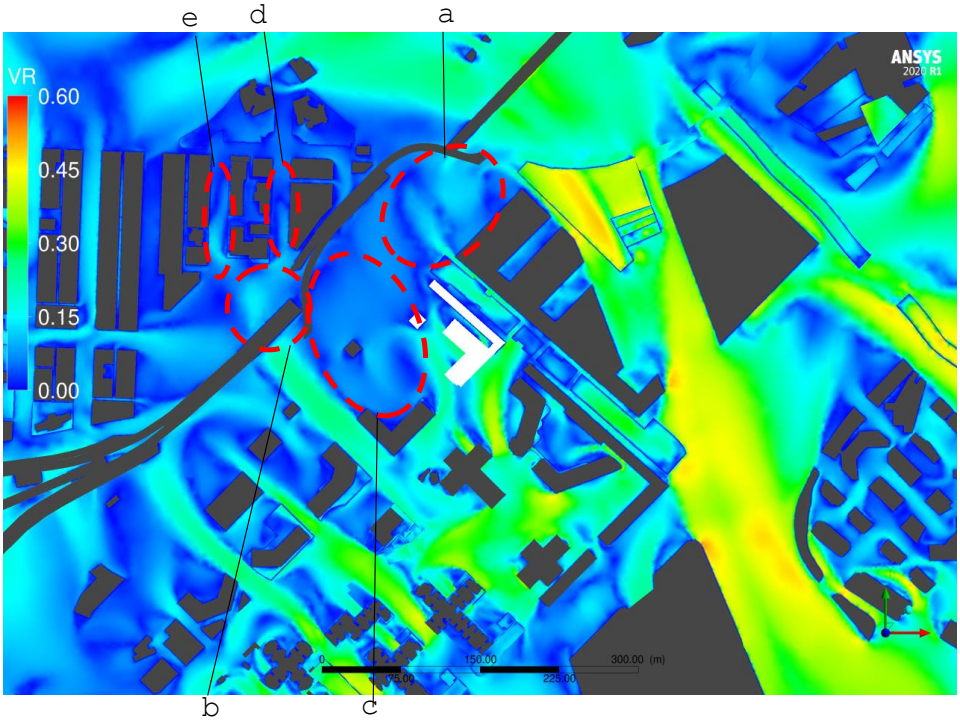
b. The upcoming SE wind hits the northern block of Site 2B1 and is directed towards the enclosed area of Site 2B1. On the other hand, part of the wind flow at Open Space (2) is also directed through the building separation between the northern block and the retail belt of Site 2B1 to reach the enclosed area. Due to the aforementioned slightly better wind performance in Open Space (2) under the Proposed Scheme, slightly higher VR is observed at the enclosed area of Site 2B1 as well.

c. Part of the upcoming SE wind along Open Space (1) is diverted towards northeast along Open Space (1). This wind flow, together with the flow from the building separation between Site 2B1 and Kai Yan Court continuously flows towards Muk Lai Road. Due to the elongated façade of the tower as well as the podium along the northwestern boundary in the Proposed Scheme, the wind performance at Muk Lai Road is slightly better as this wind is diverted towards the road instead of pass through the Subject Site.

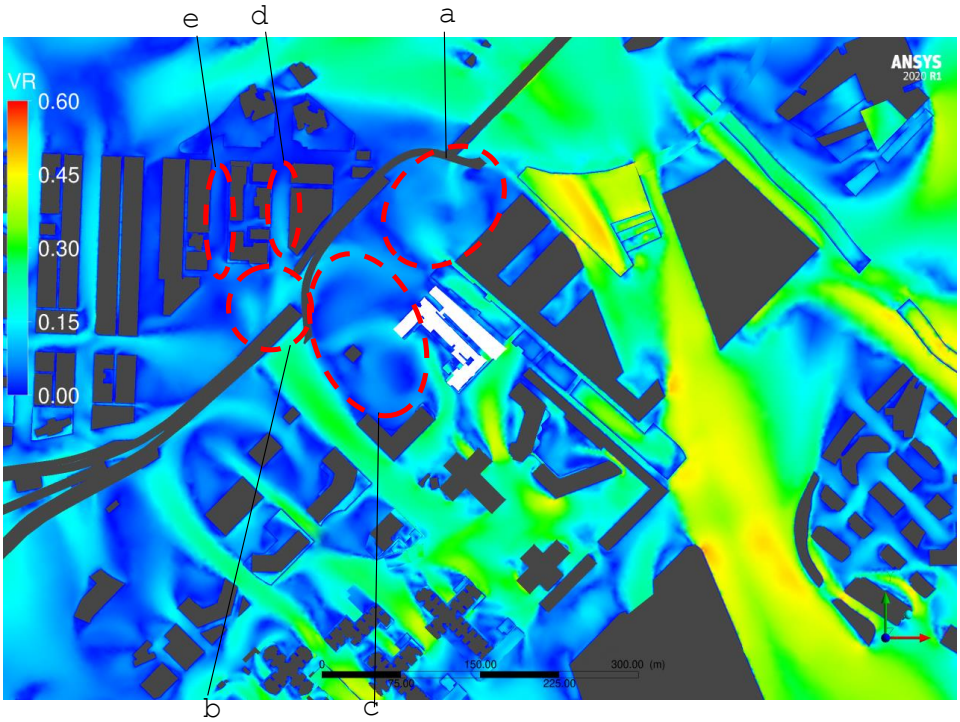
d. Due to the increased footprint of the Proposed Scheme, including the elongated tower and podium along the northwestern boundary, a larger wake area is observed in the immediate downwind area of the Subject Site. As a result, this section of Olympic Avenue experiences slightly worse wind conditions under the Proposed Scheme compared to the Baseline Scheme.

e. According to the vector plots, in the Baseline Scheme, the stronger wind passing through the Subject Site is rebounded by the Regal Oriental Hotel and reaches Site 2A3. However, in the Proposed Scheme, the upcoming wind along Olympic Avenue is diverted towards Site 2A3. As a result, a different wind pattern is observed at Site 2A3, i.e. a slightly higher VR is observed at the eastern portion but a lower VR is observed at the western portion under the Proposed Scheme compared to the Baseline Scheme.

Wind performance under wind direction of SSE



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.6 According to the contour plots under SSE wind,

a. The elongated tower in the Proposed Scheme allows stronger wind passing through Lung Tsun Bridge Corridor to reach Olympic Avenue due to the

channelized effect. This flow is rebounded by the landing part of the elevated road, creating a turbulent zone in the area to the northwest of Site 2A1. From the wind contours, the Proposed Scheme shows a slightly better wind performance in this specific area compared to the Baseline Scheme.

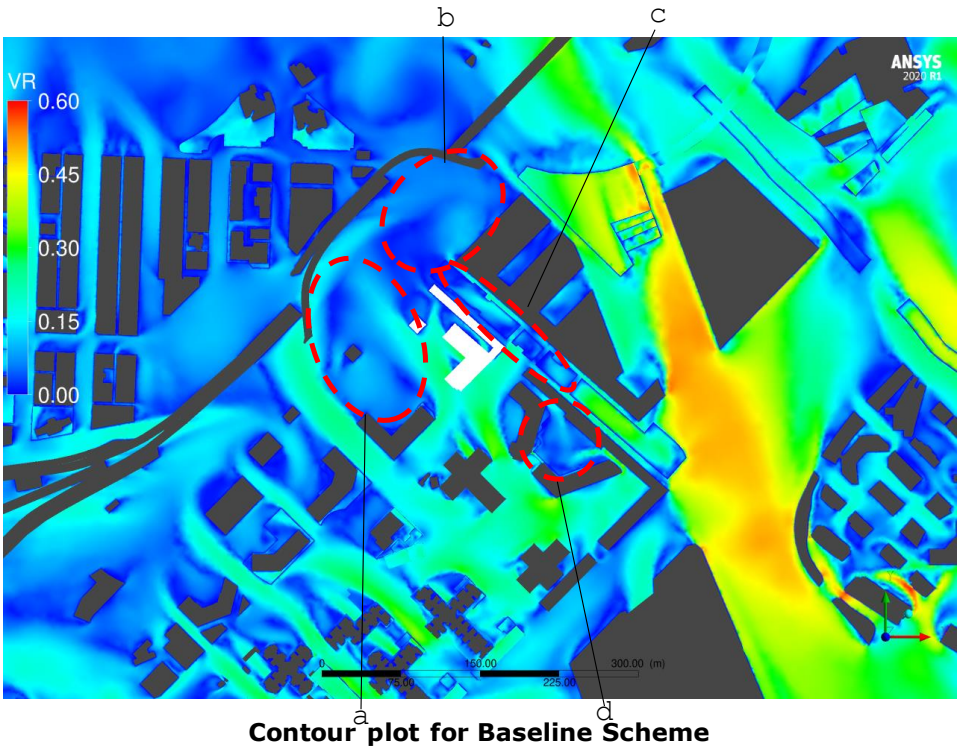
b. The increased building footprint in the Proposed Scheme may divert more of the upcoming wind to pass through the northern portion of the Site 2A3. This wind join with the wind flow from Open Space at this area. As a result, a slightly stronger wind flow is observed in the southeast-northwest direction across Open Space (1) under the Proposed Scheme compared to the Baseline Scheme.

c. The increased building footprint in the Proposed Scheme may divert more of the upcoming wind to pass through the northern portion of the Site 2A3. As a result, a slightly stronger wind flow is observed in the southeast-northwest direction across Open Space (1) under the Proposed Scheme compared to the Baseline Scheme. A slightly better wind performance observed in this area under the Proposed Scheme.

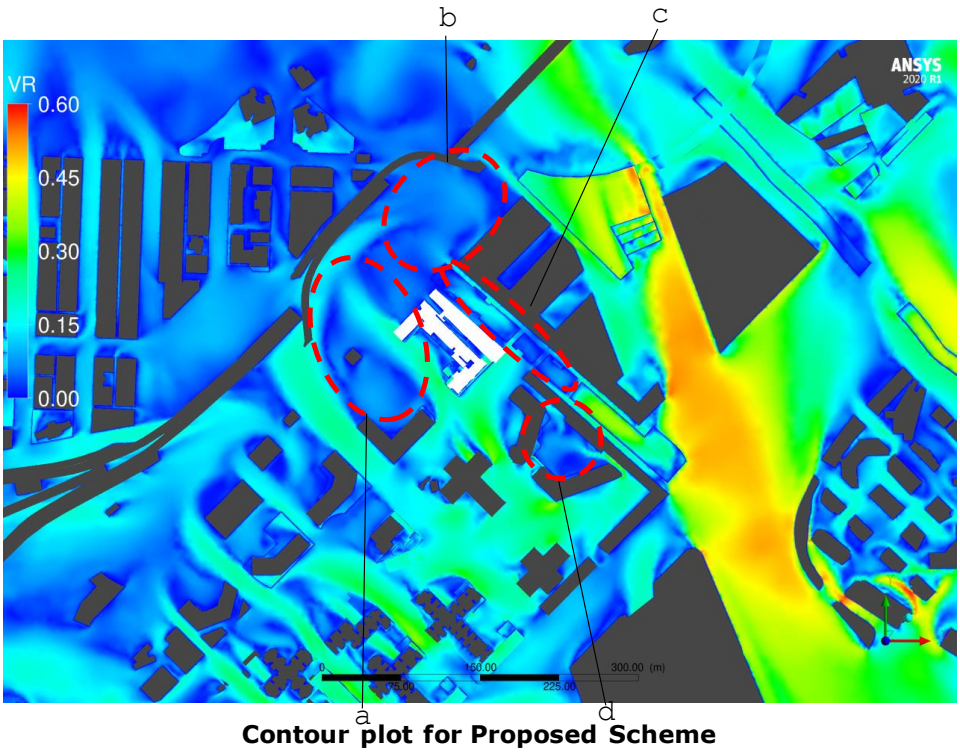
d. The stronger wind along Open Space (1) in the Proposed Scheme continuously moves towards north along Sa Po Road. Thus, Sa Po Road experiences better wind performance in the Proposed Scheme compared to the Baseline Scheme.

e. According to the vector plots, in the Baseline Scheme, the wind from Open Space (1) crosses Prince Edward Road East and is diverted primarily towards both Kai Tak Road and Sa Po Road. However, in the Proposed Scheme, most of the wind coming from Open Space (1) is diverted towards Prince Edward Road East or Sa Po Road. As a result, the VR at Kai Tak Road is lower in the Proposed Scheme.

Wind performance under wind direction of S



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.7 According to the contour plots under S wind,

a. Under both schemes, a portion of the upcoming S wind flow along Muk Lai Road would be directed towards Site 2A3, creating a turbulent area in this site. However, due to the elongated tower and podium along the northwestern boundary in the Proposed Scheme, more wind is channelled towards Muk Lai

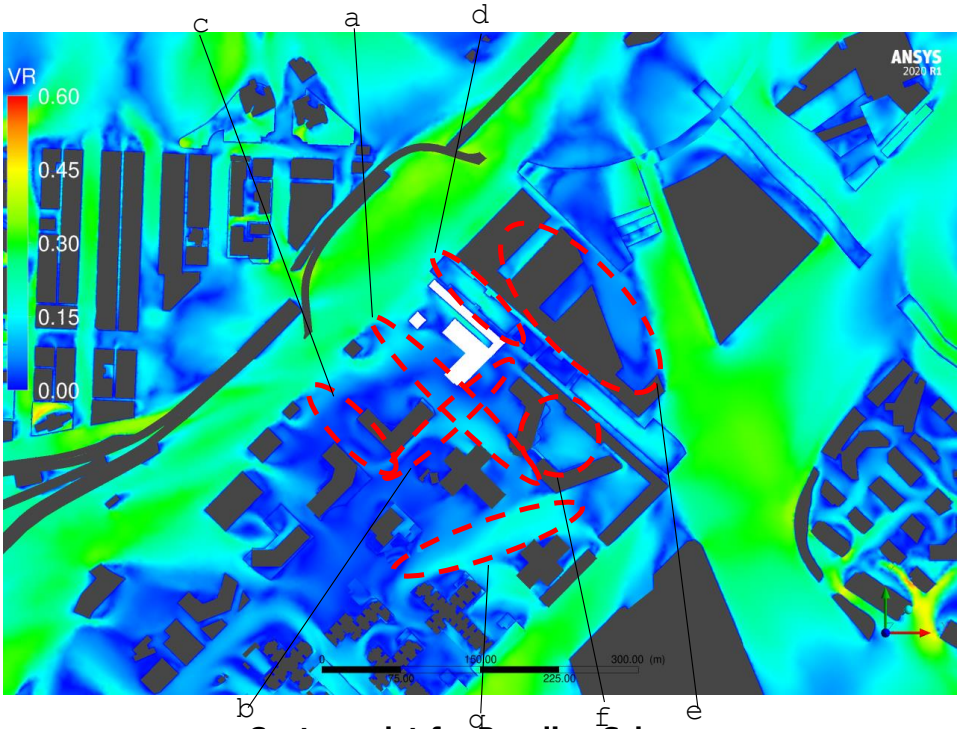
Road. As a result, the wind performance is slightly better at the area (Prince Edward East and Olympic Avenue) under the Proposed Scheme.

b. The elongated tower design of the Proposed Scheme allows more wind to pass through the Lung Tsun Bridge Corridor, which is then redirected towards the area to the north of the Subject Site. As a result, the area to the north of the Subject Site has a slightly higher Velocity Ratio (VR) in the Proposed Scheme compared to the Baseline Scheme. However, due to the larger building footprint in the Proposed Scheme, the further downwind area, i.e. the area to the northwest of CDA (3), experiences a slightly lower VR under the Proposed Scheme.

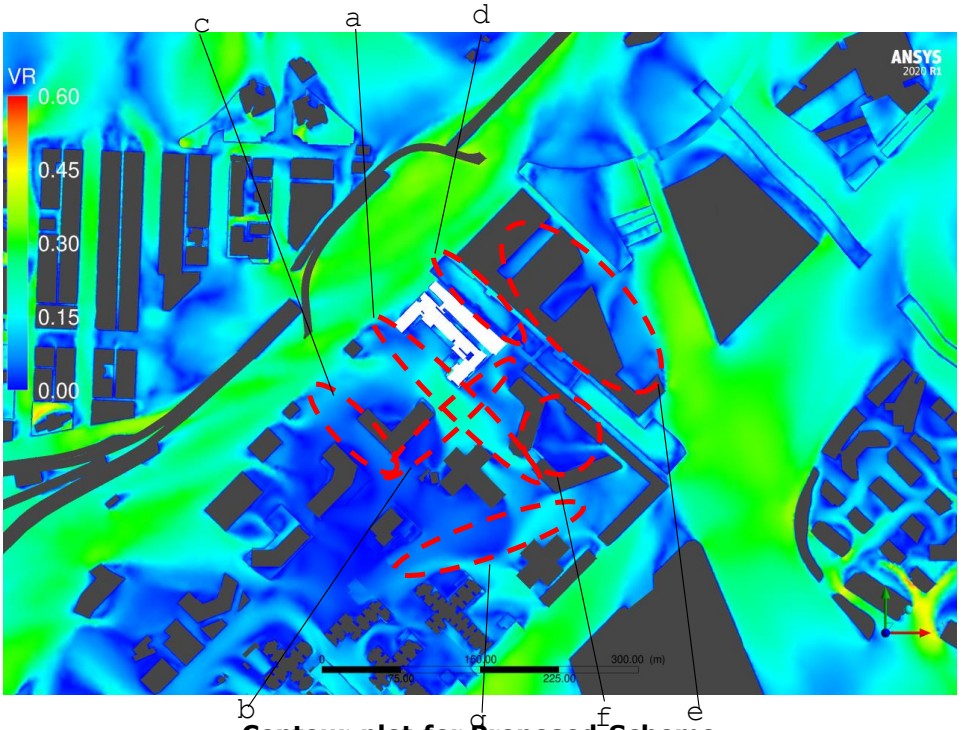
c. As mentioned above, the elongated tower design of the Proposed Scheme allows more wind to pass through the Lung Tsun Bridge Corridor. Therefore, slightly higher VR is observed to the northern portion of Lung Tusn Bridge Corridor under the Proposed Scheme. However, the larger footprint as well as the increased building height are likely to cause more downwash wind. This downwash wind is then diverted towards the southeast, counteracting the upcoming wind from the southeast direction. Consequently, the middle portion of the Lung Tsun Bridge Corridor experiences a slightly lower VR under the Proposed Scheme.

d. According to the vector plots, the southern block of Site 2B1 collects high-level upcoming S wind and diverts it towards the area between the southern block and the retail belt. A portion of this downwash wind is then diverted through the building separation to reach the enclosed area between the two blocks. Additionally, the stronger downwash wind observed in Open Space (2) under the Proposed Scheme passes through the building separation between the northern block and the retail block, reaching the enclosed area. This counters part of the wind diverted from the southern block of Site 2B1, slightly decreasing the wind performance in this enclosed area.

Wind performance under wind direction of SSW



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.8 According to the contour plots under SSW wind,

a. The upcoming SSW wind along Prince Edward Road/ Olympic Avenue flows from southwest to northeast. The elongated tower and the podium along the northwestern boundary in the Proposed Scheme can divert more of this

upcoming wind to pass through Muk Lai Road towards southeast, as shown in vector plot. Thus, the VR at Muk Lai Road and part of the building separation between Site 2B1 and Kai Yan Court is higher in the Proposed Scheme.

b. In the Proposed Scheme, the stronger wind flow from Muk Lai Road benefit the downstream area. The wind performance at the area north of the Kai Yan Court is better under the Proposed Scheme.

c. The upcoming wind from Prince Edward Road/ Olympic Avenue passes through Site 2A4 and is diverted towards southeast along Open Space (1). In the Baseline Scheme, a portion of wind flow along Open Space (1) towards southwest, as mentioned previously, is further diverted towards part of Open Space (1) between Sites 2A3 & 2A4. However, in the Proposed Scheme, all the wind along Open Space between Sites 2A3 & 2A4 comes from upcoming wind from Prince Edward Road/ Olympic Avenue. Without countering of the two flows, the wind performance is slightly better in this area in the Proposed Scheme.

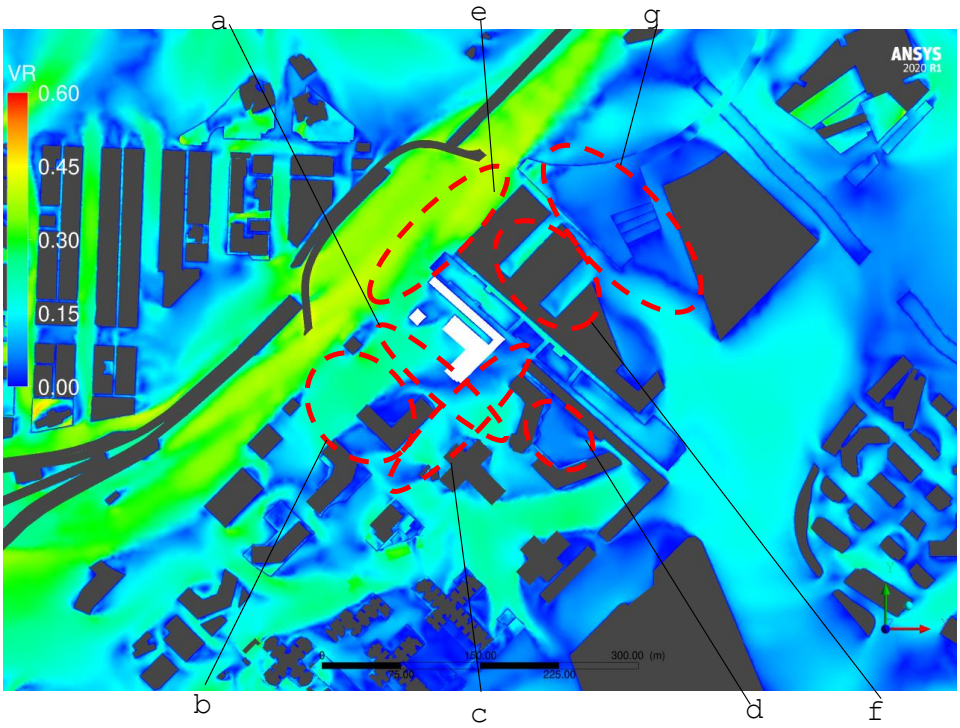
d. In the Proposed Scheme, part of the stronger wind flow from Muk Lai Road hits the northern block of Site 2B1 and is rebounded by it towards Open Space (2). This flow counters the upcoming wind from northwest along Lung Tsun Bridge Corridor. Therefore, slightly lower VR is observed at the northern portion of Lung Tsun Bridge Corridor in the Proposed Scheme.

e. Under the Proposed Scheme, the elongated tower reduces the wind skimming over the retail belt of CDA (3) and its building separations. As a result, slightly lower VR is observed at CDA (3) in the Proposed Scheme.

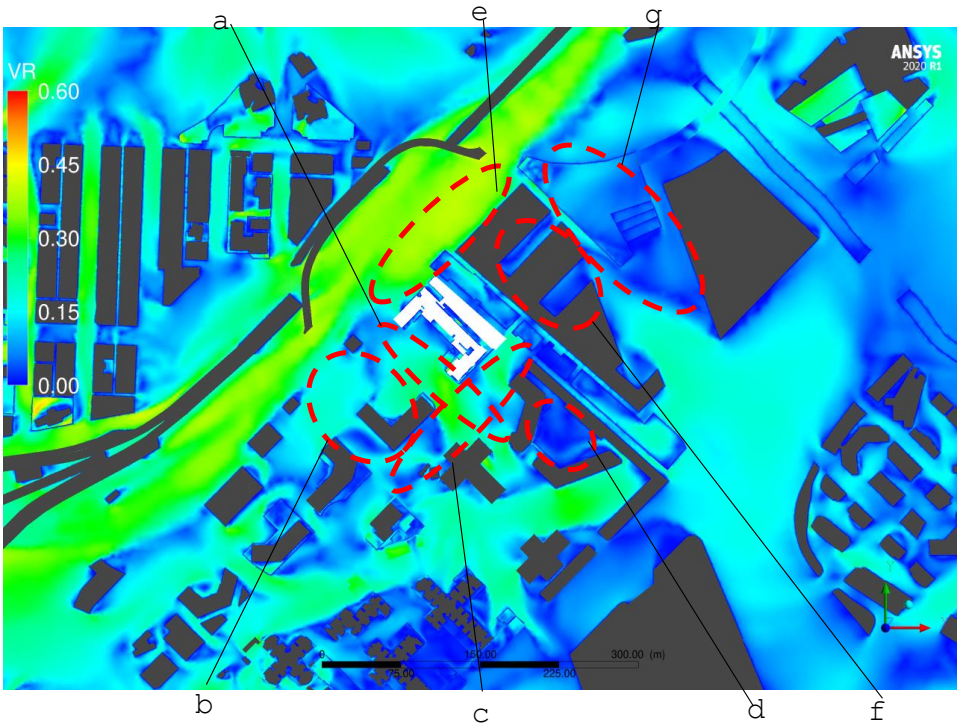
f. According to the vector plots, in the Baseline Scheme, the upcoming wind skims over the podium of Site 2B1 underneath the two towers, reaching the enclosed area. However, due to the strong flow along Muk Lai Road, less wind passes through the building separation between the two blocks in Site 2B1. As a result, the wind performance in the enclosed area of Site 2B1 is worse in the Proposed Scheme.

g. According to the vector plots, the upcoming wind hits the southern block of Site 2B1 and is diverted towards the west along MTR buffer zone, under the Baseline Scheme. However, in the Proposed Scheme, the stronger flow along Muk Lai Road counter some of the flow along the MTR buffer zone, altering the wind pattern. Therefore, lower VR is observed at MTR buffer zone in the Proposed Scheme.

Wind performance under wind direction of SW



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.9 According to the contour plots under SW wind,

a. The vector plots indicate that the elongated tower in the Proposed Scheme causes downwash wind, which is diverted towards the southwest. This

downwash wind reaches both Site 2A3 and Muk Lai Road. As a result, higher VR is observed at Muk Lai Road in the Proposed Scheme.

b. In the Baseline Scheme, the high-rise building in Site 2A4 collects high-level wind and diverts it towards Site 2A3 and the Subject Site. However, the downwash wind generated by the Proposed Scheme counters this flow in Site 2A3. Thus, decreased VR is observed at Site 2A3 as well as the area to its southwest.

c. From the vector plots, the northern block of Kai Yan Court collects high-level wind and channels it northward. In the Proposed Scheme, the stronger wind diverted towards Muk Lai Road counteracts the downwash wind caused by the northern block of Kai Yan Court, resulting in lower VR in the area north of the building. However, this stronger flow along Muk Lai Road is able to divert more of this downwash wind towards Open Space (2). A better wind performance at Open Space (2) is observed under the Proposed Scheme.

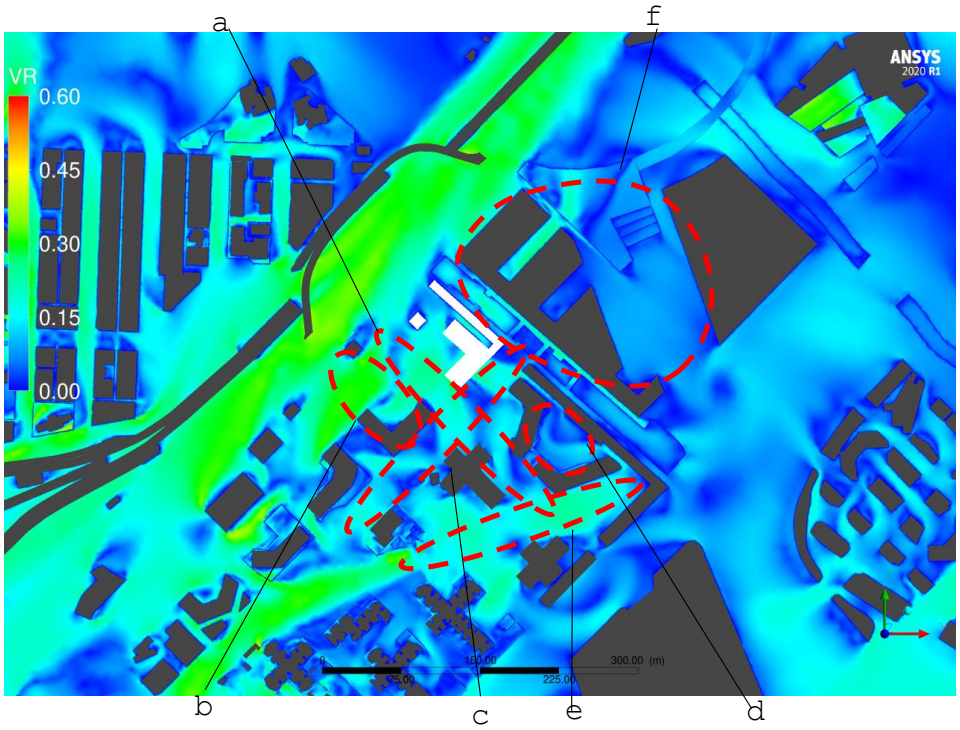
d. According to the vector plots, in the Baseline Scheme, the upcoming wind skims over the podium of Site 2B1 underneath the two towers, reaching the enclosed area. However, due to the strong flow along Muk Lai Road, less wind passes through the building separation between the two blocks in Site 2B1. As a result, the wind performance in the enclosed area of Site 2B1 is worse in the Proposed Scheme.

e. The upcoming SW wind travels from southwest to northeast along Prince Edward Road East/ Olympic Avenue. The elongated tower and podium along the northwestern boundary in the Proposed Scheme slightly improve the wind performance at the area to the north of it and Site 2A1 due to the channelized effect.

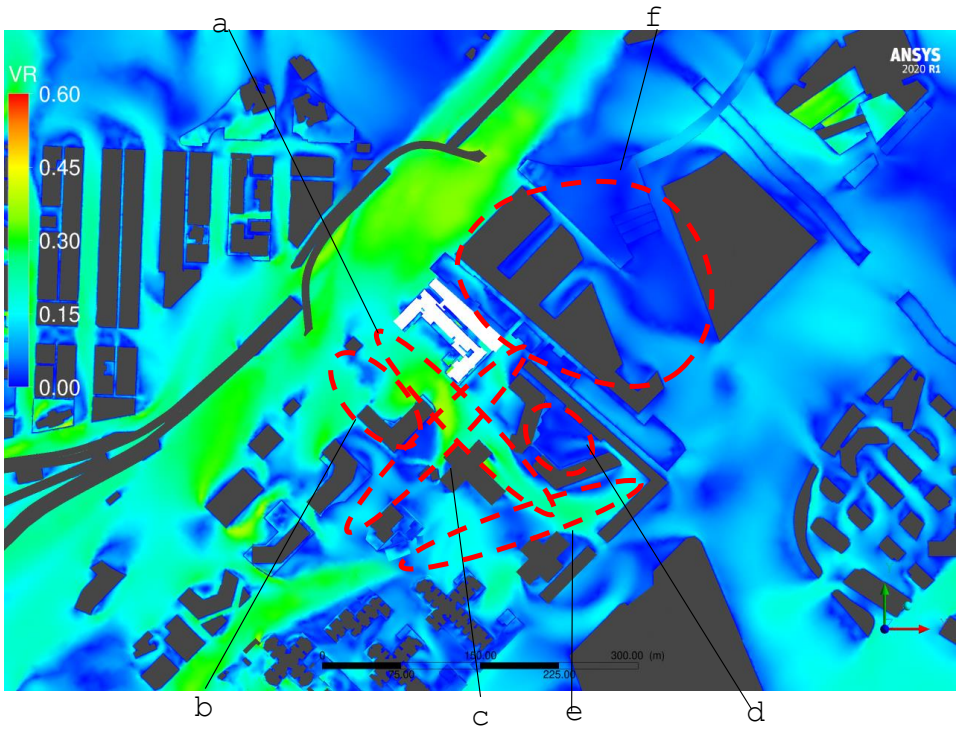
f. Situated in the downwind area of the Subject Site, Site 2A1 experiences a larger wake zone in the Proposed Scheme due to the increased building footprint.

g. According to the vector plots, the upcoming wind from the Kai Tak River consistently flows towards Site 1M2. In the Baseline Scheme, the stronger wind flow through the building separations in CDA (3) counteracts and decreases the wind performance at Site 1M2. Compared to the Baseline Scheme, slightly better wind performance is observed at Site 1M2 under the Proposed Scheme due to the previously mentioned weaker wind flow in CDA (3) as mentioned in point f.

Wind performance under wind direction of WSW



Contour plot for Baseline Scheme



Contour plot for Proposed Scheme

4.3.10 According to the contour plots under WSW wind,

a. The vector plots indicate that the elongated tower in the Proposed Scheme generates stronger downwash wind compared to the Baseline Scheme, which

is directed towards the southwest. This downwash wind reaches both Site 2A3 and Muk Lai Road, resulting in a higher VR observed at Muk Lai Road in the Proposed Scheme.

b. In both schemes, the high-rise building in Site 2A4 collects high-level wind and diverts it towards Site 2A3 and the Subject Site. However, in the Proposed Scheme, the stronger downwash wind counters this flow in the northern portion of Site 2A3. As a result, decreased VR is observed in the northern portion of Site 2A3, while higher VR is noted in the southern portion.

c. According to the vector plot, the upcoming wind flow between Sites 2A4 and 2A5 is diverted northeast along Open Space (1). Meanwhile, high-level wind collected by the northern block of Kai Yan Court is directed towards Site 2A3 due to the downwash effect. In the Proposed Scheme, the stronger wind flow along Muk Lai Street interacts with these flows in Open Space (1), reducing the wind performance in that area. For the Open Space (2), the stronger wind flow along Muk Lai Street is likely benefit the surrounding area, i.e. a better wind performance is observed in this area.

d. In the Baseline Scheme, the upcoming wind skims over the podium of Site 2B1 underneath the two towers, reaching the enclosed area. However, due to the strong flow along Muk Lai Road, less wind passes through the building separation between the two blocks in Site 2B1. As a result, the wind performance in the enclosed area of Site 2B1 is worse in the Proposed Scheme.

e. In the Baseline Scheme, the southern block of Kai Yan Court captures high-level wind and directs it both northwest and southeast along the MTR buffer zone. In the Proposed Scheme, the stronger flow along Muk Lai Street may disrupt and reduce this downwash flow. However, this wind still continues to flow into the area between the southern block and the retail block in Site 2B1. As such, slightly lower VR is observed at MTR buffer zone section near Kai Yan Court but highly VR near Site 2B1.

f. Situated in the downwind area of the Subject Site, the northern portion of Lung Tsun Bridge Corridor, Sites 2A1 & 1M2 experience a larger wake zone in the Proposed Scheme due to the increased building footprint.

5. CONCLUSION

5.1.1 The proposed development, which is located in Kai Tak development area, have been evaluated from an air ventilation perspective.

5.1.2 According to section 4.2 above, it is noted that the SVR is better in the Proposed Scheme in summer condition. On the other hand, for the LVR, the Proposed Scheme demonstrates slightly better performance to the Baseline Scheme under both annual and summer wind conditions. The increased SVR in the Proposed Scheme under summer condition can be attributed to the presence of the enlarged podium along southwest boundary and the additional block along the northwestern boundary which are likely to divert more wind along the site boundary.

5.1.3 There are some variations between the Baseline Scheme and Proposed Scheme. The VR is higher under the Proposed Scheme at Olympic Avenue (annual condition), Open Space (3) (summer condition), Lung Tsun Stone Bridge (summer condition), Open Space (2) (annual and summer condition), Pedestrian Walkway between Kai Tak 2B1 and Kai Yan Court (summer condition), Muk Lai Street (summer condition), Carpenter Road and Shek Ku Lung Road (annual condition), Sa Po Road (summer condition) and Shek Ku Lung Road Playground (summer condition).

5.1.4 On the other hand, the VR is higher under the Baseline Scheme at CDA (3) (summer condition), Kai Tak 2B1 (summer condition), Kai Yan Court (annual condition), Kai Tak 2B3 (annual and summer conditions), MTR Buffer Zone (summer condition), Muk Shun Street (annual and summer conditions), Site 2A3 (annual and summer conditions), Prince Edward Road East (annual condition), Proposed Open Space under URA Project KC-015 and KC-017 (annual condition) and Kai Tak Road (annual condition).

5.1.5 Based on the design features and the assessment result, since the LVR is comparable in both annual and summer condition, it is concluded that the proposed building design would not induce significant adverse impact to the nearby environment.

Figures

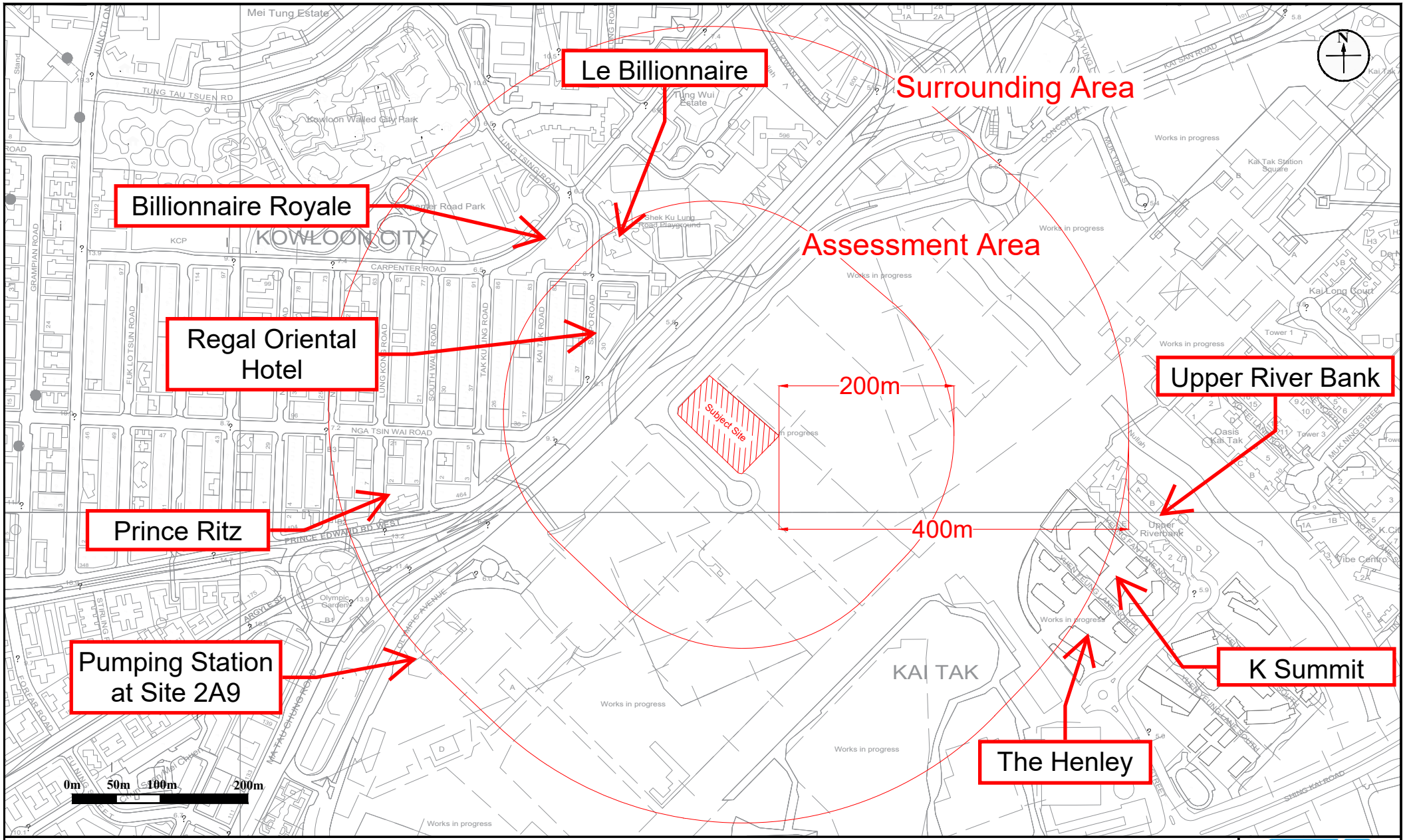


Figure: 1	RAMBOLL
Title: Location of the Subject Site and its Environs	Drawn by: WT Checked by: EC
Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon	Rev.: 2.0 Date: Jun 2024

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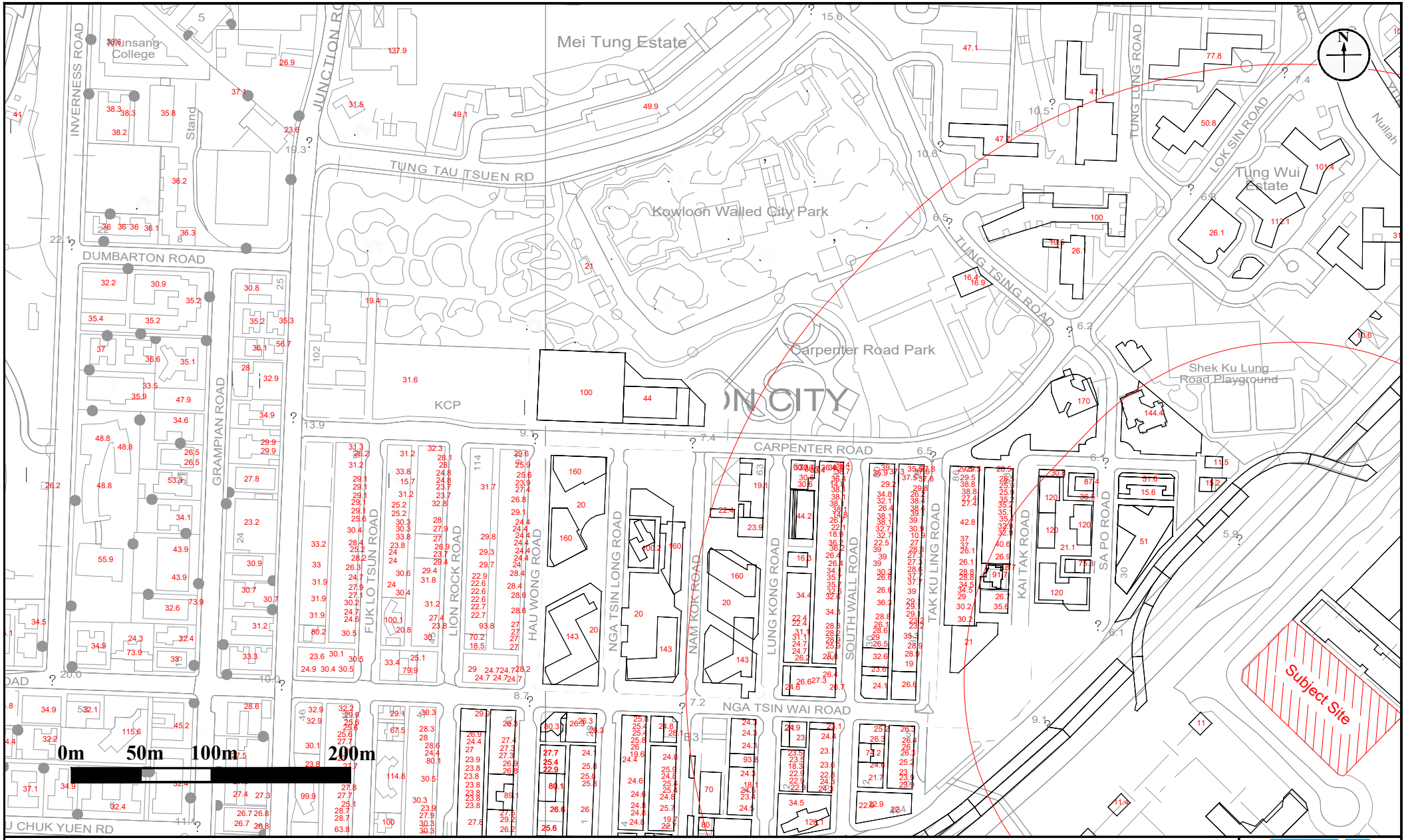

Figure: 2a

Title: Building Height of Development within the Surrounding Area (Northwestern Part)

RAMBOLL

Drawn by: WT

Checked by: EC

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

Rev.: 1.0

Date: Jun 2024

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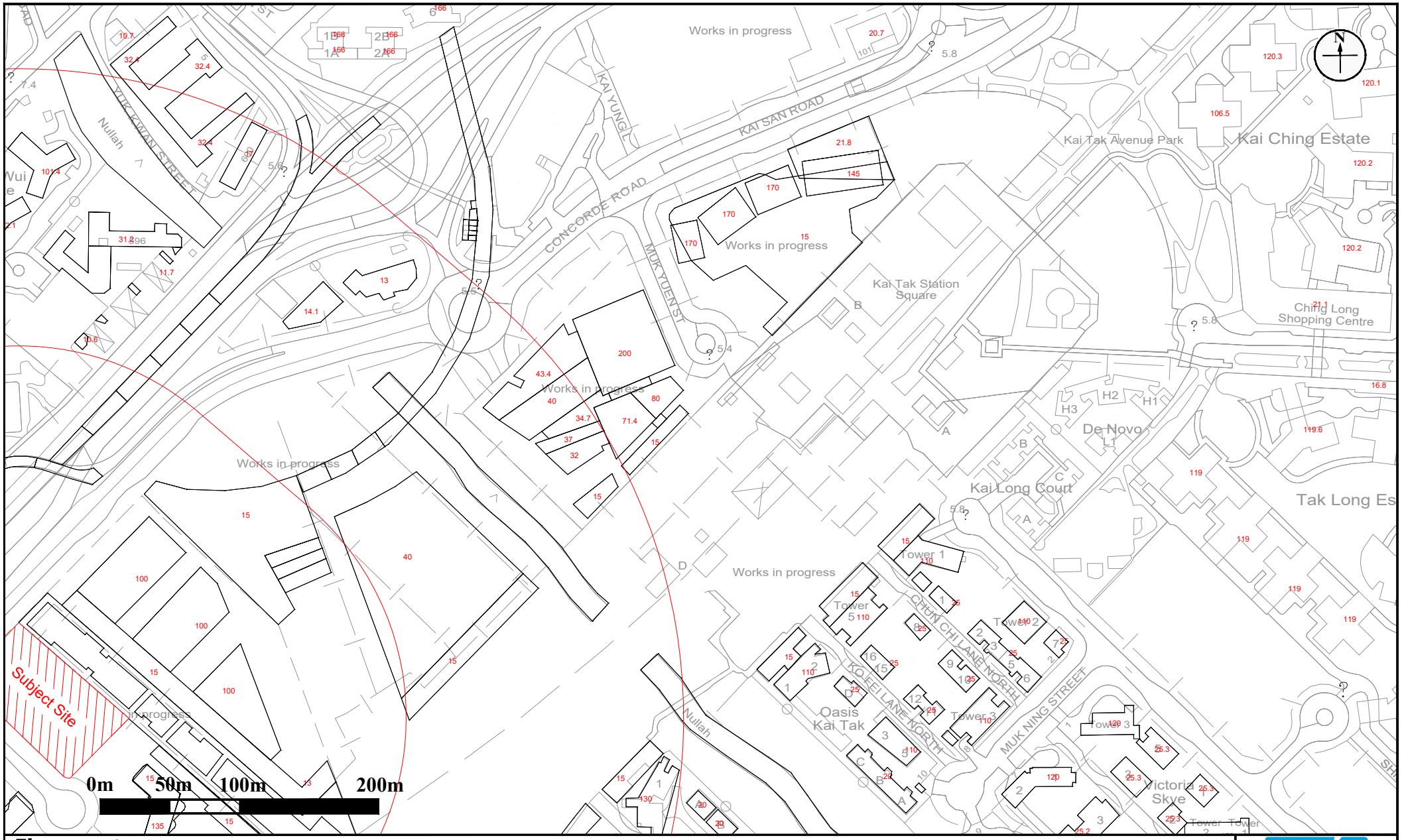

Figure: 2b

Title: Building Height of Development within the Surrounding Area (Northeastern Part)

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

RAMBOLL

Drawn by:	WT
Checked by:	EC
Rev.:	1.0
Date:	Jun 2024

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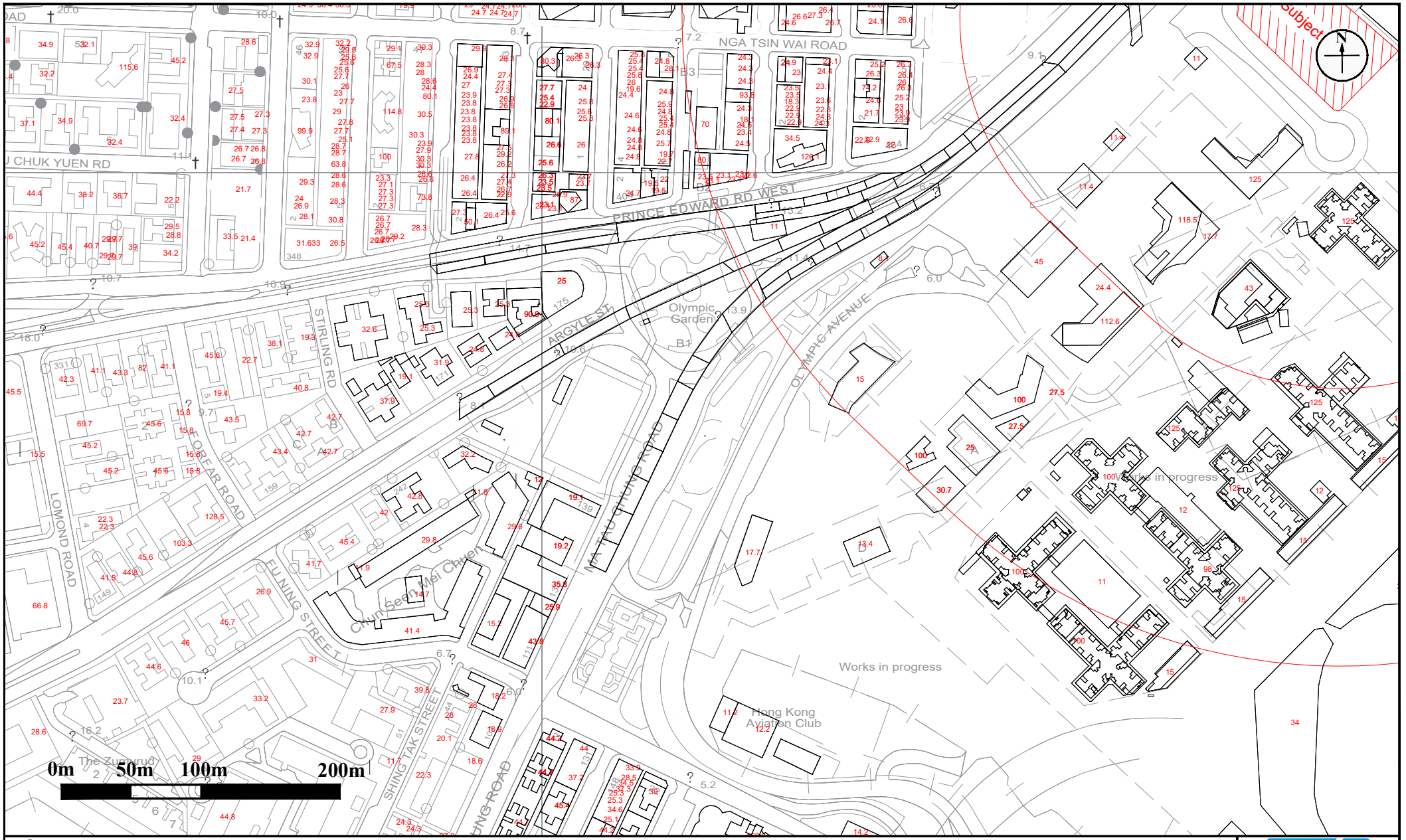

Figure: 2c

Title: Building Height of Development within the Surrounding Area (Southwestern Part)

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

RAMBOLL

Drawn by: WT

Checked by: EC

Rev.: 1.0

Date: Jun 2024

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Figure: 2d

Title: Building Height of Development within the Surrounding Area (Southeastern Part)

RAMBOLL

Drawn by:	WT
Checked by:	EC
Rev.:	1.0
Date:	Jun 2024

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

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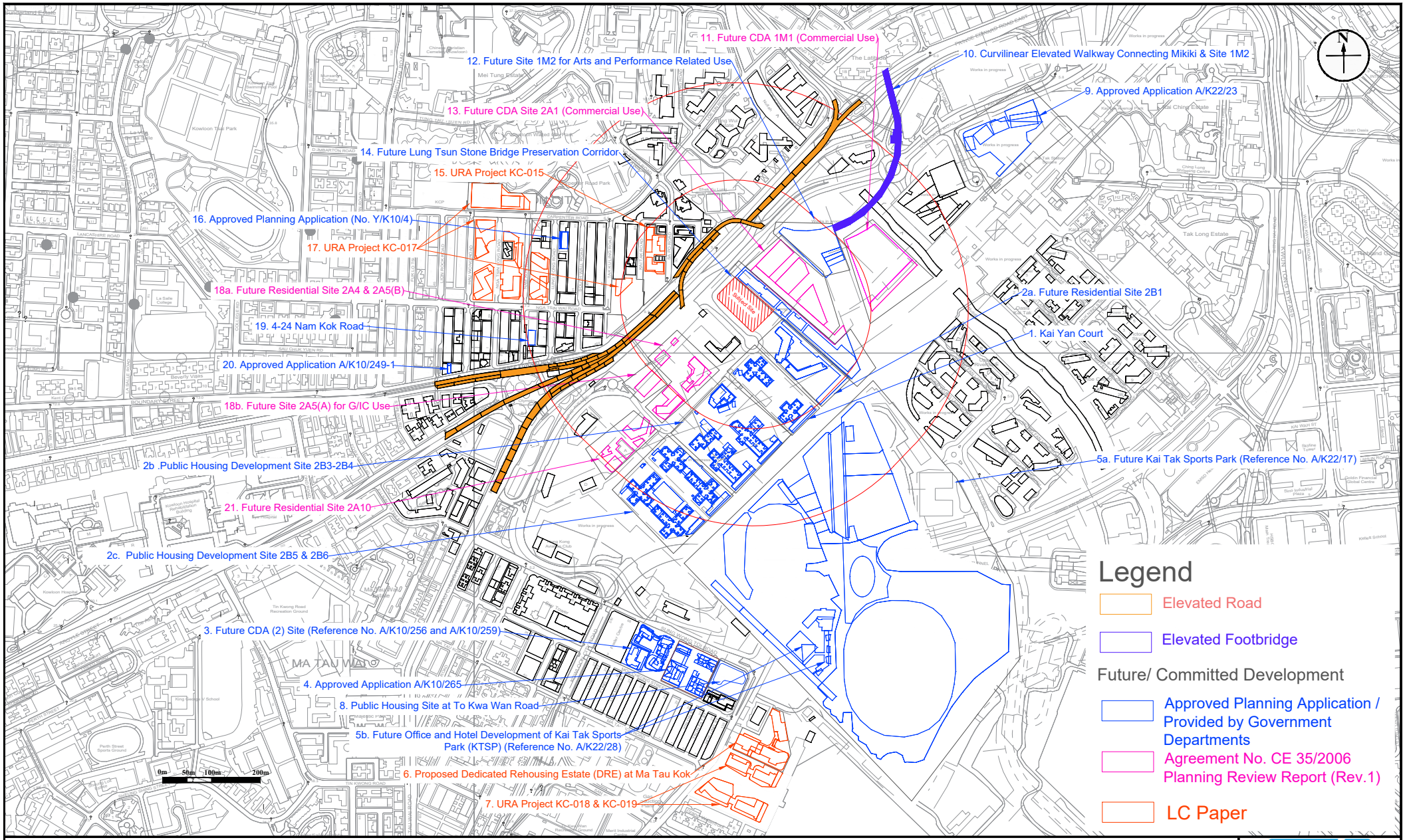

Figure: 3

Title: Building Blocks of Surrounding Future/ Committed Development

RAMBOLL

Drawn by: WT

Checked by: EC

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

Rev.: 2.0

Date: Jun 2024

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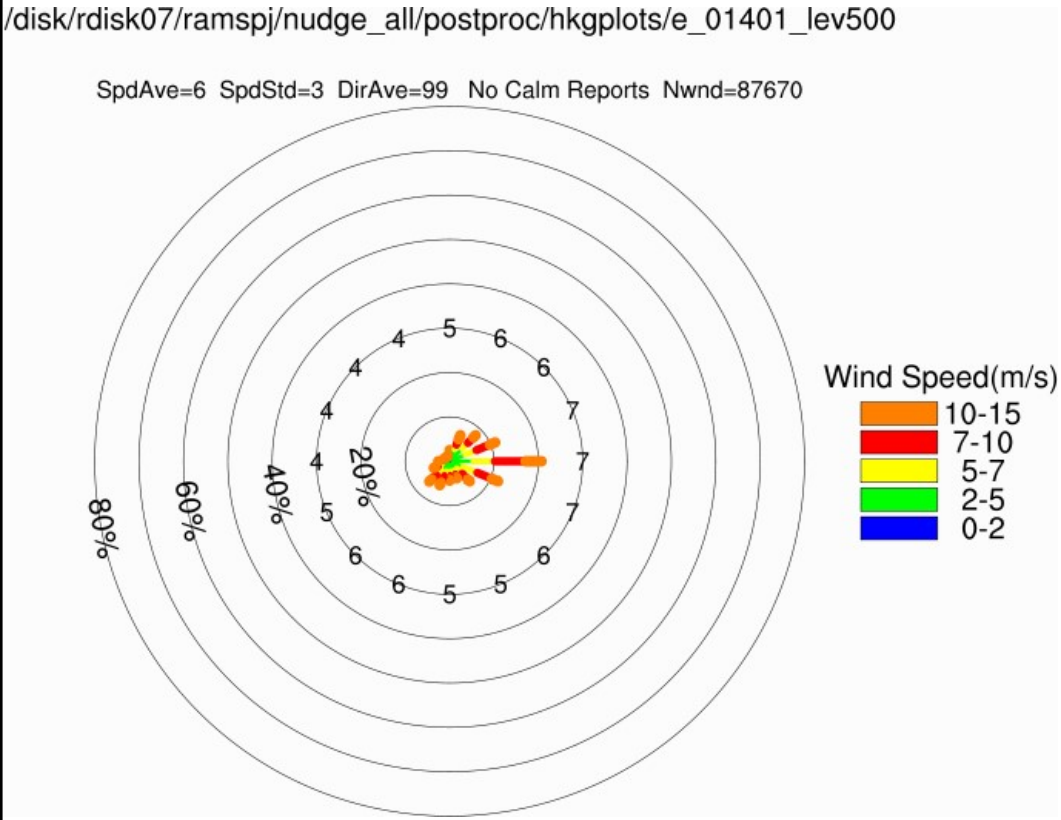
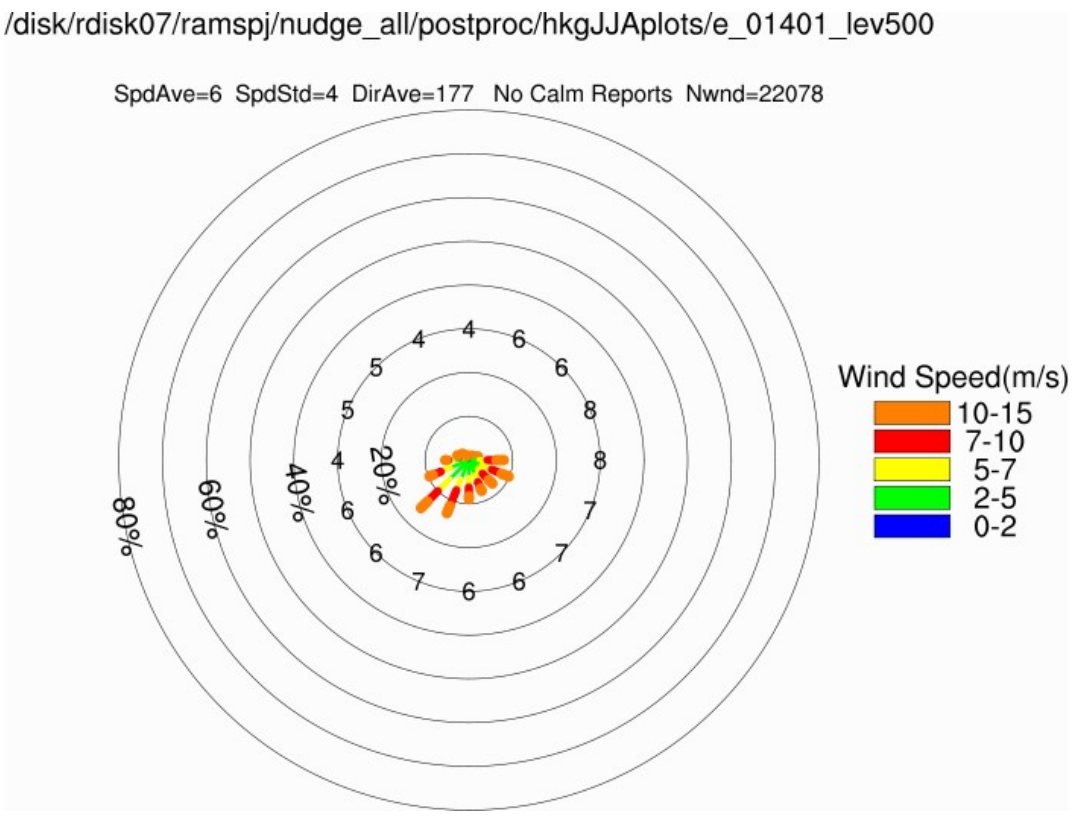


Annual Condition



Summer Condition

Figure: 4	RAMBOLL
Title: **Windrose Diagram of the RAMS**	Drawn by: WT Checked by: EC
Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon	Rev.: 1.0 Date: Jun 2024

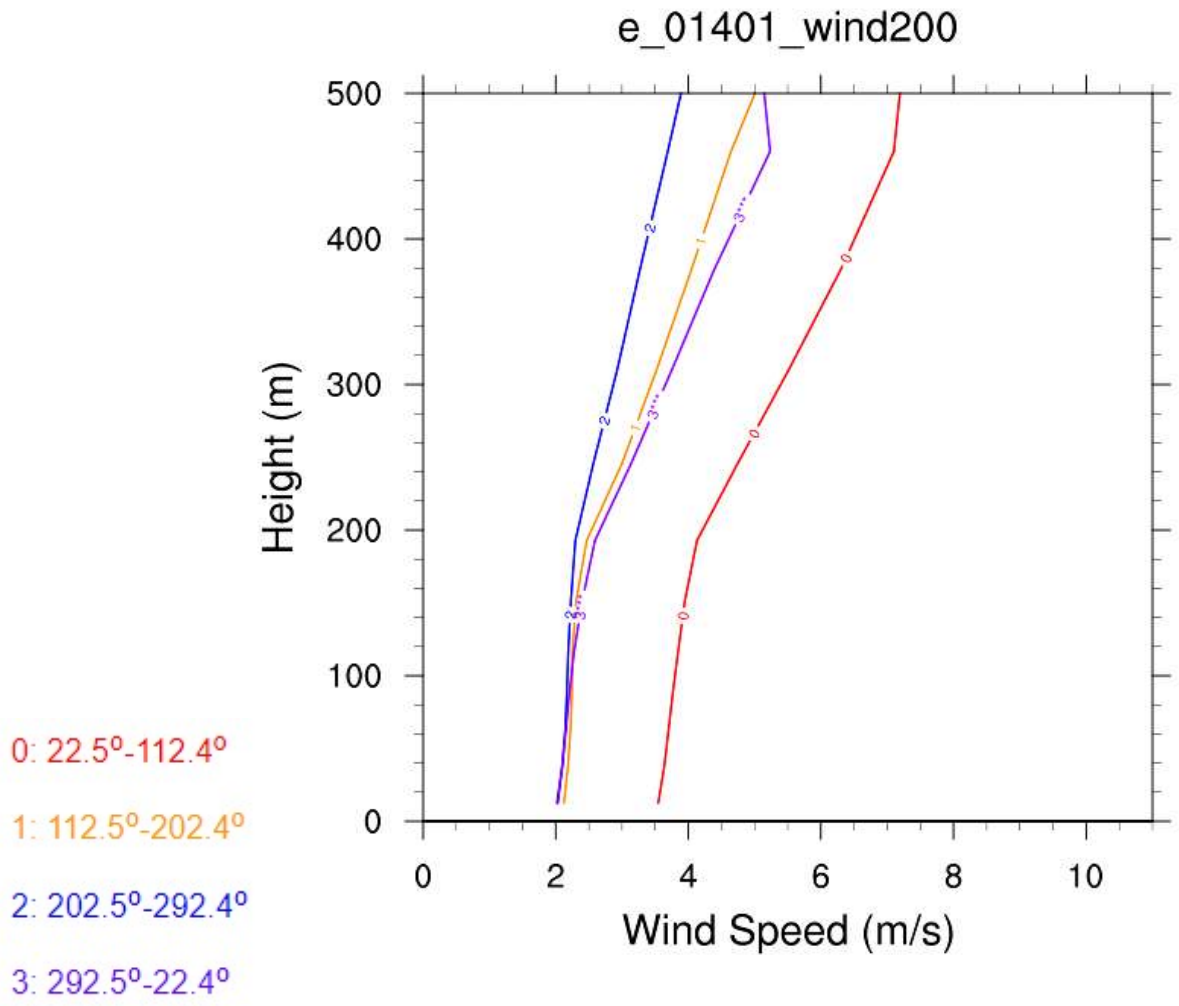


Figure: 5	RAMBOLL
Title: Wind Profile Curve for Grid X:084, Y:044	Drawn by: WT Checked by: EC
Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon	Rev.: 1.0 Date: Jun 2024

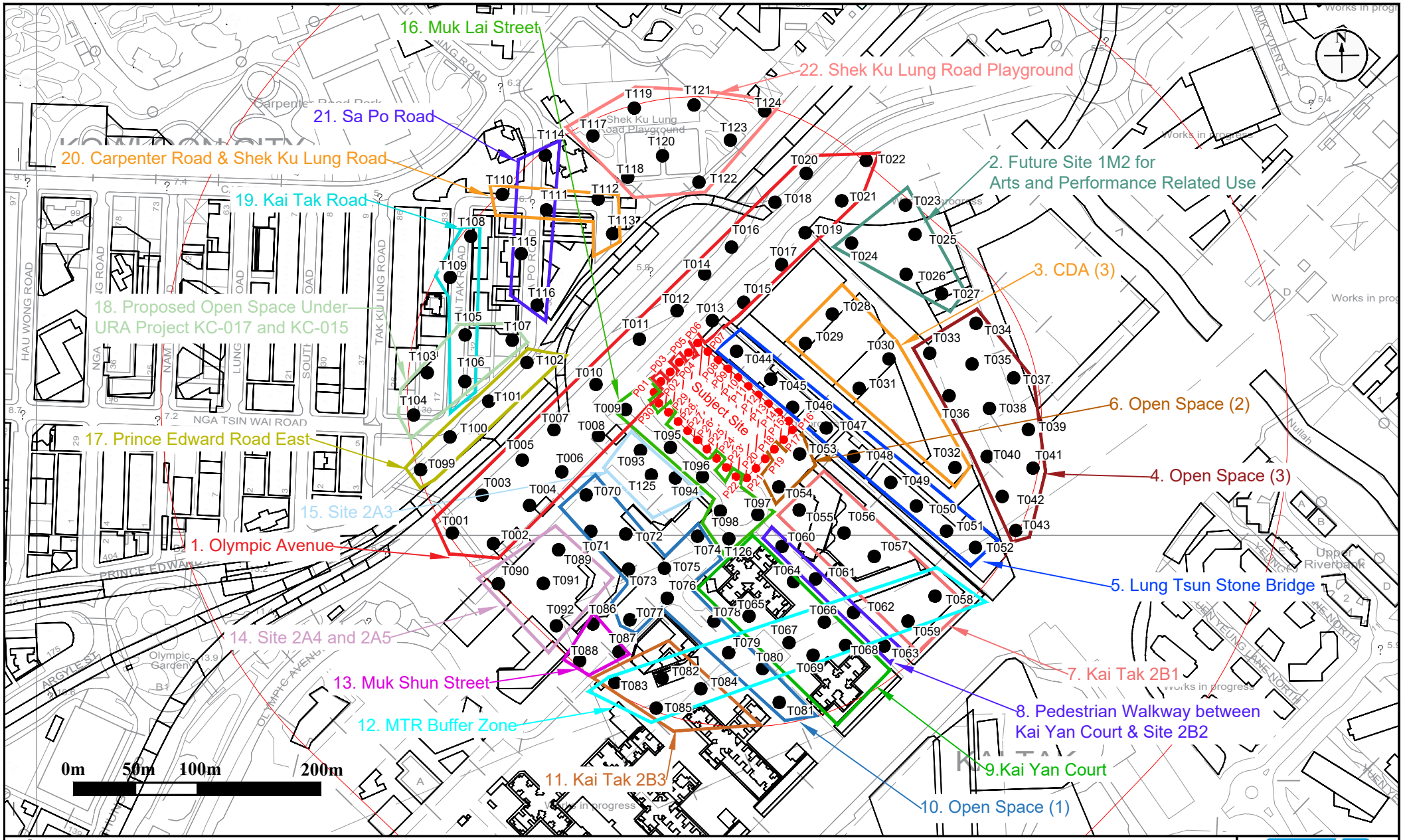


Figure: 6

Title: Test Points Selected for Quantitative Air Ventilation Assessment

RAMBOLL

Drawn by: WT

Checked by: EC

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

Rev.: 2.0

Date: Jun 2024

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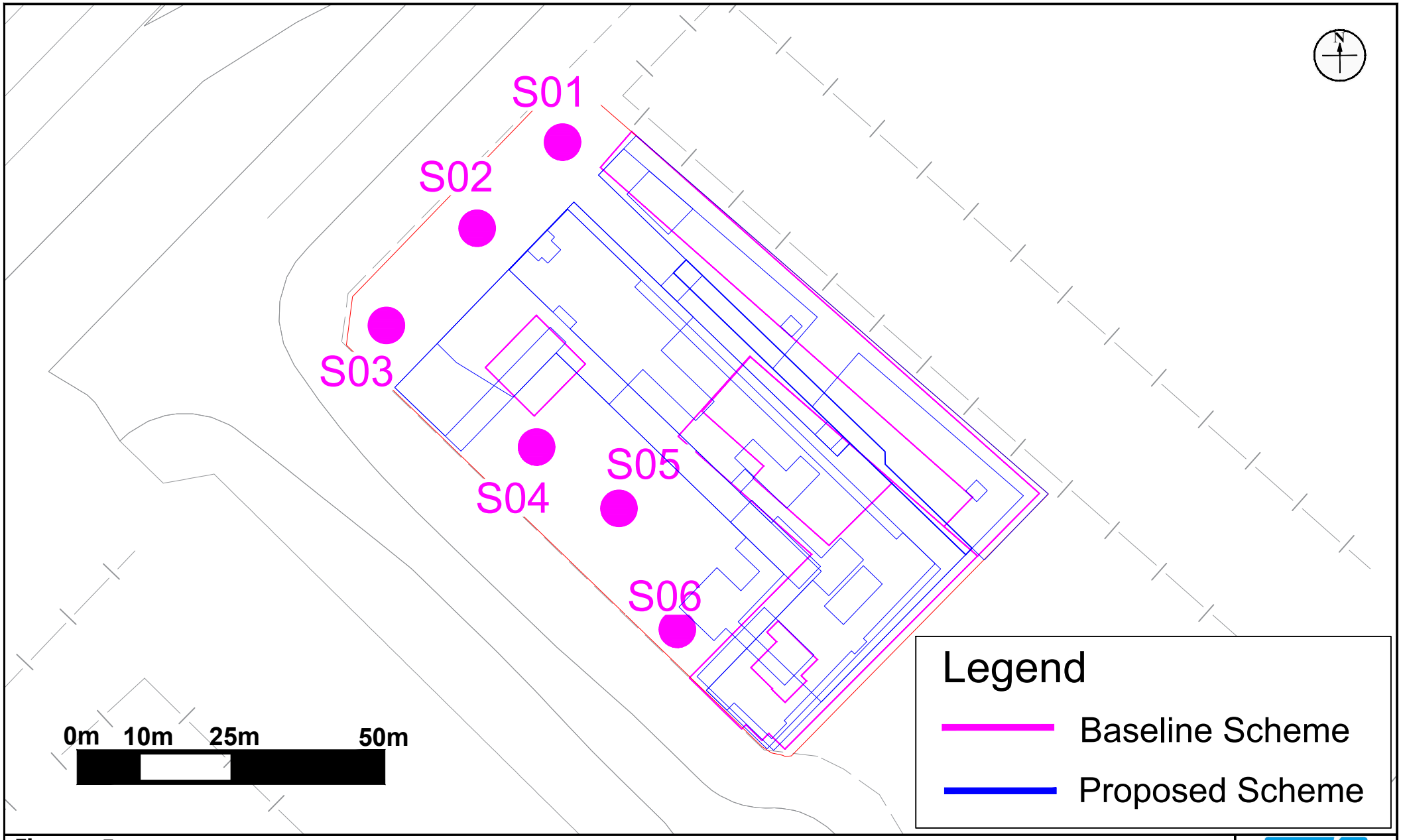

Figure: 7

Title: Special Test Points Selected for Quantitative Air Ventilation Assessment

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

RAMBOLL

Drawn by: WT

Checked by: EC

Rev.: 2.0

Date: Jun 2024

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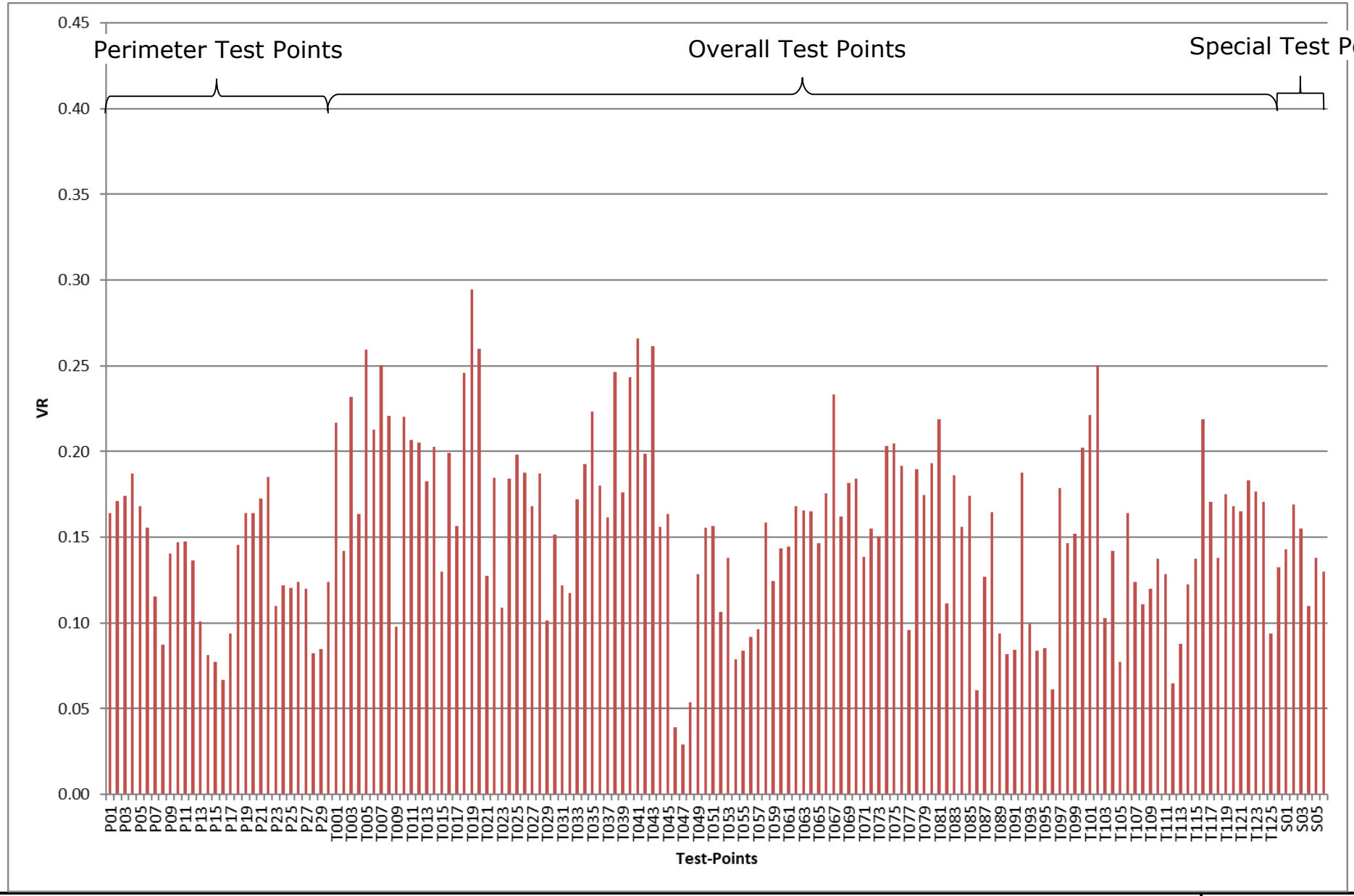

Figure: 8a

Title: Wind Velocity Ratios of Individual Test Points for Baseline Scheme (Annual)

RAMBOLL

Drawn by: WT

Checked by: EC

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

Rev.: 2.0

Date: Jun 2024

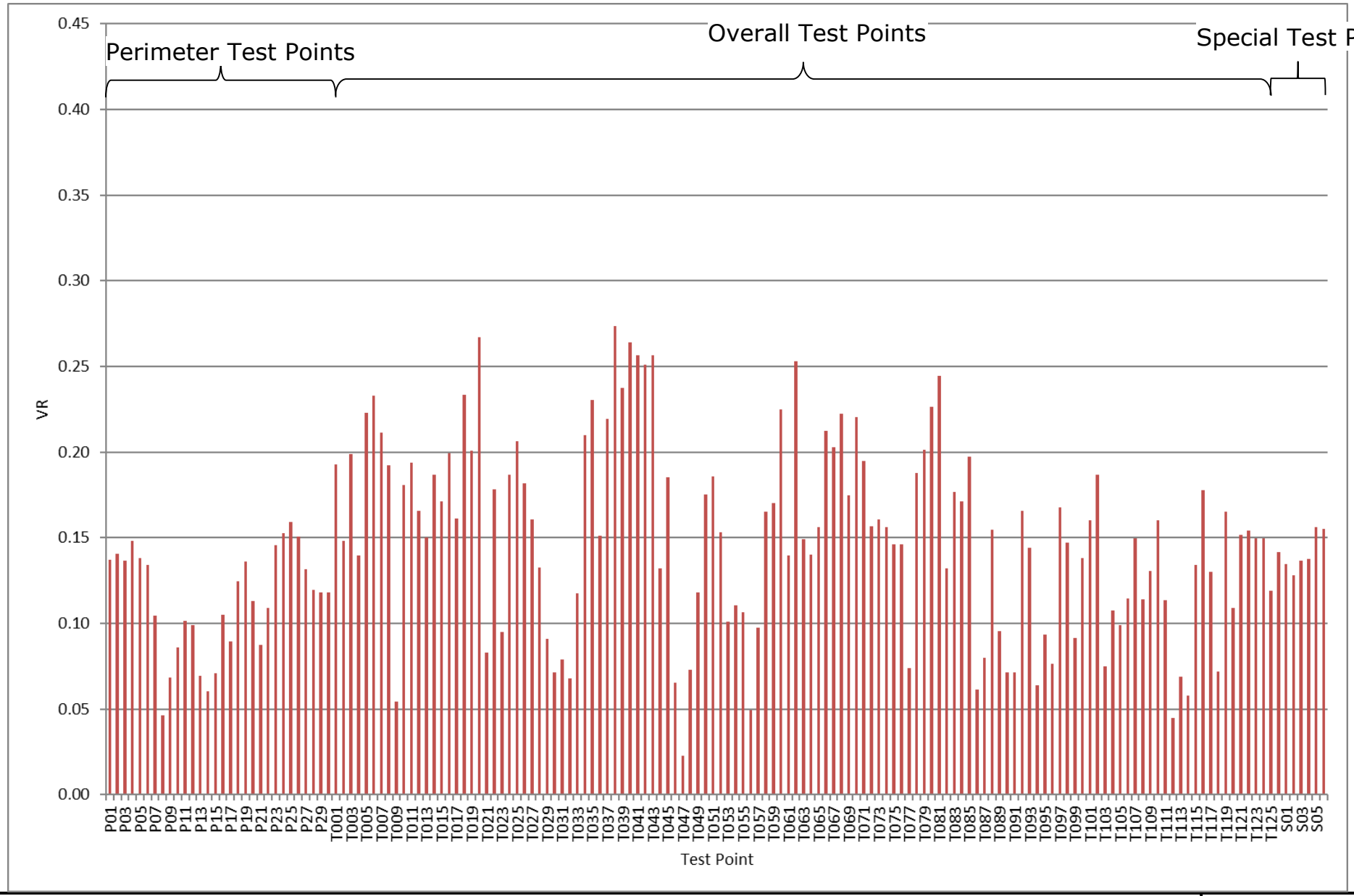

Figure: 8b

Title: Wind Velocity Ratios of Individual Test Points for Baseline Scheme (Summer)

RAMBOLL

Drawn by:	WT
Checked by:	EC
Rev.:	2.0
Date:	Jun 2024

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

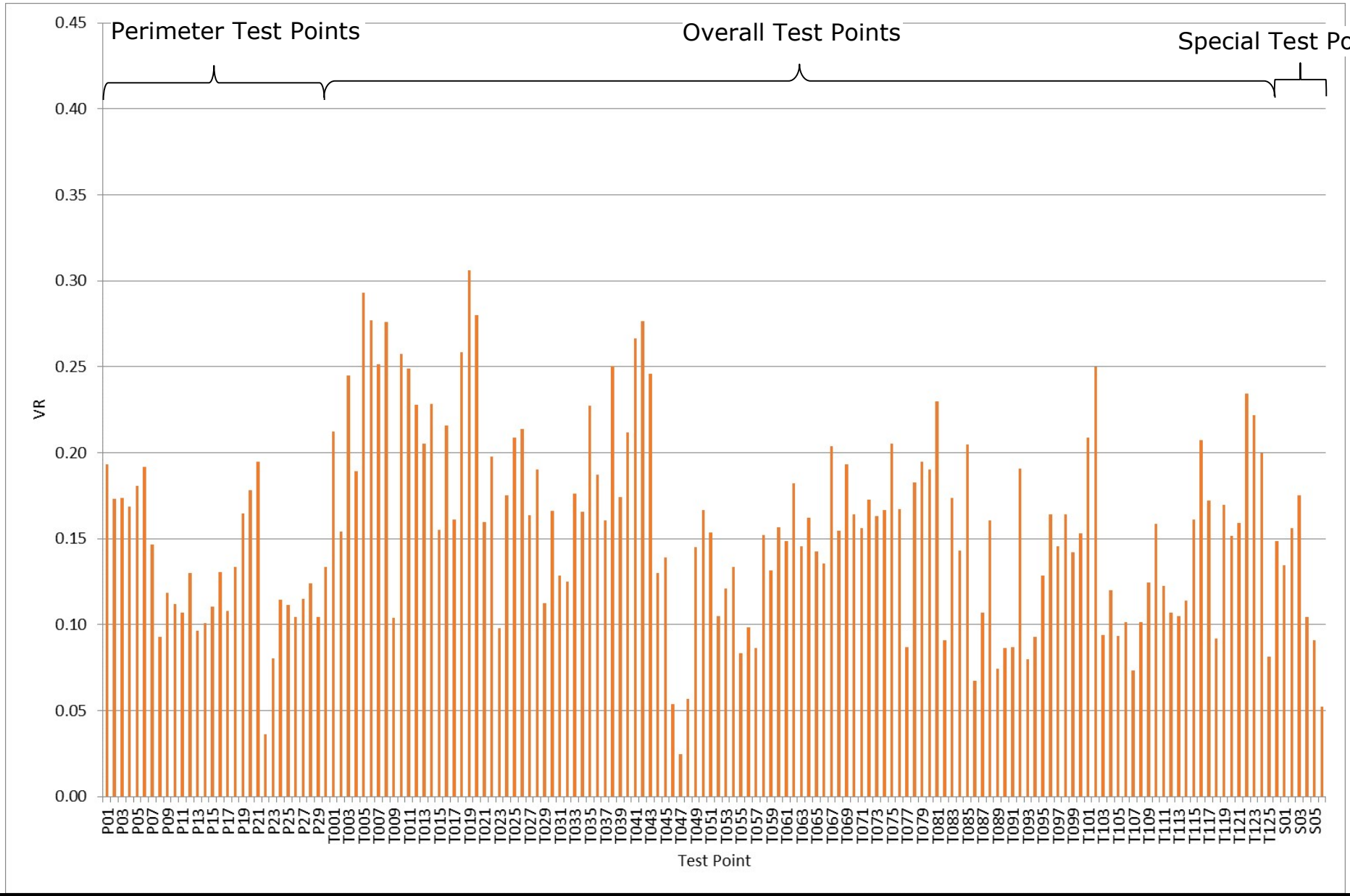

Figure: 9a

Title: Wind Velocity Ratios of Individual Test Points for Proposed Scheme (Annual)

RAMBOLL

Drawn by:	WT
Checked by:	EC
Rev.:	2.0
Date:	Jun 2024

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

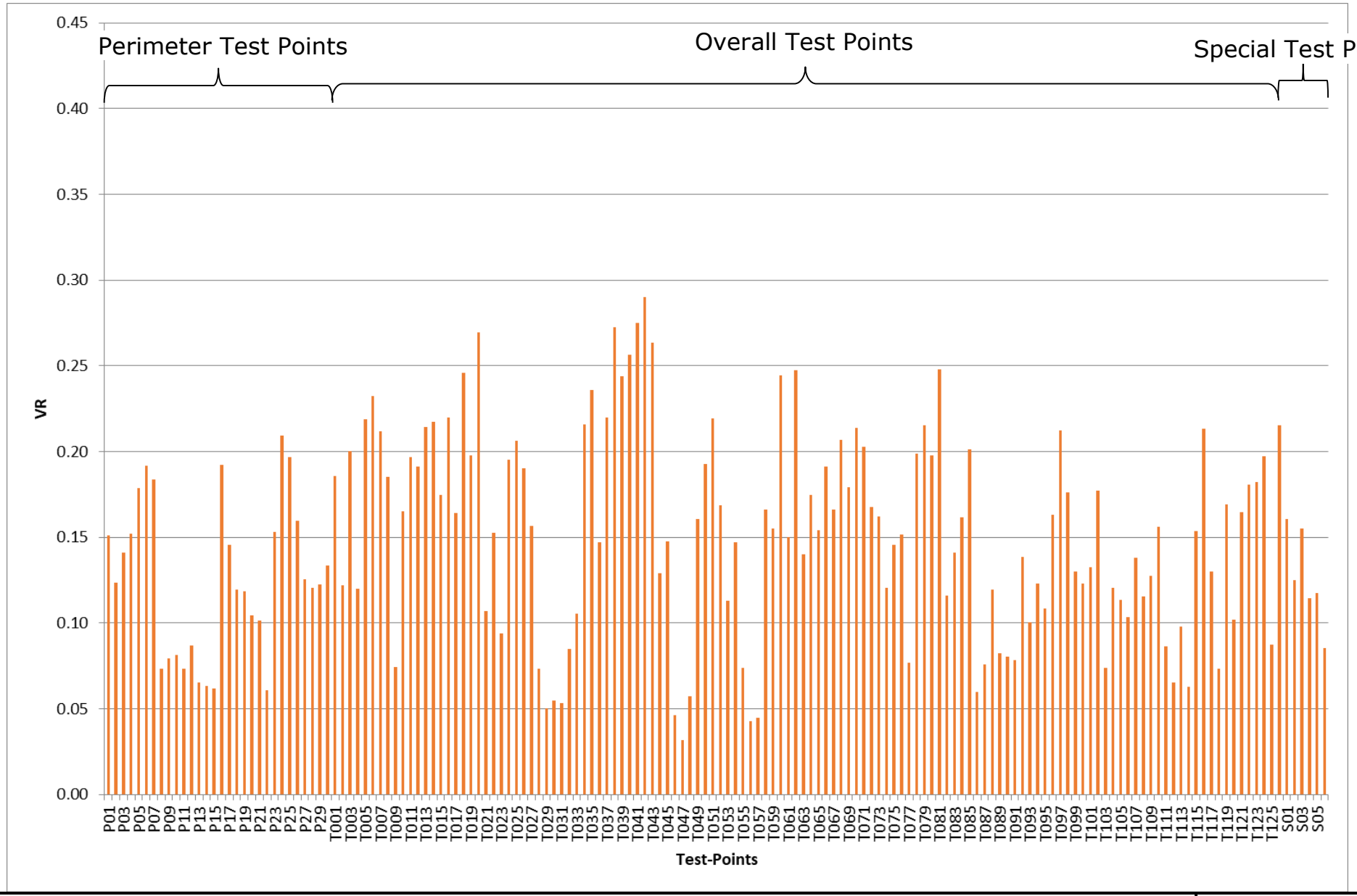

Figure: 9b

Title: Wind Velocity Ratios of Individual Test Points for Proposed Scheme (Summer)

RAMBOLL

Drawn by: WT

Checked by: EC

Rev.: 2.0

Date: Jun 2024

Project: Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

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Appendix 1

Master Layout Plan for Baseline Scheme

AECOM

B H A
B A R R I E H O
ARCHITECTURE · INTERIORS

Arbis Limited 雅邦

Agreement No. CE 35/2006 (CE)
Kai Tak Development Engineering Study cum Design and Construction of Advance Works - Investigation, Design and Construction

Title

Recommended Block Layout of Subjected Sites at Former North Apron

Scale	Date	Figure No.
1:3,000 @ A3	November 2021	**2.11**

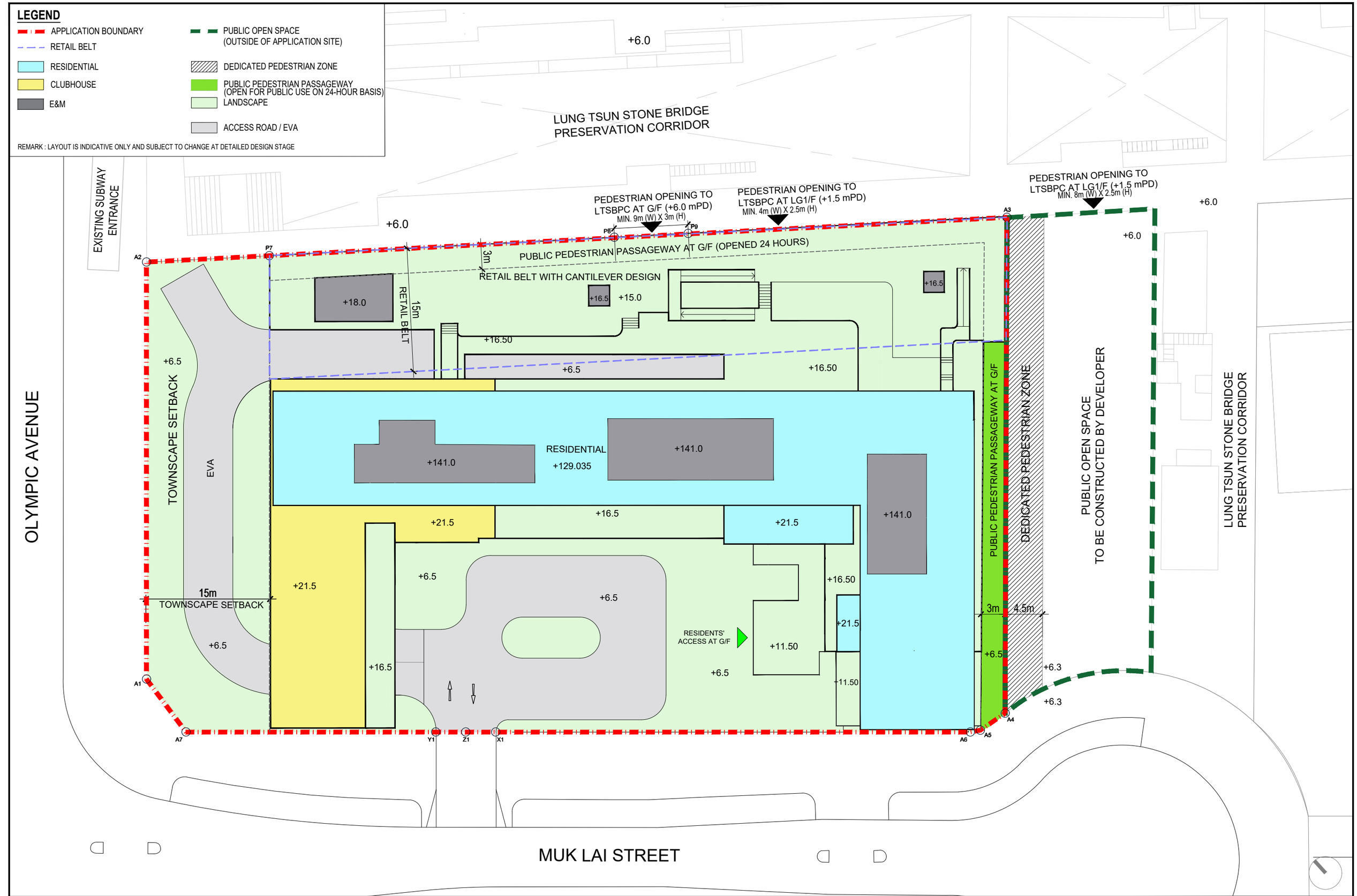
Appendix 2

Master Layout Plan for Proposed Scheme

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- CLUBHOUSE
- E&M
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- DEDICATED PEDESTRIAN ZONE
- PUBLIC PEDESTRIAN PASSAGEWAY (OPEN FOR PUBLIC USE ON 24-HOUR BASIS)
- LANDSCAPE
- ACCESS ROAD / EVA

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: MASTER LAYOUT PLAN			
		Drawing No. MLP-01	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK + PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- E&M

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

+6.0

A2 P7 P8 P9 A3

+6.0

RETAIL BELT

RESIDENTIAL TOWER

+141.0

+129.035

+141.0

+141.0

15m TOWNSCAPE SETBACK

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: R/F PLAN			
		Drawing No. P-01	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

+6.0

+6.0

A2 P7 P8 P9 A3

RETAIL BELT

RESIDENTIAL TOWER

15m TOWNSCAPE SETBACK

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: 3/F TO 34/F PLAN			
		Drawing No. P-02	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL LOBBIES
- CLUBHOUSE
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- LANDSCAPE
- E&M

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

OLYMPIC AVENUE

+6.0

+6.0

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

LANDSCAPED ROOF

+15.00

+18.0

+16.5

+16.5

+16.50

CLUBHOUSE

+16.50

+16.50

15m
TOWNSCAPE SETBACK

MUK LAI STREET

Project	Job No.	Drawing Title					
PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	01864	2/F PLAN					
		Drawing No.	Revision No.	Scale	Date		LWK +PARTNERS
		P-03	B	1:400	6 Jun 2024		

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- CLUBHOUSE
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- E&M
- LANDSCAPE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

EXISTING SUBWAY ENTRANCE

OLYMPIC AVENUE

+6.0

+6.0

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

PUBLIC PEDESTRIAN PASSAGEWAY AT G/F (OPENED 24 HOURS)

COMMERCIAL
+11.00

CLUBHOUSE
+11.50

E&M

E&M

15m
TOWNSCAPE SETBACK

+11.50

PODIUM
LANDSCAPED ROOF
+11.50

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: 1/F PLAN		
		Drawing No. P-04	Revision No. B	Scale 1:400 / Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RETAIL BELT
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- LANDSCAPE
- PUBLIC OPEN SPACE (OUTSIDE OF APPLICATION SITE)
- DEDICATED PEDESTRIAN ZONE
- PUBLIC PEDESTRIAN PASSAGEWAY (OPEN FOR PUBLIC USE ON 24-HOUR BASIS)
- ACCESS ROAD / EVA
- E&M
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND 2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

+6.0

PEDESTRIAN OPENING TO LTSBPC
(MIN. 9M(W) X 3M (H) AT G/F (+6.0mPD))

P8 P9 P7 A2 A3

PUBLIC PEDESTRIAN PASSAGEWAY

+6.0 +6.15 +6.0

15 M

CLUBHOUSE

E&M

E&M

EVA

TOWNSCAPE SETBACK

15m
TOWNSCAPE SETBACK

+6.2
RAMP DN
TO LG1/F

+6.5

RESIDENTS' ACCESS AT G/F

+6.5

PUBLIC PEDESTRIAN PASSAGEWAY

DEDICATED PEDESTRIAN ZONE

3m 4.5m

PUBLIC OPEN SPACE
TO BE CONSTRUCTED BY DEVELOPER

A1 A7 Y1 Z1 X1 A6 A5 A4

OLYMPIC AVENUE

MUK LAI STREET

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: G/F PLAN			
		Drawing No. P-05	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION SITE BOUNDARY
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE) (UNDERGROUND SHOPPING STREET OUTSIDE OF APPLICATION SITE BOUNDARY)
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- ACCESS POINT
- DRIVEWAY
- E&M
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE
- 8M(W) X 3M(H) 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE WITHIN THE UNDERGROUND SHOPPING STREET, EXACT ALIGNMENT SUBJECT TO DETAIL DESIGN

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

ONE BRIDGE
N CORRIDOR

PEDESTRIAN OPENING TO LTSBPC AT LG1/F (+1.5 mPD)
4m(W) 2.5m(H)

PEDESTRIAN OPENING TO LTSBPC AT LG1/F (+1.5 mPD)
8m(W)
2.5m(H)

A1 A2 A3 A4 A5 A6 A7 P7 P8 P9 Y1 Z1 X1

E&M
COMMERCIAL +1.5
COMMERCIAL +1.5
DRIVEWAY TO LG2/F
CARPARK
CARPARK +3.05

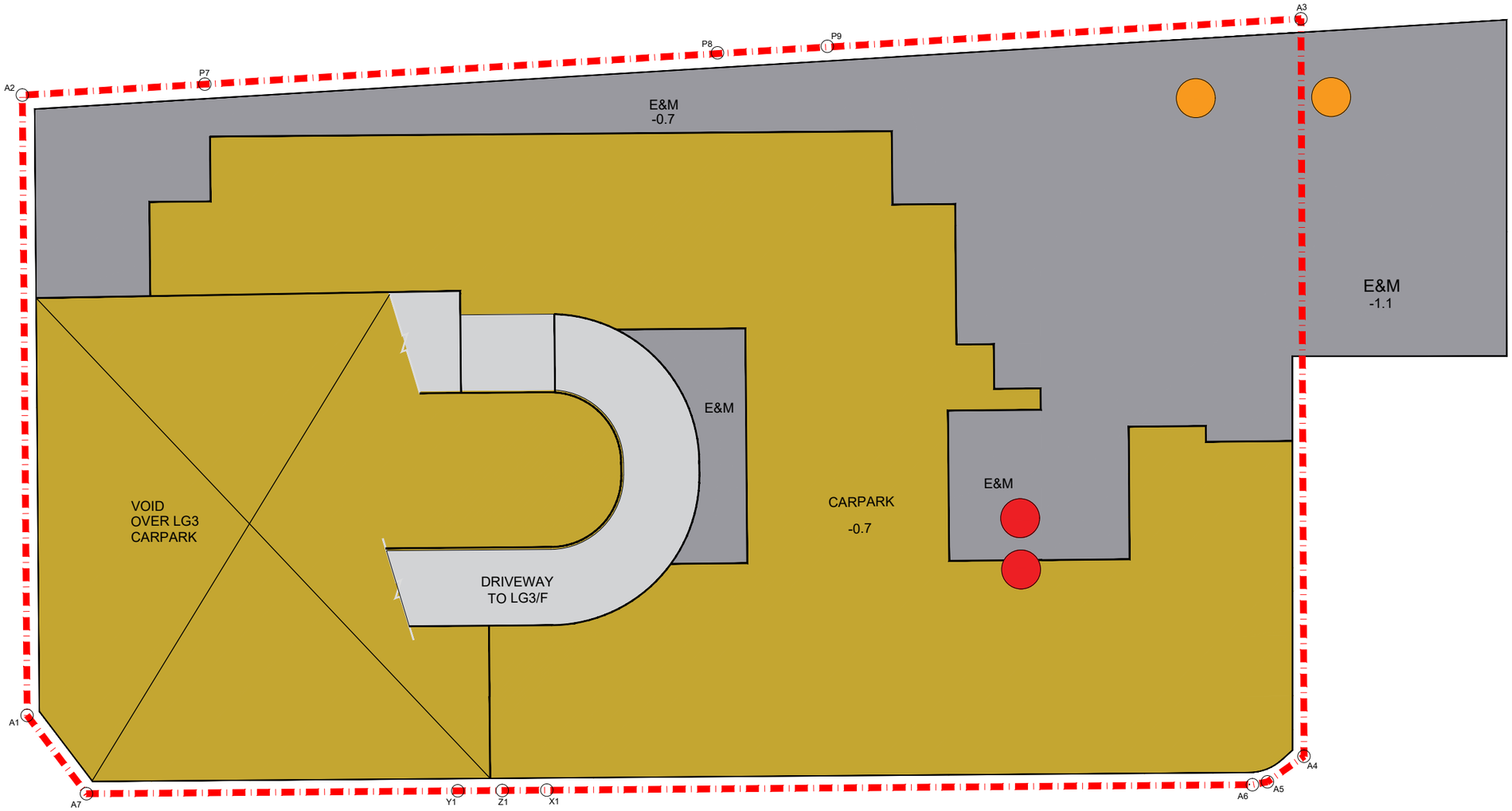
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B1/F PLAN			
		Drawing No. P-06	Revision No. B	Scale 1:400	Date 6 Jun 2024

LWK +PARTNERS

LEGEND

- APPLICATION SITE BOUNDARY
- DRIVEWAY
- E&M
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE

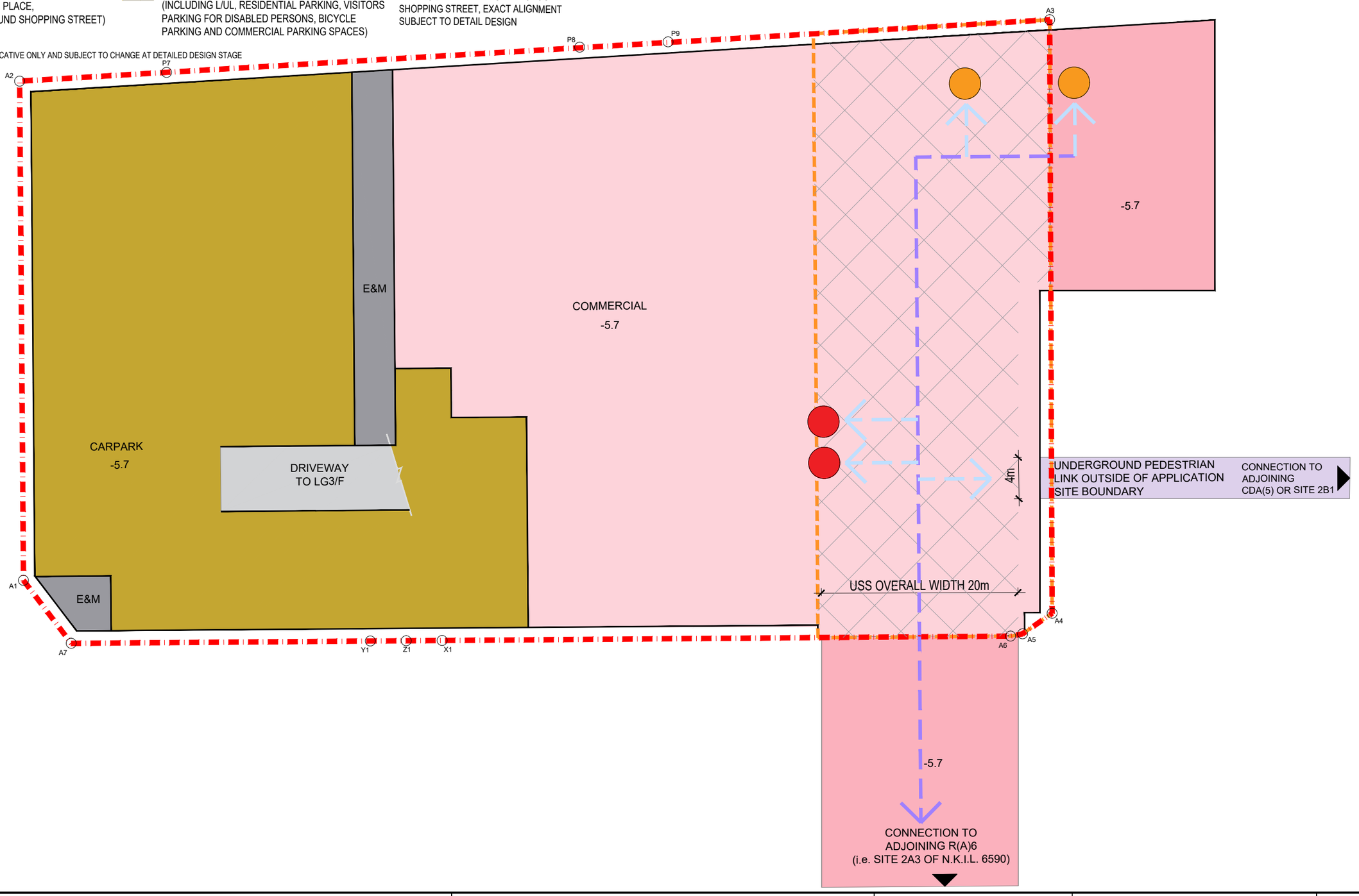


Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B2/F PLAN				LWK +PARTNERS
		Drawing No. P-07	Revision No. B	Scale 1:400	Date 6 Jun 2024	

LEGEND

- APPLICATION SITE BOUNDARY
- UNDERGROUND SHOPPING STREET (WITHIN APPLICATION SITE)
- ACCESS POINT
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE) (UNDERGROUND SHOPPING STREET OUTSIDE OF APPLICATION SITE BOUNDARY)
- COMMERCIAL (SHOPS AND SERVICES AND EATING PLACE, UNDERGROUND SHOPPING STREET)
- DRIVEWAY
- E&M
- UNDERGROUND PEDESTRIAN LINK OUTSIDE OF APPLICATION SITE BOUNDARY FOR 24-Hr PUBLIC ACCESS
- CARPARK (INCLUDING L/UL, RESIDENTIAL PARKING, VISITORS PARKING FOR DISABLED PERSONS, BICYCLE PARKING AND COMMERCIAL PARKING SPACES)
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO B1/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- VERTICAL TRANSPORT FACILITIES FROM B3/F TO G/F INCLUDING 1 LIFT AND -2 WAY ESCALATORS FOR 24-Hr PUBLIC ACCESS
- 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE
- 8M(W) X 3M(H) 24-HOUR BARRIER-FREE UNOBSTRUCTED PUBLIC PEDESTRIAN PASSAGE WITHIN THE UNDERGROUND SHOPPING STREET, EXACT ALIGNMENT SUBJECT TO DETAIL DESIGN

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



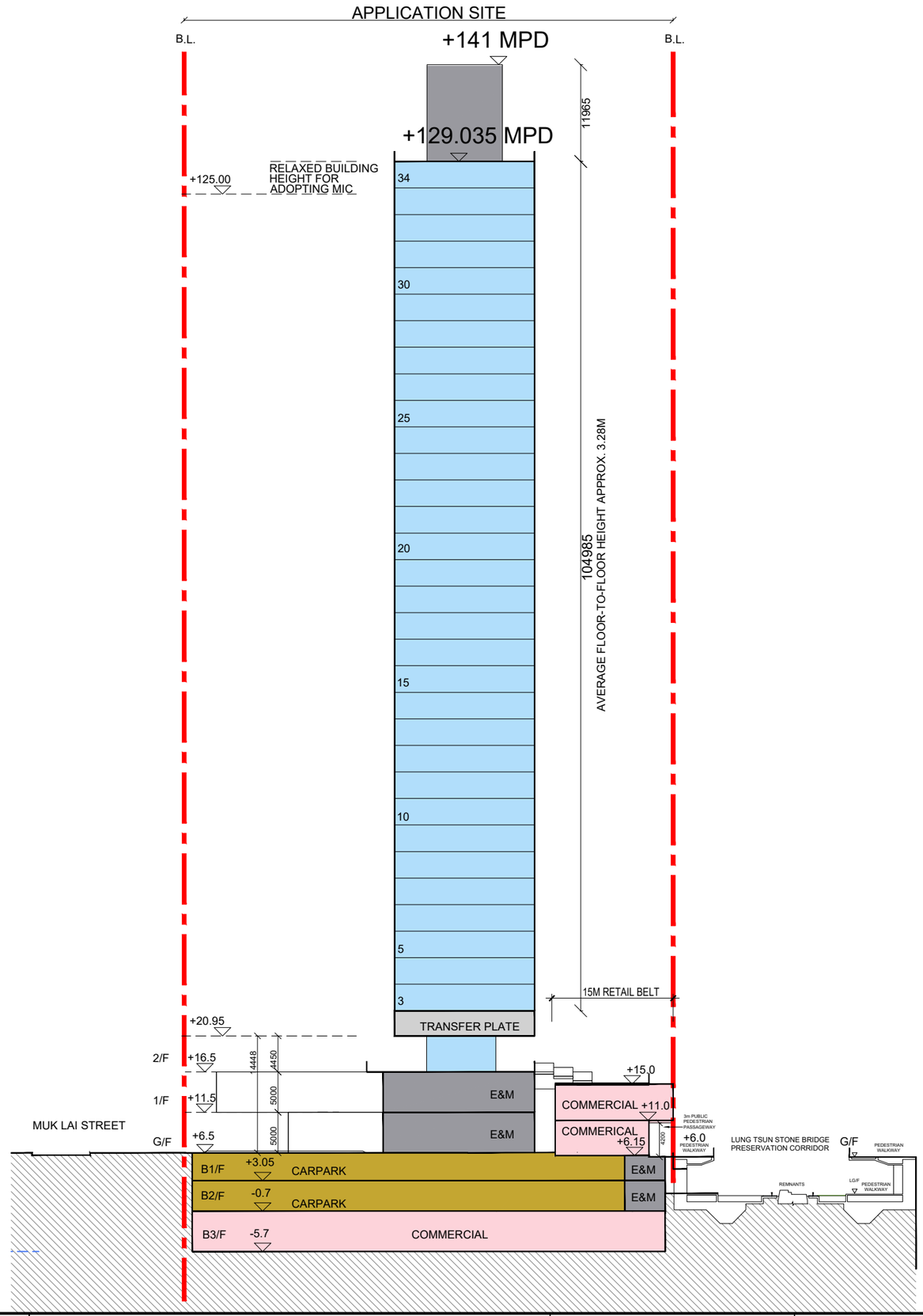
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: B3/F PLAN			
		Drawing No. P-08	Revision No. B	Scale 1:400	Date 6 Jun 2024

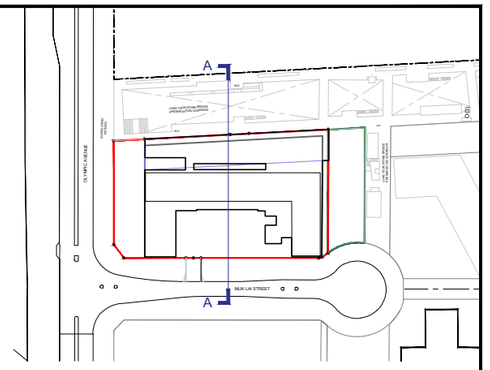
LWK +PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- CARPARK
- E&M
- TRANSFER PLATE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE





KEY PLAN
1:3000

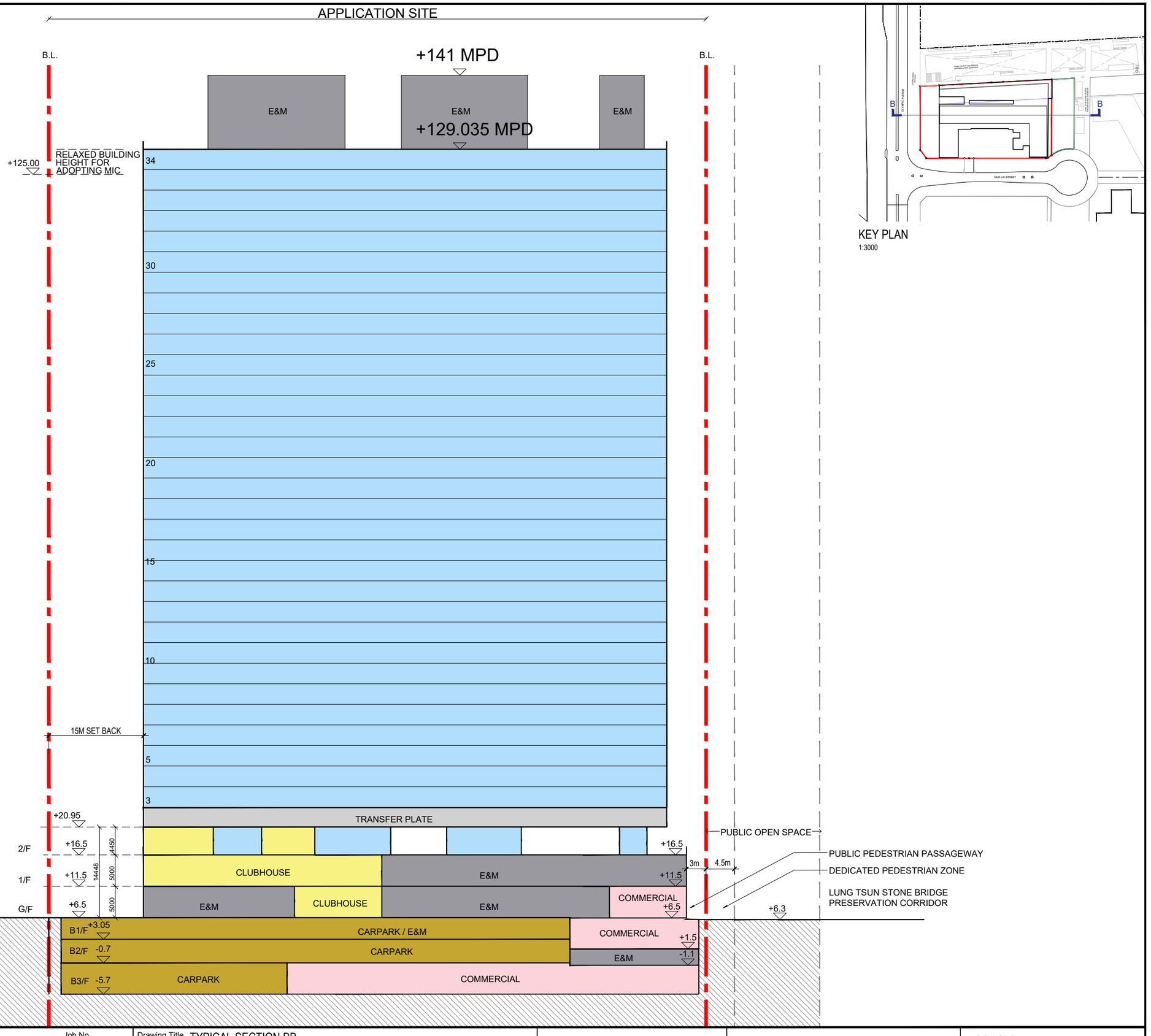
Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: TYPICAL SECTION AA		
		Drawing No. S-01	Revision No. A	Scale 1:600 / Date 6 Jun 2024

LWK + PARTNERS

LEGEND

- APPLICATION BOUNDARY
- RESIDENTIAL
- CLUBHOUSE
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- CARPARK
- E&M
- TRANSFER PLATE

REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



KEY PLAN
1:3000

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: TYPICAL SECTION BB		
		Drawing No. S-02	Revision No. A	Scale 1:600 / Date 6 JUN 2024

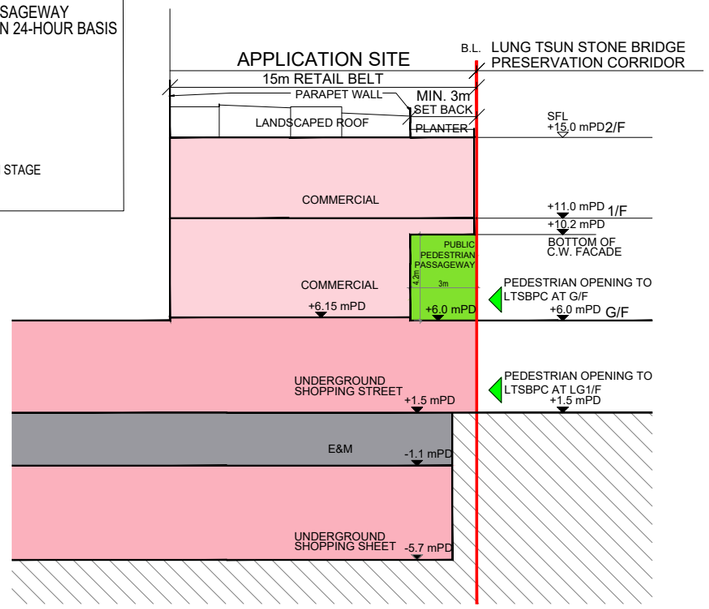
LWK + PARTNERS

LEGEND

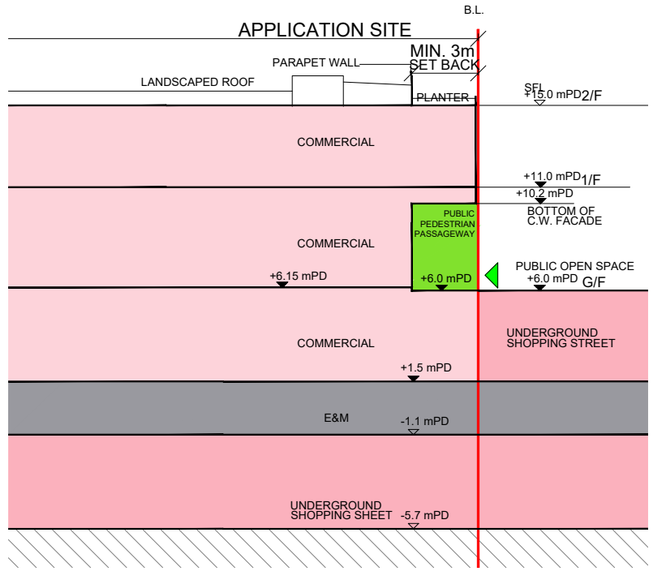
- APPLICATION BOUNDARY
- PUBLIC PEDESTRIAN PASSAGEWAY OPEN FOR PUBLIC USE ON 24-HOUR BASIS
- ACCESS PEDESTRIAN POINT
- COMMERCIAL (SHOP AND SERVICES AND EATING PLACE)
- E&M

SFL - STRUCTURAL FLOOR LEVEL

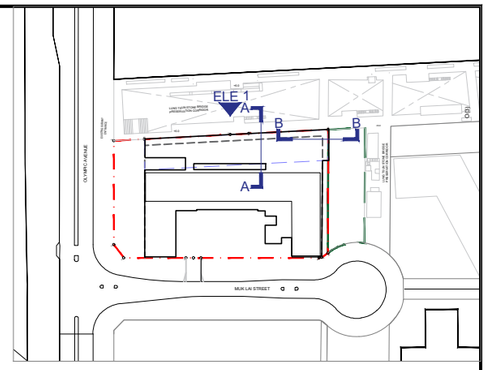
REMARK : LAYOUT IS INDICATIVE ONLY AND SUBJECT TO CHANGE AT DETAILED DESIGN STAGE



TYPICAL SECTION ACROSS RETAIL BELT BLOCK A

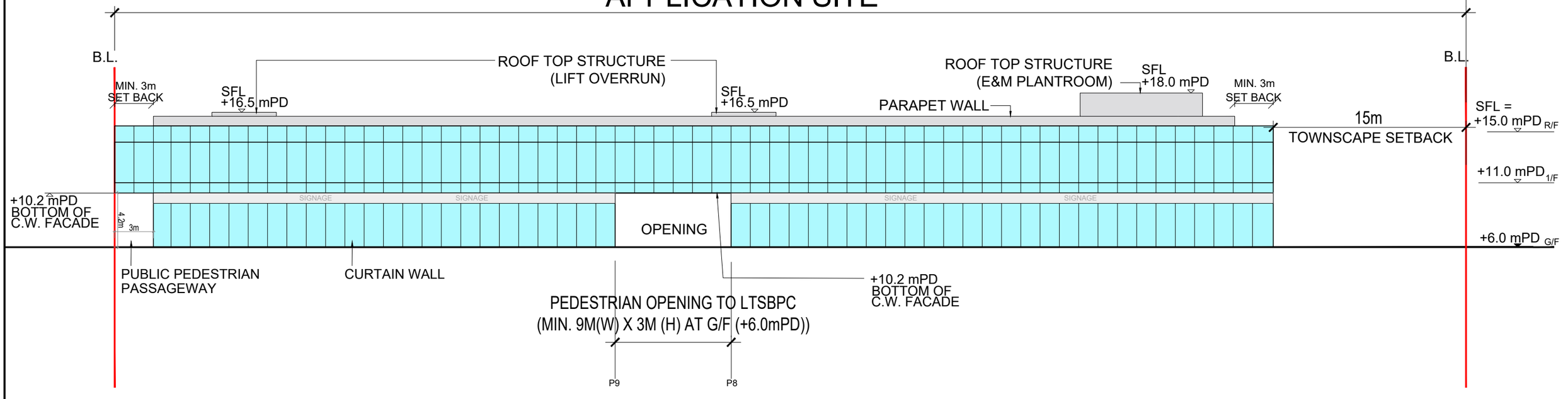


TYPICAL SECTION ACROSS RETAIL BELT BLOCK B



KEY PLAN
1:3000

APPLICATION SITE



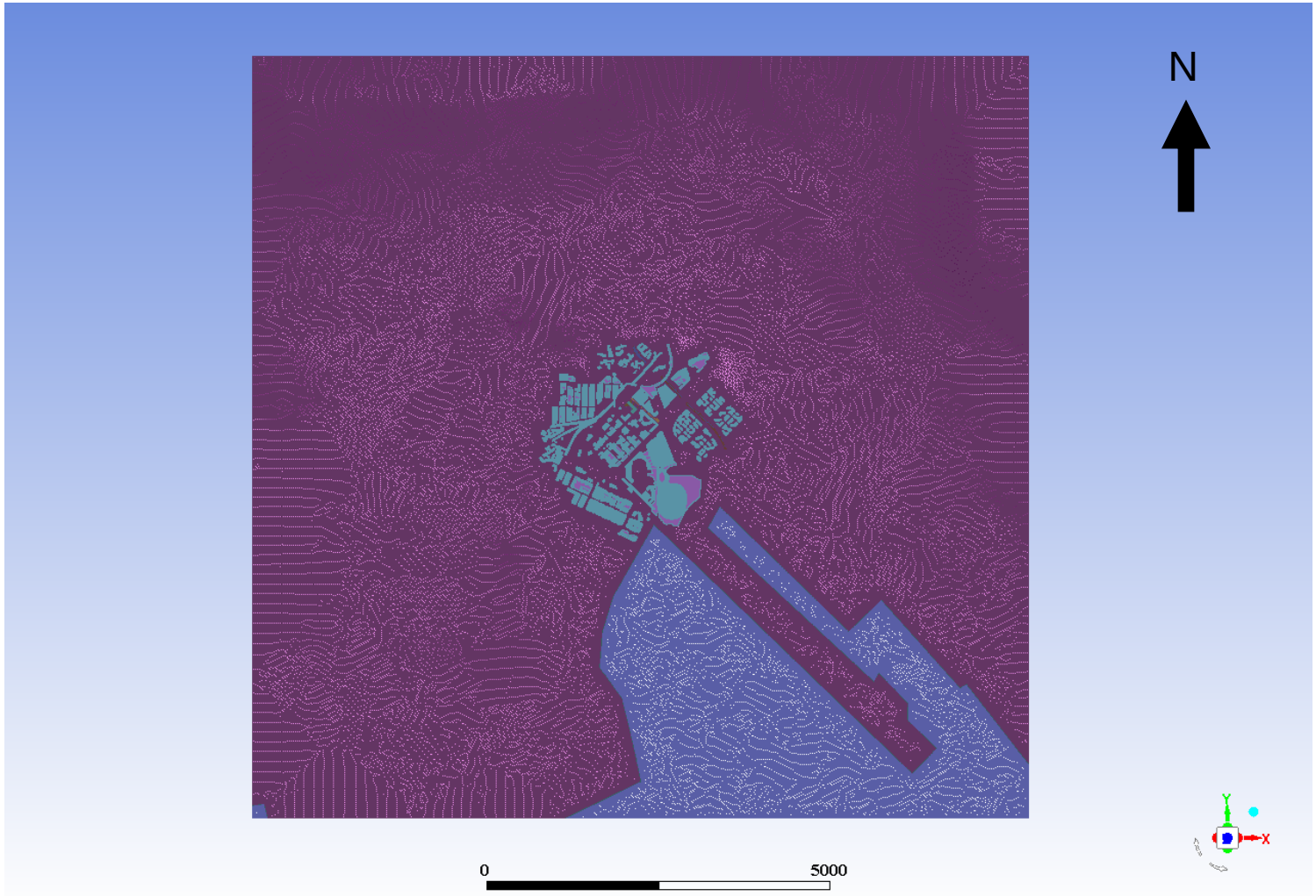
ELEVATION 1

Project: PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title: ELEVATION AND SECTIONS OF RETAIL BELT BLOCK			
		Drawing No. ELE-01	Revision No. -	Scale 1:300	Date 6 JUN 2024

LWK + PARTNERS

Appendix 3

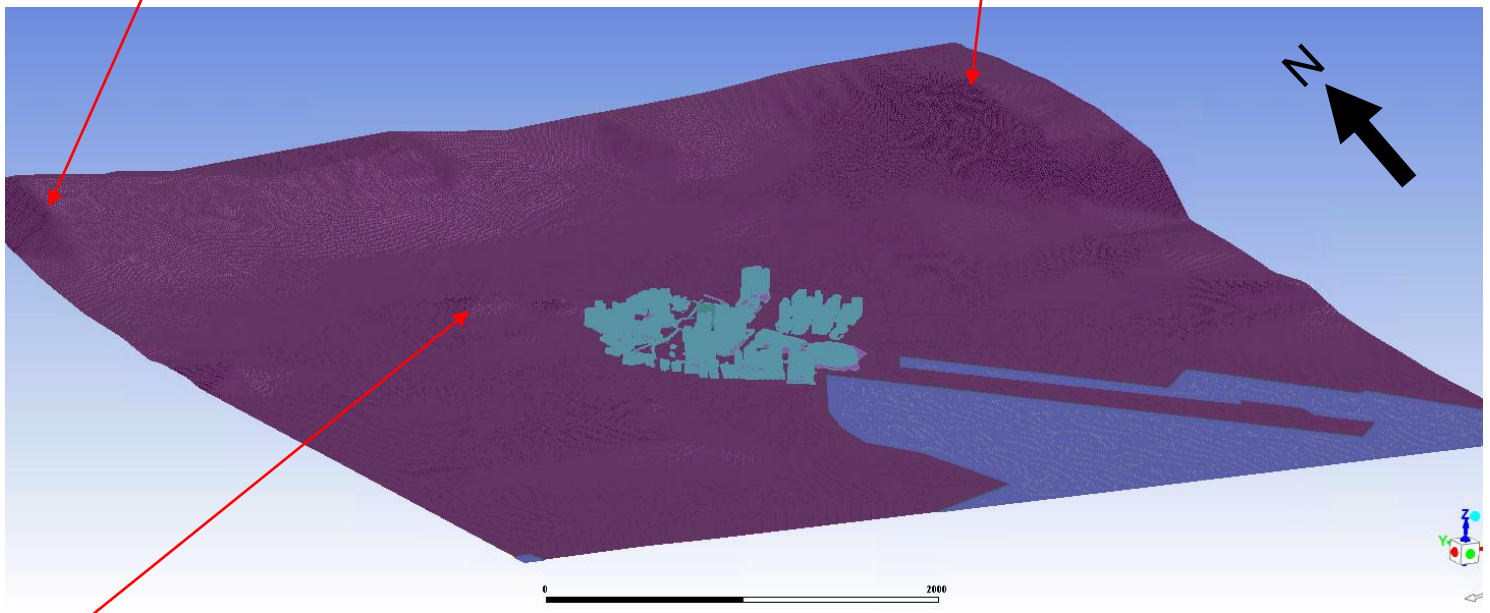
Captured Pictures of the CFD Model



Topography of Whole Domain

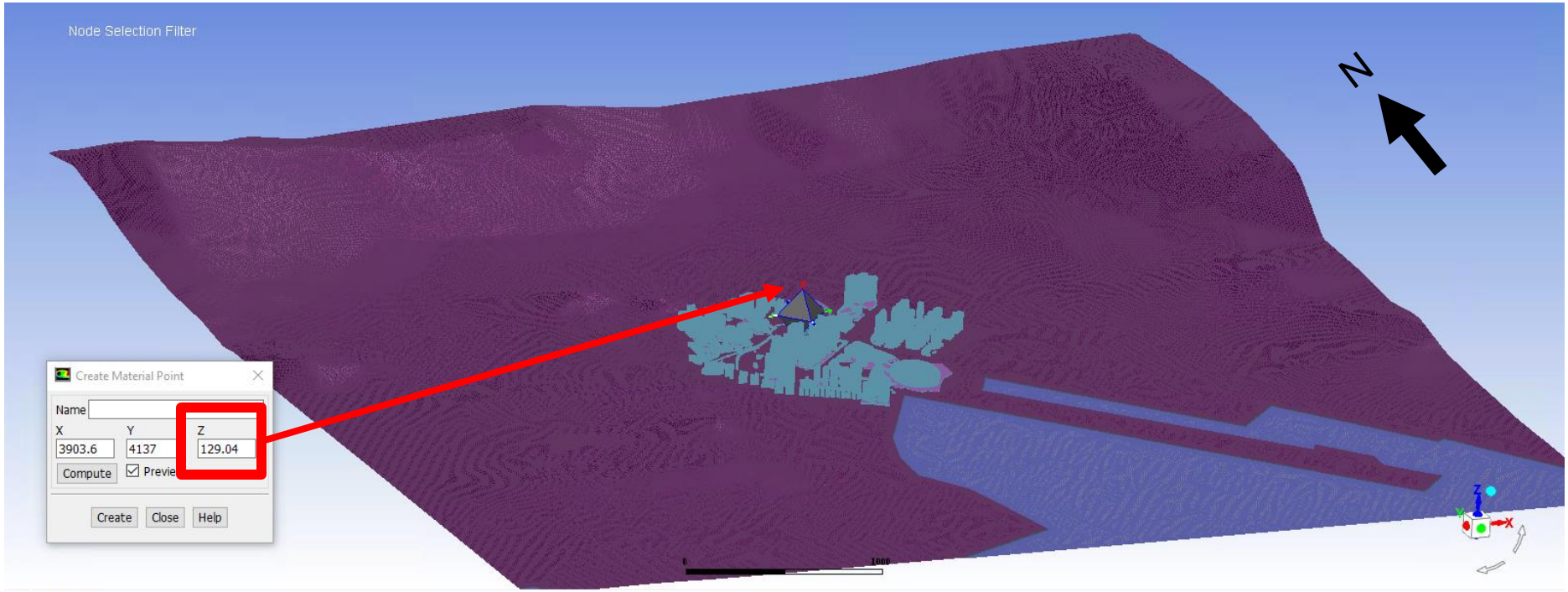
Beacon's Hill
(~450mPD)

Tung Shan
(~560mPD)

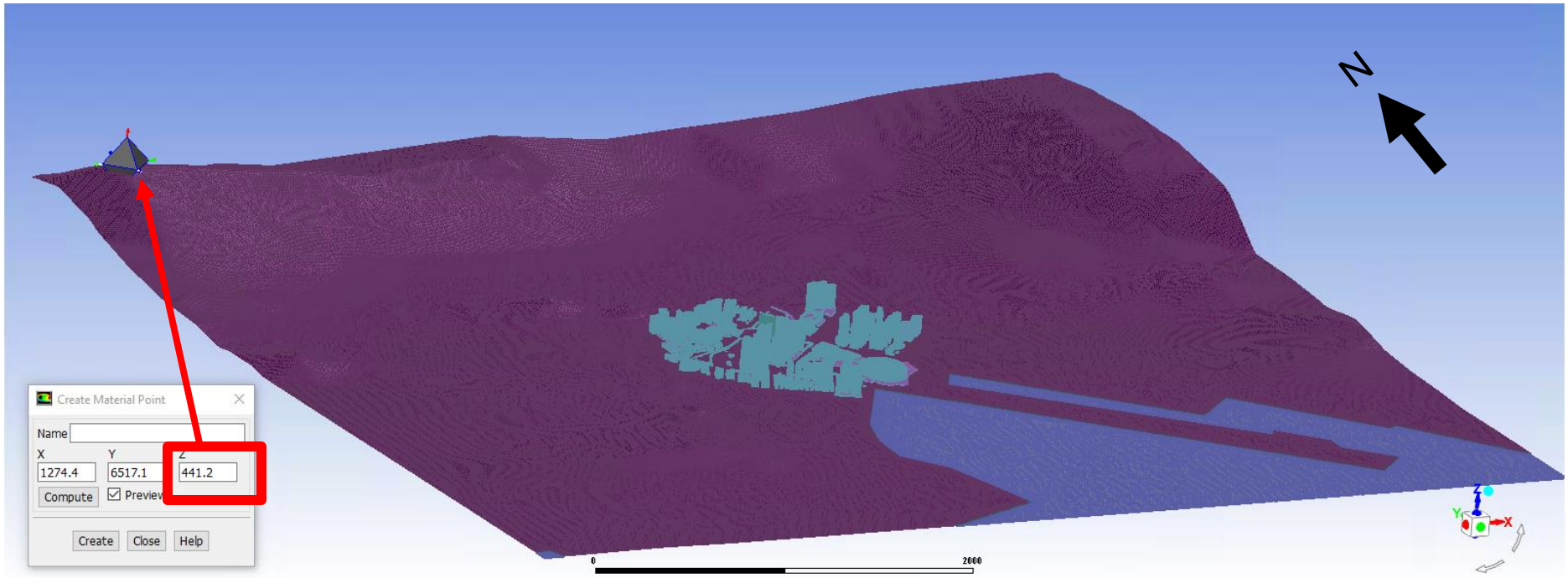


Lok Fu Service Reservoir Rest Garden
(~85mPD)

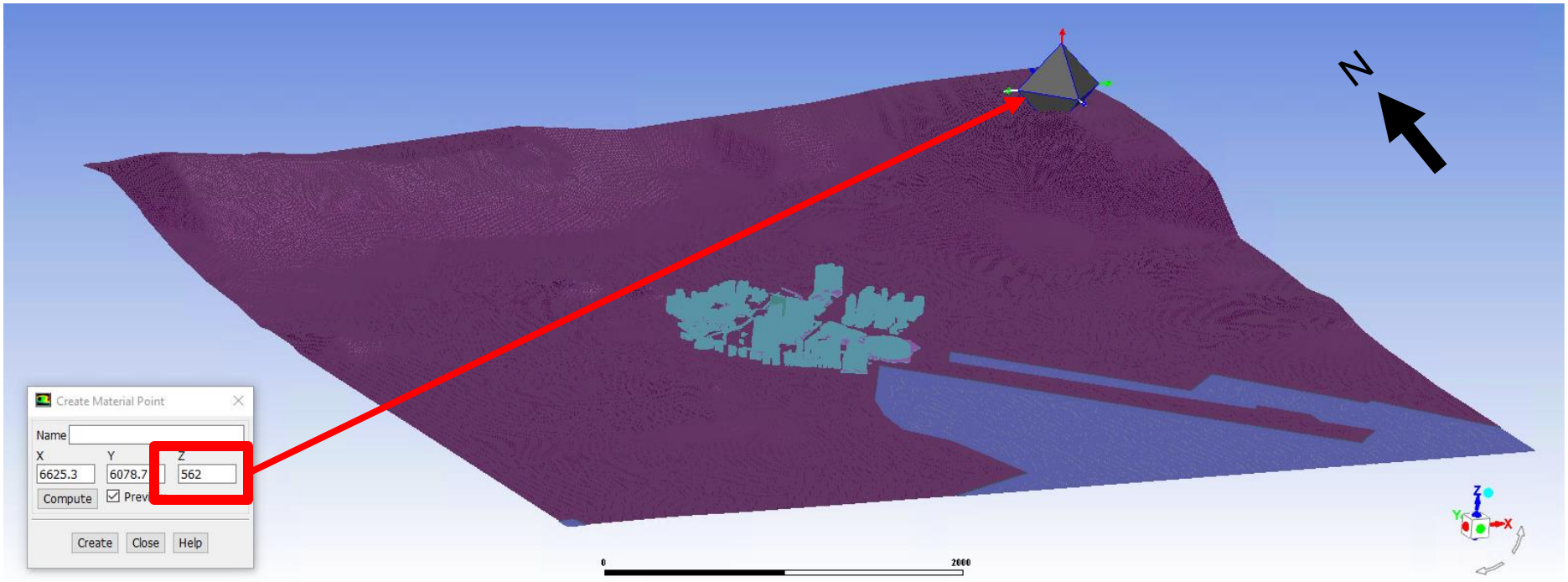
Mountains within domain topography
(Viewed from direction SSW)



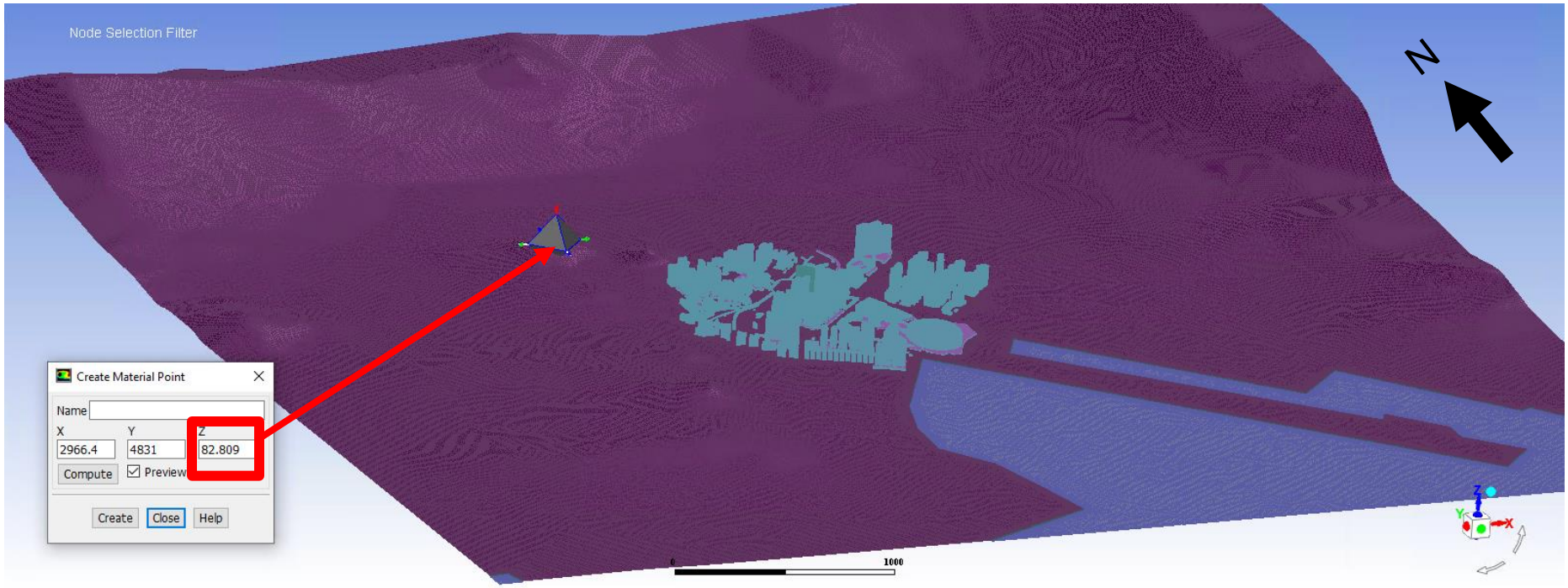
Height of PS tower



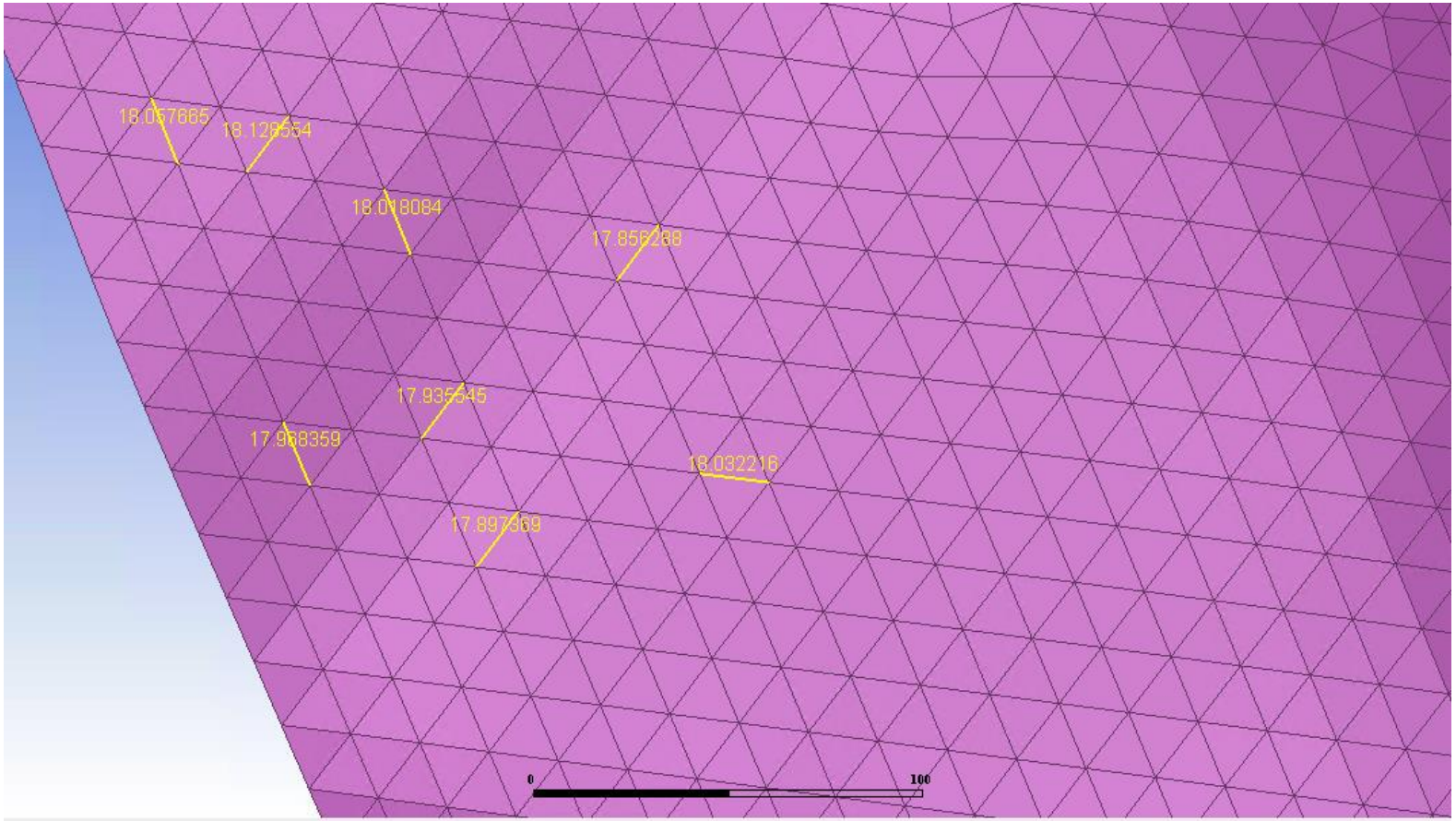
Height of Beacon's Hill (~450mPD)



Height of Tung Shan (~560mPD)



Height of Lok Fu Service Reservoir Rest Garden (~85mPD)


18.057665
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18.018084
17.856288
17.935545
17.968359
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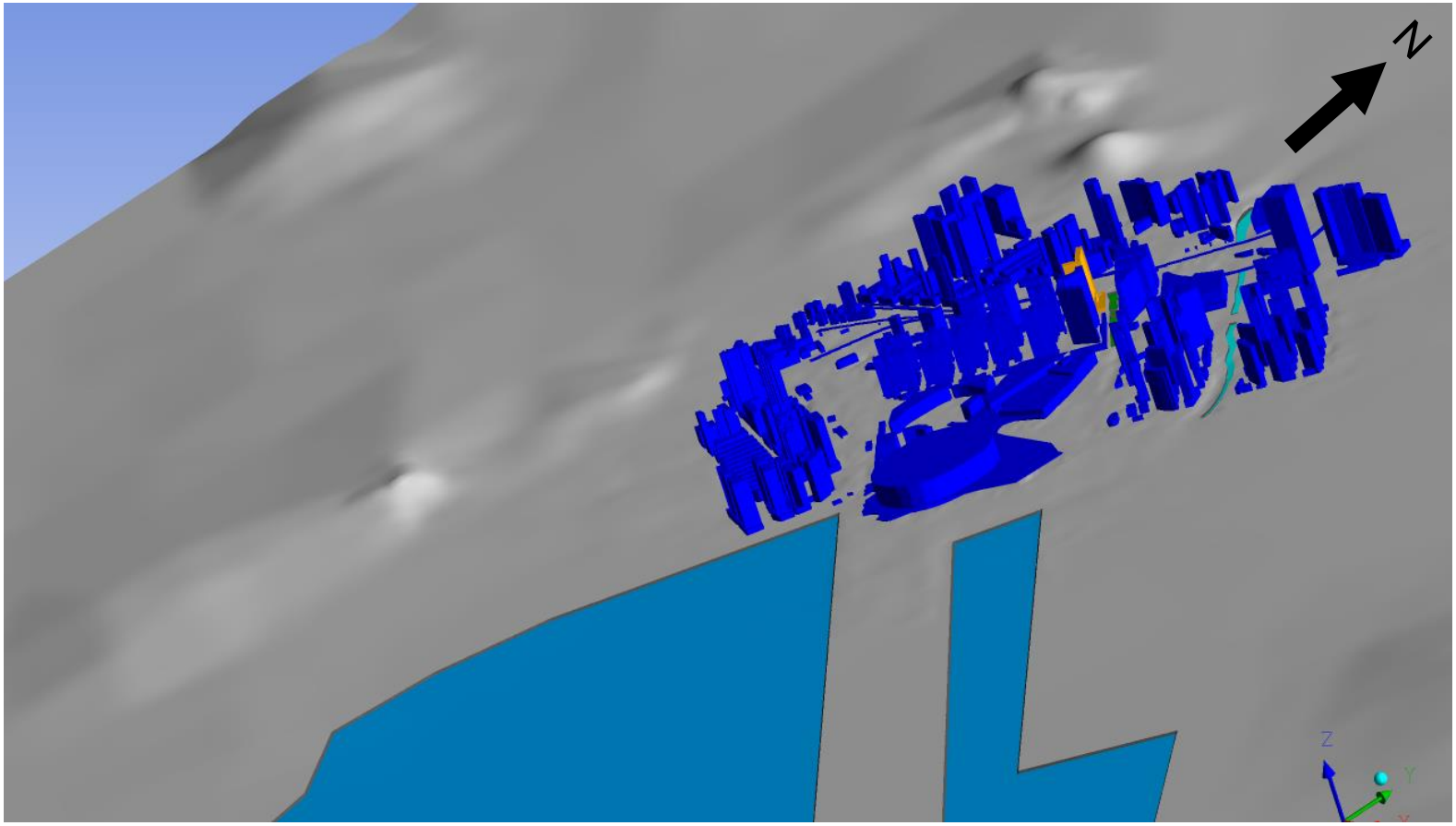
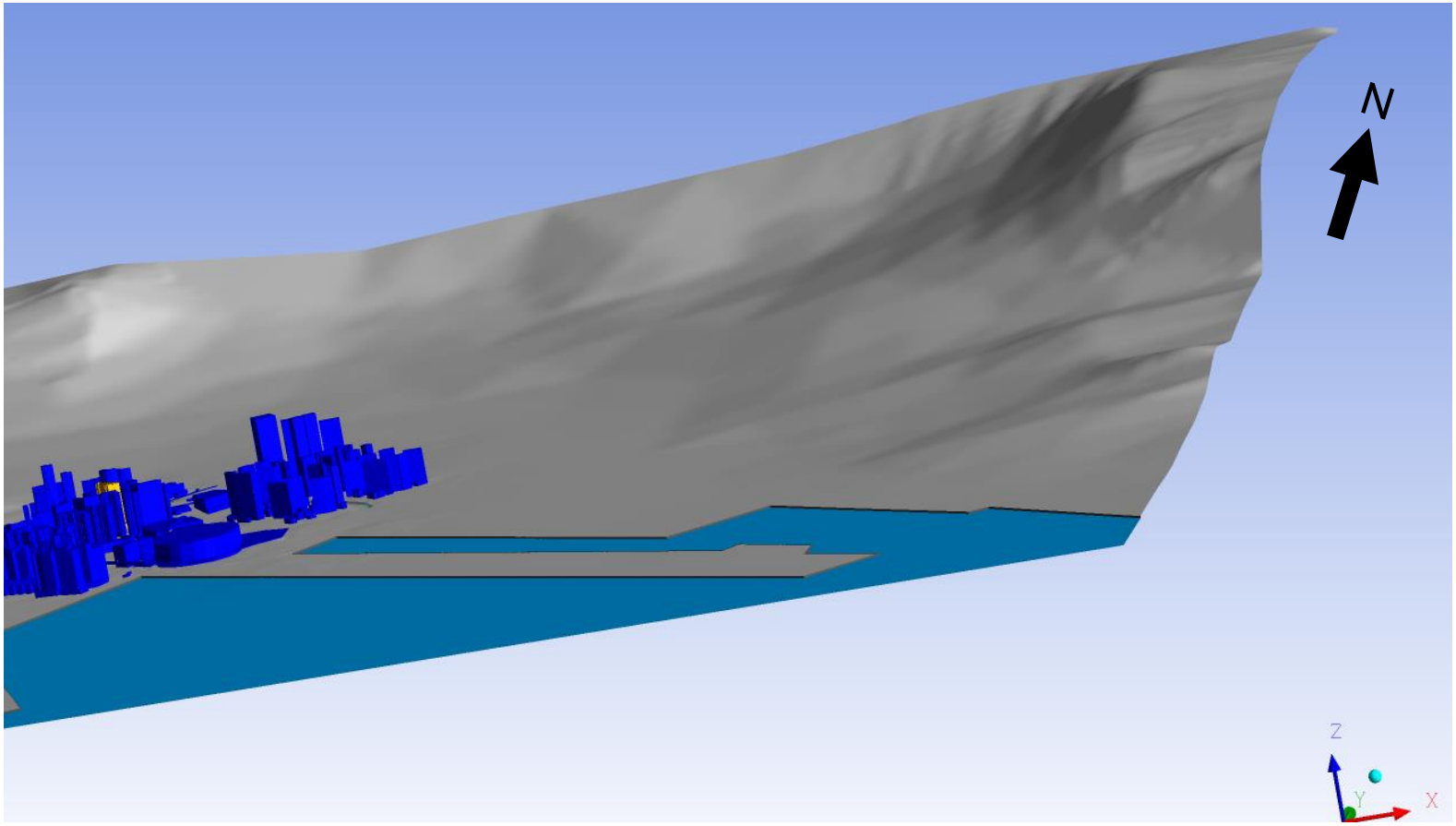
0
100

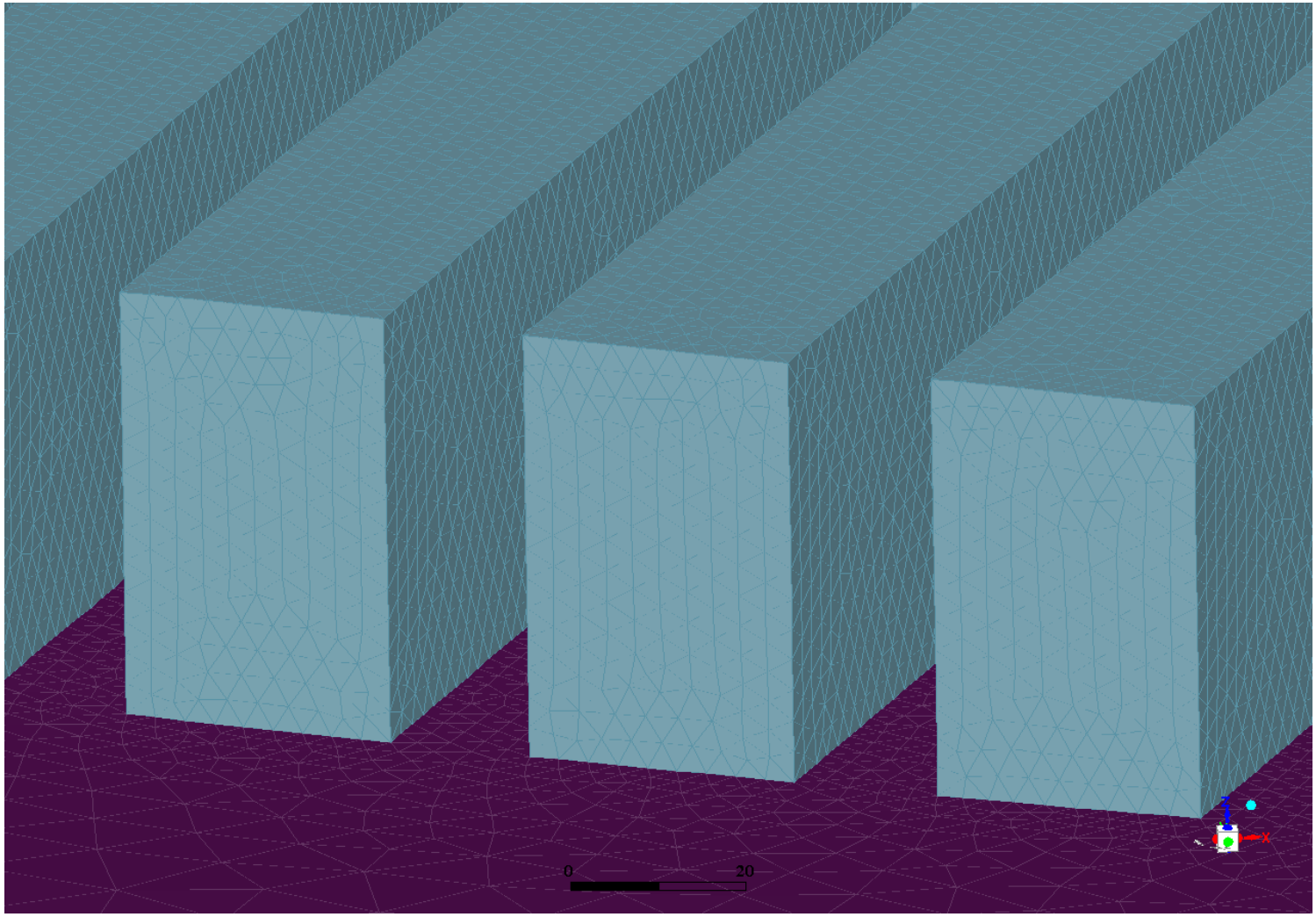
Mesh size



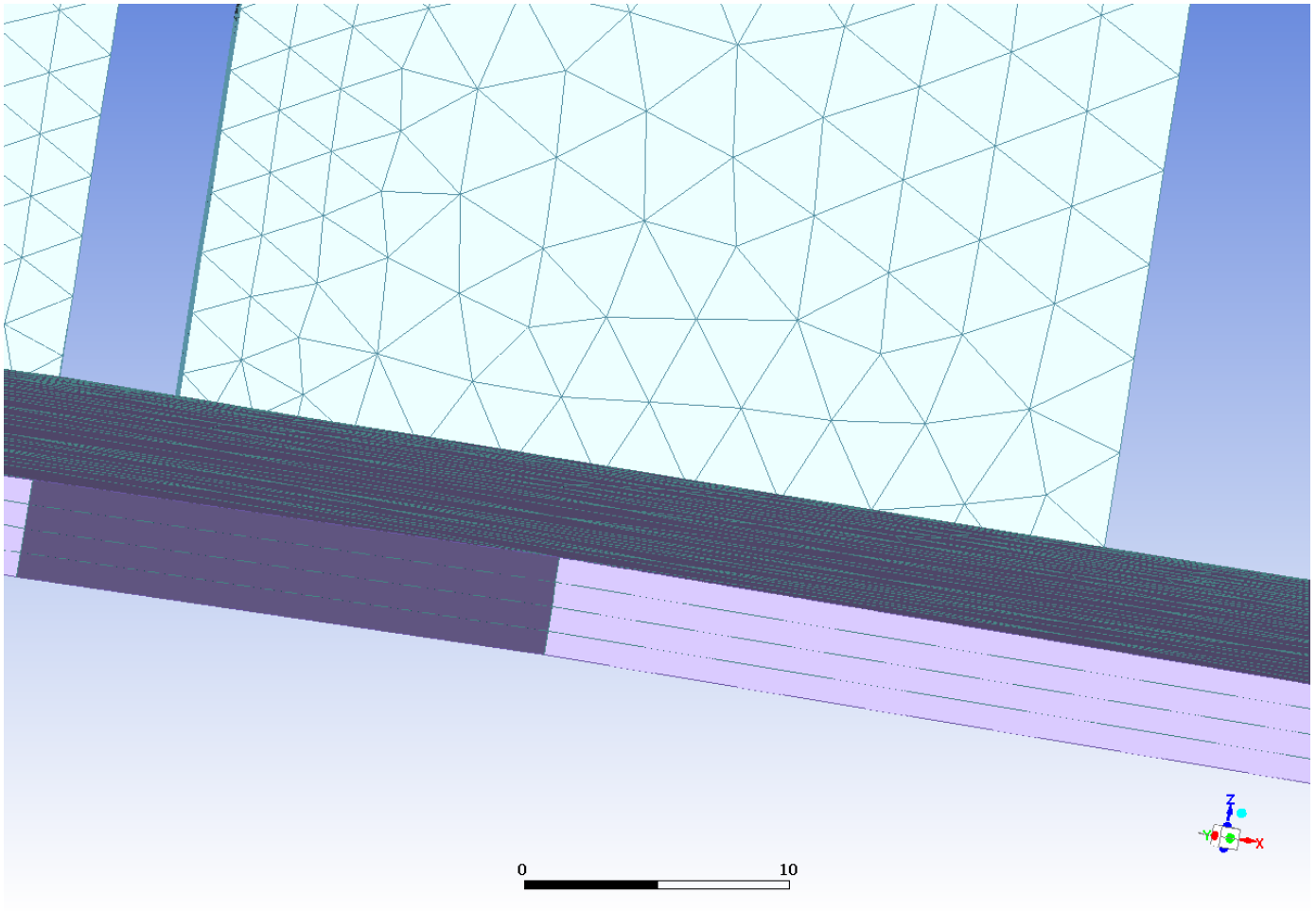
Irregularity of the topography (1)



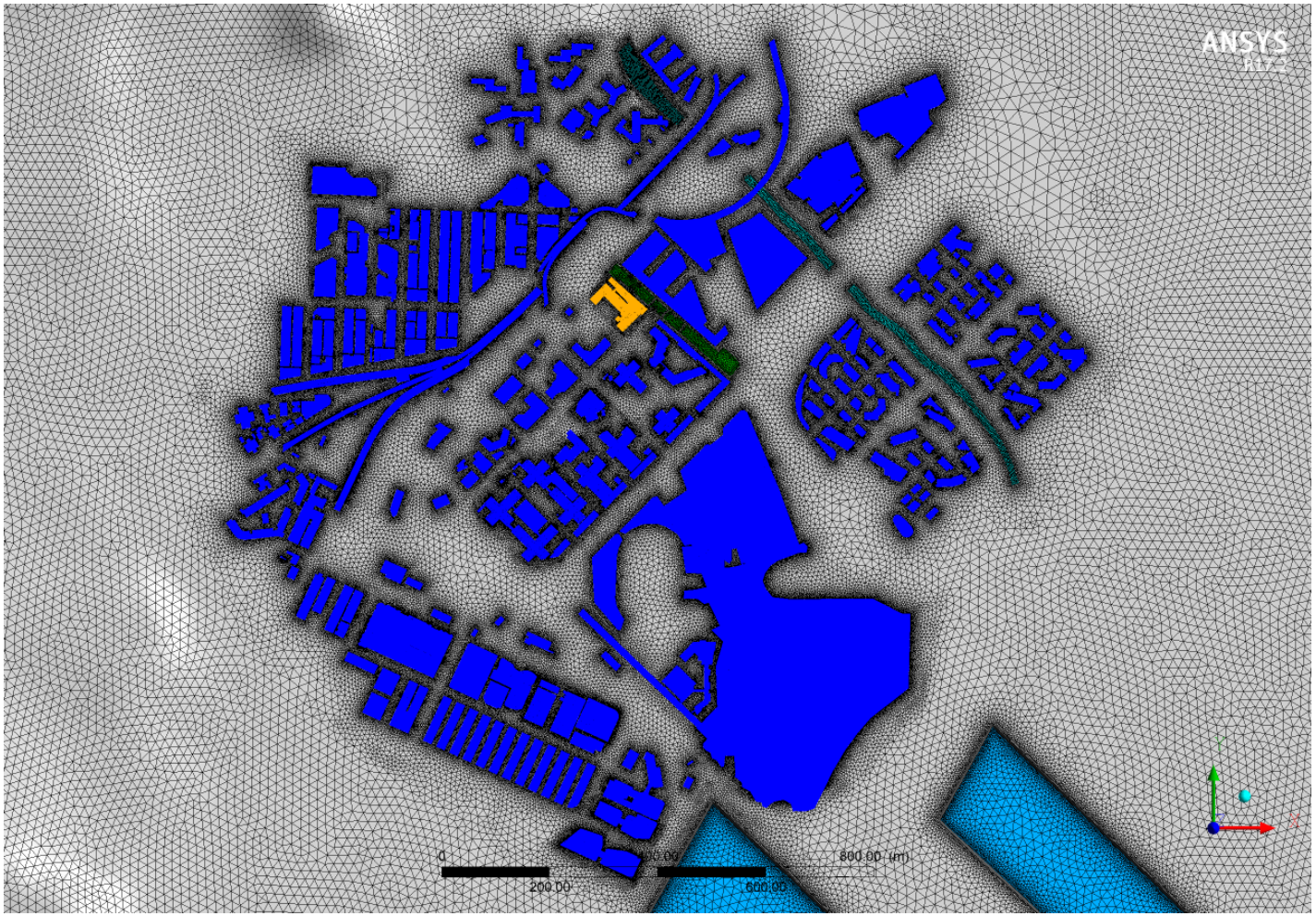
Irregularity of the topography (2)



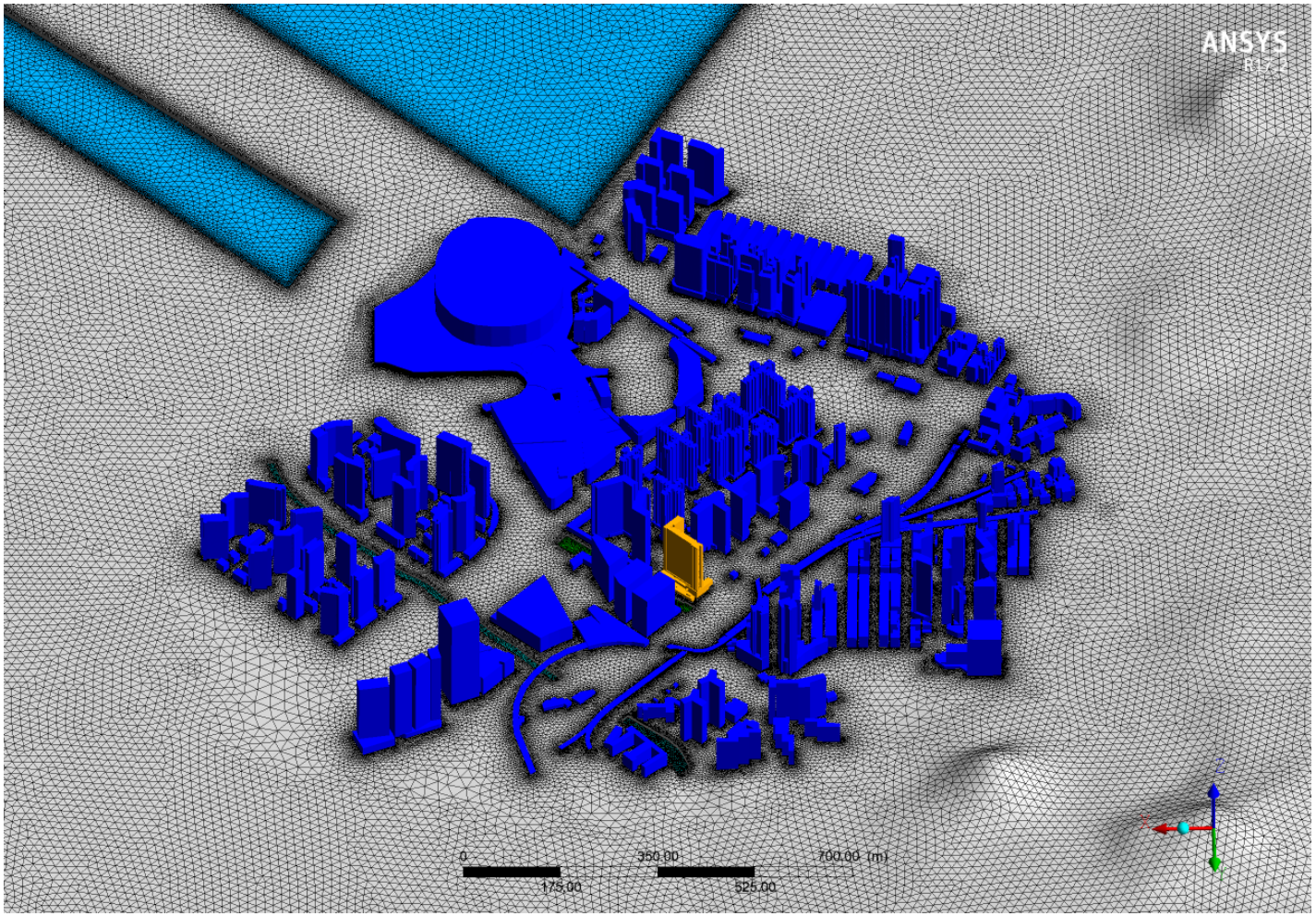
Surface Mesh



4 layers of prismatic meshes at 0.5m thick

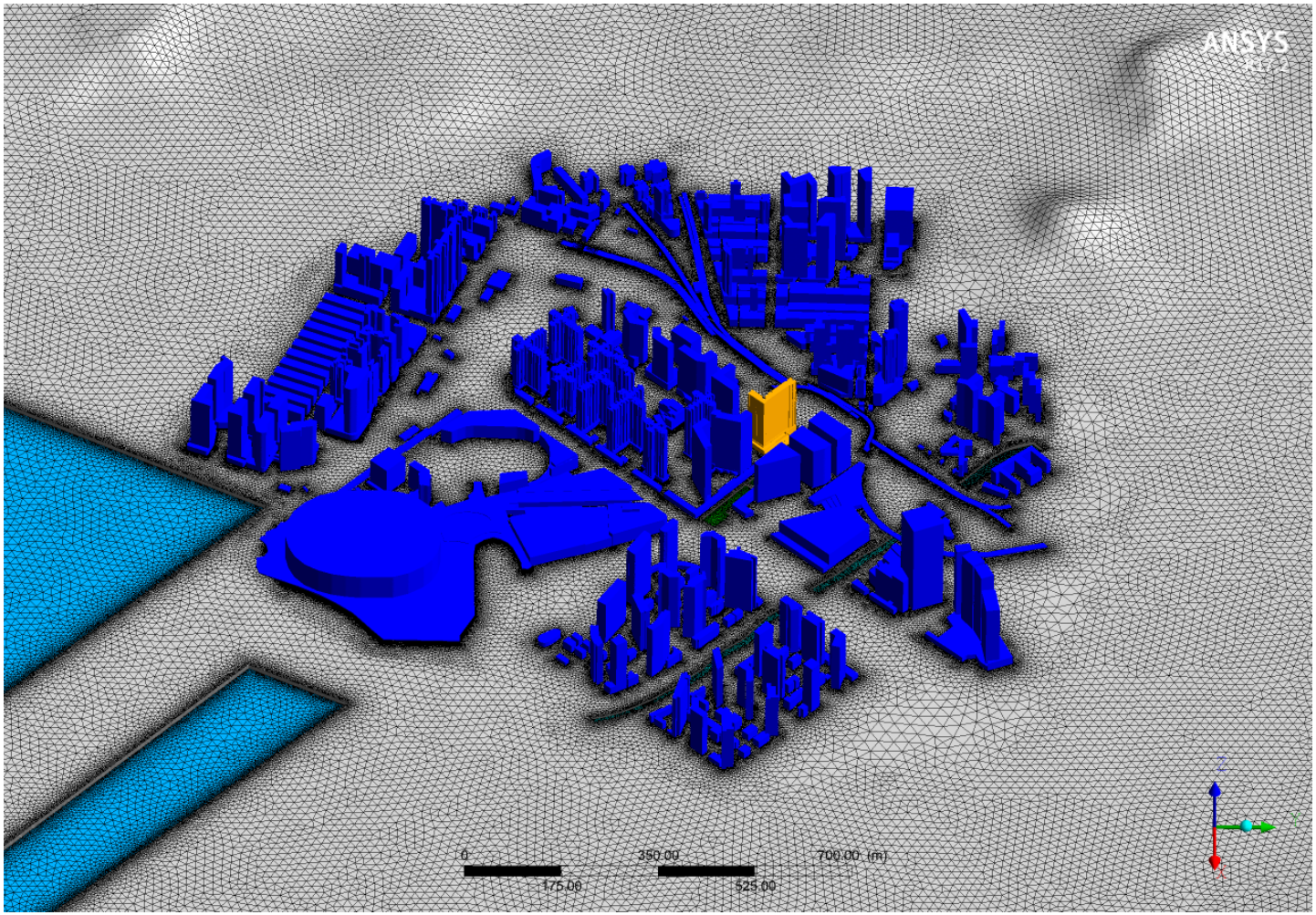


Surrounding Area – Top View



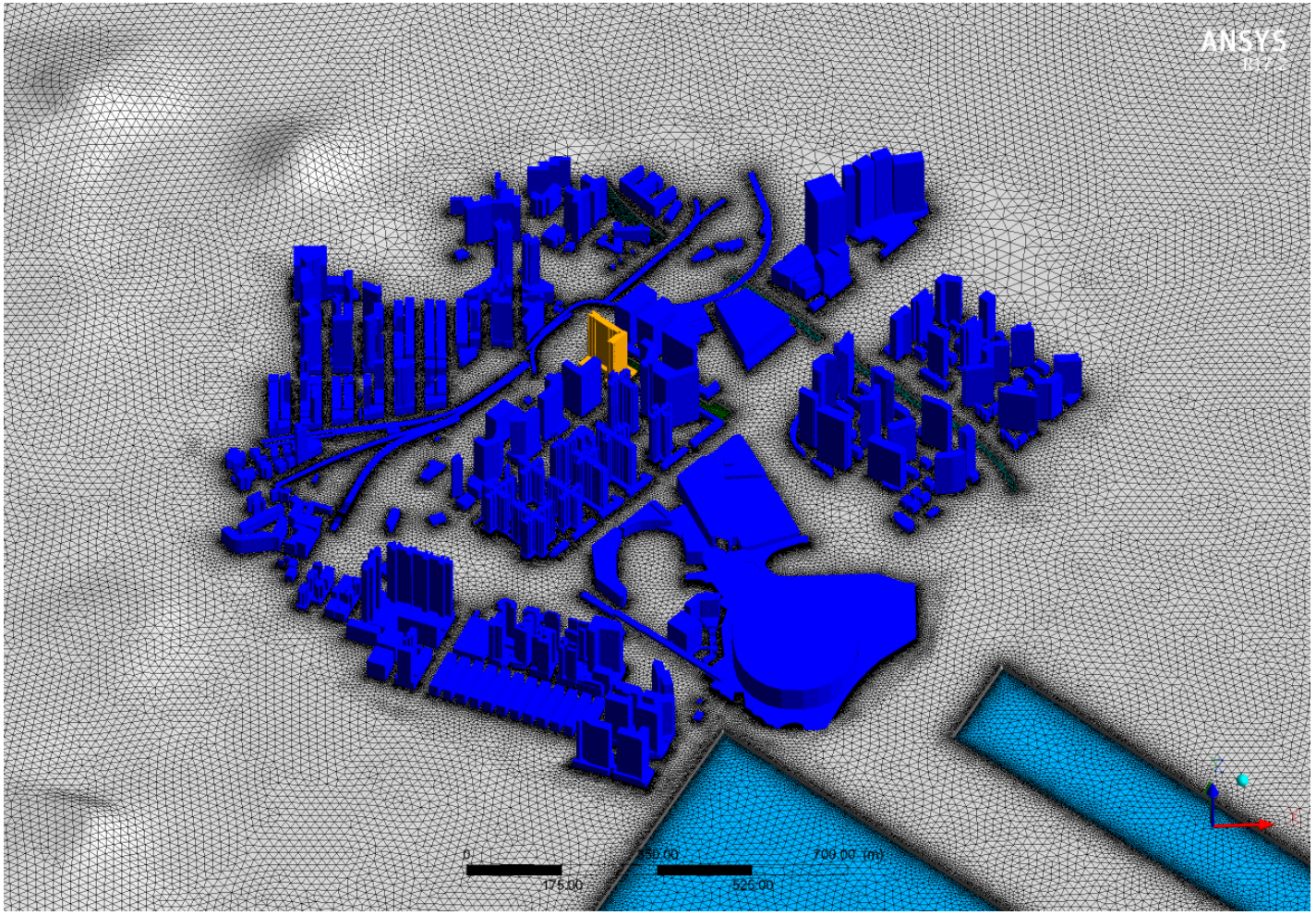
N

Surrounding Area – N

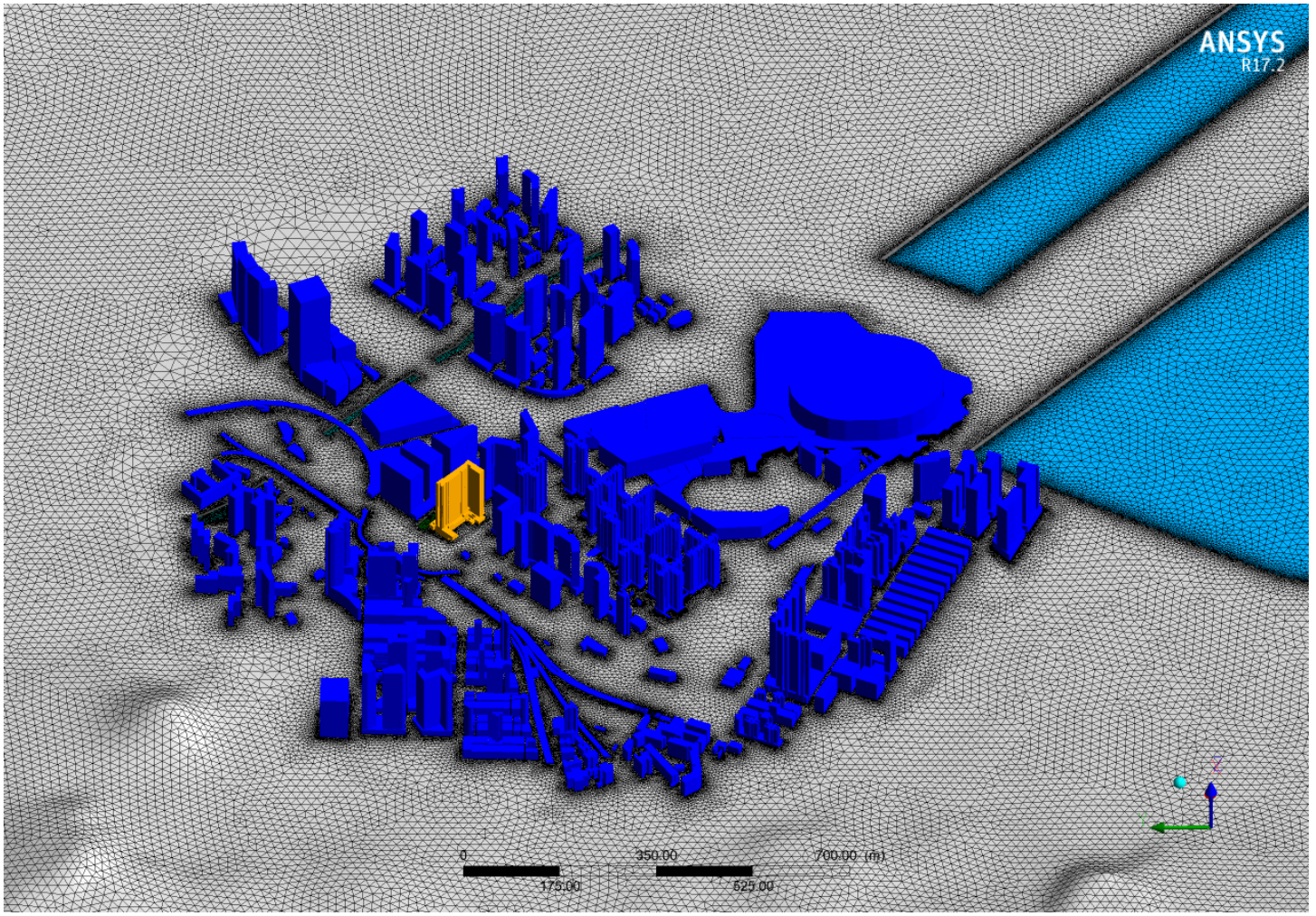


N

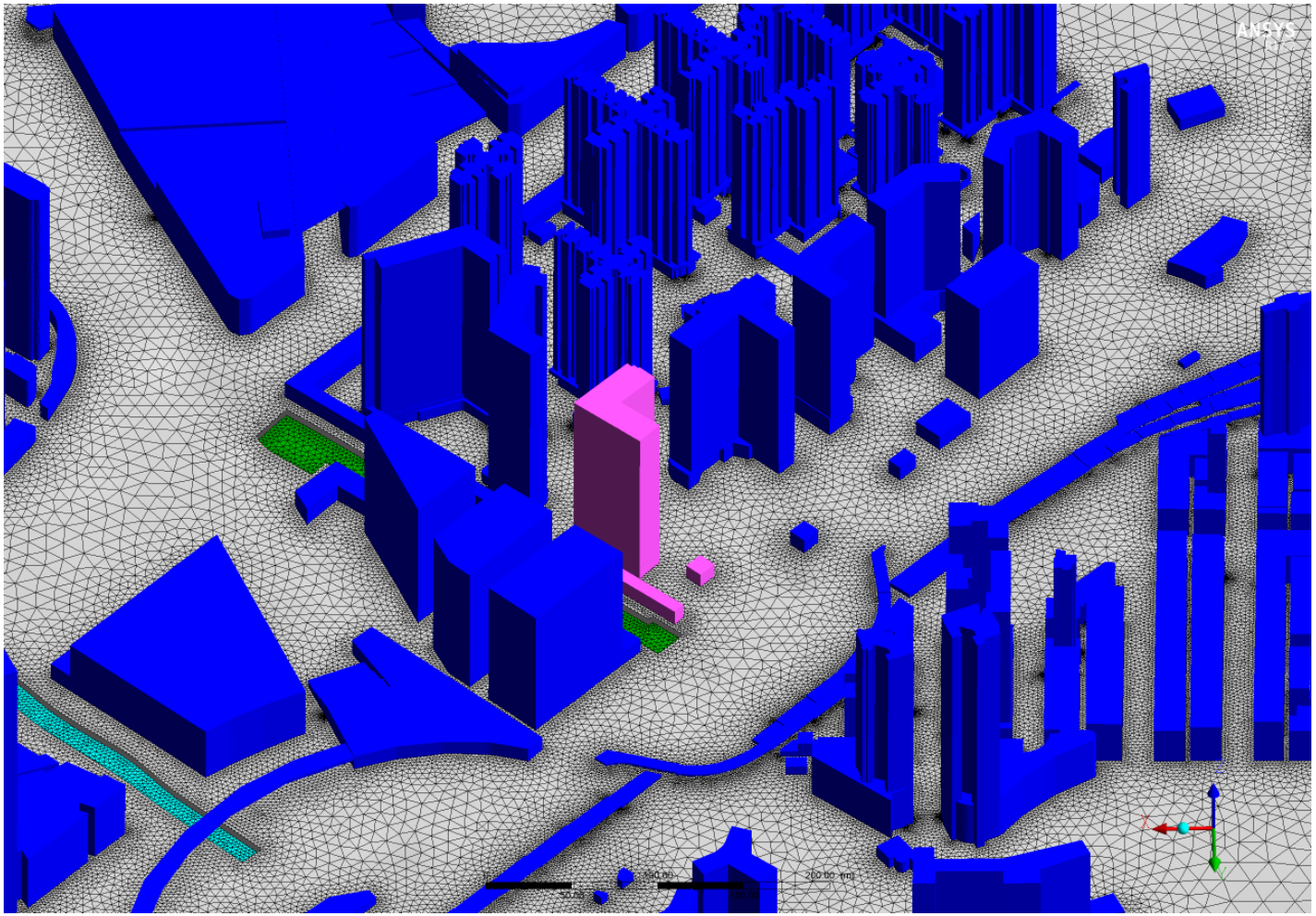
Surrounding Area – E



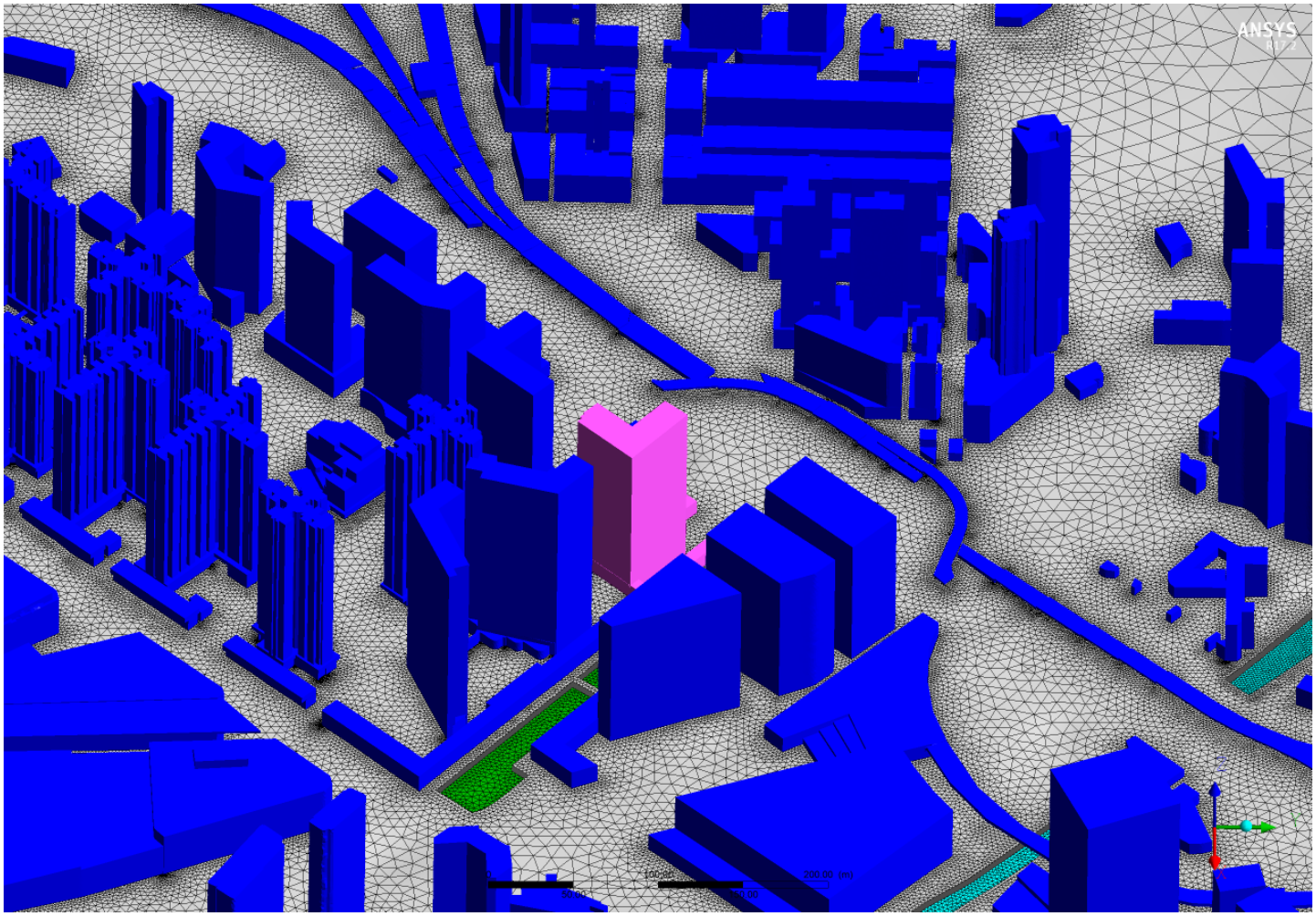
Surrounding Area – S



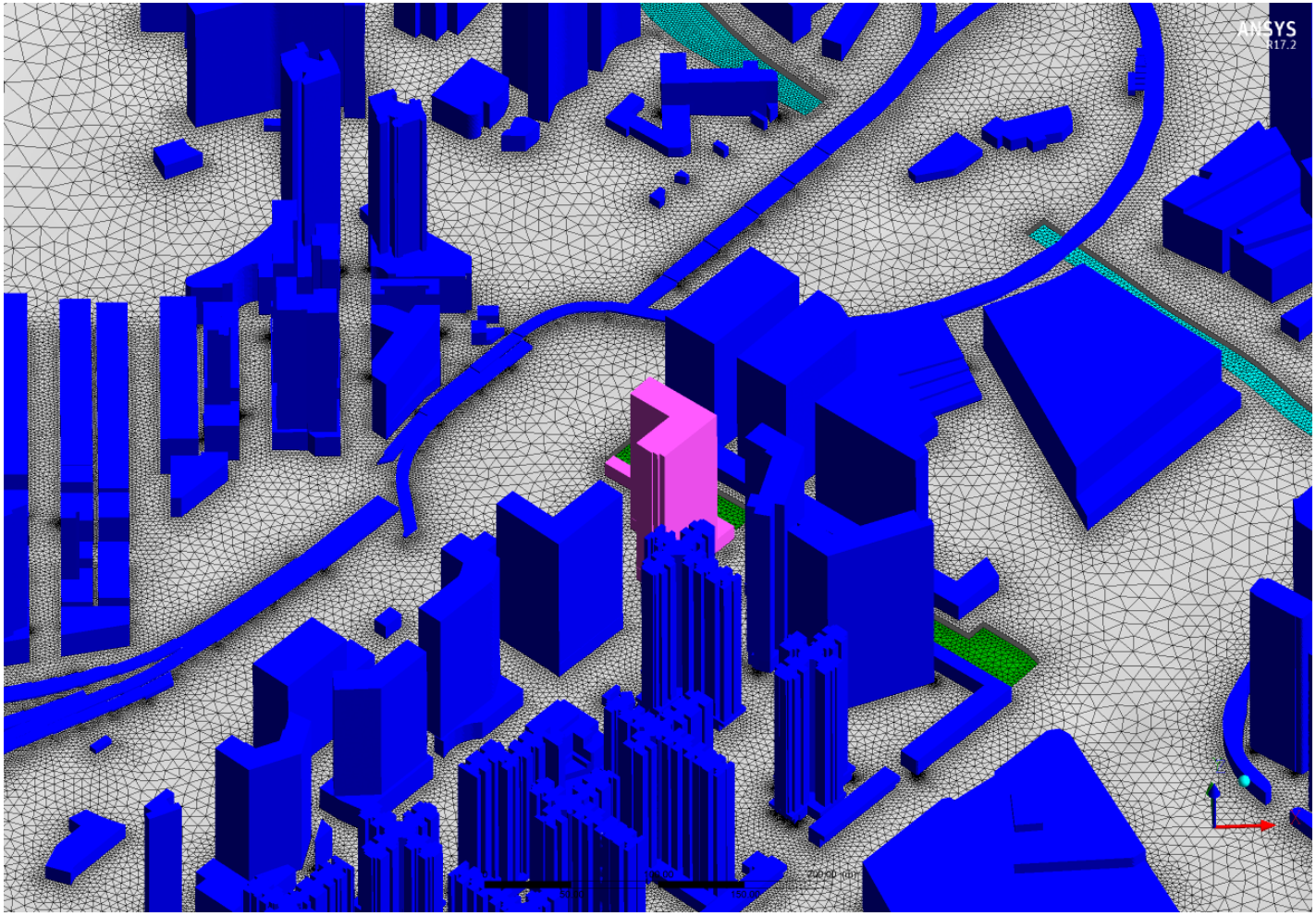
Surrounding Area – W



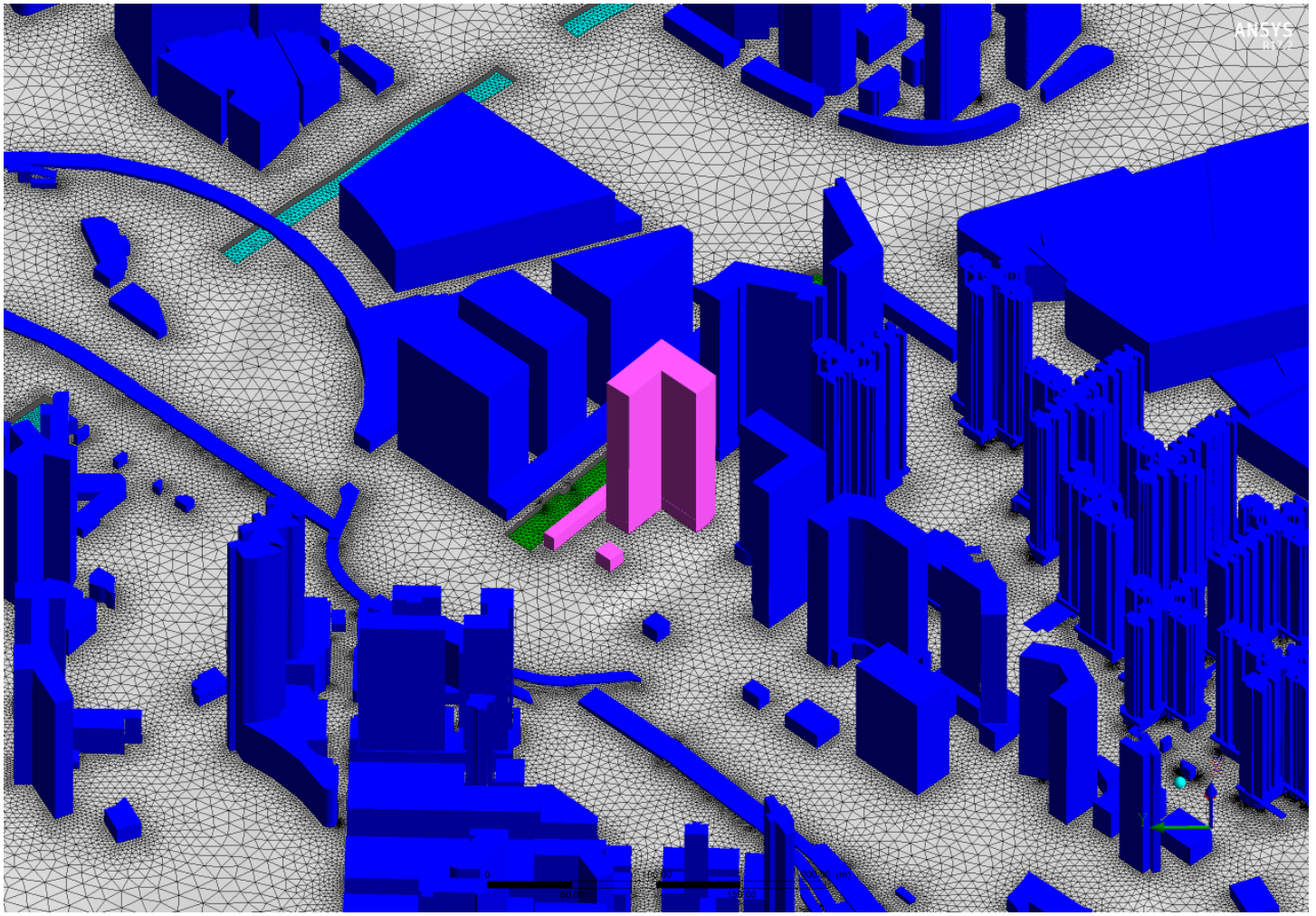
Baseline Scheme – N



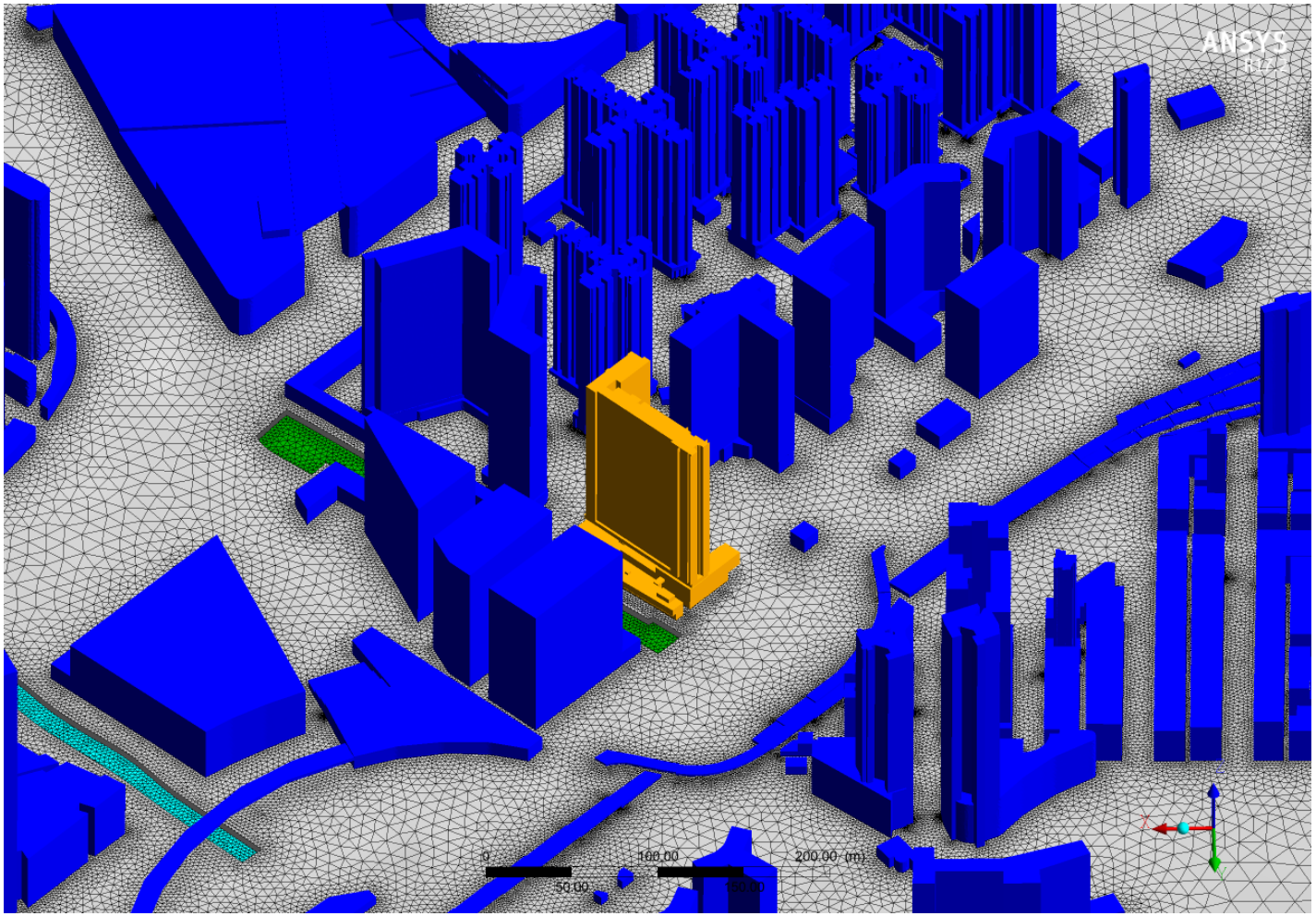
Baseline Scheme – E



Baseline Scheme – S

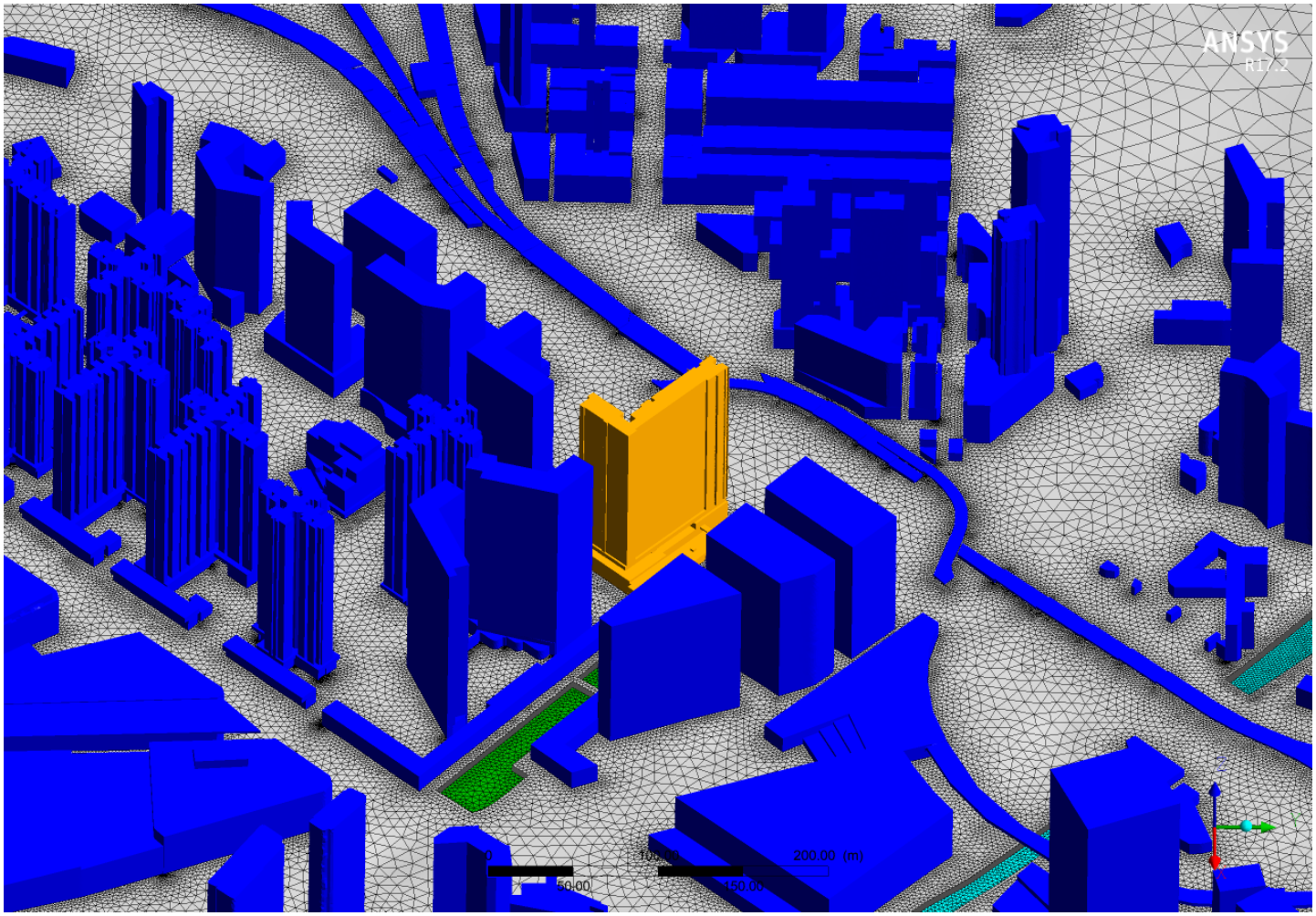


Baseline Scheme – W

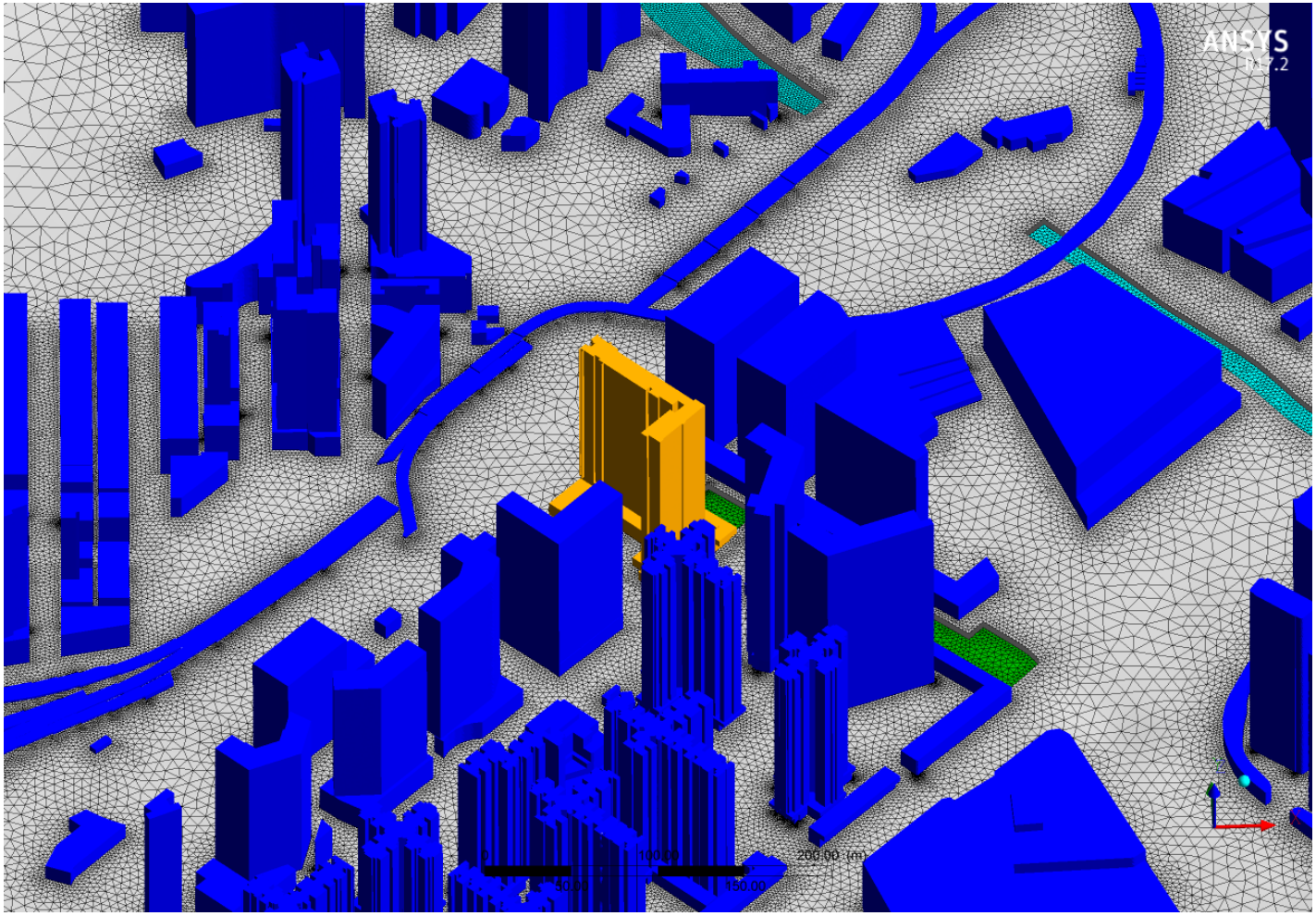


N

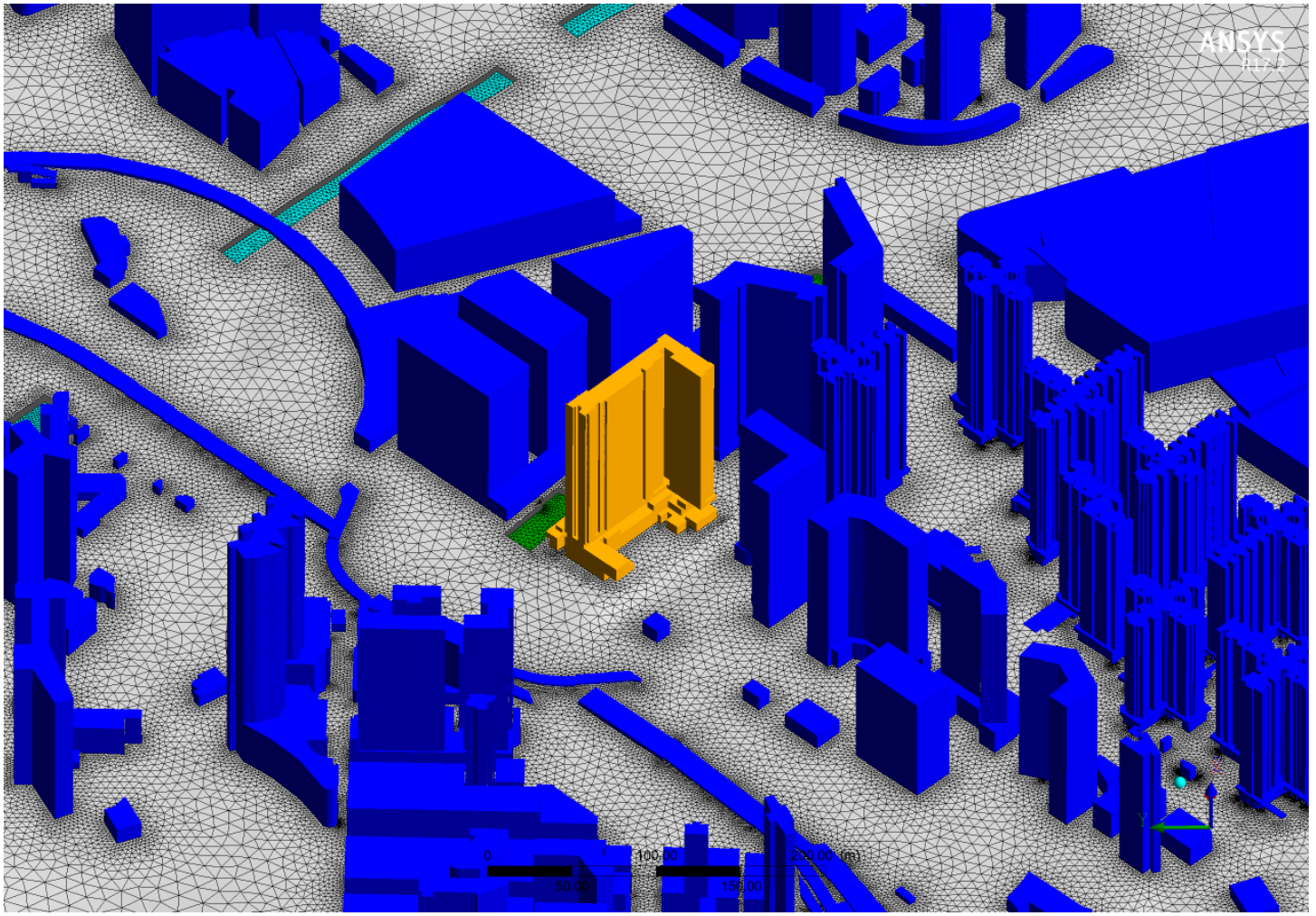
Proposed Scheme – N



Proposed Scheme – E



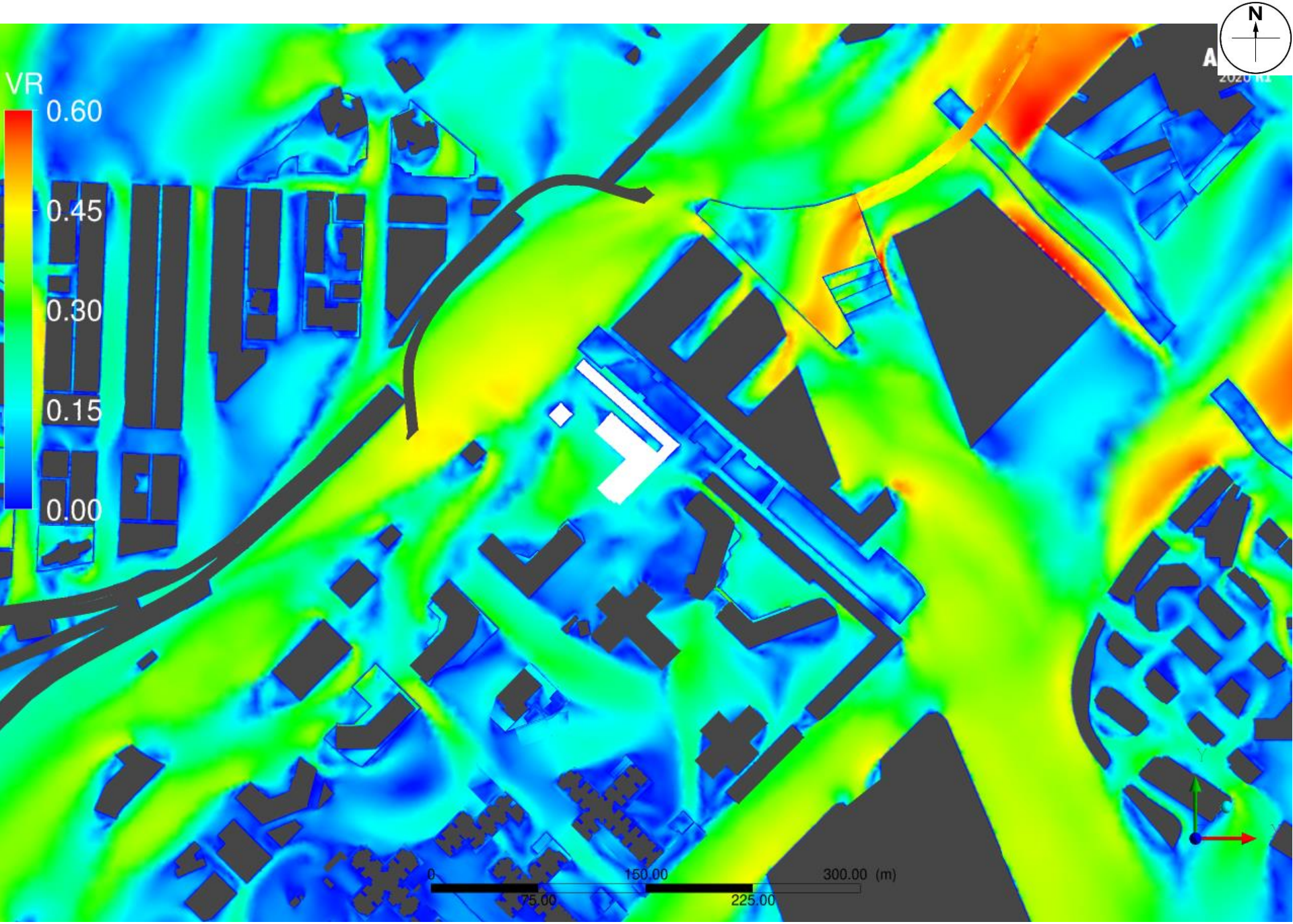
Proposed Scheme – S



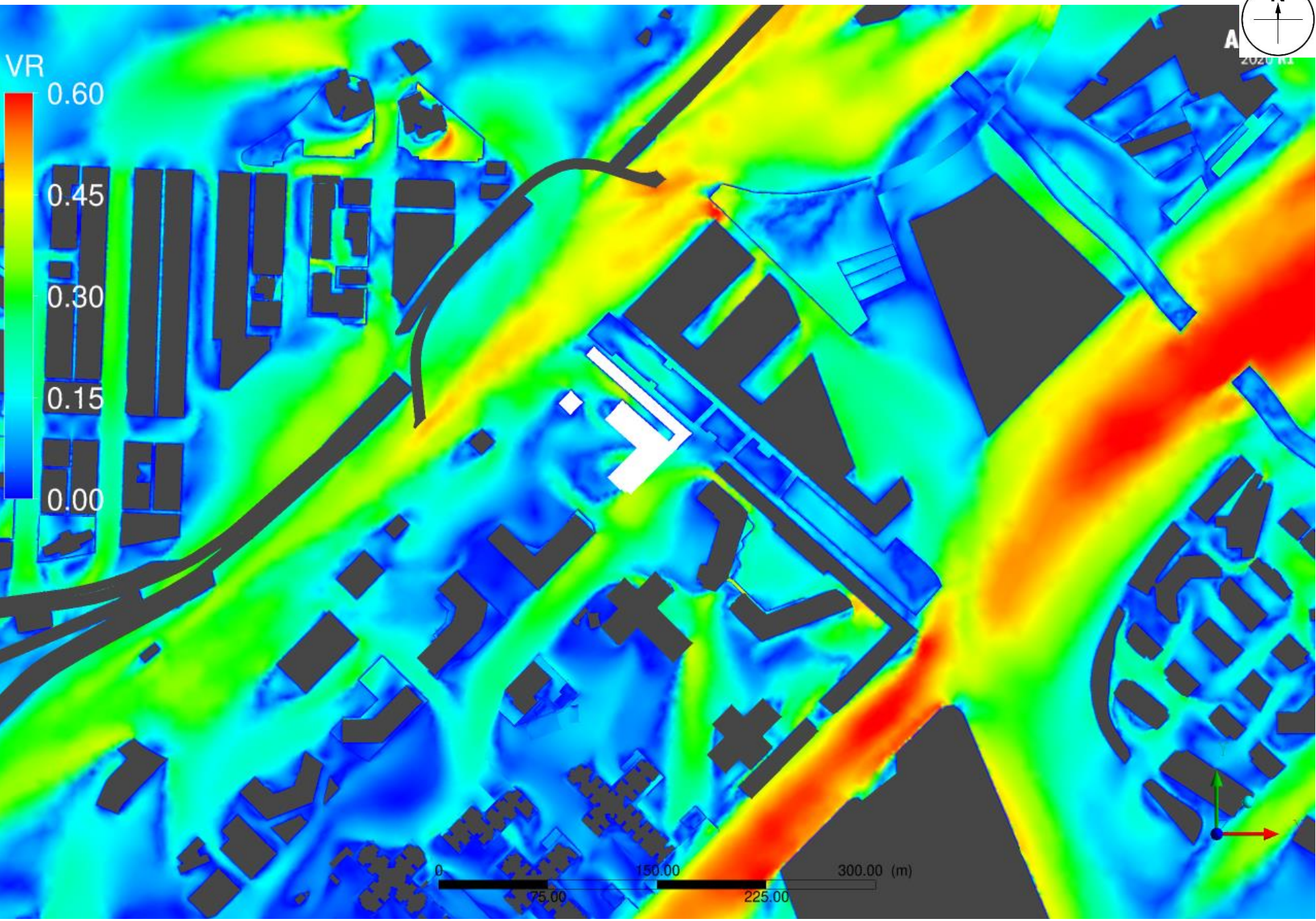
Proposed Scheme – W

Appendix 4

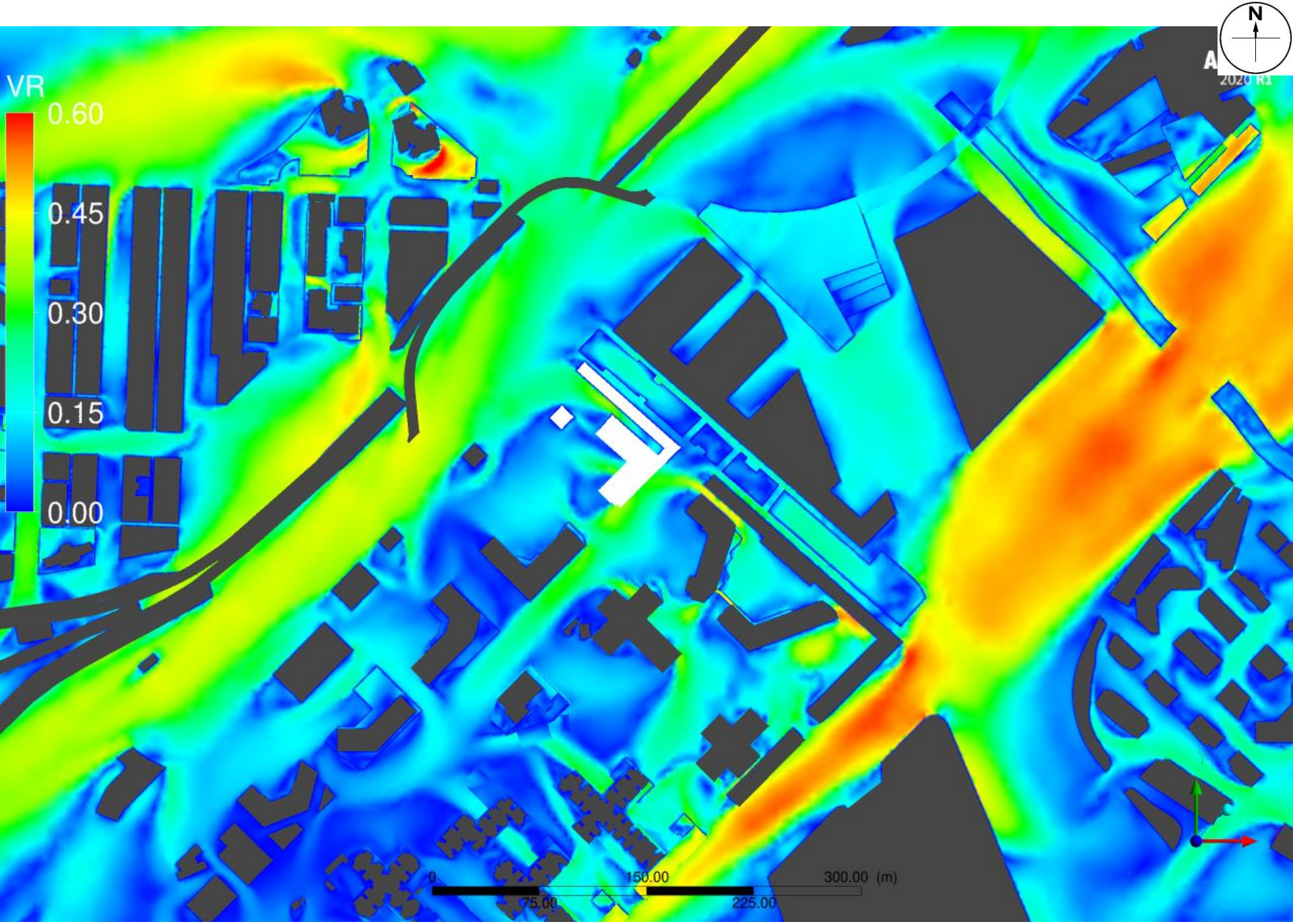
Contour and Vector Result of the CFD Simulation



