Response to Comments (1)
S.16 Planning Application No. A/K22/38

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

Further Information (1)

August 2024

Response to Comments s.16 Planning Application No. A/K22/38

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 2A2, Kai Tak Development Area, Kowloon

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Appendices

Table R1: Response to Departmental Comments of CEDD (EDO), C of P, HAD, UD&L, EMSD, CEDD (GEO), SWD, HyD, TD, WSD, ArchSD, AMO, DEVB (HO), EKEO, EPD, LandsD, DEVB, FEHD, BD, KDPO, LCSD, DSD

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

Comments from CEDD (East Development Office) (Contact: Mr. Eric TUNG; Tel.: 3579 2124)		Response
1	No 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 Home Affairs Department

Comments from HAD (Contact: Mr. Kenneth WU; Tel. 2621 3428)		Response
1	No comment on the application.	Noted.

Comments from Urban Design and Landscape Section (Landscape Unit)

Comments from UD&L (Landscape Unit) (Contact: Ms. Isabella TSUI; Tel.: 3565 3951)		Response
1	**Background (for reference only)** The Site (around 6,270m^2), Kai Tak Area 2A Site 2, falls within an area zoned "Comprehensive Development Area (4)" ("CDA(4)") on the approved Kai Tak Outline Zoning Plan (OZP) No. S/K22/8. The applicant seeks planning permission for proposed comprehensive residential-cum-commercial development.	Noted.
2	**Landscape Observations** With reference to the aerial photo of 2023, the Site is situated in an area of reclamation/ongoing major development landscape character predominately by other construction sites such as Lung Tsun Stone Bridge Preservation Corridor (LTSBPC) to its northeast, Station Square to its east, Kai Yan Court to its south and Kai Tak Sports Park to its further south. The Site is currently vacant without any existing tree. The proposed residential-cum-commercial development is considered not incompatible to the planned landscape character of the surrounding environment.	Noted.

Comments from UD&L (Landscape Unit) (Contact: Ms. Isabella TSUI; Tel.: 3565 3951)		Response
3	According to the submitted Landscape Master Plan (Annex 10), total **25** nos. new trees are proposed at G/F, 1/F and 2/F. Landscape provisions such as arrival plaza, ornamental garden and seating garden at G/F; outdoor lounge area at 1/F; and children play area, fitness area, terraced landscape, viewing terrace, seating station at 2/F are proposed for enjoyment of the users. As significant adverse impact to the existing landscape resources is not anticipated, we have **no comment** from landscape planning perspective on the application.	Noted.
4	**Remarks to Applicant** 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.
5	Comments from our Urban Design Team will be provided under separate cover.	Noted.

Comments from Electrical and Mechanical Services Department

Comments from EMSD (Contact: Mr. Stanley SIU Tel: 3757 6231)		Response
1	Please note that we have nil return.	Noted.

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 Social Welfare Department

Comments from SWD (Contact: Mr. Michael PANG; Tel.: 2116 5939)		Responses
1	Our comments on the applicant's pre-submission were given to the applicant vide emails of 4.3.2024 and 7.5.2024 respectively. To recapitulate, the following welfare facilities are required to be provided as Government Accommodation under the Conditions of Sale (CoS) for the captioned lot (i.e. bundled land sale site of Kai Tak Area 2A Site 2 and Site 3, Kai Tak, Kowloon) – · Neighbourhood Elderly Centre (NEC); · Hostel for Severely Mentally Handicapped Persons (HSMH); · Day Activity Centre (DAC); · District Support Centre for Persons with Disabilities (DSC);	Noted.

Comments from SWD (Contact: Mr. Michael PANG; Tel.: 2116 5939)		Responses
	· Boys' Home (BH); and · Centre for Cyber Youth Support Team (CYST).	
2	As reconfirmed by the applicant in paragraph 4.4 and Table 4 of the Planning Statement in the formal submission, the aforesaid welfare provision will all be accommodated in the "Residential (Group A)6" site to the southwest of the captioned site (i.e. Kai Tak Area 2A Site 3). On the understanding that the proposed s.16 planning application will not affect the aforesaid welfare provision in the "R(A)6" site and there will be ongoing liaison among us and the developer to ensure that all requirements regarding our welfare facilities as stipulated in the planning brief, relevant documents of the CoS including the Technical Schedule annexed thereto and all current and prevailing ordinances and regulations (if applicable) will be fulfilled, we have no comment on the captioned planning application. Meanwhile, suggested minor textual amendment to Table 4 of the Planning Statement is marked in the attachment below for your necessary action.	Noted. Suggested minor amendment is incorporated in the Planning Statement (**Appendix 1**).

Comments from Highways Department

Comments from HyD (Contact: Ms. Jenny LI; Tel.: 2707 7411)		Response
1	No comment on the application.	Noted.

Comments from Transport Department

Comments from Chief Traffic Engineer/Kowloon, Transport Department (Contact: Mr. Alvin CHAN; Tel.: 2399 2772)		Response (see Appendix 2)
1	Para 4.1.1: We note the traffic consultant adopted year 2032 (3 years after planned completion of the Proposed Development) as the design year of this TIA study. What if the schedule of the Proposed Development delay? Please consider to review the design year to cope with such scenario for a holistic TIA study.	For a holistic TIA study, please be advised that the design year has been revised to year 2033 to well cover the planned completion year of 2029 as well as the building covenant date of the Proposed Development by end of year 2030 as required under lease. The relevant traffic forecasts and assessments have been updated in the TIA report accordingly. Please also be advised that the conclusion of TIA remains since the updating of design year has no apparent effect to the traffic forecasts and assessments' results.

Comments from Chief Traffic Engineer/Kowloon, Transport Department (Contact: Mr. Alvin CHAN; Tel.: 2399 2772)		Response (see Appendix 2)
2	Para 4.3.10: The traffic consultant is approaching our Transport Operations (Urban) division for the anticipated road-based public transport demand of the Light Public Housing at Olympic Avenue.	Advice from Transport Operation (Urban) division on the adopted assumptions for public transport in the TIA report has been sought. Reply from Transport Operation (Urban) division with no further comment is attached in Annex 1.
3	Para 5.4.3: We note that the traffic consultant solely accounted the number of parking spaces within Kai Tak Sports Park to estimate the traffic generation. However, the visitors could also make use of the loading / unloading spaces and other road-based transportation mode like taxi. Would the traffic impact be underestimated?	The assumption of all parking spaces for private cars and coaches at the sport park will be available for the visitors of the event and to be fully utilized or fully discharged within an hour is considered on a conservative side for estimation of the traffic generation. Since the sport park is well served by MTR and public transport, it is expected that most of the visitors would be commuting to/from the sport park by MTR or buses, in particular the sensitivity test was reviewing the hypothetical scenarios of a large-scale event to start or finish during communal PM peak when the availability of taxis is in question. Nevertheless, the sensitivity test in Section 5.4 of the TIA report has been updated to include the taxi pick-up/drop-off demand in the traffic forecasts for a more conservative approach. The updated assessment results in Section 5.4 indicated that all the key access junctions will be still operating within capacity in the sensitivity test scenario.

Comments from Water Supplies Department

Comments from Construction Division, WSD (Contact: Ms Ruby HU, Tel: 2152 5772)		Response
1	No comment on the application.	Noted.

Comments from Architectural Services Department

Comments from Chief Architect/ASC, ArchSD (Contact: Ms Catherine WONG, Tel: 2582 5322)		Response
1	Based on the information provided, it is noted that the proposed application involves a 32-storey residential development of building height (BH) 129.035mPD on top of a low-rise retail block. It is noted that the proposed BH is proposed to be relaxed from 125mPD to 129.035mPD	Noted.

Comments from Chief Architect/ASC, ArchSD (Contact: Ms Catherine WONG, Tel: 2582 5322)		Response
	solely for the purpose of adopting MiC into its residential tower portion. Based on the submitted drawings and images provided in the Visual Impact Assessment, we have no particular comments on the proposal from architectural and visual impact point of view, subject to PlanD's view.	
2	It is noted that your memo and the RtC table were also sent to our CPM303 directly. We understand that he would reply to you separately as appropriate.	Noted.
3	We understand that PlanD will consider the application holistically and take into account comments/ advice from relevant parties/departments/bureaus in relation to the planning intention for the final ruling.	Noted.

Comments from Antiquities and Monuments Office

Comments from Antiquities and Monuments Office (Contact: Ms. April YIP; Tel: 2208 4418)		Response
1	Appendix 2 EA Report Chapter 5 The proposed works are in proximity to the Lung Tsun Stone Bridge ("LTSB") 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.	Noted. Key mitigation measures at site investigation stage, construction stage and operation stage are included in EA Report Chapter 5.
2	Please be reminded to comprehensively review the potential effects due to proposed construction works to the LTSB SAI and submit with monitoring proposal and precautionary measures for AMO's separate consideration.	Noted. Para. 5.2.17 of EIA refers.
3	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: **Type of Monitoring for** / **Alert** / **Alarm** / **Action** Vibration (PPV) / 5mm/s / 6mm/s / 7.5mm/s Settlement / 6mm / 8mm / 10mm Tilting / 1/2000 / 1/1500 / 1/1000	Noted. Para. 5.2.12 of EIA refers.

Comments from Antiquities and Monuments Office (Contact: Ms. April YIP; Tel: 2208 4418)		Response
	(Note: Monitoring criteria would be subjected to review upon updates of grading status of heritage site.)	

Comments from Development Bureau (Harbour Office)

Comments from DevB (Harbour Office) (Contact: Ms. Flora NG; Tel.: 3679 3545)		Response
1	The concerned site falls within an area zoned "Comprehensive Development Area (4)" ("CDA(4)") on the approved Kai Tak Outline Zoning Plan (OZP) No. S/K22/8, and fall within the harbourfront area under the purview of the Harbourfront Commission's Task Force on Kai Tak Harbourfront Development (KTTF). The project should be considered having regard to the Harbour Planning Principles and Guidelines.	Noted.
2	The gist, location plan and newspaper notices of the subject application have been circulated to Members of KTTF on 25 June 2024. Members were invited to offer comments, if any, to the Town Planning Board direct.	It is noted that the proposed scheme of the subject planning application no. A/K22/38 is circulated to KTTF for comments. A paper requested by HO is also separately submitted for comments. After consultation, the applicant will incorporate comments received into the detailed design.
3	It is noted that the pre-submission proposed to the site for a comprehensive development including flat, shop and services and eating place, with minor relaxation in building height (BH) restriction from 125mPD to 129.035mPD (+3.2%) to adopt Modular Integrated Construction (MiC) into the proposed development on earlier consultation with KTTF on a proposal at the same site in early 2024. As per the established practice for projects within the harbourfront area, the applicant should consult KTTF on the proposed development upon formal submission of the planning application and update Members with details. 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. After which, the comments of the Task Force would be conveyed to the Town Planning Board for consideration.	

Comments from Urban Design and Landscape Section (Urban Design Unit), AVA perspective

Comments from UD&L (Urban Design Unit) (Contact: Ms Rachel YIU, Tel: 3565 3944)		Response (See Appendix 3)
1	**Planned / Committed developments at Sites 2B3, 2B4, 2B5 and 2B6** (para. 1.4.2 and Appendix 6) – The consultant should provide the relevant layout plans of future developments at Sites 2B3, 2B4, 2B5 and 2B6 under the latest applications for checking.	The layout plan of Sites 2B3-2B6 have been supplemented in Appendix 6. Please refer to the updated report. The layout plan of Sites 2B3 & 2B4 are referred to Approved Application No. A/K22/35. The layout of Site 2B6 is available in the Sales Brochure and 2B5 is referenced in aerial photos. We have sought confirmation from KDPO on these references.
2	**Baseline Scheme** (para. 1.5.2 and Appendix 1) – The consultant should provide building height of the Baseline Scheme on plan for complete information. Meanwhile, it seems the building height of Baseline Scheme is slightly lower than the BHR of 125mPD (i.e. 118.1 mPD) under the referred study. The consultant should correct and provide consistent information presented on plans/figures.	Typo amended. The BHR at 118.1 mPD is updated in para. 1.5.2.
3	**Planned developments at Site 2A3** (Figure 2c and Appendix 6) – It appears that the building height of planned developments at Site 2A3 shown in Figure 2c is different from that shown in Appendix 6. The consultant should clarify and revise it where appropriate.	Typo amended. The building height at 114.95 mPD in Figure 2c has been updated.
4	**Baseline Scheme at Site 2A2 and Planned / Committed developments at Sites 2A3, 2A4, 2A5(B) and 2A10** (para. 1.5.2 and Figure 5.7b of Appendix 6) – It appears that sectional drawings of the mentioned developments do not show the correct building height of each building. The consultant should clarify and revise it where appropriate.	The sectional drawing Figure 2.7b is replaced by Figure 5.8c in Appendix 6.
5	Para. 4.2.6 – The consultant should use "CDA(3)" to refer Site 2A1 for consistency.	CDA (3) is used to refer to Site 2A1 throughout the report for consistency.
6	Figure 6 – The label of Focus Group 8 should read "Pedestrian Walkway between Kai Yan Court & Site **2B1**".	Figure 6 is updated.

Comments from Building Plan Unit, Lands Department

Comments from BPU, LandsD (Contact: Ms. Priscilla TSO; Tel.: 3793 4205)		Response
1	Detailed design of the proposed development will be examined by Building Plan Unit at building plans submission stage and I shall reserve my comments on such. That said, the following are noted: (a) Under Special Condition No. (7)(b) of the Lease, "the Retail Building Area" (i.e. the 15m wide strip of land within the Lot facing Lung Tsun Stone Bridge Preservation Corridor and is referred to in the Planning Statement as "the retail belt") shall not be used for any purpose other than non-industrial (excluding residential, office, godown, hotel, the Government Accommodation and petrol filling station) purposes. It is noted that the roof of the retail belt block is intended for use by occupier of the subject site (as stated in the last sentence of para. 5.16 of the Planning Statement). The applicant shall clarify whether "occupier" include residents.	Please note a clarification that "occupiers" include residents.
	(b) It is noted that the proposed location of "the 1st LIFT and 1st ESCALATORS" referred to in Special Condition No. (39)(c)(i) of the Lease is significantly deviated from the location indicated on the lease plans. According to the said Special Condition, the different location is subject to CEDD's approval.	Noted. No adverse comments from CEDD were received in this submission regarding the proposed layout. The exact location of the lift is subject to detail design for which CEDD will be consulted.

Comments from Energizing Kowloon East Office, Development Bureau

Comments from EKEO, DEVB (Contact: Mr. LI Wai Kit, Tel: 3904 1364)		Response
1	No objection to the application.	Noted.

Comments from Environmental Protection Department

Comments from EPD (Contact: Mr. Ms Alice HSU, Tel: 2835 1151)		Response
1	Based on the supporting planning statement (Appendix 5 Environmental Assessment and Appendix 7 Sewerage Impact Assessment) submitted by the applicant., insurmountable environmental impact is not anticipated from the proposed minor relation of BHR. The summary of findings of environmental impacts as follows: i) On air quality, the minimum separation distance between the proposed residential blocks and the nearest road kerbs of Prince Edward Road East (Primary Distributor>20m), Olympic Avenue (District Distributor>10m) and Muk Lai Street (Local Distributor>5m) have satisfied relevant vehicular	Noted.

Comments from EPD (Contact: Mr. Ms Alice HSU, Tel: 2835 1151)		Response
	emission buffer distances as stipulated in HKPSG. Also, there is no chimney emission or industrial activities identified within 200m from the Application Site. ii) On noise, with all practical and effective noise mitigation measures (i.e. façade orientation, vertical fin, acoustic windows and balconies (baffle type), enhanced acoustic windows and balconies (baffle type), noise reducer and fixed glazing with/without maintenance windows) adopted, 100% road traffic noise compliance rate for proposed development is achieved. There is no potential fixed existing noise source identified within 300m assessment area. For the fixed noise plant noise from operation of the proposed development, it will be designed with the provision of suitable silencers, acoustic louvers and enclosures at the representative NSRs to comply with the fixed noise source standard for planning purpose. iii) On sewerage, the finding of the SIA has demonstrated that after proposed mitigation measures (i.e. rehabilitation of two existing DN300 concrete public sewage pipes), there will be sufficient pipe capacity for additional sewerage flow from the proposed development.	
2	On the above basis, insurmountable environmental impacts associated with the proposed development are not anticipated. Hence, we have no objection to the captioned application from environmental perspective.	Noted.
3	However, we still have comments on EIA and SIA in Annex A. To address the remaining comments, we consider to incorporate approval conditions on the submission. *"( ) the submission of a noise impact assessment and the implementation of the noise mitigation measures identified therein for the proposed development to the satisfaction of the Director of Environmental Protection or of the Town Planning Board."* *"( ) the submission of a sewerage impact assessment for the proposed development to the satisfaction of the Director of Environmental Protection or of the Town Planning Board";* *"( ) the implementation of the local sewerage upgrading/sewerage connection works as identified in the sewerage impact assessment for the proposed development to the satisfaction of the Director of Drainage Services or of the Town Planning Board";*	Noted.