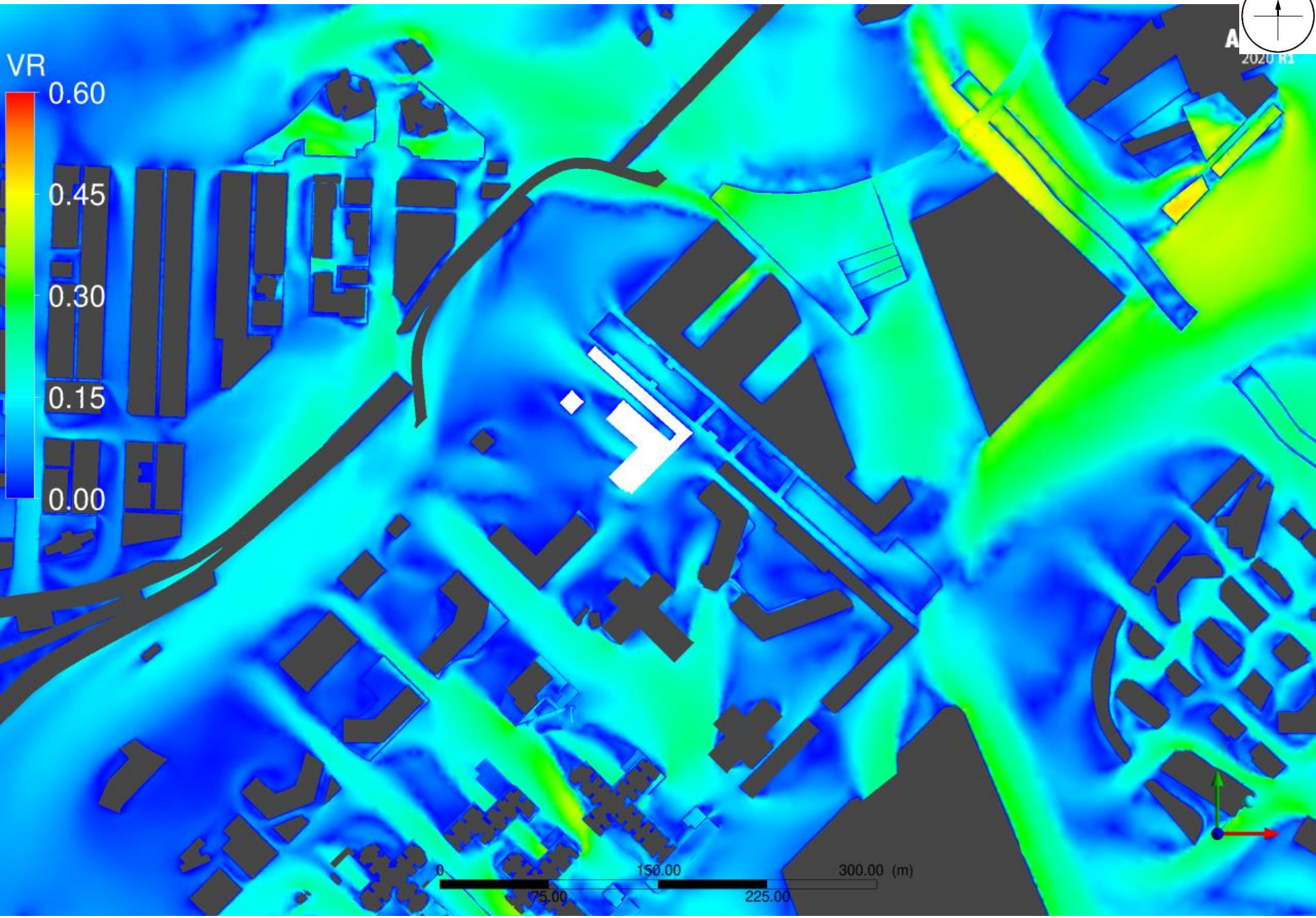
Baseline Scheme - Contour plot at pedestrian level under NNE Wind



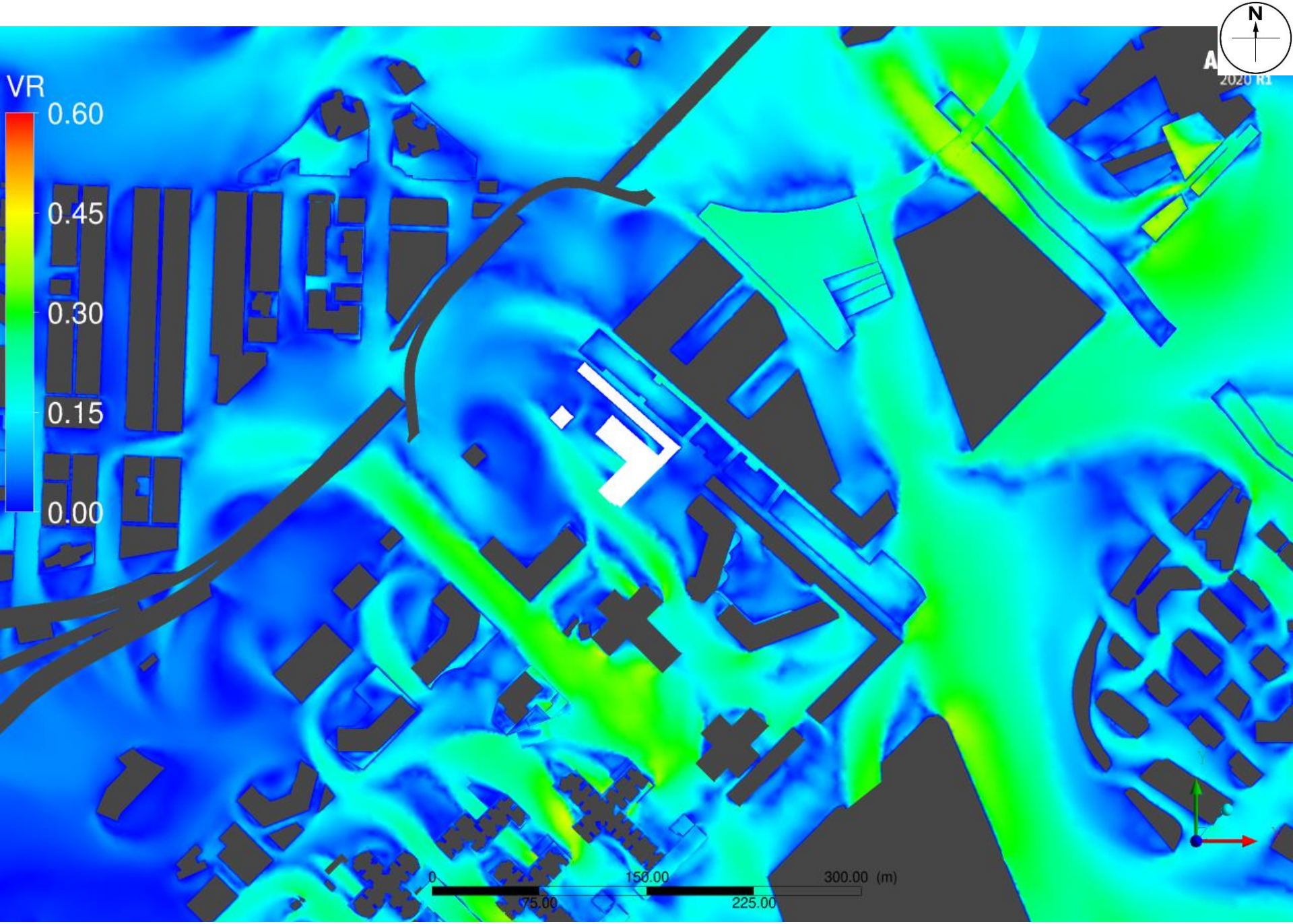
Baseline Scheme - Contour plot at pedestrian level under NE Wind



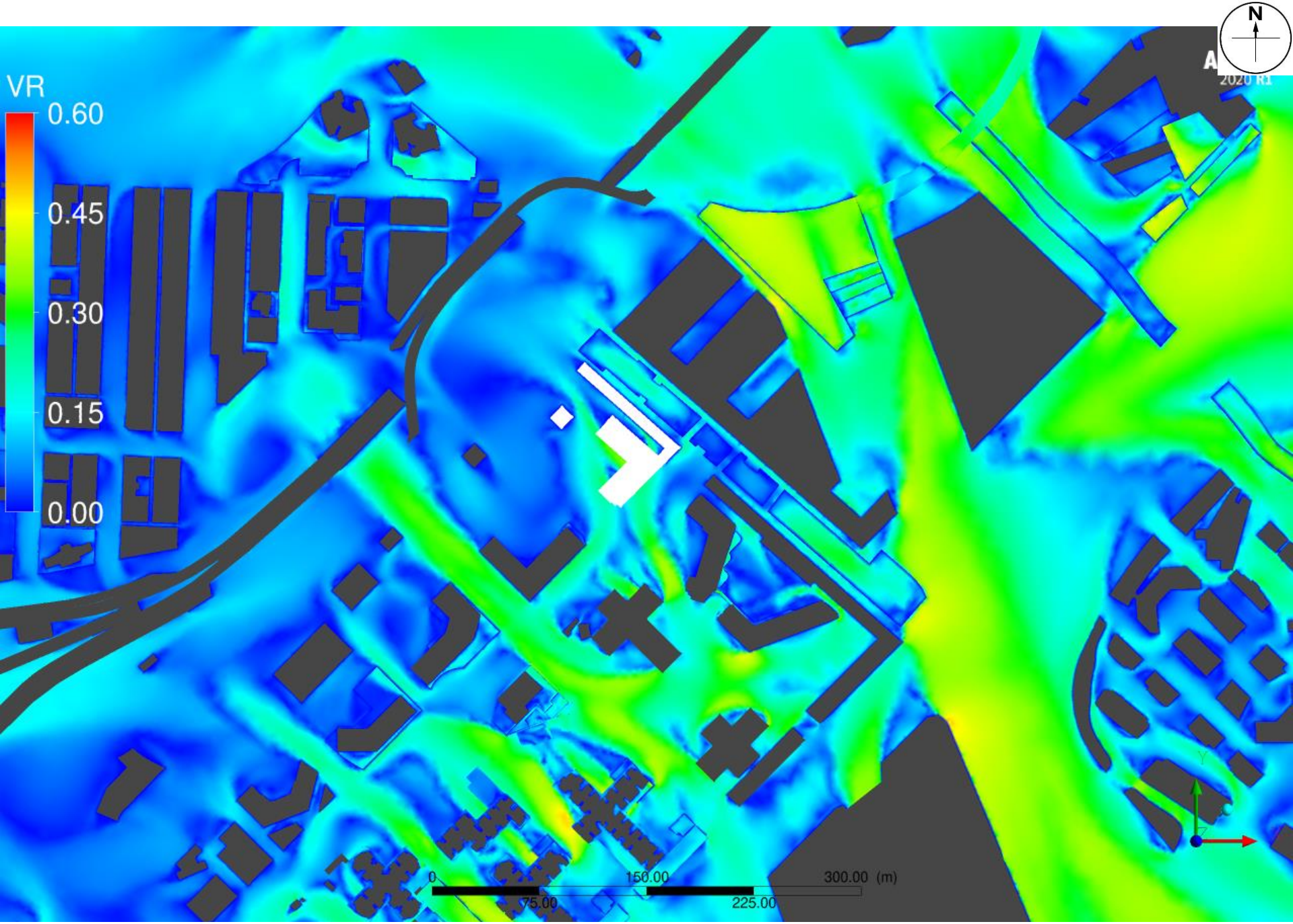
Baseline Scheme - Contour plot at pedestrian level under ENE Wind



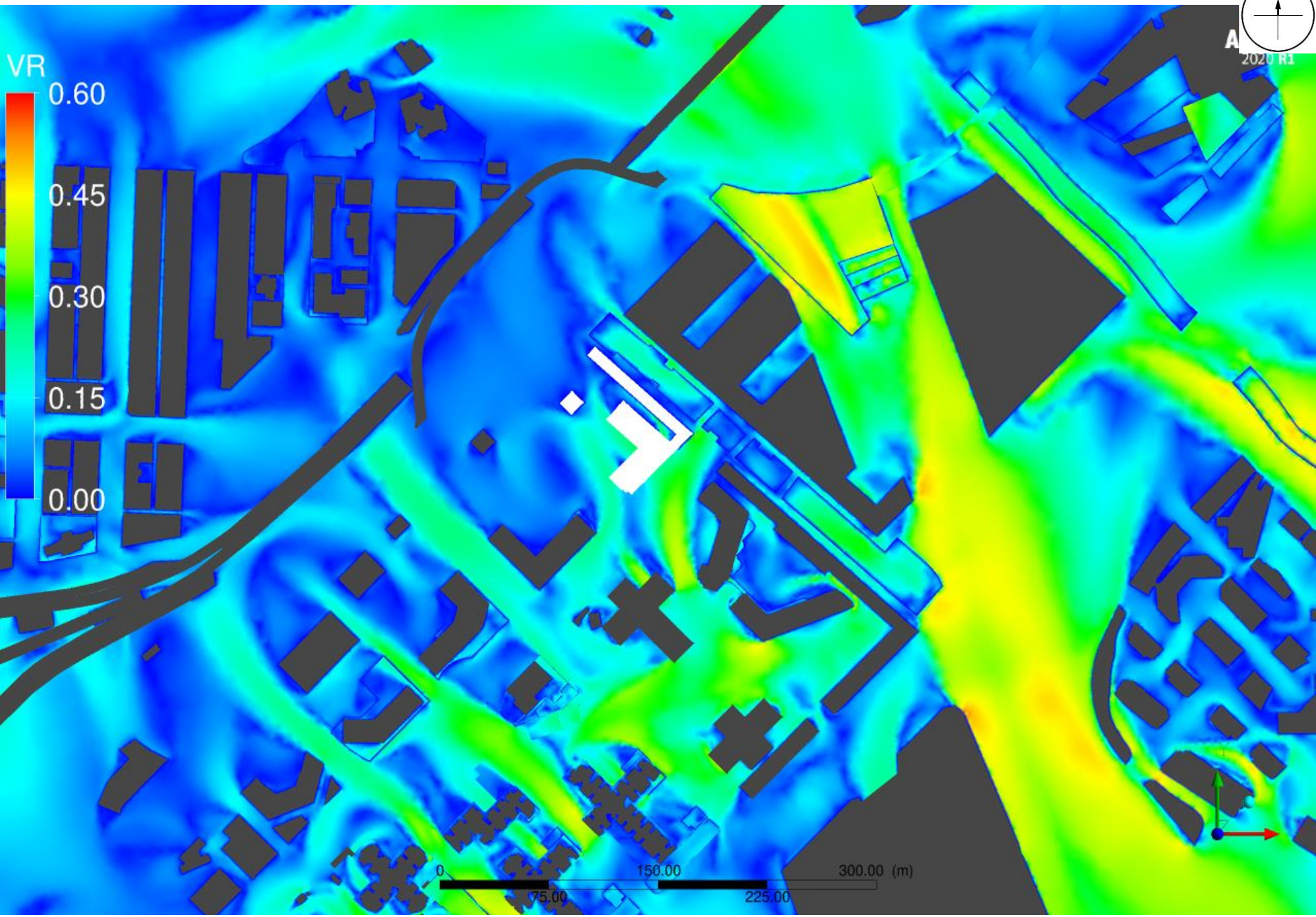
Baseline Scheme - Contour plot at pedestrian level under E Wind



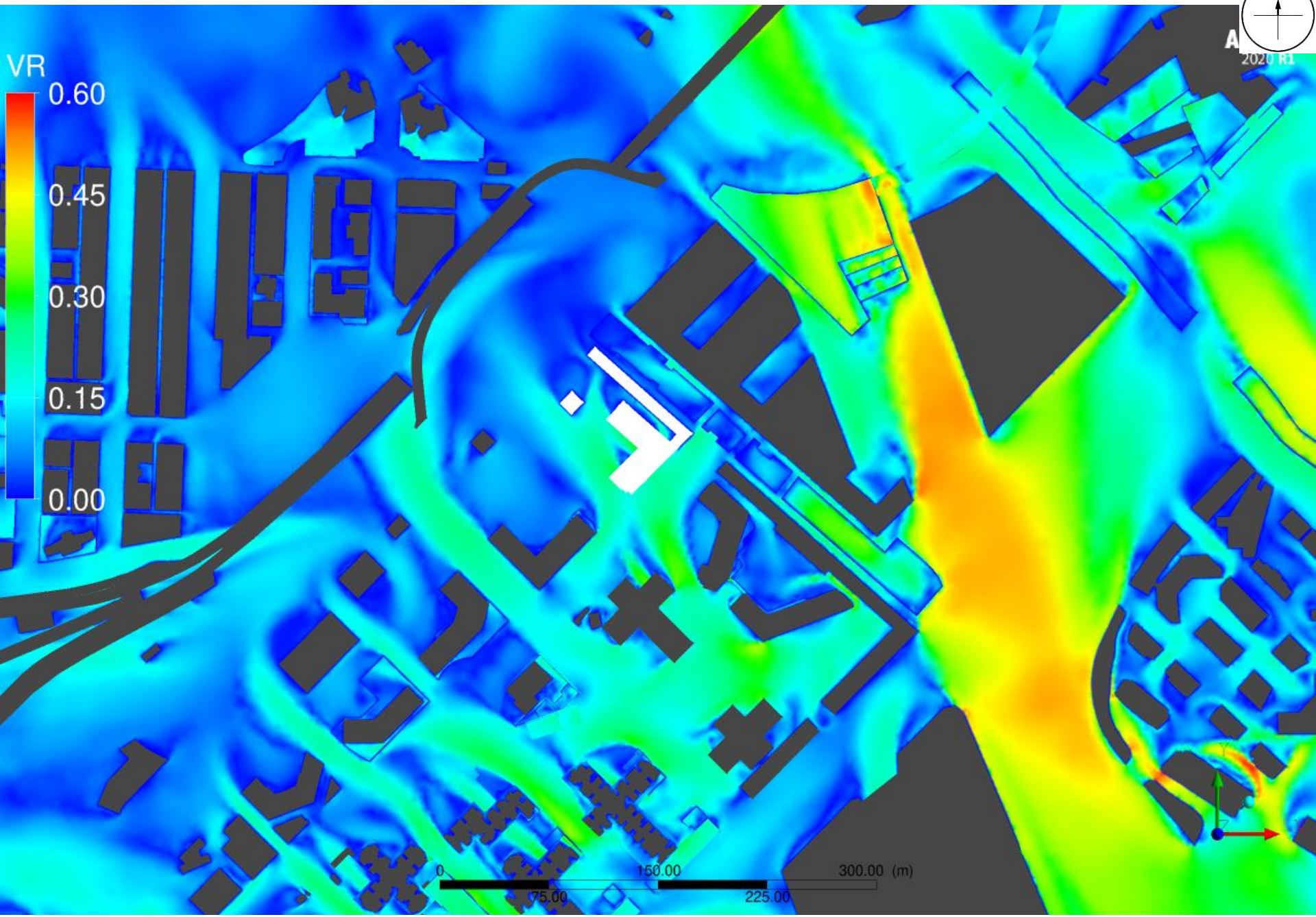
Baseline Scheme - Contour plot at pedestrian level under ESE Wind



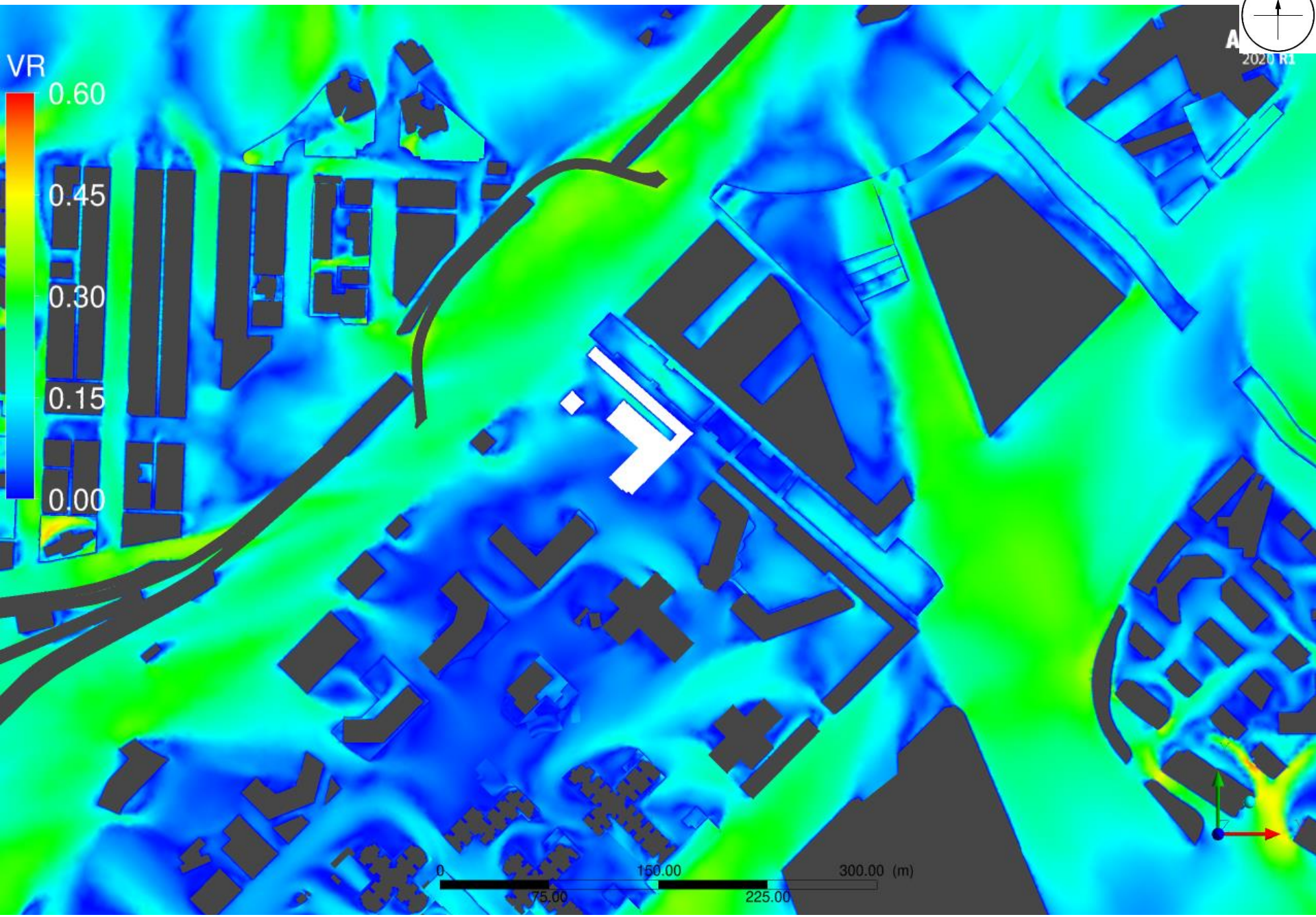
Baseline Scheme - Contour plot at pedestrian level under SE Wind



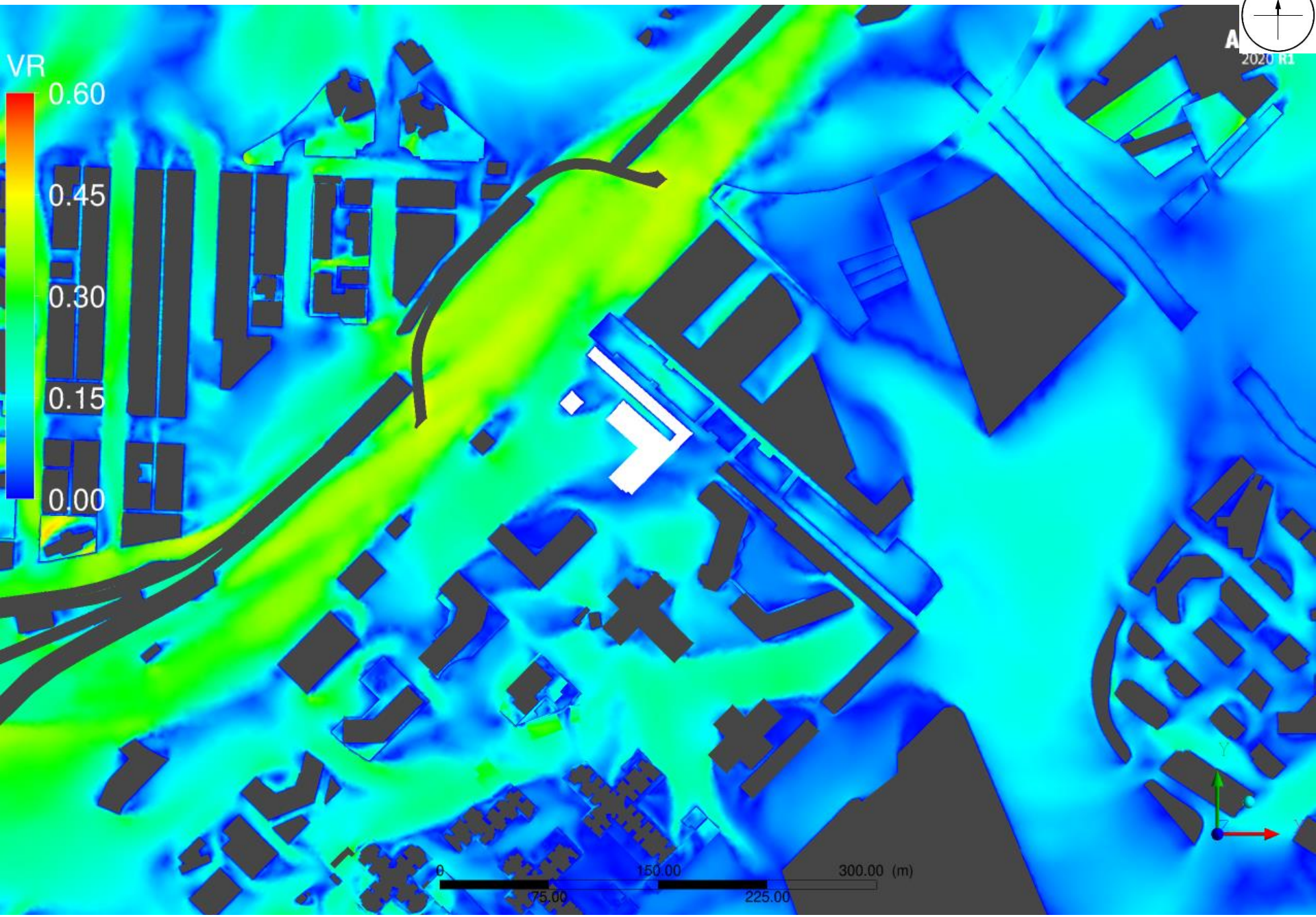
Baseline Scheme - Contour plot at pedestrian level under SSE Wind



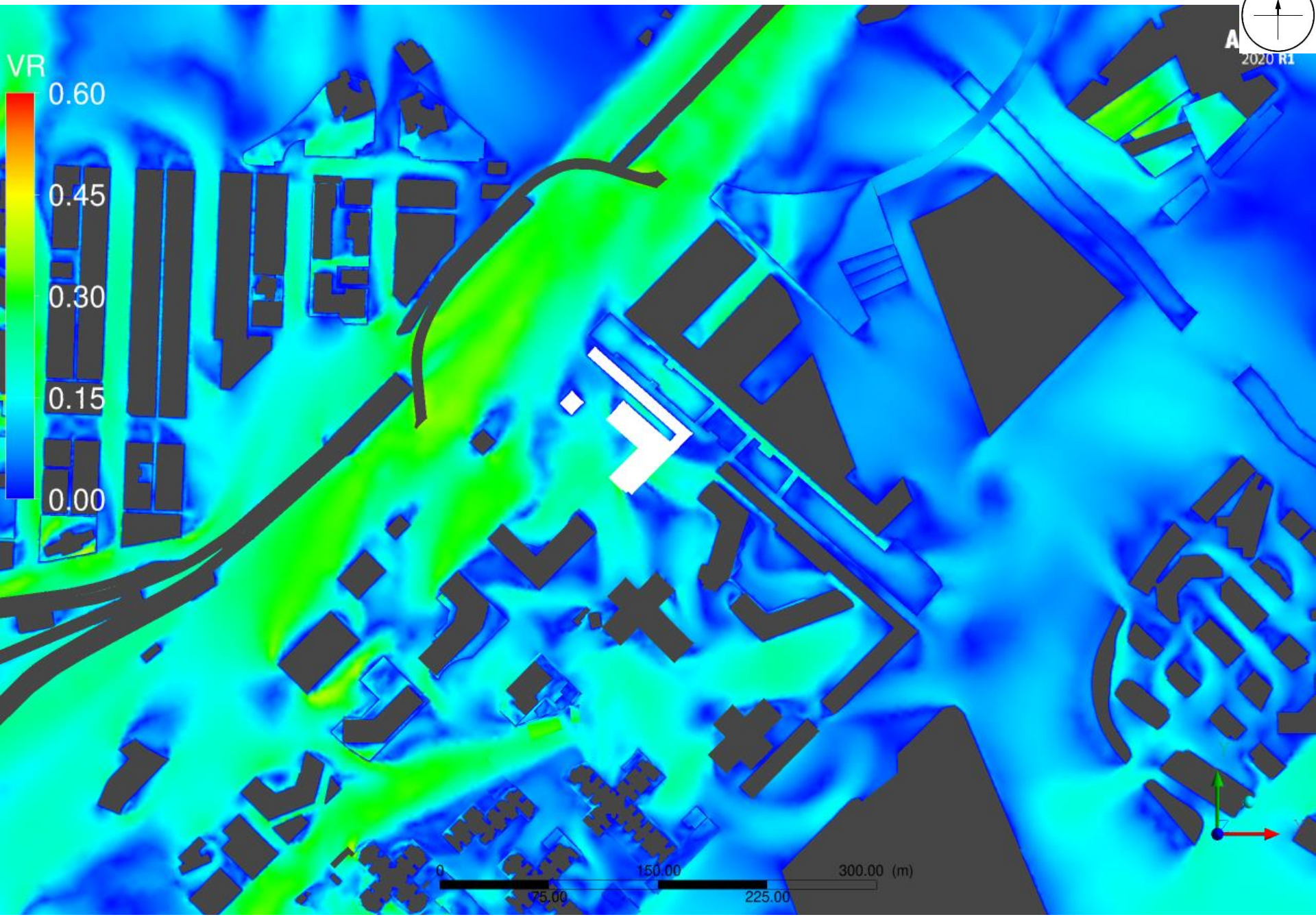
Baseline Scheme - Contour plot at pedestrian level under S Wind



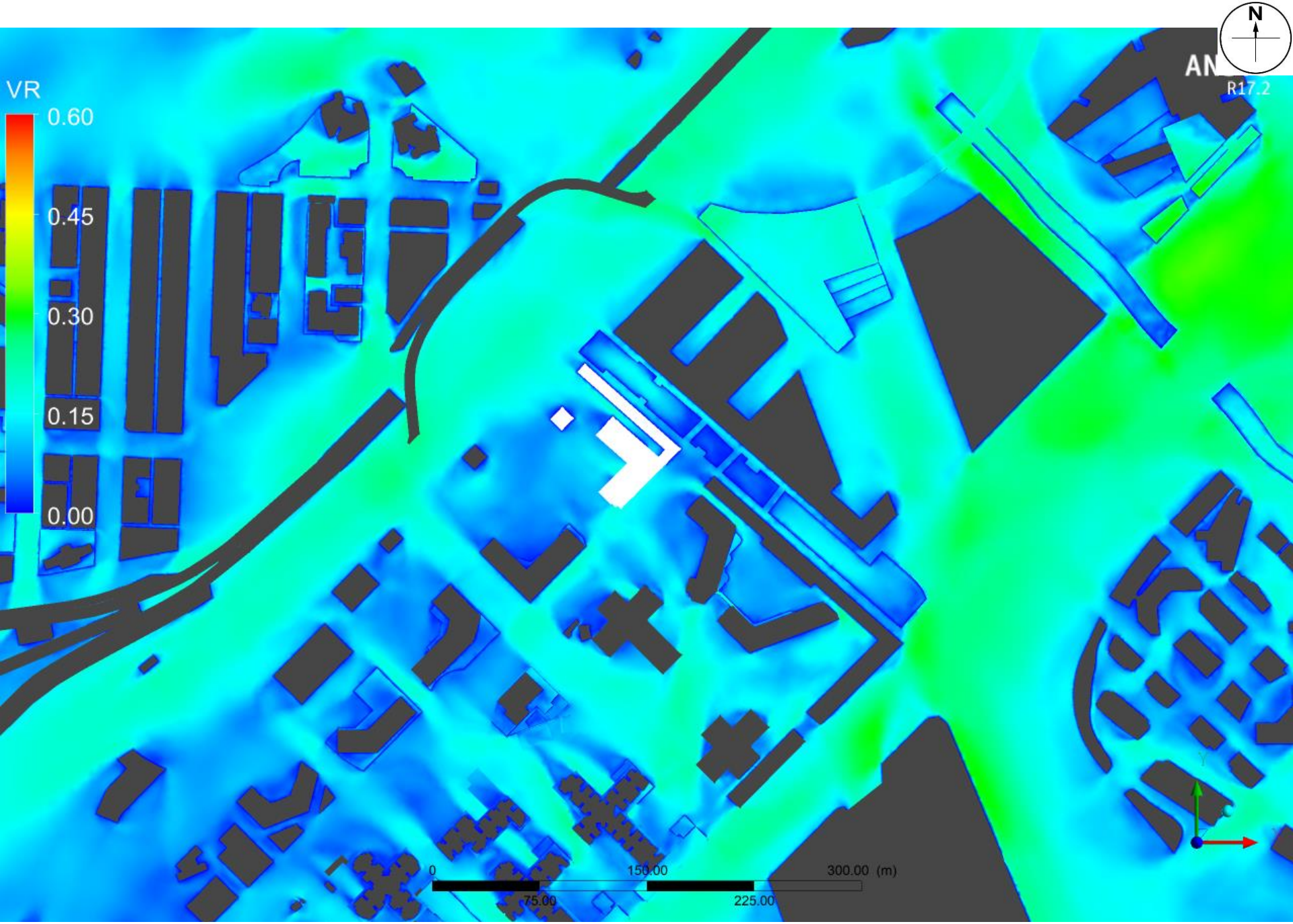
Baseline Scheme - Contour plot at pedestrian level under SSW Wind



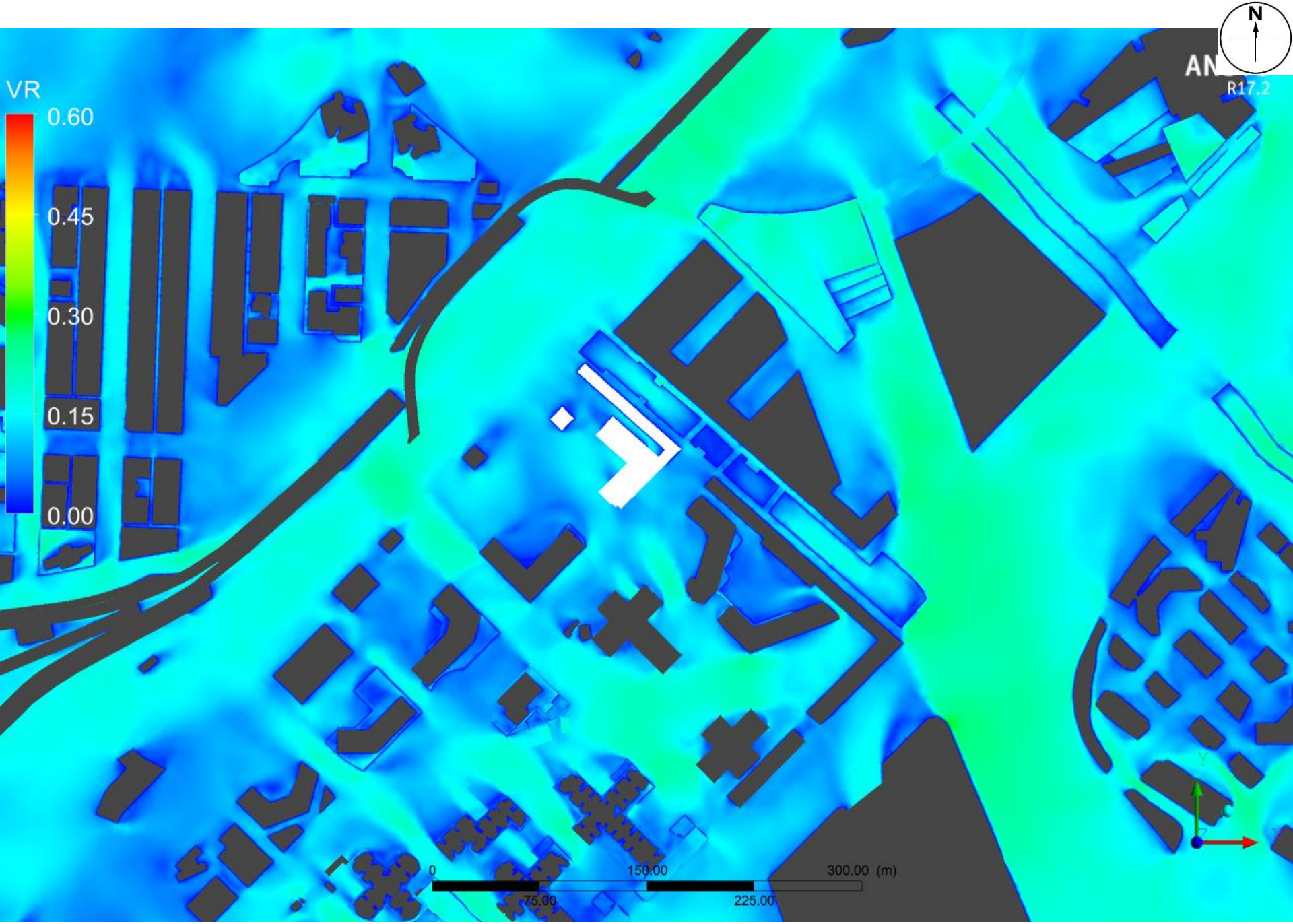
Baseline Scheme - Contour plot at pedestrian level under SW Wind



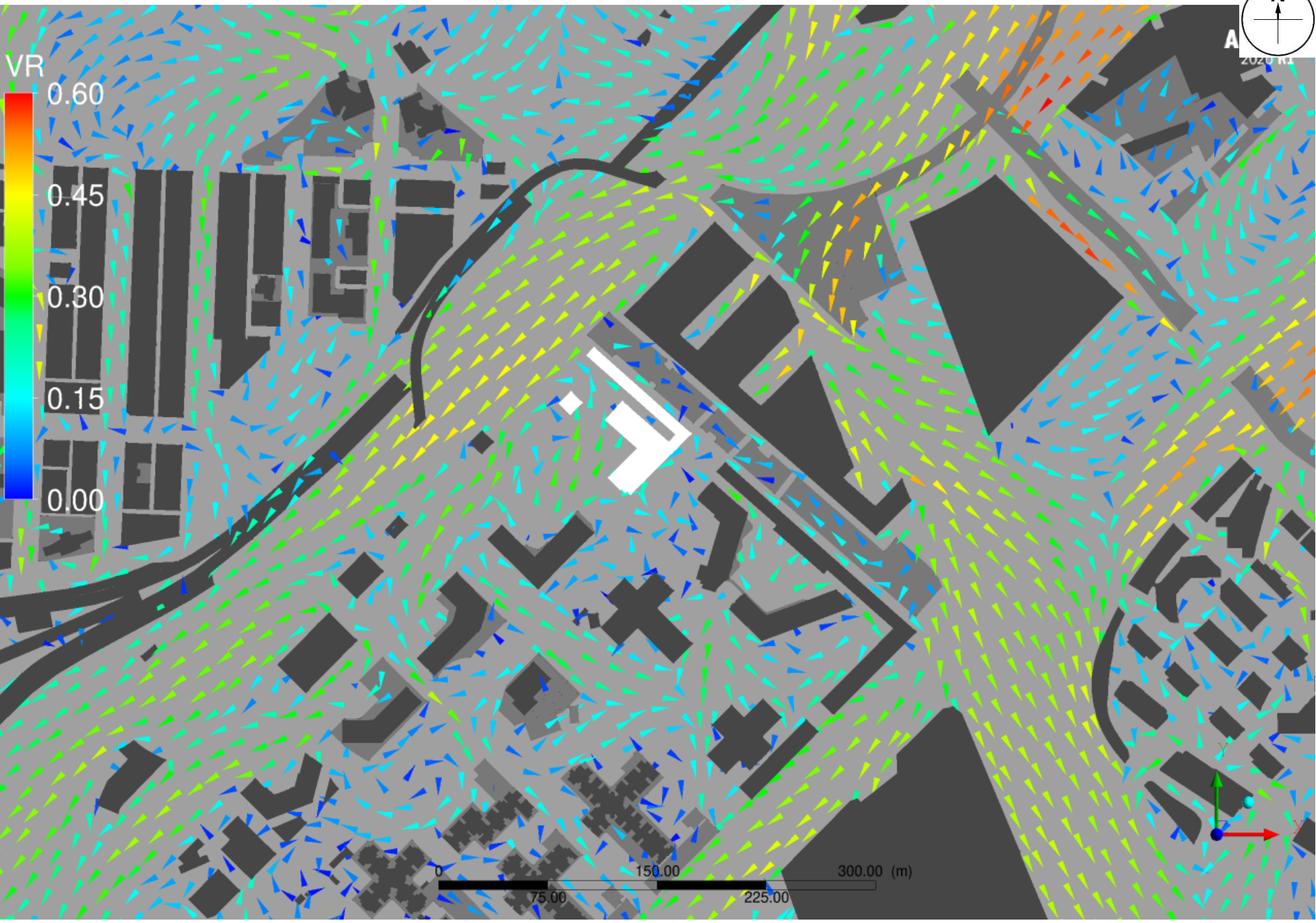
Baseline Scheme - Contour plot at pedestrian level under WSW Wind



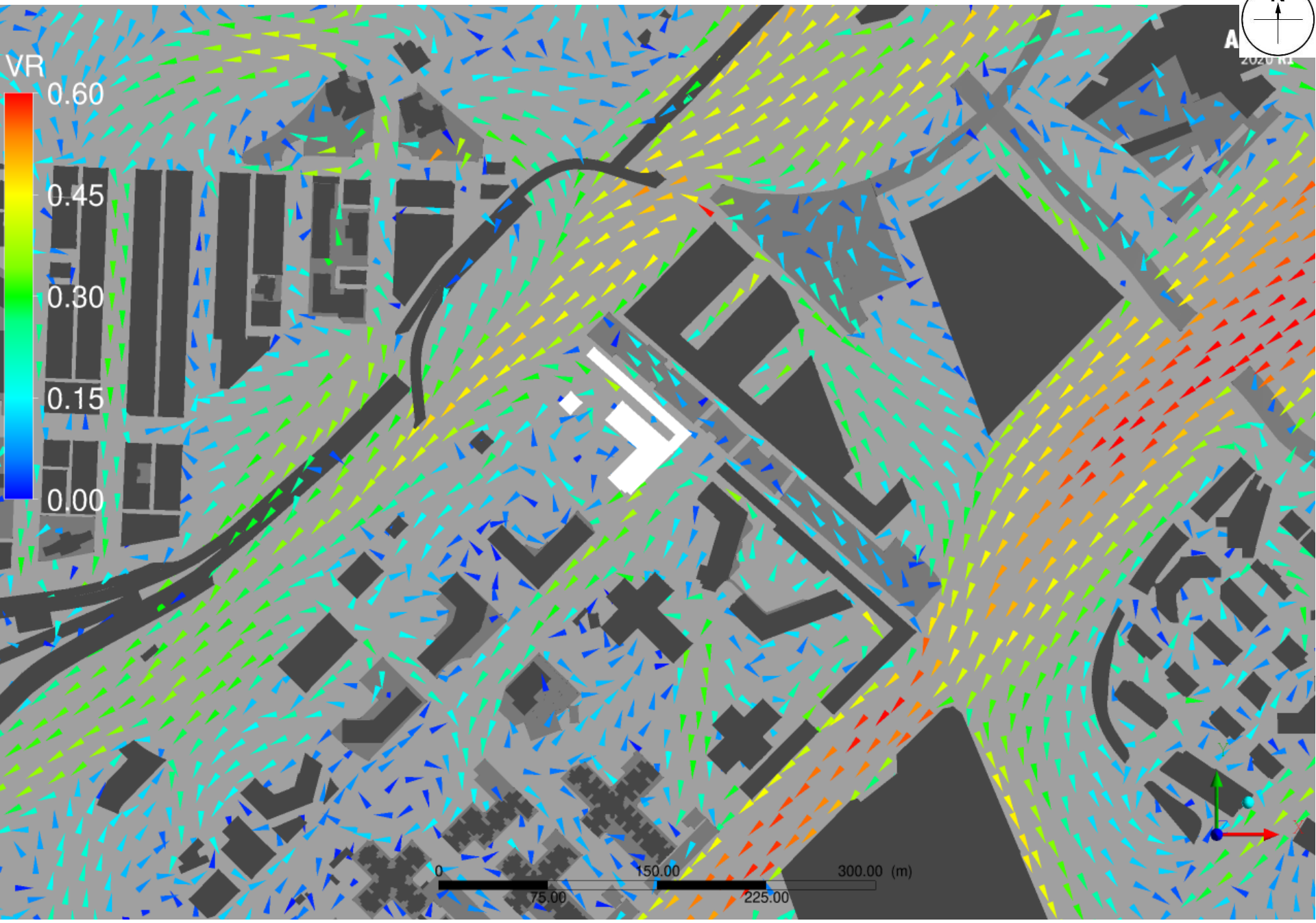
Baseline Scheme - Annual weighted wind speed colour at pedestrian level



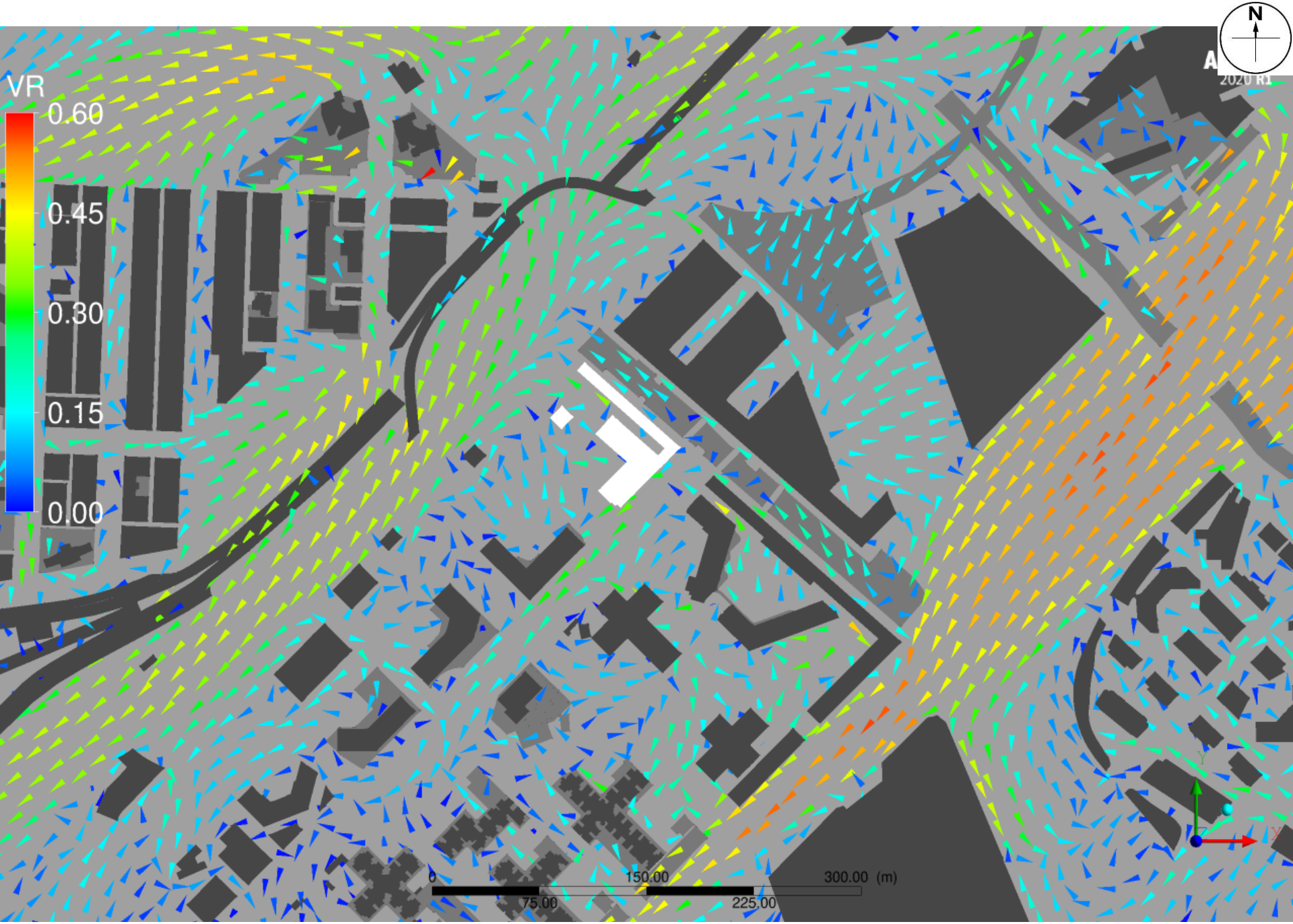
Baseline Scheme - Summer weighted wind speed colour at pedestrian level



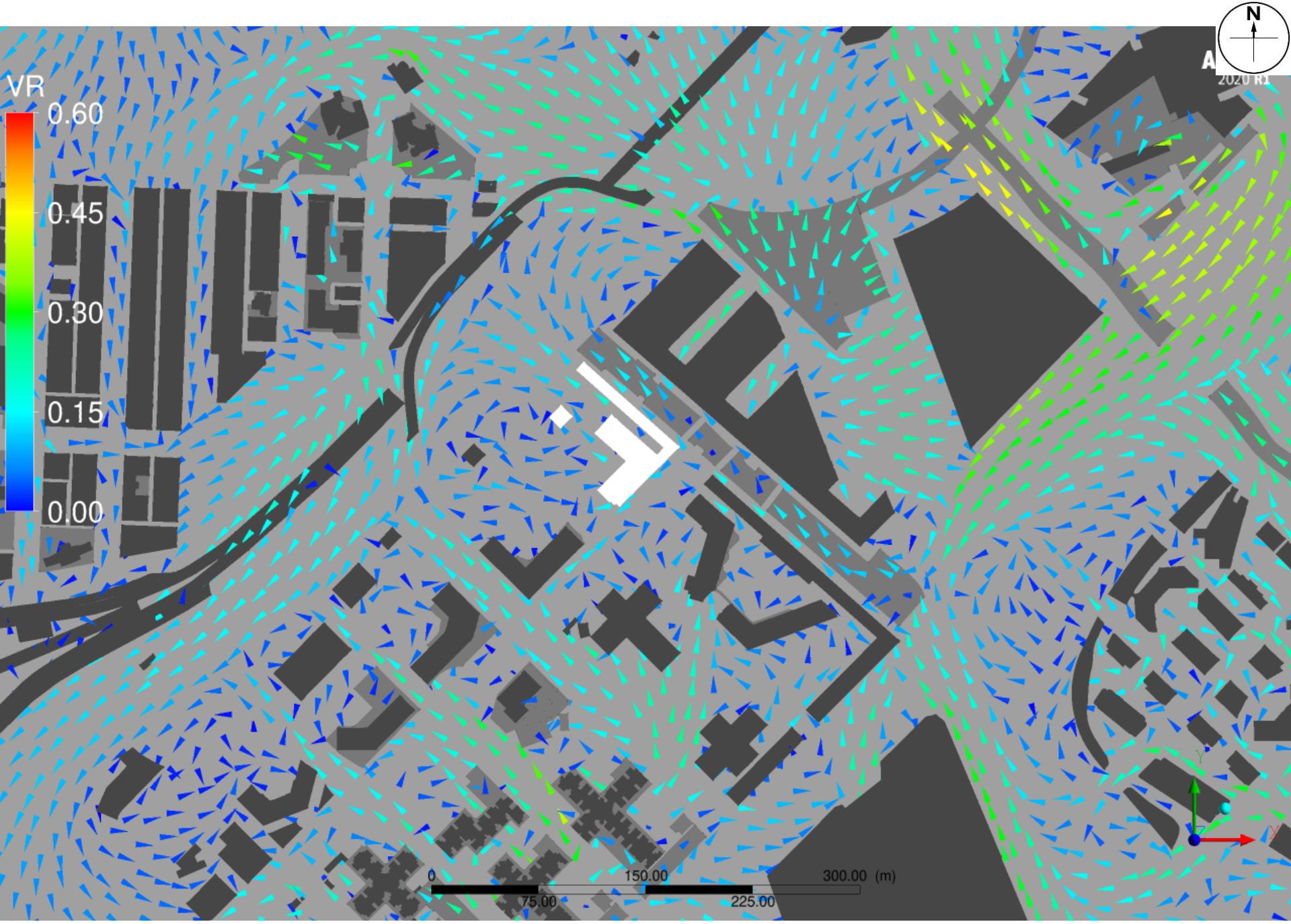
Baseline Scheme - Vector plot at pedestrian level under NNE Wind



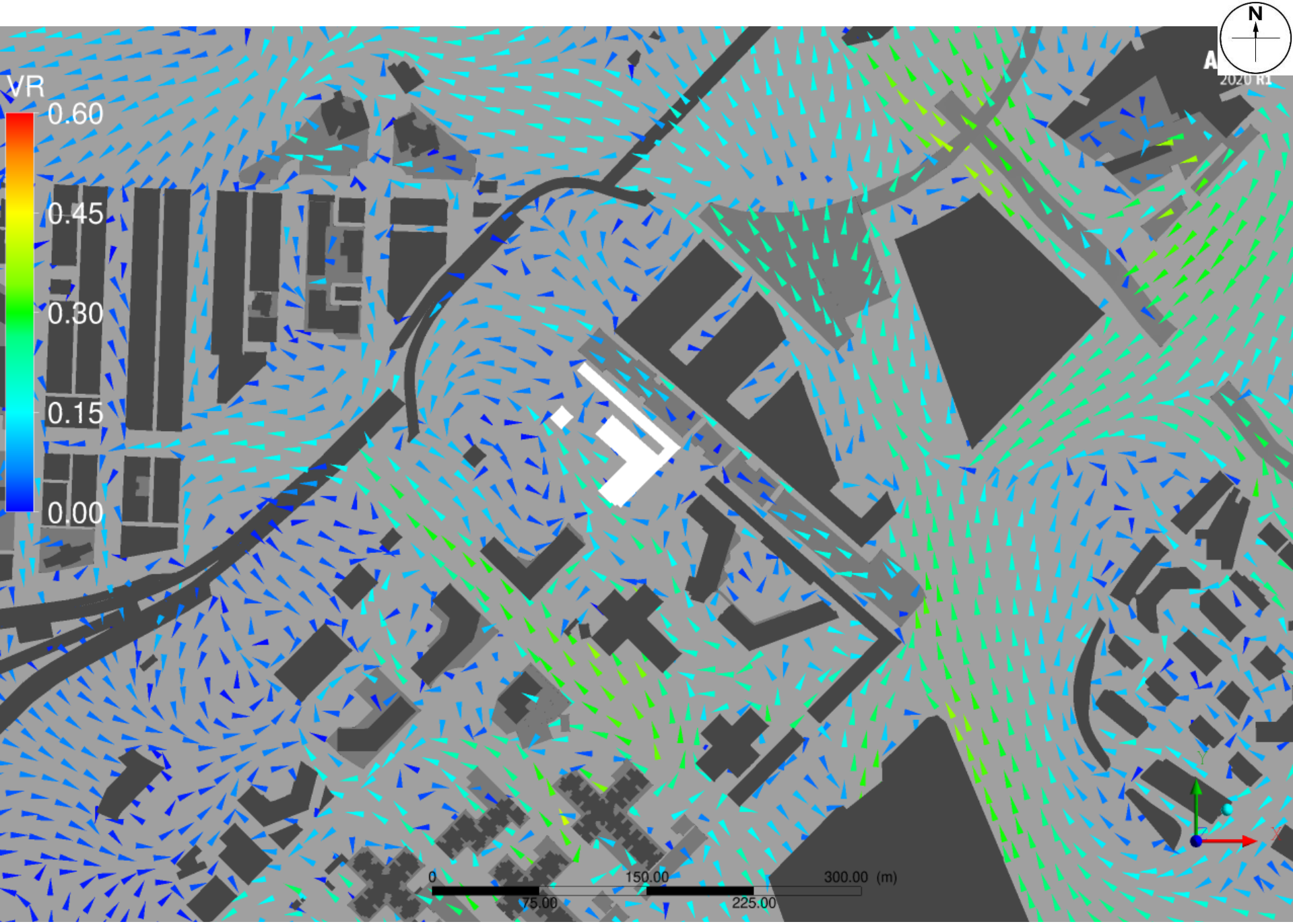
Baseline Scheme - Vector plot at pedestrian level under NE Wind



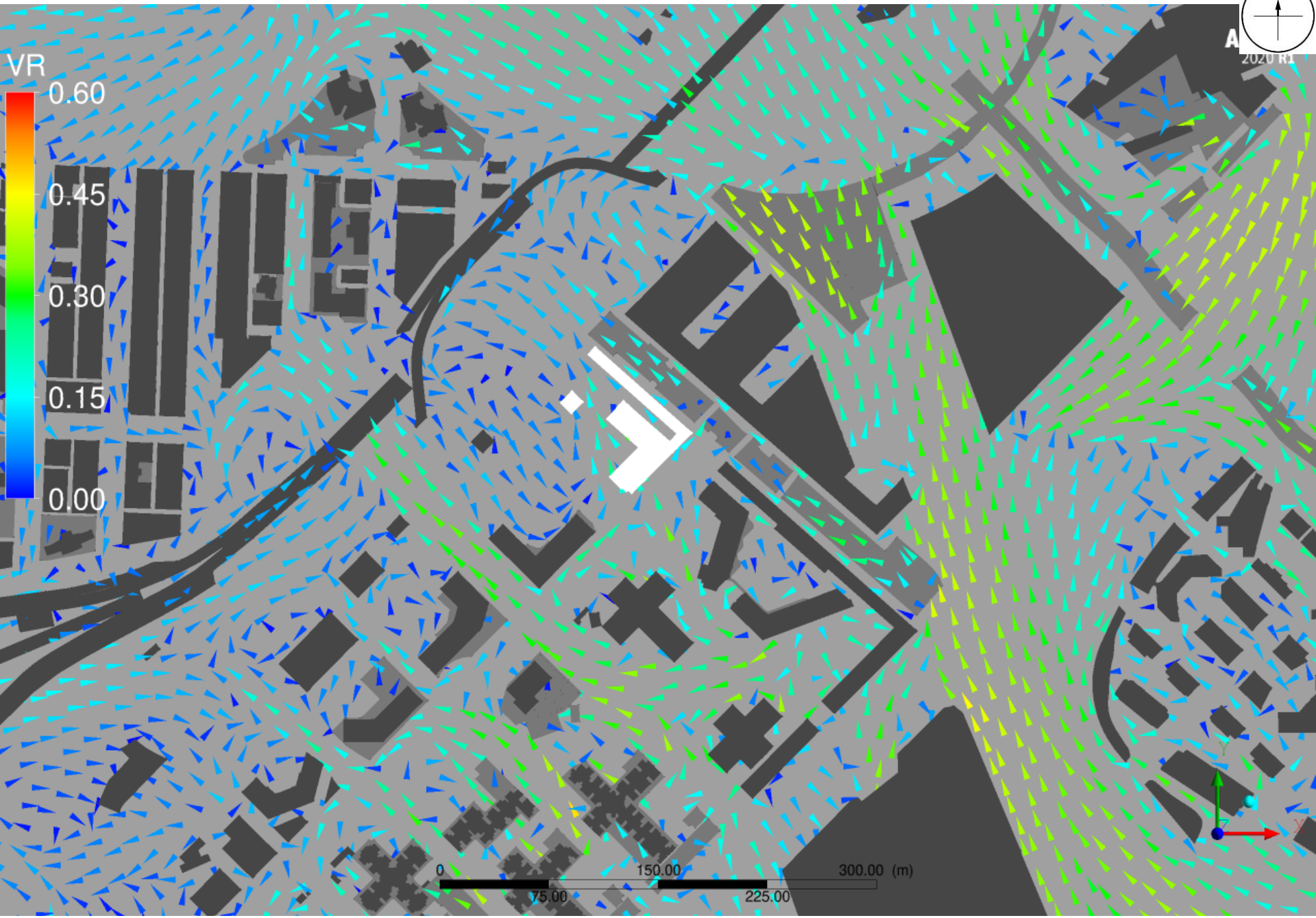
Baseline Scheme - Vector plot at pedestrian level under ENE Wind



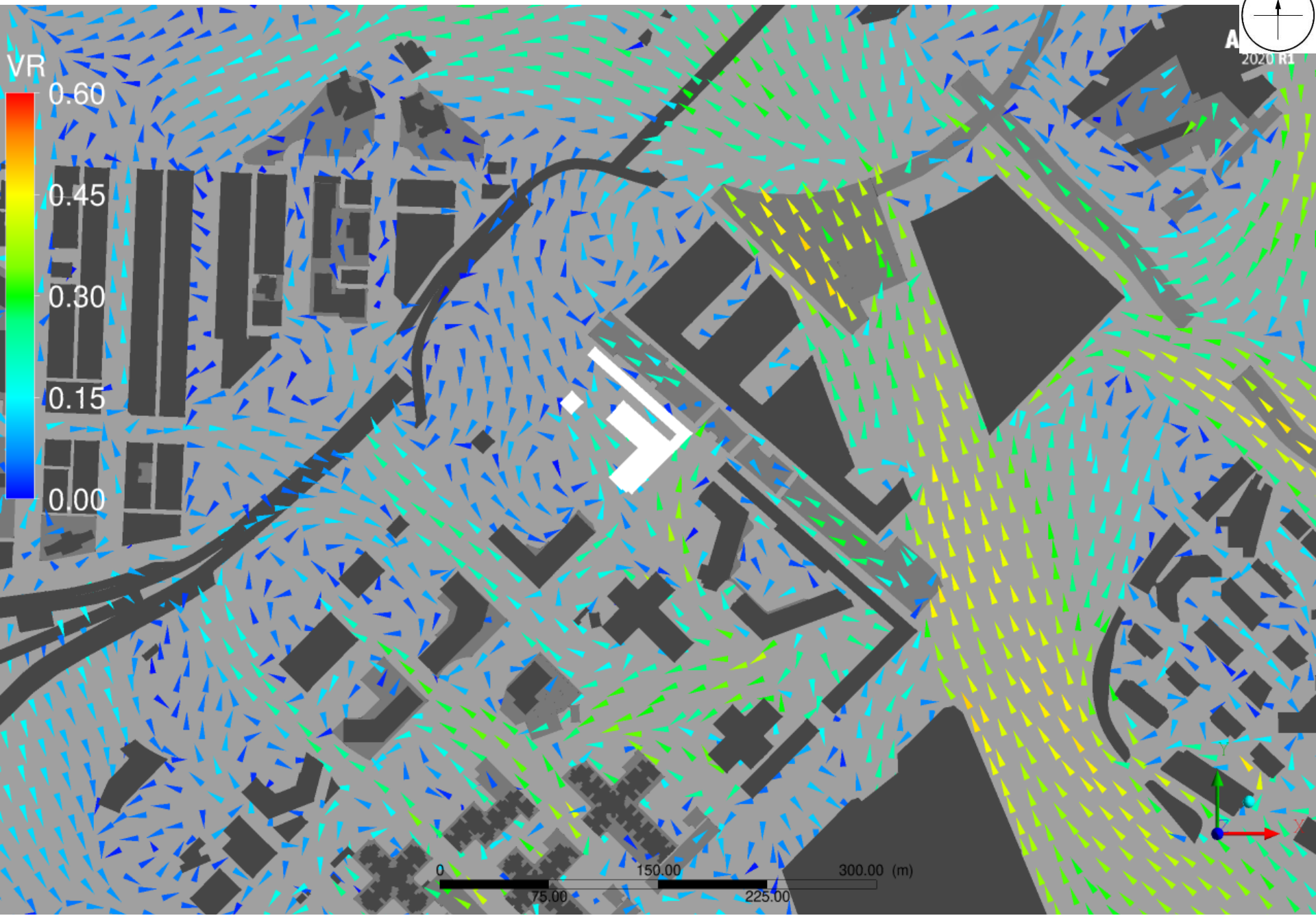
Baseline Scheme - Vector plot at pedestrian level under E Wind



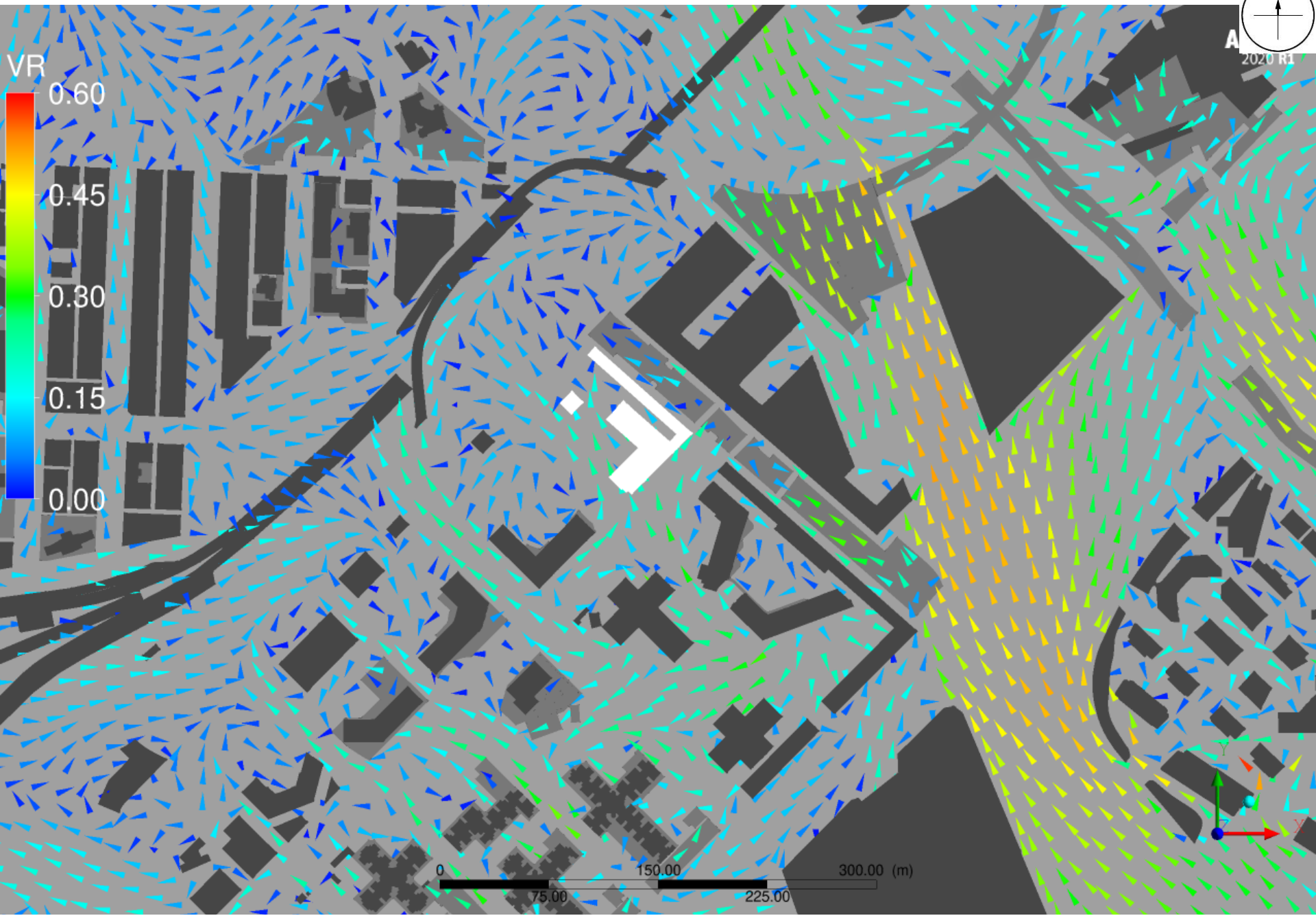
Baseline Scheme - Vector plot at pedestrian level under ESE Wind



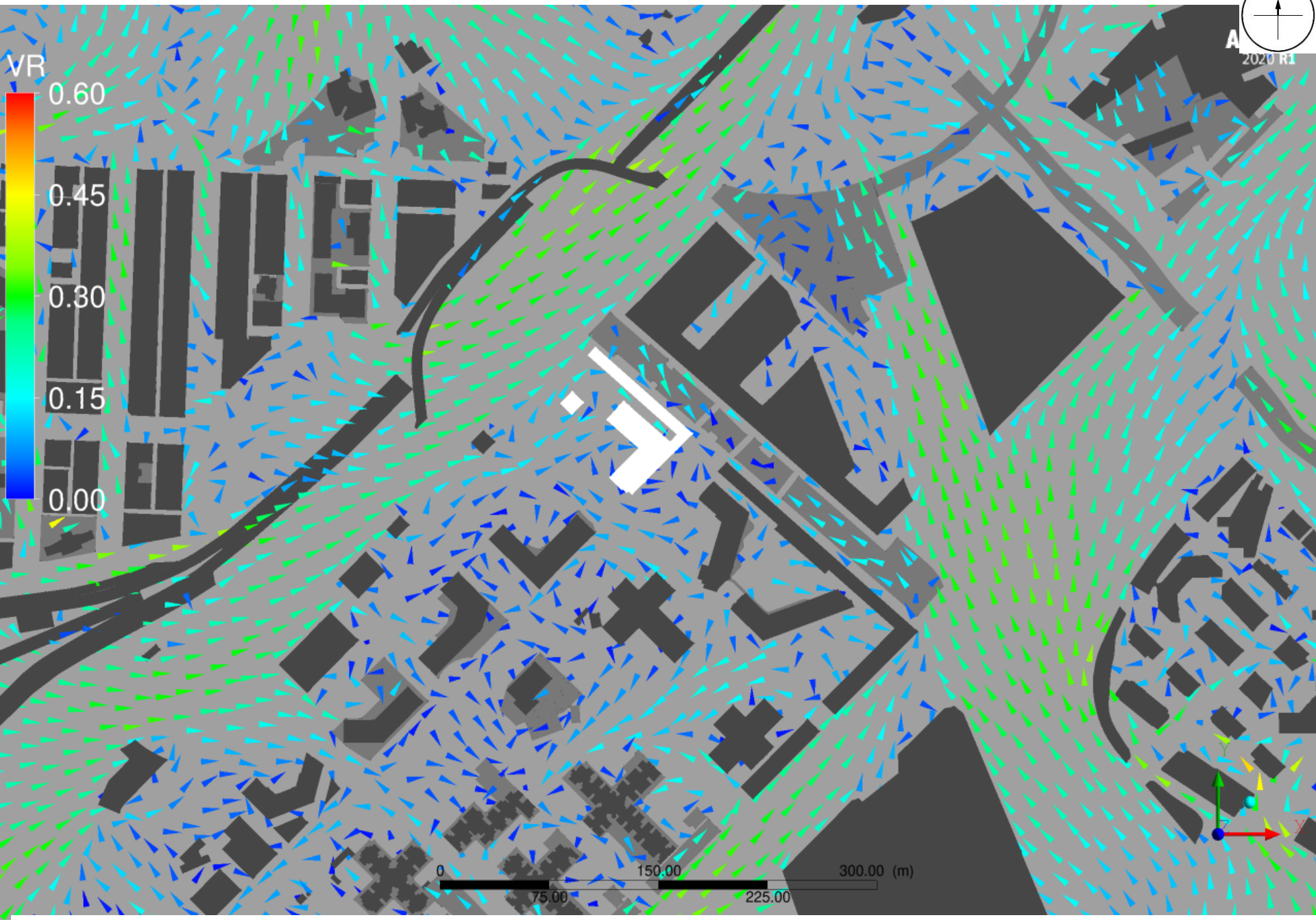
Baseline Scheme - Vector plot at pedestrian level under SE Wind



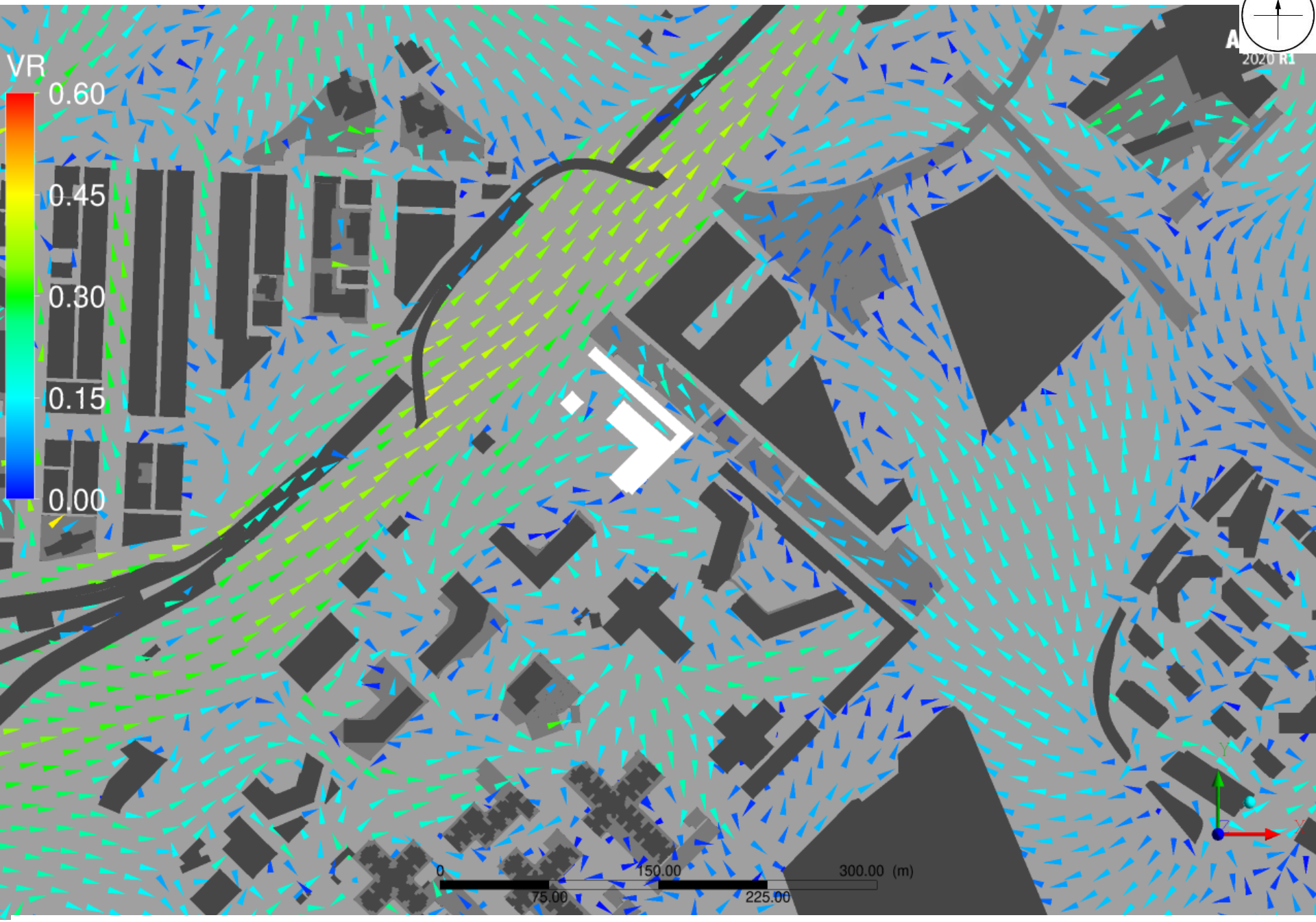
Baseline Scheme - Vector plot at pedestrian level under SSE Wind



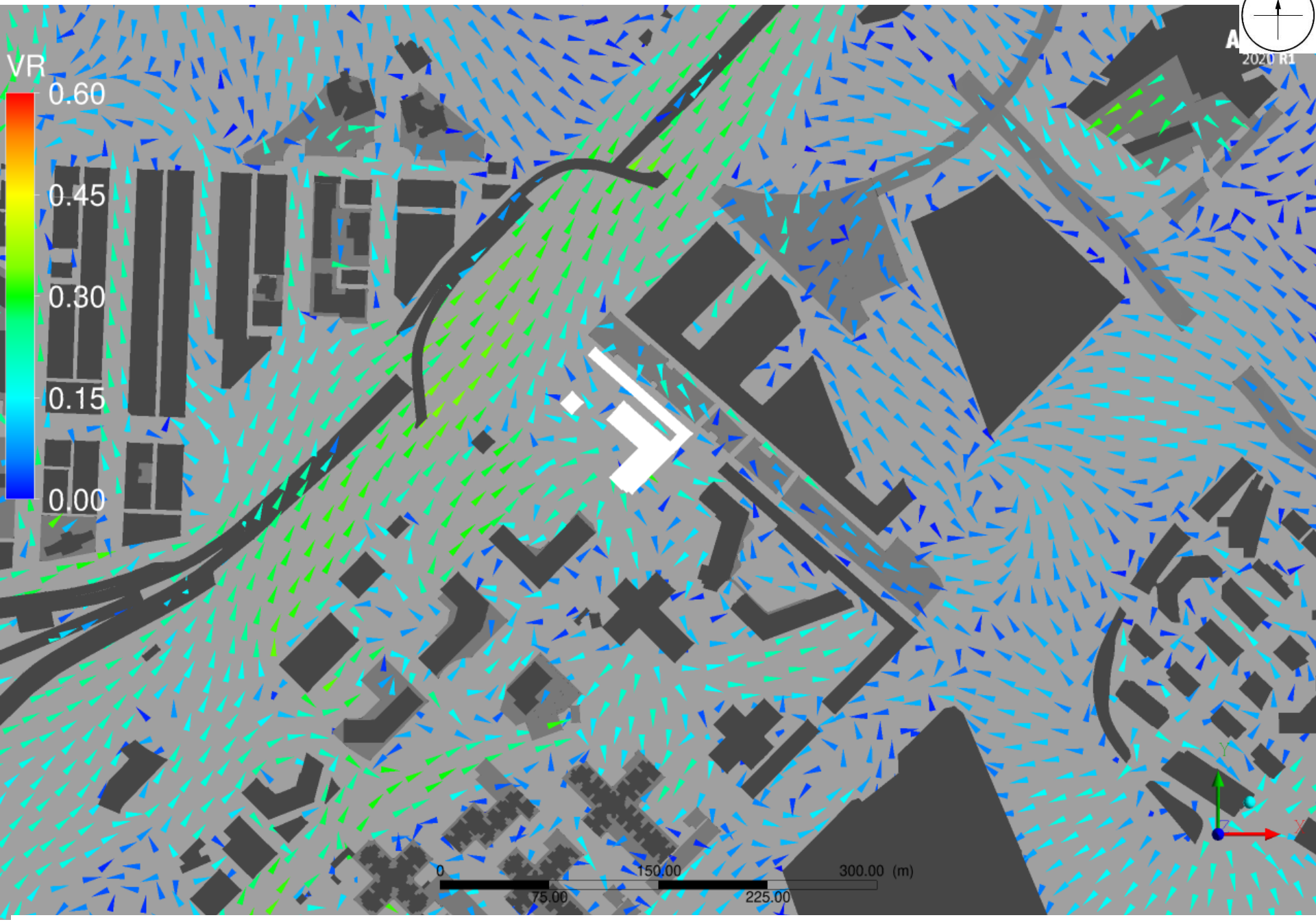
Baseline Scheme - Vector plot at pedestrian level under S Wind



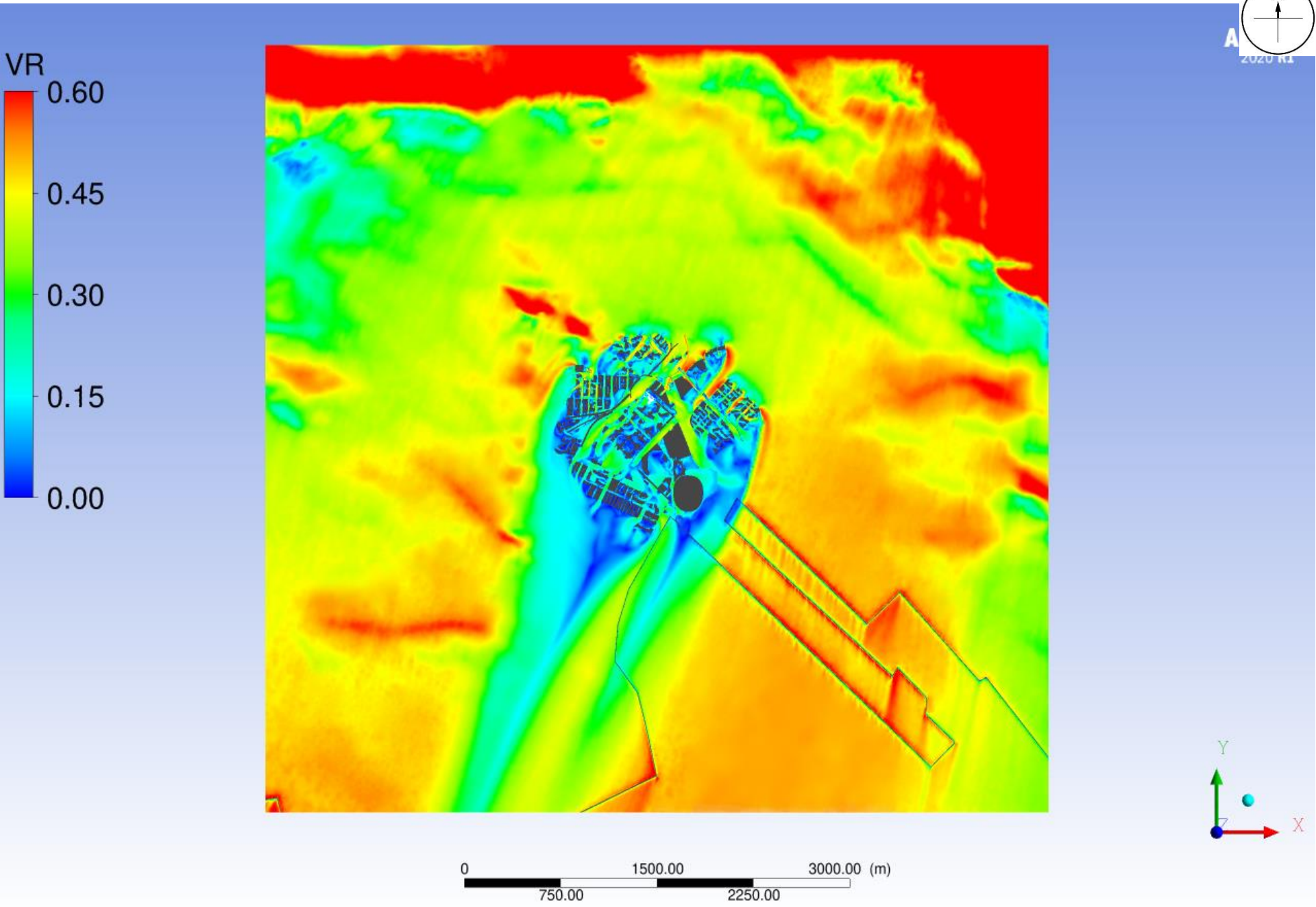
Baseline Scheme - Vector plot at pedestrian level under SSW Wind



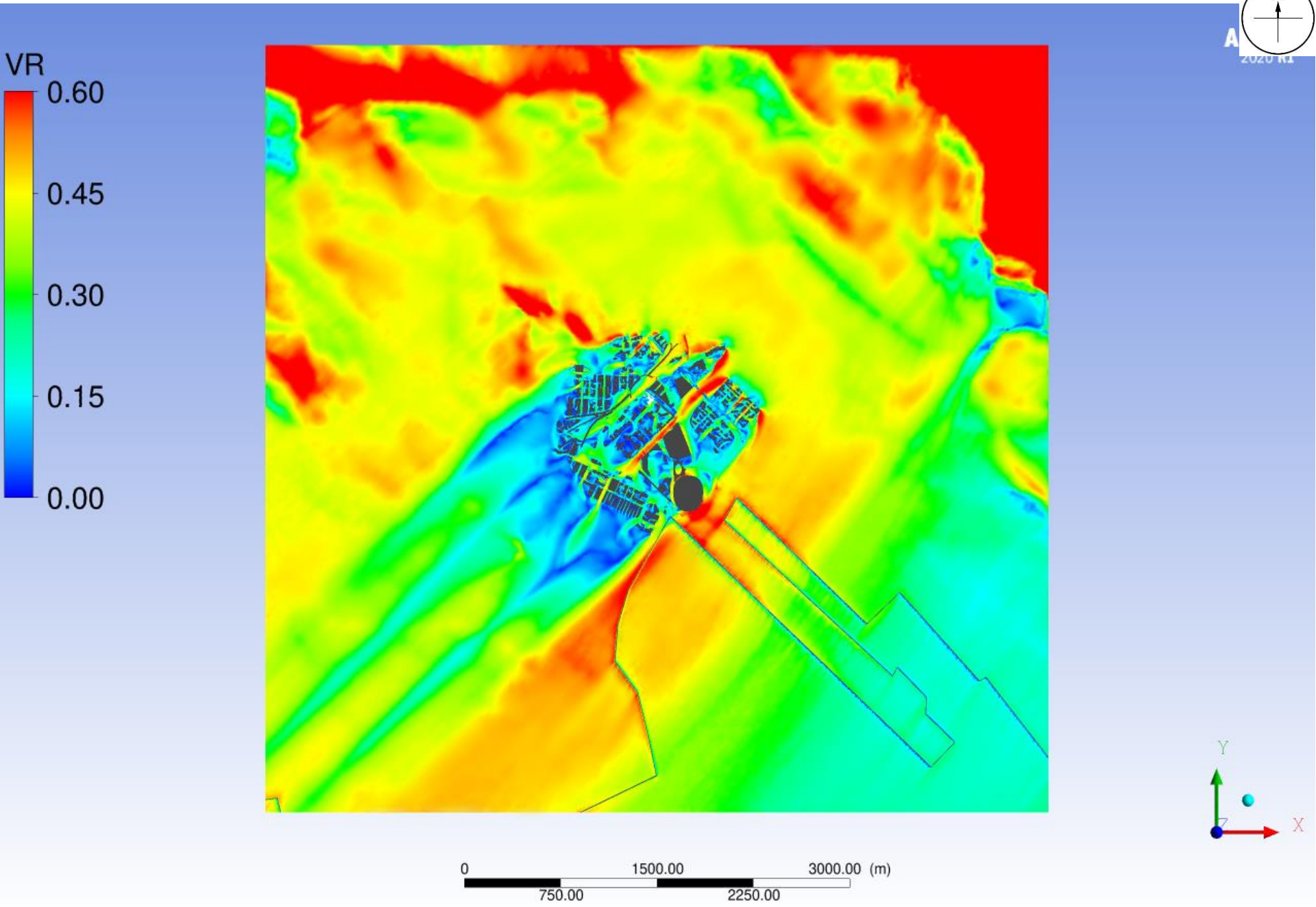
Baseline Scheme - Vector plot at pedestrian level under SW Wind



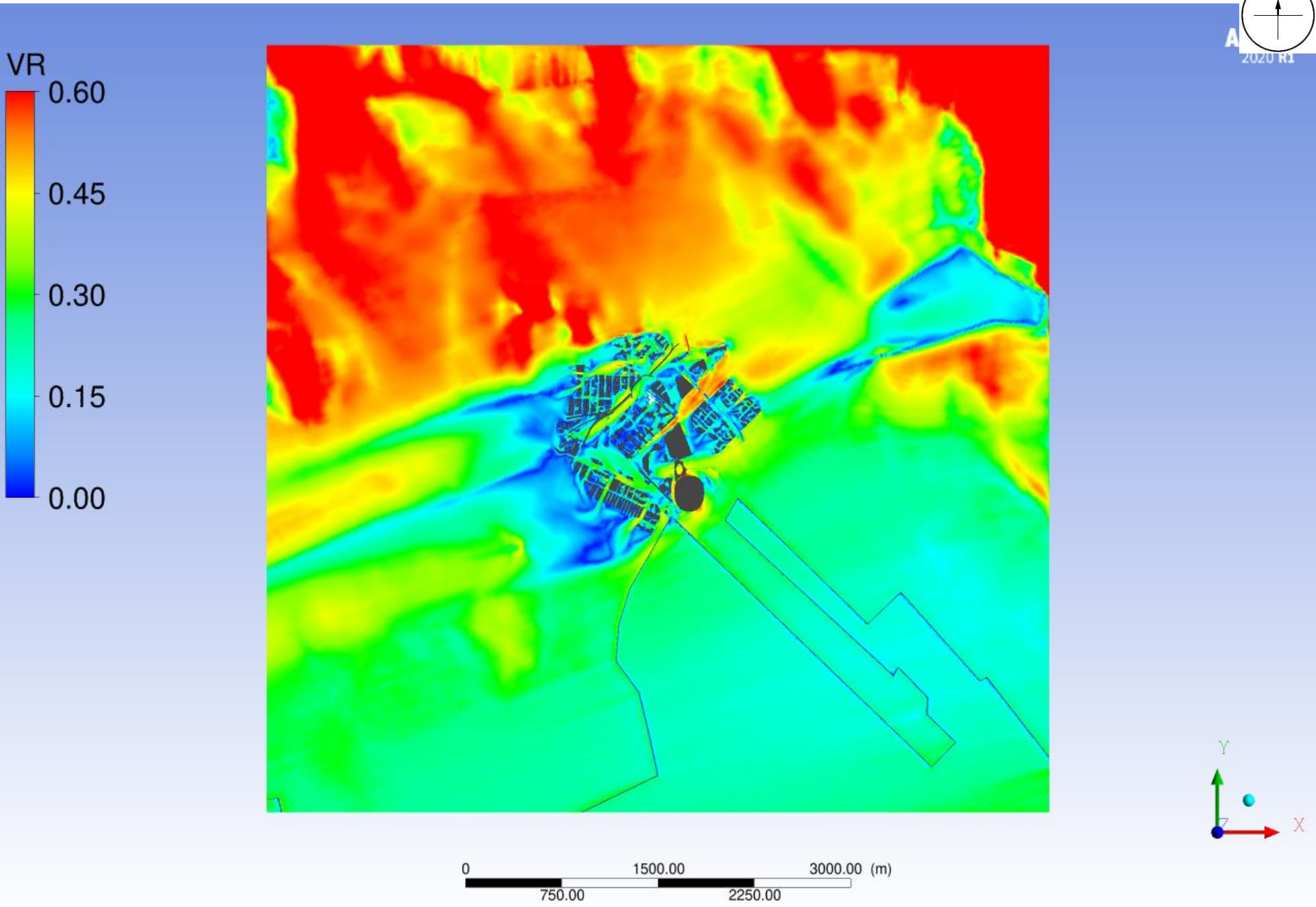
Baseline Scheme - Vector plot at pedestrian level under WSW Wind



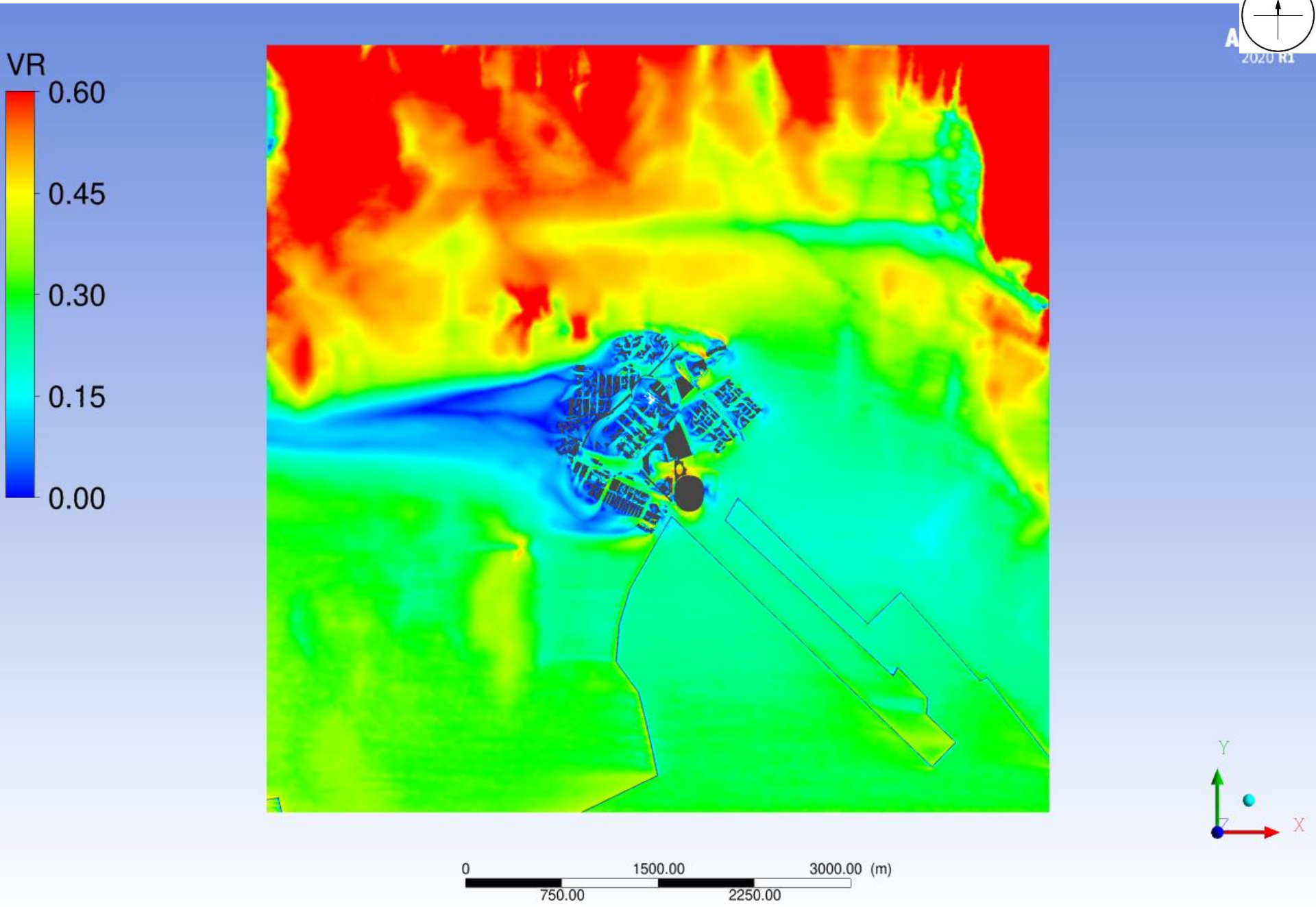
Baseline Scheme - Domain Contour plot at pedestrian level under NNE Wind



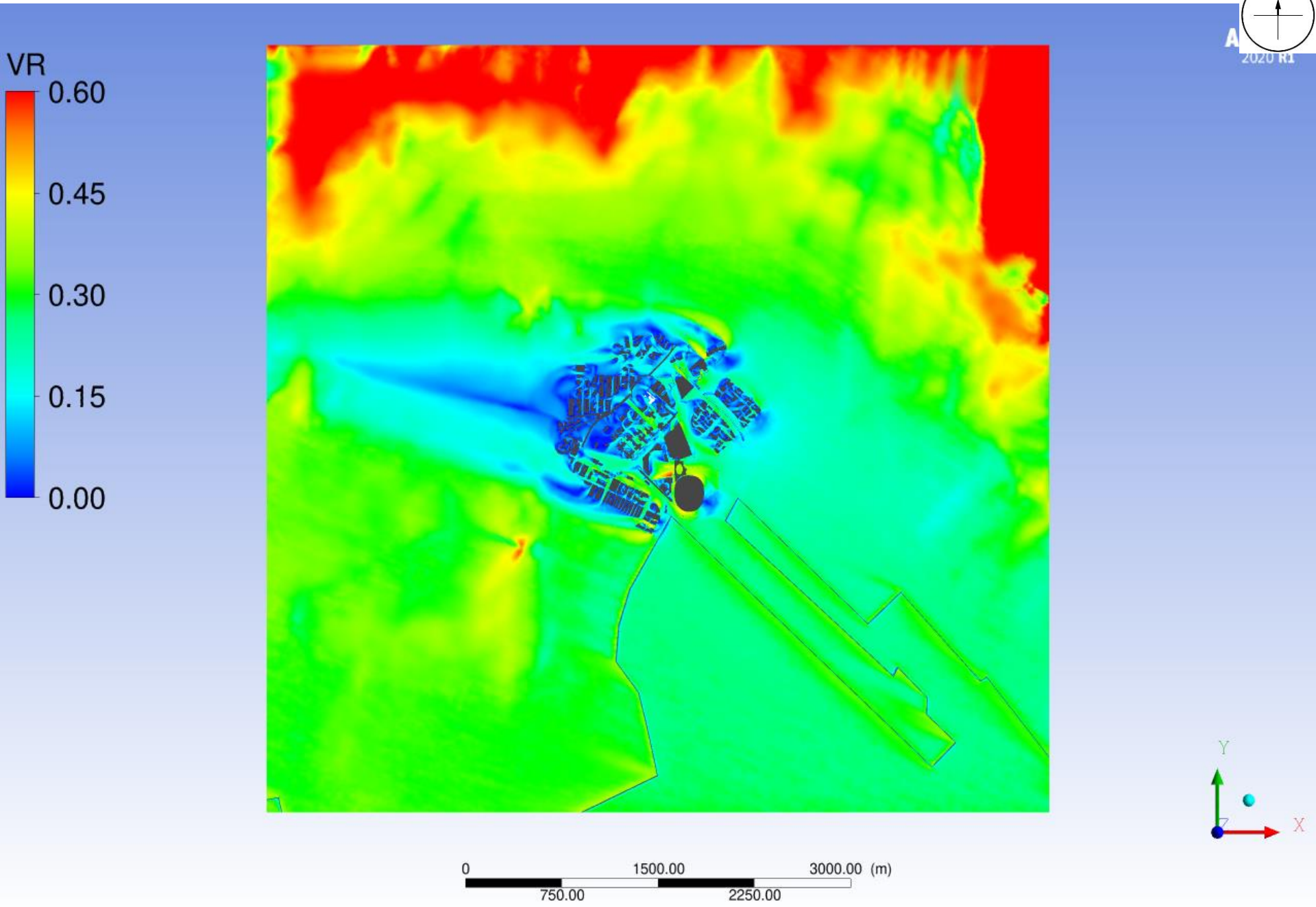
Baseline Scheme - Domain Contour plot at pedestrian level under NE Wind



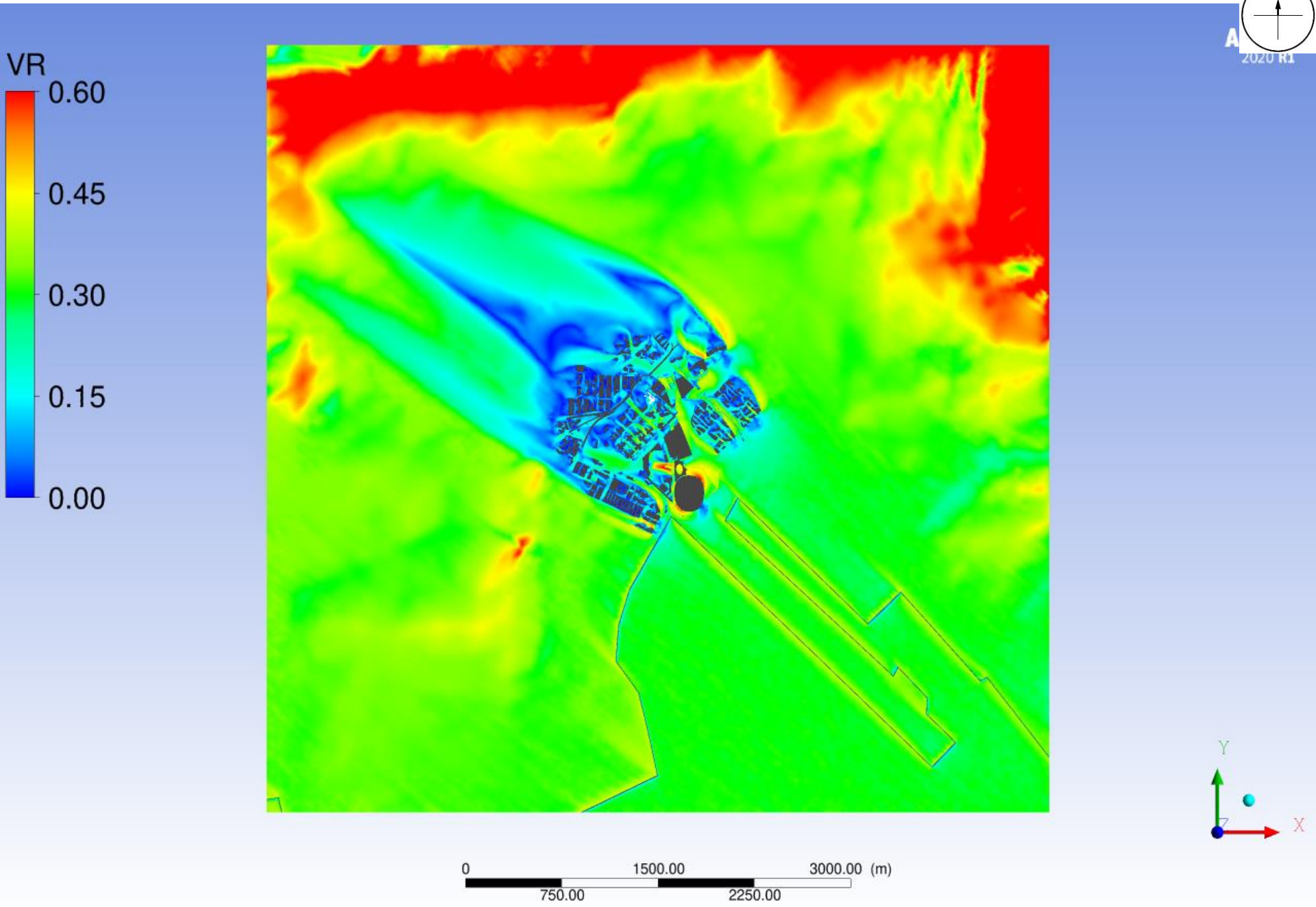
Baseline Scheme - Domain Contour plot at pedestrian level under ENE Wind



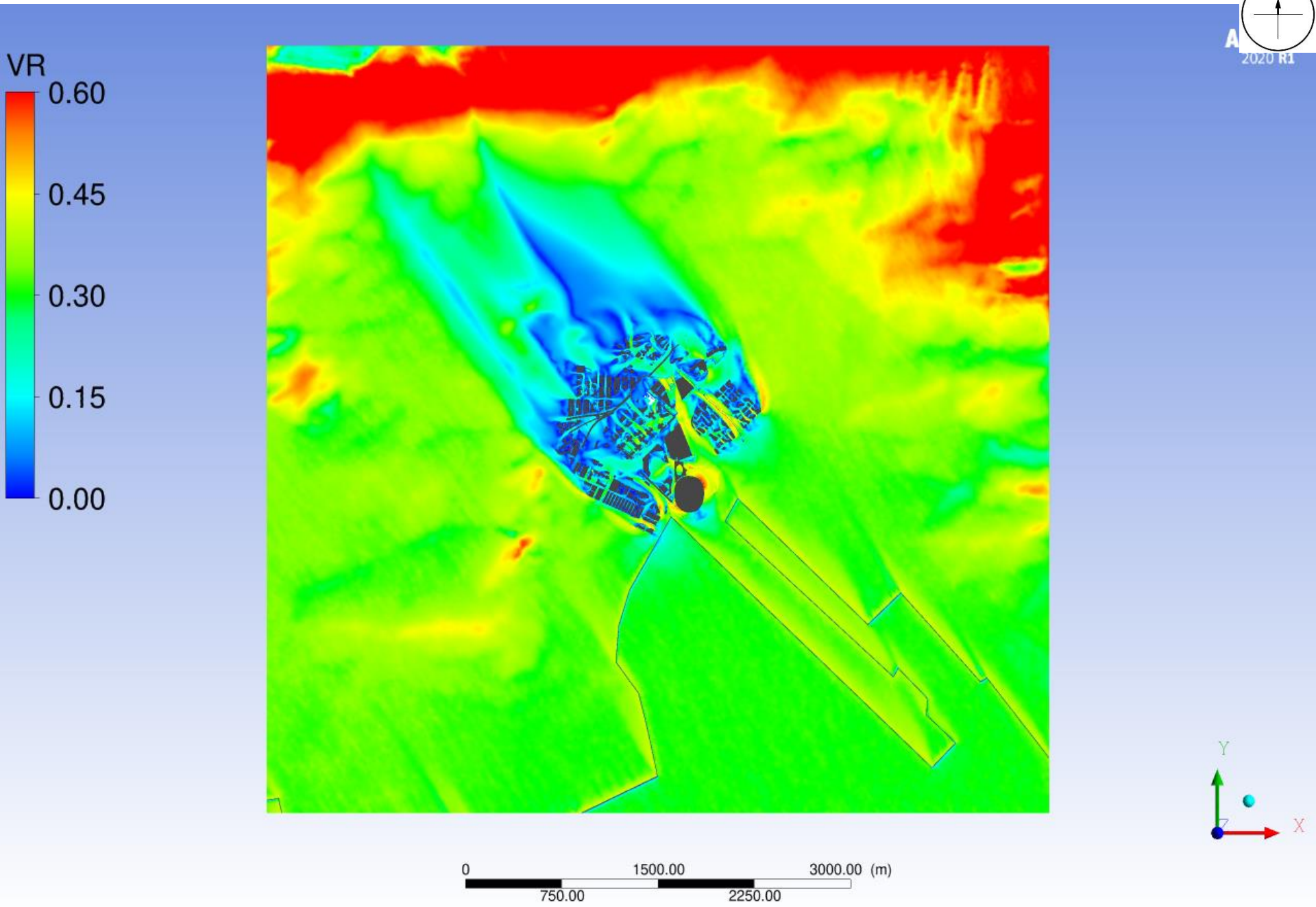
Baseline Scheme - Domain Contour plot at pedestrian level under E Wind



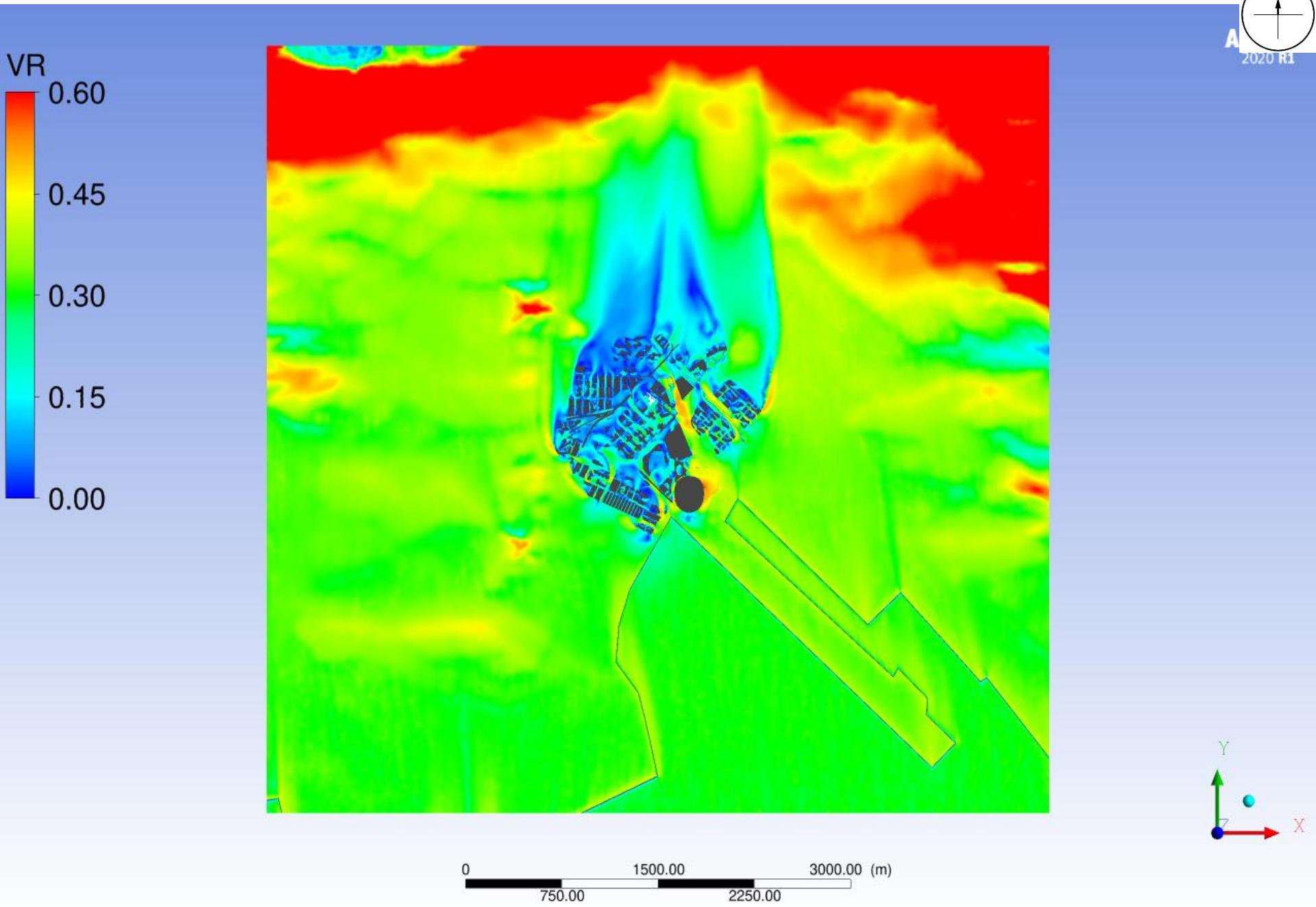
Baseline Scheme - Domain Contour plot at pedestrian level under ESE Wind



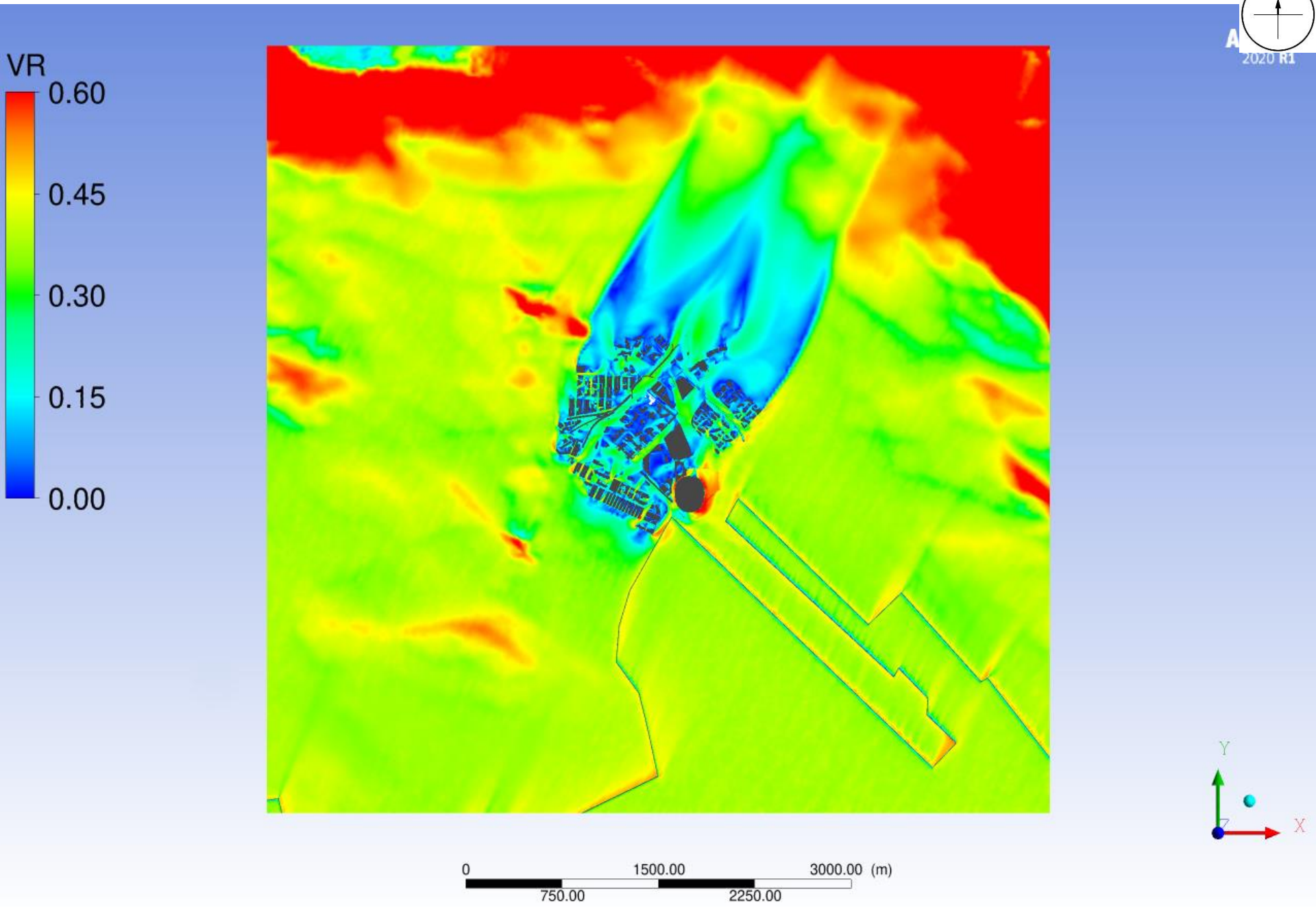
Baseline Scheme - Domain Contour plot at pedestrian level under SE Wind



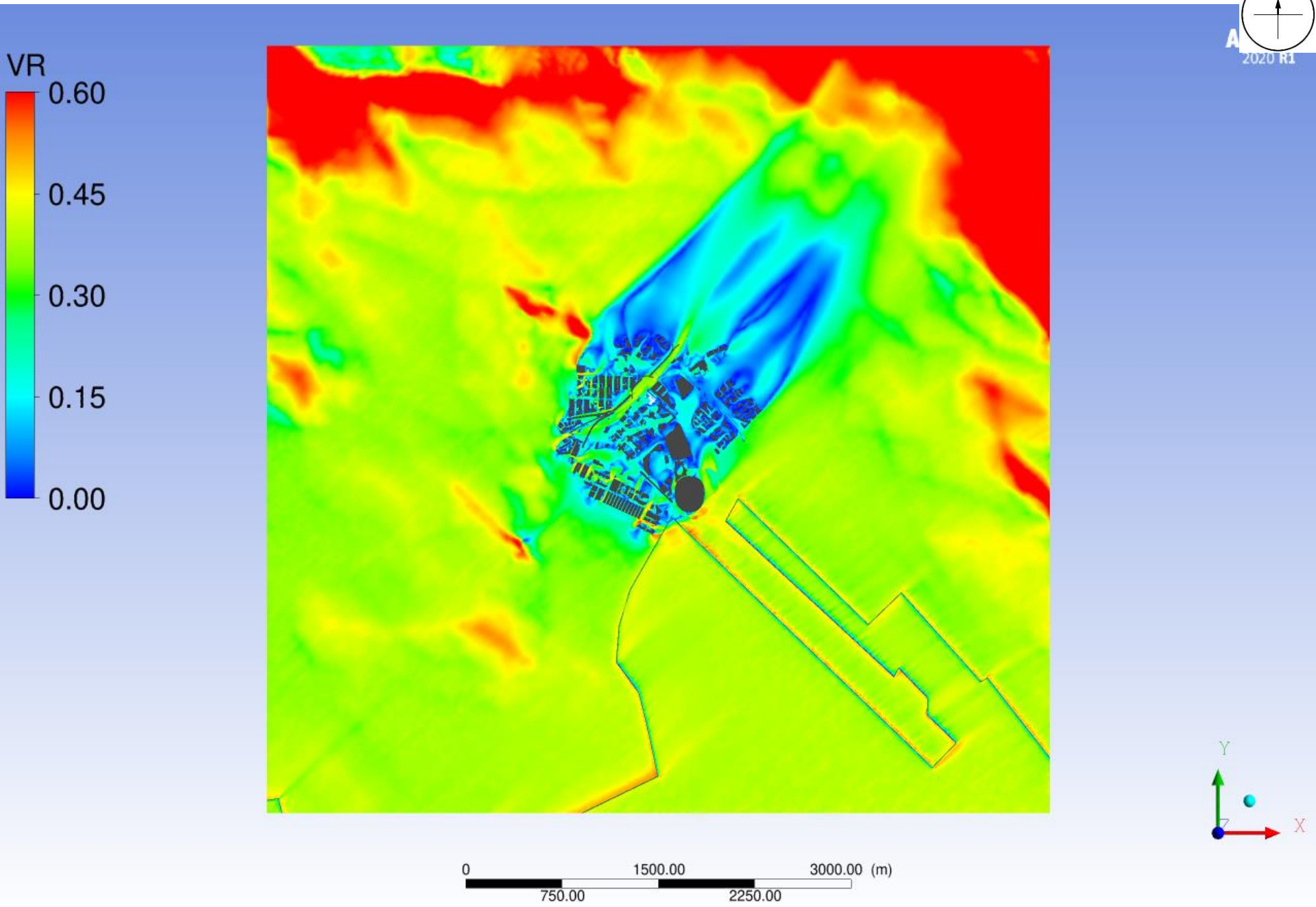
Baseline Scheme - Domain Contour plot at pedestrian level under SSE Wind



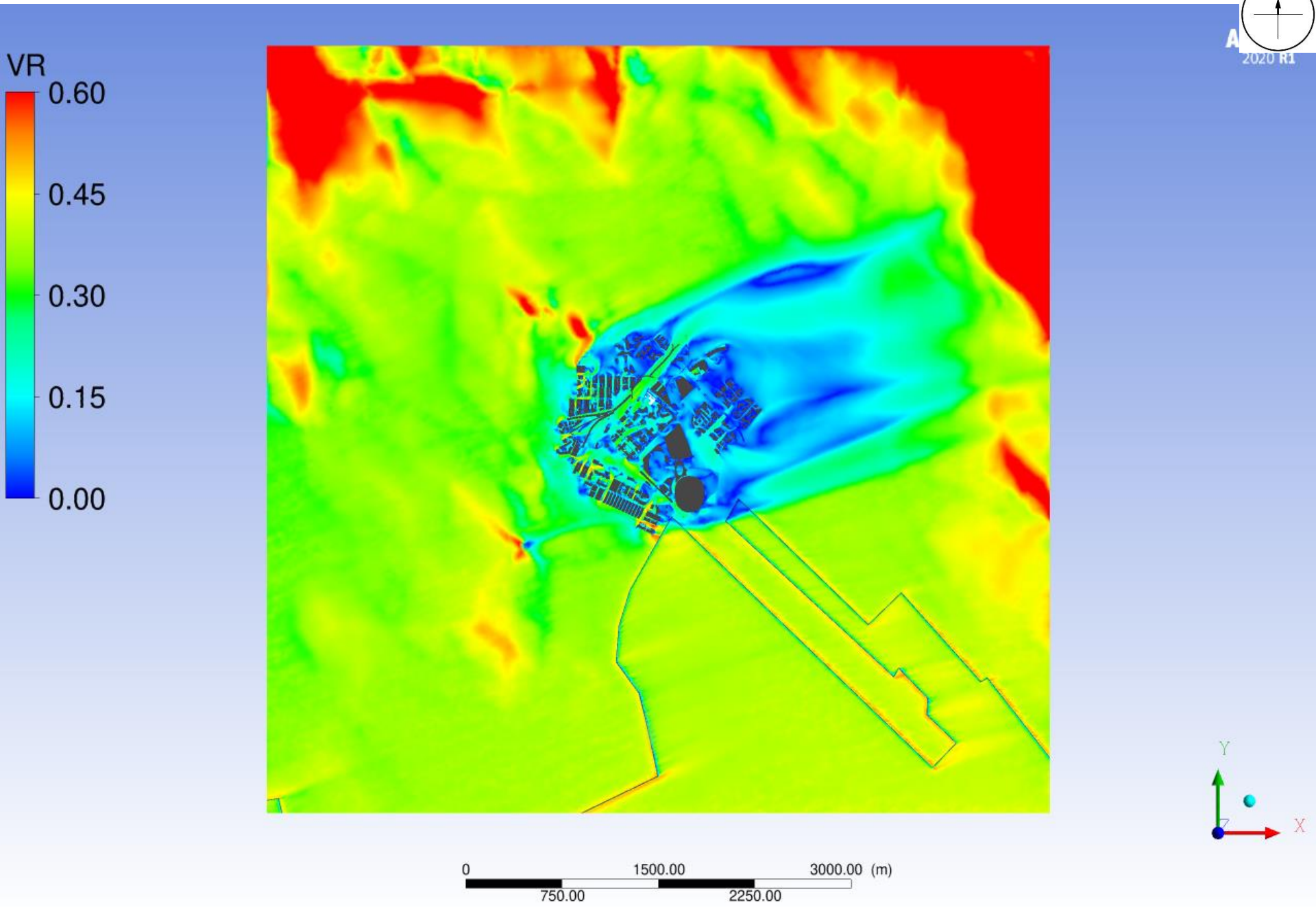
Baseline Scheme - Domain Contour plot at pedestrian level under S Wind



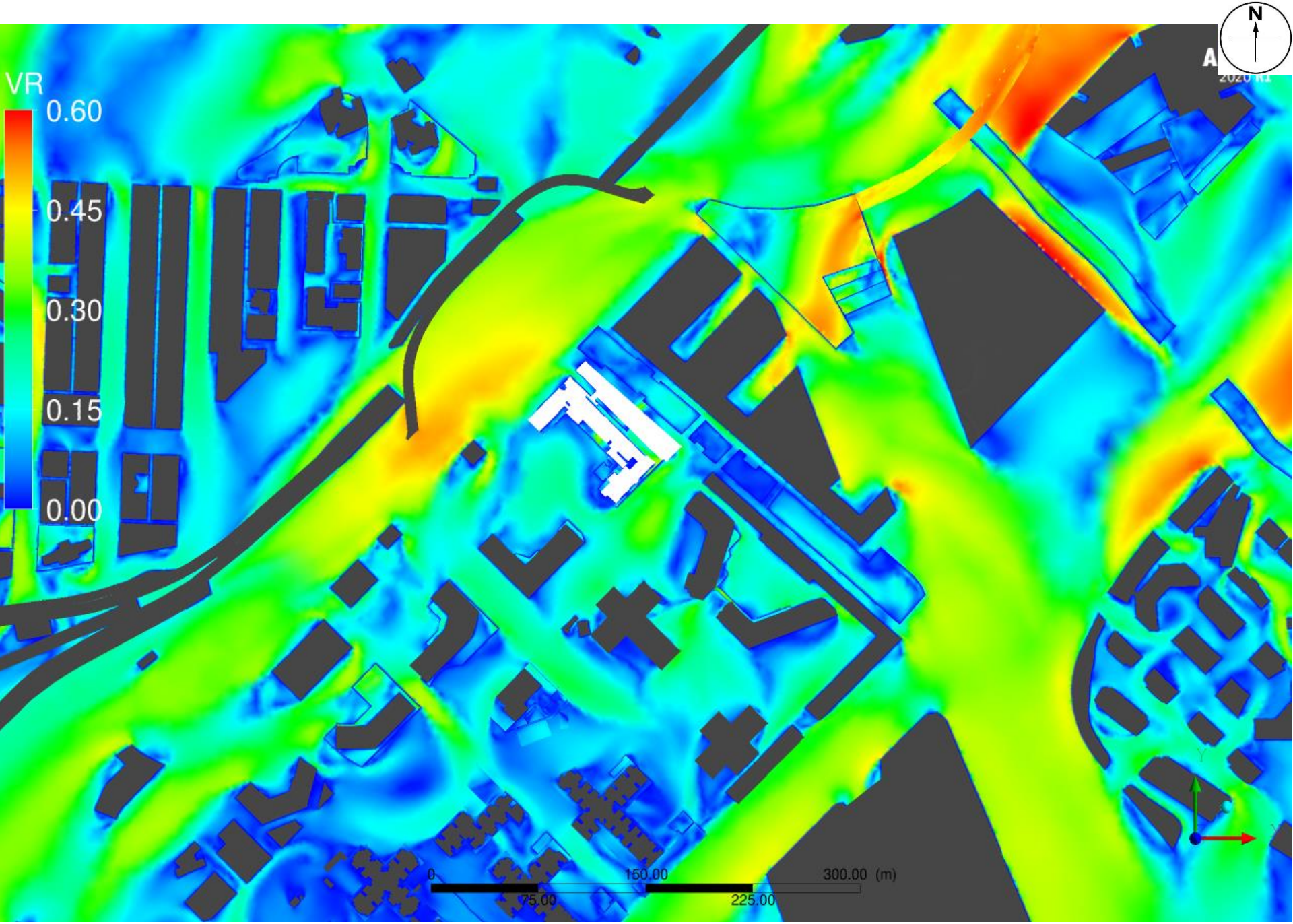
Baseline Scheme - Domain Contour plot at pedestrian level under SSW Wind



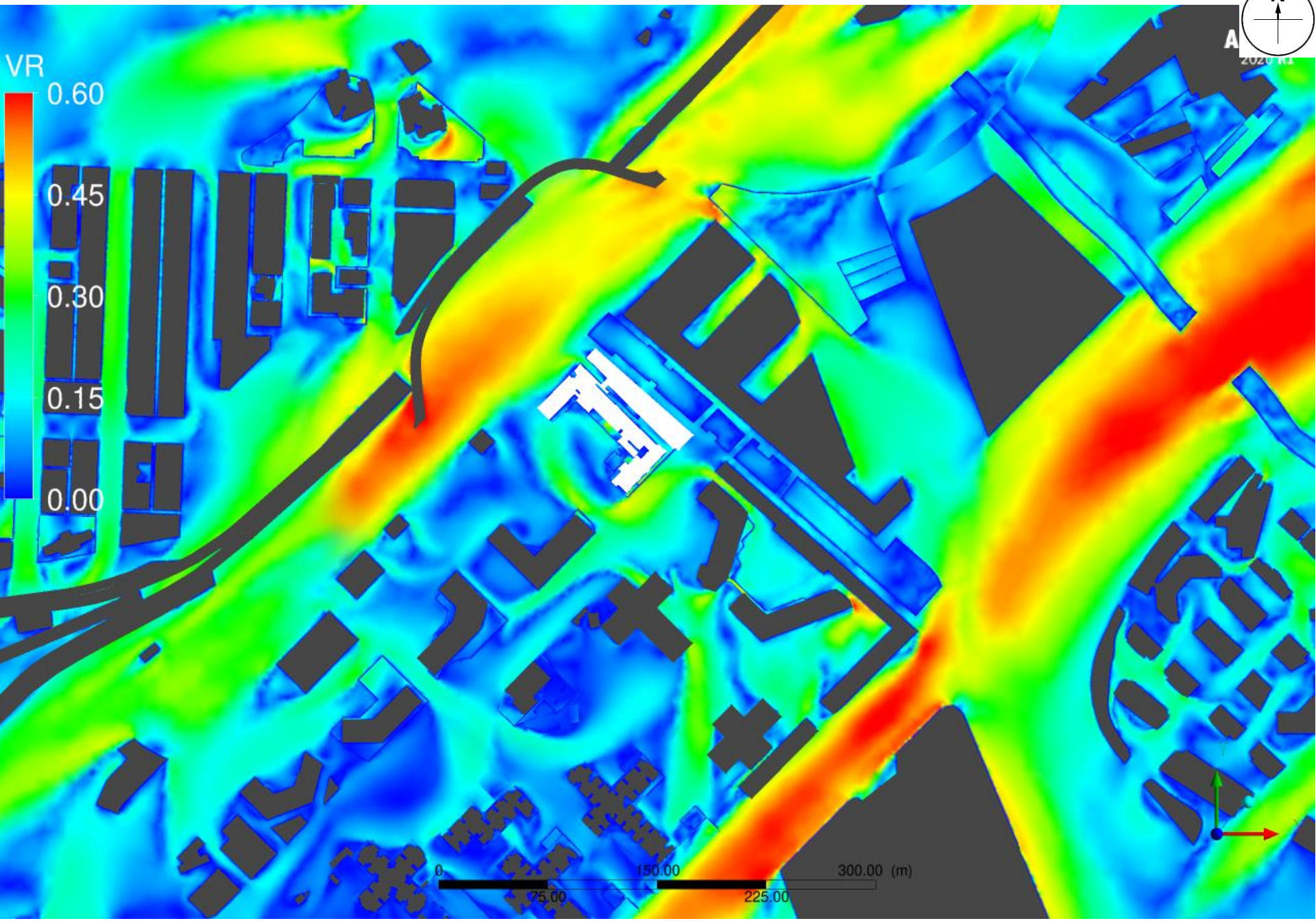
Baseline Scheme - Domain Contour plot at pedestrian level under SW Wind



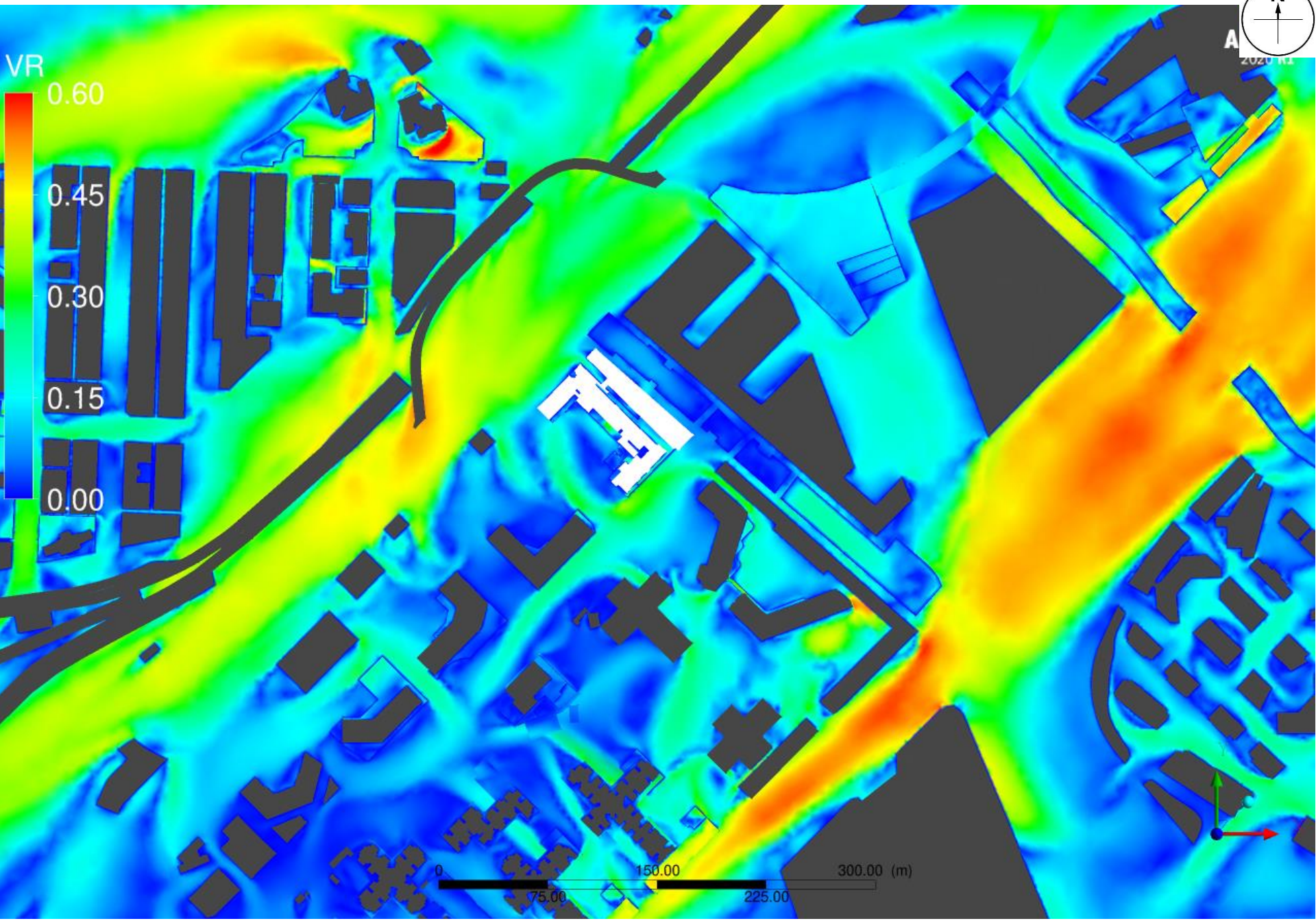
Baseline Scheme - Domain Contour plot at pedestrian level under WSW Wind



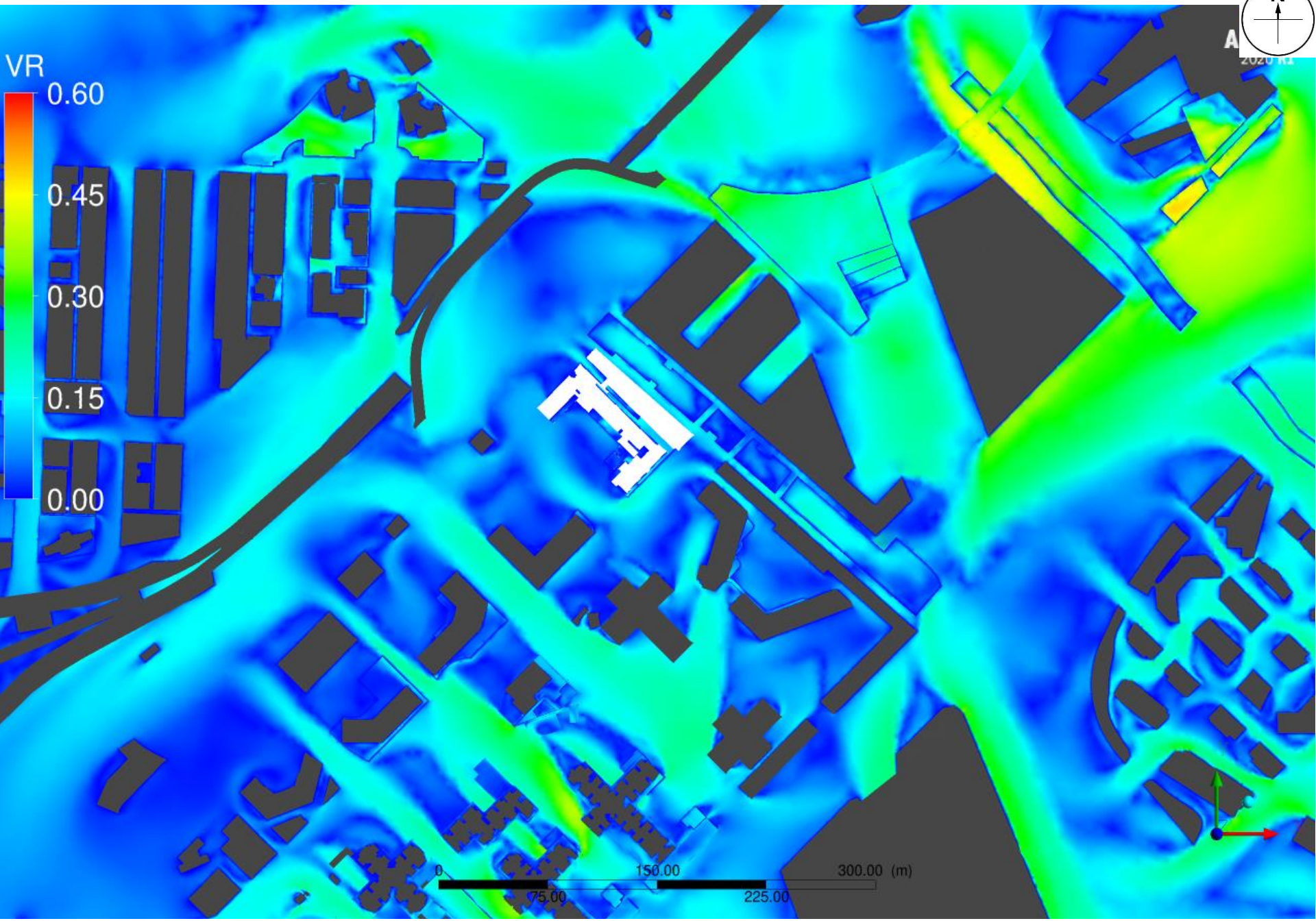
Proposed Scheme - Contour plot at pedestrian level under NNE Wind



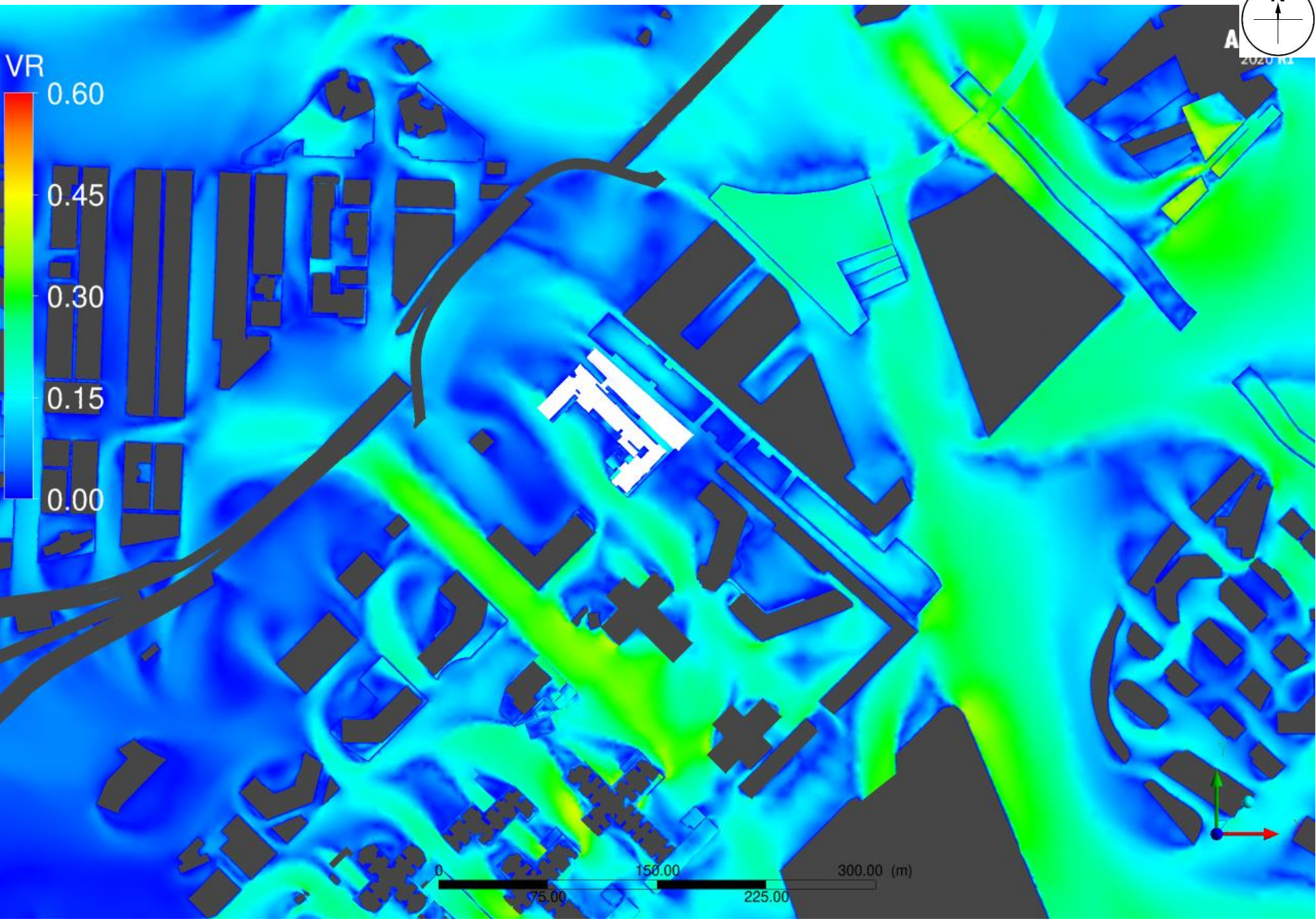
Proposed Scheme - Contour plot at pedestrian level under NE Wind



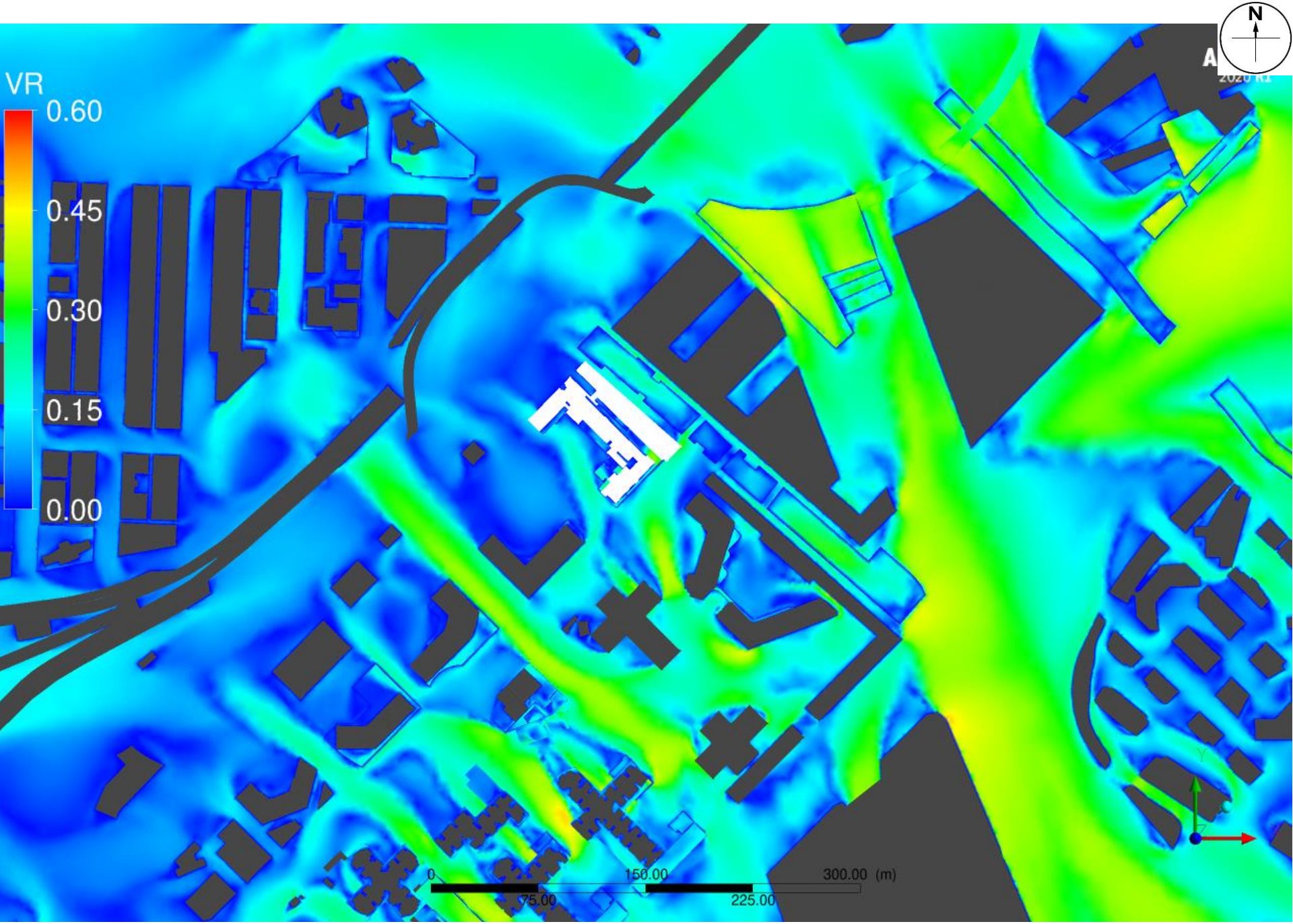
Proposed Scheme - Contour plot at pedestrian level under ENE Wind



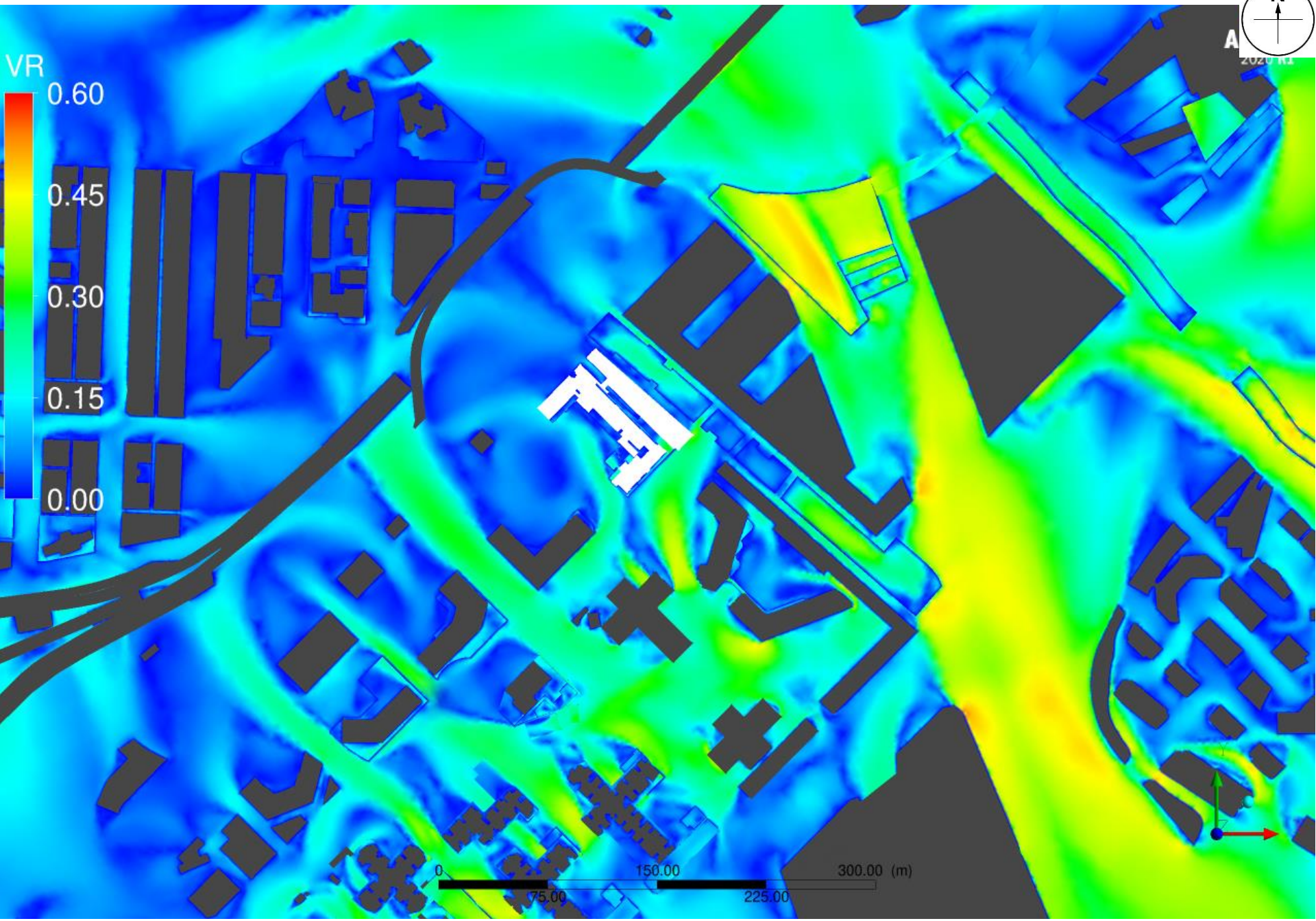
Proposed Scheme - Contour plot at pedestrian level under E Wind



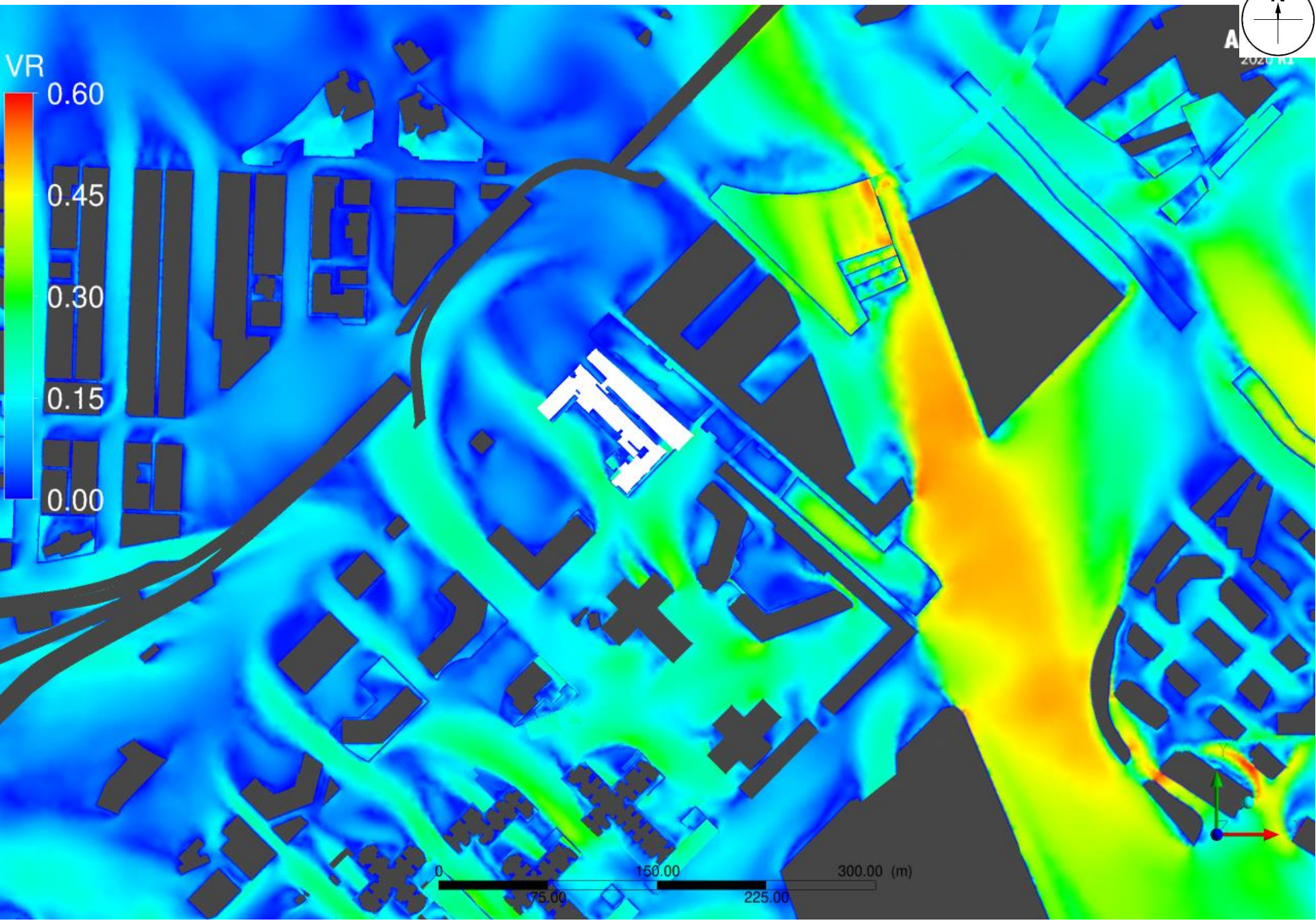
Proposed Scheme - Contour plot at pedestrian level under ESE Wind



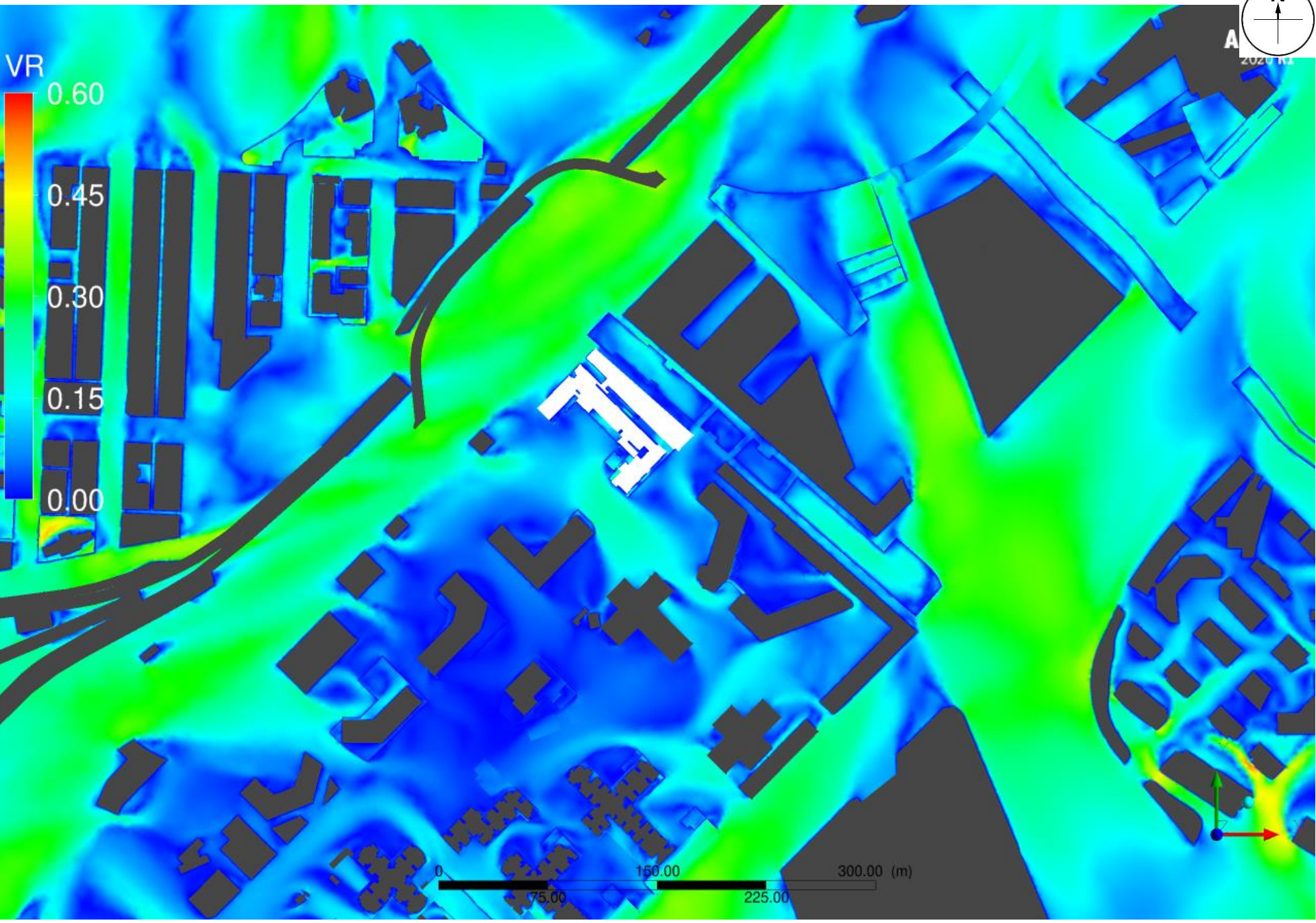
Proposed Scheme - Contour plot at pedestrian level under SE Wind



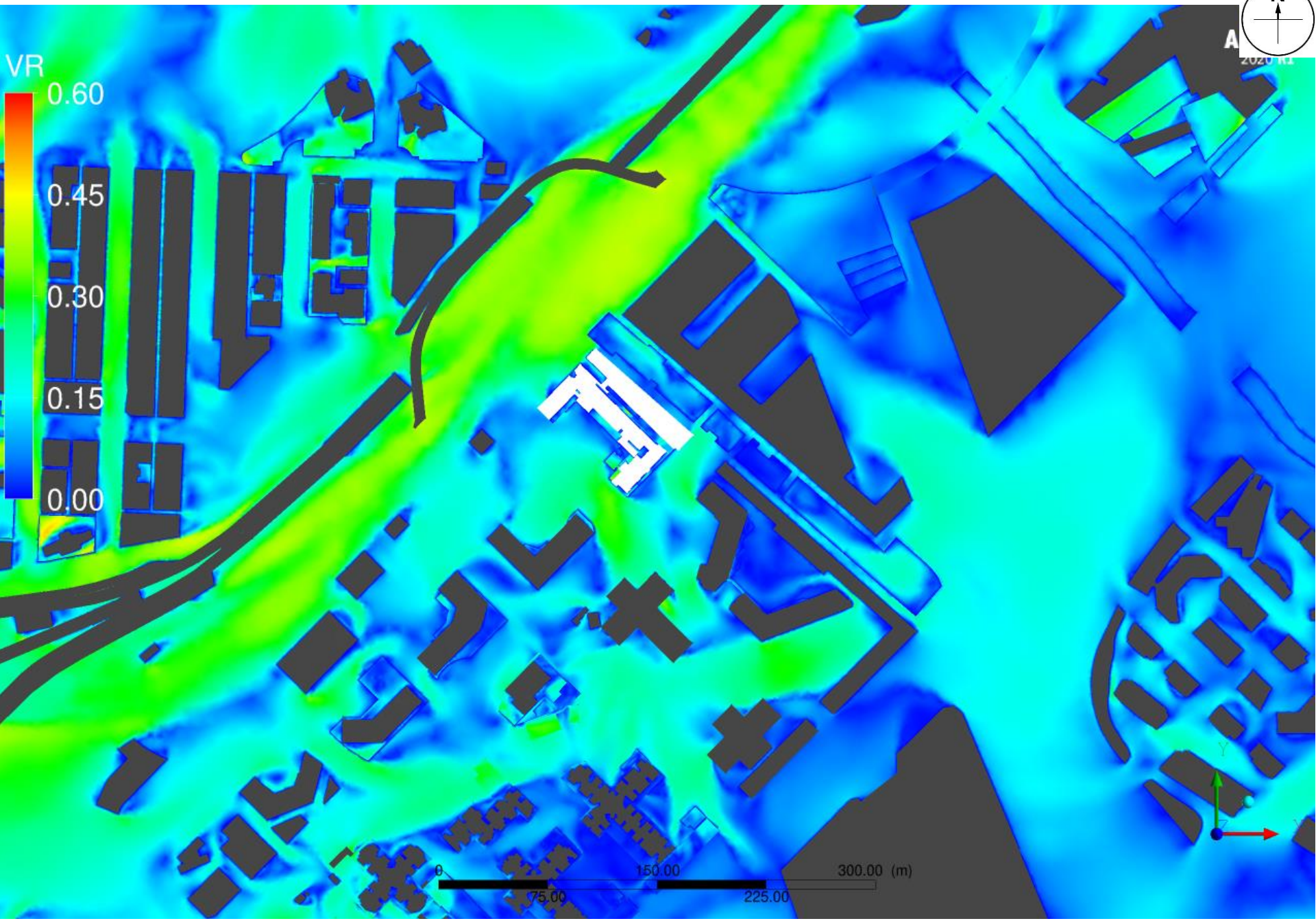
Proposed Scheme - Contour plot at pedestrian level under SSE Wind



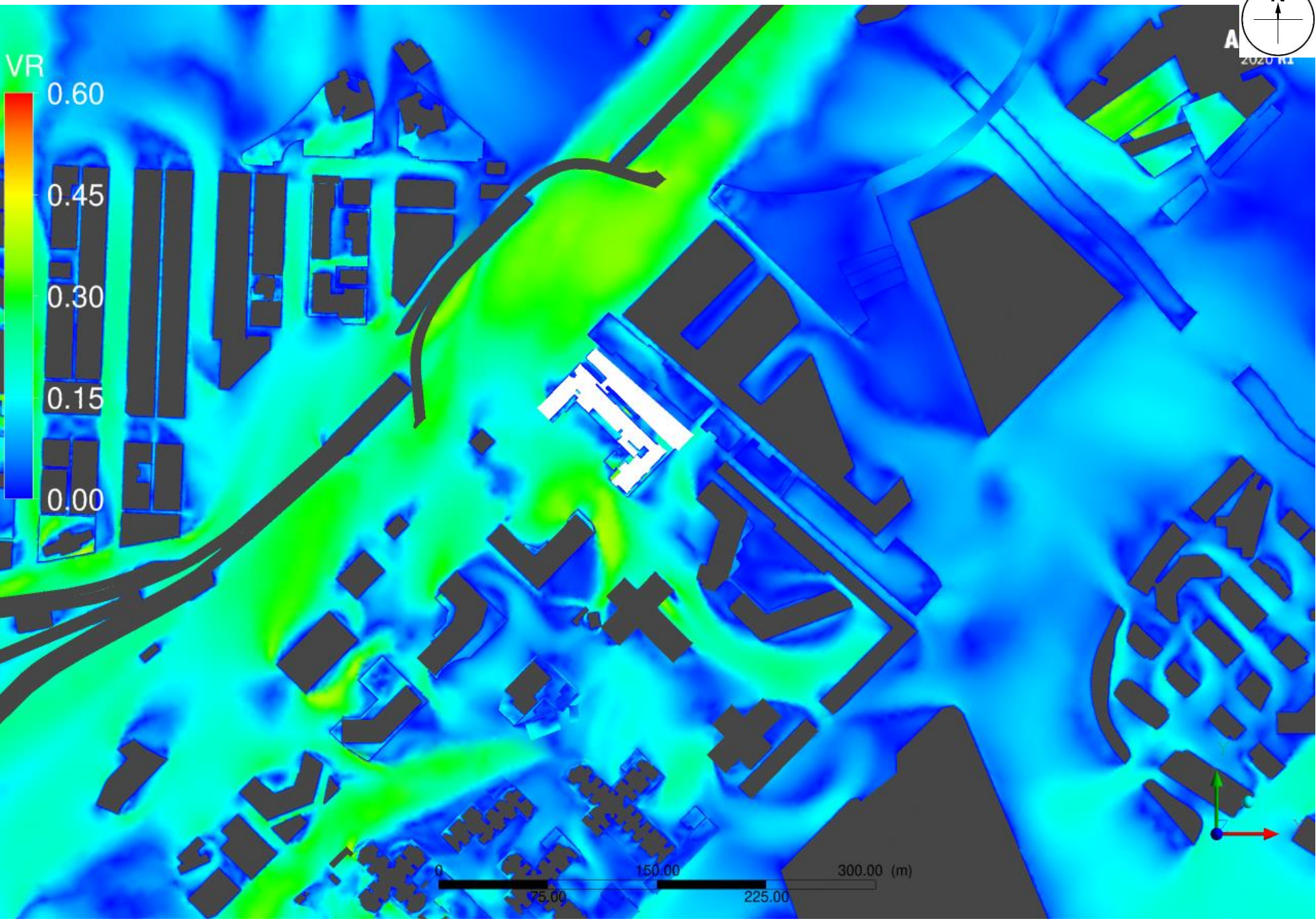
Proposed Scheme - Contour plot at pedestrian level under S Wind



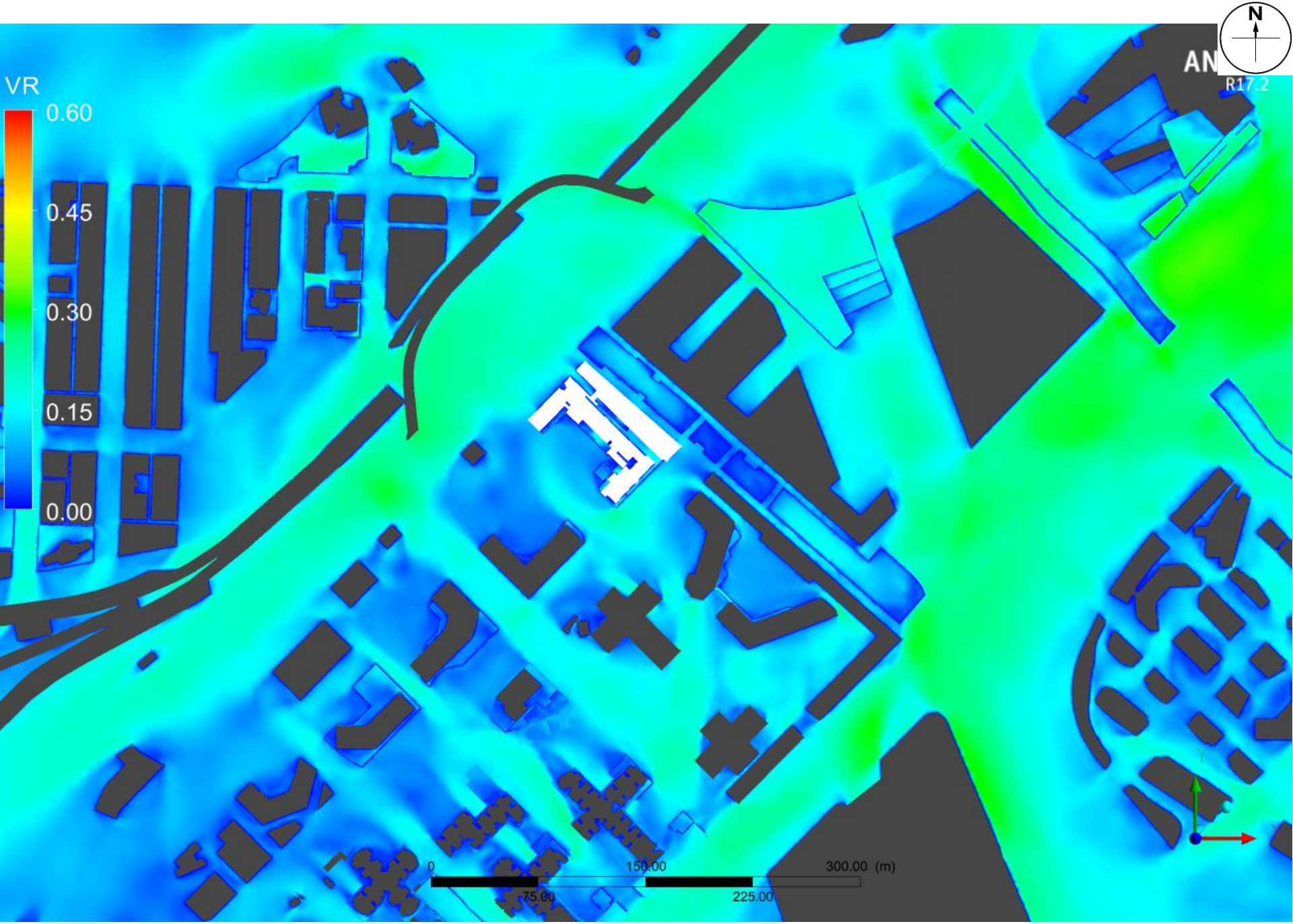
Proposed Scheme - Contour plot at pedestrian level under SSW Wind



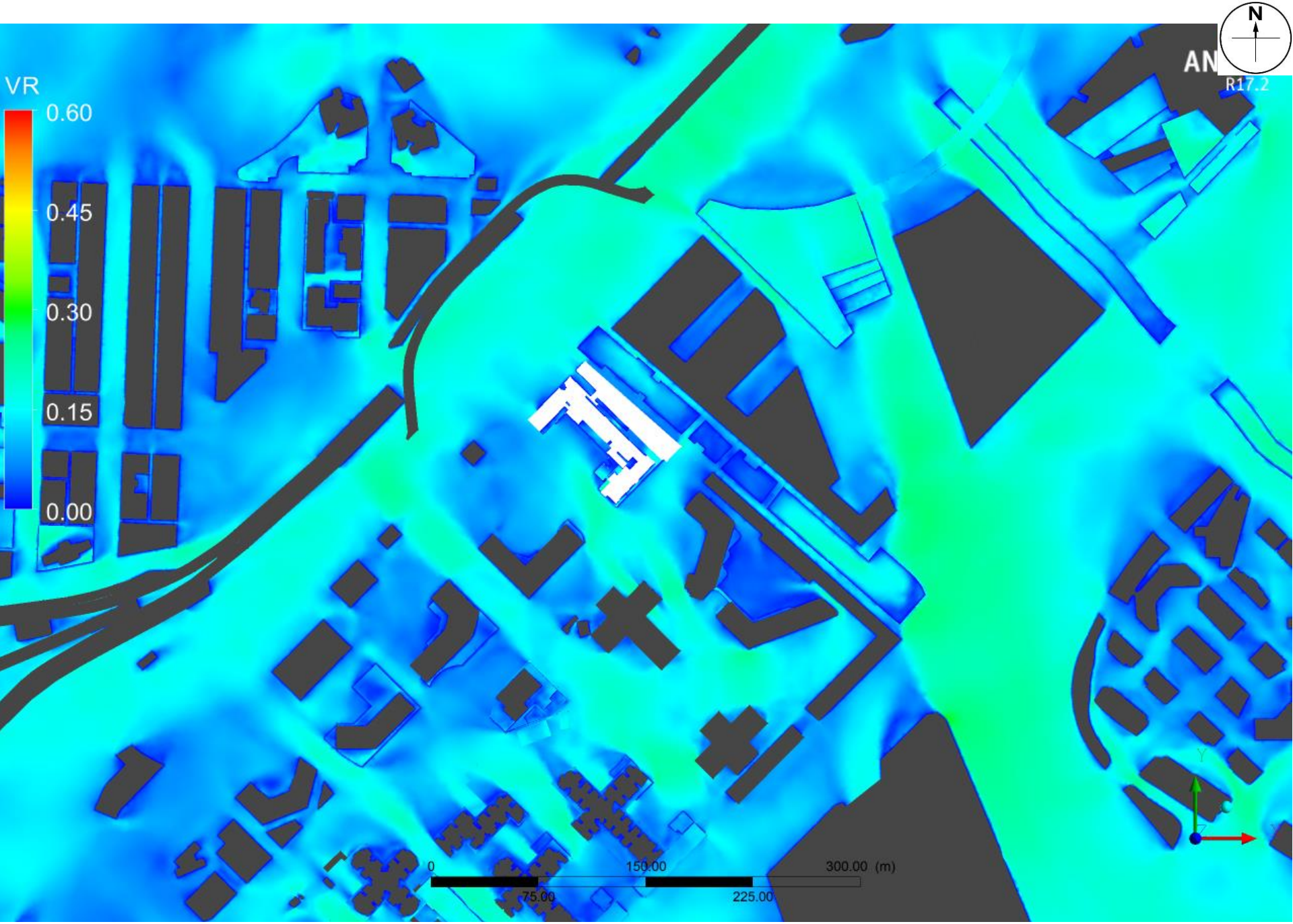
Proposed Scheme - Contour plot at pedestrian level under SW Wind



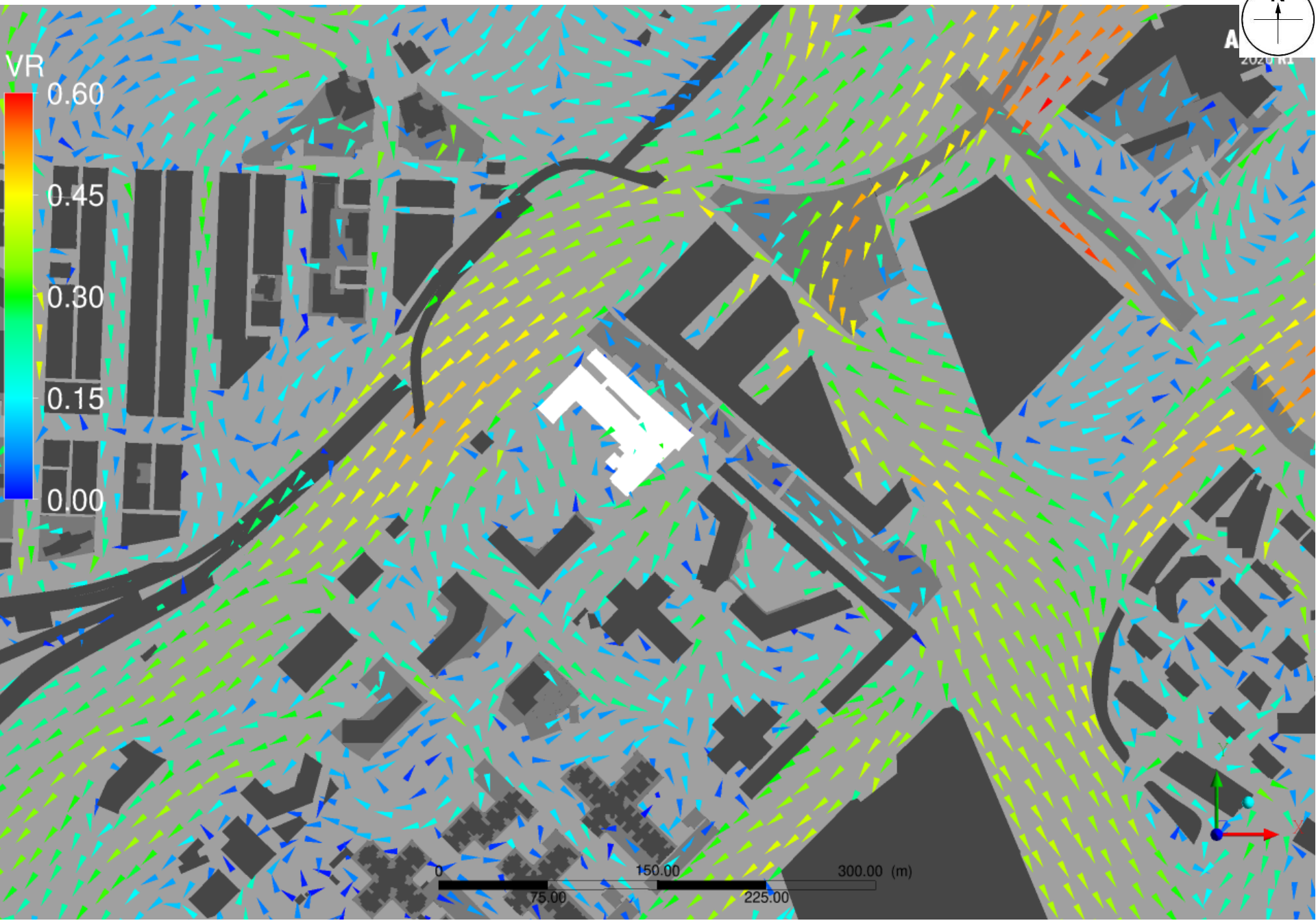
Proposed Scheme - Contour plot at pedestrian level under WSW Wind