Comments from Lands Department, Kowloon East

Comments from LandsD, Kowloon East (Contact: Mr Raymond LAM, Tel: 3842 7602 or Ms Winnie WAN, Tel: 3842 7610)		Response
1	No objection to the application.	Noted.

Comments from LandsD, Kowloon East (Contact: Mr Raymond LAM, Tel: 3842 7602 or Ms Winnie WAN, Tel: 3842 7610)		Response
2	The application site is within New Kowloon Inland Lot No. 6590 ("the Lot"), which is referred as "the Pecked Green Area" under the Conditions of Sale No. 20426 dated 12.10.2023 ("the Conditions") governing the Lot. The user of the Lot is restricted to non-industrial (excluding godown, hotel and petrol filling station) purposes. Detailed design of the proposed development would be examined by our Building Plan Unit (BPU) during the building plan submission stage and comment on it is reserved.	Noted.

Comments from Development Bureau (Planning Unit)

Comments from DEVB (Planning Unit) (Contact: Ms Stella CHOI, Tel: 3509 8842)		Response
1	I submit a nil return from the planning perspective, please.	Noted.

Comments from Food and Environmental Hygiene Department

Comments from FEHD (Contact: Mr Dickson CHENG, Tel: 3141 1230)		Response
1	FEHD has no specific comment on the captioned planning application, please.	Noted.

Comments from Buildings Department

Comments from BD (Contact: Ms. Lam Wan-Ching at 3106 3077 / Mr. Peter Lo at 3104 2011)		Responses
1	No objection in principle to the application subject to the following comments: The "R(A)6" site and "CDA(4)" site separated by Muk Lai Street should be considered as 2 individual sites for the purpose of Building Ordinance (BO) and the proposed development in each individual site should be self-sustained in all aspects under the BO.	Noted. Each "R(A)6" site and "CDA(4)" site should be considered as 2 individual sites for the purpose of the Buildings Ordinance (BO), and each site shall be self-sustained in all aspects under the BO and separate submissions to the Buildings Department shall be made.
2	It is noted that the proposed maximum site coverage (SC) of 65% has exceeded permissible limits under the First Schedule of Building (Planning) Regulations (B(P)R) for a building with building height over 61m on a Class B site. Please ensure that the proposed SC should not exceed the permissible limits under B(P)R. Your attention is drawn to B(P)R 18A and 20.	Noted. Please be clarified that the proposed maximum site coverage (SC) of 65% happens at the non-domestic part of the proposed composite building well below 21m building height and this SC does not exceed the permissible limit under the B(P)R. For domestic part above, the maximum SC shall be maximum 37.5%, which shall comply to the

Comments from BD (Contact: Ms. Lam Wan-Ching at 3106 3077 / Mr. Peter Lo at 3104 2011)		Responses
		permissible SC under B(P)R for domestic building on a Class B site. Detailed demonstration under the Buildings Ordinance (BO) shall be made upon General Building Plans submission to the satisfaction to Buildings Department.
3	Based on the schematic design as shown on the planning application, it appears that the disposition of the non-domestic portions of the development may not fulfil the building separation requirements under PNAP APP-152 Please ensure that the proposed development would comply with the sustainable building design guidelines (SBDG) in particular the building separation requirements under PNAP APP-152 if the proposed development involves application for gross floor area (GFA) concession under PNAP APP-151.	Noted. Building separation requirements under PNAP APP-152 shall be complied with. The alternative approaches set out in Appendix E to PNAP APP-152 in recognition of the genuine constraints in compliance with SBDG for building separation requirement at the low zone may be adopted as necessary for fulfilling the planning requirement of Cantilever Design fronting the LTSBPC for retail belt as stipulated in the Planning Brief. Detailed demonstration on sustainable building design guidelines (SBDG) shall be made upon General Building Plans submission to the satisfaction to Buildings Department.
4	For the proposed building of the retail blet, the unprotected opening on the external wall within 900mm from the common boundary with Lung Tsun Stone Bridge Preservation corridor (LTSBPC) is not acceptable. Your attention is drawn to section 35 of the Building (Construction) Regulation and Clause C5.3 of the Code of Practice for the Fire Safety in Buildings 2011 (FS Code).	Noted. Detailed fire rated construction complying Building (Construction) Regulation and Code of Practice for the Fire Safety in Buildings 2011 or necessary application for modification under the BO (in view of the planning requirement of Cantilever Design fronting the LTSBPC for retail belt) to be demonstrated or applied upon General Building Plans submission to the satisfaction to Buildings Department.
5	The applicant should be reminded to provide adequate means of escape for the proposed building at the retail blet. In particular, every exit route should lead directly to an ultimate place of safety with adequate clear width, B(P)R41 and FS Code refer.	Noted. Detailed demonstration of the adequate means of escape under Building Ordinance (BO) shall be made upon General Building Plans submission to the satisfaction to Buildings Department.
6	The GFA of various portions of Underground Shopping Street (USS) should be included in the plot ratio (PR) calculations of the respective parent sites as requested under the B(P)R. In addition, the resultant PR (based on the site area excluding USS) should not exceed the limit under the B(P)R. If the resultant PR is not achievable under the B(P)R and the total GFA including that for USS for that particular site is acceptable under the planning regime, the amended OZP should clearly stipulate the resultant PR (notwithstanding not achievable under B(P)R). In this connection, the Buildings Department (BD) would	Noted. Detailed GFA calculation will be demonstrated upon General Building Plans submission to the satisfaction to Buildings Department.

Comments from BD (Contact: Ms. Lam Wan-Ching at 3106 3077 / Mr. Peter Lo at 3104 2011)		Responses
	favourably consider granting modification to permit the PR specified in the B(P)R to be exceeded to a level on par with the maximum PR restriction under the planning regime which is to be in line with the spirit of the Joint Practice Note No. 4 (JPN 4).	
7	Social welfare facilities should be accountable for domestic/ non-domestic GFA and SC calculations according to their respective use in accordance with the B(P)R. However, under JPN 4, such facilities that would become government accommodation (GA) (i.e. these provisions will be handed over to the Government as required under the lease), BD may consider exempting GA from GFA, calculations if the GA will be exempted from GFA calculations under the new or amended statutory plans and the provision of such GA is included in the corresponding leases.	Noted. The detailed GFA calculation for the Government Accommodation (GA) at R(A)6 site shall be submitted upon General Building Plans submission separately to the satisfaction to Buildings Department.
8	Covered pedestrian walkway for public passage/ pedestrian circulation should be included in GFA and SC calculation under B(P)R. However, application for GFA exemption may be considered subject to compliance with the criteria stipulated in PNAP APP-108 and full justifications provided by Authorized Person at building plan submission stage.	Noted. Detailed GFA calculation will be demonstrated upon General Building Plans submission to the satisfaction to Buildings Department.
9	All building works are subject to compliance with the BO. Detailed comments under the BO on individual sites for private developments such as permissible PR, SC, means of escape, emergency vehicular access, private streets, and/or access roads, barrier free access and facilities, open space, compliance with the SBDG, etc. will be formulated at the building plan submission stage.	Noted.

Comments from Urban Design and Landscape Section (Urban Design Unit), VIA perspective

Comments from UD&L (Urban Design Unit) (Contact: Ms Rachel YIU, Tel: 3565 3944)		Response (See Appendix 4)
1	As GBP (Site 2A3) is not approved, please remove Fig. 4a and 5a and "In case GBP of Site 2A3 submitted on 28.3.2024 is not approved, CEDD scheme of +114.95mPD is followed" in Fig. 4b and 5b. Please be reminded that BH of surrounding developments other than the Site should be the same in baseline and proposed scenarios.	Fig. 4a and 5a are to be taken out from the VIA. Fig. 4b and 5b (now named as Fig. 4 and 5) are updated accordingly.
2	Please remove all the footnotes as para. 4.1 already states that the minor relaxation of BHR from +125mPD to +129.035mPD is considered in the assessment.	Footnotes are removed (VIA p.8-10 refer).
3	**VP1** - Para. 2.2.3 – Please revise to read as "…including users~~,~~ and visitors~~, staff~~ at the park".	Para. 2.2.3 is revised accordingly.
4	**VP2** - Para. 2.2.5 – As TPB PG-No. 41 focuses on protection of public views instead of private views, please revise to read as "~~visitors and staffs of~~ pedestrians travelling to/from the proposed…".	Para. 2.2.5 is revised accordingly.

Comments from UD&L (Urban Design Unit) (Contact: Ms Rachel YIU, Tel: 3565 3944)		Response (See Appendix 4)
	Para. 2.3.3 and Visual Impact Summary Table (Visual Composition, Visual Obstruction and Effect on Visual Resource) – Please revise to "....with a slight to moderate increase in obstruction …".	Para. 2.3.3 and the said table are revised accordingly.
	Fig. 4b – (a) Please remove annotation regarding application No. A/K22/16 as it does not seem relate to this VP; (b) Proposed Scheme - it seems that the bulk of the proposed development should extend to screen off more of the middle block of "CDA(3)", and its BH and the height of the BHR at +125mPD are slightly underestimated. Please review.	Fig. 4 is revised accordingly.
5	**VP3** - Para. 2.3.5 and Visual Impact Summary Table (Visual Composition, Visual Obstruction and Effect on Visual Resource) - Please revise to read as "....with a slight to moderate increase …"	Para. 2.3.5 and the said table are revised accordingly.
	Para. 2.3.6 and Visual Impact Summary Table (Magnitude of Visual Change) – Please revise the degree of visual change from "moderate" to "slight to moderate".	Para. 2.3.6 and the said table are revised accordingly.
	Fig. 5b - (a) Notional and Proposed Scheme – Please annotated the leftmost modelled block with its BH in mPD; and (b) Proposed Scheme - it seems that the BH of the proposed development at +129.035mPD and at +125mPD are slightly underestimated. Please review.	Fig. 5 is revised accordingly.
6	**VP4** – Fig. 6, Notional and Proposed Scheme - Please confirm if the layout/BH of the modelled blocks simulated for the planned developments in Kai Tak are in order. It does not seem that the bulk of "CDA(5)" is revised based on our previous comments that its bulk would be larger and extend to screen of the rest of the sky view to its left. Please also review the bulk of the leftmost block in Site 2A1 in that its BH is slightly underestimated and its bulk would be larger and extend to its left.	Please note that Figure 6 is made with reference to Fig 5.21 in Attachment V of MPC paper no. 9/21. We also confirm that the modelled blocks are in order.
7	**VP5** - Para. 2.2.12 – Please revise to "…the future ~~residents,~~ visitors ~~and staff~~ to the retail belt…"	Para. 2.2.12 is revised accordingly.
8	**VP6** – Fig. 8 – (a) Re. R-to-C Item 16 - The Consultant's responses are noted. Please adopt the view angle to tally with that of Strategic VP4 on PlanD website; (b) For clarity, please indicate the lower portion of the planned developments of Sites 2B3 to 2B6 that would be screened by the Kai Tak Sports Park with dotted line; (c) Annotation - It seems that "R(B)4" does not correspond with Sites 4A2, and 4C1 to 4C3.	Fig. 8 is revised accordingly.
9	Para. 4.1 – Please remove phrases "the visual impact is considered to be acceptable" and "and the scale and effect of increasing the BHR by 4m is negligible in the wider urban context".	Para. 4.1 is updated accordingly.

Comments from Urban Design and Landscape Section (Urban Design Unit), Other Urban Design Comments

Comments from UD&L (Urban Design Unit) (Contact: Ms Rachel YIU, Tel: 3565 3944)		Response
1	Please confirm the 4m-wide setback of residential tower from southeastern boundary facing POS.	Please be confirmed min. 3m wide setback of residential tower from southeastern boundary facing POS would be provided. (**Appendix 5**)

Comments from UD&L (Urban Design Unit) (Contact: Ms Rachel YIU, Tel: 3565 3944)		Response
2	*JPN No. 8* - **Para. 5.5 -** applicant may wish to briefly elaborate on how proposed increase of BH is within 4% of the total storey height of all MiC floors of residential tower portion according to JPN No. 8.	Further information is supplemented in SPS para. 5.5. (**Appendix 1**)
3	*Criteria for Minor Relaxation of BHR* - applicant may wish to elaborate on how proposed development fulfils the criteria for minor relaxation of BHR in accordance with Para. 8.8 of the ES of the OZP.	It fulfils criteria (f) in para. 8.8 of the ES of the OZP, in that the proposed minor relaxation of BHR is to accommodate an innovative building design that would benefit the neighbourhood and would not cause adverse landscape and visual impacts. The proposed minor relaxation of BHR is solely for adopting MiC into its residential tower portion. MiC is a form of green and innovative building design (SPS para. 5.5 and JPN8 refers). It would enable better quality control, simplify the construction process, reduce disturbance and nuisance to the neighbourhood, and reduce waste. Various technical assessments included in this submission also concluded that the proposal would not cause adverse landscape impacts. The degree of visual change brought by the minor relaxation of BHR would also be minor in nature.
4	**Re. R-to-C Item 8, SPS, Para. 5.11 –** Please review if the 16m to 21m setback at the boundary facing LTSBPC should be at the northeastern boundary instead.	Para. 5.11 is revised accordingly. (**Appendix 1**)
5	**Para. 5.14 –** Please discard "…the air ventilation…and healthy environment for pedestrians" and revise to "the proposed building design would not induce significant adverse impact to the nearby environment".	Para. 5.14 is revised accordingly. (**Appendix 1**)
6	**Re. R-to-C Item 9, SPS, Para. 5.24 and 5.25** - 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 application site boundary.	Para. 5.24 and 5.25 are revised accordingly. (**Appendix 1**)
7	**SPS, Para. 5.25** – Please supplement on the opening hours of the 3m-wide full-height setback for public pedestrian passageway abutting the southeastern boundary.	Para. 5.25 is revised accordingly. (**Appendix 1**)
8	**SPS, Para. 7.4** – Please revise to "…the visual impact of increasing the building height by (about) 4m or not more than 4% (of the residential tower MiC) ~~is negligible~~ **does not bring about significant adverse visual impact** from all the viewpoints".	Para. 7.4 is revised accordingly. (**Appendix 1**)
9	**SPS, Para. 7.5, 5th point** – Please remove "Optimizing podium-free design of the retail belt" to avoid confusion.	5th point at para. 7.5 is removed. (**Appendix 1**)
10	**SPS, Para. 7.7 (Harbour Planning Principles)** – We defer to HO of DEVB to comment from perspective of Harbour Planning Principles.	Noted.

Comments from UD&L (Urban Design Unit) (Contact: Ms Rachel YIU, Tel: 3565 3944)		Response
11	**SPS, Executive Summary (ES), Para. 8.2 and all relevant paragraphs** – Please revise to "The minor relaxation of BHR, solely to adopt MiC, ~~is insignificant and negligible from~~ **does not bring about significant adverse impact as demonstrated in** the visual appraisal." Please also revise the Chinese version of ES accordingly.	ES and para. 8.2 are revised accordingly. (**Appendix 1**)
12	**Re. R-to-C Item 12, MLP, Building Setback Diagram (Dwg. No. SK-01)** – Please clarify if 16m to 21m-wide setback from the northeastern site boundary along LTSBPC and 4m-wide setback of residential tower from the southeastern boundary facing POS is from 3/F to 34/F instead and revise as appropriate to ensure consistency with MLP.	Please be clarified that the setback of residential tower from the northeastern site boundary along LTSBPC is approximately 16m to 21m and from southeastern boundary facing POS would be min. 3m and the setback is from 3/F to 34/F. Please find amended building setback diagram at **Appendix 5.**

Comments from Kowloon District Planning Office

Comments from KDPO (Contact: Ms. Helen IP, Tel: 2231 4973)		Response
1	Please elaborate more on how the adoption of MiC would lead to the proposed minor relaxation of building height.	Please find the elaboration on MiC in **Appendix 6**.

Comments from Leisure and Cultural Services Department

Comments from LCSD (Contact: Ms Cherry LEUNG, Tel: 2601 8051)		Response
1	Please be informed that we have no specific comment on the minor relaxation in BH restriction in the captioned site.	Noted.

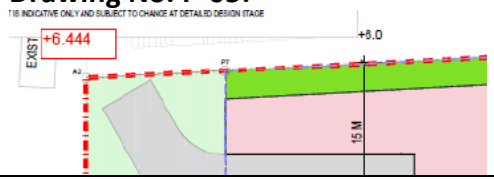
Comments from Development Bureau (Lands Unit)

Comments from DEVB (Lands Unit) (Contact: Esmond LEUNG, Tel: 3509 8834)		Response
1	Nil comment from Lands Unit/DEVB, please.	Noted.