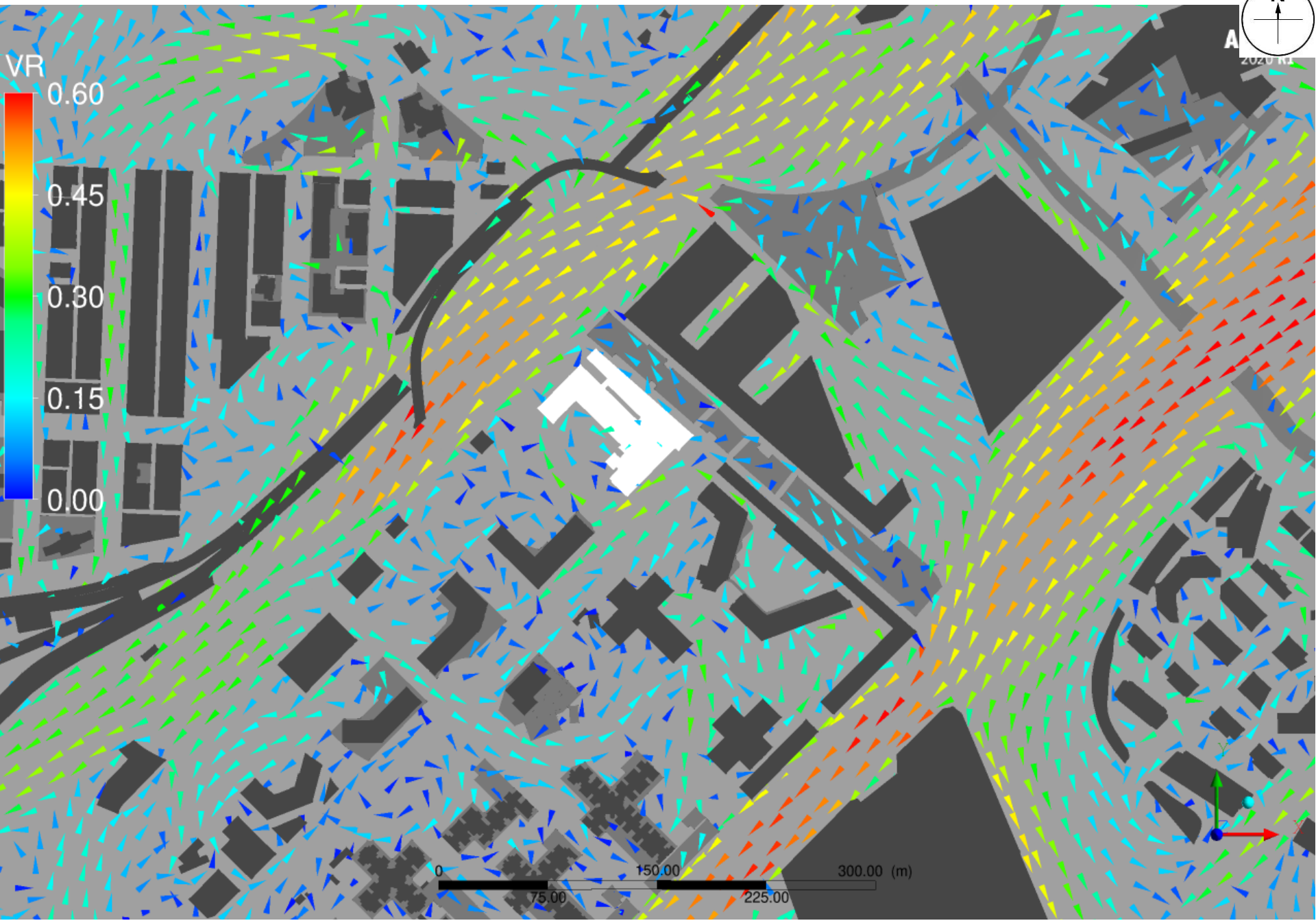
Proposed Scheme – Annual weighted wind speed colour at pedestrian level



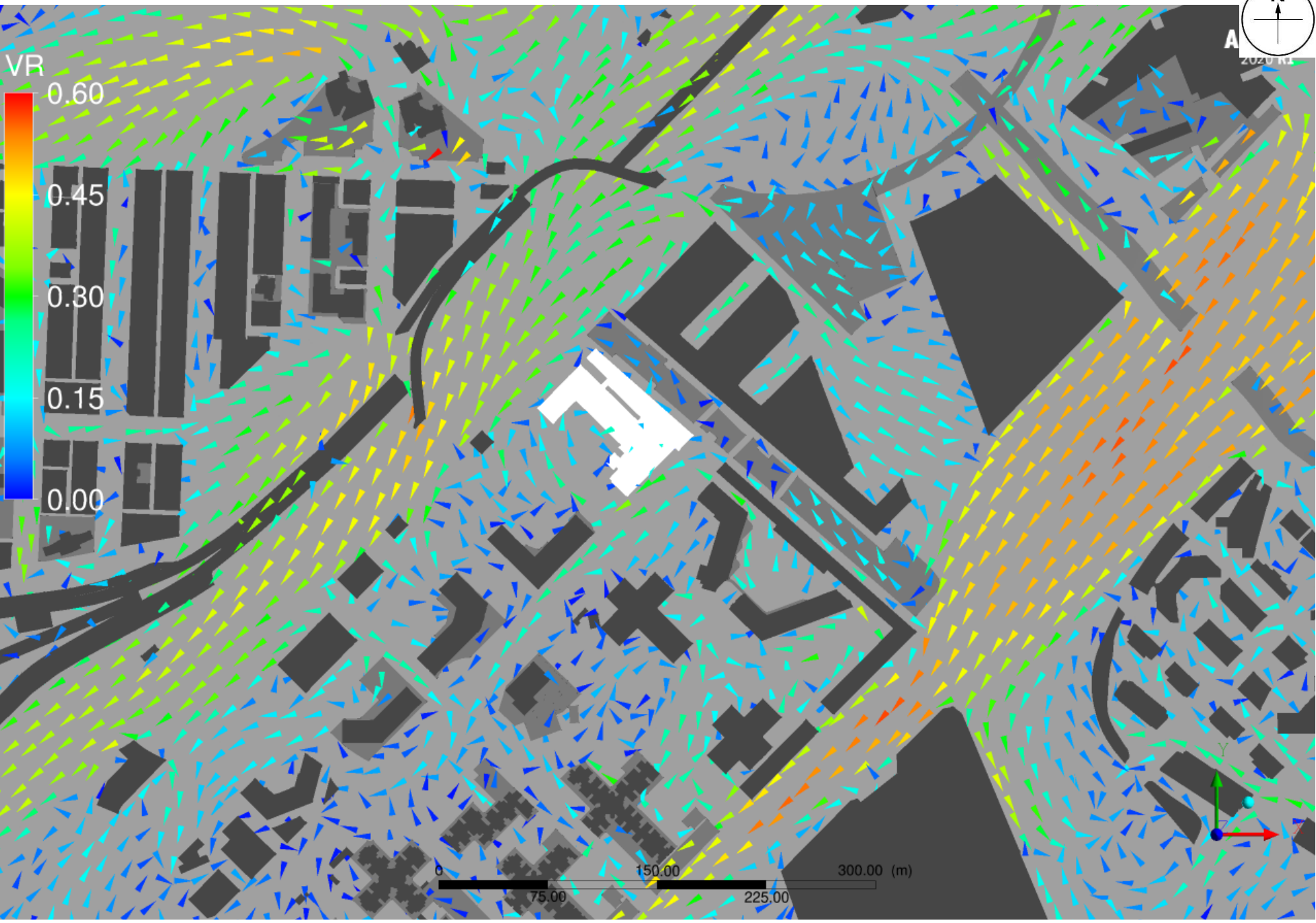
Proposed Scheme – Summer weighted wind speed colour at pedestrian level



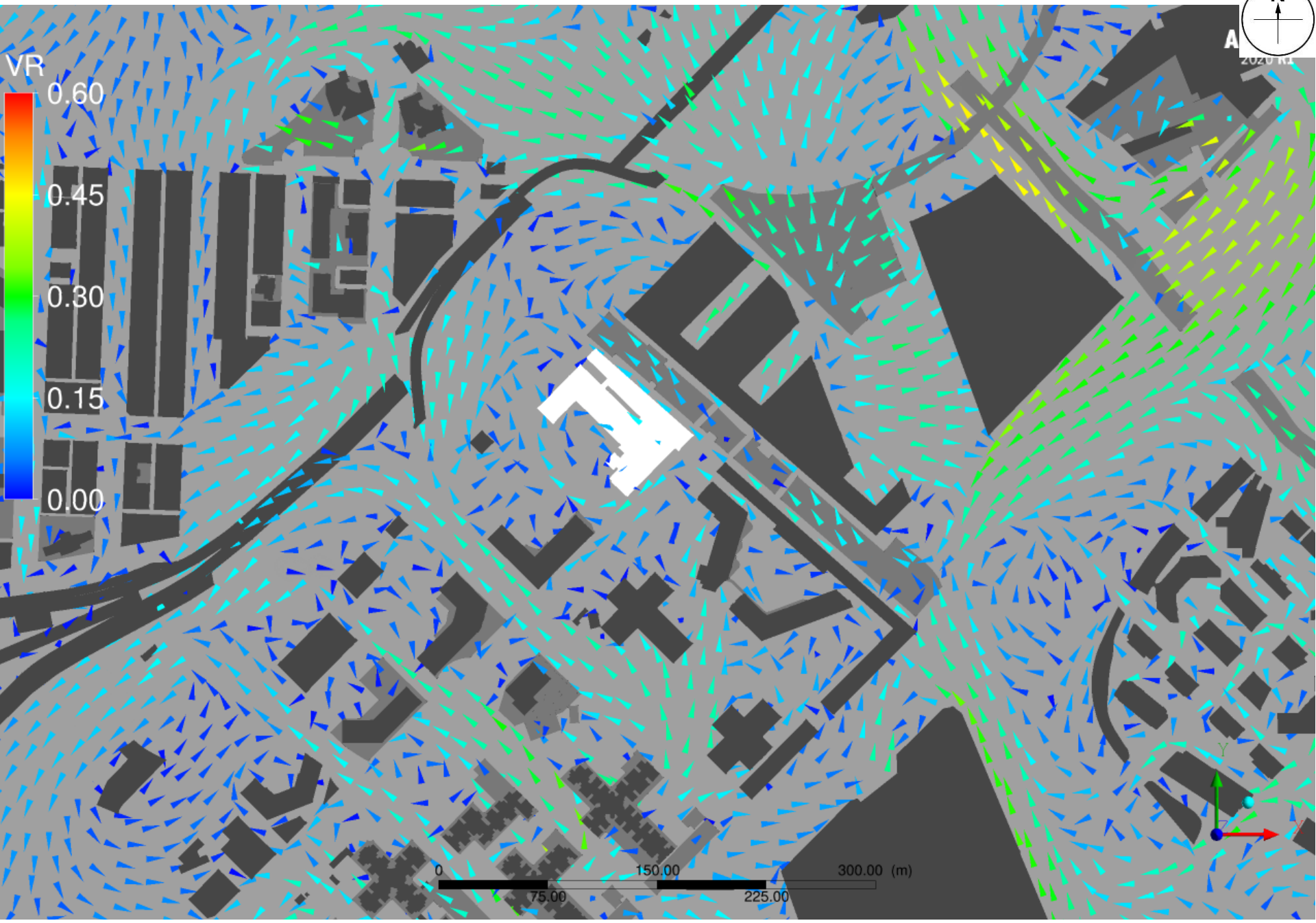
Proposed Scheme – Vector plot at pedestrian level under NNE Wind



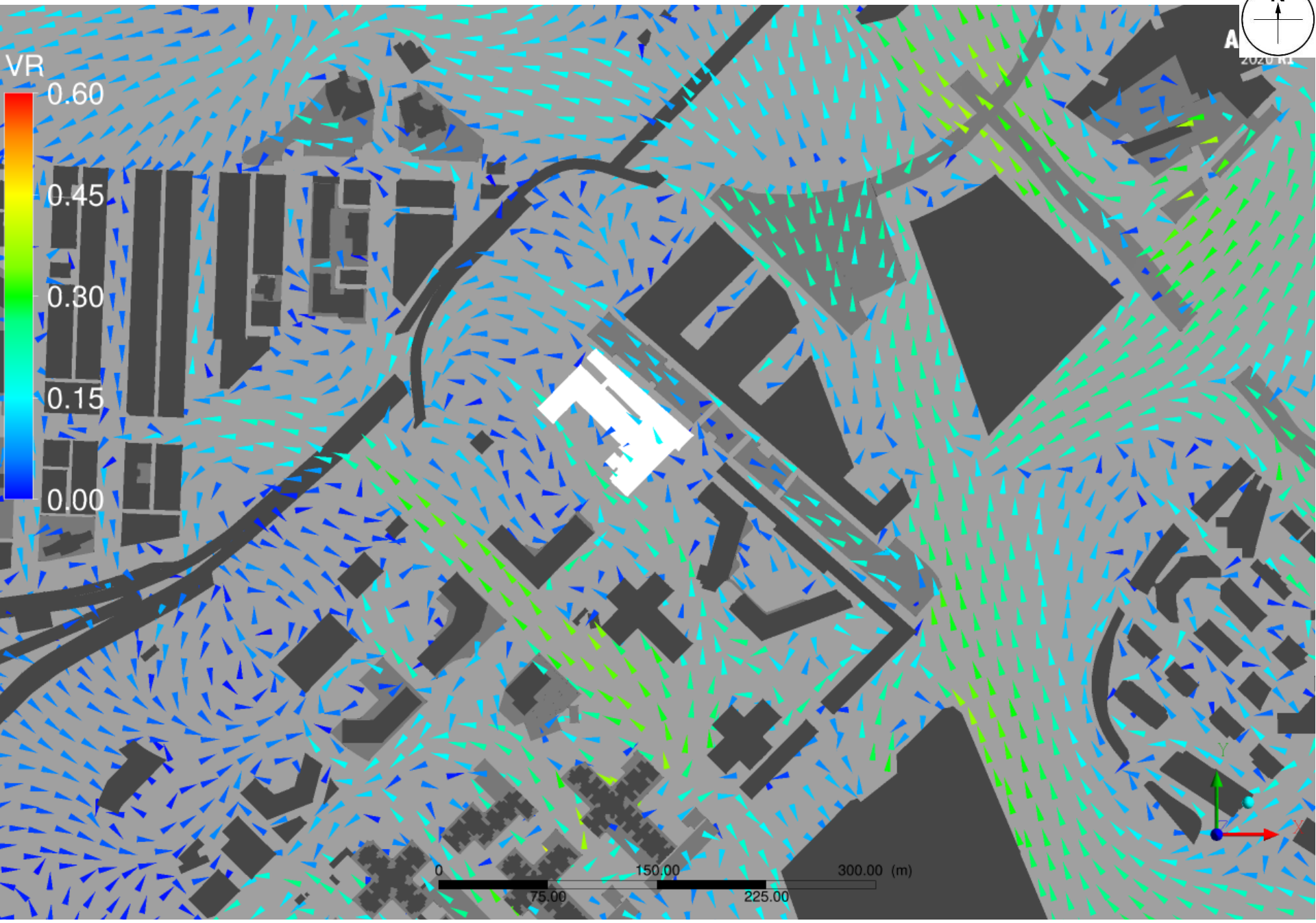
Proposed Scheme – Vector plot at pedestrian level under NE Wind



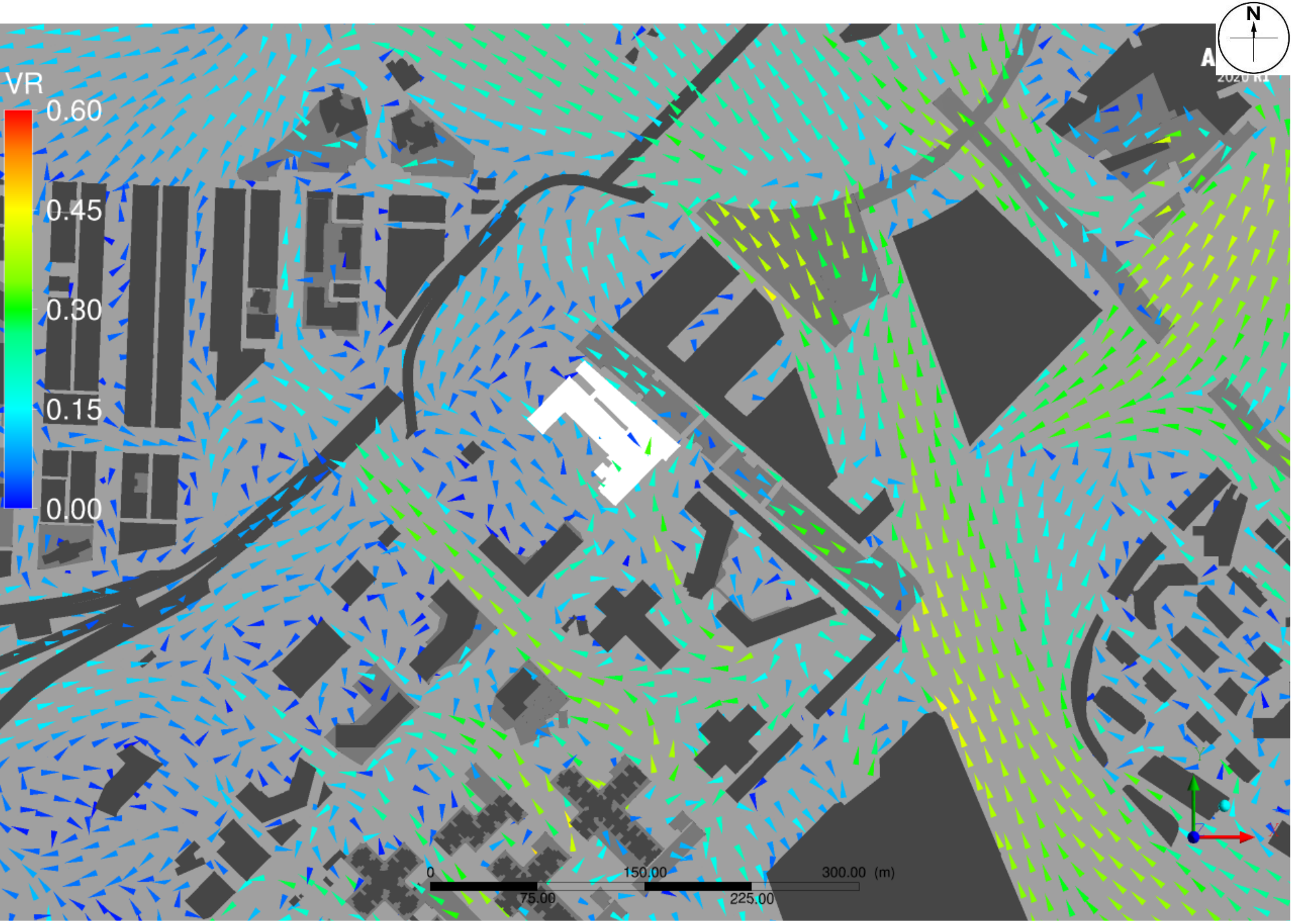
Proposed Scheme – Vector plot at pedestrian level under ENE Wind



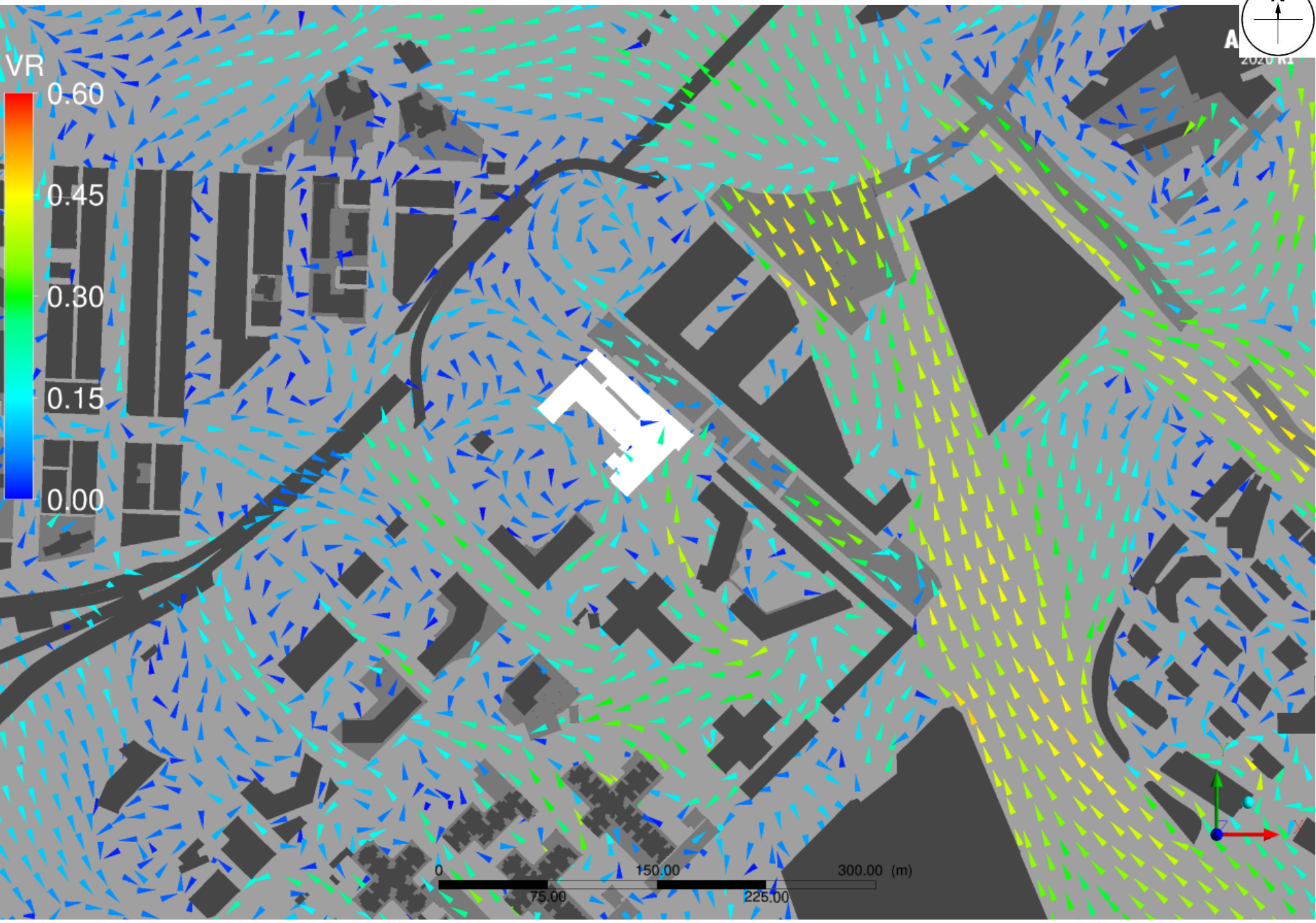
Proposed Scheme – Vector plot at pedestrian level under E Wind



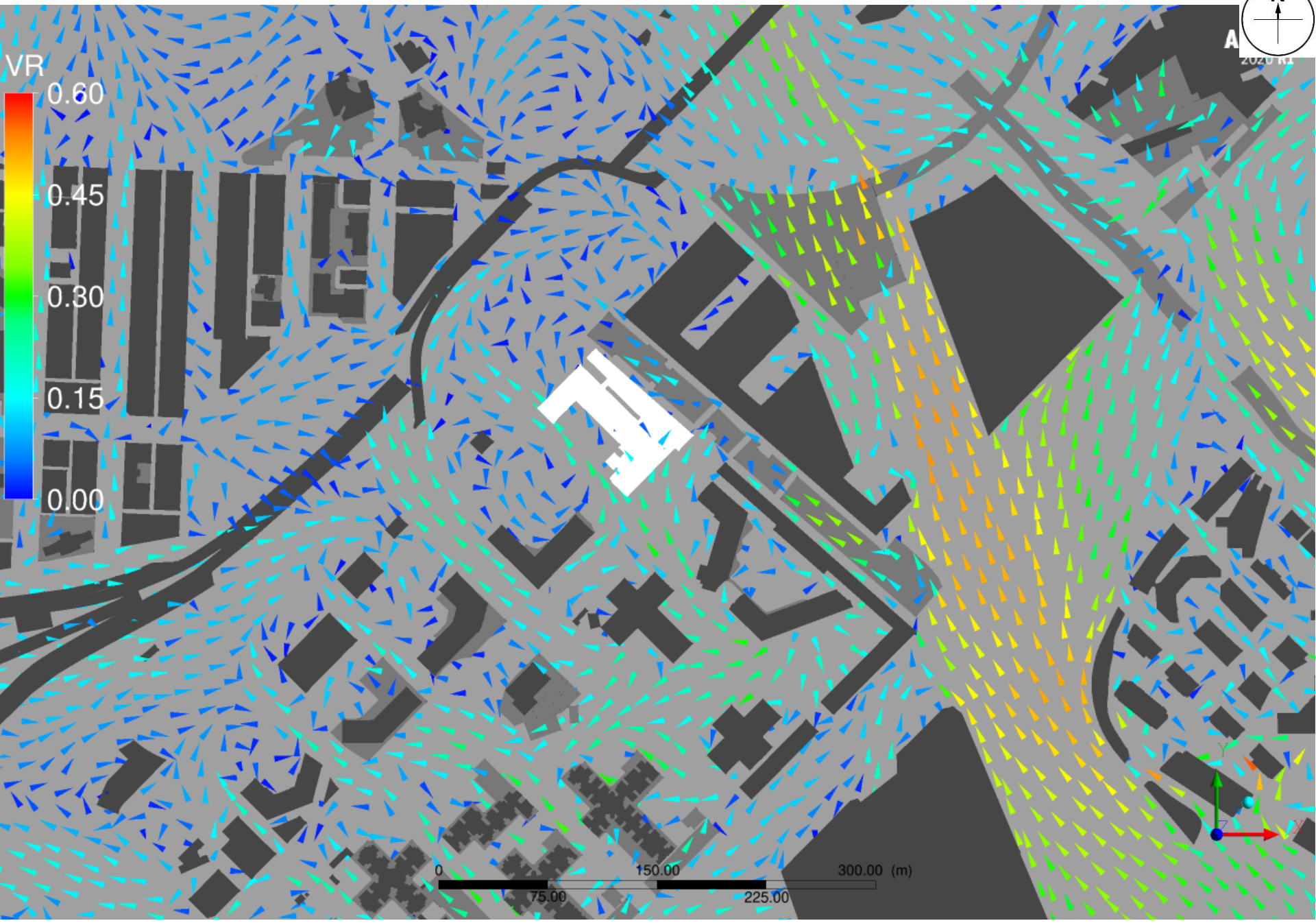
Proposed Scheme – Vector plot at pedestrian level under ESE Wind



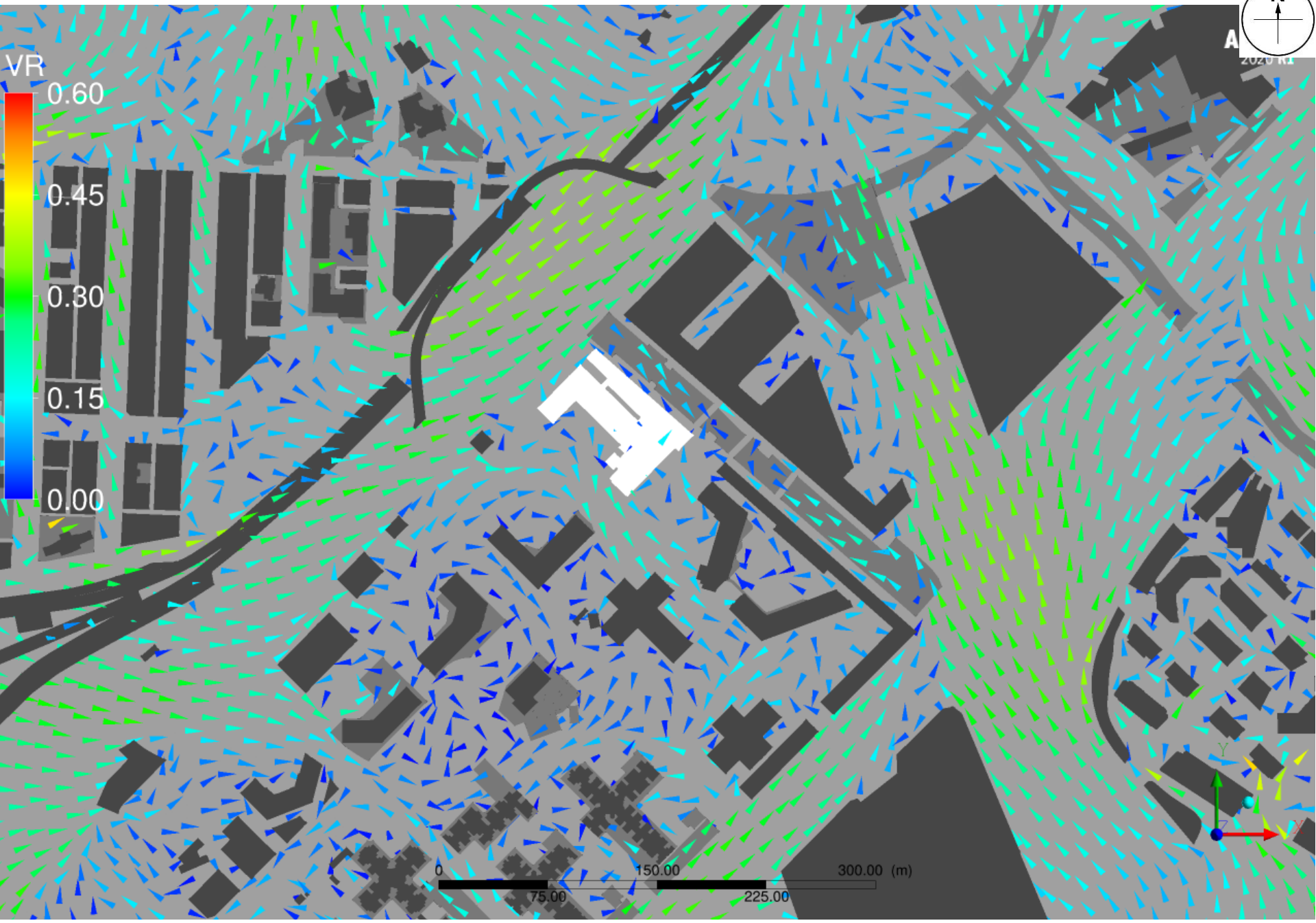
Proposed Scheme – Vector plot at pedestrian level under SE Wind



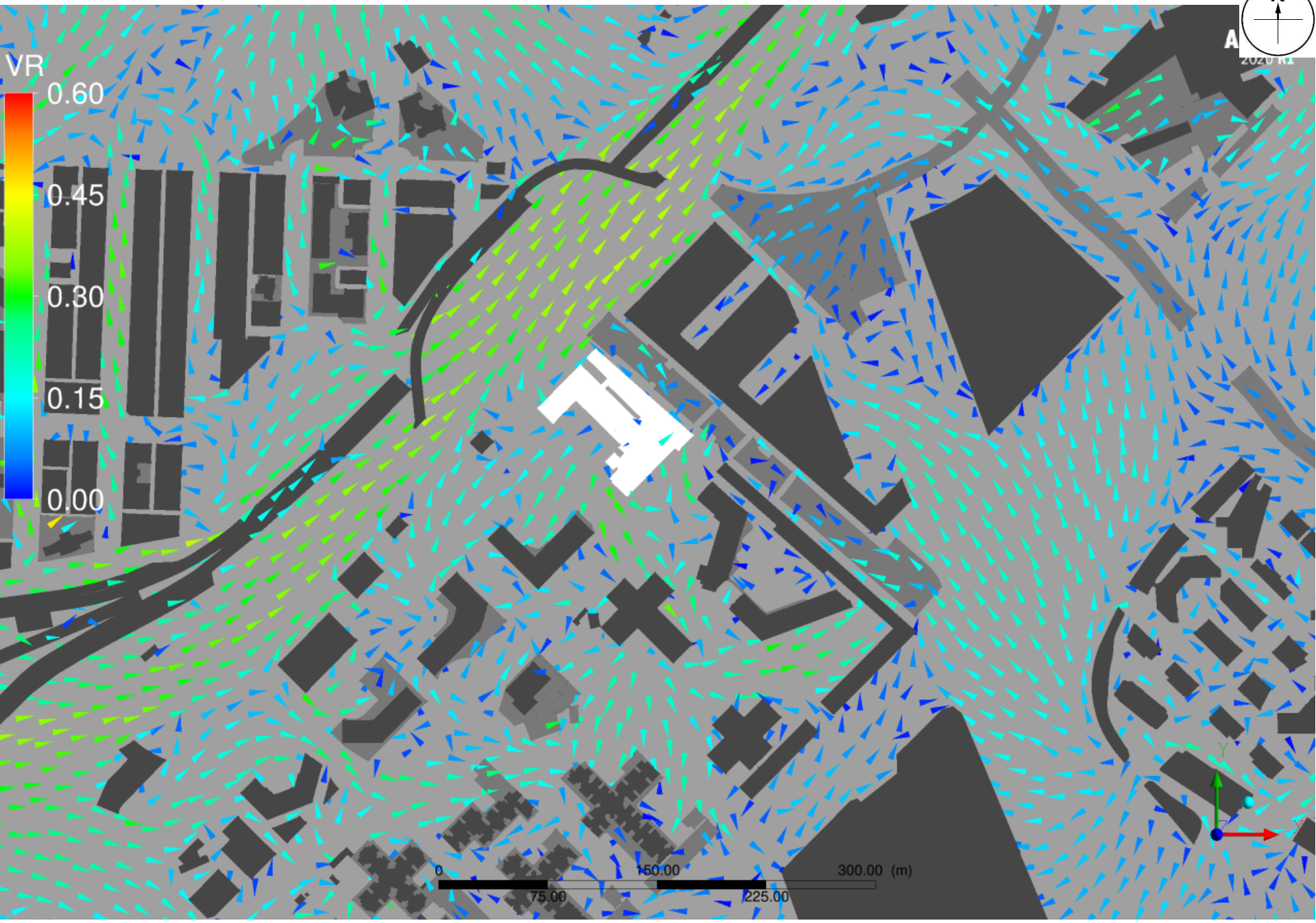
Proposed Scheme – Vector plot at pedestrian level under SSE Wind



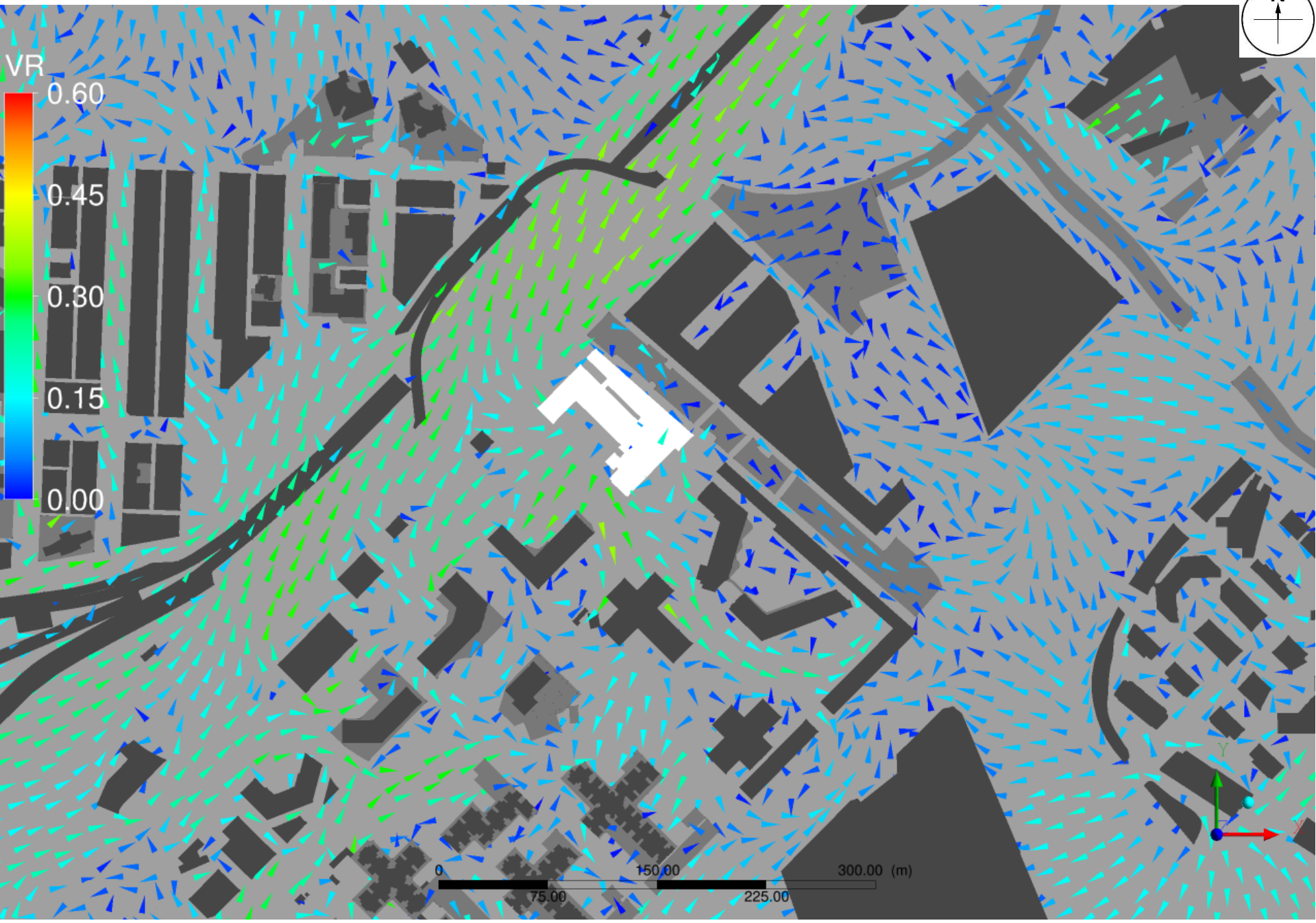
Proposed Scheme – Vector plot at pedestrian level under S Wind



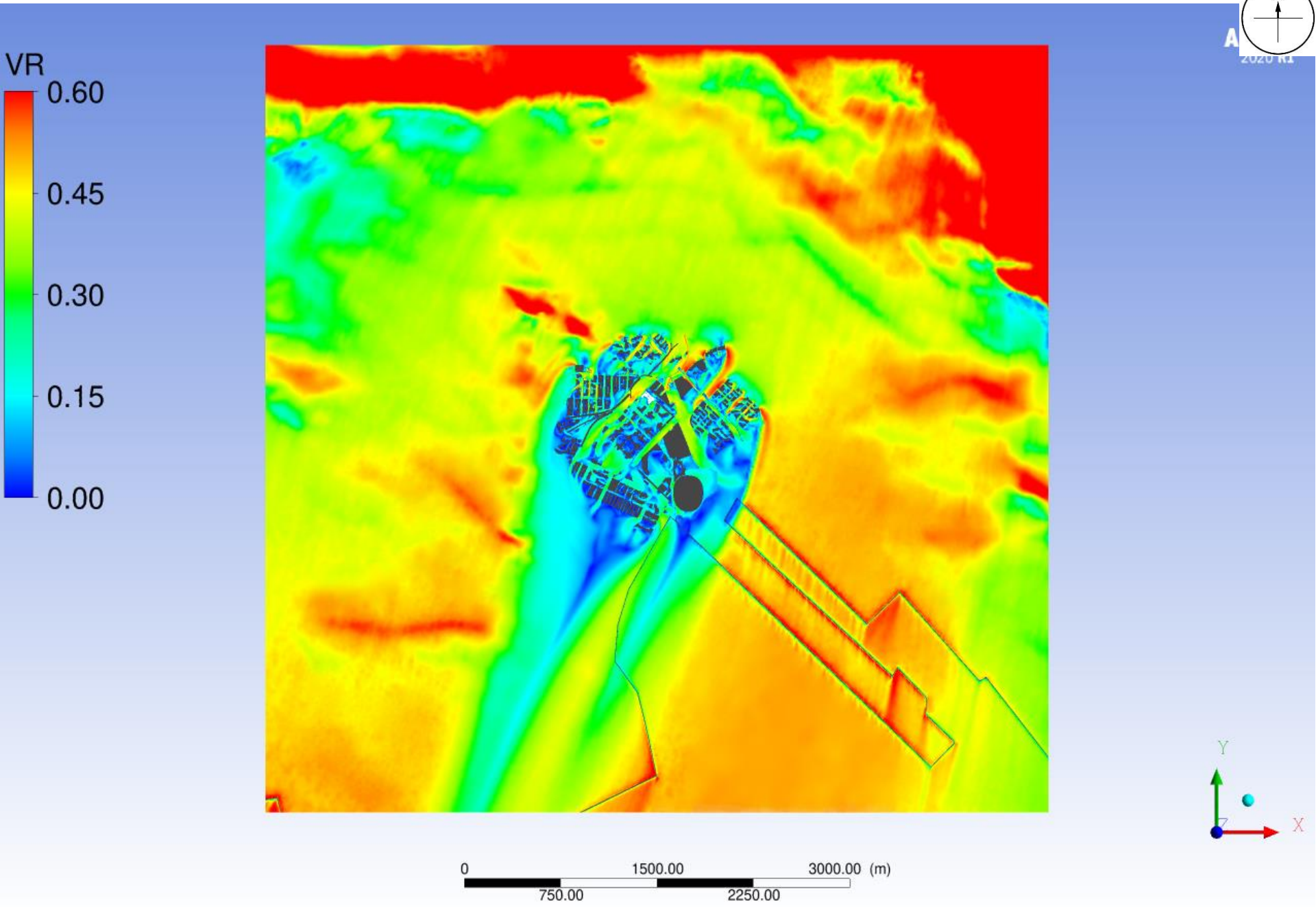
Proposed Scheme – Vector plot at pedestrian level under SSW Wind



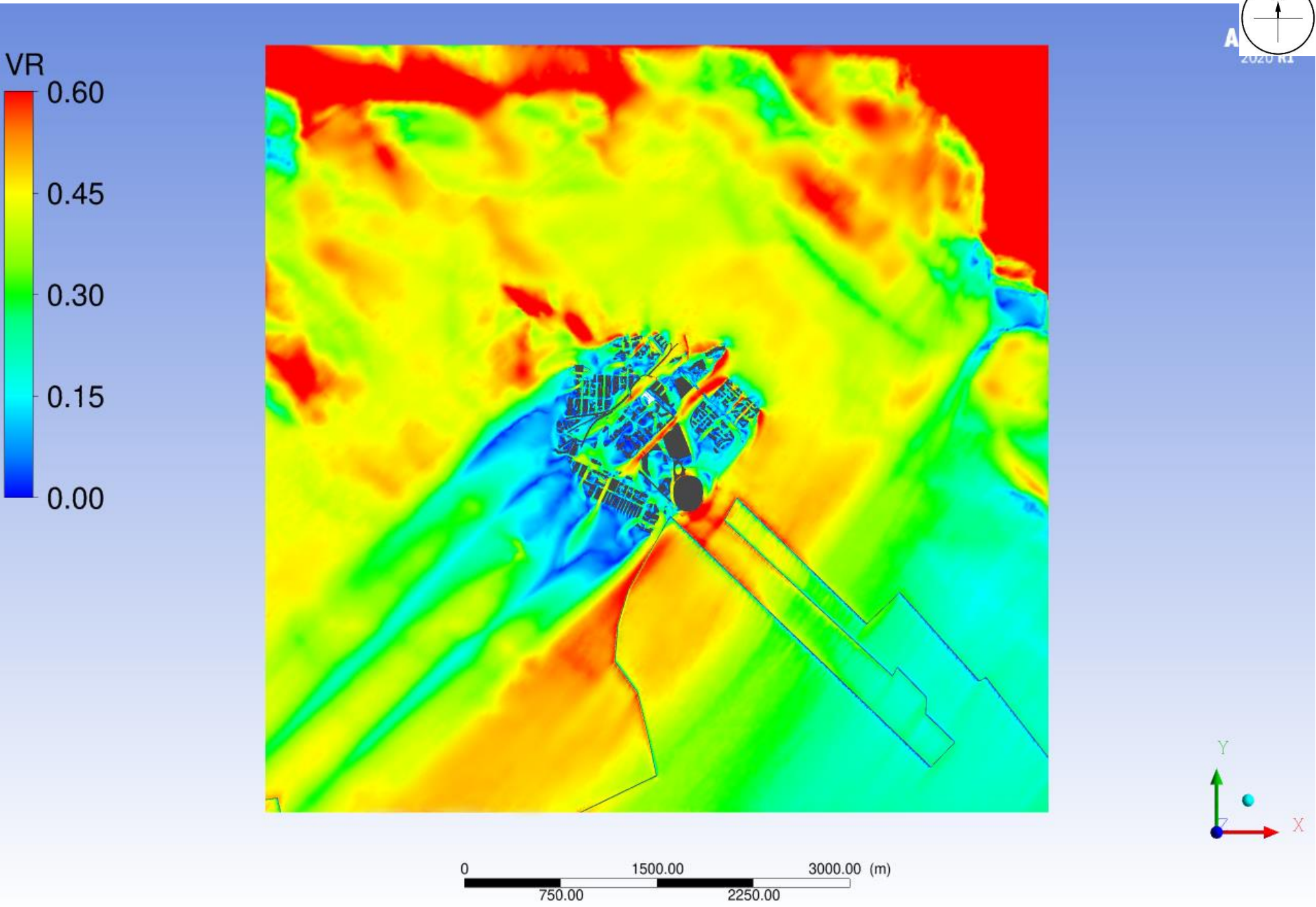
Proposed Scheme – Vector plot at pedestrian level under SW Wind



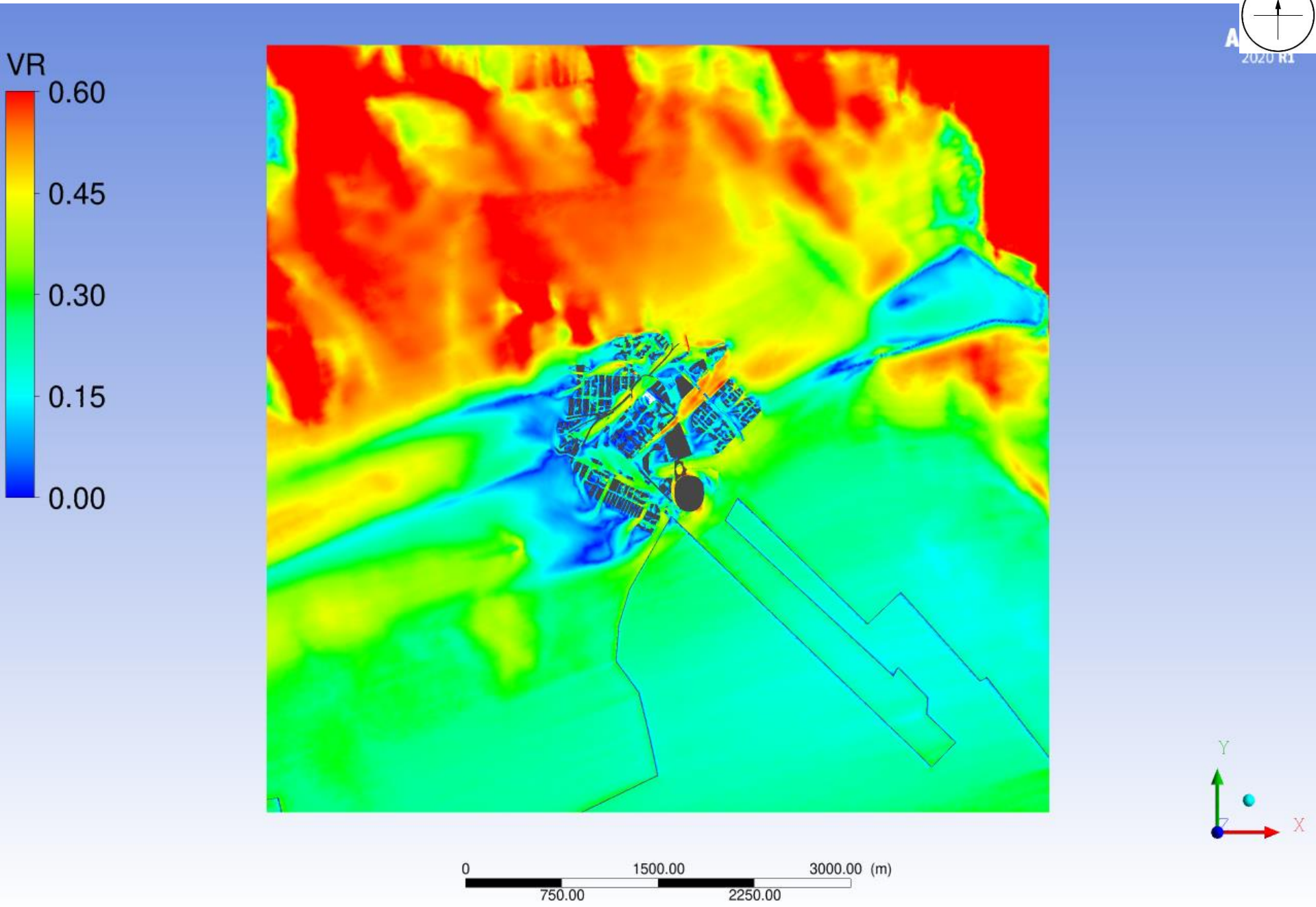
Proposed Scheme – Vector plot at pedestrian level under WSW Wind



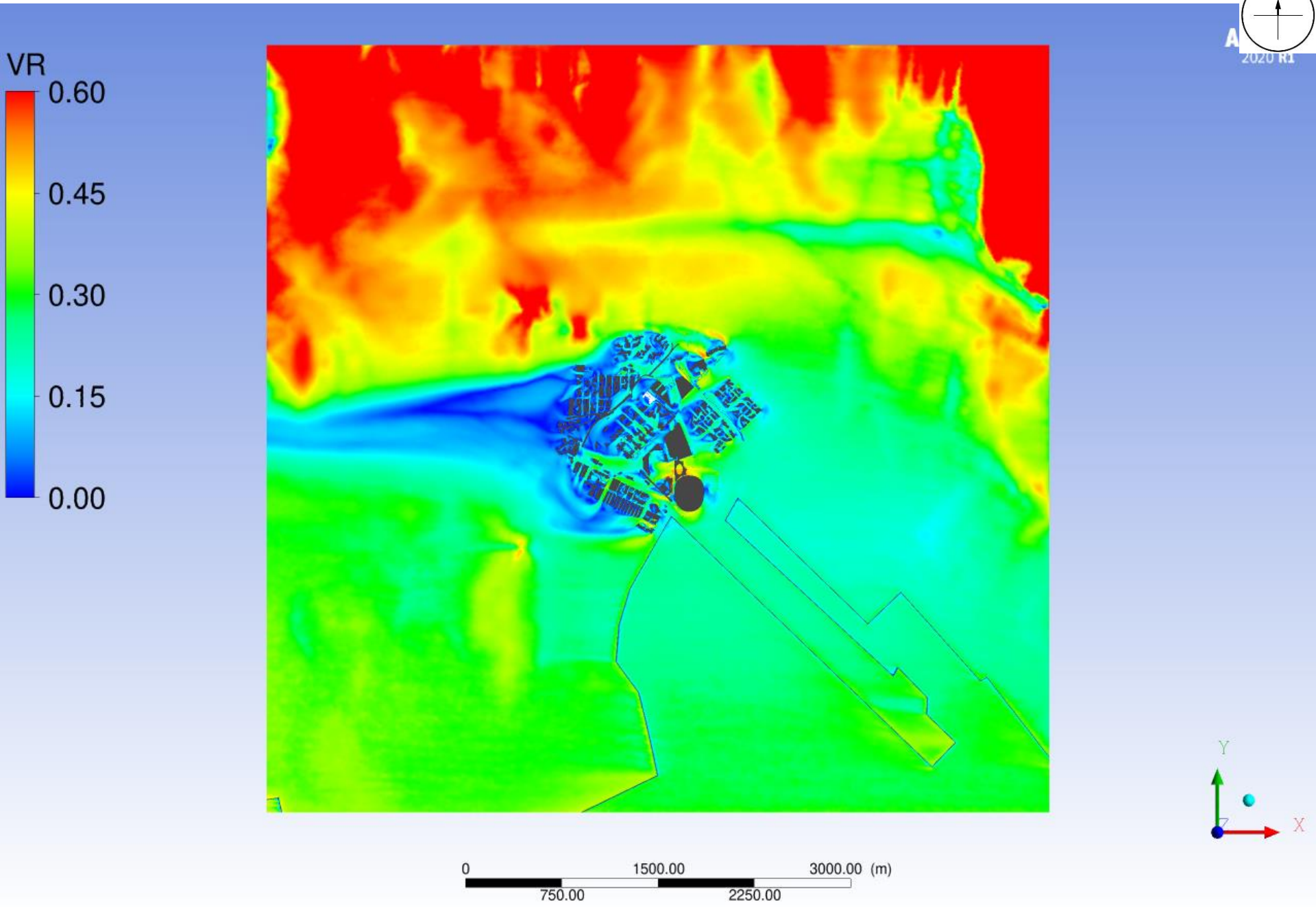
Proposed Scheme - Domain Contour plot at pedestrian level under NNE Wind



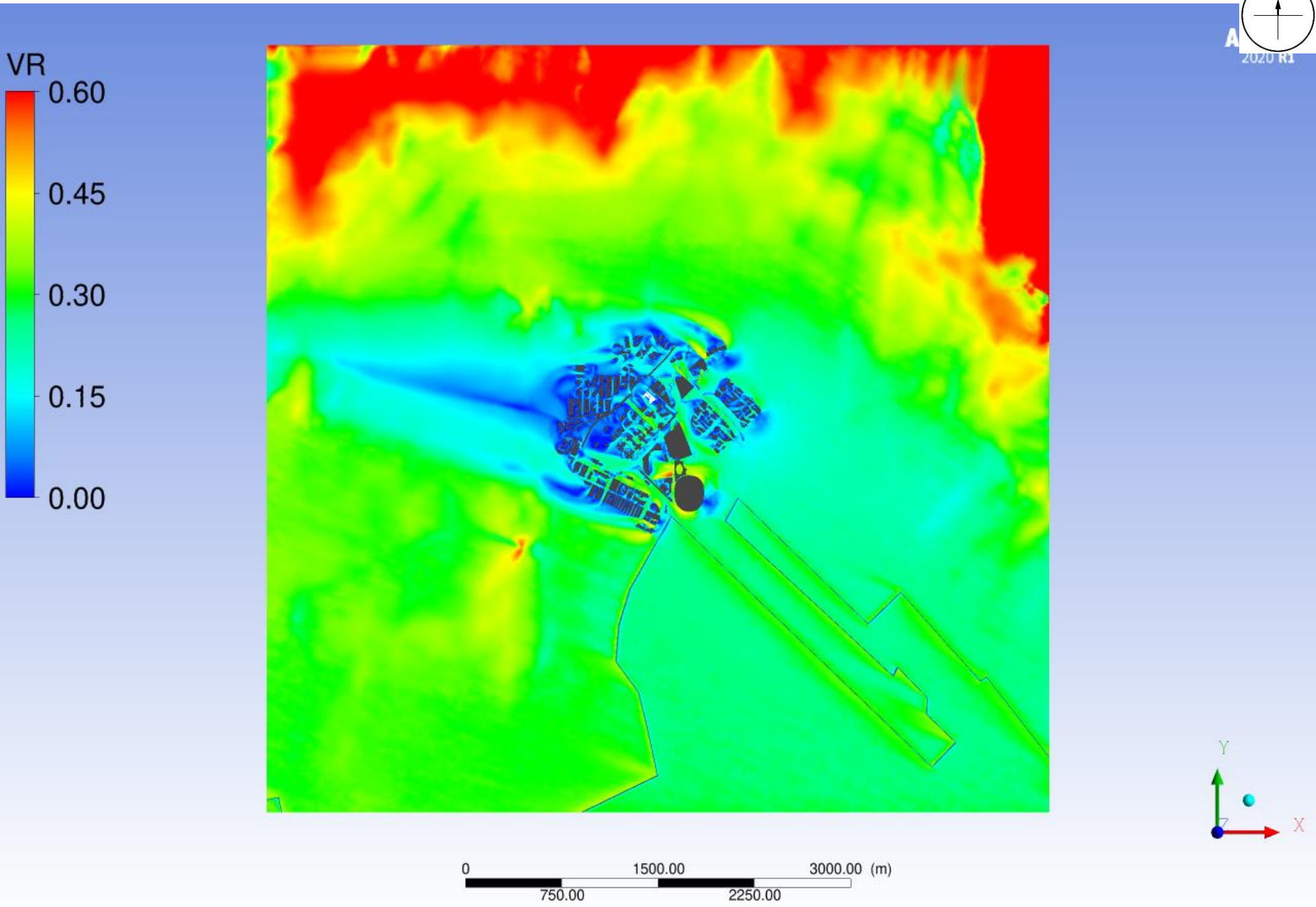
Proposed Scheme - Domain Contour plot at pedestrian level under NE Wind



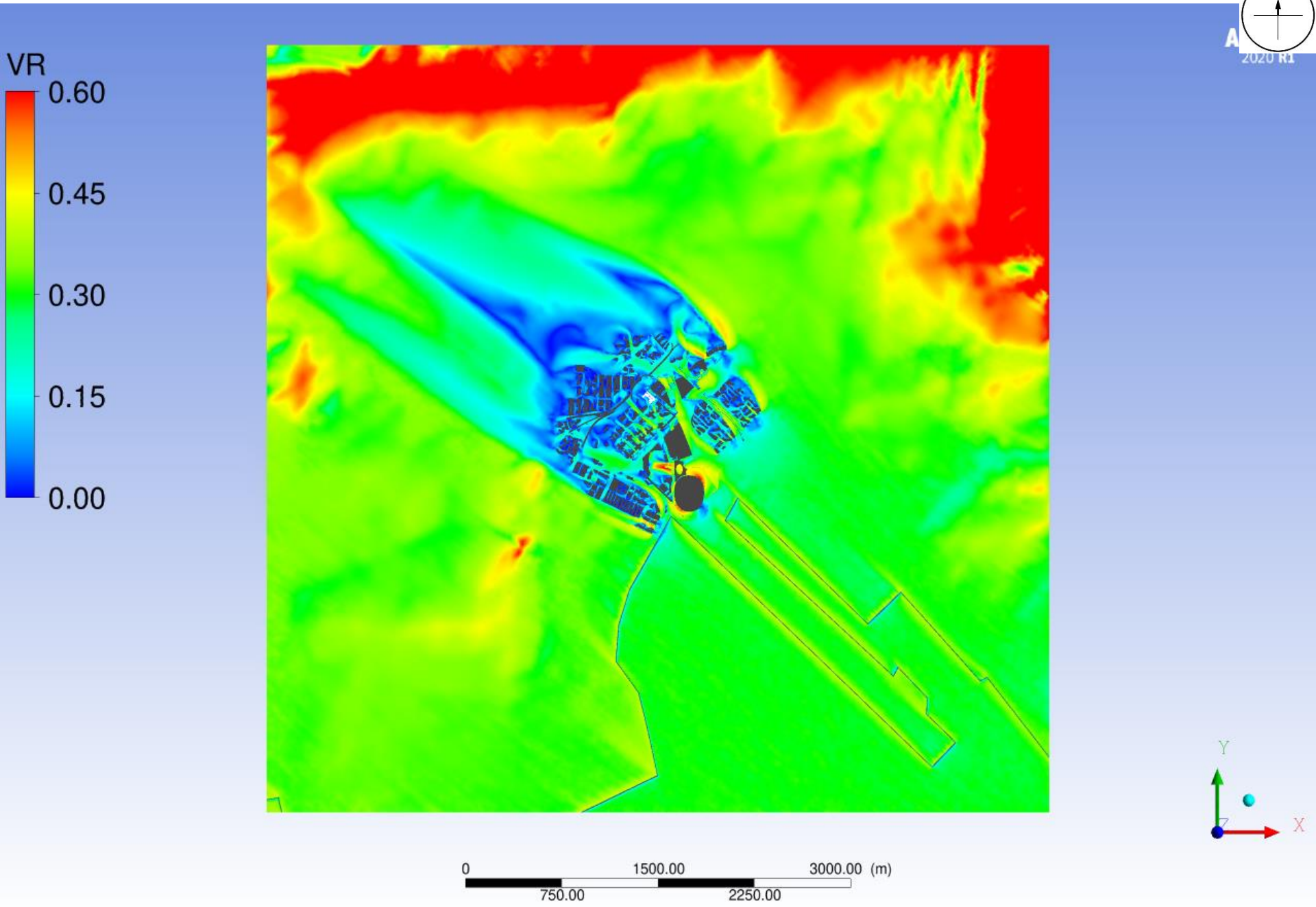
Proposed Scheme - Domain Contour plot at pedestrian level under ENE Wind



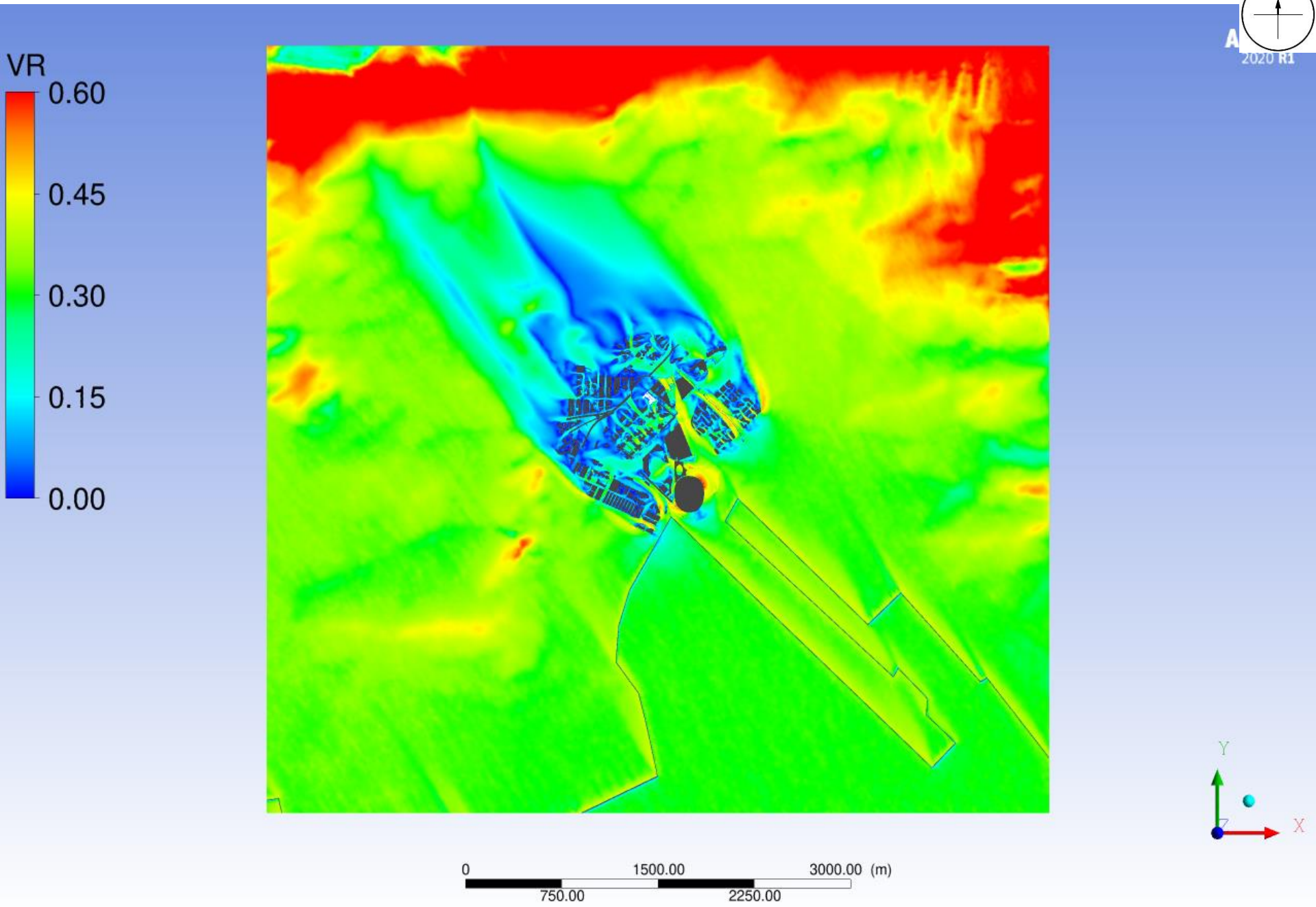
Proposed Scheme - Domain Contour plot at pedestrian level under E Wind



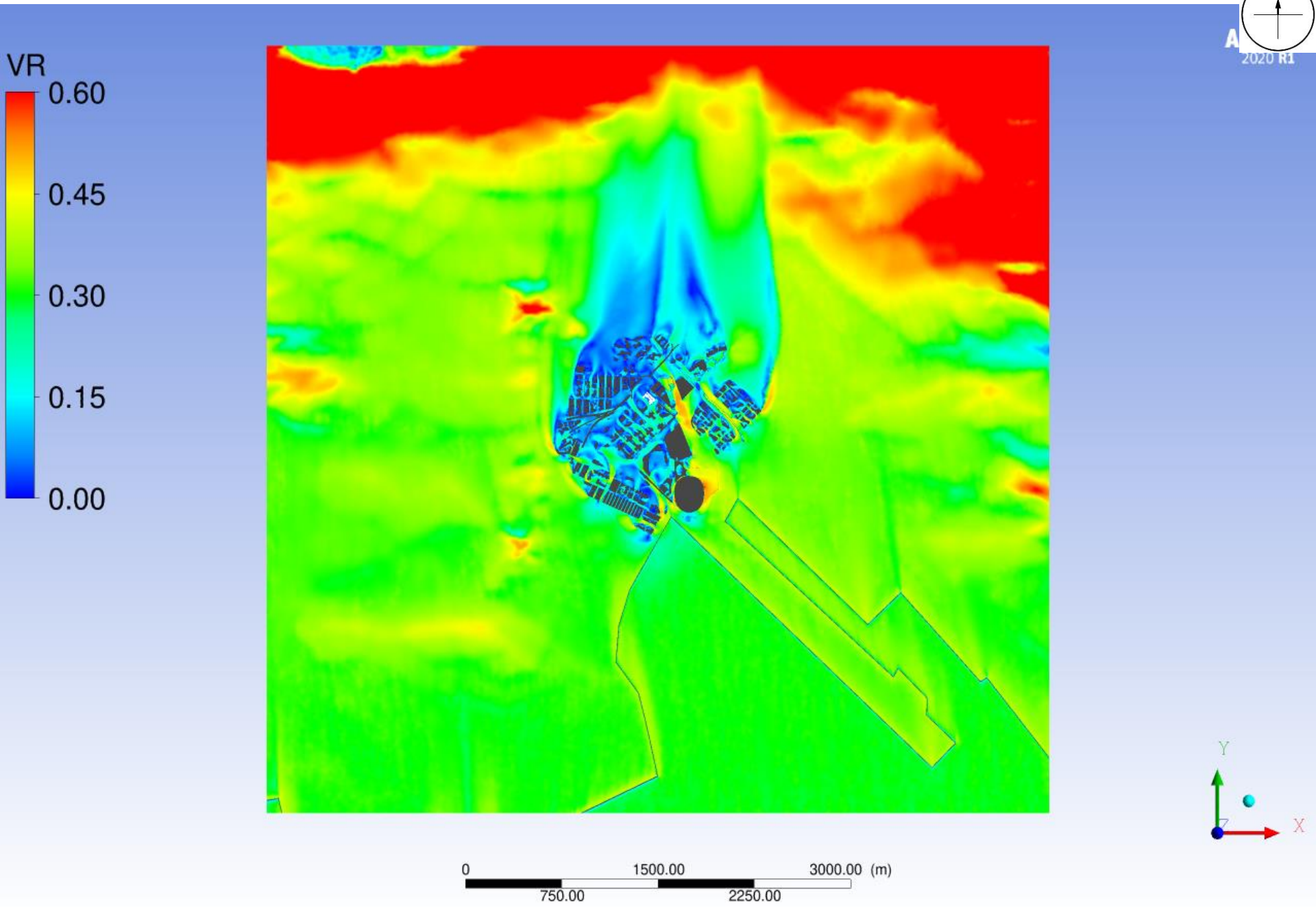
Proposed Scheme - Domain Contour plot at pedestrian level under ESE Wind



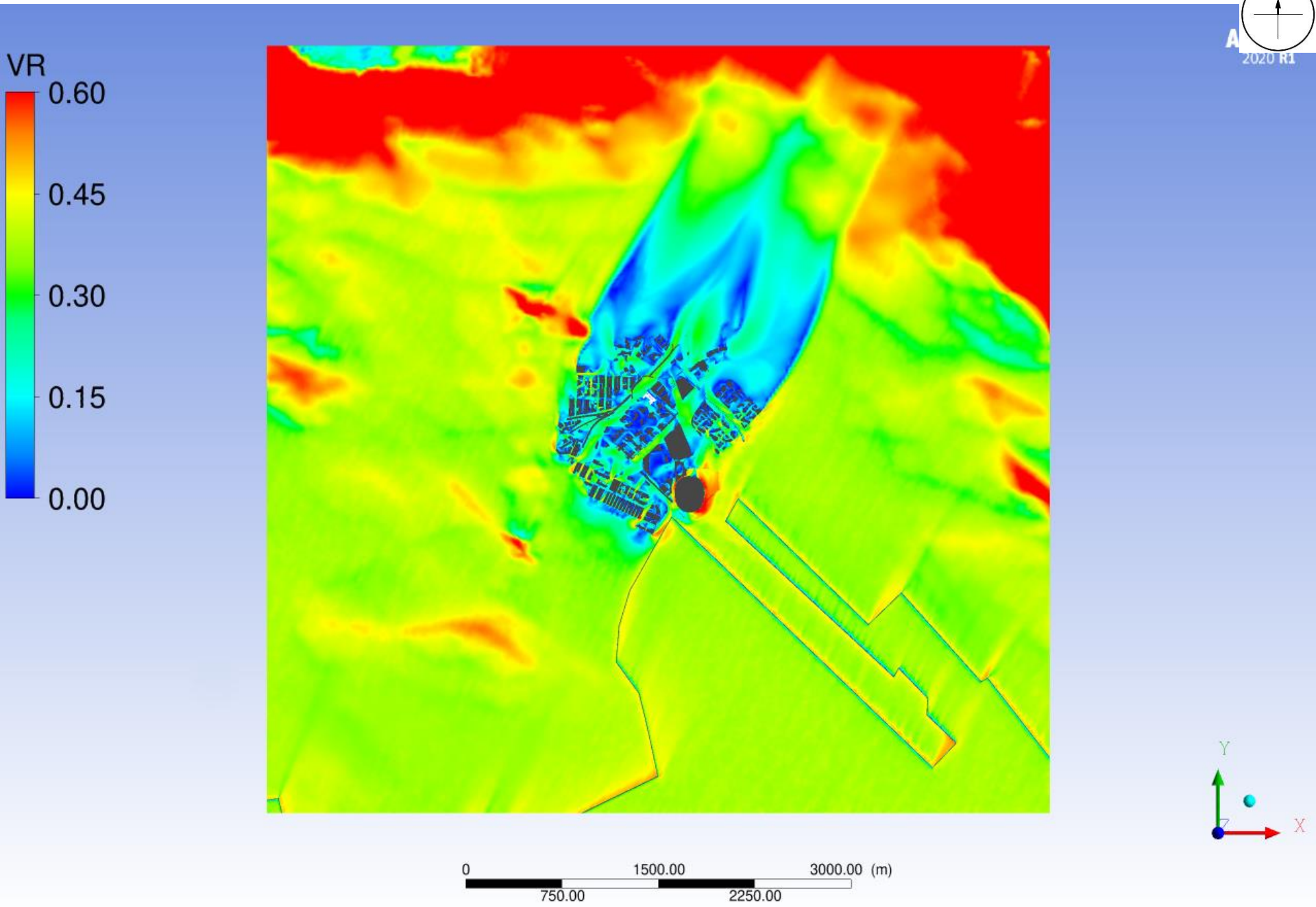
Proposed Scheme - Domain Contour plot at pedestrian level under SE Wind



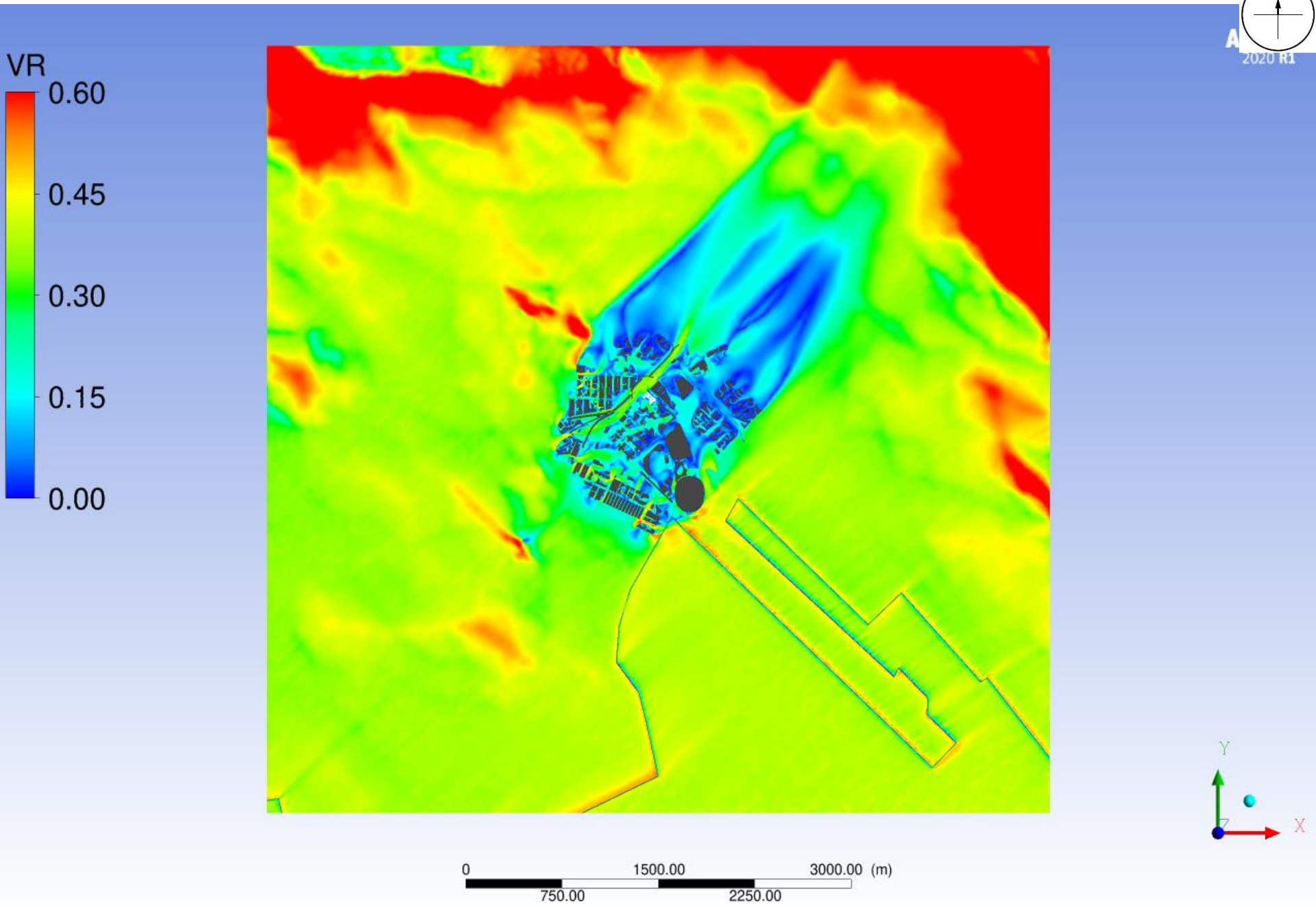
Proposed Scheme - Domain Contour plot at pedestrian level under SSE Wind



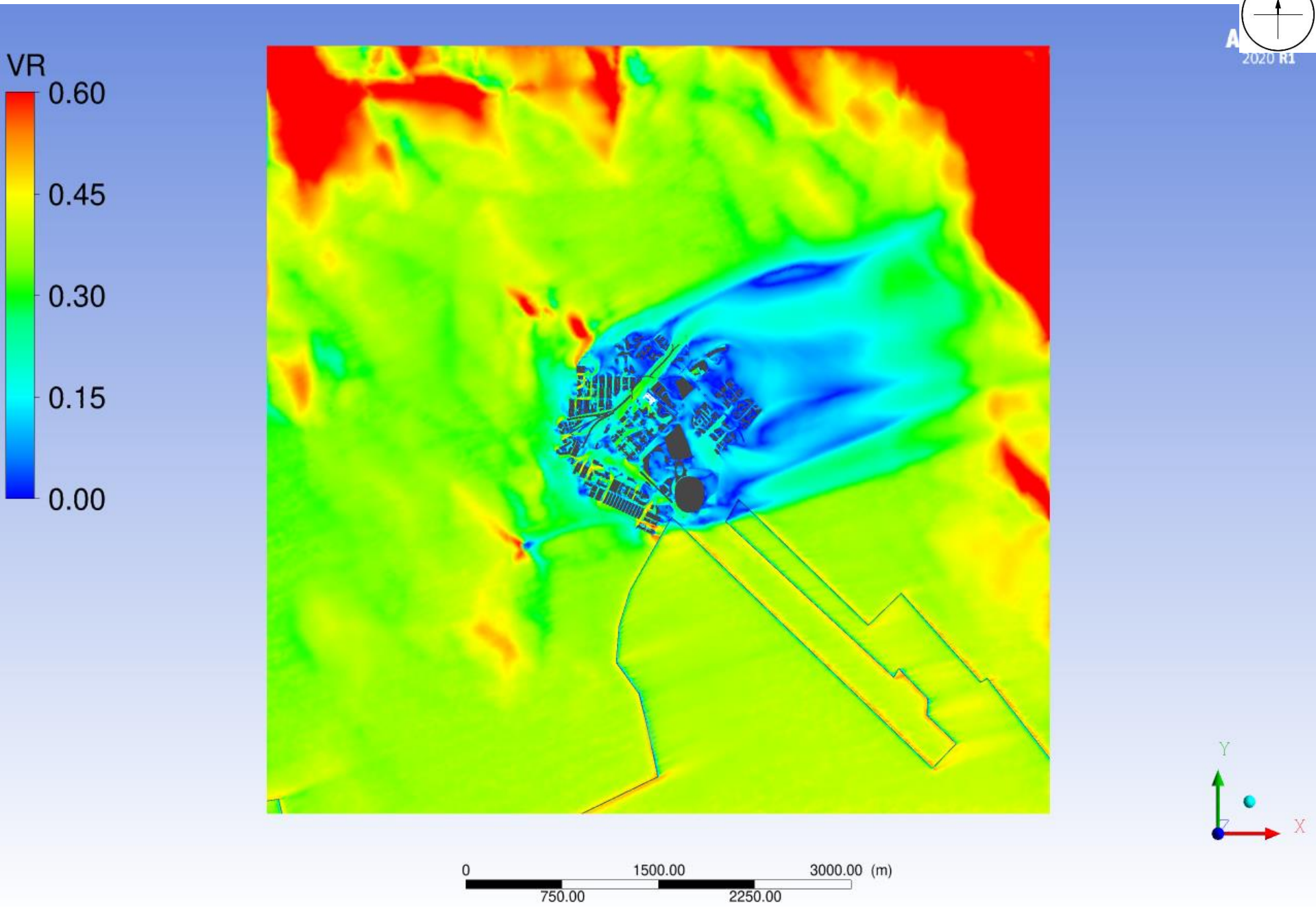
Proposed Scheme - Domain Contour plot at pedestrian level under S Wind



Proposed Scheme - Domain Contour plot at pedestrian level under SSW Wind



Proposed Scheme - Domain Contour plot at pedestrian level under SW Wind



Proposed Scheme - Domain Contour plot at pedestrian level under WSW Wind

Appendix 5

Detailed CFD Simulation Result for Selected Test Points

Baseline Scheme(VR)													
Test Point	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**Annual**	**Summer**
P01	0.42	0.30	0.27	0.02	0.08	0.05	0.06	0.14	0.20	0.23	0.18	0.16	0.14
P02	0.43	0.30	0.26	0.05	0.08	0.04	0.06	0.11	0.22	0.25	0.18	0.17	0.14
P03	0.42	0.27	0.24	0.10	0.06	0.02	0.06	0.03	0.22	0.26	0.19	0.17	0.14
P04	0.41	0.25	0.22	0.14	0.05	0.12	0.06	0.02	0.21	0.27	0.18	0.19	0.15
P05	0.40	0.23	0.14	0.15	0.02	0.09	0.02	0.04	0.20	0.27	0.16	0.17	0.14
P06	0.39	0.31	0.05	0.08	0.09	0.11	0.05	0.01	0.18	0.27	0.14	0.16	0.13
P07	0.28	0.11	0.10	0.07	0.06	0.06	0.04	0.03	0.21	0.21	0.02	0.12	0.10
P08	0.14	0.10	0.10	0.10	0.08	0.09	0.02	0.02	0.04	0.02	0.03	0.09	0.05
P09	0.24	0.21	0.16	0.15	0.12	0.14	0.04	0.05	0.01	0.03	0.05	0.14	0.07
P10	0.22	0.23	0.16	0.14	0.12	0.15	0.04	0.06	0.04	0.08	0.08	0.15	0.09
P11	0.17	0.23	0.16	0.14	0.13	0.17	0.02	0.06	0.09	0.10	0.10	0.15	0.10
P12	0.17	0.19	0.14	0.12	0.12	0.17	0.04	0.06	0.09	0.09	0.10	0.14	0.10
P13	0.15	0.15	0.10	0.09	0.10	0.13	0.02	0.07	0.03	0.06	0.08	0.10	0.07
P14	0.09	0.14	0.08	0.09	0.07	0.09	0.04	0.06	0.01	0.06	0.09	0.08	0.06
P15	0.08	0.13	0.07	0.10	0.05	0.03	0.09	0.07	0.01	0.10	0.12	0.08	0.07
P16	0.09	0.04	0.04	0.05	0.09	0.21	0.31	0.24	0.04	0.02	0.03	0.07	0.10
P17	0.12	0.18	0.14	0.08	0.02	0.14	0.23	0.20	0.04	0.05	0.03	0.09	0.09
P18	0.16	0.24	0.27	0.12	0.06	0.16	0.24	0.19	0.03	0.10	0.17	0.15	0.12
P19	0.20	0.28	0.31	0.13	0.06	0.23	0.25	0.23	0.07	0.03	0.22	0.16	0.14
P20	0.21	0.32	0.30	0.13	0.05	0.24	0.18	0.22	0.03	0.04	0.15	0.16	0.11
P21	0.15	0.39	0.34	0.14	0.10	0.14	0.11	0.19	0.02	0.04	0.05	0.17	0.09
P22	0.18	0.34	0.32	0.15	0.19	0.17	0.10	0.18	0.02	0.02	0.15	0.18	0.11
P23	0.22	0.09	0.06	0.06	0.22	0.23	0.22	0.24	0.03	0.05	0.25	0.11	0.15
P24	0.28	0.11	0.05	0.06	0.22	0.20	0.22	0.26	0.04	0.10	0.21	0.12	0.15
P25	0.31	0.03	0.10	0.05	0.21	0.14	0.19	0.23	0.05	0.17	0.24	0.12	0.16
P26	0.32	0.09	0.11	0.05	0.20	0.09	0.15	0.20	0.07	0.20	0.22	0.12	0.15
P27	0.28	0.13	0.12	0.04	0.16	0.02	0.10	0.18	0.11	0.21	0.15	0.12	0.13
P28	0.01	0.09	0.10	0.04	0.12	0.04	0.09	0.16	0.13	0.21	0.09	0.08	0.12
P29	0.20	0.11	0.05	0.02	0.08	0.05	0.10	0.16	0.13	0.22	0.10	0.09	0.12
P30	0.31	0.27	0.17	0.01	0.05	0.06	0.06	0.14	0.14	0.22	0.16	0.12	0.12
Average SVR	**0.24**	**0.20**	**0.16**	**0.09**	**0.10**	**0.12**	**0.11**	**0.13**	**0.09**	**0.13**	**0.13**	**0.13**	**0.11**
T001	0.26	0.28	0.41	0.15	0.06	0.11	0.05	0.13	0.27	0.32	0.30	0.22	0.19
T002	0.09	0.10	0.34	0.10	0.02	0.04	0.03	0.02	0.22	0.32	0.25	0.14	0.15
T003	0.36	0.36	0.42	0.15	0.02	0.09	0.14	0.07	0.27	0.37	0.31	0.23	0.20
T004	0.17	0.17	0.37	0.13	0.02	0.01	0.09	0.05	0.20	0.27	0.20	0.16	0.14
T005	0.39	0.37	0.39	0.12	0.22	0.21	0.16	0.07	0.21	0.37	0.30	0.26	0.22
T006	0.26	0.23	0.36	0.02	0.28	0.31	0.23	0.23	0.23	0.28	0.23	0.21	0.23
T007	0.43	0.42	0.43	0.16	0.03	0.14	0.09	0.22	0.23	0.36	0.31	0.25	0.21
T008	0.45	0.40	0.39	0.03	0.12	0.07	0.06	0.07	0.26	0.38	0.32	0.22	0.19
T009	0.22	0.16	0.18	0.06	0.05	0.08	0.05	0.05	0.03	0.04	0.08	0.10	0.05
T010	0.43	0.42	0.38	0.06	0.09	0.04	0.06	0.02	0.22	0.40	0.33	0.22	0.18
T011	0.39	0.25	0.35	0.09	0.08	0.08	0.05	0.08	0.30	0.36	0.31	0.21	0.19
T012	0.42	0.45	0.16	0.13	0.06	0.10	0.06	0.03	0.24	0.32	0.21	0.21	0.17
T013	0.39	0.37	0.07	0.09	0.17	0.12	0.07	0.02	0.18	0.30	0.10	0.18	0.15
T014	0.37	0.44	0.17	0.10	0.11	0.05	0.05	0.04	0.29	0.35	0.28	0.20	0.19
T015	0.29	0.35	0.04	0.01	0.01	0.12	0.08	0.10	0.27	0.34	0.25	0.13	0.17
T016	0.37	0.44	0.19	0.07	0.06	0.14	0.12	0.06	0.31	0.36	0.28	0.20	0.20
T017	0.21	0.41	0.07	0.08	0.08	0.03	0.03	0.04	0.26	0.34	0.21	0.16	0.16
T018	0.32	0.45	0.15	0.21	0.15	0.16	0.09	0.06	0.33	0.39	0.29	0.25	0.23
T019	0.42	0.52	0.29	0.31	0.21	0.23	0.18	0.19	0.14	0.22	0.17	0.29	0.20
T020	0.25	0.47	0.20	0.22	0.16	0.27	0.29	0.15	0.31	0.37	0.29	0.26	0.27
T021	0.27	0.31	0.05	0.11	0.09	0.15	0.19	0.03	0.03	0.08	0.03	0.13	0.08
T022	0.31	0.42	0.06	0.15	0.13	0.21	0.29	0.23	0.10	0.22	0.13	0.18	0.18
T023	0.25	0.27	0.05	0.06	0.06	0.14	0.19	0.12	0.08	0.10	0.04	0.11	0.10
T024	0.14	0.09	0.14	0.25	0.23	0.41	0.43	0.29	0.04	0.05	0.05	0.18	0.19
T025	0.40	0.04	0.14	0.23	0.22	0.34	0.40	0.39	0.14	0.08	0.06	0.20	0.21
T026	0.41	0.11	0.14	0.18	0.22	0.38	0.39	0.40	0.04	0.06	0.01	0.19	0.18
T027	0.31	0.12	0.08	0.20	0.16	0.28	0.26	0.27	0.15	0.05	0.05	0.17	0.16
T028	0.37	0.39	0.13	0.19	0.09	0.03	0.04	0.02	0.16	0.21	0.24	0.19	0.13
T029	0.16	0.25	0.07	0.09	0.02	0.04	0.05	0.03	0.11	0.16	0.16	0.10	0.09
T030	0.43	0.30	0.08	0.16	0.05	0.06	0.04	0.03	0.04	0.14	0.01	0.15	0.07
T031	0.30	0.24	0.03	0.12	0.09	0.09	0.07	0.04	0.05	0.12	0.04	0.12	0.08
T032	0.18	0.14	0.12	0.14	0.09	0.14	0.07	0.05	0.03	0.04	0.04	0.12	0.07
T033	0.33	0.28	0.20	0.17	0.08	0.18	0.21	0.15	0.09	0.06	0.09	0.17	0.12
T034	0.20	0.10	0.17	0.24	0.19	0.26	0.29	0.44	0.28	0.04	0.08	0.19	0.21
T035	0.33	0.16	0.19	0.25	0.21	0.26	0.31	0.46	0.28	0.09	0.08	0.22	0.23
T036	0.32	0.23	0.18	0.18	0.13	0.22	0.27	0.24	0.05	0.12	0.09	0.18	0.15
T037	0.29	0.07	0.11	0.16	0.11	0.33	0.39	0.50	0.32	0.04	0.06	0.16	0.22
T038	0.35	0.21	0.19	0.24	0.24	0.34	0.41	0.51	0.31	0.17	0.08	0.25	0.27
T039	0.34	0.12	0.12	0.11	0.16	0.30	0.37	0.50	0.31	0.18	0.03	0.18	0.24
T040	0.45	0.22	0.17	0.22	0.23	0.33	0.40	0.50	0.29	0.16	0.09	0.24	0.26
T041	0.38	0.25	0.41	0.23	0.16	0.30	0.41	0.50	0.30	0.18	0.08	0.27	0.26
T042	0.38	0.24	0.21	0.02	0.26	0.36	0.44	0.49	0.29	0.18	0.05	0.20	0.25
T043	0.36	0.36	0.42	0.09	0.27	0.37	0.42	0.48	0.29	0.14	0.10	0.26	0.26

Baseline Scheme(VR)													
Test Point	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**Annual**	**Summer**
T044	0.16	0.15	0.20	0.15	0.13	0.19	0.20	0.02	0.11	0.15	0.12	0.16	0.13
T045	0.04	0.20	0.18	0.15	0.15	0.20	0.23	0.15	0.19	0.21	0.20	0.16	0.19
T046	0.01	0.05	0.02	0.03	0.02	0.01	0.04	0.01	0.10	0.12	0.13	0.04	0.07
T047	0.05	0.06	0.05	0.02	0.01	0.04	0.05	0.02	0.01	0.03	0.03	0.03	0.02
T048	0.13	0.04	0.05	0.03	0.05	0.09	0.11	0.13	0.01	0.10	0.09	0.05	0.07
T049	0.09	0.13	0.21	0.13	0.10	0.17	0.20	0.27	0.11	0.03	0.03	0.13	0.12
T050	0.11	0.14	0.22	0.13	0.16	0.26	0.28	0.33	0.14	0.10	0.10	0.16	0.18
T051	0.10	0.11	0.19	0.13	0.18	0.28	0.28	0.30	0.17	0.13	0.10	0.16	0.19
T052	0.17	0.04	0.04	0.09	0.14	0.20	0.23	0.27	0.16	0.10	0.09	0.11	0.15
T053	0.21	0.23	0.32	0.12	0.02	0.04	0.24	0.18	0.06	0.09	0.12	0.14	0.10
T054	0.09	0.21	0.08	0.03	0.08	0.05	0.34	0.23	0.02	0.11	0.09	0.08	0.11
T055	0.05	0.08	0.08	0.07	0.09	0.11	0.07	0.10	0.06	0.18	0.13	0.08	0.11
T056	0.18	0.19	0.19	0.05	0.03	0.01	0.04	0.05	0.06	0.07	0.07	0.09	0.05
T057	0.24	0.18	0.11	0.02	0.08	0.09	0.17	0.12	0.13	0.06	0.12	0.10	0.10
T058	0.17	0.29	0.24	0.04	0.17	0.21	0.27	0.23	0.11	0.18	0.13	0.16	0.17
T059	0.20	0.11	0.13	0.06	0.12	0.22	0.26	0.23	0.09	0.22	0.19	0.12	0.17
T060	0.02	0.09	0.07	0.08	0.31	0.37	0.40	0.32	0.13	0.18	0.13	0.14	0.23
T061	0.26	0.21	0.04	0.15	0.15	0.20	0.23	0.22	0.08	0.12	0.05	0.14	0.14
T062	0.13	0.10	0.11	0.10	0.27	0.39	0.41	0.33	0.17	0.23	0.22	0.17	0.25
T063	0.14	0.24	0.21	0.09	0.18	0.22	0.05	0.14	0.13	0.18	0.16	0.17	0.15
T064	0.24	0.27	0.24	0.08	0.19	0.18	0.21	0.22	0.05	0.12	0.12	0.16	0.14
T065	0.10	0.04	0.09	0.18	0.31	0.09	0.17	0.17	0.05	0.16	0.15	0.15	0.16
T066	0.24	0.17	0.17	0.09	0.23	0.29	0.32	0.27	0.16	0.20	0.18	0.18	0.21
T067	0.23	0.32	0.25	0.22	0.23	0.24	0.27	0.20	0.15	0.20	0.15	0.23	0.20
T068	0.18	0.11	0.15	0.07	0.24	0.35	0.34	0.30	0.14	0.22	0.18	0.16	0.22
T069	0.21	0.22	0.15	0.20	0.11	0.30	0.28	0.24	0.12	0.16	0.07	0.18	0.17
T070	0.33	0.17	0.02	0.15	0.29	0.31	0.23	0.25	0.08	0.23	0.28	0.18	0.22
T071	0.16	0.02	0.06	0.13	0.23	0.30	0.23	0.21	0.03	0.21	0.30	0.14	0.19
T072	0.19	0.01	0.03	0.20	0.31	0.30	0.22	0.22	0.04	0.07	0.04	0.16	0.16
T073	0.29	0.04	0.06	0.15	0.21	0.30	0.22	0.19	0.06	0.13	0.12	0.15	0.16
T074	0.11	0.35	0.31	0.14	0.22	0.25	0.23	0.19	0.07	0.16	0.04	0.20	0.16
T075	0.19	0.29	0.26	0.17	0.28	0.21	0.10	0.12	0.04	0.13	0.15	0.20	0.15
T076	0.27	0.25	0.13	0.16	0.30	0.30	0.17	0.16	0.04	0.08	0.06	0.19	0.15
T077	0.10	0.25	0.19	0.02	0.05	0.09	0.04	0.04	0.04	0.12	0.17	0.10	0.07
T078	0.27	0.05	0.12	0.19	0.33	0.28	0.15	0.19	0.05	0.19	0.18	0.19	0.19
T079	0.19	0.12	0.08	0.15	0.31	0.35	0.34	0.20	0.08	0.14	0.17	0.17	0.20
T080	0.16	0.04	0.12	0.21	0.32	0.30	0.28	0.18	0.15	0.23	0.20	0.19	0.23
T081	0.03	0.21	0.13	0.25	0.33	0.35	0.29	0.25	0.15	0.21	0.20	0.22	0.24
T082	0.10	0.06	0.15	0.12	0.11	0.05	0.10	0.09	0.03	0.25	0.26	0.11	0.13
T083	0.22	0.22	0.07	0.23	0.24	0.29	0.33	0.23	0.04	0.10	0.12	0.19	0.18
T084	0.18	0.11	0.20	0.15	0.13	0.23	0.26	0.21	0.12	0.16	0.16	0.16	0.17
T085	0.07	0.05	0.02	0.28	0.26	0.33	0.32	0.23	0.01	0.17	0.12	0.17	0.20
T086	0.03	0.02	0.03	0.11	0.04	0.11	0.05	0.02	0.03	0.06	0.09	0.06	0.06
T087	0.14	0.24	0.13	0.14	0.08	0.09	0.04	0.05	0.03	0.10	0.10	0.13	0.08
T088	0.32	0.17	0.16	0.17	0.11	0.22	0.25	0.15	0.03	0.18	0.21	0.16	0.15
T089	0.28	0.12	0.09	0.07	0.03	0.09	0.12	0.10	0.02	0.14	0.19	0.09	0.10
T090	0.14	0.14	0.10	0.10	0.03	0.02	0.20	0.16	0.04	0.05	0.03	0.08	0.07
T091	0.16	0.10	0.11	0.02	0.15	0.01	0.02	0.07	0.10	0.09	0.06	0.08	0.07
T092	0.27	0.21	0.15	0.23	0.21	0.16	0.29	0.17	0.05	0.12	0.19	0.19	0.17
T093	0.23	0.09	0.08	0.04	0.04	0.07	0.10	0.08	0.18	0.26	0.26	0.10	0.14
T094	0.31	0.10	0.15	0.04	0.03	0.04	0.05	0.04	0.02	0.07	0.22	0.08	0.06
T095	0.14	0.10	0.11	0.05	0.01	0.06	0.03	0.07	0.09	0.21	0.12	0.09	0.09
T096	0.29	0.01	0.02	0.03	0.09	0.05	0.06	0.10	0.06	0.02	0.22	0.06	0.08
T097	0.10	0.31	0.27	0.14	0.13	0.25	0.23	0.23	0.09	0.16	0.18	0.18	0.17
T098	0.10	0.26	0.17	0.07	0.25	0.07	0.15	0.24	0.10	0.19	0.08	0.15	0.15
T099	0.08	0.29	0.35	0.15	0.01	0.06	0.06	0.05	0.03	0.15	0.20	0.15	0.09
T100	0.09	0.35	0.41	0.18	0.15	0.02	0.10	0.10	0.12	0.18	0.20	0.20	0.14
T101	0.19	0.35	0.41	0.18	0.09	0.16	0.06	0.08	0.16	0.25	0.22	0.22	0.16
T102	0.24	0.36	0.45	0.22	0.13	0.03	0.08	0.08	0.25	0.29	0.26	0.25	0.19
T103	0.10	0.15	0.18	0.11	0.02	0.14	0.07	0.08	0.05	0.06	0.12	0.10	0.07
T104	0.07	0.21	0.25	0.11	0.16	0.11	0.08	0.09	0.07	0.10	0.14	0.14	0.11
T105	0.08	0.08	0.11	0.06	0.01	0.09	0.10	0.08	0.13	0.13	0.15	0.08	0.10
T106	0.15	0.25	0.28	0.14	0.09	0.17	0.01	0.10	0.06	0.16	0.18	0.16	0.11
T107	0.07	0.18	0.16	0.09	0.04	0.06	0.06	0.10	0.25	0.24	0.20	0.12	0.15
T108	0.08	0.13	0.18	0.09	0.01	0.11	0.03	0.08	0.19	0.17	0.15	0.11	0.11
T109	0.17	0.11	0.13	0.08	0.06	0.20	0.01	0.08	0.15	0.19	0.21	0.12	0.13
T110	0.05	0.20	0.21	0.10	0.06	0.03	0.03	0.10	0.27	0.27	0.24	0.14	0.16
T111	0.07	0.13	0.16	0.16	0.03	0.12	0.04	0.04	0.17	0.16	0.11	0.13	0.11
T112	0.07	0.06	0.13	0.05	0.06	0.06	0.05	0.04	0.05	0.04	0.03	0.06	0.04
T113	0.08	0.11	0.14	0.09	0.06	0.02	0.07	0.07	0.11	0.08	0.03	0.09	0.07
T114	0.08	0.25	0.20	0.14	0.06	0.01	0.01	0.02	0.08	0.08	0.02	0.12	0.06
T115	0.32	0.06	0.21	0.08	0.05	0.08	0.03	0.04	0.24	0.25	0.16	0.14	0.13
T116	0.19	0.27	0.37	0.22	0.12	0.02	0.09	0.05	0.25	0.28	0.26	0.22	0.18
T117	0.19	0.13	0.18	0.22	0.14	0.14	0.14	0.03	0.17	0.12	0.09	0.17	0.13

Baseline Scheme(VR)													
Test Point	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**Annual**	**Summer**
T118	0.25	0.31	0.22	0.08	0.07	0.06	0.05	0.05	0.11	0.07	0.07	0.14	0.07
T119	0.17	0.06	0.22	0.20	0.14	0.21	0.23	0.11	0.19	0.18	0.07	0.17	0.17
T120	0.13	0.20	0.14	0.25	0.17	0.10	0.09	0.03	0.10	0.09	0.06	0.17	0.11
T121	0.14	0.07	0.20	0.17	0.15	0.24	0.25	0.04	0.18	0.18	0.03	0.17	0.15
T122	0.21	0.07	0.24	0.25	0.12	0.09	0.05	0.07	0.17	0.19	0.24	0.18	0.15
T123	0.20	0.04	0.25	0.22	0.16	0.22	0.24	0.04	0.12	0.11	0.17	0.18	0.15
T124	0.19	0.08	0.32	0.17	0.11	0.19	0.20	0.09	0.13	0.13	0.21	0.17	0.15
T125	0.19	0.06	0.14	0.07	0.04	0.05	0.09	0.09	0.03	0.24	0.27	0.09	0.12
T126	0.14	0.22	0.10	0.07	0.26	0.16	0.26	0.18	0.11	0.04	0.15	0.13	0.14
Average LVR	**0.22**	**0.20**	**0.17**	**0.12**	**0.13**	**0.16**	**0.16**	**0.15**	**0.13**	**0.16**	**0.14**	**0.15**	**0.14**
S01	0.34	0.06	0.14	0.15	0.03	0.08	0.05	0.06	0.19	0.27	0.13	0.14	0.13
S02	0.35	0.28	0.24	0.10	0.04	0.04	0.06	0.02	0.19	0.26	0.16	0.17	0.13
S03	0.35	0.29	0.23	0.02	0.11	0.06	0.05	0.15	0.17	0.23	0.17	0.15	0.14
S04	0.24	0.10	0.10	0.04	0.15	0.07	0.13	0.17	0.13	0.20	0.17	0.11	0.14
S05	0.26	0.12	0.16	0.09	0.14	0.16	0.20	0.23	0.08	0.18	0.18	0.14	0.16
S06	0.27	0.18	0.05	0.07	0.20	0.23	0.23	0.27	0.04	0.11	0.19	0.13	0.16

Proposed Scheme(VR)													
Test Point	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**Annual**	**Summer**
P01	0.39	0.28	0.30	0.09	0.16	0.12	0.08	0.18	0.18	0.17	0.19	0.19	0.15
P02	0.40	0.34	0.32	0.05	0.02	0.02	0.03	0.03	0.24	0.23	0.21	0.17	0.12
P03	0.39	0.35	0.31	0.02	0.05	0.04	0.03	0.07	0.26	0.26	0.22	0.17	0.14
P04	0.37	0.35	0.29	0.02	0.03	0.02	0.05	0.06	0.27	0.30	0.26	0.17	0.15
P05	0.33	0.26	0.23	0.10	0.08	0.02	0.07	0.05	0.29	0.33	0.28	0.18	0.18
P06	0.33	0.25	0.23	0.09	0.14	0.12	0.06	0.03	0.28	0.34	0.29	0.19	0.19
P07	0.10	0.11	0.08	0.12	0.17	0.14	0.02	0.02	0.25	0.32	0.26	0.15	0.18
P08	0.04	0.08	0.05	0.12	0.13	0.13	0.03	0.02	0.05	0.07	0.05	0.09	0.07
P09	0.10	0.12	0.08	0.15	0.14	0.17	0.01	0.03	0.03	0.08	0.05	0.12	0.08
P10	0.08	0.10	0.08	0.14	0.13	0.18	0.03	0.04	0.03	0.08	0.05	0.11	0.08
P11	0.06	0.11	0.08	0.14	0.13	0.18	0.04	0.06	0.03	0.04	0.02	0.11	0.07
P12	0.32	0.10	0.09	0.14	0.13	0.20	0.10	0.08	0.02	0.04	0.07	0.13	0.09
P13	0.03	0.11	0.09	0.13	0.10	0.14	0.08	0.01	0.01	0.06	0.03	0.10	0.07
P14	0.14	0.12	0.09	0.14	0.09	0.03	0.04	0.03	0.02	0.10	0.05	0.10	0.06
P15	0.22	0.12	0.07	0.16	0.11	0.02	0.04	0.02	0.02	0.08	0.04	0.11	0.06
P16	0.30	0.07	0.07	0.09	0.08	0.29	0.32	0.23	0.12	0.23	0.21	0.13	0.19
P17	0.17	0.13	0.15	0.05	0.03	0.22	0.26	0.21	0.10	0.18	0.15	0.11	0.15
P18	0.28	0.20	0.20	0.09	0.01	0.19	0.22	0.21	0.06	0.14	0.08	0.13	0.12
P19	0.31	0.28	0.25	0.13	0.05	0.15	0.19	0.20	0.06	0.13	0.09	0.16	0.12
P20	0.29	0.35	0.29	0.16	0.09	0.08	0.13	0.16	0.09	0.04	0.14	0.18	0.10
P21	0.28	0.39	0.32	0.18	0.10	0.11	0.11	0.11	0.07	0.05	0.13	0.19	0.10
P22	0.01	0.03	0.02	0.01	0.08	0.04	0.04	0.08	0.04	0.09	0.09	0.04	0.06
P23	0.01	0.06	0.03	0.02	0.20	0.16	0.22	0.25	0.05	0.17	0.17	0.08	0.15
P24	0.05	0.11	0.04	0.03	0.21	0.22	0.25	0.25	0.18	0.26	0.26	0.11	0.21
P25	0.16	0.05	0.02	0.03	0.23	0.21	0.21	0.26	0.15	0.22	0.26	0.11	0.20
P26	0.22	0.03	0.06	0.03	0.22	0.15	0.14	0.24	0.10	0.17	0.24	0.10	0.16
P27	0.20	0.14	0.15	0.05	0.19	0.06	0.09	0.21	0.06	0.14	0.20	0.12	0.13
P28	0.13	0.19	0.17	0.08	0.16	0.09	0.11	0.21	0.04	0.11	0.19	0.12	0.12
P29	0.07	0.13	0.10	0.08	0.17	0.12	0.14	0.22	0.06	0.08	0.17	0.10	0.12
P30	0.27	0.10	0.15	0.10	0.16	0.12	0.13	0.20	0.08	0.12	0.17	0.13	0.13
Average SVR	**0.20**	**0.17**	**0.15**	**0.09**	**0.12**	**0.13**	**0.11**	**0.13**	**0.11**	**0.15**	**0.15**	**0.13**	**0.13**
T001	0.37	0.47	0.43	0.04	0.02	0.10	0.14	0.14	0.27	0.32	0.30	0.21	0.19
T002	0.29	0.31	0.34	0.02	0.02	0.03	0.04	0.02	0.19	0.30	0.19	0.15	0.12
T003	0.40	0.50	0.45	0.10	0.04	0.11	0.10	0.15	0.27	0.35	0.30	0.24	0.20
T004	0.41	0.37	0.44	0.02	0.05	0.05	0.03	0.05	0.18	0.23	0.20	0.19	0.12
T005	0.43	0.54	0.44	0.11	0.26	0.22	0.13	0.07	0.24	0.34	0.24	0.29	0.22
T006	0.41	0.35	0.43	0.14	0.29	0.29	0.28	0.22	0.24	0.21	0.20	0.28	0.23
T007	0.48	0.56	0.50	0.04	0.06	0.10	0.22	0.21	0.29	0.35	0.28	0.25	0.21
T008	0.51	0.52	0.45	0.14	0.12	0.08	0.07	0.00	0.31	0.31	0.27	0.28	0.19
T009	0.22	0.17	0.19	0.03	0.08	0.11	0.06	0.05	0.04	0.07	0.16	0.10	0.07
T010	0.48	0.55	0.42	0.16	0.03	0.07	0.05	0.02	0.22	0.34	0.25	0.26	0.17
T011	0.43	0.50	0.38	0.11	0.08	0.09	0.09	0.03	0.33	0.35	0.30	0.25	0.20
T012	0.44	0.44	0.35	0.07	0.12	0.04	0.08	0.05	0.28	0.37	0.30	0.23	0.19
T013	0.35	0.28	0.24	0.08	0.16	0.17	0.16	0.08	0.27	0.35	0.29	0.21	0.21
T014	0.35	0.45	0.28	0.09	0.11	0.16	0.07	0.05	0.33	0.38	0.34	0.23	0.22
T015	0.24	0.25	0.20	0.07	0.04	0.04	0.10	0.04	0.28	0.33	0.29	0.16	0.17
T016	0.35	0.46	0.27	0.05	0.10	0.15	0.13	0.08	0.33	0.38	0.34	0.22	0.22
T017	0.25	0.24	0.26	0.06	0.05	0.06	0.03	0.02	0.28	0.33	0.28	0.16	0.16
T018	0.34	0.45	0.27	0.19	0.13	0.19	0.12	0.14	0.33	0.38	0.33	0.26	0.25
T019	0.43	0.52	0.37	0.32	0.21	0.24	0.16	0.23	0.12	0.18	0.18	0.31	0.20
T020	0.29	0.46	0.29	0.24	0.16	0.26	0.26	0.15	0.29	0.38	0.34	0.28	0.27
T021	0.27	0.31	0.13	0.13	0.09	0.22	0.20	0.04	0.10	0.08	0.04	0.16	0.11
T022	0.30	0.41	0.19	0.18	0.13	0.22	0.27	0.21	0.09	0.10	0.13	0.20	0.15
T023	0.26	0.26	0.05	0.03	0.03	0.13	0.21	0.12	0.05	0.16	0.03	0.10	0.09
T024	0.07	0.10	0.04	0.26	0.23	0.41	0.41	0.27	0.11	0.06	0.03	0.18	0.20
T025	0.40	0.29	0.10	0.18	0.22	0.34	0.41	0.40	0.14	0.11	0.02	0.21	0.21
T026	0.40	0.30	0.14	0.19	0.24	0.38	0.39	0.41	0.05	0.07	0.02	0.21	0.19
T027	0.29	0.04	0.13	0.20	0.15	0.28	0.27	0.28	0.15	0.04	0.01	0.16	0.16
T028	0.37	0.40	0.28	0.15	0.11	0.04	0.01	0.02	0.10	0.09	0.04	0.19	0.07
T029	0.17	0.26	0.19	0.08	0.03	0.05	0.05	0.00	0.07	0.07	0.03	0.11	0.05
T030	0.41	0.35	0.18	0.19	0.05	0.06	0.07	0.05	0.05	0.01	0.02	0.17	0.05
T031	0.30	0.28	0.14	0.13	0.07	0.06	0.12	0.04	0.03	0.02	0.02	0.13	0.05
T032	0.20	0.16	0.11	0.16	0.08	0.14	0.11	0.10	0.06	0.05	0.03	0.12	0.08
T033	0.35	0.31	0.21	0.17	0.09	0.18	0.18	0.17	0.08	0.04	0.03	0.18	0.11
T034	0.11	0.04	0.07	0.21	0.23	0.27	0.32	0.44	0.29	0.06	0.02	0.17	0.22
T035	0.32	0.14	0.16	0.28	0.24	0.29	0.35	0.49	0.31	0.04	0.04	0.23	0.24
T036	0.34	0.23	0.18	0.20	0.10	0.21	0.24	0.23	0.11	0.15	0.00	0.19	0.15
T037	0.26	0.05	0.10	0.14	0.19	0.29	0.39	0.50	0.33	0.03	0.02	0.16	0.22
T038	0.37	0.21	0.17	0.25	0.25	0.34	0.40	0.52	0.33	0.17	0.02	0.25	0.27
T039	0.37	0.14	0.07	0.11	0.17	0.27	0.37	0.51	0.34	0.19	0.05	0.17	0.24
T040	0.47	0.21	0.18	0.09	0.24	0.27	0.37	0.51	0.31	0.21	0.09	0.21	0.26
T041	0.38	0.21	0.26	0.31	0.16	0.29	0.40	0.50	0.33	0.19	0.11	0.27	0.28
T042	0.41	0.25	0.22	0.27	0.26	0.36	0.42	0.49	0.32	0.21	0.09	0.28	0.29
T043	0.38	0.38	0.31	0.07	0.27	0.37	0.41	0.48	0.31	0.18	0.10	0.25	0.26

Proposed Scheme(VR)													
Test Point	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**Annual**	**Summer**
T044	0.07	0.12	0.08	0.15	0.15	0.20	0.20	0.06	0.11	0.11	0.08	0.13	0.13
T045	0.14	0.14	0.08	0.15	0.15	0.20	0.23	0.17	0.14	0.12	0.08	0.14	0.15
T046	0.13	0.04	0.03	0.06	0.03	0.04	0.05	0.03	0.09	0.03	0.03	0.05	0.05
T047	0.04	0.06	0.02	0.01	0.01	0.03	0.07	0.04	0.01	0.05	0.03	0.02	0.03
T048	0.03	0.08	0.01	0.07	0.07	0.12	0.09	0.08	0.05	0.02	0.01	0.06	0.06
T049	0.12	0.11	0.14	0.16	0.15	0.24	0.27	0.30	0.15	0.06	0.07	0.14	0.16
T050	0.14	0.16	0.14	0.16	0.19	0.32	0.34	0.36	0.18	0.06	0.07	0.17	0.19
T051	0.05	0.07	0.12	0.12	0.21	0.32	0.32	0.33	0.21	0.19	0.10	0.15	0.22
T052	0.14	0.00	0.05	0.07	0.14	0.21	0.25	0.23	0.16	0.20	0.08	0.11	0.17
T053	0.12	0.21	0.20	0.10	0.04	0.08	0.21	0.15	0.04	0.19	0.08	0.12	0.11
T054	0.33	0.21	0.16	0.04	0.05	0.26	0.32	0.18	0.06	0.18	0.15	0.13	0.15
T055	0.04	0.11	0.08	0.13	0.04	0.02	0.03	0.08	0.06	0.11	0.10	0.08	0.07
T056	0.22	0.18	0.19	0.06	0.04	0.10	0.07	0.08	0.01	0.02	0.02	0.10	0.04
T057	0.23	0.15	0.11	0.03	0.08	0.07	0.03	0.01	0.03	0.06	0.03	0.09	0.04
T058	0.19	0.26	0.22	0.03	0.17	0.22	0.24	0.21	0.09	0.22	0.16	0.15	0.17
T059	0.23	0.08	0.28	0.03	0.10	0.15	0.18	0.20	0.07	0.26	0.21	0.13	0.15
T060	0.17	0.07	0.07	0.09	0.27	0.38	0.41	0.32	0.15	0.21	0.22	0.16	0.24
T061	0.21	0.10	0.07	0.16	0.20	0.25	0.25	0.19	0.09	0.12	0.03	0.15	0.15
T062	0.11	0.16	0.20	0.10	0.24	0.36	0.39	0.30	0.15	0.29	0.21	0.18	0.25
T063	0.21	0.26	0.06	0.10	0.18	0.19	0.06	0.11	0.12	0.14	0.21	0.15	0.14
T064	0.27	0.26	0.18	0.09	0.14	0.22	0.25	0.22	0.10	0.20	0.22	0.16	0.17
T065	0.03	0.06	0.11	0.18	0.29	0.11	0.14	0.21	0.04	0.17	0.12	0.14	0.15
T066	0.21	0.11	0.10	0.06	0.17	0.27	0.30	0.27	0.09	0.22	0.19	0.14	0.19
T067	0.17	0.23	0.25	0.22	0.24	0.19	0.25	0.20	0.03	0.19	0.07	0.20	0.17
T068	0.16	0.15	0.12	0.07	0.21	0.30	0.30	0.29	0.12	0.25	0.13	0.15	0.21
T069	0.17	0.25	0.10	0.21	0.25	0.24	0.25	0.23	0.14	0.16	0.02	0.19	0.18
T070	0.18	0.03	0.05	0.17	0.30	0.28	0.28	0.23	0.10	0.19	0.24	0.16	0.21
T071	0.15	0.10	0.04	0.14	0.28	0.33	0.25	0.21	0.04	0.18	0.27	0.16	0.20
T072	0.22	0.06	0.05	0.21	0.32	0.26	0.26	0.21	0.06	0.10	0.05	0.17	0.17
T073	0.26	0.13	0.03	0.14	0.29	0.35	0.24	0.18	0.01	0.16	0.04	0.16	0.16
T074	0.16	0.26	0.25	0.11	0.23	0.22	0.26	0.18	0.03	0.05	0.02	0.17	0.12
T075	0.18	0.25	0.24	0.20	0.29	0.16	0.21	0.12	0.06	0.16	0.02	0.21	0.15
T076	0.24	0.15	0.01	0.17	0.32	0.35	0.24	0.14	0.04	0.03	0.09	0.17	0.15
T077	0.10	0.09	0.18	0.02	0.11	0.09	0.03	0.07	0.02	0.12	0.12	0.09	0.08
T078	0.22	0.05	0.06	0.21	0.34	0.28	0.24	0.20	0.04	0.22	0.14	0.18	0.20
T079	0.26	0.12	0.08	0.17	0.32	0.36	0.30	0.21	0.05	0.24	0.15	0.19	0.22
T080	0.15	0.08	0.12	0.21	0.31	0.34	0.25	0.16	0.02	0.22	0.15	0.19	0.20
T081	0.10	0.17	0.20	0.24	0.32	0.38	0.28	0.25	0.14	0.24	0.21	0.23	0.25
T082	0.07	0.01	0.07	0.10	0.12	0.11	0.13	0.13	0.04	0.21	0.07	0.09	0.12
T083	0.24	0.14	0.06	0.26	0.23	0.20	0.26	0.15	0.01	0.06	0.10	0.17	0.14
T084	0.13	0.16	0.04	0.18	0.14	0.23	0.23	0.21	0.10	0.15	0.10	0.14	0.16
T085	0.06	0.15	0.12	0.31	0.25	0.34	0.26	0.17	0.06	0.13	0.23	0.20	0.20
T086	0.04	0.04	0.02	0.11	0.08	0.12	0.09	0.04	0.01	0.05	0.03	0.07	0.06
T087	0.17	0.11	0.11	0.12	0.13	0.12	0.06	0.09	0.00	0.05	0.09	0.11	0.08
T088	0.33	0.14	0.19	0.17	0.13	0.12	0.07	0.08	0.02	0.16	0.21	0.16	0.12
T089	0.14	0.13	0.12	0.04	0.03	0.01	0.05	0.10	0.02	0.16	0.21	0.07	0.08
T090	0.13	0.12	0.10	0.09	0.04	0.12	0.10	0.15	0.02	0.07	0.10	0.09	0.08
T091	0.09	0.11	0.09	0.06	0.15	0.06	0.07	0.06	0.02	0.11	0.08	0.09	0.08
T092	0.27	0.19	0.22	0.22	0.21	0.11	0.13	0.15	0.03	0.13	0.16	0.19	0.14
T093	0.07	0.06	0.14	0.04	0.04	0.08	0.06	0.05	0.16	0.11	0.19	0.08	0.10
T094	0.23	0.11	0.03	0.08	0.01	0.09	0.03	0.04	0.10	0.23	0.31	0.09	0.12
T095	0.21	0.24	0.16	0.11	0.03	0.07	0.02	0.05	0.11	0.18	0.23	0.13	0.11
T096	0.23	0.22	0.20	0.13	0.13	0.02	0.05	0.10	0.18	0.26	0.31	0.16	0.16
T097	0.16	0.24	0.21	0.04	0.05	0.18	0.26	0.21	0.20	0.31	0.38	0.15	0.21
T098	0.30	0.21	0.18	0.06	0.23	0.12	0.14	0.28	0.19	0.19	0.16	0.16	0.18
T099	0.07	0.16	0.28	0.15	0.02	0.03	0.07	0.03	0.19	0.22	0.22	0.14	0.13
T100	0.07	0.21	0.28	0.15	0.15	0.02	0.11	0.05	0.05	0.19	0.22	0.15	0.12
T101	0.12	0.39	0.41	0.16	0.11	0.18	0.08	0.05	0.12	0.15	0.20	0.21	0.13
T102	0.27	0.39	0.46	0.21	0.13	0.03	0.13	0.07	0.26	0.23	0.25	0.25	0.18
T103	0.08	0.21	0.17	0.04	0.05	0.08	0.05	0.07	0.09	0.09	0.09	0.09	0.07
T104	0.07	0.15	0.08	0.12	0.19	0.13	0.13	0.09	0.06	0.12	0.15	0.12	0.12
T105	0.05	0.03	0.19	0.06	0.06	0.11	0.07	0.07	0.15	0.16	0.16	0.09	0.11
T106	0.17	0.07	0.04	0.13	0.08	0.18	0.07	0.08	0.07	0.07	0.19	0.10	0.10
T107	0.05	0.06	0.02	0.05	0.02	0.01	0.04	0.09	0.27	0.26	0.19	0.07	0.14
T108	0.04	0.14	0.09	0.08	0.05	0.11	0.02	0.07	0.22	0.20	0.08	0.10	0.12
T109	0.21	0.11	0.17	0.09	0.04	0.16	0.04	0.09	0.17	0.16	0.21	0.12	0.13
T110	0.11	0.17	0.30	0.11	0.07	0.01	0.00	0.08	0.28	0.28	0.21	0.16	0.16
T111	0.11	0.21	0.13	0.13	0.04	0.12	0.01	0.02	0.18	0.11	0.04	0.12	0.09
T112	0.18	0.20	0.19	0.06	0.07	0.10	0.02	0.06	0.03	0.07	0.13	0.11	0.07
T113	0.12	0.12	0.18	0.08	0.06	0.03	0.04	0.07	0.12	0.16	0.15	0.10	0.10
T114	0.17	0.21	0.15	0.15	0.00	0.03	0.01	0.04	0.09	0.06	0.10	0.11	0.06
T115	0.30	0.24	0.25	0.07	0.06	0.06	0.06	0.09	0.25	0.27	0.22	0.16	0.15
T116	0.09	0.26	0.34	0.19	0.12	0.05	0.12	0.13	0.29	0.33	0.32	0.21	0.21
T117	0.14	0.18	0.24	0.21	0.09	0.14	0.15	0.06	0.15	0.13	0.11	0.17	0.13

Proposed Scheme(VR)													
Test Point	**NNE**	**NE**	**ENE**	**E**	**ESE**	**SE**	**SSE**	**S**	**SSW**	**SW**	**WSW**	**Annual**	**Summer**
T118	0.08	0.04	0.16	0.10	0.06	0.07	0.05	0.06	0.10	0.07	0.06	0.09	0.07
T119	0.14	0.19	0.13	0.17	0.14	0.23	0.21	0.10	0.20	0.19	0.10	0.17	0.17
T120	0.18	0.15	0.09	0.23	0.14	0.14	0.09	0.03	0.12	0.06	0.06	0.15	0.10
T121	0.20	0.07	0.16	0.15	0.10	0.26	0.19	0.07	0.23	0.19	0.11	0.16	0.16
T122	0.26	0.42	0.26	0.23	0.12	0.11	0.05	0.02	0.23	0.27	0.30	0.23	0.18
T123	0.24	0.33	0.30	0.21	0.13	0.24	0.22	0.04	0.15	0.19	0.31	0.22	0.18
T124	0.18	0.24	0.31	0.17	0.10	0.19	0.21	0.11	0.20	0.26	0.30	0.20	0.20
T125	0.18	0.07	0.14	0.05	0.02	0.08	0.07	0.08	0.09	0.13	0.15	0.08	0.09
T126	0.23	0.12	0.12	0.05	0.19	0.23	0.26	0.20	0.18	0.28	0.29	0.15	0.22
Average LVR	**0.22**	**0.20**	**0.17**	**0.12**	**0.13**	**0.16**	**0.16**	**0.15**	**0.14**	**0.17**	**0.15**	**0.16**	**0.15**
S01	0.18	0.17	0.14	0.09	0.07	0.03	0.05	0.05	0.25	0.32	0.25	0.13	0.16
S02	0.31	0.33	0.28	0.03	0.05	0.03	0.03	0.05	0.21	0.24	0.21	0.16	0.12
S03	0.32	0.20	0.25	0.10	0.17	0.13	0.07	0.17	0.13	0.19	0.23	0.17	0.16
S04	0.13	0.14	0.10	0.06	0.17	0.16	0.13	0.17	0.04	0.10	0.14	0.10	0.11
S05	0.11	0.12	0.06	0.05	0.12	0.16	0.16	0.15	0.11	0.10	0.13	0.09	0.12
S06	0.05	0.04	0.03	0.02	0.07	0.10	0.10	0.09	0.05	0.12	0.12	0.05	0.09

Appendix 6

Supplementary Document for Future/ Committed Developments

Appendix 6

Supplementary Document for Future/ Committed Developments

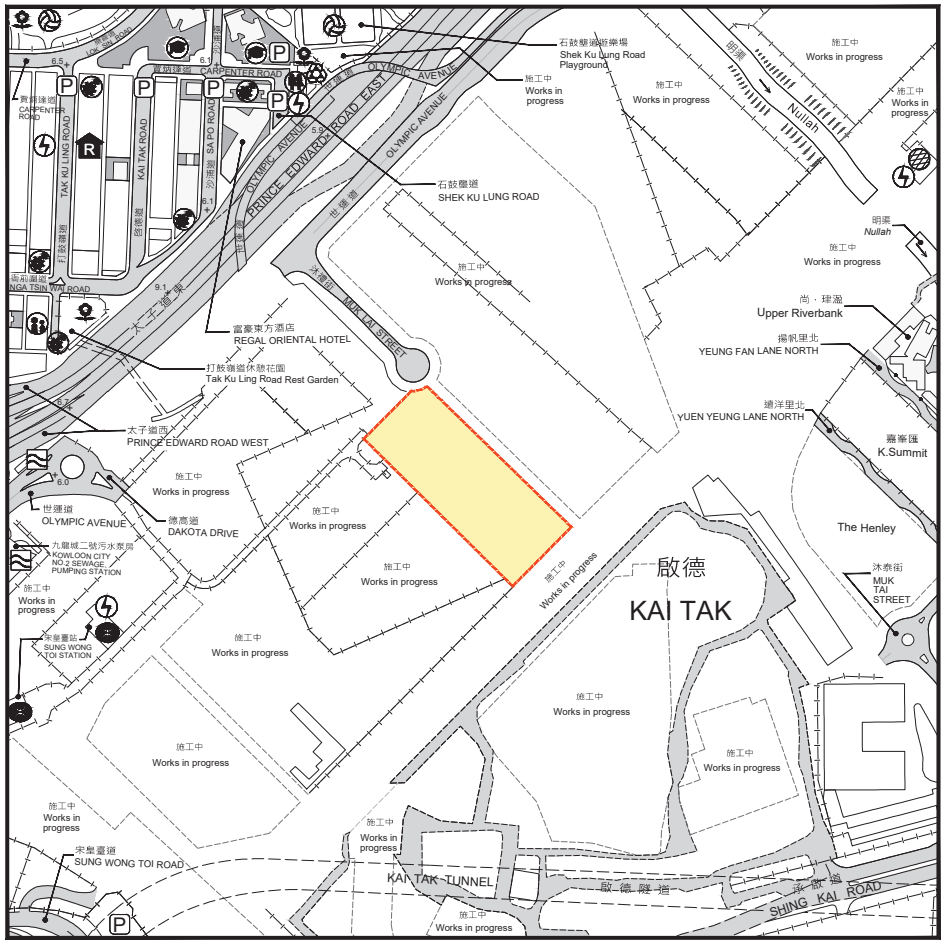
1. Kai Yan Court

出售居者有其屋計劃單位 SALE OF HOME OWNERSHIP SCHEME FLATS 2022

啟欣苑
Kai Yan Court

售樓說明書 SALES BROCHURE

07 發展項目的所在位置圖
Location Plan of the Development



比例尺 SCALE: 0 50 100 150 200 250 (米) (m)

N

啟欣苑
Kai Yan Court

圖例 NOTATION

體育設施(包括運動場及游泳池) Sports Facilities (including a Sports Ground and a Swimming Pool)	公眾停車場(包括貨車停泊處) A Public Carpark (including a Lorry Park)
公園 A Public Park	發電廠(包括電力分站) A Power Plant (including Electricity Sub-stations)
公共交通總站(包括鐵路車站) A Public Transport Terminal (including a Rail Station)	公用事業設施裝置 A Public Utility Installation
垃圾收集站 A Refuse Collection Point	社會福利設施(包括老人中心及弱智人士護理院) Social Welfare Facilities (including an Elderly Centre and a Home for the Mentally Disabled)
污水處理廠及設施 Sewage Treatment Works and Facilities	宗教場所(包括教堂、廟宇及祠堂) A Religious Institution (including a Church, a Temple and a Tsz Tong)
公廁 A Public Convenience	香港鐵路的通風井 A Ventilation Shaft for the Mass Transit Railway
學校(包括幼稚園) A School (including a Kindergarten)	

此位置圖參考日期均為2022年8月18日之測繪圖(編號分別為T11-NE-A及T11-NE-C)製作，有需要處經修正處理。

地圖由香港地理數據站提供，香港特別行政區政府為知識產權擁有人。

The Location Plan is prepared with reference to Survey Sheet Nos. T11-NE-A and T11-NE-C both dated 18 August 2022, with adjustments where necessary.

The map is provided by the Hong Kong GeoData Store and intellectual property rights are owned by the Government of the HKSAR.

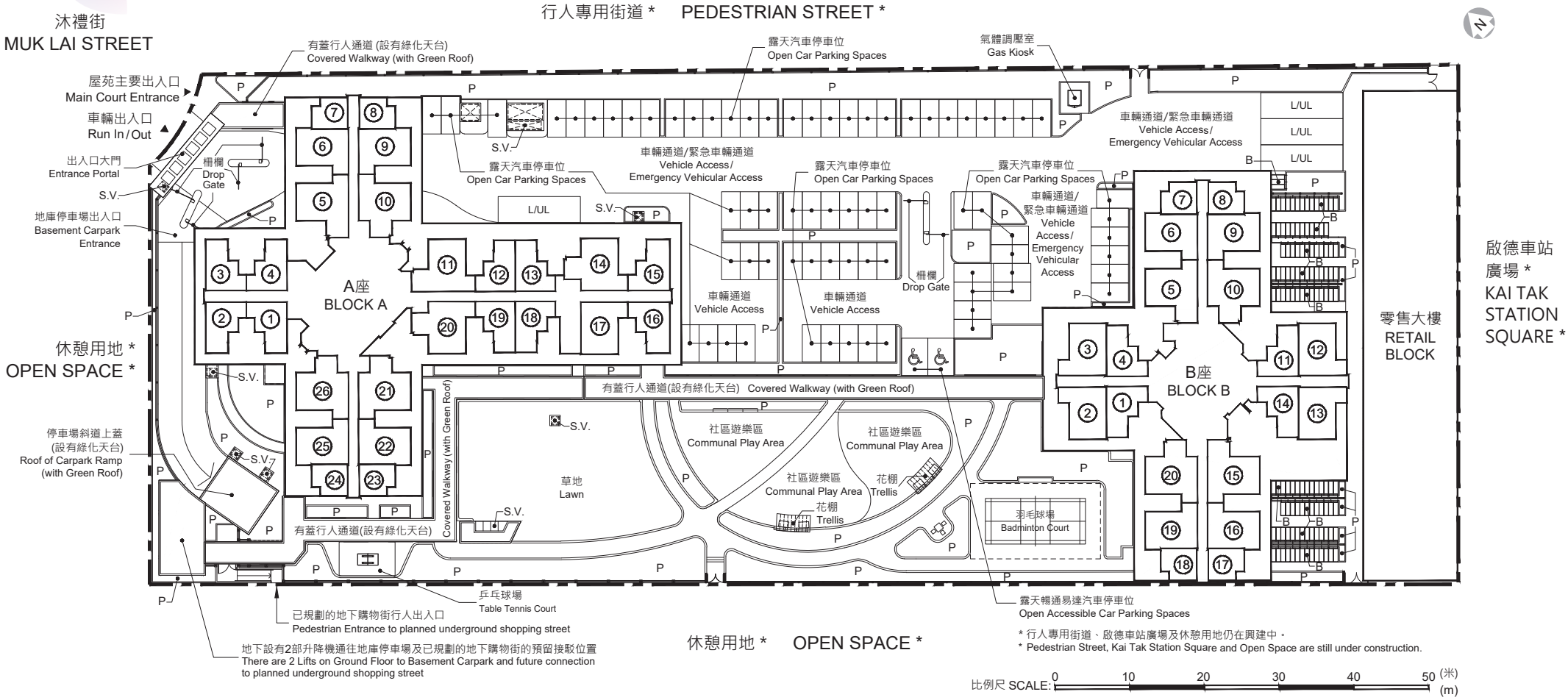
註：

1. 賣方建議買方到該發展項目作實地考察，以對該發展項目、其周邊地區環境及附近的公共設施有較佳的了解。
2. 由於該發展項目的邊界不規則的技術原因，此位置圖所顯示的範圍可能超過《一手住宅物業銷售條例》所要求顯示的範圍。

Notes:

1. The Vendor advises purchasers to conduct on-site visit for a better understanding of the Development, its surrounding environment and the public facilities nearby.
2. The plan may show more than the area required under the Residential Properties (First-hand Sales) Ordinance due to the technical reason that the boundary of the Development is irregular.

10 發展項目的布局圖
Layout Plan of the Development



由發展項目的委任建築師提供的該項目內的建築物或設施的預計落成日期：2025年6月30日
Estimated date of completion of the buildings or facilities within the Development as provided by the appointed architect for the Development: 30 June 2025

註：
上述該項目內的建築物或設施的預計落成日期為有關建築物或設施的佔用許可證的預計發出日期。

Note:
The estimated date of completion of the buildings or facilities within the Development is the estimated date for issue of Occupation Permit for the buildings or facilities concerned

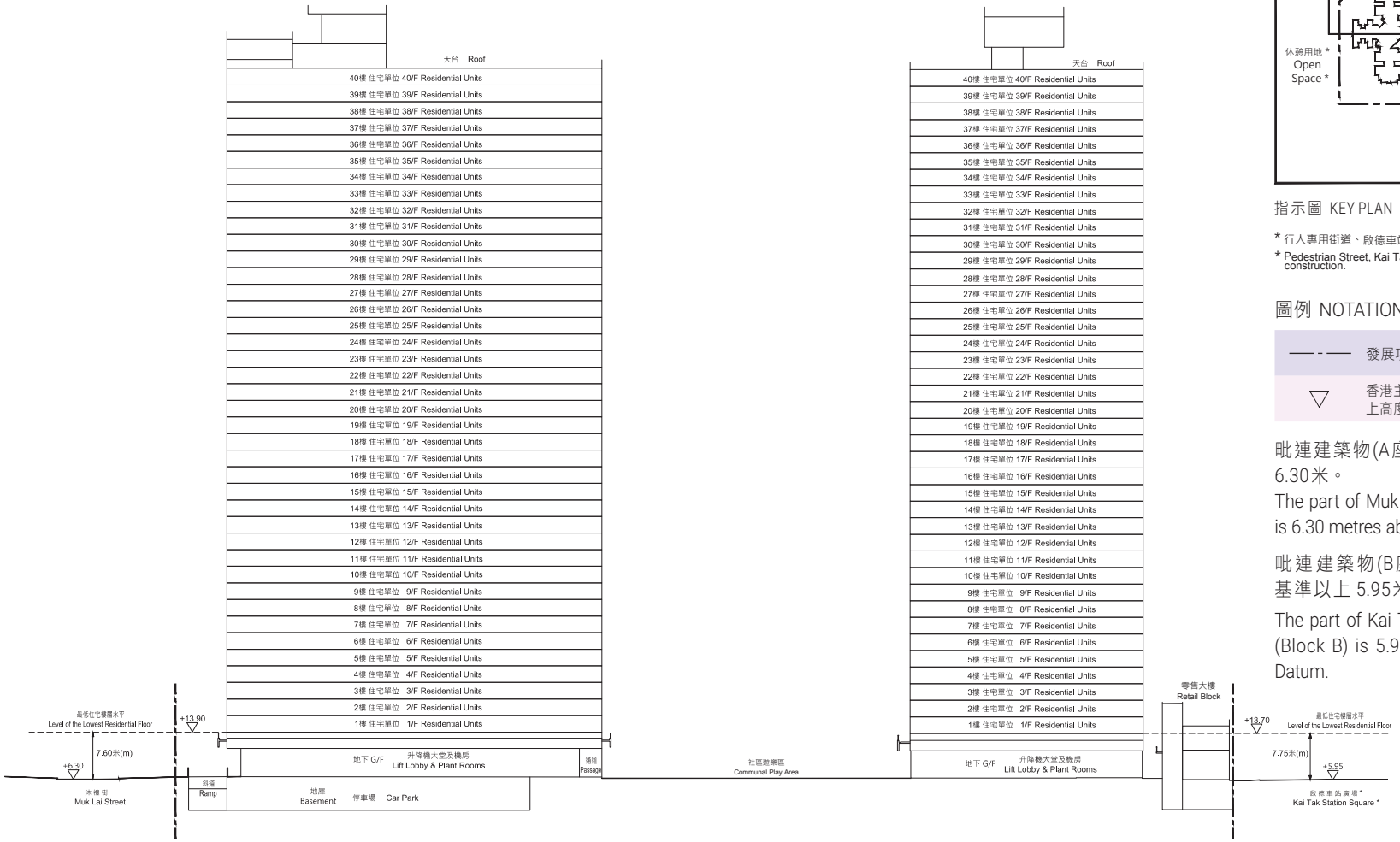
圖例 NOTATION

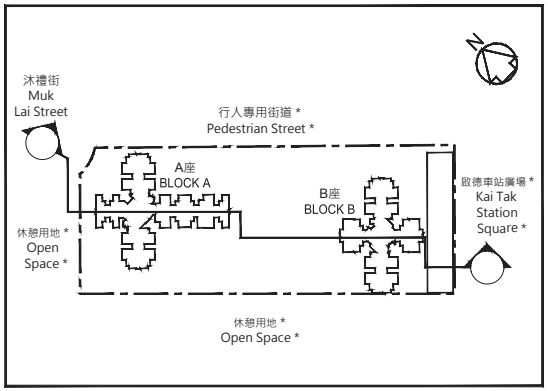
——·——·——	地界 Lot Boundary	P	花槽 Planter
①	A座1樓–40樓單位室號 Block A Flat Number on 1/F–40/F B座1樓–40樓單位室號 Block B Flat Number on 1/F–40/F	S.V.	排煙口 Smoke Vent
B	露天單車停車位 Open Bicycle Parking Spaces	L/UL	露天上落客貨停車位 Open Loading / Unloading Spaces

19 發展項目中的建築物的橫截面圖
Cross-section Plan of Building in the Development

A座
Block A

B座
Block B





指示圖 KEY PLAN

* 行人專用街道、啟德車站廣場及休憩用地仍在興建中。

* Pedestrian Street, Kai Tak Station Square and Open Space are still under construction.

圖例 NOTATION

—·—	發展項目的邊界	Boundary Line of the Development
▽	香港主水平基準上高度(米)	Height (in metres) above the Hong Kong Principal Datum

毗連建築物(A座)的一段沐禮街為香港主水平基準以上6.30米。

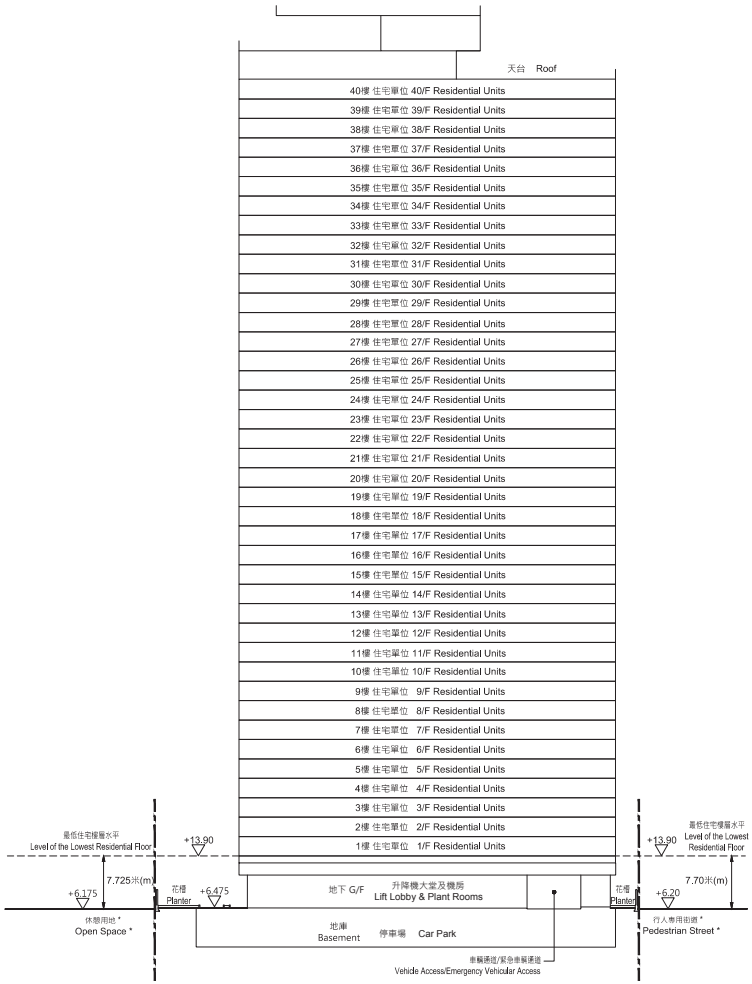
The part of Muk Lai Street adjacent to the building (Block A) is 6.30 metres above the Hong Kong Principal Datum.

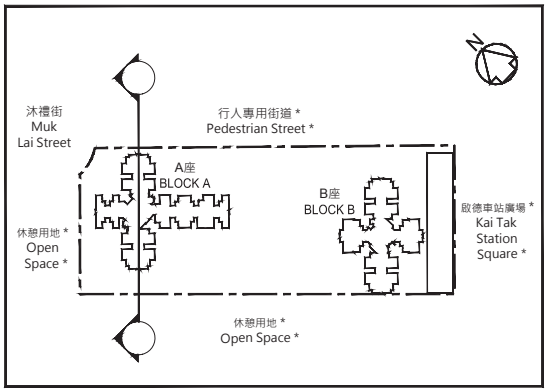
毗連建築物(B座)的一段啟德車站廣場*為香港主水平基準以上5.95米。

The part of Kai Tak Station Square* adjacent to the building (Block B) is 5.95 metres above the Hong Kong Principal Datum.

發展項目中的建築物的橫截面圖
Cross-section Plan of Building in the Development

A座
Block A





指示圖 KEY PLAN

* 行人專用街道、啟德車站廣場及休憩用地仍在興建中。

* Pedestrian Street, Kai Tak Station Square and Open Space are still under construction.

圖例 NOTATION

—·—	發展項目的邊界	Boundary Line of the Development
▽	香港主水平基準上高度(米)	Height (in metres) above the Hong Kong Principal Datum

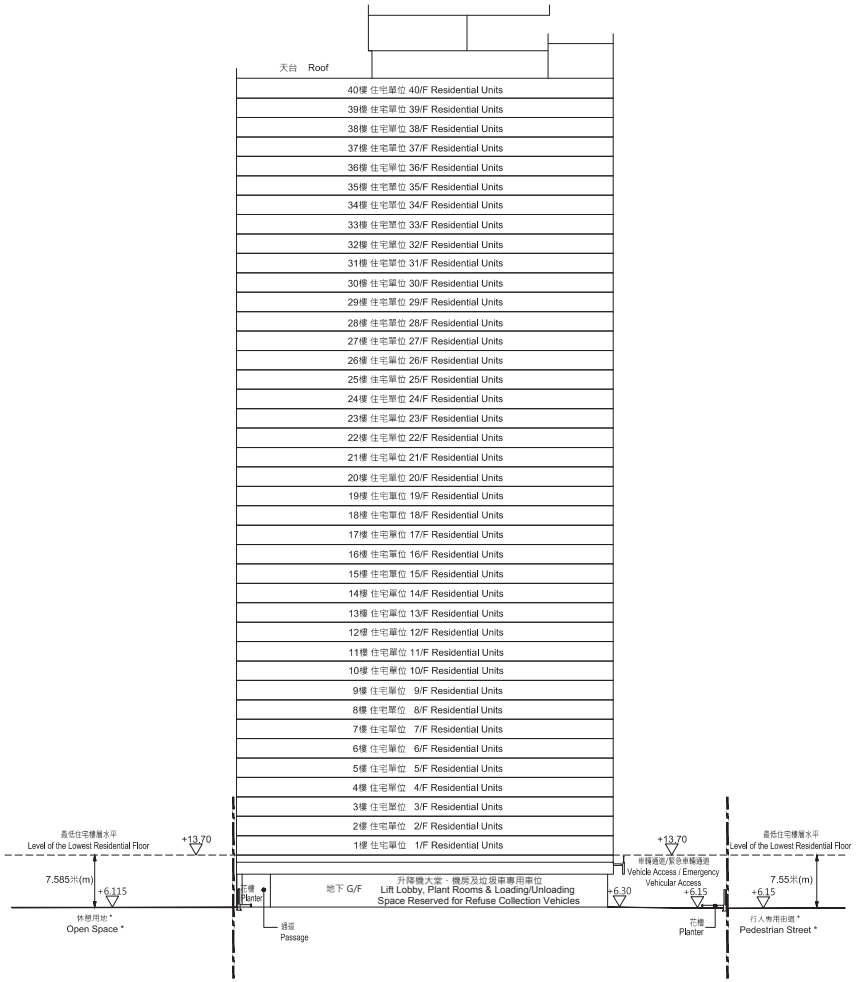
毗連建築物(A座)的一段行人專用街道*為香港主水平基準以上6.20米。

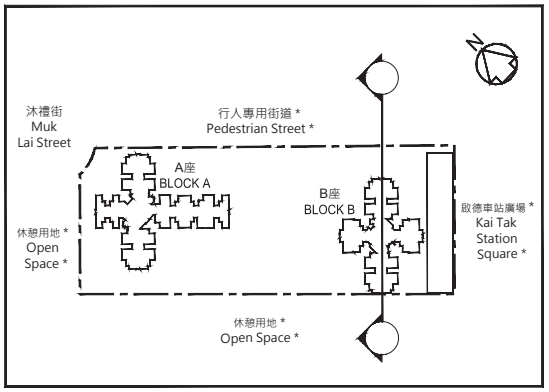
The part of Pedestrian Street* adjacent to the building (Block A) is 6.20 metres above the Hong Kong Principal Datum.

毗連建築物(A座)的一段休憩用地*為香港主水平基準以上6.175米。

The part of Open Space* adjacent to the building (Block A) is 6.175 metres above the Hong Kong Principal Datum.

B座
Block B





指示圖 KEY PLAN

* 行人專用街道、啟德車站廣場及休憩用地仍在興建中。

* Pedestrian Street, Kai Tak Station Square and Open Space are still under construction.

圖例 NOTATION

—·—	發展項目的邊界	Boundary Line of the Development
▽	香港主水平基準上高度(米)	Height (in metres) above the Hong Kong Principal Datum

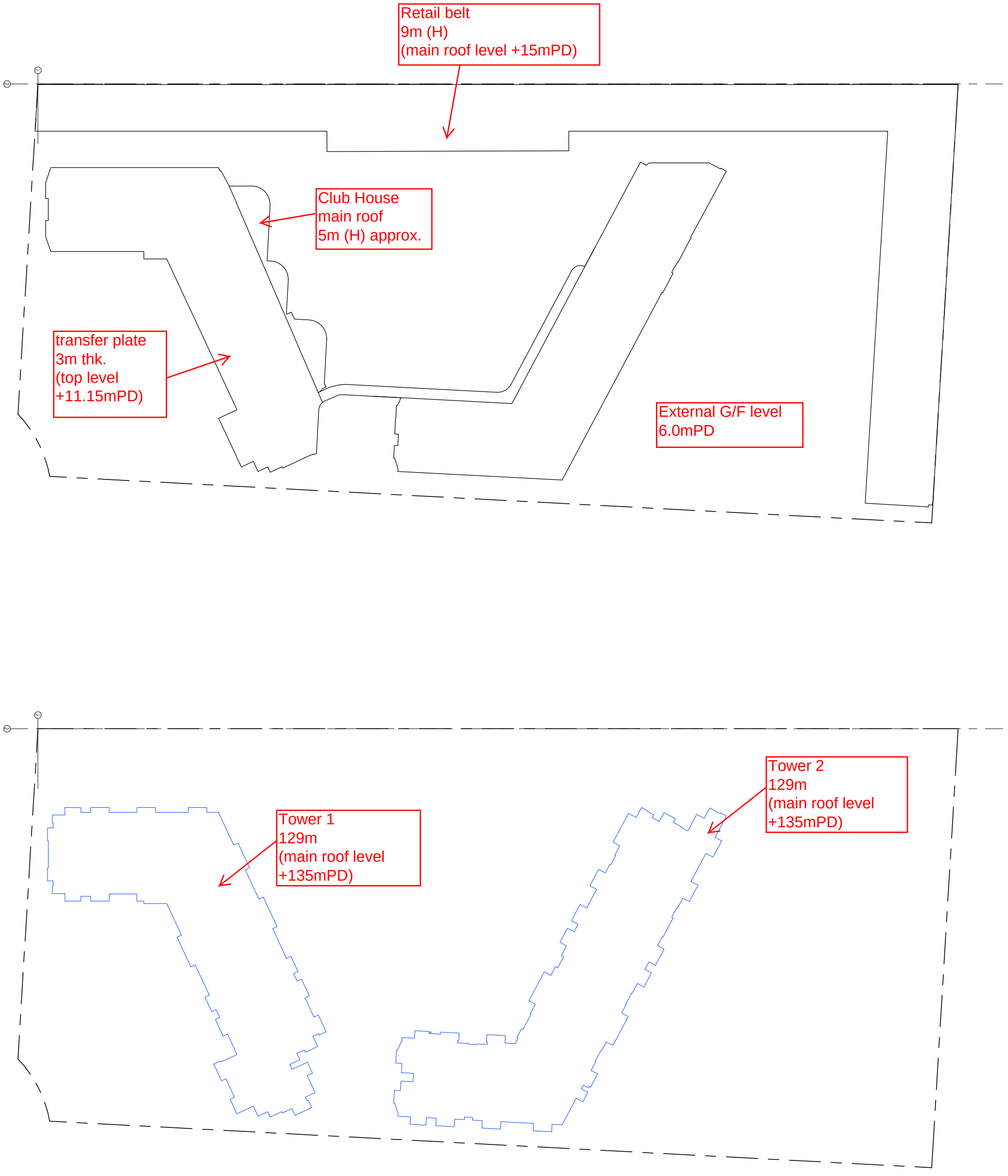
毗連建築物(B座)的一段行人專用街道*為香港主水平基準以上6.15米。

The part of Pedestrian Street* adjacent to the building (Block B) is 6.15 metres above the Hong Kong Principal Datum.

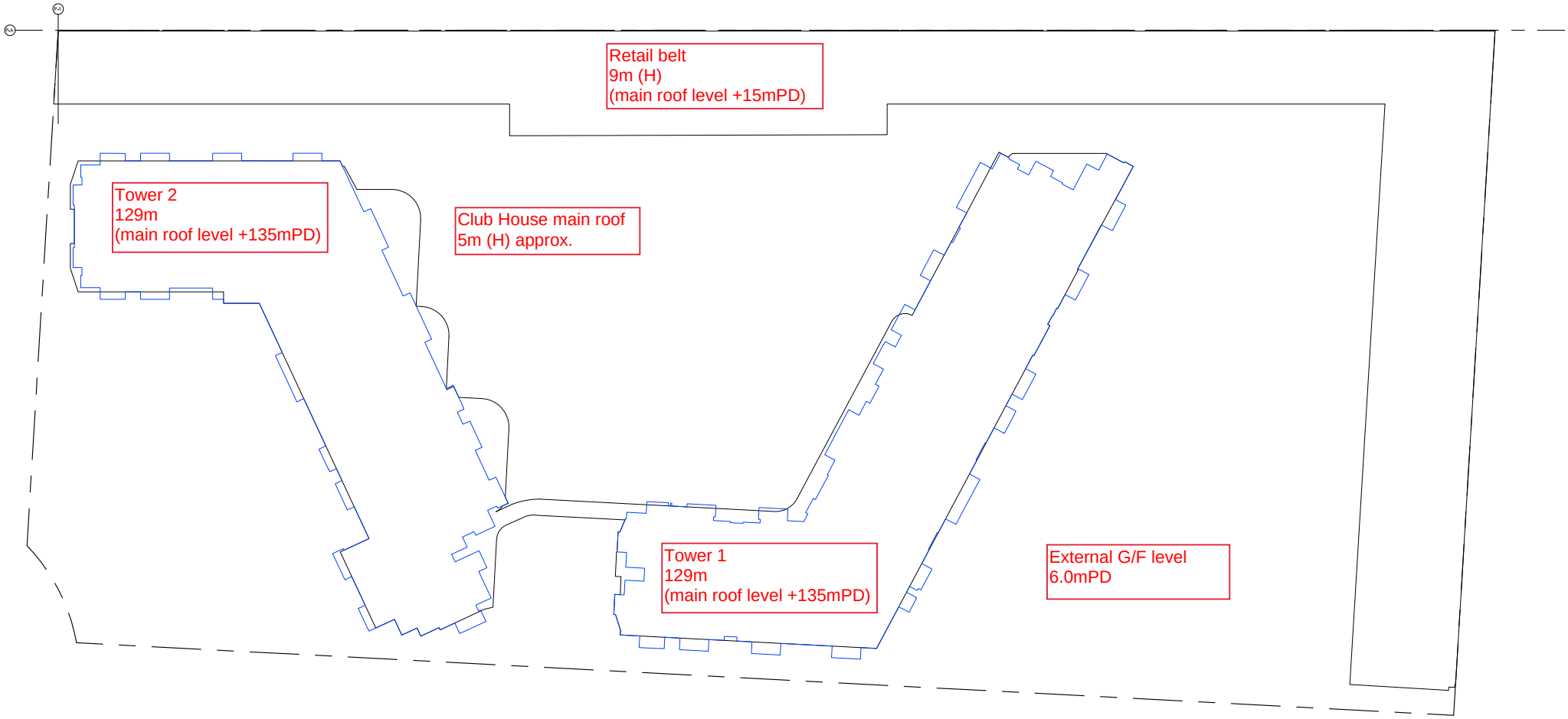
毗連建築物(B座)的一段休憩用地*為香港主水平基準以上6.115米。

The part of Open Space* adjacent to the building (Block B) is 6.115 metres above the Hong Kong Principal Datum.

2a. Future Residential Site
2B1



H:\Dwgs\ACAD\To Others\Client_HKHS\2022-09-21 outline for building\outline for building.dwg, 1:700, Project No.: N2842-H


Retail belt
9m (H)
(main roof level +15mPD)
Tower 2
129m
(main roof level +135mPD)
Club House main roof
5m (H) approx.
Tower 1
129m
(main roof level +135mPD)
External G/F level
6.0mPD

2b. Future Residential Site 2B3-2B4
2c. Future Residential Site 2B5 & 2B6

立法會參考資料摘要

《城市規劃條例》
(第 131 章)

啟德分區計劃大綱核准圖編號 S/K22/8

引言

在二零二二年十月十八日的會議上，行政會議**建議**，行政長官**指令**，應根據《城市規劃條例》(條例)第 9(1)(a)條，核准《啟德分區計劃大綱草圖編號 S/K22/7A》。該圖現重新編號為 S/K22/8，並載於
A **附件 A**。

《啟德分區計劃大綱核准圖編號 S/K22/6》自發還後所作的修訂

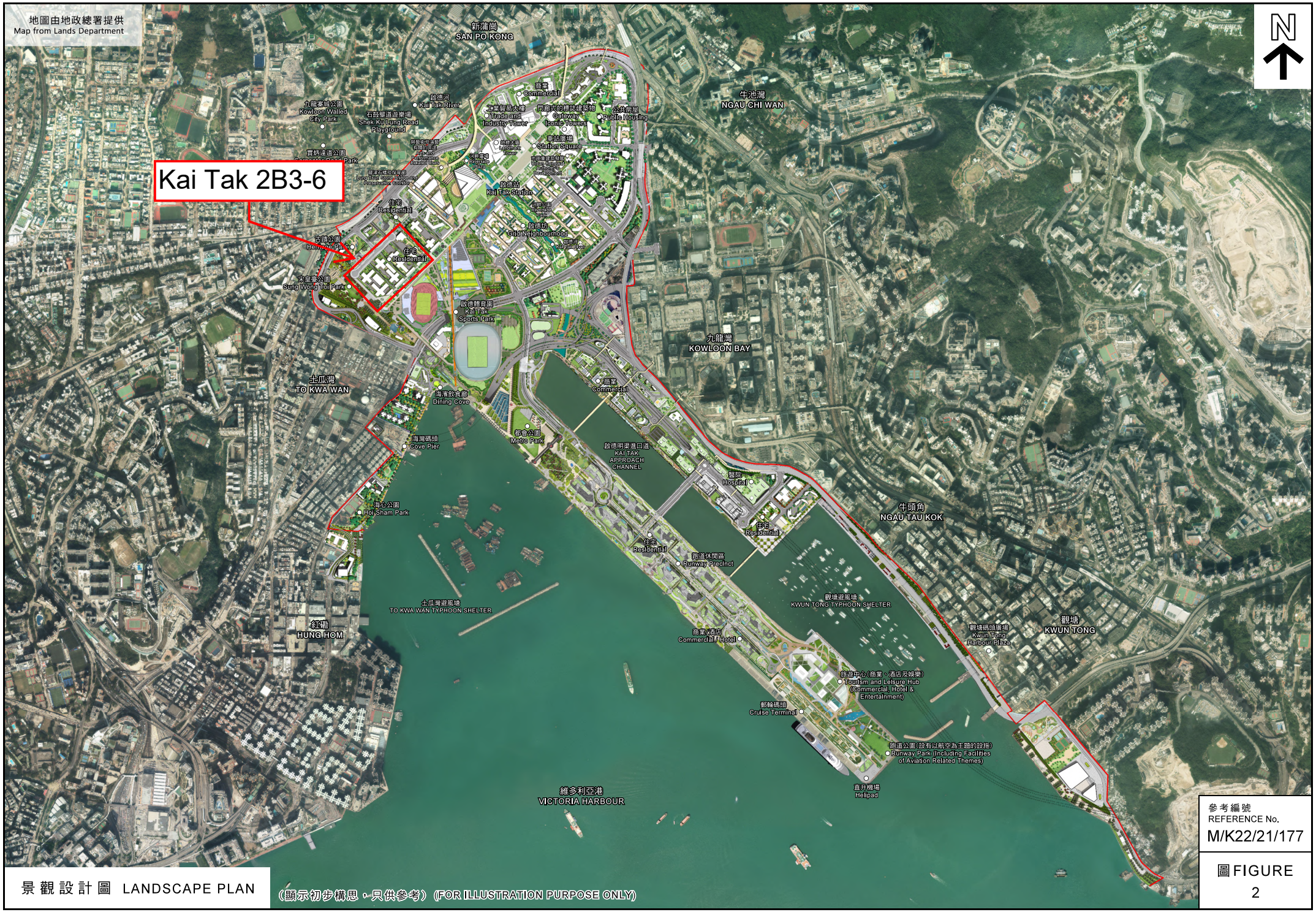
2. 《啟德分區計劃大綱核准圖編號 S/K22/6》於二零二一年六月一日發還城市規劃委員會(城規會)，城規會於二零二一年十二月十日根據條例第 5 條展示納入了修訂的《啟德分區計劃大綱草圖編號 S/K22/7》(分區計劃大綱草圖)，以供公眾查閱。分區計劃大綱草圖所顯示的修訂項目主要涉及—

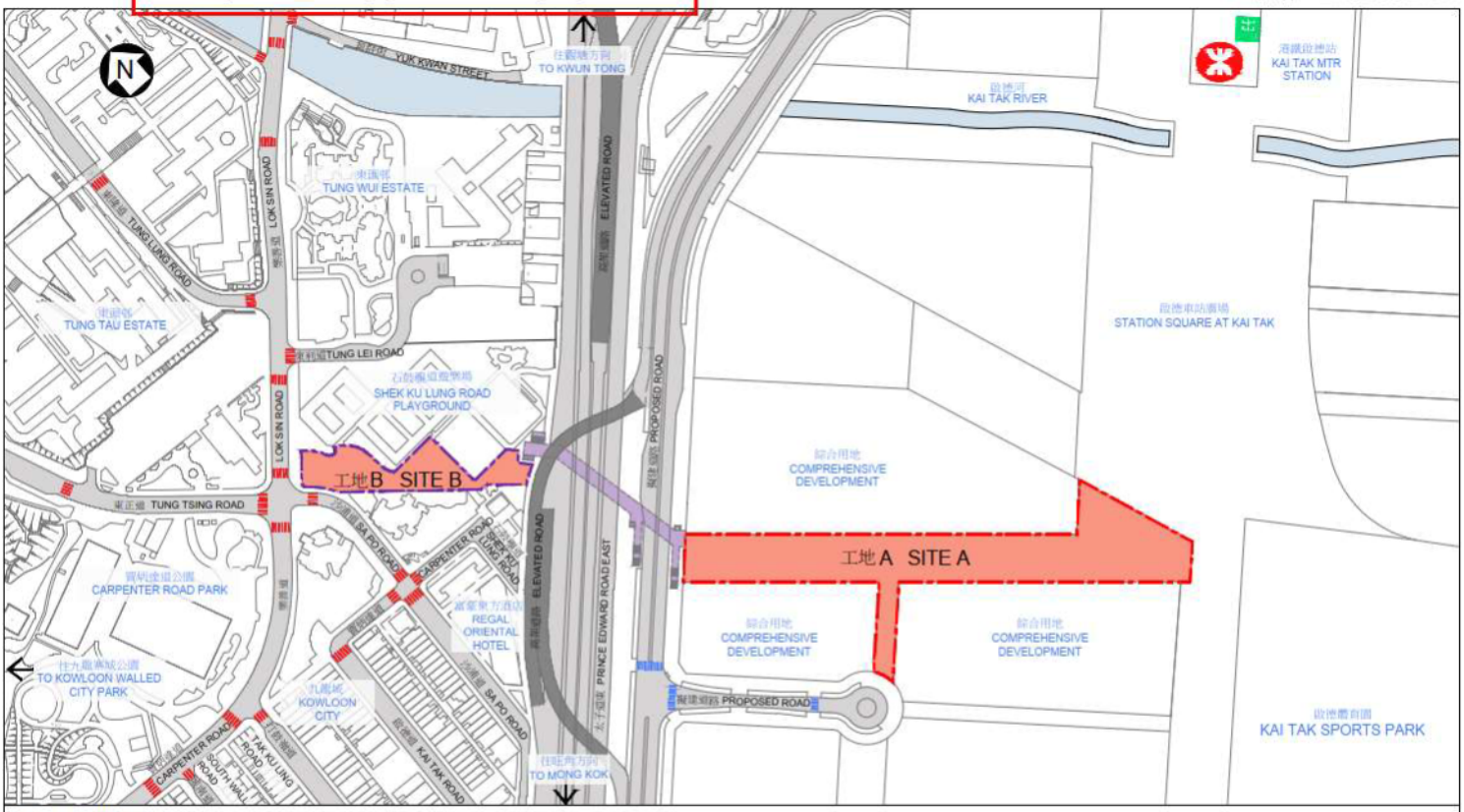
<u>私人住宅發展</u>

(a) 修訂位於世運道東南側及沐禮街東北側劃為「綜合發展區(4)」地帶用地(即用地 2A2[1])的建築物高度限制，由主水平基準上 90 米修訂為主水平基準上 125 米(**修訂項目 A**)；

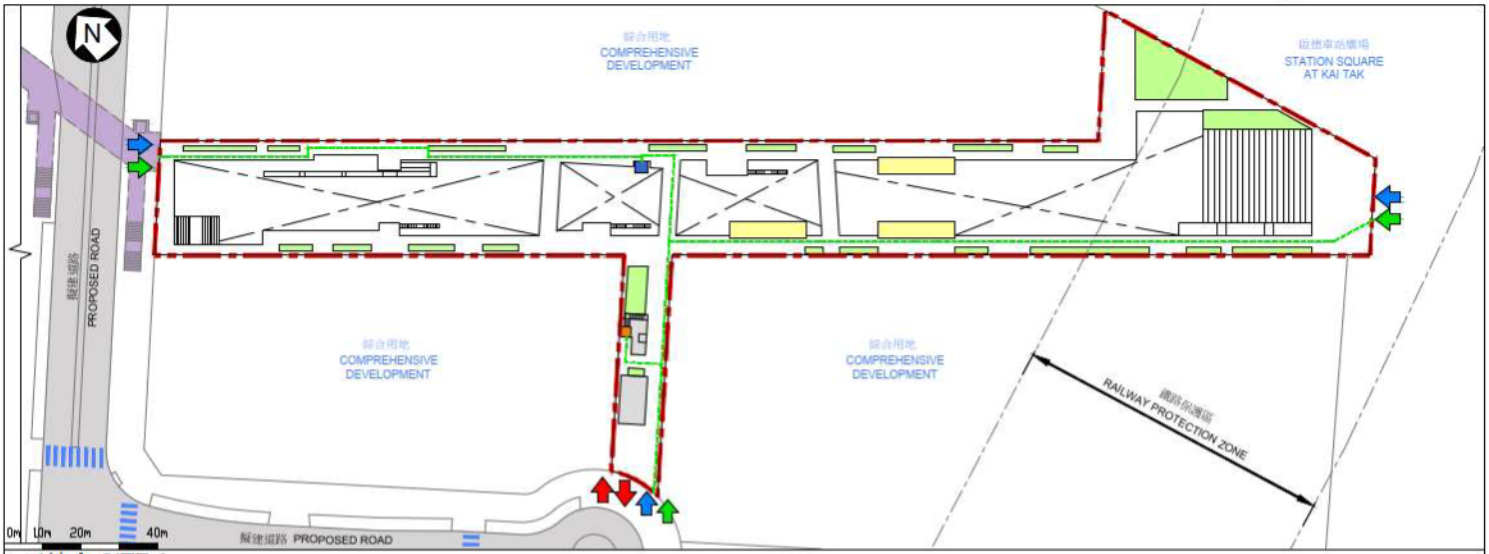
(b) 把位於世運道東南側及沐禮街西南側的一幅用地(即用地 2A3)由「商業(3)」地帶改劃為「住宅(甲類)6」地帶，並訂明建築物高度限制為主水平基準上 125 米(**修訂項目 B**)；

[1] 政府已決定把(a)用地 2A2 和 2A3，以及(b)用地 2A4、2A5(B)和 2A10 合併為兩組，而每組用地將以獨立地段的形式出售及發展。

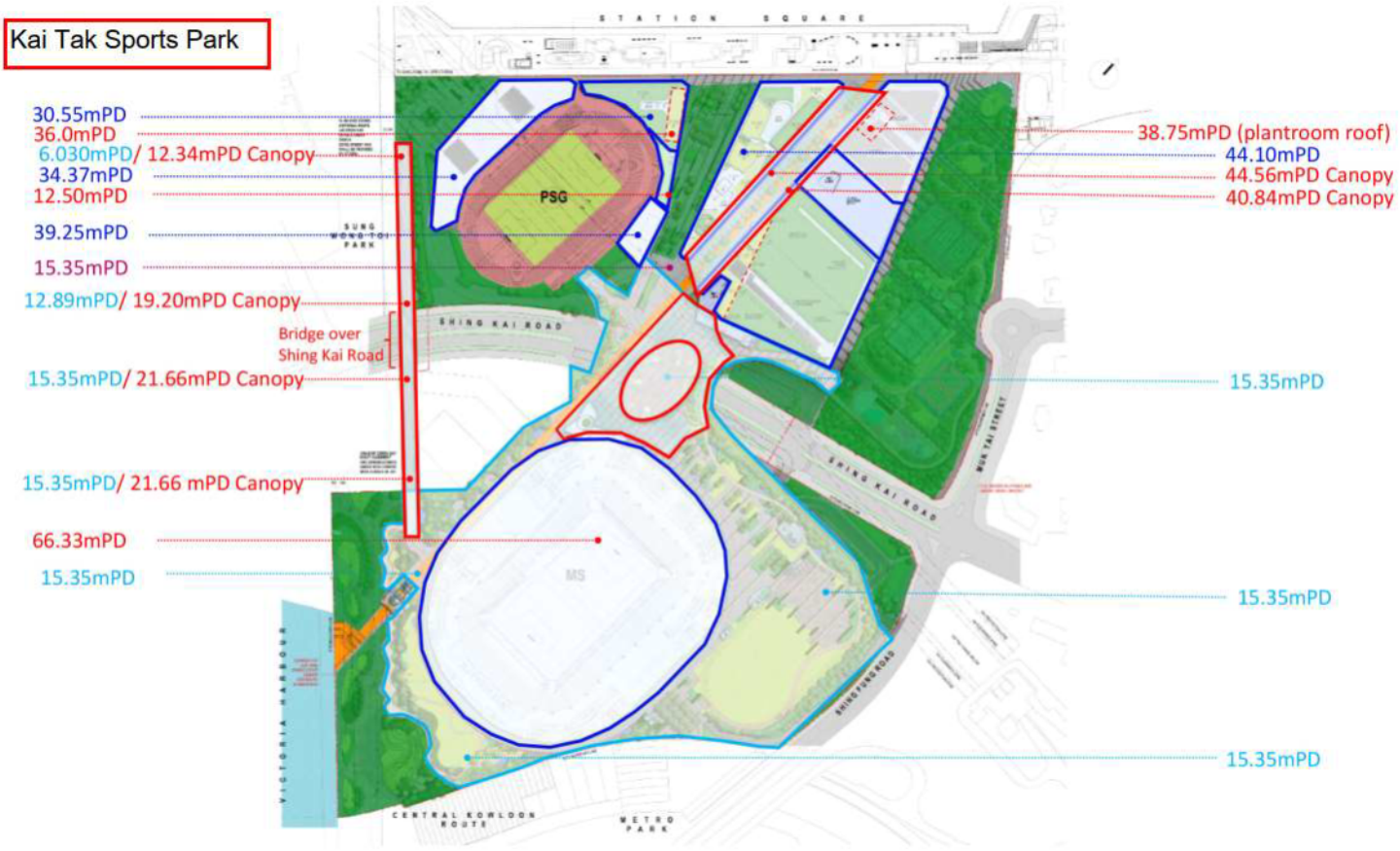

地圖由地政總署提供
Map from Lands Department
N
Kai Tak 2B3-6
新蒲崗
SAN PO KONG
牛池灣
NGAU CHI WAN
九龍灣
KOWLOON BAY
土瓜灣
TO KWA WAN
紅磡
HUNG HOM
牛頭角
NGAU TAU KOK
觀塘
KWUN TONG
維多利亞港
VICTORIA HARBOUR
啟德河
Kai Tak River
啟德站
Kai Tak Station
啟德體育園
Kai Tak Sports Park
都會公園
Metro Park
啟德跑道公園（設有以航空為主題的設施）
Runway Park (Including Facilities of Aviation Related Themes)
直升機場
Helipad
景觀設計圖 LANDSCAPE PLAN
（顯示初步構思，只供參考）(FOR ILLUSTRATION PURPOSE ONLY)
參考編號
REFERENCE No.
M/K22/21/177
圖 FIGURE
2

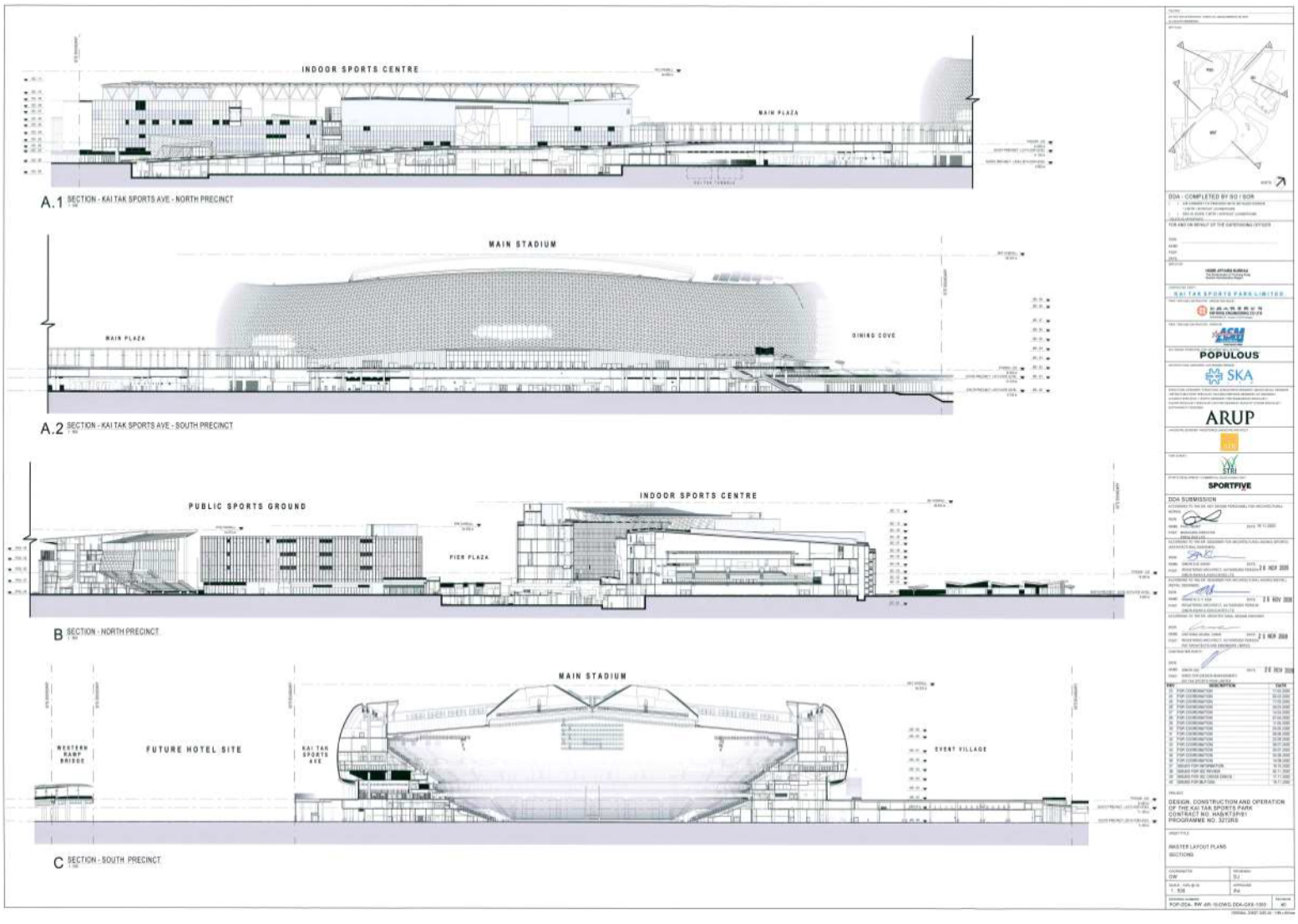


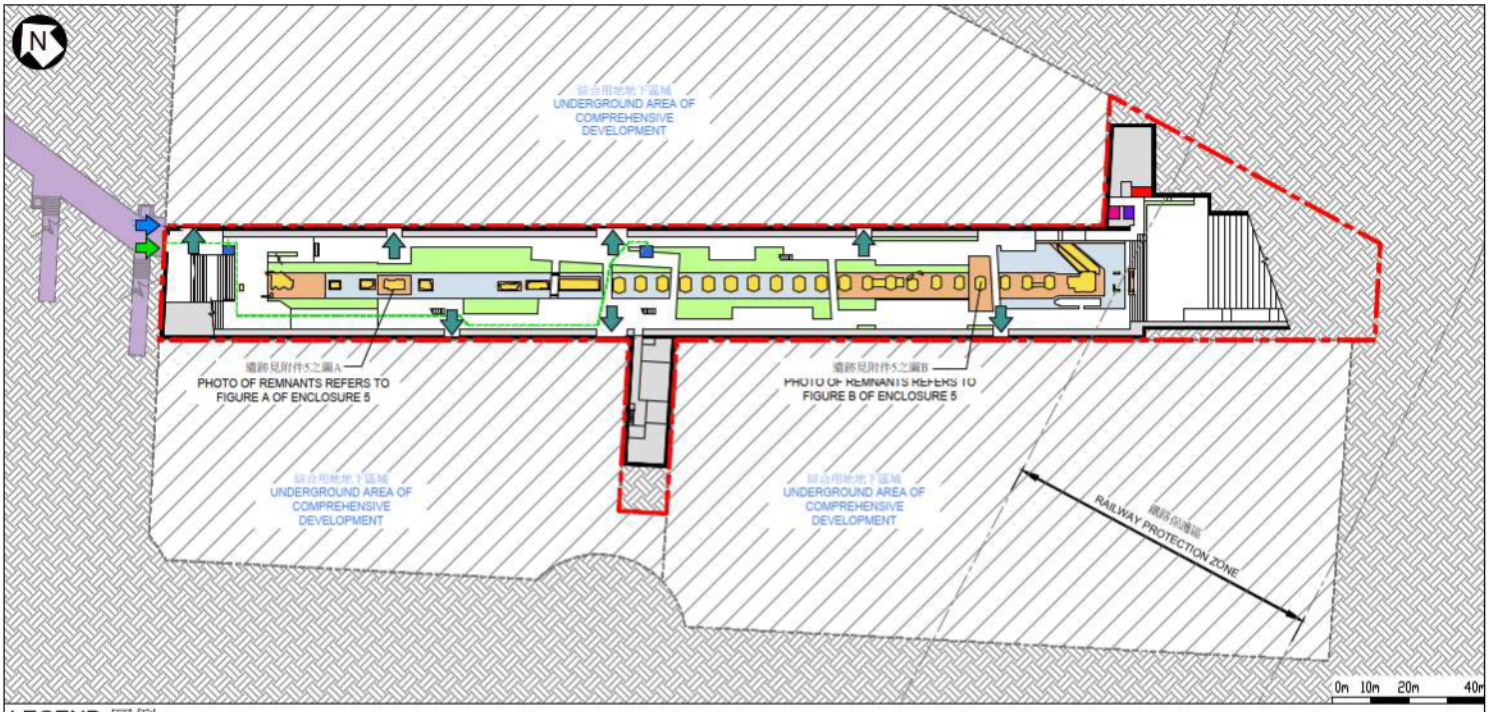
位置圖 LOCATION PLAN	470RO 啟德龍津石橋保育長廊 LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR AT KAI TAK	ARCHITECTURAL SERVICES DEPARTMENT 建築署



地下平面圖 (工地 A和B) GROUND FLOOR PLAN (SITE A & B)	470RO 啟德龍津石橋保育長廊 LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR AT KAI TAK	ARCHITECTURAL SERVICES DEPARTMENT 建築署


Kai Tak Sports Park
30.55mPD
36.0mPD
6.030mPD/ 12.34mPD Canopy
34.37mPD
12.50mPD
39.25mPD
15.35mPD
12.89mPD/ 19.20mPD Canopy
Bridge over Shing Kai Road
15.35mPD/ 21.66mPD Canopy
15.35mPD/ 21.66 mPD Canopy
66.33mPD
15.35mPD
38.75mPD (plantroom roof)
44.10mPD
44.56mPD Canopy
40.84mPD Canopy
15.35mPD
15.35mPD
15.35mPD
STATION SQUARE
PSG
SUNG WONG TOI PARK
SHING KAI ROAD
MUK TAI STREET
KAI TAK SPORTS PARK
VICTORIA HARBOUR
CENTRAL KOWLOON ROUTE
METRO PARK


INDOOR SPORTS CENTRE
MAIN PLAZA
A.1 SECTION - KAI TAK SPORTS AVE - NORTH PRECINCT
MAIN STADIUM
MAIN PLAZA
DINING COVE
A.2 SECTION - KAI TAK SPORTS AVE - SOUTH PRECINCT
PUBLIC SPORTS GROUND
INDOOR SPORTS CENTRE
PIER PLAZA
B SECTION - NORTH PRECINCT
MAIN STADIUM
WESTERN RAMP BRIDGE
FUTURE HOTEL SITE
KAI TAK SPORTS AVE
EVENT VILLAGE
C SECTION - SOUTH PRECINCT
POPULOUS
SKA
ARUP
SPORTFIVE
DDA SUBMISSION
DESIGN, CONSTRUCTION AND OPERATION OF THE KAI TAK SPORTS PARK CONTRACT NO. HA/KTSP/01 PROGRAMME NO. 3726/8
MASTER LAYOUT PLANS
SECTIONS



LEGEND 圖例

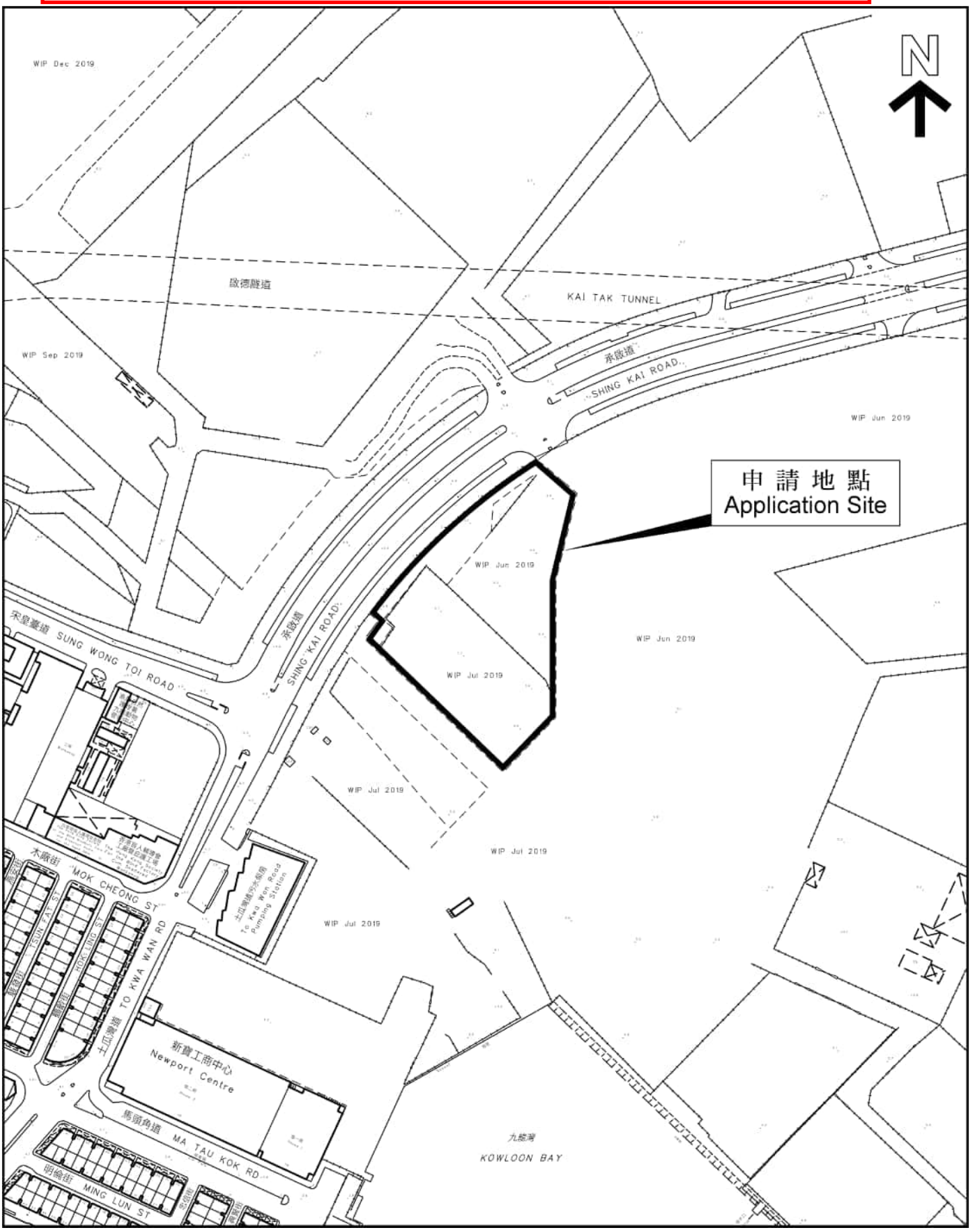
工地界線 SITE BOUNDARY	擬建接駁鄰近地區通道 PROPOSED CONNECTIONS WITH ADJACENT AREAS	花槽 / 草坪 PLANTER / LAWN	水景 WATER FEATURE	遺跡 REMNANTS	暢通易達升降機 ACCESSIBLE LIFT	育嬰室 BABYCARE ROOM
興建中行人隧道 (由其他工程承造) SUBWAY UNDER CONSTRUCTION (BY OTHERS)	行人出入口 PEDESTRIAN ENTRANCE / EXIT	救護站 FIRST-AID ROOM	礫石區 GRAVEL AREA	通用洗手間 UNIVERSAL TOILET	機房和貯物室 PLANT ROOM AND STORE ROOM	地下區域 UNDERGROUND AREA
	無障礙出入口 BARRIER-FREE ENTRANCE / EXIT	無障礙通道 BARRIER-FREE ACCESS				

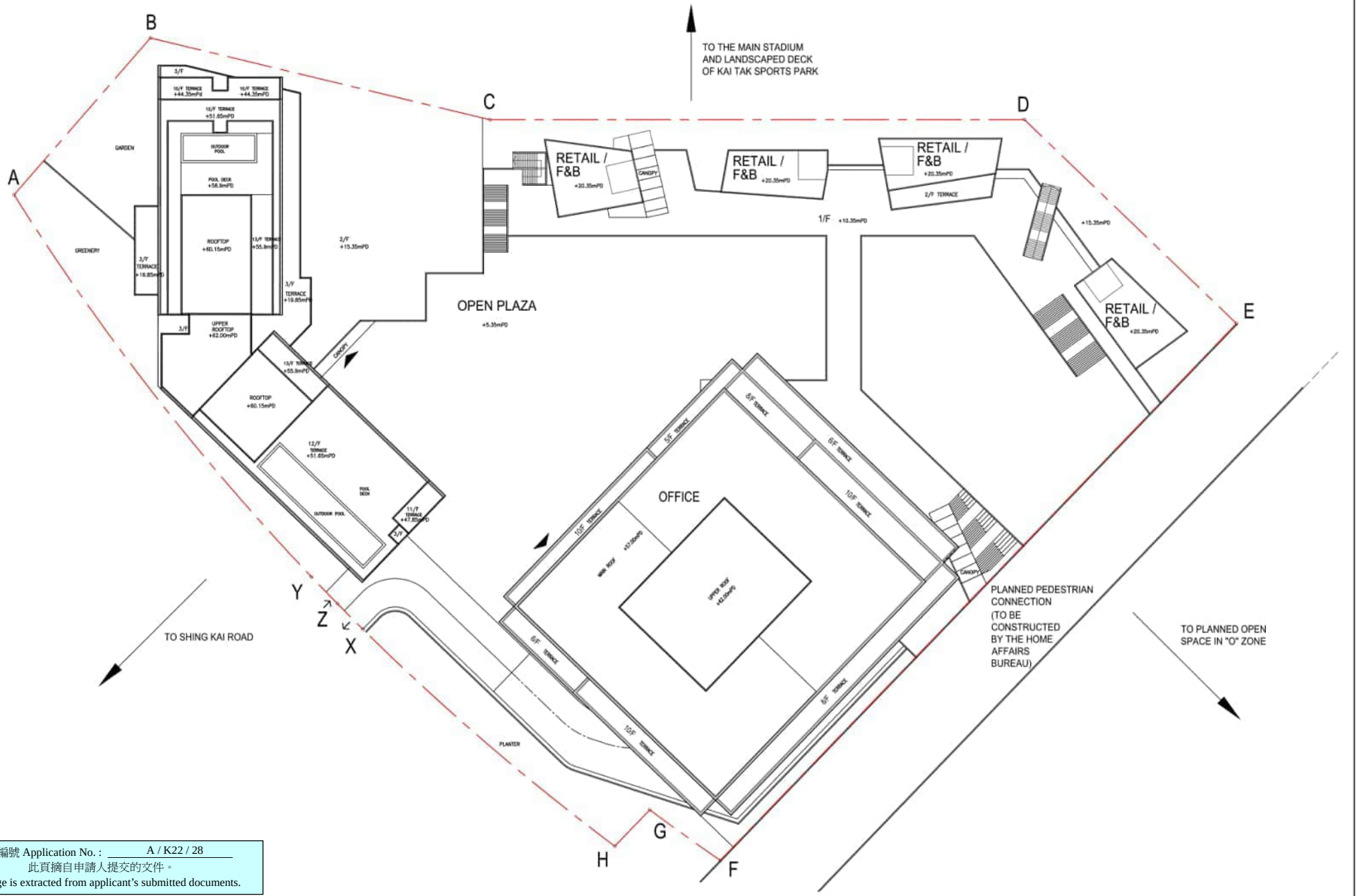
地下低層平面圖 (工地A) LOWER GROUND FLOOR PLAN (SITE A)	470RO 啟德龍津石橋保育長廊 LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR AT KAI TAK	ARCHITECTURAL SERVICES DEPARTMENT 建築署

從西北面望向保育長廊的構思透視圖
PERSPECTIVE VIEW FROM NORTHWEST DIRECTION OF PRESERVATION CORRIDOR

構思圖 (工地A) ARTIST'S IMPRESSION (SITE A)	470RO 啟德龍津石橋保育長廊 LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR AT KAI TAK	ARCHITECTURAL SERVICES DEPARTMENT 建築署

5b. Future Office and Hotel Development of Kai Tak Sports Park (KTSP)(Reference No. A/K22/28)



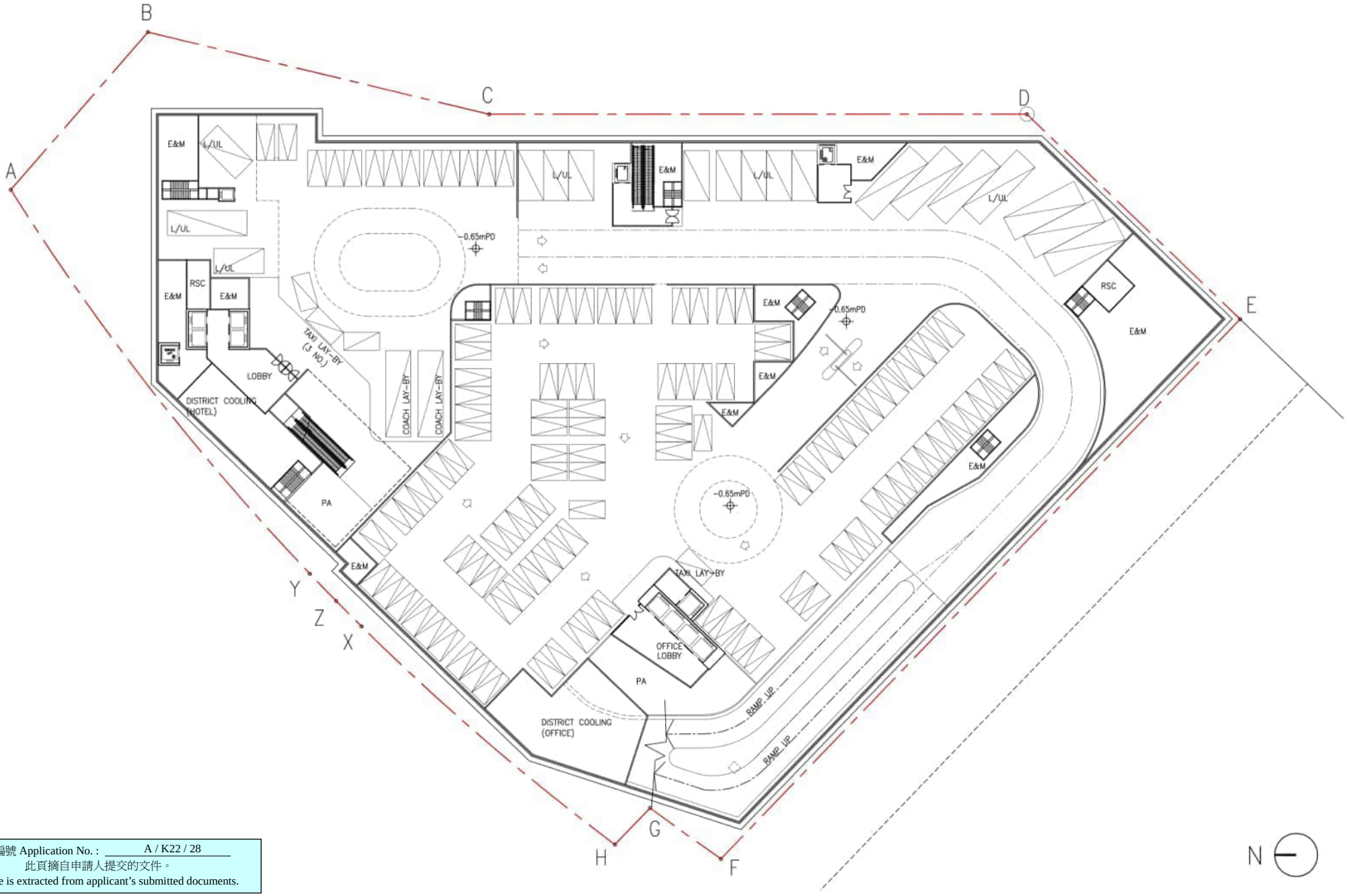


申請編號 Application No. : A / K22 / 28
此頁摘自申請人提交的文件。
This page is extracted from applicant's submitted documents.

Title

Indicative Block Plan

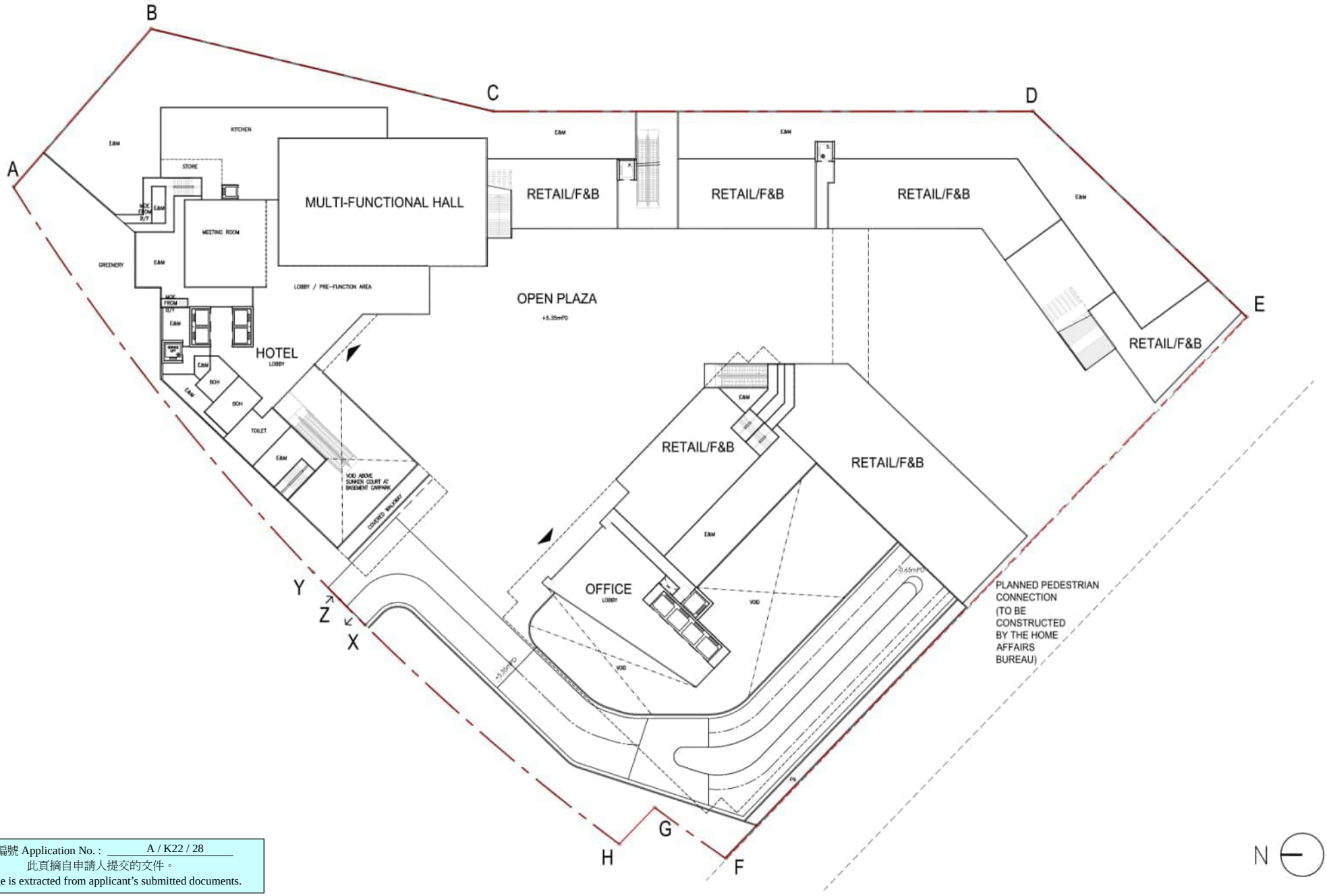
Checked	DH	Drawn	PW
Rev	0	Date	Mar 2020
Scale	N.A	Figure	3.1



Title

Indicative Basement Plan

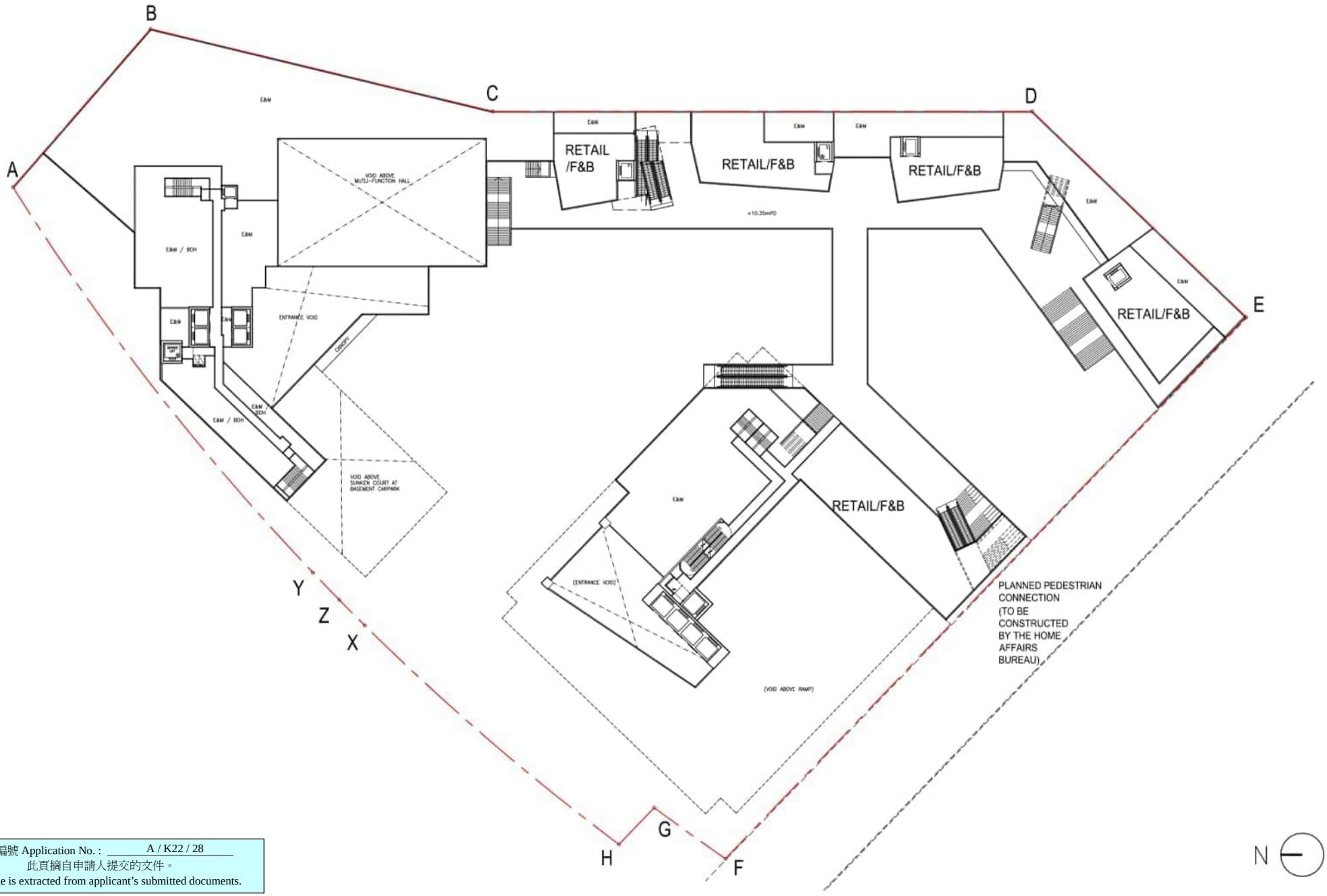
Checked	DH	Drawn	PW
Rev	0	Date	Mar 2020
Scale	N.A	Figure	3.2



Title

Indicative G/F Plan

Checked	DH	Drawn	PW
Rev	0	Date	Mar 2020
Scale	N.A	Figure	3.3



Title

Indicative 1/F Plan

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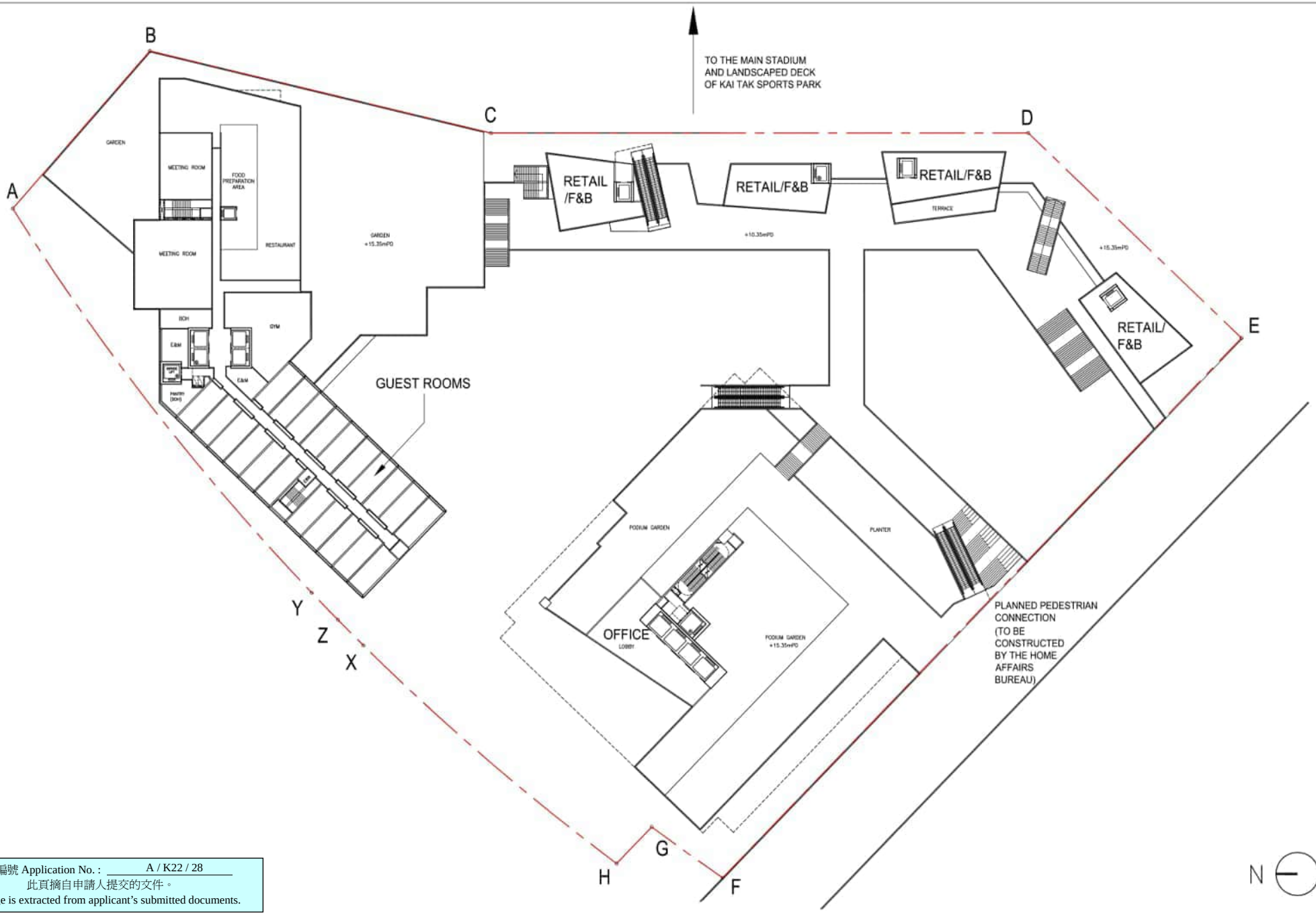
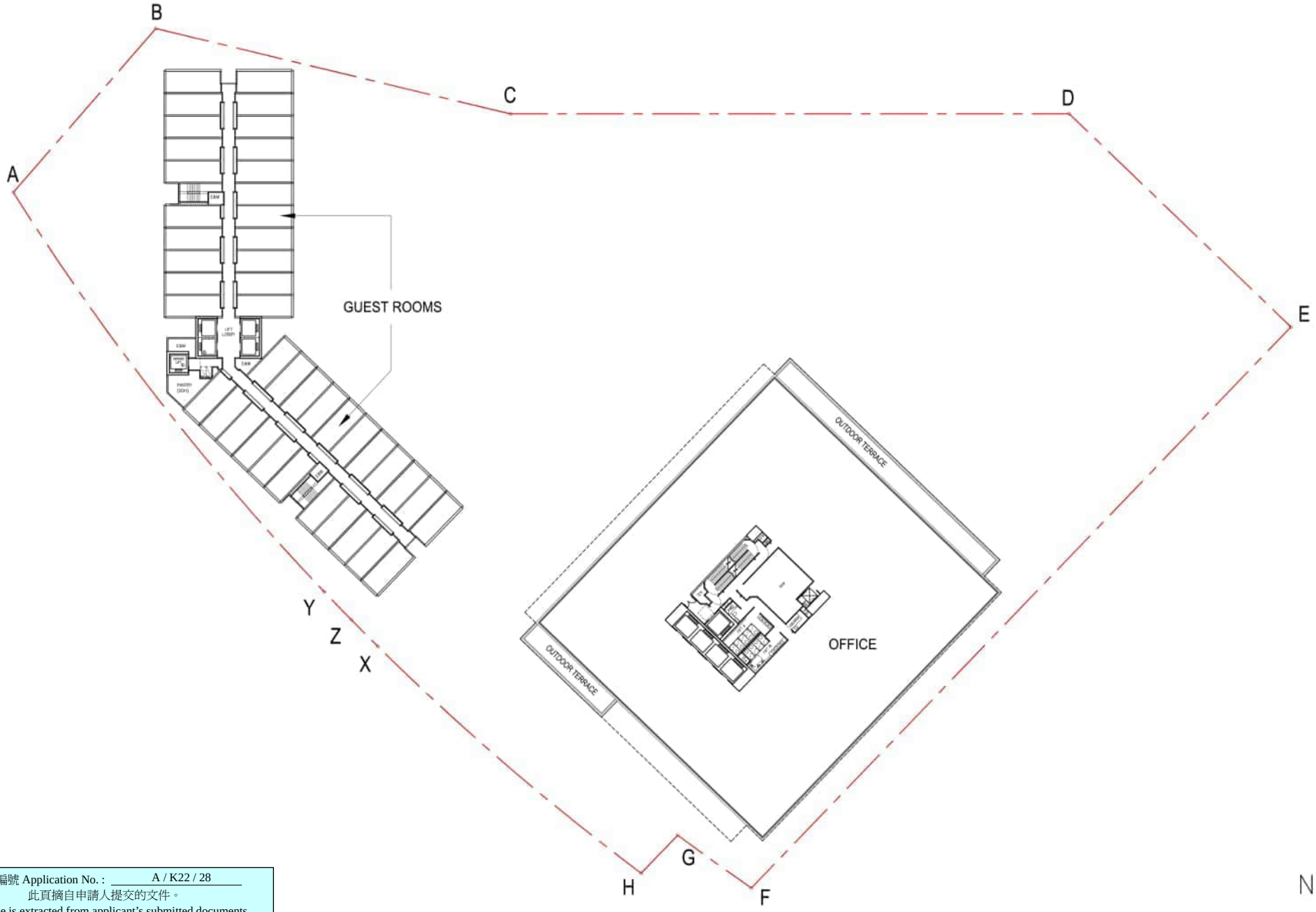
Rev	0	Date	Mar 2020
Scale	N.A	Figure	3.4



Title

Indicative 2/F Plan

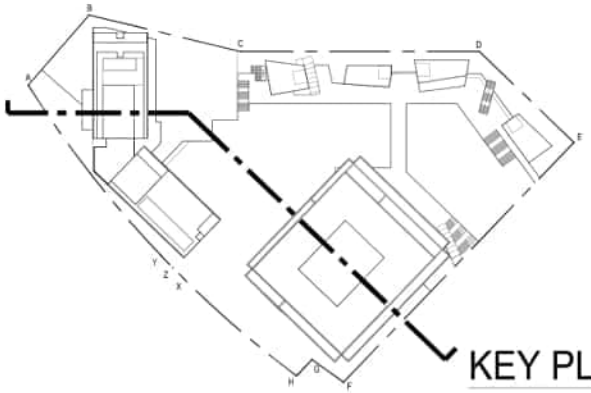
Checked	DH	Drawn	PW
Rev	0	Date	Mar 2020
Scale	N.A	Figure	3.5



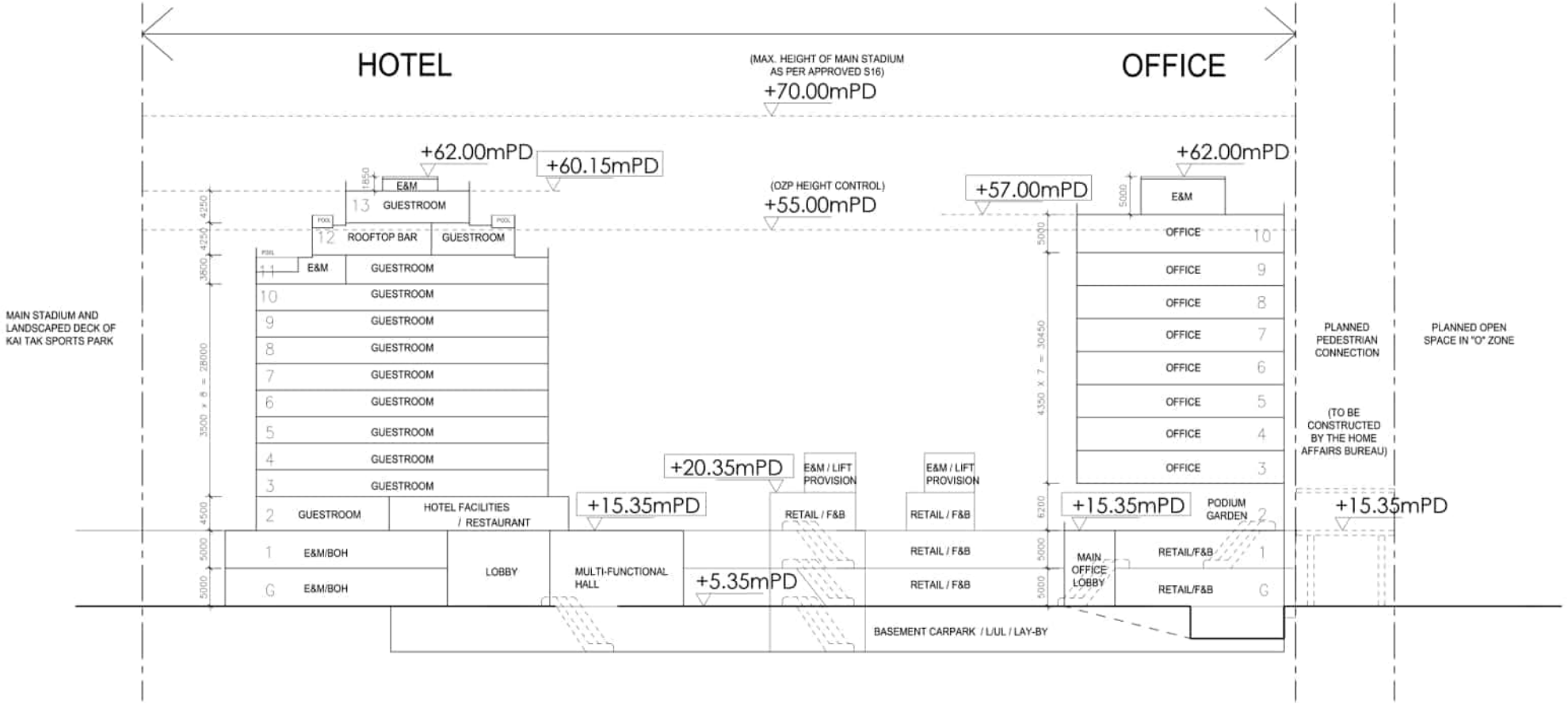
Title

Indicative Typical Plan (Hotel and Office)

Checked	DH	Drawn	PW
Rev	0	Date	Mar 2020
Scale	N.A	Figure	3.6



APPLICATION SITE



Title	Indicative Section Plan	Checked	DH	Drawn PW
		Rev	0	Date Mar 2020
		Scale	N.A	Figure 3.7

6. Proposed Dedicated Rehousing Estate at Ma Tau Kok

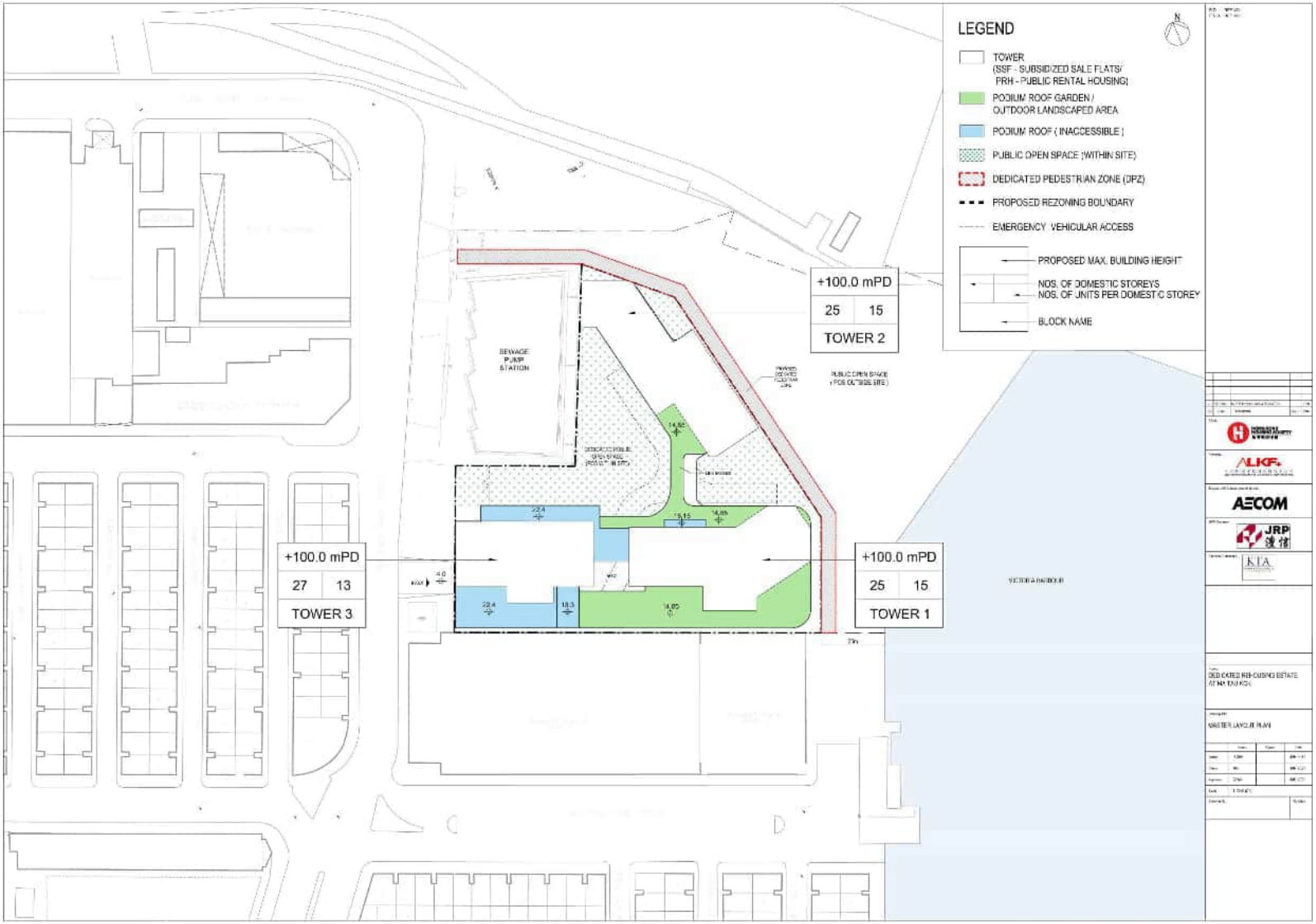


Figure 3.2: Schematic Master Layout Plan

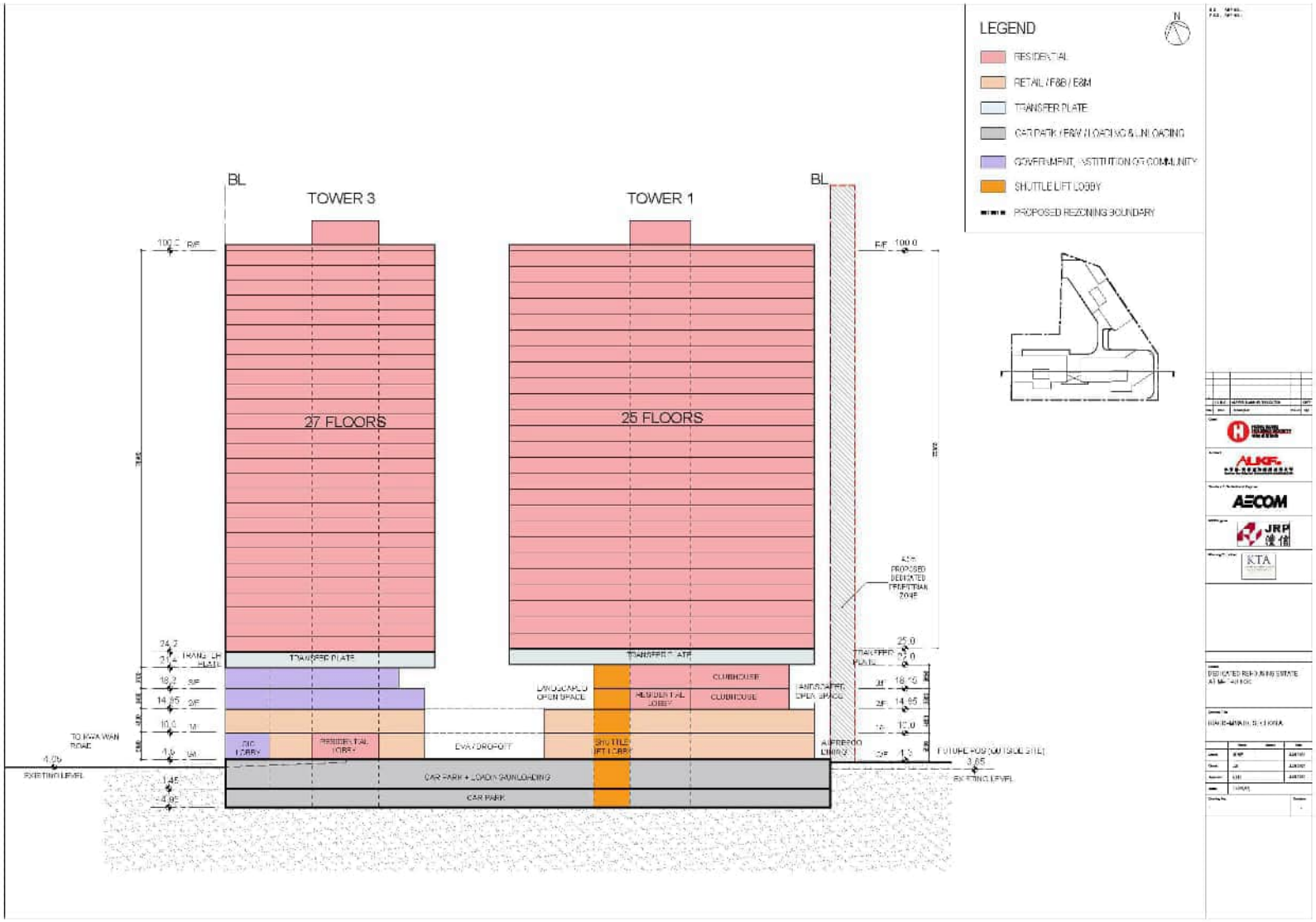


Figure 3.3: Schematic Section Plan

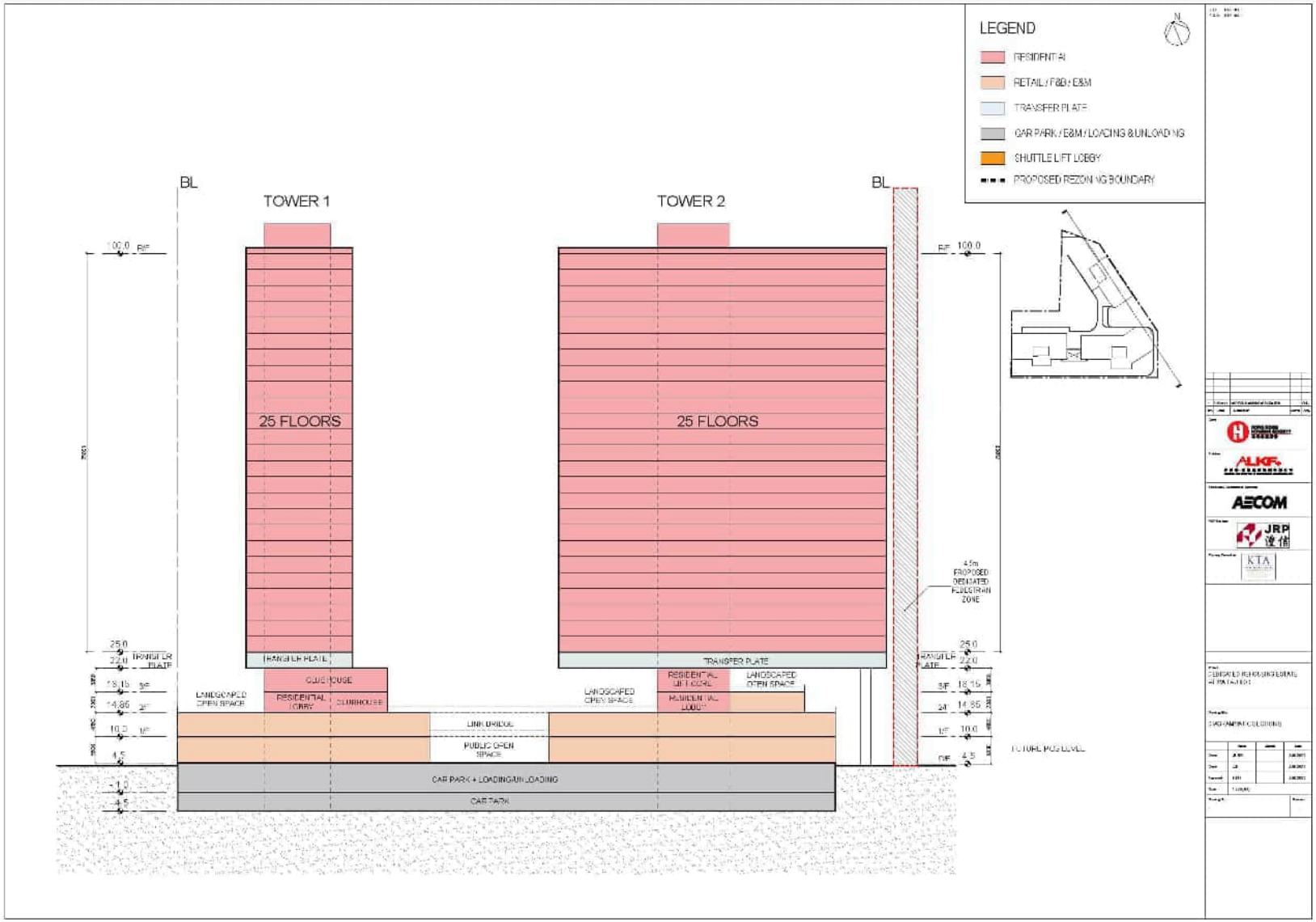
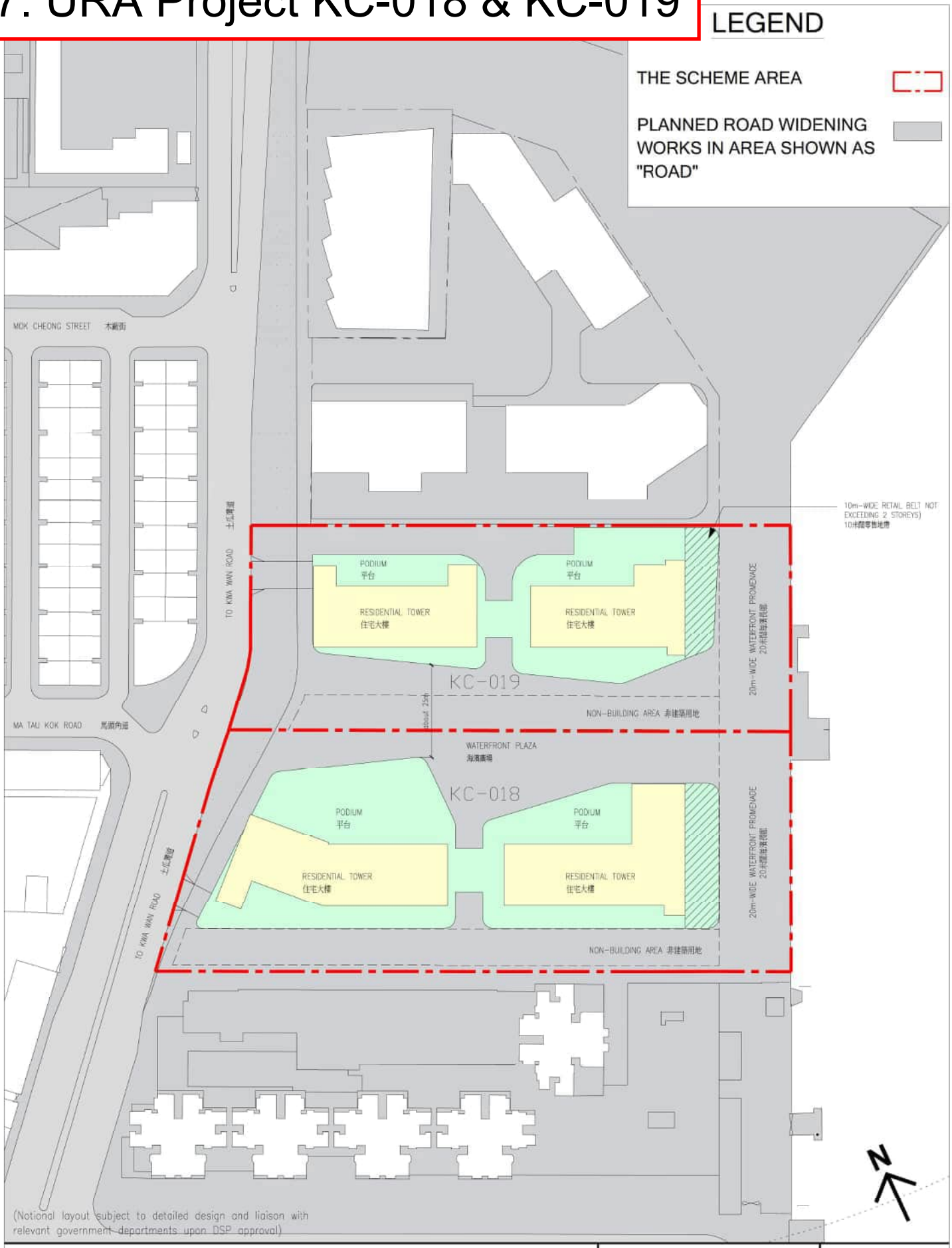


Figure 3.4: Schematic Section Plan

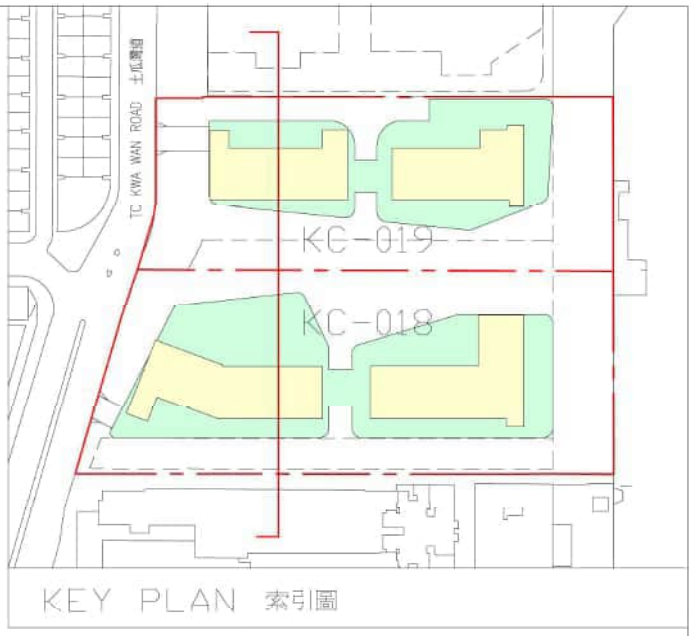
7. URA Project KC-018 & KC-019

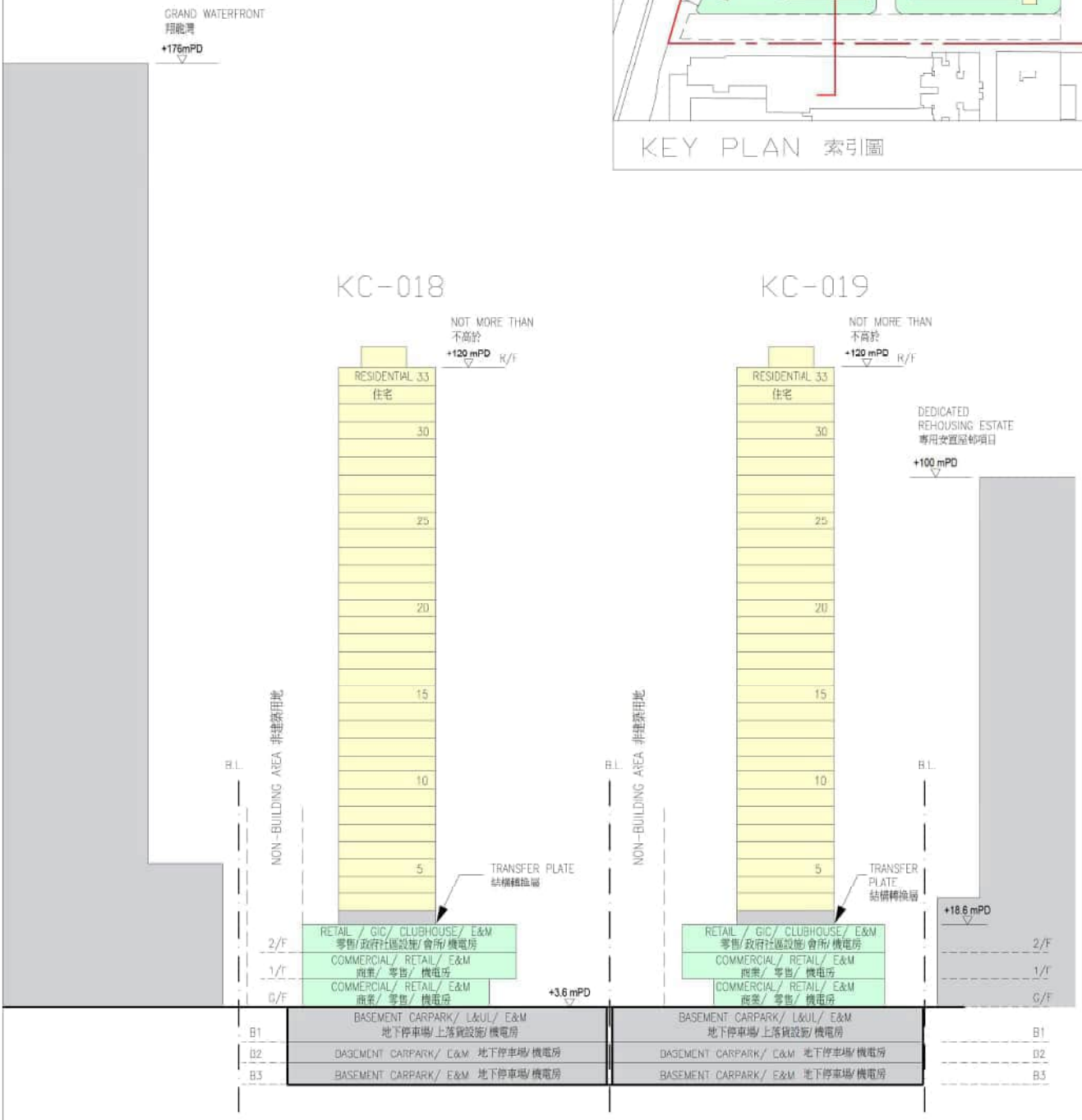


URA Ming Lun Street/ Ma Tau Kok Road (KC-018)
&
To Kwa Wan Road/ Ma Tau Kok Road (KC-019)
Development Scheme

Notional Design - Block Plan

FIGURE 1.1
NOT TO SCALE

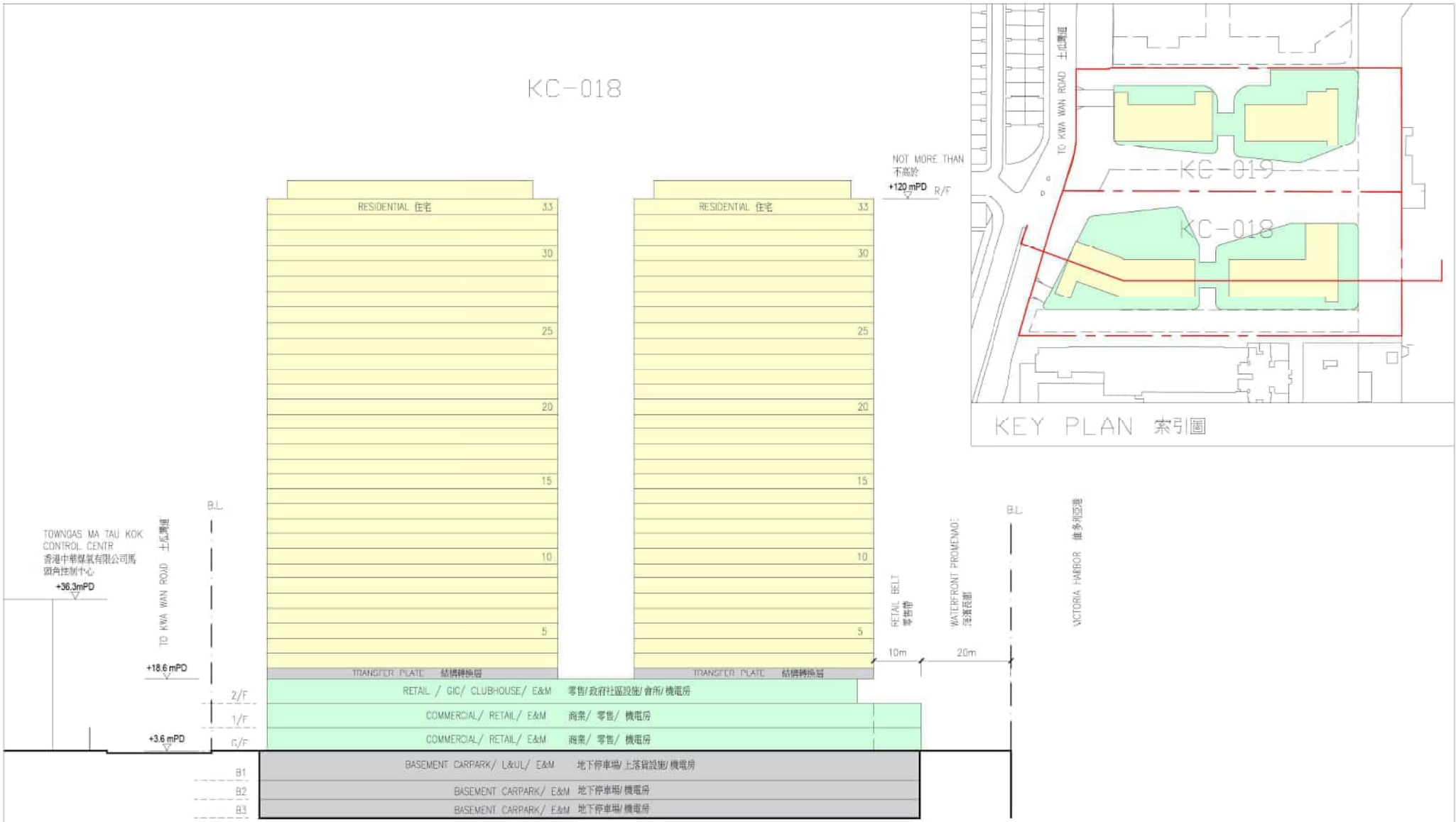




(Notional layout subject to detailed design and liaison with relevant government departments upon DSP approval)

市區重建局 URBAN RENEWAL AUTHORITY	URA Ming Lun Street/ Ma Tau Kok Road (KC-018) & To Kwa Wan Road/ Ma Tau Kok Road (KC-019) Development Scheme	Notional Design - Schematic Section

FIGURE 1.2
NOT TO SCALE



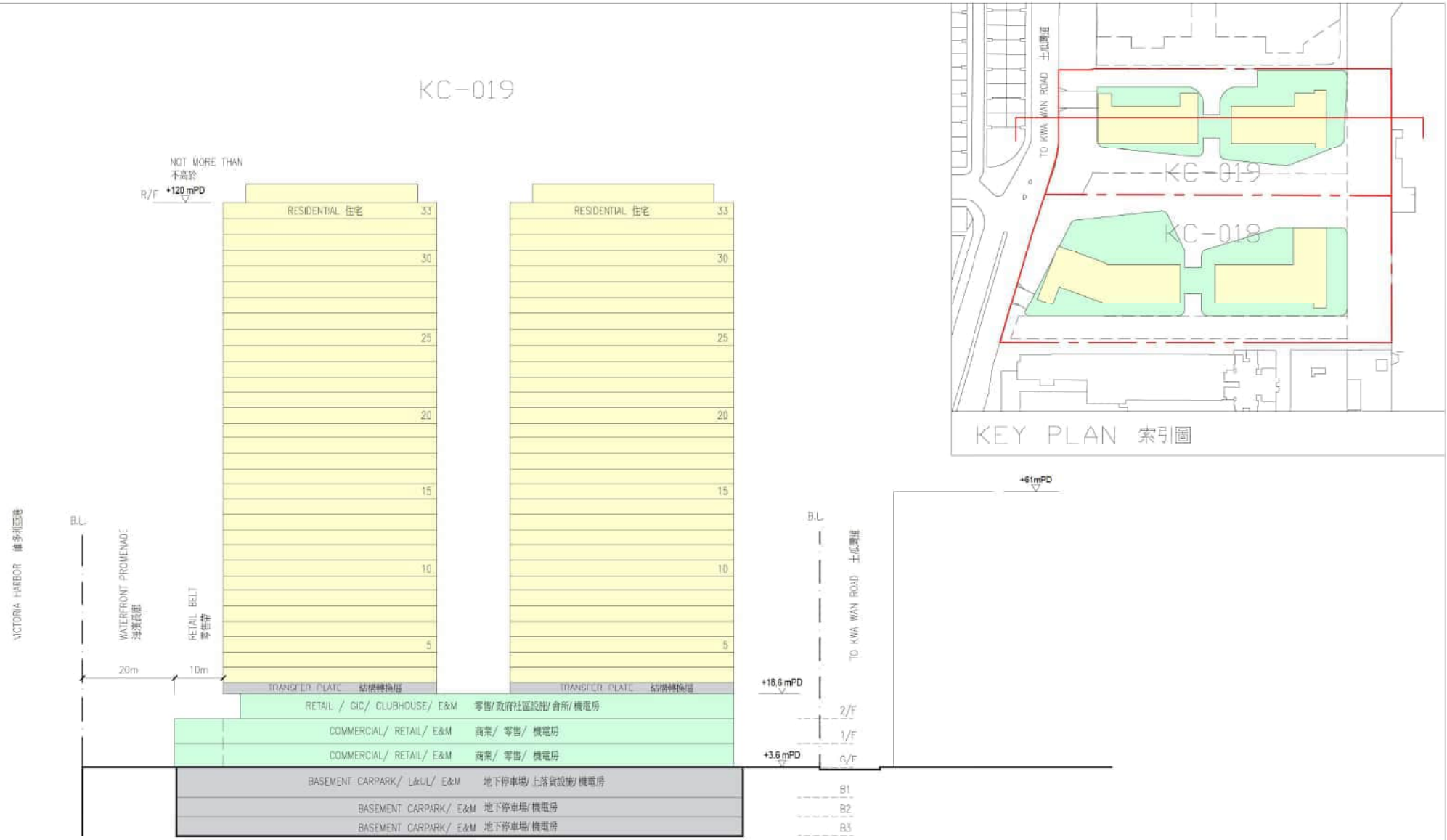
(Notional layout subject to detailed design and liaison with relevant government departments upon DSP approval)

市區重建局
URBAN RENEWAL AUTHORITY

URA Ming Lun Street/ Ma Tau Kok Road (KC-018)
&
To Kwa Wan Road/ Ma Tau Kok Road (KC-019)
Development Scheme

Notional Design - Schematic Section

FIGURE 1.3
NOT TO SCALE



(Notional layout subject to detailed design and liaison with relevant government departments upon DSP approval)

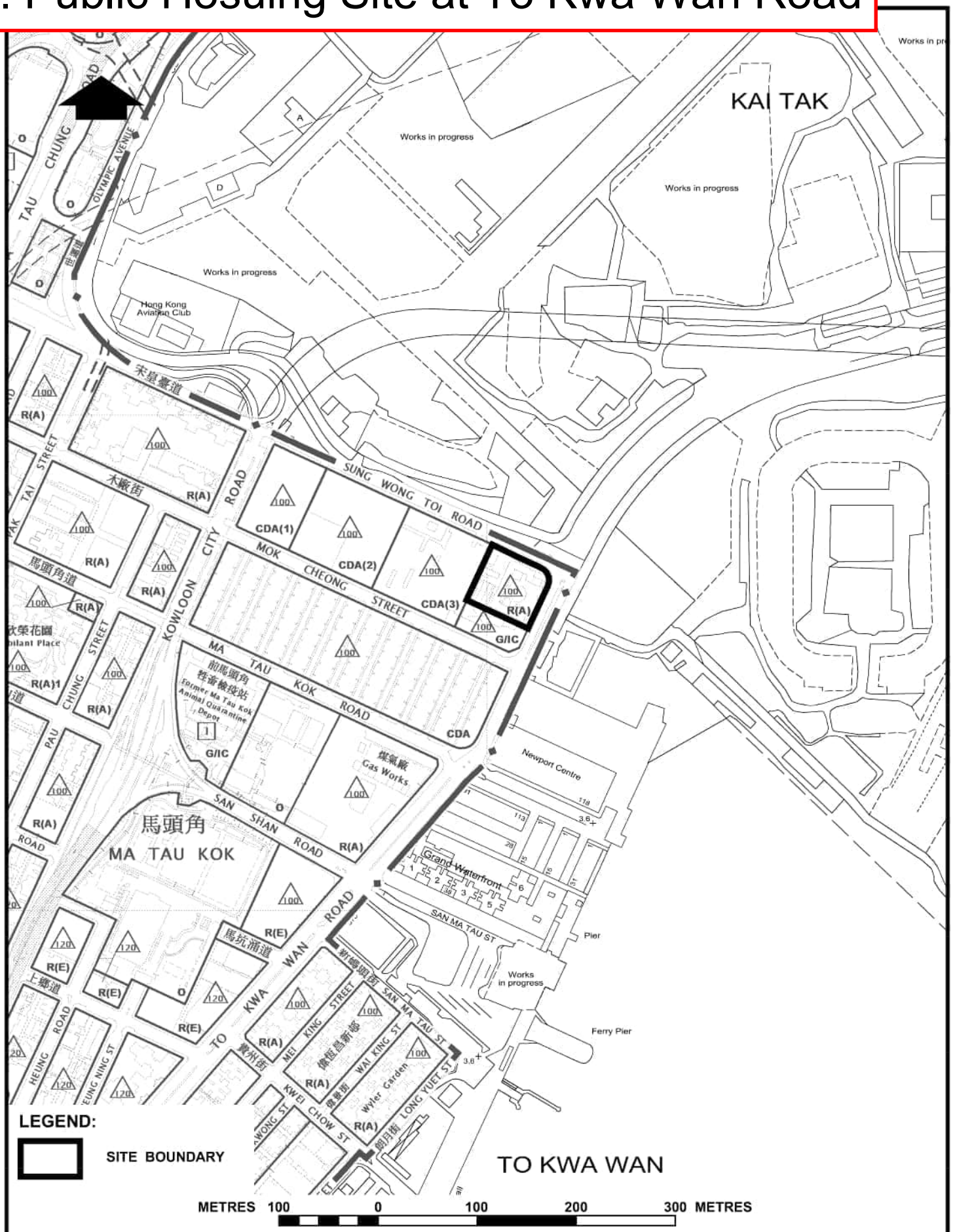
市區重建局
URBAN RENEWAL AUTHORITY

URA Ming Lun Street/ Ma Tau Kok Road (KC-018)
&
To Kwa Wan Road/ Ma Tau Kok Road (KC-019)
Development Scheme

Notional Design - Schematic Section

FIGURE 1.4
NOT TO SCALE

8. Public Hosuing Site at To Kwa Wan Road



LOCATION PLAN
PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD

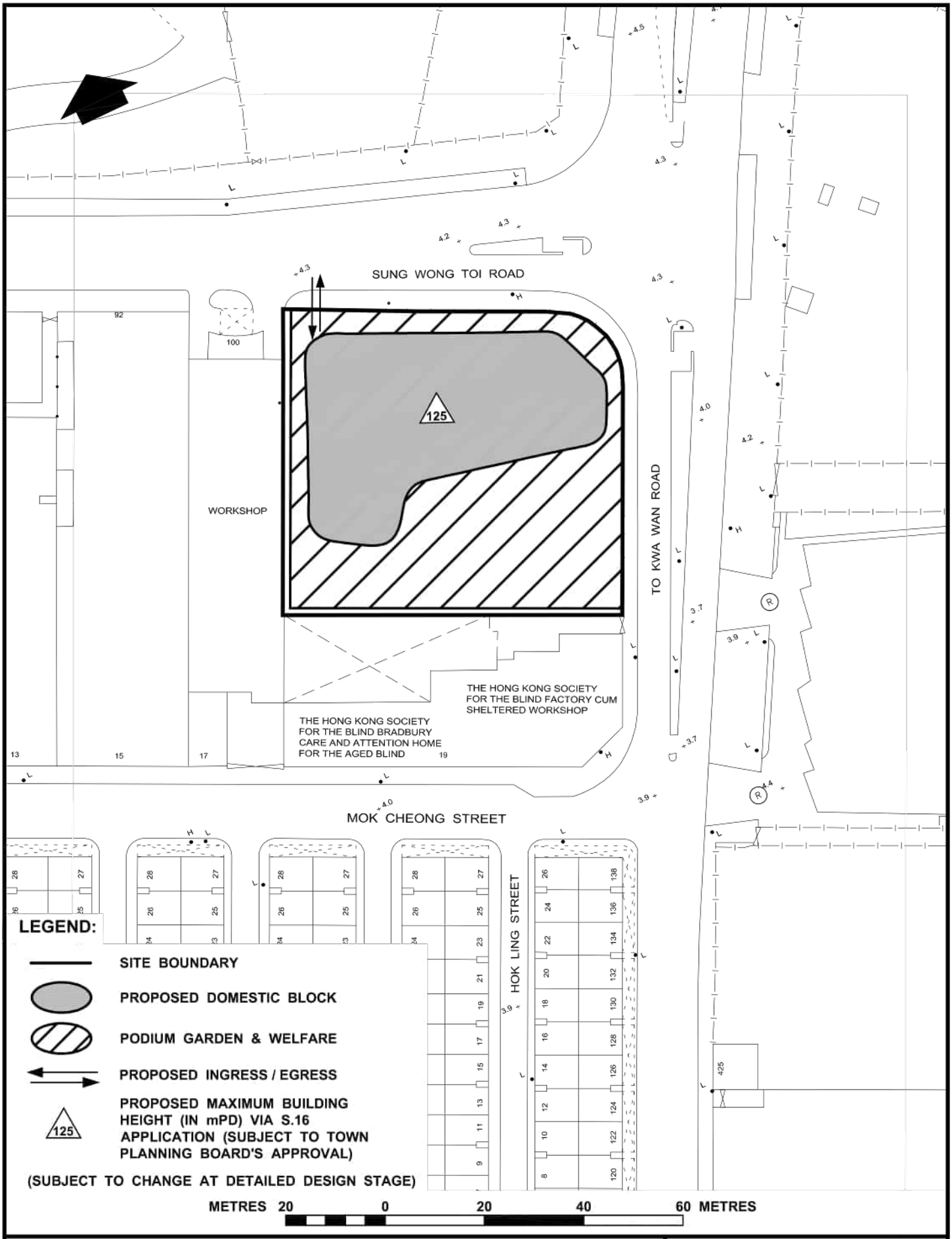
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN 1

DATE : 2. 2. 2023

BASE EXTRACTED FROM OZP No. S/K10/29

23_0111KLN_Plan1



DEVELOPMENT CONCEPT PLAN PUBLIC HOUSING DEVELOPMENT AT TO KWA WAN ROAD

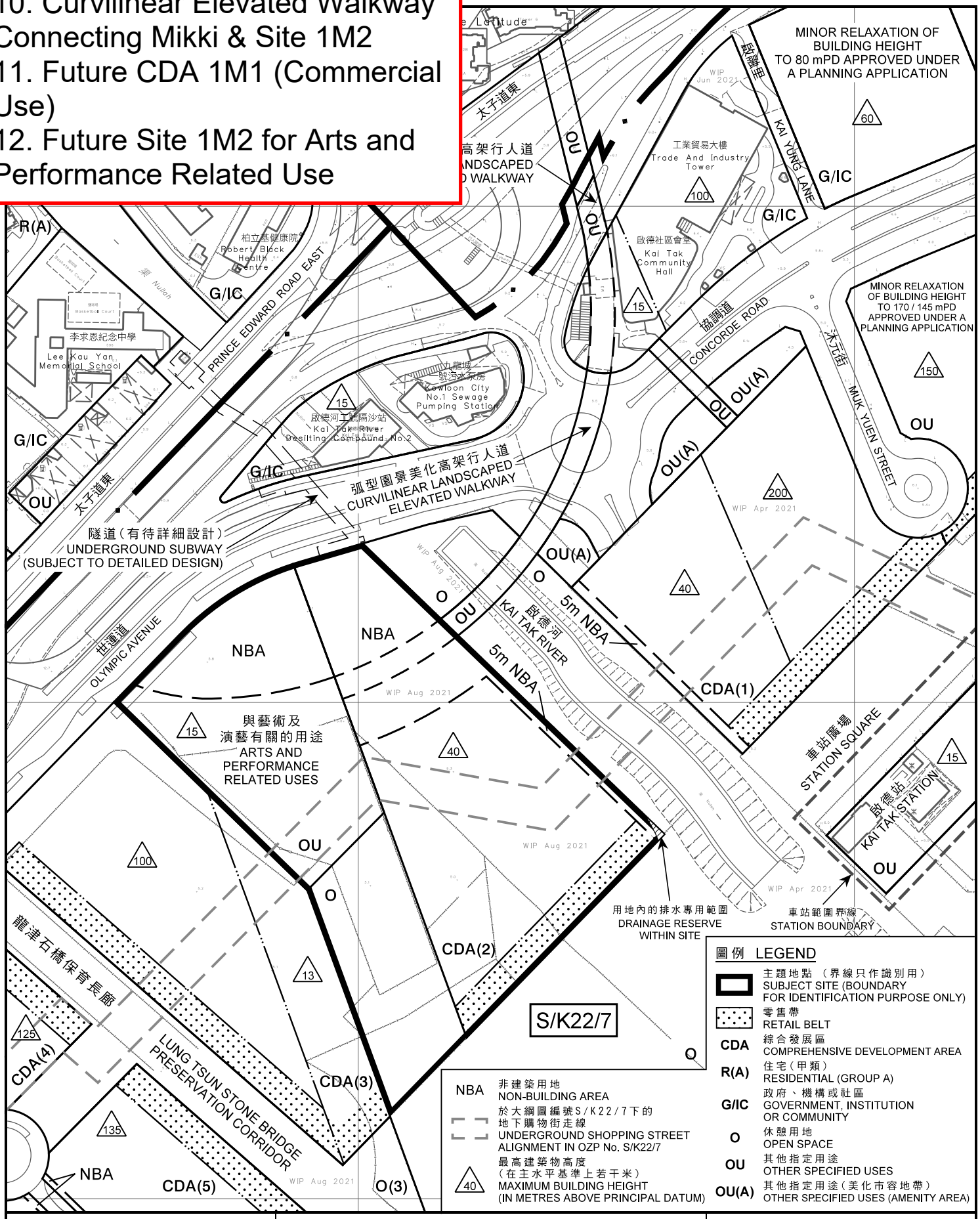
HOUSING DEPARTMENT
PLANNING SECTIONS

PLAN No.
PLAN 2
3

DATE :
18. 1. 2023

BASE EXTRACTED FROM SHT. No. 11-NE-16A

10. Curvilinear Elevated Walkway Connecting Mikki & Site 1M2
11. Future CDA 1M1 (Commercial Use)
12. Future Site 1M2 for Arts and Performance Related Use



圖例 LEGEND

	主題地點（界線只作識別用） SUBJECT SITE (BOUNDARY FOR IDENTIFICATION PURPOSE ONLY)
	零售帶 RETAIL BELT
CDA	綜合發展區 COMPREHENSIVE DEVELOPMENT AREA
R(A)	住宅（甲類） RESIDENTIAL (GROUP A)
G/IC	政府、機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
O	休憩用地 OPEN SPACE
OU	其他指定用途 OTHER SPECIFIED USES
OU(A)	其他指定用途（美化市容地帶） OTHER SPECIFIED USES (AMENITY AREA)
NBA	非建築用地 NON-BUILDING AREA
	於大綱圖編號S/K22/7下的地下購物街走線 UNDERGROUND SHOPPING STREET ALIGNMENT IN OZP No. S/K22/7
40	最高建築物高度（在主水平基準上若干米） MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)

本摘要圖於2021年12月22日擬備，所根據的資料為測量圖編號 11-NE-11A、B、C和D

EXTRACT PLAN PREPARED ON 22.12.2021 BASED ON SURVEY SHEETS No. 11-NE-11A, B, C & D

平面圖 SITE PLAN

啟德發展區涵蓋「綜合發展區(2)」、「其他指定用途」註明「與藝術及演藝有關的用途」及「休憩用地」地帶用地的規劃大綱

PLANNING BRIEF FOR THE SITE COVERING THE "COMPREHENSIVE DEVELOPMENT AREA (2)", "OTHER SPECIFIED USES" ANNOTATED "ARTS AND PERFORMANCE RELATED USES" AND "OPEN SPACE" ZONES IN KAI TAK DEVELOPMENT

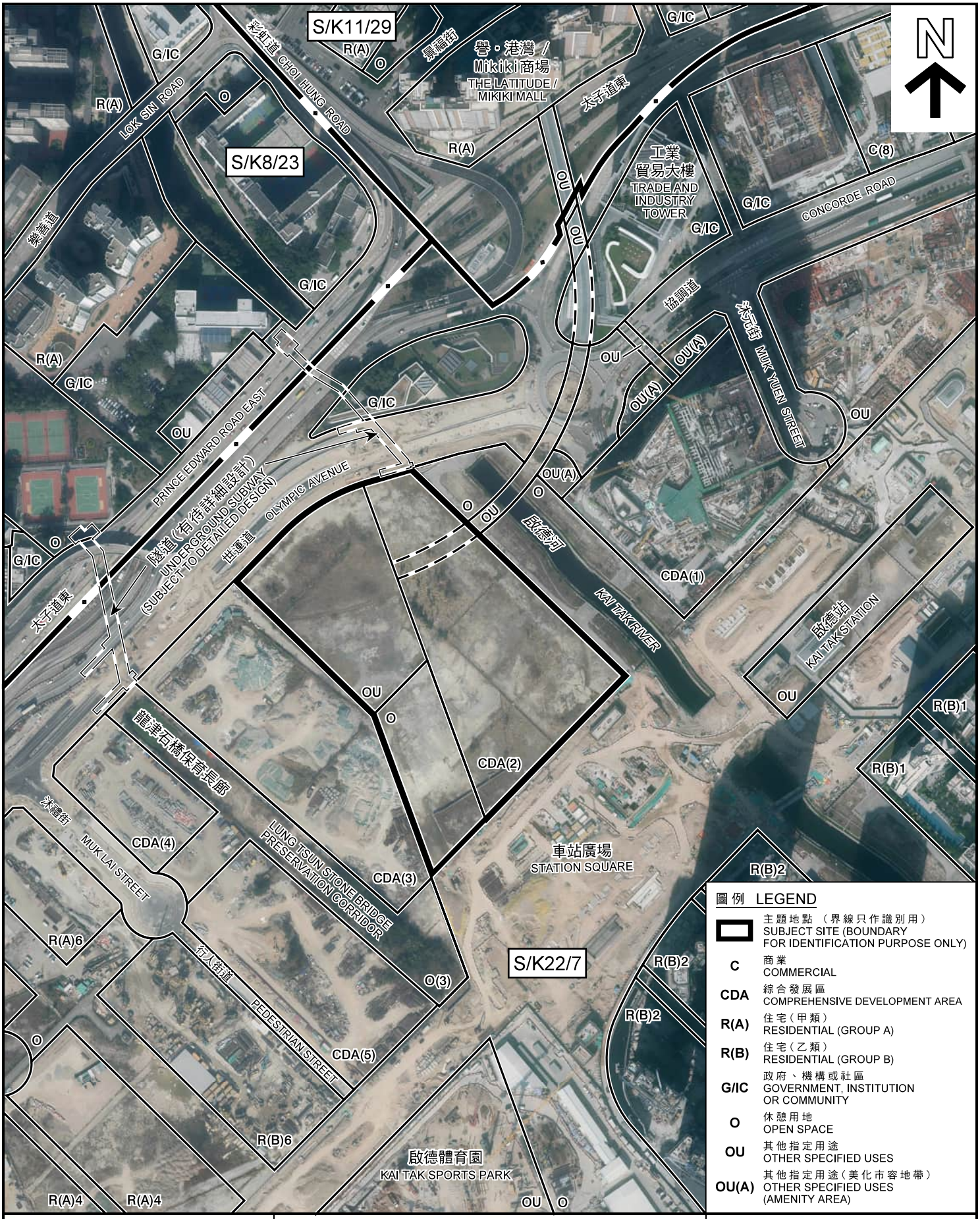
SCALE 1 : 2 500 比例尺

米 METRES 50 0 50 100 米 METRES

規劃署
PLANNING DEPARTMENT

參考編號 REFERENCE No.
M/K22/21/191

圖 PLAN 2



圖例 LEGEND

	主題地點 （界線只作識別用） SUBJECT SITE (BOUNDARY FOR IDENTIFICATION PURPOSE ONLY)
C	商業 COMMERCIAL
CDA	綜合發展區 COMPREHENSIVE DEVELOPMENT AREA
R(A)	住宅（甲類） RESIDENTIAL (GROUP A)
R(B)	住宅（乙類） RESIDENTIAL (GROUP B)
G/IC	政府、機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
O	休憩用地 OPEN SPACE
OU	其他指定用途 OTHER SPECIFIED USES
OU(A)	其他指定用途（美化市容地帶） OTHER SPECIFIED USES (AMENITY AREA)

本圖於2021年12月17日擬備，
所根據的資料為地政總署於
2020年12月7日拍得的航攝照片編號
E116989C、E116991C、
E117248C及E117250C

PLAN PREPARED ON 17.12.2021
BASED ON AERIAL PHOTOS No.
E116989C, E116991C
E117248C AND E117250C
TAKEN ON 7.12.2020
BY LANDS DEPARTMENT

航攝照片 AERIAL PHOTO

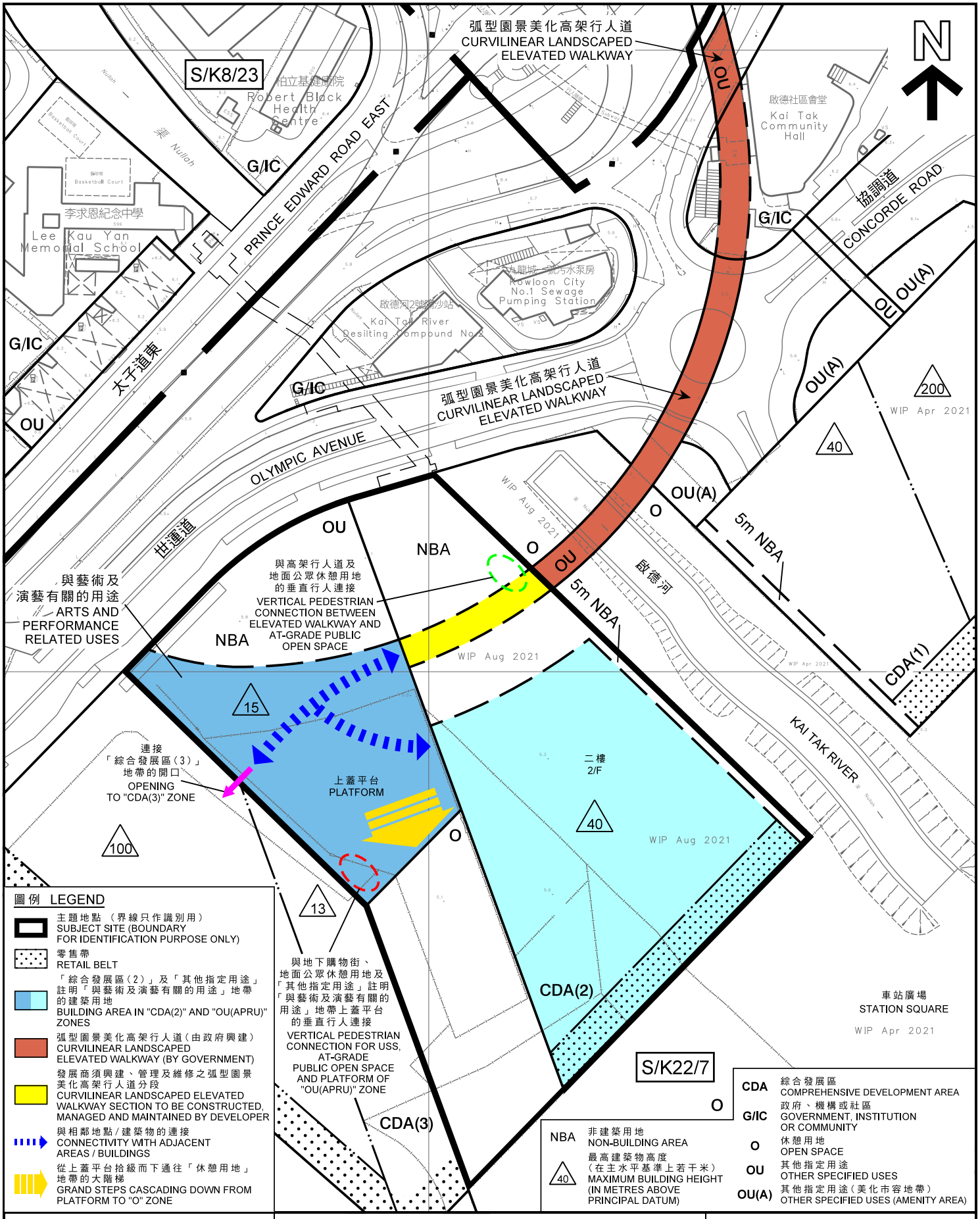
啟德發展區涵蓋「綜合發展區(2)」、「其他指定用途」註明「與藝術及演藝有關的用途」及「休憩用地」地帶用地的規劃大綱

PLANNING BRIEF FOR THE SITE COVERING THE "COMPREHENSIVE DEVELOPMENT AREA (2)", "OTHER SPECIFIED USES" ANNOTATED "ARTS AND PERFORMANCE RELATED USES" AND "OPEN SPACE" ZONES IN KAI TAK DEVELOPMENT

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K22/21/191

圖 PLAN
3



圖例 LEGEND

- 主題地點 （界線只作識別用）
  SUBJECT SITE (BOUNDARY FOR IDENTIFICATION PURPOSE ONLY)
- 零售帶
  RETAIL BELT
- 「綜合發展區(2)」及「其他指定用途」註明「與藝術及演藝有關的用途」地帶的建築用地
  BUILDING AREA IN "CDA(2)" AND "OU(APRU)" ZONES
- 弧型園景美化高架行人道(由政府興建)
  CURVILINEAR LANDSCAPED ELEVATED WALKWAY (BY GOVERNMENT)
- 發展商須興建、管理及維修之弧型園景美化高架行人道分段
  CURVILINEAR LANDSCAPED ELEVATED WALKWAY SECTION TO BE CONSTRUCTED, MANAGED AND MAINTAINED BY DEVELOPER
- 與相鄰地點/建築物的連接
  CONNECTIVITY WITH ADJACENT AREAS / BUILDINGS
- 從上蓋平台拾級而下通往「休憩用地」地帶的大階梯
  GRAND STEPS CASCADING DOWN FROM PLATFORM TO "O" ZONE

NBA	非建築用地 NON-BUILDING AREA
40	最高建築物高度（在主水平基準上若干米） MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)

CDA	綜合發展區 COMPREHENSIVE DEVELOPMENT AREA
G/IC	政府、機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
O	休憩用地 OPEN SPACE
OU	其他指定用途 OTHER SPECIFIED USES
OU(A)	其他指定用途(美化市容地帶) OTHER SPECIFIED USES (AMENITY AREA)

本摘要圖於2021年12月16日擬備，
所根據的資料為測量圖編號
11-NE-11A和B

EXTRACT PLAN PREPARED ON 16.12.2021
BASED ON SURVEY SHEETS No.
11-NE-11A & B

發展概念圖(地面以上)
DEVELOPMENT CONCEPT PLAN (ABOVE GROUND +15.0mPD)

啟德發展區涵蓋「綜合發展區(2)」、「其他指定用途」註明「與藝術及演藝有關的用途」及「休憩用地」地帶用地的規劃大綱
PLANNING BRIEF FOR THE SITE COVERING THE "COMPREHENSIVE DEVELOPMENT AREA (2)", "OTHER SPECIFIED USES" ANNOTATED "ARTS AND PERFORMANCE RELATED USES" AND "OPEN SPACE" ZONES IN KAI TAK DEVELOPMENT

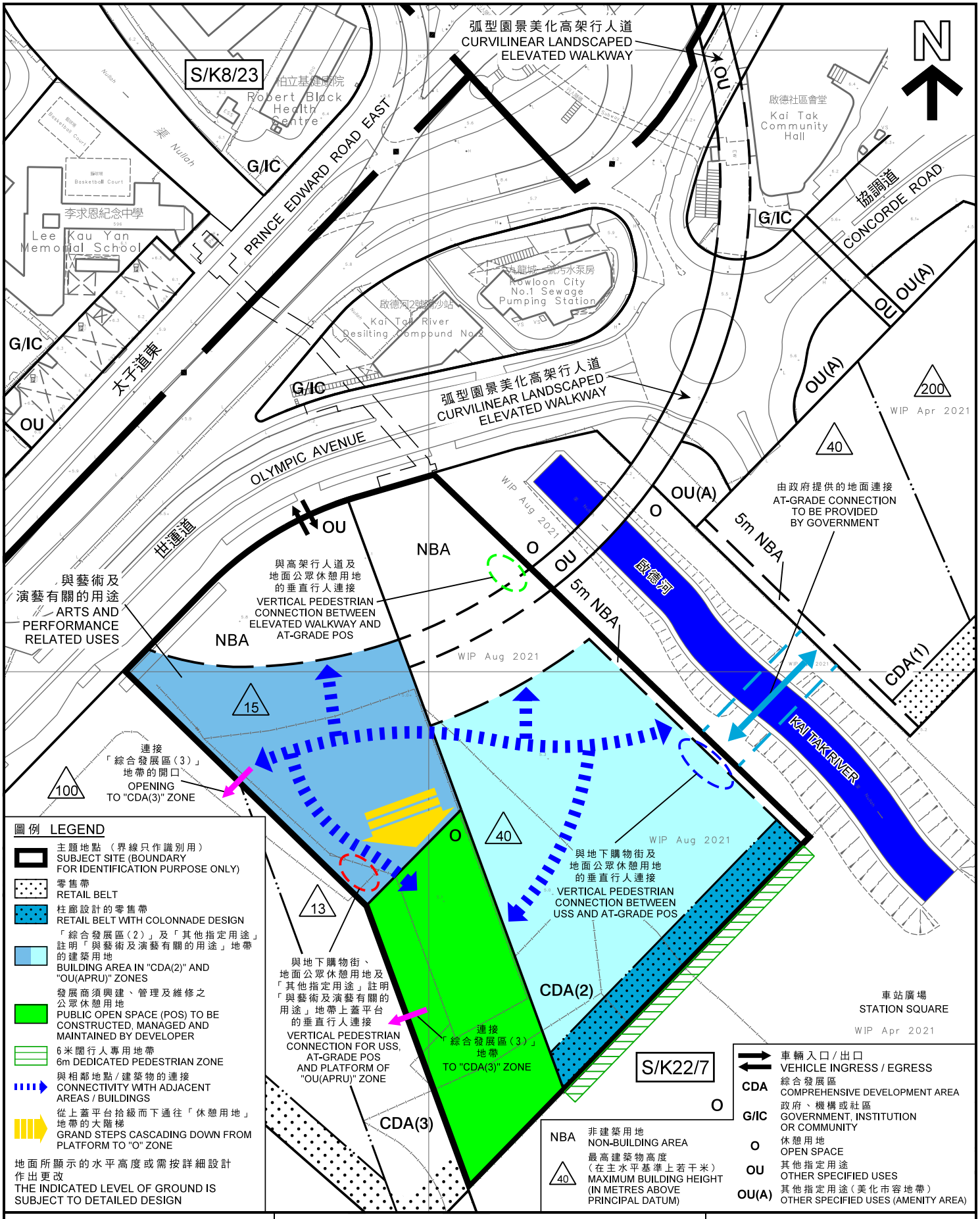
SCALE 1 : 2 000 比例尺

米 METRES 40 0 40 80 米 METRES

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K22/21/191

圖 PLAN
4a



圖例 LEGEND

- 主題地點（界線只作識別用）SUBJECT SITE (BOUNDARY FOR IDENTIFICATION PURPOSE ONLY)
- 零售帶 RETAIL BELT
- 柱廊設計的零售帶 RETAIL BELT WITH COLONNADE DESIGN
- 「綜合發展區(2)」及「其他指定用途」註明「與藝術及演藝有關的用途」地帶的建築用地 BUILDING AREA IN "CDA(2)" AND "OU(APRU)" ZONES
- 發展商須興建、管理及維修之公眾休憩用地 PUBLIC OPEN SPACE (POS) TO BE CONSTRUCTED, MANAGED AND MAINTAINED BY DEVELOPER
- 6米闊行人專用地帶 6m DEDICATED PEDESTRIAN ZONE
- 與相鄰地點/建築物的連接 CONNECTIVITY WITH ADJACENT AREAS / BUILDINGS
- 從上蓋平台拾級而下通往「休憩用地」地帶的大階梯 GRAND STEPS CASCADING DOWN FROM PLATFORM TO "O" ZONE

地面所顯示的水平高度或需按詳細設計作出更改
THE INDICATED LEVEL OF GROUND IS SUBJECT TO DETAILED DESIGN

- NBA 非建築用地 NON-BUILDING AREA
- 40 最高建築物高度（在主水平基準上若干米）MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)

- 車輛入口/出口 VEHICLE INGRESS / EGRESS
- CDA 綜合發展區 COMPREHENSIVE DEVELOPMENT AREA
- G/IC 政府、機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
- O 休憩用地 OPEN SPACE
- OU 其他指定用途 OTHER SPECIFIED USES
- OU(A) 其他指定用途（美化市容地帶）OTHER SPECIFIED USES (AMENITY AREA)

本摘要圖於2021年12月16日擬備，所根據的資料為測量圖編號 11-NE-11A和B

EXTRACT PLAN PREPARED ON 16.12.2021 BASED ON SURVEY SHEETS No. 11-NE-11A & B

發展概念圖（地面）
DEVELOPMENT CONCEPT PLAN (GROUND LEVEL +6.0mPD)

啟德發展區涵蓋「綜合發展區(2)」、「其他指定用途」註明「與藝術及演藝有關的用途」及「休憩用地」地帶用地的規劃大綱

PLANNING BRIEF FOR THE SITE COVERING THE "COMPREHENSIVE DEVELOPMENT AREA (2)", "OTHER SPECIFIED USES" ANNOTATED "ARTS AND PERFORMANCE RELATED USES" AND "OPEN SPACE" ZONES IN KAI TAK DEVELOPMENT

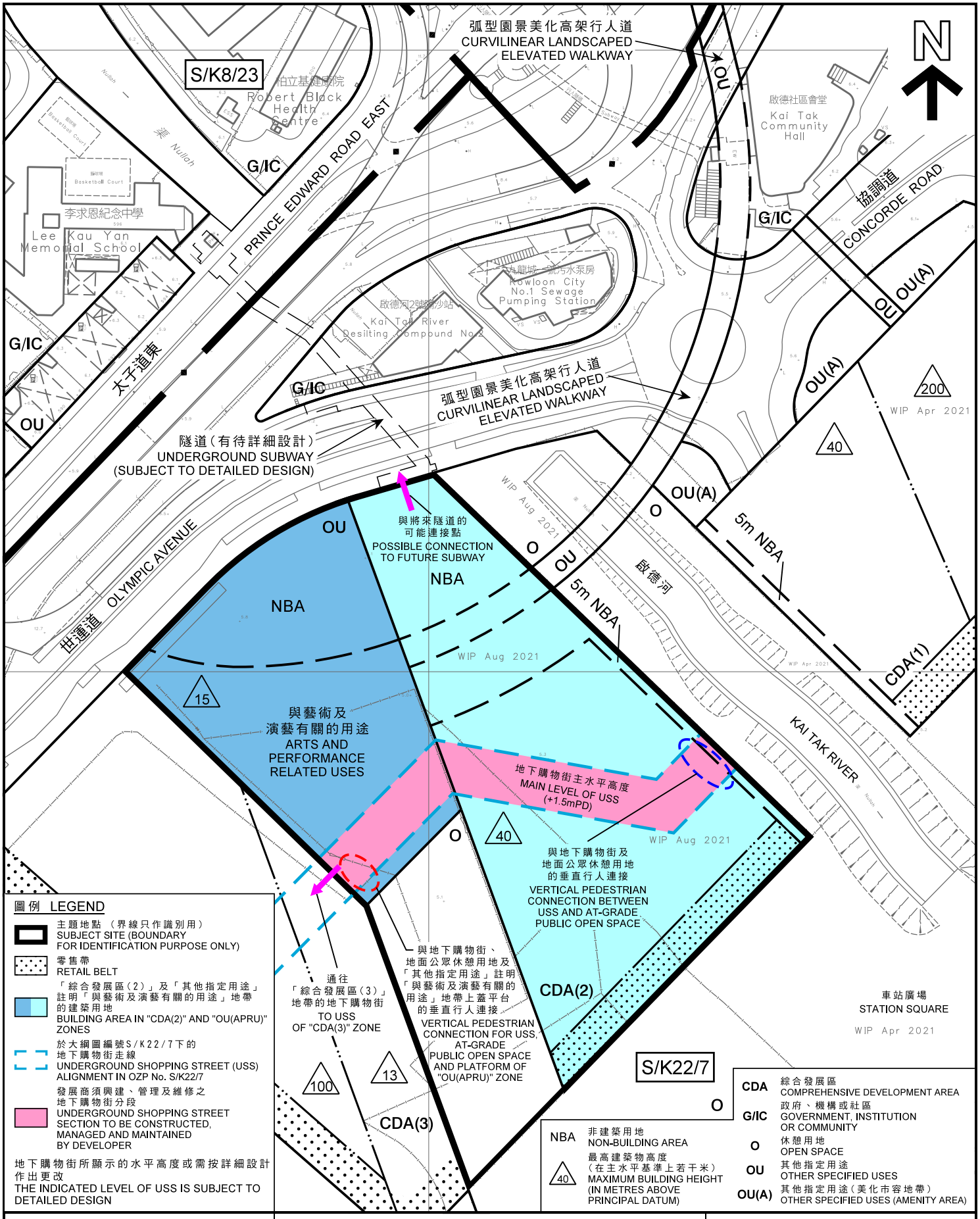
SCALE 1 : 2 000 比例尺

米 METRES 40 0 40 80 米 METRES

規劃署 PLANNING DEPARTMENT

參考編號 REFERENCE No. M/K22/21/191

圖 PLAN 4b



圖例 LEGEND

- 主題地點（界線只作識別用） SUBJECT SITE (BOUNDARY FOR IDENTIFICATION PURPOSE ONLY)
- 零售帶 RETAIL BELT
- 「綜合發展區(2)」及「其他指定用途」註明「與藝術及演藝有關的用途」地帶的建築用地 BUILDING AREA IN "CDA(2)" AND "OU(APRU)" ZONES
- 於大綱圖編號S/K22/7下的地下購物街走線 UNDERGROUND SHOPPING STREET (USS) ALIGNMENT IN OZP No. S/K22/7
- 發展商須興建、管理及維修之地下購物街分段 UNDERGROUND SHOPPING STREET SECTION TO BE CONSTRUCTED, MANAGED AND MAINTAINED BY DEVELOPER

地下購物街所顯示的水平高度或需按詳細設計作出更改
THE INDICATED LEVEL OF USS IS SUBJECT TO DETAILED DESIGN

NBA 非建築用地 NON-BUILDING AREA

40 最高建築物高度（在主水平基準上若干米） MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)

CDA	綜合發展區 COMPREHENSIVE DEVELOPMENT AREA
G/IC	政府、機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
O	休憩用地 OPEN SPACE
OU	其他指定用途 OTHER SPECIFIED USES
OU(A)	其他指定用途（美化市容地帶） OTHER SPECIFIED USES (AMENITY AREA)

本摘要圖於2021年12月16日擬備，所根據的資料為測量圖編號 11-NE-11A和B

EXTRACT PLAN PREPARED ON 16.12.2021 BASED ON SURVEY SHEETS No. 11-NE-11A & B

發展概念圖（地面以下）
DEVELOPMENT CONCEPT PLAN (BELOW GROUND +1.5mPD)

啟德發展區涵蓋「綜合發展區(2)」、「其他指定用途」註明「與藝術及演藝有關的用途」及「休憩用地」地帶用地的規劃大綱
PLANNING BRIEF FOR THE SITE COVERING THE "COMPREHENSIVE DEVELOPMENT AREA (2)", "OTHER SPECIFIED USES" ANNOTATED "ARTS AND PERFORMANCE RELATED USES" AND "OPEN SPACE" ZONES IN KAI TAK DEVELOPMENT

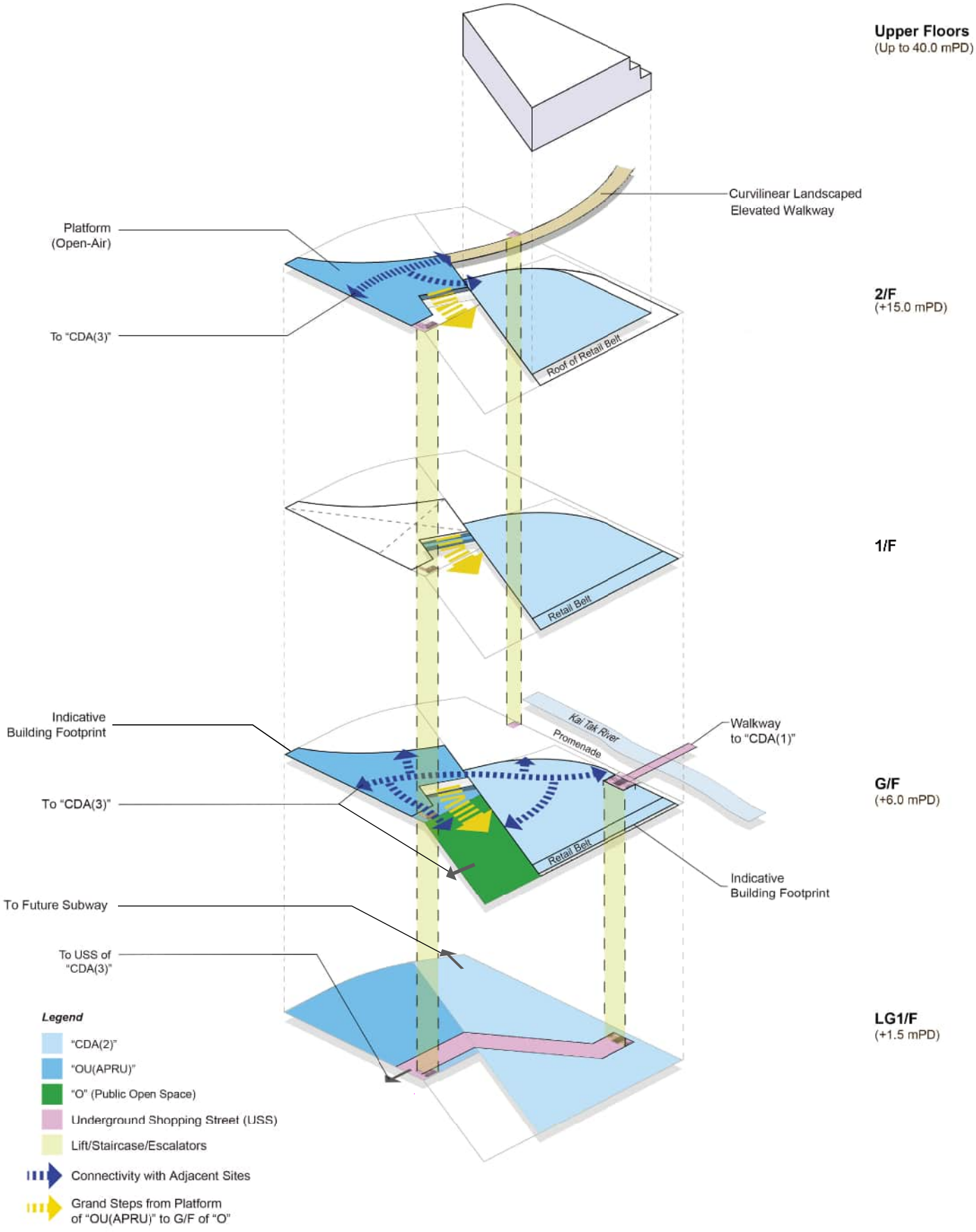
SCALE 1 : 2 000 比例尺

米 METRES 40 0 40 80 米 METRES

規劃署 PLANNING DEPARTMENT

參考編號 REFERENCE No. M/K22/21/191

圖 PLAN 4c



本圖於2021年12月16日擬備
PLAN PREPARED ON 16.12.2021

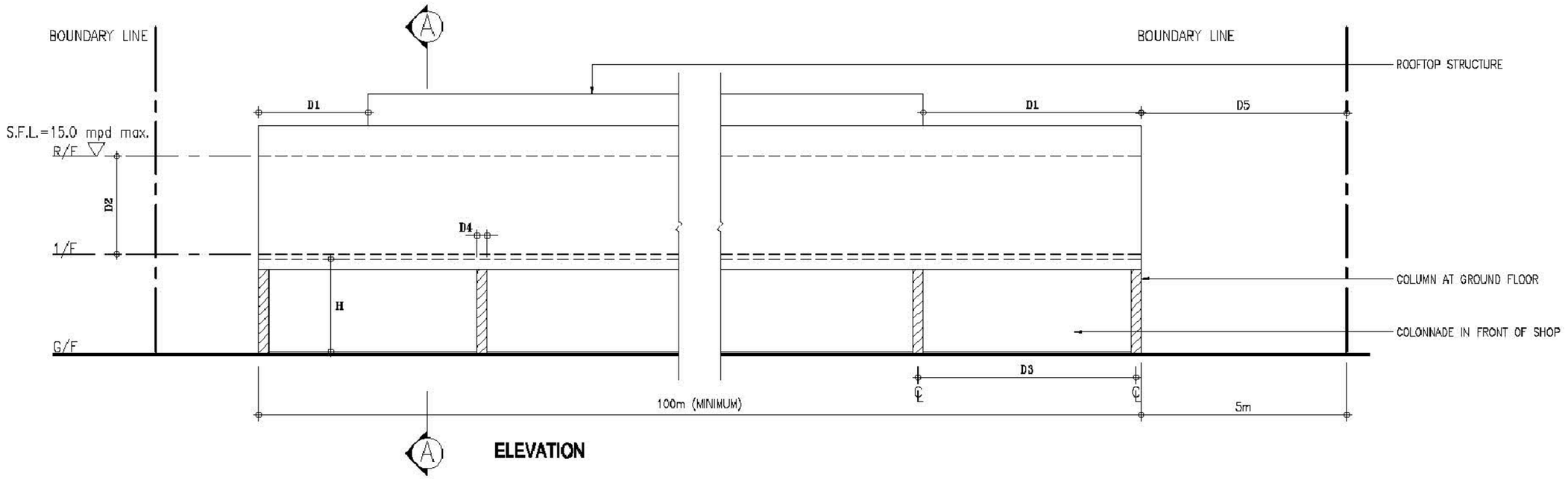
行人連接概念圖
CONCEPTUAL ILLUSTRATION OF PEDESTRIAN CONNECTIVITY

啟德發展區涵蓋「綜合發展區(2)」、
「其他指定用途」註明「與藝術及演藝有關的用途」
及「休憩用地」地帶用地的規劃大綱
PLANNING BRIEF FOR THE SITE COVERING
THE "COMPREHENSIVE DEVELOPMENT AREA (2)",
"OTHER SPECIFIED USES" ANNOTATED
"ARTS AND PERFORMANCE RELATED USES"
AND "OPEN SPACE" ZONES IN KAI TAK DEVELOPMENT

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K22/21/191

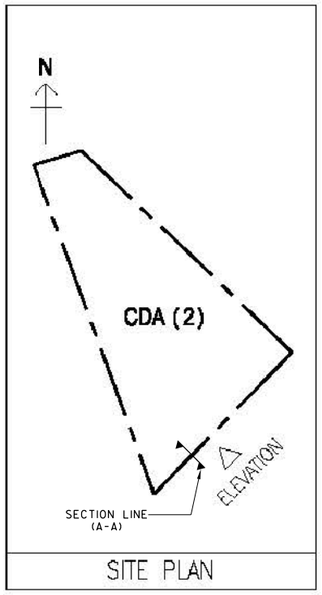
圖 PLAN
5



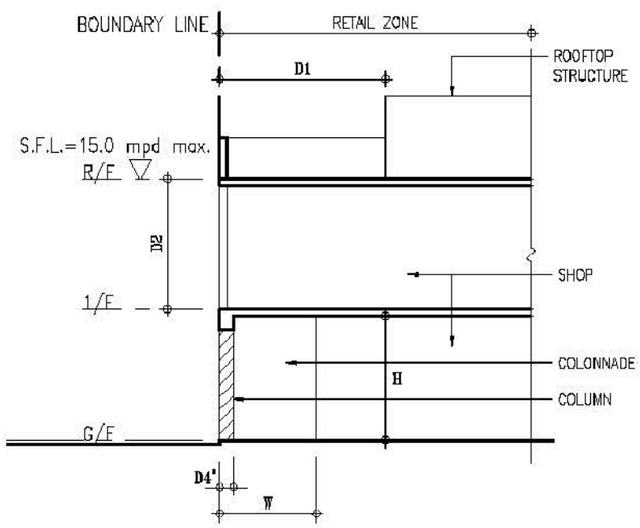
ELEVATION

NOTES

1. **H** MINIMUM 4,200mm CLEAR HEADROOM.
2. **W** 3.6 m WIDE SETBACK.
3. **D1** MINIMUM 3,500mm SETBACK OF ROOFTOP STRUCTURE FROM RETAIL BUILDING LINES.
4. **D2** MINIMUM 4,000mm FLOOR TO FLOOR HEIGHT AT 1/F.
5. **D3** COLUMN AT REGULAR INTERVAL BETWEEN 6,000mm MINIMUM AND 9,000mm MAXIMUM.
6. **D4** COLUMN WIDTH WITH DIMENSION AT 600mm MINIMUM.
7. **D4'** COLUMN DEPTH WITH DIMENSION AT 600mm MAXIMUM.
8. EXTERNAL FINISHES OF COLUMNS SHALL USE NATURAL STONE (WHICH INCLUDES GRANITE, SANDSTONE, AND SLATES), OR EARTHY MATERIALS (WHICH INCLUDE BRICKS, TERRACOTTA MADE OF CLAY), OR SUSTAINABLE TIMBERS (WHICH INCLUDE BAMBOO).
9. COLOUR OF MATERIALS FOR EXTERNAL FINISHES OF COLUMNS SHALL BE IN EARTHY OR WOODY TONES AS FOUND IN NATURE SUCH AS THE COLOUR OF DIFFERENT WOOD, STONES, BRICKS, CLAY, BAMBOO, ETC.
10. **D5** 5m NON-BUILDING AREA FROM BOUNDARY LINE.



SITE PLAN



SECTION A-A

本圖於2021年12月20日擬備
PLAN PREPARED ON 20.12.2021

於「綜合發展區(2)」的零售帶柱廊概念圖
COLONNADE CONCEPT DRAWING FOR RETAIL BELT AT "COMPREHENSIVE DEVELOPMENT AREA (2)"

啟德發展區涵蓋「綜合發展區(2)」、「其他指定用途」註明
「與藝術及演藝有關的用途」及「休憩用地」地帶用地的規劃大綱
PLANNING BRIEF FOR THE SITE COVERING THE "COMPREHENSIVE DEVELOPMENT AREA (2)",
"OTHER SPECIFIED USES" ANNOTATED "ARTS AND PERFORMANCE RELATED USES"
AND "OPEN SPACE" ZONES IN KAI TAK DEVELOPMENT

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K22/21/191

圖 PLAN
6

15. URA Project KC-015

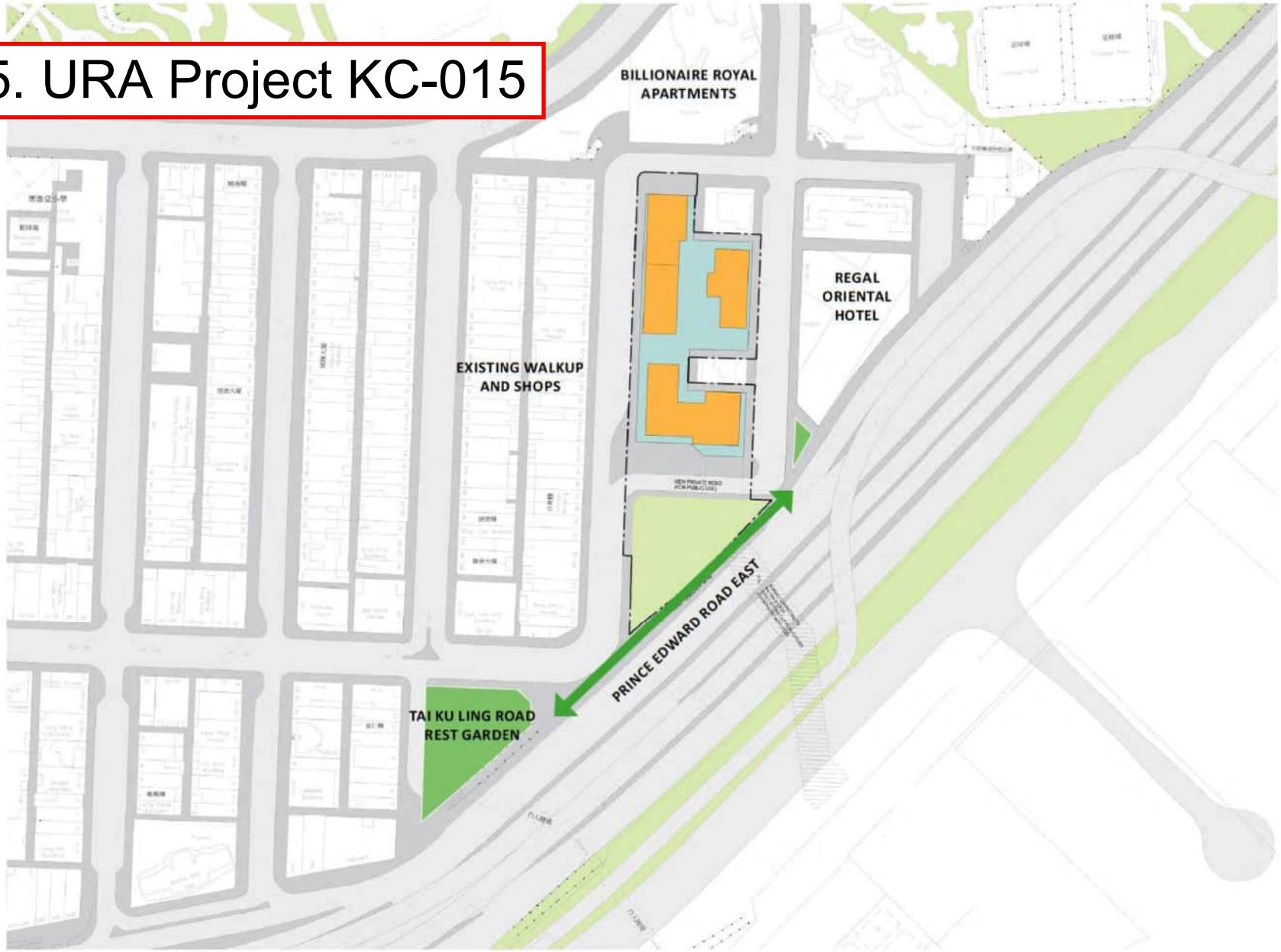


FIGURE 1.1 - CONTEXT PLAN

KC-015 KAI TAK ROAD/ SA PO ROAD DEVELOPMENT SCHEME

kola

（資料來源：由市區重建局提交）
(Source: Submitted by Urban Renewal Authority)

參考編號 REFERENCE No.	繪圖 DRAWING
M/K10/19/11	4b

Remarks: Notional design subjected to change in detailed design stage

LEGEND

1 B3 Sunken Plaza
2 B3 Amphitheatre Seating Area
3 B1 Sunken Plaza
4 B1 Amphitheatre Seating Area
5 GF Plaza
6 GF Amphitheatre Seating Area
7 GF Garden
8 GF Pavement
9 Upper Level Plat orm
10 Upper Level Planting Area

FIGURE 2.1 - OVERALL LANDSCAPE PROPOSAL

N

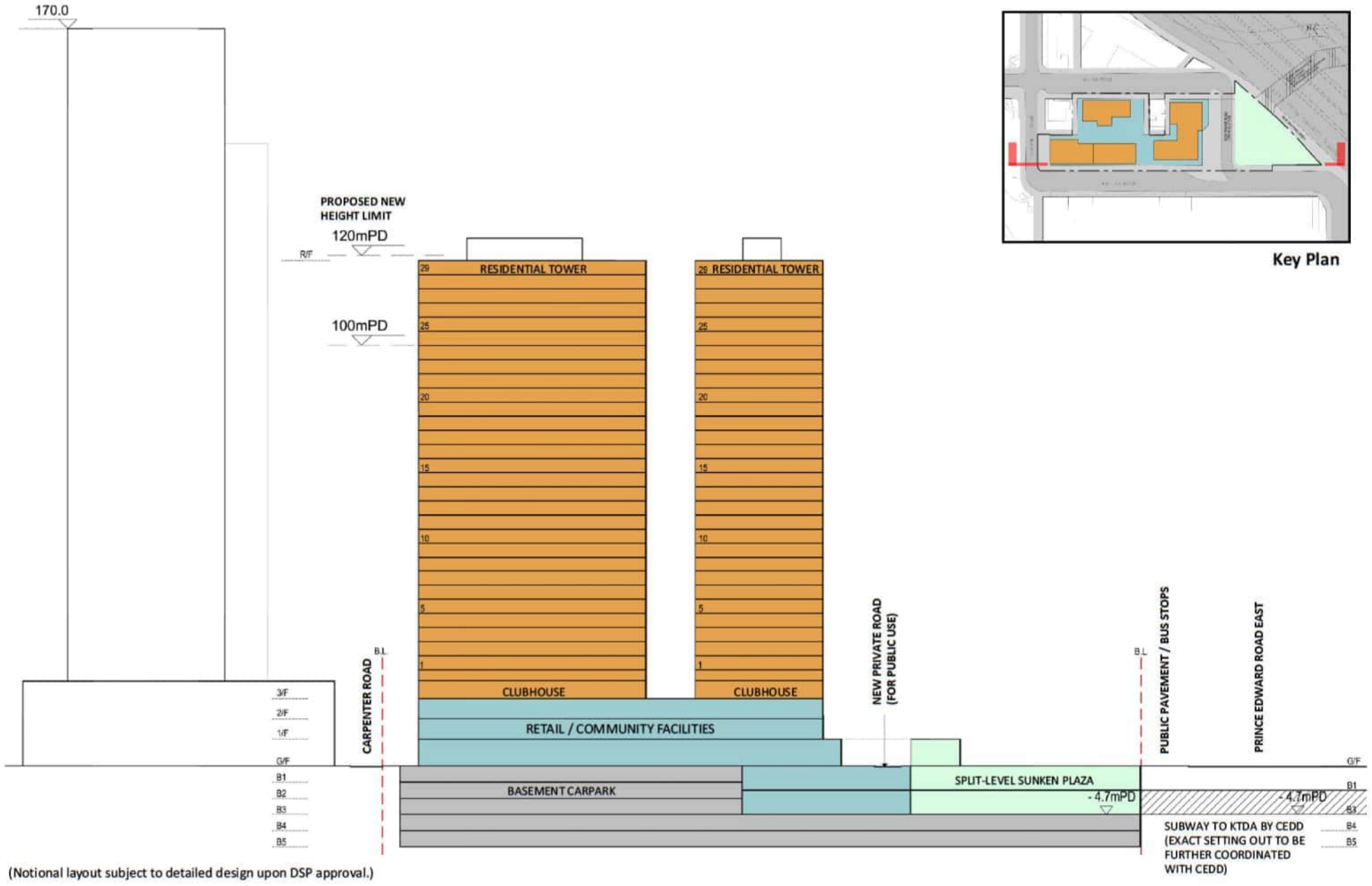
0 5 25M

kola

(Source: Submitted by Urban Renewal Authority)
(資料來源：由市區重建局提交)

參考編號 REFERENCE No. M/K10/19/11

繪圖 DRAWING 4a



(Notional layout subject to detailed design upon DSP approval.)

URA Kai Tak Road / Sa Po Road Development Scheme (KC-015)

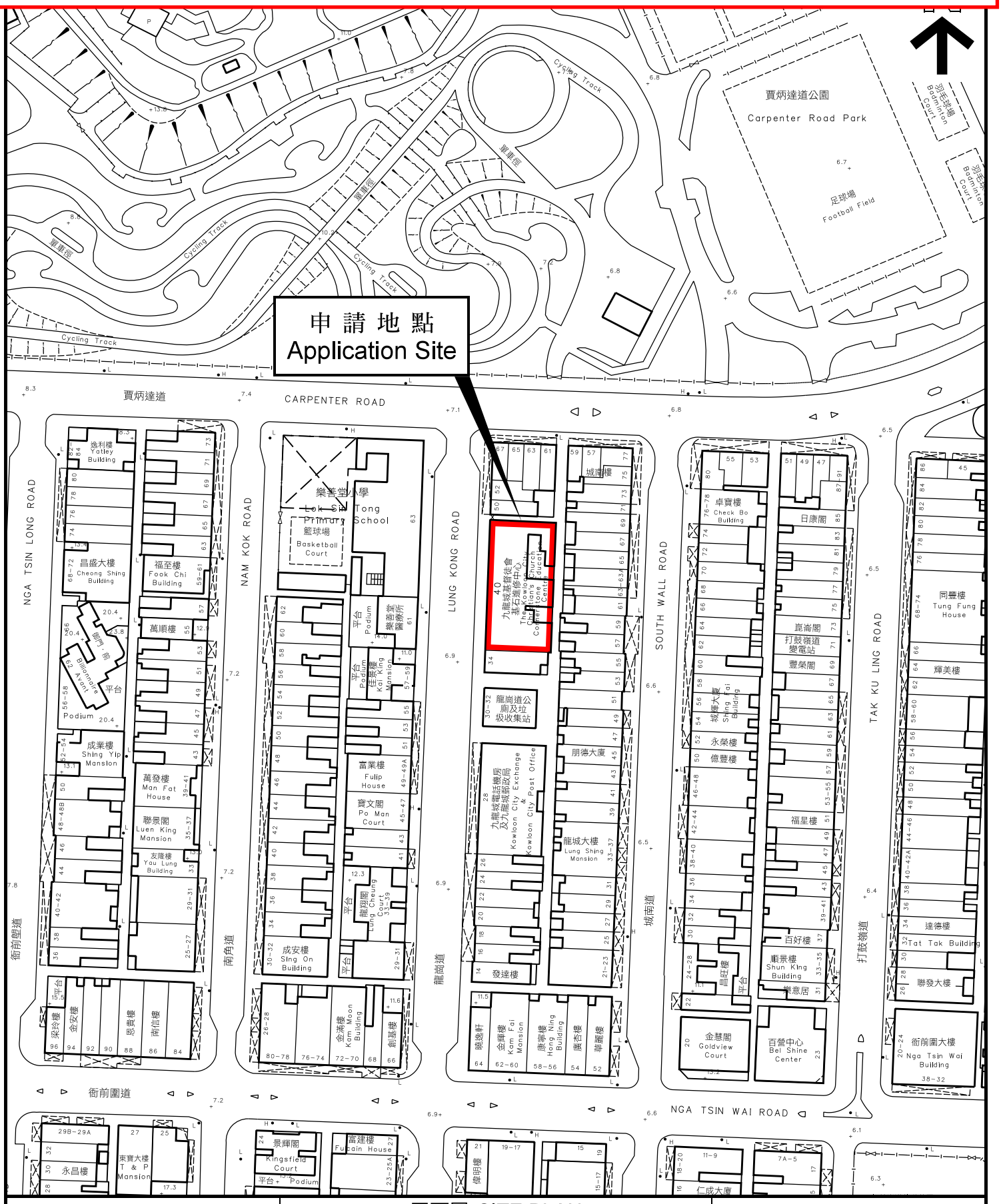
Notional Design – Schematic Section

Figure 1.2

（資料來源：由市區重建局提交）
(Source: Submitted by Urban Renewal Authority)

參考編號 REFERENCE No.	繪圖 DRAWING
M/K10/19/11	3

16. Approved Planning Application (No. Y/K10/4)

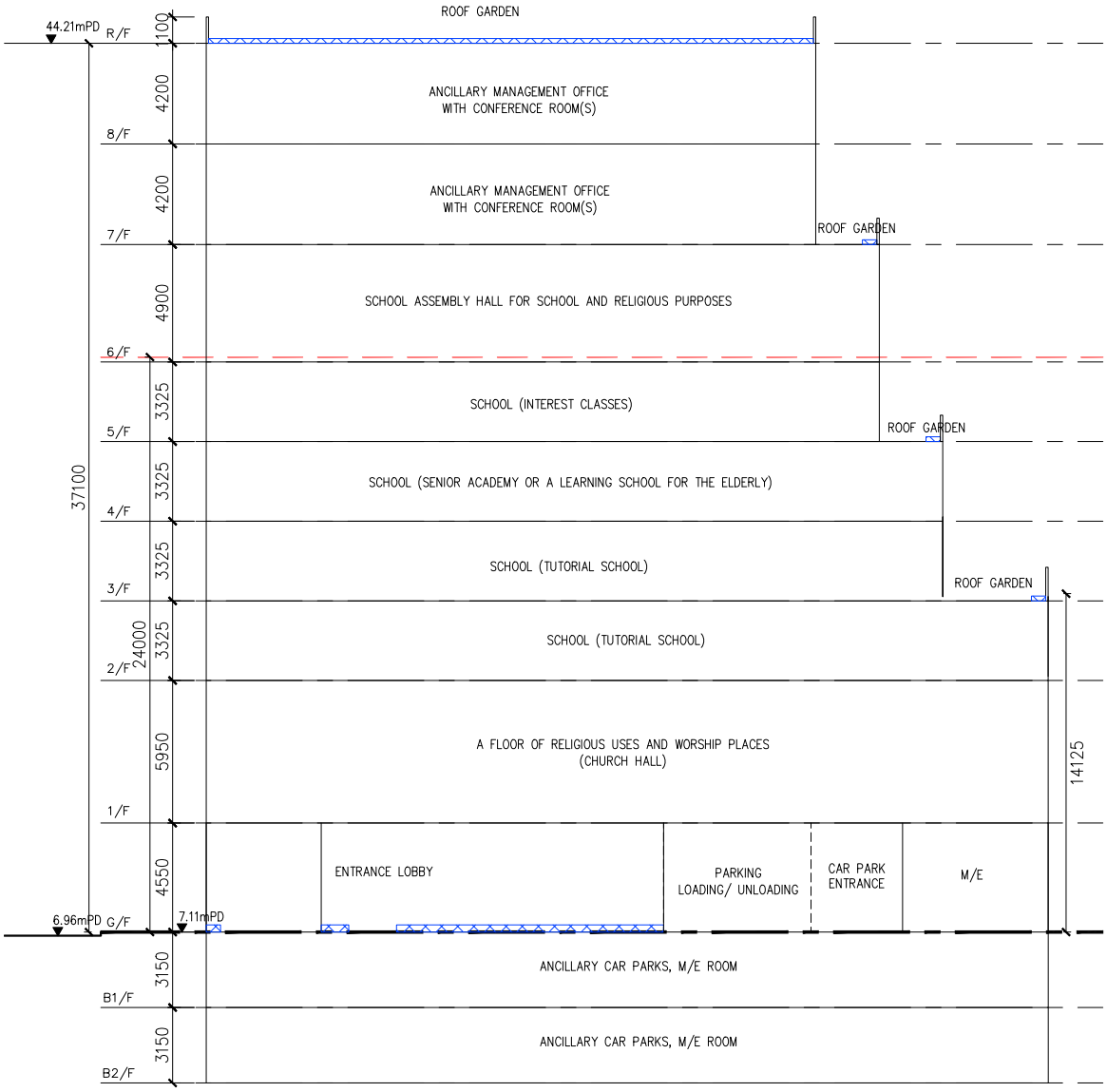


平面圖 SITE PLAN

本摘要圖於2021年4月9日擬備，
所根據的資料為測量圖編號
11-NE-11A
EXTRACT PLAN PREPARED ON 9.4.2021
BASED ON SURVEY SHEET No.
11-NE-11A

申請地點界線只作識別用
APPLICATION SITE BOUNDARY
FOR IDENTIFICATION PURPOSE ONLY

參考編號
REFERENCE No.
Y/K10/4



COMMON GREENERY

THEO TEXTURE total design solution
unit 1205 12/f blk a sea view estate 2 watson rd north point hk
p 2520 0720 f 2520 0760 www.theotexture.com

REV.	DESCRIPTION	DATE
A	GENERAL REVISION	06.06.18
B	GENERAL REVISION	26.07.19
C	GENERAL REVISION	01.08.19
D	GENERAL REVISION	19.08.19
E	GENERAL REVISION	16.12.19
F	GENERAL REVISION	04.02.20

GENERAL NOTES

All dimensions and site conditions should be checked prior to commencement of any work. Refer to figure dimensions only. Do not scale this drawing. This drawing should be read in conjunction with all related drawings and materials.

PROJECT TITLE

40 LUNG KONG ROAD

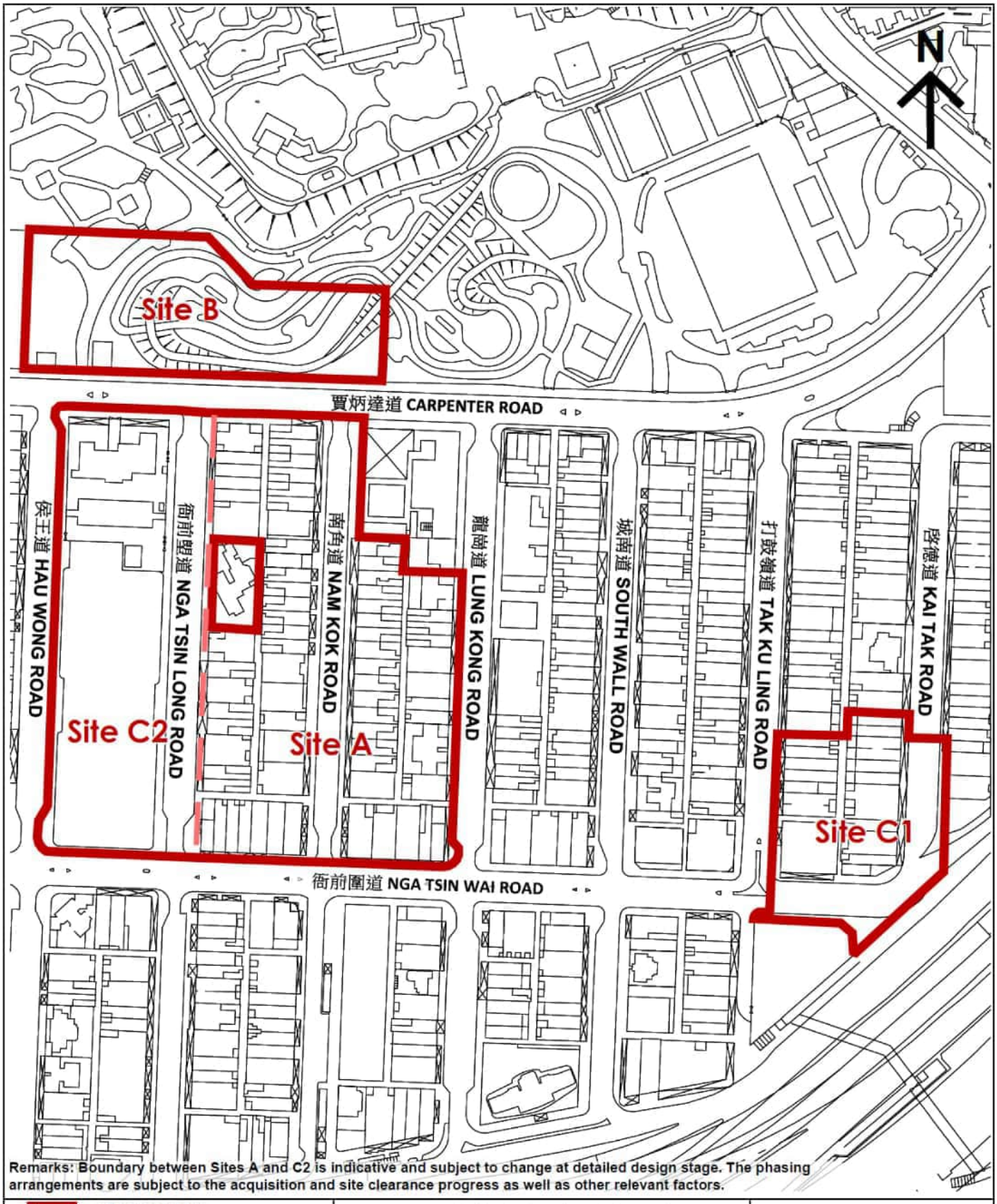
DRAWING TITLE

SECTION A

SECTION A
SCALE 1:300

SCALE	DRAWN BY	PROJECT NO.
1:300@A4	WW	TT1838
DATE	CHECKED BY	DWG NO.
25.03.2021	BW	AS01F

17. URA Project KC-017



Remarks: Boundary between Sites A and C2 is indicative and subject to change at detailed design stage. The phasing arrangements are subject to the acquisition and site clearance progress as well as other relevant factors.

THE SCHEME

Indicative Phasing Boundary

EXTRACT PLAN PREPARED ON 27.1.2022
BASED ON SURVEY SHEET No. 11-NE-11A, 11-NE-11C, 11-NW-15B, 11-NW-15D

INDICATIVE DEVELOPMENT PHASING PLAN

DEVELOPMENT SCHEME
AT NGA TSIN WAI ROAD / CARPENTER ROAD

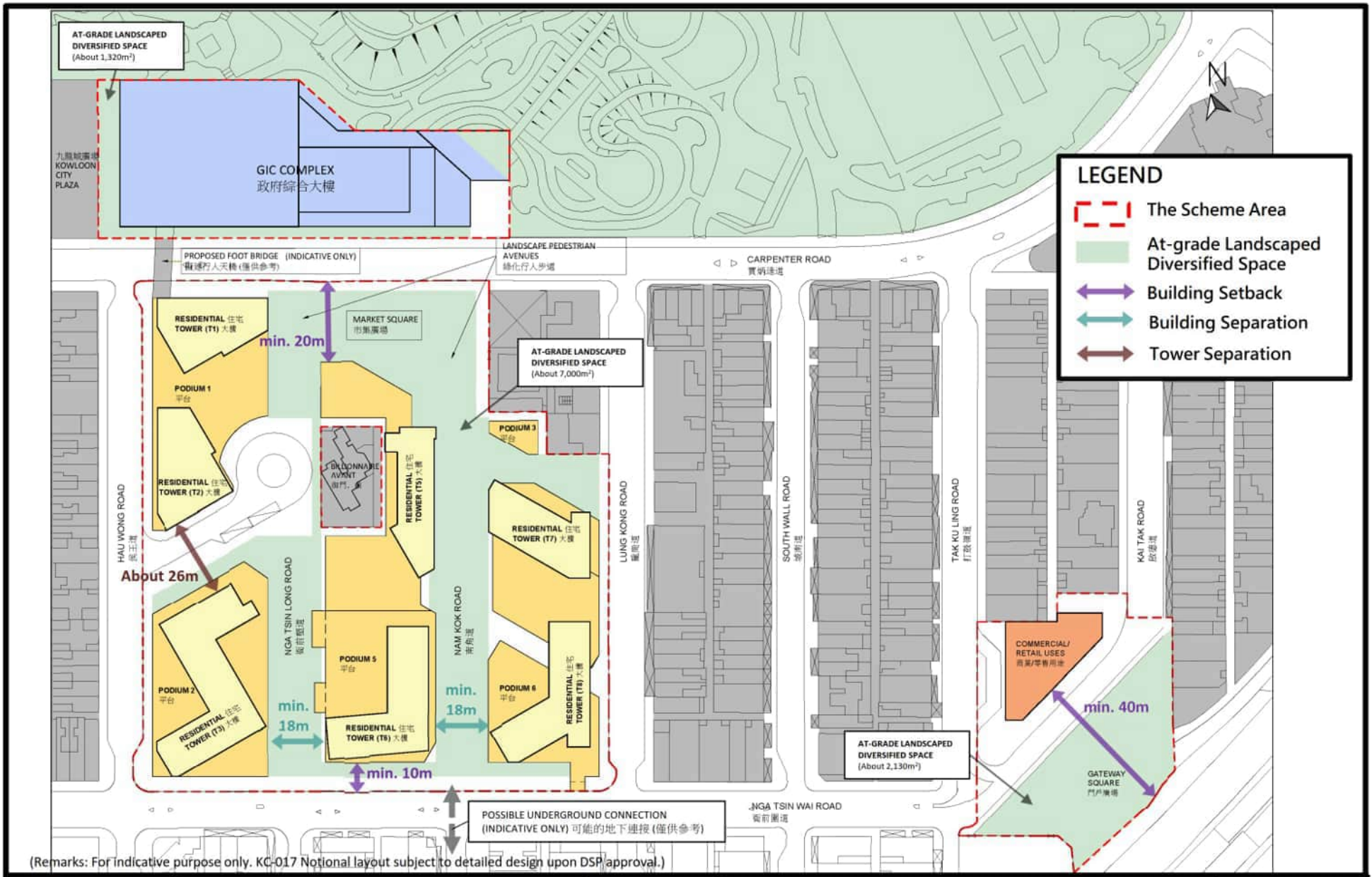
~~SCALE 1 : 2000~~

METRES 20 0 20 40 60 80 100 METRES

KC-017

（資料來源：由市區重建局提交）
(Source: Submitted by Urban Renewal Authority)

參考編號 REFERENCE No.	繪圖 DRAWING
R/S/K10/URA3/1	H - 3

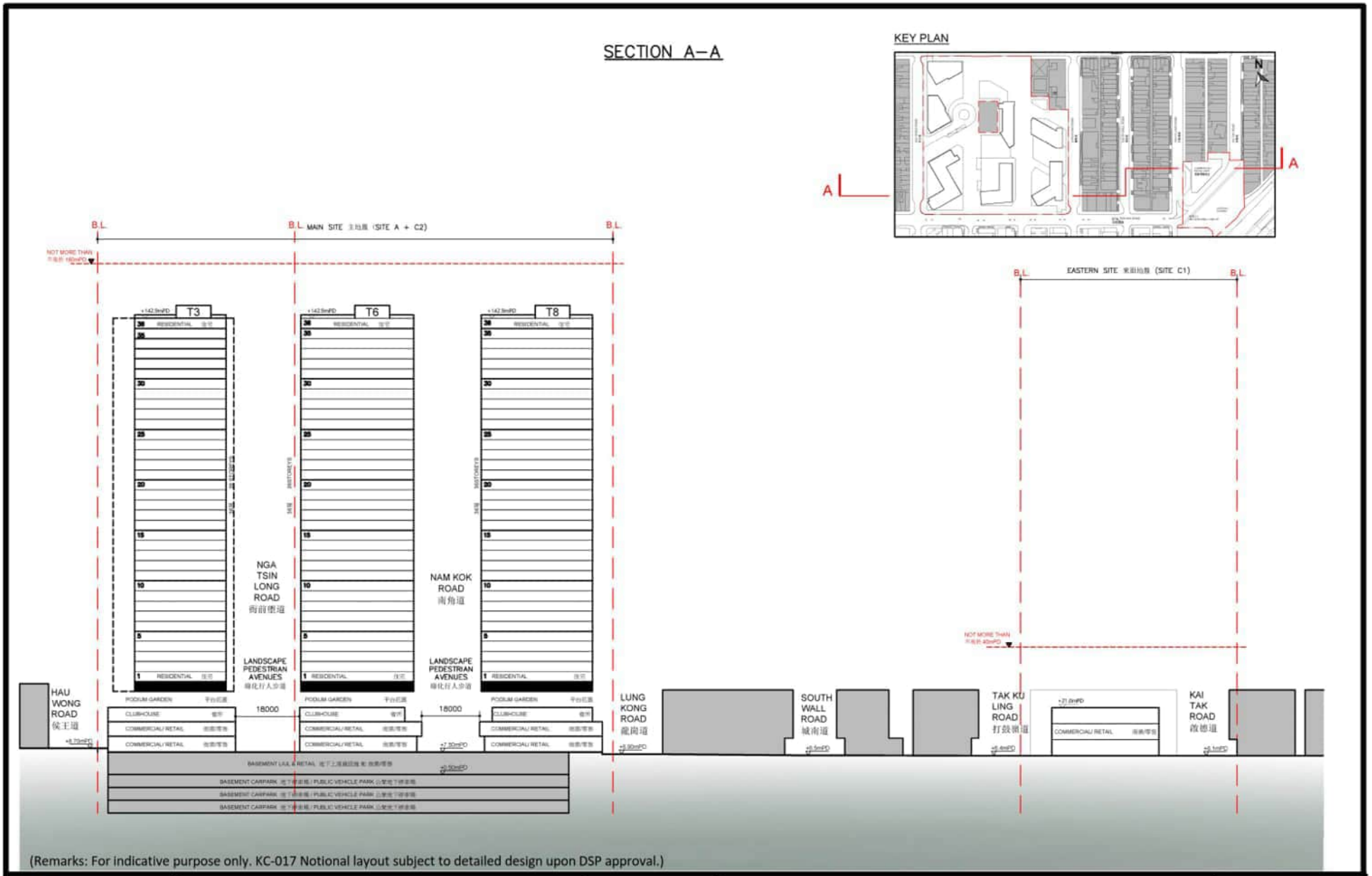


(Remarks: For indicative purpose only. KC-017 Notional layout subject to detailed design upon DSP approval.)

市區重建局 URBAN RENEWAL AUTHORITY	URA Nga Tsin Wai Road / Carpenter Road Development Scheme (KC-017)	Figure 1.1	**Revised Notional Design – Block Plan**	Not drawn to scale Sept 2022

（資料來源：由市區重建局提交）
(Source: Submitted by Urban Renewal Authority)

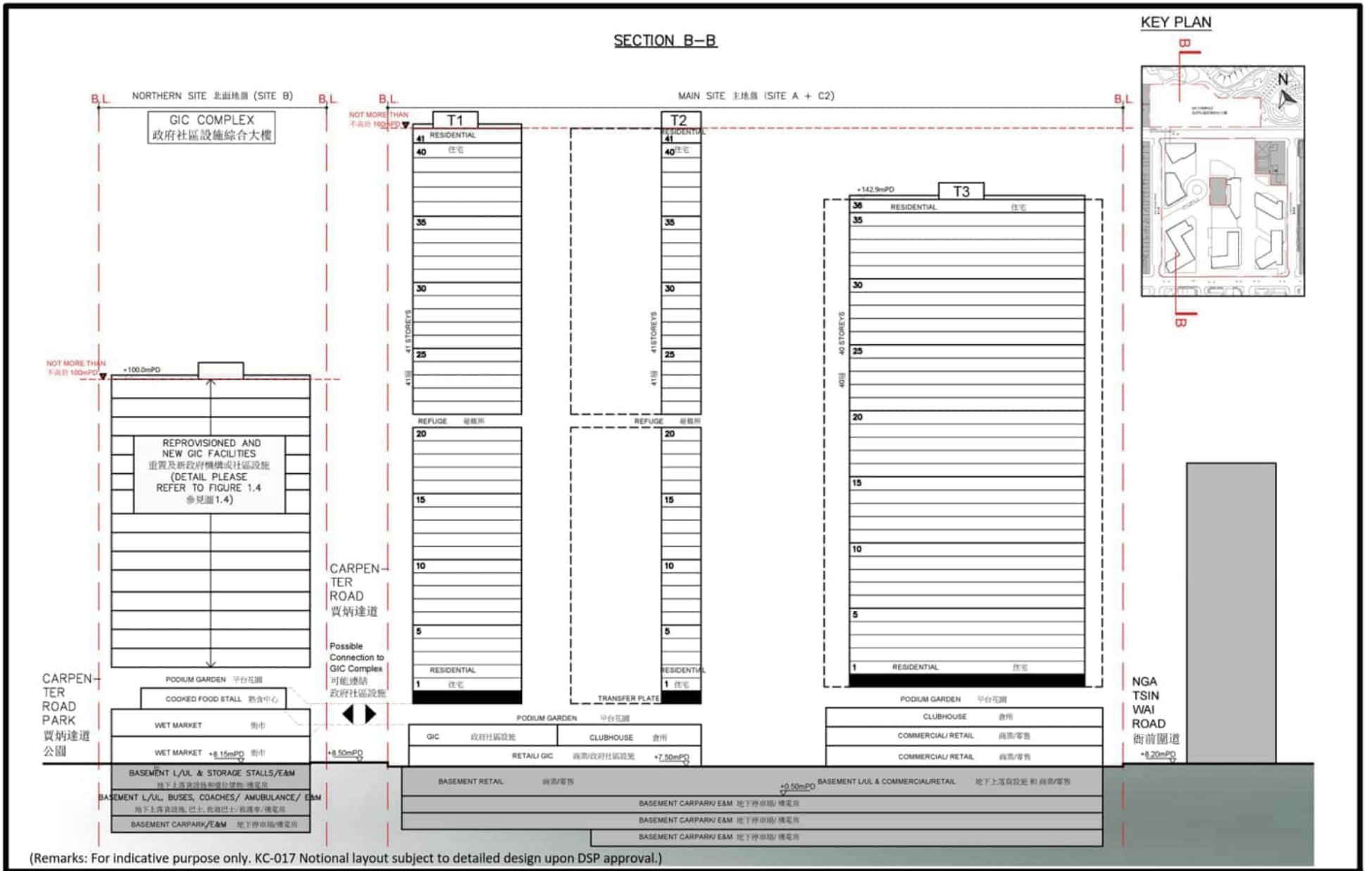
參考編號 REFERENCE No.	繪圖 DRAWING
R/S/K10/URA3/1	H - 2a



市區重建局 URBAN RENEWAL AUTHORITY	URA Nga Tsin Wai Road / Carpenter Road Development Scheme (KC-017)	Figure 1.2	**Revised Notional Design – Schematic Section A-A**	Not drawn to scale Sept 2022

（資料來源：由市區重建局提交）
(Source: Submitted by Urban Renewal Authority)

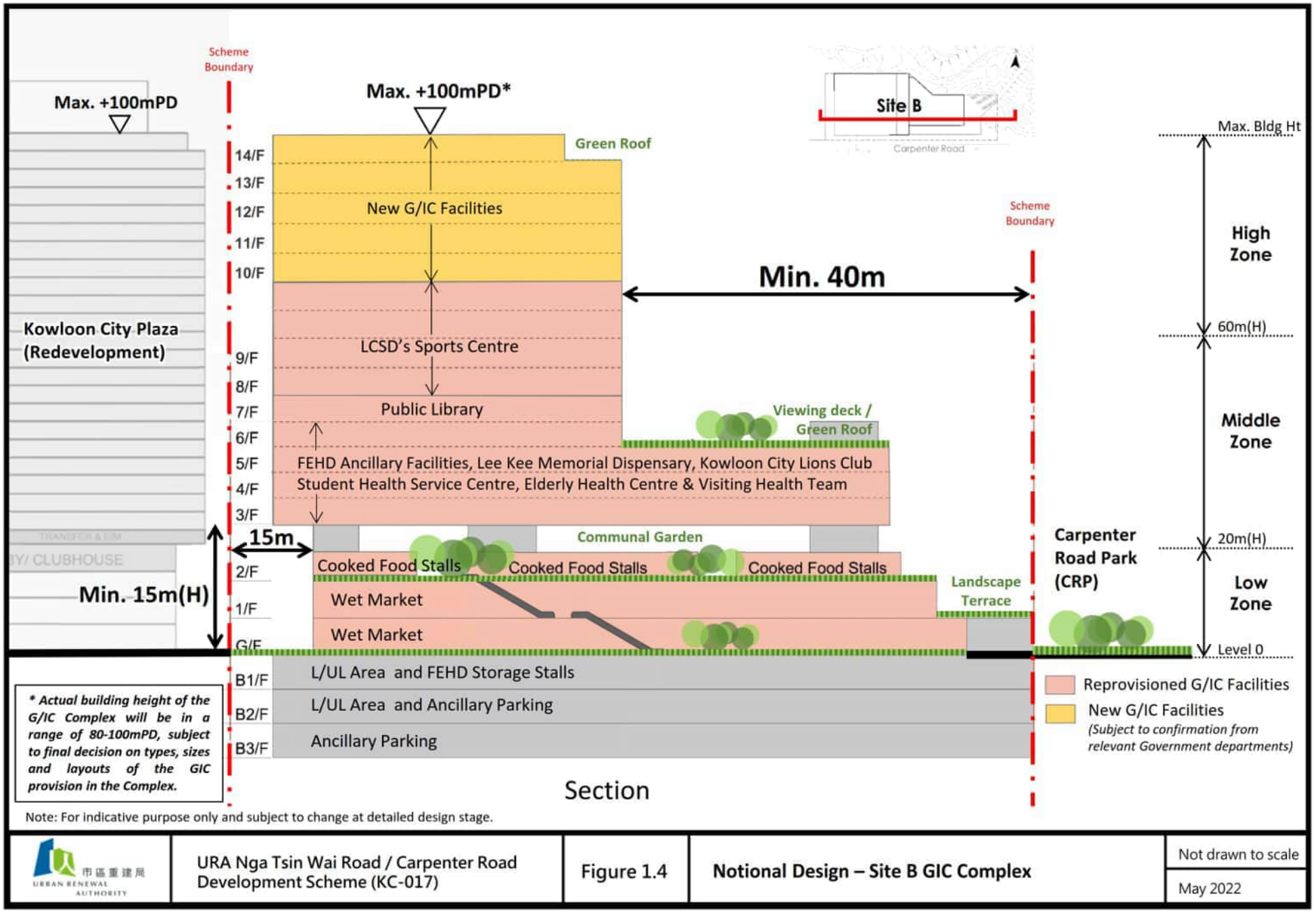
參考編號 REFERENCE No.	繪圖 DRAWING
R/S/K10/URA3/1	H - 2b



市區重建局 URBAN RENEWAL AUTHORITY	URA Nga Tsin Wai Road / Carpenter Road Development Scheme (KC-017)	Figure 1.3	**Revised Notional Design – Schematic Section B-B**	Not drawn to scale Sept 2022

（資料來源：由市區重建局提交）
(Source: Submitted by Urban Renewal Authority)

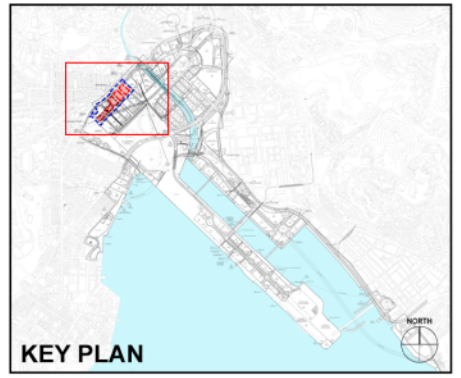
參考編號 REFERENCE No.	繪圖 DRAWING
R/S/K10/URA3/1	H - 2c



（資料來源：由市區重建局提交）
(Source: Submitted by Urban Renewal Authority)

參考編號 REFERENCE No.	繪圖 DRAWING
R/S/K10/URA3/1	H - 2d

18a. Future Residential Site 2A2-2A4, 2A5(B)
21. Future Residential Site 2A10



LEGEND

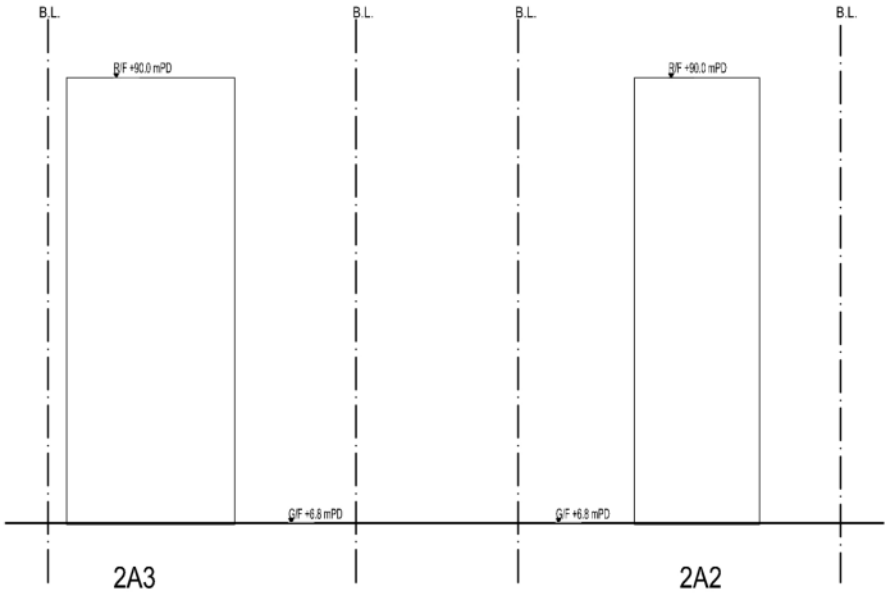
- Development Sites - North Apron
- Study Area
- Proposed Buildings
- Non-Building Areas (NBAs)

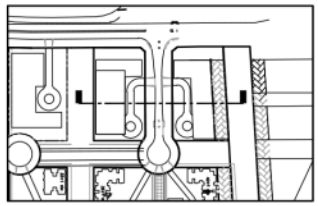
AECOM | B H A BARRIE HO ARCHITECTURE · INTERIORS | Urbis 雅邦 Limited

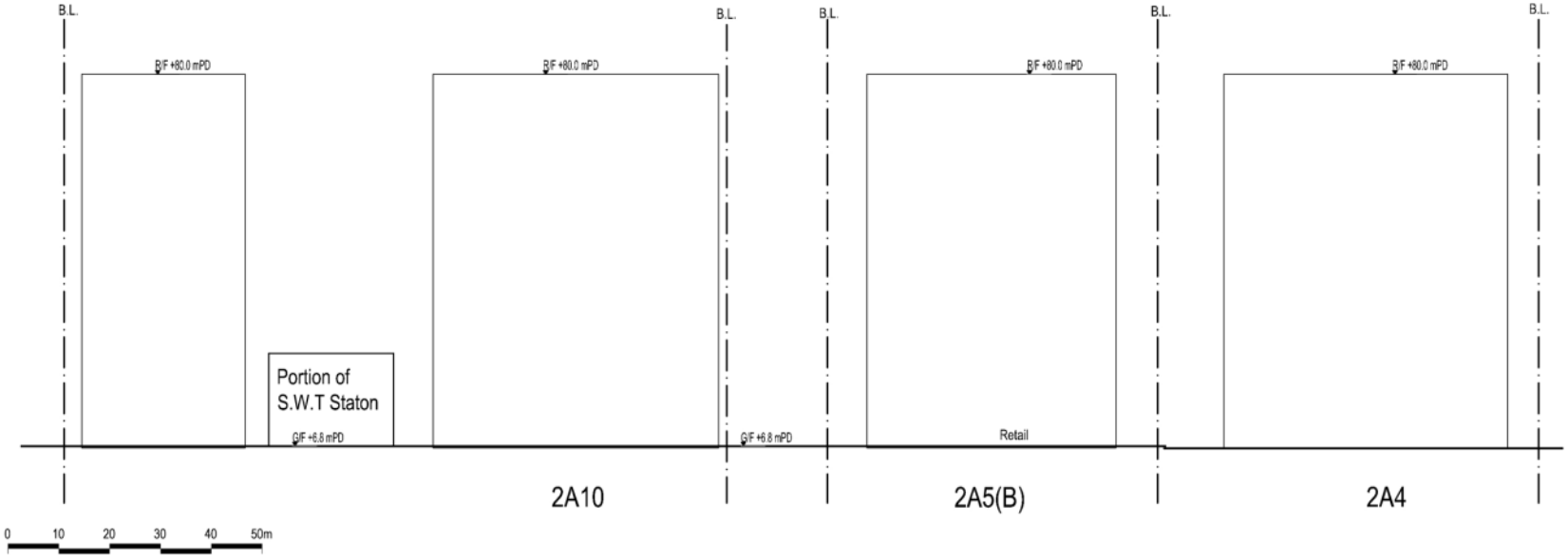
Agreement No. CE 35/2006 (CE)
Kai Tak Development Engineering Study cum Design and Construction of Advance Works - Investigation, Design and Construction

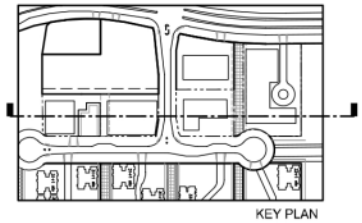
Title: **Proposed Scheme - Former North Apron Area**

Scale	Date	Figure No.
1:1,500 @ A3	November 2021	**5.6b**









AECOM

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Urbis 雅邦 Limited

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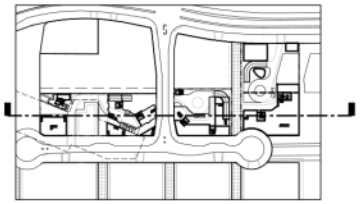
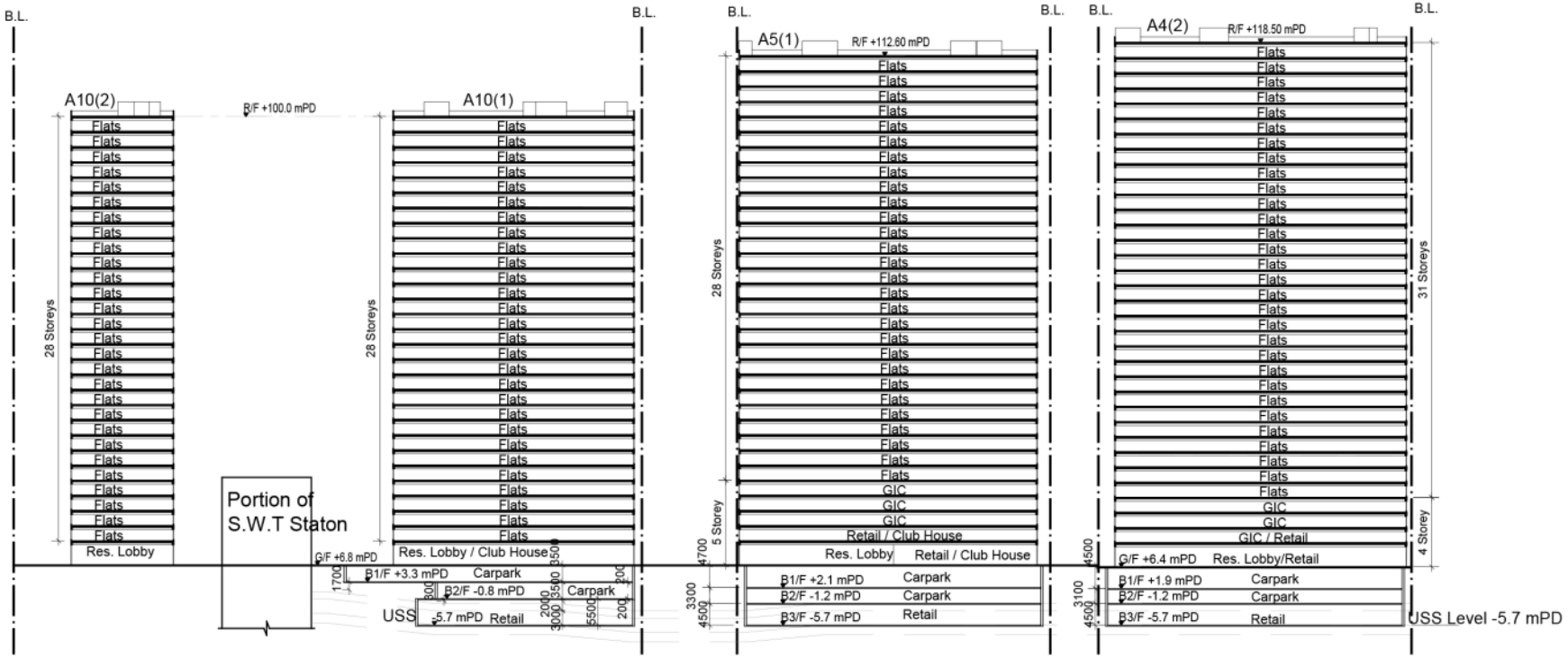
Kai Tak Development Engineering Study cum Design and Construction of Advance Works - Investigation, Design and Construction

Title

Building Heights of Subjected Sites at Former North Apron Area - Baseline Scheme

Scale	1:1,000 @ A3	Date	November 2021	Figure No.	**5.7b**





0 10 20 30 40 50m

AECOM

B H A
B A R R I E H O
ARCHITECTURE · INTERIORS

Arup

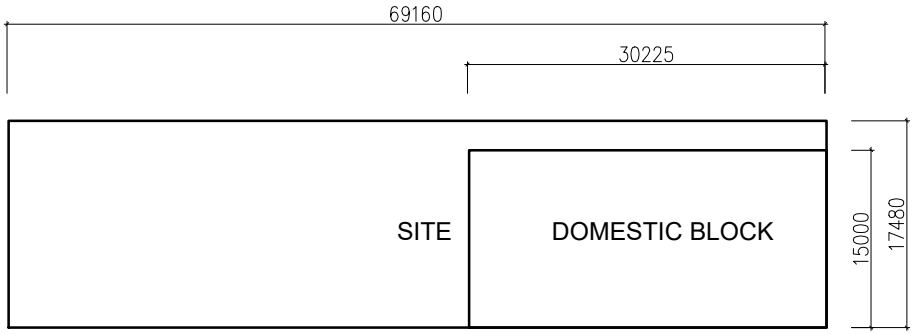
Agreement No. CE 35/2006 (CE)
Kai Tak Development Engineering Study cum Design and Construction of Advance Works - Investigation, Design and Construction

Title

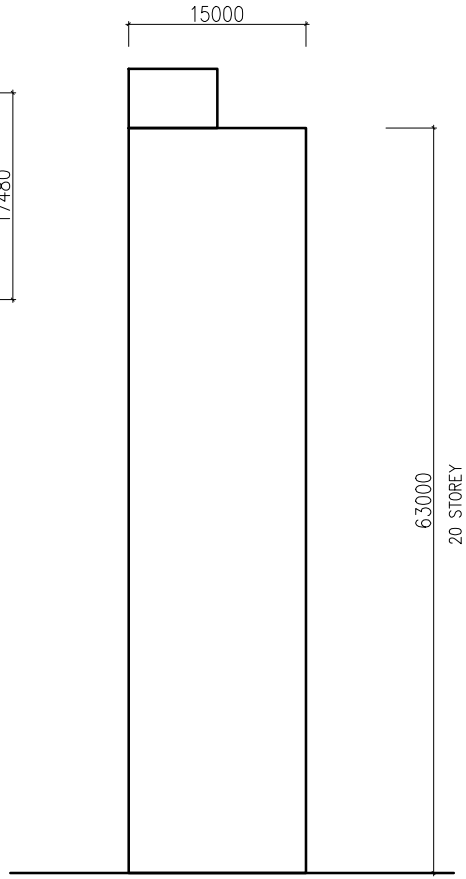
Proposed Building Heights of Subjected Sites at Former North Apron Area - Proposed Scheme (Sheet 1 of 2)

Scale	1:1,000 @ A3	Date	November 2021	Figure No.	**5.8b**

19. 4-24 Nam Kok Road



PLAN



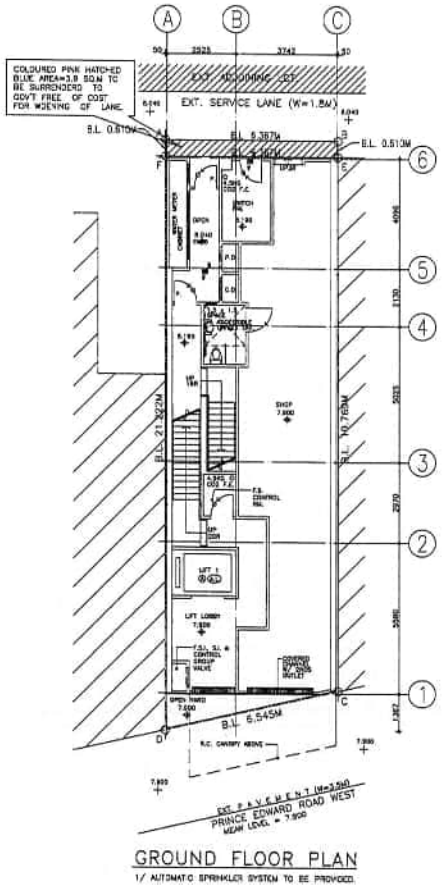
ELEVATION

4 – 24 NAM KOK ROAD
SITE AREA = 1209 m^2
MAX BH = 80 mPD
P.R. (DOMESTIC) = 7.5
P.S. DOMESTIC G.F.A. = 9,067 m^2
S.C. = 453.375 (37.5%)
STOREY = 20

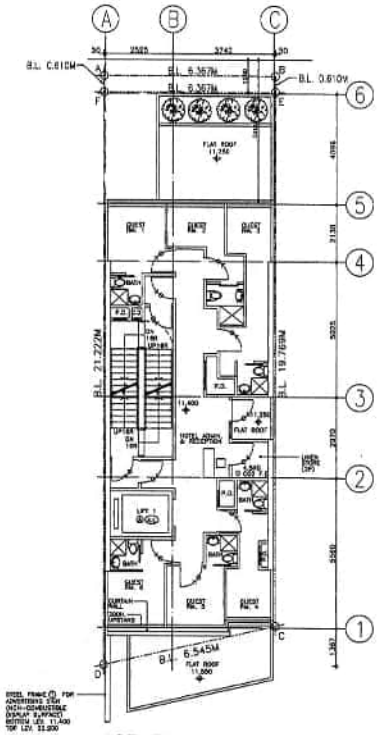
BUILDING HEIGHT
DOMESTIC = 3.15 x 20 = 63 m

20. Approved Application A/K10/249-1

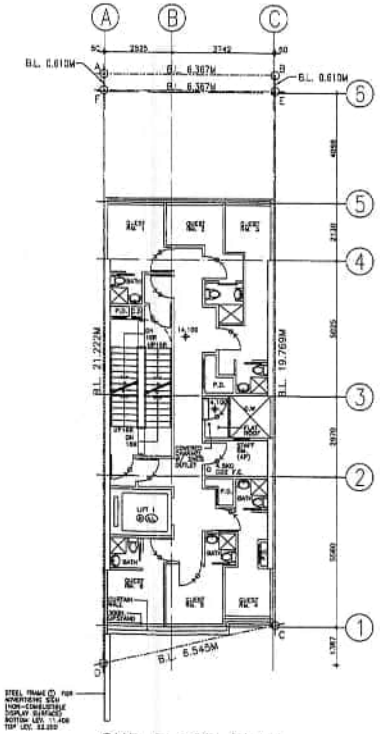
申請編號 Application No. : A / K10 / 249
此頁摘自申請人提交的文件。
This page is extracted from applicant's submitted documents.



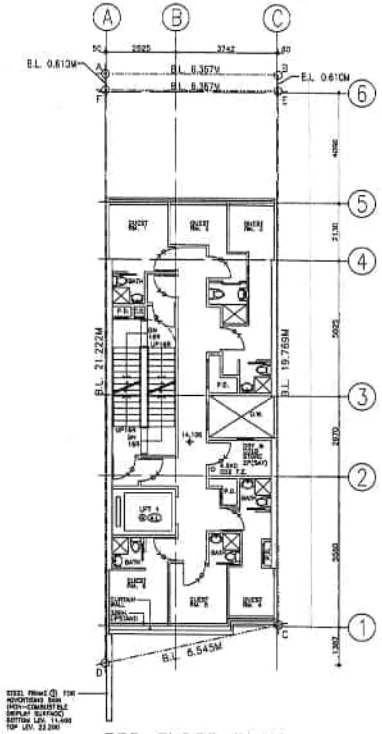
GROUND FLOOR PLAN
1/ AUTOMATIC SPRINKLER SYSTEM TO BE PROVIDED.



1ST FLOOR PLAN
1/ AUTOMATIC SPRINKLER SYSTEM TO BE PROVIDED.



2ND FLOOR PLAN
1/ AUTOMATIC SPRINKLER SYSTEM TO BE PROVIDED.



3RD FLOOR PLAN
1/ AUTOMATIC SPRINKLER SYSTEM TO BE PROVIDED.

B.D. REF. NO. 2/4032/08
F.S.D. REF. NO. 8/28687

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- P.D. PIPE DUCT TO BE PROVIDED W/. -/60/60 F.R.R. ACCESS PANEL
- DIS. DISABLED PERSONS
- LIFT VENTILANTION VENT
- C.L. CAT LADDER

DATE	REVISION	BY	CH

B.D. / F.S.D. APPROVAL DATE

S.W.LAW & ASSOCIATES
ARCHITECTS & DEVELOPMENT CONSULTANTS LIMITED
羅守加建築師事務所有限公司
G/F – 2/F, KINGSTON MANSION, 25 KING ENDS STREET, APLICHAU, HONG KONG
TEL. : 2888 8888

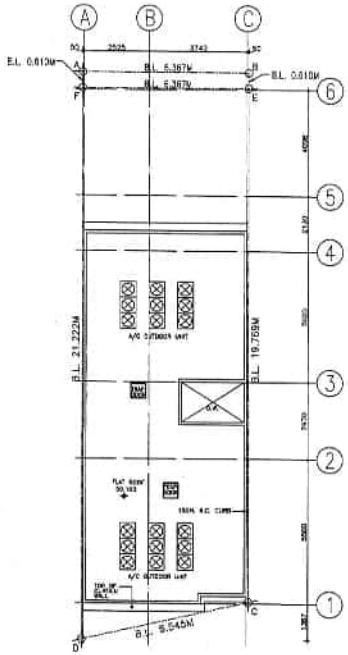
SIGNATURE

PROJECT
PROPOSED HOTEL BUILDING IN N.K.I.L. 2358 AT NO. 380 PRINCE EDWARD ROAD WEST, KOWLOON.

DRAWING TITLE
FLOOR PLANS

DATE	DRAWN	CHECKED	SCALE	REV. NO.
18/09/2013			1:100	

JOB NO.	DRAWING NO.
J323	S-001



TOP ROOF

PLOT RATIO AND SITE COVERAGE CALCULATION

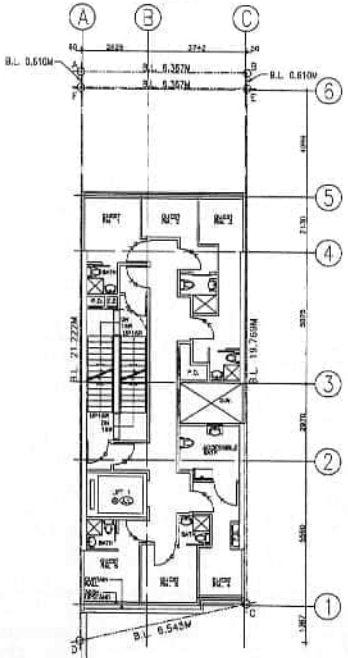
B.D.	D.L.O.
SITE AREA (FROM LEASE) = 1448 FT² = 134.500 SQ.M.	SITE AREA (FROM LEASE) = 1448 FT² = 134.500 SQ.M.
SITE AREA FOR CALCULATION OF PLOT RATIO AND SITE COVERAGE = 134.500 SQ.M – 3.5 SQ.M = 130.000 SQ.M	SITE AREA FOR CALCULATION OF PLOT RATIO AND SITE COVERAGE = 134.500 SQ.M – 3.9 SQ.M = 130.600 SQ.M
CLASS OF SITE = 'A'	CLASS OF SITE = 'A'
BUILDING HEIGHT = 35.200 M	BUILDING HEIGHT = 35.900 M
PERMISSIBLE NON-DOMESTIC PLOT RATIO = 9.5	PERMISSIBLE NON-DOMESTIC PLOT RATIO = 9
PROPOSED NON-DOMESTIC PLOT RATIO PROPOSED NON-DOMESTIC G.F.A.: GRD. FL. = 103.196 SQ.M 1ST FL. = 91.076 SQ.M 2ND & 3RD FL. = 88.141 x 2 storey = 176.282 SQ.M 4TH & 5TH FL. = 92.345 x 2 storey = 184.690 SQ.M 6TH TO 12TH FL. = 88.141 x 7 storey = 616.987 SQ.M TOTAL = 1175.231 SQ.M	PROPOSED NON-DOMESTIC PLOT RATIO PROPOSED NON-DOMESTIC G.F.A.: GRD. FL. = 106.196 SQ.M 1ST FL. = 91.076 SQ.M 2ND & 3RD FL. = 88.141 x 2 storey = 176.282 SQ.M 4TH & 5TH FL. = 92.345 x 2 storey = 184.690 SQ.M 6TH TO 12TH FL. = 88.141 x 7 storey = 616.987 SQ.M TOTAL = 1175.231 SQ.M
PROPOSED NON-DOMESTIC PLOT RATIO 1175.231 SQ.M. /130.000 SQ.M. = 9.044 < 9.5	PROPOSED NON-DOMESTIC PLOT RATIO 1175.231 SQ.M. /130.600 SQ.M. = 8.999 < 9
PERMISSIBLE NON-DOMESTIC SITE COVERAGE (ACCORDING TO B(P) REG. FIRST SCHEDULE / BUILDING HEIGHT < 15 M) = 100% PERMISSIBLE NON-DOMESTIC SITE COVERAGE (UNDER 15M) = 100% PERMISSIBLE NON-DOMESTIC SITE COVERAGE = 80% PROPOSED NON-DOMESTIC SITE COVERAGE 93.928 / 130.000 x 100% = 71.920% < 80.000%	

HOTEL FACILITIES AREA CALCULATIONS: (BOH)
1F, 2/F, 3/F & 6/F TO 12/F

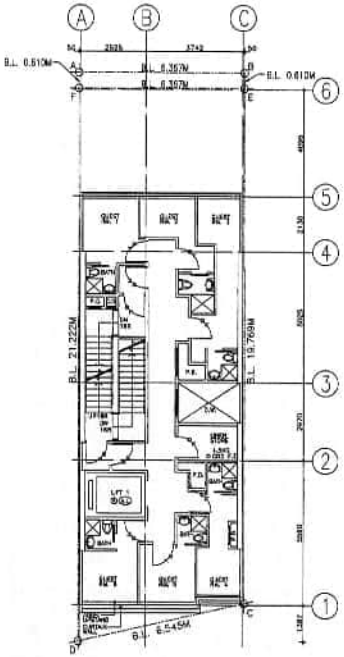
HOTEL FACILITIES AREA DIAGRAM

TOTAL HOTEL FACILITIES AREA (BOH) = 2.201 (1/F) + 3.539 (2/F) + 3.539 (3/F) + 3.539 x 7 (6/F TO 12/F) = 34.052 SQ.M.

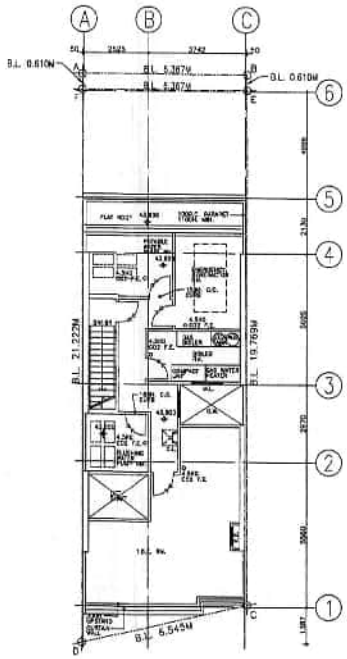
PERCENTAGE OF BOH = 34.052 / 1175.231 x 100% = 2.897%



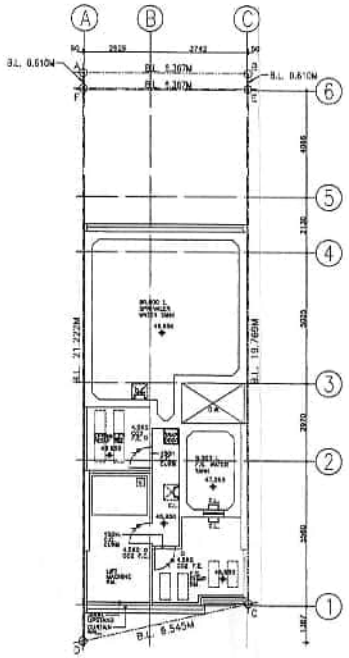
4TH & 5TH FLOOR PLAN (2 STOREY)
1/ AUTOMATIC SPRINKLER SYSTEM TO BE PROVIDED.



6TH TO 12TH FLOOR PLAN (7 STOREY)
1/ AUTOMATIC SPRINKLER SYSTEM TO BE PROVIDED.



ROOF FLOOR



SPRINKLER WATER TANK LEVEL

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- P.D. PIPE DUCT TO BE PROVIDED W/ ~/60/60 F.R.R. ACCESS PANEL.
- DIS. DISABLED PERSONS
- LIFT VENTILANTION VENT
- C.L. CAT LADDER

DATE	REVISION	BY	CH

B.D. / F.S.D. APPROVAL STAMP

S.W.LAW & ASSOCIATES
G/F ~ 2/F, KINGSTON MANSION, 28 DING XING STREET, AFUKHUAD, DING XING TEL : 0000 0000

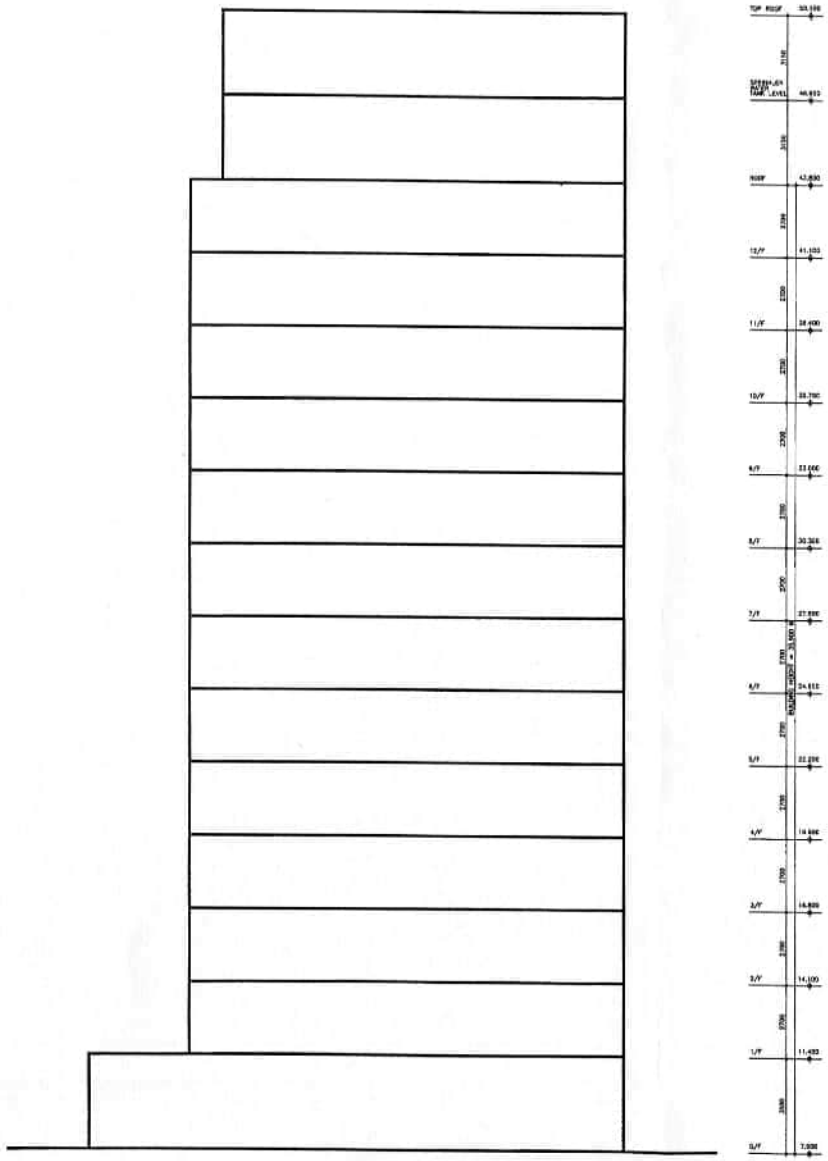
SIGNATURE

PROJECT
PROPOSED HOTEL
BUILDING IN N.K.I.L. 2358
AT NO. 380 PRINCE EDWARD ROAD WEST, KOWLOON.

DRAWING TITLE
FLOOR PLANS

DATE	DRAWN	CHECKED	SCALE	REV. NO.
18/09/2013			1:100	

JOB NO.	DRAWING NO.
J323	S-002



B.D. REF. NO. 2/4032/08

F.S.D. REF. NO. 5/28687

DATE	ISSUED TO	NO.	DATE	ISSUED TO	NO.

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- P.D. PIPE DUCT TO BE PROVIDED W/. -/60/60 F.R.R. ACCESS PANEL
- DIS. DISABLED PERSONS
- LIFT VENTILAVITION VENT
- C.L. CAT LADDER

DATE	REVISION	BY	CH

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ARCHITECTS & DEVELOPMENT CONSULTANTS LIMITED
G/F - 2/F, KINGSTON MANSION,
62 SOUTH SIKONG STREET,APLICHAU,HONG KONG
TEL : 3583 8600

SIGNATURE

PROJECT

PROPOSED HOTEL
BUILDING IN N.K.I.L. 2358
AT NO. 380 PRINCE EDWARD
ROAD WEST, KOWLOON.

DRAWING TITLE

SECTION & ELEVATIONS

DATE	DRAWN	CHECKED	SCALE	REV. NO.
16/09/2013			1:100	

JOB NO. J323

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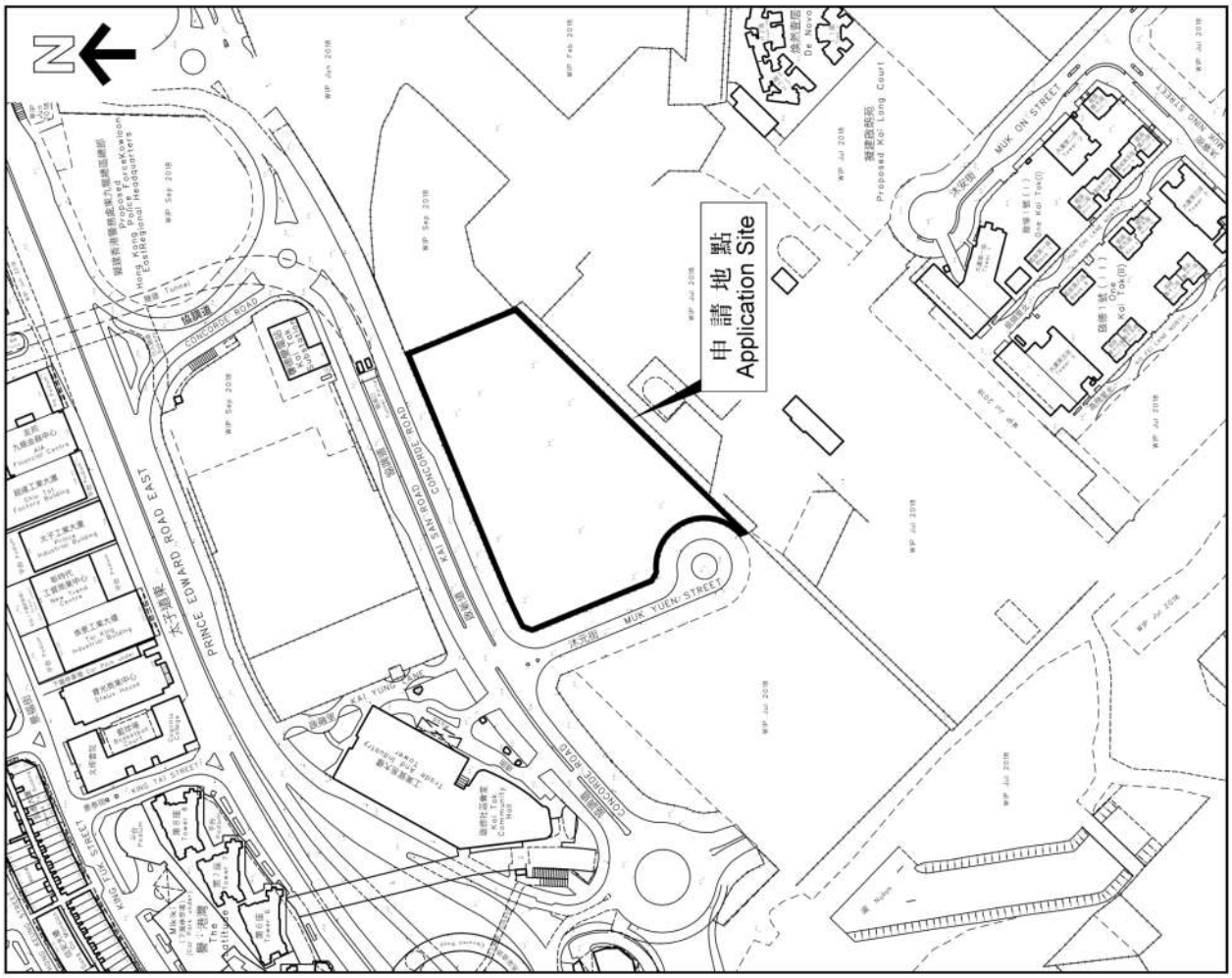
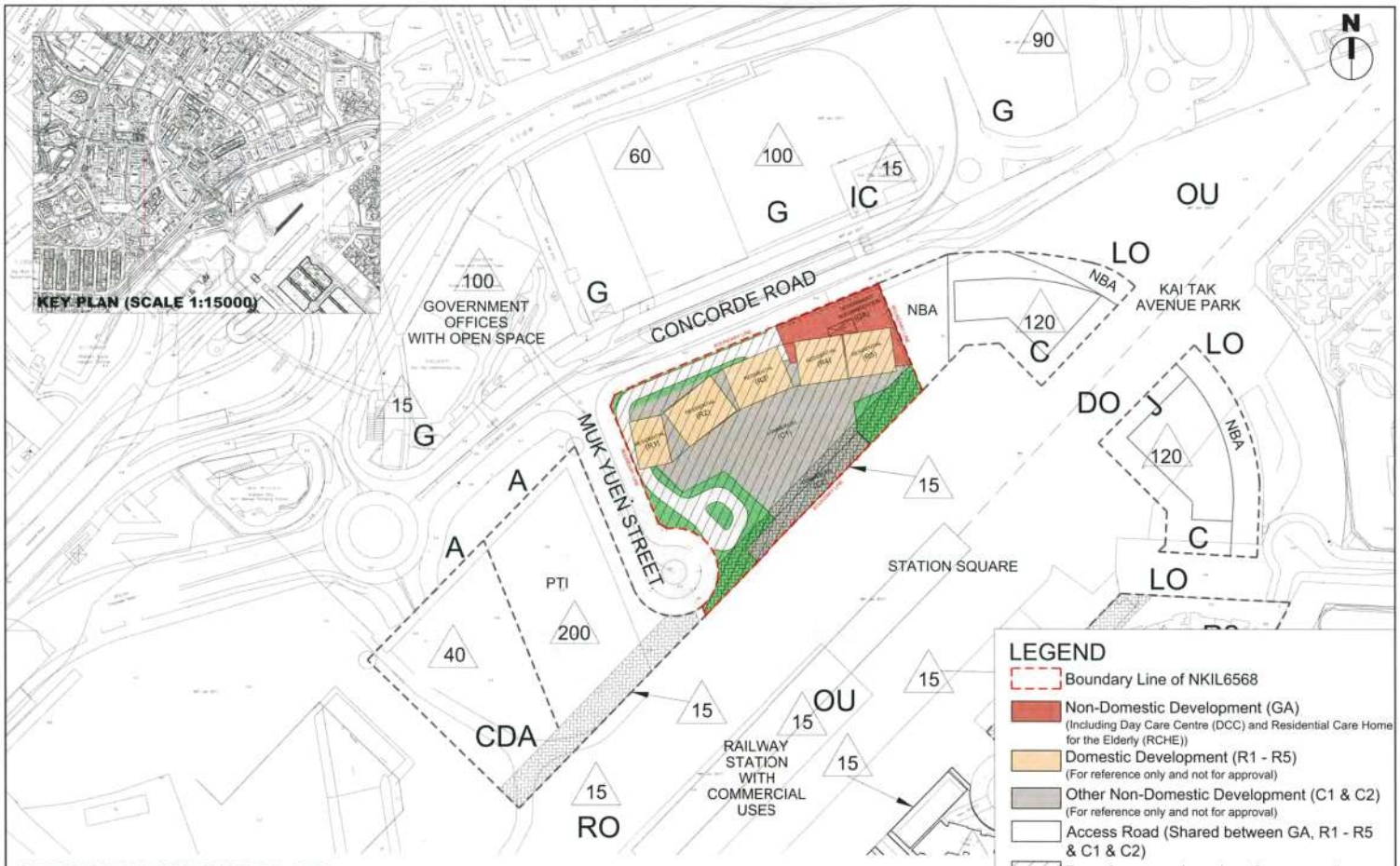


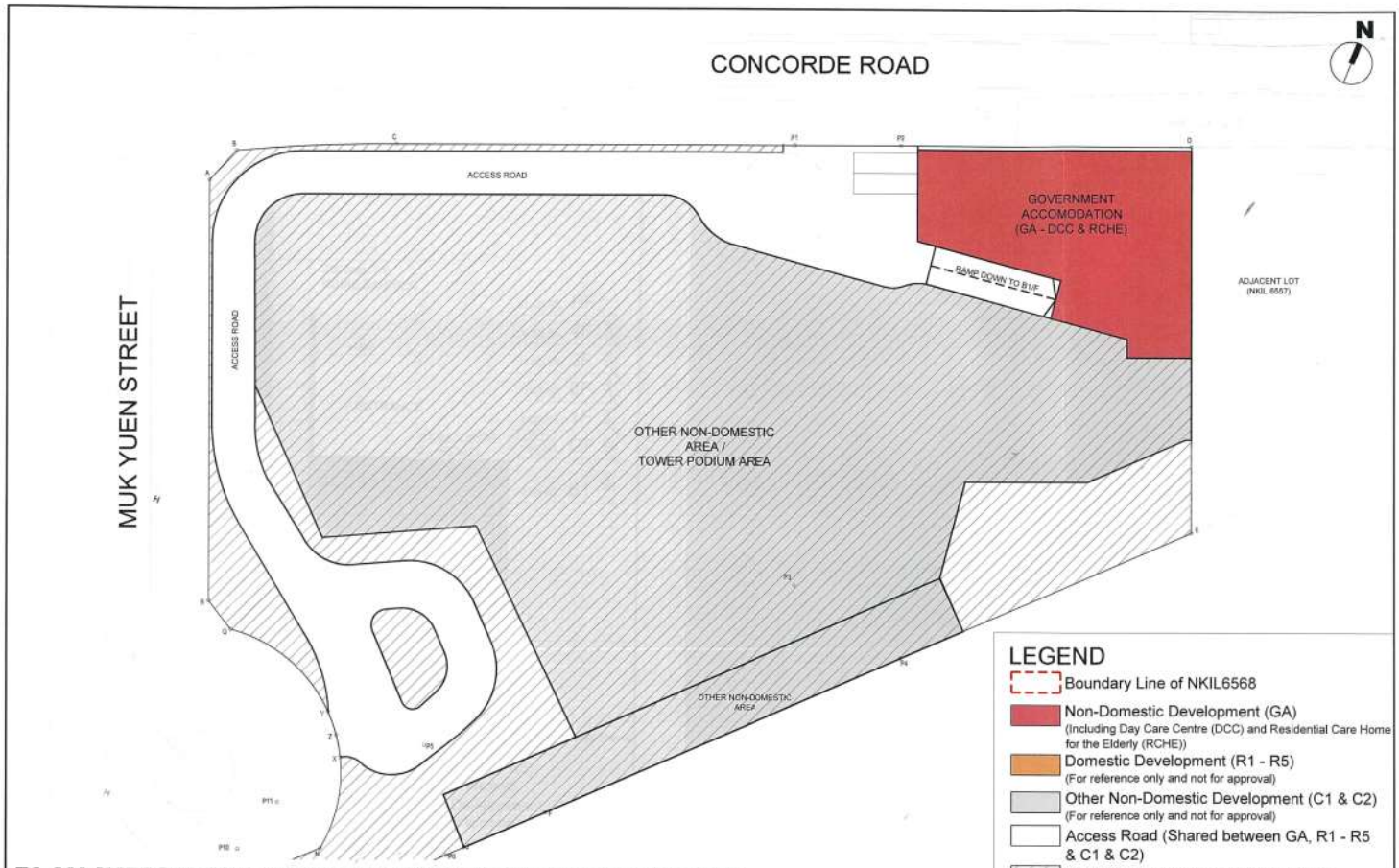


MASTER LAYOUT PLAN

PROPOSED DEVELOPMENT AT KAI TAK AREA 1F SITE 1, NKIL6568, KOWLOON

JOB No. : HKA-P-01450
SCALE : 1 : 2000
DATE : DECEMBER, 2018

lwk&partners architects

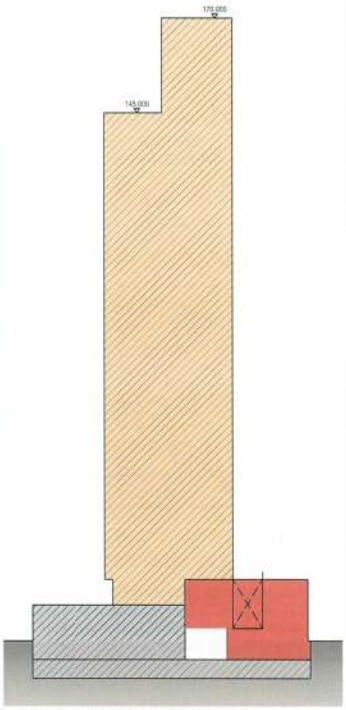


PLAN INDICATING ACCESS ROAD FOR DEVELOPMENT

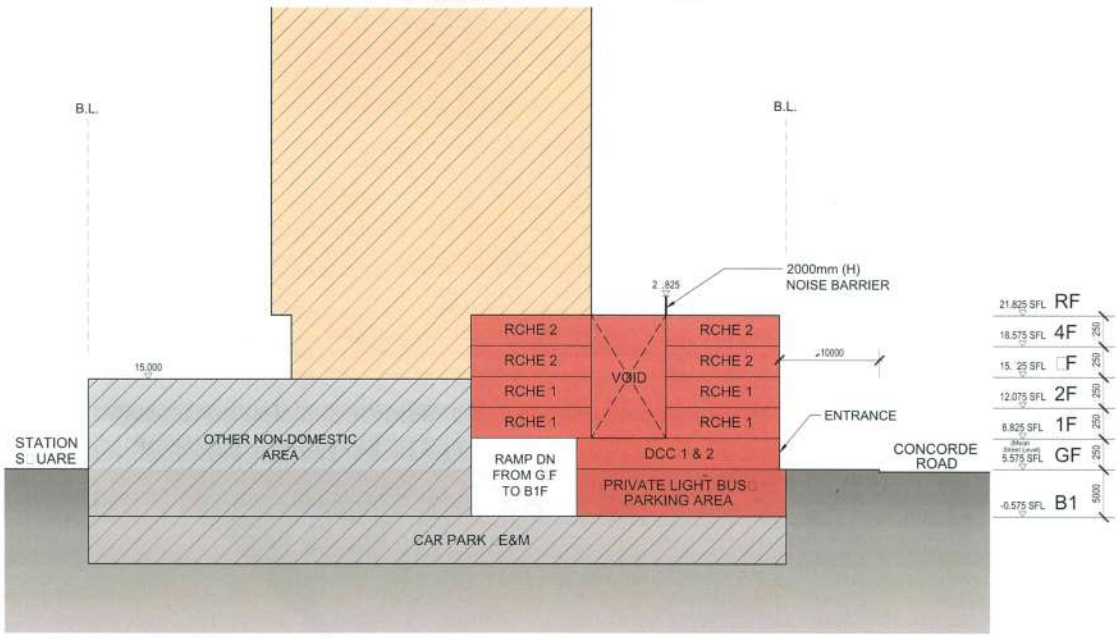
PROPOSED DEVELOPMENT
AT KAI TAK AREA 1F SITE 1, NKIL6568, KOWLOON

JOB No. : HKA-P-01450
SCALE : 1 : 400
DATE : OCTOBER, 2018

lwk&partners architects



TYPICAL SECTION THROUGH DEVELOPMENT
(SCALE 1:1000)



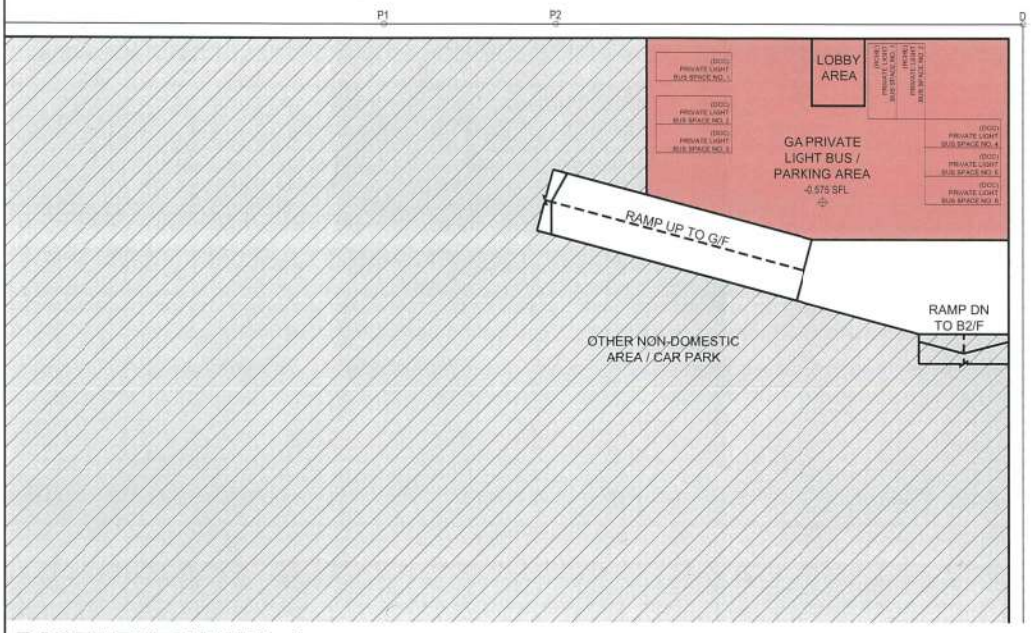
TYPICAL SECTION THROUGH GA
(SCALE 1:400)

LEGEND
Boundary Line of NKIL6568
Non-Domestic Development (GA)
(Including Day Care Centre (DCC) and Residential Care Home for the Elderly (RCHE))
Domestic Development (R1 - R5)
(For reference only and not for approval)
Other Non-Domestic Development (C1 & C2)
(For reference only and not for approval)
Access Road (Shared between GA, R1 - R5 & C1 & C2)
For reference only and not for approval

PROPOSED DEVELOPMENT
AT KAI TAK AREA 1F SITE 1, NKIL6568, KOWLOON

JOB No. : HKA-P-01450
SCALE : 1:1000 & 1:400
DATE : DECEMBER, 2018

lwk&partners architects



LEGEND

- Boundary Line of NKIL6568
- Non-Domestic Development (GA) (Including Day Care Centre (DCC) and Residential Care Home for the Elderly (RCHE))
- Domestic Development (R1 - R5) (For reference only and not for approval)
- Other Non-Domestic Development (C1 & C2) (For reference only and not for approval)
- Access Road (Shared between GA, R1 - R5 & C1 & C2)
- For reference only and not for approval

BASEMENT LEVEL 1

PROPOSED DEVELOPMENT AT KAI TAK AREA 1F SITE 1, NKIL6568, KOWLOON

JOB No. : HKA-P-01450
SCALE : 1 : 400
DATE : OCTOBER, 2018

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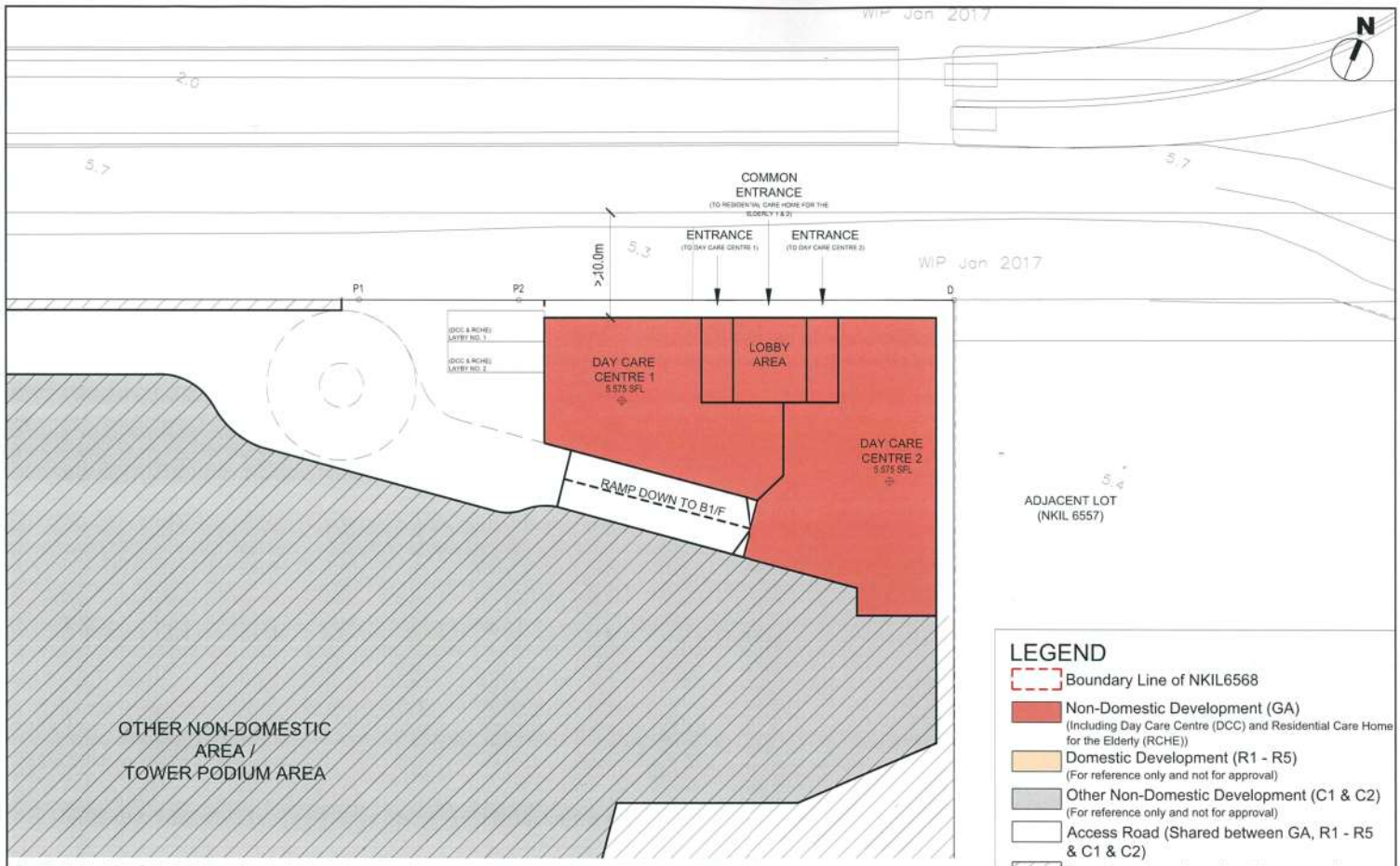


LEGEND

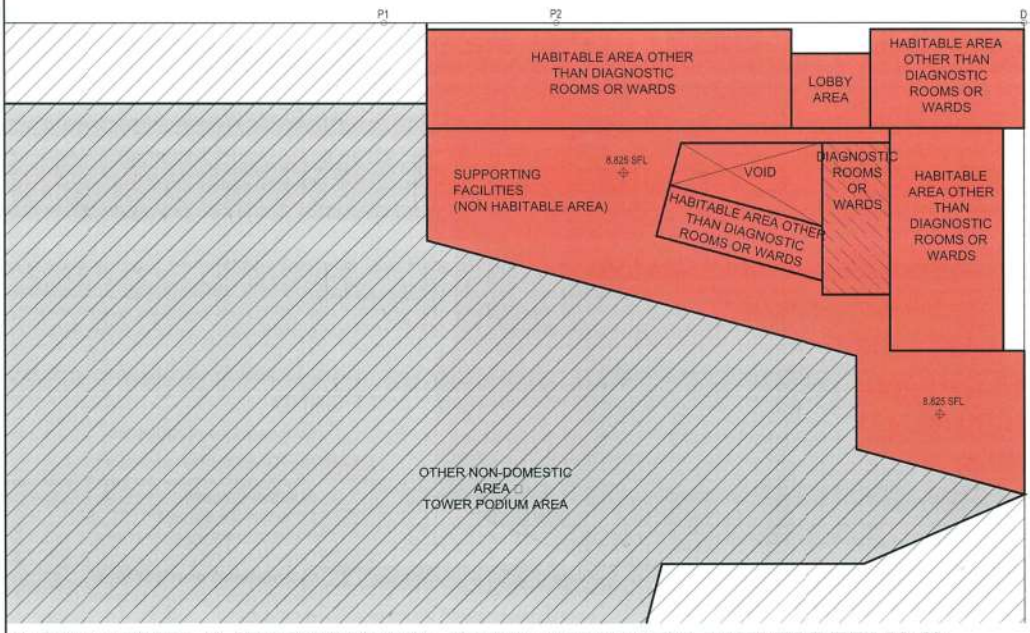
- Boundary Line of NKIL6568
- Non-Domestic Development (GA) (Including Day Care Centre (DCC) and Residential Care Home for the Elderly (RCHE))
- Domestic Development (R1 - R5) (For reference only and not for approval)
- Other Non-Domestic Development (C1 & C2) (For reference only and not for approval)
- Access Road (Shared between GA, R1 - R5 & C1 & C2)
- For reference only and not for approval

[GA] GROUND FLOOR PLAN (DAY CARE CENTRE 1 & 2)

PROPOSED DEVELOPMENT AT KAI TAK AREA 1F SITE 1, NKIL6568, KOWLOON

JOB No. : HKA-P-01450
SCALE : 1 : 400
DATE : DECEMBER, 2018

lwk&partners architects



[GA] LEVEL 1 (RESIDENTIAL CARE HOME FOR THE ELDERLY 1)

LEGEND

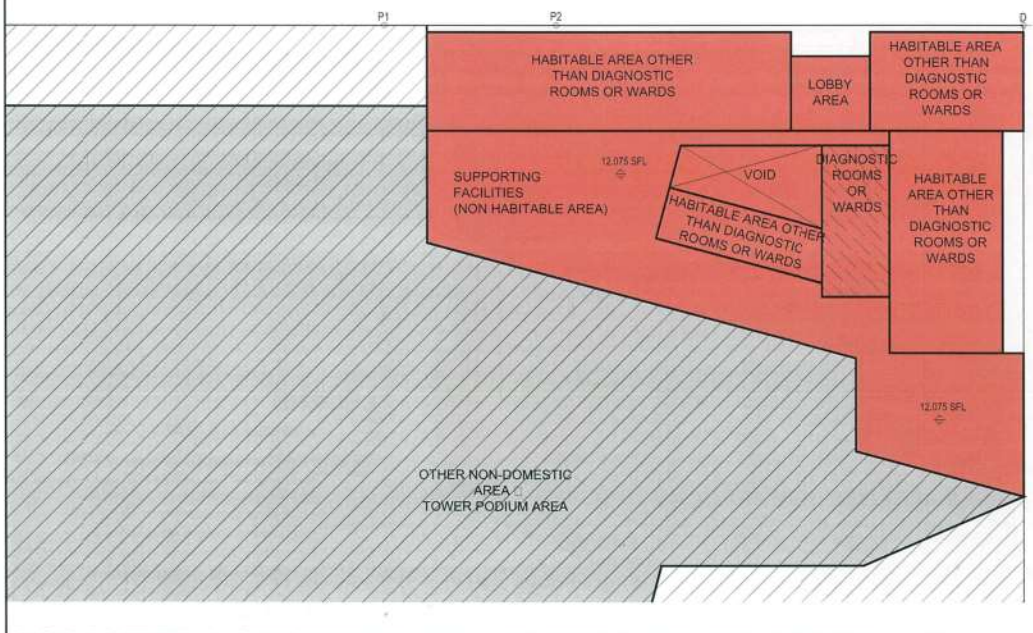
- Boundary Line of NKIL6568
- Non-Domestic Development (GA) (Including Day Care Centre (DCC) and Residential Care Home for the Elderly (RCHE))
- Domestic Development (R1 - R5) (For reference only and not for approval)
- Other Non-Domestic Development (C1 & C2) (For reference only and not for approval)
- Access Road (Shared between GA, R1 - R5 & C1 & C2)
- For reference only and not for approval

PROPOSED DEVELOPMENT
AT KAI TAK AREA 1F SITE 1, NKIL6568, KOWLOON

JOB No. : HKA-P-01450
SCALE : 1 : 400
DATE : DECEMBER, 2018

申請編號 Application No. : A / K22 / 23
此頁摘自申請人提交的文件。
This page is extracted from applicant's submitted documents.

lwk&partners architects



[GA] LEVEL 2 (RESIDENTIAL CARE HOME FOR THE ELDERLY 1)

LEGEND

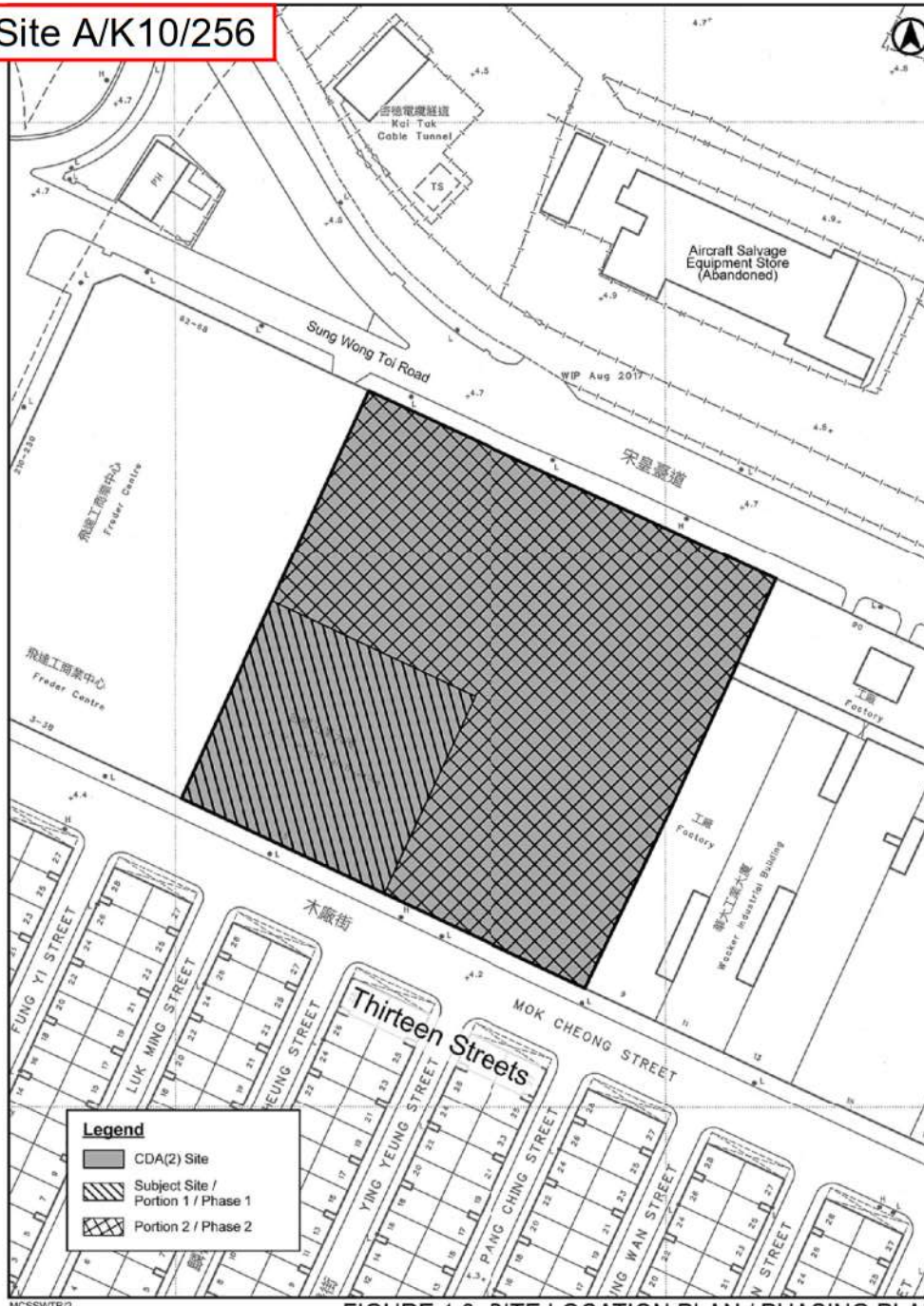
- Boundary Line of NKIL6568
- Non-Domestic Development (GA) (Including Day Care Centre (DCC) and Residential Care Home for the Elderly (RCHE))
- Domestic Development (R1 - R5) (For reference only and not for approval)
- Other Non-Domestic Development (C1 & C2) (For reference only and not for approval)
- Access Road (Shared between GA, R1 - R5 & C1 & C2)
- For reference only and not for approval