Comments from Drainage Services Department

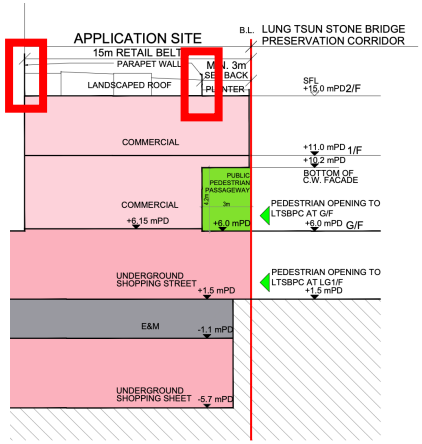
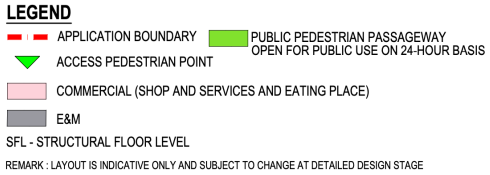
Comments from DSD (Contact: Mr KY CHEN, Tel: 2300 1425)		Response
1	Please be advised that we have no adverse comment on the submission from drainage planning and maintenance perspective. This is a coordinated reply of Mainland South Division and Land Drainage Division.	Noted.

Comments from Architectural Services Department (Project Management)

Comments from ArchSD, Project Management, Branch 3, Division 303 (Contact: Mr Eric TSANG, Tel: 2867 3456)		Response
1	Minor comment marked as below for your consideration please. **Figure 13 and 14 in PS:**  **Drawing No. P-05:** 	Please note that Figures 13 and 14 are now revised to indicate the minimum height of opening of 3m only as per the requirement stated in the Planning Brief (**Appendix 1**), whereas drawing no. S-01 indicates the bottom of curtain wall facade 4.2m (>3m) above finished floor level which conforms cantilever concept drawing for retail belt. Drawing No. P-05 is also revised accordingly (**Appendix 5**).

Comments from Kowloon District Planning Office

Comments from KDPO (Contact: Ms. Helen IP, Tel: 2231 4973)		Response
1	About the roof of the retail belt, please elaborate which part of the roof would be higher than +15mPD and the area of that.	The retail belt respects the building height restriction of +15mPD. The original landscape footbridge connecting the clubhouse and the retail belt roof area is omitted (**Appendix 5** and **Appendix 7**). The remaining landscape feature (e.g. a landscaped walkway) will be on the structural roof of +15mPD. The landscape feature concerned occupies approximately 14% of the total retail belt area. The landscape master plan with terraced landscape and paths could allow better views

Comments from KDPO (Contact: Ms. Helen IP, Tel: 2231 4973)		Response
		to the surroundings at the retail belt roof and is a result of a discussion with UD&L. Detailed design will be considered in General Building Plan submission stage.
2	Please elaborate whether the roof of the retail belt would be opened for public to access, and how could the public gain access there and how the area would be managed.	Roof of the retail belt building is a private property and not intended for open public access. It is intended to be used by occupiers of the development and visitors invited by them only. Barrier free access complying statutory requirements shall be provided. Details shall be considered in General Building Plan submission stage.
3	Please clarify the height of parapets at the retail belt roof.	The concerned parapets will be min. 1.1m in height as required under regulation 3A of the Building (Planning) Regulations (from the top of landscape features on the landscaped roof below). Details will be considered at detail design stage.  TYPICAL SECTION ACROSS RETAIL BELT BLOCK A 

Appendix 1

Replacement pages of Planning Statement

housing supply. The minor relaxation of BHR, solely to adopt MiC, does not bring about significant adverse impact as demonstrated in 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，相關改動不會造成重大的負面影響。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。

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 of 4.035m is within the acceptable 4% range of the total storey height of all MiC floors of the residential tower portion (i.e. 4% x 100.95m = 4.038m). 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

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 northeastern boundary facing LTSBPC, and minimum 3m 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 proposed building design would not induce significant adverse impact to the nearby environment.

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, which is located outside the Site boundary, 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, which is located outside the Site boundary, 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. It is open for public use on 24-hour basis.

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 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

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) does not bring about significant adverse visual impact 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) Comply with the dimensions, setback specifications and façade treatment to be compatible and congruous with the LTSBPC and surrounding developments;
(vi) G/F commercial extension from retail belt to enhance vibrancy and amenity for visitors;
(vii) Maximise at-grade public spaces by 3m-wide setback for public pedestrian passageway, and the POS;
(viii) Provision of the POS and the landscaping and public amenities at the south-east boundary of site;
(ix) 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

	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 (vi) 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)
		– 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, does not bring about significant adverse impact as demonstrated in 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 2
Replacement Pages of
Traffic Impact Assessment

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LIST OF DRAWINGS

LIST OF TABLES

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 2033 (i.e. 4 years after completion of the Proposed Development) is adopted as the design year for this TIA study. The adopted design year 2033 is also considered well sufficient to cover the building covenant date of the Proposed Development by end of year 2030 as required under lease.

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 2033 Reference Traffic Forecast

4.3.1 Future year 2033 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 2033 "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.

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**.

2033 Reference Traffic Forecasts

4.3.13 By taking into account the above, the 2033 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 60m2 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 2033 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 2033 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 2033 design traffic forecasts.

4.5.2 The 2033 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 2033 future scenarios are summarized in **Table 5.1**.

Table 5.1 Junctions to be Assessed in the Future Scenarios of Year 2033

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 2033 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 2033 Junction Operation Performance

Junction No.	Junction	Method of Control	Year 2033 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	0.78	0.46	0.81	0.48
B	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road	Roundabout	0.58	0.70	0.59	0.70
C	Shing Kai Road / Concorde Road / Muk Chun Street	Roundabout	0.43	0.46	0.44	0.47
D	Shing Kai Road / Muk Hung Street	Signal	40%	42%	39%	41%
E	Shing Kai Road / Muk Chui Street	Signal	8%	6%	7%	5%
F	Shing Kai Road / Kai Shing Street / Muk On Street	Signal	34%	19%	34%	19%
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	25%	43%	25%	42%
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Signal	8%	23%	7%	23%
J	Kowloon City Road / Sung Wong Toi Road	Signal	41%	33%	41%	33%
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Signal	33%	22%	33%	22%
L	Olympic Avenue / Hang Wan Road	Signal	88%	>100%	85%	>100%
M	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street	Roundabout	0.93	0.82	0.93	0.82
N	Kai San Road / Tsat Po Street/ Pat Tat Street	Signal	20%	27%	18%	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%	37%	17%	36%
R	Olympic Avenue / Dakota Drive	Signal	-5%	23%	-6%	22%
S	Olympic Avenue / Muk Lai Street	Signal	22%	45%	9%	31%

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 2033 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 2033 (With Junction Improvement Schemes)

Junction No.	Junction With Improvement	Method of Control	Year 2033 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%	17%
I	To Kwa Wan Road / Sung Wong Toi Road	Signal	22%	38%	22%	38%
R	Olympic Avenue / Dakota Drive	Signal	22%	44%	20%	42%
S	Olympic Avenue / Muk Lai Street	Signal	61%	67%	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 2033 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 2033 are presented in **Table 5.5**.

Table 5.5 Junctions to be Assessed in the Future Scenarios of Year 2033

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	57
		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	59	40	59
		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	62	45	62	45
		Shing Kai Rd EB	105	64	54	64	55
		Shing Kai Rd WB	220	45	43	45	44
H	Shing Kai Road / Western Access to Main Stadium	Shing Kai Rd EB	190	64	56	65	56
		Shing Kai Rd WB	175	66	56	67	56
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Sung Wong Toi Rd EB	>500	46	34	47	35
		To Kwa Wan Rd NB	70	67	60	67	61
		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	27
		Kowloon City Rd NB	80	22	23	22	23
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Sung Wong Toi Rd WB	80	57	65	57	66
		Ma Tau Chung Rd NB	170	48	72	48	72
		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	60	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	70	57
		Shing Kai Rd WB	165	71	58	71	59
R	Olympic Avenue/ Dakota Drive	Olympic Ave EB	280	40	31	44	32
		Olympic Ave WB	210	55	49	56	50
		Dakota Drive NB	120	49	33	49	33

Table 5.5 Junctions to be Assessed in the Future Scenarios of Year 2033 (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 2033 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 private cars and coaches of Kai Tak Sports Park during event starts and the traffic generation of private cars and coaches 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 Apart from the traffic attraction and generation of private cars and coaches as mentioned in the above **paragraph 5.4.3**, the potential traffic demand of taxis' pick-up/drop-off induced by Kai Tak Sport Park during the start and dispersal of the event are also taken into account in the traffic forecast for sensitivity test. The year 2033 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 2033 Junction Operation Performance - Sensitivity Test

Junction No.	Junction	Method of Control	Year 2033 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	0.47	0.47
D	Shing Kai Road / Muk Hung Street	Signal	41%	41%
E	Shing Kai Road / Muk Chui Street *(With Improvement)*	Signal	17%	17%
F	Shing Kai Road / Kai Shing Street / Muk On Street	Signal	19%	17%
G	Shing Kai Road / Shing Fung Road / Muk Tai Street	Signal	19%	20%
H	Shing Kai Road / Western Access to Main Stadium	Signal	17%	10%
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road *(With Improvement)*	Signal	27%	22%
J	Kowloon City Road / Sung Wong Toi Road	Signal	31%	14%
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Signal	21%	16%
L	Olympic Avenue / Hang Wan Road	Signal	94%	>100%
M	Prince Edward Road East / Prince Edward Road West / Ma Tau Chung Road / Argyle Street	Roundabout	0.88	0.83
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%	93%
Q	Shing Kai Road / Eastern Access to Main Stadium	Signal	13%	10%
R	Olympic Avenue/ Dakota Drive *(With Improvement)*	Signal	35%	36%
S	Olympic Avenue / Muk Lai Street *(With Improvement)*	Signal	54%	59%

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	57	57
		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	59	59
		Shing Kai Rd EB	245	38	40
		Shing Kai Rd WB	410	24	24
G	Shing Kai Road / Shing Fung Road / Muk Tai Street	Muk Tai St SB	145	27	27
		Shing Fung Rd NB	>500	57	43
		Shing Kai Rd EB	105	60	64
		Shing Kai Rd WB	220	58	48
H	Shing Kai Road / Western Access to Main Stadium	Shing Kai Rd EB	190	74	71
		Shing Kai Rd WB	175	70	74
I	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Sung Wong Toi Rd EB	>500	55	36
		To Kwa Wan Rd NB	70	66	68
		Shing Kai Rd SB	175	60	69
J	Kowloon City Road / Sung Wong Toi Road	Sung Wong Toi Rd WB	300	27	36
		Kowloon City Rd NB	80	23	32
K	Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street	Sung Wong Toi Rd WB	80	66	71
		Ma Tau Chung Rd NB	170	72	77
		Ma Tau Chung Rd SB	80	50	52
L	Olympic Avenue / Hang Wan Road	Olympic Ave NB	90	18	18
		Olympic Ave SB	280	20	17
		Hang Wan Rd EB	30	19	15
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	33	40
		Shing Kai Rd WB	255	39	42
		Slip Road of CKR	200	30	13
Q	Shing Kai Road / Eastern Access to Main Stadium	Shing Kai Rd EB	200	73	79
		Shing Kai Rd WB	165	78	74
R	Olympic Avenue/ Dakota Drive	Olympic Ave EB	280	33	34
		Olympic Ave WB	210	52	50
		Dakota Drive NB	120	34	34
S	Olympic Avenue / Muk Lai Street	Olympic Ave EB	210	19	19
		Olympic Ave WB	400	39	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 2033 under the sensitivity scenarios.

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 2033 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 2033 to 2044, reference was made to growth rates as derived from (i) the population projections from "Hong Kong Population Projections 2022 – 2046" 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 2033 to 2044 is about +0.32% p.a.

Table 6.1 Population Projections from "Hong Kong Population Projections 2022 – 2046"

Projected Population (thousand person)		Growth Rate (% p.a.)
2033	**2044**	**2033/2044**
7,903.6	8,186.8	0.32%

6.2.4 The 2044 long term traffic forecasted flows are derived by applying a growth rate of 0.32% p.a. onto the year 2033 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.

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.

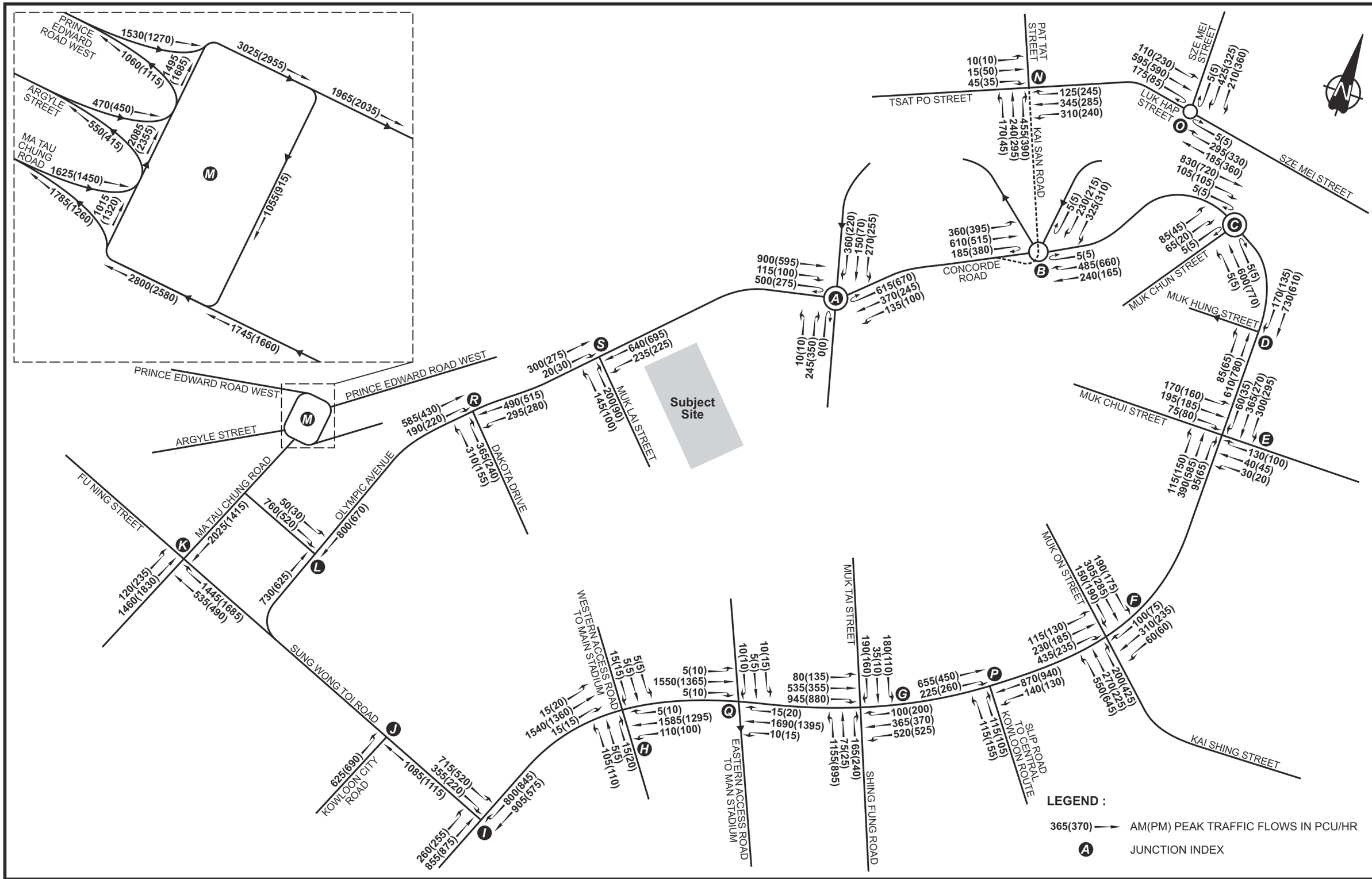
7.1.6 In view of the Proposed Development was planned to be completed by year 2029, Year 2033 (i.e. 4 years after completion of the Proposed Development) was adopted as the design year for assessments in this TIA study.