PROPOSED DEVELOPMENT
AT KAI TAK AREA 1F SITE 1, NKIL6568, KOWLOON

JOB No. : HKA-P-01450
SCALE : 1 : 400
DATE : DECEMBER, 2018

申請編號 Application No. : A / K22 / 23
此頁摘自申請人提交的文件。
This page is extracted from applicant's submitted documents.

lwk&partners architects



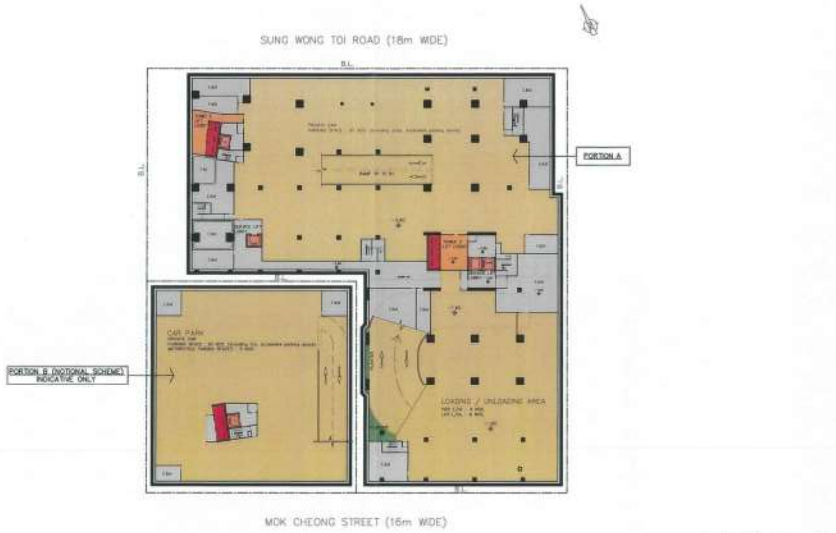
MCSSWTR/2

FIGURE 1.3 SITE LOCATION PLAN / PHASING PLAN

~~SCALE 1 : 1,000~~

(資料來源：由申請人提交)
(Source: Submitted by the applicant)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 1



B2 FLOOR PLAN

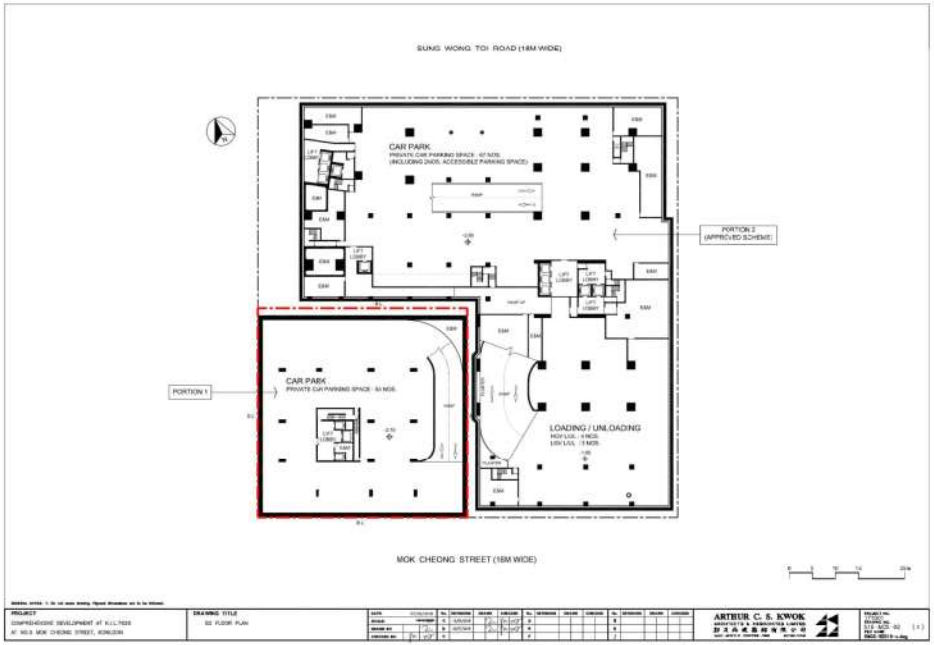
COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案
APPROVED SCHEME

MASTER LAYOUT PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案
APPROVED SCHEME



擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 3

ATTACHMENT 5

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 2

GROUND FLOOR PLAN

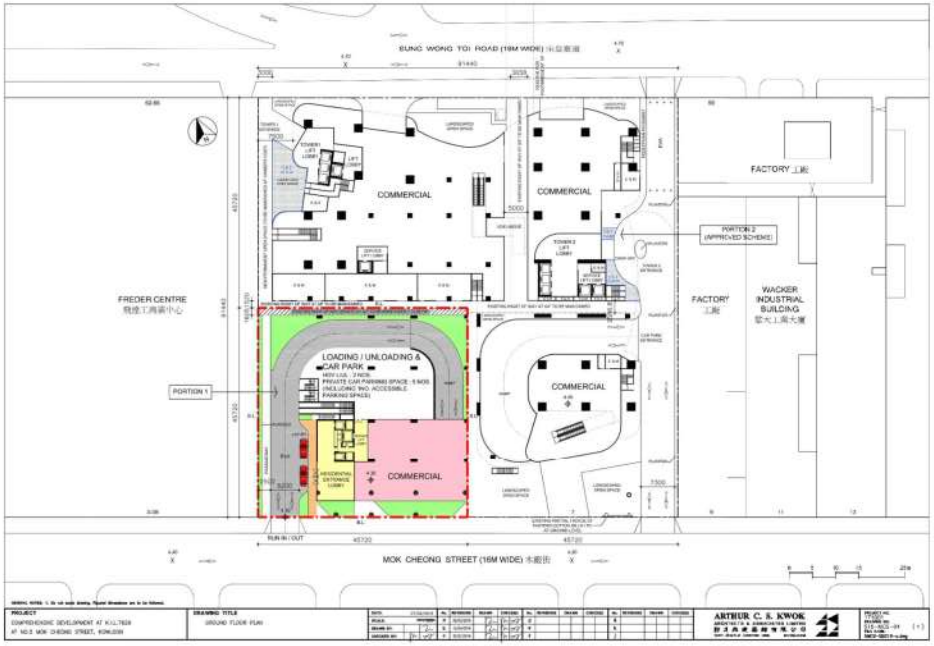
COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案
APPROVED SCHEME

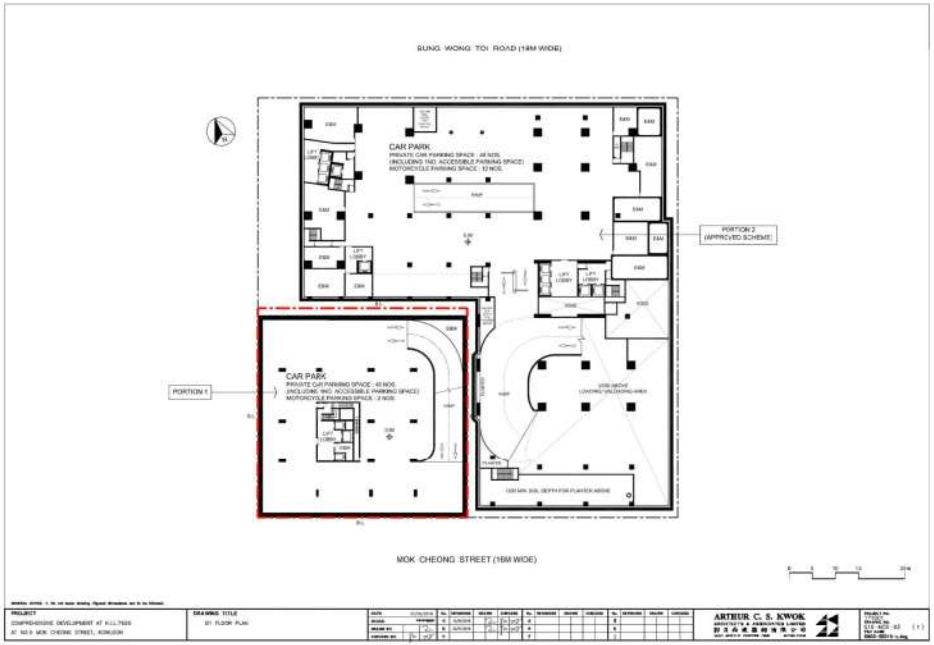
B1 FLOOR PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案
APPROVED SCHEME



擬議的方案
PROPOSED SCHEME



擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 5

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 4

2/F PODIUM FLOOR PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

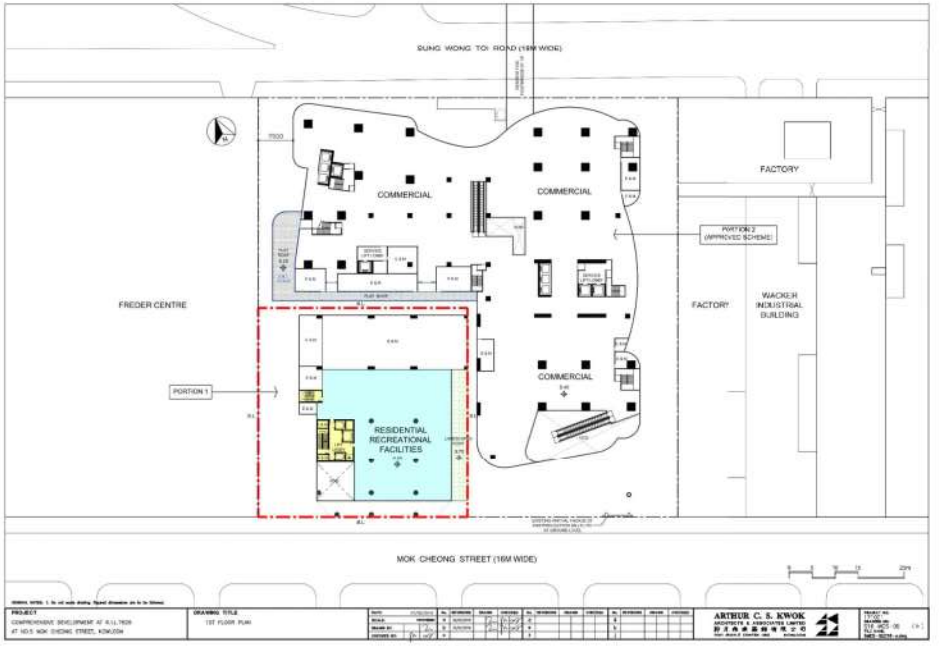
獲批准的方案
APPROVED SCHEME

1ST FLOOR PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案
APPROVED SCHEME

擬議的方案
PROPOSED SCHEME



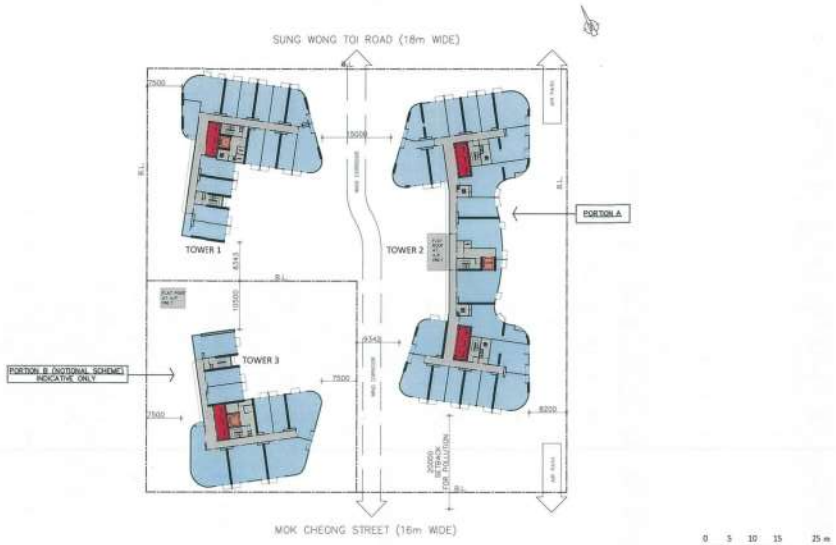
擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 7

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 6



0 5 10 15 25 m

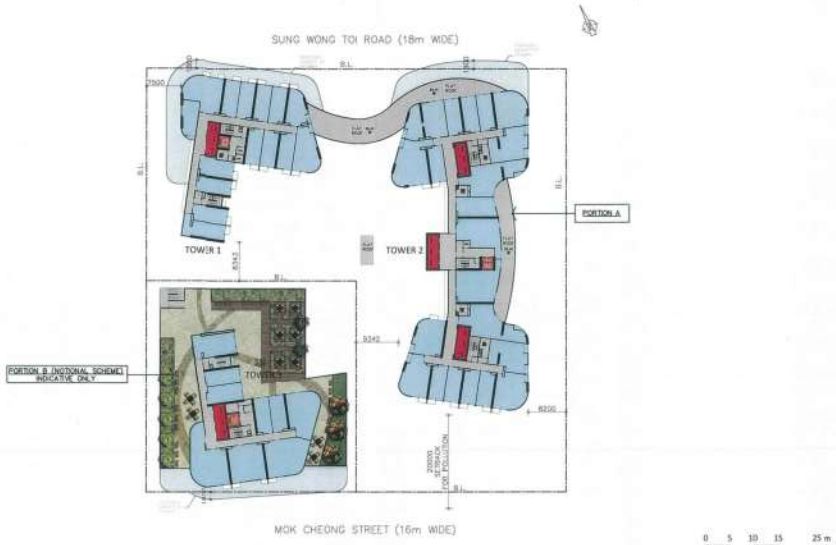
2015 - 12 - 03

Ivanhoe Architect Limited

4/F - 13/F FLOOR PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案
APPROVED SCHEME



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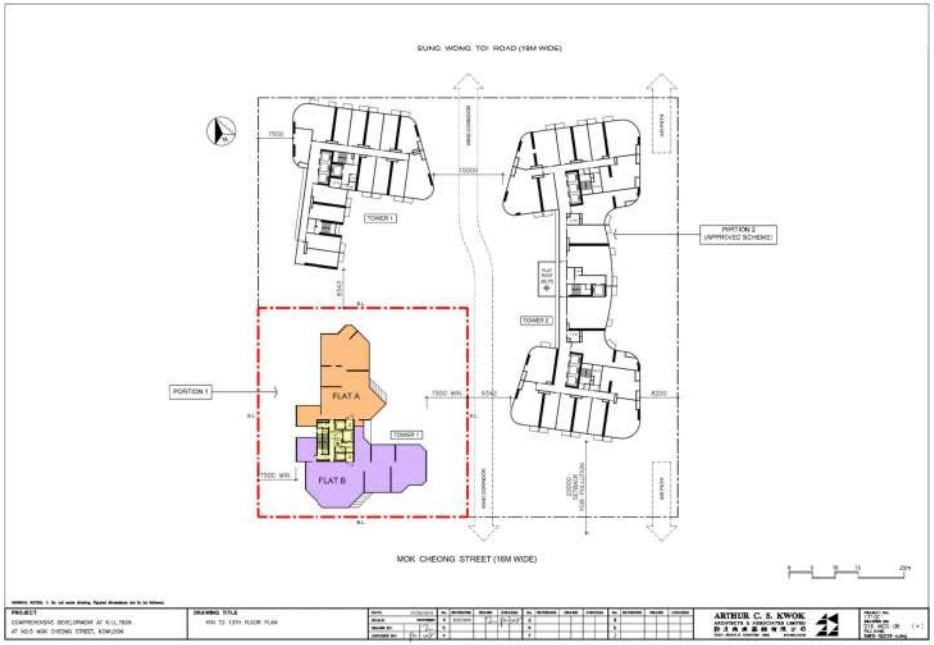
2015 - 12 - 03

Ivanhoe Architect Limited

3F FLOOR PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

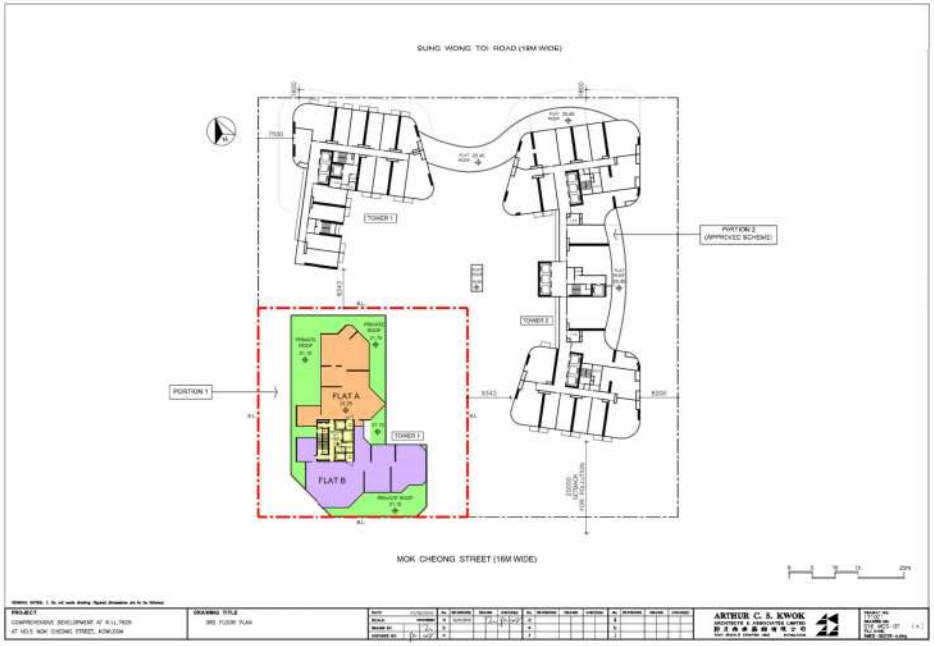
獲批准的方案
APPROVED SCHEME



擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

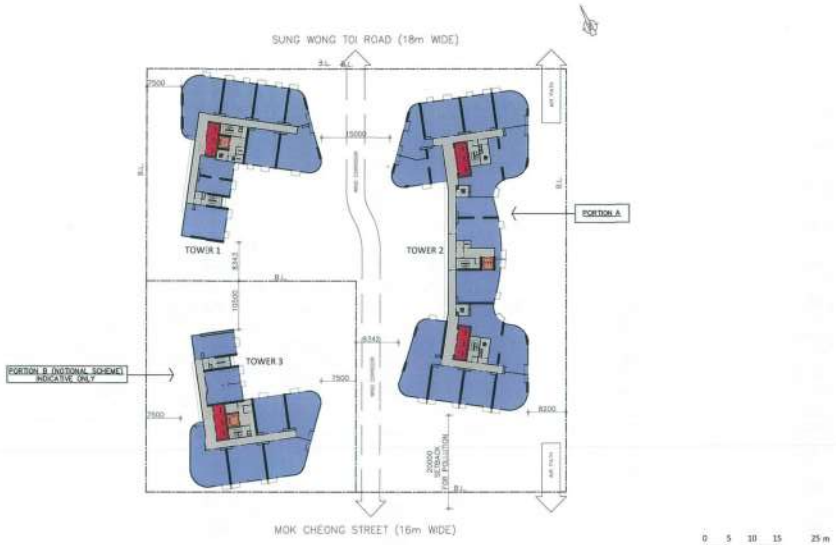
參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 9



擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 8



0 5 10 15 25 m

2015 - 12 - 03

Ivanhoe Architect Limited

26/F LOWER DUPLEX FLOOR PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578

AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案

APPROVED SCHEME

0 5 10 15 25 m

2015 - 12 - 03

Ivanhoe Architect Limited

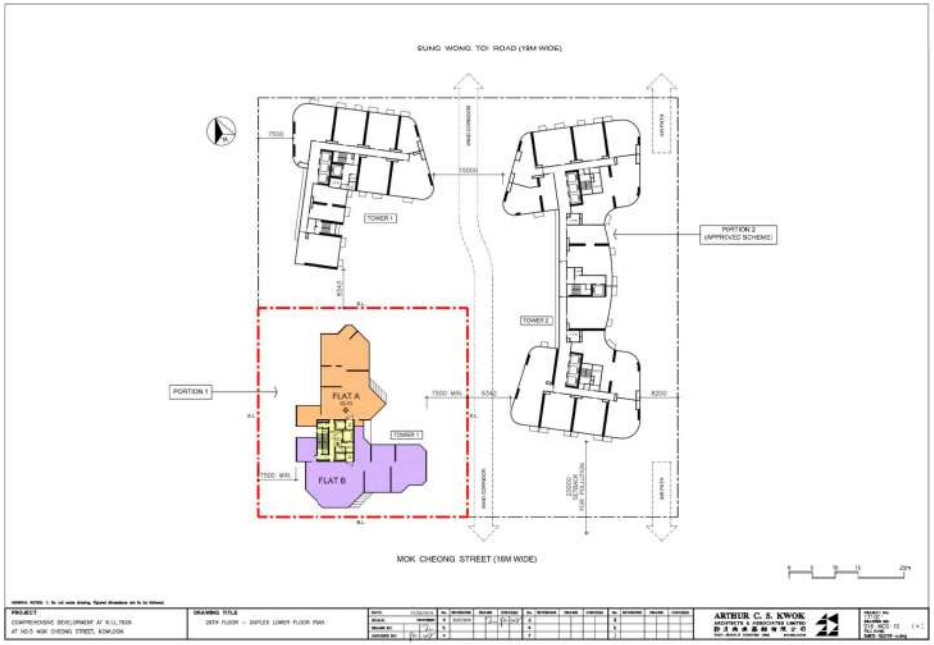
14/F - 25/F FLOOR PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578

AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案

APPROVED SCHEME



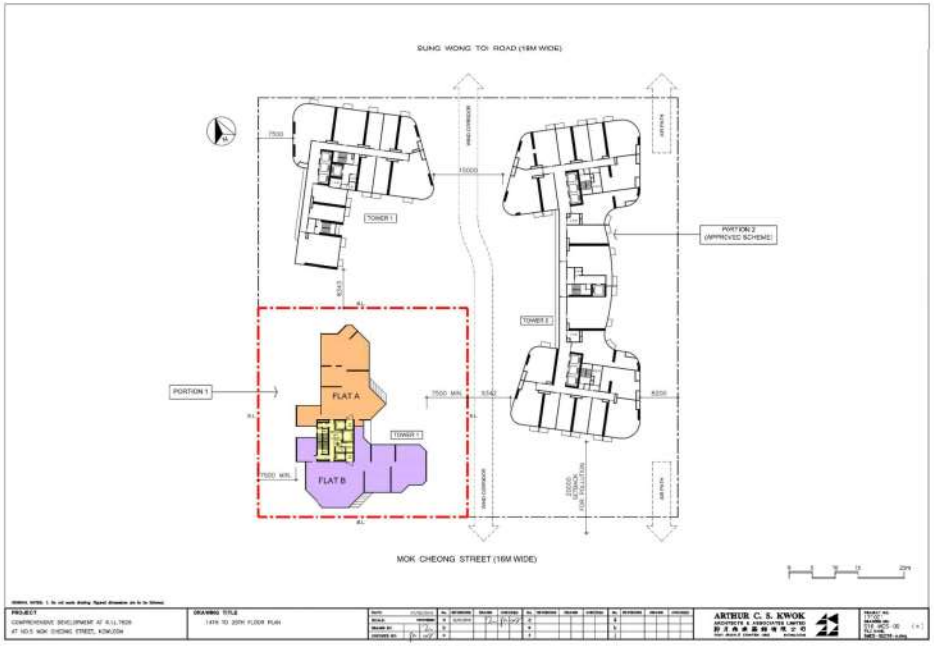
擬議的方案

PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)

(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 11



擬議的方案

PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)

(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 10

SCHEMATIC SECTION A

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

0 5 10 15 25m
2015 - 12 - 03

Prepared by Ivanhoe Architect Limited, December 2015. All Rights Reserved. CAD FILE : W:\2015\Presentation\Consultant\Sept\2015-12-03\A01.pdf

Ivanhoe Architect Limited

獲批准的方案
APPROVED SCHEME

27/F UPPER DUPLEX FLOOR PLAN

COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

0 5 10 15 25 m
2015 - 12 - 03

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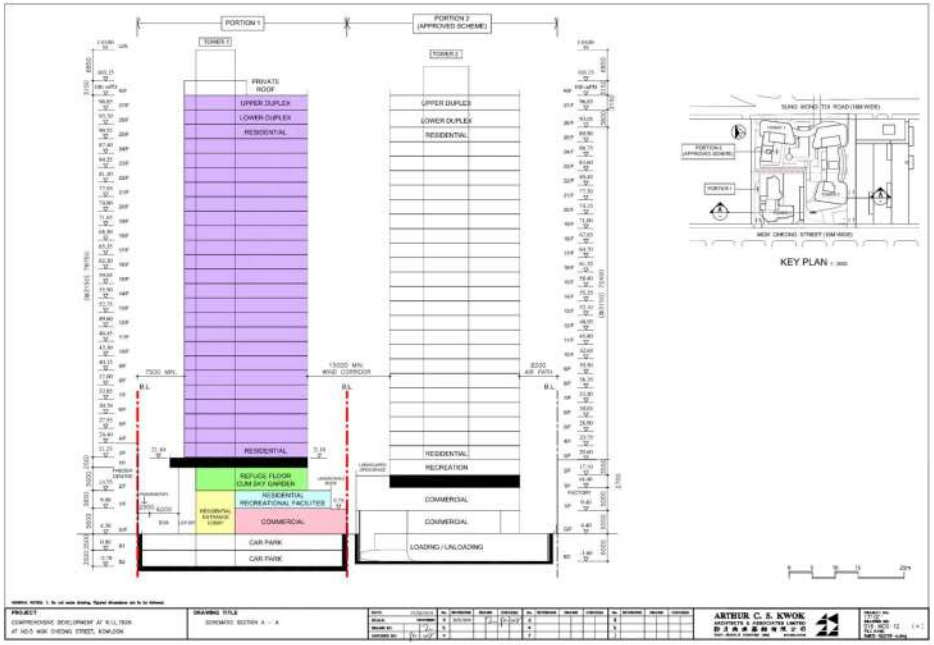
Ivanhoe Architect Limited

獲批准的方案
APPROVED SCHEME

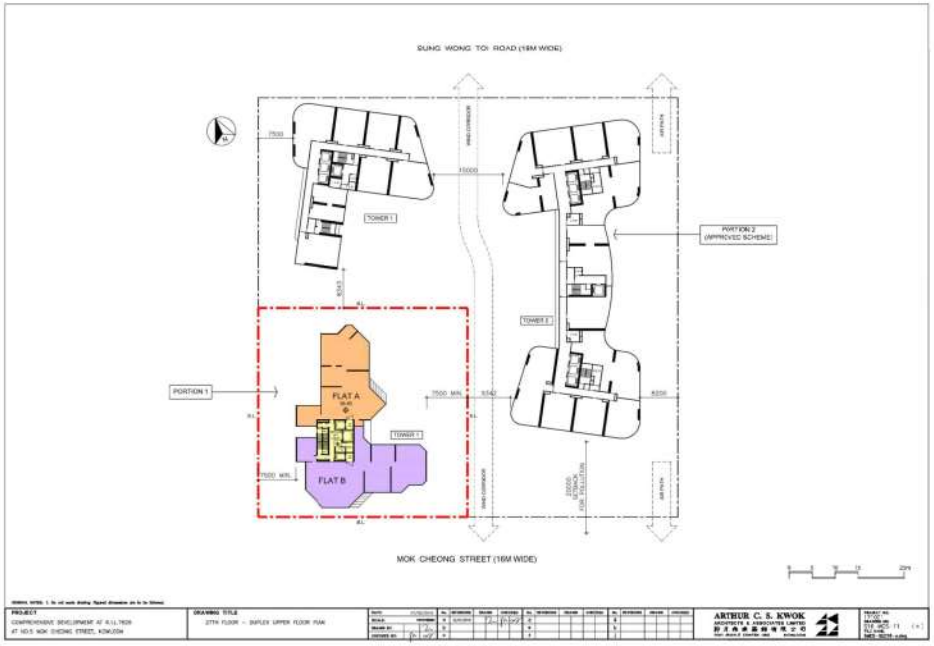


PROJECT: COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 AT NO.5 MOK CHEONG STREET, KOWLOON
DRAWING TITLE: SCHEMATIC SECTION A — A
ARTHUR C. S. KWOK ARCHITECTS & ASSOCIATES LIMITED

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 13



PROJECT: COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 AT NO.5 MOK CHEONG STREET, KOWLOON
DRAWING TITLE: 27TH FLOOR — DUPLEX UPPER FLOOR PLAN
ARTHUR C. S. KWOK ARCHITECTS & ASSOCIATES LIMITED

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 12

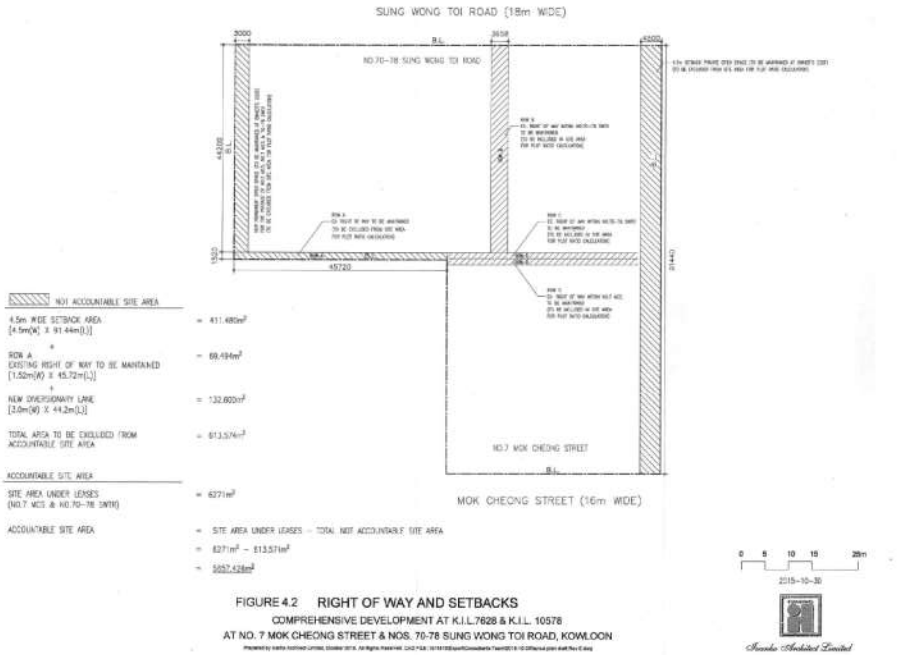


FIGURE 4.2 RIGHT OF WAY AND SETBACKS
COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

獲批准的方案
APPROVED SCHEME

SCHEMATIC SECTION B
COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 & K.I.L. 10578
AT NO. 7 MOK CHEONG STREET & NOS. 70-78 SUNG WONG TOI ROAD, KOWLOON

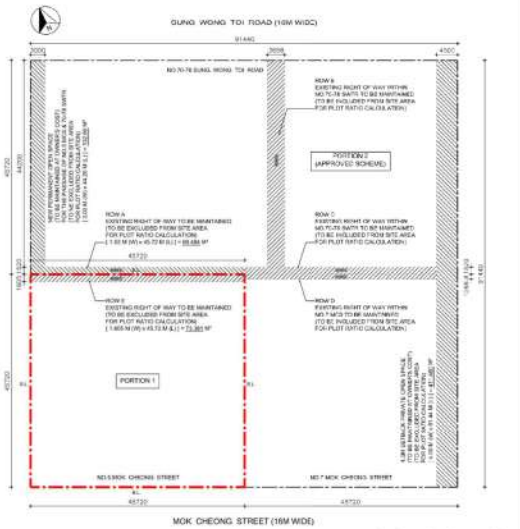
獲批准的方案
APPROVED SCHEME

MAJOR DEVELOPMENT PARAMETERS

	PHASE 1 / PORTION 1	PHASE 2 / PORTION 2	TOTAL
GROSS SITE AREA	3690.3 M²	3771 M²	8061.3 M²
NET SITE AREA	2016.170 M²	4657.426 M²	7674.345 M²
DOMESTIC GFA	NOT MORE THAN 15150 M²	NOT MORE THAN 47730 M²	NOT MORE THAN 63000 M²
NON-DOMESTIC GFA	NOT MORE THAN 2199 M²	NOT MORE THAN 1111.29 M²	NOT MORE THAN 3301.29 M²
MAX. SITE COVERAGE	RESIDENTIAL TOWER 33.33% RETAIL PODIUM 60%	RESIDENTIAL TOWER 27.5% RETAIL PODIUM 62.5%	-
BUILDING HEIGHT	100 mPD	199 mPD	-
NO. OF STOREYS	28 PLUS 2 BASEMENT CARPARK LEVELS	39 PLUS 2 BASEMENT CARPARK LEVELS	-
NO. OF FLATS	ABOUT 40	ABOUT 777	NOT MORE THAN 825
PRIVATE OPEN SPACE	NOT LESS THAN 264 M²	NOT LESS THAN 2176 M²	NOT LESS THAN 2440 M²

INTERNAL TRANSPORT FACILITIES

PARKING PROVISION	PHASE 1 / PORTION 1	PHASE 2 / PORTION 2	TOTAL
PRIVATE CAR	139	156	295
VISITOR CAR PARK	5	10	15
LOADING & UNLOADING	2	10	12
MOTORCYCLE	2	12	14



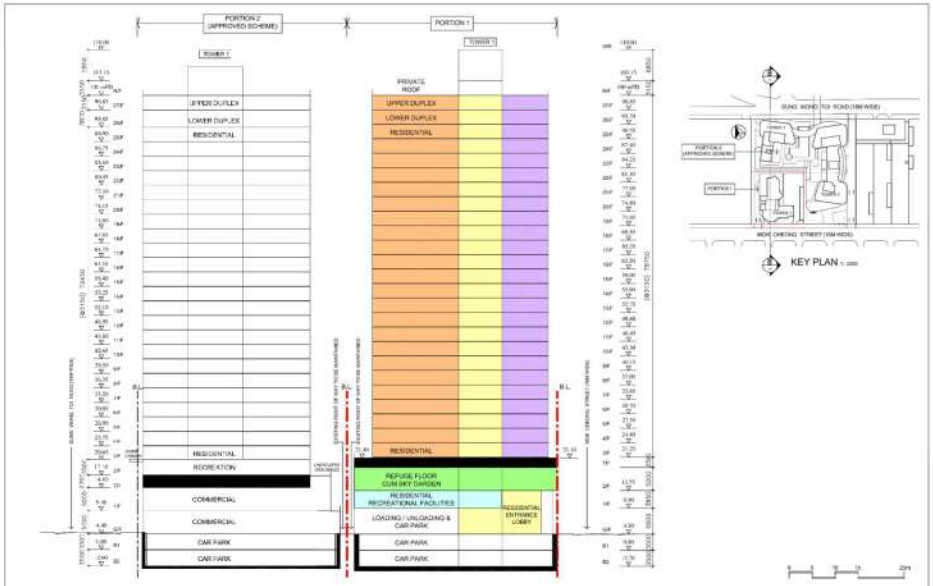
RIGHT OF WAY AND SETBACKS

PROJECT: COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 AT NO.5 MOK CHEONG STREET, KOWLOON
DRAWING TITLE: MAJOR DEVELOPMENT PARAMETERS
ARTHUR C. S. KWOK ARCHITECTS & ASSOCIATES LIMITED

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 15



PROJECT: COMPREHENSIVE DEVELOPMENT AT K.I.L.7628 AT NO.5 MOK CHEONG STREET, KOWLOON
DRAWING TITLE: SCHEMATIC SECTION A – B
ARTHUR C. S. KWOK ARCHITECTS & ASSOCIATES LIMITED

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 14

LANDSCAPE MASTER PLAN - GROUND FLOOR

DWG LMP-002
REV -
DATE APR 2018
SCALE 1:500 (A3)

地利環境 TEAM 73

獲批准的方案
APPROVED SCHEME

LANDSCAPE MASTER PLAN

DWG LMP-001
REV -
DATE APR 2018
SCALE 1:500 (A3)

地利環境 TEAM 73

獲批准的方案
APPROVED SCHEME

Minor Amendments to an Approved Master Layout Plan under Planning Application No. A/K10/256 in respect of No.5 Mok Cheong Street, Ma Tau Kok, Kowloon

GROUND FLOOR ~~(1:1000 @A3)~~
July 2018

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 17

Minor Amendments to an Approved Master Layout Plan under Planning Application No. A/K10/256 in respect of No.5 Mok Cheong Street, Ma Tau Kok, Kowloon

MASTER LAYOUT PLAN ~~(1:1000 @A3)~~
July 2018

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

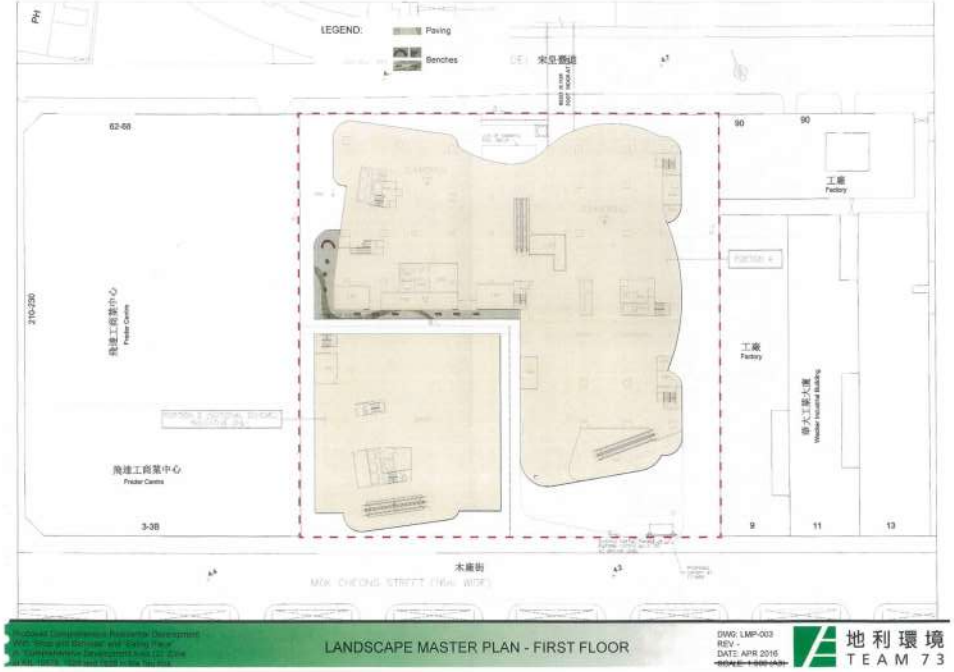
參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 16

LANDSCAPE MASTER PLAN - SECOND FLOOR

DWG: LMP-004
REV: -
DATE: APR 2018
~~SCALE: 1:500 (A0)~~

地利環境 TEAM 73

獲批准的方案
APPROVED SCHEME



LANDSCAPE MASTER PLAN - FIRST FLOOR

DWG: LMP-003
REV: -
DATE: APR 2018
~~SCALE: 1:500 (A0)~~

地利環境 TEAM 73

獲批准的方案
APPROVED SCHEME

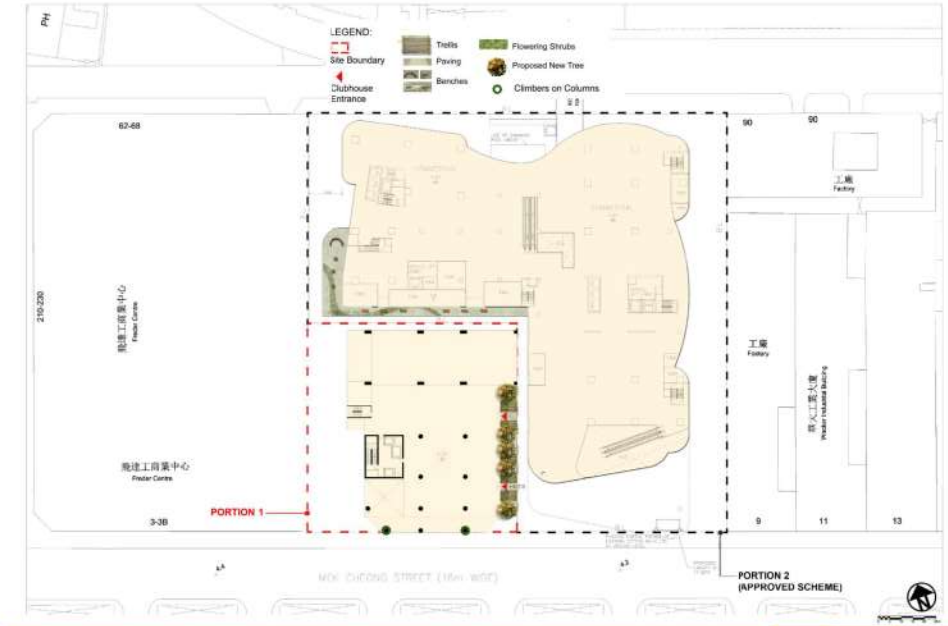
Minor Amendments to an Approved Master Layout Plan under Planning Application No. A/K10/256 in respect of No.5 Mok Cheong Street, Ma Tau Kok, Kowloon

SECOND FLOOR ~~(1:1000 @A3)~~
July 2018

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 19



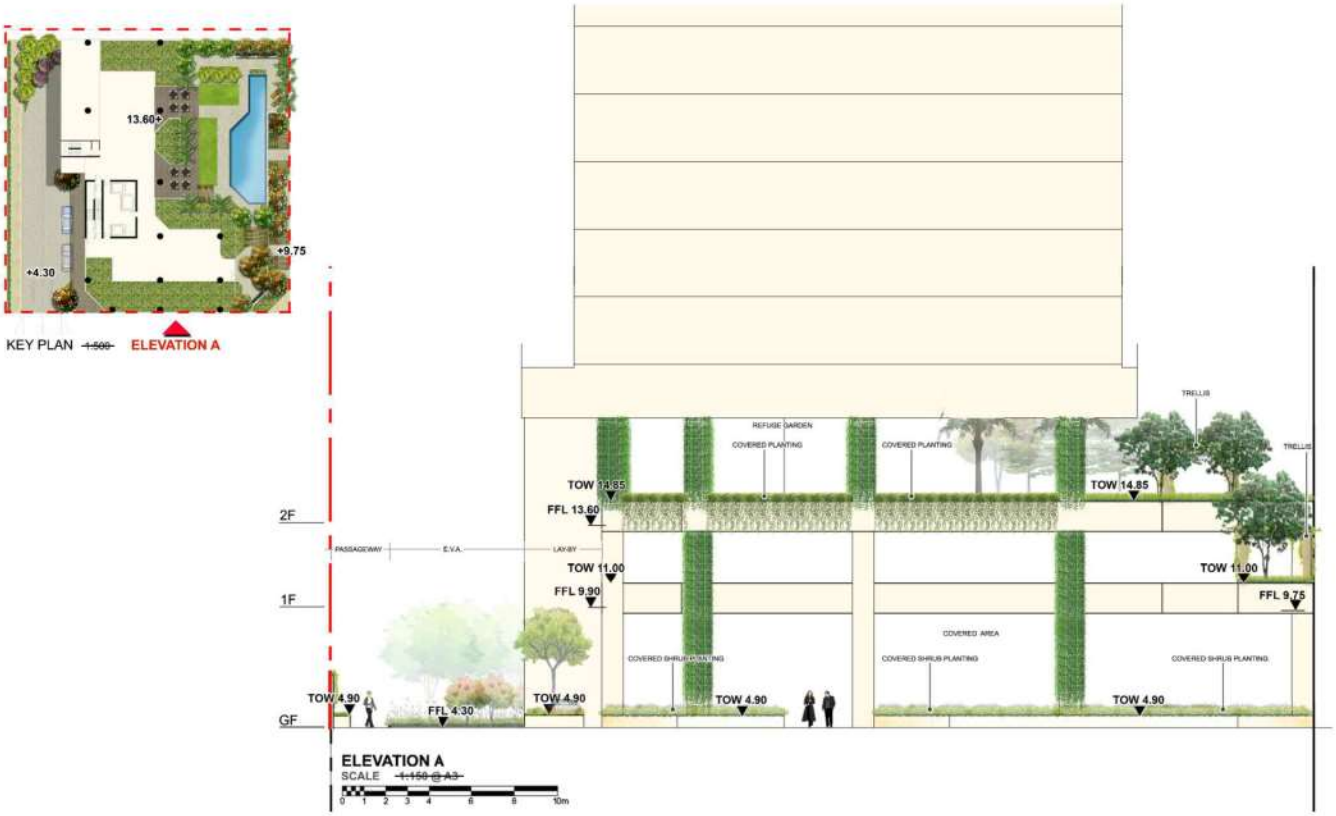
Minor Amendments to an Approved Master Layout Plan under Planning Application No. A/K10/256 in respect of No.5 Mok Cheong Street, Ma Tau Kok, Kowloon

FIRST FLOOR ~~(1:1000 @A3)~~
July 2018

擬議的方案
PROPOSED SCHEME

(資料來源：由申請人於2018年8月10日提交)
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 18

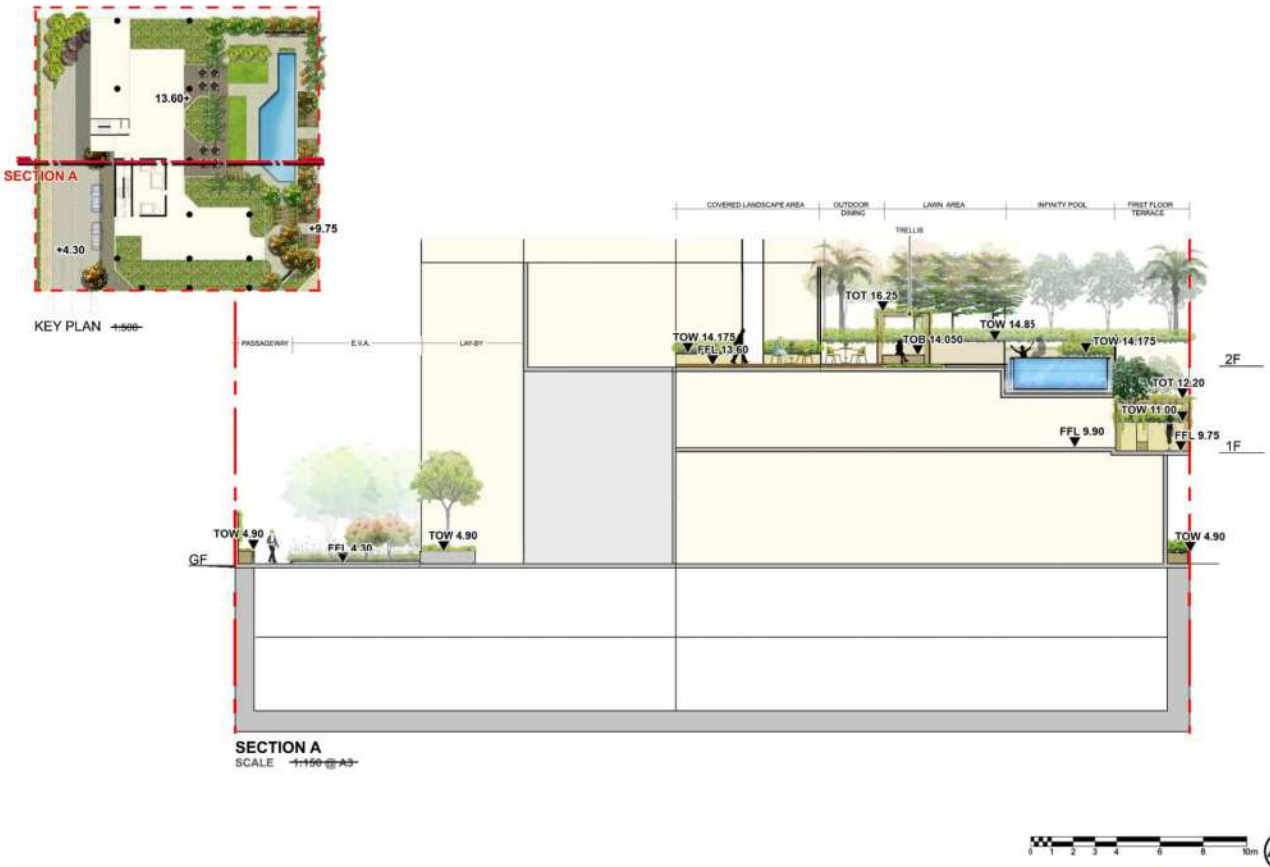


Minor Amendments to an Approved Master Layout Plan under Planning
Application No. A/K10/256 in respect of No.5 Mok Cheong Street, Ma Tau Kok, Kowloon

ELEVATION
July 2018

（資料來源：由申請人於2018年8月10日提交）
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 20

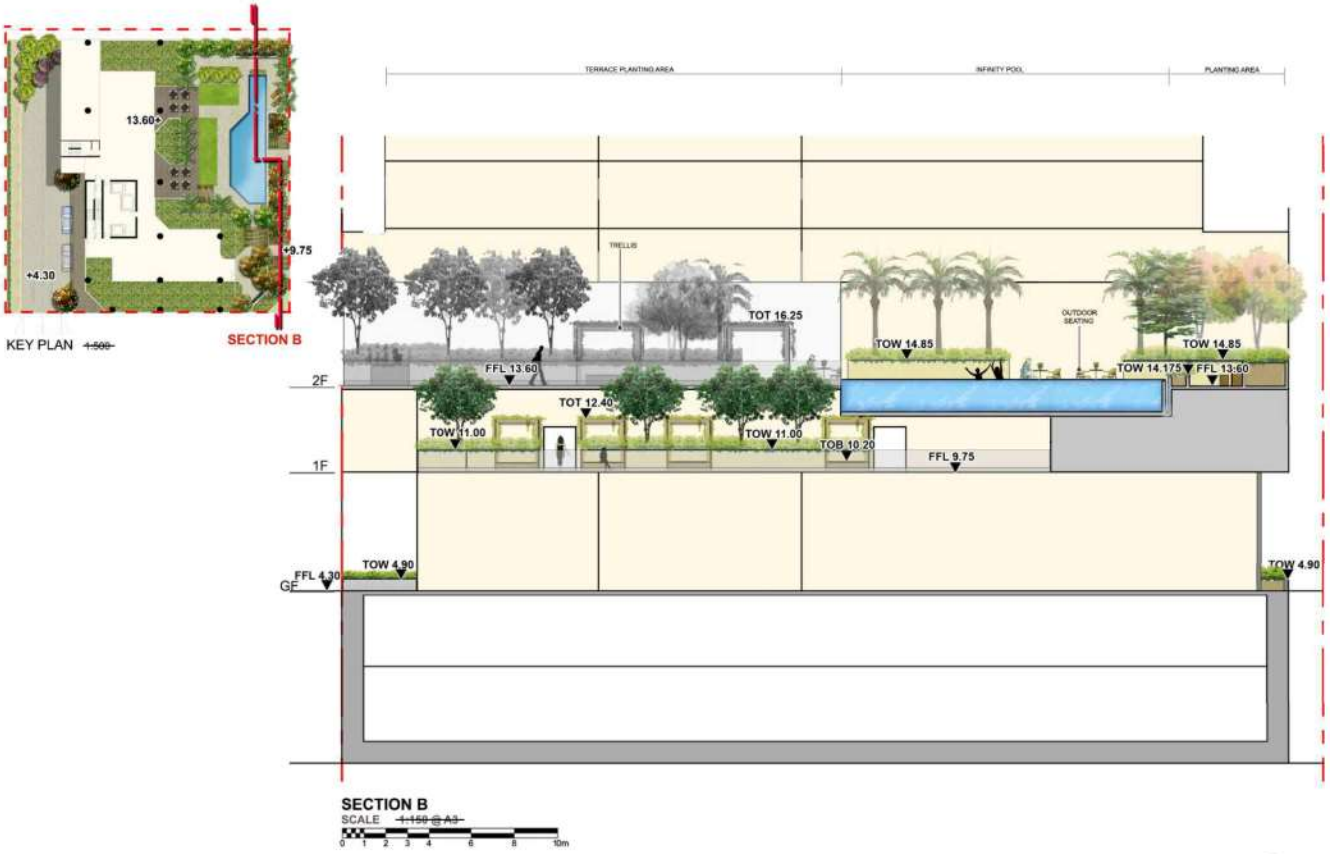


Minor Amendments to an Approved Master Layout Plan under Planning
Application No. A/K10/256 in respect of No.5 Mok Cheong Street, Ma Tau Kok, Kowloon

SECTION
July 2018

（資料來源：由申請人於2018年8月10日提交）
(Source: Submitted by the applicant on 10.8.2018)

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 21



Minor Amendments to an Approved Master Layout Plan under Planning Application No. A/K10/256 in respect of No.5 Mok Cheong Street, Ma Tau Kok, Kowloon

SECTION
July 2018

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 22

（資料來源：由申請人於2018年8月10日提交）
(Source: Submitted by the applicant on 10.8.2018)

LEGEND:
- UNCOVERED PLANTING AREA
- COVERED PLANTING AREA WITH 50% DEDUCTION
- UNCOVERED LAWN AREA
- WATER WALL/FEATURE
- VERTICAL GREEN

GREENERY SUMMARY

SITE AREA = 2090.3sqm (MINIMUM 20% OF Site Area = 418.06 sqm)

LOCATION
GROUND FLOOR: UNCOVERED GREENING 70.52sqm
GROUND FLOOR: COVERED GREENING (50%) 70.807sqm
GROUND FLOOR: VERTICAL GREENING 85sqm

FIRST FLOOR: UNCOVERED GREENING 31.498sqm
FIRST FLOOR: VERTICAL GREENING 26.976sqm

SECOND FLOOR: UNCOVERED GREENING 213.431sqm
SECOND FLOOR: COVERED GREENING (50%) 129.96sqm
SECOND FLOOR: VERTICAL GREENING 46.4sqm

TOTAL: VERTICAL GREENING & COVERED GREENING, CAPPED @ 30% OF AREA = 125.418sqm
TOTAL: UNCOVERED GREENING 315.449sqm

TOTAL: UNCOVERED GREENING 315.449sqm + TOTAL: VERTICAL GREENING/COVERED GREENING 125.418sqm = 440.867sqm (21.09%) OF 2090.3sqm

SCALE 1:500 @ A3

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 23

（資料來源：由申請人於2018年8月10日提交）
(Source: Submitted by the applicant on 10.8.2018)

1. The proposed podium is essential to accommodate the intended retail use and associated vehicular access and pedestrian drop-off facilities of the Proposed CDA(2) Development. The podium of Portion 1 is reduced by 1-storey in comparison to the Approved Scheme to match with the podium level of Portion 2. Portion 1 will also provide soft landscaping at multiple levels (especially facing Mok Cheong Street) and extensive vertical greening at the podium level to improve the streetscape and the urban environment of the old industrial area.

2. The design of the Proposed Development on the CDA(2) Site has taken into account the future development at Kai Tak. The proposed building height is strictly in accordance with the Draft Ma Tau Kok Outline Zoning Plan (i.e. 100m). Adequate building separations among the residential towers are provided to facilitate multiple wind corridors and ensure visual permeability to avoid wall effects.

3. A planned footbridge to be built by CEDD is reserved at the northern edge of Portion 2 at the podium level to potentially link up the future Sung Wong Toi Park and To Kwa Wan Old District.

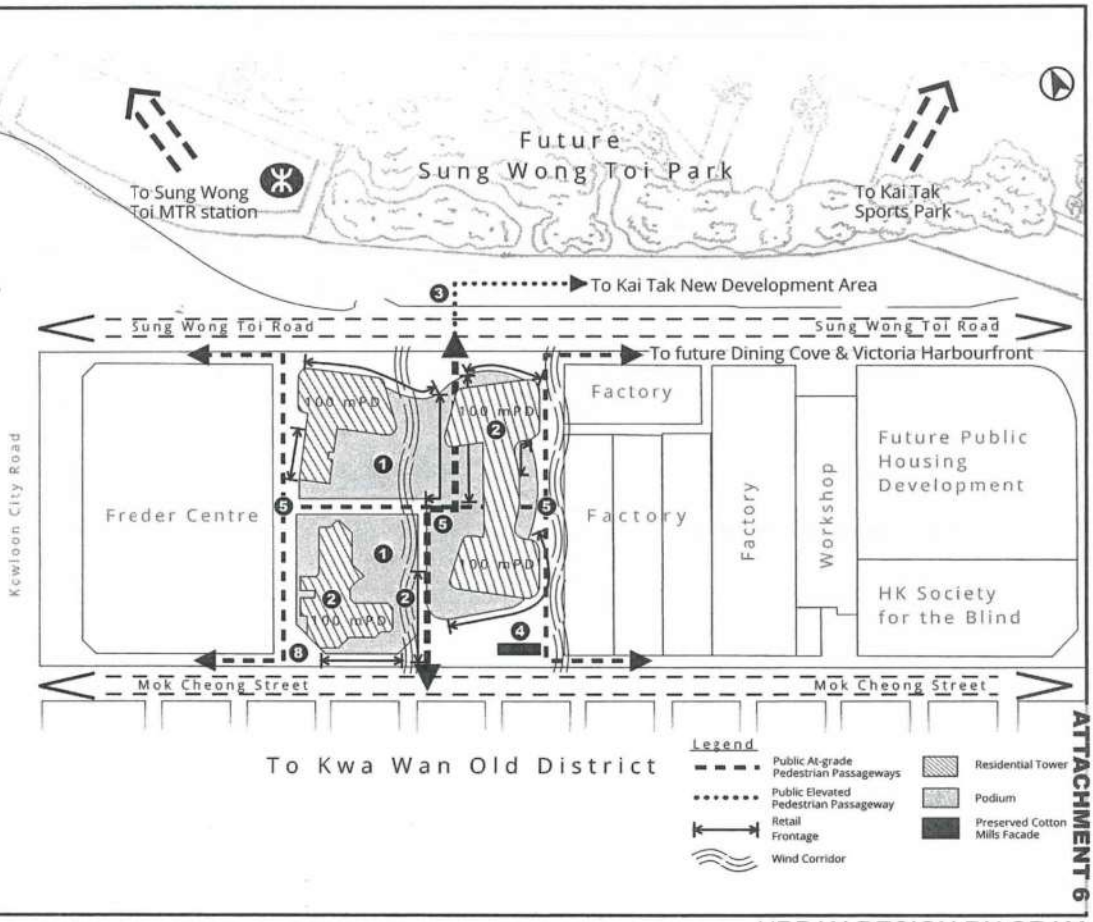
4. The remaining façade of the Eastern Cotton Mills on Mok Cheong Street is preserved in-situ as a reminiscence of the Mills. Open space near the Mill will be themed and integrated with this façade.

5. 3 pedestrian passageways running in a NE-SW direction will be provided within the CDA(2) Site. All public connections will be landscaped or interfaced with shop frontage to enhance the walking environment. The Proposed CDA(2) Development will provide access and connection between the future Kai Tak New Development to the north and the To Kwa Wan Old District to the south for both residents and the public.

6. The Proposed CDA(2) Development has made use of existing right of ways, building setbacks as well as retail components to establish a sense of relatedness and to create a lively and vibrant atmosphere at the ground floor. Specifically, the main facades facing Mok Cheong Street and Sung Wong Toi Road will be comprised of shops and public open spaces.

7. The comprehensive and well connected passageways provided within the CDA(2) Development, together with the additional setback along the eastern boundary also help to enhance permeability and visual connectivity of the local neighbourhood which is not conducive to walking at present. Hence, the proposed pedestrian network would facilitate walking activity between To Kwa Wan and the future Kai Tak New Development Area.

8. The location of the Emergency Vehicular Access of Portion 1 of the Proposed CDA(2) Development is relocated to the west to allow a more continuous shop frontage, bring the development of the two portions closer from the pedestrian perspective and minimise interruption to the footpath along Mok Cheong Street.



MCSSWTR/2

ATTACHMENT 6

URBAN DESIGN DIAGRAM
NOT TO SCALE

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 24

（資料來源：由申請人於2018年8月10日提交）
(Source: Submitted by the applicant on 10.8.2018)

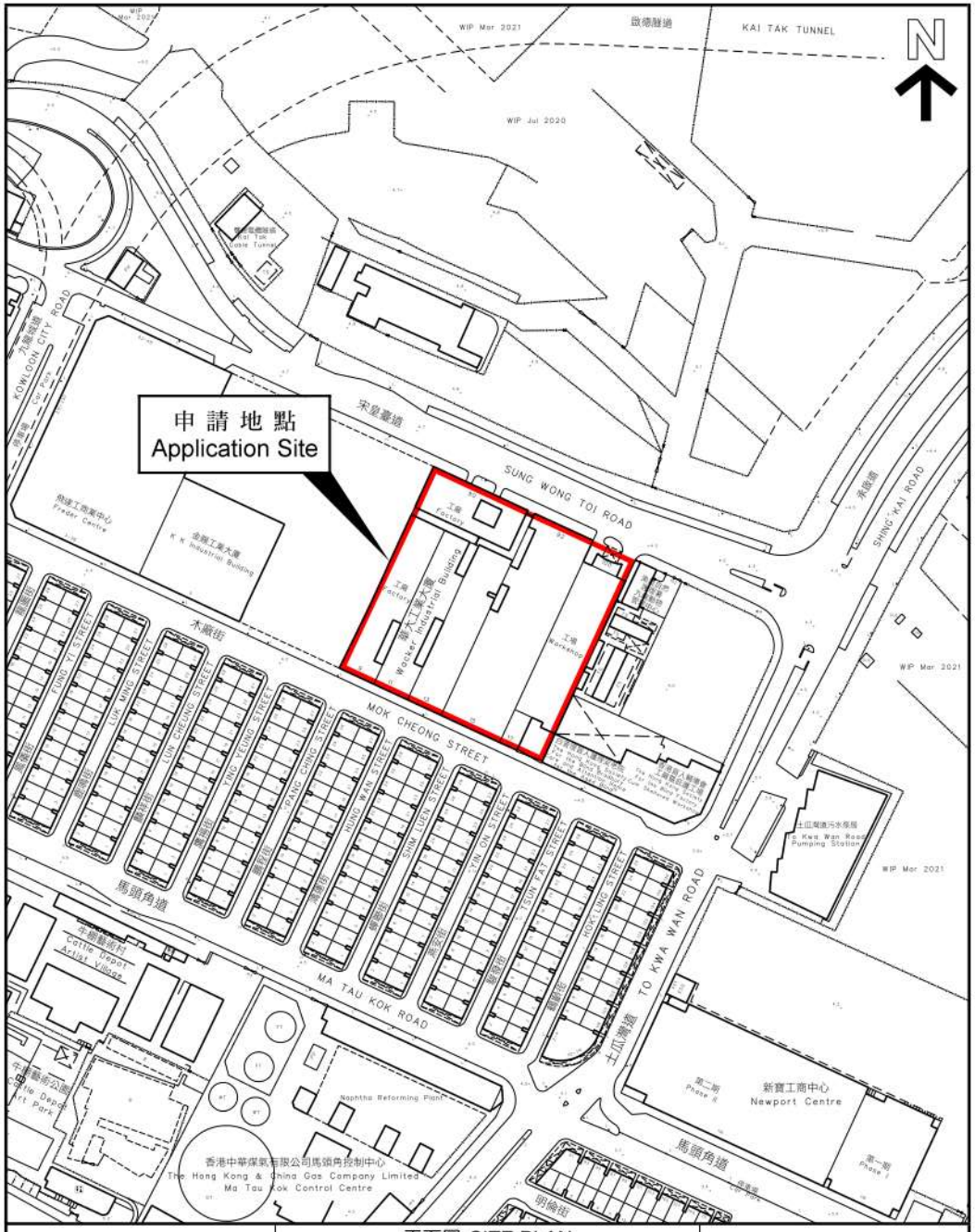
ATTACHMENT 3

PROPOSED WESTERN PASSAGEWAY

MCSSWTR/2

參考編號 REFERENCE No.	繪圖 DRAWING
A/K10/259	A - 25

（資料來源：由申請人於2018年10月19日提交）
(Source: Submitted by the applicant on 19.10.2018)



平面圖 SITE PLAN

本摘要圖於2021年6月29日擬備，
所根據的資料為測量圖編號
11-NE-11C和16A
EXTRACT PLAN PREPARED ON 29.6.2021
BASED ON SURVEY SHEETS No.
11-NE-11C & 16A

申請地點界線只作識別用
APPLICATION SITE BOUNDARY
FOR IDENTIFICATION PURPOSE ONLY

參考編號
REFERENCE No.
A/K10/265

A/K10/265

申請地點界線只作識別用
APPLICATION SITE BOUNDARY
FOR IDENTIFICATION PURPOSE ONLY

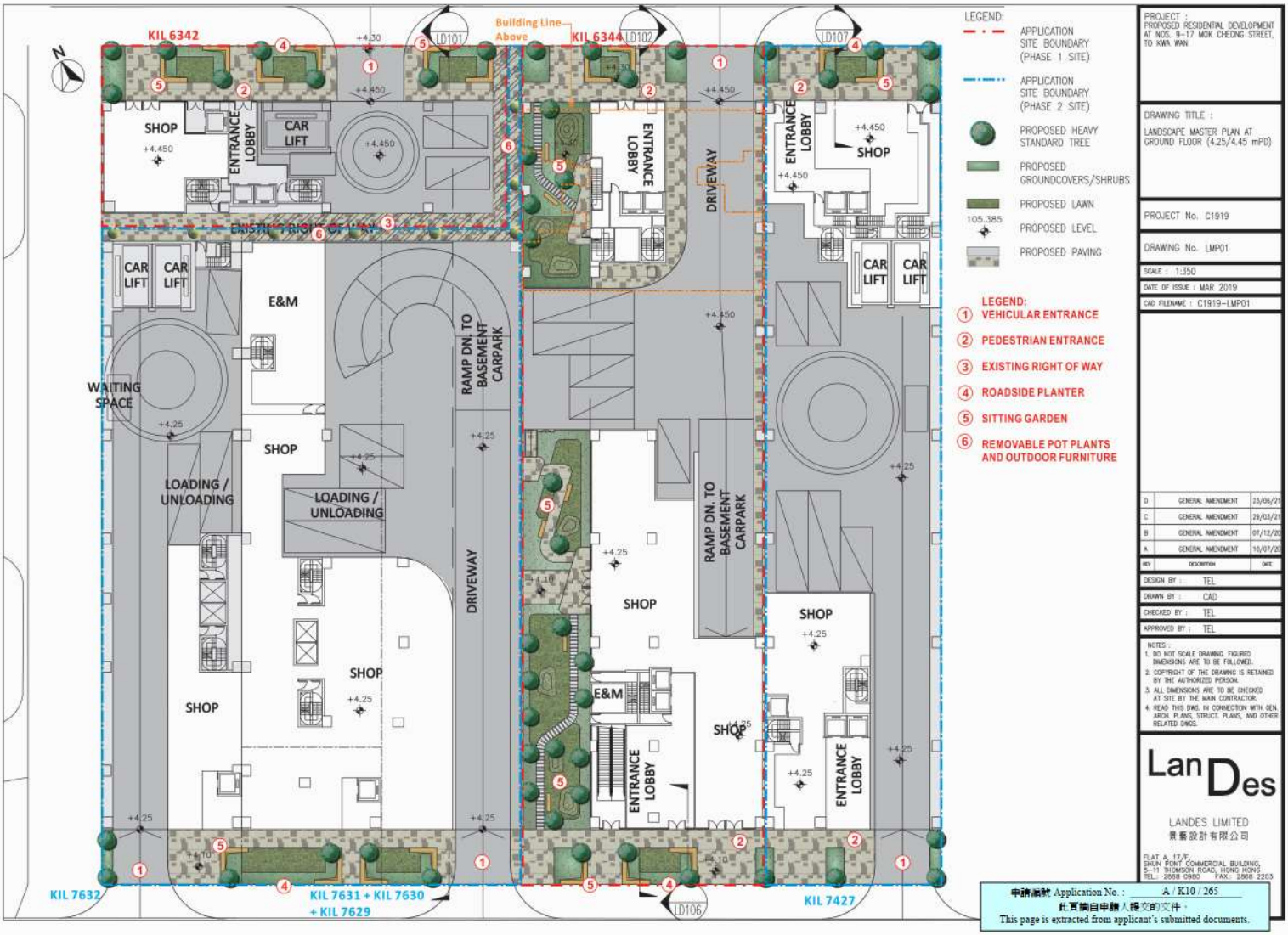
位置圖 LOCATION PLAN

本摘要圖於2021年6月29日擬備，
所根據的資料為於2021年5月21日
展示的分區計劃大綱圖編號S/K10/27，
以及於2018年5月15日
核准的分區計劃大綱圖編號S/K22/6
EXTRACT PLAN PREPARED ON 29.6.2021
BASED ON OUTLINE ZONING PLANS No.
S/K10/27 EXHIBITED ON 21.5.2021 AND
S/K22/6 APPROVED ON 15.5.2018

SCALE 1 : 5 000 比例尺
米 METRES 100 0 100 200 米 METRES

申請地點界線只作識別用
APPLICATION SITE BOUNDARY
FOR IDENTIFICATION PURPOSE ONLY

參考編號
REFERENCE No.
A/K10/265



PROJECT :
PROPOSED RESIDENTIAL DEVELOPMENT AT NOS. 9-17 MOK CHEONG STREET, TO KWA WAN

DRAWING TITLE :
LANDSCAPE MASTER PLAN AT GROUND FLOOR (4.25/4.45 mPD)

PROJECT No. C1919

DRAWING No. LMP01

SCALE : 1:350

DATE OF ISSUE : MAR 2019

CAD FILENAME : C1919-LMP01

REV	DESCRIPTION	DATE
D	GENERAL AMENDMENT	23/08/21
C	GENERAL AMENDMENT	29/03/21
B	GENERAL AMENDMENT	07/12/20
A	GENERAL AMENDMENT	10/07/20

DESIGN BY : TEL
DRAWN BY : CAD
CHECKED BY : TEL
APPROVED BY : TEL

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4. READ THIS DWG. IN CONNECTION WITH GEN. ARCH. PLANS, STRUCT. PLANS, AND OTHER RELATED DWGS.

LanDes
LANDES LIMITED
景藝設計有限公司
FLAT A, 17/F, SHUN PONT COMMERCIAL BUILDING, 5-11 THOMSON ROAD, HONG KONG
TEL.: 2868 0980 FAX.: 2868 2203

申請編號 Application No. : A / K10 / 265
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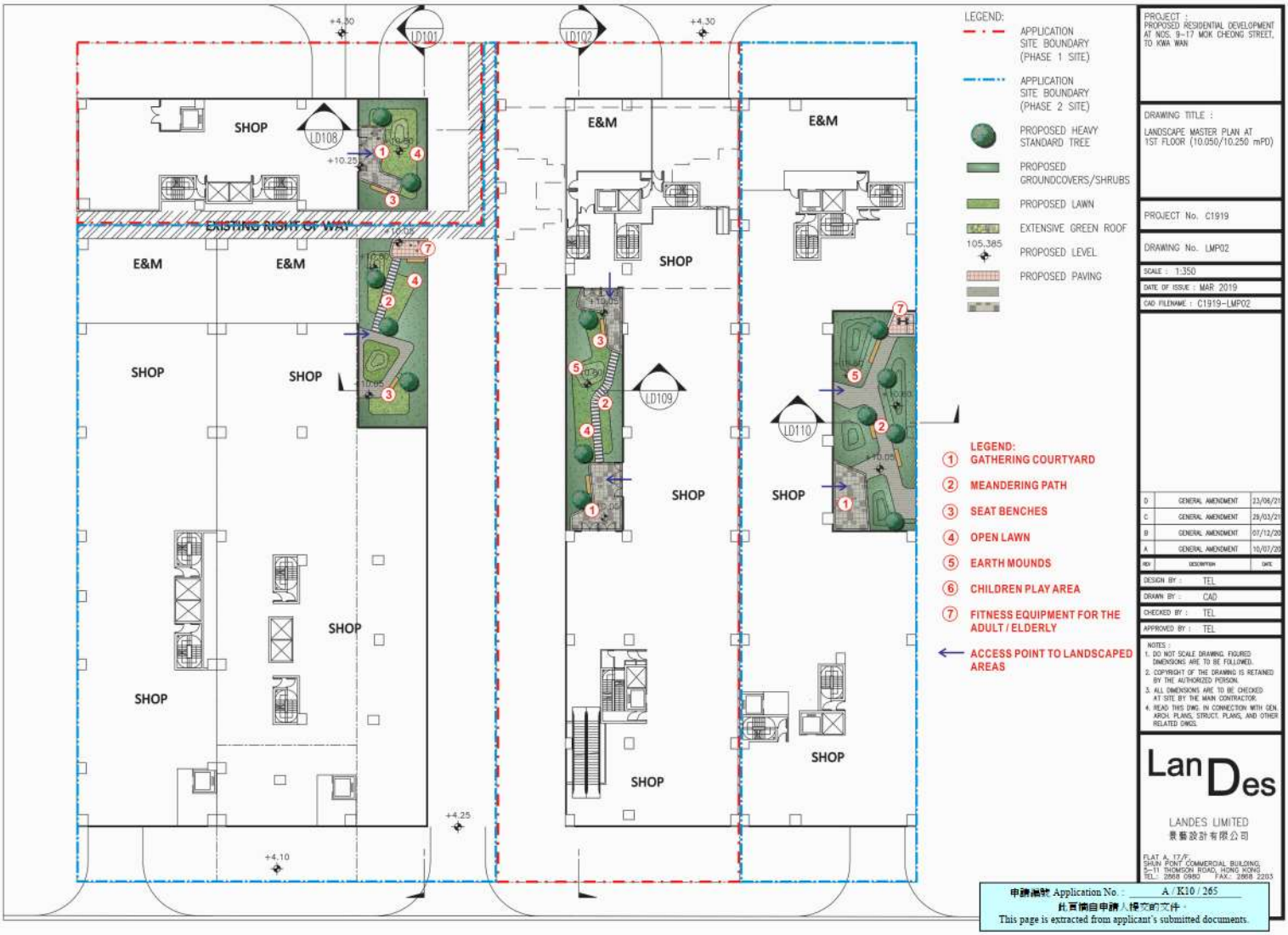
This page is extracted from applicant's submitted documents.



PROJECT :
PROPOSED RESIDENTIAL DEVELOPMENT AT NOS. 9-17 MOK CHEONG STREET, TO KWA WAN

DRAWING TITLE :
LANDSCAPE MASTER PLAN AT 1ST FLOOR (10.050/10.250 mPD)

PROJECT No. C1919

DRAWING No. LMP02

SCALE : 1:350

DATE OF ISSUE : MAR 2019

CAD FILENAME : C1919-LMP02

REV	DESCRIPTION	DATE
D	GENERAL AMENDMENT	23/08/21
C	GENERAL AMENDMENT	29/03/21
B	GENERAL AMENDMENT	07/12/20
A	GENERAL AMENDMENT	10/07/20

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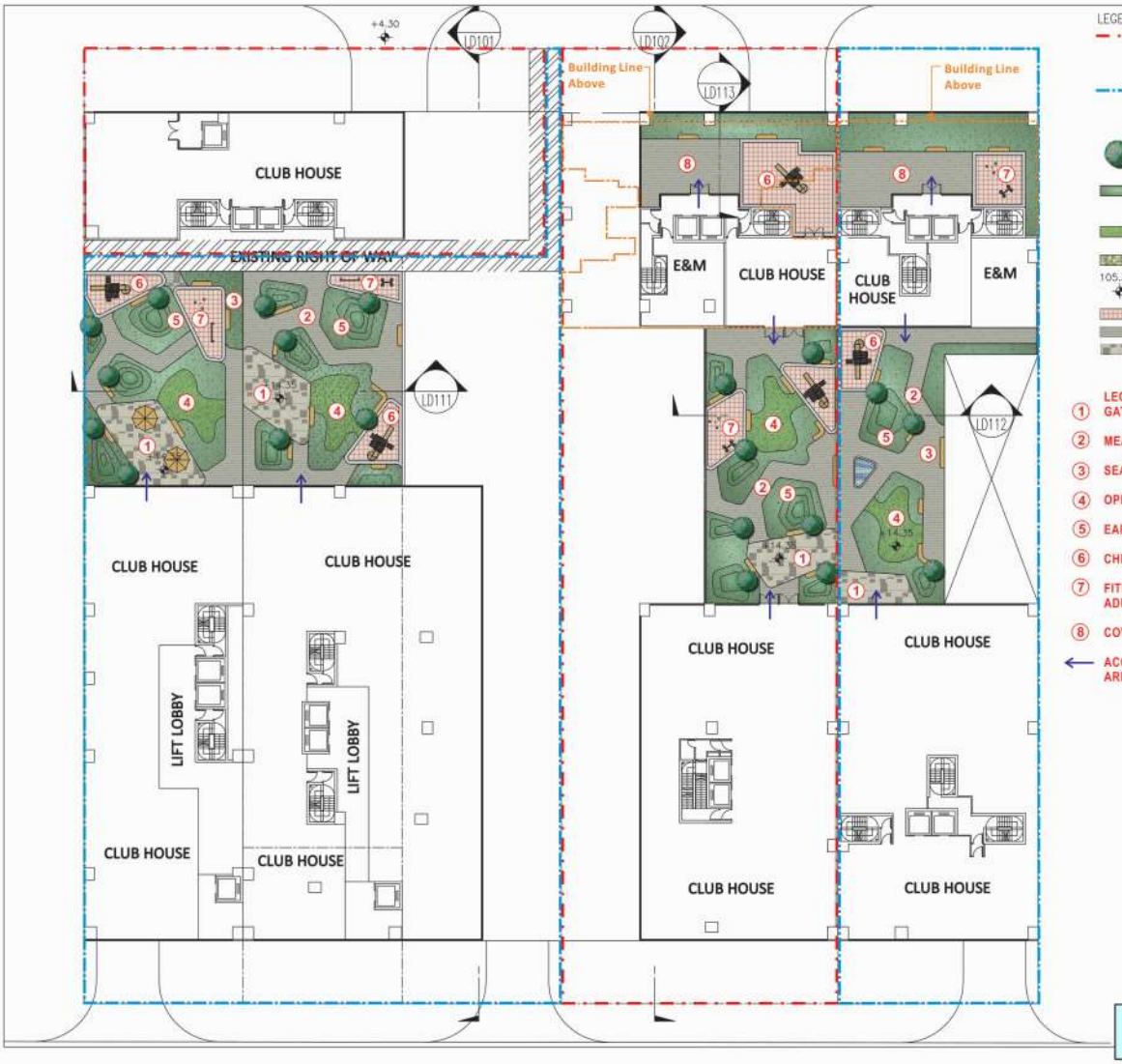

LEGEND:

- APPLICATION SITE BOUNDARY (PHASE 1 SITE)
- APPLICATION SITE BOUNDARY (PHASE 2 SITE)
- PROPOSED HEAVY STANDARD TREE
- PROPOSED GROUNDCOVERS/SHRUBS
- PROPOSED LAWN
- EXTENSIVE GREEN ROOF
- 105.385 PROPOSED LEVEL
- PROPOSED PAVING

LEGEND:

1. GATHERING COURTYARD
2. MEANDERING PATH
3. SEAT BENCHES
4. OPEN LAWN
5. EARTH MOUNDS
6. CHILDREN PLAY AREA
7. FITNESS EQUIPMENT FOR THE ADULT / ELDERLY
8. COVERED COURTYARD

ACCESS TO LANDSCAPED AREAS

PROJECT :
PROPOSED RESIDENTIAL DEVELOPMENT AT NOS. 9-17 MOK CHEONG STREET, TO KWA WAN

DRAWING TITLE :
LANDSCAPE MASTER PLAN AT 2ND FLOOR (14.250/14.450 mPD)

PROJECT No. C1919

DRAWING No. LMP03

SCALE : 1:350

DATE OF ISSUE : MAR 2019

CAD FILENAME : C1919-LMP03

REV	DESCRIPTION	DATE
D	GENERAL AMENDMENT	23/08/21
C	GENERAL AMENDMENT	29/03/21
B	GENERAL AMENDMENT	07/12/20
A	GENERAL AMENDMENT	10/07/20

DESIGN BY : TEL
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申請編號 Application No. : A / K10 / 265
此頁摘自申請人提交的文件。
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LEGEND:

- APPLICATION SITE BOUNDARY (PHASE 1 SITE)
- APPLICATION SITE BOUNDARY (PHASE 2 SITE)
- PROPOSED HEAVY STANDARD TREE
- PROPOSED GROUNDCOVERS/SHRUBS
- PROPOSED LAWN
- EXTENSIVE GREEN ROOF
- 105.385 PROPOSED LEVEL
- PROPOSED PAVING

MAINTENANCE ACCESS

ACCESS TO LANDSCAPED AREAS

NOTE:
DETAILS OF EXTENSIVE GREEN ROOF SHALL REFER TO DWG NO.LD105

PROJECT :
PROPOSED RESIDENTIAL DEVELOPMENT AT NOS. 9-17 MOK CHEONG STREET, TO KWA WAN

DRAWING TITLE :
LANDSCAPE MASTER PLAN AT ROOF PLAN

PROJECT No. C1919

DRAWING No. LMP04

SCALE : 1:350

DATE OF ISSUE : MAR 2019

CAD FILENAME : C1919-LMP04

REV	DESCRIPTION	DATE
D	GENERAL AMENDMENT	23/08/21
C	GENERAL AMENDMENT	29/03/21
B	GENERAL AMENDMENT	07/12/20
A	GENERAL AMENDMENT	10/07/20

DESIGN BY : TEL
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香港灣仔譚臣道5-11號,
信邦商業大廈17樓A室
電話: 2868 0980
傳真: 2868 2203

申請編號 Application No. : A / K10 / 265
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LEGEND:

- APPLICATION SITE BOUNDARY (PHASE 1 SITE)
- APPLICATION SITE BOUNDARY (PHASE 2 SITE)
- PROPOSED HEAVY STANDARD TREE
- PROPOSED GROUNDCOVERS/SHRUBS
- PROPOSED LAWN
- EXTENSIVE GREEN ROOF
- 105.385 PROPOSED LEVEL
- PROPOSED PAVING

LEGEND:

1. EXTENSIVE GREEN ROOF
2. GATHERING COURTYARD
3. MEANDERING PATH
4. SEAT BENCHES
5. MULTI-FUNCTIONAL LAWN WITH EARTH MOUNDS
6. CHILDREN PLAY AREA
7. FITNESS EQUIPMENT FOR THE ADULT/ELDERLY
8. WATER FEATURE

NOTE:
DETAILS OF EXTENSIVE GREEN ROOF SHALL REFER TO DWG NO.LD105

PROJECT :
PROPOSED RESIDENTIAL DEVELOPMENT AT NOS. 9-17 MOK CHEONG STREET, TO KWA WAN

DRAWING TITLE :
LANDSCAPE MASTER PLAN – R/F

PROJECT No. C1919

DRAWING No. LMP05

SCALE : 1:350

DATE OF ISSUE : MAR 2019

CAD FILENAME : C1919-LMP05

REV	DESCRIPTION	DATE
D	GENERAL AMENDMENT	21/06/21
C	GENERAL AMENDMENT	29/03/21
B	GENERAL AMENDMENT	07/12/20
A	GENERAL AMENDMENT	10/07/20

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香港灣仔譚臣道5-11號,
信邦商業大廈17樓A室
電話: 2868 0980
傳真: 2868 2203

LEGEND:

- APPLICATION SITE BOUNDARY (PHASE 1 SITE)
- APPLICATION SITE BOUNDARY (PHASE 2 SITE)
- COMMUNAL OPEN SPACE
- 105.385 PROPOSED LEVEL

Phase 1 Site
(KIL 6342+KIL6344)

Domestic Provision
Occupancy: =875
Communal Open Space =1,103.0sq.m.

Phase 2 Site
(KIL 7632 + KIL 7427 + KIL 7631 + KIL 7630 + KIL 7629)

Domestic Provision
Occupancy: =1,089
Communal Open Space =1,168.0sq.m.

CDA(3) Site

Domestic Provision
Occupancy: =1,964
Communal Open Space =2,271.0sq.m.

Hence, the provision of the communal open space can meet the requirement under HKPSG, i.e. 1m per person

PROJECT :
PROPOSED RESIDENTIAL DEVELOPMENT AT NOS. 9-17 MOK CHEONG STREET, TO KWA WAN

DRAWING TITLE :
COMMUNAL OPEN SPACE PROVISION

PROJECT No. C1919

DRAWING No. OS01

SCALE : 1:350

DATE OF ISSUE : NOV 2019

CAD FILENAME : C1919-OS01

REV	DESCRIPTION	DATE
D	GENERAL AMENDMENT	21/06/21
C	GENERAL AMENDMENT	29/03/21
B	GENERAL AMENDMENT	07/12/20
A	GENERAL AMENDMENT	10/07/20

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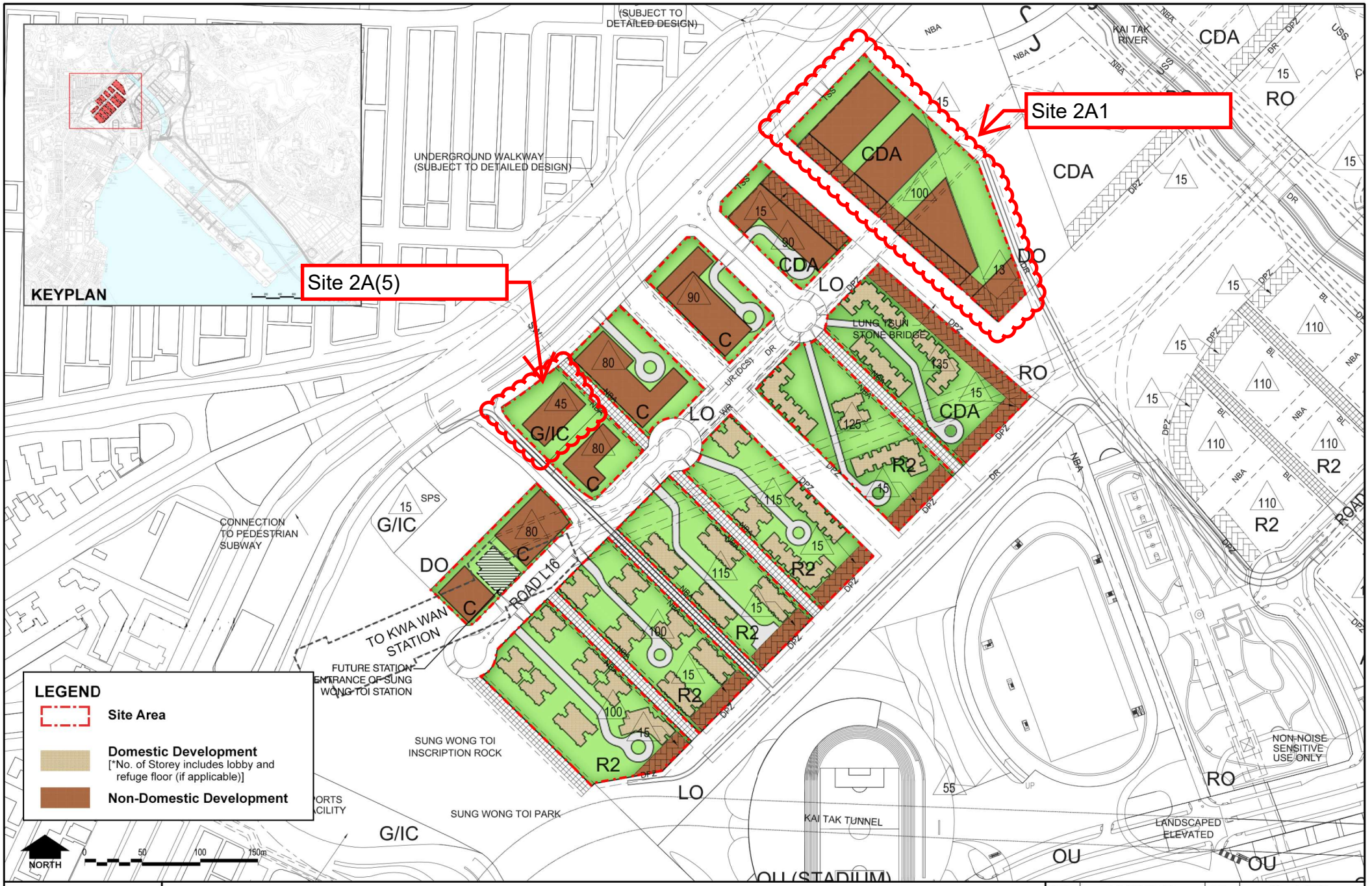


AECOM

AGREEMENT NO. CE 35/2006 (CE)
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS - INVESTIGATION, DESIGN AND CONSTRUCTION

INTENSIFICATION OF SITES 2A + 2B

SCALE	1:3,000 @ A3	DATE	March 2017
CHECK		DRAWN	
JOB No.	60022408	DRAWING No.	Figure 2.8
		REV	--

Appendix 9: Traffic Impact Assessment

06/06/2024

Reference number CHK50786310/CHC/L2400937/lda

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon

Traffic Impact Assessment

Final Report

SYSTRA MVA

IDENTIFICATION TABLE	
Project	Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon
Study	Traffic Impact Assessment
Type of document	Final Report
Date	06/06/2024
File name	L2400937_2A Site2 TIA Report.docx
Reference number	CHK50786310/CHC/L2400937/lda

MVA Hong Kong Limited
22/F Genesis • 33-35 Wong Chuk Hang Road • Hong Kong
T. +852 2529 7037 • F. +852 2527 8490 • E. info@mvaasia.com • www.mvaasia.com

TABLE OF CONTENTS

LIST OF DRAWINGS

LIST OF TABLES

1. INTRODUCTION

1.1 Background

1.1.1 The Application Site is located on Muk Lai Street and adjacent to Olympic Avenue, at Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon. The Site is zoned "Comprehensive Development Area (4)" on the Approved Kai Tak Outline Zoning Plan No. S/K22/8.

1.1.2 Under the Town Planning Ordinance, a section 16 planning application is required to be submitted by the Applicant to obtain permission from the Town Planning Board (TPB), for a comprehensive development (the Proposed Development), including flat, shop & services and eating place.

1.1.3 In support of the Section 16 planning application (S16 Application) from a traffic engineering viewpoint, MVA Hong Kong Limited (MVA) was commissioned to conduct a Traffic Impact Assessment (TIA) study for the Proposed Development.

1.2 Study Objectives

1.2.1 The main objectives of this study are:

- to assess the existing traffic conditions in the vicinity of the Application Site;
- to forecast traffic demands on the adjacent road network in the design year;
- to estimate the potential traffic induced by the Proposed Development based on the proposed development parameters;
- to assess the potential impact on the adjacent road network due to the Proposed Development; and;
- to recommend improvement measures, if necessary, to alleviate any traffic problems on the road network.

1.3 Structure of the Report

1.3.1 Following this introductory chapter, there are five further chapters.

1.3.2 **Chapter 2** – *The Proposed Development*, which presents the planning parameters of the Proposed Development, the vehicular access arrangement and the provision of internal transport facilities.

1.3.3 **Chapter 3** – *Existing Traffic Situation*, which describes the existing road network in the vicinity of the Application Site, presents the summary of traffic count survey and assesses the existing traffic conditions.

1.3.4 **Chapter 4** – Future *Traffic Situation*, which describes the future road network in the near vicinity and discusses the potential traffic generations and attractions of the Proposed Development at Application Site.

1.3.5 **Chapter 5** – *Traffic Impact Assessments*, which presents the findings of the traffic impact assessment in the future design year and recommends improvement measures, if necessary.

1.3.6 **Chapter 6** – *Long Term Traffic Forecast for Noise Impact Assessment (NIA)*, which describes the forecasting methodology and presents the results of long term traffic forecast for NIA.

1.3.7 **Chapter 7** – *Summary and Conclusion*, which summarizes the findings of the study and presents the conclusion regarding the traffic issues of the Proposed Development.

2. THE PROPOSED DEVELOPMENT

2.1 Site Location

2.1.1 As shown in **Drawing No. 2.1**, the Application Site is located on Muk Lai Street and adjacent to Olympic Avenue at Kai Tak Area 2A Site 2, Kai Tak Development Area.

2.1.2 It is situated to the northeast of MTR Sung Wong Toi Station and to the south of the Lung Tsun Bridge Preservation Corridor. It has a site area of about 6,270m^2.

2.2 Development Schedule

2.2.1 The Proposed Development is planned as a comprehensive development including flats and retail (shop & services and eating place). It is tentatively planned that the Proposed Development would be completed by year 2029.

2.2.2 The key development parameters of the Proposed Development under the proposed Master Layout Plan are summarized in **Table 2.1**.

Table 2.1 Key Development Parameters

Application Site Area (about)	6,270 m^2
Total Plot Ratio (Maximum)	7.5
• Domestic • Non-domestic (including shop & services and eating place)	6.5 1.0 (1)
Total GFA (Maximum)	47,025 m^2 (about)
• Domestic • Non-domestic (including shop & services and eating place)	40,755 m^2 (about) 6,270 m^2 (about) (2)
No. of Blocks	
• Residential • Retail Belt	1 1
Design Population	2,232(3)
No. of Flats	930

Notes: (1) Plot ratio of 0.2 for Retail Belt is included.
(2) Minimum GFA of 1,254m^2 for Retail Belt is included.
(3) Based on a person per flat ratio of 2.4.

2.3 Proposed Access Arrangement

2.3.1 The Proposed Development would be accessed from Olympic Avenue via Muk Lai Street. The vehicular access of the Proposed Development will be located at Muk Lai Street in accordance with the X1,Y1,Z1 point as specified in the Lease of the lot, shown indicated in **Drawing No.2.2**.

2.4 Proposed Internal Transport Facilities

2.4.1 The internal transport facilities will be provided in accordance with the relevant land sale conditions of the Application Site based on the development parameters, as shown in **Table 2.2.**

Table 2.2 Proposed Provision of Internal Transport Facilities

Transport Facilities		Lease Requirement	Development Parameters	Estimated Provision	Required Provision
Residential Portion					
Private Car Parking Spaces	Residential	1 space for every 11.9 units or part thereof for unit size less than 40 m^2 (1)	192 units (Size < 40 m^2)	17	**159 – 191 (2)(3)**
		1 space for every 4.9 units or part thereof for unit size not less than 40 m^2 but less than 70 m^2 (1)	706 units (40m^2 ≤ Size <70m^2)	145	
		1 space for every 2.5 units or part thereof for unit size not less than 70 m^2 but less than 100 m^2 (1)	32 units (70m^2 ≤ Size <100m^2)	13	
		1 space for every 1.4 units or part thereof for unit size not less than 100 m^2 but less than 130 m^2 (1)	-	-	
		1 space for every 1.1 units or part thereof for unit size not less than 130 m^2 but less than 160 m^2 (1)	-	-	
		1 space for every 0.8 units or part thereof for unit size not less than 160 m^2 (1)	-	-	
			Sum	175	
	Visitor	1 space per block for a block with 30 or below units (4)	-	-	**5**
		2 spaces per block for a block with 31 to 45 units (4)	-	-	
		3 spaces per block for a block with 46 to 60 units (4)	-	-	
		4 spaces per block for a block with 61 to 75 units (4)	-	-	
		5 spaces per block for a block with more than 75 units (4)	1 Block (930 units)	5	
			Sum	5	
Loading/ unloading Bays		1 space for every 800 units or part thereof, subject to a minimum 1 space for each residential block (5)	930 units (1 block)	2	**2**
Motorcycle Parking Spaces		1 space for every 100 units or part thereof (6)	930 units	10	**10**
Bicycle Parking Spaces		1 space for every 15 units or part thereof the with size less than 70 m^2 (7)	898 units (Size < 70m^2)	60	**60**
Retail Portion					
Private Car Parking Space		1 space for every 150 m^2 or part thereof the GFA for non-industrial (8)	6,270 m^2 (Retail)	42	**40 – 44 (2)**
Loading/ unloading Bays		1 space for every 800 m^2 or part thereof the GFA for non-industrial (9)		8	**8**
Motorcycle Parking Spaces		10% of the total number or part thereof the non-industrial parking spaces (10)	42 spaces	5	**5**

Notes:
(1) Refer to Clause 49(a)(i) of the Conditions of Sale.
(2) Refer to Clause 53(a) of the Conditions of Sale, the Purchaser may increase or reduce the respective numbers of spaces required to be provided under the said Special Conditions by not more than 5% provided that the total number of spaces so increased or reduced shall not exceed 50.
(3) Refer to Clause 53(b) of the Conditions of Sale, in addition to the Clause 53(a), the Purchaser may increase or reduce the respective numbers of spaces required to be provided under the said Special Conditions without taking into account the spaces calculated in Clause 53(a) by not more than 5%.
(4) Refer to Clause 49(a)(iii) of the Conditions of Sale.
(5) Refer to Clause 51(a)(i)(I) of the Conditions of Sale.
(6) Refer to Clause 49(d)(i)(I) of the Conditions of Sale.
(7) Refer to Clause 49(e) of the Conditions of Sale.
(8) Refer to Clause 49(b)(i)(II) of the Conditions of Sale.
(9) Refer to Clause 51(a)(i)(III) of the Conditions of Sale.
(10) Refer to Clause 49(d)(i)(III) of the Conditions of Sale.

3. EXISTING TRAFFIC CONTEXT

3.1 Existing Road Network

3.1.1 **Drawing No. 3.1** shows the existing road network that serves the Proposed Development. The Proposed Development are mainly served by Muk Lai Street and Olympic Avenue and supported by Prince Edward Road East, Prince Edward Road West, Argyle Street and Ma Tau Chung Road.

3.1.2 Muk Lai Street is a single two-lane local distributor which will be providing a direct connection to Olympic Avenue for the Proposed Development as well as the adjacent future developments on the street.

3.1.3 Olympic Avenue is dual two-lane district distributor in east-west direction. Its eastern end connects to Concorde Road and its western end connects to Sung Wong Toi Road.

3.1.4 Prince Edward Road East is a dual three lane primary distributor in east-west direction connecting Kowloon City and San Po Kong.

3.1.5 Prince Edward Road West is a dual three lane primary distributor in east-west direction connecting Kowloon City and Mong Kok.

3.1.6 Argyle Street is a dual three lane primary distributor in east-west direction connecting Kowloon City and Mong Kok.

3.1.7 Ma Tau Chung Road is a dual three lane primary distributor in north-south direction connecting Kowloon City and Hung Hom.

3.2 Existing Traffic Conditions

3.2.1 In order to appraise the existing traffic conditions at the road network in the vicinity of the Application Site, traffic surveys in the form of manual classified count surveys have been conducted at the identified key junctions within the area of influence (AOI) during the AM periods of 07:30 – 09:30 and the PM peak periods of 17:00 – 19:00 on a typical weekday in late-January of 2024.

3.2.2 The AOI and the surveyed key existing junctions are shown in **Drawing no. 3.1** and listed in the **Table 3.1**.

Table 3.1 Identified Key Junctions for Assessment

Junction No.	Junctions	Existing Method of Control	Drawing No.
A	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road(1)	Roundabout	3.2
B	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road	Roundabout	3.3
C	Shing Kai Road / Concorde Road / Muk Chun Street	Roundabout	3.4
D	Shing Kai Road / Muk Hung Street	Signal	3.5
E	Shing Kai Road / Muk Chui Street	Signal	3.6
F	Shing Kai Road / Kai Shing Street / Muk On Street	Signal	3.7
G	Shing Kai Road / Shing Fung Road / Muk Tai Street(1)	Signal	3.8
H	Shing Kai Road / Western Access to Main Stadium(1)	Signal	3.9
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road(1)	Signal	3.10
J	Kowloon City Road / Sung Wong Toi Road	Signal	3.11
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Signal	3.12
L	Olympic Avenue / Hang Wan Road(1)	Signal	3.13
M	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street	Roundabout	3.14
N	Kai San Road / Tsat Po Street/ Pat Tat Street	Signal	3.15
O	Sze Mei Street / Luk Hop Street	Roundabout	3.16

Note : (1) Temporary traffic arrangement was being implemented during the traffic survey.

3.2.3 The locations of the above fifteen junctions are illustrated in **Drawing No. 3.1**. The existing junction layout arrangements and method of control are shown in **Drawing Nos. 3.2 to 3.16** respectively.

3.2.4 Analysis of the observed traffic data indicates that the AM and PM peak hour flows occurred from 07:45 to 08:45 and from 17:30 to 18:30 respectively. The observed peak hour traffic flows are summarized and presented in **Drawing No. 3.17**.

3.2.5 The potential season effect on the observed traffic flows is reviewed with reference to the historical monthly variation of traffic flow at Prince Edward Road East (i.e. the closest core station to the Application Site) in Annual Traffic Census (ATC). In view of the traffic pattern including the monthly variation in 2020 – 2022 ATC were affected by the COVID-19 pandemic, the monthly variation in 2018 and 2019 ATC are referred, and it is identified that the traffic flows at Prince Edward Road East in January and February are all at or above 100% of the average flow of the year. Therefore, the traffic flows surveyed in late-January should have no impact by the season effect.

3.2.6 To evaluate the existing traffic condition in the vicinity of the Application Site, the operational performance of the identified junctions were assessed based on the observed traffic flows and their existing junction layouts and control method. The results are summarised in **Table 3.2**, and the details of junction assessments are attached in **Appendix A**.

Table 3.2 Existing Operation Junction Performance in 2024

Junction No.	Junction	Method of Control	Year 2024 RC(1)/DFC(2)	
			AM Peak	PM Peak
A	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road(3)	Roundabout	0.40	0.30
B	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road	Roundabout	0.30	0.28
C	Shing Kai Road / Concorde Road / Muk Chun Street	Roundabout	0.28	0.33
D	Shing Kai Road / Muk Hung Street	Signal	95%	>100%
E	Shing Kai Road / Muk Chui Street	Signal	28%	36%
F	Shing Kai Road / Kai Shing Street / Muk On Street	Signal	80%	82%
G	Shing Kai Road / Shing Fung Road / Muk Tai Street(3)	Signal	91%	>100%
H	Shing Kai Road / Western Access to Main Stadium(3)	Signal	>100%	>100%
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road(3)	Signal	95%	>100%
J	Kowloon City Road / Sung Wong Toi Road	Signal	>100%	>100%
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Signal	65%	39%
L	Olympic Avenue / Hang Wan Road(3)	Signal	>100%	>100%
M	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street	Roundabout	0.79	0.70
N	Kai San Road / Tsat Po Street/ Pat Tat Street	Signal	72%	28%
O	Sze Mei Street / Luk Hop Street	Roundabout	0.38	0.48

Notes: (1) RC = Reserve capacity of a signal junction.
(2) DFC = Ratio of flow to capacity for a roundabout.
(3) Junction with temporary traffic management scheme implemented.

3.2.7 The assessment results in **Table 3.2** indicated that all critical junctions are at present operating within capacities.

3.3 Existing Public Transport Services

3.3.1 The Application Site is situated within 500m distance to both the Sung Wong Toi and Kai Tak MTR station. Apart from the MTR service, there are numerous of bus routes and minibus routes providing services in the vicinity of the Application Site. The details of bus and minibus routes are listed in **Table 3.3**.

Table 3.3 Existing Public Transport Services in the Vicinity of Application Site

Route No.	Origin – Destination	Headway (minutes) / Departure Time
Franchised Bus Route		
1A	Sau Mau Ping (Central) <-> Star Ferry	7-15
2A	Lok Wah <-> Mei Foo	10-25
2X	Choi Foo <-> Mei Foo	20-30
3B	Tsz Wan Shan (Central) <-> Hung Hom (Hung Luen Road)	20-30
5	Fu Shan Estate <-> Star Ferry	9-25
5A	Kai Tak (Kai Ching Estate) <-> Star Ferry	25-30

Table 3.3 Existing Public Transport Services in the Vicinity of Application Site (Cont'd)

Route No.	Origin – Destination	Headway (minutes) / Departure Time
Franchised Bus Route		
5C	Tsz Wan Shan (Central) <-> Star Ferry	8-20
5D	Telford Gardens <-> Hung Hom (Circular)	12-30
5M	Kai Tak (Tak Long Estate) <-> Kowloon Bay Station (Circular)	12-25
6D	Ngau Tau Kok <-> Mei Foo	12-30
6P[(1)]	Cheung Sha Wan (So Uk Estate) <-> Lei Yue Mun Estate	20
9	Choi Foo <-> Tsim Sha Tsui East (Mody Road)	15-30
10	Choi Wan <-> Tai Kok Tsui (Circular)	15-30
11	Diamond Hill Station <-> Kowloon Station	11-25
11B	Kwun Tong (Tsui Ping Road) <-> Kowloon City Ferry	10-30
11D	Lok Fu <-> Kwun Tong Ferry	15-30
11X	On Tai (North) <-> Hung Hom Station	9-25
13D	Po Tat <-> Island Harbourview	15-30
14	Lei Yue Mun Estate <-> China Ferry Terminal	12-30
15	Ping Tin <-> Hung Hom (Hung Luen Road)	12-25
16	Lam Tin (Kwong Tin Estate) <-> Mong Kok (Park Avenue)	8-25
16P[(2)]	Kwun Tong Ferry <-> Mong Kok (Park Avenue)	07:50, 17:30
16X	Lam Tin (Kwong Tin Estate) <-> Mong Kok (Park Avenue)	20-60
17	Kwun Tong (Yue Man Square) <-> Ho Man Tin (Oi Man Estate)	5-25
20	Kai Tak (Muk On Street) <-> Cheung Shha Wan (Hoi Tat)	12-30
20A	Kai Tak Cruise Terminal <-> High Speed Rail West Kowloon Station	20-35
21	Choi Wan <-> Hung Hom Station	20-30
22	Kai Tak Cruise Terminal <-> Kowloon Tong (Festival Walk)	20-30
22D[(2)]	Kai Tak Station <-> Kai Tak Runway Area	07:10, 07:40, 08:10, 08:40, 16:55, 17:10, 17:25
22M	To Kwa Wan <-> Kai Tak Cruise Terminal (Circular)	20-30
22X	Kai Tak Station <-> One Victoria	18-30
24	Kai Yip <-> Mong Kok (Circular)	12-30
26	Shun Tin <-> Tsim Sha Tsui East	8-30
27	Shun Tin <-> Mong Kok (Circular)	6-20
27X[(2)]	Shun Tin <-> Olympic Station	07:45, 08:15, 18:10, 18:30
28	Tsim Sha Tsui (Star Ferry) <-> Lok Wah	10-25
42	Tsing Yi (Cheung Hong Estate) <-> Shun Lee	15-25
61X	Tuen Mun Central <-> Kowloon City Ferry	10-30
75X	Tai Po (Fu Shin) <-> Kowloon City Ferry	11-25
78C	Kai Tak <-> Queen's Hill Fanling	55-60
78X[(2)]	Kai Tak <-> Queen's Hill Fanling	15-60
85S[(1)(2)]	Yiu On -> Hung Hom (Hung Luen Road)	07:45, 08:00
85X	Ma On Shan Town Centre <-> Hung Hom (Hung Luen Road)	9-30
92R[(3)]	Sai Kung <-> Star Ferry	20-60
93K	Po Lam <-> Mong Kok East Station	17-30
95	Tsui Lam <-> Kowloon Station	12-30
98C	Hang Hau (North) (Tseung Kwan O Hospital) <-> Mei Foo	10-25
98E[(2)]	Hang Hau (North) (Tseung Kwan O Hospital) <-> Mei Foo	07:45, 08:05, 17:45, 18:05
98S[(1)(2)]	Lohas Park Station <-> Mei Foo	06:40, 07:00, 07:20, 07:40
101	Kwun Tong (Yue Man Square) <-> Kennedy Town	4-30
106	Wong Tai Sin <-> Siu Sai Wan (Island Resort)	6-20
106A[(2)]	Wong Tai Sin -> Tai Koo (Kornhill Plaza)	07:25, 07:35, 07:45, 07:55
106P[(2)]	Wong Tai Sin -> Siu Sai Wan (Island Resort)	17:15, 17:35
107	Kowloon Bay <-> Wah Kwai	7-25
108	Kai Yip <-> Braemar Hill	10-30
111	Ping Shek/Choi Hung Station <-> Central (Macau Ferry)	4-30
111P[(5)]	Choi Fook <-> Central (Macau Ferry)	07:07, 07:17, 07:40, 07:55, 18:15, 18:40
116	Tsz Wan Shan (Central) <-> Quarry Bay (Yau Man Street)	4-20

Table 3.3 Existing Public Transport Services in the Vicinity of Application Site (Cont'd)

Route No.	Origin – Destination	Headway (minutes) / Departure Time
Franchised Bus Route		
203E	Choi Hung <-> Kowloon Station	15-25
213D	Sau Mau Ping <-> Mong Kok (Circular)	10-25
275X(2)	Tai Po (Fu Shin) <-> Hung Hom (Hung Luen Road)	07:05, 07:18, 07:32, 07:45, 18:05, 18:18, 18:32, 18:45
293S	Hang Hau (Ngan O) <-> Mei Foo	00:35, 01:05, 01:35, 04:00, 04:20, 05:00
296C	Sheung Tak <-> Cheung Sha Wan (Hoi Ying Estate)	15-30
296P(2)	Sheung Tak <-> Lai Chi Kok Station	07:45, 17:45
297	Po Lam <-> Hung Hom (Hung Luen Road)	15-30
298C(2)	LOHAS Park Station <-> Mei Foo	07:35, 17:30
298X(2)	Hang Hau (North) (Tseung Kwan O Hospital) <-> Cheung Sha Wan (Kom Tsun Street)	07:30, 07:50, 08:10, 17:35, 17:55, 18:15
608	Kowloon City (Shing Tak Street) <-> Shau Kei Wan	10-30
608P(2)	Siu Sai Wan (Island Resort) -> Kowloon City (Shing Tak Street)	07:30, 07:45
641	Kai Tak (Kai Ching Estate) <-> Central (Macau Ferry)	10-30
793	Tseung Kwan O Industrial Estate <-> So Uk	15-60
796X	Tseung Kwan O Industrial Estate <-> Tsim Sha Tsui East	12-30
797	San Po Kong <-> LOHAS Park/Tseung Kwan O Industrial Estate	20-30
A22	Lam Tin Station <-> Airport (via HZMB Hong Kong Port)	15-60
A25	Kai Tak <-> Airport	30-60
E23	Tsz Wan Shan (South) <-> Airport (Ground Transportation Centre)	12-30
E23A	Tsz Wan Shan (South) <-> Airport (via Tung Chung North)	20-30
N20	Island Harbour View -> Kai Tak (Muk On Street)	0:50
N23	Tsz Wan Shan (North) <-> Tung Chung Station	00:15, 01:10, 03:35, 04:35, 05:05
N121	Ngau Tau Kok <-> Central (Macau Ferry)	15-25
N213	Tsim Sha Tsui East (Mody Road) -> On Tai (West)	00:30, 01:00
N216	Yau Tong <-> Hung Hom Station	25-30
N293	Sheung Tak <-> Mong Kok (Park Avenue)	20-30
N796	Lohas Park <-> Mong Kok (via Tsim Sha Tsui)	20-30
GMB Route		
25A	Kowloon Tong Station <-> Tung Tau Estate	15-20
25B	Kowloon Tong Station <-> San Po Kong (The Latitude)	15-18
25M	Kowloon Tong Station <-> Tung Tau Estate	6-8
46	Richland Gardens <-> Tai Kok Tsui (Olympic Station)	3-15
49	Shun Tin Estate <-> Kowloon City Ferry Pier (Circular)	25
61(6)	Siu Sai Wan (Island Resort) <-> Mong Kok Station	60
69	Laguna City <-> Kowloon City (Lion Rock Road)	20-30
69A	Laguna City <-> Prince Edward Station (Tung Choi Street)	15-20
70	Diamond Hill Station <-> Tai Kok Tsui (Olympic Station)	4-15
70A	Diamond Hill Station <-> Tai Kok Tsui (Olympic Station)	30-60
82	Choi Hing Court <-> Kai Tak (Airside)	15-30
88	Kai Ching Estate <-> Wong Tai Sin (Circular)	12-30
102	Hang Hau Station <-> San Po Kong (Hong Keung Street)	5-10
105	Tseung Kwan O (Hong Sing Garden) <-> To Kwa Wan (Ko Shan Theatre)	5-20
110	Tiu Keng Leng Station Public Transport Interchange <-> Kowloon City	15-30

Notes :
(1) Peak hour service only
(2) Services on Monday to Friday except public holidays
(3) Services on Saturday, Sunday and public holidays
(4) Services on Saturday except public holidays
(5) Services on Mon to Saturday except public holidays
(6) Overnight Service only

4. FUTURE TRAFFIC CONDITIONS

4.1 Design Year and Future Scenarios to be Assessed

4.1.1 The Proposed Development is planned to be completed by year 2029. In order to assess the impact on the local road network due to the Proposed Development, Year 2032 (i.e. 3 years after completion of the Proposed Development) is adopted as the design year for this TIA study.

4.1.2 To evaluate the effect to the surrounding road junctions due to the Proposed Development, the below future scenarios will be assessed:

- **Reference Scenario** – Future case of the Application Site without the Proposed Development
- **Design Scenario** – Future case of the Application Site with completion of the Proposed Development

4.2 Local Area Traffic Model Development and Validation

4.2.1 A Local Area Traffic Model (LATM) is developed for providing traffic forecasts within the AOI for traffic impact assessment SATURN platform.

Base Year Traffic Model Development

4.2.2 Transport Department (TD)'s 2019-based Base District Traffic Model (BDTM) "K2" covering Kowloon East is adopted to develop the 2024 LATM including the road network and matrices.

4.2.3 The LATM road network is developed from BDTM base year model. The road network within the AOI in the traffic model has been checked against the existing roads and junction configuration / method of control based on the on-site observation, as presented **in Section 3.2**, as well as the public transport information as available from HKemobility and websites of the franchised bus companies.

4.2.4 The LATM matrices are derived by applying growth to the BDTM base year matrices and refining with reference to the observed traffic count data. Then, the matrix estimation SATME2 function, which is a sub-programme within the SATURN suite of programmes, is applied for recalculating the origin and destination matrices to give the best overall fit with the observed traffic flows.

4.2.5 Under this study, the LATM will serve as a prime basis for facilitating traffic forecasts and assessments to be carried out. Hence, the developed base year LATM, simulated from the updated road network and the refined matrices, is further validated against the observed traffic count data comprising 15 key junctions and 5 screenlines, as illustrated in **Appendix B.**

4.2.6 The BDTM validation criteria is adopted in the TIA and are listed in the **Table 4.1** below:

Table 4.1 BDTM Validation Criteria

Validation Criteria	Validation Target
Junction Arm Flows and Screenline Link Flows	GEH 5 or less on 85% of links GEH 10 or less on 100% of links
Screenline Link Flows	85% within 10% 100% within 20%

4.2.7 The GEH statistic is a modified chi-square test of the form.

$$\sqrt{\frac{(V_2 - V_1)^2}{\frac{1}{2}(V_1 + V_2)}}$$

Where V1 and V2 are the observed and modelled flows on a specific link.

4.2.8 The junctions and screenlines validation results are summarised in **Table 4.2** and **Table 4.3** respectively. Detailed summary of validation results is in **Appendix B**

Table 4.2 Summary of Junction Count Validation Results

Criteria Guideline	Target	Number of Count within Criteria		Percentage of Count within Criteria	
		AM Peak	PM Peak	AM Peak	PM Peak
Total No. of Links	-	100	100	100%	100%
Comparisons on GEH Values					
Links within GEH 5	85%	97	91	97%	91%
Links within GEH 10	100%	100	100	100%	100%
Links greater GEH 10	0%	0	0	0%	0%

Table 4.3 Summary of Link Count Validation Results

Criteria Guideline	Target	Number of Count within Criteria		Percentage of Count within Criteria	
		AM Peak	PM Peak	AM Peak	PM Peak
Total No. of Links	-	51	51	100%	100%
Comparisons on GEH Values					
Links within GEH 5	85%	50	50	98%	98%
Links within GEH 10	100%	51	51	100%	100%
Links greater GEH 10	0%	0	0	0%	0%
Comparisons on Percentage Difference					
Links within ±10%	85%	51	51	100%	100%
Links within ±20%	100%	51	51	100%	100%
Links greater ±20%	0%	0	0	0%	0%

4.2.9 The above results show that the traffic flows at all screenlines and key junctions are satisfactorily validated to the validation criteria for both AM peak and PM peak hours. It is considered that the validated LATM with the 2024 adjusted traffic conditions is robust and reliable for conducting future traffic projections and traffic forecast to facilitate this study.

4.3 2032 Reference Traffic Forecast

4.3.1 Future year 2032 reference traffic flows are formulated by projecting the future year 2031 BDTM with zonal growth factor of Kowloon City derived from 2019 – based The Territorial Population and Employment Data Matrix (TPEDM) of +0.6% p.a. by 1 year. Derivation of growth factor from TPEDM are presented in **Table 4.4**.

Table 4.4 Population and Employment in Kowloon City Area Estimates from TPEDM

TPEDM Estimates	Year			Derived Annual Growth Rate (% p.a.)	
	2019	2026	2031	2031/2019	2031/2026
Population	429,300	451,100	420,050	-0.18%	-1.42%
Employment	212,000	237,900	227,850	**+0.60%**	-0.86%
Adopted Growth Rate				**+0.6%**	

Source: 2016 – based Territorial Population and Employment Data Matrix as available on Planning Department's website

Future Road Network

4.3.2 Central Kowloon Route (CKR) and Trunk Road T2 have already been considered and incorporated in the future year BDTM model. Hence, the development of design year 2032 "reference scenario" model also assumed these highway infrastructures in place.

- **Central Kowloon Route** is a 4.7 km long dual 3-lane trunk road in Central Kowloon linking Yau Ma Tei Interchange in West Kowloon with the road network on Kai Tak Development and Kowloon Bay in East Kowloon.

- **Trunk Road T2** is a dual two-lane trunk road of approximately 3 km long connecting CKR and Tseung Kwan O – Lam Tin Tunnel. Trunk Road T2 runs along South East Kowloon connecting CKR at its west and TKO-LTT at its east.

4.3.3 Apart from the key junctions as presented in **Table 3.1**, there will be four more planned junctions (Junction P - Shing Kai Road / Proposed Slip Road to Central Kowloon Route, Junction Q – Shing Kai Road / Eastern Access to Main Stadium, R - Olympic Avenue / Dakota Drive and Junction S - Olympic Avenue / Muk Lai Street), as identified in **Drawing No. 3.1** to be critical for TIA of the Proposed Development.

4.3.4 Junction P will be completed under Central Kowloon Route and Junction Q will be formed under the Kai Tak Sport Park project. For Junction R and Junction S, the junctions will be completed under Kai Tak Development – Stage 5B and Stage 5A infrastructure works at former north apron area respectively.

4.3.5 The layouts of the abovementioned four planned future junctions and the future layout of the existing junctions A, G, H, I, and L without temporary traffic management scheme are illustrated from **Drawing Nos. 4.1 to 4.9** and summarized in **Table 4.5**.

Table 4.5 Planned Junctions of Kai Tak Development

Junction No.	Junctions	Method of Control	Drawing No.
A	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road	Roundabout	4.1
G	Shing Kai Road / Shing Fung Road / Muk Tai Street	Signal	4.2
H	Shing Kai Road / Western Access to Main Stadium	Signal	4.3
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Signal	4.4
L	Olympic Avenue / Hang Wan Road	Signal	4.5
P	Shing Kai Road / Proposed Slip Road to Central Kowloon Route	Signal	4.6
Q	Shing Kai Road / Eastern Access to Main Stadium	Signal	4.7
R	Olympic Avenue / Dakota Drive	Signal	4.8
S	Olympic Avenue / Muk Lai Street	Signal	4.9

Public Transport Planning

4.3.6 To reflect the latest public transport planning, the LATM is reviewed and updated in accordance with the *Bus Routes Planning Programme 2024-2025* as available from Transport Department's website.

Kai Tak Development and Other Planned Developments

4.3.7 The future year "reference case" LATM has been updated with the latest planning parameters of general land use purpose of individual sites of the Kai Tak Development as well as other planned developments in the vicinity. The latest planning parameters of the individual sites are either referenced to the latest approved Kai Tak Outline Zoning Plan (OZP) S/K22/8, the latest approved planning applications, publicly available information or the consultant's in-house database whichever is more appropriate. The planned developments of Kai Tak Development area and the other planned developments which have been updated in LATM are listed **Table 4.7**. The traffic generation and attraction are estimated by adopting the trip rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of the prevailing Transport Planning and Design Manual (TPDM) or Appendix Q of BDTM Urban Final Report or the consultant's in-house database as presented in **Table 4.6**.

Table 4.6 Adopted Trip Rates

Development	Trip Rate Reference	AM Peak		PM Peak		Abbreviation
		Generation	Attraction	Generation	Attraction	
Public rental housing with average flat size 30 sqm (pcu/hr/flat)	TPDM(1)	0.0242	0.0226	0.0177	0.0201	TPDM-30
Public rental housing with average flat size 40 sqm (pcu/hr/flat)	TPDM(1)	0.0432	0.0326	0.0237	0.0301	TPDM-40
Subsidised housing with average flat size 50 sqm (pcu/hr/flat)	TPDM(1)	0.0622	0.0426	0.0297	0.0401	TPDM-50
Private Housing with average flat size 60 sqm (pcu/hr/flat)	TPDM(1)	0.0718	0.0425	0.0286	0.0370	TPDM-60
Private Housing with average flat size 70 sqm (pcu/hr/flat)	TPDM(1)	0.0888	0.0515	0.0356	0.0480	TPDM-70
Private Housing with average flat size 80 sqm (pcu/hr/flat)	TPDM(1)	0.1058	0.0605	0.0426	0.0590	TPDM-80
Private Housing with average flat size 100 sqm (pcu/hr/flat)	TPDM(1)	0.1887	0.0942	0.0862	0.1214	TPDM-100
Private Housing with average flat size 120 sqm (pcu/hr/flat)	TPDM(1)	0.2246	0.1157	0.1068	0.1468	TPDM-120
Private Housing with average flat size 140 sqm (pcu/hr/flat)	TPDM(1)	0.2604	0.1372	0.1275	0.1722	TPDM-140
Private Housing with average flat size 300 sqm (pcu/hr/flat)	TPDM(1)	0.3252	0.2609	0.2835	0.4074	TPDM-300
Office (pcu/hr/100 sqm GFA)	TPDM(1)	0.1703	0.2452	0.1573	0.1175	TPDM-OFF
Retail / Shopping Complex (pcu/hr/100 sqm GFA)	TPDM(1)	0.2296	0.2434	0.3100	0.3563	TPDM-RET
Hotel (pcu/hr/guest room)	TPDM(1)	0.1329	0.1457	0.1290	0.1546	TPDM-HOT
Primary School (pcu/hr/class operating)	BDTM Report(2)	0.5000	0.4667	0.6000	0.5000	BDTM-PS
Secondary School (pcu/hr/class operating)	BDTM Report(2)	0.6364	0.8788	0.2727	0.0909	BDTM-SS
Hospital (pcu/hr/bed)	BDTM Report(2)	0.1849	0.2737	0.2591	0.2048	BDTM-HS
Performing Arts & Cultural Facilities (pcu/hr/100 sqm GFA)	In-house Survey(3)	0.0600	0.0920	0.1644	0.0569	INH-PACF

Notes: (1) Mean trip rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of TPDM.
(2) Trip rates from Appendix Q of BDTM Urban Final Report.
(3) Consultant's in-house trip rates as surveyed from M+, Yao Tsung-I Academy and Kwai Tsing Theatre.

Table 4.7 Kai Tak Development and Other Planned Developments Updated in the LATM

Site Ref. No.[1]	Planned Development	Development Parameters	Adopted Trip Rates[2]	Estimated Traffic Flows (pcu/hr)			
				AM Peak		PM Peak	
				Generation	Attraction	Generation	Attraction
1	Proposed School at Kai Tak Site 1B2	30 classrooms[3]	BDTM-PS	15	14	18	15
2	Proposed School at Kai Tak Site 1B3	30 classrooms[3]	BDTM-SS	19	26	8	3
3	Proposed Primary School at Kai Tak Site 1B4	30 classrooms[4]	BDTM-PS	68	40	27	35
4	Proposed Commercial Development (C(8) Zone) at Kai Tak Site 1D2	70,728m² GFA[5]	TPDM-OFF	120	173	111	83
5	Proposed Public Housing at Kai Tak Site 1E1	2,150 flats [6]	TPDM-50	134	92	64	86
		37,270m² non-domestic GFA[6]	TPDM-RET	13	12	9	10
6	Proposed Commercial Development (CDA(2) Zone) at Kai Tak Site 1M1	88,776m² GFA[7]	TPDM-OFF	151	218	140	104
7	OU Zone for arts and performance related uses at Kai Tak Site 1M2	11,600m² GFA[8]	INH-PACF	7	11	19	7
8	Proposed Commercial Development (CDA(3) Zone) at Kai Tak Site 2A1	131,960m² GFA[9]	TPDM-OFF	225	324	208	155
9	Proposed Private Residential Development at Kai Tak Site 2A3	950 flats[10]	TPDM-60	68	40	27	35
		5,968m² non-domestic GFA[10]	TPDM-RET	14	15	19	21
10	Proposed Residential Development at Kai Tak Site 2A4, 2A5(B) and 2A10	About 2080 flats[11][12]	TPDM-60	150	88	60	77
		24,036 m² non-domestic GFA[11]	TPDM-RET	55	59	75	86
11	Proposed Subsidized Housing at Kai Tak Site 2B1	1,800 flats[13]	TPDM-60	130	77	52	67
		4,140m² Retail GFA[13]	TPDM-RET	10	11	13	15
12	Proposed Public Housing at Kai Tak Site 2B3	1,280 flats[14]	TPDM-50	80	55	38	51
		11,900m² non-domestic GFA[15]	TPDM-RET	27	29	37	42
13	Proposed Public Housing at Kai Tak Site 2B4	1,840 flats[14]	TPDM-50	114	78	55	74
		2,380m² non-domestic GFA[15]	TPDM-RET	5	6	7	8
14	Proposed Hotel and Commercial Development at Shing Kai Road near Kai Tak Main Stadium	440 guest rooms[16]	TPDM-HOT	59	65	57	69
		14,450m² office GFA[16]	TPDM-OFF	25	36	23	17
		1,550m² retail GFA[16]	TPDM-RET	4	4	5	6
15	Proposed Commercial Development (C(1) Zone) at Kai Tak Site 3B1-4	220,133m² GFA[17]	TPDM-OFF	375	540	346	259
16	Proposed Commercial Development (C(8) Zone) at Kai Tak Site 3B6	107,768m² GFA[18]	TPDM-OFF	184	264	170	127
17	Kai Tak New Acute Hospital	2,400 beds[19]	BDTM-HS	444	657	622	492
18	Proposed Private Residential Development at Kai Tak Site 4A2	2062 flats[20]	TPDM-60	148	88	59	76
		12,260m² non-domestic GFA[20]	TPDM-RET	28	30	38	44
19	Proposed Private Residential Development at Kai Tak Site 4B3	1216 flats[21]	TPDM-60	87	52	35	45
20	Proposed Private Residential Development at Kai Tak Site 4B5	2092 flats[22][12]	TPDM-60	150	89	60	77
21	Proposed Private Residential Development at Kai Tak Site 4C1	582 flats[23]	TPDM-120	131	67	62	85
		1,899m² non-domestic GFA[23]	TPDM-RET	4	5	6	7
22	Proposed Private Residential Development at Kai Tak Site 4C3	439 flats[24]	TPDM-140	114	60	56	76
		2,830m² non-domestic GFA[24]	TPDM-RET	6	7	9	10

Table 4.7 Kai Tak Development and Other Planned Developments Updated in the LATM (Cont'd)

Site Ref. No. [1]	Planned Development	Development Parameters	Adopted Trip Rates[2]	Estimated Traffic Flows (pcu/hr)			
				AM Peak		PM Peak	
				Generation	Attraction	Generation	Attraction
23	Proposed Commercial Development (C(7) Zone) at Kai Tak Site 4C4	80,205m² GFA[25]	TPDM-RET	184	195	249	286
24	Proposed Commercial Development (C(5) Zone) at Kai Tak Site 4C5	56,880m² GFA[26]	TPDM-RET	131	138	176	203
25	Proposed Private Residential Development at Kai Tak Site 4E1	702 flats[27]	TPDM-60	50	30	20	26
		1,110m² non-domestic GFA[27]	TPDM-RET	3	3	3	4
26	Proposed Private Residential Development at Kai Tak Site 4E2	1,160 flats[28][12]	TPDM-60	83	49	33	43
		2,190m² non-domestic GFA[28]	TPDM-RET	5	5	7	8
27	Proposed Residential and Commercial Development at 5 & 7 Mok Cheong Street and 70-78 Sung Wong Toi Road, Ma Tau Kok	48 flats with average flat size of 328m² [29]	TPDM-300	16	13	14	20
		777 flats with average flat size of 61m² [29]	TPDM-60	56	33	22	29
		9,261m² non-domestic GFA[29]	TPDM-RET	21	23	29	33
28	Proposed Residential and Commercial Development at Kowloon IL6342, 6344, 7427, 7629, 7630, 7631 and 7632, Mok Cheong Street and Sung Wong Toi Road, Ma Tau Kok	746 flats with average flat size of 84m² [30]	TPDM-80	79	45	32	44
		9,261m² non-domestic GFA[30]	TPDM-RET	17	18	24	27

Notes:

(1) Refer to the **Drawing No. 4.10.**
(2) Refer to the **Table 4.6.**
(3) According to the 8th meeting minutes of HDPC of KCDC, the site is planned to be school development.
(4) Available information from ArchSD website: https://www.archsd.gov.hk/en/projects/capital-projects-under-detail/362EP.html.
(5) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 8,841sqm and the permitted plot ratio is 8 for C(8) zone.
(6) Refer to HKHS's reply on document no. 15/22 of HDPC of KCDC and Monthly Digest for February 2021 by BD.
(7) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 19,728sqm and the permitted plot ratio is 4.5 for CDA(2) zone.
(8) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the maximum total GFA is 11,600sqm.
(9) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 19,994sqm and the permitted plot ratio is 6.6 for CDA(3) zone.
(10) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 5,968sqm and the permitted plot ratios are 6.5 (domestic) and 1.0 (non-domestic) for R(A)(6) zone.
(11) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 16,024sqm and the permitted plot ratios are 6.5 (domestic) and 1.5 (non-domestic) for R(A)(5) zone.
(12) Assumed average flat size is 50sqm.
(13) Refer to the TIA for the planning application (No.: A/K22/30).
(14) Refer to the Addendum to the Approved Planning Brief as published by HKHA on Mar 2023.
(15) Refer to the available information from the planning application (No.: A/K22/35).
(16) Refer to the TIA for the planning application (No.: A/K22/28).
(17) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 37,954sqm and the permitted plot ratio is 5.8 for C(1) zone.
(18) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 13,471sqm and the permitted plot ratio is 8 for C(8) zone.
(19) Refer to available information from Hospital Authority website.
(20) Refer to Monthly Digest for February 2021 by BD.
(21) Refer to Monthly Digest for December 2020 by BD.
(22) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 13,949sqm and the permitted plot ratio is 7.5 for RB)(8) zone.
(23) Refer to Monthly Digest for November 2020 by BD.
(24) Refer to Monthly Digest for December 2020 by BD.
(25) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 10,694sqm and the permitted plot ratio is 7.5 for C(7) zone.

(26) According to the approved Kai Tak Outline Zoning Plan No. S/K22/8, the site area is 9,480sqm and the permitted plot ratio is 6 for C(5) zone.
(27) Refer to Monthly Digest for November 2021 by BD.
(28) Refer to Sing Tao News dated 19 July 2022, the domestic GFA is around 58,000m^2 while the non-domestic GFA is around 2,190m^2.
(29) Refer to the available information from the planning application (No.: A/K10/259).
(30) Refer to the available information from the planning application (No.: A/K10/265).

4.3.8 Apart from the planned developments, as listed **Table 4.7**, which have been updated in LATM, other planned developments at the Kai Tak Development area which are originally included in the BDTM and hence the LATM are listed out as below.

A. Proposed Commercial Development at Kai Tak Site 1E2
B. Proposed Private Residential Development at Kai Tak Site 1F1
C. Proposed Public Housing Development at Kai Tak Site 2B2
D. Proposed Public Housing Development at Kai Tak Site 2B5
E. Proposed Public Housing Development at Kai Tak Site 2B6
F. Kai Tak Main Stadium and Sports Park (Kai Tak Sites 2D1 & 2D2)
G. Proposed Private Residential Development at Kai Tak Site 4A1
H. Proposed Private Residential Development at Kai Tak Site 4B1
I. Proposed Private Residential Development at Kai Tak Site 4B4
J. Proposed Private Residential Development at Kai Tak Site 4C2

Light Public Housing at Kai Tak

4.3.9 To fill the short-term gap of public housing supply, light public housing project with provision of about 10,700 residential units will be implemented at the sites (i.e. Kai Tak Site 1M1, 1M2, 2A1 and part of open space) on Olympic Avenue in Kai Tak. The potential traffic induced by the light public housing is estimated as presented in **Table 4.8**.

Table 4.8 Traffic Generation and Attraction of Light Public Housing at Olympic Avenue

Parameters	Adopted Trip Rates[2]	Traffic Generation and Attraction (pcu/hr)			
		AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
10,700 flats[1]	TPDM-30	259	242	189	215

Notes:
(1) Refer to LC Paper No. CB(1) 1123/2023(02)
(2) Refer to **Table 4.6**.

4.3.10 Apart from the traffic generation of the light public housing in **Table 4.8** as estimated by the TPDM trips, the potential increase of road-based public transport demand due to the light public housing is also reviewed as summarized in **Table 4.9**.

Table 4.9 Anticipated Road-based Public Transport Demand of the Light Public Housing at Olympic Avenue

		AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
Overall Pedestrian Trip Generation and Attraction					
Pedestrian Trip Rates [1] (ped/hr/unit)		0.4253	0.092	0.1701	0.3680
Total Pedestrian Trips for 10,700 units (ped/hr)		4,551	984	1,820	3,938
Road-based Public Transport Demand					
Passenger Demand [2]		1,899	411	759	1,643
Traffic Demand of Road-based Public Transport	Vehicle per Hour [3]	22	5	9	19
	PCU per Hour [4]	**55**	**13**	**23**	**48**

Notes :
(1) Consultant's in-house trip rates surveyed from the public housing development Kai Ching Estate at the Kai Tak area.
(2) Based on the transport mode distribution of 42% for Public Light Bus and Franchised Bus as derived from the modal splits of Kowloon City area in 2021 Census.

(3) Number of buses required to serve the passenger demand based on the average 75% occupancy rate of bus with max. capacity 120 passengers, i.e. 90 passengers to be carried by each bus.
(4) A pcu factor of 2.5 for bus is adopted for conversion of vehicle to pcu.

4.3.11 By superimposing the above estimated road-based public transport demand onto the traffic generation and attraction in **Table 4.8**, the total road-based traffic induced by the light public housing at Olympic Avenue are estimated as shown in **Table 4.10**.

Table 4.10 Total Road-based Traffic Generation and Attraction of Light Public Housing at Olympic Avenue

	Total Road-based Traffic Generation and Attraction (pcu/hr)			
	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Light Public Housing at Olympic Avenue	**314** [259 + 55]	**255** [242 + 13]	**212** [189 + 23]	**263** [215 + 48]

4.3.12 Under the OZP, the sites occupied by the light public housing are intended for commercial use and arts & performance related uses in long-term planning. As comparing the potential traffic induced by public light housing (including the potential increase of road-based public transport) with the long-term planning, it is identified that the traffic induced by the uses under long-term planning would be more critical, as shown in **Table 4.11**. Therefore, the assumption of uses at the concerned Sites 1M1, 1M2, 2A1 (as listed in **Table 4.7**) as adopted in the traffic model is considered more conservative for assessments.

Table 4.11 Comparison of Traffic Induced by Light Public Housing Scheme and Long-term Planning Scheme

Uses at Sites 1M1, 1M2 and 2A1	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
*Light Public Housing Scheme **[A]***				
Light Public Housing(1)	**314**	**255**	**212**	**263**
*Long-term Planning Scheme **[B]***				
Commercial Use at Site 1M1(2)	151	218	140	104
Arts & Performance related Use at Site 1M2(2)	7	11	19	7
Commercial Use at Site 2A1(2)	225	324	208	155
Total	**383**	**553**	**367**	**266**
Net Difference [A] – [B]	**-69**	**-298**	**-155**	**-3**

Notes:
(1) Refer to **Table 4.10**
(2) Refer to **Table 4.7**.

2032 Reference Traffic Forecasts

By taking into account the above, the 2032 reference traffic forecasts are derived as shown in **Drawing No. 4.11**.

4.4 Traffic Generation and Attraction of the Proposed Development

4.4.1 In order to estimate the potential traffic generation and attraction of the Proposed Developments under proposed development parameter as shown in **Table 2.1**, reference has been made to the trip generation rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of the prevailing Transport Planning and Design Manual (TPDM). The adopted trip rates are summarized in **Table 4.12**.

Table 4.12 Estimated Potential Traffic Generation and Attraction of the Proposed Development

	AM Peak		PM Peak	
	Generation	**Attraction**	**Generation**	**Attraction**
Residential – 930 flats at average flat size 43.1m^2				
Adopted Trip Rates [(1)] (pcu/hr/flat)	0.0718	0.0425	0.0286	0.0370
Estimated Trips (pcu/hr)	67	40	27	34
Retail – 6,270 m^2 GFA				
Adopted Trip Rates [(2)] (pcu/hr/100m^2 GFA)	0.2296	0.2434	0.3100	0.3563
Estimated Trips (pcu/hr)	14	15	19	22
Overall				
Estimated Trips (pcu/hr)	**81**	**55**	**46**	**56**

Notes: (1) TPDM Mean trip rates for high-density private housing development with avg. flat size of 60m^2 are adopted.
(2) TPDM Mean trip rates for retail development are adopted.

4.4.2 Based on the proposed development parameters, it is estimated that the Proposed Developments will generate and attract about 81 pcu/hr and 55 pcu/hr in the AM peak hour and generate and attract about 46 pcu/hr and 56 pcu/hr in the PM peak hour respectively.

4.5 2032 Design Traffic Forecasts

4.5.1 The estimated traffic generation and attraction of the Proposed Development (as shown in **Table 4.12** and presented in **Drawing No. 4.12**) were then superimposed onto the 2032 reference traffic flows according to the origin-destination (O-D) pattern of the traffic zone representing the Application Site in the LATM to derive the 2032 design traffic forecasts.

4.5.2 The 2032 AM and PM peak design traffic forecasts (with the Proposed Development) are shown in **Drawing No. 4.13**.

5. TRAFFIC IMPACT ASSESSMENT

5.1 Junction Operational Assessment

5.1.1 As mentioned in **Paragraphs 4.3.3-4.3.5**, there will be planned junctions within the AOI in the future. The junction layout and method of control adopted for assessment of year 2032 future scenarios are summarized in **Table 5.1**.

Table 5.1 Junctions to be Assessed in the Future Scenarios of Year 2032

Junction No.	Junctions	Layout	Method of Control	Drawing No.
A	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road	Planned	Roundabout	4.1
B	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road	Existing	Roundabout	3.3
C	Shing Kai Road / Concorde Road / Muk Chun Street	Existing	Roundabout	3.4
D	Shing Kai Road / Muk Hung Street	Existing	Signal	3.5
E	Shing Kai Road / Muk Chui Street	Existing	Signal	3.6
F	Shing Kai Road / Kai Shing Street / Muk On Street	Existing	Signal	3.7
G	Shing Kai Road / Shing Fung Road / Muk Tai Street	Planned	Signal	4.2
H	Shing Kai Road / Western Access to Main Stadium	Planned	Signal	4.3
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Planned	Signal	4.4
J	Kowloon City Road / Sung Wong Toi Road	Existing	Signal	3.11
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Existing	Signal	3.12
L	Olympic Avenue / Hang Wan Road	Planned	Signal	4.5
M	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street	Existing	Roundabout	3.14
N	Kai San Road / Tsat Po Street/ Pat Tat Street	Existing	Signal	3.15
O	Sze Mei Street / Luk Hop Street	Existing	Roundabout	3.16
P	Shing Kai Road / Slip Road of Central Kowloon Route	Planned	Signal	4.6
Q	Shing Kai Road / Eastern Access to Main Stadium	Planned	Signal	4.7
R	Olympic Avenue/ Dakota Drive	Planned	Signal	4.8
S	Olympic Avenue / Muk Lai Street	Planned	Signal	4.9

5.1.2 To assess the traffic impact due to the Proposed Development, operational assessments of the identified key junctions in the AOI for both reference and design scenarios in year 2032 has been conducted. The results are summarised and presented in **Table 5.2,** and the details of junction assessments are attached in **Appendix A**.

Table 5.2 Year 2032 Junction Operation Performance

Junction No.	Junction	Method of Control	Year 2032 RC[(1)]/DFC[(2)]			
			Reference Scenario [Without Proposed Development]		Design Scenario [With Proposed Development]	
			AM Peak	PM Peak	AM Peak	PM Peak
A	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road	Roundabout	0.77	0.46	0.80	0.47
B	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road	Roundabout	0.58	0.69	0.59	0.70
C	Shing Kai Road / Concorde Road / Muk Chun Street	Roundabout	0.43	0.46	0.44	0.46
D	Shing Kai Road / Muk Hung Street	Signal	41%	42%	40%	42%
E	Shing Kai Road / Muk Chui Street	Signal	8%	6%	7%	6%
F	Shing Kai Road / Kai Shing Street / Muk On Street	Signal	34%	20%	34%	20%
G	Shing Kai Road / Shing Fung Road / Muk Tai Street	Signal	17%	31%	17%	30%
H	Shing Kai Road / Western Access to Main Stadium	Signal	26%	44%	25%	43%
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Signal	9%	24%	8%	23%
J	Kowloon City Road / Sung Wong Toi Road	Signal	42%	34%	41%	33%
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Signal	34%	22%	34%	22%
L	Olympic Avenue / Hang Wan Road	Signal	90%	>100%	86%	>100%
M	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street	Roundabout	0.92	0.81	0.92	0.81
N	Kai San Road / Tsat Po Street/ Pat Tat Street	Signal	21%	27%	19%	25%
O	Sze Mei Street / Luk Hop Street	Roundabout	0.72	0.75	0.73	0.76
P	Shing Kai Road / Slip Road of Central Kowloon Route	Signal	>100%	>100%	>100%	>100%
Q	Shing Kai Road / Eastern Access to Main Stadium	Signal	18%	38%	18%	37%
R	Olympic Avenue / Dakota Drive	Signal	-5%	24%	-6%	23%
S	Olympic Avenue / Muk Lai Street	Signal	23%	45%	10%	32%

Notes: (1) RC = Reserve capacity of a signal junction.
(2) DFC = Ratio of flow to capacity for a roundabout or a priority junction.

5.1.3 **Table 5.1** indicates all the key access junctions will be operating within capacity during the AM and PM peak periods in the design year 2032 except for the Junction R - Olympic Avenue / Dakota Drive which will be overloaded during the AM peak under both the reference scenario and design scenario. Besides, it is also assessed that some junctions will operate at/close to their capacities including Junction E - Shing Kai Road / Muk Chui Street, Junction I - To Kwa Wan Road / Sung Wong Toi Road, and Junction S - Olympic Avenue / Muk Lai Street, and therefore possible junction improvement schemes should be reviewed to improve the junction performances.

5.1.4 Apart from abovementioned Junctions E, I, R and S, it is also identified that Junction M - Olympic Garden Roundabout would operate close to it capacity, however, the impact to this junction's performance due to the Proposed Development is negligible as proven by the junction assessment results in **Table 5.2**.

5.2 Junction Improvement Schemes

Junction E - Shing Kai Road / Muk Chui Street

5.2.1 According to the meeting minutes of the 4th meeting of Housing, Planning and Lands Committee of the 6th Term Kwun Tong District Council dated 17 September 2020, it is noted that an improvement scheme at the junction of Shing Kai Road / Muk Chui Street was planned and will be implementation by the Public Housing Development at Wang Chiu Road by Housing Authority (HKHA).

5.2.2 Notwithstanding that the details of the improvement scheme was not available in the abovementioned document, it is anticipated that the junction would be improved by local widening of carriageway at Muk Chui Street at the eastern approach arm of the junction, as illustrated in **Drawing No. 5.1**.

Junction I - To Kwa Wan Road / Sung Wong Toi Road

5.2.3 Refer to the information of the approved planning application (Application No. A/K22/35) for the public housing developments at Kai Tak Site 2B3 and 2B4, it is noted that junction improvement scheme at Junction I was proposed under the aforesaid public housing developments project.

5.2.4 Notwithstanding that the details on the junction improvement scheme is not available from the application document, it is anticipated that the junction would be improved by widening at Sung Wong Toi Road eastbound approach to increase the traffic lanes from existing 3 lanes to 4 lanes with revised method of control as demonstrated in **Drawing No. 5.2**.

Junction R - Olympic Avenue / Dakota Drive

5.2.5 To improve the junction operational performance, it is possible to widen the Dakota Drive approach to provide one additional traffic lane as shown in **Drawing No. 5.3**.

5.2.6 As the junction is the immediate junction serving the access of nearby public housing sites, e.g. Kai Tak Site 2B3 to 2B4, while the junction assessment results reflected that impact to the junction's performance due to the Proposed Development is very minimal (i.e. the junction will be overloaded in the Reference Scenario without the Proposed Development and the change in RC at Design Scenario is minute), the junction improvement should be responsible

by other party. It is understood that the junction improvement would be covered by the CEDD's planned infrastructure works for Kai Tak development.

Junction S - Olympic Avenue / Muk Lai Street

5.2.7 According to the Traffic Impact Assessment report of the approved planning application (Application No. A/K22/30) for the subsidized housing development at the adjacent Site 2B1 on Muk Lai Street Hong Kong Housing Society (HKHS), it is noted that a junction improvement scheme, as exhibited in **Drawing No. 5.4,** was proposed and to be implemented by the subsidized housing development at the adjacent Site 2B1.

5.2.8 Based on the proposed junction improvement schemes, the operational performances have been re-assessed, and the results are summarised in **Table 5.3**.

Table 5.3 Operational Performance of Critical Junctions in 2032 (With Junction Improvement Schemes)

Junction No.	Junction With Improvement	Method of Control	Year 2032 RC(1)/DFC(2)			
			Reference Scenario [Without Proposed Development]		Design Scenario [With Proposed Development]	
			AM Peak	PM Peak	AM Peak	PM Peak
E	Shing Kai Road / Muk Chui Street	Signal	21%	19%	20%	18%
I	To Kwa Wan Road / Sung Wong Toi Road	Signal	23%	39%	22%	38%
R	Olympic Avenue / Dakota Drive	Signal	22%	44%	20%	43%
S	Olympic Avenue / Muk Lai Street	Signal	61%	68%	44%	60%

Notes: (1) RC = Reserve capacity of a signal junction.
(2) DFC = Ratio of flow to capacity for a roundabout or a priority junction.

5.2.9 The assessment results in **Table 5.3** revealed that Junctions E, I, R, and S will all operate with adequate capacities in the design year 2032 with implementation of junction improvement schemes.

5.2.10 The anticipated responsible project proponents of the junction improvement scheme as discussed in above are summarised in **Table 5.4**.

Table 5.4 Summary of Junction Improvement Schemes

Junction No.	Junction Improvement Scheme	Anticipated Responsible Project Proponent	Planned Completion
E	Shing Kai Road / Muk Chui Street	Public Housing Development at Wang Chiu Road by HKHA	By 2025
I	To Kwa Wan Road / Sung Wong Toi Road	Public Housing Developments at Kai Tak Sites 2B3 and 2B4 by HKHA	By 2026/27
R	Olympic Avenue / Dakota Drive	CEDD	By 2025
S	Olympic Avenue / Muk Lai Street	Subsidized Housing Development at Kai Tak Site 2B1 by HKHS	By 2026

5.3 Queue Length Assessment

5.3.1 Apart from junction operational performance, queue length assessment is also conducted. The estimated queue lengths at the assessed signal junctions in the reference and design scenarios at the design year 2032 are presented in **Table 5.5**.

Table 5.5 Junctions to be Assessed in the Future Scenarios of Year 2032

Ref No.	Junctions	Approach	Capacity (m)	Average Queue Length (m)			
				Reference Scenario [Without Proposed Development]		Design Scenario [With Proposed Development]	
				AM Peak	PM Peak	AM Peak	PM Peak
D	Shing Kai Road / Muk Hung Street	Shing Kai Rd NB	175	34	38	34	38
		Shing Kai Rd SB	195	37	33	37	33
E	Shing Kai Road / Muk Chui Street	Muk Chui St EB	95	34	35	36	35
		L3 Road WB	35	25	26	27	32
		Shing Kai Rd NB	405	46	56	46	56
		Shing Kai Rd SB	175	54	43	53	44
F	Shing Kai Road / Kai Shing Street / Muk On Street	Muk On St SB	135	46	51	46	51
		Kai Shing Rd NB	90	40	58	40	58
		Shing Kai Rd EB	245	39	37	39	37
		Shing Kai Rd WB	410	33	24	33	24
G	Shing Kai Road / Shing Fung Road / Muk Tai Street	Muk Tai St SB	145	32	23	32	23
		Shing Fung Rd NB	>500	61	45	61	45
		Shing Kai Rd EB	105	63	54	64	54
		Shing Kai Rd WB	220	44	43	44	44
H	Shing Kai Road / Western Access to Main Stadium	Shing Kai Rd EB	190	64	56	64	56
		Shing Kai Rd WB	175	66	56	66	56
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Sung Wong Toi Rd EB	>500	46	34	46	34
		To Kwa Wan Rd NB	70	66	60	67	60
		Shing Kai Rd SB	175	68	56	68	56
J	Kowloon City Road / Sung Wong Toi Road	Sung Wong Toi Rd WB	300	25	26	25	26
		Kowloon City Rd NB	80	21	23	21	23
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Sung Wong Toi Rd WB	80	56	65	57	65
		Ma Tau Chung Rd NB	170	48	71	48	71
		Ma Tau Chung Rd SB	80	65	50	65	50
L	Olympic Avenue / Hang Wan Road	Olympic Ave NB	90	20	16	20	16
		Olympic Ave SB	280	21	16	21	17
		Hang Wan Rd EB	30	20	14	20	14
N	Kai San Road / Tsat Po Street / Pat Tat Street	Tsat Po Street EB	100	26	19	26	19
		Tsat Po Street WB	155	57	53	58	54
		Kai San Road NB	>500	57	50	59	52
P	Shing Kai Road / Slip Road of Central Kowloon Route	Shing Kai Rd EB	245	40	32	40	32
		Shing Kai Rd WB	255	40	38	40	38
		Slip Road of CKR	200	9	14	9	14
Q	Shing Kai Road / Eastern Access to Main Stadium	Shing Kai Rd EB	200	69	57	69	57
		Shing Kai Rd WB	165	70	58	71	58
R	Olympic Avenue/ Dakota Drive	Olympic Ave EB	280	40	31	44	32
		Olympic Ave WB	210	54	49	56	49
		Dakota Drive NB	120	49	32	49	33

Table 5.5 Junctions to be Assessed in the Future Scenarios of Year 2032 (Cont'd)

Ref No.	Junctions	Approach	Capacity (m)	Average Queue Length (m)			
				Reference Scenario [Without Proposed Development]		Design Scenario [With Proposed Development]	
				AM Peak	PM Peak	AM Peak	PM Peak
S	Olympic Avenue / Muk Lai Street	Olympic Ave EB	210	18	17	20	19
		Olympic Ave WB	400	36	36	39	37
		Muk Lai St NB	100	30	18	35	23

5.3.2 The queue length assessment results in **Table 5.5** revealed that the estimated queue lengths at all assessed Junctions will be within the available capacity in the design year 2032 under both the reference and design scenarios. The results also reflect that the differences of queue lengths between the reference and design scenarios are insignificant.

5.4 Sensitivity Test for Event at Kai Tak Sports Park

5.4.1 Since the large-scale event should be normally hosted outside the communal peak hours while Kai Tak Sports Park is situated at a location where is well served by MTR and public transport, the traffic impact of event at Kai Tak Sports Park during the communal peak hours should be minimal. Particularly, it is very unlikely that any key highlighted event/ceremony would be held in the early morning during the communal AM peak. Nevertheless, a sensitivity test on potential impact of the large-scale event at Kai Tak Sports Park with both the event start and event dispersal scenarios during critical communal PM peak is carried out.

5.4.2 With reference to the approved planning application (Application No. A/K22/17) for "Minor Relaxation of Building Height Restriction for the Proposed Main Stadium at the Southern Portion of the Kai Tak Sports Park; Proposed Hotel and Eating Place", it is noted that there would be a total of 700 private car parking spaces and 60 coach parking spaces provided at Kai Tak Sports Park.

5.4.3 For sensitivity test purpose, it is assumed that all of the 700 car parking spaces and 60 coach parking spaces would serve the visitors of the event; and they would be arriving and leaving within an hour during the event starts and event dispersal respectively. Therefore, the traffic attraction of Kai Tak Sports Park during event starts and the traffic generation of Kai Tak Sport Park during event dispersal in critical PM peak under the sensitivity test scenarios would be about 820 pcu/hr (i.e. 700 pcu/hr for private cars and 120 pcu/hr for coaches).

5.4.4 By accounting the above traffic attraction and generation of Kai Tak Sports Park during event starts and event dispersal in the year 2032 PM peak design traffic flows, the year 2032 PM peak traffic flows in the sensitivity test scenarios are derived as shown in **Drawing No. 5.5**.

5.4.5 To test the critical scenarios of large scale event at Kai Tak Sports Park during the communal PM peak, the operational performances of the junctions within AOI are further assessed, and the results are summarised in **Table 5.6**.

Table 5.6 Year 2032 Junction Operation Performance - Sensitivity Test

Junction No.	Junction	Method of Control	Year 2032 RC(1)/DFC(2)	
			Sensitivity Test Scenarios of Critical PM Peak	
			Event Start	Event Dispersal
A	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road	Roundabout	0.49	0.48
B	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road	Roundabout	0.70	0.70
C	Shing Kai Road / Concorde Road / Muk Chun Street	Roundabout	0.46	0.46
D	Shing Kai Road / Muk Hung Street	Signal	42%	42%
E	Shing Kai Road / Muk Chui Street *(With Improvement)*	Signal	18%	18%
F	Shing Kai Road / Kai Shing Street / Muk On Street	Signal	20%	18%
G	Shing Kai Road / Shing Fung Road / Muk Tai Street	Signal	21%	22%
H	Shing Kai Road / Western Access to Main Stadium	Signal	21%	13%
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road *(With Improvement)*	Signal	29%	22%
J	Kowloon City Road / Sung Wong Toi Road	Signal	33%	16%
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Signal	22%	17%
L	Olympic Avenue / Hang Wan Road	Signal	>100%	>100%
M	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street	Roundabout	0.87	0.81
N	Kai San Road / Tsat Po Street/ Pat Tat Street	Signal	25%	25%
O	Sze Mei Street / Luk Hop Street	Roundabout	0.76	0.76
P	Shing Kai Road / Slip Road of Central Kowloon Route	Signal	>100%	>100%
Q	Shing Kai Road / Eastern Access to Main Stadium	Signal	15%	23%
R	Olympic Avenue/ Dakota Drive *(With Improvement)*	Signal	36%	37%
S	Olympic Avenue / Muk Lai Street *(With Improvement)*	Signal	56%	60%

Notes: (1) RC = Reserve capacity of a signal junction.
(2) DFC = Ratio of flow to capacity for a roundabout or a priority junction.

5.4.6 **Table 5.6** indicates that all the key access junctions will be still operating within capacity during the critical PM peak with event at Kai Tak Sports Park under the critical sensitivity test scenarios.

5.4.7 Apart from junction operational performance, queue length assessment is also conducted for the sensitivity test scenarios. The estimated queue lengths are presented in **Table 5.7**.

Table 5.7 Junctions to be Assessed in the Sensitivity Test Scenarios

Ref No.	Junctions	Approach	Capacity (m)	Average Queue Length (m) Sensitivity Test Scenarios of Critical PM Peak	
				Event Start	Event Dispersal
D	Shing Kai Road / Muk Hung Street	Shing Kai Rd NB	175	38	38
		Shing Kai Rd SB	195	33	33
E	Shing Kai Road / Muk Chui Street	Muk Chui St EB	95	35	35
		L3 Road WB	35	32	32
		Shing Kai Rd NB	405	56	56
		Shing Kai Rd SB	175	44	44
F	Shing Kai Road / Kai Shing Street / Muk On Street	Muk On St SB	135	51	53
		Kai Shing Rd NB	90	58	59
		Shing Kai Rd EB	245	37	39
		Shing Kai Rd WB	410	24	24
G	Shing Kai Road / Shing Fung Road / Muk Tai Street	Muk Tai St SB	145	27	25
		Shing Fung Rd NB	>500	56	43
		Shing Kai Rd EB	105	58	64
		Shing Kai Rd WB	220	56	48
H	Shing Kai Road / Western Access to Main Stadium	Shing Kai Rd EB	190	72	67
		Shing Kai Rd WB	175	66	70
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Sung Wong Toi Rd EB	>500	53	34
		To Kwa Wan Rd NB	70	65	66
		Shing Kai Rd SB	175	58	69
J	Kowloon City Road / Sung Wong Toi Road	Sung Wong Toi Rd WB	300	26	34
		Kowloon City Rd NB	80	23	31
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Sung Wong Toi Rd WB	80	65	70
		Ma Tau Chung Rd NB	170	71	76
		Ma Tau Chung Rd SB	80	50	52
L	Olympic Avenue / Hang Wan Road	Olympic Ave NB	90	18	17
		Olympic Ave SB	280	20	16
		Hang Wan Rd EB	30	18	14
N	Kai San Road / Tsat Po Street / Pat Tat Street	Tsat Po Street EB	100	19	19
		Tsat Po Street WB	155	54	54
		Kai San Road NB	>500	52	52
P	Shing Kai Road / Slip Road of Central Kowloon Route	Shing Kai Rd EB	245	32	38
		Shing Kai Rd WB	255	39	41
		Slip Road of CKR	200	29	13
Q	Shing Kai Road / Eastern Access to Main Stadium	Shing Kai Rd EB	200	70	67
		Shing Kai Rd WB	165	76	62
R	Olympic Avenue/ Dakota Drive	Olympic Ave EB	280	33	34
		Olympic Ave WB	210	52	50
		Dakota Drive NB	120	34	33
S	Olympic Avenue / Muk Lai Street	Olympic Ave EB	210	19	19
		Olympic Ave WB	400	38	37
		Muk Lai St NB	100	23	23

5.4.8 The queue length assessment results in **Table 5.7** revealed that the estimated queue lengths at all assessed junctions will be still within the available capacity in the design year 2032 under the sensitivity scenarios.

5.5 Review on Public Transport

5.5.1 Based on the development parameters as listed in **Table 2.1**, the potential public transport demand of the Proposed Development is reviewed as shown in **Table 5.8**.

Table 5.8 Anticipated Public Transport Demand of the Proposed Development

	AM Peak		PM Peak	
	Generation	Attraction	Generation	Attraction
Pedestrian Generation of the Proposed Development				
Pedestrian Trip Rates[(1)] (ped/hour/unit)	0.5598	0.0856	0.1899	0.2558
Total Pedestrian Trips – 930 units (ped/hour)	521	80	177	238
Anticipated Public Transport Demand of the Proposed Development (Passenger/Hour)				
MTR[(2)]	224	34	76	102
Public Light Bus / Franchised Bus[(2)]	219	34	74	100

Notes :

(1) Consultant's in-house trip rates surveyed from the private residential development Monaco One at the Kai Tak area.

(2) Based on the transport mode distribution of 43% for MTR and 42% for Public Light Bus and Franchised Bus as derived from the modal splits of Kowloon City area in 2021 Census.

5.5.2 As presented in **Table 5.8**, it is reviewed that the potential peak outbound demands of MTR and bus/GMB are some 200 passengers during the AM peak hour. In view of the Proposed Development is situated within a reasonable walking distance of 370m from the Sung Wong Toi and 570m from Kai Tak MTR stations, while there are also more than 60 nos. franchised bus routes and 10 nos. GMB routes providing services along Prince Road Edwards East and Concorde Road (i.e. Kai Tak PTI insider Airside) within the 500m walking distance from the Proposed Development, it is therefore anticipated that the Proposed Development can be well catered by the surrounding public transport services.

6. LONG TERM TRAFFIC FORECAST FOR NOISE IMPACT ASSESSMENT

6.1 Design year of NIA Study

6.1.1 Taking into consideration that the Proposed Development is planned to be completed by year 2029, design year of 2044 (completion year of the Proposed Development + 15 years) have been adopted for NIA study. The year 2044 peak hour traffic forecasts (solely used for NIA study of this project) together with the vehicle composition breakdown are summarized in **Appendix C**.

6.2 Methodology of Traffic Forecast for NIA Study

6.2.1 To derive the year 2044 long term traffic forecast data for the NIA study, the set of year 2032 design traffic flows as derived for TIA as discussed in **Section 4** is used as basis.

6.2.2 For the long-term traffic growth from year 2032 to 2044, reference was made to growth rates as derived from (i) the population projections from "Hong Kong Population Projection 2022 – 2069" as published by Census and Statistics Department.

6.2.3 Based on the population projections as presented in **Table 6.1**, it is derived that the annual growth rate of population in HKSAR from year 2032 to 2044 is about +0.34% p.a.

Table 6.1 Population Projections from "Hong Kong Population Projections 2020 – 2046"

Projected Population (thousand person)		Growth Rate (% p.a.)
2032	**2044**	**2032/2044**
7862.1	8,186.8	0.34%

6.2.4 The 2044 long term traffic forecasted flows are derived by applying a growth rate of 0.34% p.a. onto the year 2032 design traffic flows upto the future year 2044. The forecasted year 2044 traffic flows in passenger car unit (PCU) are listed in **Table A** of **Appendix C**.

6.2.5 To serve the NIA study purpose, the produced year 2044 traffic forecast were then converted from PCU to vehicles based on the PCU conversion factors as stipulated in TPDM and the composition of breakdown of vehicles from manual classified count surveys data. The PCU conversation factors are listed in **Table 6.2** below.

Table 6.2 Adopted Passenger Car Unit (PCU) Conversion Factors

Vehicle Type	PCU Factors[(1)]
Private Car / Taxi	1.0
Light Van	1.1
Light Goods Vehicle (LGV)	1.5
Medium Goods Vehicle (MGV)	2.0
Heavy Goods Vehicle (HGV)	2.5
Motorcycle	0.75
Light Bus	1.5
Special Purpose Bus	2.0
Bus	2.5
Tractor Unit	2.5

Notes: (1) Conversion factors stipulated in TPDM Vol.2 Ch.2.3 Table 2.3.1.1.

6.2.6 For the new/planned future road sections, i.e. Olympic Avenue, Dakota Drive, Muk Lai Street and Road L16, model PV/GV/Preload traffic flows in the LATM are also referred for converting the traffic forecasts from PCU to vehicles.

6.2.7 In the LATM, each road link would include the forecasted AM/PM peak traffic flows (in pcus/hr) of three categories namely Private Vehicle (PV), Goods Vehicle (GV) and Preload. For PV, it includes Motorcycle, Car, Taxi and Private Light Bus. For GV, it includes LGV, MGV and HGV. For Preload, it includes Public Light Bus, Non-Franchised Bus and Franchised Bus. Based on the vehicle compositions of traffic count surveys at the adjacent road sections, the PCU factors under the above three categories were derived. These derived PCU factors were adopted to convert the PV, GV and Preload LAM traffic flows from pcu unit into vehicle unit. The forecasted year 2044 traffic flows in vehicles for NIA are presented in **Table B** of **Appendix C**.

6.3 Vehicle Class

6.3.1 For NIA purpose, the vehicles with an unladen weight of 1,525kg should be categorized as heavy vehicles (HV). Therefore, HV percentage including the category of goods vehicle (GV) (comprise with light goods vehicle (LGV), medium/heavy goods vehicle (MGV/HGV) and container trucks) and the category of public transport (PT) (comprise with public light bus (PLB), non-franchised buses (SPB) and franchised buses (FB)) are adopted in accordance with the traffic noise impact assessment requirement.

6.3.2 With vehicle compositions derived for 2044 traffic forecasts as discussed **paragraphs 6.2.5 – 6.2.7**, the HV percentages for NIA are derived by grouping the vehicle types in accordance with the above NIA requirements. The derived HV percentages for NIA are also presented in **Table B** of **Appendix C**.

7. SUMMARY AND CONCLUSION

7.1 Summary

7.1.1 The Application Site is zoned "Comprehensive Development Area (4)" on the Approved Kai Tak Outline Zoning Plan No. S/K22/8. Under the Town Planning Ordinance, a section 16 planning application is required to be submitted by the Applicant to obtain permission from the Town Planning Board (TPB), for the Proposed Development.

7.1.2 In support of the S16 Application from a traffic engineering viewpoint, MVA was commissioned to conduct a TIA study for the Proposed Development.

7.1.3 The Proposed Development would be accessed from Olympic Avenue via Muk Lai Street, and the vehicular access would be located at Muk Lai Street in accordance with the X1,Y1,Z1 point as specified in the Lease of the lot. The internal transport facilities would also be provided in accordance with the relevant land sale conditions of the Application Site.

7.1.4 Based on the proposed development schedule, it was estimated that the Proposed Development would generate and attract about 81 pcu/hr and 55 pcu/hr in the AM peak hour and generate and attract about 46 pcu/hr and 56 pcu/hr in the PM peak hour respectively.

7.1.5 To appraise the existing traffic condition, traffic count surveys were conducted in the surrounding road network. The existing operational performance of the critical junctions was assessed with the observed traffic flows, and the assessment results revealed that all critical junctions were operating within capacities.

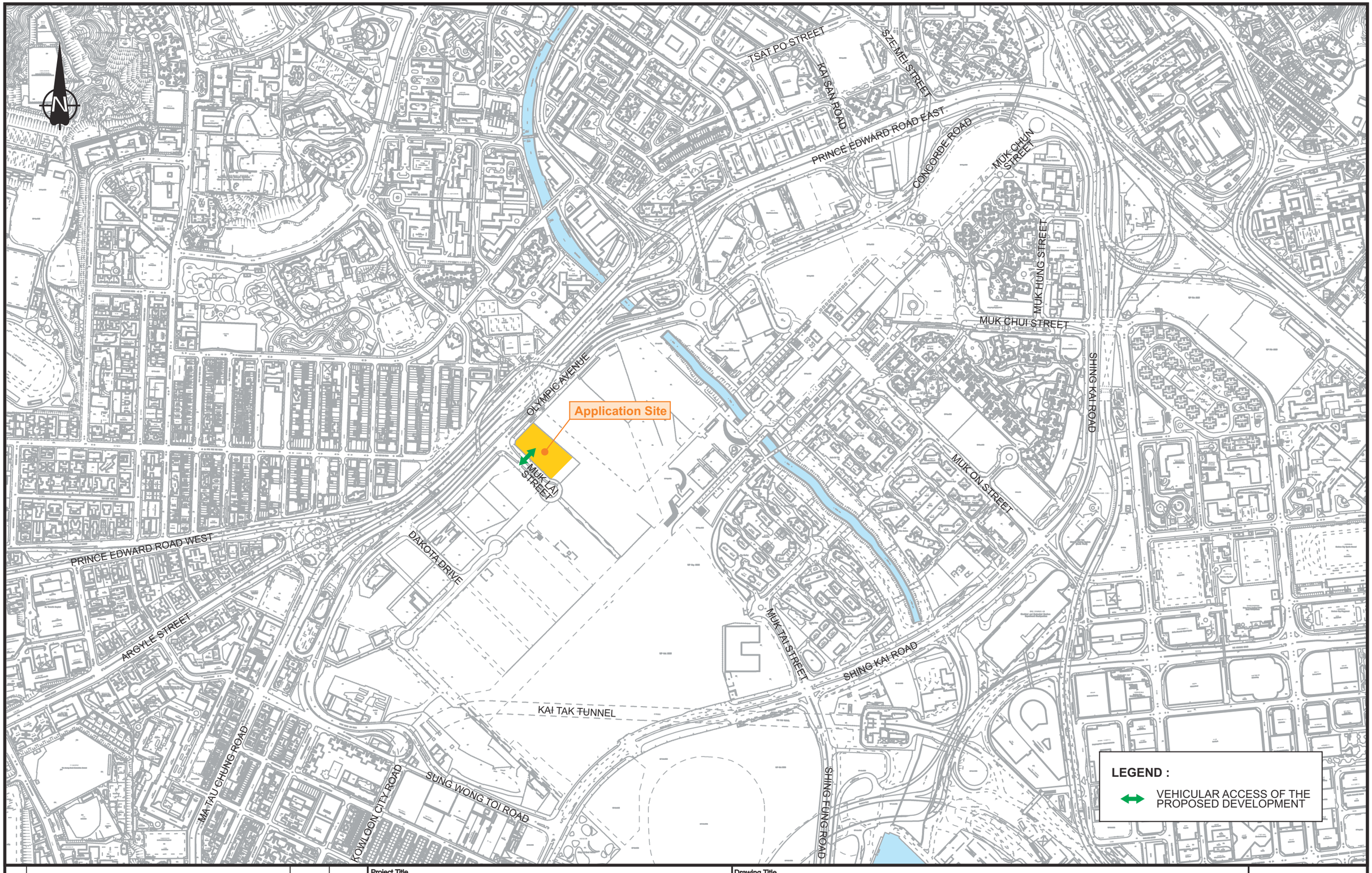
7.1.6 In view of the Proposed Development was planned to be completed by year 2029, Year 2032 (i.e. 3 years after completion of the Proposed Development) was adopted as the design year for assessments in this TIA study.

7.1.7 A local area traffic model was developed, and it was demonstrated that the base year traffic model satisfactorily replicates the year 2024 traffic conditions and was able to provide a robust basis for the development of design year traffic models to facilitate traffic forecasting. Design year 2032 traffic forecast were then developed from the validated base year LATM, zonal growth factor derived from 2019 – based TPEDM and future year 2031 BDTM.

7.1.8 Assessment of operational performance of the critical junctions revealed that all the key access junctions would be operating within capacity during the AM and PM peak periods under both the reference scenario and design scenario in the design year 2032 by taking into account the future junction improvement schemes at Junction E (Shing Kai Road / Muk Chui Street), Junction I (To Kwa Wan Road / Sung Wong Toi Road), Junction R (Olympic Avenue / Dakota Drive) and Junction S (Olympic Avenue / Muk Lai Street) which to be implemented either by CEDD or under the project of Public Housing Development at Wang Chiu Road and the adjacent public housing and subsidised housing projects.

7.2 Conclusion

7.2.1 In conclusion, the traffic impact assessment has demonstrated that the traffic generated by the proposed developments can be absorbed by the nearby future road network and would not cause any adverse traffic impact. Hence it can be concluded that the proposed developments are acceptable in traffic terms.