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 2033 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 2033 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
-	-	-	-
-	-	-	-
-	-	-	-
A	TD'S COMMENTS INCORPORATED	CHC	23JUL24

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

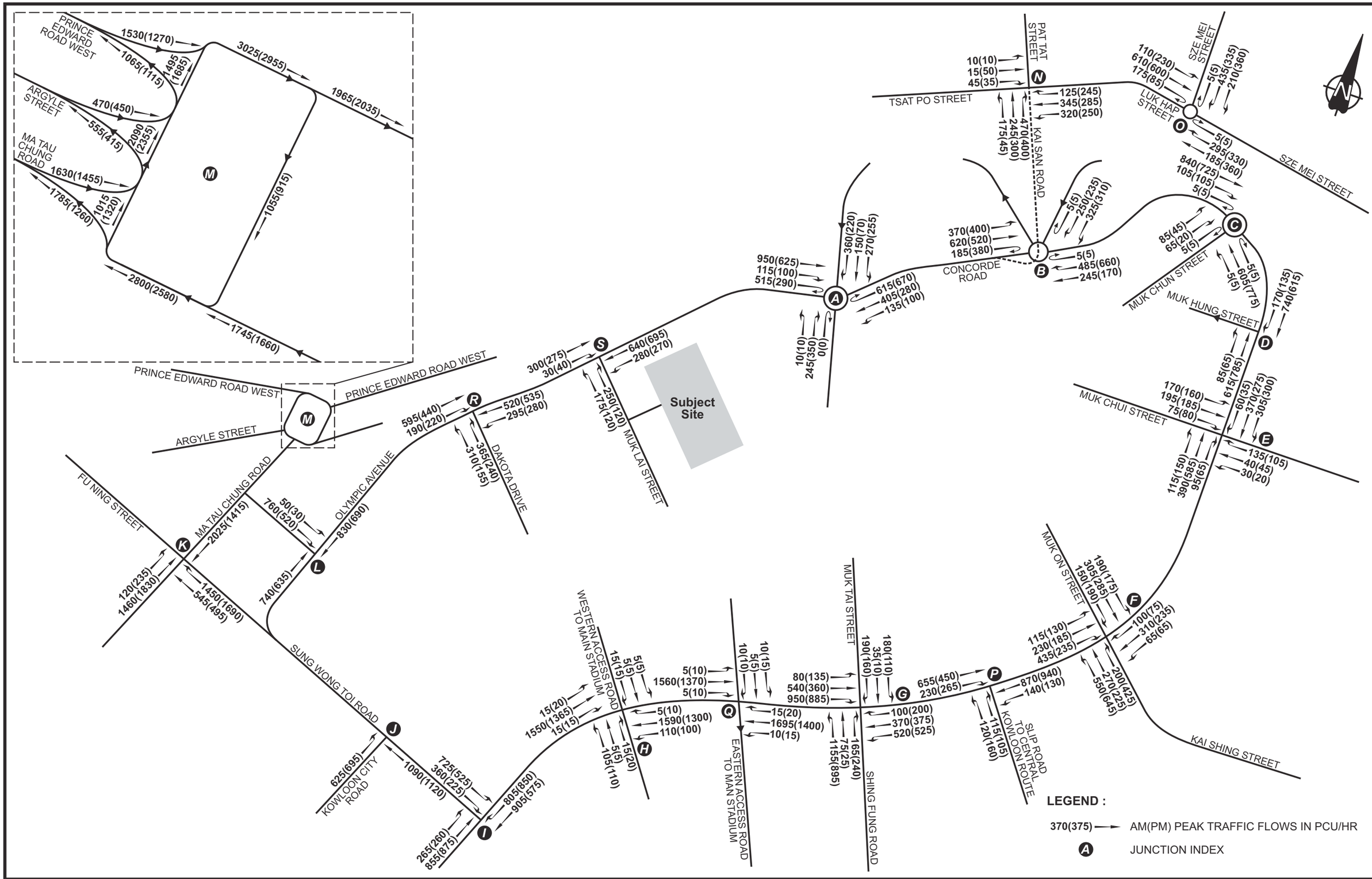
YEAR 2033 REFERENCE TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	4.11	A

SYSTRA MVA

CHK50786310/TIA/F411-A.CDR/LLH/23JUL24

Original Size : A3



Rev.	Description	Checked	Date
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-	-	-	-
-	-	-	-
A	TD'S COMMENTS INCORPORATED	CHC	25JUL24

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 2033 DESIGN TRAFFIC FLOWS

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	4.13	A

SYSTRA MVA

CHK50786310/TIA/F413-A.CDR/LLH/25JUL24

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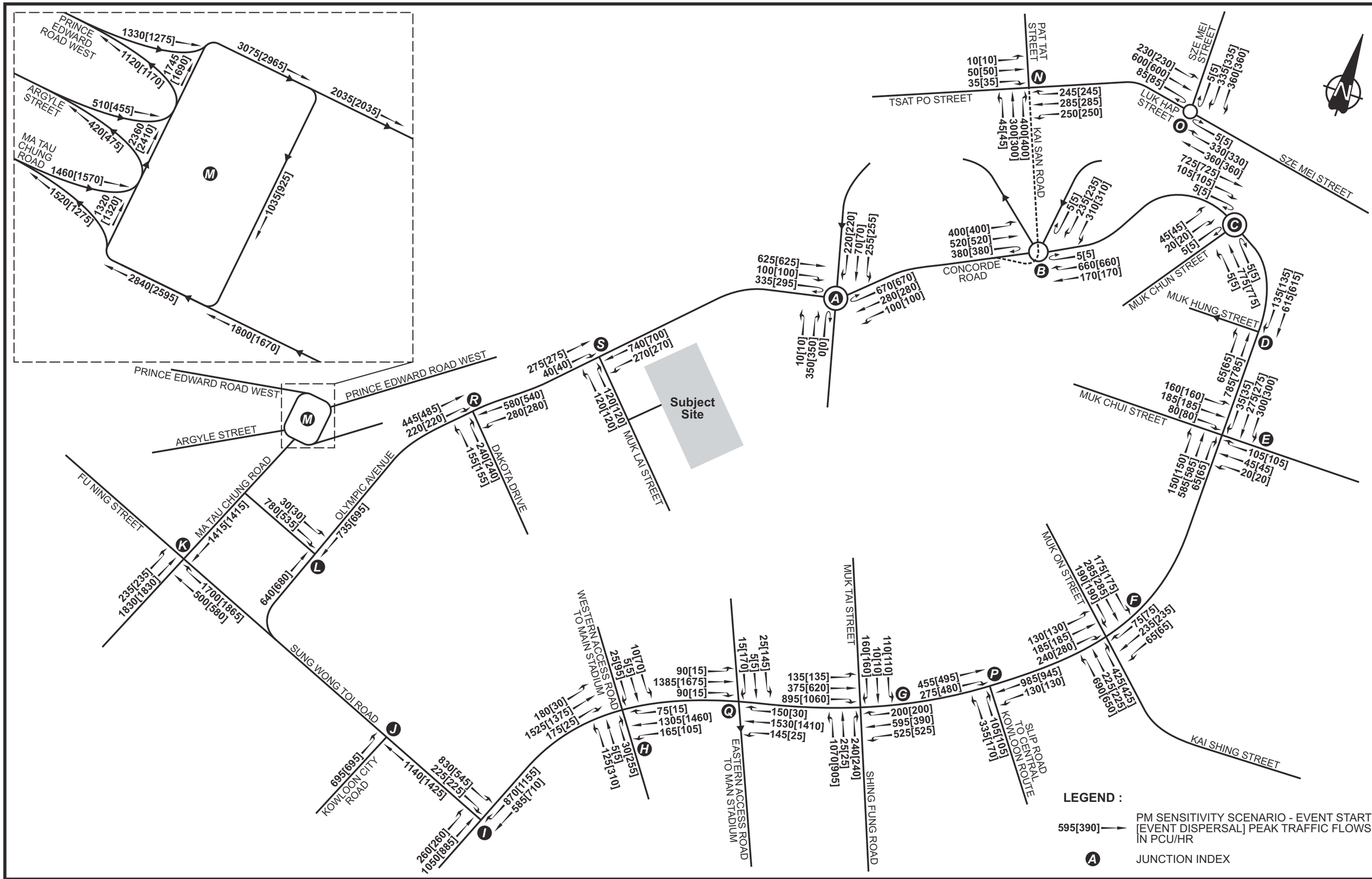

Rev.	Description	Checked	Date
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-	-	-	-
-	-	-	-
A	TD'S COMMENTS INCORPORATED	CHC	25JUL24

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 2033 DESIGN TRAFFIC FLOWS FOR SENSITIVITY TEST

Designed	Checked	Scale	Date	Drawing No.	Rev.
TCW	CHC	NTS	JUN 2024	5.5	A

SYSTRA MVA

CHK50786310/TIA/F55-A.CDR/LLH/25JUL24

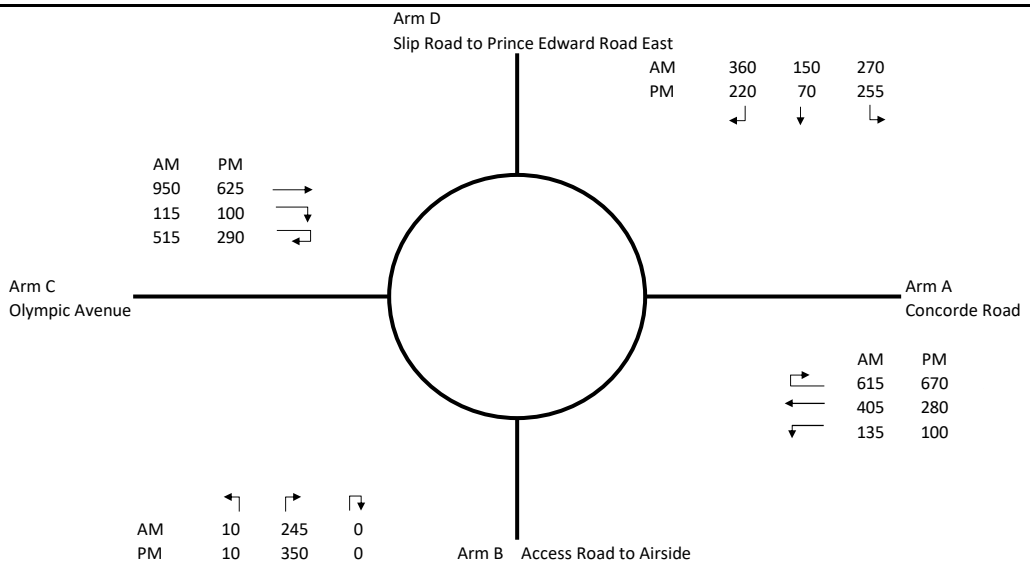
Original Size : A3

APPENDIX A – JUNCTION ASSESSMENTS

2033 Reference

Roundabout Capacity Calculation

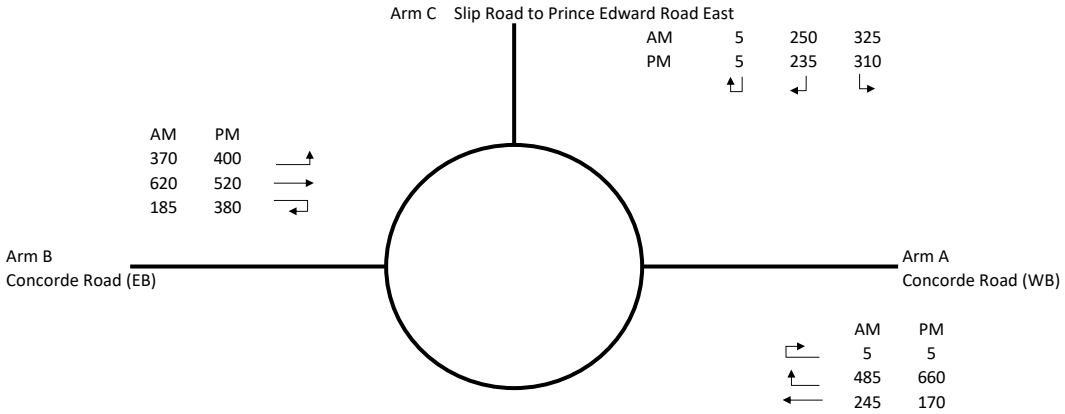
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				1,155	255	1,580	780	
Qc	Circulating Flow Across Entry (pcu/hour)				1,140	1,895	860	2,440	
Qe	= K (F - Fc*Qc)				1842	1032	2273	958	
DFC	= Q / Qe	Design Flow / Capacity	0.81		0.63	0.25	0.70	**0.81**	
		Total Entry Flows	3,770						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,050	360	1,015	545	
Qc	Circulating Flow Across Entry (pcu/hour)				680	1,460	1,020	2,035	
Qe	= K (F - Fc*Qc)				2186	1330	2154	1256	
DFC	= Q / Qe	Design Flow / Capacity	0.48		**0.48**	0.27	0.47	0.43	
		Total Entry Flows	2,970						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

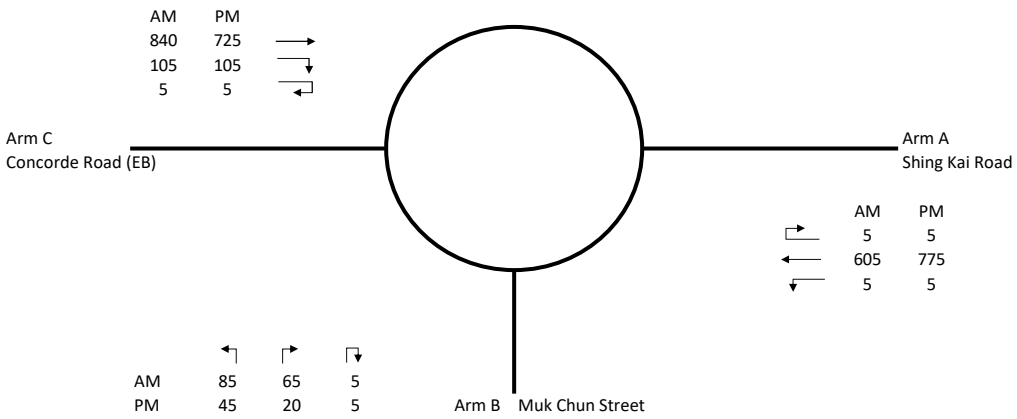
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				735	1,175	580	
Qc	Circulating Flow Across Entry (pcu/hour)				440	495	810	
Qe	= K (F - Fc*Qc)				2275	1994	1930	
DFC	= Q / Qe	Design Flow / Capacity	0.59		0.32	**0.59**	0.30	
		Total Entry Flows	2,490					
PM RESULT								
Q	Entry Flow (pcu/hour)				835	1,300	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	670	905	
Qe	= K (F - Fc*Qc)				2120	1856	1849	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,685					
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:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				615	155	950	
Qc	Circulating Flow Across Entry (pcu/hour)				115	610	75	
Qe	= K (F - Fc*Qc)				1684	1481	2171	
DFC	= Q / Qe	Design Flow / Capacity	0.44		0.37	0.10	**0.44**	
		Total Entry Flows	1,720					
PM RESULT								
Q	Entry Flow (pcu/hour)				785	70	835	
Qc	Circulating Flow Across Entry (pcu/hour)				115	780	30	
Qe	= K (F - Fc*Qc)				1684	1381	2200	
DFC	= Q / Qe	Design Flow / Capacity	0.47		**0.47**	0.05	0.38	
		Total Entry Flows	1,690					
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: 2033

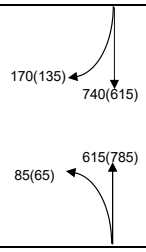
Description: 2033 Designed Scenario Designed By: TCW Checked By: CHC

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			25%	16%	1930	1950	334	0.173	0.173	407	0.209	
(NB)	↑	A	1	3.650						2120	2120	366	0.173		443	0.209	0.209
Shing Kai Road	↓	B	2	3.650						1980	1980	455	0.230	0.230	374	0.189	
(SB)	↓ →	B	2	3.650		8		37%	36%	1980	1985	455	0.230		376	0.189	0.189
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

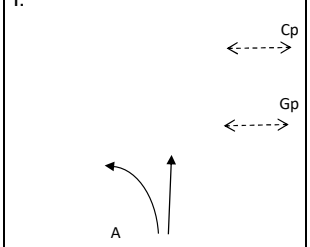
Flow: (pcu/hr)



Group	Gp,B	A,B,Ep	Group	A,Dp	A,B,Ep
y	0.230	0.403	y	0.209	0.398
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. (%)	170%	39%	R.C. (%)	197%	41%

Stage / Phase Diagrams

1.



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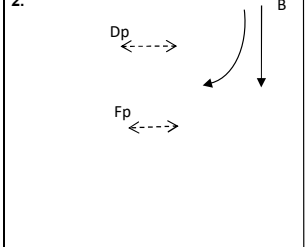

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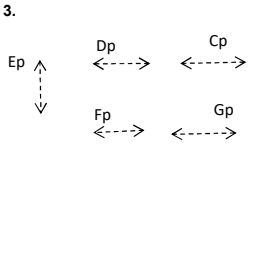


4.

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: JUL, 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: 2033

Description: 2033 Design Scenario — Designed By: TCW — Checked By: CHC

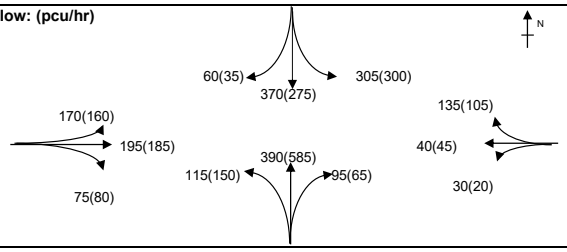
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak 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		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	382	0.199	
(NB)		A	1	3.650		20		30%	16%	2075	2095	312	0.150		418	0.200	0.200

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

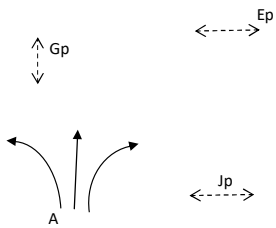
Flow: (pcu/hr)



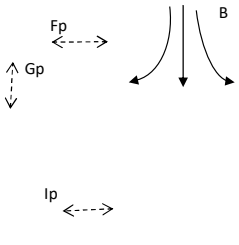
Group	Jp,B,C,D	A,B,C,D	Group	A,Fp,C,D	A,B,C,D
y	0.488	0.638	y	0.473	0.647
L (sec)	38	29	L (sec)	39	29
C (sec)	120	120	C (sec)	120	120
y pract.	0.615	0.683	y pract.	0.608	0.683
R.C. (%)	26%	7%	R.C. (%)	28%	5%

Stage / Phase Diagrams

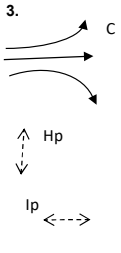
1.



2.



3.



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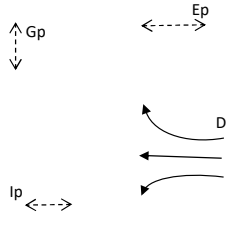


5.

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: JUL, 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: 2033

Description: 2033 Design Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

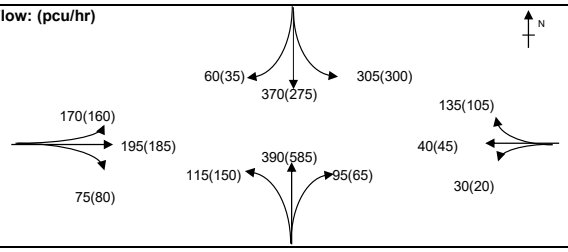
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak 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	382	0.199	
(NB)		A	1	3.650		20		30%	16%	2075	2095	312	0.150		418	0.200	0.200

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

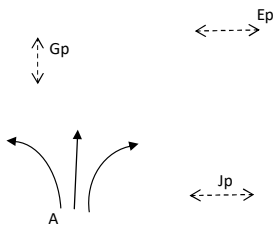
Flow: (pcu/hr)



Group	A,B,Hp,D	A,B,C,D	Group	A,B,Hp,D	A,B,C,D
y	0.411	0.570	y	0.427	0.581
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. (%)	33%	17%

Stage / Phase Diagrams

1.



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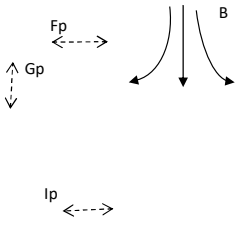

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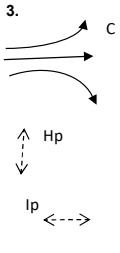

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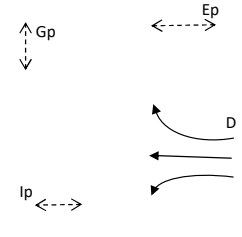


5.

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: JUL, 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: 2033

Description: 2033 Design Scenario — Designed By: TCW — Checked By: CHC

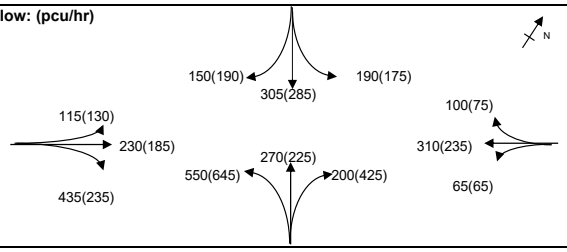
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	2	3.650	18			45%	74%	1910	1865	255	0.134	0.134	175	0.094	
		A	2	3.650		18		66%	28%	2010	2070	268	0.133		194	0.094	
		A	2	3.650		15				1925	1925	257	0.134		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		425	0.216	0.216
		C	4	3.650						2120	2120	270	0.127	0.127	225	0.106	
	#	B	1,2,4	4.000	50					1370	1370	550	0.401		645	0.471	

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:

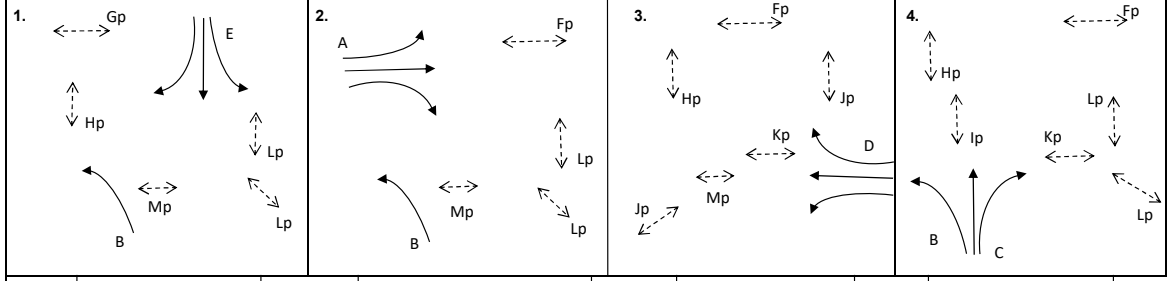
TAC Junction: 130s CT adopted
Site factor 0.7 adopted

Flow: (pcu/hr)



Group	Gp,A,D,C	E,A,Jp,C	Group	Gp,A,Jp,C	E,A,Jp,C
y	0.359	0.425	y	0.310	0.475
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. (%)	27%	19%

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: JUL, 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: 2033

Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

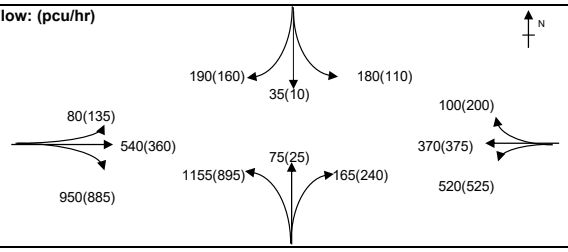
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		B	2	3.650	15			27%	58%	1930	1870	296	0.153		233	0.125	
		B	2	3.500						2105	2105	324	0.154		262	0.124	
		B	2	3.500		20				1960	1960	481	0.245	0.245	448	0.229	0.229
		B	2	3.500		15				1915	1915	469	0.245		437	0.228	
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	251	0.134		253	0.135	
		E	4	3.650	28					2010	2010	269	0.134		272	0.135	
Shing Fung Road		C	2,3	3.650	20					1840	1840	556	0.302		431	0.234	
		C	2,3	3.650	22					1985	1985	599	0.302		464	0.234	
		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:

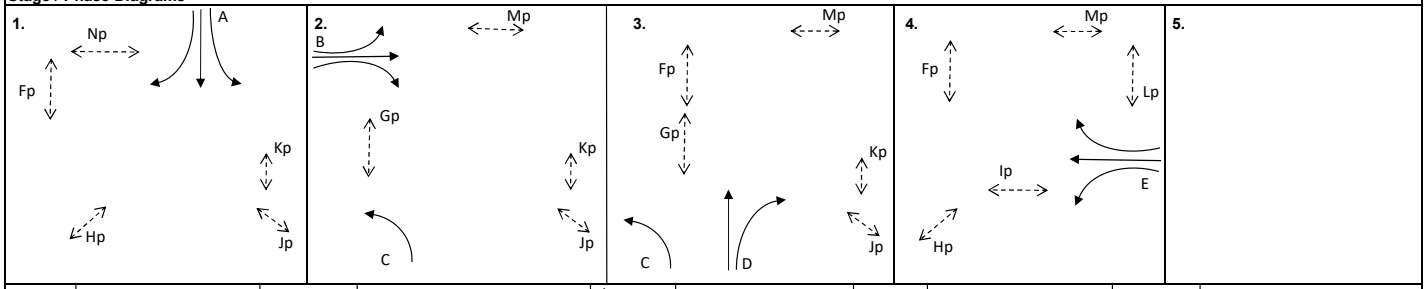
TAC junction : CT 130s adopted
^ Site factor 0.5 added due to flare length

Flow: (pcu/hr)



Group	A,B,D,E	A,B,D,Lp	Group	A,B,D,Lp	A,B,D,E
y	0.668	0.533	y	0.462	0.601
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. (%)	17%	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: JUL, 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: 2033

Description: 2033 Design Scenario — Designed By: TCW — Checked By: CHC

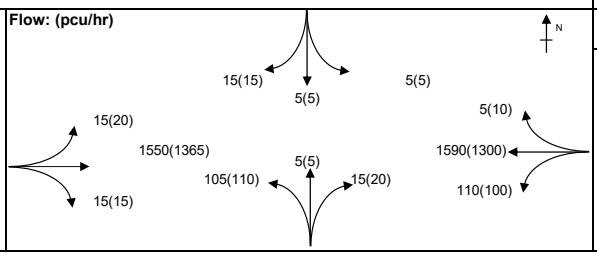
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road EB		A	1	3.650	17.5			3%	4%	1975	1970	502	0.254		445	0.226	0.226
		A	1	3.650						2120	2120	540	0.255	0.255	478	0.225	
		A	1	3.650		22.5		3%	3%	2115	2115	538	0.254		477	0.226	
Shing Kai Road WB		C	3	3.650	17.5			21%	23%	1945	1940	536	0.276		443	0.228	
		C	3	3.650						2120	2120	585	0.276	0.276	484	0.228	
		C	3	3.650		22.5		1%	2%	2120	2115	584	0.275		483	0.228	0.228
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

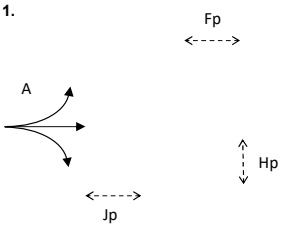
Flow: (pcu/hr)



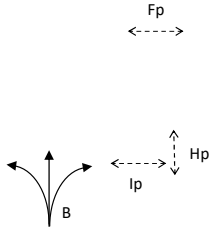
Group	A,B,Gp,D	A,B,C,D	Group	A,B,Gp,D	A,B,C,D
y	0.313	0.589	y	0.287	0.515
L (sec)	39	24	L (sec)	39	24
C (sec)	130	130	C (sec)	130	130
y pract.	0.630	0.734	y pract.	0.630	0.734
R.C. (%)	101%	25%	R.C. (%)	120%	42%

Stage / Phase Diagrams

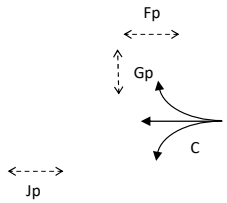
1.



2.



3.



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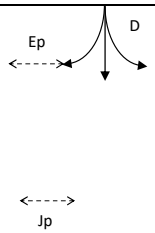


5.

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: JUL, 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: 2033

Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

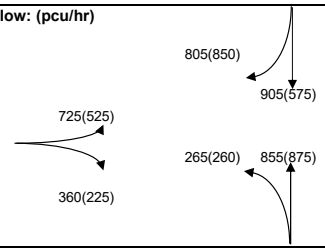
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road	← ↑	C	1	3.600	18			49%	48%	1895	1900	538	0.284	0.284	545	0.287	
(NB)	↑	C	1	3.000						2055	2055	582	0.283		590	0.287	0.287
Shing Kai Road	↓	A	2	3.500						1965	1965	551	0.280		462	0.235	
(SB)	← ↓	A	2	3.650		32		39%	77%	2080	2045	584	0.281	0.281	481	0.235	0.235
	↓	A	2	4.000		30				2050	2050	575	0.280		482	0.235	
Sung Wong Toi	↑	B	3	3.650	18					1830	1830	349	0.191		253	0.138	0.138
Road	↑ →	B	3	3.650	20	32		100% / 0%	100% / 0%	1970	1970	376	0.191	0.191	272	0.138	
(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

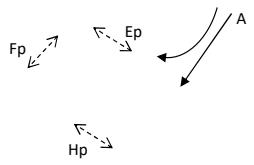
Flow: (pcu/hr)



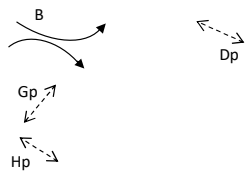
Group	A,Gp,C	A,B,C	Group	A,Gp,C	A,B,C
y	0.565	0.756	y	0.522	0.661
L (sec)	29	13	L (sec)	29	13
C (sec)	130	130	C (sec)	130	130
y pract.	0.699	0.810	y pract.	0.699	0.810
R.C. (%)	24%	7%	R.C. (%)	34%	23%

Stage / Phase Diagrams

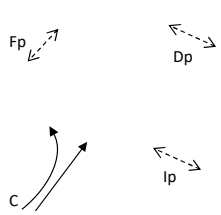
1.



2.



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: JUL, 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: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road — Design Year: 2033

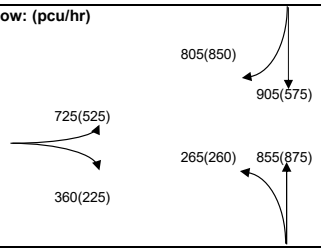
Description: 2033 Design Scenario (With proposed junction improvement) — Designed By: TCW — Checked By: CHC

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	↰↑	D	4	3.600	18			49%	48%	1895	1900	538	0.284	0.284	545	0.287	
(NB)	↑	D	4	3.000						2055	2055	582	0.283		590	0.287	0.287
Shing Kai Riad (SB)	↓	A	1,2	3.500						1965	1965	551	0.280		462	0.235	
	↰↓	A	1,2	3.650		32		39%	77%	2080	2045	584	0.281	0.281	481	0.235	0.235
	↰	A	1,2	4.000		30				2050	2050	575	0.280		482	0.235	
To Kwa Wan Road	→↑ *	C	2,3	3.500	18					1630	1630	329	0.202		238	0.146	
(EB)	→↑	C	2,3	3.500	20					1960	1960	396	0.202		287	0.146	
	→↓	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

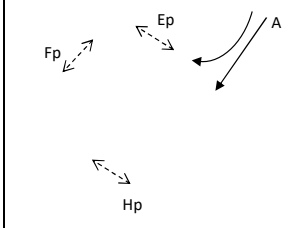
Flow: (pcu/hr)



Group	A,Jp	A,B,D	Group	A,Jp	A,B,D
y	0.281	0.655	y	0.235	0.579
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. (%)	169%	22%	R.C. (%)	221%	38%

Stage / Phase Diagrams

1.



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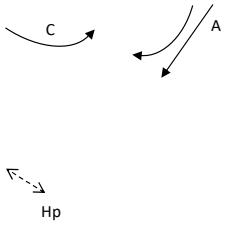

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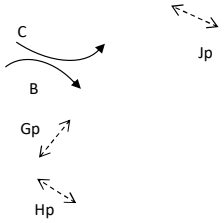
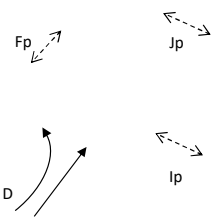


4.



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: JUL, 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: 2033

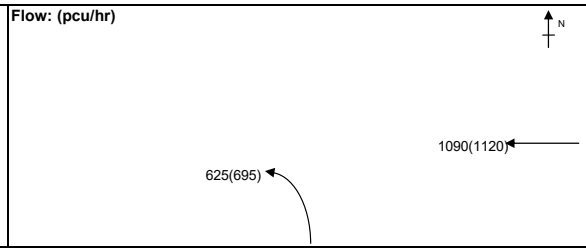
Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

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	528	0.333		543	0.343	0.343
	←	A	1	3.500						1685	1685	562	0.334	0.334	577	0.342	
Kowloon City Road	↰	B	2	4.500	10					1435	1435	298	0.208		332	0.231	0.231
	↰	B	2	4.500	12					1570	1570	327	0.208	0.208	363	0.231	
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

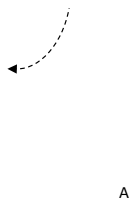
Flow: (pcu/hr)



Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.334	0.542	y	0.343	0.574
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. (%)	58%	41%	R.C. (%)	54%	33%

Stage / Phase Diagrams

1.