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

SITE LOCATION

Designed	Checked	Scale	Date	Drawing No.	Rev.
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SYSTRA MVA

CHK50786310/TIA/F21.CDR/LLH/6JUN24

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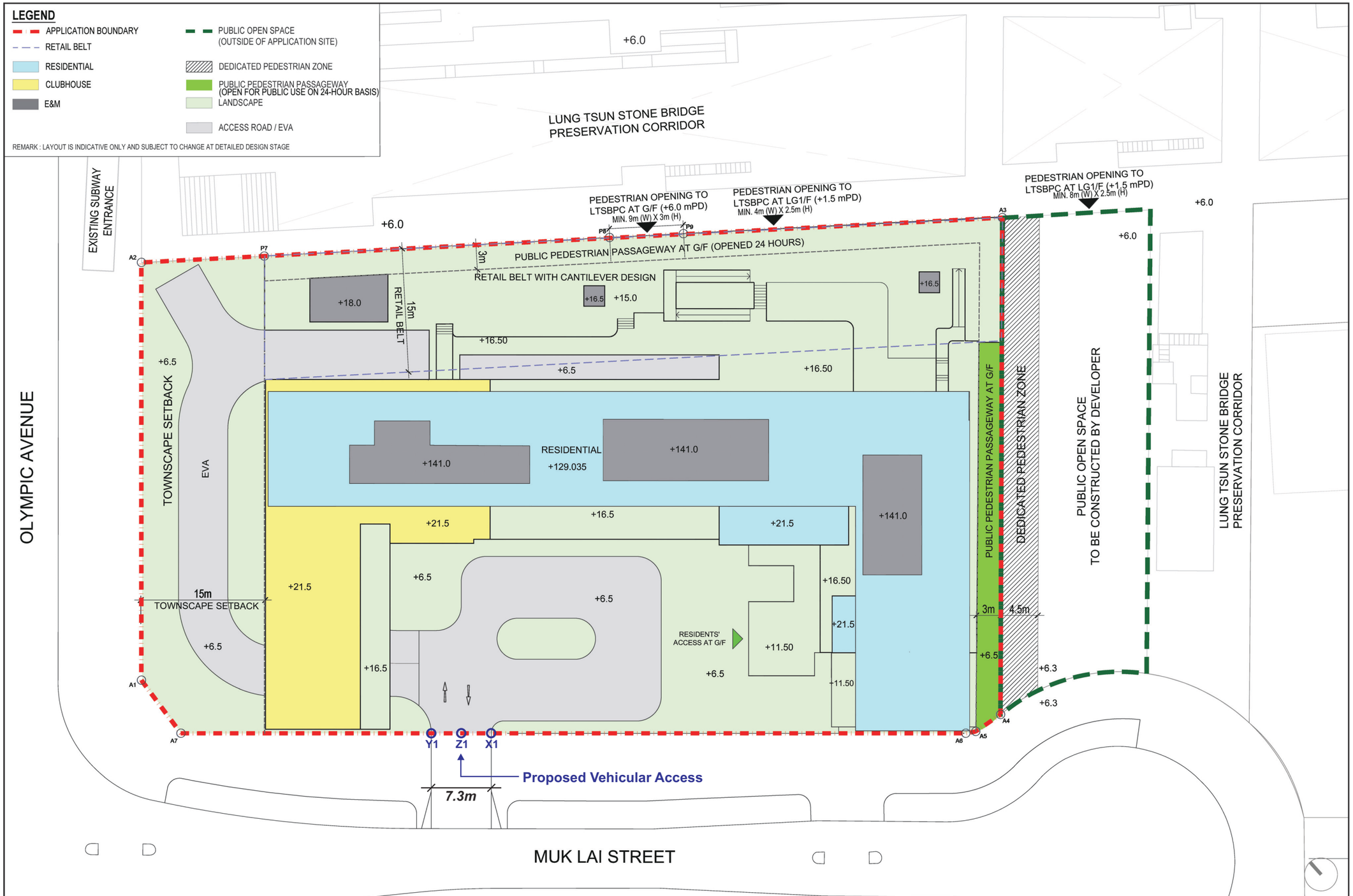

Project	PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON
Job No.	01864
Drawing Title	MASTER LAYOUT PLAN
Drawing No.	MLP-01
Revision No.	B
Scale	1:400
Date	6 Jun 2024

LWK +PARTNERS

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

MASTER LAYOUT PLAN

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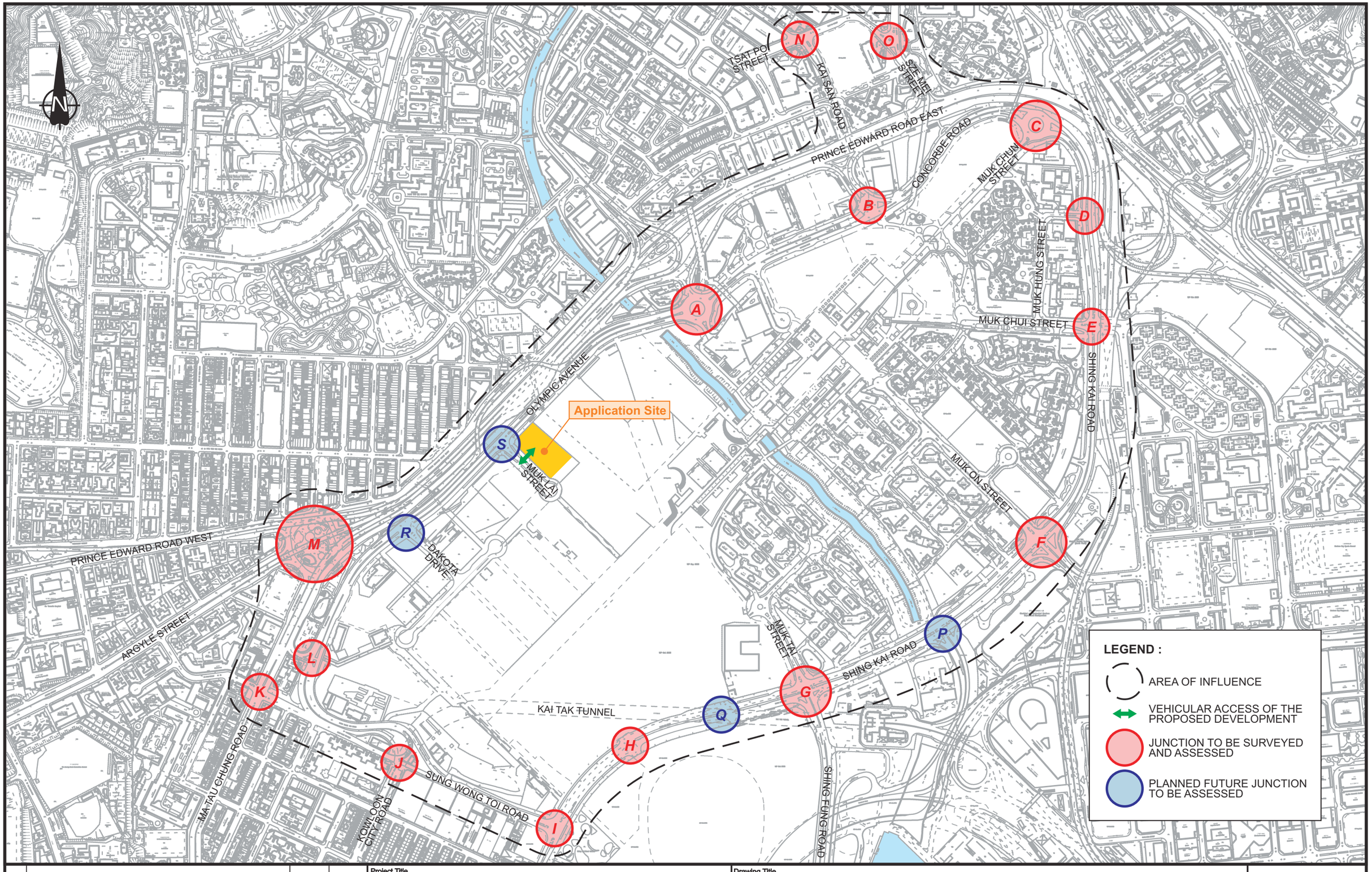
SYSTRA MVA



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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

EXISTING ROAD NETWORK AND KEY JUNCTIONS TO BE ASSESSED

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	3.1	-

SYSTRA MVA

CHK50786310/TIA/F31.CDR/LLH/6JUN24

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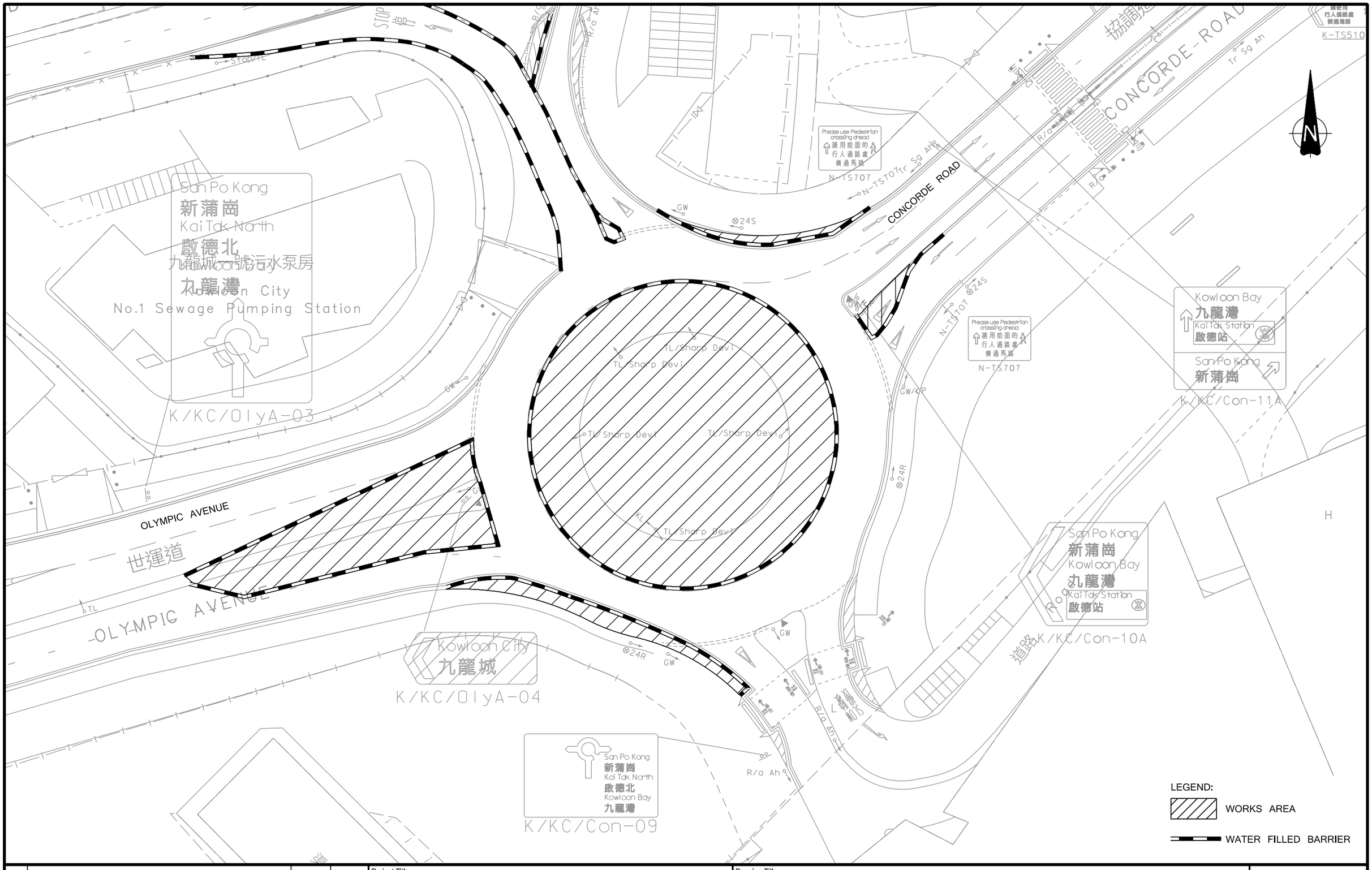

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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF SLIP ROAD OF PRINCE EDWARD ROAD EAST (KOWLOON CITY) / OLYMPIC AVENUE / CONCORDE ROAD (JUNCTION A)

Designed	Checked	Scale	Date	Drawing No.	Rev.
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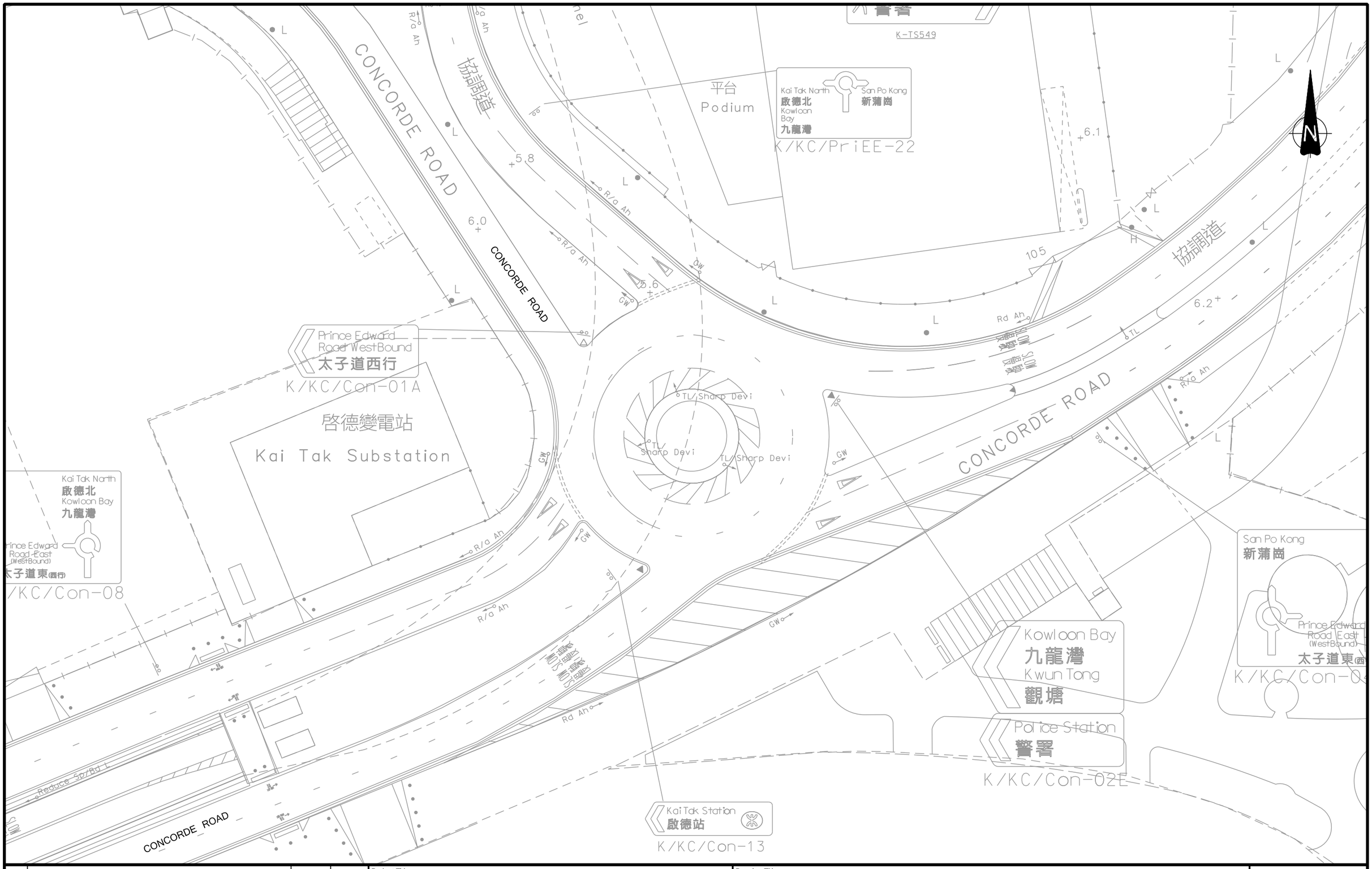
SYSTRA MVA

CHK50786310/TIA/F32.DGN/TKH/06JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

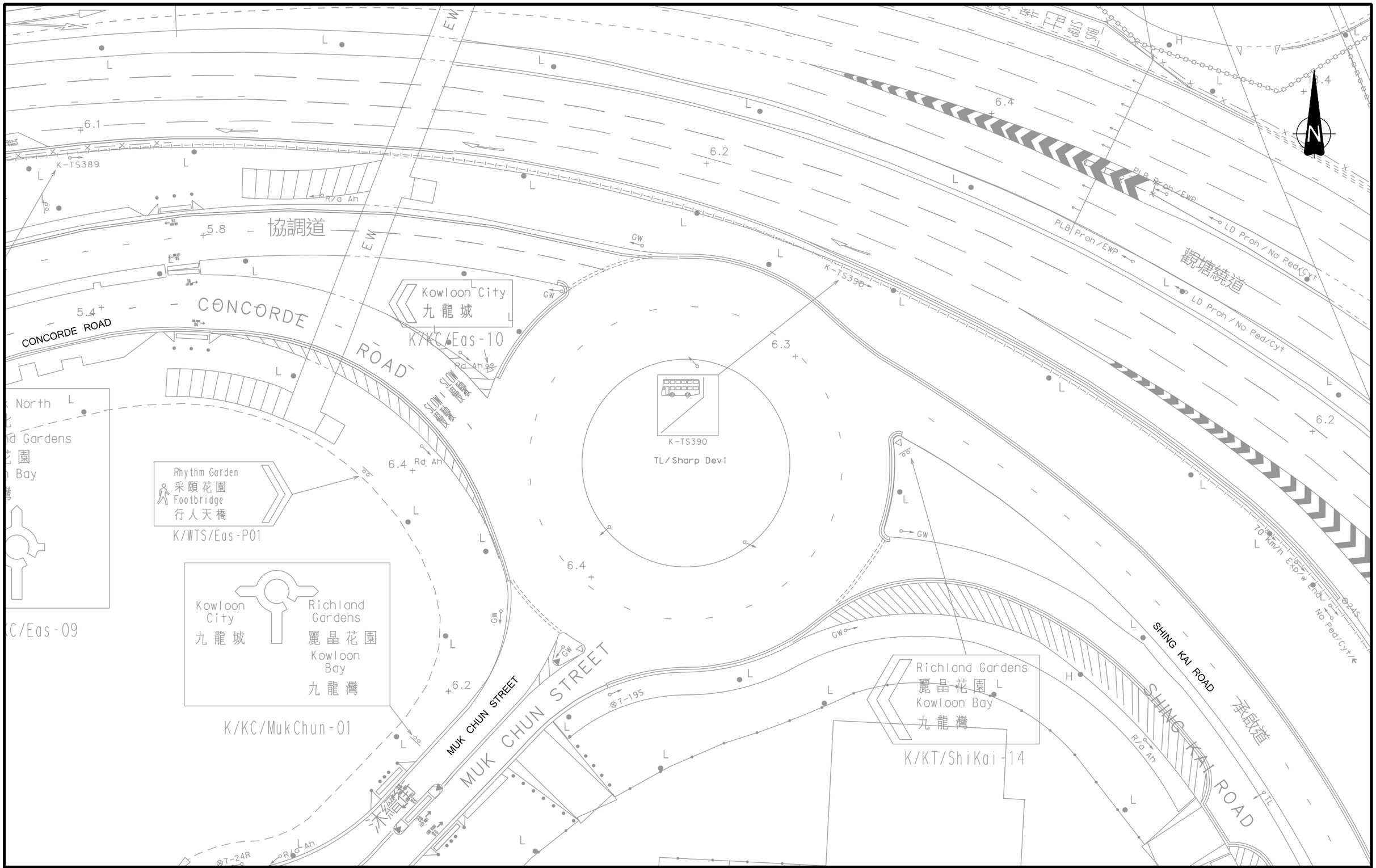
EXISTING JUNCTION LAYOUT OF PRINCE EDWARD ROAD EAST (SAU PO KONG) / CONCORDE ROAD (JUNCTION B)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.3	-

SYSTRA MVA

CHK50786310/TIA/F33.DGN/TKH/06JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

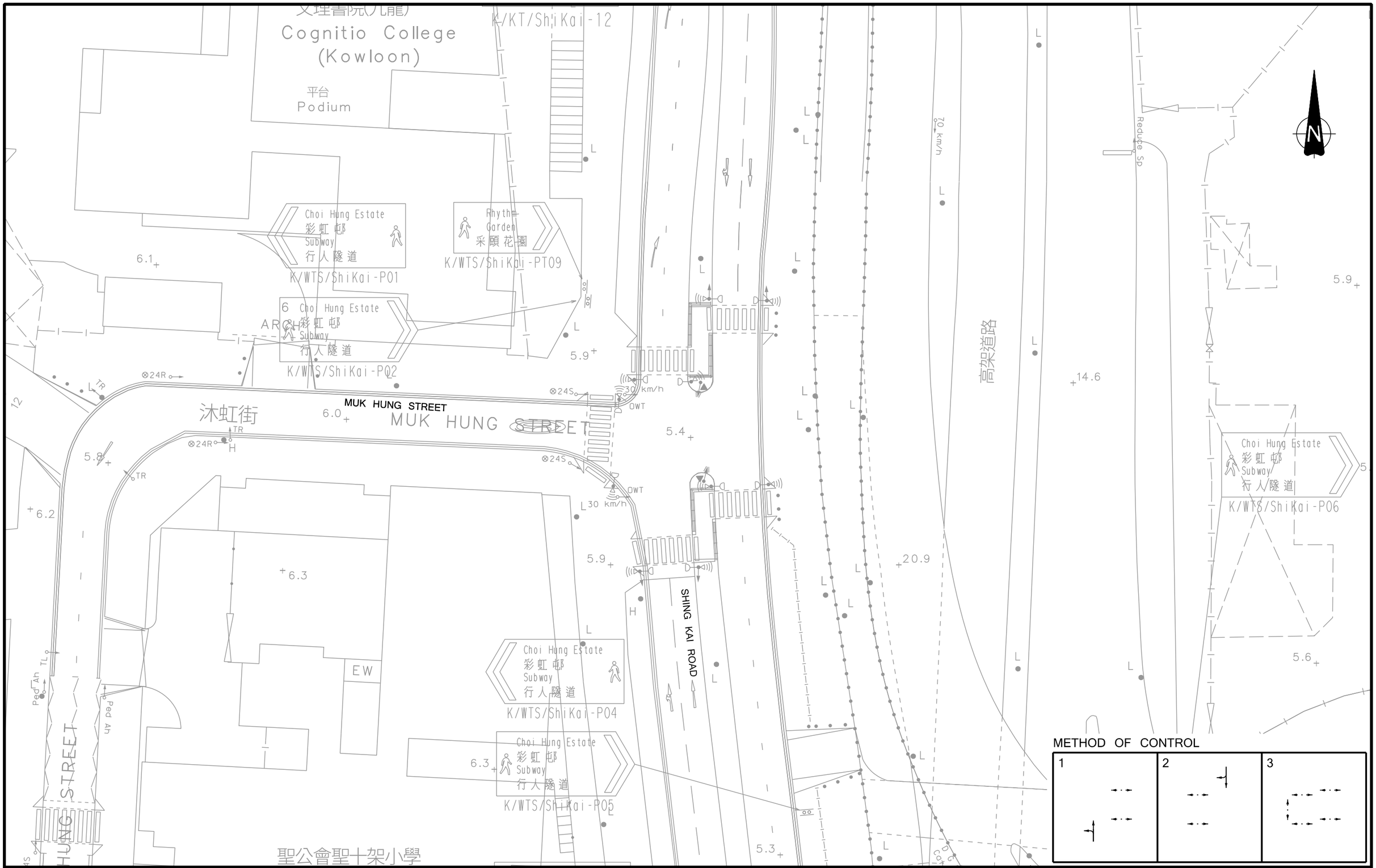
Drawing Title

EXISTING JUNCTION LAYOUT OF SHING KAI ROAD / CONCORDE ROAD / MUK CHUN STREET (JUNCTION C)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.4	-

CHK50786310/TIA/F34.DGN/TKH/06JUN24

Original Size : A3



METHOD OF CONTROL

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF SHING KAI ROAD / MUK HUNG STREET (JUNCTION D)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.5	-

SYSTRA MVA

CHK50786310/TIA/F35.DGN/TKH/06JUN24

Original Size : A3

保良局何壽南小學 K/KT/ShiKai-09

Po Leung Kuk Stanley Ho Sau Nan Primary School

K/WTS/ShiKai-PT10

Rhythm Garden 采頤花園

Richland Garden 麗晶花園 K/WTS/ShiKai-PT11

Richland Garden 麗晶花園 K/WTS/ShiKai-PT12

Richland Gardens 麗晶花園 K/KT/MukChui-01

Kowloon City 九龍城 K/KT/MukChui-02

Richland Gardens 麗晶花園 K/KT/ShiKai-08

Kowloon City 九龍城 K/KT/MukChui-03

Kowloon Bay 九龍灣 K/KT/MukChui-05

Kowloon Bay 九龍灣 K/KT/MukChui-04

Tak Long Estate 德朗邨 Kai Tak Station 啟德站

晴朗商場

Ching Long Shopping Centre

Choi Hung Estate 彩虹邨 Subway 行人隧道 K/WTS/ShiKai-P07

Richland Garden 麗晶花園 K/WTS/ShiKai-PT13

Choi Hung Estate 彩虹邨 Subway 行人隧道 K/WTS/ShiKai-P08

KWUN TONG BYPASS

MUK CHUI STREET

WANG CHIU ROAD

SHING KAI ROAD

PLB Proh/ LD Proh/

BUS ONLY

第七座 Block 7

METHOD OF CONTROL

1 2 3 4

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF SHING KAI ROAD / MUK CHUI STREET (JUNCTION E)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.6	-

CHK50786310/TIA/F36.DGN/TKH/06JUN24

Original Size : A3

MUK ON STREET

SHING KAI ROAD

KAI SHING STREET

Kowloon City 九龍城
K/KT/MukOn-02

Kowloon City 九龍城
K/KT/MukOn-01

Muk On Street 沐安街
K/KT/ShiKai-28

Kai Tak Station 啟德站
K/KT/ShiKai-04C

Muk On Street 沐安街
K/KT/ShiKai-26

Kowloon Bay 九龍灣
K/KT/ShiKai-03

Kowloon Bay 九龍灣
K/KT/ShiKai-05

To Kwa Wan 土瓜灣
K/KT/KaiShi-05

Muk On Street 沐安街
K/KT/ShiKai-29

Kowloon City 九龍城
Kai Tak Station 啟德站
Kowloon Bay 九龍灣
K/KT/ShiKai-01B

Muk On Street 沐安街
K/KT/KaiShi-08

Muk On Street 沐安街
K/KT/ShiKai-27

Tak Long Estate 德朗邨
To Kwa Wan 土瓜灣
K/KT/KaiShi-04

承啟道
垃圾收集站

道路

TS

NUT

METHOD OF CONTROL

1 2 3 4

Kai Tak District Cooling System (North Plant)

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF SHING KAI ROAD / KAI SHING STREET / MUK ON STREET (JUNCTION F)

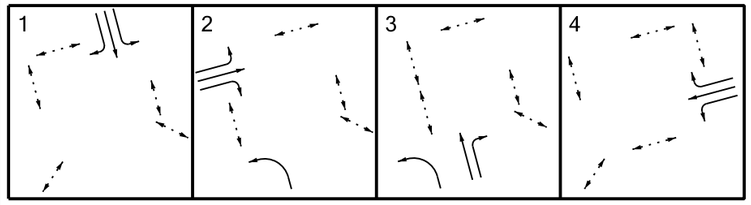
Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.7	-

SYSTRA MVA

CHK50786310/TIA/F37.DGN/TKH/06JUN24

Original Size : A3

EXISTING METHOD OF CONTROL



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF SHING KAI ROAD / SHING FUNG ROAD / MUK TAI STREET (JUNCTION G)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.8	-

CHK50786310/TIA/F38.DGN/TKH/06JUN24

Original Size : A3

SHING KAI ROAD

承啟道

WIP Oct 2023

LEGEND:

WORKS AREA

WATER FILLED BARRIER

EXISITNG METHOD OF CONTROL

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Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

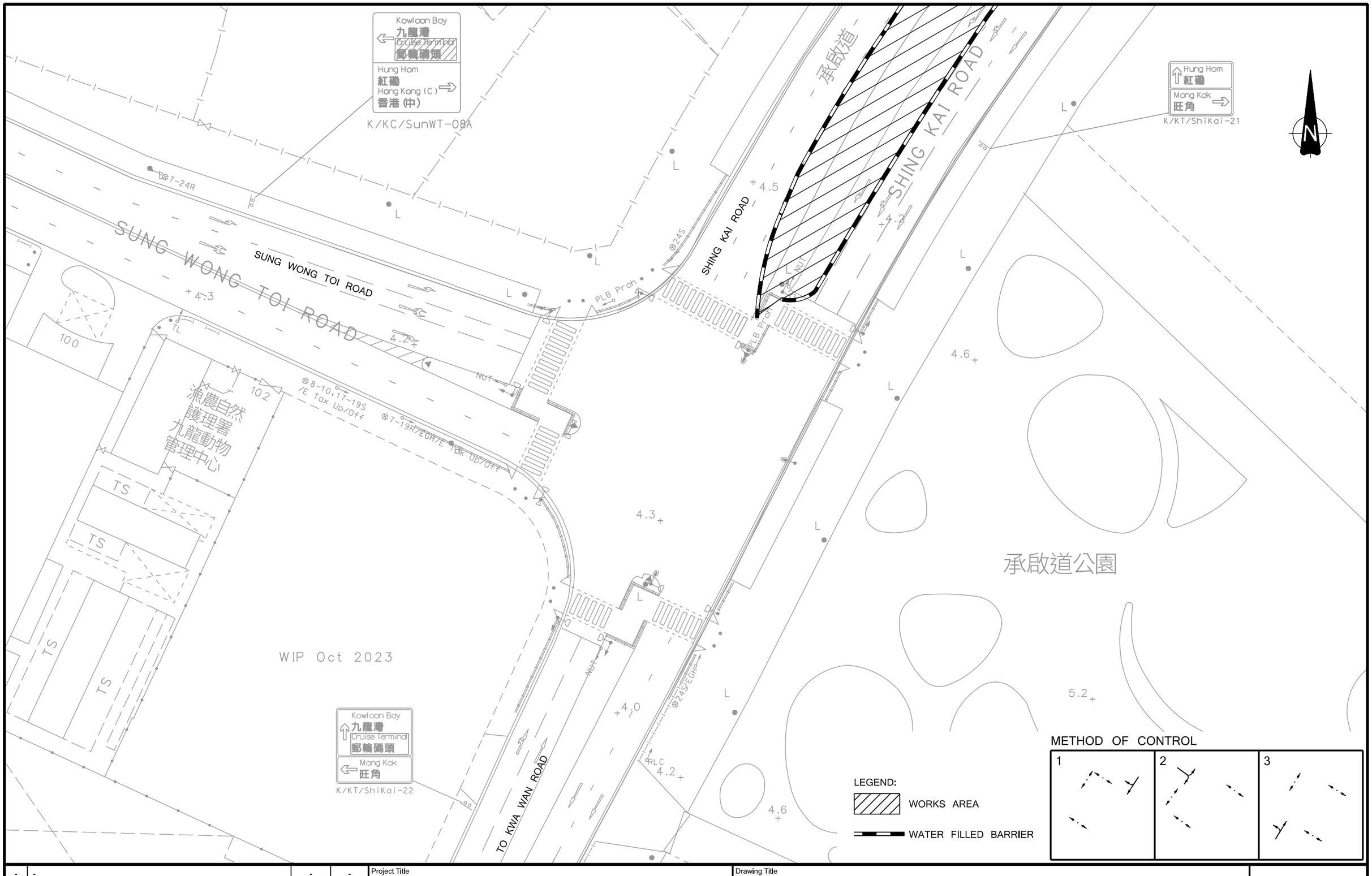
EXISTING JUNCTION LAYOUT OF SHING KAI ROAD / WESTERN ACCESS TO MAIN STADIUM (JUNCTION H)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	**3.9**	-

SYSTRA MVA

CHK50786310/TIA/F39.DGN/TKH/06JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

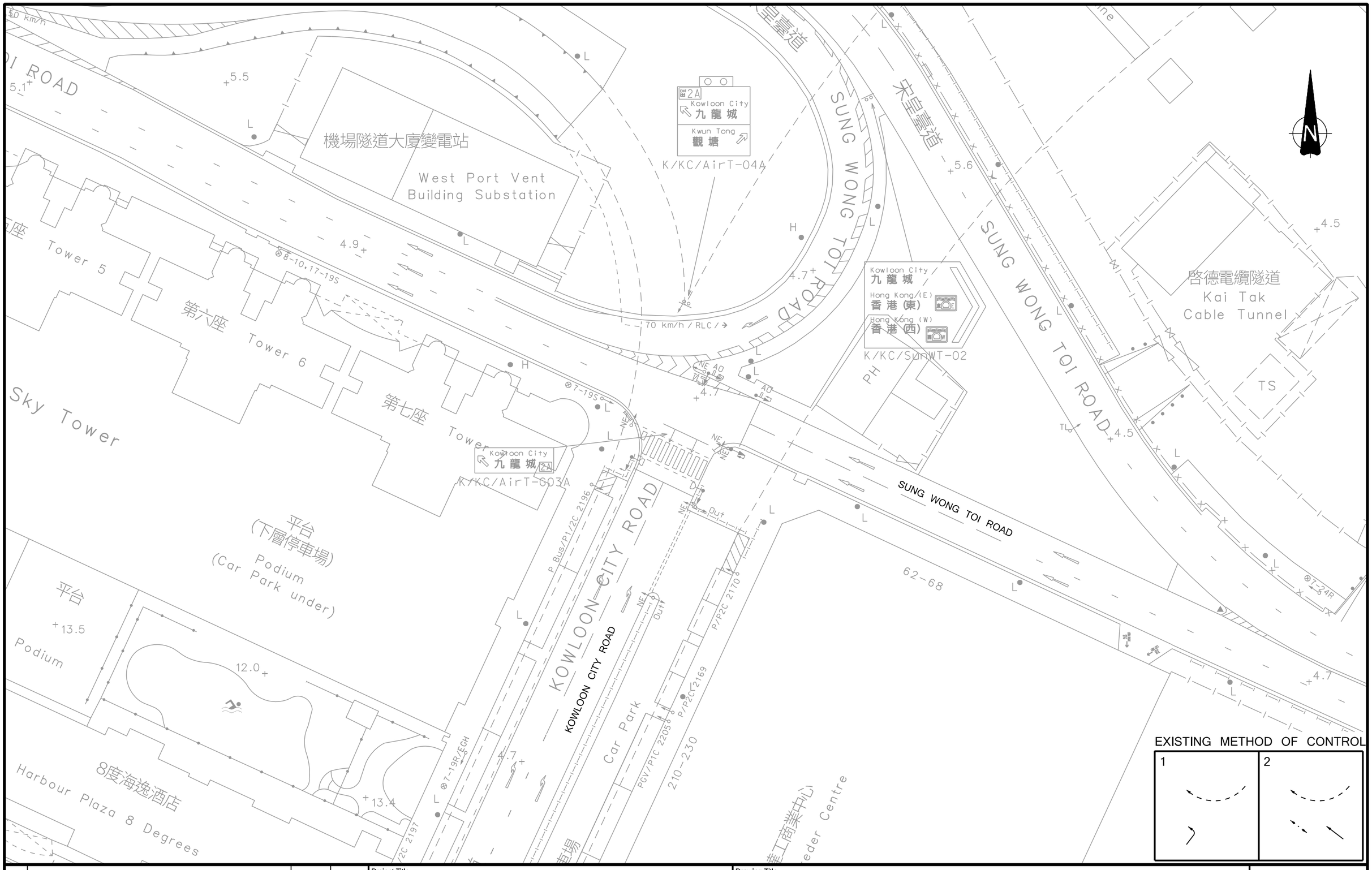
EXISTING JUNCTION LAYOUT OF TO KWA WAN ROAD / SHING KAI ROAD / SUNG WONG TOI ROAD (JUNCTION I)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.10	-

SYSTRA MVA

CHK50786310/TIA/F310.DGN/TKH/06JUN24

Original Size : A3



EXISTING METHOD OF CONTROL

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF KOWLOON CITY ROAD / SUNG WONG TOI ROAD (JUNCTION J)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.11	-

SYSTRA MVA

CHK50786310/TIA/F311.DGN/TKH/06JUN24

Original Size : A3

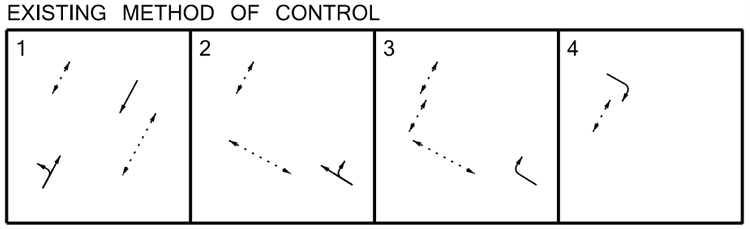
聖公會聖三一堂小學
S.K.H. Holy Trinity Primary School
至真樓
Chi Chun Lau
To Mong Kok
往旺角
K/KC/FUN-T02
錦華大廈
Kam Wah Building
111-127
馬頭涌道
盛德街休憩處
馬頭涌消防局
Ma Tau Chung Fire Station
香港扶幼會 滙豐銀行慈善基金 讀寫發展中心
九龍婦女福利會幼稚園
Kowloon Women's Welfare Club Nursery School
香港保護兒童會
Hong Kong Society for the Protection of Children
霞光醫務所
Emmanuel Medical Mission
香港家庭計劃指導會
The Family Planning Association of Hong Kong
福桃樓
MA TAU CHUNG ROAD
SHING TAK STREET
SUNG WONG TOI ROAD
宋皇臺道
Sung Wong Toi Garden
宋王臺花園
Mong Kok & Kowloon City
旺角及九龍城
San Po Kong, Sha Tin, Kwun Tong & Hong Kong (E)
新蒲崗, 沙田, 觀塘及香港(東)
K/KC/MaTC-G01
Olympic Avenue
世運道
K/KC/SunWT-06
Sung Wong Toi Station
宋皇臺站
K/KC/SunWT-05A
K-TS597
LD Prohibited
AMV Prohibited/E Bus
EGH/E Tax Up/Off
7-19R/EGH/E Tax Up/Off
7-19R/EGH/TR
8-10,17-19S
Tr Sg Ah/Reduce Sp
7-19R/EGH/E Tax Up/Off
Disable v
Ch'Td/Sch
End
PMC
PH
NAO
AO
CW
EW
NET
RLC
TWT

LEGEND:

WORKS AREA

WATER FILLED BARRIER

EXISTING METHOD OF CONTROL



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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF MA TAU CHUNG ROAD / SUNG WONG TOI ROAD / FU NING STREET (JUNCTION K)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.12	-

SYSTRA MVA

CHK50786310/TIA/F312.DGN/TKH/06JUN24

Original Size : A3

OLYMPIC AVENUE

HANG WAN ROAD

MA TAU CHUNG ROAD

Basketball Court

Hong Kong
香港
K/KC/OlyA-01

Mong Kok & Kowloon City
旺角及九龍城
K/KC/MaTC-G01

San Po Kong, Sha Tin, Kwun Tong & Hong Kong (E)
新蒲崗，沙田，觀塘及香港（東）

K-TS597

TS597

LEGEND:

WORKS AREA

WATER FILLED BARRIER

EXISTING METHOD OF CONTROL

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		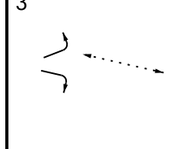

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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

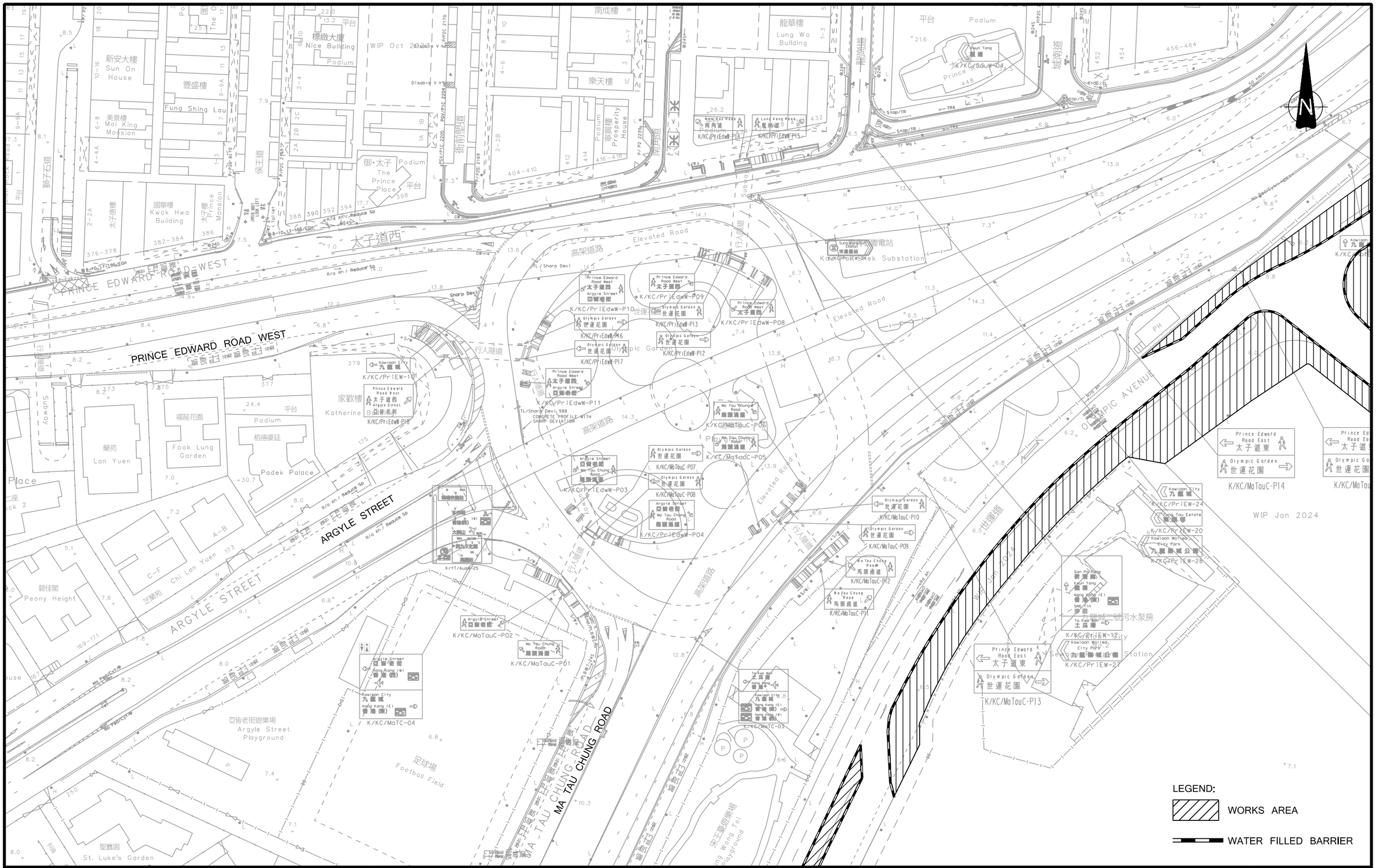
Drawing Title

EXISTING JUNCTION LAYOUT OF OLYMPIC AVENUE / HANG WAN ROAD (JUNCTION L)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	**3.13**	-

CHK50786310/TIA/F313.DGN/TKH/06JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

EXISTING JUNCTION LAYOUT OF PRINCE EDWARD ROAD EAST / PRINCE EDWARD ROAD WEST / MA TAU CHUNG ROAD / ARGYLE STREET (JUNCTION M)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:1000(A3)	JUN 2024	3.14	-

SYSTRA MVA

CHK50786310/TIA/F314.DGN/TKH/06JUN24

Original Size : A3

PAT TAT STREET

TSAT PO STREET

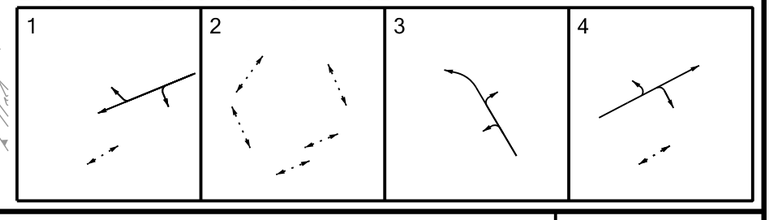
KAI SAN ROAD

Kai Tak Station
啟德站

K/KC/TsaP-01A

WIP Aug 2023

EXISTING METHOD OF CONTROL



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

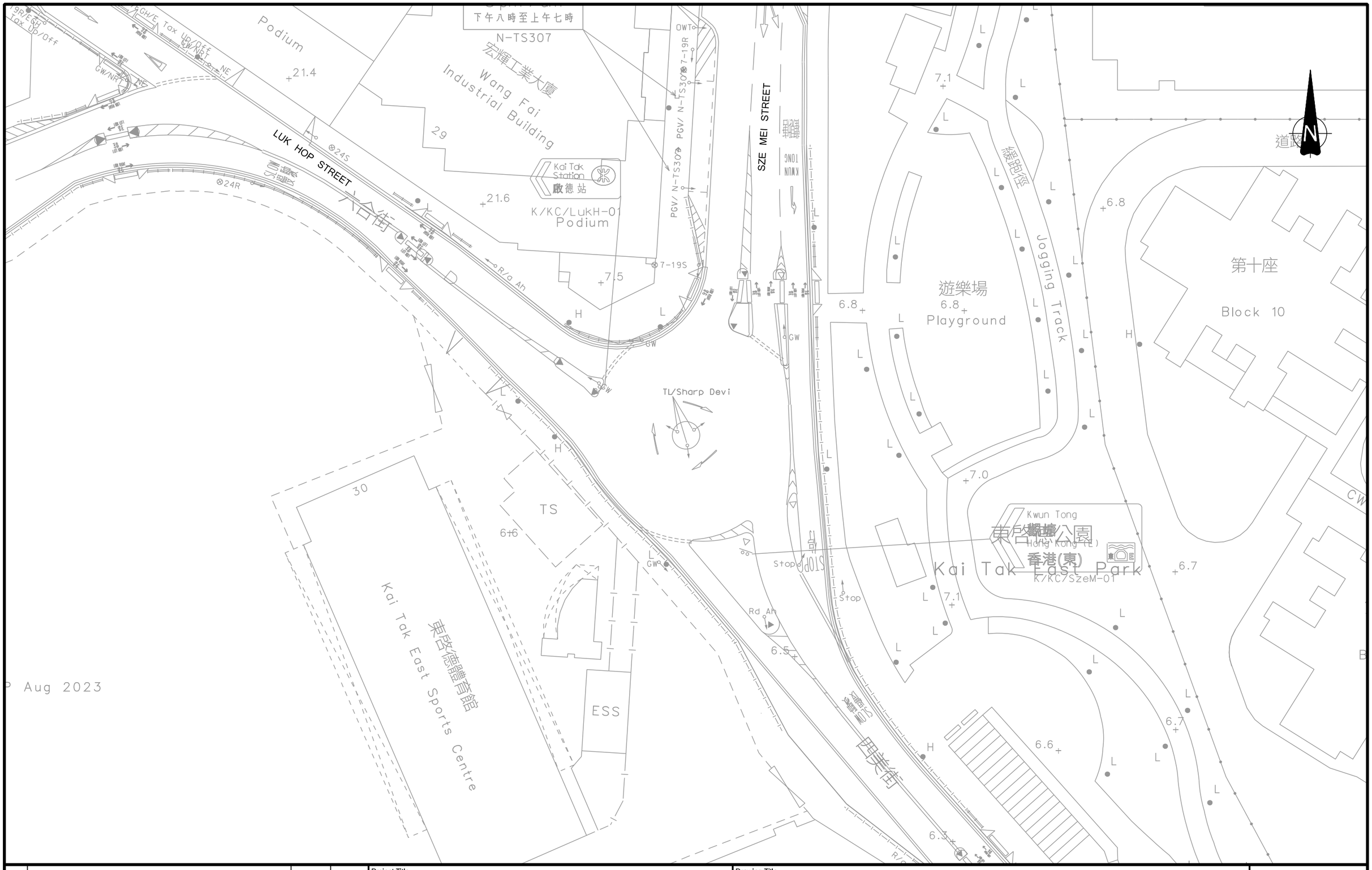
EXISTING JUNCTION LAYOUT OF KAI SAN ROAD / TSAT PO STREET / PAT TAT STREET (JUNCTION N)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.15	-

SYSTRA MVA

CHK50786310/TIA/F315.DGN/TKH/06JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

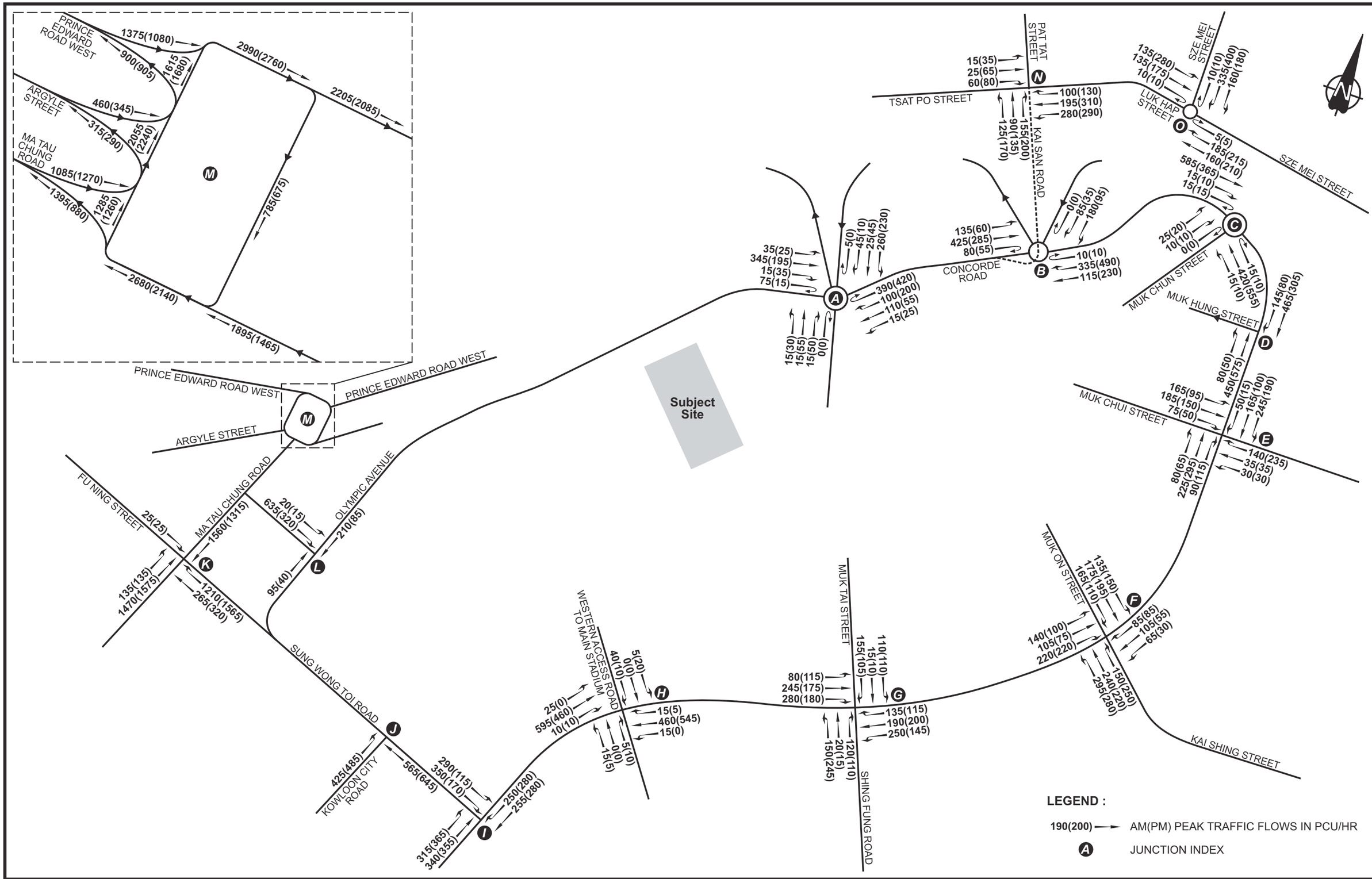
EXISTING JUNCTION LAYOUT OF SZE MEI STREET / LUK HOP STREET (JUNCTION O)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	3.16	-

SYSTRA MVA

CHK50786310/TIA/F316.DGN/TKH/06JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

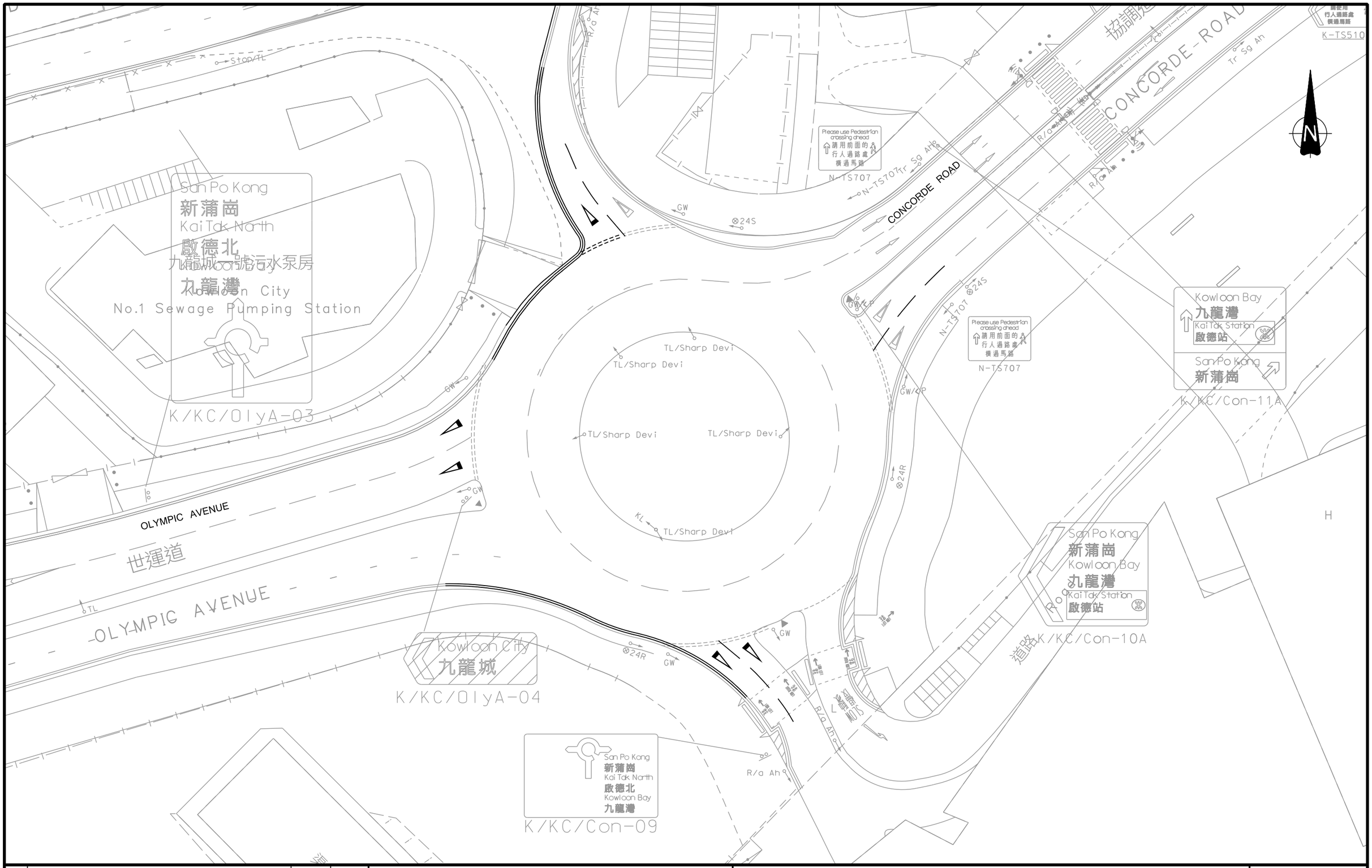
YEAR 2024 OBSERVED TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	3.17	-

SYSTRA MVA

CHK50786310/TIA/F317.CDR/LLH/5JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

FUTURE JUNCTION LAYOUT OF SLIP ROAD OF PRINCE EDWARD ROAD EAST (KOWLOON CITY) / OLYMPIC AVENUE / CONCORDE ROAD (JUNCTION A)

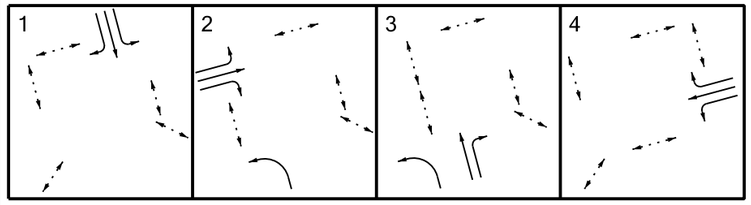
Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	4.1	-

SYSTRA MVA

CHK50786310/TIA/F41.DGN/TKH/06JUN24

Original Size : A3

METHOD OF CONTROL



MUK TAI STREET

SHING KAI ROAD

SHING FUNG ROAD

承啟道

ESS

TS

KAI TAK TUNNEL

WIP Jun 2023

Kowloon Bay 九龍灣
Cruise Terminal 郵輪碼頭
K/KT/ShiKai-18

Te Kwa Wan 土瓜灣
Cruise Terminal 郵輪碼頭
K/KT/ShiKai-18

NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

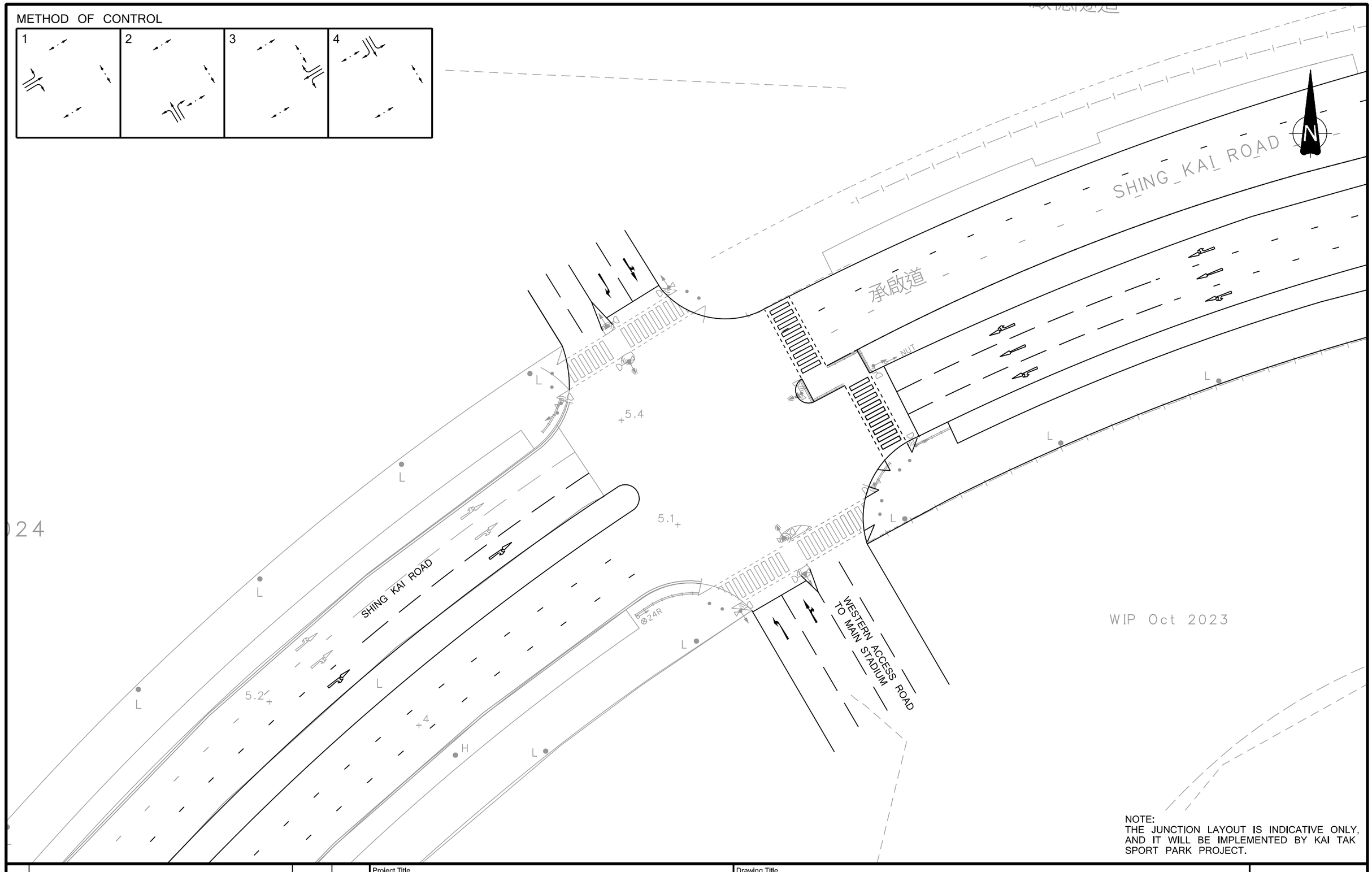
FUTURE JUNCTION LAYOUT OF SHING KAI ROAD / SHING FUNG ROAD / MUK TAI STREET (JUNCTION G)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	4.2	-

CHK50786310/TIA/F42.DGN/TKH/06JUN24

Original Size : A3

METHOD OF CONTROL



NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY, AND IT WILL BE IMPLEMENTED BY KAI TAK SPORT PARK PROJECT.

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

FUTURE JUNCTION LAYOUT OF SHING KAI ROAD / WESTERN ACCESS TO MAIN STADIUM (JUNCTION H)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	**4.3**	-

SYSTRA MVA

CHK50786310/TIA/F43.DGN/TKH/06JUN24

Original Size : A3

Kowloon Bay
九龍灣
Cruise Terminal
郵輪碼頭
Hung Hom
紅磡
Hong Kong (C)
香港 (中)
K/KC/SunWT-08A

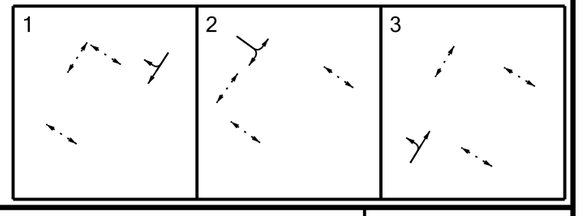
Hung Hom
紅磡
Mong Kok
旺角
K/KT/ShiKai-21

SUNG WONG TOI ROAD
SHING KAI ROAD
承啟道
PLB Prohibited
NUT
RLC
TS
100
102
漁農自然護理署
九龍動物管理中心
WIP Oct 2023
TO KWA WAN ROAD
承啟道公園
Shing

Kowloon Bay
九龍灣
Cruise Terminal
郵輪碼頭
Mong Kok
旺角
K/KT/ShiKai-22

NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

METHOD OF CONTROL



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

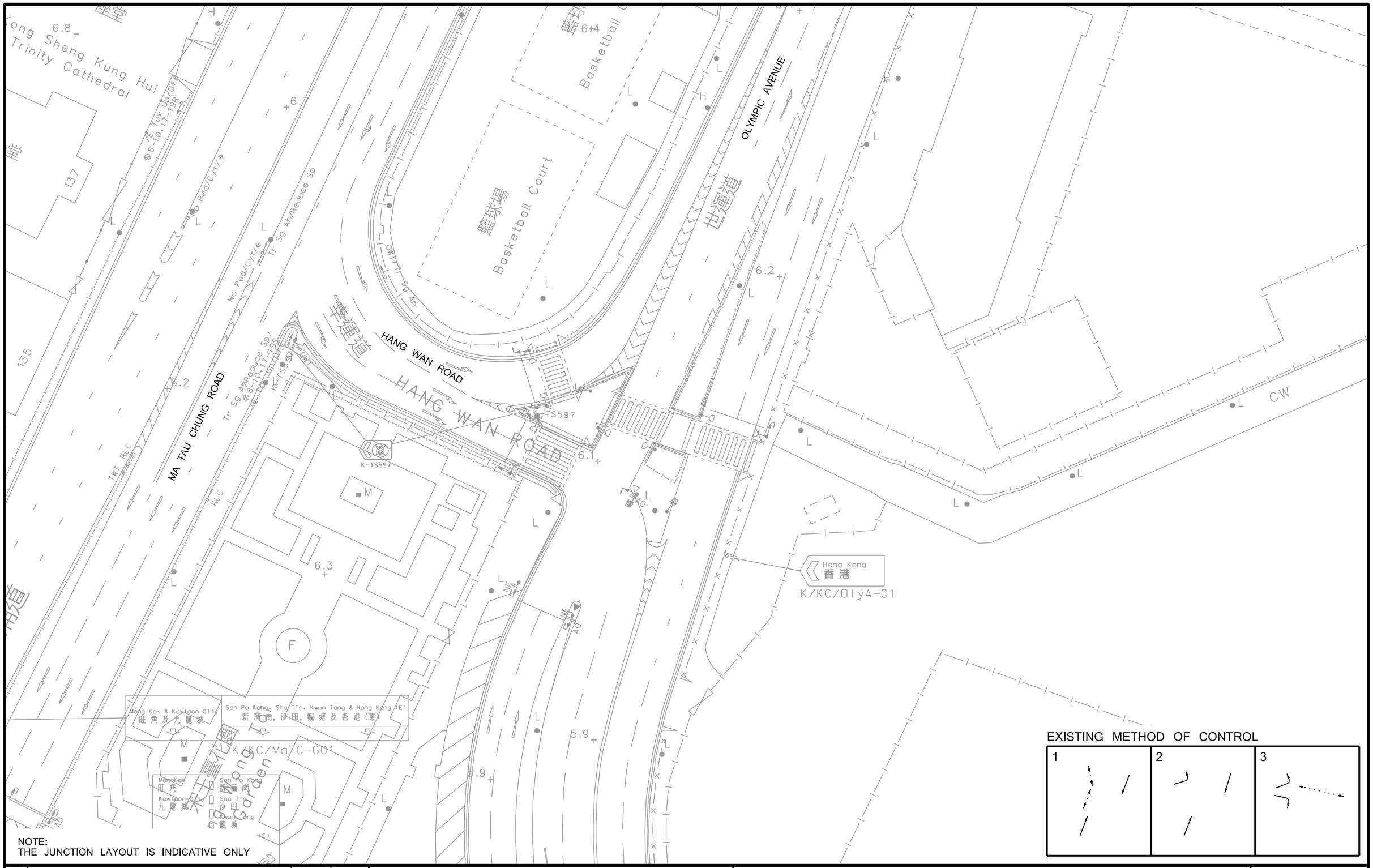
FUTURE JUNCTION LAYOUT OF TO KWA WAN ROAD / SHING KAI ROAD / SUNG WONG TOI ROAD (JUNCTION I)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	4.4	-

SYSTRA MVA

CHK50786310/TIA/F44.DGN/TKH/06JUN24

Original Size : A3



NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

EXISTING METHOD OF CONTROL

1	2	3

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

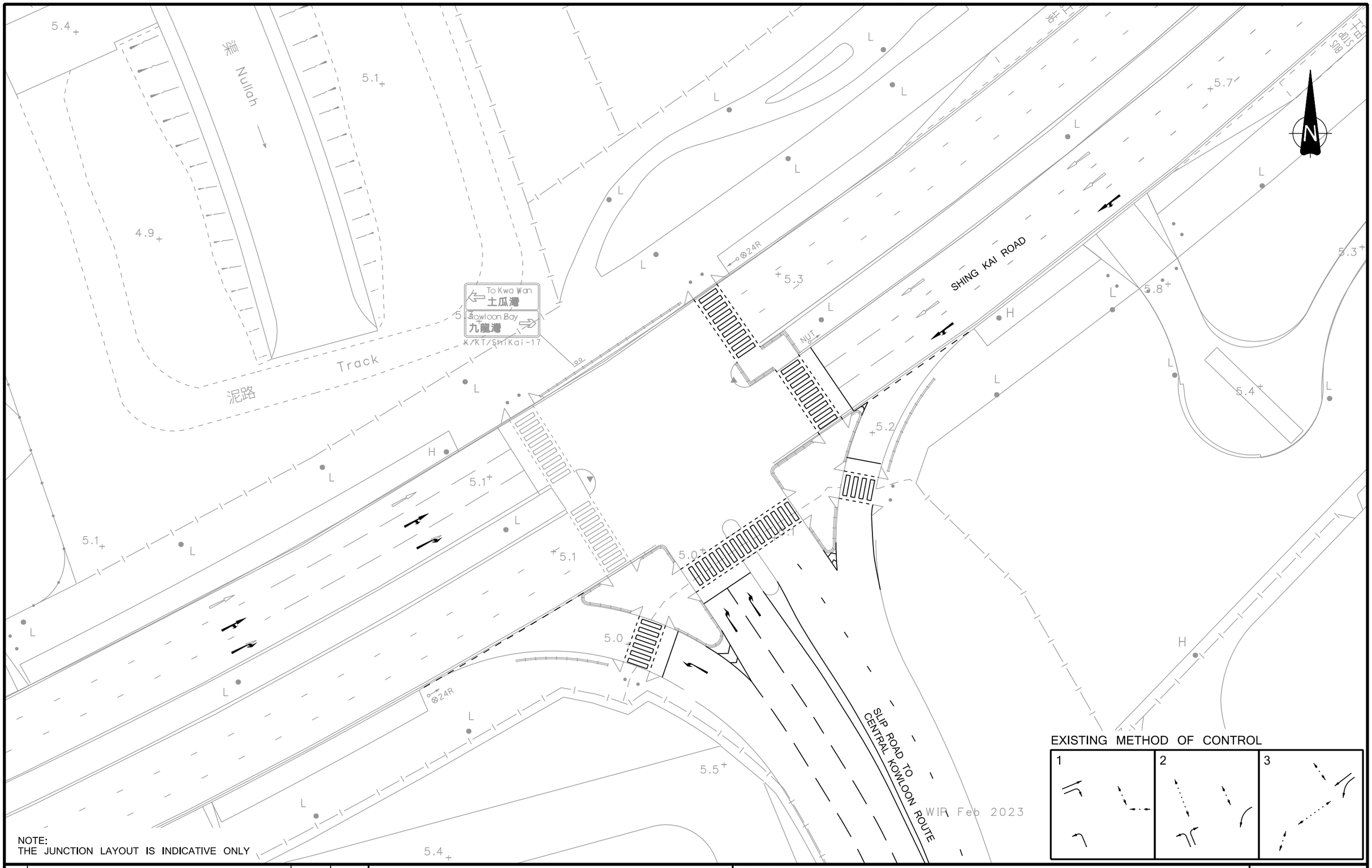
FUTURE JUNCTION LAYOUT OF OLYMPIC AVENUE / HANG WAN ROAD (JUNCTION L)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	**4.5**	-

SYSTRA MVA

CHK50786310/TIA/F45.DGN/TKH/06JUN24

Original Size : A3



NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

EXISTING METHOD OF CONTROL

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

FUTURE JUNCTION LAYOUT OF SHING KAI ROAD / PROPOSED SLIP ROAD TO CENTRAL KOWLOON ROUTE (JUNCTION P)

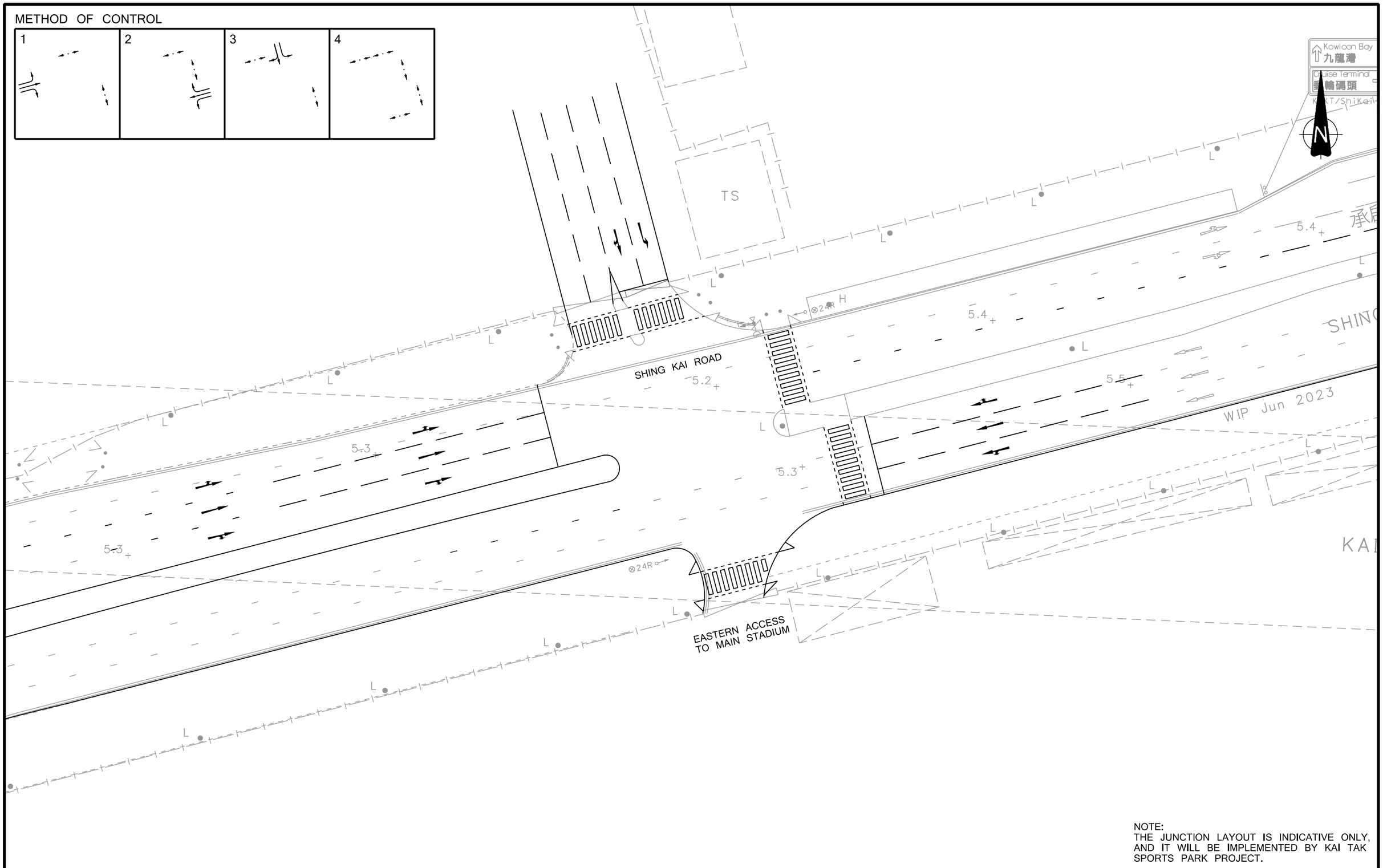
Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	**4.6**	-

SYSTRA MVA

CHK50786310/TIA/F46.DGN/TKH/06JUN24

Original Size : A3

METHOD OF CONTROL



NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY, AND IT WILL BE IMPLEMENTED BY KAI TAK SPORTS PARK PROJECT.

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

FUTURE JUNCTION LAYOUT OF SHING KAI ROAD / EASTERN ACCESS TO MAIN STADIUM (JUNCTION Q)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	4.7	-

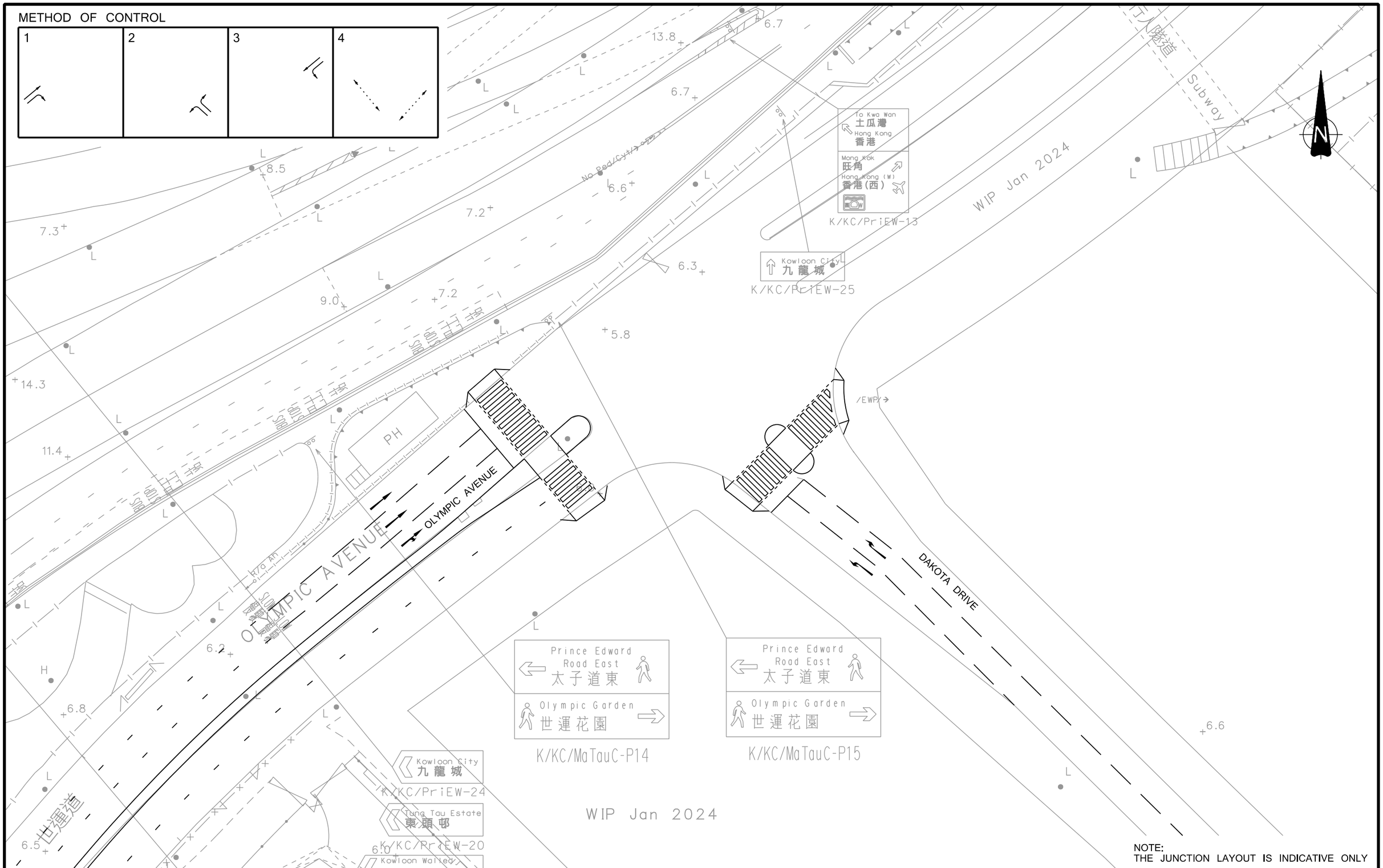
SYSTRA MVA

CHK50786310/TIA/F47.DGN/TKH/06JUN24

Original Size : A3

METHOD OF CONTROL

1	2	3	4



NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

FUTURE JUNCTION LAYOUT OF OLYMPIC AVENUE / DAKOTA DRIVE (JUNCTION R)

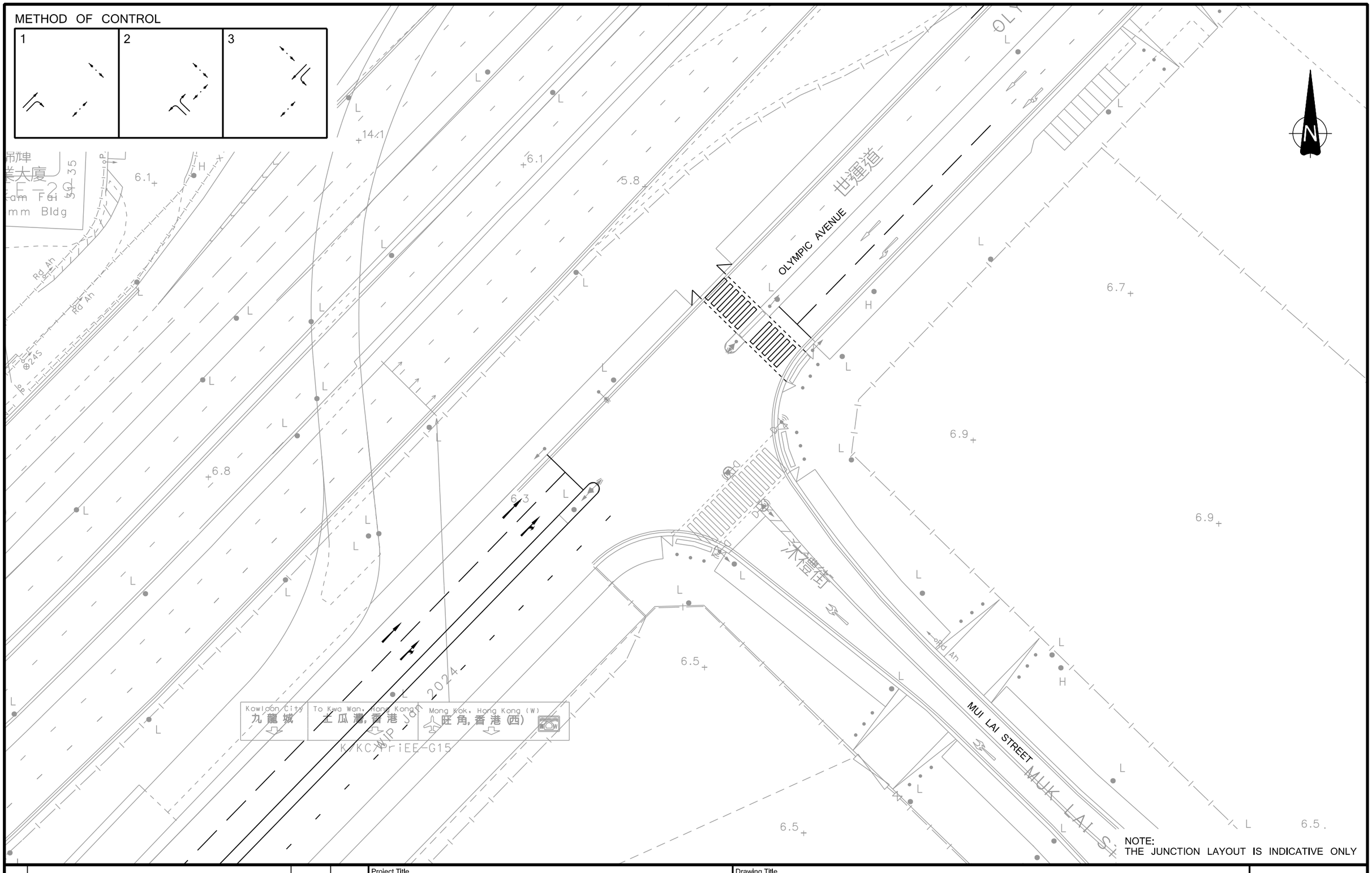
Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	4.8	-

SYSTRA MVA

CHK50786310/TIA/F48.DGN/TKH/06JUN24

Original Size : A3

METHOD OF CONTROL



NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

FUTURE JUNCTION LAYOUT OF OLYMPIC AVENUE / MUK LAI STREET (JUNCTION S)

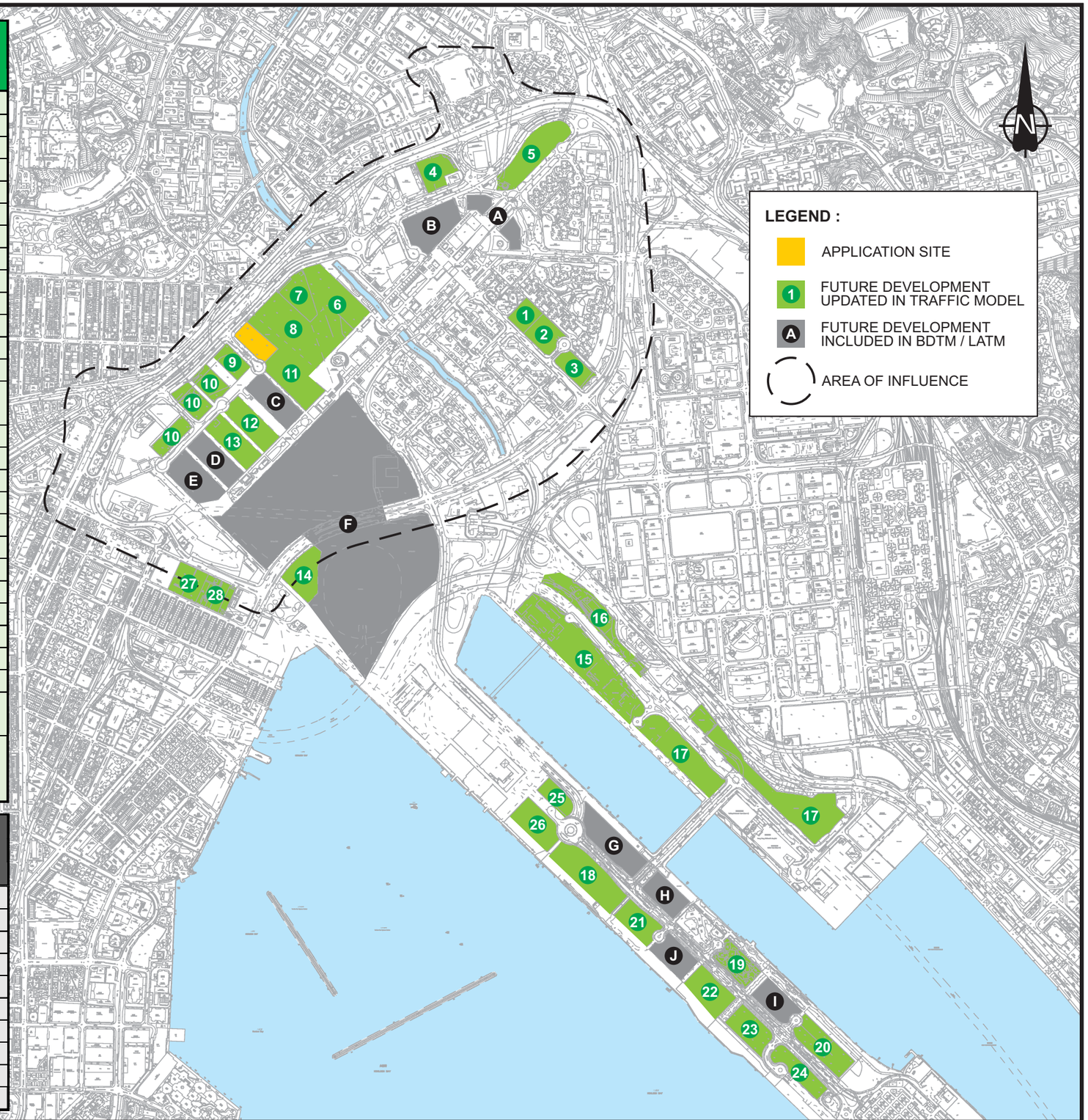
Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	**4.9**	-

CHK50786310/TIA/F49.DGN/TKH/06JUN24

Original Size : A3

Site Ref. No.	Planned Future Development Updated in Traffic Model
1	Proposed School at Kai Tak Site 1B2
2	Proposed School at Kai Tak Site 1B3
3	Proposed Primary School at Kai Tak Site 1B4
4	Proposed Commercial Development (C(8) Zone) at Kai Tak Site 1D2
5	Proposed Public Housing at Kai Tak Site 1E1
6	Proposed Commercial Development (CDA(2) Zone) at Kai Tak Site 1M1
7	OU Zone for arts and performance related uses at Kai Tak Site 1M2
8	Proposed Commercial Development (CDA(3) Zone) at Kai Tak Site 2A1
9	Proposed Private Residential Development at Kai Tak Site 2A3
10	Proposed Residential Development at Kai Tak Site 2A4, 2A5(B) and 2A10
11	Proposed Subsidized Housing at Kai Tak Site 2B1
12	Proposed Public Housing at Kai Tak Site 2B3
13	Proposed Public Housing at Kai Tak Site 2B4
14	Proposed Hotel and Commercial Development at Shing Kai Road near Kai Tak Main Stadium
15	Proposed Commercial Development (C(1) Zone) at Kai Tak Site 3B1-4
16	Proposed Commercial Development (C(8) Zone) at Kai Tak Site 3B6
17	Kai Tak New Acute Hospital
18	Proposed Private Residential Development at Kai Tak Site 4A2
19	Proposed Private Residential Development at Kai Tak Site 4B3
20	Proposed Private Residential Development at Kai Tak Site 4B5
21	Proposed Private Residential Development at Kai Tak Site 4C1
22	Proposed Private Residential Development at Kai Tak Site 4C3
23	Proposed Commercial Development (C(7) Zone) at Kai Tak Site 4C4
24	Proposed Commercial Development (C(5) Zone) at Kai Tak Site 4C5
25	Proposed Private Residential Development at Kai Tak Site 4E1
26	Proposed Private Residential Development at Kai Tak Site 4E2
27	Proposed Residential and Commercial Development at 5 & 7 Mok Cheong Street and 70-78 Sung Wong Toi Road, Ma Tau Kok
28	Proposed Residential and Commercial Development at Kowloon IL6342, 6344, 7427, 7629, 7630, 7631 and 7632, Mok Cheong Street and Sung Wong Toi Road, Ma Tau Kok

Site Ref. No.	Other Planned Future Development Included in BDTM / LATM
A	Proposed Commercial Development at Kai Tak Site 1E2
B	Proposed Private Residential Development at Kai Tak Site 1F1
C	Proposed Public Housing Development at Kai Tak Site 2B2
D	Proposed Public Housing Development at Kai Tak Site 2B5
E	Proposed Public Housing Development at Kai Tak Site 2B6
F	Kai Tak Main Stadium and Sports Park (Kai Tak Sites 2D1 & 2D2)
G	Proposed Private Residential Development at Kai Tak Site 4A1
H	Proposed Private Residential Development at Kai Tak Site 4B1
I	Proposed Private Residential Development at Kai Tak Site 4B4
J	Proposed Private Residential Development at Kai Tak Site 4C2



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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

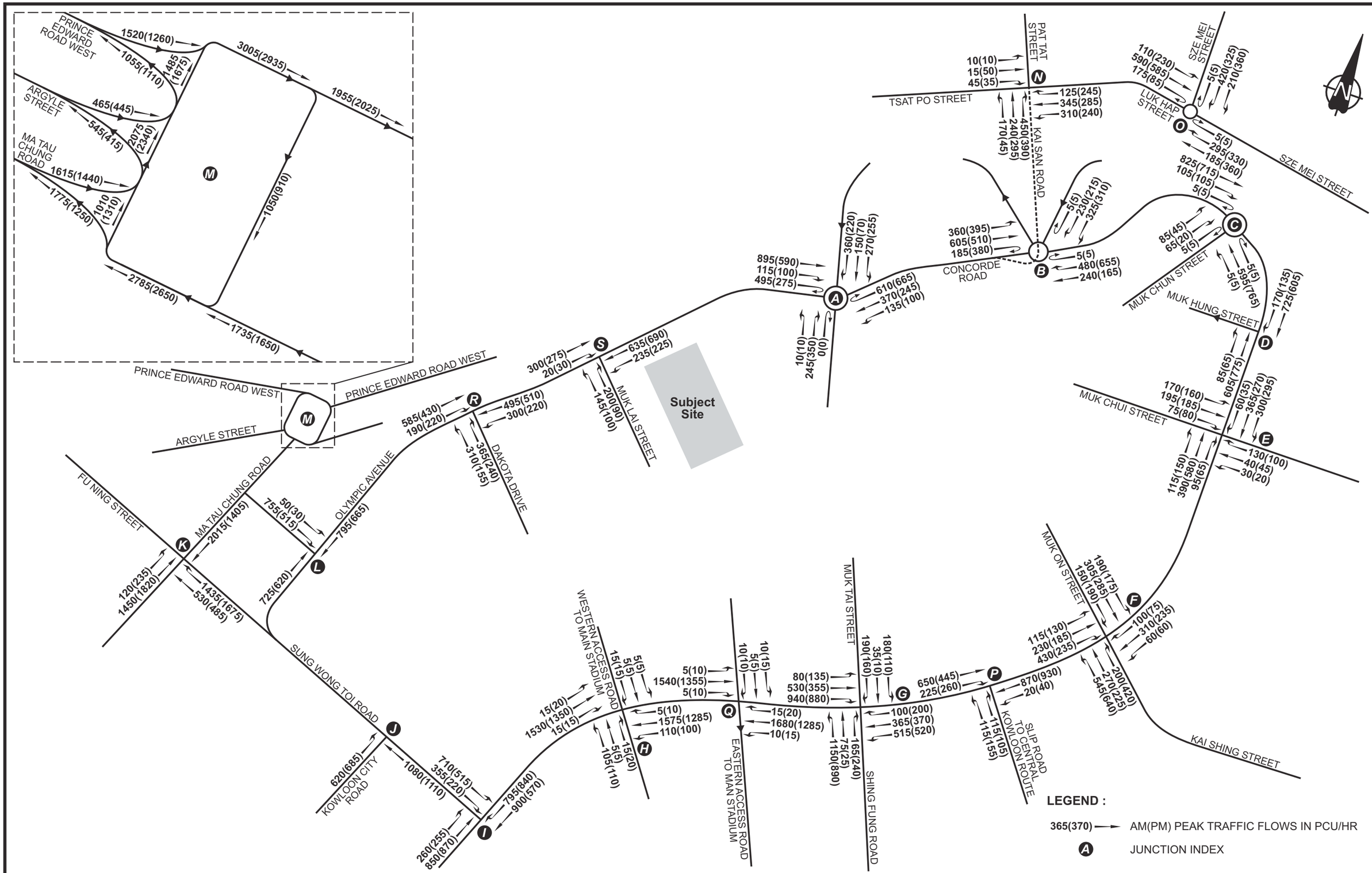
PLANNED FUTURE DEVELOPMENTS UPDATED IN TRAFFIC MODEL

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	4.10	-

SYSTRA MVA

CHK50786310/TIA/F410.CDR/LLH/6JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

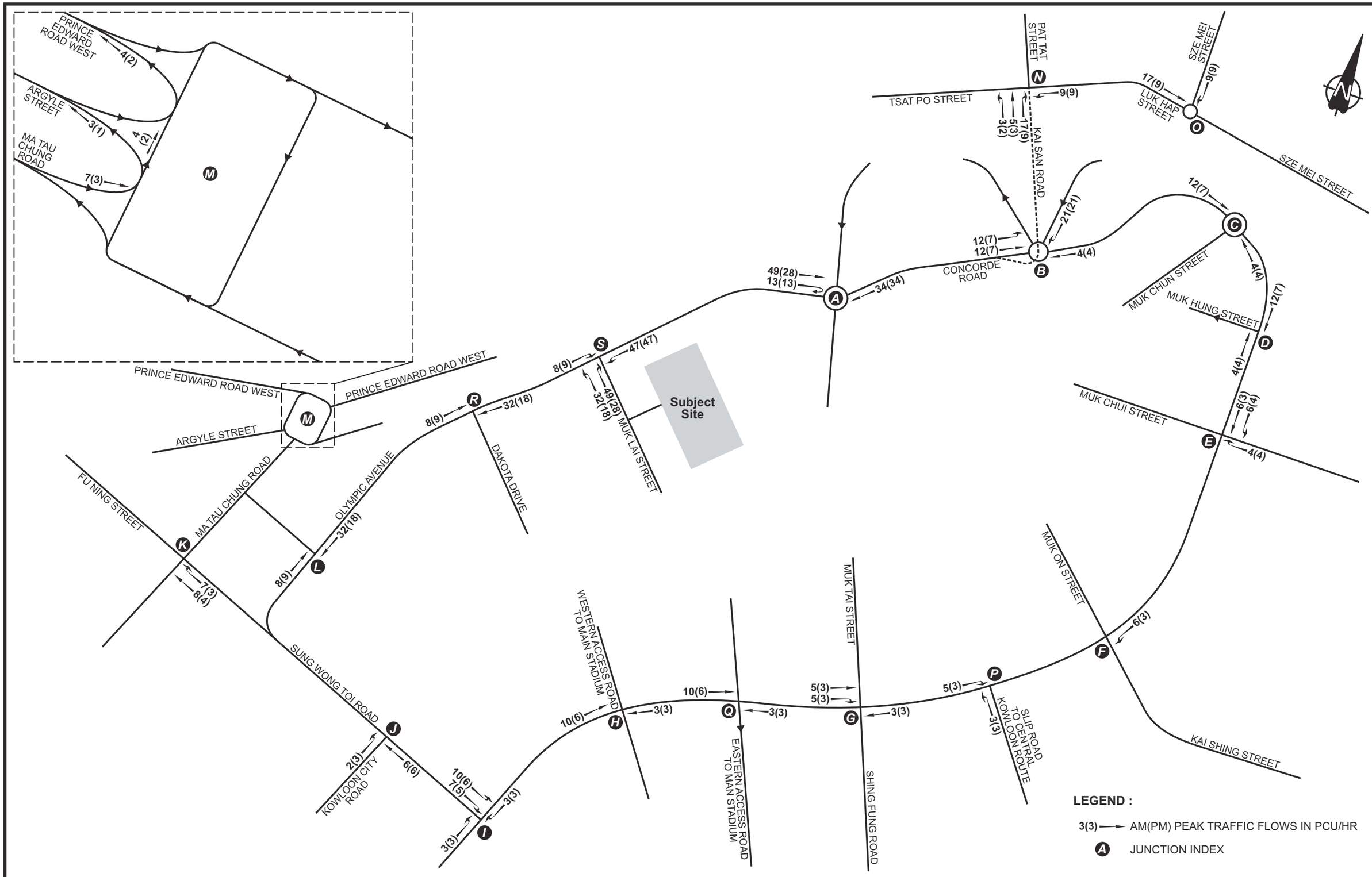
YEAR 2032 REFERENCE TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	4.11	-

SYSTRA MVA

CHK50786310/TIA/F411.CDR/LLH/5JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

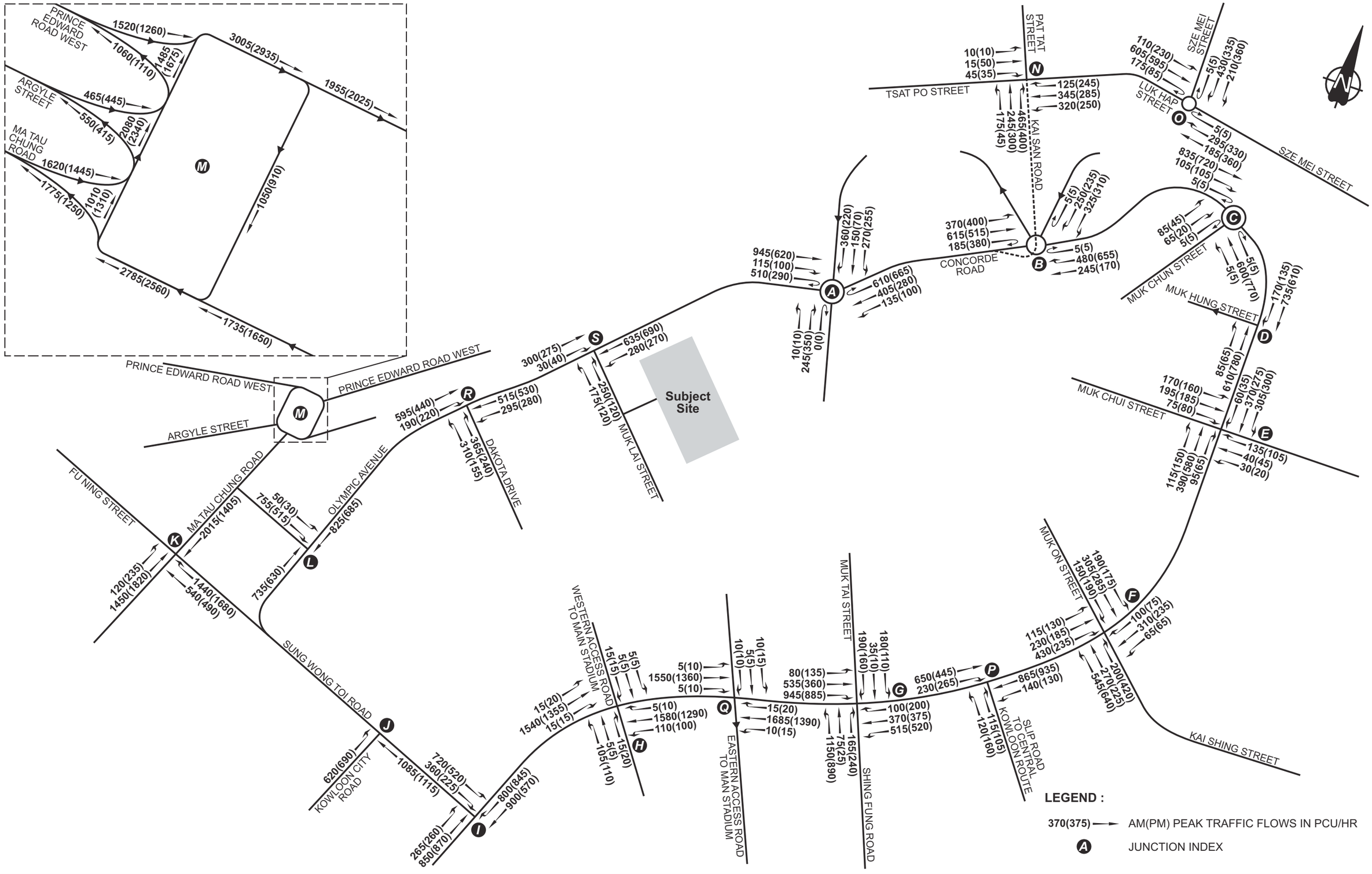
DEVELOPMENT TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	4.12	-

SYSTRA MVA

CHK50786310/TIA/F412.CDR/LLH/5JUN24

Original Size : A3



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

YEAR 2032 DESIGN TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	4.13	-

SYSTRA MVA

CHK50786310/TIA/F413.CDR/LLH/5JUN24

Original Size : A3

保良局何壽南小學 K/KT/ShiKai-09

Po Leung Kuk Stanley Ho Sau Nan Primary School

K/WTS/ShiKai-PT10

Rhythm Garden 采頤花園

Richland Garden 麗晶花園 K/WTS/ShiKai-PT11

Richland Garden 麗晶花園 K/WTS/ShiKai-PT12

Richland Gardens 麗晶花園 K/KT/ShiKai-08

Richland Gardens 麗晶花園 K/KT/MukChui-01

Kowloon City 九龍城 K/KT/MukChui-02

Kowloon City 九龍城 K/KT/MukChui-03

Kowloon Bay 九龍灣 K/KT/MukChui-05

Kowloon Bay 九龍灣 K/KT/MukChui-04

Tak Long Estate 德朗邨 Kai Tak Station 啟德站

晴朗商場

Ching Long Shopping Centre

Choi Hung Estate 彩虹邨 Subway 行人隧道 K/WTS/ShiKai-P07

Richland Garden 麗晶花園 K/WTS/ShiKai-PT13

Choi Hung Estate 彩虹邨 Subway 行人隧道 K/WTS/ShiKai-P08

KWUN TONG BYPASS

SHING KAI ROAD

CHUI STREET

MUI CHUI STREET

WANG CHIU ROAD

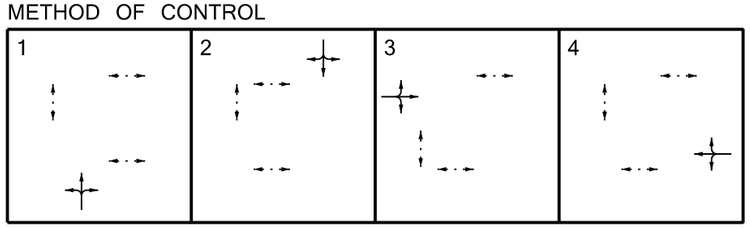
PLB Proh/ LD Proh/

BUS ONLY

第七座 Block 7

NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

METHOD OF CONTROL



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

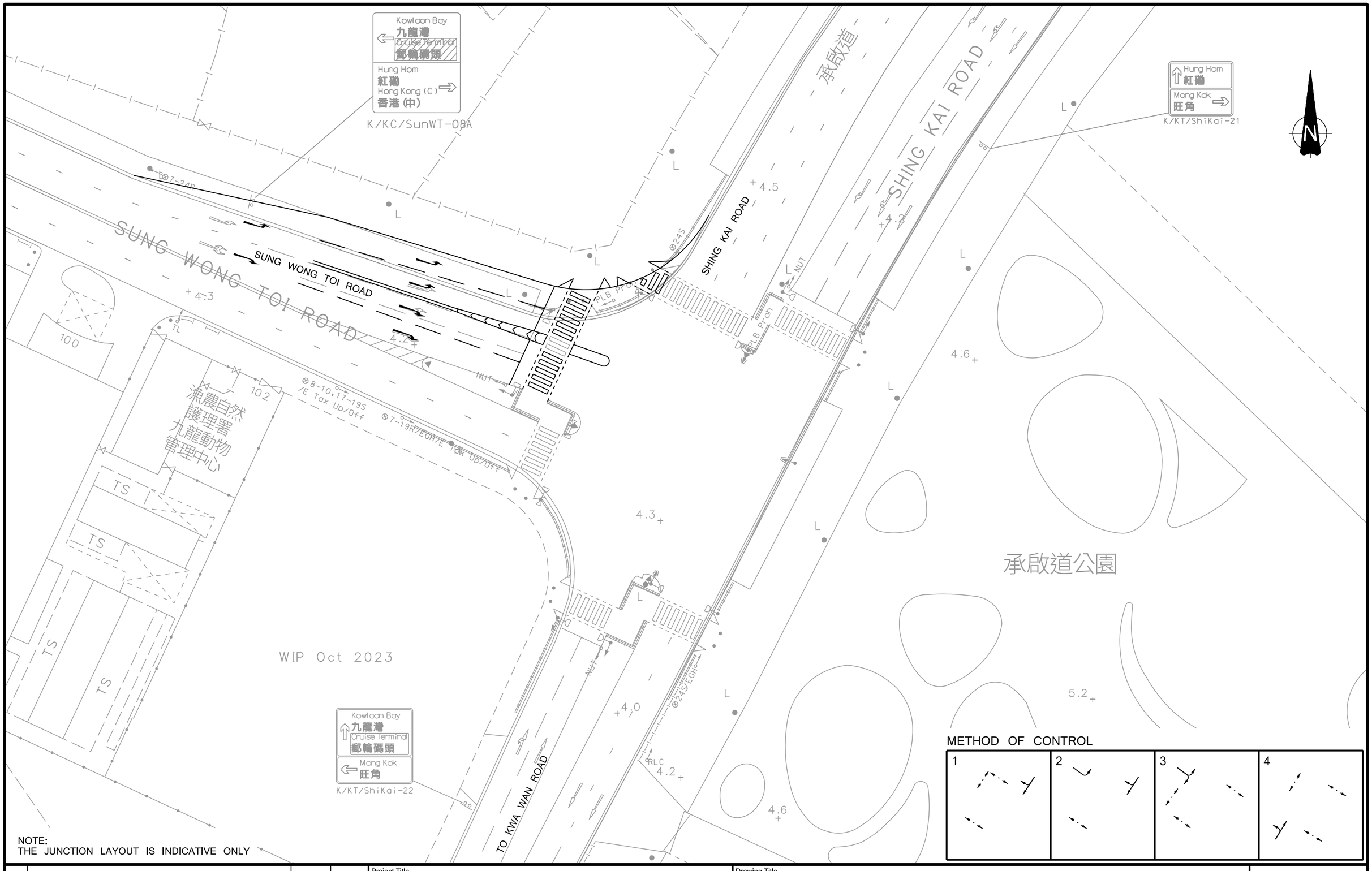
JUNCTION IMPROVEMENT SCHEME FOR JUNCTION OF SHING KAI ROAD / MUK CHUI STREET (JUNCTION E) (BY HKHA)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	5.1	-

SYSTRA MVA

CHK50786310/TIA/F51.DGN/TKH/06JUN24

Original Size : A3



METHOD OF CONTROL

NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

JUNCTION IMPROVEMENT SCHEME FOR JUNCTION OF TO KWA WAN ROAD / SHING KAI ROAD / SUNG WONG TOI ROAD (JUNCTION I) (BY OTHER)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	5.2	-

SYSTRA MVA

CHK50786310/TIA/F52.DGN/TKH/06JUN24

Original Size : A3

METHOD OF CONTROL

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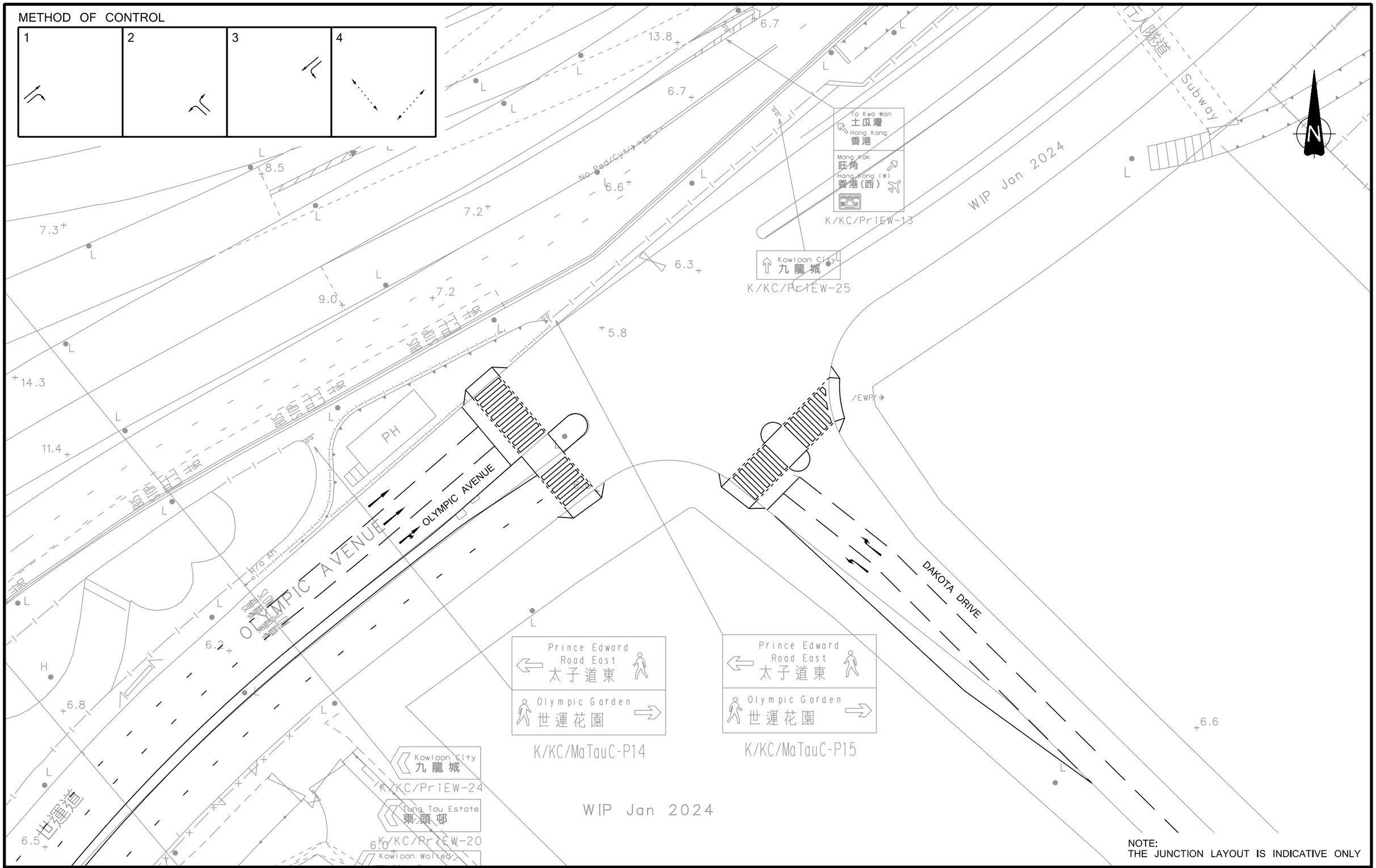

NOTE:
THE JUNCTION LAYOUT IS INDICATIVE ONLY

Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA,KOWLOON

Drawing Title

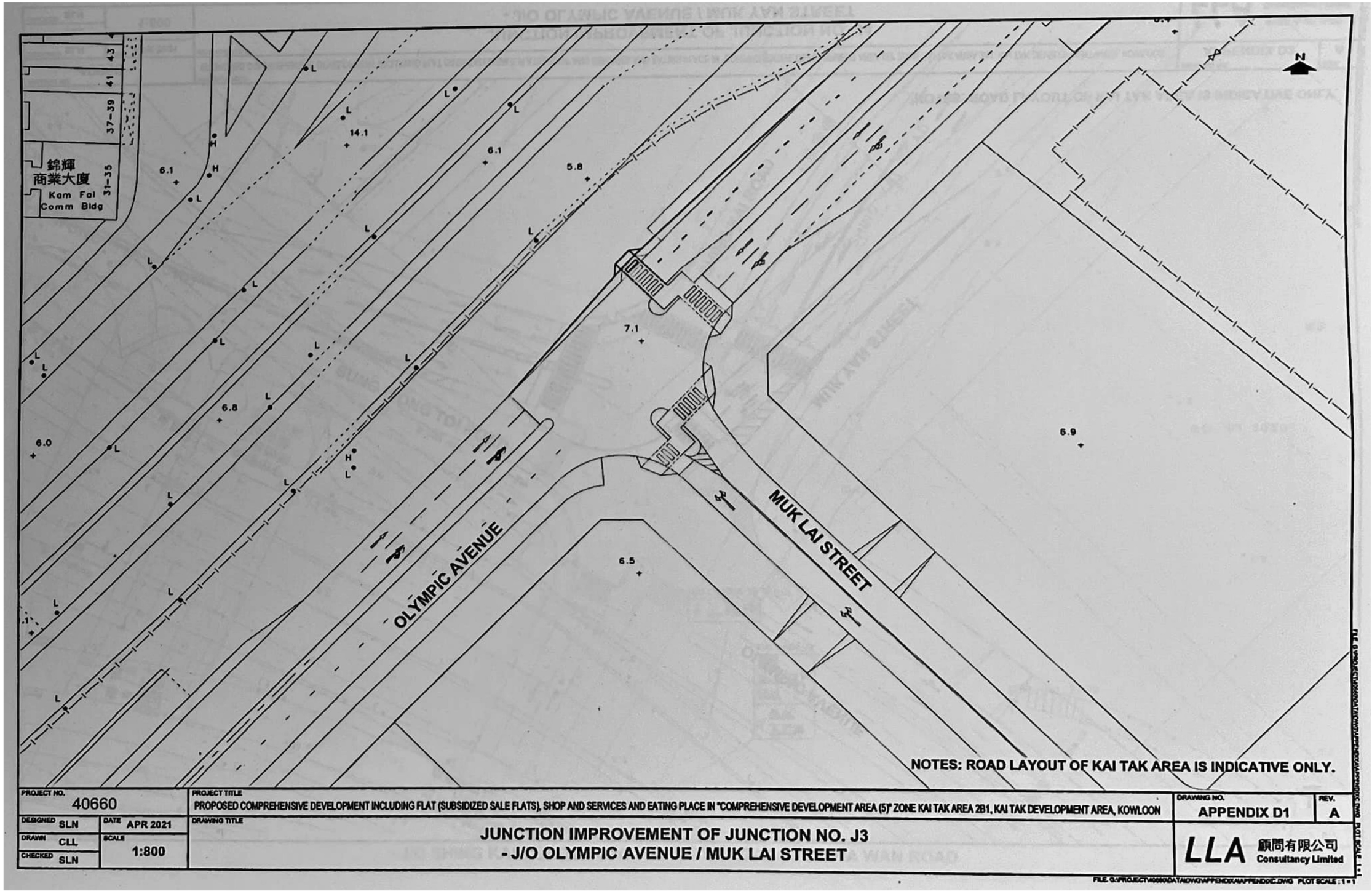
JUNCTION IMPROVEMENT SCHEME FOR JUNCTION OF OLYMPIC AVENUE / DAKOTA DRIVE (JUNCTION R) (BY OTHER)

Designed	Checked	Scale	Date	Drawing No.	Rev.
CNM	CHC	1:500(A3)	JUN 2024	5.3	-

SYSTRA MVA

CHK50786310/TIA/F53.DGN/TKH/06JUN24

Original Size : A3



Note :
Extracted from the Traffic Impact Assessment Report of the Approved Planning Application No. A/K22/30

Rev.	Description	Checked	Date
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Project Title

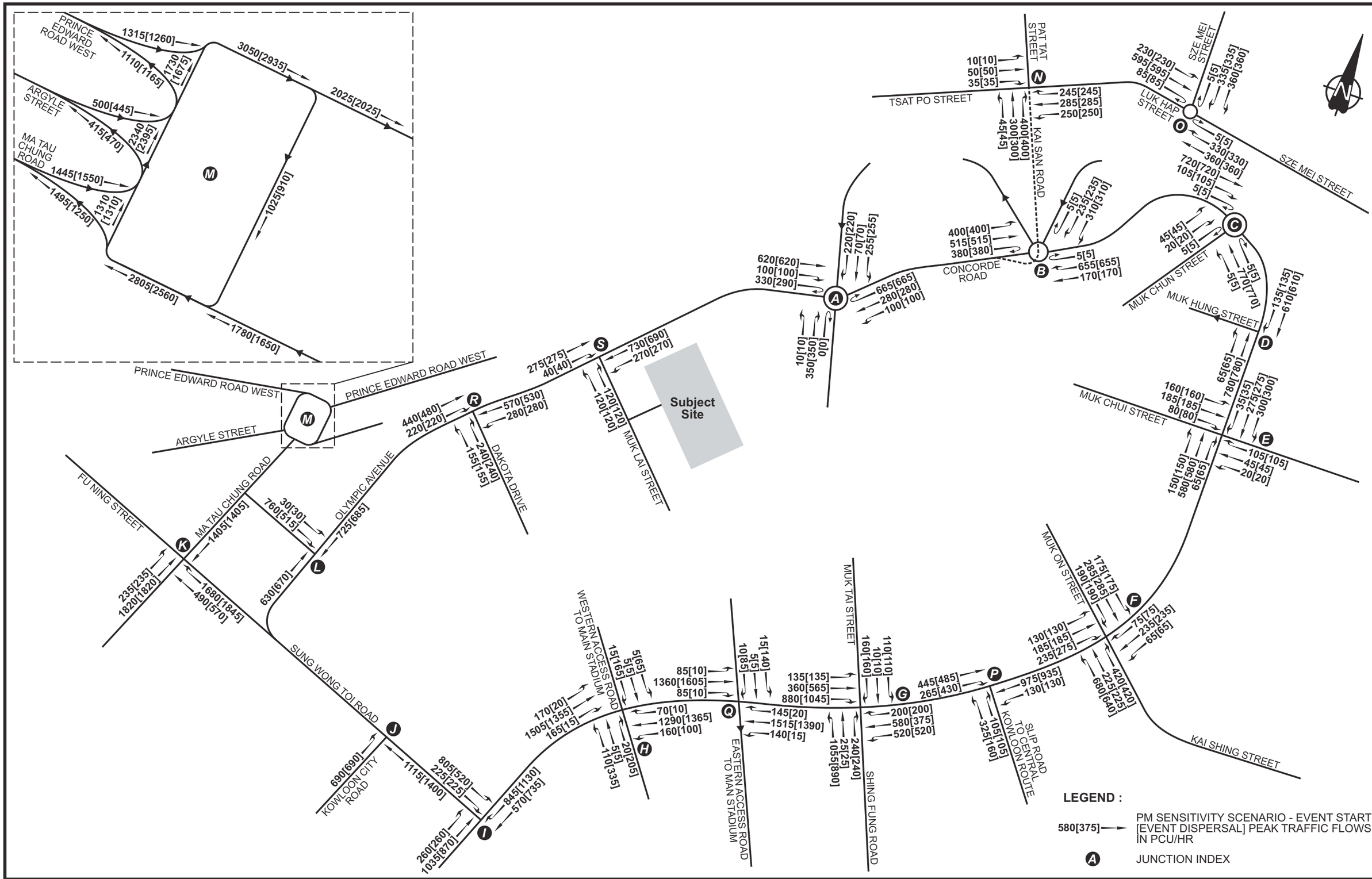
PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

JUNCTION IMPROVEMENT SCHEME FOR JUNCTION OF OLYMPIC AVENUE / MUK LAI STREET (JUNCTION S) (BY HKHS)

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	5.4	-

SYSTRA MVA



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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

YEAR 2032 DESIGN TRAFFIC FLOWS FOR SENSITIVITY TEST

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	5.5	-

SYSTRA MVA

CHK50786310/TIA/F55.CDR/LLH/6JUN24

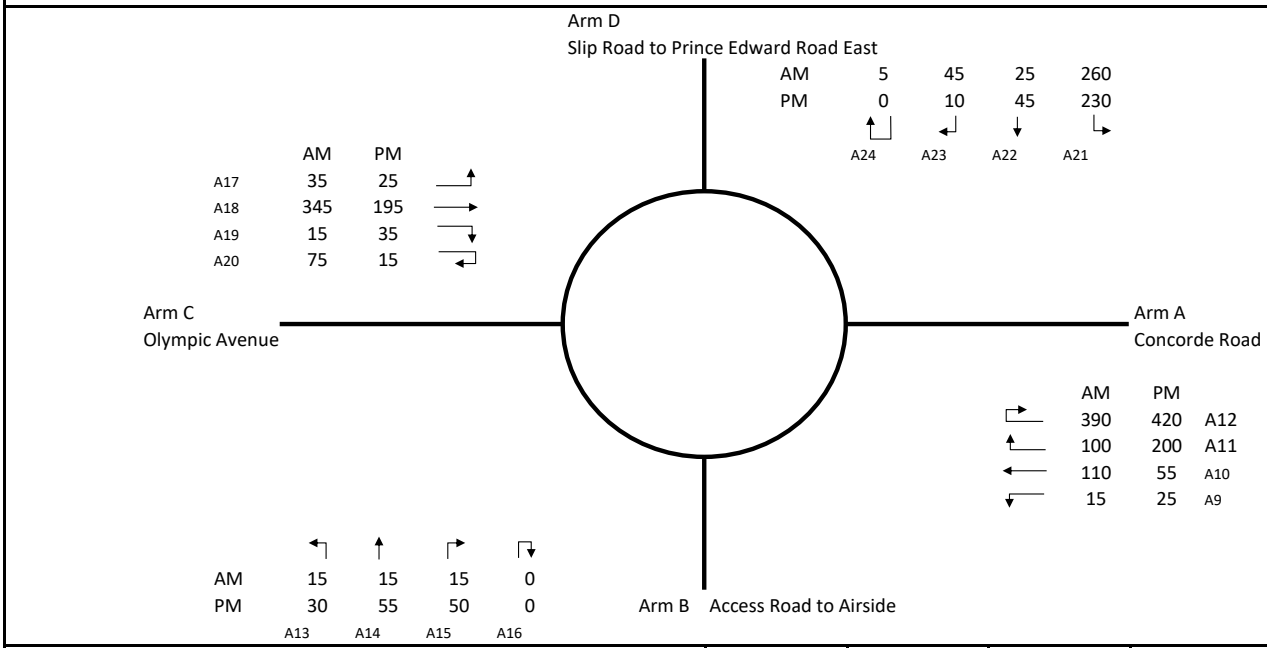
Original Size : A3

APPENDIX A – JUNCTION ASSESSMENTS

2024 Observed

Roundabout Capacity Calculation

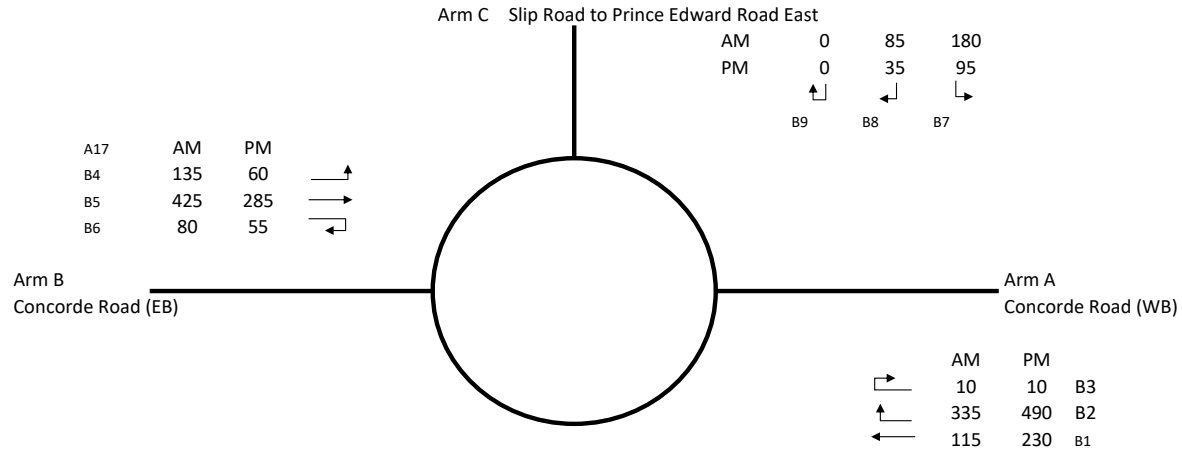
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2024 Observed Scenario			Checked by:	CHC
Design Year:	2024	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road				
Arm B	Access Road to Airside				
Arm C	Olympic Avenue				
Arm D	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				7.00	5.50	7.00	3.60	
E	Entry Width (m)				4.50	5.50	6.00	5.00	
L	Effective Length of Flare (m)				1.00	7.00	7.00	14.00	
R	Entry Radius (m)				35.00	30.00	25.00	30.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	60.00	
A	Entry Angle (degree)				15.00	15.00	60.00	40.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			-4.00	0.00	-0.23	0.16	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.07	1.07	0.91	0.98	
X2	= V + ((E-V) / (1+2S))				7.36	5.50	5.16	4.66	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	1.00	
F	= 303 * X2				2229	1667	1563	1412	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.65	0.55	0.53	0.51	
AM RESULT									
Q	Entry Flow (pcu/hour)				615	45	470	335	
Qc	Circulating Flow Across Entry (pcu/hour)				165	725	505	840	
Qe	= K (F - Fc*Qc)				2277	1353	1172	968	
DFC	= Q / Qe	Design Flow / Capacity	0.40		0.27	0.03	**0.40**	0.35	
		Total Entry Flows	1,465						
PM RESULT									
Q	Entry Flow (pcu/hour)				700	135	270	285	
Qc	Circulating Flow Across Entry (pcu/hour)				105	700	670	715	
Qe	= K (F - Fc*Qc)				2319	1368	1092	1030	
DFC	= Q / Qe	Design Flow / Capacity	0.30		**0.30**	0.10	0.25	0.28	
		Total Entry Flows	1,390						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

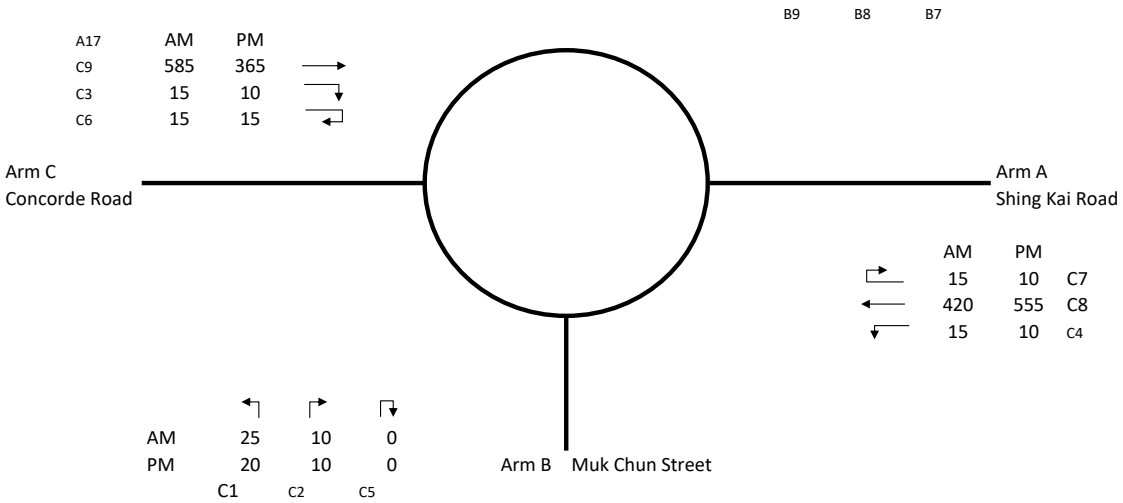
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2024 Observed Scenario			Checked by:	CHC
Design Year:	2024	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road (WB)				
Arm B	Concorde Road (EB)				
Arm C	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				8.00	7.00	8.00	
E	Entry Width (m)				8.00	8.00	8.00	
L	Effective Length of Flare (m)				1.00	6.00	1.00	
R	Entry Radius (m)				42.00	20.00	47.00	
D	Inscribed Circle Diameter (m)				40.00	40.00	40.00	
A	Entry Angle (degree)				10.00	22.00	15.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.27	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	1.03	1.08	
X2	= V + ((E-V) / (1+2S))				8.00	7.65	8.00	
M	= EXP ((D-60) /10)				0.14	0.14	0.14	
F	= 303 * X2				2424	2319	2424	
Td	= 1 + (0.5 / (1+M))				1.44	1.44	1.44	
Fc	= 0.21*Td (1 + 0.2*X2)				0.79	0.77	0.79	
AM RESULT								
Q	Entry Flow (pcu/hour)				460	640	265	
Qc	Circulating Flow Across Entry (pcu/hour)				165	345	515	
Qe	= K (F - Fc*Qc)				2512	2112	2181	
DFC	= Q / Qe	Design Flow / Capacity	0.30		0.18	**0.30**	0.12	
		Total Entry Flows	1,365					
PM RESULT								
Q	Entry Flow (pcu/hour)				730	400	130	
Qc	Circulating Flow Across Entry (pcu/hour)				90	500	350	
Qe	= K (F - Fc*Qc)				2577	1990	2321	
DFC	= Q / Qe	Design Flow / Capacity	0.28		**0.28**	0.20	0.06	
		Total Entry Flows	1,260					
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9								

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Shing Kai Road / Concorde Road / Muk Chun Street			Designed by:	TCW
Scheme:	2024 Observed Scenario			Checked by:	CHC
Design Year:	2024	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Shing Kai Road				
Arm B	Muk Chun Street				
Arm C	Concorde Road				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				5.00	5.00	7.00	
E	Entry Width (m)				7.00	7.50	7.00	
L	Effective Length of Flare (m)				5.00	5.00	5.00	
R	Entry Radius (m)				30.00	20.00	50.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	
A	Entry Angle (degree)				40.00	25.00	25.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.64	0.80	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				0.98	1.02	1.05	
X2	= V + ((E-V) / (1+2S))				5.88	5.96	7.00	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	
F	= 303 * X2				1781	1806	2121	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.57	0.58	0.63	
AM RESULT								
Q	Entry Flow (pcu/hour)				450	35	615	
Qc	Circulating Flow Across Entry (pcu/hour)				30	435	25	
Qe	= K (F - Fc*Qc)				1731	1583	2204	
DFC	= Q / Qe	Design Flow / Capacity	0.28		0.26	0.02	**0.28**	
		Total Entry Flows	1,100					
PM RESULT								
Q	Entry Flow (pcu/hour)				575	30	390	
Qc	Circulating Flow Across Entry (pcu/hour)				25	565	20	
Qe	= K (F - Fc*Qc)				1734	1507	2207	
DFC	= Q / Qe	Design Flow / Capacity	0.33		**0.33**	0.02	0.18	
		Total Entry Flows	995					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Hung Street Design Year: 2024

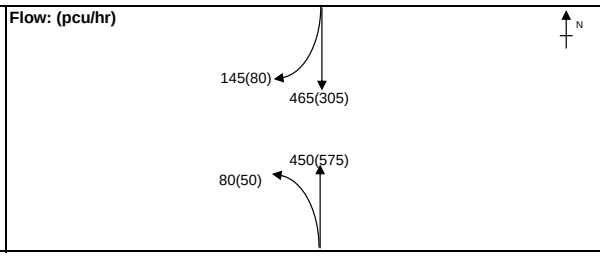
Description: 2024 Observed Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road		A	1	3.650	15			32%	17%	1920	1945	252	0.131	0.131	299	0.154	
(NB)		A	1	3.650						2120	2120	278	0.131		326	0.154	0.154
Shing Kai Road		B	2	3.650						1980	1980	308	0.156	0.156	193	0.097	
(SB)		B	2	3.650		8		48%	42%	1945	1965	302	0.155		192	0.098	0.098
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Dp	2,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Ep	3	MIN GREEN + FLASH =			9	+	9	=	18			*			*
		Fp	2,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Gp	1,3	MIN GREEN + FLASH =			9	+	9	=	18						

Notes:

TAC junction : CT 90s adopted

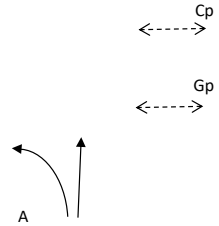
Flow: (pcu/hr)



Group	Gp,B	A,B,Ep	Group	A,Dp	A,B,Ep
y	0.156	0.287	y	0.154	0.251
L (sec)	28	34	L (sec)	28	34
C (sec)	90	90	C (sec)	90	90
y pract.	0.620	0.560	y pract.	0.620	0.560
R.C. (%)	299%	95%	R.C. (%)	303%	123%

Stage / Phase Diagrams

1.



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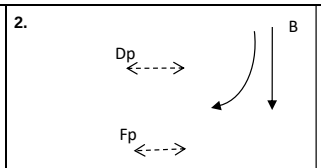

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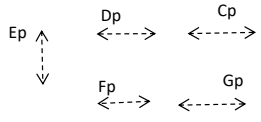


4.

5.

I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=
I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=

Date: JUN, 2024 **Junction:** (D) Shing Kai Road / Muk Hung Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2024

Description: 2024 Observed Scenario Designed By: TCW Checked By: CHC

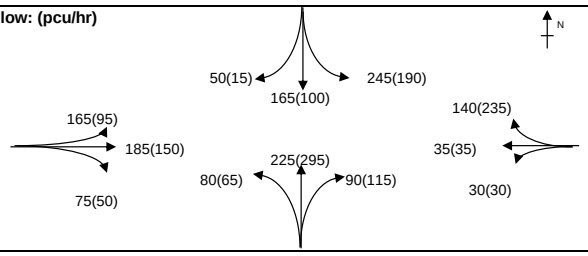
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street (EB)		C	3	3.750	30	25		39% / 18%	32% / 17%	1930	1940	425	0.220	0.220	295	0.152	0.152
Shing Kai Road (SB)		B	2	3.650	10			100%	100%	1720	1720	245	0.142	0.142	190	0.110	0.110
		B	2	3.650		20		23%	13%	2085	2100	215	0.103		115	0.055	
Muk Chui Street (WB)		D	4	3.650		20				1970	1970	140	0.071	0.071	235	0.119	0.119
		D	4	3.650	10			46%	46%	1850	1850	65	0.035		65	0.035	
Shing Kai Road (NB)		A	1	3.650	18			42%	28%	1915	1935	191	0.100	0.100	231	0.119	0.119
		A	1	3.650		20		44%	47%	2050	2050	204	0.100		244	0.119	

Pedestrian Crossing	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

TAC junction: CT 120s adopted

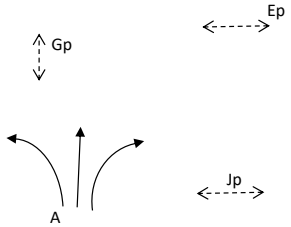
Flow: (pcu/hr)



Group	Jp,B,C,D	A,B,C,D	Group	A,Fp,C,D	A,B,C,D
y	0.434	0.533	y	0.391	0.501
L (sec)	38	29	L (sec)	39	29
C (sec)	120	120	C (sec)	120	120
y pract.	0.615	0.683	y pract.	0.608	0.683
R.C. (%)	42%	28%	R.C. (%)	55%	36%

Stage / Phase Diagrams

1.



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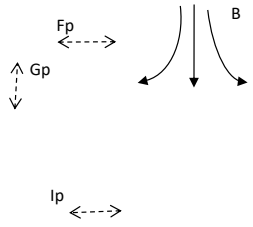

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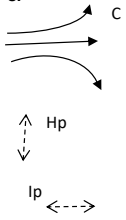

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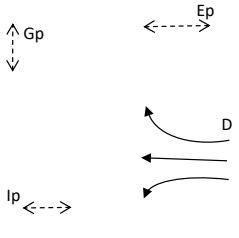


5.

I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=
I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (E) Shing Kai Road / Muk Chui Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Kai Shing Street / Muk On Street — Design Year: 2024

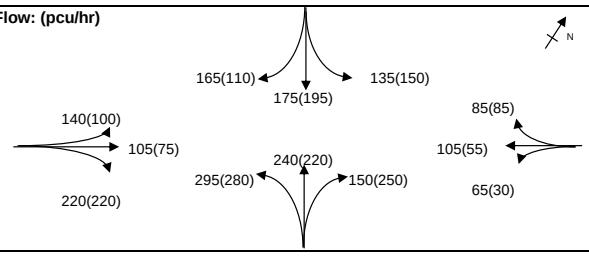
Description: 2024 Observed Scenario — Designed By: TCW — Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	2	3.650	18			95%	79%	1835	1860	147	0.080	0.080	127	0.068	0.068
		A	2	3.650		18		40%	65%	2050	2010	164	0.080		137	0.068	
		A	2	3.650		15				1925	1925	154	0.080		131	0.068	
Muk On Street		E	1	3.650	18			59%	69%	1890	1870	230	0.122	0.122	217	0.116	
		E	1	3.650		20		67%	46%	2020	2050	245	0.121		238	0.116	0.116
Shing Kai Road (WB)		D	3	3.650						2120	2120	98	0.046		55	0.026	
		D	3	3.650		20		92%	100%	1985	1970	92	0.046		85	0.043	
	#	D	3	3.650	50					1345	1345	65	0.048		30	0.022	
kai Shing Street		C	4	3.650		20				1970	1970	150	0.076		250	0.127	0.127
		C	4	3.650						2120	2120	240	0.113	0.113	220	0.104	
	#	B	1,2,4	4.000	50					1370	1370	295	0.215		280	0.204	
Pedestrian Crossing		Fp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14								
		Gp	1	MIN GREEN + FLASH =	8	+	20	=	28								
		Hp	1,3,4	MIN GREEN + FLASH =	8	+	21	=	29								
		Ip	4	MIN GREEN + FLASH =	5	+	9	=	14								
		Jp	3	MIN GREEN + FLASH =	7	+	17	=	24					*			*
		Kp	3,4	MIN GREEN + FLASH =	5	+	9	=	14								
		Lp	1,2,4	MIN GREEN + FLASH =	5	+	9	=	14								
		Mp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14								

Notes:

TAC Junction: 130s CT adopted
Site factor 0.7 adopted

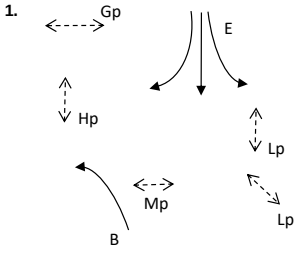
Flow: (pcu/hr)



Group	Gp,A,Jp,C	E,A,Jp,C	Group	Gp,A,Jp,C	E,A,Jp,C
y	0.193	0.315	y	0.195	0.311
L (sec)	73	48	L (sec)	73	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.395	0.568	y pract.	0.395	0.568
R.C. (%)	104%	80%	R.C. (%)	102%	82%

Stage / Phase Diagrams

1.



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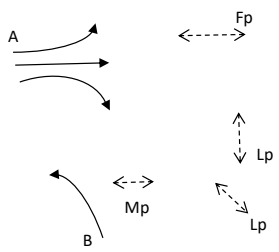

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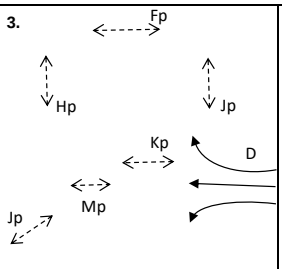

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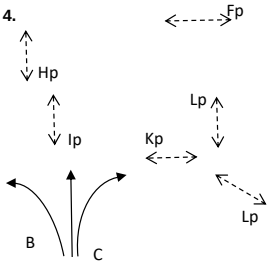


5.

I/G= 8		I/G= 6		I/G= 10	24	I/G= 3		I/G=			
I/G= 8		I/G= 6		I/G= 10	24	I/G= 3		I/G=			

Date: JUN, 2024 — **Junction:** (F) Shing Kai Road / Kai Shing Street / Muk On Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Shing Fung Road — Design Year: 2024

Description: 2024 Observed Scenario — Designed By: TCW — Checked By: CHC

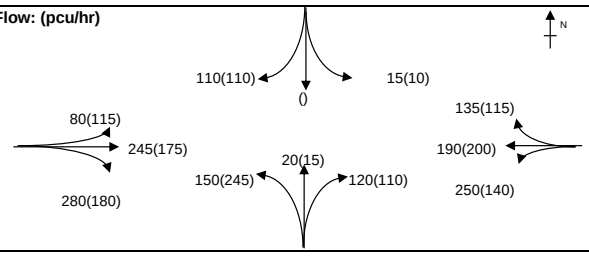
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	^	B	2	3.000	15			60%	98%	1445	1395	134	0.093		117	0.084	
		B	2	3.000						2055	2055	191	0.093		173	0.084	
		B	2	3.000		25		100%	100%	1940	1940	280	0.144	0.144	180	0.093	0.093
Muk Tai Street	*	A	1	4.000	22	17		55% / 5%	47% / 4%	2060	2075	280	0.136	0.136	225	0.108	0.108
Shing Kai Road (WB)		E	4	3.000						2055	2055	185	0.090		179	0.087	
	^	E	4	3.000		23		96%	85%	1545	1560	140	0.091	0.091	136	0.087	0.087
		E	4	3.650	25					1870	1870	120	0.064		67	0.036	
		E	4	3.650	28					2010	2010	130	0.065		73	0.036	
Shing Fung Road	^	C	2,3	3.650	20					1475	1475	64	0.043		104	0.071	
		C	2,3	3.650	22					1985	1985	86	0.043		141	0.071	
		D	3	3.000		23		73%	78%	1960	1955	75	0.038		67	0.034	
		D	3	3.000		19				1690	1690	65	0.038	0.038	58	0.034	0.034

Pedestrian Crossing	Fp	1,3,4	MIN GREEN + FLASH =	8	+	15	= 23
	Gp	2,3	MIN GREEN + FLASH =	5	+	7	= 12
	Hp	1,4	MIN GREEN + FLASH =	5	+	8	= 13
	Ip	4	MIN GREEN + FLASH =	10	+	9	= 19
	Jp	1,2,3	MIN GREEN + FLASH =	5	+	9	= 14
	Kp	1,2,3	MIN GREEN + FLASH =	5	+	7	= 12
	Lp	4	MIN GREEN + FLASH =	7	+	13	= 20
	Mp	2,3	MIN GREEN + FLASH =	5	+	9	= 14
	Np	1	MIN GREEN + FLASH =	6	+	11	= 17

Notes:

TAC junction : CT 130s adopted
^ Site factor 0.8 added due to flare length
* 135 pcu/hr saturation flow added

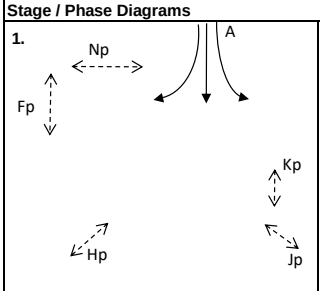
Flow: (pcu/hr)



Group	A,B,D,Lp	A,B,D,E	Group	A,B,D,Lp	A,B,D,E
y	0.319	0.409	y	0.236	0.323
L (sec)	40	17	L (sec)	40	17
C (sec)	130	130	C (sec)	130	130
y pract.	0.623	0.782	y pract.	0.623	0.782
R.C. (%)	95%	91%	R.C. (%)	165%	142%

Stage / Phase Diagrams

1.



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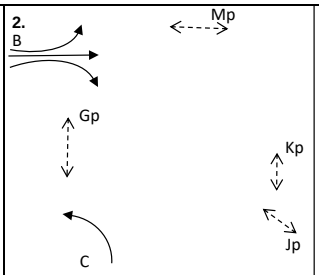

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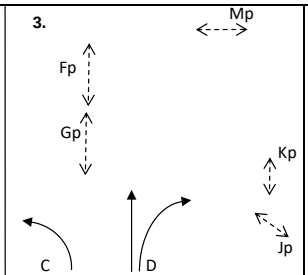

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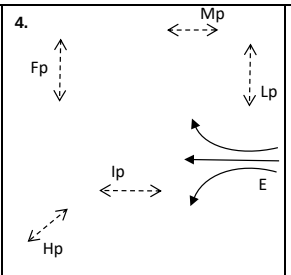


5.

I/G= 5		I/G= 5		I/G= 6		I/G= 5	I/G=
I/G= 5		I/G= 5		I/G= 6		I/G= 5	I/G=

Date: JUN, 2024 — **Junction:** Shing Kai Road / Shing Fung Road (G)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Western access to main stadium Design Year: 2024

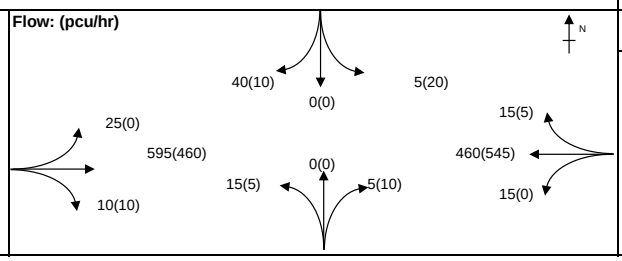
Description: 2024 Observed Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/h	PM Peak y Value	PM Peak Critical y
Shing Kai Road EB		A	1	3.650	15			8%	0%	1965	1980	303	0.154		227	0.115	
		A	1	3.650		25		3%	4%	2115	2115	327	0.155	0.155	243	0.115	0.115
Shing Kai Road WB		C	3	3.650	15			6%	0%	1965	1980	236	0.120	0.120	266	0.134	0.134
		C	3	3.650		25		6%	2%	2115	2120	254	0.120		284	0.134	
Western Access Road to Main Stadium NB		B	2	5.000	15	25		75% / 25%	33% / 67%	1940	1970	20	0.010		15	0.008	
Western Access Road to Main Stadium SB		D	4	3.500	20	30		11% / 89%	67% / 33%	1865	1840	45	0.024	0.024	30	0.016	
Pedestrian Crossing		Ep	5	MIN GREEN + FLASH =			5	+	7	=	12			*			*

Notes:

TAC junction : CT 130s adopted

Flow: (pcu/hr)



Group		A,B,C,D,Ep	Group		A,B,C,D,Ep
y		0.299	y		0.249
L (sec)		36	L (sec)		42
C (sec)		130	C (sec)		130
y pract.		0.651	y pract.		0.609
R.C. (%)		118%	R.C. (%)		144%

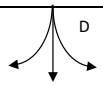
Stage / Phase Diagrams

1.

2.

3.

4.



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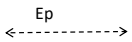


I/G=		I/G= 5	5	I/G= 5		I/G= 7		I/G= 5	12
I/G=		I/G= 5	5	I/G= 5		I/G= 7	5	I/G= 5	12

Date: JUN, 2024 **Junction:** (H) Shing Kai Road / Western access to main stadium

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2024

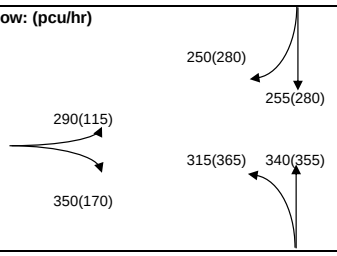
Description: 2024 Observed Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		C	1	3.600	18			100%	100%	1825	1825	315	0.173	0.173	365	0.200	0.200
(NB)		C	1	3.000						2055	2055	340	0.165		355	0.173	
Shing Kai Road		A	2	3.650						1980	1980	255	0.129		280	0.141	
(SB)		A	2	3.650		30		100%	100%	1885	1885	250	0.133	0.133	280	0.149	0.149
Sung Wong Toi		B	3	3.650	18					1830	1830	200	0.109		89	0.049	
Road		B	3	3.650	20	32		41% / 59%	27% / 73%	2005	2010	219	0.109		98	0.049	
(EB)		B	3	3.650		30				2020	2020	221	0.109	0.109	98	0.049	
Pedestrian Crossing		Dp	2,3	MIN GREEN + FLASH =			5	+	10	=	15						
		Ep	1	MIN GREEN + FLASH =			5	+	12	=	17						
		Fp	1,3	MIN GREEN + FLASH =			5	+	11	=	16						
		Gp	2	MIN GREEN + FLASH =			5	+	7	=	12						*
		Hp	1,2	MIN GREEN + FLASH =			5	+	6	=	11						
		Ip	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

TAC Junction: CT 130s adopted

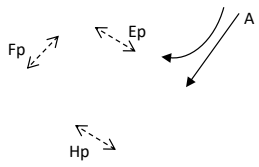
Flow: (pcu/hr)



Group	A,Gp,C	A,B,C	Group	A,B,C	A,Gp,C
y	0.305	0.415	y	0.397	0.349
L (sec)	29	13	L (sec)	13	29
C (sec)	130	130	C (sec)	130	130
y pract.	0.699	0.810	y pract.	0.810	0.699
R.C. (%)	129%	95%	R.C. (%)	104%	101%

Stage / Phase Diagrams

1.



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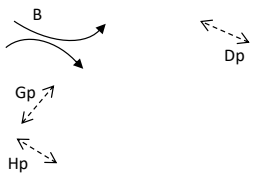

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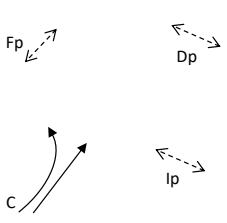


4.

5.

I/G= 5		I/G= 6		I/G= 5		I/G=	I/G=
I/G= 5		I/G= 12	12	I/G= 2		I/G=	I/G=

Date: JUN, 2024 **Junction:** (I) To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Kowloon City Road / Sung Wong Toi Road Design Year: 2024

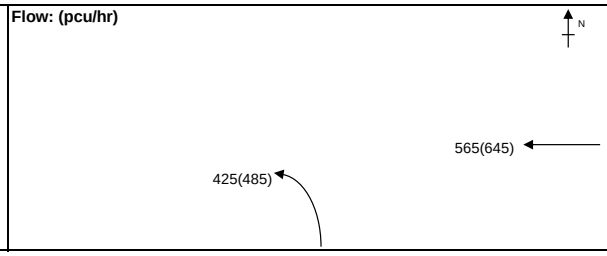
Description: 2024 Observed Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	←	A	1	3.650						1585	1585	274	0.173	0.173	313	0.197	0.197
	←	A	1	3.500						1685	1685	291	0.173		332	0.197	
Kowloon City Road	↰	B	2	4.500	10					1435	1435	203	0.141	0.141	232	0.162	0.162
	↰	B	2	4.500	12					1570	1570	222	0.141		253	0.161	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =	10		+	11	=	21							

Notes:

Site factor 0.8 added due to kerbside activities at Sung Wong Toi Road & Kowloon City Road

Flow: (pcu/hr)

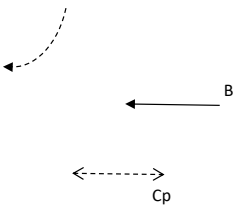


Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.173	0.314	y	0.197	0.359
L (sec)	27	10	L (sec)	27	10
C (sec)	65	65	C (sec)	65	65
y pract.	0.526	0.762	y pract.	0.526	0.762
R.C. (%)	204%	142%	R.C. (%)	166%	112%

Stage / Phase Diagrams

1.

2.



3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=	

Date: JUN, 2024 **Junction:** (J) Kowloon City Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street Design Year: 2024

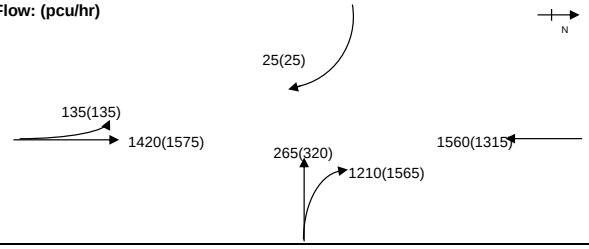
Description: 2024 Observed Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	↱	D	2,3	3.500		15				1785	1785	384	0.215		497	0.278	
	↱	D	2,3	3.500		15				1915	1915	413	0.216	0.216	533	0.278	
	↱	D	2,3	3.000		21				1920	1920	413	0.215		535	0.279	0.279
	↑	E	2	3.500						1965	1965	128	0.065		154	0.078	
	↑	E	2	3.500						2105	2105	137	0.065		166	0.079	
Ma Tau Chung Rd (NB)	↗	A	1	3.500	10			28%	25%	1885	1895	481	0.255	0.255	530	0.280	
	→	A	1	3.500						2105	2105	537	0.255		590	0.280	0.280
	→	A	1	3.500						2105	2105	537	0.255		590	0.280	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	532	0.253		448	0.213	
	←	B	1	3.500						2105	2105	532	0.253		449	0.213	
	←	B	1	3.500						1965	1965	496	0.252		418	0.213	
Fu Ning Street	↲	I	4	3.500		20				1830	1830	25	0.014		25	0.014	

Pedestrian Crossing	Cp	1	MIN GREEN + FLASH =	10	+	9	=	19
	Fp	2,3	MIN GREEN + FLASH =	10	+	9	=	19
	Gp	1,2,3	MIN GREEN + FLASH =	5	+	5	=	10
	Hp	3,4	MIN GREEN + FLASH =	7	+	8	=	15

Notes:

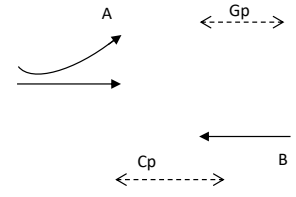
Flow: (pcu/hr)



Group	B,D,I	A,D,I	Group	B,D,I	A,D,I
y	0.468	0.471	y	0.492	0.559
L (sec)	18	18	L (sec)	18	18
C (sec)	130	130	C (sec)	130	130
y pract.	0.775	0.775	y pract.	0.775	0.775
R.C. (%)	66%	65%	R.C. (%)	58%	39%

Stage / Phase Diagrams

1.



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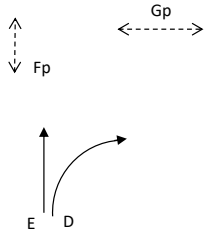

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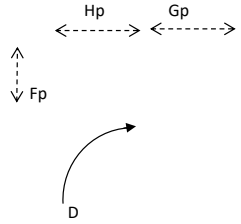

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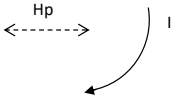


5.

I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			
I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			

Date: JUN, 2024 **Junction:** (K) Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

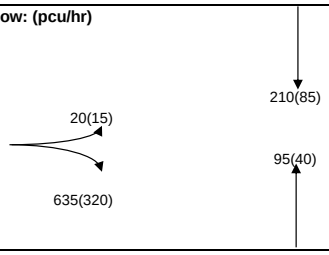
Junction: Olympic Avenue / Hang Wan Road Design Year: 2024

Description: 2024 Observed Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (NB)	↑	A	1,2 1,2	3.700						1985	1985	95	0.048		40	0.020	
Olympic Avenue (SB)	↓	B	1,2	3.650						1980	1980	101	0.051		41	0.021	
	↓	B	1,2	3.650						2120	2120	109	0.051	0.051	44	0.021	0.021
Hang Wan Road	→	C	2,3	5.000	13					1895	1895	20	0.011		15	0.008	
	→	D	3	3.300		25				1965	1965	320	0.163	0.163	161	0.082	
	→	D	3	3.300		20				1940	1940	315	0.162		159	0.082	0.082
Pedestrian Crossing		Ep	1	MIN GREEN + FLASH =			5	+	6	=	11						
		Fp	1	MIN GREEN + FLASH =			5	+	6	=	11						
		Gp	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

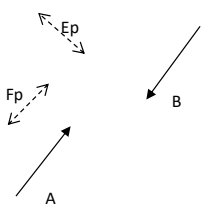
Flow: (pcu/hr)



Group	A,D	B,D	Group	A,D	B,D
y	0.211	0.214	y	0.102	0.103
L (sec)	9	11	L (sec)	9	11
C (sec)	60	60	C (sec)	60	60
y pract.	0.765	0.735	y pract.	0.765	0.735
R.C. (%)	263%	243%	R.C. (%)	649%	616%

Stage / Phase Diagrams

1.



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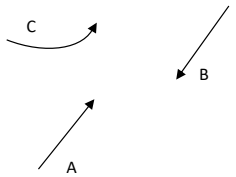

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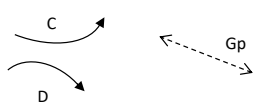


4.

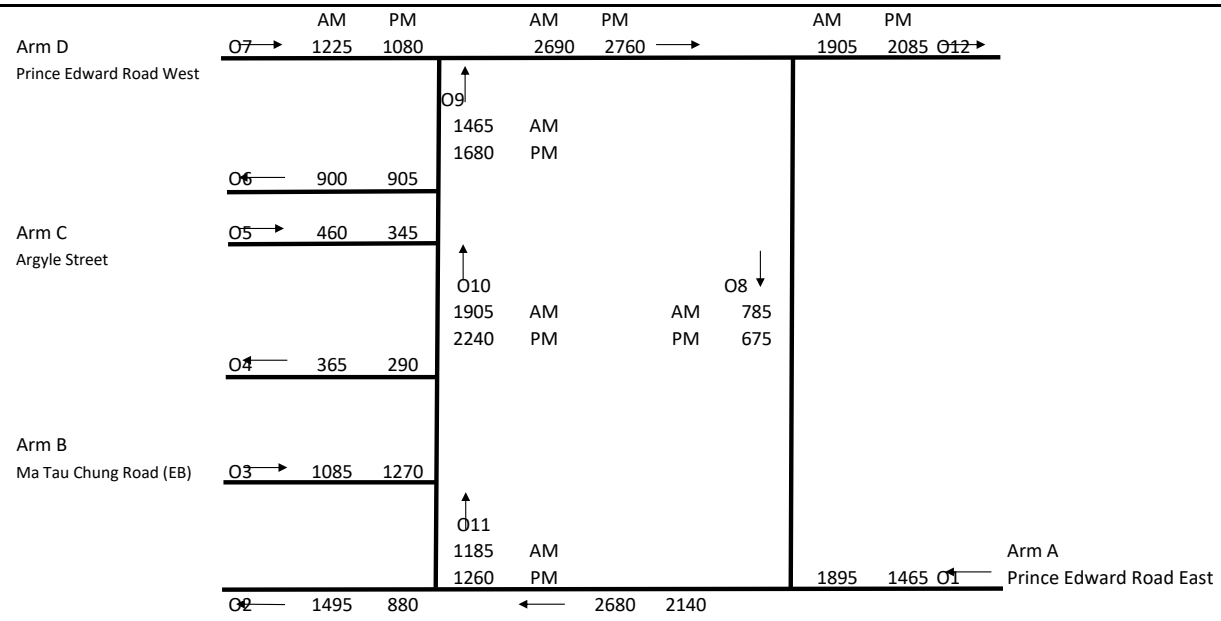
5.

I/G= 6		I/G=		I/G= 7		I/G=	I/G=
I/G= 6		I/G=		I/G= 7		I/G=	I/G=

Date: JUN, 2024 **Junction:** (L) Olympic Avenue / Hang Wan Road

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2		
Junction:	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street	Designed by:	TCW
Scheme:	2024 Observed Scenario	Checked by:	CHC
Design Year:	2024 Job No.: CHK50786310	Date:	JUN, 2024
Arm A	Prince Edward Road East		
Arm B	Ma Tau Chung Road (EB)		
Arm C	Argyle Street		
Arm D	Prince Edward Road West		



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				8.50	9.50	6.00	6.50	
E	Entry Width (m)				9.00	10.00	8.00	9.70	
L	Effective Length of Flare (m)				1.00	5.00	5.00	9.00	
R	Entry Radius (m)				50.00	22.00	28.00	60.00	
D	Inscribed Circle Diameter (m)				100.00	100.00	100.00	100.00	
A	Entry Angle (degree)				10.00	55.00	15.00	30.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.80	0.16	0.64	0.57	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	0.92	1.07	1.03	
X2	= V + ((E-V) / (1+2S))				8.69	9.88	6.88	8.00	
M	= EXP ((D-60) /10)				54.60	54.60	54.60	54.60	
F	= 303 * X2				2634	2993	2084	2423	
Td	= 1 + (0.5 / (1+M))				1.01	1.01	1.01	1.01	
Fc	= 0.21*Td (1 + 0.2*X2)				0.58	0.63	0.50	0.55	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,895	1,085	460	1,225	
Qc	Circulating Flow Across Entry (pcu/hour)				785	1,185	1,905	1,465	
Qe	= K (F - Fc*Qc)				2393	2061	1199	1669	
DFC	= Q / Qe	Design Flow / Capacity	0.79		**0.79**	0.53	0.38	0.73	
		Total Entry Flows	4,665						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,465	1,270	345	1,080	
Qc	Circulating Flow Across Entry (pcu/hour)				675	1,260	2,240	1,680	
Qe	= K (F - Fc*Qc)				2463	2018	1019	1547	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.59	0.63	0.34	**0.70**	
		Total Entry Flows	4,160						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

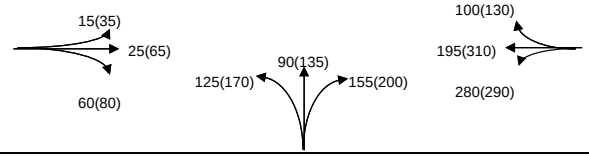
Junction: Kai San Road / Tsat Po Street Design Year: 2024

Description: 2024 Observed Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Tsat Po Street (EB)		C	4	5.000	10	25		15% / 60%	19% / 44%	2000	2005	100	0.050	0.050	180	0.090	0.090
Tsat Po Street (WB)		A	1	3.600	10			100%	87%	1715	1745	280	0.163	0.163	334	0.191	0.191
		A	1	3.600		25		34%	33%	2075	2075	295	0.142		396	0.191	
Kai San Road (NB)		B	2	4.000		15				1960	1960	155	0.079		200	0.102	
		B	2	4.000	10			58%	56%	1855	1860	215	0.116	0.116	305	0.164	0.164
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			10	+	9	=	19						
		Ep	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Fp	1,2,4	MIN GREEN + FLASH =			7	+	7	=	14						
		Gp	2	MIN GREEN + FLASH =			9	+	8	=	17			*			*
		Hp	2	MIN GREEN + FLASH =			7	+	7	=	14						

Notes:

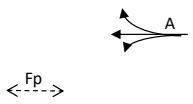
Flow: (pcu/hr)



Group	A,Gp,B,C	A,Gp,B,C	Group	A,Gp,B,C	A,Gp,B,C
y	0.329	0.329	y	0.445	0.445
L (sec)	48	48	L (sec)	48	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.568	0.568	y pract.	0.568	0.568
R.C. (%)	72%	72%	R.C. (%)	28%	28%

Stage / Phase Diagrams

1.



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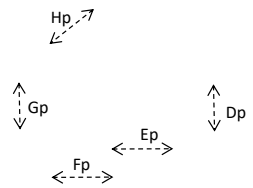

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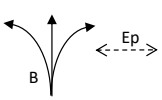

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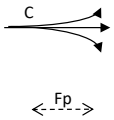


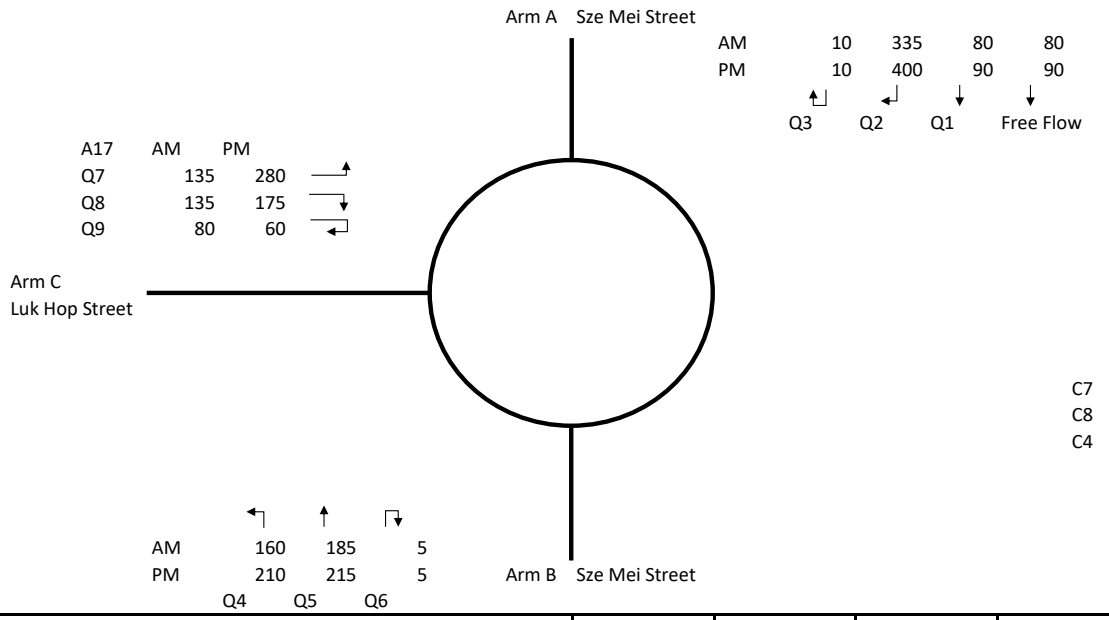
5.

I/G= 11		I/G= 11	17	I/G= 3		I/G= 9		I/G=	
I/G= 11		I/G= 11	17	I/G= 3		I/G= 9		I/G=	

Date: JUN, 2024 **Junction:** Kai San Road / Tsat Po Street (N)

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Sze Mei Street / Luk Hop Street			Designed by:	TCW
Scheme:	2024 Observed Scenario			Checked by:	CHC
Design Year:	2024	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Sze Mei Street				
Arm B	Sze Mei Street				
Arm C	Luk Hop Street				



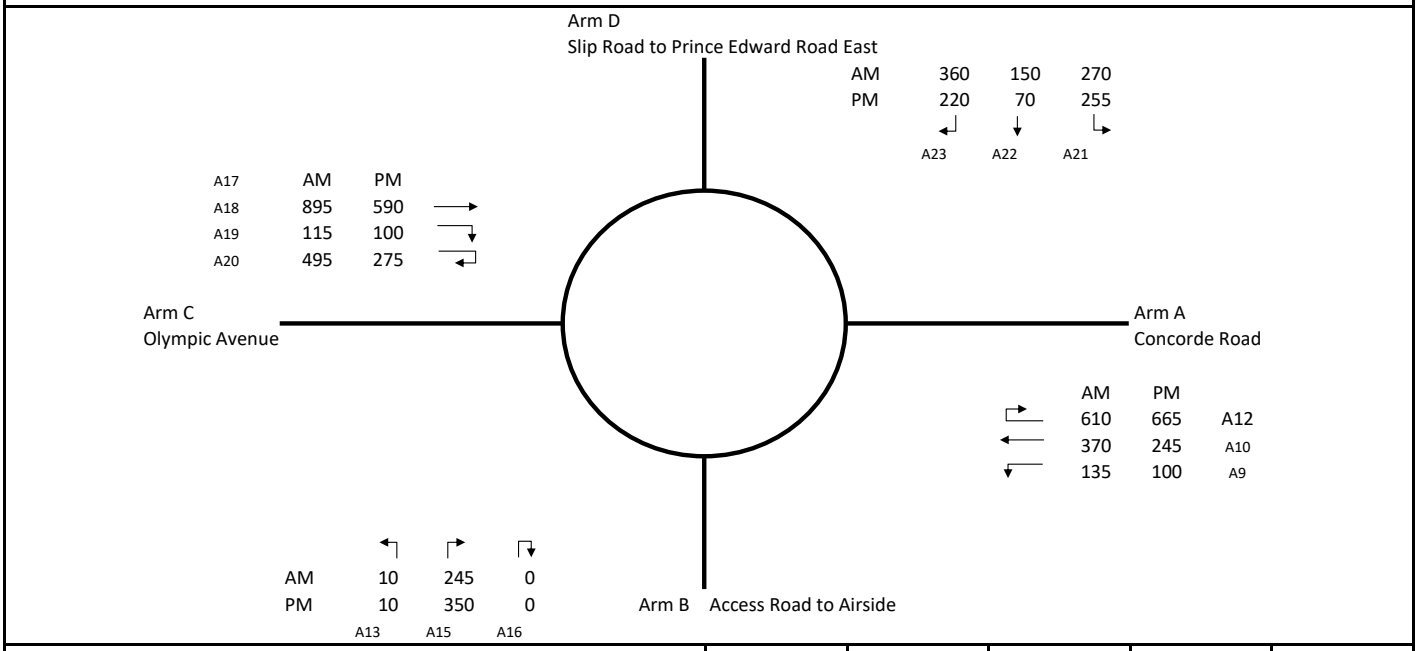
				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				4.00	3.50	4.50	
E	Entry Width (m)				4.00	3.50	5.00	
L	Effective Length of Flare (m)				1.00	1.00	2.00	
R	Entry Radius (m)				30.00	100.00	15.00	
D	Inscribed Circle Diameter (m)				30.00	30.00	30.00	
A	Entry Angle (degree)				10.00	10.00	35.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.00	0.40	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.09	1.11	0.97	
X2	= V + ((E-V) / (1+2S))				4.00	3.50	4.78	
M	= EXP ((D-60) /10)				0.05	0.05	0.05	
F	= 303 * X2				1212	1061	1448	
Td	= 1 + (0.5 / (1+M))				1.48	1.48	1.48	
Fc	= 0.21*Td (1 + 0.2*X2)				0.56	0.53	0.61	
AM RESULT								
Q	Entry Flow (pcu/hour)				425	350	350	
Qc	Circulating Flow Across Entry (pcu/hour)				220	425	200	
Qe	= K (F - Fc*Qc)				1183	927	1282	
DFC	= Q / Qe	Design Flow / Capacity	0.38		0.36	**0.38**	0.27	
		Total Entry Flows	1,125					
PM RESULT								
Q	Entry Flow (pcu/hour)				500	430	515	
Qc	Circulating Flow Across Entry (pcu/hour)				240	470	230	
Qe	= K (F - Fc*Qc)				1170	901	1264	
DFC	= Q / Qe	Design Flow / Capacity	0.48		0.43	**0.48**	0.41	
		Total Entry Flows	1,445					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

2032 Reference

Roundabout Capacity Calculation

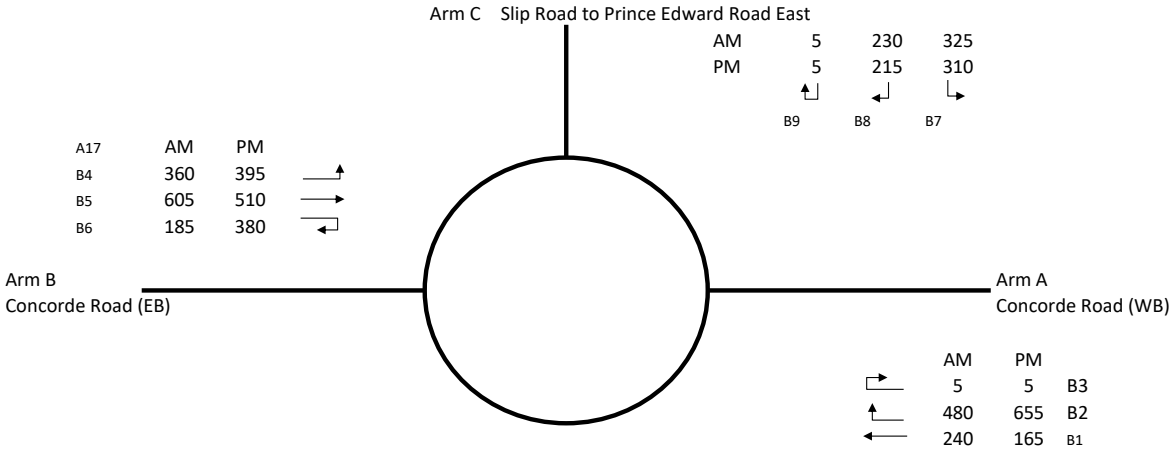
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2032 Reference Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road				
Arm B	Access Road to Airside				
Arm C	Olympic Avenue				
Arm D	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				7.30	7.00	10.00	7.00	
E	Entry Width (m)				10.00	7.50	11.00	10.50	
L	Effective Length of Flare (m)				5.00	1.00	5.00	20.00	
R	Entry Radius (m)				35.00	30.00	25.00	30.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	60.00	
A	Entry Angle (degree)				15.00	15.00	60.00	40.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.86	0.80	0.32	0.28	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.07	1.07	0.91	0.98	
X2	= V + ((E-V) / (1+2S))				8.29	7.19	10.61	9.24	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	1.00	
F	= 303 * X2				2512	2179	3215	2801	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.70	0.64	0.82	0.75	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,115	255	1,505	780	
Qc	Circulating Flow Across Entry (pcu/hour)				1,120	1,835	855	2,360	
Qe	= K (F - Fc*Qc)				1857	1073	2277	1017	
DFC	= Q / Qe	Design Flow / Capacity	0.77		0.60	0.24	0.66	**0.77**	
		Total Entry Flows	3,655						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,010	360	965	545	
Qc	Circulating Flow Across Entry (pcu/hour)				665	1,405	1,015	1,980	
Qe	= K (F - Fc*Qc)				2197	1367	2158	1296	
DFC	= Q / Qe	Design Flow / Capacity	0.46		**0.46**	0.26	0.45	0.42	
		Total Entry Flows	2,880						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

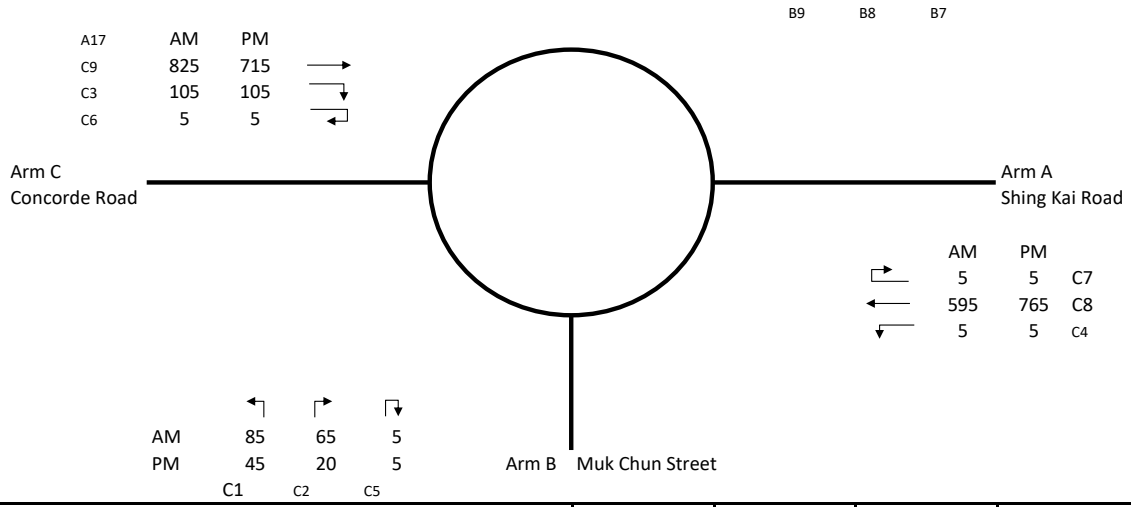
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2032 Reference Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road (WB)				
Arm B	Concorde Road (EB)				
Arm C	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				8.00	7.00	8.00	
E	Entry Width (m)				8.00	8.00	8.00	
L	Effective Length of Flare (m)				1.00	6.00	1.00	
R	Entry Radius (m)				42.00	20.00	47.00	
D	Inscribed Circle Diameter (m)				40.00	40.00	40.00	
A	Entry Angle (degree)				10.00	22.00	15.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.27	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	1.03	1.08	
X2	= V + ((E-V) / (1+2S))				8.00	7.65	8.00	
M	= EXP ((D-60) /10)				0.14	0.14	0.14	
F	= 303 * X2				2424	2319	2424	
Td	= 1 + (0.5 / (1+M))				1.44	1.44	1.44	
Fc	= 0.21*Td (1 + 0.2*X2)				0.79	0.77	0.79	
AM RESULT								
Q	Entry Flow (pcu/hour)				725	1,150	560	
Qc	Circulating Flow Across Entry (pcu/hour)				420	490	795	
Qe	= K (F - Fc*Qc)				2293	1998	1943	
DFC	= Q / Qe	Design Flow / Capacity	0.58		0.32	**0.58**	0.29	
		Total Entry Flows	2,435					
PM RESULT								
Q	Entry Flow (pcu/hour)				825	1,285	530	
Qc	Circulating Flow Across Entry (pcu/hour)				600	665	895	
Qe	= K (F - Fc*Qc)				2138	1860	1858	
DFC	= Q / Qe	Design Flow / Capacity	0.69		0.39	**0.69**	0.29	
		Total Entry Flows	2,640					
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9								

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Shing Kai Road / Concorde Road / Muk Chun Street			Designed by:	TCW
Scheme:	2032 Reference Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Shing Kai Road				
Arm B	Muk Chun Street				
Arm C	Concorde Road				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				5.00	5.00	7.00	
E	Entry Width (m)				7.00	7.50	7.00	
L	Effective Length of Flare (m)				5.00	5.00	5.00	
R	Entry Radius (m)				30.00	20.00	50.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	
A	Entry Angle (degree)				40.00	25.00	25.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.64	0.80	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				0.98	1.02	1.05	
X2	= V + ((E-V) / (1+2S))				5.88	5.96	7.00	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	
F	= 303 * X2				1781	1806	2121	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.57	0.58	0.63	
AM RESULT								
Q	Entry Flow (pcu/hour)				605	155	935	
Qc	Circulating Flow Across Entry (pcu/hour)				115	600	75	
Qe	= K (F - Fc*Qc)				1684	1486	2171	
DFC	= Q / Qe	Design Flow / Capacity	0.43		0.36	0.10	**0.43**	
		Total Entry Flows	1,695					
PM RESULT								
Q	Entry Flow (pcu/hour)				775	70	825	
Qc	Circulating Flow Across Entry (pcu/hour)				115	770	30	
Qe	= K (F - Fc*Qc)				1684	1387	2200	
DFC	= Q / Qe	Design Flow / Capacity	0.46		**0.46**	0.05	0.37	
		Total Entry Flows	1,670					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Hung Street Design Year: 2032

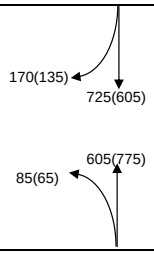
Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road		A	1	3.650	15			26%	16%	1930	1950	329	0.170	0.170	402	0.206	
(NB)		A	1	3.650						2120	2120	361	0.170		438	0.207	0.207
Shing Kai Road		B	2	3.650						1980	1980	448	0.226	0.226	370	0.187	0.187
(SB)		B	2	3.650		8		38%	36%	1980	1985	447	0.226		370	0.186	
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Dp	2,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Ep	3	MIN GREEN + FLASH =			9	+	9	=	18			*			*
		Fp	2,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Gp	1,3	MIN GREEN + FLASH =			9	+	9	=	18						

Notes:

TAC junction : CT 90s adopted

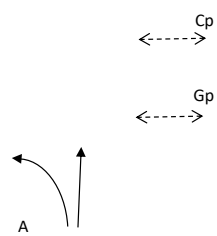
Flow: (pcu/hr)



Group	Gp,B	A,B,Ep	Group	A,Dp	A,B,Ep
y	0.226	0.397	y	0.207	0.393
L (sec)	28	34	L (sec)	28	34
C (sec)	90	90	C (sec)	90	90
y pract.	0.620	0.560	y pract.	0.620	0.560
R.C. (%)	174%	41%	R.C. (%)	200%	42%

Stage / Phase Diagrams

1.



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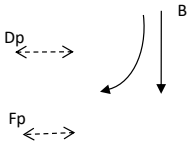

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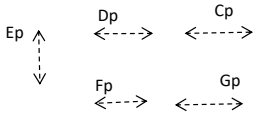


4.

5.

I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=
I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=

Date: JUN, 2024 **Junction:** (D) Shing Kai Road / Muk Hung Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2032

Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

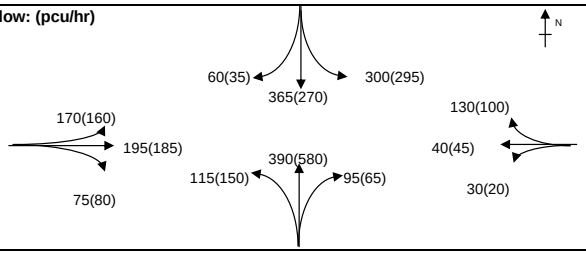
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street (EB)		C	3	3.750	30	25		39% / 17%	38% / 19%	1935	1930	440	0.227	0.227	425	0.220	0.220
Shing Kai Road (SB)		B	2	3.650	10			91%	100%	1740	1720	329	0.189	0.189	295	0.172	0.172
		B	2	3.650		20		15%	11%	2095	2100	396	0.189		305	0.145	
Muk Chui Street (WB)		D	4	3.650		20				1970	1970	130	0.066	0.066	100	0.051	0.051
		D	4	3.650	10			43%	31%	1860	1895	70	0.038		65	0.034	
Shing Kai Road (NB)		A	1	3.650	18			40%	39%	1915	1915	288	0.150	0.150	380	0.198	0.198
		A	1	3.650		20		30%	16%	2075	2095	312	0.150		415	0.198	

Pedestrian Crossing	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

TAC junction: CT 120s adopted

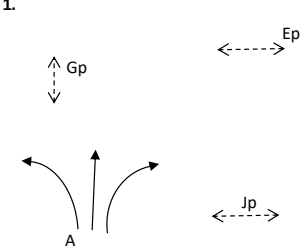
Flow: (pcu/hr)



Group	Jp,B,C,D	A,B,C,D	Group	A,Fp,C,D	A,B,C,D
y	0.482	0.633	y	0.469	0.641
L (sec)	38	29	L (sec)	39	29
C (sec)	120	120	C (sec)	120	120
y pract.	0.615	0.683	y pract.	0.608	0.683
R.C. (%)	27%	8%	R.C. (%)	29%	6%

Stage / Phase Diagrams

1.



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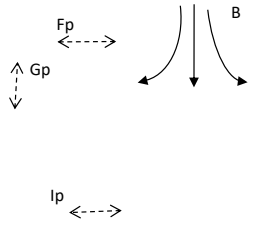

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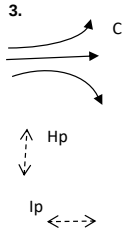

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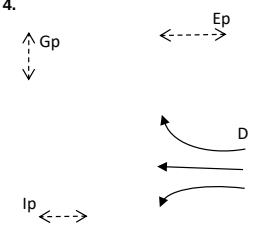


5.

I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=
I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (E) Shing Kai Road / Muk Chui Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2032

Description: 2032 Reference Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

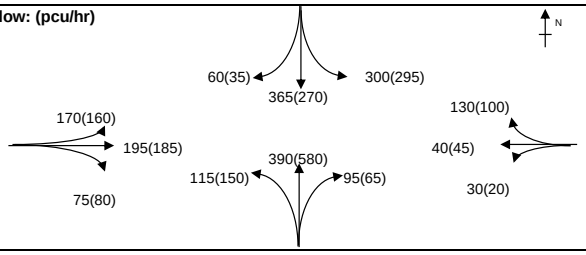
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street	*	C	3	4.000	15			82%	80%	1305	1305	207	0.159		201	0.154	0.154
(EB)	*	C	3	4.000		17		32%	36%	1465	1460	233	0.159	0.159	224	0.153	
Shing Kai Road		B	2	3.650	10			91%	100%	1740	1720	329	0.189	0.189	295	0.172	0.172
(SB)		B	2	3.650		20		15%	11%	2095	2100	396	0.189		305	0.145	
Muk Chui Street		D	4	3.650		20				1970	1970	130	0.066	0.066	100	0.051	0.051
(WB)		D	4	3.650	10			43%	31%	1860	1895	70	0.038		65	0.034	
Shing Kai Road		A	1	3.650	18			40%	39%	1915	1915	288	0.150	0.150	380	0.198	0.198
(NB)		A	1	3.650		20		30%	16%	2075	2095	312	0.150		415	0.198	

Pedestrian Crossing	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

TAC junction: CT 120s adopted
* Site factor 0.7 added due to flare length

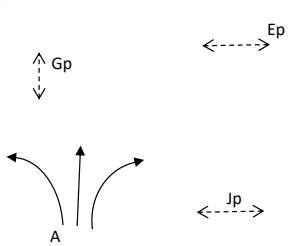
Flow: (pcu/hr)



Group	A,B,Hp,D	A,B,C,D	Group	A,B,Hp,D	A,B,C,D
y	0.405	0.565	y	0.421	0.575
L (sec)	44	29	L (sec)	44	29
C (sec)	120	120	C (sec)	120	120
y pract.	0.570	0.683	y pract.	0.570	0.683
R.C. (%)	41%	21%	R.C. (%)	35%	19%

Stage / Phase Diagrams

1.



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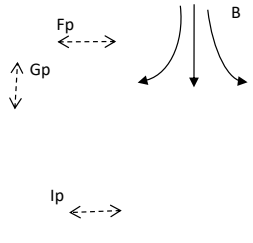

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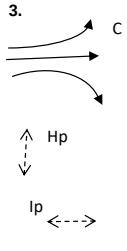

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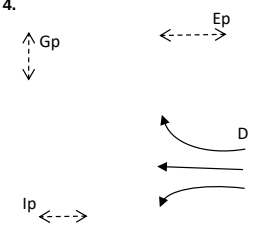


5.

I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=
I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (E) Shing Kai Road / Muk Chui Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Kai Shing Street / Muk On Street — Design Year: 2032

Description: 2032 Reference Scenario — Designed By: TCW — Checked By: CHC

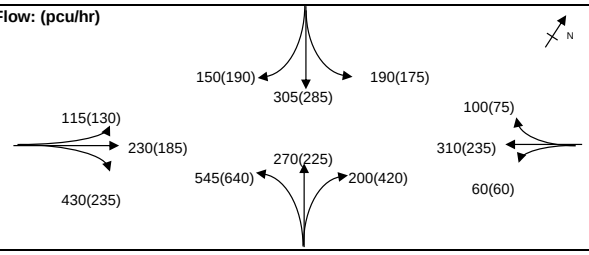
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	2	3.650	18			45%	74%	1910	1865	253	0.132		175	0.094	
		A	2	3.650		18		66%	28%	2010	2070	267	0.133	0.133	194	0.094	
		A	2	3.650		15				1925	1925	255	0.132		181	0.094	0.094
Muk On Street		E	1	3.650	18			61%	56%	1885	1890	309	0.164	0.164	313	0.166	0.166
		E	1	3.650		20		45%	56%	2050	2035	336	0.164		337	0.166	
Shing Kai Road (WB)		D	3	3.650						2120	2120	209	0.099		158	0.075	
		D	3	3.650		20		50%	49%	2045	2045	201	0.098		152	0.074	
	#	D	3	3.650	50					1345	1345	60	0.045		60	0.045	
kai Shing Street		C	4	3.650		20				1970	1970	200	0.102		420	0.213	0.213
		C	4	3.650						2120	2120	270	0.127	0.127	225	0.106	
	#	B	1,2,4	4.000	50					1370	1370	545	0.398		640	0.467	

Pedestrian Crossing	Fp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Gp	1	MIN GREEN + FLASH =	8	+	20	=	28		
	Hp	1,3,4	MIN GREEN + FLASH =	8	+	21	=	29		
	Ip	4	MIN GREEN + FLASH =	5	+	9	=	14		
	Jp	3	MIN GREEN + FLASH =	7	+	17	=	24	*	*
	Kp	3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Lp	1,2,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Mp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14		

Notes:

TAC Junction: 130s CT adopted
Site factor 0.7 adopted

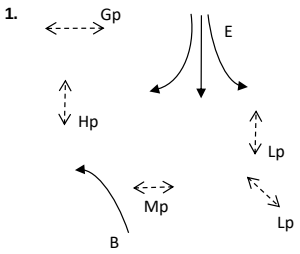
Flow: (pcu/hr)



Group	E,A,D,C	E,A,Jp,C	Group	Gp,A,Jp,C	E,A,Jp,C
y	0.523	0.424	y	0.307	0.473
L (sec)	28	48	L (sec)	73	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.706	0.568	y pract.	0.395	0.568
R.C. (%)	35%	34%	R.C. (%)	28%	20%

Stage / Phase Diagrams

1.



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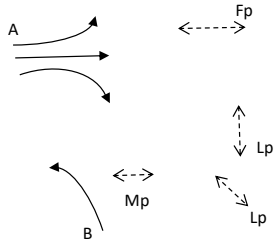

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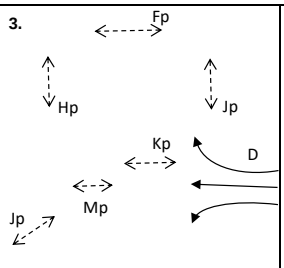
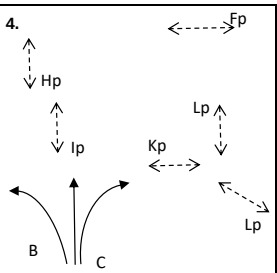


4.



5.

I/G= 8		I/G= 6		I/G= 10	24	I/G= 3	I/G=
I/G= 8		I/G= 6		I/G= 10	24	I/G= 3	I/G=

Date: JUN, 2024 — **Junction:** (F) Shing Kai Road / Kai Shing Street / Muk On Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Shing Fung Road / Muk Tai Street Design Year: 2032

Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

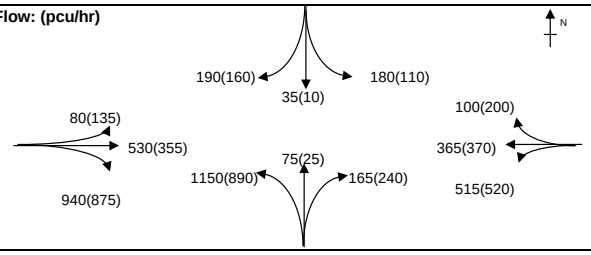
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		B	2	3.650	15			27%	58%	1925	1870	292	0.152		231	0.124	
		B	2	3.500						2105	2105	318	0.151		259	0.123	
		B	2	3.500		20				1960	1960	475	0.242		443	0.226	0.226
		B	2	3.500		15				1915	1915	465	0.243	0.243	432	0.226	
Muk Tai Street	^	A	1	3.750		17				980	980	190	0.194		160	0.163	0.163
	^	A	1	4.000	22			84%	92%	955	950	215	0.225	0.225	120	0.126	
Shing Kai Road (WB)		E	4	3.650						2120	2120	236	0.111		292	0.138	0.138
		E	4	3.650		23		44%	72%	2060	2025	229	0.111		278	0.137	
		E	4	3.650	25					1870	1870	248	0.133		251	0.134	
		E	4	3.650	28					2010	2010	267	0.133		269	0.134	
Shing Fung Road		C	2,3	3.650	20					1840	1840	553	0.301		428	0.233	
		C	2,3	3.650	22					1985	1985	597	0.301		462	0.233	
		D	3	3.650		23		42%	82%	2065	2010	130	0.063	0.063	142	0.071	0.071
		D	3	3.650		19				1750	1750	110	0.063		123	0.070	

Pedestrian Crossing								
	Fp	1,3,4	MIN GREEN + FLASH =	8	+	15	=	23
	Gp	2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,4	MIN GREEN + FLASH =	5	+	8	=	13
	Ip	4	MIN GREEN + FLASH =	10	+	9	=	19
	Jp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14
	Kp	1,2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Lp	4	MIN GREEN + FLASH =	7	+	13	=	20
	Mp	2,3	MIN GREEN + FLASH =	5	+	9	=	14
	Np	1	MIN GREEN + FLASH =	6	+	11	=	17

Notes:

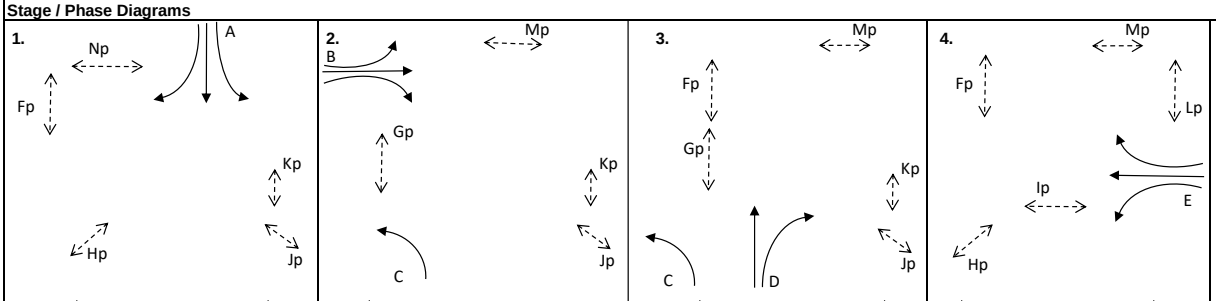
TAC junction : CT 130s adopted
^ Site factor 0.5 added due to flare length

Flow: (pcu/hr)



Group	A,B,D,E	A,B,D,Lp	Group	A,B,D,Lp	A,B,D,E
y	0.664	0.531	y	0.460	0.598
L (sec)	17	40	L (sec)	40	17
C (sec)	130	130	C (sec)	130	130
y pract.	0.782	0.623	y pract.	0.623	0.782
R.C. (%)	18%	17%	R.C. (%)	35%	31%

Stage / Phase Diagrams



I/G= 2		I/G= 5		I/G= 6		I/G= 10	20
I/G= 5		I/G= 5		I/G= 6		I/G= 5	

I/G=	
I/G=	

Date: JUN, 2024 **Junction:** (G) Shing Kai Road / Shing Fung Road / Muk Tai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Western access to main stadium Design Year: 2032

Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

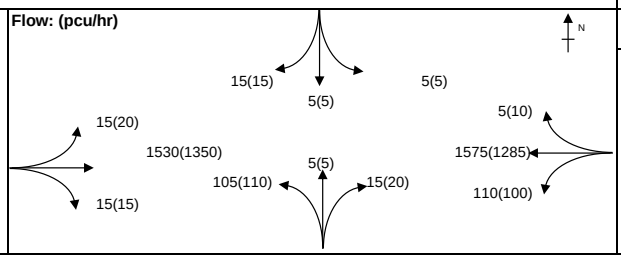
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/h	PM Peak y Value	PM Peak Critical y
Shing Kai Road EB		A	1	3.650	17.5			3%	5%	1975	1970	496	0.251		440	0.223	0.223
		A	1	3.650						2120	2120	533	0.251	0.251	473	0.223	
		A	1	3.650		22.5		3%	3%	2115	2115	531	0.251		472	0.223	
Shing Kai Road WB		C	3	3.650	17.5			21%	23%	1945	1940	532	0.274	0.274	438	0.226	
		C	3	3.650						2120	2120	579	0.273		479	0.226	
		C	3	3.650		22.5		1%	2%	2120	2115	579	0.273		478	0.226	0.226
Western Access Road to Main Stadium NB		B	2	3.750	15					1810	1810	105	0.058	0.058	110	0.061	0.061
		B	2	3.750		22.5		75%	80%	2030	2020	20	0.010		25	0.012	
Western Access Road to Main Stadium SB		D	4	3.500	20			50%	50%	1895	1895	10	0.005		10	0.005	
		D	4	3.500		32.5				2010	2010	15	0.007		15	0.007	

Pedestrian Crossing	Ep	4	MIN GREEN + FLASH =	5	+	5	=	10
	Fp	1,2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Gp	3	MIN GREEN + FLASH =	5	+	10	=	15
	Hp	1,2,4	MIN GREEN + FLASH =	6	+	11	=	17
	Ip	2	MIN GREEN + FLASH =	5	+	8	=	13
	Jp	1,3,4	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC junction : CT 130s adopted

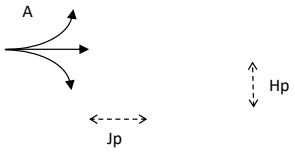
Flow: (pcu/hr)



Group	A,B,Gp,D	A,B,C,D	Group	A,B,Gp,D	A,B,C,D
y	0.309	0.583	y	0.284	0.510
L (sec)	39	24	L (sec)	39	24
C (sec)	130	130	C (sec)	130	130
y pract.	0.630	0.734	y pract.	0.630	0.734
R.C. (%)	104%	26%	R.C. (%)	122%	44%

Stage / Phase Diagrams

1.



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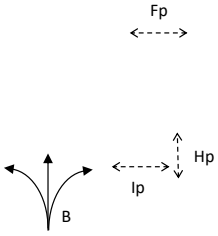

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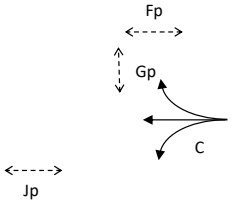

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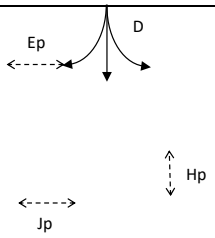

5.

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I/G= 5		I/G= 5		I/G= 5		I/G= 7	5

I/G= | I/G=

Date: JUN, 2024

Junction: (H) Shing Kai Road / Western access to main stadium

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2032

Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

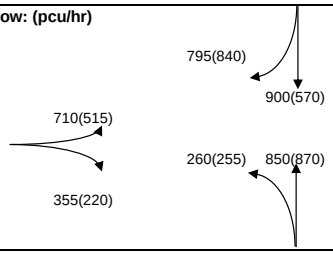
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		C	1	3.600	18			49%	47%	1900	1900	533	0.281		540	0.284	
(NB)		C	1	3.000						2055	2055	577	0.281	0.281	585	0.285	0.285
Shing Kai Road		A	2	3.500						1965	1965	546	0.278		457	0.233	
(SB)		A	2	3.650		32		39%	76%	2080	2045	579	0.278	0.278	476	0.233	0.233
		A	2	4.000		30				2050	2050	570	0.278		477	0.233	
Sung Wong Toi		B	3	3.650	18					1830	1830	342	0.187	0.187	248	0.136	
Road		B	3	3.650	20	32		100% / 0%	100% / 0%	1970	1970	368	0.187		267	0.136	0.136
(EB)		B	3	3.650		30				2020	2020	355	0.176		220	0.109	

Pedestrian Crossing	Dp	2,3	MIN GREEN + FLASH =	5	+	10	=	15
	Ep	1	MIN GREEN + FLASH =	5	+	12	=	17
	Fp	1,3	MIN GREEN + FLASH =	5	+	11	=	16
	Gp	2	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,2	MIN GREEN + FLASH =	5	+	6	=	11
	Ip	3	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC Junction: CT 130s adopted
^ Site factor 0.9 adopted for kerbside activities at Sung Wong Toi Road WB

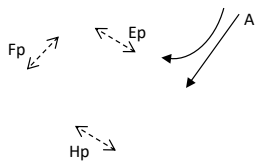
Flow: (pcu/hr)



Group	A,Gp,C	A,B,C	Group	A,Gp,C	A,B,C
y	0.559	0.746	y	0.517	0.653
L (sec)	29	13	L (sec)	29	13
C (sec)	130	130	C (sec)	130	130
y pract.	0.699	0.810	y pract.	0.699	0.810
R.C. (%)	25%	9%	R.C. (%)	35%	24%

Stage / Phase Diagrams

1.



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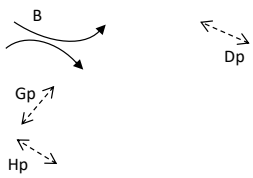

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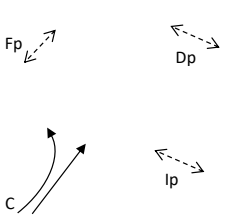


4.

5.

I/G= 5		I/G= 6		I/G= 5		I/G=	I/G=
I/G= 5		I/G= 6		I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** 1 To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2032

Description: 2032 Reference Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

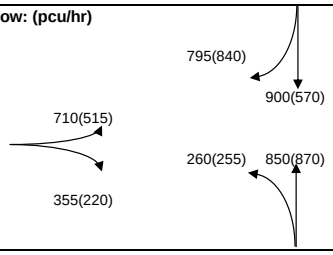
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road (NB)	↰↑	D	4	3.600	18			49%	47%	1900	1900	533	0.281		540	0.284	
	↑	D	4	3.000						2055	2055	577	0.281	0.281	585	0.285	0.285
Shing Kai Riad (SB)	↓	A	1,2	3.500						1965	1965	546	0.278		457	0.233	
	↰↓	A	1,2	3.650		32		39%	76%	2080	2045	579	0.278	0.278	476	0.233	0.233
	↲	A	1,2	4.000		30				2050	2050	570	0.278		477	0.233	
To Kwa Wan Road (EB)	→↑ *	C	2,3	3.500	18					1630	1630	322	0.198		234	0.144	
	→↑	C	2,3	3.500	20					1960	1960	388	0.198		281	0.143	
	→↓	B	3	3.500		30				2005	2005	178	0.089	0.089	110	0.055	
	→↓	B	3	3.500		28				2000	2000	177	0.089		110	0.055	0.055

Pedestrian Crossing								
	Jp	3,4	MIN GREEN + FLASH =	5	+	10	=	15
	Ep	1	MIN GREEN + FLASH =	7	+	13	=	17
	Fp	1,4	MIN GREEN + FLASH =	8	+	15	=	16
	Gp	3	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,2,3	MIN GREEN + FLASH =	5	+	6	=	11
	Ip	4	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC Junction : CT 130s adopted
*Site factor 0.9 added due to flare length

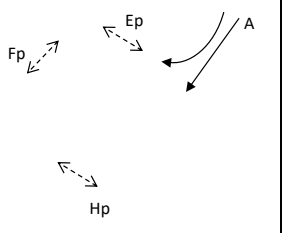
Flow: (pcu/hr)



Group	A,Jp	A,B,D	Group	A,Jp	A,B,D
y	0.278	0.648	y	0.233	0.572
L (sec)	21	15	L (sec)	21	15
C (sec)	130	130	C (sec)	130	130
y pract.	0.755	0.796	y pract.	0.755	0.796
R.C. (%)	171%	23%	R.C. (%)	224%	39%

Stage / Phase Diagrams

1.



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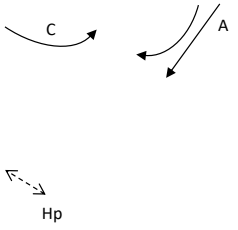

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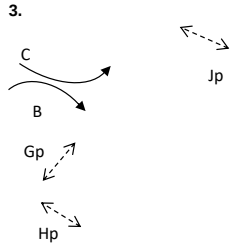

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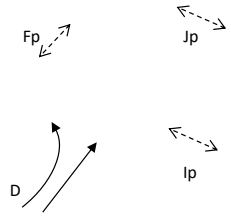


5.

I/G= 5		I/G= 2		I/G= 6		I/G= 5		I/G=	
I/G= 5		I/G= 2		I/G= 6		I/G= 5		I/G=	

Date: JUN, 2024 **Junction:** 1 To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Kowloon City Road / Sung Wong Toi Road Design Year: 2032

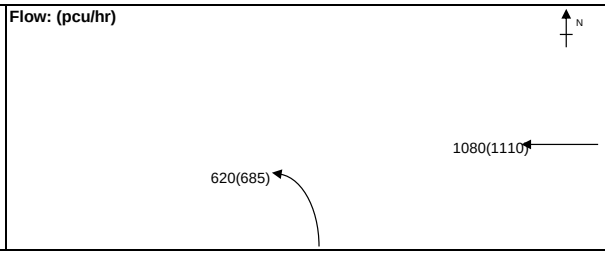
Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	←	A	1	3.650						1585	1585	523	0.330		538	0.339	
	←	A	1	3.500						1685	1685	557	0.331	0.331	572	0.339	0.339
Kowloon City Road	↰	B	2	4.500	10					1435	1435	296	0.206		327	0.228	
	↰	B	2	4.500	12					1570	1570	324	0.206	0.206	358	0.228	0.228
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =			10	+	11	=	21						

Notes:

Site factor 0.8 added due to kerbside activities at Sung Wong Toi Road & Kowloon City Road

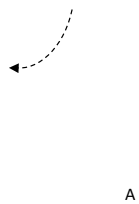
Flow: (pcu/hr)



Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.331	0.537	y	0.339	0.567
L (sec)	27	10	L (sec)	27	10
C (sec)	65	65	C (sec)	65	65
y pract.	0.526	0.762	y pract.	0.526	0.762
R.C. (%)	59%	42%	R.C. (%)	55%	34%

Stage / Phase Diagrams

1.



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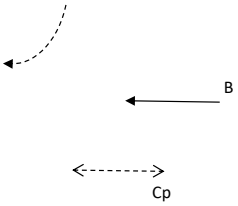


3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=	

Date: JUN, 2024 **Junction:** (J) Kowloon City Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street Design Year: 2032

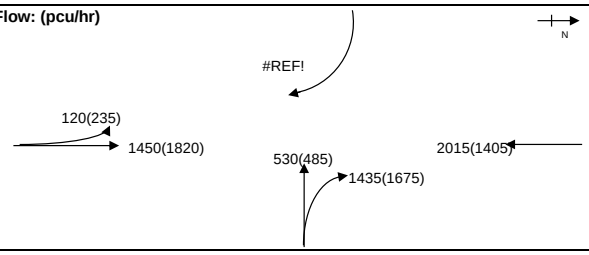
Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	↱	D	2,3	3.500		15				1785	1785	451	0.253	0.253	526	0.295	
	↱	D	2,3	3.500		20				1960	1960	494	0.252		577	0.294	
	↱	D	2,3	3.000		25				1940	1940	490	0.253		572	0.295	0.295
	↑	E	2	3.500						1965	1965	256	0.130		234	0.119	
	↑	E	2	3.500						2105	2105	274	0.130		251	0.119	
Ma Tau Chung Rd (NB)	↑→	A	1	3.500	10			25%	37%	1895	1860	487	0.257		630	0.339	
	→	A	1	3.500						2105	2105	542	0.257		713	0.339	0.339
	→	A	1	3.500						2105	2105	541	0.257		712	0.338	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	687	0.326	0.326	479	0.228	
	←	B	1	3.500						2105	2105	687	0.326		479	0.228	
	←	B	1	3.500						1965	1965	641	0.326		447	0.227	
Fu Ning Street	↲	I	4	3.500		20				1830	1830	25	0.014		25	0.014	

Pedestrian Crossing								
	Cp	1	MIN GREEN + FLASH =	10	+	9	=	19
	Fp	2,3	MIN GREEN + FLASH =	10	+	9	=	19
	Gp	1,2,3	MIN GREEN + FLASH =	5	+	5	=	10
	Hp	3,4	MIN GREEN + FLASH =	7	+	8	=	15

Notes:

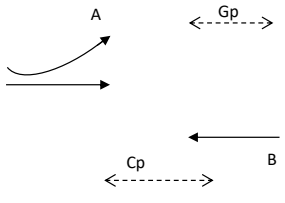
Flow: (pcu/hr)



Group	A,D,I	B,D,I	Group	B,D,I	A,D,I
y	0.510	0.579	y	0.522	0.634
L (sec)	18	18	L (sec)	18	18
C (sec)	130	130	C (sec)	130	130
y pract.	0.775	0.775	y pract.	0.775	0.775
R.C. (%)	52%	34%	R.C. (%)	48%	22%

Stage / Phase Diagrams

1.



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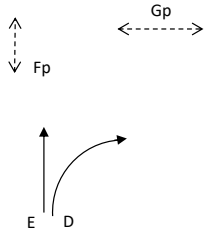

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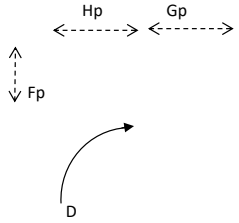

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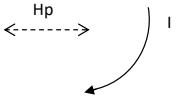


5.

I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			
I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			

Date: JUN, 2024 **Junction:** (K) Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

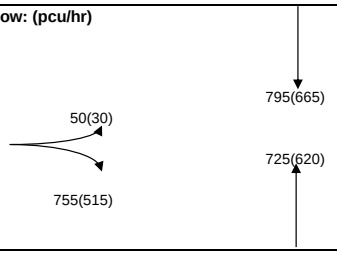
Junction: Olympic Avenue / Hang Wan Road Design Year: 2032

Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	↑	A	1,2	3.500						1965	1965	350	0.178		299	0.152	
(NB)	↑	A	1,2	3.500						2105	2105	375	0.178		321	0.152	
Olympic Avenue	↓	B	1,2	3.650						1980	1980	384	0.194	0.194	321	0.162	
(SB)	↓	B	1,2	3.650						2120	2120	411	0.194		344	0.162	0.162
Hang Wan Road	→↑*	C	2,3	5.000	13					1895	1895	50	0.026		30	0.016	
	→↓*	D	3	3.300		25				1965	1965	380	0.193	0.193	259	0.132	
	→↓*	D	3	3.300		20				1940	1940	375	0.193		256	0.132	0.132
Pedestrian Crossing		Ep	1	MIN GREEN + FLASH =			5	+	7	=	12						
		Fp	1	MIN GREEN + FLASH =			5	+	7	=	12						
		Gp	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

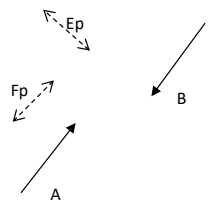
Flow: (pcu/hr)



Group	A,D	B,D	Group	A,D	B,D
y	0.372	0.387	y	0.284	0.294
L (sec)	9	11	L (sec)	9	11
C (sec)	60	60	C (sec)	60	60
y pract.	0.765	0.735	y pract.	0.765	0.735
R.C. (%)	106%	90%	R.C. (%)	169%	150%

Stage / Phase Diagrams

1.



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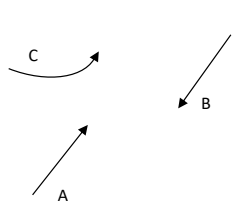

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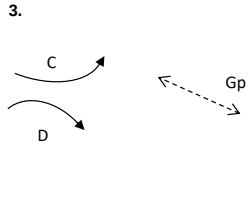


4.

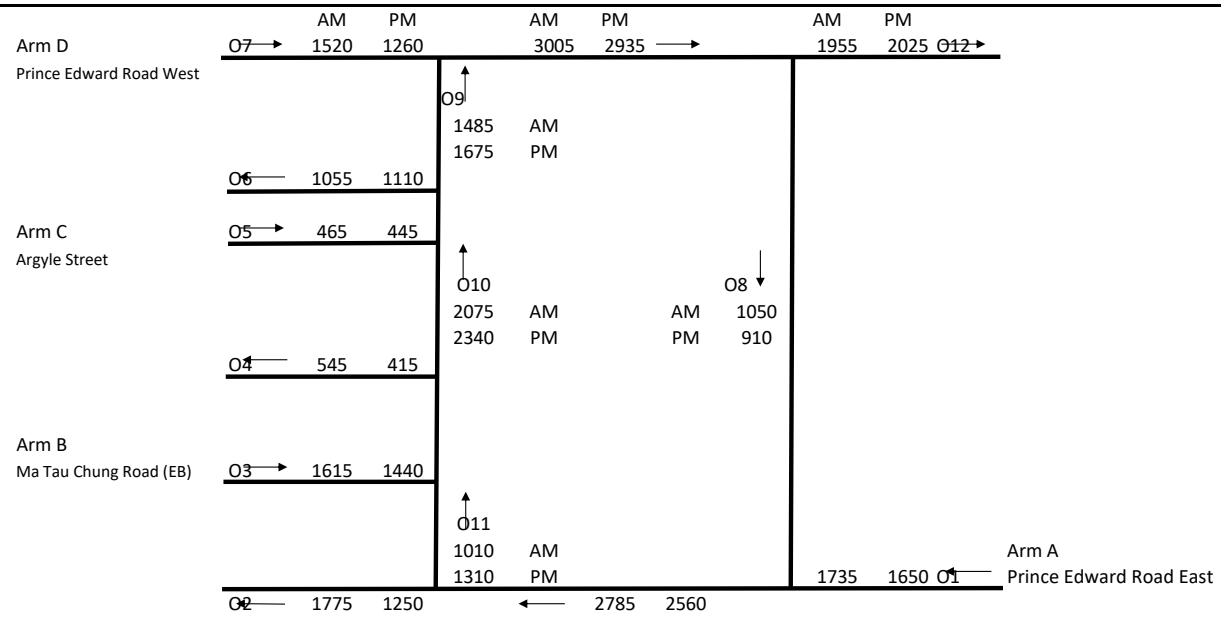
5.

I/G= 6		I/G=		I/G= 7		I/G=	I/G=
I/G= 6		I/G=		I/G= 7		I/G=	I/G=

Date: JUN, 2024 **Junction:** Olympic Avenue / Hang Wan Road (N)

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street			Designed by:	TCW
Scheme:	2032 Reference Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Prince Edward Road East				
Arm B	Ma Tau Chung Road (EB)				
Arm C	Argyle Street				
Arm D	Prince Edward Road West				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				8.50	9.50	6.00	6.50	
E	Entry Width (m)				9.00	10.00	8.00	9.70	
L	Effective Length of Flare (m)				1.00	5.00	5.00	9.00	
R	Entry Radius (m)				50.00	22.00	28.00	60.00	
D	Inscribed Circle Diameter (m)				100.00	100.00	100.00	100.00	
A	Entry Angle (degree)				10.00	55.00	15.00	30.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.80	0.16	0.64	0.57	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	0.92	1.07	1.03	
X2	= V + ((E-V) / (1+2S))				8.69	9.88	6.88	8.00	
M	= EXP ((D-60) /10)				54.60	54.60	54.60	54.60	
F	= 303 * X2				2634	2993	2084	2423	
Td	= 1 + (0.5 / (1+M))				1.01	1.01	1.01	1.01	
Fc	= 0.21*Td (1 + 0.2*X2)				0.58	0.63	0.50	0.55	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,735	1,615	465	1,520	
Qc	Circulating Flow Across Entry (pcu/hour)				1,050	1,010	2,075	1,485	
Qe	= K (F - Fc*Qc)				2224	2162	1108	1657	
DFC	= Q / Qe	Design Flow / Capacity		0.92	0.78	0.75	0.42	**0.92**	
		Total Entry Flows		5,335					
PM RESULT									
Q	Entry Flow (pcu/hour)				1,650	1,440	445	1,260	
Qc	Circulating Flow Across Entry (pcu/hour)				910	1,310	2,340	1,675	
Qe	= K (F - Fc*Qc)				2314	1989	966	1549	
DFC	= Q / Qe	Design Flow / Capacity		0.81	0.71	0.72	0.46	**0.81**	
		Total Entry Flows		4,795					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

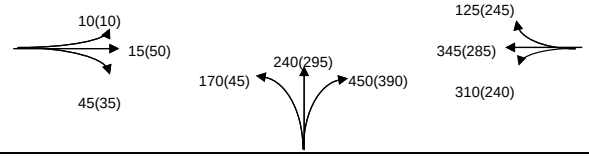
Junction: Kai San Road / Tsat Po Street Design Year: 2032

Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Tsat Po Street (EB)		C	4	5.000	10	25		14% / 64%	11% / 37%	1995	2040	70	0.035	0.035	95	0.047	0.047
Tsat Po Street (WB)		A	1	3.600	10			87%	67%	1745	1795	356	0.204	0.204	360	0.201	
		A	1	3.600		25		29%	60%	2080	2040	424	0.204		410	0.201	0.201
Kai San Road (NB)		B	2	4.000		15				1960	1960	450	0.230	0.230	390	0.199	0.199
		B	2	4.000	10			41%	13%	1895	1975	410	0.216		340	0.172	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			10	+	9	=	19						
		Ep	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Fp	1,2,4	MIN GREEN + FLASH =			7	+	7	=	14						
		Gp	2	MIN GREEN + FLASH =			9	+	8	=	17			*			*
		Hp	2	MIN GREEN + FLASH =			7	+	7	=	14						

Notes:

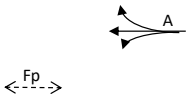
Flow: (pcu/hr)



Group	A,Gp,B,C	A,Gp,B,C	Group	A,Gp,B,C	A,Gp,B,C
y	0.469	0.469	y	0.447	0.447
L (sec)	48	48	L (sec)	48	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.568	0.568	y pract.	0.568	0.568
R.C. (%)	21%	21%	R.C. (%)	27%	27%

Stage / Phase Diagrams

1.



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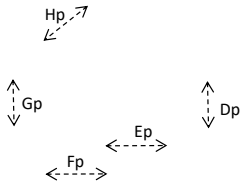

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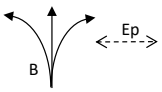

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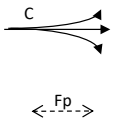


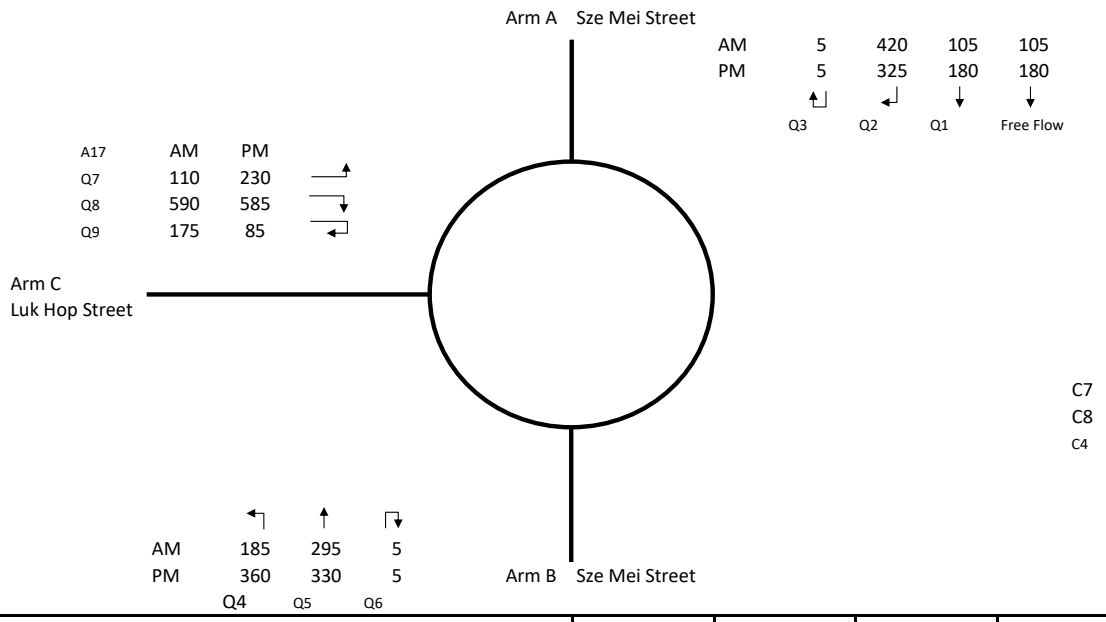
5.

I/G= 11		I/G= 11	17	I/G= 3		I/G= 9	I/G=
I/G= 11		I/G= 11	17	I/G= 3		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (N) Kai San Road / Tsat Po Street

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Sze Mei Street / Luk Hop Street			Designed by:	TCW
Scheme:	2032 Reference Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Sze Mei Street				
Arm B	Sze Mei Street				
Arm C	Luk Hop Street				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				4.00	3.50	4.50	
E	Entry Width (m)				4.00	3.50	5.00	
L	Effective Length of Flare (m)				1.00	1.00	2.00	
R	Entry Radius (m)				30.00	100.00	15.00	
D	Inscribed Circle Diameter (m)				30.00	30.00	30.00	
A	Entry Angle (degree)				10.00	10.00	35.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.00	0.40	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.09	1.11	0.97	
X2	= V + ((E-V) / (1+2S))				4.00	3.50	4.78	
M	= EXP ((D-60) /10)				0.05	0.05	0.05	
F	= 303 * X2				1212	1061	1448	
Td	= 1 + (0.5 / (1+M))				1.48	1.48	1.48	
Fc	= 0.21*Td (1 + 0.2*X2)				0.56	0.53	0.61	
AM RESULT								
Q	Entry Flow (pcu/hour)				530	485	875	
Qc	Circulating Flow Across Entry (pcu/hour)				770	600	305	
Qe	= K (F - Fc*Qc)				849	825	1220	
DFC	= Q / Qe	Design Flow / Capacity	0.72		0.62	0.59	**0.72**	
		Total Entry Flows	1,890					
PM RESULT								
Q	Entry Flow (pcu/hour)				510	695	900	
Qc	Circulating Flow Across Entry (pcu/hour)				675	415	340	
Qe	= K (F - Fc*Qc)				907	933	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.75		0.56	0.74	**0.75**	
		Total Entry Flows	2,105					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Slip road of CKR Design Year: 2032

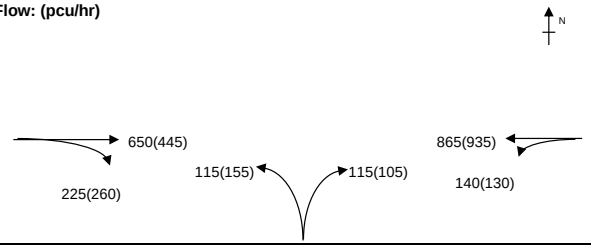
Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	→	A	1	3.650						1980	1980	314	0.159	0.159	230	0.116	0.116
	↱	A	1	3.650		26		0%	12%	2120	2105	336	0.158		244	0.116	
	↴	A	1	3.650		23				1990	1990	225	0.113		231	0.116	
Shing Kai Road (WB)	↰ *	E	3	4.500	35			43%	38%	2030	2030	326	0.161		346	0.170	0.170
	←	E	3	3.600						2115	2115	340	0.161	0.161	360	0.170	
	←	E	3	3.600						2115	2115	339	0.160		359	0.170	
Slip Road of CKR	↰	B	1,2	5.000	35					2030	2030	115	0.057		155	0.076	
	↱	C	2	3.600		18				1950	1950	57	0.029		52	0.027	
	↱	C	2	3.600		20				1965	1965	58	0.030		53	0.027	
Pedestrian Crossing		Fp	1,2	MIN GREEN + FLASH =			5	+	10	=	15						
		Gp	1	MIN GREEN + FLASH =			5	+	5	=	10						
		Hp	2	MIN GREEN + FLASH =			14	+	10	=	24			*			*
		Ip	3	MIN GREEN + FLASH =			5	+	10	=	15						
		Jp	3	MIN GREEN + FLASH =			5	+	5	=	10						
		Kp	3	MIN GREEN + FLASH =			10	+	8	=	18						

Notes:

* assumed to be same phase for conservative purpose

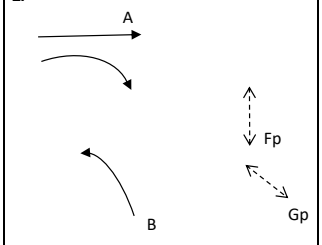
Flow: (pcu/hr)



Group	A,C,E	A,Hp,E	Group	A,C,E	A,Hp,E
y	0.349	0.319	y	0.314	0.287
L (sec)	12	37	L (sec)	12	37
C (sec)	130	130	C (sec)	130	130
y pract.	0.817	0.644	y pract.	0.817	0.644
R.C. (%)	134%	102%	R.C. (%)	161%	125%

Stage / Phase Diagrams

1.



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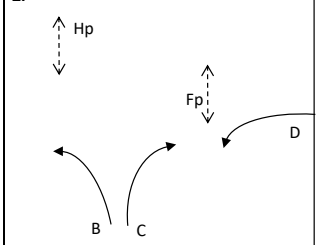

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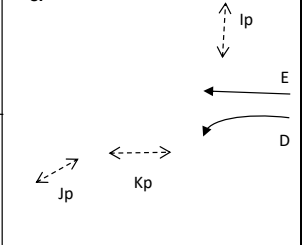


4.

5.

I/G= 5		I/G= 5	24	I/G= 5		I/G=	I/G=
I/G= 5		I/G= 5	24	I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** (P) Shing Kai Road / Slip road of CKR

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Eastern access to main stadium Design Year: 2032

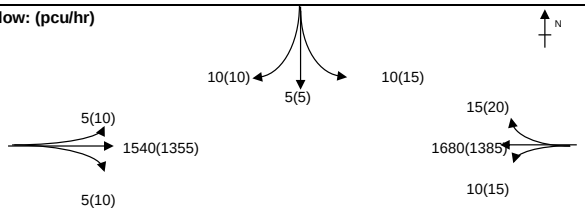
Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	1	3.800	15			1%	2%	1995	1990	493	0.247		437	0.220	
	→	A	1	3.800						2135	2135	529	0.248	0.248	469	0.220	0.220
		A	1	3.800		30		1%	2%	2135	2135	528	0.247		469	0.220	
Eastern Access to main Stadium		C	3	3.650	10					1720	1720	10	0.006		15	0.009	
		C	3	3.650		15		67%	67%	1990	1990	15	0.008		15	0.008	
Shing Kai Road (WB)		B	2	3.800	15			2%	3%	1990	1990	542	0.272		451	0.227	
	←	B	2	3.800						2135	2135	582	0.273		485	0.227	
		B	2	3.800		30		3%	4%	2130	2130	581	0.273	0.273	484	0.227	0.227
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =	5		+	10	=	15				*			*
		Ep	1,3,4	MIN GREEN + FLASH =	5		+	10	=	15							
		Fp	2,4	MIN GREEN + FLASH =	5		+	10	=	15							
		Gp	3,4	MIN GREEN + FLASH =	5		+	7	=	12							
		Hp	1,2,4	MIN GREEN + FLASH =	5		+	7	=	12							

Notes:

TAC junction : CT 130s adopted

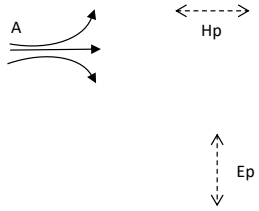
Flow: (pcu/hr)



Group	A,B,Gp	A,B,C,Dp	Group	A,B,Gp	A,B,C,Dp
y	0.521	0.521	y	0.447	0.447
L (sec)	26	41	L (sec)	26	41
C (sec)	130	130	C (sec)	130	130
y pract.	0.720	0.616	y pract.	0.720	0.616
R.C. (%)	38%	18%	R.C. (%)	61%	38%

Stage / Phase Diagrams

1.



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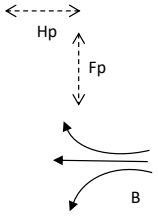

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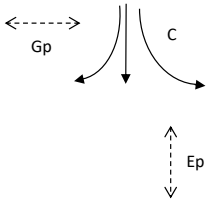

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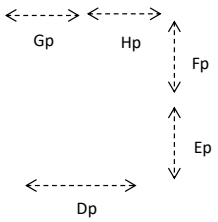


5.

I/G= 5		I/G= 7		I/G= 6	5	I/G= 5	15	I/G=	
I/G= 5		I/G= 7		I/G= 6	5	I/G= 5	15	I/G=	

Date: JUN, 2024

Junction: Shing Kai Road / Eastern access to main stadium (Q)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Olympic Avenue/ Dakota Drive Design Year: 2032

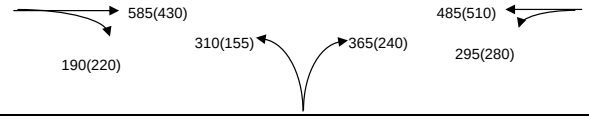
Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	250	0.126		208	0.105	
	→	A	1	3.650						2120	2120	268	0.126		222	0.105	
	→	A	1	3.650		25		74%	100%	2030	2000	257	0.127	0.127	220	0.110	0.110
Dakota Drive (NB)	*	B	2	4.500	15	20		46% / 54%	39% / 61%	2040	2040	675	0.331	0.331	395	0.194	0.194
Olympic Avenue (WB)		C	3	3.650	15			82%	76%	1830	1840	361	0.197		367	0.199	
	←	C	3	3.650						2120	2120	419	0.198	0.198	423	0.200	0.200
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			6	+	10	=	16			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	10	=	16						

Notes:

* Saturation flow 150 pcu/hr added

Flow: (pcu/hr)

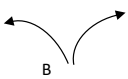


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.655	0.655	y	0.503	0.503
L (sec)	34	37	L (sec)	34	37
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.623	y pract.	0.645	0.623
R.C. (%)	-2%	-5%	R.C. (%)	28%	24%

Stage / Phase Diagrams

1.

2.



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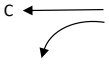

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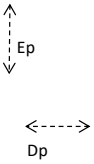


5.

I/G= 3		I/G= 6		I/G= 5		I/G= 10	16
I/G= 3		I/G= 6		I/G= 5		I/G= 10	16

I/G= | | I/G= | |

Date: JUN, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

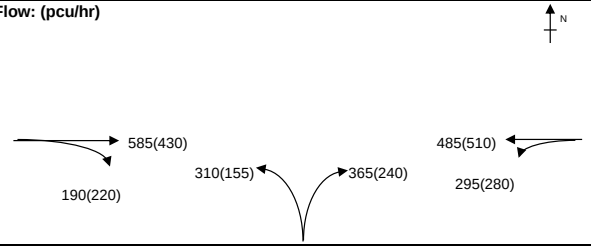
Junction: Olympic Avenue/ Dakota Drive Design Year: 2032

Description: 2032 Reference Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	250	0.126		208	0.105	
(EB)	→	A	1	3.650						2120	2120	268	0.126		222	0.105	
	↘	A	1	3.650		25		74%	100%	2030	2000	257	0.127	0.127	220	0.110	0.110
Dakota Drive	↰	B	2	3.500	15					1785	1785	310	0.174		155	0.087	
(NB)	↱	B	2	3.500		20				1960	1960	365	0.186	0.186	240	0.122	0.122
Olympic Avenue	↙	C	3	3.650	15			82%	76%	1830	1840	361	0.197		367	0.199	
(WB)	←	C	3	3.650						2120	2120	419	0.198	0.198	423	0.200	0.200
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			6	+	10	=	16			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	10	=	16						

Notes:

Flow: (pcu/hr)

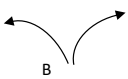


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.510	0.510	y	0.432	0.432
L (sec)	34	37	L (sec)	34	37
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.623	y pract.	0.645	0.623
R.C. (%)	26%	22%	R.C. (%)	49%	44%

Stage / Phase Diagrams

1.

2.



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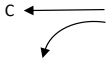

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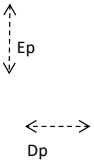


5.

I/G= 3		I/G= 6		I/G= 5		I/G= 10	16	I/G=	
I/G= 3		I/G= 6		I/G= 5		I/G= 10	16	I/G=	

Date: JUN, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

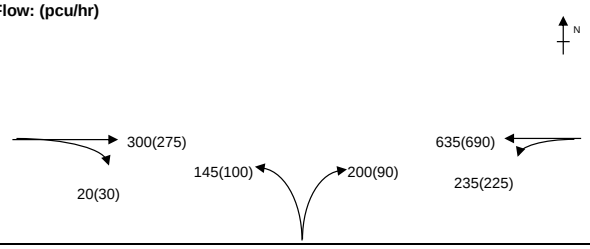
Junction: Olympic Avenue / Muk Lai Street Design Year: 2032

Description: 2032 Reference Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	155	0.078		148	0.075	
(EB)	→↓	A	1	3.650		19		12%	19%	2100	2090	165	0.079	0.079	157	0.075	0.075
Muk Lai Street (NB)	↑→	B	2	4.500	16	19		42% / 58%	53% / 47%	1905	1900	345	0.181	0.181	190	0.100	0.100
Olympic Avenue	↓←	C	3	3.650	16			57%	52%	1880	1890	409	0.218	0.218	431	0.228	
(WB)	←	C	3	3.650						2120	2120	461	0.217		484	0.228	0.228
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			7	+	13	=	20			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	15	=	21						

Notes:

Flow: (pcu/hr)



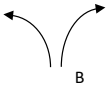
Group	A,C,B,Ep	A,C,B,Dp	Group	A,C,B,Ep	A,C,B,Dp
y	0.477	0.477	y	0.403	0.403
L (sec)	37	42	L (sec)	37	42
C (sec)	120	120	C (sec)	120	120
y pract.	0.623	0.585	y pract.	0.623	0.585
R.C. (%)	30%	23%	R.C. (%)	54%	45%

Stage / Phase Diagrams

1.

2.

3.



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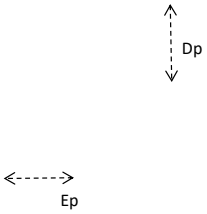


5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	20
I/G= 2		I/G= 7		I/G= 6		I/G= 10	20

I/G=

I/G=

Date: JUN, 2024

Junction: (S) Olympic Avenue / Muk Lai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

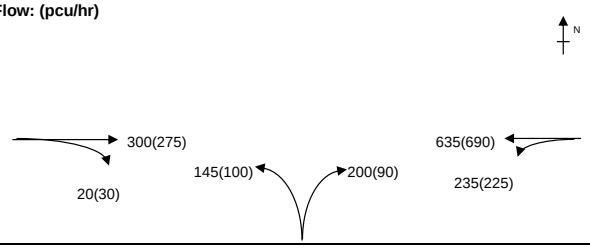
Junction: Olympic Avenue / Muk Lai Street Design Year: 2032

Description: 2032 Reference Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	155	0.078		148	0.075	
	→↓	A	1	3.650		19		12%	19%	2100	2090	165	0.079	0.079	157	0.075	0.075
Muk Lai Street (NB)	↑	B	2	4.500	16	19		42% / 58%	53% / 47%	1905	1900	345	0.181	0.181	190	0.100	
Olympic Avenue (WB)	↓	C	3	3.650	16			57%	52%	1880	1890	409	0.218	0.218	431	0.228	
	←	C	3	3.650						2120	2120	461	0.217		484	0.228	0.228
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			7	+	13	=	20						
		Ep	1,2	MIN GREEN + FLASH =			7	+	13	=	20						
		Fp	2	MIN GREEN + FLASH =			6	+	15	=	21						*
		Gp	1,3	MIN GREEN + FLASH =			6	+	15	=	21						

Notes:

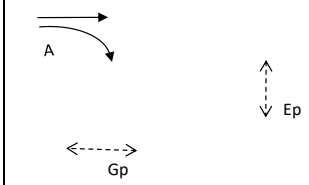
Flow: (pcu/hr)



Group	A,Fp,C	A,B,C	Group	A,B,C	A,Fp,C
y	0.296	0.477	y	0.403	0.303
L (sec)	39	13	L (sec)	13	39
C (sec)	90	90	C (sec)	90	90
y pract.	0.510	0.770	y pract.	0.770	0.510
R.C. (%)	72%	61%	R.C. (%)	91%	68%

Stage / Phase Diagrams

1.



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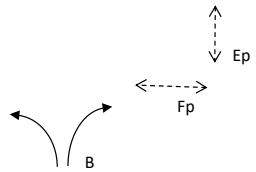

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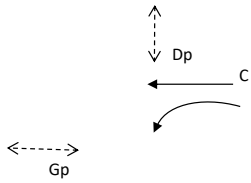


4.

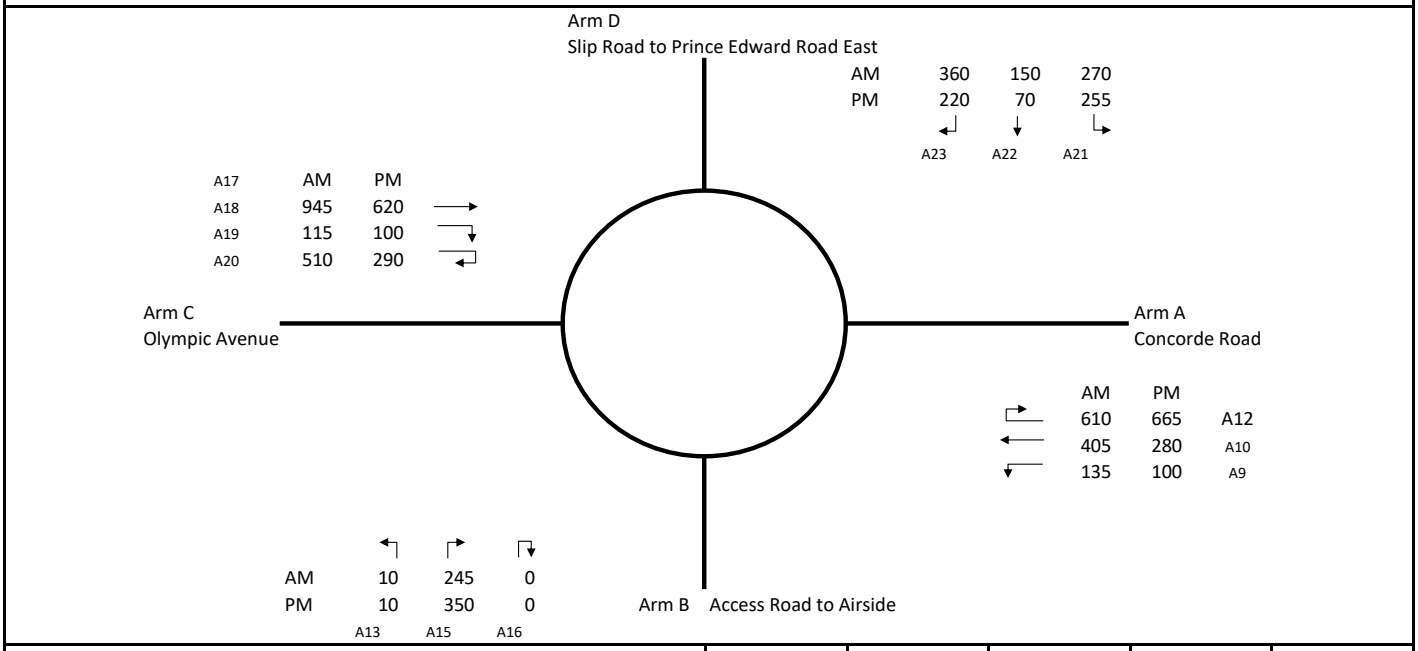
5.

I/G= 6		I/G= 5		I/G= 5		I/G=	I/G=
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=
						Date: JUN, 2024	Junction: (S) Olympic Avenue / Muk Lai Street

2032 Design

Roundabout Capacity Calculation

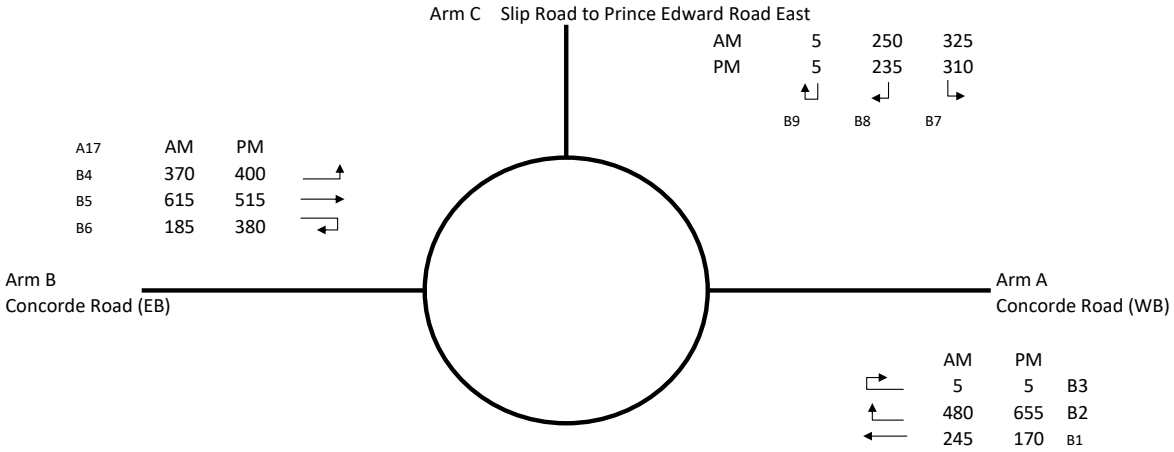
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2032 Design Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road				
Arm B	Access Road to Airside				
Arm C	Olympic Avenue				
Arm D	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				7.30	7.00	10.00	7.00	
E	Entry Width (m)				10.00	7.50	11.00	10.50	
L	Effective Length of Flare (m)				5.00	1.00	5.00	20.00	
R	Entry Radius (m)				35.00	30.00	25.00	30.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	60.00	
A	Entry Angle (degree)				15.00	15.00	60.00	40.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.86	0.80	0.32	0.28	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.07	1.07	0.91	0.98	
X2	= V + ((E-V) / (1+2S))				8.29	7.19	10.61	9.24	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	1.00	
F	= 303 * X2				2512	2179	3215	2801	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.70	0.64	0.82	0.75	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,150	255	1,570	780	
Qc	Circulating Flow Across Entry (pcu/hour)				1,135	1,885	855	2,425	
Qe	= K (F - Fc*Qc)				1845	1039	2277	969	
DFC	= Q / Qe	Design Flow / Capacity	0.80		0.62	0.25	0.69	**0.80**	
		Total Entry Flows	3,755						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,045	360	1,010	545	
Qc	Circulating Flow Across Entry (pcu/hour)				680	1,455	1,015	2,025	
Qe	= K (F - Fc*Qc)				2186	1333	2158	1263	
DFC	= Q / Qe	Design Flow / Capacity	0.48		**0.48**	0.27	0.47	0.43	
		Total Entry Flows	2,960						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2032 Design Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road (WB)				
Arm B	Concorde Road (EB)				
Arm C	Slip Road to Prince Edward Road East				

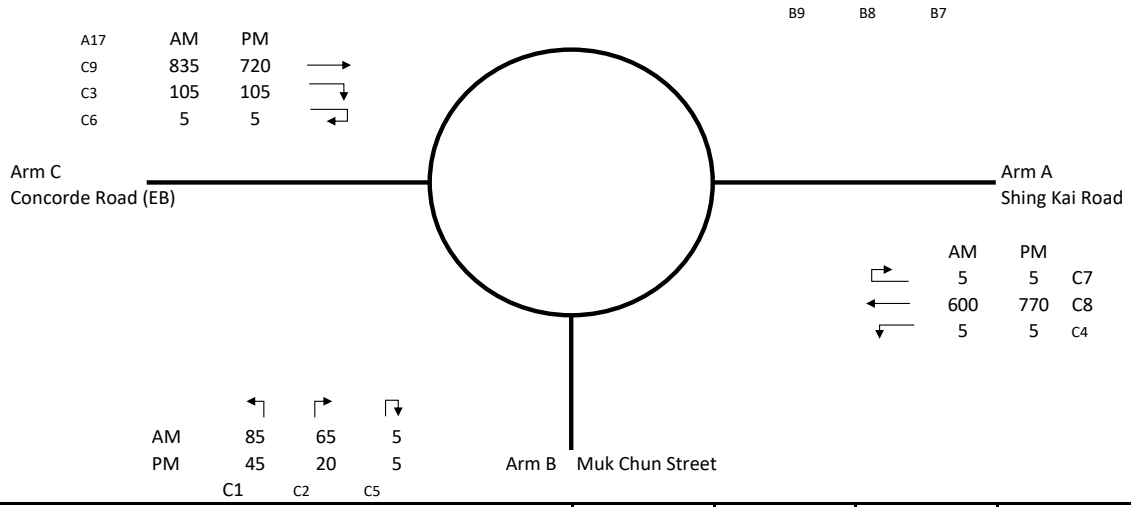


				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				8.00	7.00	8.00	
E	Entry Width (m)				8.00	8.00	8.00	
L	Effective Length of Flare (m)				1.00	6.00	1.00	
R	Entry Radius (m)				42.00	20.00	47.00	
D	Inscribed Circle Diameter (m)				40.00	40.00	40.00	
A	Entry Angle (degree)				10.00	22.00	15.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.27	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	1.03	1.08	
X2	= V + ((E-V) / (1+2S))				8.00	7.65	8.00	
M	= EXP ((D-60) /10)				0.14	0.14	0.14	
F	= 303 * X2				2424	2319	2424	
Td	= 1 + (0.5 / (1+M))				1.44	1.44	1.44	
Fc	= 0.21*Td (1 + 0.2*X2)				0.79	0.77	0.79	
AM RESULT								
Q	Entry Flow (pcu/hour)				730	1,170	580	
Qc	Circulating Flow Across Entry (pcu/hour)				440	490	805	
Qe	= K (F - Fc*Qc)				2275	1998	1934	
DFC	= Q / Qe	Design Flow / Capacity	0.59		0.32	**0.59**	0.30	
		Total Entry Flows	2,480					
PM RESULT								
Q	Entry Flow (pcu/hour)				830	1,295	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	665	900	
Qe	= K (F - Fc*Qc)				2120	1860	1854	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,675					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Shing Kai Road / Concorde Road / Muk Chun Street			Designed by:	TCW
Scheme:	2032 Design Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Shing Kai Road				
Arm B	Muk Chun Street				
Arm C	Concorde Road (EB)				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				5.00	5.00	7.00	
E	Entry Width (m)				7.00	7.50	7.00	
L	Effective Length of Flare (m)				5.00	5.00	5.00	
R	Entry Radius (m)				30.00	20.00	50.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	
A	Entry Angle (degree)				40.00	25.00	25.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.64	0.80	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				0.98	1.02	1.05	
X2	= V + ((E-V) / (1+2S))				5.88	5.96	7.00	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	
F	= 303 * X2				1781	1806	2121	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.57	0.58	0.63	
AM RESULT								
Q	Entry Flow (pcu/hour)				610	155	945	
Qc	Circulating Flow Across Entry (pcu/hour)				115	605	75	
Qe	= K (F - Fc*Qc)				1684	1483	2171	
DFC	= Q / Qe	Design Flow / Capacity	0.44		0.36	0.10	**0.44**	
		Total Entry Flows	1,710					
PM RESULT								
Q	Entry Flow (pcu/hour)				780	70	830	
Qc	Circulating Flow Across Entry (pcu/hour)				115	775	30	
Qe	= K (F - Fc*Qc)				1684	1384	2200	
DFC	= Q / Qe	Design Flow / Capacity	0.46		**0.46**	0.05	0.38	
		Total Entry Flows	1,680					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Hung Street Design Year: 2032

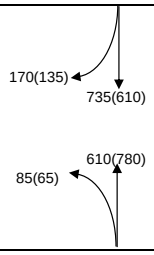
Description: 2032 Designed Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road		A	1	3.650	15			26%	16%	1930	1950	331	0.172		405	0.208	0.208
(NB)		A	1	3.650						2120	2120	364	0.172	0.172	440	0.208	
Shing Kai Road		B	2	3.650						1980	1980	452	0.228		372	0.188	
(SB)		B	2	3.650		8		38%	36%	1980	1985	453	0.229	0.229	373	0.188	0.188
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Dp	2,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Ep	3	MIN GREEN + FLASH =			9	+	9	=	18			*			*
		Fp	2,3	MIN GREEN + FLASH =			9	+	9	=	18						
		Gp	1,3	MIN GREEN + FLASH =			9	+	9	=	18						

Notes:

TAC junction : CT 90s adopted

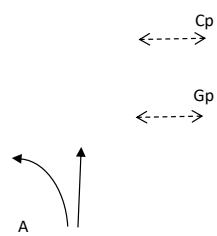
Flow: (pcu/hr)



Group	Gp,B	A,B,Ep	Group	A,Dp	A,B,Ep
y	0.229	0.400	y	0.208	0.396
L (sec)	28	34	L (sec)	28	34
C (sec)	90	90	C (sec)	90	90
y pract.	0.620	0.560	y pract.	0.620	0.560
R.C. (%)	171%	40%	R.C. (%)	199%	42%

Stage / Phase Diagrams

1.



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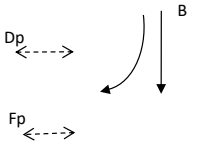

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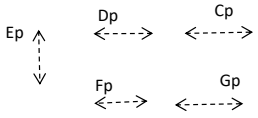


4.

5.

I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=
I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=

Date: JUN, 2024 **Junction:** (D) Shing Kai Road / Muk Hung Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2032

Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

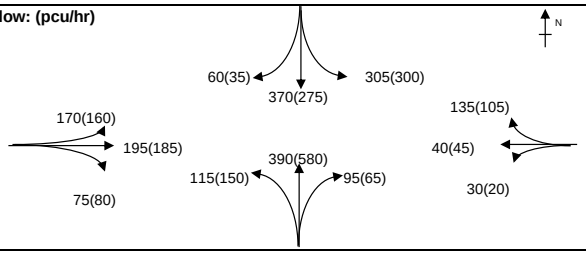
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street (EB)		C	3	3.750	30	25		39% / 17%	38% / 19%	1935	1930	440	0.227	0.227	425	0.220	0.220
Shing Kai Road (SB)		B	2	3.650	10			92%	100%	1740	1720	333	0.191		300	0.174	0.174
		B	2	3.650		20		15%	11%	2095	2100	402	0.192	0.192	310	0.148	
Muk Chui Street (WB)		D	4	3.650		20				1970	1970	135	0.069	0.069	105	0.053	0.053
		D	4	3.650	10			43%	31%	1860	1895	70	0.038		65	0.034	
Shing Kai Road (NB)		A	1	3.650	18			40%	39%	1915	1915	288	0.150	0.150	380	0.198	0.198
		A	1	3.650		20		30%	16%	2075	2095	312	0.150		415	0.198	

Pedestrian Crossing	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

TAC junction: CT 120s adopted

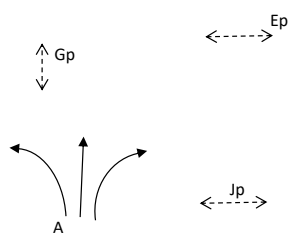
Flow: (pcu/hr)



Group	Jp,B,C,D	A,B,C,D	Group	A,Fp,C,D	A,B,C,D
y	0.488	0.638	y	0.472	0.646
L (sec)	38	29	L (sec)	39	29
C (sec)	120	120	C (sec)	120	120
y pract.	0.615	0.683	y pract.	0.608	0.683
R.C. (%)	26%	7%	R.C. (%)	29%	6%

Stage / Phase Diagrams

1.



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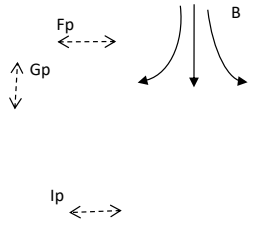

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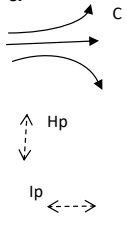

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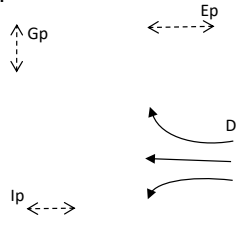


5.

I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=
I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** Shing Kai Road / Muk Chui Street (E)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2032

Description: 2032 Design Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

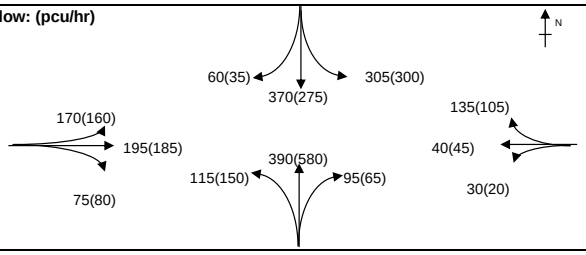
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street	*	C	3	4.000	15			82%	80%	1305	1305	207	0.159		201	0.154	0.154
(EB)	*	C	3	4.000		17		32%	36%	1465	1460	233	0.159	0.159	224	0.153	
Shing Kai Road		B	2	3.650	10			92%	100%	1740	1720	333	0.191		300	0.174	0.174
(SB)		B	2	3.650		20		15%	11%	2095	2100	402	0.192	0.192	310	0.148	
Muk Chui Street		D	4	3.650		20				1970	1970	135	0.069	0.069	105	0.053	0.053
(WB)		D	4	3.650	10			43%	31%	1860	1895	70	0.038		65	0.034	
Shing Kai Road		A	1	3.650	18			40%	39%	1915	1915	288	0.150	0.150	380	0.198	0.198
(NB)		A	1	3.650		20		30%	16%	2075	2095	312	0.150		415	0.198	

Pedestrian Crossing	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

TAC junction: CT 120s adopted
* Site factor 0.7 added due to flare length

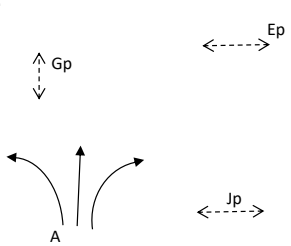
Flow: (pcu/hr)



Group	A,B,Hp,D	A,B,C,D	Group	A,B,Hp,D	A,B,C,D
y	0.411	0.570	y	0.426	0.580
L (sec)	44	29	L (sec)	44	29
C (sec)	120	120	C (sec)	120	120
y pract.	0.570	0.683	y pract.	0.570	0.683
R.C. (%)	39%	20%	R.C. (%)	34%	18%

Stage / Phase Diagrams

1.



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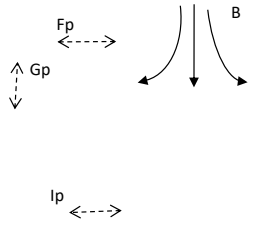
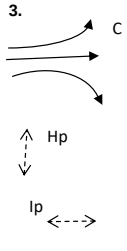
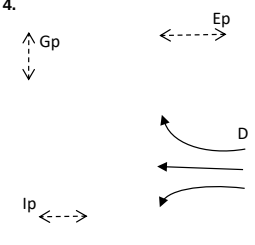


3.



4.



5.

I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=
I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** Shing Kai Road / Muk Chui Street (E)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Kai Shing Street / Muk On Street — Design Year: 2032

Description: 2032 Design Scenario — Designed By: TCW — Checked By: CHC

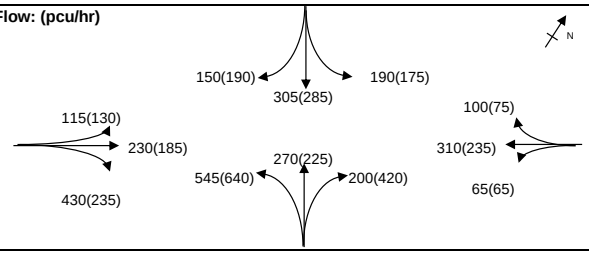
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	2	3.650	18			45%	74%	1910	1865	253	0.132		175	0.094	
		A	2	3.650		18		66%	28%	2010	2070	267	0.133	0.133	194	0.094	
		A	2	3.650		15				1925	1925	255	0.132		181	0.094	0.094
Muk On Street		E	1	3.650	18			61%	56%	1885	1890	309	0.164	0.164	313	0.166	0.166
		E	1	3.650		20		45%	56%	2050	2035	336	0.164		337	0.166	
Shing Kai Road (WB)		D	3	3.650						2120	2120	209	0.099		158	0.075	
		D	3	3.650		20		50%	49%	2045	2045	201	0.098		152	0.074	
	#	D	3	3.650	50					1345	1345	65	0.048		65	0.048	
kai Shing Street		C	4	3.650		20				1970	1970	200	0.102		420	0.213	0.213
		C	4	3.650						2120	2120	270	0.127	0.127	225	0.106	
	#	B	1,2,4	4.000	50					1370	1370	545	0.398		640	0.467	

Pedestrian Crossing	Fp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Gp	1	MIN GREEN + FLASH =	8	+	20	=	28		
	Hp	1,3,4	MIN GREEN + FLASH =	8	+	21	=	29		
	Ip	4	MIN GREEN + FLASH =	5	+	9	=	14		
	Jp	3	MIN GREEN + FLASH =	7	+	17	=	24	*	*
	Kp	3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Lp	1,2,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Mp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14		

Notes:

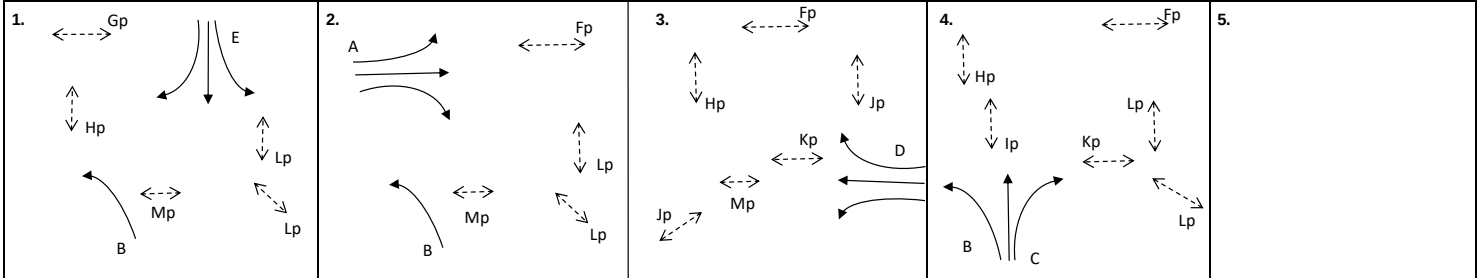
TAC Junction: 130s CT adopted
Site factor 0.7 adopted

Flow: (pcu/hr)



Group	Gp,A,D,C	E,A,Jp,C	Group	Gp,A,Jp,C	E,A,Jp,C
y	0.359	0.424	y	0.307	0.473
L (sec)	56	48	L (sec)	73	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.512	0.568	y pract.	0.395	0.568
R.C. (%)	43%	34%	R.C. (%)	28%	20%

Stage / Phase Diagrams



I/G= 8		I/G= 6		I/G= 10	24	I/G= 3	I/G=
I/G= 8		I/G= 6		I/G= 10	24	I/G= 3	I/G=

Date: JUN, 2024 — **Junction:** Shing Kai Road / Kai Shing Street / Muk On Street (F)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Shing Fung Road / Muk Tai Street Design Year: 2032

Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

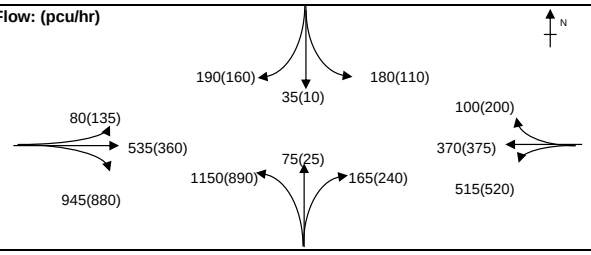
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		B	2	3.650	15			27%	58%	1930	1870	294	0.152		233	0.125	
		B	2	3.500						2105	2105	321	0.152		262	0.124	
		B	2	3.500		20				1960	1960	478	0.244	0.244	445	0.227	
		B	2	3.500		15				1915	1915	467	0.244		435	0.227	0.227
Muk Tai Street		A	1	3.750		17				980	980	190	0.194		160	0.163	0.163
		A	1	4.000	22			84%	92%	955	950	215	0.225	0.225	120	0.126	
Shing Kai Road (WB)		E	4	3.650						2120	2120	238	0.112		294	0.139	
		E	4	3.650		23		43%	71%	2060	2025	232	0.113		281	0.139	0.139
		E	4	3.650	25					1870	1870	248	0.133		251	0.134	
		E	4	3.650	28					2010	2010	267	0.133		269	0.134	
Shing Fung Road		C	2,3	3.650	20					1840	1840	553	0.301		428	0.233	
		C	2,3	3.650	22					1985	1985	597	0.301		462	0.233	
		D	3	3.650		23		42%	82%	2065	2010	130	0.063	0.063	142	0.071	0.071
		D	3	3.650		19				1750	1750	110	0.063		123	0.070	

Pedestrian Crossing	Fp	1,3,4	MIN GREEN + FLASH =	8	+	15	=	23
	Gp	2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,4	MIN GREEN + FLASH =	5	+	8	=	13
	Ip	4	MIN GREEN + FLASH =	10	+	9	=	19
	Jp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14
	Kp	1,2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Lp	4	MIN GREEN + FLASH =	7	+	13	=	20
	Mp	2,3	MIN GREEN + FLASH =	5	+	9	=	14
	Np	1	MIN GREEN + FLASH =	6	+	11	=	17

Notes:

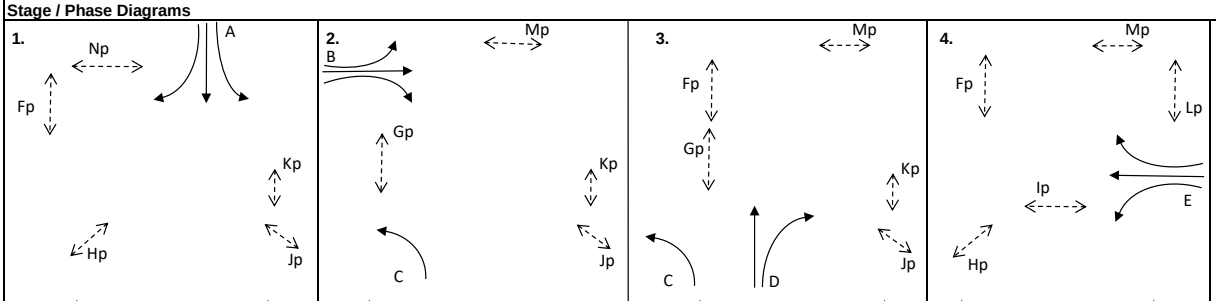
TAC junction : CT 130s adopted
^ Site factor 0.5 added due to flare length

Flow: (pcu/hr)



Group	A,B,D,E	A,B,D,Lp	Group	A,B,D,Lp	A,B,D,E
y	0.665	0.532	y	0.461	0.600
L (sec)	17	40	L (sec)	40	17
C (sec)	130	130	C (sec)	130	130
y pract.	0.782	0.623	y pract.	0.623	0.782
R.C. (%)	18%	17%	R.C. (%)	35%	30%

Stage / Phase Diagrams



I/G= 2		I/G= 5		I/G= 6		I/G= 10	20	I/G=
I/G= 5		I/G= 5		I/G= 6		I/G= 5		I/G=

Date: JUN, 2024 **Junction:** (G) Shing Kai Road / Shing Fung Road / Muk Tai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Western access to main stadium Design Year: 2032

Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

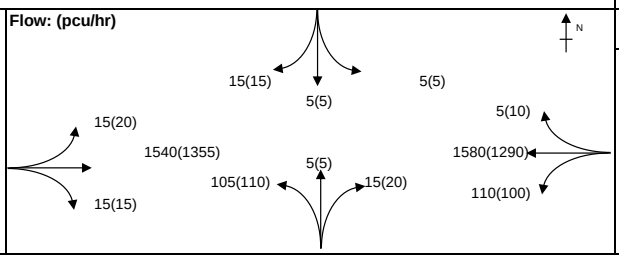
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/h	PM Peak y Value	PM Peak Critical y
Shing Kai Road EB		A	1	3.650	17.5			3%	5%	1975	1970	499	0.253		442	0.224	0.224
		A	1	3.650						2120	2120	536	0.253		474	0.224	
		A	1	3.650		22.5		3%	3%	2115	2115	535	0.253	0.253	474	0.224	
Shing Kai Road WB		C	3	3.650	17.5			21%	23%	1945	1940	533	0.274		440	0.227	
		C	3	3.650						2120	2120	581	0.274	0.274	480	0.226	
		C	3	3.650		22.5		1%	2%	2120	2115	581	0.274		480	0.227	0.227
Western Access Road to Main Stadium NB		B	2	3.750	15					1810	1810	105	0.058	0.058	110	0.061	0.061
		B	2	3.750		22.5		75%	80%	2030	2020	20	0.010		25	0.012	
Western Access Road to Main Stadium SB		D	4	3.500	20			50%	50%	1895	1895	10	0.005		10	0.005	
		D	4	3.500		32.5				2010	2010	15	0.007		15	0.007	

Pedestrian Crossing	Ep	4	MIN GREEN + FLASH =	5	+	5	=	10
	Fp	1,2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Gp	3	MIN GREEN + FLASH =	5	+	10	=	15
	Hp	1,2,4	MIN GREEN + FLASH =	6	+	11	=	17
	Ip	2	MIN GREEN + FLASH =	5	+	8	=	13
	Jp	1,3,4	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC junction : CT 130s adopted

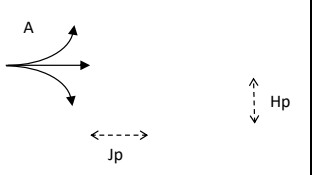
Flow: (pcu/hr)



Group	A,B,Gp,D	A,B,C,D	Group	A,B,Gp,D	A,B,C,D
y	0.311	0.585	y	0.285	0.512
L (sec)	39	24	L (sec)	39	24
C (sec)	130	130	C (sec)	130	130
y pract.	0.630	0.734	y pract.	0.630	0.734
R.C. (%)	103%	25%	R.C. (%)	121%	43%

Stage / Phase Diagrams

1.



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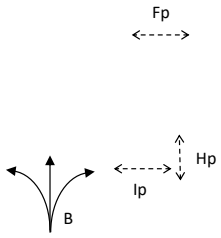

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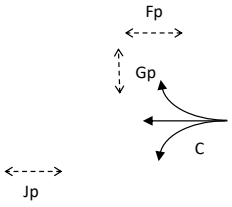
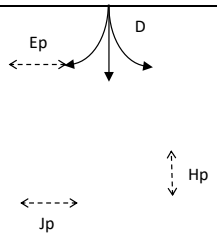


4.



5.

I/G= 5		I/G= 5		I/G= 5		I/G= 7	5
I/G= 5		I/G= 5		I/G= 5		I/G= 7	5

I/G= I/G=

Date: JUN, 2024 **Junction:** (H) Shing Kai Road / Western access to main stadium

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2032

Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

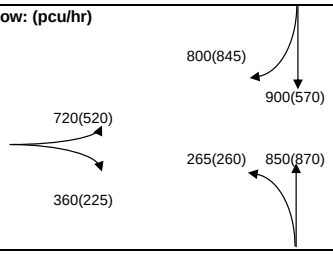
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		C	1	3.600	18			50%	48%	1895	1900	535	0.282	0.282	543	0.286	0.286
(NB)		C	1	3.000						2055	2055	580	0.282		587	0.286	
Shing Kai Road		A	2	3.500						1965	1965	548	0.279		459	0.234	
(SB)		A	2	3.650		32		39%	77%	2080	2045	580	0.279		477	0.233	
		A	2	4.000		30				2050	2050	572	0.279	0.279	479	0.234	0.234
Sung Wong Toi		B	3	3.650	18					1830	1830	347	0.190	0.190	250	0.137	
Road		B	3	3.650	20	32		100% / 0%	100% / 0%	1970	1970	373	0.189		270	0.137	0.137
(EB)		B	3	3.650		30				2020	2020	360	0.178		225	0.111	

Pedestrian Crossing	Dp	2,3	MIN GREEN + FLASH =	5	+	10	=	15
	Ep	1	MIN GREEN + FLASH =	5	+	12	=	17
	Fp	1,3	MIN GREEN + FLASH =	5	+	11	=	16
	Gp	2	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,2	MIN GREEN + FLASH =	5	+	6	=	11
	Ip	3	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC Junction: CT 130s adopted

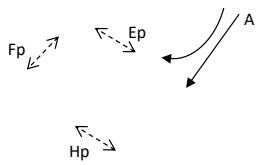
Flow: (pcu/hr)



Group	A,Gp,C	A,B,C	Group	A,Gp,C	A,B,C
y	0.561	0.751	y	0.519	0.657
L (sec)	29	13	L (sec)	29	13
C (sec)	130	130	C (sec)	130	130
y pract.	0.699	0.810	y pract.	0.699	0.810
R.C. (%)	25%	8%	R.C. (%)	35%	23%

Stage / Phase Diagrams

1.



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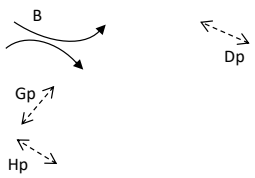
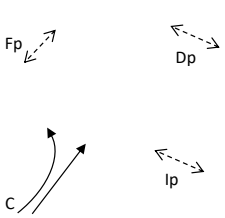


3.



4.

5.

I/G= 5		I/G= 6		I/G= 5		I/G=	
I/G= 5		I/G= 6		I/G= 5		I/G=	

Date: JUN, 2024 **Junction:** 1 To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2032

Description: 2032 Design Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

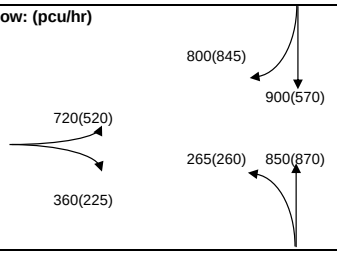
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road (NB)	↰↑	D	4	3.600	18			50%	48%	1895	1900	535	0.282	0.282	543	0.286	0.286
	↑	D	4	3.000						2055	2055	580	0.282		587	0.286	
Shing Kai Riad (SB)	↓	A	1,2	3.500						1965	1965	548	0.279		459	0.234	
	↰↓	A	1,2	3.650		32		39%	77%	2080	2045	580	0.279		477	0.233	
	↳	A	1,2	4.000		30				2050	2050	572	0.279	0.279	479	0.234	0.234
To Kwa Wan Road (EB)	↰↑ *	C	2,3	3.500	18					1630	1630	327	0.201		236	0.145	
	↰↑	C	2,3	3.500	20					1960	1960	393	0.201		284	0.145	
	↴	B	3	3.500		30				2005	2005	180	0.090		113	0.056	0.056
	↴	B	3	3.500		28				2000	2000	180	0.090	0.090	112	0.056	

Pedestrian Crossing	Jp	3,4	MIN GREEN + FLASH =	5	+	10	=	15
	Ep	1	MIN GREEN + FLASH =	7	+	13	=	17
	Fp	1,4	MIN GREEN + FLASH =	8	+	15	=	16
	Gp	3	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,2,3	MIN GREEN + FLASH =	5	+	6	=	11
	Ip	4	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC Junction : CT 130s adopted
*Site factor 0.9 added due to flare length

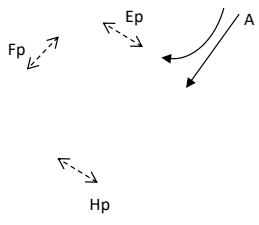
Flow: (pcu/hr)



Group	A,Jp	A,B,D	Group	A,Jp	A,B,D
y	0.279	0.651	y	0.234	0.576
L (sec)	21	15	L (sec)	21	15
C (sec)	130	130	C (sec)	130	130
y pract.	0.755	0.796	y pract.	0.755	0.796
R.C. (%)	170%	22%	R.C. (%)	223%	38%

Stage / Phase Diagrams

1.



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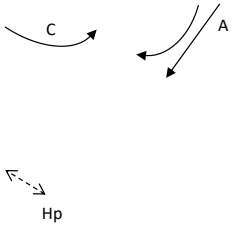
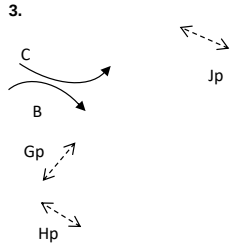
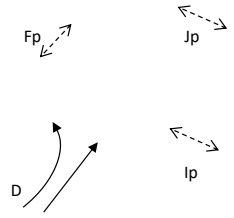


3.



4.



5.

I/G= 5		I/G= 2		I/G= 6		I/G= 5	I/G=
I/G= 5		I/G= 2		I/G= 6		I/G= 5	I/G=

Date: JUN, 2024 **Junction:** 1 To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Kowloon City Road / Sung Wong Toi Road Design Year: 2032

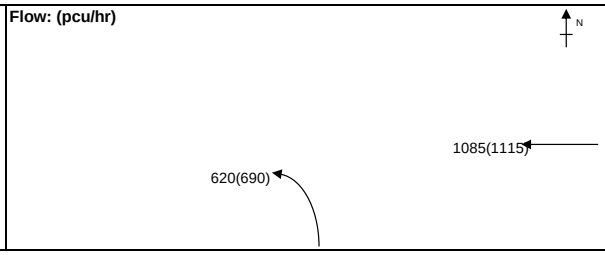
Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	←	A	1	3.650						1585	1585	526	0.332	0.332	540	0.341	
	←	A	1	3.500						1685	1685	559	0.332		575	0.341	0.341
Kowloon City Road	↰	B	2	4.500	10					1435	1435	296	0.206		330	0.230	0.230
	↰	B	2	4.500	12					1570	1570	324	0.206	0.206	360	0.229	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =			10	+	11	=	21						

Notes:

Site factor 0.8 added due to kerbside activities at Sung Wong Toi Road & Kowloon City Road

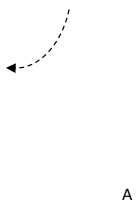
Flow: (pcu/hr)



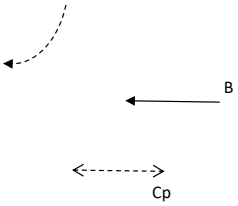
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.332	0.538	y	0.341	0.571
L (sec)	27	10	L (sec)	27	10
C (sec)	65	65	C (sec)	65	65
y pract.	0.526	0.762	y pract.	0.526	0.762
R.C. (%)	59%	41%	R.C. (%)	54%	33%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=	

Date: JUN, 2024 **Junction:** (J) Kowloon City Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street Design Year: 2032

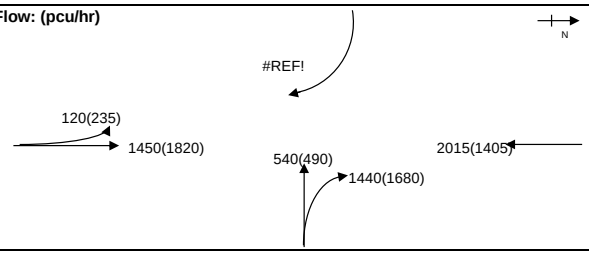
Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	↱	D	2,3	3.500		15				1785	1785	452	0.253		527	0.295	
	↱	D	2,3	3.500		20				1960	1960	497	0.254	0.254	580	0.296	0.296
	↱	D	2,3	3.000		25				1940	1940	491	0.253		573	0.295	
	↑	E	2	3.500						1965	1965	261	0.133		237	0.121	
	↑	E	2	3.500						2105	2105	279	0.133		253	0.120	
Ma Tau Chung Rd (NB)	↑→	A	1	3.500	10			25%	37%	1895	1860	487	0.257		630	0.339	
	→	A	1	3.500						2105	2105	542	0.257		713	0.339	0.339
	→	A	1	3.500						2105	2105	541	0.257		712	0.338	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	687	0.326	0.326	479	0.228	
	←	B	1	3.500						2105	2105	687	0.326		479	0.228	
	←	B	1	3.500						1965	1965	641	0.326		447	0.227	
Fu Ning Street	↲	I	4	3.500		20				1830	1830	25	0.014		25	0.014	

Pedestrian Crossing								
	Cp	1	MIN GREEN + FLASH =	10	+	9	=	19
	Fp	2,3	MIN GREEN + FLASH =	10	+	9	=	19
	Gp	1,2,3	MIN GREEN + FLASH =	5	+	5	=	10
	Hp	3,4	MIN GREEN + FLASH =	7	+	8	=	15

Notes:

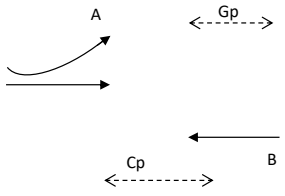
Flow: (pcu/hr)



Group	A,D,I	B,D,I	Group	B,D,I	A,D,I
y	0.511	0.580	y	0.523	0.635
L (sec)	18	18	L (sec)	18	18
C (sec)	130	130	C (sec)	130	130
y pract.	0.775	0.775	y pract.	0.775	0.775
R.C. (%)	52%	34%	R.C. (%)	48%	22%

Stage / Phase Diagrams

1.



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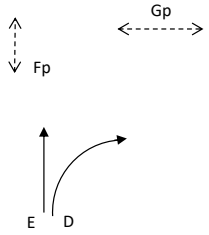

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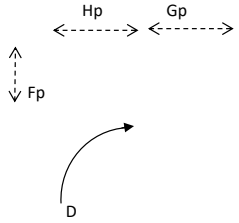
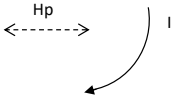


4.



5.

I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			
I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			

Date: JUN, 2024 **Junction:** (K) Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

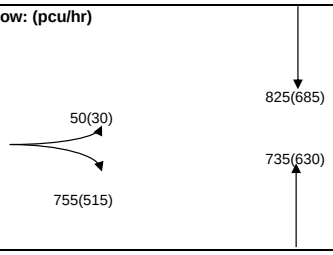
Junction: Olympic Avenue / Hang Wan Road Design Year: 2032

Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	↑	A	1,2	3.500						1965	1965	355	0.181		304	0.155	
(NB)	↑	A	1,2	3.500						2105	2105	380	0.181		326	0.155	
Olympic Avenue	↓	B	1,2	3.650						1980	1980	398	0.201		331	0.167	0.167
(SB)	↓	B	1,2	3.650						2120	2120	427	0.201	0.201	354	0.167	
Hang Wan Road	→↑*	C	2,3	5.000	13					1895	1895	50	0.026		30	0.016	
	→↓*	D	3	3.300		25				1965	1965	380	0.193	0.193	259	0.132	
	→↓*	D	3	3.300		20				1940	1940	375	0.193		256	0.132	0.132
Pedestrian Crossing		Ep	1	MIN GREEN + FLASH =			5	+	6	=	11						
		Fp	1	MIN GREEN + FLASH =			5	+	6	=	11						
		Gp	3	MIN GREEN + FLASH =			5	+	7	=	12						

Notes:

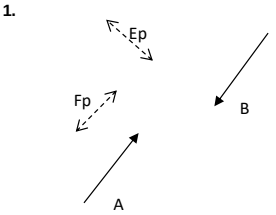
Flow: (pcu/hr)



Group	A,D	B,D	Group	A,D	B,D
y	0.374	0.395	y	0.287	0.299
L (sec)	9	11	L (sec)	9	11
C (sec)	60	60	C (sec)	60	60
y pract.	0.765	0.735	y pract.	0.765	0.735
R.C. (%)	105%	86%	R.C. (%)	167%	146%

Stage / Phase Diagrams

1.



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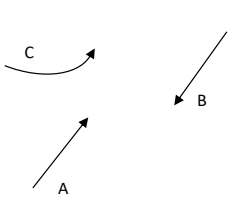

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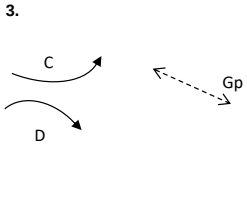


4.

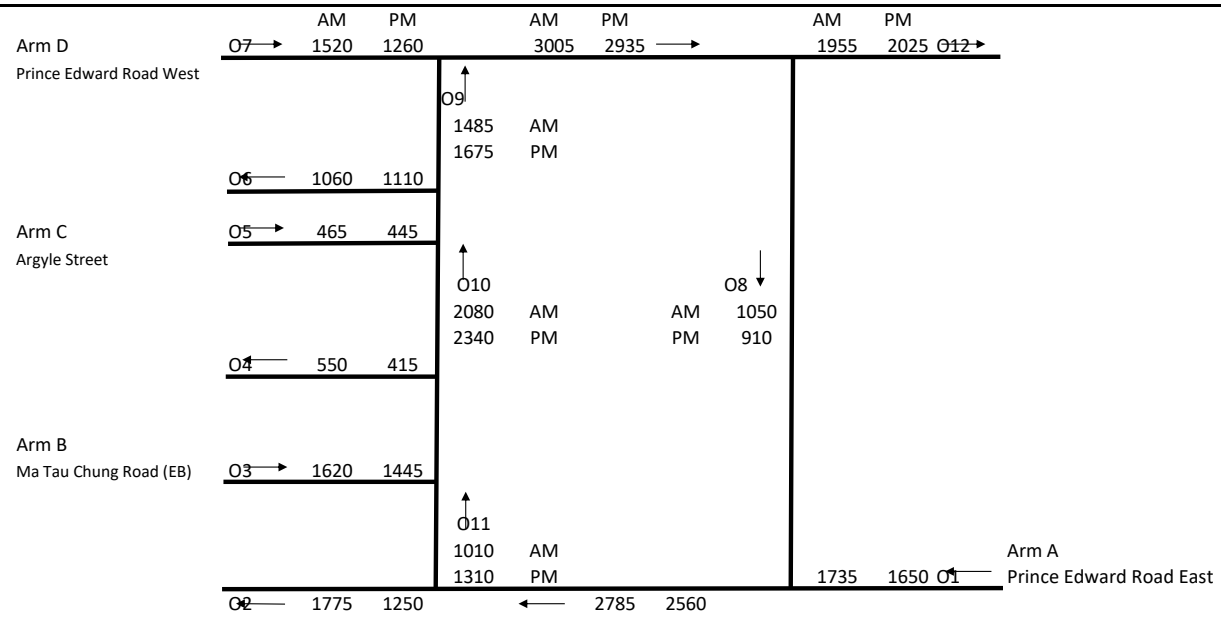
5.

I/G= 6		I/G=		I/G= 7		I/G=	I/G=
I/G= 6		I/G=		I/G= 7		I/G=	I/G=

Date: JUN, 2024 **Junction:** Olympic Avenue / Hang Wan Road (L)

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street			Designed by:	TCW
Scheme:	2032 Design Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Prince Edward Road East				
Arm B	Ma Tau Chung Road (EB)				
Arm C	Argyle Street				
Arm D	Prince Edward Road West				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				8.50	9.50	6.00	6.50	
E	Entry Width (m)				9.00	10.00	8.00	9.70	
L	Effective Length of Flare (m)				1.00	5.00	5.00	9.00	
R	Entry Radius (m)				50.00	22.00	28.00	60.00	
D	Inscribed Circle Diameter (m)				100.00	100.00	100.00	100.00	
A	Entry Angle (degree)				10.00	55.00	15.00	30.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.80	0.16	0.64	0.57	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	0.92	1.07	1.03	
X2	= V + ((E-V) / (1+2S))				8.69	9.88	6.88	8.00	
M	= EXP ((D-60) /10)				54.60	54.60	54.60	54.60	
F	= 303 * X2				2634	2993	2084	2423	
Td	= 1 + (0.5 / (1+M))				1.01	1.01	1.01	1.01	
Fc	= 0.21*Td (1 + 0.2*X2)				0.58	0.63	0.50	0.55	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,735	1,620	465	1,520	
Qc	Circulating Flow Across Entry (pcu/hour)				1,050	1,010	2,080	1,485	
Qe	= K (F - Fc*Qc)				2224	2162	1105	1657	
DFC	= Q / Qe	Design Flow / Capacity		0.92	0.78	0.75	0.42	**0.92**	
		Total Entry Flows		5,340					
PM RESULT									
Q	Entry Flow (pcu/hour)				1,650	1,445	445	1,260	
Qc	Circulating Flow Across Entry (pcu/hour)				910	1,310	2,340	1,675	
Qe	= K (F - Fc*Qc)				2314	1989	966	1549	
DFC	= Q / Qe	Design Flow / Capacity		0.81	0.71	0.73	0.46	**0.81**	
		Total Entry Flows		4,800					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

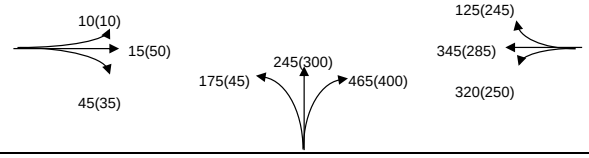
Junction: Kai San Road / Tsat Po Street Design Year: 2032

Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Tsat Po Street (EB)		C	4	5.000	10	25		14% / 64%	11% / 37%	1995	2040	70	0.035	0.035	95	0.047	0.047
Tsat Po Street (WB)		A	1	3.600	10			89%	69%	1745	1790	360	0.206		364	0.203	
		A	1	3.600		25		29%	59%	2080	2045	430	0.207	0.207	416	0.203	0.203
Kai San Road (NB)		B	2	4.000		15				1960	1960	465	0.237	0.237	400	0.204	0.204
		B	2	4.000	10			42%	13%	1895	1975	420	0.222		345	0.175	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			10	+	9	=	19						
		Ep	2,3	MIN GREEN + FLASH =			8	+	8	=	16						
		Fp	1,2,4	MIN GREEN + FLASH =			7	+	7	=	14						
		Gp	2	MIN GREEN + FLASH =			9	+	8	=	17			*			*
		Hp	2	MIN GREEN + FLASH =			7	+	7	=	14						

Notes:

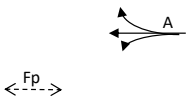
Flow: (pcu/hr)



Group	A,Gp,B,C	A,Gp,B,C	Group	A,Gp,B,C	A,Gp,B,C
y	0.479	0.479	y	0.454	0.454
L (sec)	48	48	L (sec)	48	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.568	0.568	y pract.	0.568	0.568
R.C. (%)	19%	19%	R.C. (%)	25%	25%

Stage / Phase Diagrams

1.



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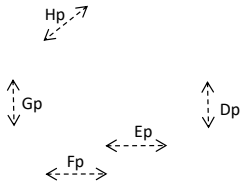

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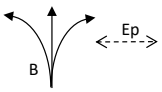

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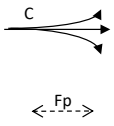


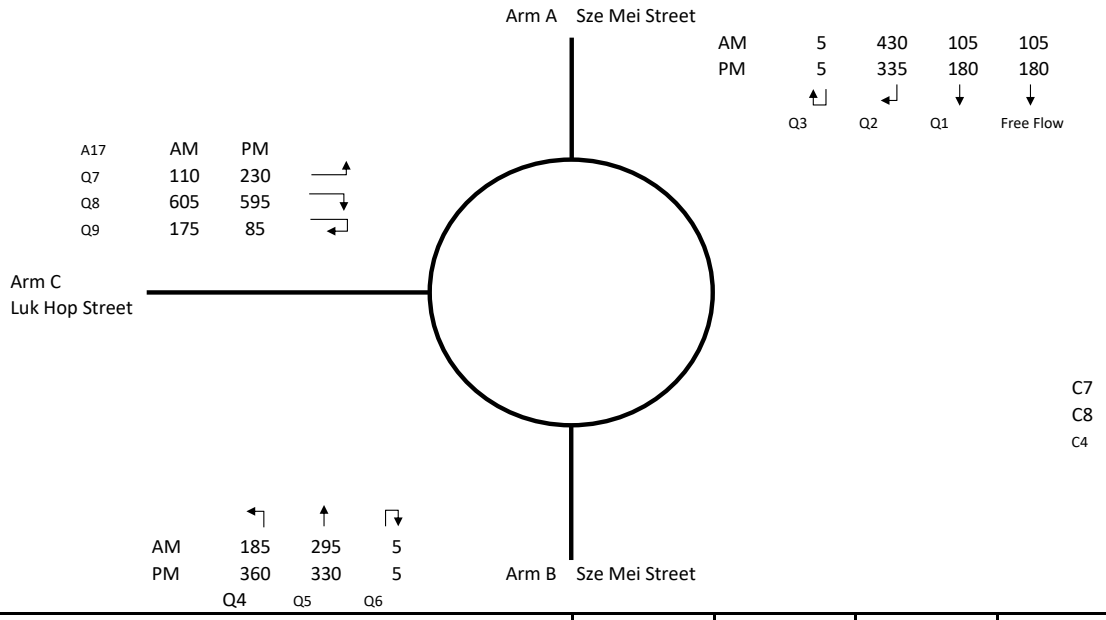
5.

I/G= 11		I/G= 11	17	I/G= 3		I/G= 9	I/G=
I/G= 11		I/G= 11	17	I/G= 3		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (N) Kai San Road / Tsat Po Street

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Sze Mei Street / Luk Hop Street			Designed by:	TCW
Scheme:	2032 Design Scenario			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Sze Mei Street				
Arm B	Sze Mei Street				
Arm C	Luk Hop Street				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				4.00	3.50	4.50	
E	Entry Width (m)				4.00	3.50	5.00	
L	Effective Length of Flare (m)				1.00	1.00	2.00	
R	Entry Radius (m)				30.00	100.00	15.00	
D	Inscribed Circle Diameter (m)				30.00	30.00	30.00	
A	Entry Angle (degree)				10.00	10.00	35.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.00	0.40	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.09	1.11	0.97	
X2	= V + ((E-V) / (1+2S))				4.00	3.50	4.78	
M	= EXP ((D-60) /10)				0.05	0.05	0.05	
F	= 303 * X2				1212	1061	1448	
Td	= 1 + (0.5 / (1+M))				1.48	1.48	1.48	
Fc	= 0.21*Td (1 + 0.2*X2)				0.56	0.53	0.61	
AM RESULT								
Q	Entry Flow (pcu/hour)				540	485	890	
Qc	Circulating Flow Across Entry (pcu/hour)				785	610	305	
Qe	= K (F - Fc*Qc)				840	819	1220	
DFC	= Q / Qe	Design Flow / Capacity	0.73		0.64	0.59	**0.73**	
		Total Entry Flows	1,915					
PM RESULT								
Q	Entry Flow (pcu/hour)				520	695	910	
Qc	Circulating Flow Across Entry (pcu/hour)				685	425	340	
Qe	= K (F - Fc*Qc)				901	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,125					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Slip road of CKR Design Year: 2032

Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

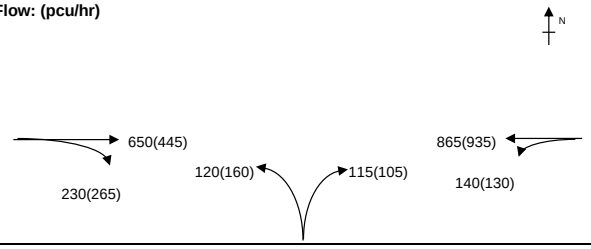
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	→	A	1	3.650						1980	1980	314	0.159	0.159	231	0.117	
	↱	A	1	3.650		26		0%	13%	2120	2105	336	0.158		246	0.117	
	↴	A	1	3.650		23				1990	1990	230	0.116		233	0.117	0.117
Shing Kai Road (WB)	↰ *	E	3	4.500	35			43%	38%	2030	2030	326	0.161		346	0.170	0.170
	←	E	3	3.600						2115	2115	340	0.161	0.161	360	0.170	
	←	E	3	3.600						2115	2115	339	0.160		359	0.170	
Slip Road of CKR	↰	B	1,2	5.000	35					2030	2030	120	0.059		160	0.079	
	↱	C	2	3.600		18				1950	1950	57	0.029		52	0.027	
	↱	C	2	3.600		20				1965	1965	58	0.030		53	0.027	

Pedestrian Crossing	Fp	1,2	MIN GREEN + FLASH =	5	+	10	=	15	
	Gp	1	MIN GREEN + FLASH =	5	+	5	=	10	
	Hp	2	MIN GREEN + FLASH =	14	+	10	=	24	*
	Ip	3	MIN GREEN + FLASH =	5	+	10	=	15	
	Jp	3	MIN GREEN + FLASH =	5	+	5	=	10	
	Kp	3	MIN GREEN + FLASH =	10	+	8	=	18	

Notes:

* assumed to be same phase for conservative purpose

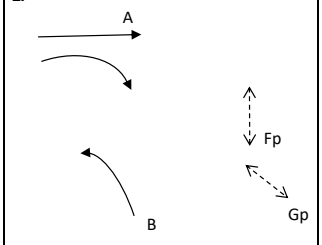
Flow: (pcu/hr)



Group	A,C,E	A,Hp,E	Group	A,C,E	A,Hp,E
y	0.349	0.319	y	0.315	0.288
L (sec)	12	37	L (sec)	12	37
C (sec)	130	130	C (sec)	130	130
y pract.	0.817	0.644	y pract.	0.817	0.644
R.C. (%)	134%	102%	R.C. (%)	160%	124%

Stage / Phase Diagrams

1.



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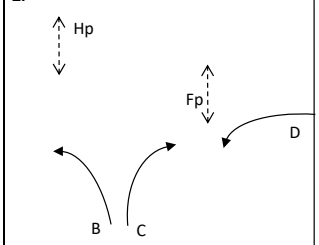

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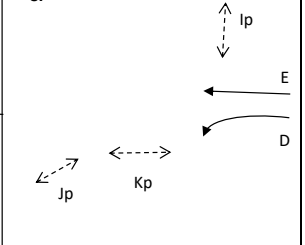


4.

5.

I/G= 5		I/G= 5	24	I/G= 5		I/G=	I/G=
I/G= 5		I/G= 5	24	I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** (P) Shing Kai Road / Slip road of CKR

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Eastern access to main stadium Design Year: 2032

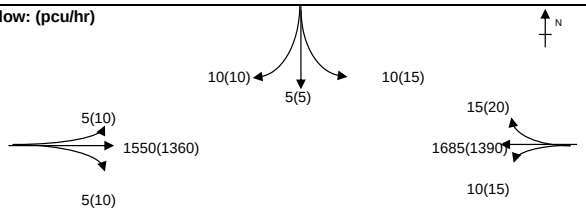
Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	1	3.800	15			1%	2%	1995	1990	496	0.249		439	0.221	
		A	1	3.800						2135	2135	532	0.249	0.249	471	0.221	0.221
		A	1	3.800		30		1%	2%	2135	2135	532	0.249		470	0.220	
Eastern Access to main stadium		C	3	3.650	10					1720	1720	10	0.006		15	0.009	
		C	3	3.650		15		67%	67%	1990	1990	15	0.008		15	0.008	
Shing Kai Road (WB)		B	2	3.800	15			2%	3%	1990	1990	544	0.273		453	0.228	
		B	2	3.800						2135	2135	583	0.273		487	0.228	0.228
		B	2	3.800		30		3%	4%	2130	2130	583	0.274	0.274	485	0.228	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =	5	+	10	=	15					*			*
		Ep	1,3,4	MIN GREEN + FLASH =	5	+	10	=	15								
		Fp	2,4	MIN GREEN + FLASH =	5	+	10	=	15								
		Gp	3,4	MIN GREEN + FLASH =	5	+	7	=	12								
		Hp	1,2,4	MIN GREEN + FLASH =	5	+	7	=	12								

Notes:

TAC junction : CT 130s adopted

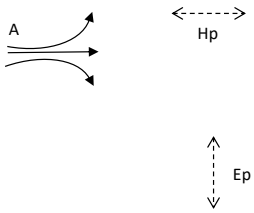
Flow: (pcu/hr)



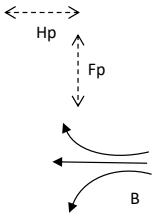
Group	A,B,Gp	A,B,C,Dp	Group	A,B,Gp	A,B,C,Dp
y	0.523	0.523	y	0.449	0.449
L (sec)	26	41	L (sec)	26	41
C (sec)	130	130	C (sec)	130	130
y pract.	0.720	0.616	y pract.	0.720	0.616
R.C. (%)	38%	18%	R.C. (%)	60%	37%

Stage / Phase Diagrams

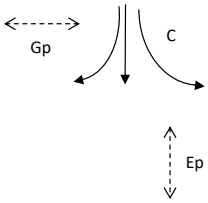
1.



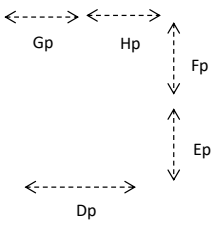
2.



3.



4.



5.

I/G= 5		I/G= 7		I/G= 6	5	I/G= 5	15	I/G=			
I/G= 5		I/G= 7		I/G= 6	5	I/G= 5	15	I/G=			

Date: JUN, 2024 **Junction:** (Q) Shing Kai Road / Eastern access to main stadium

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Olympic Avenue/ Dakota Drive Design Year: 2032

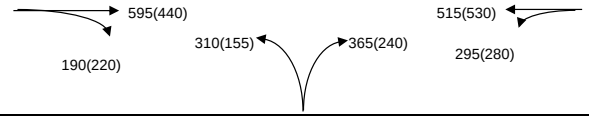
Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	254	0.128	0.128	212	0.107	
	→	A	1	3.650						2120	2120	271	0.128		228	0.108	
	→	A	1	3.650		25		73%	100%	2030	2000	260	0.128		220	0.110	0.110
Dakota Drive (NB)	*	B	2	4.500	15	20		46% / 54%	39% / 61%	2040	2040	675	0.331	0.331	395	0.194	0.194
Olympic Avenue (WB)	←	C	3	3.650	15			78%	74%	1835	1845	376	0.205	0.205	377	0.204	0.204
	←	C	3	3.650						2120	2120	434	0.205		433	0.204	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			6	+	10	=	16			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	10	=	16						

Notes:

* Saturation flow 150 pcu/hr added

Flow: (pcu/hr)

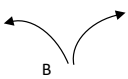


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.664	0.664	y	0.508	0.508
L (sec)	34	37	L (sec)	34	37
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.623	y pract.	0.645	0.623
R.C. (%)	-3%	-6%	R.C. (%)	27%	23%

Stage / Phase Diagrams

1.

2.



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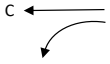

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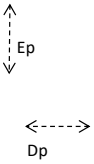


5.

I/G= 3		I/G= 6		I/G= 5		I/G= 10	16
I/G= 3		I/G= 6		I/G= 5		I/G= 10	16

I/G= | | I/G= | |

Date: JUN, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

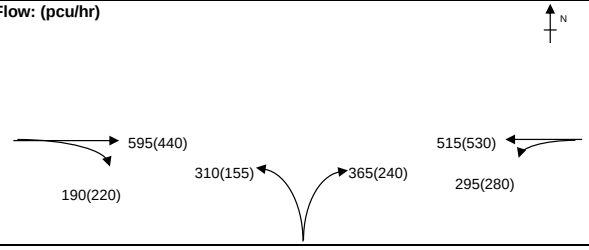
Junction: Olympic Avenue/ Dakota Drive Design Year: 2032

Description: 2032 Design Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	254	0.128	0.128	212	0.107	
(EB)	→	A	1	3.650						2120	2120	271	0.128		228	0.108	
	↘	A	1	3.650		25		73%	100%	2030	2000	260	0.128		220	0.110	0.110
Dakota Drive	↰	B	2	3.500	15					1785	1785	310	0.174		155	0.087	
(NB)	↱	B	2	3.500		20				1960	1960	365	0.186	0.186	240	0.122	0.122
Olympic Avenue	↙	C	3	3.650	15			78%	74%	1835	1845	376	0.205	0.205	377	0.204	0.204
(WB)	←	C	3	3.650						2120	2120	434	0.205		433	0.204	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			6	+	10	=	16			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	10	=	16						

Notes:

Flow: (pcu/hr)

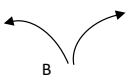


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.519	0.519	y	0.437	0.437
L (sec)	34	37	L (sec)	34	37
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.623	y pract.	0.645	0.623
R.C. (%)	24%	20%	R.C. (%)	48%	43%

Stage / Phase Diagrams

1.

2.



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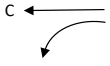

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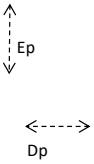


5.

I/G= 3		I/G= 6		I/G= 5		I/G= 10	16	I/G=	
I/G= 3		I/G= 6		I/G= 5		I/G= 10	16	I/G=	

Date: JUN, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

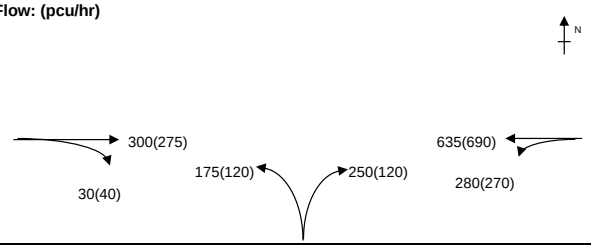
Junction: Olympic Avenue / Muk Lai Street Design Year: 2032

Description: 2032 Design Scenario Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	161	0.081	0.081	154	0.078	0.078
(EB)	↓	A	1	3.650		19		18%	25%	2090	2080	169	0.081		161	0.077	
Muk Lai Street (NB)	↑	B	2	4.500	16	19		41% / 59%	50% / 50%	1905	1900	425	0.223	0.223	240	0.126	0.126
Olympic Avenue	↓	C	3	3.650	16			65%	60%	1865	1875	428	0.229		451	0.241	0.241
(WB)	←	C	3	3.650						2120	2120	487	0.230	0.230	509	0.240	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			7	+	13	=	20			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	15	=	21						

Notes:

Flow: (pcu/hr)



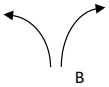
Group	A,C,B,Ep	A,C,B,Dp	Group	A,C,B,Ep	A,C,B,Dp
y	0.534	0.534	y	0.445	0.445
L (sec)	37	42	L (sec)	37	42
C (sec)	120	120	C (sec)	120	120
y pract.	0.623	0.585	y pract.	0.623	0.585
R.C. (%)	17%	10%	R.C. (%)	40%	32%

Stage / Phase Diagrams

1.

2.

3.



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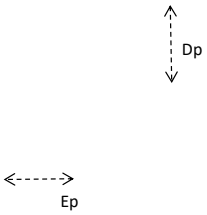


5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	20
I/G= 2		I/G= 7		I/G= 6		I/G= 10	20

I/G=

I/G=

Date: JUN, 2024

Junction: Olympic Avenue / Muk Lai Street (S)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

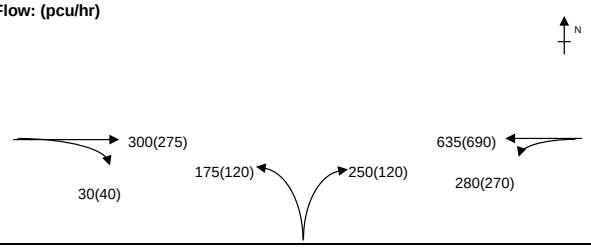
Junction: Olympic Avenue / Muk Lai Street Design Year: 2032

Description: 2032 Design Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	161	0.081	0.081	154	0.078	0.078
(EB)	↓	A	1	3.650		19		18%	25%	2090	2080	169	0.081		161	0.077	
Muk Lai Street (NB)	↑	B	2	4.500	16	19		41% / 59%	50% / 50%	1905	1900	425	0.223	0.223	240	0.126	
Olympic Avenue	↓	C	3	3.650	16			65%	60%	1865	1875	428	0.229		451	0.241	0.241
(WB)	←	C	3	3.650						2120	2120	487	0.230	0.230	509	0.240	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			7	+	13	=	20						
		Ep	1,2	MIN GREEN + FLASH =			7	+	13	=	20						
		Fp	2	MIN GREEN + FLASH =			6	+	15	=	21						*
		Gp	1,3	MIN GREEN + FLASH =			6	+	15	=	21						

Notes:

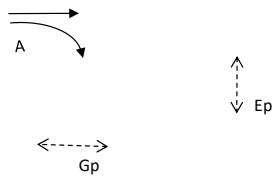
Flow: (pcu/hr)



Group	A,B,Dp	A,B,C	Group	A,B,C	A,Fp,C
y	0.304	0.534	y	0.445	0.318
L (sec)	43	13	L (sec)	13	39
C (sec)	90	90	C (sec)	90	90
y pract.	0.470	0.770	y pract.	0.770	0.510
R.C. (%)	54%	44%	R.C. (%)	73%	60%

Stage / Phase Diagrams

1.



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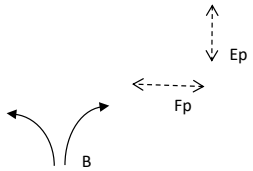

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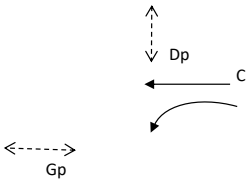


4.

5.

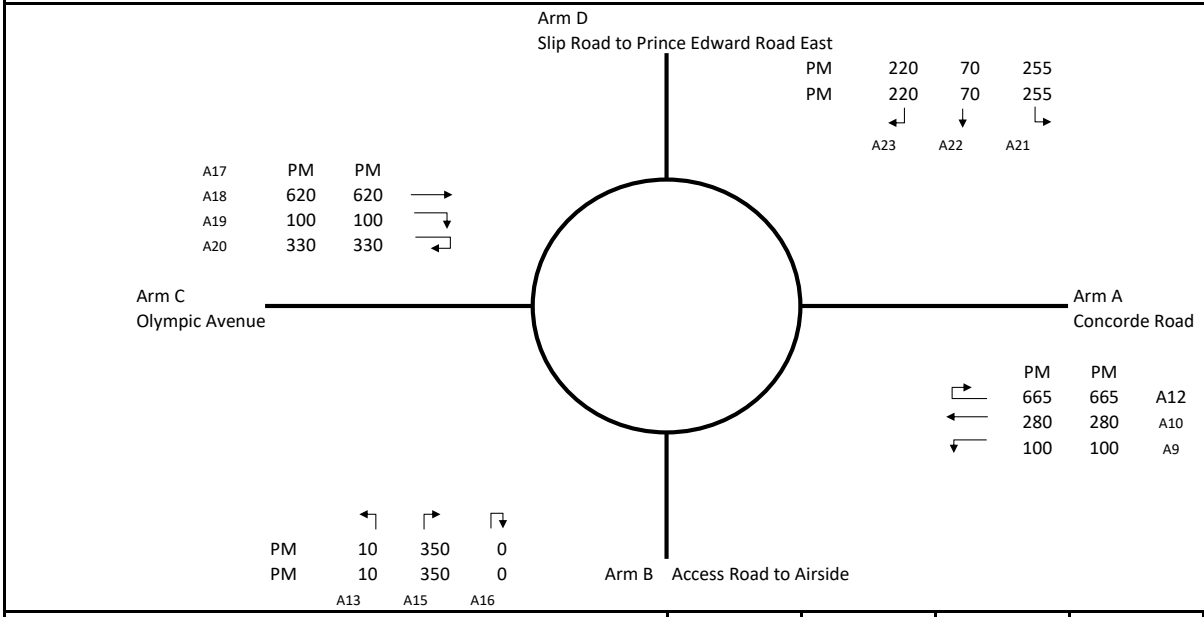
I/G= 6		I/G= 5		I/G= 5		I/G=	I/G=
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

2032 Design
(Sensitivity Test - Event Start)

Roundabout Capacity Calculation

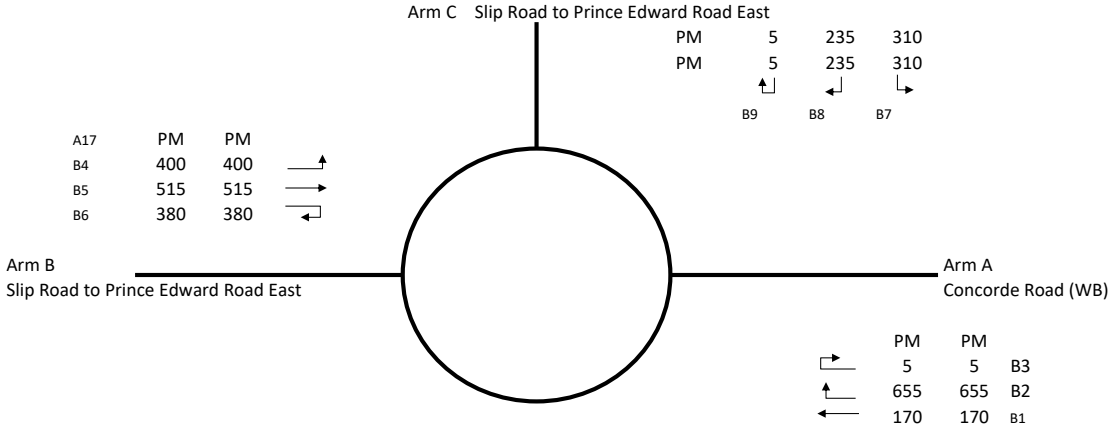
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road				
Arm B	Access Road to Airside				
Arm C	Olympic Avenue				
Arm D	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				7.30	7.00	10.00	7.00	
E	Entry Width (m)				10.00	7.50	11.00	10.50	
L	Effective Length of Flare (m)				5.00	1.00	5.00	20.00	
R	Entry Radius (m)				35.00	30.00	25.00	30.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	60.00	
A	Entry Angle (degree)				15.00	15.00	60.00	40.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.86	0.80	0.32	0.28	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.07	1.07	0.91	0.98	
X2	= V + ((E-V) / (1+2S))				8.29	7.19	10.61	9.24	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	1.00	
F	= 303 * X2				2512	2179	3215	2801	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.70	0.64	0.82	0.75	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,045	360	1,050	545	
Qc	Circulating Flow Across Entry (pcu/hour)				720	1,495	1,015	2,065	
Qe	= K (F - Fc*Qc)				2156	1306	2158	1234	
DFC	= Q / Qe	Design Flow / Capacity	0.49		0.48	0.28	**0.49**	0.44	
		Total Entry Flows	3,000						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,045	360	1,050	545	
Qc	Circulating Flow Across Entry (pcu/hour)				720	1,495	1,015	2,065	
Qe	= K (F - Fc*Qc)				2156	1306	2158	1234	
DFC	= Q / Qe	Design Flow / Capacity	0.49		0.48	0.28	**0.49**	0.44	
		Total Entry Flows	3,000						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

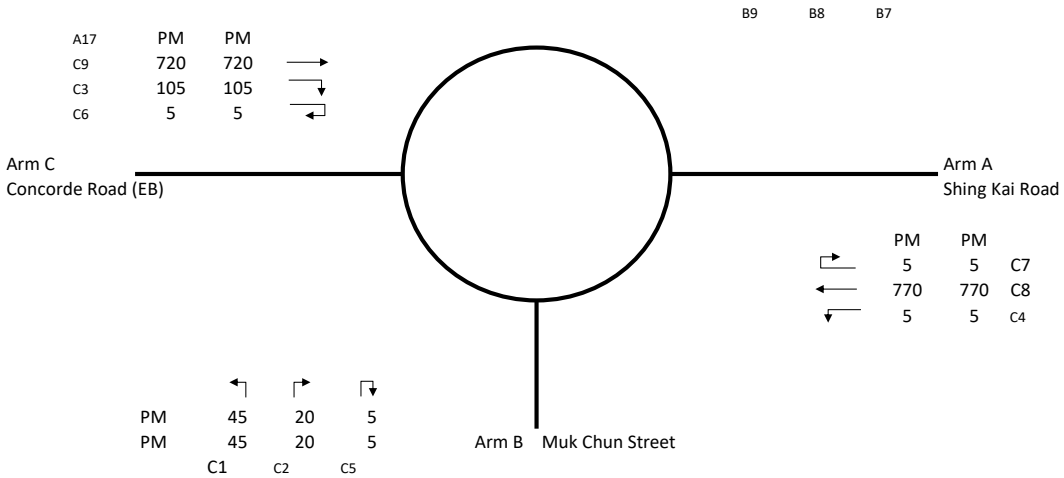
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road (WB)				
Arm B	Concorde Road (EB)				
Arm C	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				8.00	7.00	8.00	
E	Entry Width (m)				8.00	8.00	8.00	
L	Effective Length of Flare (m)				1.00	6.00	1.00	
R	Entry Radius (m)				42.00	20.00	47.00	
D	Inscribed Circle Diameter (m)				40.00	40.00	40.00	
A	Entry Angle (degree)				10.00	22.00	15.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.27	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	1.03	1.08	
X2	= V + ((E-V) / (1+2S))				8.00	7.65	8.00	
M	= EXP ((D-60) /10)				0.14	0.14	0.14	
F	= 303 * X2				2424	2319	2424	
Td	= 1 + (0.5 / (1+M))				1.44	1.44	1.44	
Fc	= 0.21*Td (1 + 0.2*X2)				0.79	0.77	0.79	
AM RESULT								
Q	Entry Flow (pcu/hour)				830	1,295	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	665	900	
Qe	= K (F - Fc*Qc)				2120	1860	1854	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,675					
PM RESULT								
Q	Entry Flow (pcu/hour)				830	1,295	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	665	900	
Qe	= K (F - Fc*Qc)				2120	1860	1854	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,675					
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9								

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Shing Kai Road / Concorde Road / Muk Chun Street			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Shing Kai Road				
Arm B	Muk Chun Street				
Arm C	Concorde Road (EB)				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				5.00	5.00	7.00	
E	Entry Width (m)				7.00	7.50	7.00	
L	Effective Length of Flare (m)				5.00	5.00	5.00	
R	Entry Radius (m)				29.00	20.00	50.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	
A	Entry Angle (degree)				40.00	27.00	23.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.64	0.80	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				0.98	1.01	1.05	
X2	= V + ((E-V) / (1+2S))				5.88	5.96	7.00	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	
F	= 303 * X2				1781	1806	2121	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.57	0.58	0.63	
AM RESULT								
Q	Entry Flow (pcu/hour)				780	70	830	
Qc	Circulating Flow Across Entry (pcu/hour)				115	775	30	
Qe	= K (F - Fc*Qc)				1682	1375	2215	
DFC	= Q / Qe	Design Flow / Capacity	0.46		**0.46**	0.05	0.37	
		Total Entry Flows	1,680					
PM RESULT								
Q	Entry Flow (pcu/hour)				780	70	830	
Qc	Circulating Flow Across Entry (pcu/hour)				115	775	30	
Qe	= K (F - Fc*Qc)				1682	1375	2215	
DFC	= Q / Qe	Design Flow / Capacity	0.46		**0.46**	0.05	0.37	
		Total Entry Flows	1,680					
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9								

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Hung Street Design Year: 2032

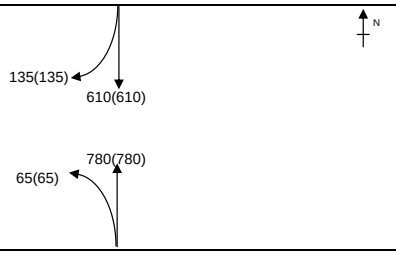
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road	↓↑	A	1	3.650	15			16%	16%	1950	1950	405	0.208	0.208
(NB)	↑	A	1	3.650						2120	2120	440	0.208	
Shing Kai Road	↓	B	2	3.650						1980	1980	372	0.188	
(SB)	↓	B	2	3.650		8		36%	36%	1985	1985	373	0.188	0.188
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =	9	+	9	=	18					
		Dp	2,3	MIN GREEN + FLASH =	9	+	9	=	18					
		Ep	3	MIN GREEN + FLASH =	9	+	9	=	18					*
		Fp	2,3	MIN GREEN + FLASH =	9	+	9	=	18					
		Gp	1,3	MIN GREEN + FLASH =	9	+	9	=	18					

Notes:

TAC junction : CT 90s adopted

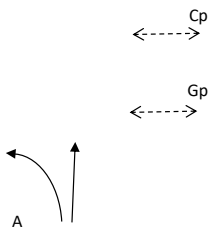
Flow: (pcu/hr)



Group	A,Dp	A,B,Ep
y	0.208	0.396
L (sec)	28	34
C (sec)	90	90
y pract.	0.620	0.560
R.C. (%)	199%	42%

Stage / Phase Diagrams

1.



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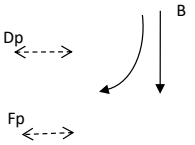

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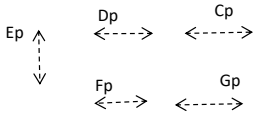


4.

5.

I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=
I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=

Date: JUN, 2024 **Junction:** (D) Shing Kai Road / Muk Hung Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

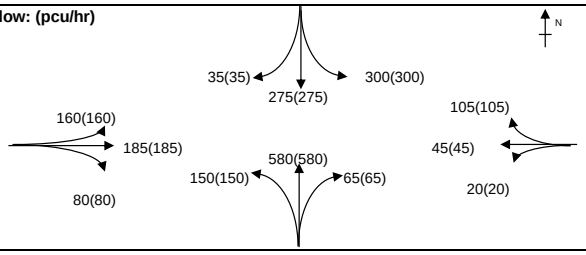
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street (EB)		C	3	3.750	30	25		38% / 19%	38% / 19%	1930	1930	425	0.220	0.220
Shing Kai Road (SB)		B	2	3.650	10			100%	100%	1720	1720	300	0.174	0.174
		B	2	3.650		20		11%	11%	2100	2100	310	0.148	
Muk Chui Street (WB)		D	4	3.650		20				1970	1970	105	0.053	0.053
		D	4	3.650	10			31%	31%	1895	1895	65	0.034	
Shing Kai Road (NB)		A	1	3.650	18			39%	39%	1915	1915	380	0.198	0.198
		A	1	3.650		20		16%	16%	2095	2095	415	0.198	

Pedestrian Crossing								
	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

TAC junction: CT 120s adopted

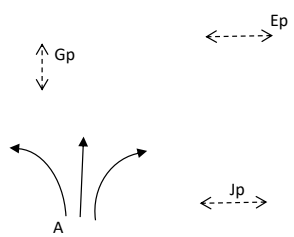
Flow: (pcu/hr)



Group	A,Fp,C,D	A,B,C,D
y	0.472	0.646
L (sec)	39	29
C (sec)	120	120
y pract.	0.608	0.683
R.C. (%)	29%	6%

Stage / Phase Diagrams

1.



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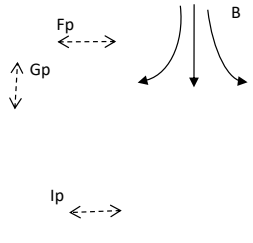

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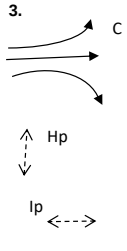

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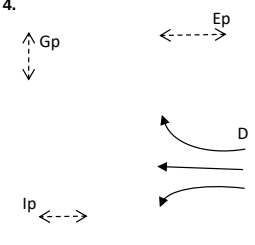


5.

I/G= 8		I/G= 9		I/G= 7		I/G= 9		I/G=	
I/G= 8		I/G= 9		I/G= 7		I/G= 9		I/G=	

Date: JUN, 2024 **Junction:** (E) Shing Kai Road / Muk Chui Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

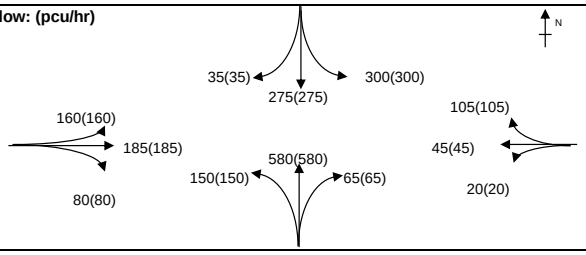
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street	*	C	3	4.000	15			80%	80%	1305	1305	201	0.154	0.154
(EB)	*	C	3	4.000		17		36%	36%	1460	1460	224	0.153	
Shing Kai Road		B	2	3.650	10			100%	100%	1720	1720	300	0.174	0.174
(SB)		B	2	3.650		20		11%	11%	2100	2100	310	0.148	
Muk Chui Street		D	4	3.650		20				1970	1970	105	0.053	0.053
(WB)		D	4	3.650	10			31%	31%	1895	1895	65	0.034	
Shing Kai Road		A	1	3.650	18			39%	39%	1915	1915	380	0.198	0.198
(NB)		A	1	3.650		20		16%	16%	2095	2095	415	0.198	

Pedestrian Crossing	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

TAC junction: CT 120s adopted
* Site factor 0.7 added due to flare length

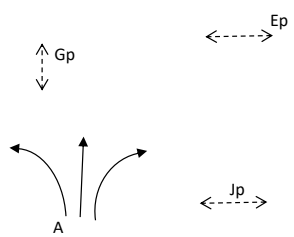
Flow: (pcu/hr)



Group	A,B,Hp,D	A,B,C,D
y	0.426	0.580
L (sec)	44	29
C (sec)	120	120
y pract.	0.570	0.683
R.C. (%)	34%	18%

Stage / Phase Diagrams

1.



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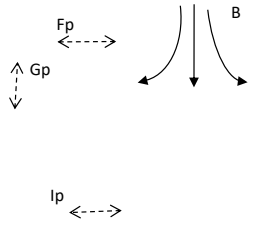

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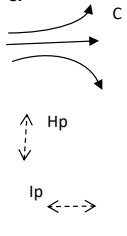

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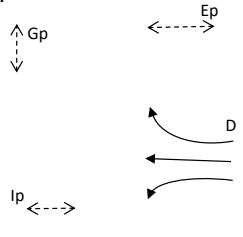


5.

I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=
I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (E) Shing Kai Road / Muk Chui Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Kai Shing Street / Muk On Street — Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

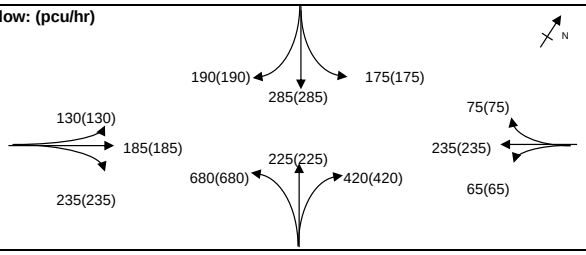
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	2	3.650	18			74%	74%	1865	1865	175	0.094	
		A	2	3.650		18		28%	28%	2070	2070	194	0.094	
		A	2	3.650		15				1925	1925	181	0.094	0.094
Muk On Street		E	1	3.650	18			56%	56%	1890	1890	313	0.166	0.166
		E	1	3.650		20		56%	56%	2035	2035	337	0.166	
Shing Kai Road (WB)		D	3	3.650						2120	2120	158	0.075	
		D	3	3.650		20		49%	49%	2045	2045	152	0.074	
	#	D	3	3.650	50					1345	1345	65	0.048	
kai Shing Street		C	4	3.650		20				1970	1970	420	0.213	0.213
		C	4	3.650						2120	2120	225	0.106	
	#	B	1,2,4	4.000	50					1370	1370	680	0.496	

Pedestrian Crossing	Fp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Gp	1	MIN GREEN + FLASH =	8	+	20	=	28		
	Hp	1,3,4	MIN GREEN + FLASH =	8	+	21	=	29		
	Ip	4	MIN GREEN + FLASH =	5	+	9	=	14		
	Jp	3	MIN GREEN + FLASH =	7	+	17	=	24		*
	Kp	3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Lp	1,2,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Mp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14		

Notes:

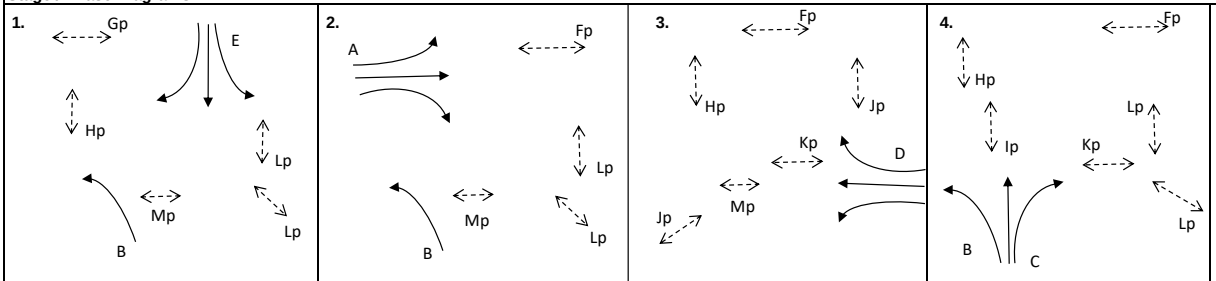
TAC Junction: 130s CT adopted
Site factor 0.7 adopted

Flow: (pcu/hr)



Group	Gp,A,Jp,C	E,A,Jp,C
y	0.307	0.473
L (sec)	73	48
C (sec)	130	130
y pract.	0.395	0.568
R.C. (%)	28%	20%

Stage / Phase Diagrams



I/G= 8		I/G= 6		I/G= 10	24	I/G= 3	I/G=
I/G= 8		I/G= 6		I/G= 10	24	I/G= 3	I/G=

Date: JUN, 2024 **Junction:** (F) Shing Kai Road / Kai Shing Street / Muk On Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Shing Fung Road / Muk Tai Street — Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

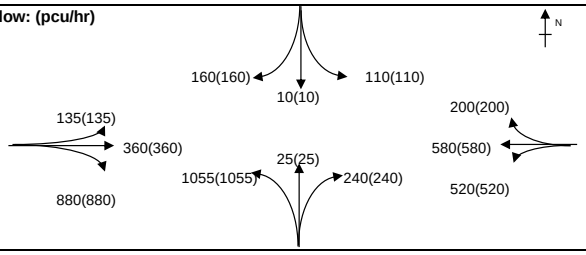
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		B	2	3.650	15			58%	58%	1870	1870	233	0.125	
		B	2	3.500						2105	2105	262	0.124	
		B	2	3.500		20				1960	1960	445	0.227	
		B	2	3.500		15				1915	1915	435	0.227	0.227
Muk Tai Street	^	A	1	3.750		17				980	980	160	0.163	0.163
	^	A	1	4.000	22			92%	92%	950	950	120	0.126	
Shing Kai Road (WB)		E	4	3.650						2120	2120	397	0.187	0.187
		E	4	3.650		23		52%	52%	2050	2050	383	0.187	
		E	4	3.650	25					1870	1870	251	0.134	
		E	4	3.650	28					2010	2010	269	0.134	
Shing Fung Road		C	2,3	3.650	20					1840	1840	508	0.276	
		C	2,3	3.650	22					1985	1985	547	0.276	
		D	3	3.650		23		82%	82%	2010	2010	142	0.071	0.071
		D	3	3.650		19				1750	1750	123	0.070	

Pedestrian Crossing								
	Fp	1,3,4	MIN GREEN + FLASH =	8	+	15	=	23
	Gp	2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,4	MIN GREEN + FLASH =	5	+	8	=	13
	Ip	4	MIN GREEN + FLASH =	10	+	9	=	19
	Jp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14
	Kp	1,2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Lp	4	MIN GREEN + FLASH =	7	+	13	=	20
	Mp	2,3	MIN GREEN + FLASH =	5	+	9	=	14
	Np	1	MIN GREEN + FLASH =	6	+	11	=	17

Notes:

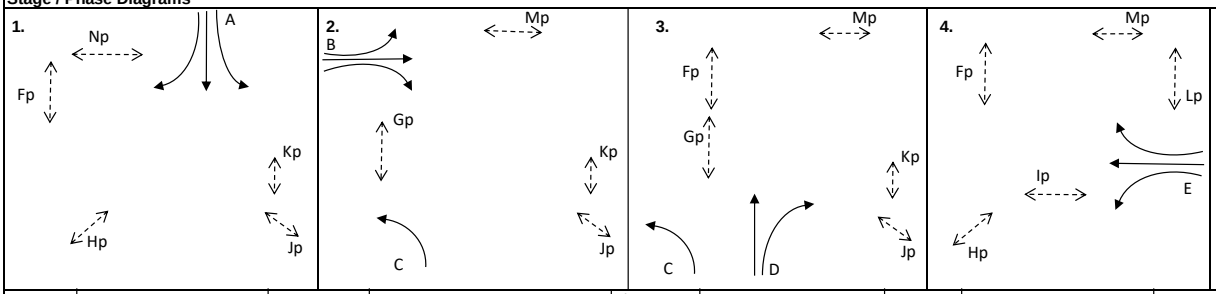
TAC junction : CT 130s adopted
^ Site factor 0.5 added due to flare length

Flow: (pcu/hr)



Group	A,C,E	A,B,D,E
y	0.627	0.648
L (sec)	17	17
C (sec)	130	130
y pract.	0.782	0.782
R.C. (%)	25%	21%

Stage / Phase Diagrams



I/G= 5		I/G= 5		I/G= 6		I/G= 5	I/G=
I/G= 5		I/G= 5		I/G= 6		I/G= 5	I/G=

Date: JUN, 2024 **Junction:** (G) Shing Kai Road / Shing Fung Road / Muk Tai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Western access to main stadium Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

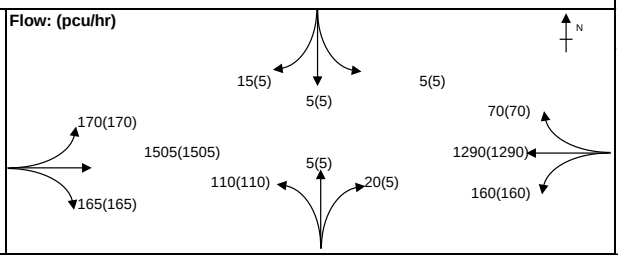
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/h	y Value	Critical y
Shing Kai Road EB		A	1	3.650	17.5			29%	29%	1930	1930	579	0.300	0.300
		A	1	3.650						2120	2120	636	0.300	
		A	1	3.650		22.5		26%	26%	2085	2085	625	0.300	
Shing Kai Road WB		C	3	3.650	17.5			34%	34%	1925	1925	476	0.247	
		C	3	3.650						2120	2120	524	0.247	
		C	3	3.650		22.5		13%	13%	2100	2100	520	0.248	0.248
Western Access Road to Main Stadium NB		B	2	3.750	15					1810	1810	110	0.061	0.061
		B	2	3.750		22.5		80%	50%	2020	2060	10	0.005	
Western Access Road to Main Stadium SB		D	4	3.500	20			50%	50%	1895	1895	10	0.005	
		D	4	3.500		32.5				2010	2010	5	0.002	

Pedestrian Crossing								
	Ep	4	MIN GREEN + FLASH =	5	+	5	=	10
	Fp	1,2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Gp	3	MIN GREEN + FLASH =	5	+	10	=	15
	Hp	1,2,4	MIN GREEN + FLASH =	6	+	11	=	17
	Ip	2	MIN GREEN + FLASH =	5	+	8	=	13
	Jp	1,3,4	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC junction : CT 130s adopted

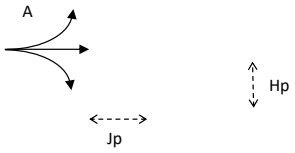
Flow: (pcu/hr)



Group	A,B,Gp,D	A,B,C,D
y	0.361	0.608
L (sec)	39	24
C (sec)	130	130
y pract.	0.630	0.734
R.C. (%)	75%	21%

Stage / Phase Diagrams

1.



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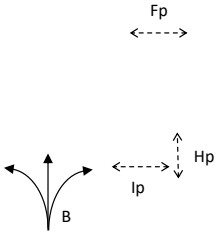

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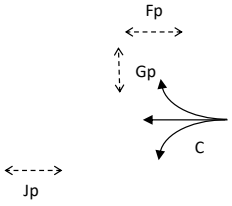

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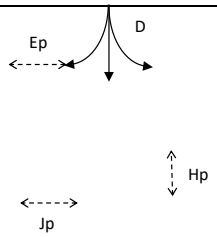


5.

I/G= 5		I/G= 5		I/G= 5		I/G= 7	5	I/G=
I/G= 5		I/G= 5		I/G= 5		I/G= 7	5	I/G=

Date: JUN, 2024 **Junction:** (H) Shing Kai Road / Western access to main stadium

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

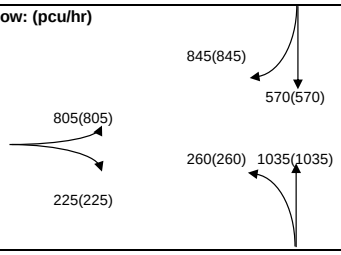
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		C	1	3.600	18			42%	42%	1910	1910	624	0.327	0.327
(NB)		C	1	3.000						2055	2055	671	0.327	
Shing Kai Road		A	2	3.500						1965	1965	459	0.234	
(SB)		A	2	3.650		32		77%	77%	2045	2045	477	0.233	
		A	2	4.000		30				2050	2050	479	0.234	0.234
Sung Wong Toi		B	3	3.650	18					1830	1830	387	0.211	
Road		B	3	3.650	20	24		100% / 0%	100% / 0%	1970	1970	418	0.212	0.212
(EB)		B	3	3.650		22				1985	1985	225	0.113	

Pedestrian Crossing	Dp	2,3	MIN GREEN + FLASH =	5	+	10	=	15
	Ep	1	MIN GREEN + FLASH =	5	+	12	=	17
	Fp	1,3	MIN GREEN + FLASH =	5	+	11	=	16
	Gp	2	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,2	MIN GREEN + FLASH =	5	+	6	=	11
	Ip	3	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC Junction: CT 130s adopted

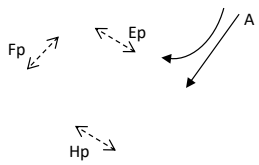
Flow: (pcu/hr)



Group	A,Gp,C	A,B,C
y	0.560	0.773
L (sec)	29	13
C (sec)	130	130
y pract.	0.699	0.810
R.C. (%)	25%	5%

Stage / Phase Diagrams

1.



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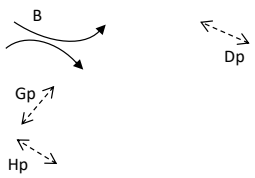

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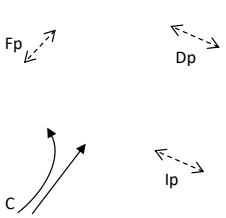


4.

5.

I/G= 5		I/G= 6		I/G= 5		I/G=	I/G=
I/G= 5		I/G= 6		I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** 1 To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

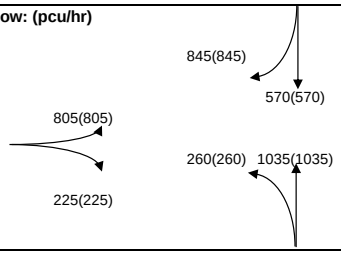
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road	↰↑	D	4	3.600	18			42%	42%	1910	1910	624	0.327	0.327
(NB)	↑	D	4	3.000						2055	2055	671	0.327	
Shing Kai Riad (SB)	↓	A	1,2	3.500						1965	1965	459	0.234	
	↰↓	A	1,2	3.650		32		77%	77%	2045	2045	477	0.233	
	↲	A	1,2	4.000		30				2050	2050	479	0.234	0.234
To Kwa Wan Road	↑*	C	2,3	3.500	18					1630	1630	366	0.225	
(EB)	↑	C	2,3	3.500	20					1960	1960	439	0.224	
	↴	B	3	3.500		30				2005	2005	113	0.056	0.056
	↴	B	3	3.500		28				2000	2000	112	0.056	

Pedestrian Crossing	Jp	3,4	MIN GREEN + FLASH =	5	+	10	=	15
	Ep	1	MIN GREEN + FLASH =	7	+	13	=	17
	Fp	1,4	MIN GREEN + FLASH =	8	+	15	=	16
	Gp	3	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,2,3	MIN GREEN + FLASH =	5	+	6	=	11
	Ip	4	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC Junction : CT 130s adopted
*Site factor 0.9 added due to flare length

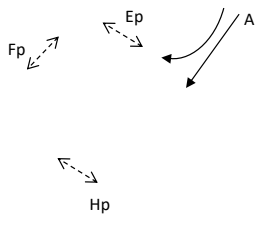
Flow: (pcu/hr)



Group	Ep,C,Ip	A,B,D
y	0.225	0.617
L (sec)	30	15
C (sec)	130	130
y pract.	0.692	0.796
R.C. (%)	208%	29%

Stage / Phase Diagrams

1.



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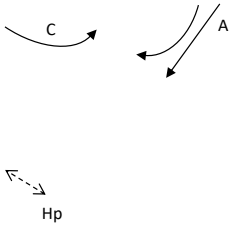

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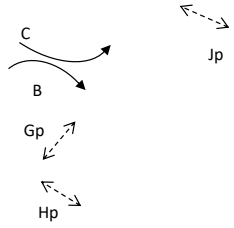

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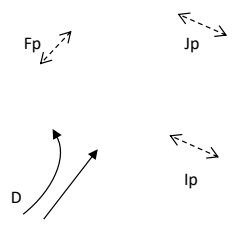


5.

I/G= 5		I/G= 2		I/G= 6		I/G= 5	I/G=
I/G= 5		I/G= 2		I/G= 6		I/G= 5	I/G=

Date: JUN, 2024 **Junction:** (1) To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Kowloon City Road / Sung Wong Toi Road Design Year: 2032

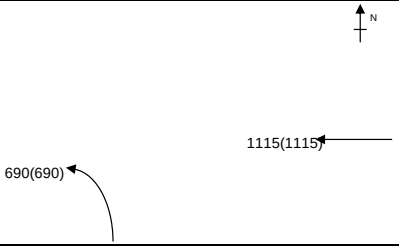
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	←	A	1	3.650						1585	1585	540	0.341	
	←	A	1	3.500						1685	1685	575	0.341	0.341
Kowloon City Road	↰	B	2	4.500	10					1435	1435	330	0.230	0.230
	↰	B	2	4.500	12					1570	1570	360	0.229	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =	10		+	11	=	21				

Notes:

Site factor 0.8 added due to kerbside activities at Sung Wong Toi Road & Kowloon City Road

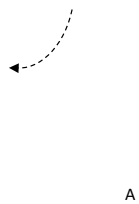
Flow: (pcu/hr)



Group	A,Cp	A,B
y	0.341	0.571
L (sec)	27	10
C (sec)	65	65
y pract.	0.526	0.762
R.C. (%)	54%	33%

Stage / Phase Diagrams

1.



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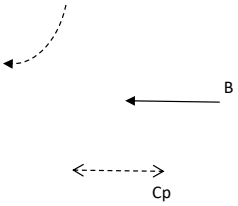


3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=	

Date: JUN, 2024 **Junction:** (J) Kowloon City Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

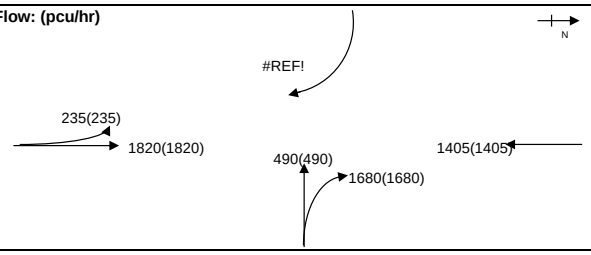
Junction: Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	↱	D	2,3	3.500		15				1785	1785	527	0.295	
	↱	D	2,3	3.500		20				1960	1960	580	0.296	0.296
	↱	D	2,3	3.000		25				1940	1940	573	0.295	
	↑	E	2	3.500						1965	1965	237	0.121	
	↑	E	2	3.500						2105	2105	253	0.120	
Ma Tau Chung Rd (NB)	→↑	A	1	3.500	10			37%	37%	1860	1860	630	0.339	
	→	A	1	3.500						2105	2105	713	0.339	0.339
	→	A	1	3.500						2105	2105	712	0.338	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	479	0.228	
	←	B	1	3.500						2105	2105	479	0.228	
	←	B	1	3.500						1965	1965	447	0.227	
Fu Ning Street	↲	I	4	3.500		20				1830	1830	25	0.014	
Pedestrian Crossing		Cp	1	MIN GREEN + FLASH =			10	+	9	=	19			
		Fp	2,3	MIN GREEN + FLASH =			10	+	9	=	19			
		Gp	1,2,3	MIN GREEN + FLASH =			5	+	5	=	10			
		Hp	3,4	MIN GREEN + FLASH =			7	+	8	=	15			

Notes:

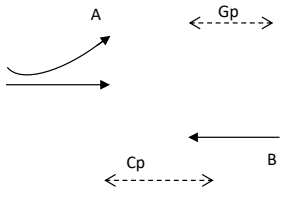
Flow: (pcu/hr)



Group	B,D,I	A,D,I
y	0.523	0.635
L (sec)	18	18
C (sec)	130	130
y pract.	0.775	0.775
R.C. (%)	48%	22%

Stage / Phase Diagrams

1.



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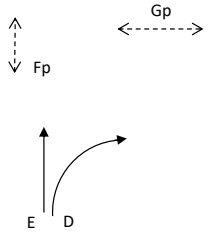

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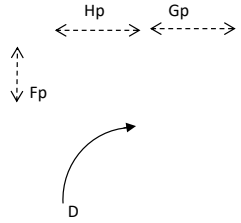

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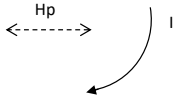


5.

I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			
I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			

Date: JUN, 2024 **Junction:** (K) Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

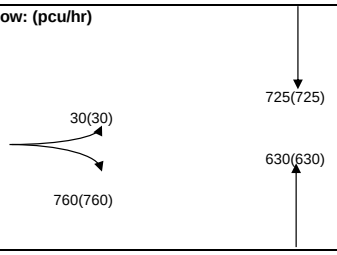
Junction: Olympic Avenue / Hang Wan Road Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	↑	A	1,2	3.500						1965	1965	304	0.155	
(NB)	↑	A	1,2	3.500						2105	2105	326	0.155	
Olympic Avenue	↓	B	1,2	3.650						1980	1980	350	0.177	
(SB)	↓	B	1,2	3.650						2120	2120	375	0.177	0.177
Hang Wan Road	→↑*	C	2,3	5.000	13					1895	1895	30	0.016	
	→↓*	D	3	3.300		25				1965	1965	382	0.194	
	→↓*	D	3	3.300		20				1940	1940	378	0.195	0.195
Pedestrian Crossing		Ep	1	MIN GREEN + FLASH =			5	+	6	=	11			
		Fp	1	MIN GREEN + FLASH =			5	+	6	=	11			
		Gp	3	MIN GREEN + FLASH =			5	+	7	=	12			

Notes:

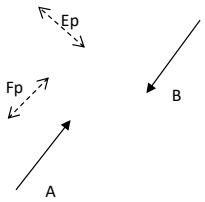
Flow: (pcu/hr)



Group	A,D	B,D
y	0.350	0.372
L (sec)	9	11
C (sec)	60	60
y pract.	0.765	0.735
R.C. (%)	119%	98%

Stage / Phase Diagrams

1.



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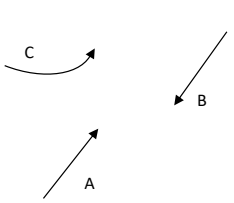

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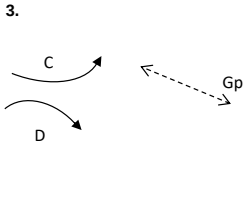


4.

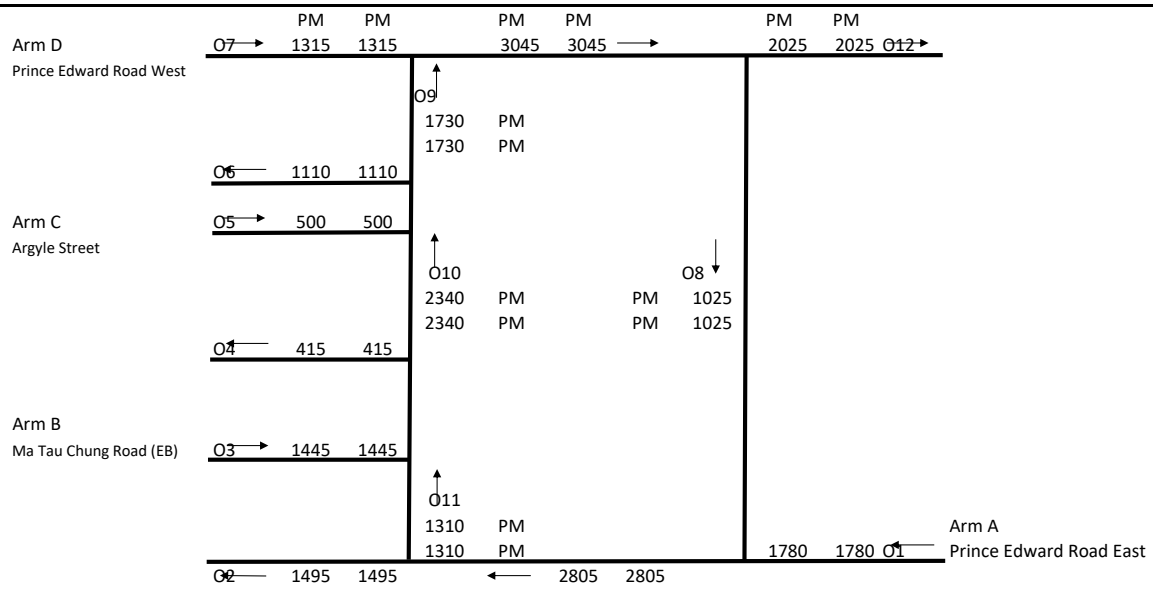
5.

I/G= 6		I/G=		I/G= 7		I/G=	I/G=
I/G= 6		I/G=		I/G= 7		I/G=	I/G=

Date: JUN, 2024 **Junction:** (L) Olympic Avenue / Hang Wan Road

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Prince Edward Road East				
Arm B	Ma Tau Chung Road (EB)				
Arm C	Argyle Street				
Arm D	Prince Edward Road West				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				8.50	9.50	6.00	6.50	
E	Entry Width (m)				9.00	10.00	8.00	9.70	
L	Effective Length of Flare (m)				1.00	5.00	5.00	9.00	
R	Entry Radius (m)				50.00	22.00	28.00	60.00	
D	Inscribed Circle Diameter (m)				100.00	100.00	100.00	100.00	
A	Entry Angle (degree)				10.00	55.00	15.00	30.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.80	0.16	0.64	0.57	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	0.92	1.07	1.03	
X2	= V + ((E-V) / (1+2S))				8.69	9.88	6.88	8.00	
M	= EXP ((D-60) /10)				54.60	54.60	54.60	54.60	
F	= 303 * X2				2634	2993	2084	2423	
Td	= 1 + (0.5 / (1+M))				1.01	1.01	1.01	1.01	
Fc	= 0.21*Td (1 + 0.2*X2)				0.58	0.63	0.50	0.55	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,780	1,445	500	1,315	
Qc	Circulating Flow Across Entry (pcu/hour)				1,025	1,310	2,340	1,730	
Qe	= K (F - Fc*Qc)				2240	1989	966	1518	
DFC	= Q / Qe	Design Flow / Capacity	0.87		0.79	0.73	0.52	**0.87**	
		Total Entry Flows	5,040						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,780	1,445	500	1,315	
Qc	Circulating Flow Across Entry (pcu/hour)				1,025	1,310	2,340	1,730	
Qe	= K (F - Fc*Qc)				2240	1989	966	1518	
DFC	= Q / Qe	Design Flow / Capacity	0.87		0.79	0.73	0.52	**0.87**	
		Total Entry Flows	5,040						

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

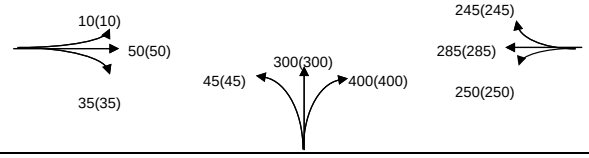
Junction: Kai San Road / Tsat Po Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Tsat Po Street (EB)		C	4	5.000	10	25		11% / 37%	11% / 37%	2040	2040	95	0.047	0.047
Tsat Po Street (WB)		A	1	3.600	10			69%	69%	1790	1790	364	0.203	
		A	1	3.600		25		59%	59%	2045	2045	416	0.203	0.203
Kai San Road (NB)		B	2	4.000		15				1960	1960	400	0.204	0.204
		B	2	4.000	10			13%	13%	1975	1975	345	0.175	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			10	+	9	=	19			
		Ep	2,3	MIN GREEN + FLASH =			8	+	8	=	16			
		Fp	1,2,4	MIN GREEN + FLASH =			7	+	7	=	14			
		Gp	2	MIN GREEN + FLASH =			9	+	8	=	17			*
		Hp	2	MIN GREEN + FLASH =			7	+	7	=	14			

Notes:

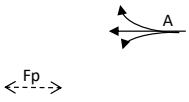
Flow: (pcu/hr)



Group	A,Gp,B,C	A,Gp,B,C
y	0.454	0.454
L (sec)	48	48
C (sec)	130	130
y pract.	0.568	0.568
R.C. (%)	25%	25%

Stage / Phase Diagrams

1.



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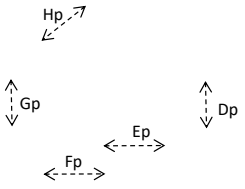

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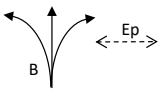

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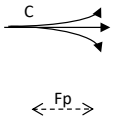


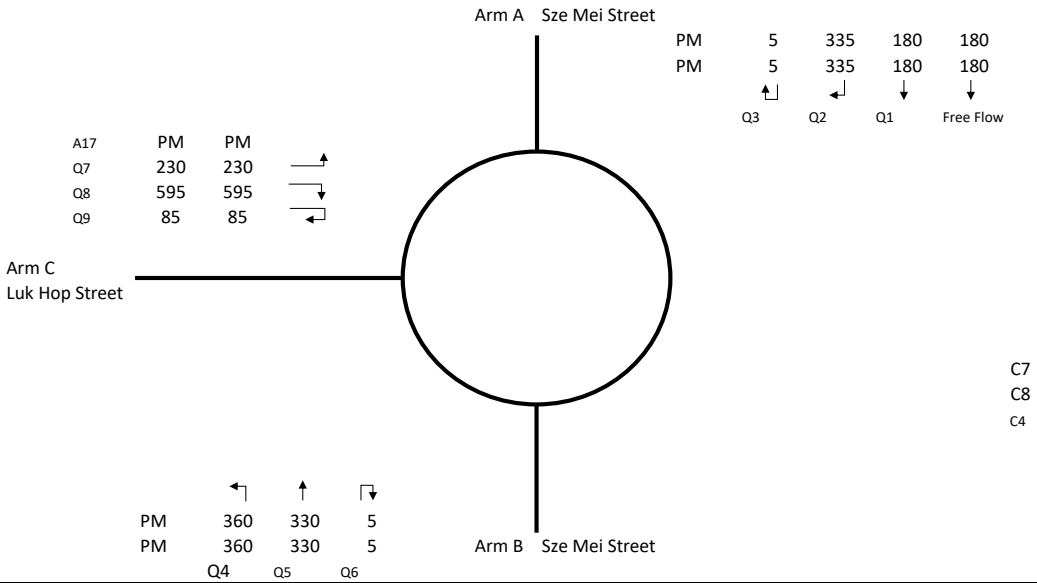
5.

I/G= 11		I/G= 11	17	I/G= 3		I/G= 9	I/G=
I/G= 11		I/G= 11	17	I/G= 3		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (N) Kai San Road / Tsat Po Street

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Sze Mei Street / Luk Hop Street			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Sze Mei Street				
Arm B	Sze Mei Street				
Arm C	Luk Hop Street				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				4.00	3.50	4.50	
E	Entry Width (m)				4.00	3.50	5.00	
L	Effective Length of Flare (m)				1.00	1.00	2.00	
R	Entry Radius (m)				30.00	100.00	15.00	
D	Inscribed Circle Diameter (m)				30.00	30.00	30.00	
A	Entry Angle (degree)				10.00	10.00	35.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.00	0.40	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.09	1.11	0.97	
X2	= V + ((E-V) / (1+2S))				4.00	3.50	4.78	
M	= EXP ((D-60) /10)				0.05	0.05	0.05	
F	= 303 * X2				1212	1061	1448	
Td	= 1 + (0.5 / (1+M))				1.48	1.48	1.48	
Fc	= 0.21*Td (1 + 0.2*X2)				0.56	0.53	0.61	
AM RESULT								
Q	Entry Flow (pcu/hour)				520	695	910	
Qc	Circulating Flow Across Entry (pcu/hour)				685	425	340	
Qe	= K (F - Fc*Qc)				901	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,125					
PM RESULT								
Q	Entry Flow (pcu/hour)				520	695	910	
Qc	Circulating Flow Across Entry (pcu/hour)				685	425	340	
Qe	= K (F - Fc*Qc)				901	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,125					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Slip road of CKR Design Year: 2032

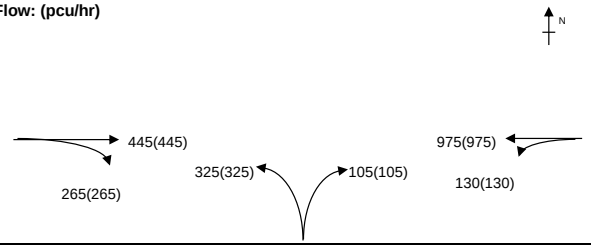
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	→	A	1	3.650						1980	1980	231	0.117	
	↱	A	1	3.650		26		13%	13%	2105	2105	246	0.117	
	↴	A	1	3.650		23				1990	1990	233	0.117	0.117
Shing Kai Road (WB)	↰↓ *	E	3	4.500	35			36%	36%	2035	2035	359	0.176	0.176
	←	E	3	3.600						2115	2115	373	0.176	
	←	E	3	3.600						2115	2115	373	0.176	
Slip Road of CKR	↰	B	1,2	5.000	35					2030	2030	325	0.160	
	↱	C	2	3.600		18				1950	1950	52	0.027	
	↱	C	2	3.600		20				1965	1965	53	0.027	
Pedestrian Crossing		Fp	1,2	MIN GREEN + FLASH =			5	+	10	=	15			
		Gp	1	MIN GREEN + FLASH =			5	+	5	=	10			
		Hp	2	MIN GREEN + FLASH =			14	+	10	=	24			*
		Ip	3	MIN GREEN + FLASH =			5	+	10	=	15			
		Jp	3	MIN GREEN + FLASH =			5	+	5	=	10			
		Kp	3	MIN GREEN + FLASH =			10	+	8	=	18			

Notes:

* assumed to be same phase for conservative purpose

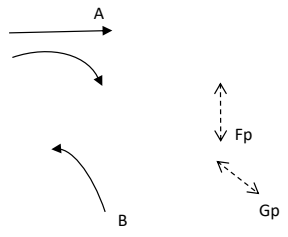
Flow: (pcu/hr)



Group	B,E	A,Hp,E
y	0.337	0.293
L (sec)	8	37
C (sec)	130	130
y pract.	0.845	0.644
R.C. (%)	151%	119%

Stage / Phase Diagrams

1.



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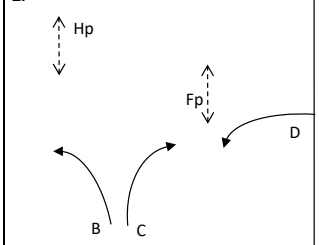

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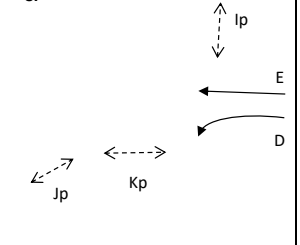


4.

5.

I/G= 5		I/G= 5	24	I/G= 5		I/G=	I/G=
I/G= 5		I/G= 5	24	I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** (P) Shing Kai Road / Slip road of CKR

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Eastern access to main stadium Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

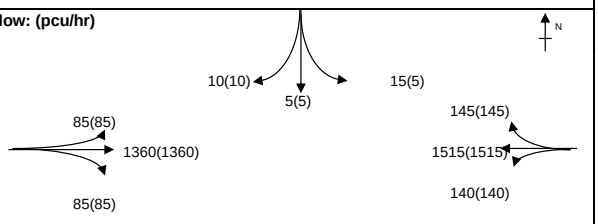
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	1	3.800	15			18%	18%	1960	1960	483	0.246	0.246
		A	1	3.800						2135	2135	526	0.246	
		A	1	3.800		30		16%	16%	2120	2120	521	0.246	
Eastern Access to main stadium		C	3	3.650	10					1720	1720	5	0.003	
		C	3	3.650		15		67%	67%	1990	1990	15	0.008	
Shing Kai Road (WB)		B	2	3.800	15			25%	25%	1945	1945	566	0.291	0.291
		B	2	3.800						2135	2135	621	0.291	
		B	2	3.800		30		24%	24%	2110	2110	613	0.291	

Pedestrian Crossing	Dp	4	MIN GREEN + FLASH =	5	+	10	=	15		*
	Ep	1,3,4	MIN GREEN + FLASH =	5	+	10	=	15		
	Fp	2,4	MIN GREEN + FLASH =	5	+	10	=	15		
	Gp	3,4	MIN GREEN + FLASH =	5	+	7	=	12		
	Hp	1,2,4	MIN GREEN + FLASH =	5	+	7	=	12		

Notes:

TAC junction : CT 130s adopted

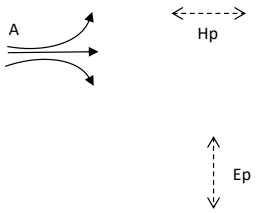
Flow: (pcu/hr)



Group	A,B,Gp	A,B,C,Dp
y	0.537	0.537
L (sec)	26	41
C (sec)	130	130
y pract.	0.720	0.616
R.C. (%)	34%	15%

Stage / Phase Diagrams

1.



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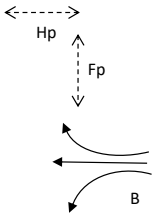

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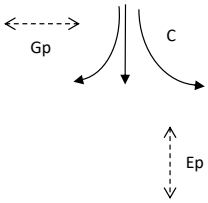
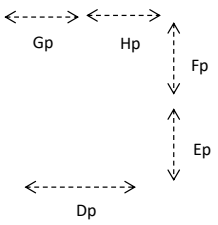


4.



5.

I/G= 5		I/G= 7		I/G= 6	5	I/G= 5	15	I/G=	
I/G= 5		I/G= 7		I/G= 6	5	I/G= 5	15	I/G=	

Date: JUN, 2024 **Junction:** (Q) Shing Kai Road / Eastern access to main stadium

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Olympic Avenue/ Dakota Drive Design Year: 2032

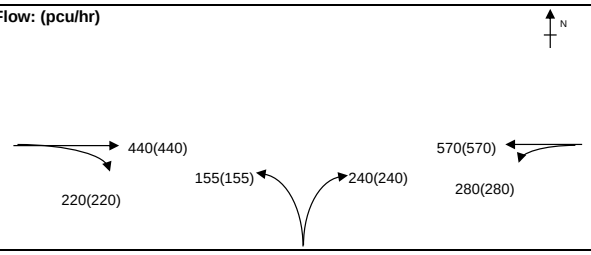
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	212	0.107	
	→	A	1	3.650						2120	2120	228	0.108	
	→↓	A	1	3.650		24		100%	100%	1995	1995	220	0.110	0.110
Muk Tan Street (NB)	↑ *	B	2	4.500	16	19		39% / 61%	39% / 61%	2040	2040	395	0.194	0.194
Olympic Avenue (WB)	↓	C	3	3.650	16			71%	71%	1855	1855	397	0.214	0.214
	←	C	3	3.650						2120	2120	453	0.214	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			9	+	9	=	18			*
		Ep	4	MIN GREEN + FLASH =			9	+	8	=	17			

Notes:

* Saturation flow 150 pcu/hr added

Flow: (pcu/hr)

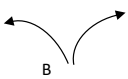


Group	A,B,C,Ep	A,B,C,Dp
y	0.518	0.518
L (sec)	35	39
C (sec)	120	120
y pract.	0.638	0.608
R.C. (%)	23%	17%

Stage / Phase Diagrams

1.

2.



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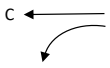

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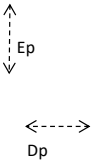


5.

I/G= 3		I/G= 6		I/G= 5		I/G= 10	18	I/G=	
I/G= 3		I/G= 6		I/G= 5		I/G= 10	18	I/G=	

Date: JUN, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

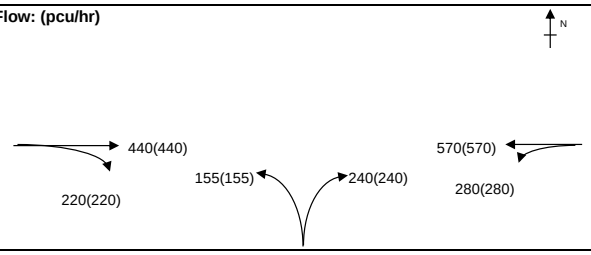
Junction: Olympic Avenue/ Dakota Drive Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	212	0.107	
(EB)	→	A	1	3.650						2120	2120	228	0.108	
	→↓	A	1	3.650		23		100%	100%	1990	1990	220	0.111	0.111
Dakota Drive	↰	B	2	3.500	16					1795	1795	155	0.086	
(NB)	↱	B	2	3.500		18				1945	1945	240	0.123	0.123
Olympic Avenue	↓←	C	3	3.650	16			71%	71%	1855	1855	397	0.214	0.214
(WB)	←	C	3	3.650						2120	2120	453	0.214	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			9	+	9	=	18			*
		Ep	4	MIN GREEN + FLASH =			9	+	8	=	17			

Notes:

Flow: (pcu/hr)

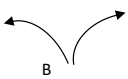


Group	A,B,C,Ep	A,B,C,Dp
y	0.448	0.448
L (sec)	35	39
C (sec)	120	120
y pract.	0.638	0.608
R.C. (%)	42%	36%

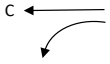
Stage / Phase Diagrams

1.

2.



3.



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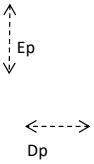


5.

I/G= 3		I/G= 6		I/G= 5		I/G= 10	18	I/G=	
I/G= 3		I/G= 6		I/G= 5		I/G= 10	18	I/G=	

Date: JUN, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

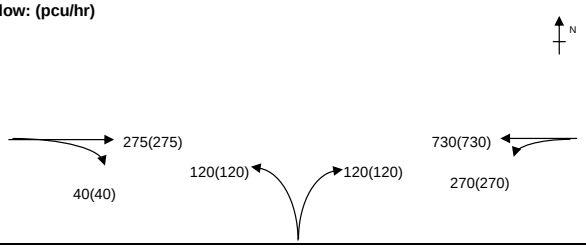
Junction: Olympic Avenue / Muk Lai Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	154	0.078	0.078
	↓	A	1	3.650		19		25%	25%	2080	2080	161	0.077	
Muk Lai Street (NB)	↑	B	2	4.500	16	19		50% / 50%	50% / 50%	1900	1900	240	0.126	0.126
Olympic Avenue (WB)	↓	C	3	3.650	16			57%	57%	1880	1880	470	0.250	0.250
	←	C	3	3.650						2120	2120	530	0.250	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			7	+	13	=	20			*
		Ep	4	MIN GREEN + FLASH =			6	+	15	=	21			

Notes:

Flow: (pcu/hr)



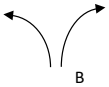
Group	A,C,B,Ep	A,C,B,Dp
y	0.454	0.454
L (sec)	37	42
C (sec)	120	120
y pract.	0.623	0.585
R.C. (%)	37%	29%

Stage / Phase Diagrams

1.

2.

3.



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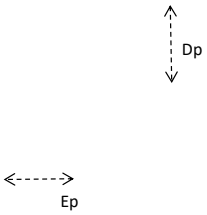


5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	20
I/G= 2		I/G= 7		I/G= 6		I/G= 10	20

I/G=

I/G=

Date: JUN, 2024

Junction: Olympic Avenue / Muk Lai Street (S)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

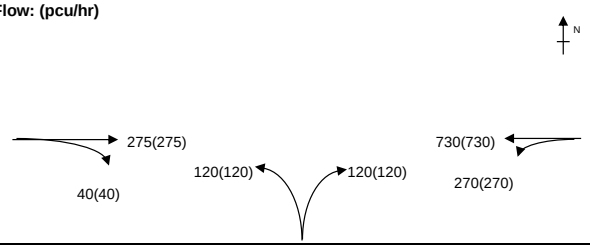
Junction: Olympic Avenue / Muk Lai Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	154	0.078	0.078
(EB)	↓	A	1	3.650		19		25%	25%	2080	2080	161	0.077	
Muk Lai Street (NB)	↑	B	2	4.500	16	19		50% / 50%	50% / 50%	1900	1900	240	0.126	
Olympic Avenue	↓	C	3	3.650	16			57%	57%	1880	1880	470	0.250	0.250
(WB)	←	C	3	3.650						2120	2120	530	0.250	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			7	+	13	=	20			
		Ep	1,2	MIN GREEN + FLASH =			7	+	13	=	20			
		Fp	2	MIN GREEN + FLASH =			6	+	15	=	21			*
		Gp	1,3	MIN GREEN + FLASH =			6	+	15	=	21			

Notes:

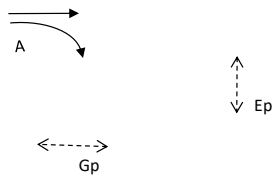
Flow: (pcu/hr)



Group	A,B,C	A,Fp,C
y	0.454	0.328
L (sec)	13	39
C (sec)	90	90
y pract.	0.770	0.510
R.C. (%)	70%	56%

Stage / Phase Diagrams

1.



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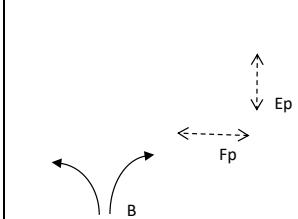

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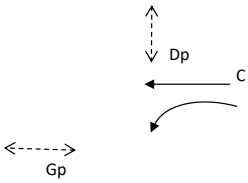


4.

5.

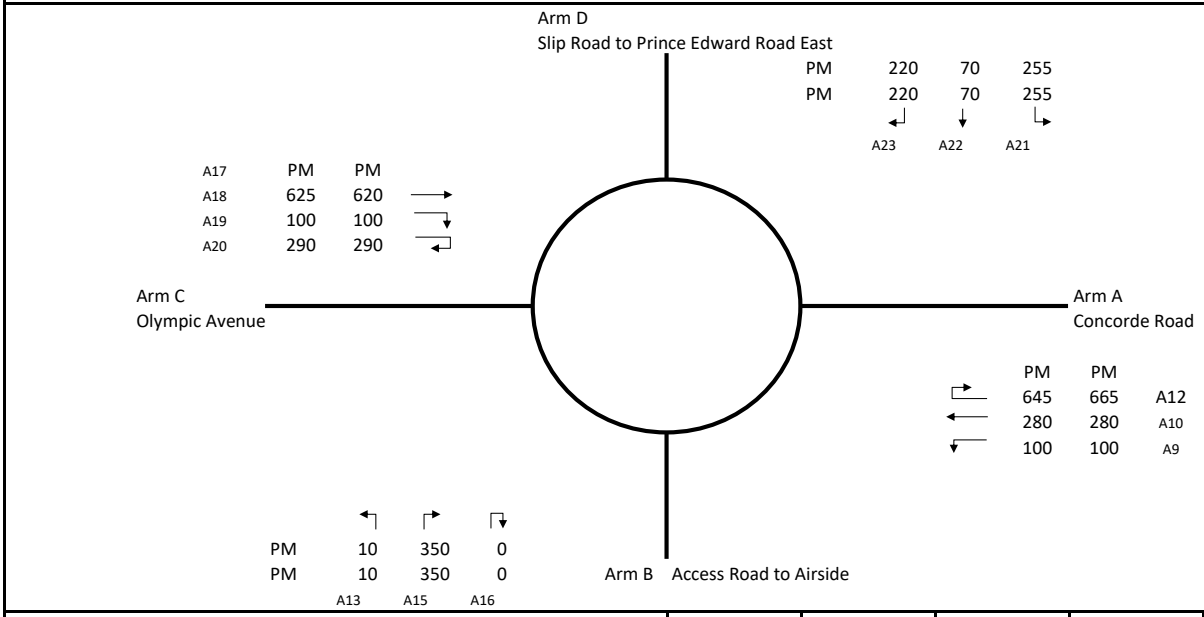
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

2032 Design
(Sensitivity Test - Event Dispersal)

Roundabout Capacity Calculation

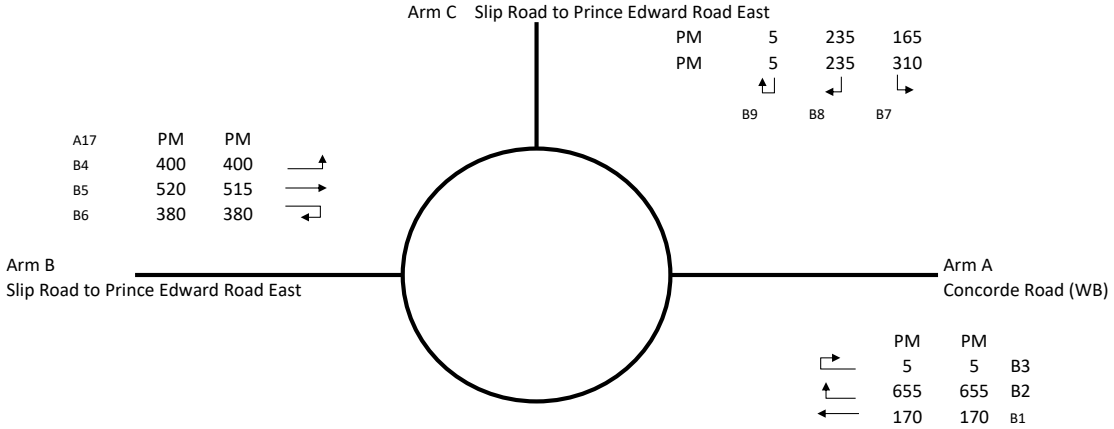
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road				
Arm B	Access Road to Airside				
Arm C	Olympic Avenue				
Arm D	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				7.30	7.00	10.00	7.00	
E	Entry Width (m)				10.00	7.50	11.00	10.50	
L	Effective Length of Flare (m)				5.00	1.00	5.00	20.00	
R	Entry Radius (m)				35.00	30.00	25.00	30.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	60.00	
A	Entry Angle (degree)				15.00	15.00	60.00	40.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.86	0.80	0.32	0.28	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.07	1.07	0.91	0.98	
X2	= V + ((E-V) / (1+2S))				8.29	7.19	10.61	9.24	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	1.00	
F	= 303 * X2				2512	2179	3215	2801	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.70	0.64	0.82	0.75	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,025	360	1,015	545	
Qc	Circulating Flow Across Entry (pcu/hour)				680	1,435	995	2,010	
Qe	= K (F - Fc*Qc)				2186	1347	2173	1274	
DFC	= Q / Qe	Design Flow / Capacity	0.47		**0.47**	0.27	0.47	0.43	
		Total Entry Flows	2,945						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,045	360	1,010	545	
Qc	Circulating Flow Across Entry (pcu/hour)				680	1,455	1,015	2,025	
Qe	= K (F - Fc*Qc)				2186	1333	2158	1263	
DFC	= Q / Qe	Design Flow / Capacity	0.48		**0.48**	0.27	0.47	0.43	
		Total Entry Flows	2,960						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

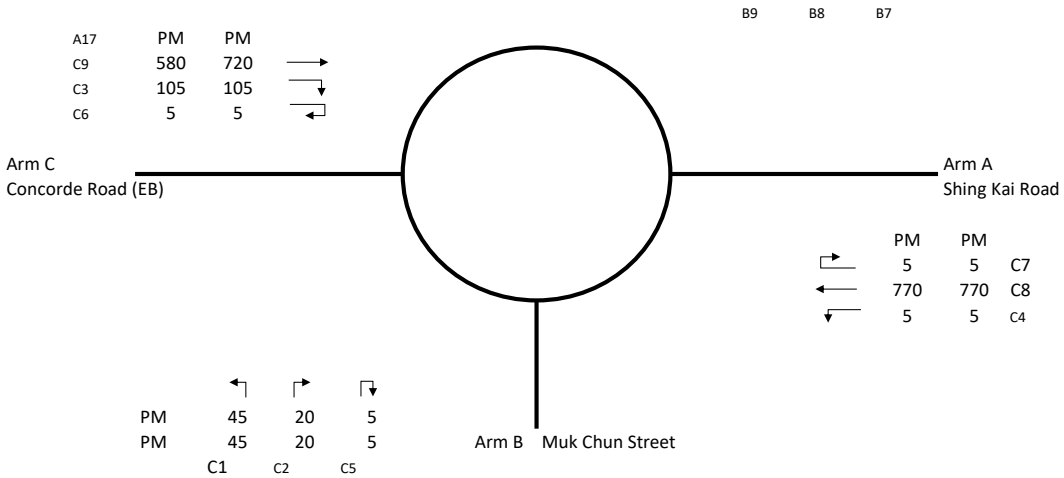
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Concorde Road (WB)				
Arm B	Concorde Road (EB)				
Arm C	Slip Road to Prince Edward Road East				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				8.00	7.00	8.00	
E	Entry Width (m)				8.00	8.00	8.00	
L	Effective Length of Flare (m)				1.00	6.00	1.00	
R	Entry Radius (m)				42.00	20.00	47.00	
D	Inscribed Circle Diameter (m)				40.00	40.00	40.00	
A	Entry Angle (degree)				10.00	22.00	15.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.27	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	1.03	1.08	
X2	= V + ((E-V) / (1+2S))				8.00	7.65	8.00	
M	= EXP ((D-60) /10)				0.14	0.14	0.14	
F	= 303 * X2				2424	2319	2424	
Td	= 1 + (0.5 / (1+M))				1.44	1.44	1.44	
Fc	= 0.21*Td (1 + 0.2*X2)				0.79	0.77	0.79	
AM RESULT								
Q	Entry Flow (pcu/hour)				830	1,300	405	
Qc	Circulating Flow Across Entry (pcu/hour)				620	665	905	
Qe	= K (F - Fc*Qc)				2120	1860	1849	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.22	
		Total Entry Flows	2,535					
PM RESULT								
Q	Entry Flow (pcu/hour)				830	1,295	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	665	900	
Qe	= K (F - Fc*Qc)				2120	1860	1854	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,675					
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9								

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Shing Kai Road / Concorde Road / Muk Chun Street			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Shing Kai Road				
Arm B	Muk Chun Street				
Arm C	Concorde Road (EB)				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				5.00	5.00	7.00	
E	Entry Width (m)				7.00	7.50	7.00	
L	Effective Length of Flare (m)				5.00	5.00	5.00	
R	Entry Radius (m)				29.00	20.00	50.00	
D	Inscribed Circle Diameter (m)				60.00	60.00	60.00	
A	Entry Angle (degree)				40.00	27.00	23.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.64	0.80	0.00	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				0.98	1.01	1.05	
X2	= V + ((E-V) / (1+2S))				5.88	5.96	7.00	
M	= EXP ((D-60) /10)				1.00	1.00	1.00	
F	= 303 * X2				1781	1806	2121	
Td	= 1 + (0.5 / (1+M))				1.25	1.25	1.25	
Fc	= 0.21*Td (1 + 0.2*X2)				0.57	0.58	0.63	
AM RESULT								
Q	Entry Flow (pcu/hour)				780	70	690	
Qc	Circulating Flow Across Entry (pcu/hour)				115	775	30	
Qe	= K (F - Fc*Qc)				1682	1375	2215	
DFC	= Q / Qe	Design Flow / Capacity	0.46		**0.46**	0.05	0.31	
		Total Entry Flows	1,540					
PM RESULT								
Q	Entry Flow (pcu/hour)				780	70	830	
Qc	Circulating Flow Across Entry (pcu/hour)				115	775	30	
Qe	= K (F - Fc*Qc)				1682	1375	2215	
DFC	= Q / Qe	Design Flow / Capacity	0.46		**0.46**	0.05	0.37	
		Total Entry Flows	1,680					
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9								

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Hung Street Design Year: 2032

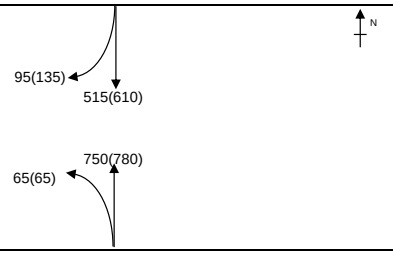
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road	↓↑	A	1	3.650	15			17%	16%	1950	1950	405	0.208	0.208
(NB)	↑	A	1	3.650						2120	2120	440	0.208	
Shing Kai Road	↓	B	2	3.650						1980	1980	372	0.188	
(SB)	↓↑	B	2	3.650		8		31%	36%	2005	1985	373	0.188	0.188
Pedestrian Crossing		Cp	1,3	MIN GREEN + FLASH =	9	+	9	=	18					
		Dp	2,3	MIN GREEN + FLASH =	9	+	9	=	18					
		Ep	3	MIN GREEN + FLASH =	9	+	9	=	18					*
		Fp	2,3	MIN GREEN + FLASH =	9	+	9	=	18					
		Gp	1,3	MIN GREEN + FLASH =	9	+	9	=	18					

Notes:

TAC junction : CT 90s adopted

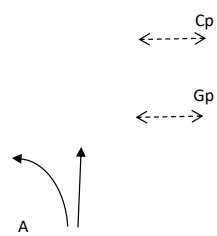
Flow: (pcu/hr)



Group	A,Dp	A,B,Ep
y	0.208	0.396
L (sec)	28	34
C (sec)	90	90
y pract.	0.620	0.560
R.C. (%)	199%	42%

Stage / Phase Diagrams

1.



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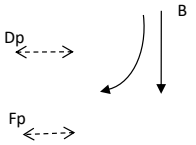

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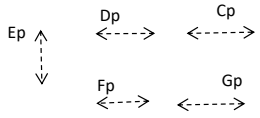


4.

5.

I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=
I/G= 3		I/G= 5		I/G= 10	18	I/G=	I/G=

Date: JUN, 2024 **Junction:** (D) Shing Kai Road / Muk Hung Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

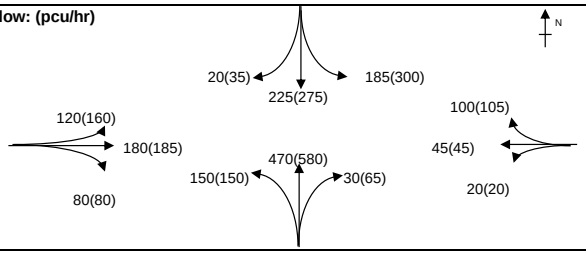
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street (EB)		C	3	3.750	30	25		32% / 21%	38% / 19%	1935	1930	425	0.220	0.220
Shing Kai Road		B	2	3.650	10			95%	100%	1730	1720	300	0.174	0.174
(SB)		B	2	3.650		20		8%	11%	2105	2100	310	0.148	
Muk Chui Street		D	4	3.650		20				1970	1970	105	0.053	0.053
(WB)		D	4	3.650	10			31%	31%	1895	1895	65	0.034	
Shing Kai Road		A	1	3.650	18			49%	39%	1905	1915	380	0.198	0.198
(NB)		A	1	3.650		20		9%	16%	2105	2095	415	0.198	

Pedestrian Crossing	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

TAC junction: CT 120s adopted

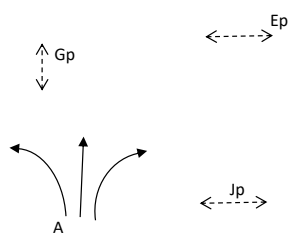
Flow: (pcu/hr)



Group	A,Fp,C,D	A,B,C,D
y	0.472	0.646
L (sec)	39	29
C (sec)	120	120
y pract.	0.608	0.683
R.C. (%)	29%	6%

Stage / Phase Diagrams

1.



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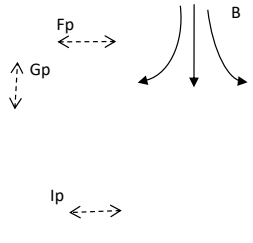

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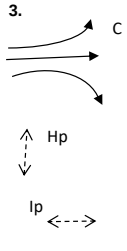

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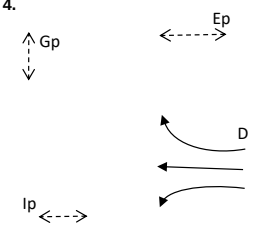


5.

I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=
I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (E) Shing Kai Road / Muk Chui Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Muk Chui Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

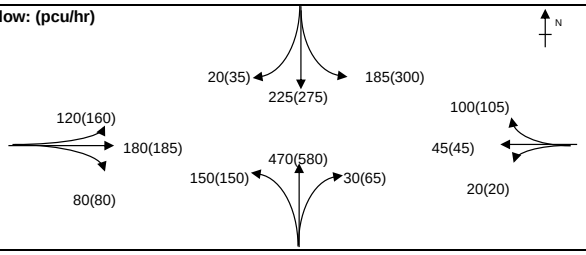
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street	*	C	3	4.000	15			66%	80%	1325	1305	201	0.154	0.154
(EB)	*	C	3	4.000		17		40%	36%	1455	1460	224	0.153	
Shing Kai Road		B	2	3.650	10			95%	100%	1730	1720	300	0.174	0.174
(SB)		B	2	3.650		20		8%	11%	2105	2100	310	0.148	
Muk Chui Street		D	4	3.650		20				1970	1970	105	0.053	0.053
(WB)		D	4	3.650	10			31%	31%	1895	1895	65	0.034	
Shing Kai Road		A	1	3.650	18			49%	39%	1905	1915	380	0.198	0.198
(NB)		A	1	3.650		20		9%	16%	2105	2095	415	0.198	

Pedestrian Crossing								
	Ep	1,4	MIN GREEN + FLASH =	5	+	9	=	14
	Fp	2	MIN GREEN + FLASH =	5	+	9	=	14
	Gp	1,2,4	MIN GREEN + FLASH =	5	+	8	=	13
	Hp	3	MIN GREEN + FLASH =	6	+	10	=	16
	Ip	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14
	Jp	1	MIN GREEN + FLASH =	5	+	11	=	16

Notes:

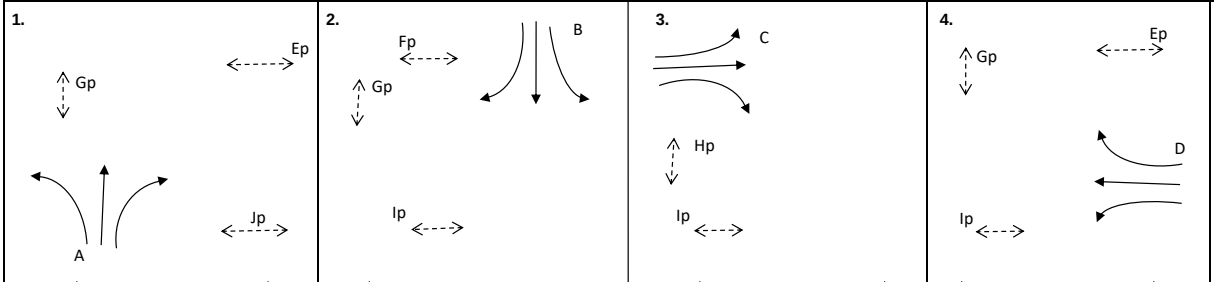
TAC junction: CT 120s adopted
* Site factor 0.7 added due to flare length

Flow: (pcu/hr)



Group	A,B,Hp,D	A,B,C,D
y	0.426	0.580
L (sec)	44	29
C (sec)	120	120
y pract.	0.570	0.683
R.C. (%)	34%	18%

Stage / Phase Diagrams



I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=
I/G= 8		I/G= 9		I/G= 7		I/G= 9	I/G=

Date: JUN, 2024 **Junction:** (E) Shing Kai Road / Muk Chui Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Kai Shing Street / Muk On Street — Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

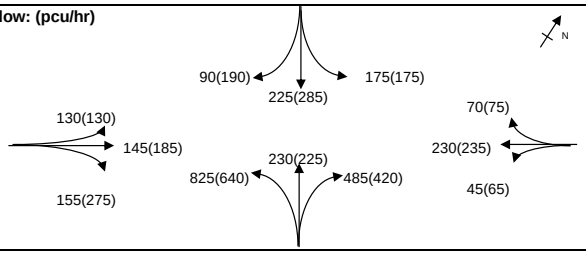
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road		A	2	3.650	18			97%	69%	1830	1875	189	0.101	0.101
(EB)		A	2	3.650		18		9%	39%	2105	2055	207	0.101	
		A	2	3.650		15				1925	1925	194	0.101	
Muk On Street		E	1	3.650	18			75%	56%	1865	1890	313	0.166	0.166
		E	1	3.650		20		35%	56%	2065	2035	337	0.166	
Shing Kai Road		D	3	3.650						2120	2120	158	0.075	
(WB)		D	3	3.650		20		48%	49%	2045	2045	152	0.074	
	#	D	3	3.650	50					1345	1345	65	0.048	
kai Shing Street		C	4	3.650		20				1970	1970	420	0.213	0.213
		C	4	3.650						2120	2120	225	0.106	
	#	B	1,2,4	4.000	50					1370	1370	640	0.467	

Pedestrian Crossing	Fp	2,3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Gp	1	MIN GREEN + FLASH =	8	+	20	=	28		
	Hp	1,3,4	MIN GREEN + FLASH =	8	+	21	=	29		
	Ip	4	MIN GREEN + FLASH =	5	+	9	=	14		
	Jp	3	MIN GREEN + FLASH =	7	+	17	=	24		*
	Kp	3,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Lp	1,2,4	MIN GREEN + FLASH =	5	+	9	=	14		
	Mp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14		

Notes:

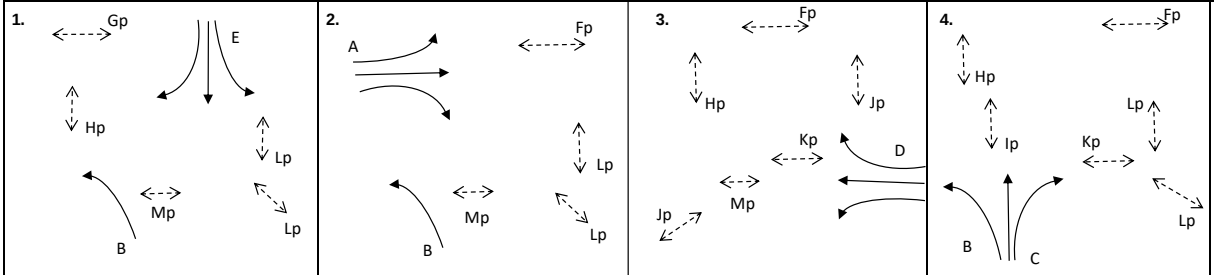
TAC Junction: 130s CT adopted
Site factor 0.7 adopted

Flow: (pcu/hr)



Group	Gp,A,Jp,C	E,A,Jp,C
y	0.314	0.480
L (sec)	73	48
C (sec)	130	130
y pract.	0.395	0.568
R.C. (%)	26%	18%

Stage / Phase Diagrams



I/G=		I/G=		I/G= 5	24	I/G= 3	I/G=
I/G= 8		I/G= 6		I/G= 10	24	I/G= 3	I/G=

Date: JUN, 2024 **Junction:** (F) Shing Kai Road / Kai Shing Street / Muk On Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Shing Fung Road / Muk Tai Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

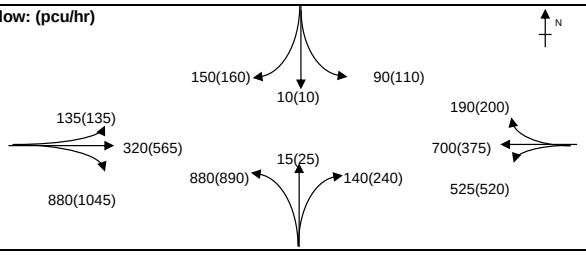
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		B	2	3.650	15			63%	41%	1865	1905	332	0.174	
		B	2	3.500						2105	2105	368	0.175	
		B	2	3.500		20				1960	1960	529	0.270	0.270
		B	2	3.500		15				1915	1915	516	0.269	
Muk Tai Street	^	A	1	3.750		17				980	980	160	0.163	0.163
	^	A	1	4.000	22			90%	92%	950	950	120	0.126	
Shing Kai Road (WB)		E	4	3.650						2120	2120	294	0.139	
		E	4	3.650		23		43%	71%	2060	2025	281	0.139	0.139
		E	4	3.650	25					1870	1870	251	0.134	
		E	4	3.650	28					2010	2010	269	0.134	
Shing Fung Road		C	2,3	3.650	20					1840	1840	428	0.233	
		C	2,3	3.650	22					1985	1985	462	0.233	
		D	3	3.650		23		82%	82%	2010	2010	142	0.071	0.071
		D	3	3.650		19				1750	1750	123	0.070	

Pedestrian Crossing	Fp	1,3,4	MIN GREEN + FLASH =	8	+	15	=	23
	Gp	2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,4	MIN GREEN + FLASH =	5	+	8	=	13
	Ip	4	MIN GREEN + FLASH =	10	+	9	=	19
	Jp	1,2,3	MIN GREEN + FLASH =	5	+	9	=	14
	Kp	1,2,3	MIN GREEN + FLASH =	5	+	7	=	12
	Lp	4	MIN GREEN + FLASH =	7	+	13	=	20
	Mp	2,3	MIN GREEN + FLASH =	5	+	9	=	14
	Np	1	MIN GREEN + FLASH =	6	+	11	=	17

Notes:

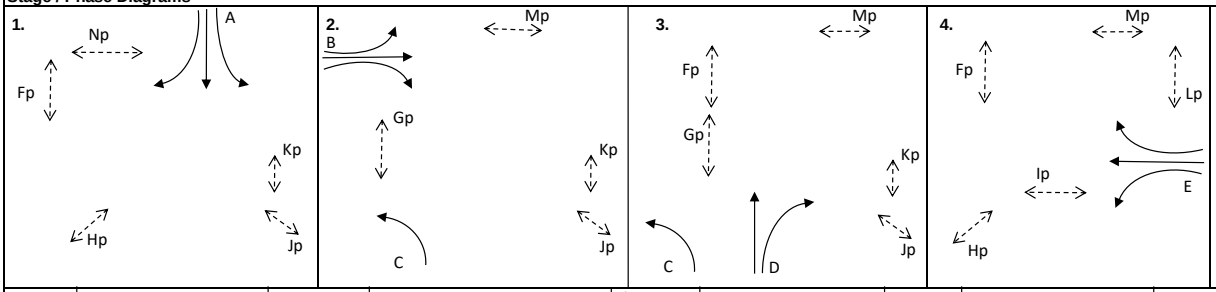
TAC junction : CT 130s adopted
^ Site factor 0.5 added due to flare length

Flow: (pcu/hr)



Group	A,B,D,Lp	A,B,D,E
y	0.504	0.643
L (sec)	40	17
C (sec)	130	130
y pract.	0.623	0.782
R.C. (%)	24%	22%

Stage / Phase Diagrams



I/G= 5		I/G= 5		I/G= 6		I/G= 5	I/G=
I/G= 5		I/G= 5		I/G= 6		I/G= 5	I/G=

Date: JUN, 2024 **Junction:** (G) Shing Kai Road / Shing Fung Road / Muk Tai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Western access to main stadium Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

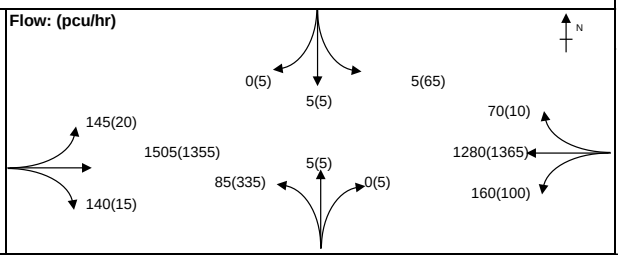
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/h	y Value	Critical y
Shing Kai Road EB		A	1	3.650	17.5			26%	5%	1935	1970	442	0.224	0.224
		A	1	3.650						2120	2120	474	0.224	
		A	1	3.650		22.5		23%	3%	2090	2115	474	0.224	
Shing Kai Road WB		C	3	3.650	17.5			34%	22%	1925	1945	464	0.239	
		C	3	3.650						2120	2120	506	0.239	
		C	3	3.650		22.5		14%	2%	2100	2115	505	0.239	0.239
Western Access Road to Main Stadium NB		B	2	3.750	15					1810	1810	335	0.185	0.185
		B	2	3.750		22.5		0%	50%	2130	2060	10	0.005	
Western Access Road to Main Stadium SB		D	4	3.500	20			50%	93%	1895	1835	70	0.038	0.038
		D	4	3.500		32.5				2010	2010	5	0.002	

Pedestrian Crossing	Ep	4	MIN GREEN + FLASH =	5	+	5	=	10	
	Fp	1,2,3	MIN GREEN + FLASH =	5	+	7	=	12	
	Gp	3	MIN GREEN + FLASH =	5	+	10	=	15	
	Hp	1,2,4	MIN GREEN + FLASH =	6	+	11	=	17	
	Ip	2	MIN GREEN + FLASH =	5	+	8	=	13	
	Jp	1,3,4	MIN GREEN + FLASH =	5	+	7	=	12	

Notes:

TAC junction : CT 130s adopted

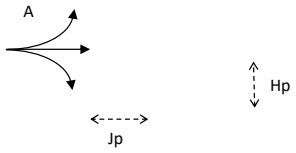
Flow: (pcu/hr)



Group	A,B,Gp,D	A,B,C,D
y	0.448	0.686
L (sec)	33	18
C (sec)	130	130
y pract.	0.672	0.775
R.C. (%)	50%	13%

Stage / Phase Diagrams

1.



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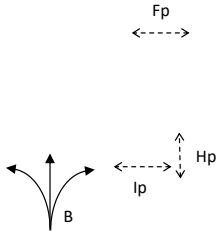

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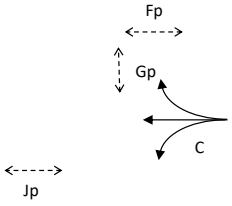

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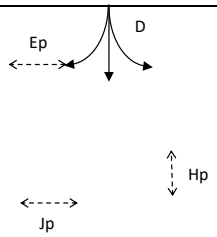


5.

I/G= 5		I/G= 5		I/G= 5		I/G= 7	I/G=
I/G= 5		I/G= 5		I/G= 5		I/G= 7	I/G=

Date: JUN, 2024 **Junction:** (H) Shing Kai Road / Western access to main stadium

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

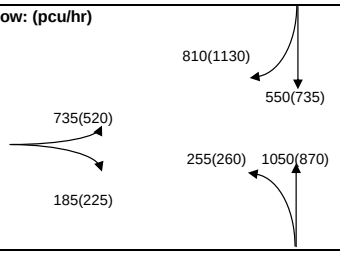
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		C	1	3.600	18			41%	48%	1910	1900	543	0.286	0.286
(NB)		C	1	3.000						2055	2055	587	0.286	
Shing Kai Road		A	2	3.500						1965	1965	605	0.308	0.308
(SB)		A	2	3.650		32		76%	79%	2045	2045	629	0.308	
		A	2	4.000		30				2050	2050	631	0.308	
Sung Wong Toi		B	3	3.650	18					1830	1830	250	0.137	
Road		B	3	3.650	20	24		100% / 0%	100% / 0%	1970	1970	270	0.137	0.137
(EB)		B	3	3.650		22				1985	1985	225	0.113	

Pedestrian Crossing	Dp	2,3	MIN GREEN + FLASH =	5	+	10	=	15
	Ep	1	MIN GREEN + FLASH =	5	+	12	=	17
	Fp	1,3	MIN GREEN + FLASH =	5	+	11	=	16
	Gp	2	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,2	MIN GREEN + FLASH =	5	+	6	=	11
	Ip	3	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC Junction: CT 130s adopted

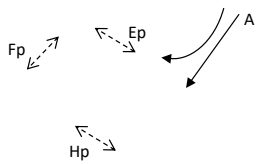
Flow: (pcu/hr)



Group	A,Gp,C	A,B,C
y	0.594	0.731
L (sec)	29	13
C (sec)	130	130
y pract.	0.699	0.810
R.C. (%)	18%	11%

Stage / Phase Diagrams

1.



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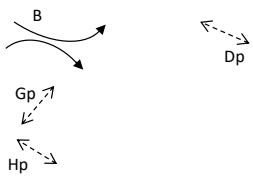

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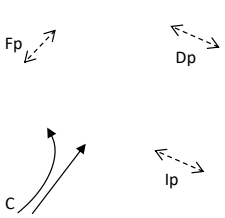


4.

5.

I/G= 5		I/G= 6		I/G= 5		I/G=	I/G=
I/G= 5		I/G= 6		I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** 1 To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

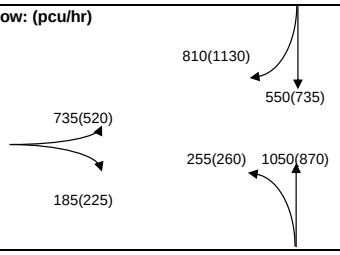
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		D	4	3.600	18			41%	48%	1910	1900	543	0.286	0.286
(NB)		D	4	3.000						2055	2055	587	0.286	
Shing Kai Riad (SB)		A	1,2	3.500						1965	1965	605	0.308	0.308
		A	1,2	3.650		32		76%	79%	2045	2045	629	0.308	
		A	1,2	4.000		30				2050	2050	631	0.308	
To Kwa Wan Road	*	C	2,3	3.500	18					1630	1630	236	0.145	
(EB)		C	2,3	3.500	20					1960	1960	284	0.145	
		B	3	3.500		30				2005	2005	113	0.056	0.056
		B	3	3.500		28				2000	2000	112	0.056	

Pedestrian Crossing	Jp	3,4	MIN GREEN + FLASH =	5	+	10	=	15
	Ep	1	MIN GREEN + FLASH =	7	+	13	=	17
	Fp	1,4	MIN GREEN + FLASH =	8	+	15	=	16
	Gp	3	MIN GREEN + FLASH =	5	+	7	=	12
	Hp	1,2,3	MIN GREEN + FLASH =	5	+	6	=	11
	Ip	4	MIN GREEN + FLASH =	5	+	7	=	12

Notes:

TAC Junction : CT 130s adopted
*Site factor 0.9 added due to flare length

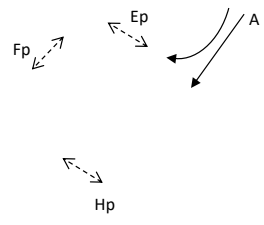
Flow: (pcu/hr)



Group	A,Jp	A,B,D
y	0.308	0.650
L (sec)	21	15
C (sec)	130	130
y pract.	0.755	0.796
R.C. (%)	145%	22%

Stage / Phase Diagrams

1.



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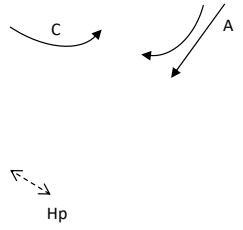

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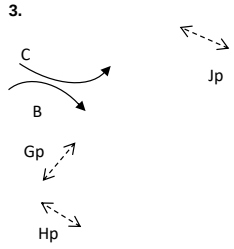

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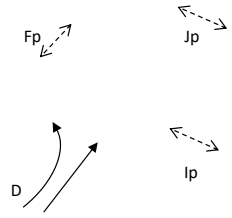


5.

I/G= 5		I/G= 2		I/G= 6		I/G= 5	I/G=
I/G= 5		I/G= 2		I/G= 6		I/G= 5	I/G=

Date: JUN, 2024 **Junction:** 1 To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Kowloon City Road / Sung Wong Toi Road Design Year: 2032

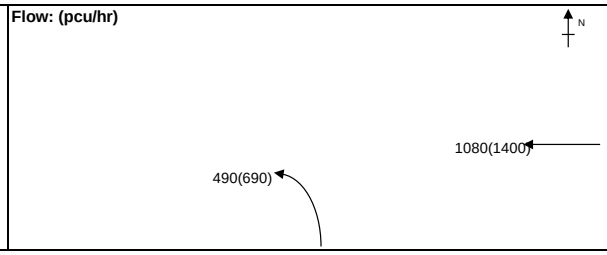
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	←	A	1	3.650						1585	1585	679	0.428	0.428
	←	A	1	3.500						1685	1685	721	0.428	
Kowloon City Road	↰	B	2	4.500	10					1435	1435	330	0.230	0.230
	↰	B	2	4.500	12					1570	1570	360	0.229	
Pedestrian Crossing		Cp	2	MIN GREEN + FLASH =	10		+	11		=	21			

Notes:

Site factor 0.8 added due to kerbside activities at Sung Wong Toi Road & Kowloon City Road

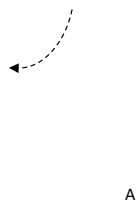
Flow: (pcu/hr)



Group	A,Cp	A,B
y	0.428	0.658
L (sec)	27	10
C (sec)	65	65
y pract.	0.526	0.762
R.C. (%)	23%	16%

Stage / Phase Diagrams

1.



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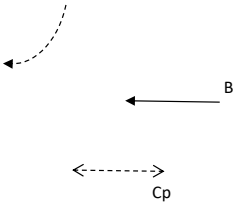


3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=	

Date: JUN, 2024 **Junction:** (J) Kowloon City Road / Sung Wong Toi Road

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street Design Year: 2032

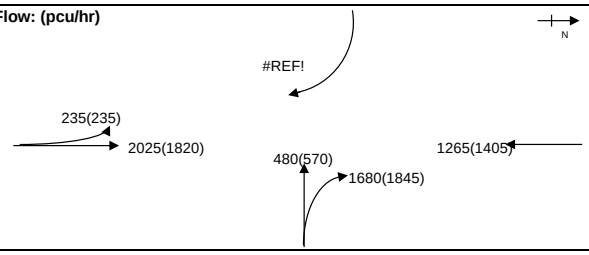
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	↱	D	2,3	3.500		15				1785	1785	579	0.324	
	↱	D	2,3	3.500		20				1960	1960	636	0.324	
	↱	D	2,3	3.000		25				1940	1940	630	0.325	0.325
	↑	E	2	3.500						1965	1965	275	0.140	
	↑	E	2	3.500						2105	2105	295	0.140	
Ma Tau Chung Rd (NB)	↗	A	1	3.500	10			34%	37%	1870	1860	630	0.339	
	→	A	1	3.500						2105	2105	713	0.339	0.339
	→	A	1	3.500						2105	2105	712	0.338	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	479	0.228	
	←	B	1	3.500						2105	2105	479	0.228	
	←	B	1	3.500						1965	1965	447	0.227	
Fu Ning Street	↲	I	4	3.500		20				1830	1830	25	0.014	

Pedestrian Crossing								
	Cp	1	MIN GREEN + FLASH =	10	+	9	=	19
	Fp	2,3	MIN GREEN + FLASH =	10	+	9	=	19
	Gp	1,2,3	MIN GREEN + FLASH =	5	+	5	=	10
	Hp	3,4	MIN GREEN + FLASH =	7	+	8	=	15

Notes:

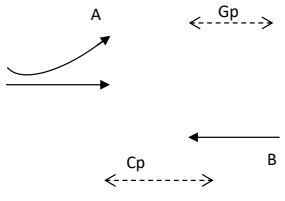
Flow: (pcu/hr)



Group	B,D,I	A,D,I
y	0.552	0.663
L (sec)	18	18
C (sec)	130	130
y pract.	0.775	0.775
R.C. (%)	40%	17%

Stage / Phase Diagrams

1.



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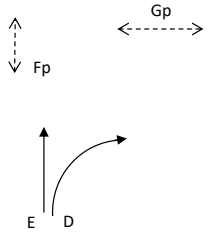

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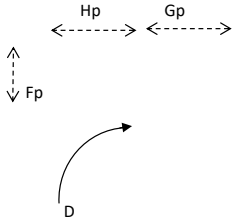

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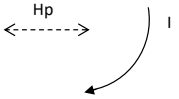


5.

I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			
I/G=		I/G= 5		I/G= 5		I/G= 5	5	I/G=			

Date: JUN, 2024 **Junction:** (K) Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

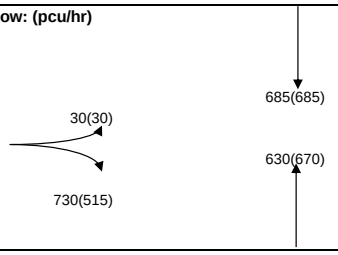
Junction: Olympic Avenue / Hang Wan Road Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	↑	A	1,2	3.500						1965	1965	323	0.164	
(NB)	↑	A	1,2	3.500						2105	2105	347	0.165	
Olympic Avenue	↓	B	2,3	3.650						1980	1980	331	0.167	0.167
(SB)	↓	B	2,3	3.650						2120	2120	354	0.167	
Hang Wan Road	→↑*	C	2,3	5.000	13					1895	1895	30	0.016	
	→↓*	D	3	3.300		25				1965	1965	259	0.132	
	→↓*	D	3	3.300		20				1940	1940	256	0.132	0.132
Pedestrian Crossing		Ep	1	MIN GREEN + FLASH =			5	+	6	=	11			
		Fp	1	MIN GREEN + FLASH =			5	+	6	=	11			
		Gp	3	MIN GREEN + FLASH =			5	+	7	=	12			
		Hp	2,3	MIN GREEN + FLASH =			5	+	9	=	14			

Notes:

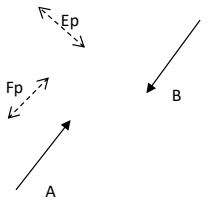
Flow: (pcu/hr)



Group	A,D	B,D
y	0.297	0.299
L (sec)	9	11
C (sec)	60	60
y pract.	0.765	0.735
R.C. (%)	158%	146%

Stage / Phase Diagrams

1.



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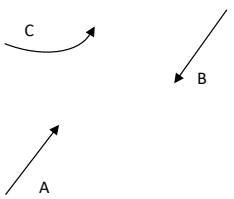

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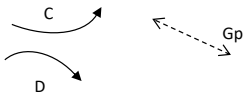


4.

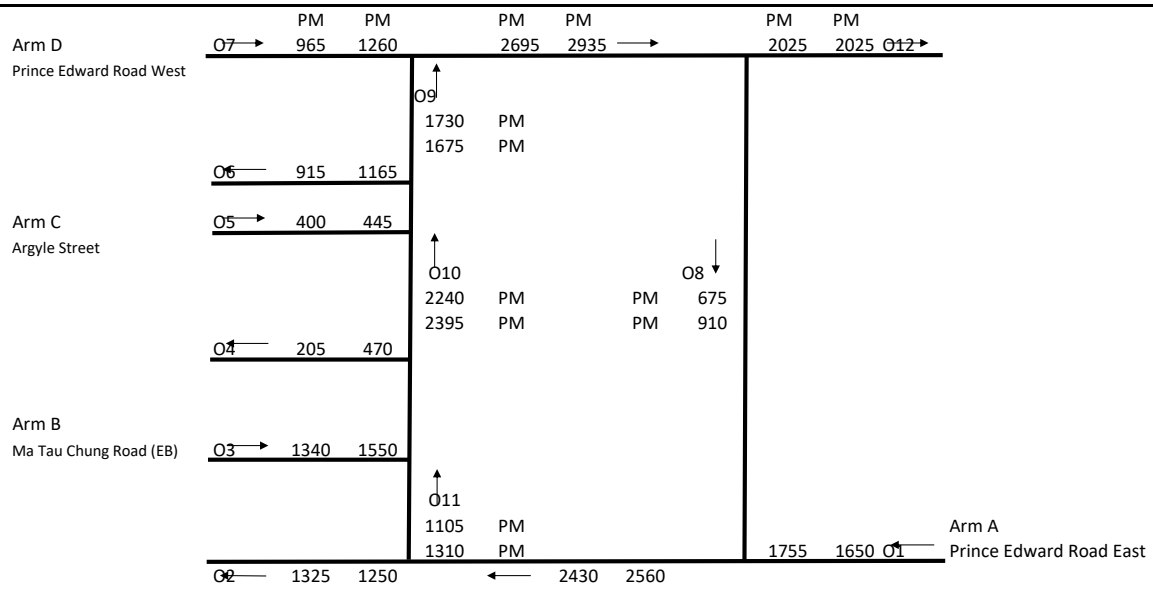
5.

I/G= 6		I/G=		I/G= 7		I/G=	I/G=
I/G= 6		I/G=		I/G= 7		I/G=	I/G=

Date: JUN, 2024 **Junction:** (L) Olympic Avenue / Hang Wan Road

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Prince Edward Road East				
Arm B	Ma Tau Chung Road (EB)				
Arm C	Argyle Street				
Arm D	Prince Edward Road West				



				ENTRY ARM	A	B	C	D	
INPUT PARAMETERS									
V	Approach Half Width (m)				8.50	9.50	6.00	6.50	
E	Entry Width (m)				9.00	10.00	8.00	9.70	
L	Effective Length of Flare (m)				1.00	5.00	5.00	9.00	
R	Entry Radius (m)				50.00	22.00	28.00	60.00	
D	Inscribed Circle Diameter (m)				100.00	100.00	100.00	100.00	
A	Entry Angle (degree)				10.00	55.00	15.00	30.00	
OUTPUT PARAMETERS									
S	= 1.6 (E - V) / L	Sharpness of flare			0.80	0.16	0.64	0.57	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.10	0.92	1.07	1.03	
X2	= V + ((E-V) / (1+2S))				8.69	9.88	6.88	8.00	
M	= EXP ((D-60) /10)				54.60	54.60	54.60	54.60	
F	= 303 * X2				2634	2993	2084	2423	
Td	= 1 + (0.5 / (1+M))				1.01	1.01	1.01	1.01	
Fc	= 0.21*Td (1 + 0.2*X2)				0.58	0.63	0.50	0.55	
AM RESULT									
Q	Entry Flow (pcu/hour)				1,755	1,340	400	965	
Qc	Circulating Flow Across Entry (pcu/hour)				675	1,105	2,240	1,730	
Qe	= K (F - Fc*Qc)				2463	2108	1019	1518	
DFC	= Q / Qe	Design Flow / Capacity	0.71		**0.71**	0.64	0.39	0.64	
		Total Entry Flows	4,460						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,650	1,550	445	1,260	
Qc	Circulating Flow Across Entry (pcu/hour)				910	1,310	2,395	1,675	
Qe	= K (F - Fc*Qc)				2314	1989	936	1549	
DFC	= Q / Qe	Design Flow / Capacity	0.81		0.71	0.78	0.48	**0.81**	
		Total Entry Flows	4,905						

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

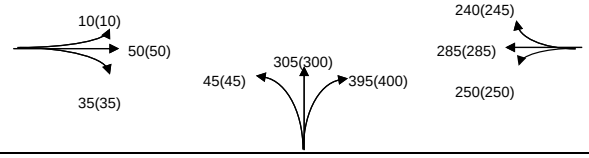
Junction: Kai San Road / Tsat Po Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Tsat Po Street (EB)		C	4	5.000	10	25		11% / 37%	11% / 37%	2040	2040	95	0.047	0.047
Tsat Po Street (WB)		A	1	3.600	10			69%	69%	1790	1790	364	0.203	
		A	1	3.600		25		58%	59%	2045	2045	416	0.203	0.203
Kai San Road (NB)		B	2	4.000		15				1960	1960	400	0.204	0.204
		B	2	4.000	10			13%	13%	1975	1975	345	0.175	
Pedestrian Crossing		Dp	2	MIN GREEN + FLASH =			10	+	9	=	19			
		Ep	2,3	MIN GREEN + FLASH =			8	+	8	=	16			
		Fp	1,2,4	MIN GREEN + FLASH =			7	+	7	=	14			
		Gp	2	MIN GREEN + FLASH =			9	+	8	=	17			*
		Hp	2	MIN GREEN + FLASH =			7	+	7	=	14			

Notes:

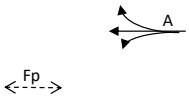
Flow: (pcu/hr)



Group	A,Gp,B,C	A,Gp,B,C
y	0.454	0.454
L (sec)	48	48
C (sec)	130	130
y pract.	0.568	0.568
R.C. (%)	25%	25%

Stage / Phase Diagrams

1.



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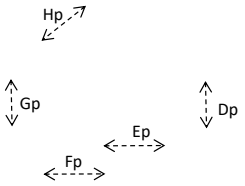

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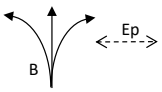

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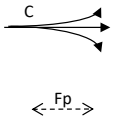


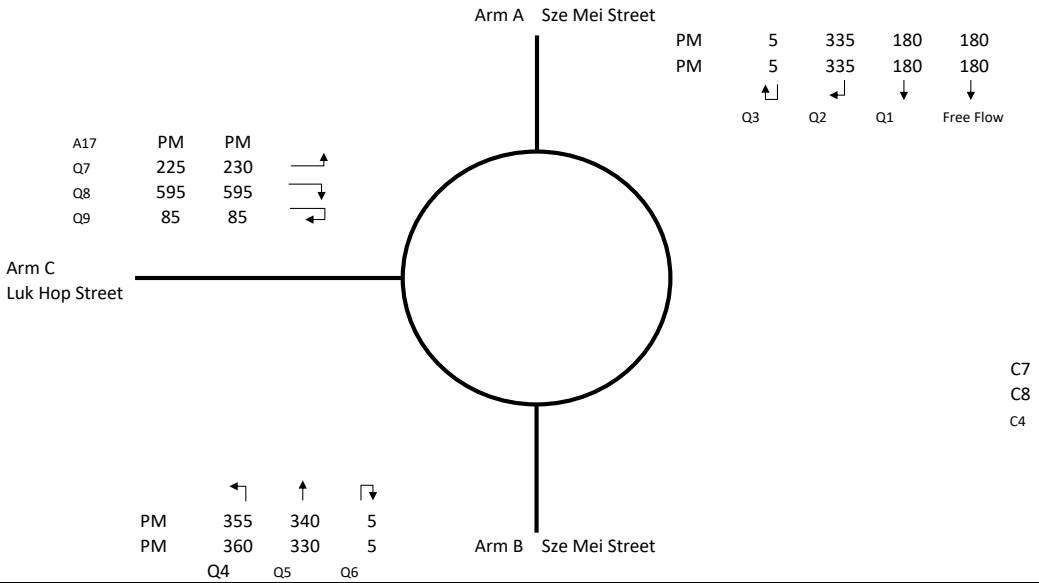
5.

I/G= 11		I/G= 11	17	I/G= 3		I/G= 9		I/G=	
I/G= 11		I/G= 11	17	I/G= 3		I/G= 9		I/G=	

Date: JUN, 2024 **Junction:** (N) Kai San Road / Tsat Po Street

Roundabout Capacity Calculation

Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Sze Mei Street / Luk Hop Street			Designed by:	TCW
Scheme:	2032 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2032	Job No.: CHK50786310		Date:	JUN, 2024
Arm A	Sze Mei Street				
Arm B	Sze Mei Street				
Arm C	Luk Hop Street				



				ENTRY ARM	A	B	C	
INPUT PARAMETERS								
V	Approach Half Width (m)				4.00	3.50	4.50	
E	Entry Width (m)				4.00	3.50	5.00	
L	Effective Length of Flare (m)				1.00	1.00	2.00	
R	Entry Radius (m)				30.00	100.00	15.00	
D	Inscribed Circle Diameter (m)				30.00	30.00	30.00	
A	Entry Angle (degree)				10.00	10.00	35.00	
OUTPUT PARAMETERS								
S	= 1.6 (E - V) / L	Sharpness of flare			0.00	0.00	0.40	
K	= 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05)				1.09	1.11	0.97	
X2	= V + ((E-V) / (1+2S))				4.00	3.50	4.78	
M	= EXP ((D-60) /10)				0.05	0.05	0.05	
F	= 303 * X2				1212	1061	1448	
Td	= 1 + (0.5 / (1+M))				1.48	1.48	1.48	
Fc	= 0.21*Td (1 + 0.2*X2)				0.56	0.53	0.61	
AM RESULT								
Q	Entry Flow (pcu/hour)				520	700	905	
Qc	Circulating Flow Across Entry (pcu/hour)				685	425	350	
Qe	= K (F - Fc*Qc)				901	927	1194	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,125					
PM RESULT								
Q	Entry Flow (pcu/hour)				520	695	910	
Qc	Circulating Flow Across Entry (pcu/hour)				685	425	340	
Qe	= K (F - Fc*Qc)				901	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,125					

All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Slip road of CKR Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

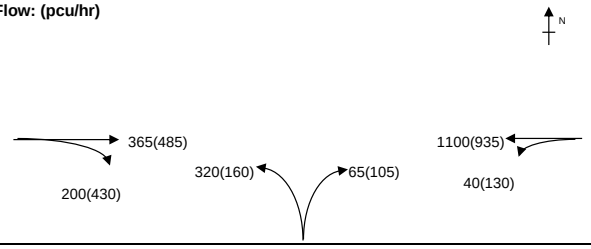
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	→	A	1	3.650						1980	1980	300	0.152	
	→↓	A	1	3.650		26		8%	41%	2110	2070	314	0.152	0.152
	→↓	A	1	3.650		23				1990	1990	301	0.151	
Shing Kai Road (WB)	←↓ *	E	3	4.500	35			11%	38%	2055	2030	346	0.170	0.170
	←	E	3	3.600						2115	2115	360	0.170	
	←	E	3	3.600						2115	2115	359	0.170	
Slip Road of CKR	↰	B	1,2	5.000	35					2030	2030	160	0.079	
	↱	C	2	3.600		18				1950	1950	52	0.027	
	↱	C	2	3.600		20				1965	1965	53	0.027	

Pedestrian Crossing	Fp	1,2	MIN GREEN + FLASH =	5	+	10	=	15	
	Gp	1	MIN GREEN + FLASH =	5	+	5	=	10	
	Hp	2	MIN GREEN + FLASH =	14	+	10	=	24	*
	Ip	3	MIN GREEN + FLASH =	5	+	10	=	15	
	Jp	3	MIN GREEN + FLASH =	5	+	5	=	10	
	Kp	3	MIN GREEN + FLASH =	10	+	8	=	18	

Notes:

* assumed to be same phase for conservative purpose

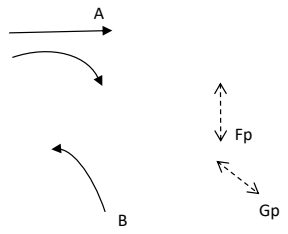
Flow: (pcu/hr)



Group	A,C,E	A,Hp,E
y	0.349	0.322
L (sec)	12	37
C (sec)	130	130
y pract.	0.817	0.644
R.C. (%)	134%	100%

Stage / Phase Diagrams

1.