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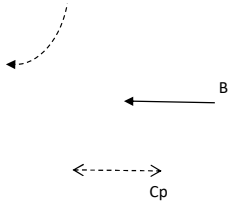


3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=		I/G=	

Date: JUL, 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: 2033

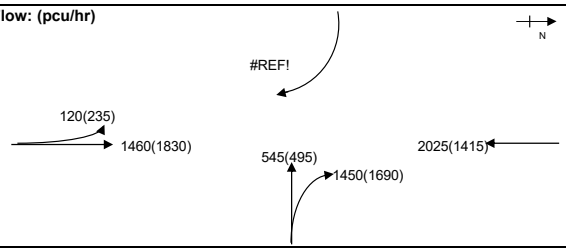
Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

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	455	0.255		531	0.297	0.297
	↱	D	2,3	3.500		20				1960	1960	500	0.255		582	0.297	
	↱	D	2,3	3.000		25				1940	1940	495	0.255	0.255	577	0.297	
	↑	E	2	3.500						1965	1965	263	0.134		239	0.122	
	↑	E	2	3.500						2105	2105	282	0.134		256	0.122	
Ma Tau Chung Rd (NB)	↗	A	1	3.500	10			24%	37%	1895	1860	491	0.259		633	0.340	0.340
	→	A	1	3.500						2105	2105	545	0.259		716	0.340	
	→	A	1	3.500						2105	2105	544	0.258		716	0.340	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	690	0.328		482	0.229	
	←	B	1	3.500						2105	2105	691	0.328	0.328	483	0.229	
	←	B	1	3.500						1965	1965	644	0.328		450	0.229	
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

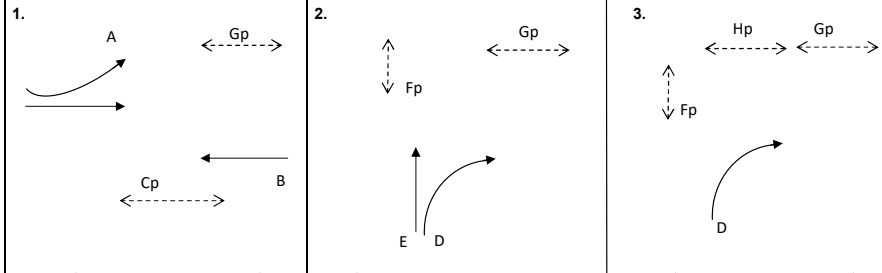
Notes:

Flow: (pcu/hr)



Group	A,D,I	B,D,I	Group	B,D,I	A,D,I
y	0.514	0.583	y	0.527	0.638
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. (%)	51%	33%	R.C. (%)	47%	22%

Stage / Phase Diagrams



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: JUL, 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: 2033

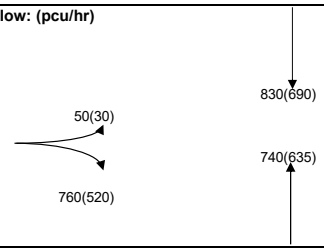
Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

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	357	0.182		307	0.156	
(NB)	↑	A	1,2	3.500						2105	2105	383	0.182		328	0.156	
Olympic Avenue	↓	B	1,2	3.650						1980	1980	401	0.203	0.203	333	0.168	
(SB)	↓	B	1,2	3.650						2120	2120	429	0.202		357	0.168	0.168
Hang Wan Road	↱*	C	2,3	5.000	13					1895	1895	50	0.026		30	0.016	
	↱*	D	3	3.300		25				1965	1965	382	0.194		262	0.133	0.133
	↱*	D	3	3.300		20				1940	1940	378	0.195	0.195	258	0.133	

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:

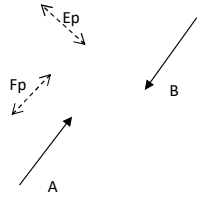
Flow: (pcu/hr)



Group	A,D	B,D	Group	A,D	B,D
y	0.377	0.397	y	0.290	0.302
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. (%)	103%	85%	R.C. (%)	164%	144%

Stage / Phase Diagrams

1.



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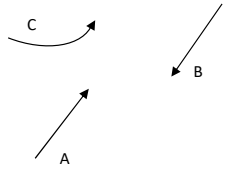

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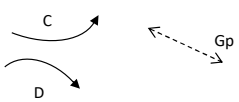


4.

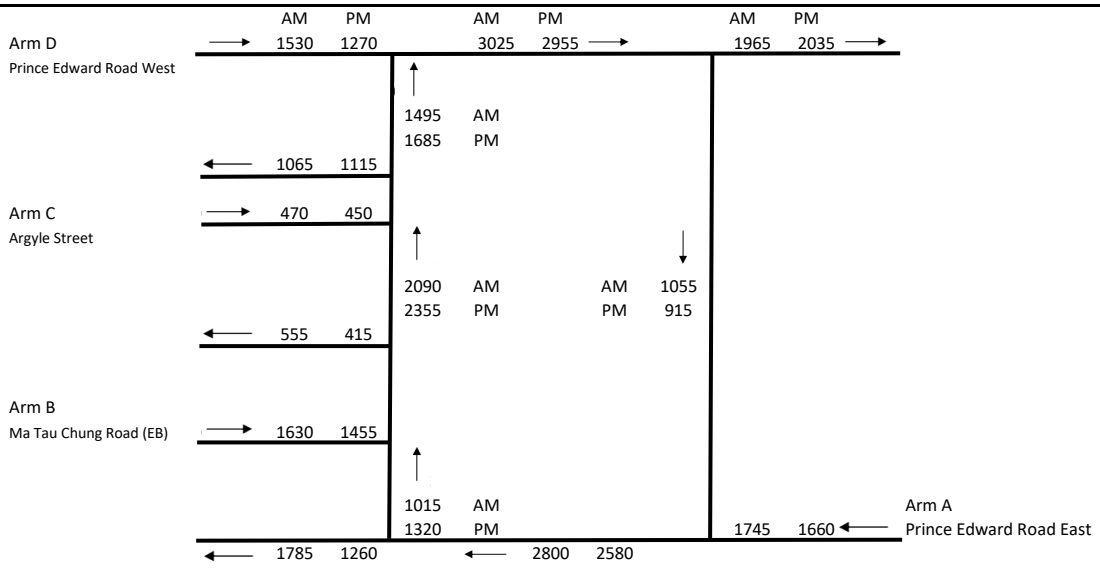
5.

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: JUL, 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:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				1,745	1,630	470	1,530	
Qc	Circulating Flow Across Entry (pcu/hour)				1,055	1,015	2,090	1,495	
Qe	= K (F - Fc*Qc)				2221	2160	1100	1652	
DFC	= Q / Qe	Design Flow / Capacity	0.93		0.79	0.75	0.43	**0.93**	
		Total Entry Flows	5,375						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,660	1,455	450	1,270	
Qc	Circulating Flow Across Entry (pcu/hour)				915	1,320	2,355	1,685	
Qe	= K (F - Fc*Qc)				2310	1983	958	1544	
DFC	= Q / Qe	Design Flow / Capacity	0.82		0.72	0.73	0.47	**0.82**	
		Total Entry Flows	4,835						
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**

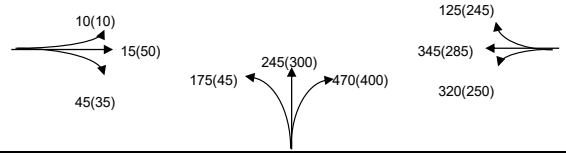
Junction: Kai San Road / Tsat Po Street Design Year: 2033

Description: 2033 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		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	470	0.240	0.240	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:

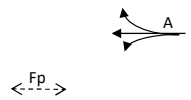
Flow: (pcu/hr)



Group	A,Gp,B,C	A,Gp,B,C	Group	A,Gp,B,C	A,Gp,B,C
y	0.447	0.447	y	0.454	0.454
L (sec)	54	54	L (sec)	48	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.526	0.526	y pract.	0.568	0.568
R.C. (%)	18%	18%	R.C. (%)	25%	25%

Stage / Phase Diagrams

1.



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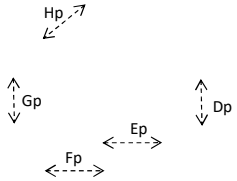

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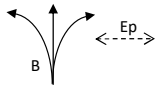
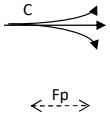


4.



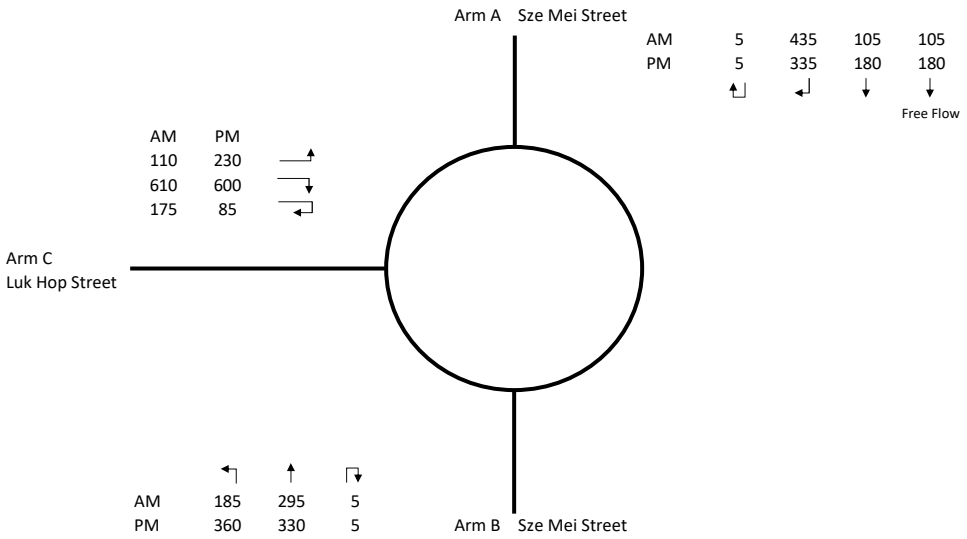
5.

I/G= 11		I/G= 11	17	I/G= 3		I/G= 9	5	I/G=	
I/G= 11		I/G= 11	17	I/G= 3		I/G= 9		I/G=	

Date: JUL, 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:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				545	485	895	
Qc	Circulating Flow Across Entry (pcu/hour)				790	615	305	
Qe	= K (F - Fc*Qc)				837	816	1220	
DFC	= Q / Qe	Design Flow / Capacity	0.73		0.65	0.59	**0.73**	
		Total Entry Flows	1,925					
PM RESULT								
Q	Entry Flow (pcu/hour)				520	695	915	
Qc	Circulating Flow Across Entry (pcu/hour)				690	425	340	
Qe	= K (F - Fc*Qc)				898	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,130					
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: 2033

Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

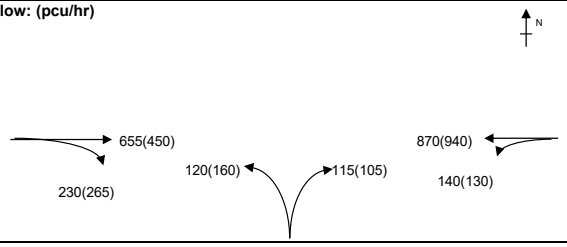
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	→	A	1	3.650						1980	1980	316	0.160		233	0.118	
	↱	A	1	3.650		26		0%	13%	2120	2105	339	0.160	0.160	248	0.118	0.118
	↴	A	1	3.650		23				1990	1990	230	0.116		234	0.118	
Shing Kai Road (WB)	↰↓ *	E	3	4.500	35			43%	37%	2030	2030	327	0.161		347	0.171	
	←	E	3	3.600						2115	2115	342	0.162	0.162	362	0.171	0.171
	←	E	3	3.600						2115	2115	341	0.161		361	0.171	
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

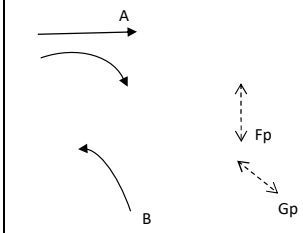
Flow: (pcu/hr)



Group	A,C,E	A,Hp,E	Group	A,C,E	A,Hp,E
y	0.351	0.322	y	0.316	0.289
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. (%)	133%	100%	R.C. (%)	159%	123%

Stage / Phase Diagrams

1.



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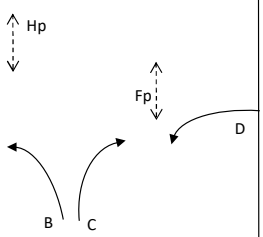

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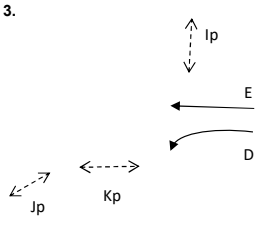


4.

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: JUL, 2024 **Junction:** Shing Kai Road / Slip road of CKR (P)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Eastern access to main stadium — Design Year: 2033

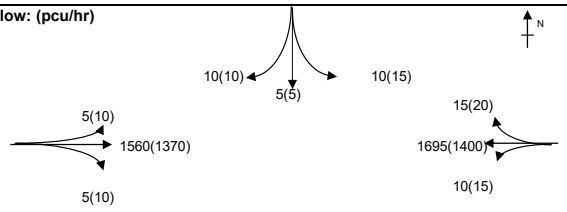
Description: 2033 Design Scenario — Designed By: TCW — Checked By: CHC

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	500	0.251	0.251	442	0.222	0.222
		A	1	3.800						2135	2135	535	0.251		474	0.222	
		A	1	3.800		30		1%	2%	2135	2135	535	0.251		474	0.222	
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	547	0.275		456	0.229	
		B	2	3.800						2135	2135	587	0.275		490	0.230	
		B	2	3.800		30		3%	4%	2130	2130	586	0.275	0.275	489	0.230	0.230
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

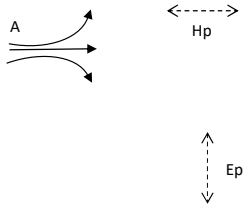
Flow: (pcu/hr)



Group	A,B,Gp	A,B,C,Dp	Group	A,B,Gp	A,B,C,Dp
y	0.526	0.526	y	0.452	0.452
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. (%)	37%	17%	R.C. (%)	59%	36%

Stage / Phase Diagrams

1.



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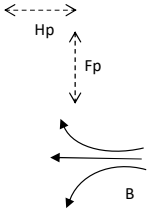

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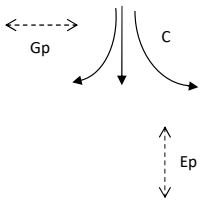

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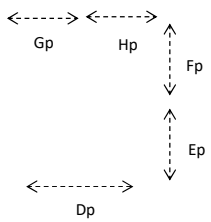


5.

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: JUL, 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: 2033

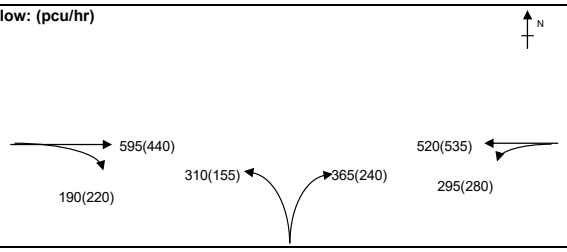
Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

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
Muk Yan Street (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	378	0.206		379	0.205	
	←	C	3	3.650						2120	2120	437	0.206	0.206	436	0.206	0.206
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)

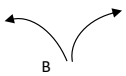


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.665	0.665	y	0.509	0.509
L (sec)	34	37	L (sec)	34	37
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.623	y pract.	0.645	0.623
R.C. (%)	-3%	-6%	R.C. (%)	27%	22%

Stage / Phase Diagrams

1.

2.



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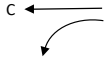

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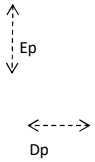


5.

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: JUL, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

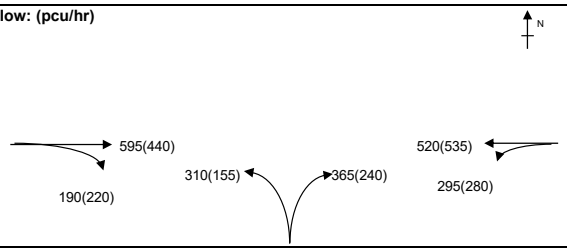
Junction: Olympic Avenue/ Dakota Drive Design Year: 2033

Description: 2033 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
Muk Yan Street	↰	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	378	0.206		379	0.205	
(WB)	←	C	3	3.650						2120	2120	437	0.206	0.206	436	0.206	0.206
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			6	+	10	=	16			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	10	=	16						

Notes:

Flow: (pcu/hr)

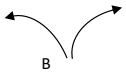


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.521	0.521	y	0.438	0.438
L (sec)	34	37	L (sec)	34	37
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.623	y pract.	0.645	0.623
R.C. (%)	24%	20%	R.C. (%)	47%	42%

Stage / Phase Diagrams

1.

2.



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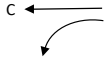

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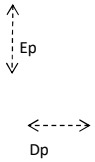


5.

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: JUL, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

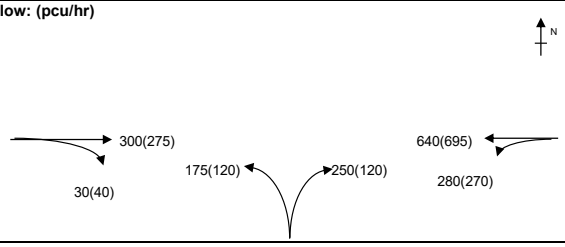
Junction: Olympic Avenue / Muk Lai Street Design Year: 2033

Description: 2033 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	431	0.231	0.231	453	0.242	0.242
(WB)	←	C	3	3.650						2120	2120	489	0.231		512	0.242	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			7	+	13	=	20			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	15	=	21						

Notes:

Flow: (pcu/hr)



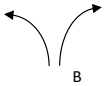
Group	A,C,B,Ep	A,C,B,Dp	Group	A,C,B,Ep	A,C,B,Dp
y	0.536	0.536	y	0.446	0.446
L (sec)	37	42	L (sec)	37	42
C (sec)	120	120	C (sec)	120	120
y pract.	0.623	0.585	y pract.	0.623	0.585
R.C. (%)	16%	9%	R.C. (%)	40%	31%

Stage / Phase Diagrams

1.