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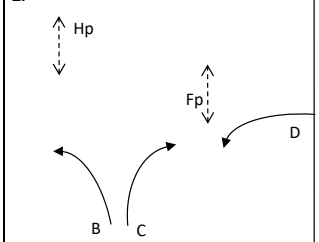

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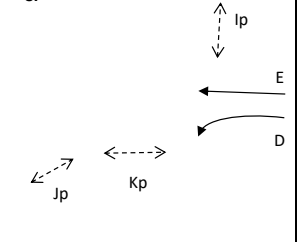


4.

5.

I/G= 5		I/G= 5	24	I/G= 5		I/G=	I/G=
I/G= 5		I/G= 5	24	I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** (P) Shing Kai Road / Slip road of CKR

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Eastern access to main stadium Design Year: 2032

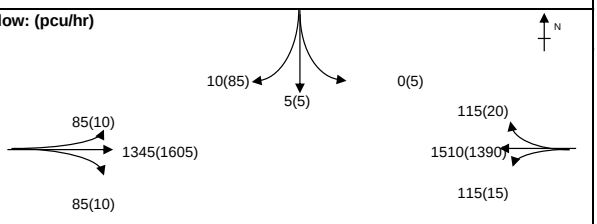
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	1	3.800	15			18%	2%	1960	1990	517	0.260	0.260
		A	1	3.800						2135	2135	554	0.259	
		A	1	3.800		30		16%	2%	2120	2135	554	0.259	
Eastern Access to main stadium		C	3	3.650	10					1720	1720	5	0.003	
		C	3	3.650		15		67%	94%	1990	1935	90	0.047	0.047
Shing Kai Road (WB)		B	2	3.800	15			21%	3%	1955	1990	453	0.228	
		B	2	3.800						2135	2135	487	0.228	0.228
		B	2	3.800		30		19%	4%	2115	2130	485	0.228	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =	5	+	10	=	15					*
		Ep	1,3,4	MIN GREEN + FLASH =	5	+	10	=	15					
		Fp	2,4	MIN GREEN + FLASH =	5	+	10	=	15					
		Gp	3,4	MIN GREEN + FLASH =	5	+	7	=	12					
		Hp	1,2,4	MIN GREEN + FLASH =	5	+	7	=	12					

Notes:

TAC junction : CT 130s adopted

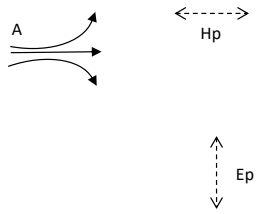
Flow: (pcu/hr)



Group	A,B,Gp	A,B,C,Dp
y	0.488	0.534
L (sec)	26	35
C (sec)	130	130
y pract.	0.720	0.658
R.C. (%)	48%	23%

Stage / Phase Diagrams

1.



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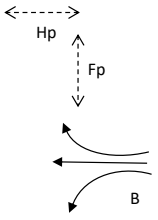

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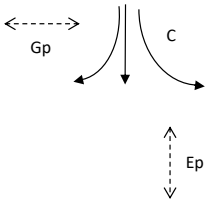

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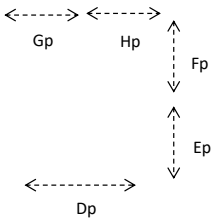


5.

I/G= 5		I/G= 7		I/G= 6	5	I/G= 5	15	I/G=	
I/G= 5		I/G= 7		I/G= 6		I/G= 5	15	I/G=	

Date: JUN, 2024 **Junction:** (Q) Shing Kai Road / Eastern access to main stadium

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Olympic Avenue/ Dakota Drive Design Year: 2032

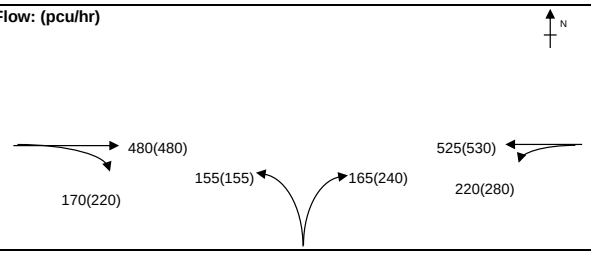
Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	227	0.115	
	→	A	1	3.650						2120	2120	243	0.115	
	→	A	1	3.650		24		79%	96%	2020	2000	230	0.115	0.115
Muk Tan Street (NB)	*	B	2	4.500	16	19		48% / 52%	39% / 61%	2040	2040	395	0.194	0.194
Olympic Avenue (WB)	←	C	3	3.650	16			63%	74%	1870	1850	378	0.204	0.204
	←	C	3	3.650						2120	2120	432	0.204	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			9	+	9	=	18			*
		Ep	4	MIN GREEN + FLASH =			9	+	8	=	17			

Notes:

* Saturation flow 150 pcu/hr added

Flow: (pcu/hr)

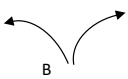


Group	A,B,C,Ep	A,B,C,Dp
y	0.513	0.513
L (sec)	35	39
C (sec)	120	120
y pract.	0.638	0.608
R.C. (%)	24%	18%

Stage / Phase Diagrams

1.

2.



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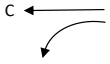

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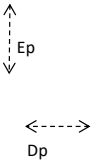


5.

I/G= 3		I/G= 6		I/G= 5		I/G= 10	18
I/G= 3		I/G= 6		I/G= 5		I/G= 10	18

I/G=

I/G=

Date: JUN, 2024

Junction: Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

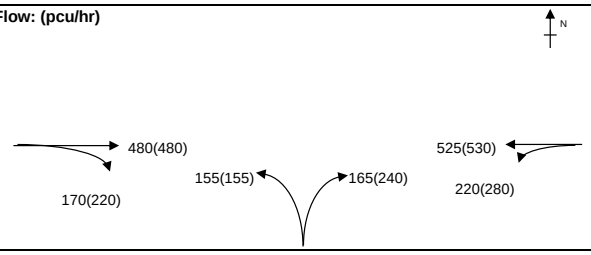
Junction: Olympic Avenue/ Dakota Drive Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	227	0.115	
(EB)	→	A	1	3.650						2120	2120	244	0.115	0.115
	→	A	1	3.650		23		79%	96%	2015	1995	229	0.115	
Dakota Drive	↰	B	2	3.500	16					1795	1795	155	0.086	
(NB)	↱	B	2	3.500		18				1945	1945	240	0.123	0.123
Olympic Avenue	↓	C	3	3.650	16			63%	74%	1870	1850	378	0.204	0.204
(WB)	←	C	3	3.650						2120	2120	432	0.204	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			9	+	9	=	18			*
		Ep	4	MIN GREEN + FLASH =			9	+	8	=	17			

Notes:

Flow: (pcu/hr)

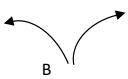


Group	A,B,C,Ep	A,B,C,Dp
y	0.443	0.443
L (sec)	35	39
C (sec)	120	120
y pract.	0.638	0.608
R.C. (%)	44%	37%

Stage / Phase Diagrams

1.

2.



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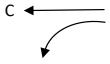
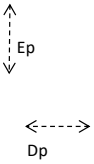


4.



5.

I/G= 3		I/G= 6		I/G= 5		I/G= 10	18	I/G=	
I/G= 3		I/G= 6		I/G= 5		I/G= 10	18	I/G=	

Date: JUN, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

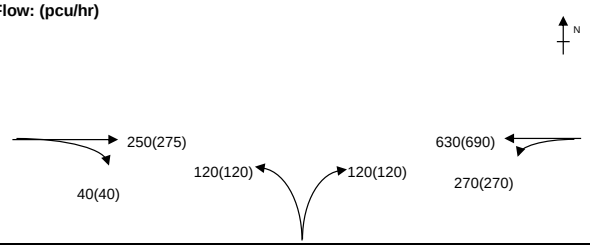
Junction: Olympic Avenue / Muk Lai Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	154	0.078	0.078
(EB)	↓	A	1	3.650		19		27%	25%	2075	2080	161	0.077	
Muk Lai Street (NB)	↑	B	2	4.500	16	19		50% / 50%	50% / 50%	1900	1900	240	0.126	0.126
Olympic Avenue	↓	C	3	3.650	16			64%	60%	1870	1875	451	0.241	0.241
(WB)	←	C	3	3.650						2120	2120	509	0.240	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			7	+	13	=	20			*
		Ep	4	MIN GREEN + FLASH =			6	+	15	=	21			

Notes:

Flow: (pcu/hr)



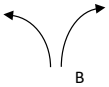
Group	A,C,B,Ep	A,C,B,Dp
y	0.445	0.445
L (sec)	37	42
C (sec)	120	120
y pract.	0.623	0.585
R.C. (%)	40%	32%

Stage / Phase Diagrams

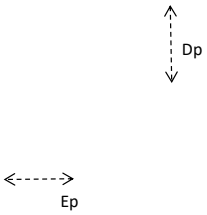
1.

2.

3.



4.



5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	20	I/G=	
I/G= 2		I/G= 7		I/G= 6		I/G= 10	20	I/G=	

Date: JUN, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

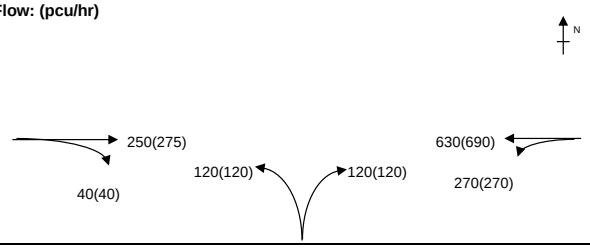
Junction: Olympic Avenue / Muk Lai Street Design Year: 2032

Description: 2032 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	154	0.078	0.078
	→↓	A	1	3.650		19		27%	25%	2075	2080	161	0.077	
Muk Lai Street (NB)	↑→	B	2	4.500	16	19		50% / 50%	50% / 50%	1900	1900	240	0.126	
Olympic Avenue (WB)	↓←	C	3	3.650	16			64%	60%	1870	1875	451	0.241	0.241
	←	C	3	3.650						2120	2120	509	0.240	
Pedestrian Crossing		Dp	3	MIN GREEN + FLASH =			7	+	13	=	20			
		Ep	1,2	MIN GREEN + FLASH =			7	+	13	=	20			
		Fp	2	MIN GREEN + FLASH =			6	+	15	=	21			*
		Gp	1,3	MIN GREEN + FLASH =			6	+	15	=	21			

Notes:

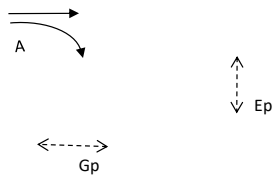
Flow: (pcu/hr)



Group	A,B,C	A,Fp,C
y	0.445	0.318
L (sec)	13	39
C (sec)	90	90
y pract.	0.770	0.510
R.C. (%)	73%	60%

Stage / Phase Diagrams

1.



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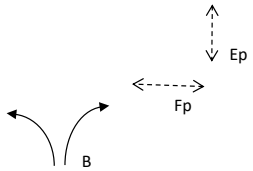

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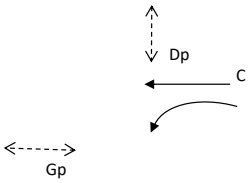


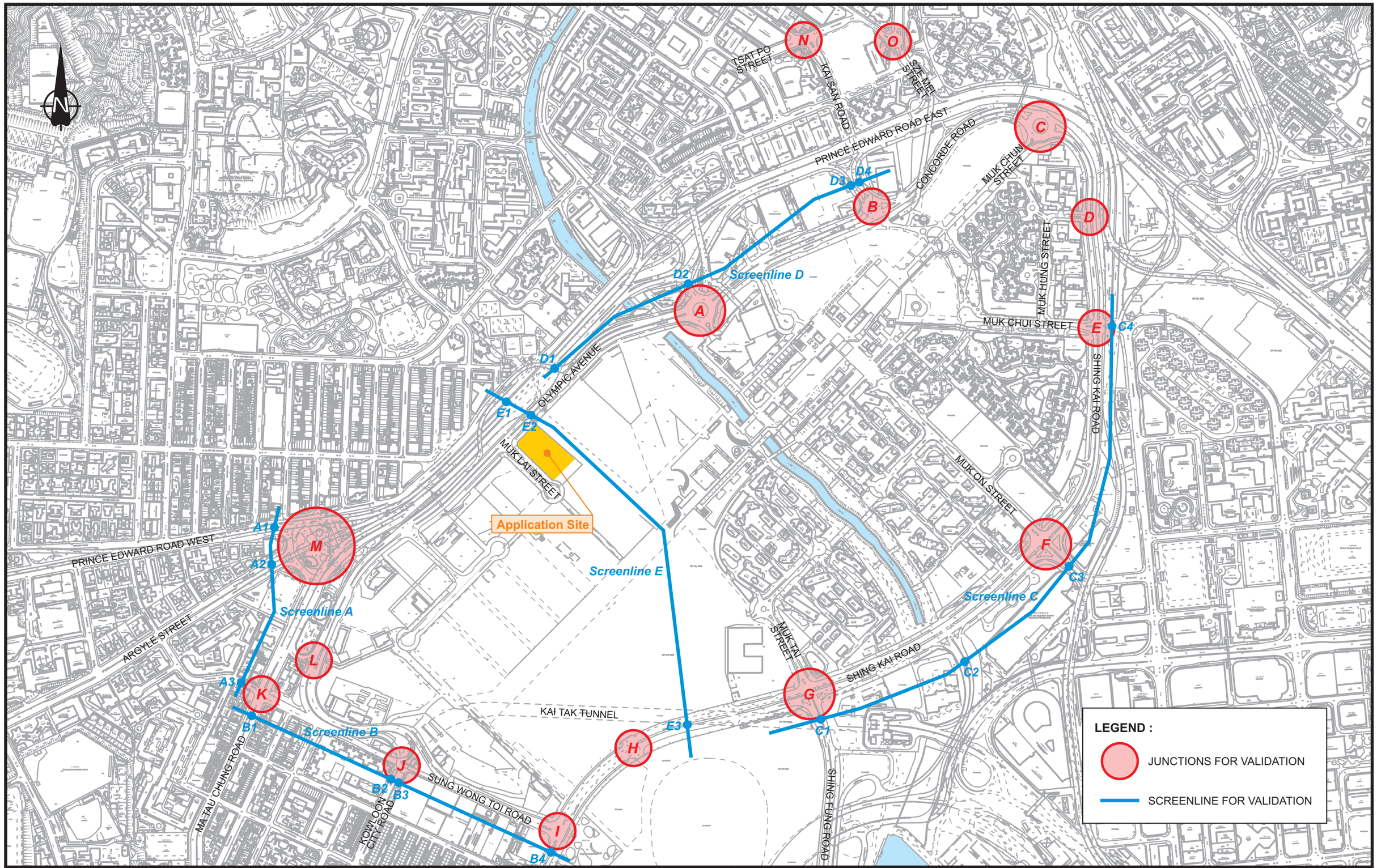
4.

5.

I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=

Date: JUN, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

APPENDIX B – DETAILED SUMMARY OF VALIDATION RESULTS



Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

SCREENLINES FOR LOCAL AREA MODEL VALIDATION

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	MAR 2024	B1	-

SYSTRA MVA

CHK50786310/TIA/B1.CDR/LLH/25MAR24

Original Size : A3

Screenline A Inbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Prince Edward Road West (At Grade)	IB	1480	1525	45	3%	2.12
Prince Edward Road West (Flyover)	IB	1015	1040	25	2%	1.66
Argyle Street (At Grade)	IB	420	425	5	1%	0
Argyle Street (Flyover)	IB	1130	1155	25	2%	0.53
Fu Ning Street	IB	25	25	0	0%	0
Total		**4070**	**4170**	**100**	**2%**	**1.56**

Screenline A Outbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Prince Edward Road West (At Grade)	OB	865	850	-15	-2%	0
Prince Edward Road West (Flyover)	OB	1390	1490	100	7%	1.44
Argyle Street (At Grade)	OB	320	310	-10	-3%	0
Argyle Street (Flyover)	OB	1430	1460	30	2%	0.78
Fu Ning Street	OB	395	395	0	0%	0
Total		**4400**	**4505**	**105**	**2%**	**1.57**

Screenline B Inbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Ma Tau Chung Road	IB	1795	1810	15	1%	0
Kai Tak Tunnel	IB	535	545	10	2%	0.55
Kowloon City Road	IB	420	420	0	0%	0.41
To Kwa Wan Road	IB	640	670	30	5%	2.12
Total		**2330**	**2355**	**25**	**1%**	**0.52**

Screenline B Outbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Ma Tau Chung Road	OB	1760	1735	-25	-1%	0
To Kwa Wan Road	OB	585	615	30	5%	2.24
Total		**2345**	**2350**	**5**	**0%**	**0.1**

Screenline C Inbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Shing Fung Road	IB	275	285	10	4%	0.53
Kai Shing Street	IB	700	715	15	2%	0
Muk Chui Street	IB	170	165	-5	-3%	0
Total		**1145**	**1165**	**20**	**2%**	**0.59**

Screenline C Outbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Shing Fung Road	OB	530	550	20	4%	1.36
Kai Shing Street	OB	465	470	5	1%	0
Muk Chui Street	OB	520	515	-5	-1%	0
Total		**985**	**985**	**0**	**0%**	**0**

Screenline D Inbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Flyover from Prince Edward Road East to Olympic Avenue	IB	310	305	-5	-2%	0
Slip Road of Prince Edward Road East (Kowloon City)	IB	330	290	-40	-12%	0.52
Slip Road from Prince Edward Road East	IB	265	275	10	4%	0.61
Kai San Road	IB	355	340	-15	-4%	1.08
Total		**620**	**615**	**-5**	**-1%**	**0.2**

Screenline D Outbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Slip Road of Prince Edward Road East (Kowloon City)	OB	160	165	5	3%	0
Slip Road to Prince Edward Road East	OB	445	455	10	2%	0
Kai San Road	OB	370	370	0	0%	0.47
Total		**975**	**990**	**15**	**2%**	**0.48**

Screenline E Westbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Prince Edward Road East	WB	1390	1490	100	7%	1.44
Prince Edward Road East	WB	4145	4100	-45	-1%	0.4
Olympic Avenue	WB	255	275	20	8%	0.4
Shing Kai Road	WB	475	465	-10	-2%	0.48
Total		**6265**	**6330**	**65**	**1%**	**0.82**

Screenline E Eastbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Prince Edward Road East	EB	3705	3515	-190	-5%	2.18
Prince Edward Road East	EB	1635	1660	25	2%	0.25
Olympic Avenue	EB	160	160	0	0%	0
Shing Kai Road	EB	595	600	5	1%	1.16
Total		**6095**	**5935**	**-160**	**-3%**	**2.06**

JA - Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Slip Road of Prince Edward Road East (Kowloon City)	IB	330	290	-40	-12%	0.52
	Concorde Road	IB	630	690	60	10%	2.3
	Airside	IB	45	45	0	0%	0
	Olympic Avenue	IB	470	470	0	0%	0
	Total	**IB**	**1475**	**1495**	**20**	**1%**	**0.52**
Exit Arm	Slip Road of Prince Edward Road East (Kowloon City)	OB	160	165	5	3%	0
	Concorde Road	OB	1020	1020	0	0%	0.67
	Airside	OB	55	55	0	0%	0
	Olympic Avenue	OB	245	265	20	8%	0.82
	Total	**OB**	**1480**	**1505**	**25**	**2%**	**0.65**

JB - Slip Road of Prince Edward Road East (San Po Kong) / Concorde Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Slip Road of Prince Edward Road East (San Po Kong)	IB	265	275	10	4%	0.61
	Concorde Road	IB	440	430	-10	-2%	0
	Concorde Road	IB	650	650	0	0%	0
	Total	**IB**	**1355**	**1355**	**0**	**0%**	**0**
Exit Arm	Slip Road of Prince Edward Road East (San Po Kong)	OB	445	455	10	2%	0
	Concorde Road	OB	625	625	0	0%	0
	Concorde Road	OB	285	275	-10	-4%	0.66
	Total	**OB**	**1355**	**1355**	**0**	**0%**	**0**

JC - Shing Kai Road / Concorde Road / Muk Chun Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	430	430	0	0%	0
	Muk Chun Street	IB	35	0	-35	-100%	6.32
	Concorde Road	IB	625	625	0	0%	0
	Total	**IB**	**1090**	**1055**	**-35**	**-3%**	**1.07**
Exit Arm	Shing Kai Road	OB	620	625	5	1%	0
	Muk Chun Street	OB	30	0	-30	-100%	6.32
	Concorde Road	OB	440	430	-10	-2%	0
	Total	**OB**	**1090**	**1055**	**-35**	**-3%**	**1.07**

JD - Shing Kai Road / Muk Hung Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	620	625	5	1%	0
	Shing Kai Road	IB	500	500	0	0%	0
	Total	**IB**	**1120**	**1125**	**5**	**0%**	**0.15**
Exit Arm	Shing Kai Road	OB	430	430	0	0%	0
	Shing Kai Road	OB	470	480	10	2%	0
	Muk Hung Street	OB	220	215	-5	-2%	0
	Total	**OB**	**1120**	**1125**	**5**	**0%**	**0.15**

JE - Shing Kai Road / Muk Chui Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	465	480	15	3%	0
	Muk Chui Street	IB	170	165	-5	-3%	0
	Shing Kai Road	IB	380	355	-25	-7%	0
	Muk Chui Street	IB	415	415	0	0%	0
	Total	**IB**	**1430**	**1415**	**-15**	**-1%**	**0.4**
Exit Arm	Shing Kai Road	OB	500	500	0	0%	0
	Muk Chui Street	OB	520	515	-5	-1%	0
	Shing Kai Road	OB	245	250	5	2%	0
	Muk Chui Street	OB	165	150	-15	-9%	0
	Total	**OB**	**1430**	**1415**	**-15**	**-1%**	**0.4**

JF - Shing Kai Road / Kai Shing Street / Muk On Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	230	250	20	9%	0.77
	Kai Shing Street	IB	700	715	15	2%	0
	Shing Kai Road	IB	440	440	0	0%	0.55
	Muk On Street	IB	425	395	-30	-7%	0
	Total	**IB**	**1795**	**1800**	**5**	**0%**	**0.12**
Exit Arm	Shing Kai Road	OB	375	375	0	0%	0
	Kai Shing Street	OB	465	470	5	1%	0
	Shing Kai Road	OB	535	535	0	0%	0
	Muk On Street	OB	420	420	0	0%	0
	Total	**OB**	**1795**	**1800**	**5**	**0%**	**0.12**

JG - Shing Kai Road / Shing Fung Road / Muk Tai Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Muk Tai Street	IB	280	300	20	7%	1.83
	Shing Kai Road	IB	545	535	-10	-2%	0.39
	Shing Fung Road	IB	275	285	10	4%	0.53
	Shing Kai Road	IB	595	600	5	1%	1.16
	Total	**IB**	**1695**	**1720**	**25**	**1%**	**0.61**
Exit Arm	Muk Tai Street	OB	235	230	-5	-2%	0
	Shing Kai Road	OB	450	440	-10	-2%	1.08
	Shing Fung Road	OB	530	550	20	4%	1.36
	Shing Kai Road	OB	480	500	20	4%	1.38
	Total	**OB**	**1695**	**1720**	**25**	**1%**	**0.61**

JH - Shing Kai Road / Eastern access to main stadium

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Kai Tak Public Sport Ground	IB	45	55	10	22%	0.77
	Shing Kai Road	IB	475	465	-10	-2%	0.48
	Kai Tak Sport Park	IB	20	25	5	25%	0
	Shing Kai Road	IB	620	635	15	2%	1.47
	Total	**IB**	**1160**	**1180**	**20**	**2%**	**0.58**
Exit Arm	Kai Tak Public Sport Ground	OB	40	45	5	13%	0
	Shing Kai Road	OB	595	600	5	1%	1.16
	Kai Tak Sport Park	OB	25	20	-5	-20%	1.41
	Shing Kai Road	OB	500	505	5	1%	0.43
	Total	**OB**	**1160**	**1170**	**10**	**1%**	**0.29**

JI - To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	490	505	15	3%	0.86
	To Kwa Wan Road	IB	640	670	30	5%	2.12
	Sung Wong Toi Road	IB	635	635	0	0%	0.76
	Total	**IB**	**1765**	**1810**	**45**	**3%**	**1.06**
Exit Arm	Shing Kai Road	OB	620	635	15	2%	1.47
	To Kwa Wan Road	OB	585	615	30	5%	2.24
	Sung Wong Toi Road	OB	560	565	5	1%	0.41
	Total	**OB**	**1765**	**1815**	**50**	**3%**	**1.18**

JJ - Kowloon City Road / Sung Wong Toi Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Sung Wong Toi Road	IB	560	565	5	1%	0.41
	Kowloon City Road	IB	420	420	0	0%	0.41
	Total	**IB**	**980**	**985**	**5**	**1%**	**0.16**
Exit Arm	Sung Wong Toi Road	OB	1190	1195	5	0%	0.5
	Total	**OB**	**1190**	**1195**	**5**	**0%**	**0.14**

JK - Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Ma Tau Chung Road	IB	1735	1710	-25	-1%	0
	Sung Wong Toi Road	IB	1395	1400	5	0%	0.25
	Ma Tau Chung Road	IB	1795	1810	15	1%	0
	Fu Ning Street	IB	25	25	0	0%	0
	Total	**IB**	**4950**	**4945**	**-5**	**0%**	**0.07**
Exit Arm	Ma Tau Chung Road	OB	2795	2810	15	1%	0
	Ma Tau Chung Road	OB	1760	1735	-25	-1%	0
	Fu Ning Street	OB	395	395	0	0%	0
	Total	**OB**	**4950**	**4940**	**-10**	**0%**	**0.14**

JL - Olympic Avenue / Hang Wan Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Olympic Avenue	IB	210	285	75	36%	4.15
	Olympic Avenue	IB	110	100	-10	-9%	1.35
	Hang Wan Road	IB	650	615	-35	-5%	0.82
	Total	**IB**	**970**	**1000**	**30**	**3%**	**0.96**
Exit Arm	Olympic Avenue	OB	115	100	-15	-13%	1.35
	Olympic Avenue	OB	855	900	45	5%	2.05
	Total	**OB**	**970**	**1000**	**30**	**3%**	**0.96**

JM - Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Prince Edward Road East	IB	1865	1810	-55	-3%	1.72
	Ma Tau Chung Road	IB	1155	1155	0	0%	0
	Argyle Road	IB	420	425	5	1%	0
	Prince Edward Road West	IB	1480	1525	45	3%	2.12
	Total	**IB**	**4920**	**4915**	**-5**	**0%**	**0.07**
Exit Arm	Prince Edward Road East	OB	2180	2165	-15	-1%	0.28
	Ma Tau Chung Road	OB	1530	1490	-40	-3%	1.22
	Argyle Road	OB	320	310	-10	-3%	0
	Prince Edward Road West	OB	865	850	-15	-2%	0
	Total	**OB**	**4895**	**4815**	**-80**	**-2%**	**1.15**

JN - Kai San Road / Tsat Po Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Tsat Po Street	IB	605	605	0	0%	0.38
	Kai San Road	IB	370	370	0	0%	0.47
	Tsat Po Street	IB	100	75	-25	-25%	2.63
	Total	**IB**	**1075**	**1050**	**-25**	**-2%**	**0.77**
Exit Arm	Pat Tat Street	OB	205	155	-50	-24%	4.47
	Tsat Po Street	OB	180	210	30	17%	3.04
	Kai San Road	OB	355	340	-15	-4%	1.08
	Tsat Po Street	OB	330	330	0	0%	0
	Total	**OB**	**1070**	**1035**	**-35**	**-3%**	**1.08**

JO - Sze Mei Street / Luk Hop Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Sze Mei Street	IB	535	500	-35	-7%	2.63
	Luk Hop Street	IB	350	420	70	20%	2.63
	Sze Mei Street	IB	425	495	70	16%	3.35
	Total	**IB**	**1310**	**1415**	**105**	**8%**	**2.84**
Exit Arm	Sze Mei Street	OB	440	405	-35	-8%	3.38
	Luk Hop Street	OB	590	605	15	3%	1.13
	Sze Mei Street	OB	280	400	120	43%	1
	Total	**OB**	**1310**	**1410**	**100**	**8%**	**2.71**

Screenline A Inbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Prince Edward Road West (At Grade)	IB	1190	1175	-15	-1%	0.48
Prince Edward Road West (Flyover)	IB	1245	1270	25	2%	0.34
Argyle Street (At Grade)	IB	310	320	10	3%	0
Argyle Street (Flyover)	IB	1150	1150	0	0%	0
Fu Ning Street	IB	20	20	0	0%	0
Total		**3915**	**3935**	**20**	**1%**	**0.32**

Screenline A Outbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Prince Edward Road West (At Grade)	OB	885	825	-60	-7%	1.03
Prince Edward Road West (Flyover)	OB	1805	1815	10	1%	0
Argyle Street (At Grade)	OB	290	290	0	0%	0
Argyle Street (Flyover)	OB	1285	1285	0	0%	0
Fu Ning Street	OB	455	455	0	0%	0.53
Total		**4720**	**4670**	**-50**	**-1%**	**0.73**

Screenline B Inbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Ma Tau Chung Road	IB	1915	1980	65	3%	0.56
Kai Tak Tunnel	IB	760	755	-5	-1%	0
Kowloon City Road	IB	480	490	10	2%	0.93
To Kwa Wan Road	IB	700	700	0	0%	0
Total		**2675**	**2735**	**60**	**2%**	**1.15**

Screenline B Outbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Ma Tau Chung Road	OB	1455	1440	-15	-1%	0.36
To Kwa Wan Road	OB	425	445	20	5%	0
Total		**1880**	**1885**	**5**	**0%**	**0.12**

Screenline C Inbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Shing Fung Road	IB	355	360	5	1%	0
Kai Shing Street	IB	765	760	-5	-1%	0
Muk Chui Street	IB	280	285	5	2%	0.77
Total		**1400**	**1405**	**5**	**0%**	**0.13**

Screenline C Outbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Shing Fung Road	OB	310	310	0	0%	0.78
Kai Shing Street	OB	445	445	0	0%	0
Muk Chui Street	OB	450	445	-5	-1%	0
Total		**895**	**890**	**-5**	**-1%**	**0.17**

Screenline D Inbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Flyover from Prince Edward Road East to Olympic Avenue	IB	175	165	-10	-6%	0
Slip Road of Prince Edward Road East (Kowloon City)	IB	285	310	25	9%	0.59
Slip Road from Prince Edward Road East	IB	120	115	-5	-4%	0.95
Kai San Road	IB	380	380	0	0%	0.59
Total		**500**	**495**	**-5**	**-1%**	**0.22**

Screenline D Outbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Slip Road of Prince Edward Road East (Kowloon City)	OB	285	290	5	2%	0
Slip Road to Prince Edward Road East	OB	520	535	15	3%	0
Kai San Road	OB	515	535	20	4%	0
Total		**1320**	**1360**	**40**	**3%**	**1.09**

Screenline E Westbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Prince Edward Road East	WB	1805	1815	10	1%	0
Prince Edward Road East	WB	3475	3485	10	0%	0
Olympic Avenue	WB	100	110	10	10%	0
Shing Kai Road	WB	540	520	-20	-4%	0
Total		**5920**	**5930**	**10**	**0%**	**0.13**

Screenline E Eastbound		Total = PV+GV+PT (pcu/hr)				
Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Prince Edward Road East	EB	3905	3940	35	1%	0.7
Prince Edward Road East	EB	2020	2095	75	4%	0.48
Olympic Avenue	EB	95	110	15	16%	0.95
Shing Kai Road	EB	475	490	15	3%	0.43
Total		**6495**	**6635**	**140**	**2%**	**1.73**

JA - Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Slip Road of Prince Edward Road East (Kowloon City)	IB	285	310	25	9%	0.59
	Concorde Road	IB	705	685	-20	-3%	1.66
	Airside	IB	135	135	0	0%	0
	Olympic Avenue	IB	270	275	5	2%	0.66
	Total	**IB**	**1395**	**1405**	**10**	**1%**	**0.27**
Exit Arm	Slip Road of Prince Edward Road East (Kowloon City)	OB	285	290	5	2%	0
	Concorde Road	OB	905	895	-10	-1%	0.38
	Airside	OB	105	105	0	0%	0
	Olympic Avenue	OB	130	125	-5	-4%	0
	Total	**OB**	**1425**	**1415**	**-10**	**-1%**	**0.27**

JB - Slip Road of Prince Edward Road East (San Po Kong) / Concorde Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Slip Road of Prince Edward Road East (San Po Kong)	IB	120	115	-5	-4%	0.95
	Concorde Road	IB	720	590	-130	-18%	3.81
	Concorde Road	IB	400	530	130	33%	3.98
	Total	**IB**	**1240**	**1235**	**-5**	**0%**	**0.14**
Exit Arm	Slip Road of Prince Edward Road East (San Po Kong)	OB	520	535	15	3%	0
	Concorde Road	OB	390	390	0	0%	0
	Concorde Road	OB	325	305	-20	-6%	1.24
	Total	**OB**	**1235**	**1230**	**-5**	**0%**	**0.14**

JC - Shing Kai Road / Concorde Road / Muk Chun Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	565	590	25	4%	0
	Muk Chun Street	IB	30	0	-30	-100%	4.47
	Concorde Road	IB	390	390	0	0%	0
	Total	**IB**	**985**	**980**	**-5**	**-1%**	**0.16**
Exit Arm	Shing Kai Road	OB	385	390	5	1%	0.63
	Muk Chun Street	OB	20	0	-20	-100%	3.16
	Concorde Road	OB	580	590	10	2%	0
	Total	**OB**	**985**	**980**	**-5**	**-1%**	**0.16**

JD - Shing Kai Road / Muk Hung Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	385	390	5	1%	0.63
	Shing Kai Road	IB	610	625	15	2%	0
	Total	**IB**	**995**	**1015**	**20**	**2%**	**0.63**
Exit Arm	Shing Kai Road	OB	565	590	25	4%	0
	Shing Kai Road	OB	295	285	-10	-3%	0.69
	Muk Hung Street	OB	135	135	0	0%	0
	Total	**OB**	**995**	**1010**	**15**	**2%**	**0.47**

JE - Shing Kai Road / Muk Chui Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	295	285	-10	-3%	0
	Muk Chui Street	IB	280	285	5	2%	0.77
	Shing Kai Road	IB	465	425	-40	-9%	2.24
	Muk Chui Street	IB	305	345	40	13%	2.7
	Total	**IB**	**1345**	**1340**	**-5**	**0%**	**0.14**
Exit Arm	Shing Kai Road	OB	610	625	15	2%	0
	Muk Chui Street	OB	450	445	-5	-1%	0
	Shing Kai Road	OB	170	160	-10	-6%	0.88
	Muk Chui Street	OB	115	110	-5	-4%	0
	Total	**OB**	**1345**	**1340**	**-5**	**0%**	**0.14**

JF - Shing Kai Road / Kai Shing Street / Muk On Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	160	160	0	0%	0
	Kai Shing Street	IB	765	760	-5	-1%	0
	Shing Kai Road	IB	365	365	0	0%	0
	Muk On Street	IB	405	410	5	1%	0
	Total	**IB**	**1695**	**1695**	**0**	**0%**	**0**
Exit Arm	Shing Kai Road	OB	465	480	15	3%	0
	Kai Shing Street	OB	445	445	0	0%	0
	Shing Kai Road	OB	415	400	-15	-4%	0
	Muk On Street	OB	365	365	0	0%	0
	Total	**OB**	**1690**	**1690**	**0**	**0%**	**0**

JG - Shing Kai Road / Shing Fung Road / Muk Tai Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Muk Tai Street	IB	225	265	40	18%	1.58
	Shing Kai Road	IB	425	400	-25	-6%	0.43
	Shing Fung Road	IB	355	360	5	1%	0
	Shing Kai Road	IB	455	490	35	8%	0.43
	Total	**IB**	**1460**	**1515**	**55**	**4%**	**1.43**
Exit Arm	Muk Tai Street	OB	245	290	45	18%	1.49
	Shing Kai Road	OB	365	365	0	0%	0.53
	Shing Fung Road	OB	310	310	0	0%	0.78
	Shing Kai Road	OB	540	550	10	2%	1.83
	Total	**OB**	**1460**	**1515**	**55**	**4%**	**1.43**

JH - Shing Kai Road / Western access to main stadium

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Kai Tak Public Sport Ground	IB	30	65	35	117%	0
	Shing Kai Road	IB	540	520	-20	-4%	0
	Kai Tak Sport Park	IB	15	40	25	167%	5.16
	Shing Kai Road	IB	455	445	-10	-2%	0.47
	Total	**IB**	**1040**	**1070**	**30**	**3%**	**0.92**
Exit Arm	Kai Tak Public Sport Ground	OB	5	20	15	300%	0
	Shing Kai Road	OB	475	490	15	3%	0.43
	Kai Tak Sport Park	OB	10	20	10	100%	0
	Shing Kai Road	OB	550	530	-20	-4%	0.47
	Total	**OB**	**1040**	**1060**	**20**	**2%**	**0.62**

JI - To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Shing Kai Road	IB	550	530	-20	-4%	0
	To Kwa Wan Road	IB	700	700	0	0%	0
	Sung Wong Toi Road	IB	270	260	-10	-4%	0
	Total	**IB**	**1520**	**1490**	**-30**	**-2%**	**0.77**
Exit Arm	Shing Kai Road	OB	455	445	-10	-2%	0.47
	To Kwa Wan Road	OB	425	445	20	5%	0
	Sung Wong Toi Road	OB	640	605	-35	-5%	0.42
	Total	**OB**	**1520**	**1495**	**-25**	**-2%**	**0.64**

JJ - Kowloon City Road / Sung Wong Toi Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Sung Wong Toi Road	IB	640	605	-35	-5%	0.42
	Kowloon City Road	IB	480	490	10	2%	0.93
	Total	**IB**	**1120**	**1095**	**-25**	**-2%**	**0.75**
Exit Arm	Sung Wong Toi Road	OB	1265	1235	-30	-2%	0.87
	Total	**OB**	**1265**	**1235**	**-30**	**-2%**	**0.85**

JK - Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Ma Tau Chung Road	IB	1435	1420	-15	-1%	0.36
	Sung Wong Toi Road	IB	1885	1835	-50	-3%	0.26
	Ma Tau Chung Road	IB	1915	1980	65	3%	0.56
	Fu Ning Street	IB	20	20	0	0%	0
	Total	**IB**	**5255**	**5255**	**0**	**0%**	**0**
Exit Arm	Ma Tau Chung Road	OB	3345	3350	5	0%	0.2
	Ma Tau Chung Road	OB	1455	1440	-15	-1%	0.36
	Fu Ning Street	OB	455	455	0	0%	0.53
	Total	**OB**	**5255**	**5245**	**-10**	**0%**	**0.14**

JL - Olympic Avenue / Hang Wan Road

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Olympic Avenue	IB	85	140	55	65%	1.69
	Olympic Avenue	IB	55	45	-10	-18%	2.58
	Hang Wan Road	IB	325	320	-5	-2%	0
	Total	**IB**	**465**	**505**	**40**	**9%**	**1.82**
Exit Arm	Olympic Avenue	OB	55	45	-10	-18%	1.41
	Olympic Avenue	OB	410	455	45	11%	0
	Total	**OB**	**465**	**500**	**35**	**8%**	**1.59**

JM - Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Prince Edward Road East	IB	1445	1455	10	1%	0
	Ma Tau Chung Road	IB	1325	1260	-65	-5%	1.13
	Argyle Road	IB	310	320	10	3%	0
	Prince Edward Road West	IB	1190	1175	-15	-1%	0.48
	Total	**IB**	**4270**	**4210**	**-60**	**-1%**	**0.92**
Exit Arm	Prince Edward Road East	OB	2065	2060	-5	0%	0
	Ma Tau Chung Road	OB	1015	990	-25	-2%	0.43
	Argyle Road	OB	290	290	0	0%	0
	Prince Edward Road West	OB	885	825	-60	-7%	1.03
	Total	**OB**	**4255**	**4165**	**-90**	**-2%**	**1.39**

JN - Kai San Road / Tsat Po Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Tsat Po Street	IB	845	685	-160	-19%	0.76
	Kai San Road	IB	515	535	20	4%	0
	Tsat Po Street	IB	180	130	-50	-28%	1.58
	Total	**IB**	**1540**	**1350**	**-190**	**-12%**	**5**
Exit Arm	Pat Tat Street	OB	300	270	-30	-10%	0.55
	Tsat Po Street	OB	275	290	15	5%	0
	Kai San Road	OB	380	380	0	0%	0.59
	Tsat Po Street	OB	585	410	-175	-30%	1.95
	Total	**OB**	**1540**	**1350**	**-190**	**-12%**	**5**

JO - Sze Mei Street / Luk Hop Street

			Total = PV+GV+PT (pcu/hr)				
	Street Name	Dir'n	Obs.	Mod.	Diff.	%Diff.	GEH
Entry Arm	Sze Mei Street	IB	605	565	-40	-7%	2.63
	Luk Hop Street	IB	525	560	35	7%	0.78
	Sze Mei Street	IB	620	695	75	12%	4.24
	Total	**IB**	**1750**	**1820**	**70**	**4%**	**1.66**
Exit Arm	Sze Mei Street	OB	640	655	15	2%	0.42
	Luk Hop Street	OB	780	685	-95	-12%	0.38
	Sze Mei Street	OB	335	485	150	45%	3.64
	Total	**OB**	**1755**	**1825**	**70**	**4%**	**1.65**

APPENDIX C – LONG TERM TRAFFIC FORECAST FOR NIA

Table A - Year 2044 Traffic Forecast Flows (in PCU/Hour)

Road Index (1)	Road	Road Type	2044 Traffic (2) Flows (pcu/hr)	
			AM	PM
1	Muk Lai Street	Local Distributor	490	340
2	Muk Lai Street	Local Distributor	740	550
3	Proposed Road L16	Local Distributor	540	400
4	Proposed Road L16	Local Distributor	600	480
5	Dakota Drive	Local Distributor	1160	890
6	Olympic Avenue	District Distributor	810	680
7	Olympic Avenue	District Distributor	850	710
8	Olympic Avenue	District Distributor	340	320
9	Olympic Avenue	District Distributor	840	840
10	Olympic Avenue	District Distributor	570	410
11	Olympic Avenue	District Distributor	950	990
12	Olympic Avenus	District Distributor	1630	1050
13	Slip Road from Olympic Avenue to Prince Edward Road East	District Distributor	650	370
14	Slip Road from Prince Edward East to Olympic Avenus	District Distributor	1040	670
15	Prince Edward Road East	Primary Distributor	4630	4450
16	Prince Edward Road East	Primary Distributor	4190	3780
17	Prince Edward Road East	Primary Distributor	4740	4740
18	Prince Edward Road East	Primary Distributor	1830	1580
19	Prince Edward Road East	Primary Distributor	3790	4070
20	Prince Edward Road West	Primary Distributor	1620	1750
21	Prince Edward Road West	Primary Distributor	2330	2030
22	Ma Tau Chung Road	Primary Distributor	1320	2490
23	Ma Tau Chung Road	Primary Distributor	1000	700
24	Ma Tau Chung Road	Primary Distributor	1860	1780
25	Argyle Street	Primary Distributor	1300	1390
26	Argyle Street	Primary Distributor	1320	1330
27	From South Wall Road to Prince Edward Road West	Local Distributor	370	320
28	From South Wall Road to Lung Kong Road	Local Distributor	30	30
29	From Prince Edward Road West to Lung Kong Road	Local Distributor	600	700
30	Lung Kong Road	Local Distributor	590	780
31	Lung Kong Road	Local Distributor	250	330
32	South Wall Road	Local Distributor	420	350
33	South Wall Road	Local Distributor	130	210
34	Tak Ku Ling Road	Local Distributor	280	340
35	Kai Tak Road	Local Distributor	30	70
36	Sa Po Road	Local Distributor	340	330
37	Sa Po Road	Local Distributor	360	400
38	Nga Tsin Wai Road	Local Distributor	600	730
39	Nga Tsin Wai Road	Local Distributor	520	590
40	Nga Tsin Wai Road	Local Distributor	520	560
41	Nga Tsin Wai Road	Local Distributor	370	400
42	Carpenter Road	Local Distributor	390	400
43	Lok Sin Road	Local Distributor	540	510
44	Lok Sin Road	Local Distributor	430	360
45	Tung Tsing Road	Local Distributor	410	400
46	Tung Lei Road	Local Distributor	50	40

Note:

(1) Road index refer to Drawing No. C1

(2) Figures are rounded to the nearest 10

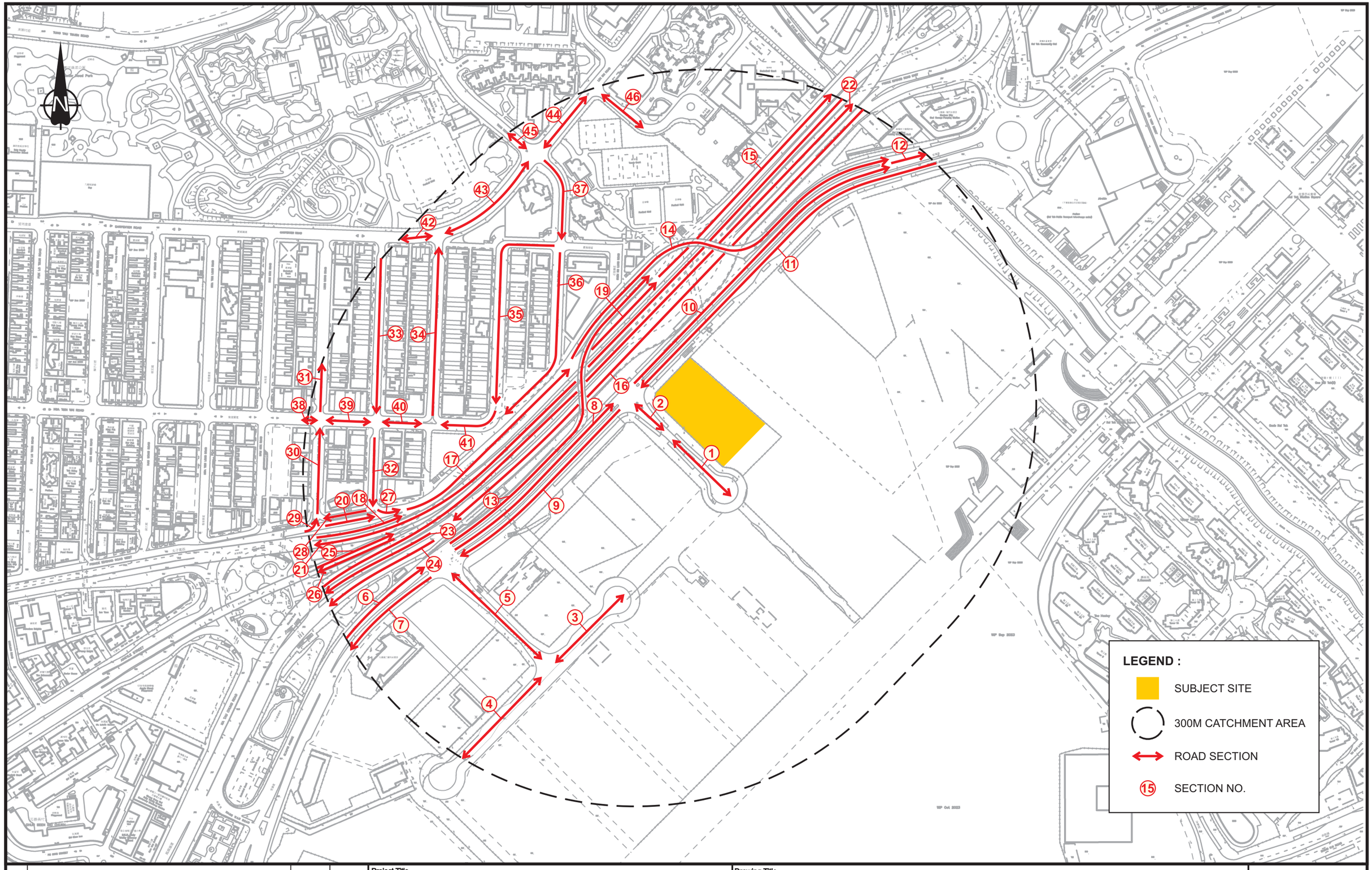
Table B - Year 2044 Traffic Forecast Flows and HV% for NIA

Road Index (1)	Road	Road Type	Speed Limit (km/hr)	2044 Traffic (2) Flows (veh/hr)		HV %	
				AM	PM	AM	PM
1	Muk Lai Street	Local Distributor	50	430	320	27%	7%
2	Muk Lai Street	Local Distributor	50	670	520	27%	7%
3	Proposed Road L16	Local Distributor	50	420	320	20%	21%
4	Proposed Road L16	Local Distributor	50	520	350	18%	22%
5	Dakota Drive	Local Distributor	50	920	670	20%	21%
6	Olympic Avenue	District Distributor	50	700	610	27%	10%
7	Olympic Avenue	District Distributor	50	780	670	11%	13%
8	Olympic Avenue	District Distributor	50	280	280	23%	14%
9	Olympic Avenue	District Distributor	50	800	730	11%	13%
10	Olympic Avenue	District Distributor	50	510	350	22%	15%
11	Olympic Avenue	District Distributor	50	890	880	13%	12%
12	Olympic Avenus	District Distributor	50	1400	990	13%	10%
13	Slip Road from Olympic Avenue to Prince Edward Road East	District Distributor	50	540	320	27%	10%
14	Slip Road from Prince Edward East to Olympic Avenus	District Distributor	50	880	650	22%	17%
15	Prince Edward Road East	Primary Distributor	70	3960	3800	23%	24%
16	Prince Edward Road East	Primary Distributor	70	3460	3230	29%	24%
17	Prince Edward Road East	Primary Distributor	70	4090	4090	23%	23%
18	Prince Edward Road East	Primary Distributor	70	1710	1500	14%	14%
19	Prince Edward Road East	Primary Distributor	70	3240	3480	23%	24%
20	Prince Edward Road West	Primary Distributor	50	1190	1230	35%	37%
21	Prince Edward Road West	Primary Distributor	70	2030	1860	27%	21%
22	Ma Tau Chung Road	Primary Distributor	70	1070	2350	28%	21%
23	Ma Tau Chung Road	Primary Distributor	70	930	650	22%	21%
24	Ma Tau Chung Road	Primary Distributor	50	1350	1310	48%	44%
25	Argyle Street	Primary Distributor	70	1170	1250	22%	27%
26	Argyle Street	Primary Distributor	70	1270	1290	7%	8%
27	From South Wall Road to Prince Edward Road West	Local Distributor	50	350	310	26%	19%
28	From South Wall Road to Lung Kong Road	Local Distributor	50	30	30	25%	19%
29	From Prince Edward Road West to Lung Kong Road	Local Distributor	50	560	680	25%	16%
30	Lung Kong Road	Local Distributor	50	540	760	23%	14%
31	Lung Kong Road	Local Distributor	50	230	310	27%	16%
32	South Wall Road	Local Distributor	50	390	340	26%	19%
33	South Wall Road	Local Distributor	50	120	210	28%	13%
34	Tak Ku Ling Road	Local Distributor	50	230	300	41%	30%
35	Kai Tak Road	Local Distributor	50	30	70	27%	25%
36	Sa Po Road	Local Distributor	50	300	300	27%	21%
37	Sa Po Road	Local Distributor	50	320	370	30%	23%
38	Nga Tsin Wai Road	Local Distributor	50	530	680	27%	20%
39	Nga Tsin Wai Road	Local Distributor	50	450	550	32%	22%
40	Nga Tsin Wai Road	Local Distributor	50	450	500	33%	25%
41	Nga Tsin Wai Road	Local Distributor	50	300	370	30%	22%
42	Carpenter Road	Local Distributor	50	350	380	30%	17%
43	Lok Sin Road	Local Distributor	50	470	470	32%	22%
44	Lok Sin Road	Local Distributor	50	360	310	40%	36%
45	Tung Tsing Road	Local Distributor	50	370	380	27%	17%
46	Tung Lei Road	Local Distributor	50	40	40	32%	21%

Note:

(1) Road index refer to Drawing No. C1

(2) Figures are rounded to the nearest 10



Rev.	Description	Checked	Date
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Project Title

PROPOSED COMPREHENSIVE DEVELOPMENT INCLUDING FLAT, SHOP & SERVICES AND EATING PLACE, WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION IN "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE, KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON

Drawing Title

INDEX PLAN

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	MAR 2024	C1	-

SYSTRA MVA

CHK50786310/TIA/C1.CDR/LLH/25MAR24

Original Size : A3

Appendix 10: Visual Impact Assessment

Section 16 Planning Application

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Visual Impact Assessment

June 2024

Project Title	Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in “Comprehensive Development Area (4)” zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)
Report Title	Visual Impact Assessment
Prepared by	Masterplan Limited

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1.1. Overview of the Visual Impact Assessment

1.1.1. The Application Site, which is located in the Kai Tak City Centre area of Kai Tak Development (KTD) abutting the Lung Tsun Stone Bridge Preservation Corridor (LTSBPC) to its northeast, is zoned "Comprehensive Development Area (4)" ("CDA(4)") on the approved Kai Tak OZP No. S/K22/8 (OZP) (**Figure 1**). The "CDA(4)" zone is intended for residential development with a low-rise retail block (retail belt) fronting the LTSBPC to help foster a lively atmosphere. Under the Town Planning Ordinance, a section 16 (s.16) planning application is required to be submitted by the Applicant to obtain permission from the Town Planning Board, for a comprehensive development, including flat, shop & services and eating place, with minor relaxation of building height restriction (BHR). A Master Layout Plan is included in the application submission to demonstrate the comprehensiveness of the development proposal and its integration with the adjacent Lung Tsun Stone Bridge Preservation Corridor. A Visual Impact Assessment is provided in this report in support of the s16 planning application.

1.1.2. This report identifies the potential visual impact during operation phase of the proposed development. The comparison between the Notional Scheme by the Civil Engineering and Development Department (CEDD) in Attachment V of MPC paper no. 9/21 (**Figures 9a and 9b**) and the proposed scheme are summarized and assessed for each viewing point (VP).

1.1.3. This report is prepared with reference to *Town Planning Board Guidelines on Submission of Visual Impact Assessment for Planning Application to the Town Planning Board (TPB PG-No.41)*. The report includes the following:

- a visual impact assessment methodology; and
- a visual impact assessment section that includes:
  - ❖ a visual baseline review providing a comprehensive description of the baseline condition and visual elements of identified VPs with visual envelope;
  - ❖ identification of potential visual impacts;
  - ❖ prediction of the nature of visual impacts and the potential magnitude of change;
  - ❖ recommendation of appropriate mitigation measures; and
  - ❖ prediction of the significance of residual visual impacts after the implementation of the suggested mitigation measures.

1.2. Project Description

1.2.1. The Application Site, with an area of about 6,270 m^2, is located at western portion of the Kai Tak City Centre area and accessible from Olympic Avenue and Muk Lai Street. It is bounded by an area zoned "O(3)" intended for the LTSBPC to its northeast and southeast, Muk Lai Street to its southwest and Olympic Avenue to its northwest. Under the Notes of the OZP, the Application Site has a BHR of +125mPD.

1.2.2. Under the subject application, there is one residential tower providing 930 residential units and domestic GFA of about 40,755 m^2. Apart from the residential portion, following the planning brief of the Application Site, a retail belt with a GFA of a minimum of 1,254 m^2 is proposed in this application. The anticipated completion year for the proposed development is 2029.

1.3. Objective and Scopes

1.3.1. The proposed development complies with the development parameters and criteria stipulated in the Notes of the OZP and the endorsed planning brief for "CDA(4)" site, including plot ratio, GFA and site coverage, with a proposed minor relaxation of building height restriction from +125mPD to +129.035mPD, to adopt MiC in to the building design and comply with the Joint Practice Note No.8 to simplify the construction process and reduce waste. Given the site is zoned "CDA" subject to comprehensive planning and design control, a VIA is conducted to ensure visual consideration have been adequately considered. The aim of this report is to examine the changes and visual impacts caused by the proposed residential development at the Application Site for purpose of review and approval of the Town Planning Board (TPB). In addition, the proposed mitigation measures shall be proposed if applicable.

1.4. Standards and Guidelines

1.4.1. The following standards and guidelines have been referred to for assessing the visual impact associated with the proposed development:

- Approved Kai Tak OZP No. S/K22/8;
- Town Planning Board Guidelines on Submission of Visual Impact Assessment for Planning Applications to the Town Planning Board (TPB PG-No. 41);
- Kai Tak Brand Identity Manual and Public Creative Guideline; and
- Kai Tak Development Urban Design Guidelines and Manual (for private domestic/ private non-domestic/ GIC sites).

2. VISUAL CONTEXT AND VISUAL ELEMENTS

2.1. Methodology

Assessment Area

2.1.1. The assessment area covers the area of visual influence within which the proposed development is pronouncedly visible from the key sensitive viewers. Given the site is located at the city centre of Kai Tak surrounded by planned high-rise residential or commercial developments, those planned developments contribute to cumulative impact as a group of buildings, of which an assessment area 3 times the height of the proposed building (i.e. 123.035m x 3 = 369.105m) is set as an initial reference. On top and as the Application Site is part of the harbourfront development, ridgelines (in particular the Lion Rock) as visual backdrop of the development viewed from the opposite side of the harbour has also been covered in the visual appraisal.

Identification and Classification of Viewing Points (VPs)

2.1.2. With reference to para. 4.5 of TPB PG No. 41, the visual assessment is based on public views and local vantage points that are easily accessible and popular to the public, e.g. key pedestrian nodes, public areas for outdoor facilities, recreation, rest, leisure, walking and prominent travel routes.

Visual Sensitivity

2.1.3. The effects of visual changes on assessment area and sensitive public viewers should be appraised. The visual sensitivity of the public viewers from the viewing points can be qualitatively graded as **high, medium or low**, taking into account the activity of the viewers, the duration and distance over which the proposed development would remain visible, and the public perception of value attached to the views being assessed. The appraisal is expected to consider the following aspects:

- **Visual Composition**: Total visual effects of the visual elements due to their variation in locations, massing, heights, dispositions, scales, forms, proportions and characters vis-a-viz the overall visual backdrop;

- **Visual Obstruction**: Development may cause views in its foreground or background to be intercepted or blocked. The

degree of visual obstruction and loss of views or visual openness due to the proposed development from all key public viewing points within the assessment area should be assessed;

- **Effect on Public Viewers**: The effects of visual changes from key public viewing points with direct sightlines to the proposed development should be assessed and demonstrated; and

- **Effect on Visual Resources**: Assessment should appraise if the proposed development may improve or degrade the condition, quality and character of the assessment area and any on-site and off-site visual impact.

Evaluation of Visual Impact

2.1.4. The evaluation of visual impact is classified as follows:

- **Negligible**: If the proposed development will have insignificant visual effects to identified VPs, or the visual effects would be screened or filtered by other distracting visual elements in the assessment area;

- **Slightly Adverse**: If the proposed development will result in some negative visual effects to identified VPs;

- **Moderately Adverse**: If the proposed development will result in negative visual effects to identified VPs; and

- **Significantly Adverse**: If the proposed development will cause serious and detrimental visual effects to identified VPs.

2.2. Identification and Classification of Viewpoints

2.2.1. With reference to para. 4.5 of TPB PG No. 41, the visual assessment is based on public views and local vantage points that are easily accessible and popular to the public, e.g. key pedestrian nodes, public areas for outdoor facilities, recreation, rest, leisure, walking and prominent travel routes. In this regard, 6 public VPs are identified in the vicinity of the Application Site and their locations are shown in **Figures 2a** and **2b**.

VP1 – Planned Kai Tak Sports Park (Shing Kai Road) - under Construction

2.2.2. VP1 is about 600m from the proposed development and is about 140m from the junction of Shing Kai Road and Sung Wong Toi Road, and the viewing angle passes through the Sports Park. It is located at the southwest of the planned Kai Tak Sports Park, which is planned to be a hub for sports and leisure activities and currently under construction. Targeted to be completed by the end of 2024 for an opening in 2025, the planned Kai Tak Sports Park will be the anchor complemented by a comprehensive network of open spaces.

2.2.3. As Kai Tak Sports Park is still under construction with restricted access, the VP taken at Shing Kai Road is to represent the view of the future VSRs including users, visitors, staff at the park.

2.2.4. The users of the public sports ground will be engaging in active recreational activities and the duration over which the proposed development would remain visible to them is short, the visual sensitivity of VSRs will be **low** to **medium**. The other VSRs will mainly be audience and visitors walking around the Sports Park and their visual sensitivity will be **medium** to **high**.

VP2 – Nga Tsin Wai Road

2.2.5. VP2 was taken at Nga Tsin Wai Road in Kowloon City, about 180m to the west of the proposed development across Prince Edward Road East. This VP is next to existing bus stops at Prince Edward Road East and the Tak Ku Ling Road Rest Garden. It falls within the area of Urban Renewal Authority's "Nga Tsin Wai Road / Carpenter Road Development Scheme", which will be provided with retail facilities to support the gateway square connecting to the Kai Tak Development Area (KTDA). VP2 could represent the view of VSR who travels to/from the bus stops at Prince Edward Road East and Tak Ku Ling Road Rest Garden, and future VSRs including visitors and staffs of the proposed commercial facilities in this area. Their visual sensitivity of VP2 is considered to be **medium**.

VP3 – Shek Ku Lung Road Playground

2.2.6. VP3 is taken from the soccer pitch in Shek Ku Lung Road Playground, about 185m away from the proposed development. Shek Ku Lung Road Playground is a major open space in the district with provision of soccer pitches, tennis and volleyball courts. This VP is selected to review the impact of the VSRs who would be engaging in active recreational activities.

2.2.7. Due to distance from the Application Site and the VSRs will be engaging in active recreational activities, the visual sensitivity of VP3 is considered to be **medium** to **high**.

VP4 – Prince Edward Road East Footbridge (Near Kai Tak Community Hall)

2.2.8. VP4 is taken at about 430m to the east of the Application Site at the Prince Edward Road East Footbridge near Kai Tak Community Hall. The footbridge is part of the pedestrian linkage system that connects residential/commercial development at the Latitude and MIKIKI Mall, the Kai Tak Community Hall, and commercial developments at Airside at KTDA. It is selected to review the impact of the VSRs who commutes via the elevated walkway system between KTDA and the existing development further inland.

2.2.9. Due to distance from the Application Site and the VSRs will be commuters of the Prince Edward Road East Footbridge, the visual sensitivity of VP3 is considered to be **low** to **medium**.

VP5 - Open Space at Lung Tsun Stone Bridge Preservation Corridor (Close-up Viewpoint) - under Construction

2.2.10. As the open space at LTSBPC (i.e. “Open Space (3)” (“O(3)”) on the OZP) is under construction with restricted access, existing photo of the close-up condition is hard to be taken. The current VP at the eastern edge of “O(3)” adjoining the Station Square to represent a close-up viewpoint. “O(3)” is intended for in-situ preservation of the Lung Tsun Stone Bridge remnants and the provision of Heritage Park for preservation and public appreciation of heritage and archaeological relics. The Station Square includes large area of open space for various leisure activities (e.g. cycling and lawn bowling). The axis of Kai Tak Station Square from east to west are planned with abundant trees and green open spaces, which will serve as the point of arrival from the Kai Tak Station. The Station Square not only provides a park with leisure and recreational facilities, it also serves as an extensive pedestrian link between

Kai Tak Station, the Kai Tak Sports Park, LTSBPC and the residential/ commercial developments nearby.

2.2.11. The proposed development and the retail belt are linked with the Station Square axis and is adjacent to LTSBPC, it is one of the nearest buildings that the visitors will see from the Station Square and LTSBPC. The VP was chosen to capture the lower level of the proposed development with the focus on the retail belt design and its interphase with LTSBPC.

2.2.12. The potential VSRs of this VP would be the future residents, visitors and staff to the retail belt, LTSBPC, Kai Tak Sports Park, and the underground MTR station and Shopping Street.

2.2.13. As this represents a close-up viewpoint with significant view of development, the sensitivity of VP5 is considered to be **high**.

VP6 – Quarry Bay Park (Distant Viewpoint)

2.2.14. VP6 is a distant viewpoint of more than 5km from the Application Site. Victoria Harbour and the ridgeline are key visual assets of Hong Kong and its view shall be properly preserved according to Chapter 11 of Hong Kong Planning Standards and Guidelines. Among the recommended strategic vantage points, the Quarry Bay Park has an exposed view to To Kwa wan and Ma Tau Kok waterfront and is therefore considered to have highest relevancy to the development at the Application Site.

2.2.15. Due to far distance from the Application Site, the visual sensitivity of VP6 is judged to be **low**.

2.3. Assessment of Visual Impacts

2.3.1. As the area is planned for Kai Tak Development, the assessment evaluates the potential visual impact of the **Proposed Scheme** as compared with the **Notional Scheme.** The Notional Scheme of the subject site is prepared based on Figure 5.6 of Attachment V of MPC Paper No. 9/21 (i.e. 'Agreement No. CE 35/2006 (CE) Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction Further Review of Land Use in Kai Tak Development') **(Figures 9a and 9b)**. Other existing, planned/committed developments in the surroundings, including proposed developments in approved s.16 application no. A/K22/16, A/K22/30 and A/K22/35 have been considered and reflected in the photomontages. The Proposed Scheme has incorporated a proposed minor

relaxation of building height restriction from +125mPD to +129.035mPD. The viewpoint locations of representative VSRs are shown in **Figures 2a** and **2b.** Their impacts are assessed and summarized below:

VP1 – Planned Kai Tak Sports Park (Shing Kai Road) - under Construction (Figure 3)

2.3.2. VP1 is about 600m from the proposed development and is from about 140m from the junction of Shing Kai Road and Sung Wong Toi Road. The visual composition of this VP currently has views to the partially completed public sports ground of the Kai Tak Sports Park, existing residential developments along Prince Edward Road East and the various sites which are undergoing construction works. Upon completion of the planned Kai Tak Sports Park and as seen from the photomontages, there is no significant difference between the Notional Scheme and the Proposed Scheme, which has incorporated a minor relaxation of BHR from +125mPD to +129.035mPD[1]. The proposed development in both schemes is not visible due to screening by Sports Park development and other planned buildings and do not obstruct the open sky view in both schemes. In the light of this, there is no visual impact associated with the proposed development. VP1 is identified to experience no visual change at operation phase.

VP2 – Nga Tsin Wai Road (**Figures 4a** and **4b**)

2.3.3. VP2 was taken at Nga Tsin Wai Road in Kowloon City, about 180m to the west of the proposed development across Prince Edward Road East. The visual composition of this VP currently has views to the bus stations and flyover at Prince Edward Road East in the foreground, and existing residential developments and the various sites which are undergoing construction works in Kai Tak at the back. Upon completion of the planned residential/commercial developments and GIC facilities along Prince Edward Road East, there is no significant difference between the Notional Scheme and the Proposed Scheme, which has incorporated a minor relaxation of BHR from +125mPD to +129.035mPD[2]. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme. The proposed development is considered visually compatible with the other high-rise development under both Notional and Proposed Schemes.

[1] The visual impact of the minor relaxation of the BHR from +125mPD to +129.035mPD is demonstrated to be insignificant as the overall building form between the two schemes are similar.
[2] Same as above footnote.

2.3.4. The proposed development will stand amongst the planned high-rise developments and visual change of VP2 is judged to be **slight to moderate** at operation phase. The impact significance is considered as **slightly to moderately adverse**.

VP3 – Shek Ku Lung Road Playground (**Figures 5a** and **5b**)

2.3.5. The existing VP has views to flyover in the foreground and the existing high-rise development and the developments that are under construction at the Kai Tak Development Area in the background. As seen from the photomontages for both the Notional and Proposed Schemes, the open view from the soccer pitch in Shek Ku Lung Road Playground, approximately 185m away from the proposed development, the proposed development is considered visually compatible with the other high-rise developments (i.e. "CDA(3)" and "CDA(5)" at +100mPD and +135mPD on the OZP respectively) and might slightly dominate the view and setting for both Notional Scheme and Proposed Scheme, which has incorporated a minor relaxation of BHR from +125mPD to +129.035mPD[3]. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme. The Notional Scheme from CEDD and the Proposed Scheme are comparable in terms of visual change.

2.3.6. The proposed development will stand amongst the planned high-rise developments and visual change of VP3 is judged to be **moderate** at operation phase. The impact significance is considered as **slightly to moderately adverse**.

VP4 – Prince Edward Road East Footbridge (Near Kai Tak Community Hall) (Figure 6)

2.3.7. VP4 is taken at about 430m to the east of the Application Site at the Prince Edward Road East Footbridge near Kai Tak Community Hall. The existing VP has views to Kowloon City No. 1 Sewage Pumping Station and flyovers in the foreground, existing schools and residential developments, with the various sites which are undergoing construction works in Kai Tak at the back. Upon the completion of "CDA(3)" in the foreground, the proposed development would be largely screened under both Notional Scheme and Proposed Scheme, which has incorporated a minor relaxation of BHR from +125mPD to

[3] Same as above footnote.

+129.035mPD[4]. A small portion of the open sky view would be obstructed by proposed development in both schemes and the portion of obstruction is similar in both schemes. There is insignificant change to the overall visual composition under both schemes. The visual impact under both schemes is similar.

2.3.8. Considering VP4 is at a considerable distance from the proposed development and that the proposed development will stand amongst the planned high-rise, visual change of VP4 is judged to be minimal at operation phase. The impact significance is considered as **negligible**.

VP5 – Open Space at Lung Tsun Stone Bridge Preservation Corridor (Close-up Viewpoint) - under Construction (Figure 7)

2.3.9. VP5 represents a close-up viewpoint which was taken at the eastern edge of "O(3)" adjoining the Station Square. The retail belt design has strictly followed the requirements in the Planning Brief to provide a continuous low-rise building as a design response to the LTSBPC.

2.3.10. The Proposed Scheme tallies with the recommendations of the Notional Scheme by CEDD, the site Kai Tak Area 2A Site 2 (zoned as "CDA(4)") and the planning intention is to ensure their disposition and design would be in harmony with LTSBPC. The retail belt for the "CDA" site in CEDD's scenario is also similar with the Proposed Scheme.

2.3.11. The VSRs from this viewpoint is identified to experience slight visual change as a result of the proposed development and mitigation measures (**paragraph 3.1.2** below refers). A portion of the open sky view would be obstructed by the proposed development in the notional scheme and proposed scheme, which has incorporated a minor relaxation of BHR from +125mPD to +129.035mPD[5], with a slight increase in obstruction in the Proposed Scheme as compared to the Notional Scheme. In addition, the residential development at vicinity including "CDA(5)", and "R(A)6" are planned to be high-rise development, which would help set the urban high rise development context. The impact significance is considered as **slightly adverse**.

[4] Same as above footnote.
[5] Same as above footnote.

VP6 – Quarry Bay Park (Distant Viewpoint) (Figure 8)

2.3.12. The proposed development is considered compatible with the surrounding developments in terms of scale and character. The proposed development will blend-in with the surrounding townscape harmoniously in both Notional Scheme from CEDD and Proposed Scheme. The proposed development is will not be visible due to screening by the completed and planned developments in the foreground in both schemes[6]. The ridgelines at Lion Rock and the open sky view will not be blocked and still provides panoramic views and natural backdrop to the city. Given the far distance, the VSRs is identified to experience no visual change at operation phase, and the visual impact is considered **negligible**.

[6] Same as above footnote.

Table below provides a summary of the assessment of the six VPs and the appraisal of visual changes for the Proposed Scheme and Notional Scheme:

VP	Description	Sensitivity (Low, Medium, High)	Visual Composition	Visual Obstruction	Magnitude of Visual Change on Public Viewers	Effect on Visual Resource	Compatibility of the Proposed Development with the Surrounding Landscape	Visual Impact due to Proposed Scheme	Duration of Impact Under Operation Phases
1	Planned Kai Tak Sports Park (Shing Kai Road) - under Construction	Users of the public sports ground - low to medium. Audience and visitors walking around Kai Tak Sports Park - medium to high.	Upon completion of Kai Tak Sports Park, the proposed building mass will not be visible beyond planned structures for both Notional and Proposed Schemes. The open sky view will not be impacted by the proposed development in both schemes.	Minimal visual obstruction and visual openness remains largely intact. The open sky view will not be impacted by the proposed development in both schemes	Negligible	Minimum visual degradation of existing visual resources. The open sky view will not be impacted by the proposed development in both schemes	Fair	Negligible	Permanent
2	Nga Tsin Wai Road	Medium	Upon completion of the planned residential/ commercial developments and GIC facilities along Prince Edward Road East, the proposed development is considered visually compatible with the other high-rise development. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Partial blockage of views which reduce visual permeability. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Slight to Moderate	Slight visual degradation of existing visual resources. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Fair	Slightly to Moderately Adverse	Permanent
3	Shek Ku Lung Road Playground	Medium to High	Upon completion of the planned development at “CDA(3)” and “CDA(5)” sites, the proposed development is considered visually compatible with the other high-rise development and might slightly dominate the view and setting for both Notional and Proposed Schemes. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Partial blockage of views which reduce visual permeability. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Moderate	Moderate visual degradation of existing visual resources. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Fair	Slightly to Moderately Adverse	Permanent
4	Prince Edward Road East Footbridge (Near	Low to Medium	Upon completion of the “CDA(3)” in the foreground, the proposed development would be largely screened under both Proposed and	Partial blockage of views which reduce visual permeability. A small portion of the open sky	Slight	Minimal visual degradation of existing visual resources. A small portion of the open sky view would be	Fair	Negligible	Permanent

VP	Description	Sensitivity (Low, Medium, High)	Visual Composition	Visual Obstruction	Magnitude of Visual Change on Public Viewers	Effect on Visual Resource	Compatibility of the Proposed Development with the Surrounding Landscape	Visual Impact due to Proposed Scheme	Duration of Impact Under Operation Phases
	Kai Tak Community Hall)		Notional schemes. There is insignificant change to the overall visual composition under both schemes. A small portion of the open sky view would be obstructed by proposed development in both schemes.	view would be obstructed by proposed development in both schemes.		obstructed by proposed development in both schemes.			
5	Open Space at Lung Tsun Stone Bridge Preservation Corridor (Close-up Viewpoint) - under Construction	High	Proposed building mass at lower levels will dominate views and setting for both Notional and Proposed Schemes. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Blockage of view which reduces visual permeability. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Slight	Slight visual degradation of existing visual resources. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight increase in obstruction in the proposed scheme as compared to the notional scheme.	Good	Slightly adverse	Permanent
6	Quarry Bay Park (Distant Viewpoint)	Low	Proposed building mass for both Notional and Proposed Schemes will stand amongst other high-rise developments and continue to respect the ridgelines at Lion Rock. The proposed development would be screened off by the completed and planned developments in the foreground and does not impact on the open sky view in both schemes.	Minimal visual obstruction and visual openness remains largely intact. The proposed development would be screened off by the completed and planned developments in the foreground and does not impact on the open sky view in both schemes.	Negligible	Minimum visual degradation of existing visual resources. The proposed development would be screened off by the completed and planned developments in the foreground and does not impact on the open sky view in both schemes.	Good	Negligible	Permanent

3. MITIGATION MEASURES

3.1. The previous sections have identified the potential visual impacts due to the proposed development. Several mitigation measures have been suggested to alleviate some of the effects of these impacts where possible.

3.2. To devise a more attractive external appearance of the buildings and other related works, aesthetically pleasing design is important to reduce the adverse impact from the proposed development. The indicative design measures are shown below:

	Mitigation Measures
1	A permeable and welcoming entrance space is suggested to ensure an attractive interface between the LTSBPC and the site.
2	Streetscape elements e.g. paving, signage, street furniture, lighting and landscaping etc. shall be sensitively designed in a manner that responds to the local context (i.e. Kai Tak Station Square and/or LTSBPC).
3	Structure will be designed coherently with the cantilever façade design fronting the LTSBPC.

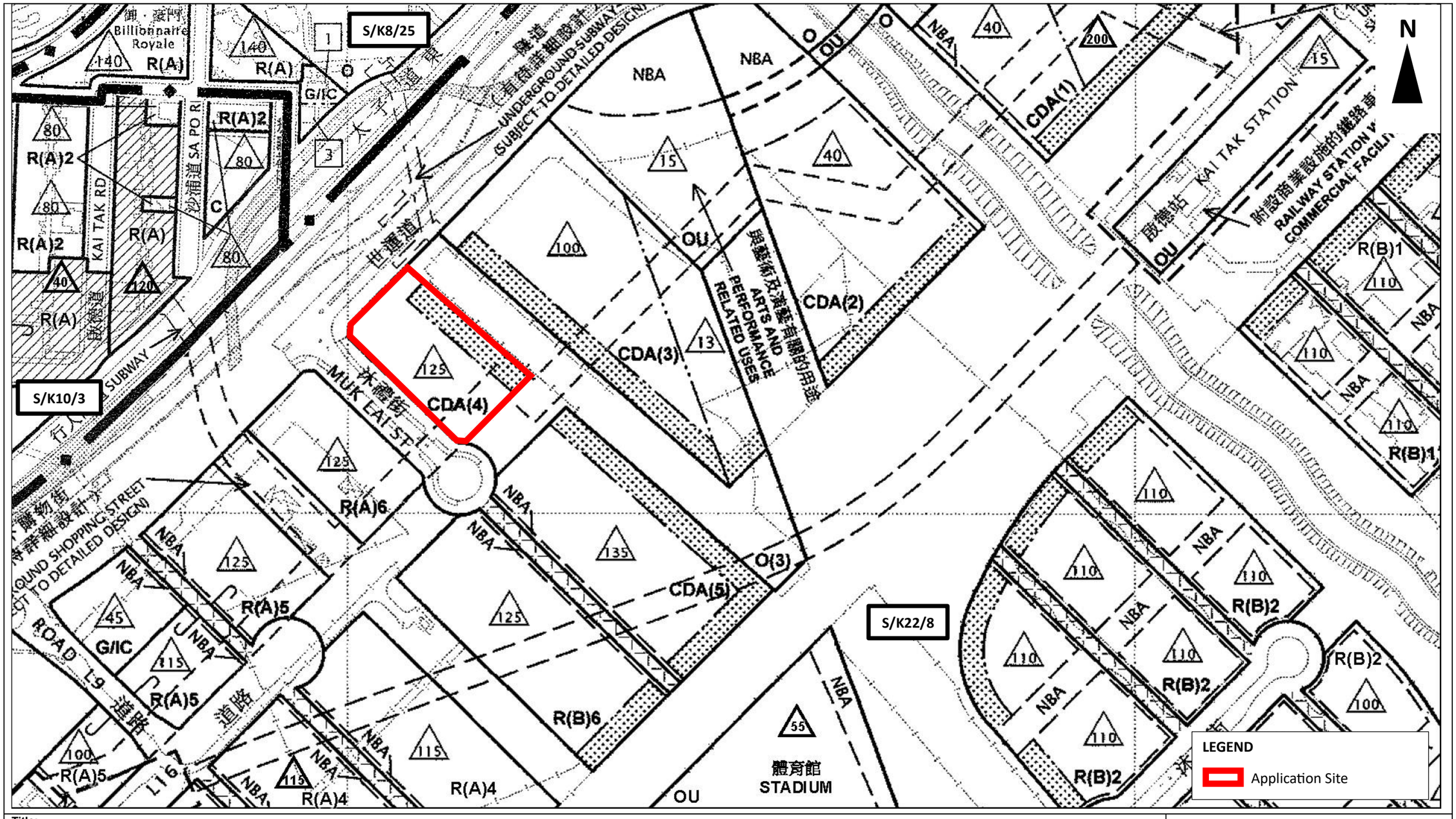
4. CONCLUSION

4.1. This VIA is prepared in support of a s.16 Planning Application for a proposed comprehensive development including flat, shop & services and eating place with minor relaxation of BHR in “Comprehensive Development Area (4)” zone for Capital Asian Limited at Kai Tak Area 2A Site 2. From a total of 6 VPs that are assessed, the proposed development is only obviously noticeable from 3 viewpoints (i.e. Nga Tsin Wai Road, Shek Ku Lung Road Playground and the close-up viewpoint at the Open Space at LTSBPC). As a site for proposed comprehensive residential/ commercial development with minor relaxation of BHR from +125 to +129.035mPD, the visual impact is considered to be acceptable. From the other viewpoints, the proposed development will be screened mostly by other future developments around the KTDA. The visual impact of the minor relaxation of BHR from +125mPD to +129mDP has been taken into account in the assessment, and the scale and effect of increasing the BHR by 4m is negligible in the wider urban context. In gist, the overall visual impact arising from the proposed development will be from “negligible” to “slightly to moderately adverse”.

4.2. Assuming that full and appropriate implementation of mitigation measures are carried out during operation phase, the visual impacts are perceived to be **acceptable** with mitigation measures.

- End -

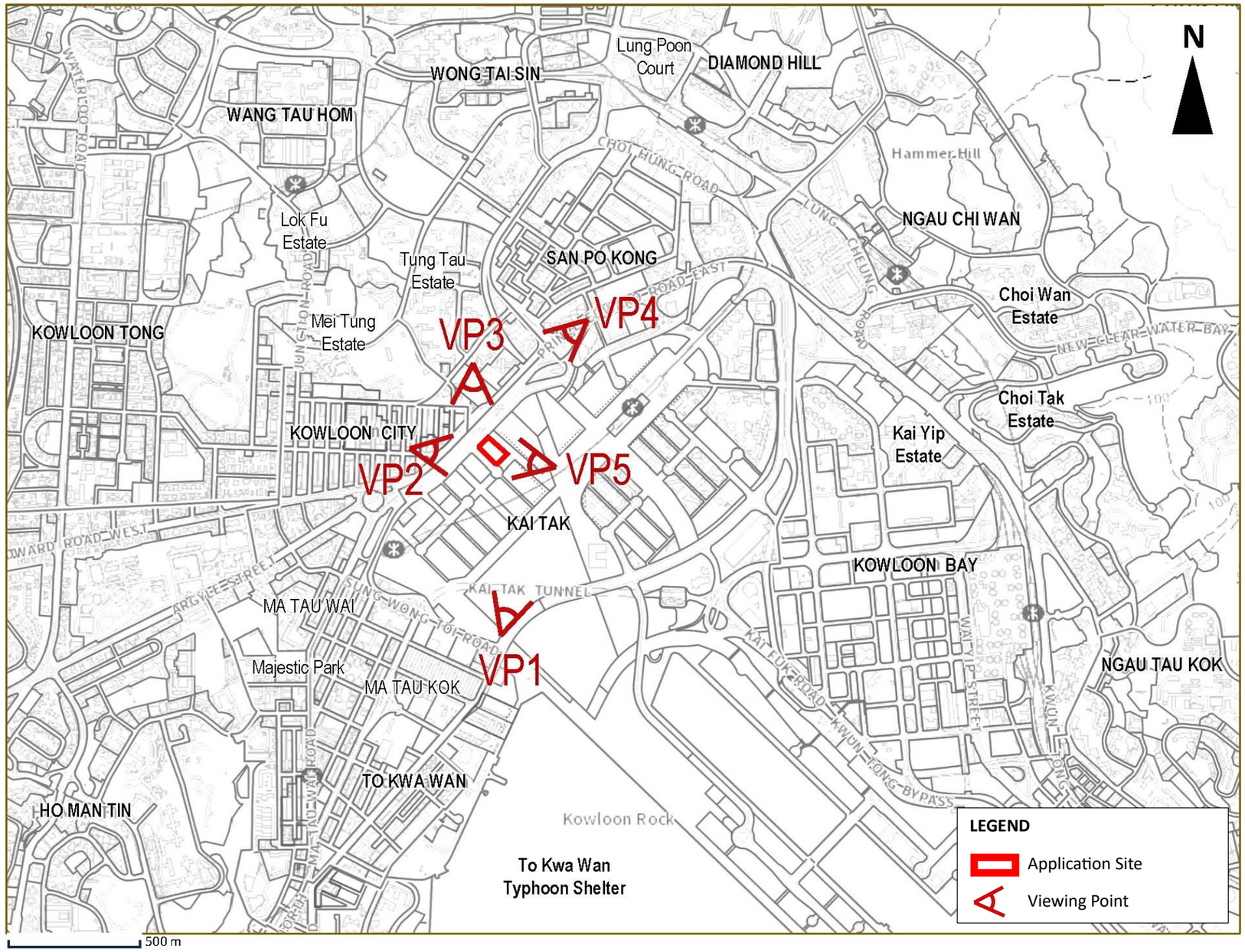
FIGURES



Title:

LAND USES IN VICINITY OF THE APPLICATION SITE

FIGURE 1



VP1: Planned Kai Tak Sports Park (Shing Kai Road) - under Construction

VP2: Nga Tsin Wai Road

VP3: Shek Ku Lung Road Playground

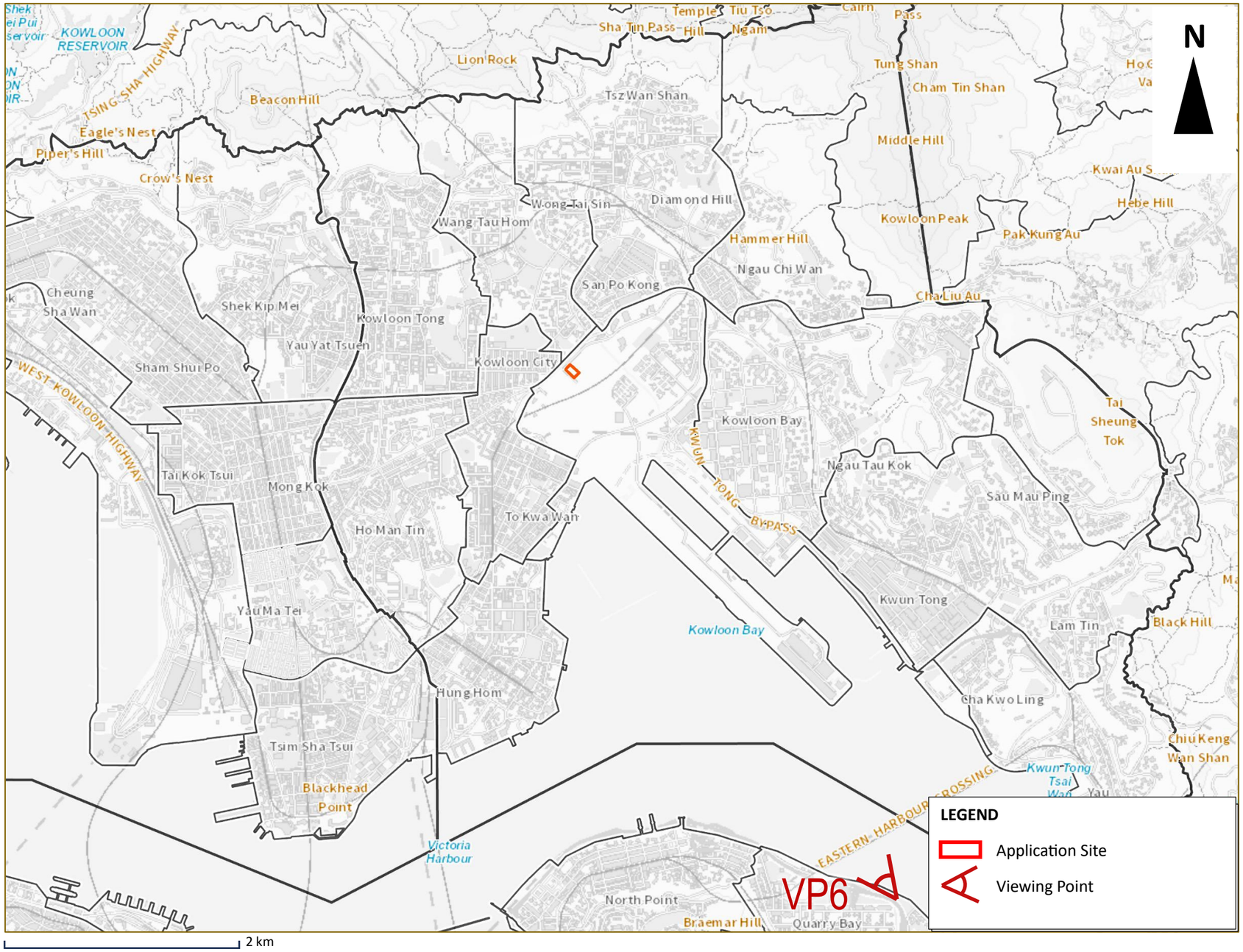
VP4: Prince Edward Road East Footbridge (Near Kai Tak Community Hall)

VP5: Open Space at Lung Tsun Stone Bridge Preservation Corridor (Close-up Viewpoint) - under Construction

Title:

LOCATION OF VPS 1 to 5

FIGURE 2a

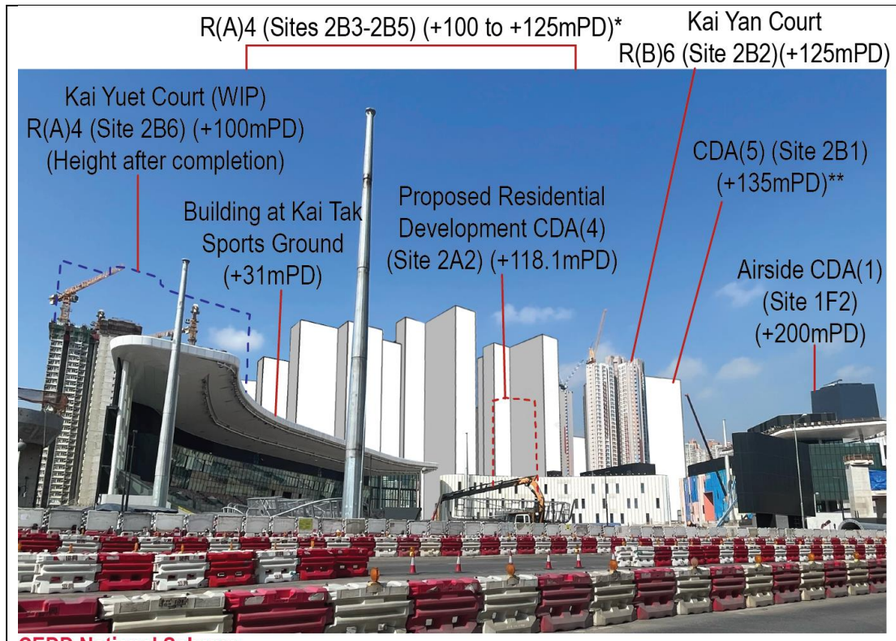


VP6: Quarry Bay Park (Distant Viewpoint)

Title:

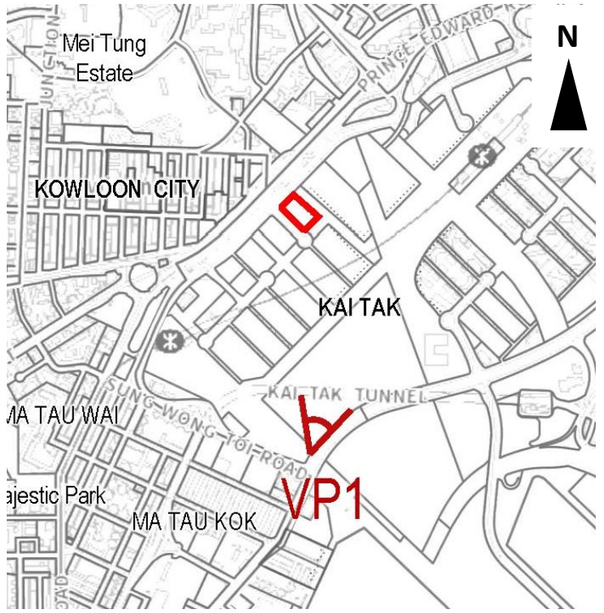
LOCATION OF VP 6

FIGURE 2b

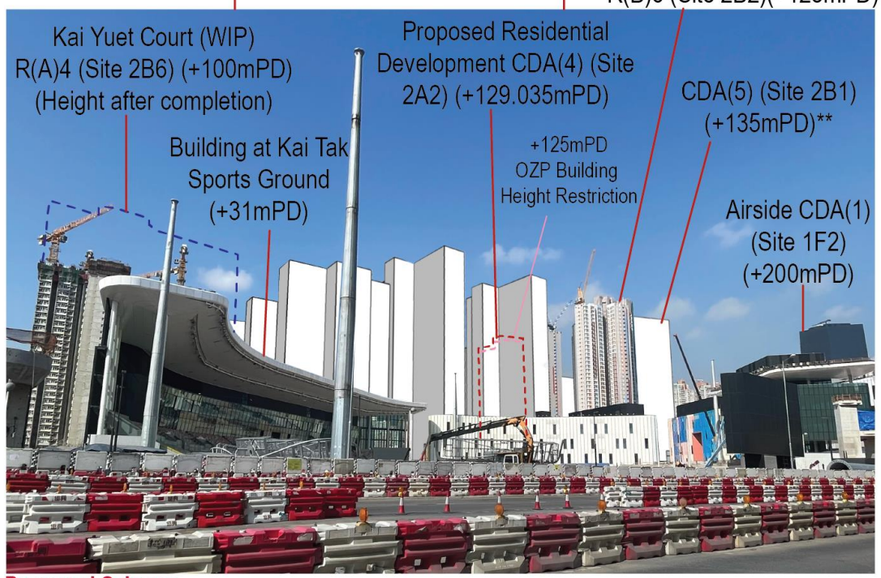


CEDD Notional Scheme

Existing Condition



KEY PLAN



Proposed Scheme

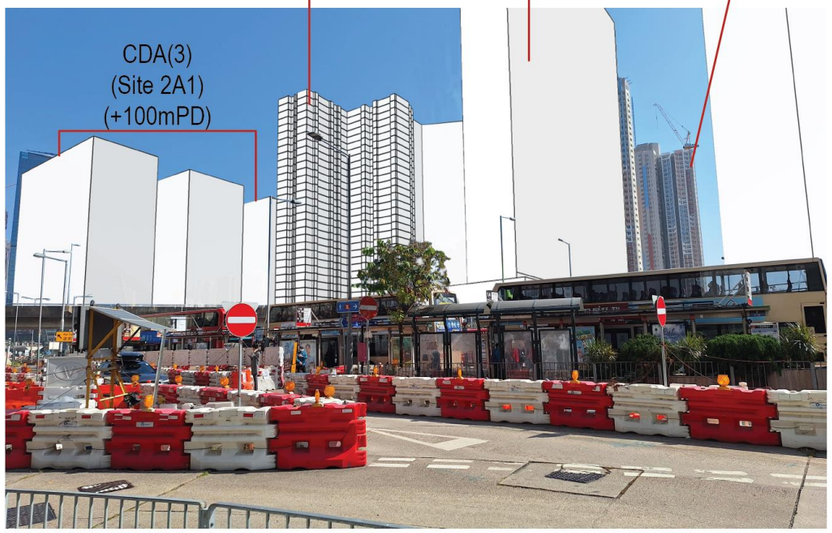
*Approval of planning application no. A/K22/35 has permitted a minor relaxation of building height restriction at Sites 2B3 and 2B4 to+125mPD.

**Under planning application no. A/K22/30.

Title:

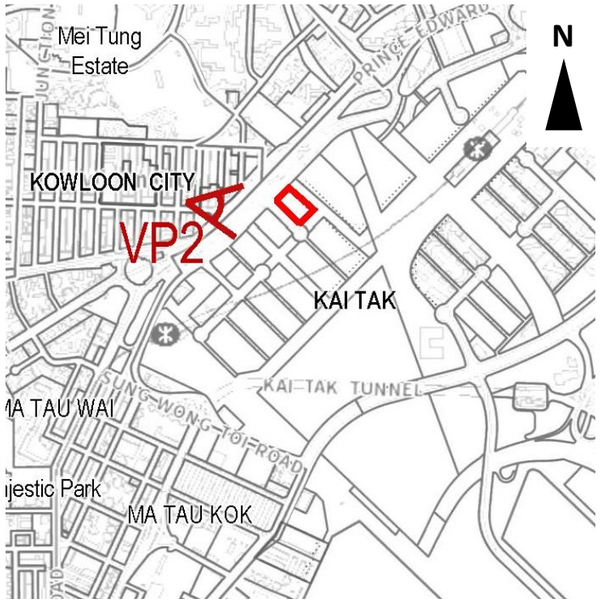
VP1: VIEW FROM PLANNED KAI TAK SPORTS PARK (SHING KAI ROAD)

FIGURE 3

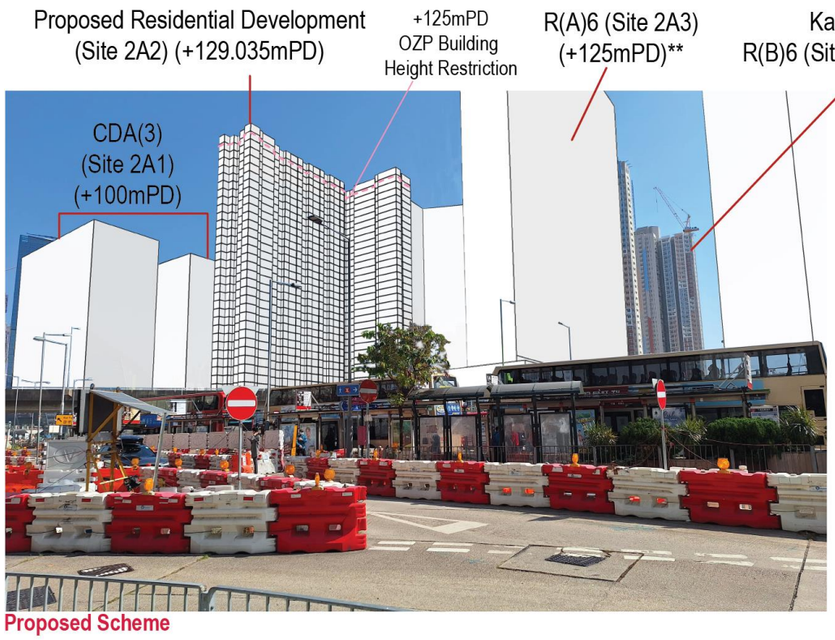


CEDD Notional Scheme

Existing Condition



KEY PLAN



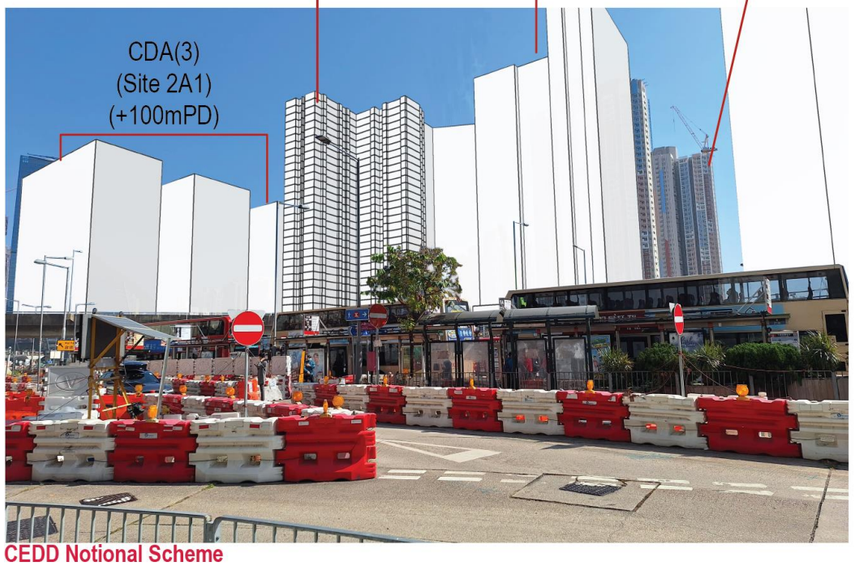
Proposed Scheme

*Approval of planning application no. A/K22/16 has permitted a minor relaxation of building height restriction at Sites 1K1 to 1K3 to +130mPD.
** In case GBP of Site 2A3 submitted on 28.3.2024 is approved, +125mPD in the said GBP is followed.

Title:

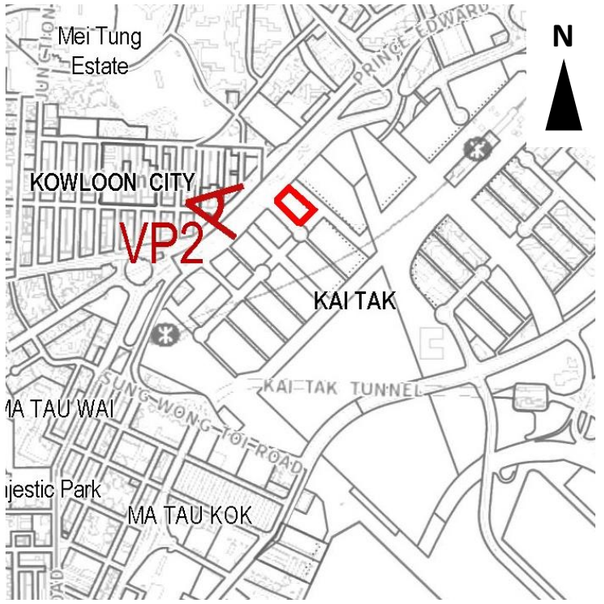
VP2: VIEW FROM NGA TSIN WAI ROAD *(If 2A3 GBP dated 28.3.2024 is approved)*

FIGURE 4a

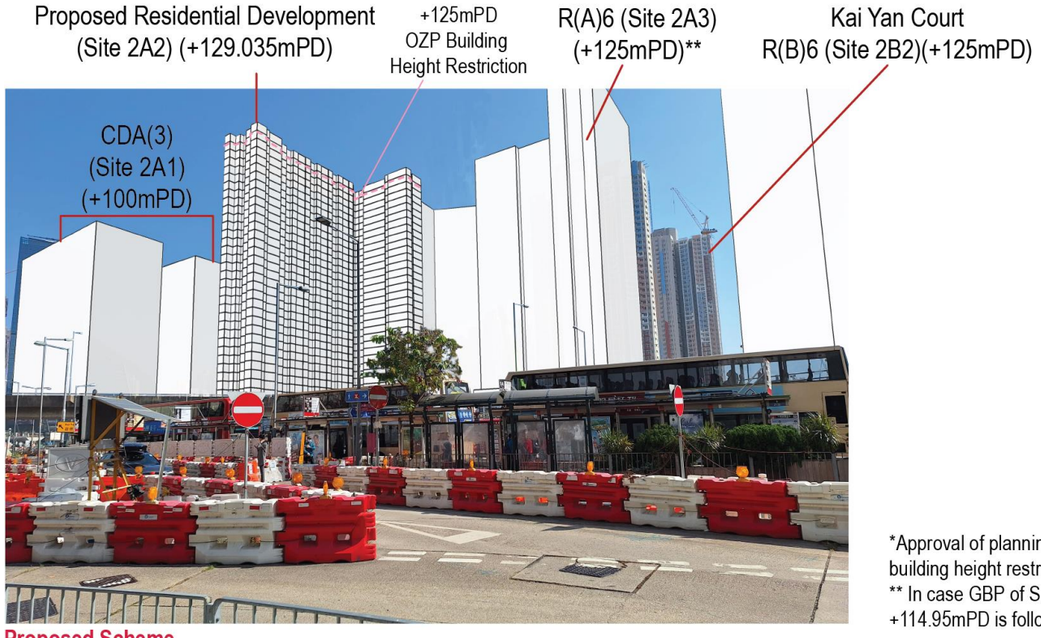


CEDD Notional Scheme

Existing Condition



KEY PLAN



Proposed Scheme

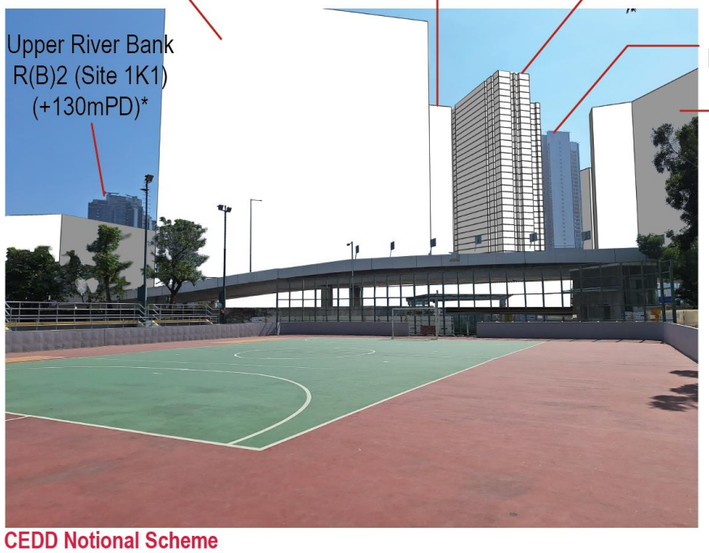
*Approval of planning application no. A/K22/16 has permitted a minor relaxation of building height restriction at Sites 1K1 to 1K3 to +130mPD.
** In case GBP of Site 2A3 submitted on 28.3.2024 is not approved, CEDD scheme of +114.95mPD is followed.

KEY PLAN

Title:

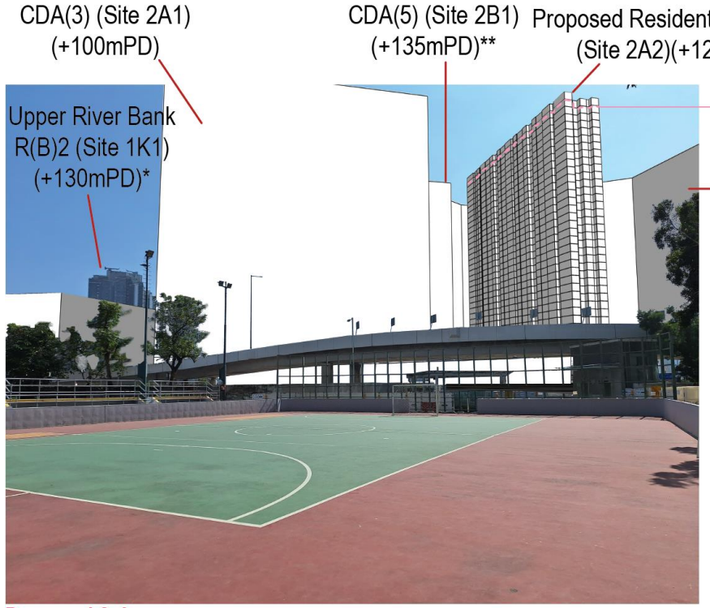
VP2: VIEW FROM NGA TSIN WAI ROAD *(If 2A3 GBP dated 28.3.2024 is not approved)*

FIGURE 4b



CEDD Notional Scheme

Existing Condition

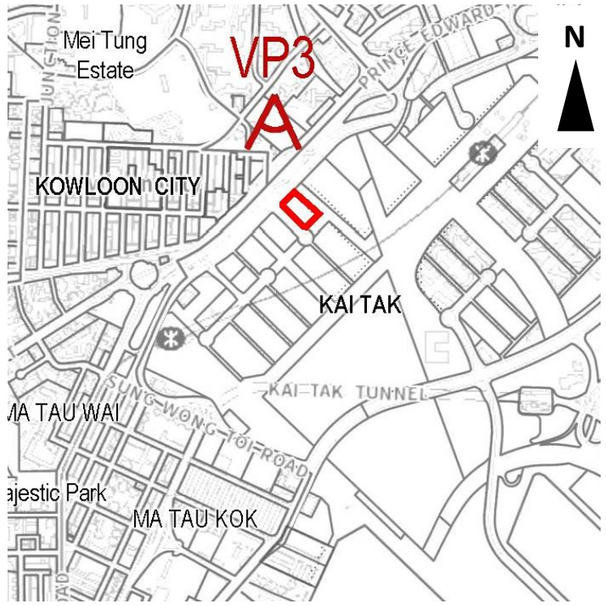


Proposed Scheme

*Approval of planning application no. A/K22/16 has permitted a minor relaxation of building height restriction at Sites 1K1 to 1K3 to +130mPD.

**Under planning application no. A/K22/30.

***** In case GBP of Site 2A3 submitted on 28.3.2024 is approved, +125mPD in the said GBP is followed.



KEY PLAN

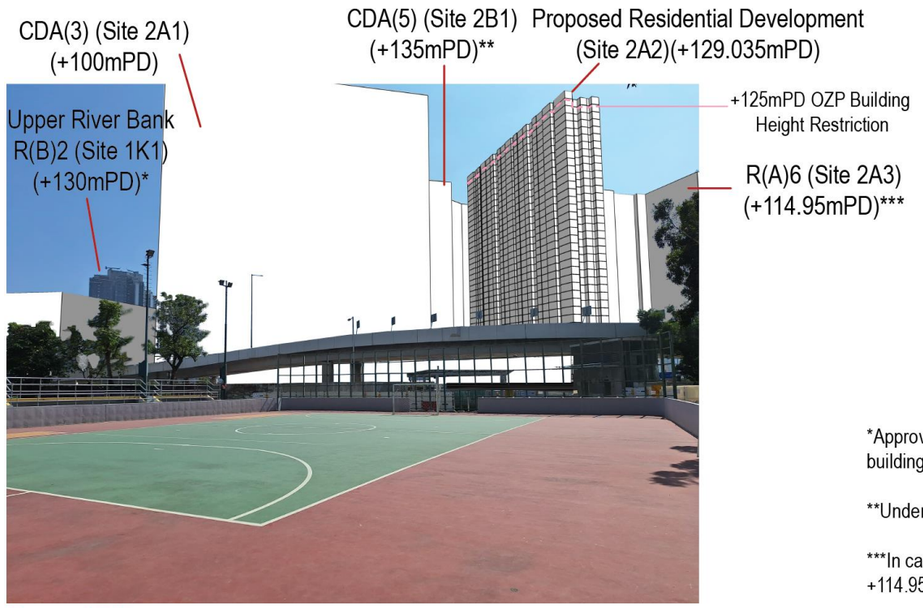
Title:

VP3: VIEW FROM SHEK KU LING ROAD PLAYGROUND *(if 2A3 GBP dated 28.3.2024 is approved)*

FIGURE 5a

CEDD Notional Scheme

Existing Condition

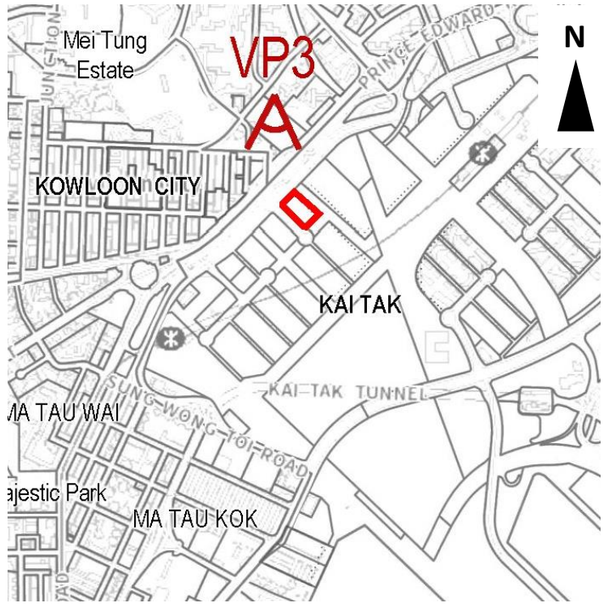


Proposed Scheme

*Approval of planning application no. A/K22/16 has permitted a minor relaxation of building height restriction at Sites 1K1 to 1K3 to +130mPD.

**Under planning application no. A/K22/30.

***In case GBP of Site 2A3 submitted on 28.3.2024 is not approved, CEDD scheme of +114.95mPD is followed.

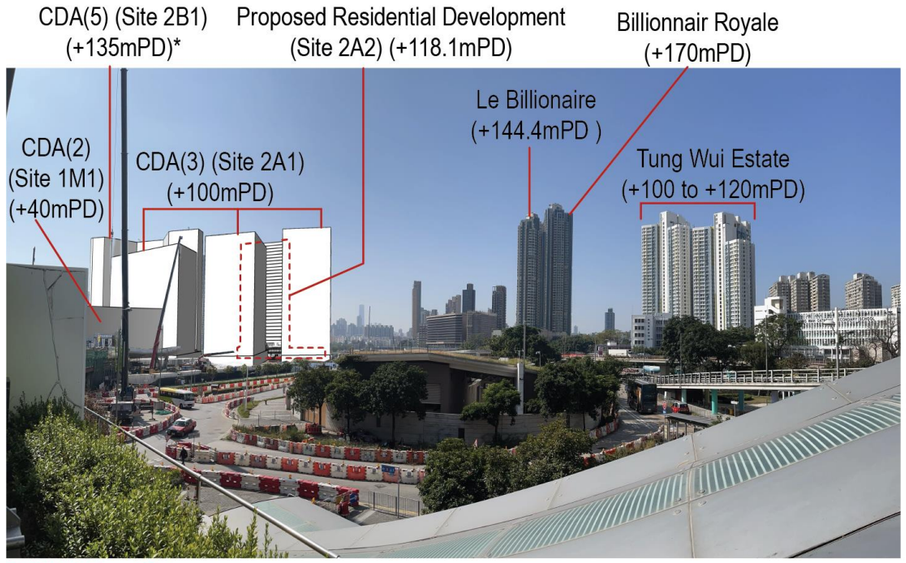


KEY PLAN

Title:

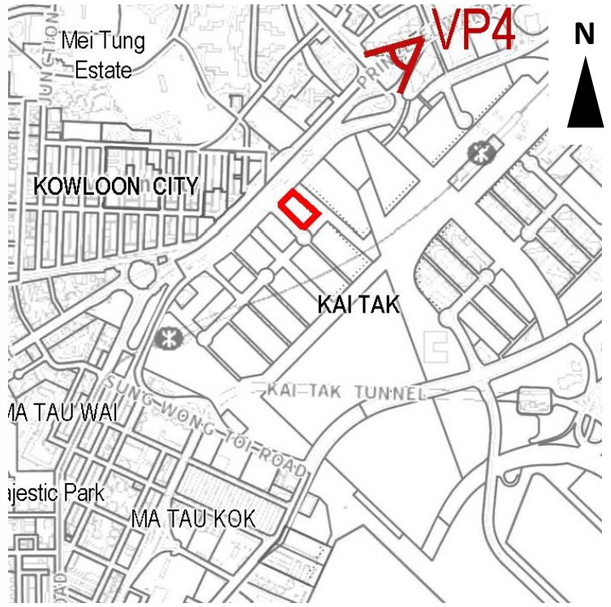
VP3: VIEW FROM SHEK KU LING ROAD PLAYGROUND *(if 2A3 GBP dated 28.3.2024 is not approved)*

FIGURE 5b

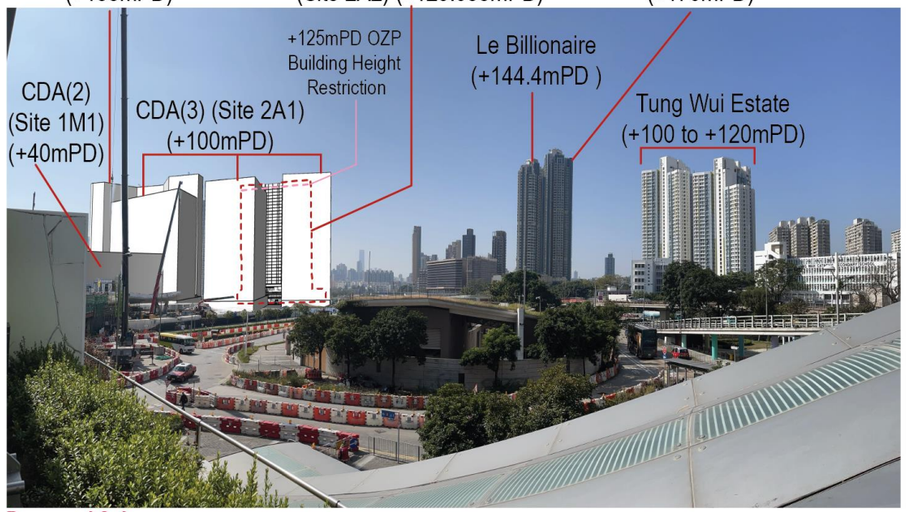


CEDD Notional Scheme

Existing Condition



KEY PLAN



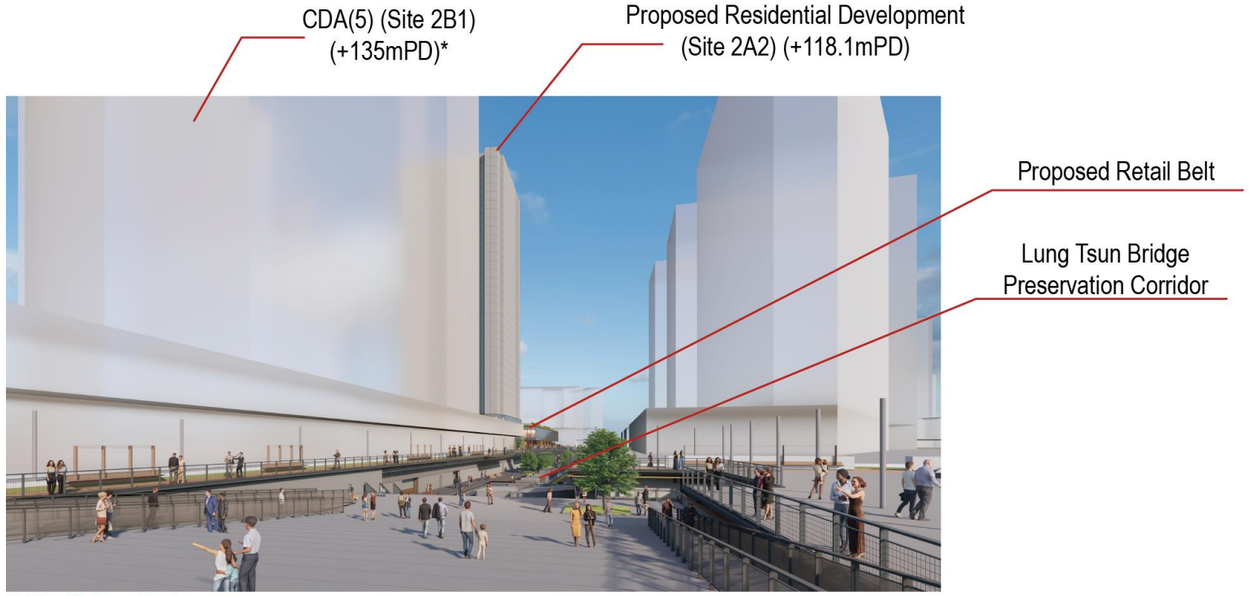
Proposed Scheme

*Under planning application no. A/K22/30.

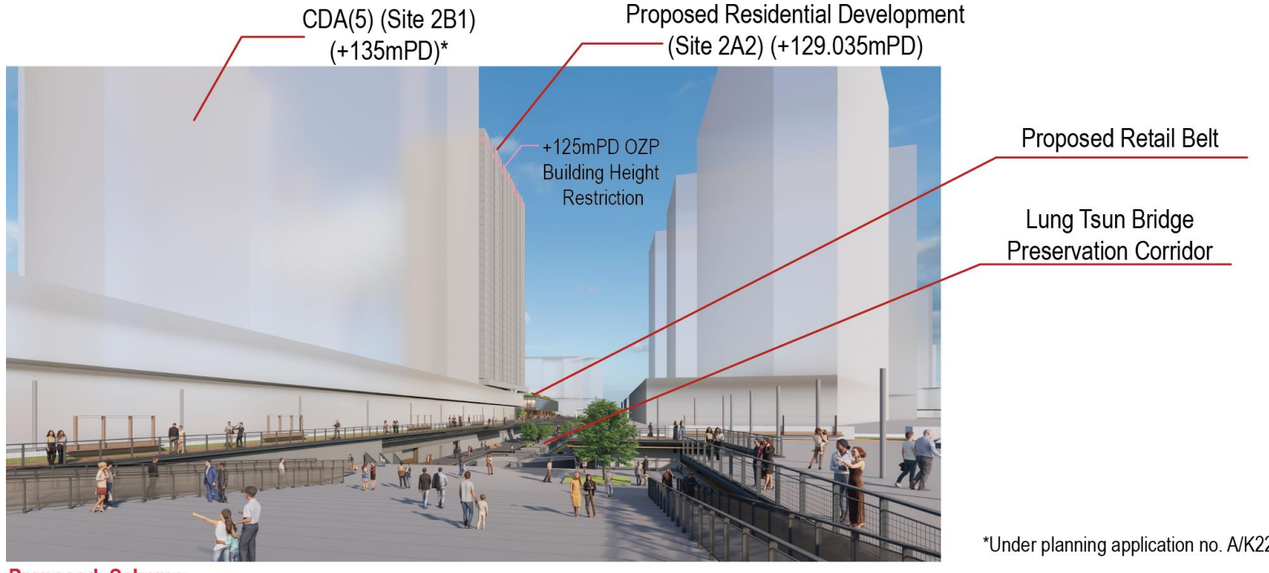
Title:

VP4: VIEW FROM PRINCE EDWARD ROAD EAST FOOTBRIDGE

FIGURE 6

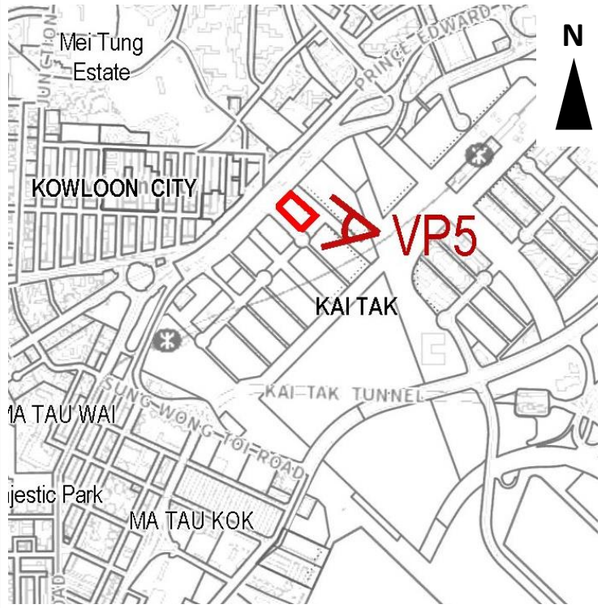


CEDD Notional Scheme



Proposed Scheme

*Under planning application no. A/K22/30.

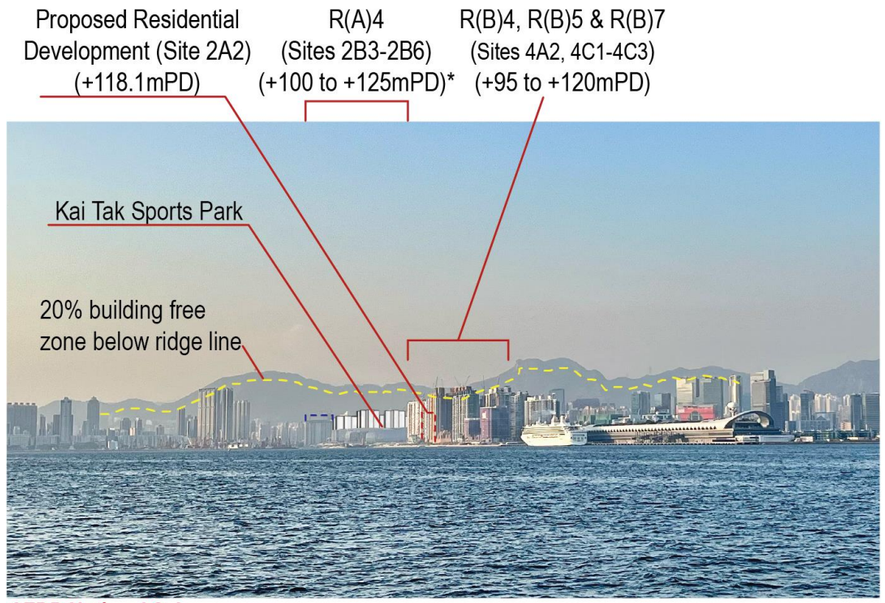


KEY PLAN

Title:

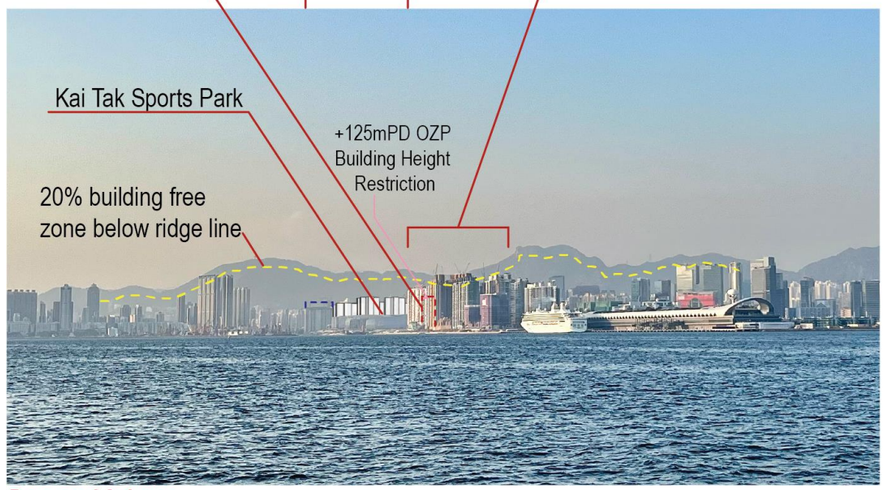
VP5: VIEW FROM OPEN SPACE AT LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (CLOSE-UP VIEWPOINT)

FIGURE 7



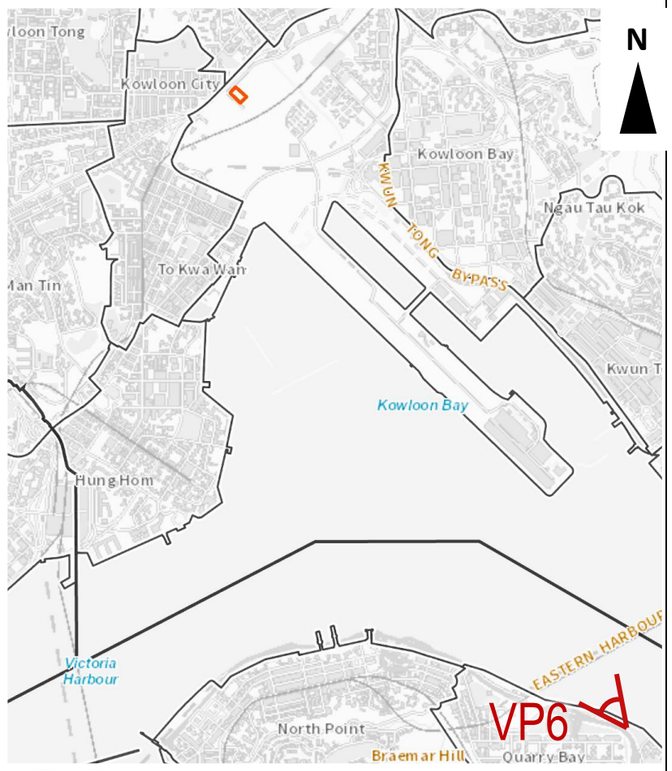
CEDD Notional Scheme

Existing Condition



Proposed Scheme

*Approval of planning application no. A/K22/35 has permitted a minor relaxation of building height restriction at Sites 2B3 and 2B4 to +125mPD. The blue dotted line is the height of Kai Yuet Court (WIP) R(A)4 (Site 2B6) (+100mPD) after completion.

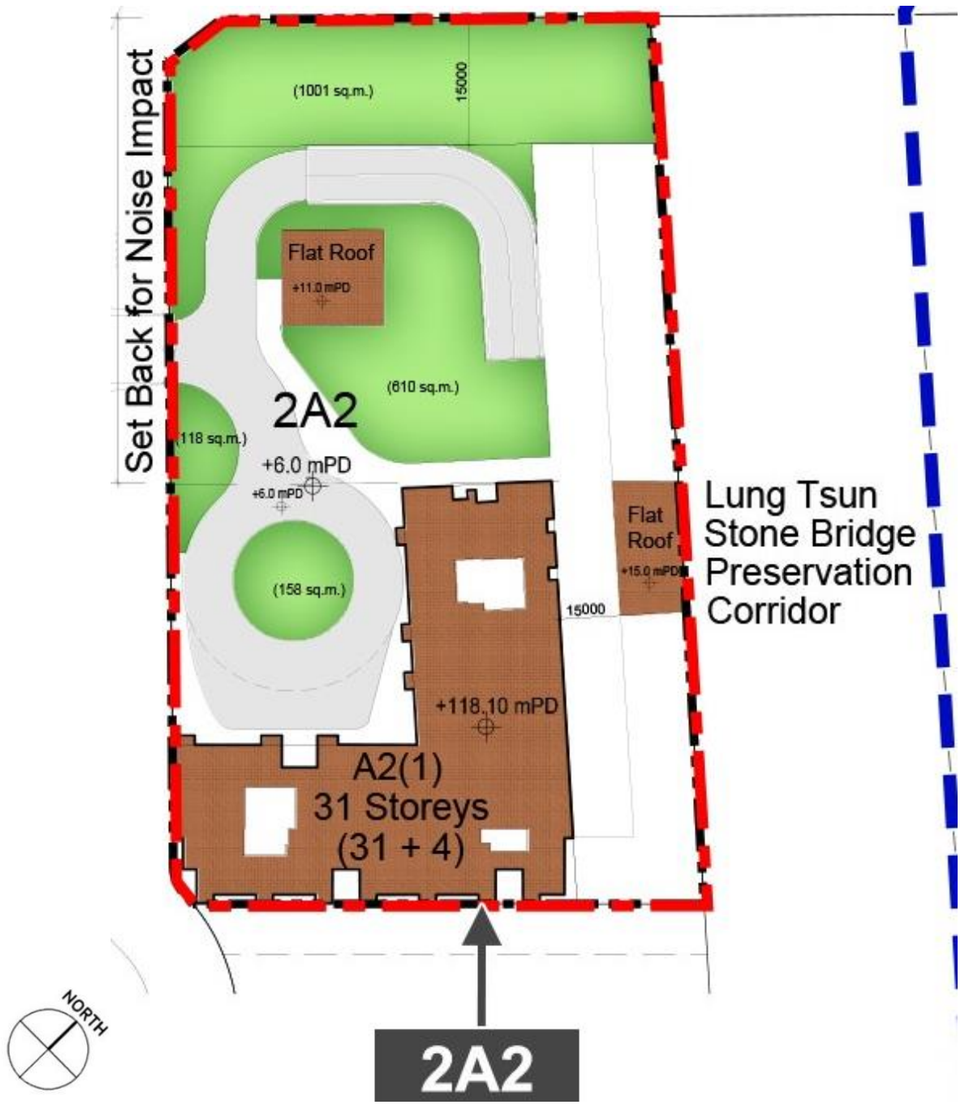


KEY PLAN

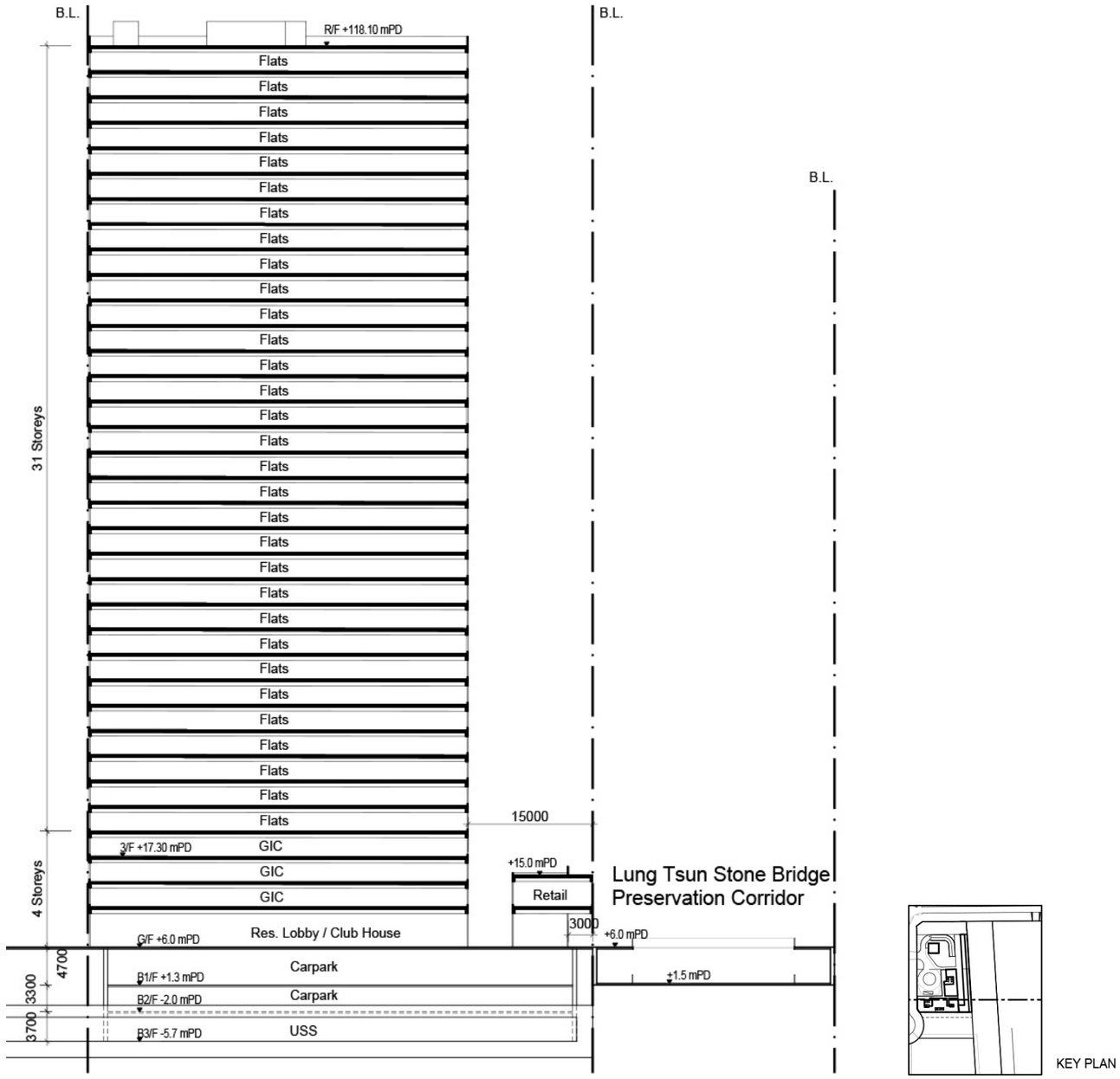
Title:

VP6: VIEW FROM QUARRY BAY PARK (DISTANT VIEWPOINT)

FIGURE 8



Title:	
NOTIONAL SCHEME (EXTRACTED FROM FIGURE 5.6B OF ATTACHMENT V OF MPC PAPER NO. 9/21)	**FIGURE 9a**



Title:	
NOTIONAL SCHEME (EXTRACTED FROM FIGURE 5.8C OF ATTACHMENT V OF MPC PAPER NO. 9/21)	**FIGURE 9b**

Appendix 11: Landscape Master Plan

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

LANDSCAPE MASTER PLAN SUBMISSION

JUNE 2024

Landscape Government Submission Consultant: Axxa Group Limited

Signed by:

Mr. Jason TEO, Registered Landscape Architect (R101)

axxa group

Table of Contents

APPENDICES

1.0 INTRODUCTION

1.1 This Landscape Master Plan is submitted in support of S16 Planning Application for the Proposed Comprehensive Development including Flat, Shop & Services and Eating Place, with Minor Relaxation of Building Height Restriction in "Comprehensive Development Area (4)" Zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission).

1.2 The Application Site, with an area of about 6,270m^2, is located in the Kai Tak City Centre area of Kai Tak Development (KTD) abutting the Lung Tsun Stone Bridge Preservation Corridor (LTSBPC) to its northeast, is zoned "CDA(4)" zone on the Approved Kai Tak Outline Zoning Plan No. S/K22/8. It is bounded by Muk Lai Street to its southwest and Olympic Avenue to its northwest. The Government has plans to build Light Public Housing at this location on a temporary basis. The "CDA(5)" site to the southeast is intended for residential developments, being a public housing development to be implemented by the Hong Kong Housing Society. A large open space to the further northeast of the Site, i.t. Station Square will circumscribe Kai Tak Station and associated commercial facilities. To the southwest of the Site across Muk Lai Street is a site zoned "Residential (Group A)6". Kai Tak Sports Park is located to the further south in the area. Refer to **Figure 1**.

Figure 1 Location Plan

2.0 ASSESSMENT OF POTENTIAL IMPACTS ON EXISTING TREES

2.1 There are **no** existing trees identified within the Site.

2.2 There are **no** endangered tree species identified in the tree survey under the listing in 'Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)'. Additionally, there are no "Champion" trees observed within the site or its periphery during the undertaking of this survey.

3.0 PROJECT OVERVIEW

3.1 Proposed Development

The Proposed Development consists of a 32-storey residential tower with clubhouse, basement carpark and associated facilities with a maximum building height of not more than +129.035mPD at main roof. Retail and other supporting facilities are located in a 2-storey Retail Belt with cantilevered fronting to the LTSBPC and is setback to provide an unobstructed public pedestrian passageway. The underground level of the Proposed Development also serves as part of the Underground Shopping Street (USS) system for retail use and for a 24-hour barrier-free unobstructed public pedestrian passage. Vehicular access to the Proposed Development is via Muk Lai Street.

3.2 Connectivity between the Proposed Development and the Surrounding

The Proposed Development serves as a connectivity node to connect LTSBPC, Underground Shopping Street (USS), "CDA(5)" and "R(A)6". It provides easy and convenient street level and underground access via pedestrian openings, pedestrian connections, 24-hour barrier-free public access and vertical connections at different levels. Refer to **Appendix C**.

- **Connections with LTSBPC**
  Pedestrian opening to be provided (i) at the north-eastern site boundary at the G/F level for connection with G/F of the LTSBPC at +6.0mPD; (ii) at the north-eastern site boundary at basement level for connection with LG1/F of the LTSBPC at +1.5mPD; and (iii) within USS for connection with LG1/F of the LTSBPC at +1.5mPD.

- **Connections with USS**
  Public pedestrian passage to be provided at the underground level of the Site at -5.7mPD. 24-hour barrier-free vertical pedestrian facilities to be provided (i) at the north-eastern end of the USS section to link up the USS at -5.7mPD with LG1/F of the LTSBPC at +1.5mPD via the 24-hour pedestrian walkway within the Site; (ii) at the south-western end of the USS section to link up USS at -5.7mPD with G/F of the Site at +6.0mPD via the 24-hour pedestrian walkway within the Site; and (iii) a 24-hour barrier-free underground pedestrian link at the same FFL of the USS at -5.7mPD to link up the USS with a lot boundary of the "CDA(5)" site to the southeast to facilitate residents of the "CDA(5)" site to access the USS.

- **Pedestrian Connections both internally and with its surrounding areas**
  Public pedestrian passage to be provided at the underground level of the Site at -5.7mPD. 24-hour barrier free vertical pedestrian facilities to be provided (i) at the G/F level (+6.0mPD), connections with G/F of the LTSBPC via the pedestrian opening, the POS and the pedestrian passageway on G/F of the retail belt; (ii) at the basement level of +1.5mPD, connection with LG1/F of the LTSBPC via the pedestrian openings (including one from the USS); and (iii) at the basement level of -5.7mPD, connections with the next USS section to the southwest abutting the "R(A)" site and the "CDA(5)" site via the underground pedestrian link.

  For vertical pedestrian connection of different levels (i) lift and 2-way escalators to connect the USS at -5.7mPD with LG1/F of the LTSBPC at +1.5mPD via the 24-hour pedestrian walkway; and (ii) lift and 2-way escalators to connect the USS at -5.7mPD with G/F of the Site at +6.0mPD at the south-western end of the USS section to the adjoining POS and public road at ground level via the 24-hour pedestrian walkway.

4.0 LANDSCAPE OBJECTIVES

4.1 The primary landscape objectives are:

- To create a comprehensive landscape design to integrate the development with the surrounding environment, especially the LTSBPC, as well as to soften the building mass;
- To improve the connectivity of the site with the adjacent development, and to provide convenient pedestrian connections both internally and with its surrounding areas/ developments;
- To maximize at-grade amenity treatment and explore greening opportunity throughout the development;
- To enhance landscape quality and to introduce ornamental species to feature areas;
- To achieve a minimum site greenery coverage of 30% of the site area;
- To provide sufficient private open space for future residents of the development, and at-grade public spaces.

5.0 LANDSCAPE PROPOSAL

This section provides a broad description of the design, function and amenity provisions for the landscape components. The landscape design concept of the Proposed Development is to integrate the development with the surrounding environment, especially the LTSBPC. Refer to **Appendices A** and **B** for details.

5.1 General Landscape Area

The landscape framework includes the following:

Ground Floor

- **Landscape at Main Access** - There are separate vehicular and pedestrian access points to the Proposed Development via Muk Lai Street. The arrival plaza will be defined by flowering feature trees and ornamental flowering shrubs to create a signature arrival experience to the Proposed Development. Distinctive paving materials and pattern will be adopted to create a safe and pleasant pedestrian passageway at the G/F of the retail belt and adjacent to the Public Open Space (POS).

- **Landscape at Townscape Setback** – The landscape at this 15m-wide townscape setback aims to create a tranquil and relaxing atmosphere. Benches and a combination of soft and hard landscape will be provided for leisure and relaxation.

- **Buffer Planting** – Buffer planting strip with trees/ tall shrubs along the site boundary will provide a green interface with the surrounding land uses.

- **Public Open Space (Outside Application Site)** – A strip of POS, with an area of about 1,100m^2, abutting the south-eastern boundary of the Site at G/F adjoining the LTSBPC is designed with intriguing configuration and arrangement of hard and soft landscape. Seating benches and open lawn will be provided for public enjoyment. Submission of Public Open Space (Outside Application Site) will be submitted to relevant authority for vetting and approval under relevant clauses separately.

First Floor and Second Floor

- **Residential Landscape Area** – The residential landscape consists of hard and soft landscape areas for multi-function usage suitable for function and recreation facilities. Landscape elements such as seating deck, children play area, outdoor lounge area, viewing terrace will be provided for practical use of future residents. The residential landscape is infused with a

varied planting palette to yield changing variety and seasonal interest. It maximizes the aesthetic beauty, reduces heat and integrates as an integral part of the overall landscape design.

- **Retail Belt Landscape Area** – The amenity planting strip along the rear of the retail belt serves as a buffer to segregate the residential area and the bustling pedestrian walkways of LTSBPC. Despite the planning brief requirement to provide 3m parapet wall setback (**Appendix F**), a terraced landscape is proposed to create a cascade lookout to LTSBPC to allow better integration and visual connection. Generous lawn area is provided at the northeast corner of the site not only for leisure and relaxation, but providing a wider view to LTSBPC and the surroundings. Outdoor seatings and benches are provided to serve as gathering spots or simply for rest and comfort. Besides, a variety of shrub species are proposed on the planter of retail roof to enhance visual amenity, to soften the architectural building, and to integrate the development with the surrounding environment, especially the LTSBPC.

6.0 HARD LANDSCAPE (PAVING MATERIALS/ FINISHES)

This section provides a description of the hardscape design together with general information on hardscape related aspects of the design.

6.1 Hard Landscape Materials

6.1.1 Hardscape materials and design are chosen for durability, sustainability, low maintenance, and reasonable cost.

6.2 Landscape Lighting

6.2.1 The landscape lighting will be designed in accordance with the intended use of an area, such as seating areas or play areas and for the safety and security of pedestrian circulation.

6.3 Design Codes, Technical Standards & Safety Provision

6.3.1 Hard landscape design works shall be in compliance with the Government ordinances, codes and regulations, and relevant international standards.

7.0 SOFT LANDSCAPE

This section provides a description of the soft landscape design and softscape elements together with general information on softscape related aspects of design, including irrigation and maintenance.

7.1 Plant Material Tables

7.1.1 The following list indicates the proposed combination of native and exotic tree species along with suitable ornamental evergreen and flowering species to strengthen the greening/ conservation and replenish woodland habitats. Carefully selected species will ensure maximum greening effect with minimum maintenance requirements. Flowering trees of various sizes will be used in combination with ornamental shrub planting to create a year-round display.

7.1.2 The summary schedule of key plant material listed below is subject to further refinement and plant availability at detailed design stage. Refer to **Table 3A** and **3B** below:

Table 3A: Proposed Species of New Trees

Proposed Species	Chinese Name	Quantity/ Size
Bischofia javanica *	秋楓	Total: 25 nos. Size: Standard to Heavy Standard Size
Cinnamomum burmanii *	陰香	
Cinnamomum camphora *	樟	
Dracontomelon duperreanum	人面子	
Ilex rotunda Thunb. var. macrocarpa *	小果鐵冬青	
Liquidambar formosana *	楓香	
Lagerstroemia speciosa	大花紫薇	
Tabebuia chrysantha	黃花風鈴木	
Terminalia mantaly	細葉欖仁	
Viburnum odoratissimum *	珊瑚樹	

Remarks: * Native

Table 3B: Proposed Shrubs and Groundcover Species

Proposed Species	Chinese Name	Height x Spread mm)	Spacing (mm)
Shrub Species			
Aglaia odorata	米仔蘭	600 x 500	400
Aspidistra lurida *	一葉蘭	500 x 400	300
Duranta repens	金連翹	300 x 300	250
Ixora coccinea	黃花龍船花	400 x 300	200
Melastoma malabathricum *	野牡丹	500 x 400	300
Murraya paniculata	九里香	800 x 600	500
Psychotria asiatica *	九節	500 x 400	300
Schefflera heptaphylla *	鵝掌柴	600 x 500	400
Ground Cover Species			
Cuphea hyssopifolia	細葉雪茄花	300 x 300	200
Liriope spicata *	山麥冬	300 x 300	250
Nephrolepis auriculata *	腎蕨	300 x 300	250
Tradescantia spathacea 'Dwarf'	矮種蚌花	200 x 250	200

Remarks: * Native

7.2 Open Space Provision (Appendix D)

Private Open Space
As stipulated in Chapter 4 of the Hong Kong Planning Standards and Guidelines, the minimum standard of 1m2 per person shall be provided. With the design population of 2,232, a total open space of not less than 2,232m2 will be provided for private communal use.

Public Open Space (Outside Application Site)
A public open space with an area of approx. 1,100m^2 will be provided outside Application Site. POS area is with barrier-free access and is easily accessible by the public. POS in Private Development Design and Management Guidelines (POSPD) are considered in the preparation of POS design. Submission of Public Open Space (Outside Application Site) will be submitted to relevant authority for vetting and approval under relevant clauses separately.

7.3 Greenery Provision (Appendix E)

As required by the Planning Brief, a minimum site coverage of greenery of 30% of the site area of the "CDA(4)" zone, i.e. 1,881m^2, including a minimum greening at the pedestrian zone (i.e. the 15m vertical zone from the ground level) of 20% of the site area, i.e. 1,254m^2, and a minimum roof greening of 20% of the total roof area, i.e. 785m^2 out of total roof area of 3,925m^2. The Public Open Space (POS) outside Application Site shall have a minimum site coverage of greenery of 30%, i.e. 330m^2.

7.4 Soil Depth and Drainage Provision for the Planted Area

7.4.1 The need for adequate soil depths to ensure proper plant growth is taken into account for all planting areas. The appropriate soil depths (approximate and excluding drainage layers) are:

- Trees: 1200mm
- Shrub: 600mm
- Lawn/ Groundcover: 300mm

7.5 Irrigation and Proposed Source of Water Supply

7.5.1 Water points (not more than 40m apart c/c) are located throughout the Application Site for irrigation.

Appendix A

Landscape Master Plan

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

+6.00mPD

OLYMPIC AVENUE

2.5m H Fence Wall

15m

+18.00mPD

+16.50mPD

+15.00mPD

+16.50mPD

+16.50mPD

+141.00mPD

+141.00mPD

+129.035mPD

+16.50mPD

+21.50mPD

+141.00mPD

+6.50mPD

+16.50mPD

+6.50mPD

+21.50mPD

Entrance to Residential Units

+11.50mPD

+6.00mPD

+6.00mPD

PUBLIC OPEN SPACE
(For reference only)

3m

+6.30mPD

+6.30mPD

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

MUK LAI STREET

LEGEND:

- APPLICATION SITE BOUNDARY
- PUBLIC OPEN SPACE BOUNDARY (not included in Application Site)
- PROPOSED NEW TREES (25 nos. within Application Site)
- PROPOSED SHRUB PLANTING
- PROPOSED LAWN & GROUNDCOVER PLANTING
- PROPOSED PAVING
- PROPOSED EVA / DRIVEWAY
- PROPOSED SEATING/BENCHES
- PROPOSED FENCE WALL
- +6.5mPD PROPOSED LEVELS
- VEHICULAR ACCESS
- PEDESTRIAN ACCESS

LANDSCAPE COMPONENTS:

1. Arrival Plaza
2. Ornamental Garden
3. Seating Garden
4. Outdoor Lounge Area
5. Terraced Landscape
6. Viewing Terrace
7. Public Pedestrian Passageway

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Landscape Master Plan - Composite Plan

Dwg. No. : 2023208-LMP-01b

Date : JUN 2024
(A3-size)

axxa group

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LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

Pedestrian Opening to LTSPBC
at +6.00mPD

+6.00mPD

+6.00mPD

+6.00mPD

OLYMPIC AVENUE

COMMERCIAL
+6.15mPD

2.5m H
Fence Wall

15m

CLUBHOUSE
+6.50mPD

E&M

E&M

PUBLIC OPEN SPACE
(For reference only)

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

3
+6.50mPD

1
+6.50mPD

To
Basement
Carpark

Building Line
Above

Entrance to
Residential Units

COMMERCIAL
+6.50mPD

4
3m

+6.30mPD

+6.30mPD

MUK LAI STREET

LEGEND:

- APPLICATION SITE BOUNDARY
- PUBLIC OPEN SPACE BOUNDARY (not included in Application Site)
- PROPOSED NEW TREES (15 nos. within Application Site)
- PROPOSED SHRUB PLANTING
- PROPOSED LAWN & GROUNDCOVER PLANTING
- PROPOSED PAVING
- PROPOSED EVA / DRIVEWAY
- PROPOSED SEATING/BENCHES
- PROPOSED FENCE WALL
- +6.5mPD PROPOSED LEVELS
- VEHICULAR ACCESS
- PEDESTRIAN ACCESS

LANDSCAPE COMPONENTS:

1. Arrival Plaza
2. Ornamental Garden
3. Seating Garden
4. Public Pedestrian Passageway

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Landscape Master Plan - G/F (+6.50mPD)

Dwg. No. : 2023208-LMP-02b

Date : JUN 2024
(A3-size)

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LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

OLYMPIC AVENUE

E&M

+15.00mPD

+16.50mPD

CLUBHOUSE

LIFT
LOBBY

LIFT
LOBBY

LIFT
LOBBY

Building Line
Above

+16.50mPD

+16.50mPD

+16.50mPD

+11.50mPD

+11.50mPD

PUBLIC OPEN SPACE
(For reference only)

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

MUK LAI STREET

LEGEND:

- APPLICATION SITE BOUNDARY
- PUBLIC OPEN SPACE BOUNDARY (not included in Application Site)
- PROPOSED NEW TREES (10 nos. within Application Site)
- PROPOSED SHRUB PLANTING
- PROPOSED PAVING
- PROPOSED CHILDREN PLAY AREA
- PROPOSED SEATING/BENCHES
- +6.5mPD PROPOSED LEVELS
- PEDESTRIAN ACCESS

LANDSCAPE COMPONENTS:

1. Covered Landscape
2. Children Play Area
3. Outdoor Lounge Area
4. Terraced Landscape
5. Viewing Terrace
6. Seating Area

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Landscape Master Plan - 1/F (+11.50mPD) & 2/F (+15.00mPD & +16.50mPD)

Dwg. No. : 2023208-LMP-03b

Date : JUN 2024
(A3-size)

axxa group

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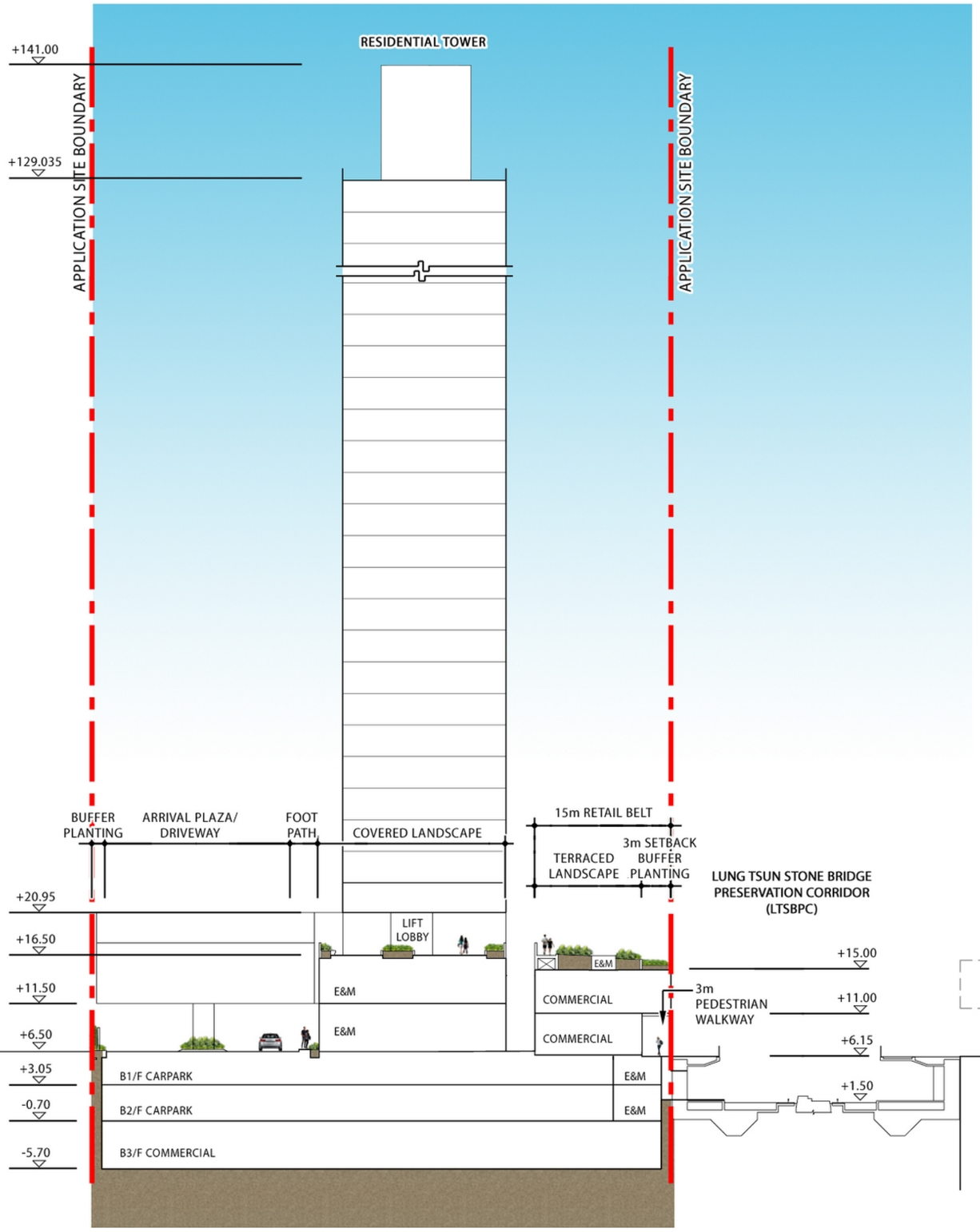
Appendix B

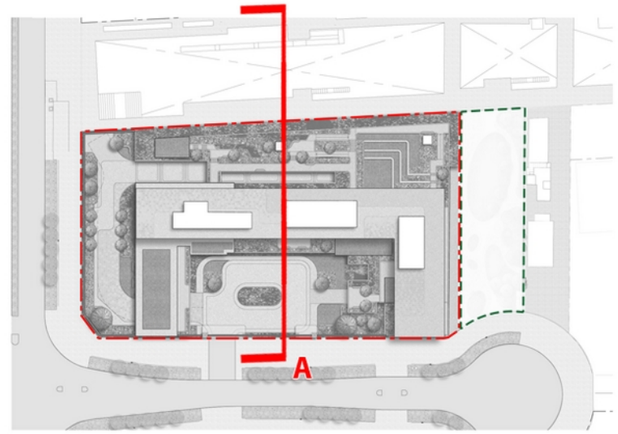
Landscape Sections



LANDSCAPE SECTION A

0m 2m 5m 10m 20m

SCALE : 1:500 (A3)



KEYPLAN

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Landscape Section

Dwg. No. : 2023208-SEC-01b

Date : JUN 2024
(A3-size)

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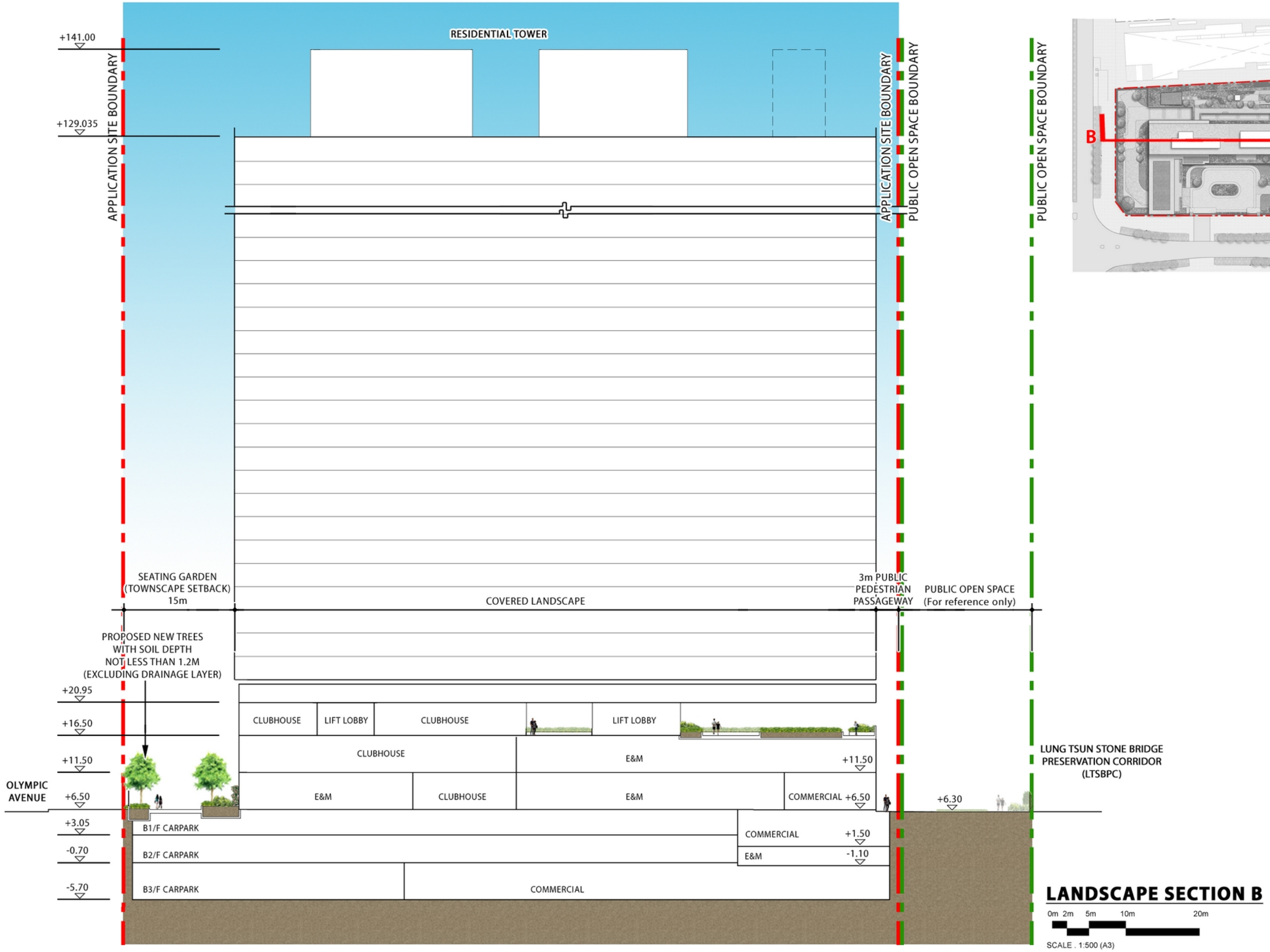

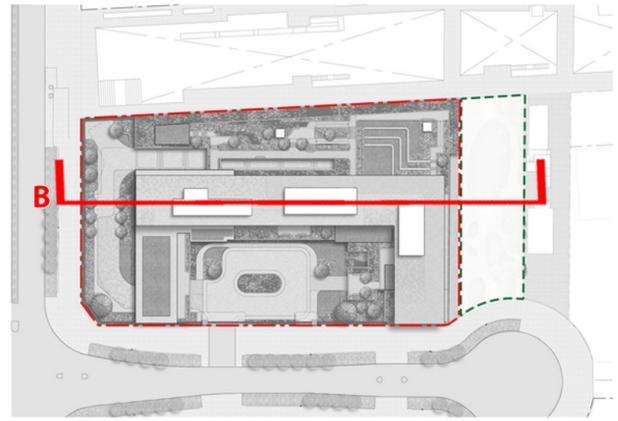

KEYPLAN

LANDSCAPE SECTION B

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Landscape Section

Dwg. No. : 2023208-SEC-02b

Date : JUN 2024
(A3-size)

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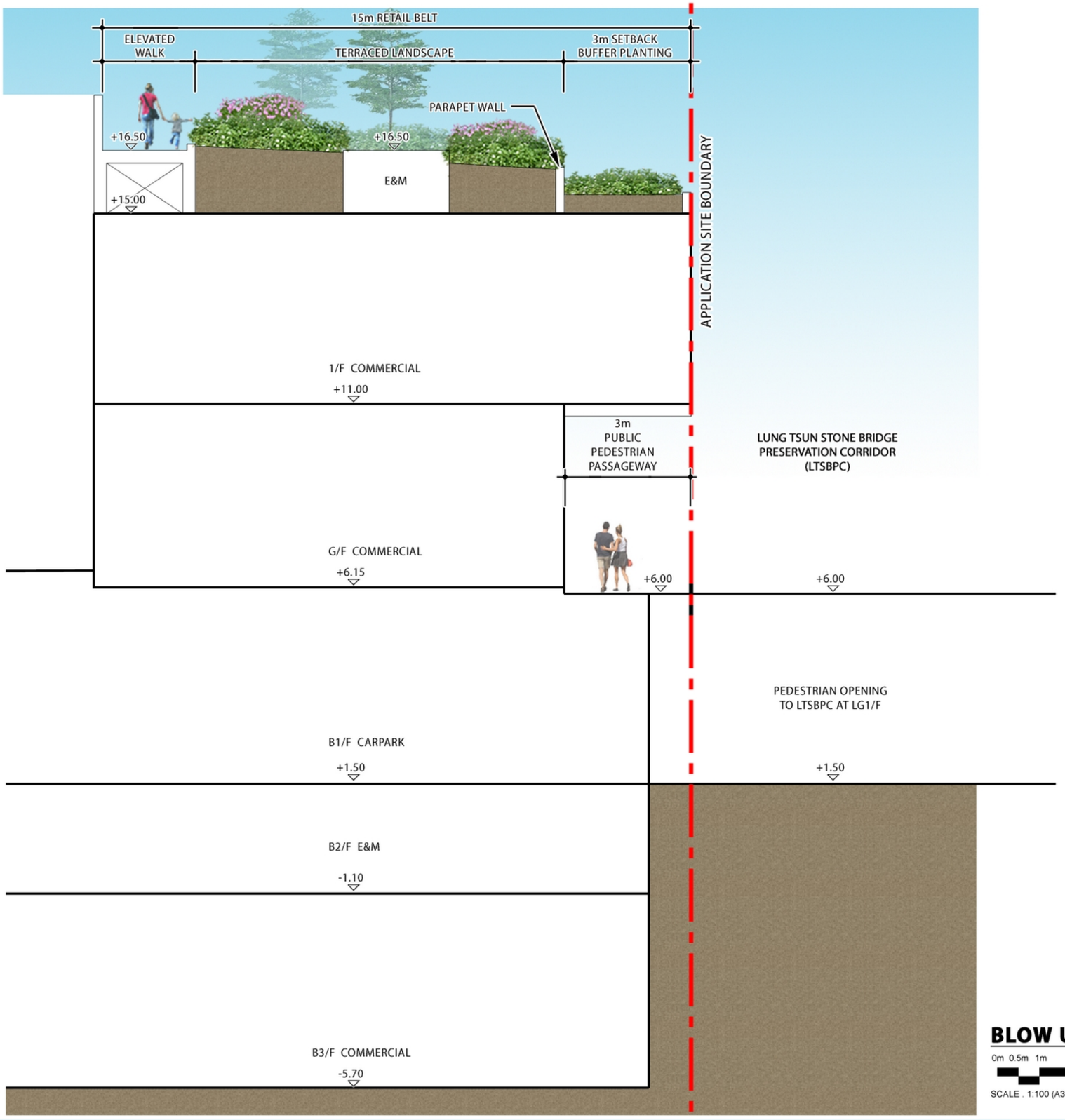
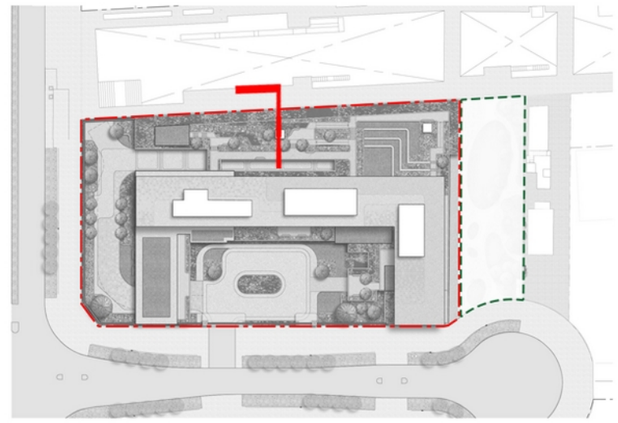




KEYPLAN

BLOW UP SECTION ACROSS RETAIL BELT

0m 0.5m 1m 2m 4m

SCALE . 1:100 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Landscape Section - Blow Up Section across Retail Belt

Dwg. No. : 2023208-SEC-03b

Date : JUN 2024
(A3-size)

axxa group

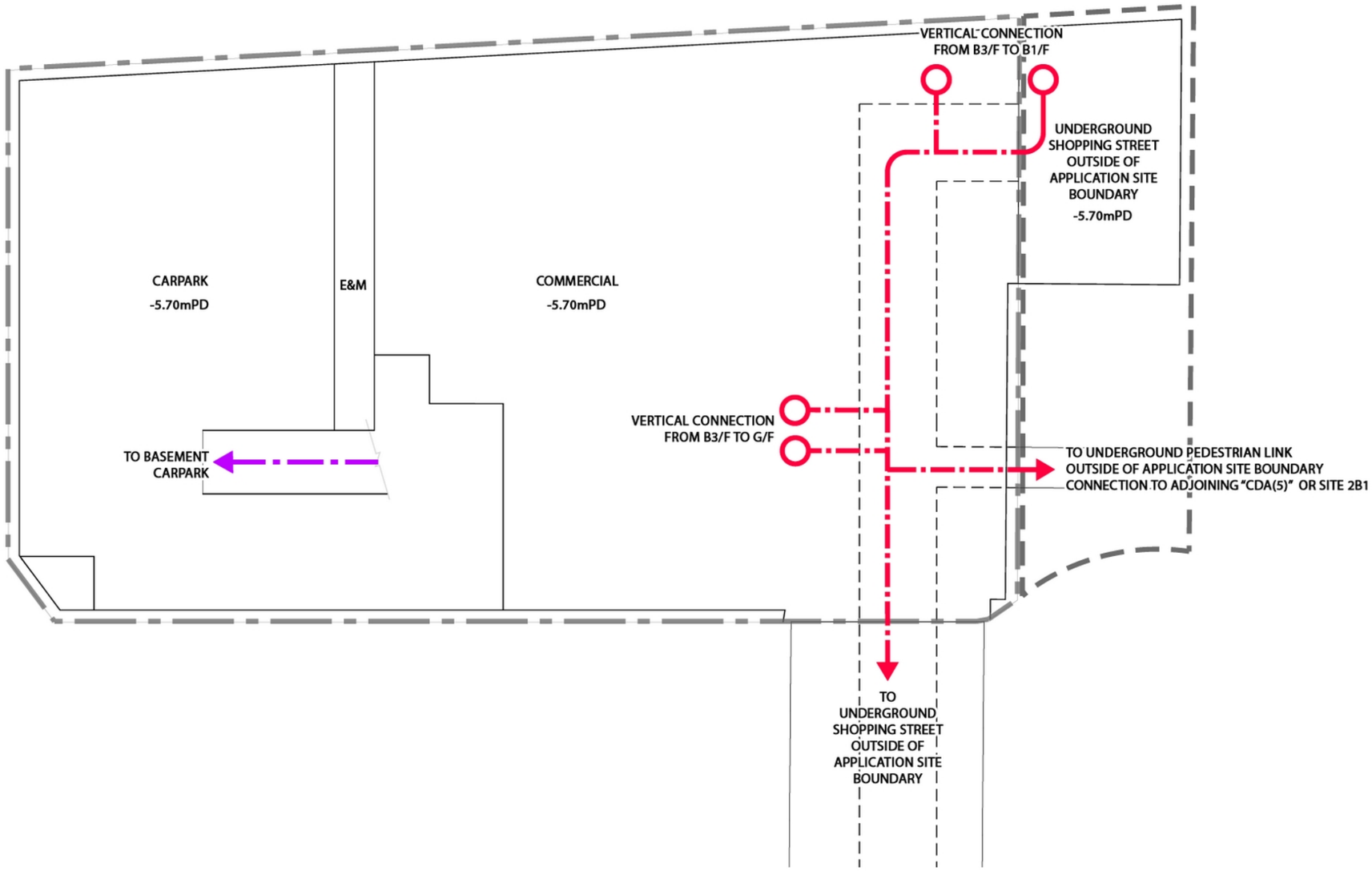
Appendix C

Circulation Diagram Plan

LEGEND:

VEHICULAR ACCESS

24-HOUR PEDESTRIAN CONNECTION



N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Circulation Demarcation Plan - B3/F (-5.70mPD)

Dwg. No. : 2023208-CDP-01b

Date : JUN 2024
(A3-size)

axxa group

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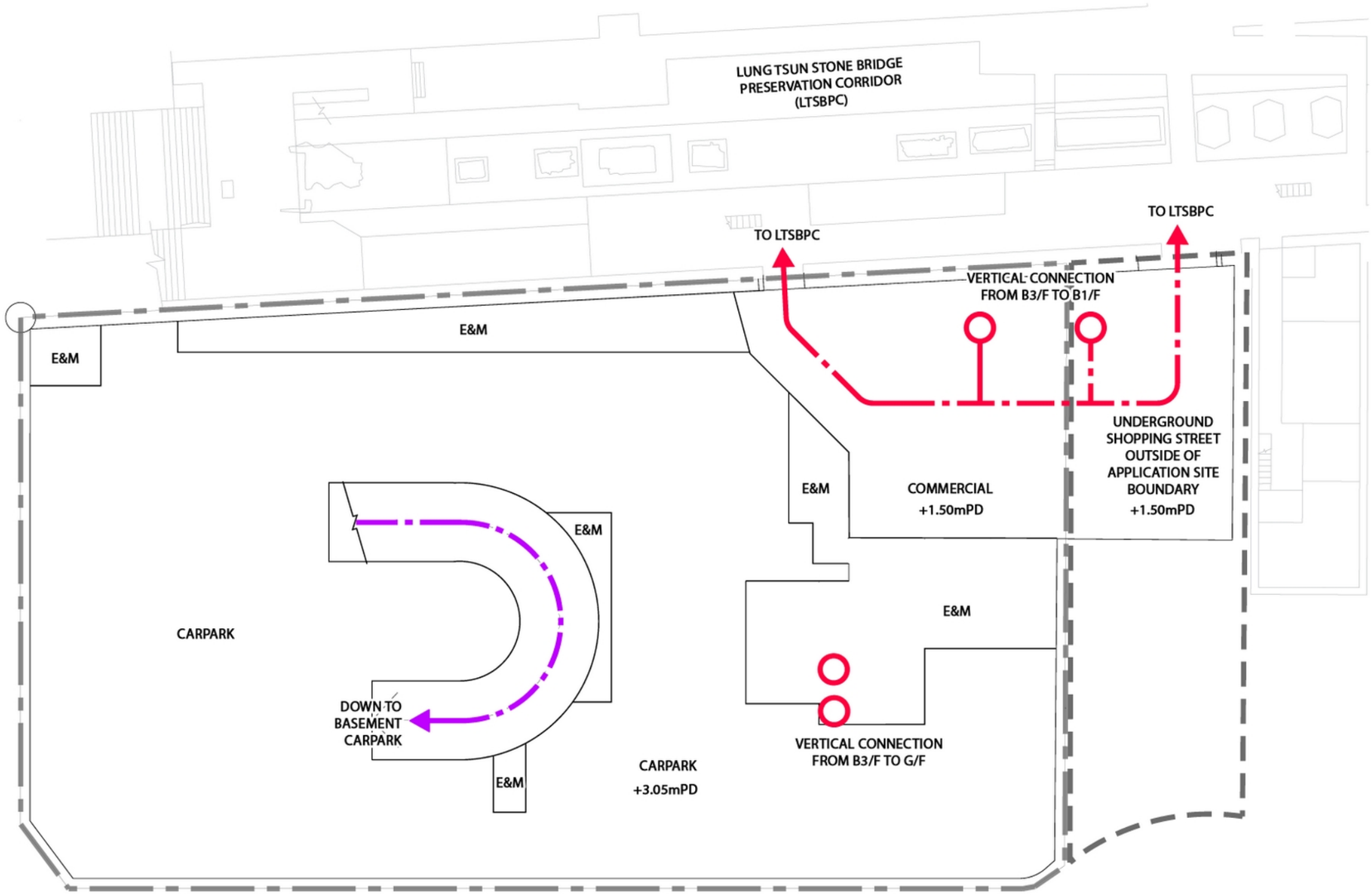

LEGEND:

- VEHICULAR ACCESS
- 24-HOUR PEDESTRIAN CONNECTION

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Circulation Demarcation Plan - B1/F (+1.50mPD)

Dwg. No. : 2023208-CDP-02b

Date : JUN 2024
(A3-size)

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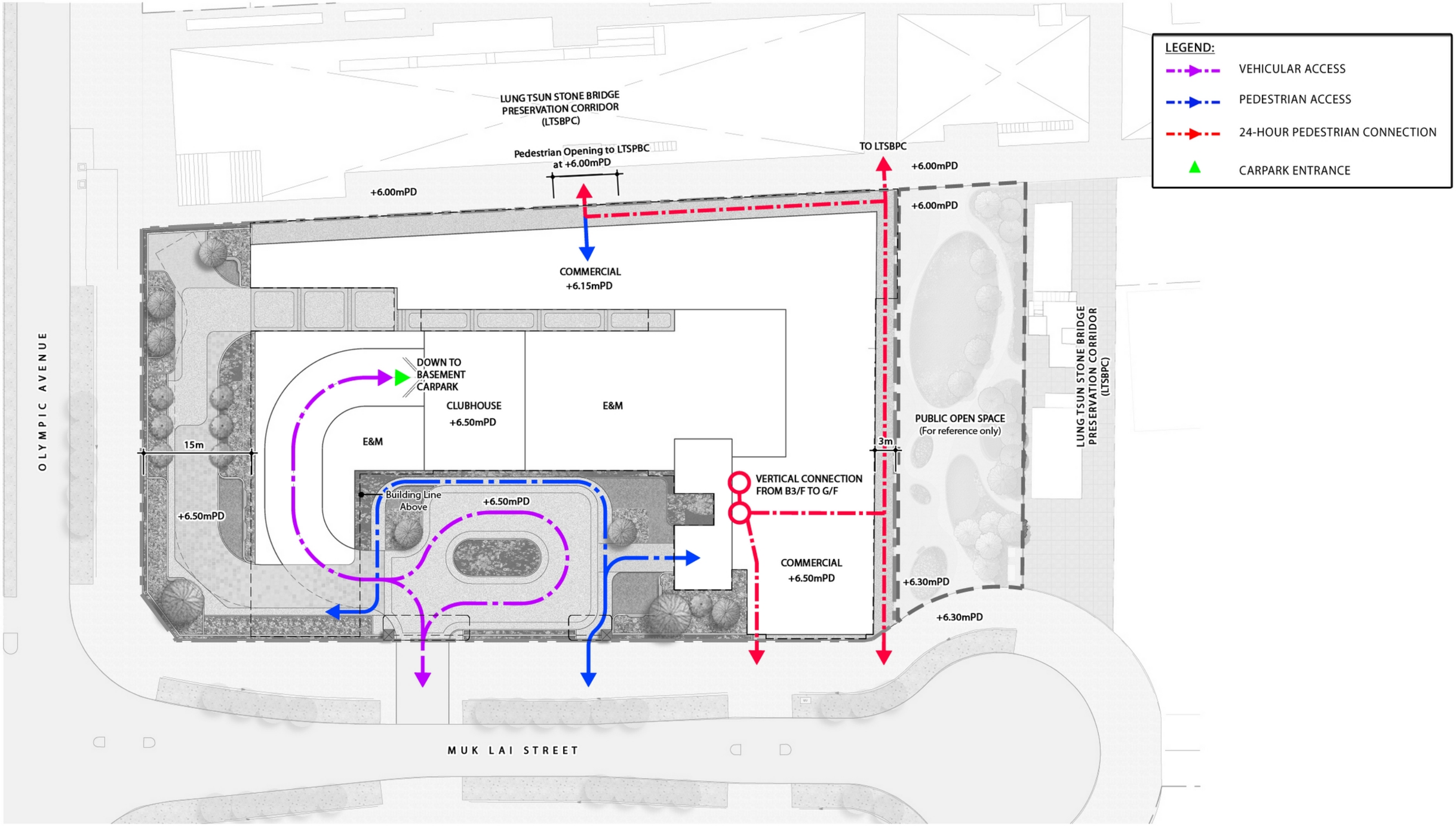

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Circulation Demarcation Plan - G/F (+6.50mPD)

Dwg. No. : 2023208-CDP-03b

Date : JUN 2024
(A3-size)

axxa group

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LEGEND:

PEDESTRIAN ACCESS

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

OLYMPIC AVENUE

E&M

+15.00mPD

+16.50mPD

Building Line Above

CLUBHOUSE

+16.50mPD

LIFT LOBBY

LIFT LOBBY

VERTICAL CONNECTION FROM 2/F TO RESIDENTIAL TOWER

VERTICAL CONNECTION FROM 2/F TO RESIDENTIAL TOWER

VERTICAL CONNECTION FROM 2/F TO RESIDENTIAL TOWER

LIFT LOBBY

PUBLIC OPEN SPACE (For reference only)

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

+16.50mPD

+11.50mPD

+11.50mPD

MUK LAI STREET

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Circulation Demarcation Plan - 1/F (+11.50mPD) & 2/F (+15.00mPD & +16.50mPD)

Dwg. No. : 2023208-CDP-04b

Date : JUN 2024
(A3-size)

axxa group

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Appendix D

Open Space Demarcation Plan

LEGEND:

- APPLICATION SITE BOUNDARY
- PUBLIC OPEN SPACE BOUNDARY
- PRIVATE OPEN SPACE (Not less than 2,232 sqm)
- PUBLIC OPEN SPACE (Not less than 1,100 sqm)

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

+6.00mPD

+6.00mPD

+6.00mPD

+16.50mPD

+15.00mPD

+16.50mPD

+18.00mPD

+16.50mPD

+141.00mPD

+141.00mPD

+129.035mPD

+16.50mPD

+21.50mPD

+141.00mPD

+6.50mPD

+6.50mPD

+16.50mPD

+21.50mPD

+11.50mPD

PUBLIC OPEN SPACE
(For reference only)

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

+6.30mPD

+6.30mPD

OLYMPIC AVENUE

MUK LAI STREET

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Open Space Demarcation Plan - G/F (+6.50mPD), 1/F (+11.50mPD) & 2/F (+15.00mPD & +16.50mPD)

Dwg. No. : 2023208-ODP-01b

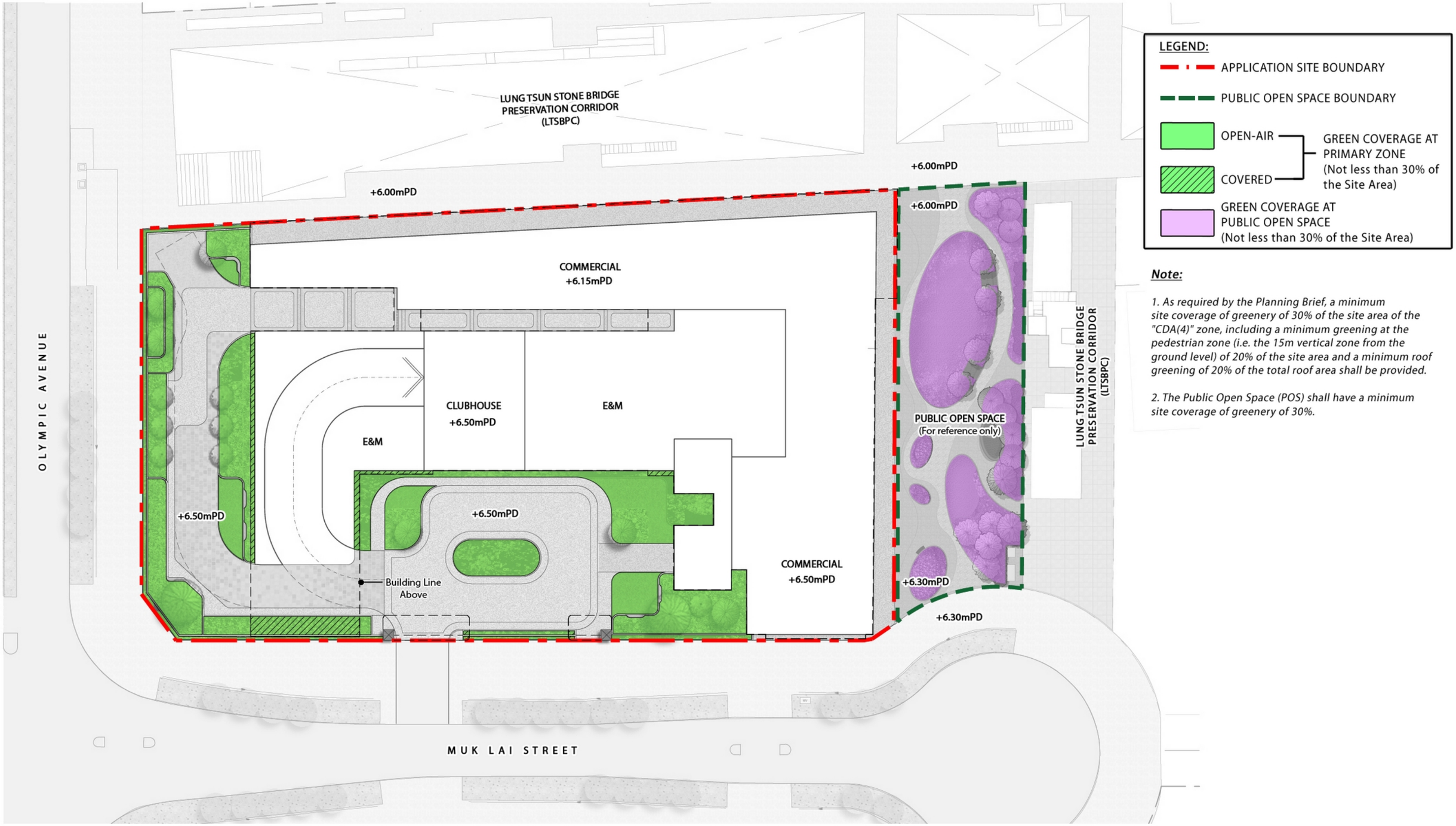
Date : JUN 2024
(A3-size)

axxa group

Y:\0-Axxagroup Project 2023\2023208_NKIL6590_Sino\Graphic Storage\5. Submission Drawing\2024-06-06 LMP\2023208-ODP-01b

Appendix E

Greenery Demarcation Plan



LEGEND:

- APPLICATION SITE BOUNDARY
- PUBLIC OPEN SPACE BOUNDARY
- OPEN-AIR
- COVERED

GREEN COVERAGE AT PRIMARY ZONE (Not less than 30% of the Site Area)

GREEN COVERAGE AT PUBLIC OPEN SPACE (Not less than 30% of the Site Area)

Note:

1. As required by the Planning Brief, a minimum site coverage of greenery of 30% of the site area of the "CDA(4)" zone, including a minimum greening at the pedestrian zone (i.e. the 15m vertical zone from the ground level) of 20% of the site area and a minimum roof greening of 20% of the total roof area shall be provided.

2. The Public Open Space (POS) shall have a minimum site coverage of greenery of 30%.

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Greenery Demarcation Plan - G/F (+6.50mPD)

Dwg. No. : 2023208-GDP-01b

Date : JUN 2024
(A3-size)

axxa group

Y:\0-Axxagroup Project 2023\2023208_NKIL6590_Sino\Graphic Storage\5. Submission Drawing\2024-06-06 LMP\2023208-GDP-01b

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

OLYMPIC AVENUE

E&M

+15.00mPD

+16.50mPD

CLUBHOUSE

+16.50mPD

LIFT
LOBBY

LIFT
LOBBY

+16.50mPD

LIFT
LOBBY

Building Line
Above

+16.50mPD

+11.50mPD

+11.50mPD

PUBLIC OPEN SPACE
(For reference only)

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

MUK LAI STREET

LEGEND:

APPLICATION SITE BOUNDARY

PUBLIC OPEN SPACE BOUNDARY

OPEN-AIR

COVERED

GREEN COVERAGE AT PRIMARY ZONE
(Not less than 30% of the Site Area)

Note:

1. As required by the Planning Brief, a minimum site coverage of greenery of 30% of the site area of the "CDA(4)" zone, including a minimum greening at the pedestrian zone (i.e. the 15m vertical zone from the ground level) of 20% of the site area and a minimum roof greening of 20% of the total roof area shall be provided.

2. The Public Open Space (POS) shall have a minimum site coverage of greenery of 30%.

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

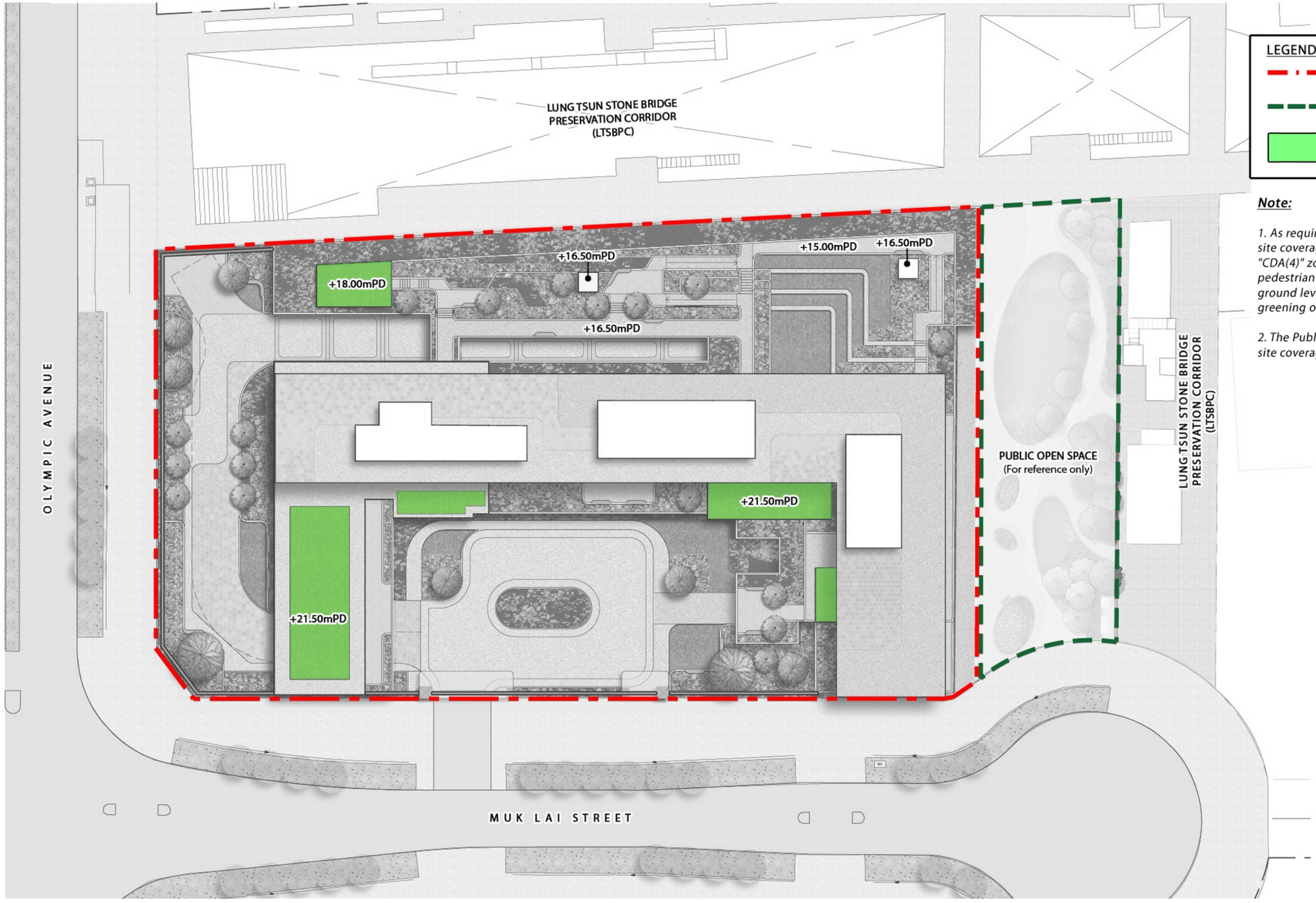
Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Greenery Demarcation Plan - 1/F (+11.50mPD) & 2/F (+15.00mPD & +16.50mPD)

Dwg. No. : 2023208-GDP-02b

Date : JUN 2024
(A3-size)

axxa group



LEGEND:

- APPLICATION SITE BOUNDARY
- PUBLIC OPEN SPACE BOUNDARY
- GREEN COVERAGE AT PRIMARY ZONE (Not less than 30% of the Site Area)

Note:

1. As required by the Planning Brief, a minimum site coverage of greenery of 30% of the site area of the "CDA(4)" zone, including a minimum greening at the pedestrian zone (i.e. the 15m vertical zone from the ground level) of 20% of the site area and a minimum roof greening of 20% of the total roof area shall be provided.

2. The Public Open Space (POS) shall have a minimum site coverage of greenery of 30%.

N

0m 2m 5m 10m 20m

SCALE . 1:500 (A3)

Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Greenery Demarcation Plan - 2/F Roof (+21.50mPD)

Dwg. No. : 2023208-GDP-03b

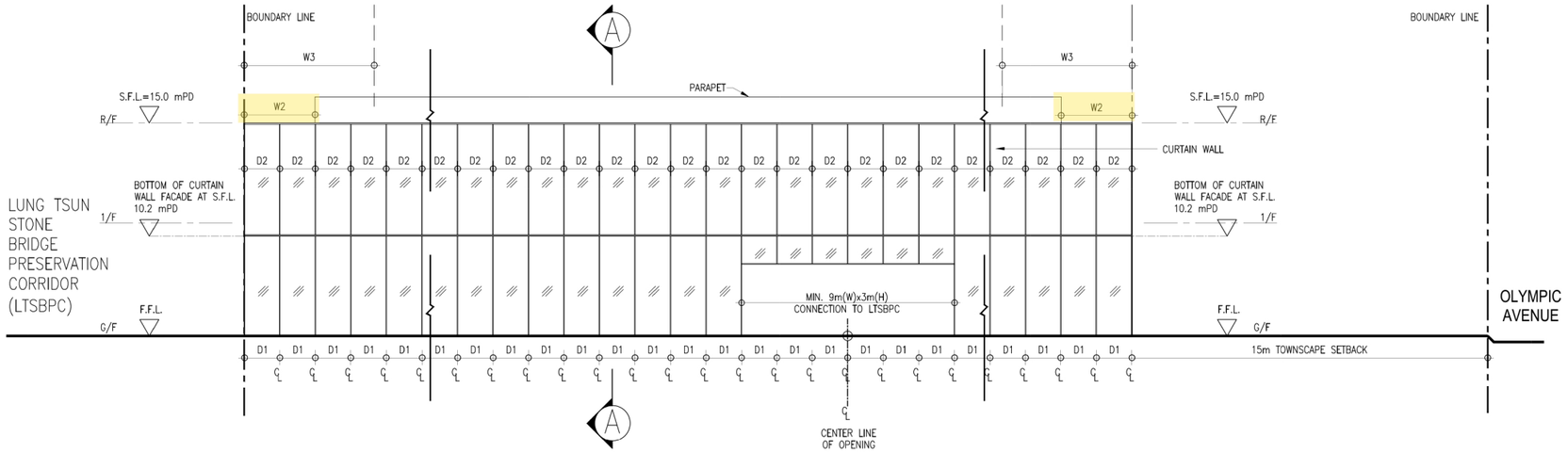
Date : JUN 2024
(A3-size)

axxa group

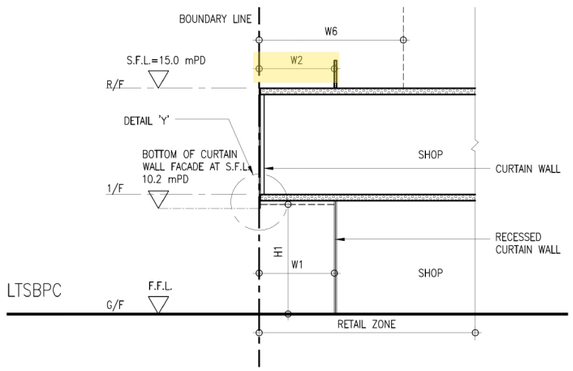
Appendix F

Extract from "Planning Brief for the "Comprehensive Development Area (4)" Zone in Kai Tak Development" about Parapet Wall with 3000mm Setback

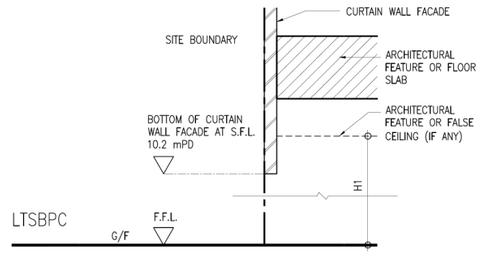
CONTROL DRAWING FOR CDA (4)



ELEVATION 1

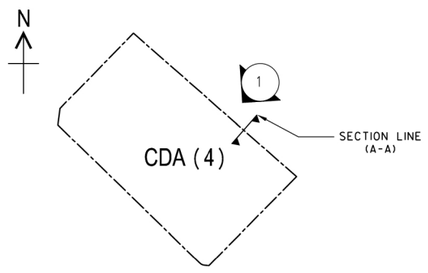


SECTION A-A



DETAIL 'Y'

NOTES:
1. H1 MIN. 4200mm CLEAR HEADROOM
2. W1 MIN. 3000mm SETBACK FOR AN UNOBSTRUCTED PUBLIC PASSAGE.
3. W2 3000mm SETBACK.
4. W3 MIN. 5500mm SETBACK. NO BUILDING STRUCTURE ABOVE 15 mPD IS ALLOWED IN THIS ZONE.
5. W6 MIN. 15000mm SETBACK. NO BUILDING STRUCTURE ABOVE 15 mPD IS ALLOWED IN THIS ZONE.
6. D1 CONTINUOUS GLASS CURTAIN WALL. MIN. 1500mm BETWEEN MULLIONS.
7. D2 CONTINUOUS GLASS CURTAIN WALL. MIN. 1500mm BETWEEN MULLIONS.
8. COLOUR OF ARCHITECTURAL STEEL FRAME SHALL BE IN DARK GREY TONES. COLOUR OF EXTERNAL FINISHES OF RETAIL BELT STRUCTURE SHALL BE IN GREY TONES.



KEY PLAN

本圖於2022年6月13日擬備
PLAN PREPARED ON 13.6.2022

於「綜合發展區(4)」的零售帶懸臂概念圖
CANTILEVER CONCEPT DRAWING FOR RETAIL BELT AT "COMPREHENSIVE DEVELOPMENT AREA (4)"

啟德發展區「綜合發展區(4)」地帶的規劃大綱
PLANNING BRIEF FOR THE "COMPREHENSIVE DEVELOPMENT AREA (4)" ZONE IN KAI TAK DEVELOPMENT

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K22/22/62

圖 PLAN
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