2.

3.



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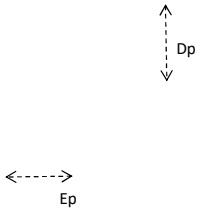


5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	20	I/G=	
I/G= 2		I/G= 7		I/G= 6		I/G= 10	20	I/G=	

Date: JUL, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

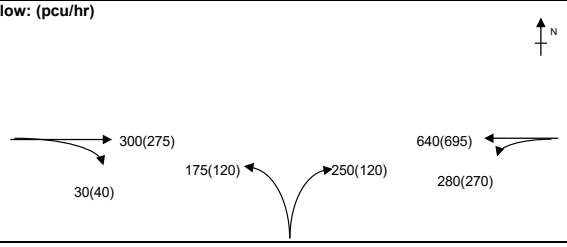
Junction: Olympic Avenue / Muk Lai Street Design Year: 2033

Description: 2033 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	431	0.231	0.231	453	0.242	0.242
(WB)	←	C	3	3.650						2120	2120	489	0.231		512	0.242	
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:

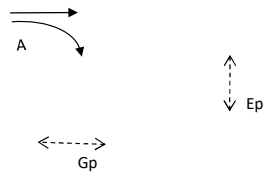
Flow: (pcu/hr)



Group	A,B,Dp	A,B,C	Group	A,B,C	A,Fp,C
y	0.304	0.536	y	0.446	0.319
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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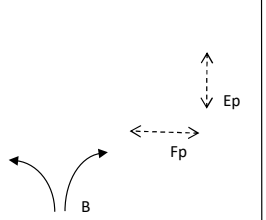

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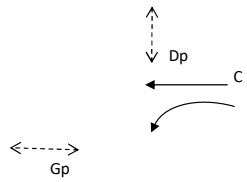


4.

5.

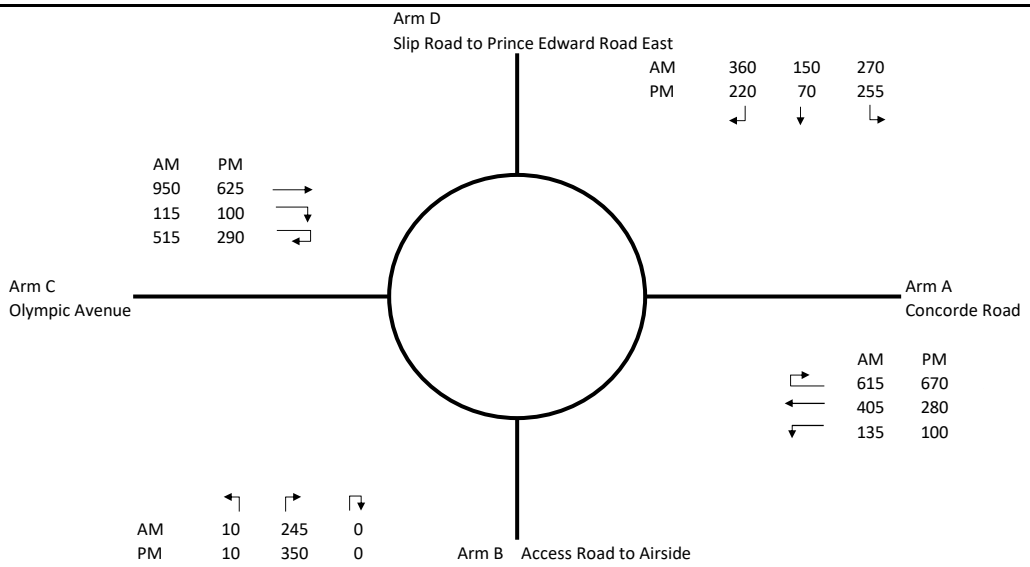
I/G= 6		I/G= 5		I/G= 5		I/G=	I/G=
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=

Date: JUL, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

2033 Design

Roundabout Capacity Calculation

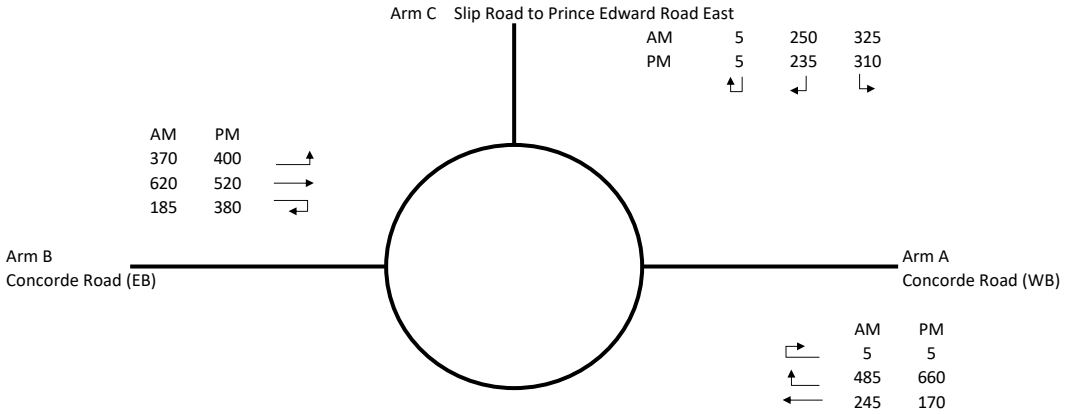
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				1,155	255	1,580	780	
Qc	Circulating Flow Across Entry (pcu/hour)				1,140	1,895	860	2,440	
Qe	= K (F - Fc*Qc)				1842	1032	2273	958	
DFC	= Q / Qe	Design Flow / Capacity	0.81		0.63	0.25	0.70	**0.81**	
		Total Entry Flows	3,770						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,050	360	1,015	545	
Qc	Circulating Flow Across Entry (pcu/hour)				680	1,460	1,020	2,035	
Qe	= K (F - Fc*Qc)				2186	1330	2154	1256	
DFC	= Q / Qe	Design Flow / Capacity	0.48		**0.48**	0.27	0.47	0.43	
		Total Entry Flows	2,970						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

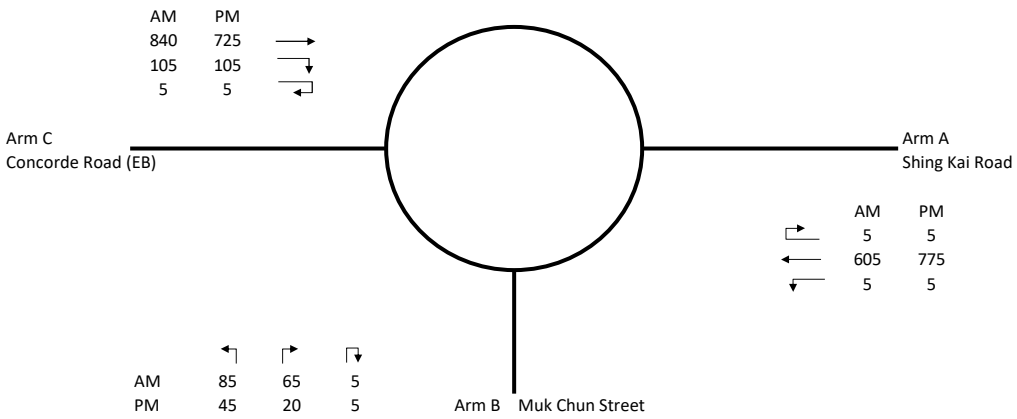
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				735	1,175	580	
Qc	Circulating Flow Across Entry (pcu/hour)				440	495	810	
Qe	= K (F - Fc*Qc)				2275	1994	1930	
DFC	= Q / Qe	Design Flow / Capacity	0.59		0.32	**0.59**	0.30	
		Total Entry Flows	2,490					
PM RESULT								
Q	Entry Flow (pcu/hour)				835	1,300	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	670	905	
Qe	= K (F - Fc*Qc)				2120	1856	1849	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,685					
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:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				615	155	950	
Qc	Circulating Flow Across Entry (pcu/hour)				115	610	75	
Qe	= K (F - Fc*Qc)				1684	1481	2171	
DFC	= Q / Qe	Design Flow / Capacity	0.44		0.37	0.10	**0.44**	
		Total Entry Flows	1,720					
PM RESULT								
Q	Entry Flow (pcu/hour)				785	70	835	
Qc	Circulating Flow Across Entry (pcu/hour)				115	780	30	
Qe	= K (F - Fc*Qc)				1684	1381	2200	
DFC	= Q / Qe	Design Flow / Capacity	0.47		**0.47**	0.05	0.38	
		Total Entry Flows	1,690					
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: 2033

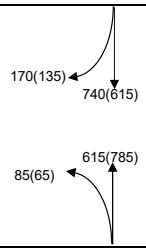
Description: 2033 Designed Scenario Designed By: TCW Checked By: CHC

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			25%	16%	1930	1950	334	0.173	0.173	407	0.209	
(NB)	↑	A	1	3.650						2120	2120	366	0.173		443	0.209	0.209
Shing Kai Road	↓	B	2	3.650						1980	1980	455	0.230	0.230	374	0.189	
(SB)	↓ →	B	2	3.650		8		37%	36%	1980	1985	455	0.230		376	0.189	0.189
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

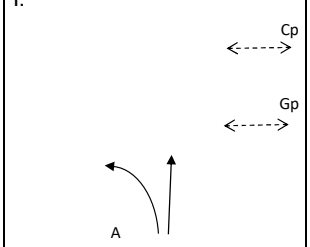
Flow: (pcu/hr)



Group	Gp,B	A,B,Ep	Group	A,Dp	A,B,Ep
y	0.230	0.403	y	0.209	0.398
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. (%)	170%	39%	R.C. (%)	197%	41%

Stage / Phase Diagrams

1.



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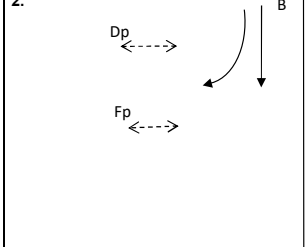

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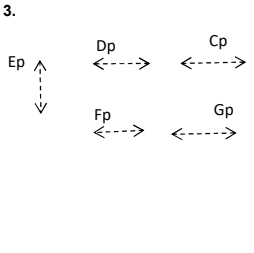


4.

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: JUL, 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: 2033

Description: 2033 Design Scenario — Designed By: TCW — Checked By: CHC

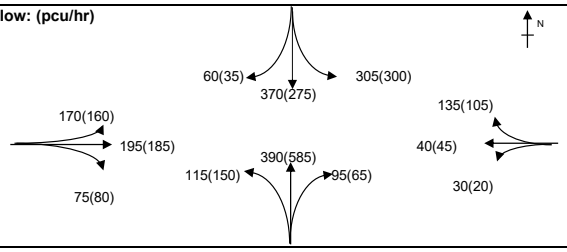
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak 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		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	382	0.199	
(NB)		A	1	3.650		20		30%	16%	2075	2095	312	0.150		418	0.200	0.200

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

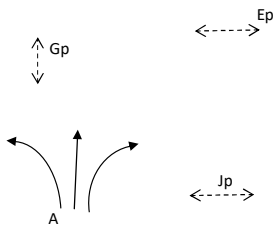
Flow: (pcu/hr)



Group	Jp,B,C,D	A,B,C,D	Group	A,Fp,C,D	A,B,C,D
y	0.488	0.638	y	0.473	0.647
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. (%)	28%	5%

Stage / Phase Diagrams

1.



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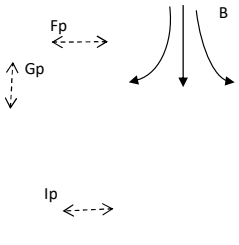

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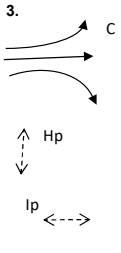

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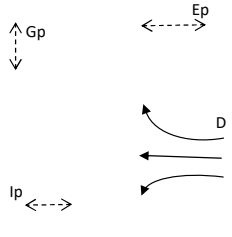


5.

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: JUL, 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: 2033

Description: 2033 Design Scenario (With proposed junction improvement) Designed By: TCW Checked By: CHC

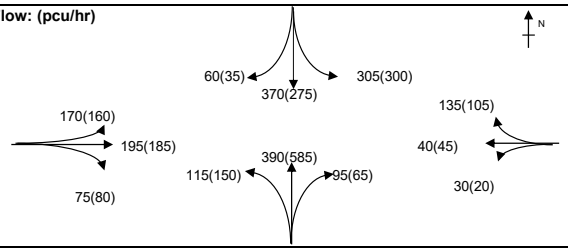
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak 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	382	0.199	
(NB)		A	1	3.650		20		30%	16%	2075	2095	312	0.150		418	0.200	0.200

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

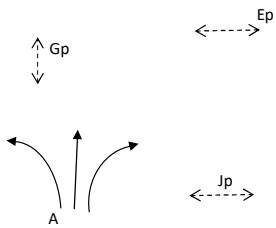
Flow: (pcu/hr)



Group	A,B,Hp,D	A,B,C,D	Group	A,B,Hp,D	A,B,C,D
y	0.411	0.570	y	0.427	0.581
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. (%)	33%	17%

Stage / Phase Diagrams

1.



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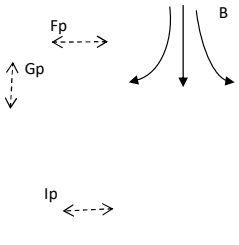
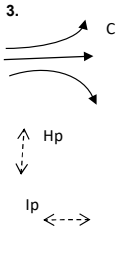


3.



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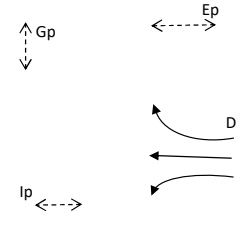


5.

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: JUL, 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: 2033

Description: 2033 Design Scenario — Designed By: TCW — Checked By: CHC

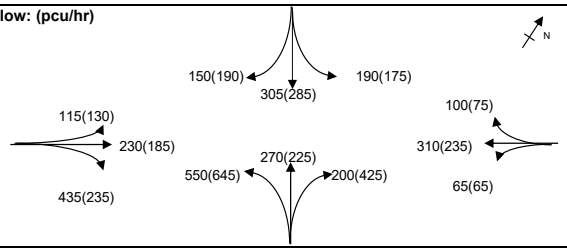
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	2	3.650	18			45%	74%	1910	1865	255	0.134	0.134	175	0.094	
		A	2	3.650		18		66%	28%	2010	2070	268	0.133		194	0.094	
		A	2	3.650		15				1925	1925	257	0.134		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		425	0.216	0.216
		C	4	3.650						2120	2120	270	0.127	0.127	225	0.106	
	#	B	1,2,4	4.000	50					1370	1370	550	0.401		645	0.471	

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:

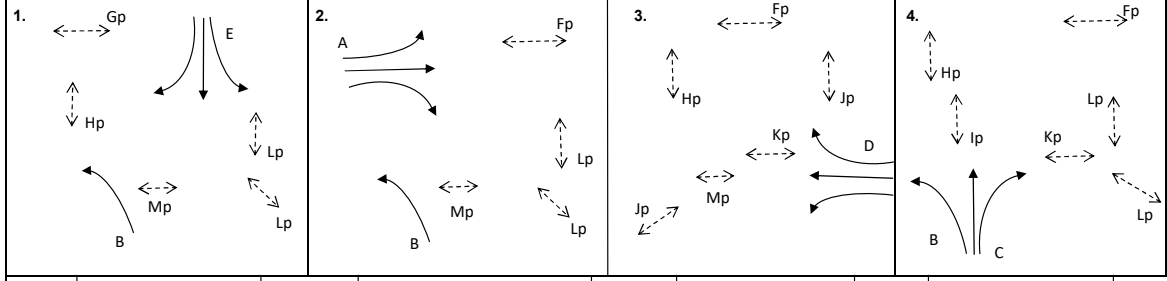
TAC Junction: 130s CT adopted
Site factor 0.7 adopted

Flow: (pcu/hr)



Group	Gp,A,D,C	E,A,Jp,C	Group	Gp,A,Jp,C	E,A,Jp,C
y	0.359	0.425	y	0.310	0.475
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. (%)	27%	19%

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: JUL, 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: 2033

Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

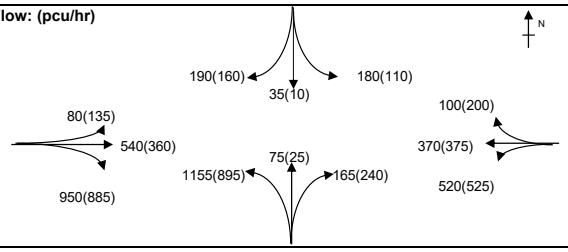
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		B	2	3.650	15			27%	58%	1930	1870	296	0.153		233	0.125	
		B	2	3.500						2105	2105	324	0.154		262	0.124	
		B	2	3.500		20				1960	1960	481	0.245	0.245	448	0.229	0.229
		B	2	3.500		15				1915	1915	469	0.245		437	0.228	
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	251	0.134		253	0.135	
		E	4	3.650	28					2010	2010	269	0.134		272	0.135	
Shing Fung Road		C	2,3	3.650	20					1840	1840	556	0.302		431	0.234	
		C	2,3	3.650	22					1985	1985	599	0.302		464	0.234	
		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:

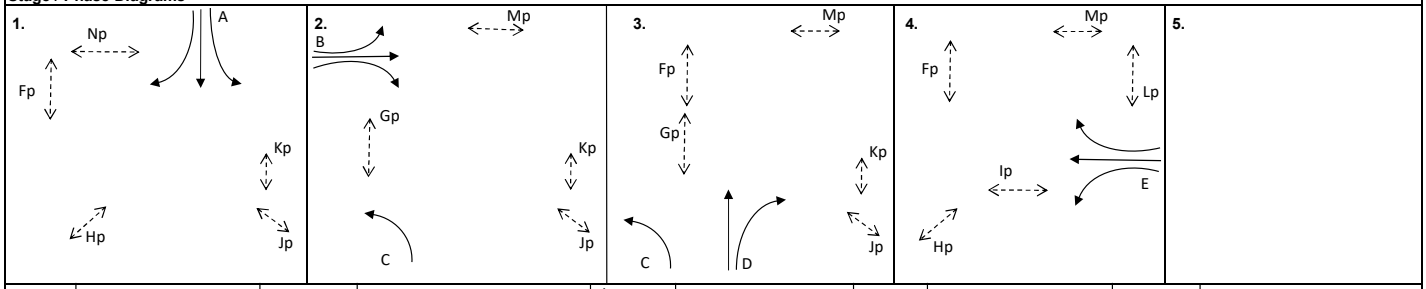
TAC junction : CT 130s adopted
^ Site factor 0.5 added due to flare length

Flow: (pcu/hr)



Group	A,B,D,E	A,B,D,Lp	Group	A,B,D,Lp	A,B,D,E
y	0.668	0.533	y	0.462	0.601
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. (%)	17%	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: JUL, 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: 2033

Description: 2033 Design Scenario — Designed By: TCW — Checked By: CHC

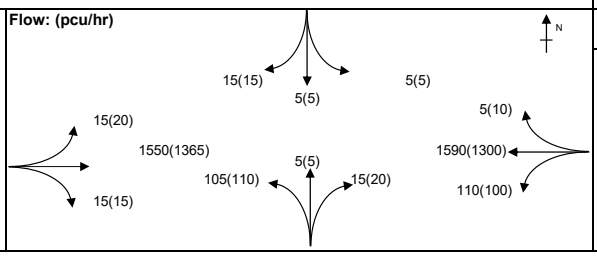
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road EB		A	1	3.650	17.5			3%	4%	1975	1970	502	0.254		445	0.226	0.226
		A	1	3.650						2120	2120	540	0.255	0.255	478	0.225	
		A	1	3.650		22.5		3%	3%	2115	2115	538	0.254		477	0.226	
Shing Kai Road WB		C	3	3.650	17.5			21%	23%	1945	1940	536	0.276		443	0.228	
		C	3	3.650						2120	2120	585	0.276	0.276	484	0.228	
		C	3	3.650		22.5		1%	2%	2120	2115	584	0.275		483	0.228	0.228
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

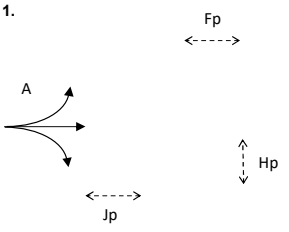
Flow: (pcu/hr)



Group	A,B,Gp,D	A,B,C,D	Group	A,B,Gp,D	A,B,C,D
y	0.313	0.589	y	0.287	0.515
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. (%)	101%	25%	R.C. (%)	120%	42%

Stage / Phase Diagrams

1.



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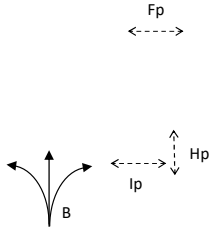
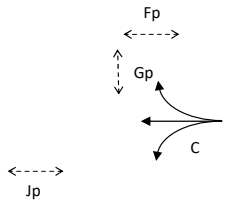
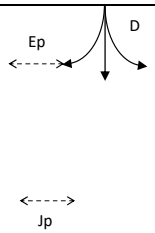


3.



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: JUL, 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: 2033

Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

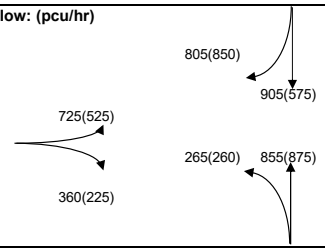
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road	← ↑	C	1	3.600	18			49%	48%	1895	1900	538	0.284	0.284	545	0.287	
(NB)	↑	C	1	3.000						2055	2055	582	0.283		590	0.287	0.287
Shing Kai Road	↓	A	2	3.500						1965	1965	551	0.280		462	0.235	
(SB)	← ↓	A	2	3.650		32		39%	77%	2080	2045	584	0.281	0.281	481	0.235	0.235
	↓	A	2	4.000		30				2050	2050	575	0.280		482	0.235	
Sung Wong Toi	↑	B	3	3.650	18					1830	1830	349	0.191		253	0.138	0.138
Road	↑ →	B	3	3.650	20	32		100% / 0%	100% / 0%	1970	1970	376	0.191	0.191	272	0.138	
(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

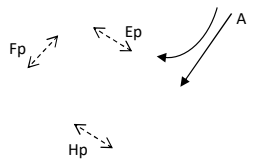
Flow: (pcu/hr)



Group	A,Gp,C	A,B,C	Group	A,Gp,C	A,B,C
y	0.565	0.756	y	0.522	0.661
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. (%)	24%	7%	R.C. (%)	34%	23%

Stage / Phase Diagrams

1.



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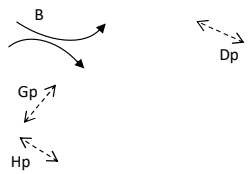

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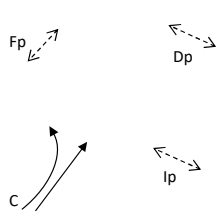


4.

5.

I/G= 5		I/G= 6		I/G= 5		I/G=	
I/G= 5		I/G= 6		I/G= 5		I/G=	

Date: JUL, 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: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road — Design Year: 2033

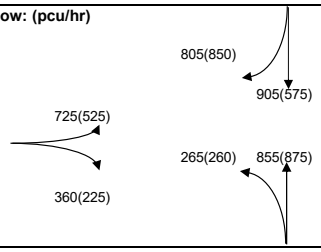
Description: 2033 Design Scenario (With proposed junction improvement) — Designed By: TCW — Checked By: CHC

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	↰↑	D	4	3.600	18			49%	48%	1895	1900	538	0.284	0.284	545	0.287	
(NB)	↑	D	4	3.000						2055	2055	582	0.283		590	0.287	0.287
Shing Kai Riad (SB)	↓	A	1,2	3.500						1965	1965	551	0.280		462	0.235	
	↰↓	A	1,2	3.650		32		39%	77%	2080	2045	584	0.281	0.281	481	0.235	0.235
	↰	A	1,2	4.000		30				2050	2050	575	0.280		482	0.235	
To Kwa Wan Road	→↑ *	C	2,3	3.500	18					1630	1630	329	0.202		238	0.146	
(EB)	→↑	C	2,3	3.500	20					1960	1960	396	0.202		287	0.146	
	→↓	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

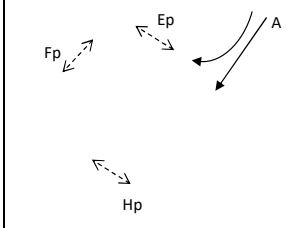
Flow: (pcu/hr)



Group	A,Jp	A,B,D	Group	A,Jp	A,B,D
y	0.281	0.655	y	0.235	0.579
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. (%)	169%	22%	R.C. (%)	221%	38%

Stage / Phase Diagrams

1.



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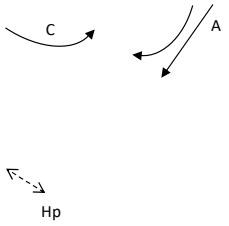

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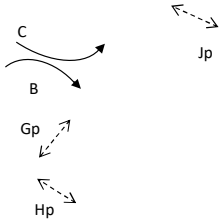

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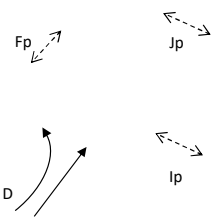


5.

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: JUL, 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: 2033

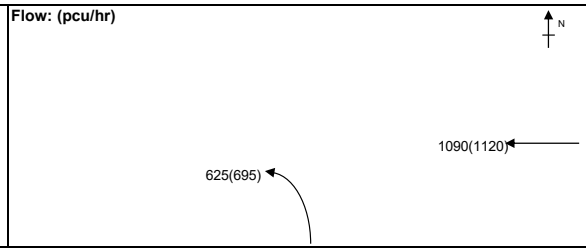
Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

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	528	0.333		543	0.343	0.343
	←	A	1	3.500						1685	1685	562	0.334	0.334	577	0.342	
Kowloon City Road	↰	B	2	4.500	10					1435	1435	298	0.208		332	0.231	0.231
	↰	B	2	4.500	12					1570	1570	327	0.208	0.208	363	0.231	
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

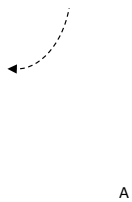
Flow: (pcu/hr)



Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.334	0.542	y	0.343	0.574
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. (%)	58%	41%	R.C. (%)	54%	33%

Stage / Phase Diagrams

1.



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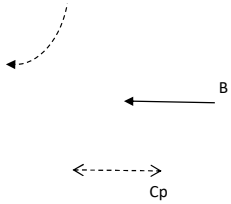


3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=		I/G=	

Date: JUL, 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: 2033

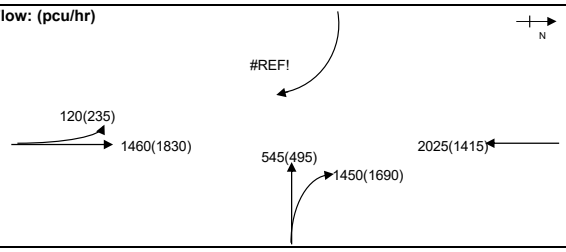
Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

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	455	0.255		531	0.297	0.297
	↱	D	2,3	3.500		20				1960	1960	500	0.255		582	0.297	
	↱	D	2,3	3.000		25				1940	1940	495	0.255	0.255	577	0.297	
	↑	E	2	3.500						1965	1965	263	0.134		239	0.122	
	↑	E	2	3.500						2105	2105	282	0.134		256	0.122	
Ma Tau Chung Rd (NB)	↗	A	1	3.500	10			24%	37%	1895	1860	491	0.259		633	0.340	0.340
	→	A	1	3.500						2105	2105	545	0.259		716	0.340	
	→	A	1	3.500						2105	2105	544	0.258		716	0.340	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	690	0.328		482	0.229	
	←	B	1	3.500						2105	2105	691	0.328	0.328	483	0.229	
	←	B	1	3.500						1965	1965	644	0.328		450	0.229	
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

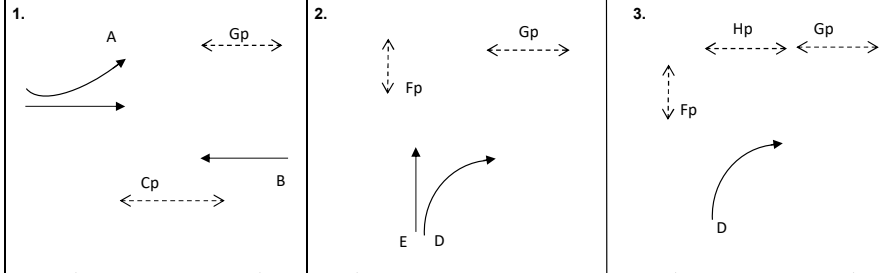
Notes:

Flow: (pcu/hr)



Group	A,D,I	B,D,I	Group	B,D,I	A,D,I
y	0.514	0.583	y	0.527	0.638
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. (%)	51%	33%	R.C. (%)	47%	22%

Stage / Phase Diagrams



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: JUL, 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: 2033

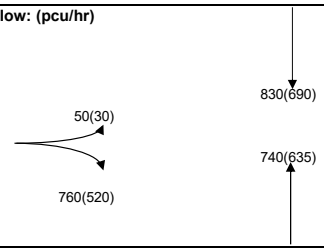
Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

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	357	0.182		307	0.156	
(NB)	↑	A	1,2	3.500						2105	2105	383	0.182		328	0.156	
Olympic Avenue	↓	B	1,2	3.650						1980	1980	401	0.203	0.203	333	0.168	
(SB)	↓	B	1,2	3.650						2120	2120	429	0.202		357	0.168	0.168
Hang Wan Road	↱*	C	2,3	5.000	13					1895	1895	50	0.026		30	0.016	
	↱*	D	3	3.300		25				1965	1965	382	0.194		262	0.133	0.133
	↱*	D	3	3.300		20				1940	1940	378	0.195	0.195	258	0.133	

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:

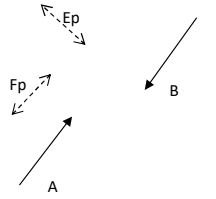
Flow: (pcu/hr)



Group	A,D	B,D	Group	A,D	B,D
y	0.377	0.397	y	0.290	0.302
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. (%)	103%	85%	R.C. (%)	164%	144%

Stage / Phase Diagrams

1.



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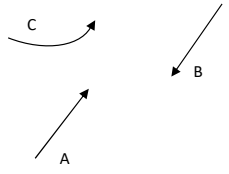

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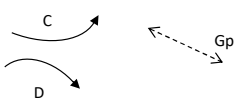


4.

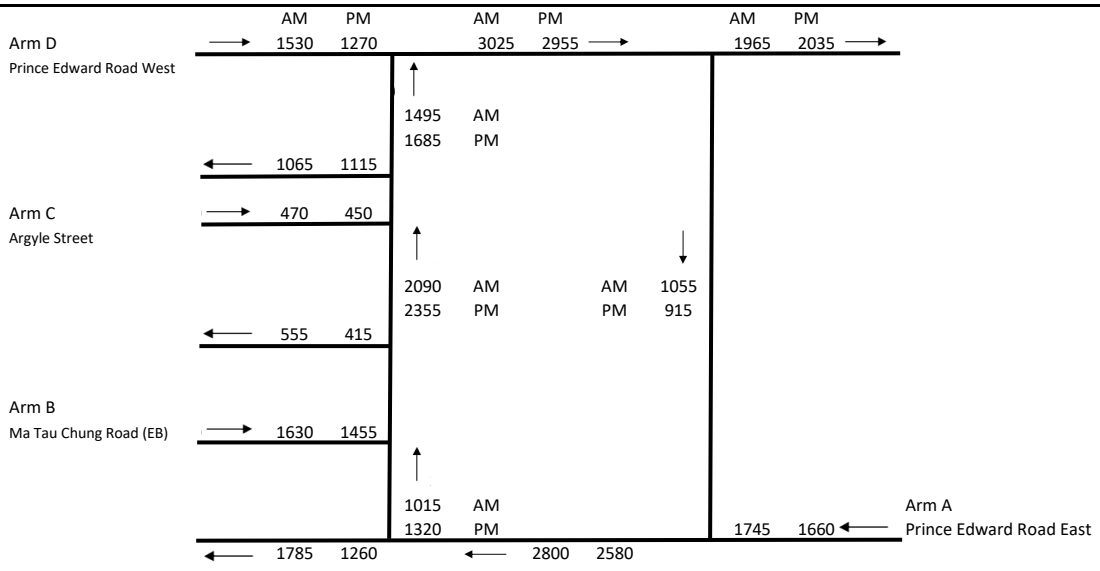
5.

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: JUL, 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:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				1,745	1,630	470	1,530	
Qc	Circulating Flow Across Entry (pcu/hour)				1,055	1,015	2,090	1,495	
Qe	= K (F - Fc*Qc)				2221	2160	1100	1652	
DFC	= Q / Qe	Design Flow / Capacity	0.93		0.79	0.75	0.43	**0.93**	
		Total Entry Flows	5,375						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,660	1,455	450	1,270	
Qc	Circulating Flow Across Entry (pcu/hour)				915	1,320	2,355	1,685	
Qe	= K (F - Fc*Qc)				2310	1983	958	1544	
DFC	= Q / Qe	Design Flow / Capacity	0.82		0.72	0.73	0.47	**0.82**	
		Total Entry Flows	4,835						
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**

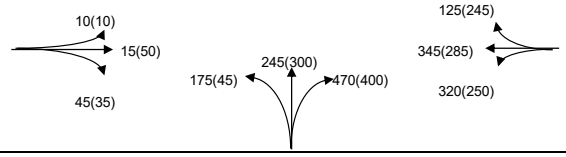
Junction: Kai San Road / Tsat Po Street Design Year: 2033

Description: 2033 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		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	470	0.240	0.240	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:

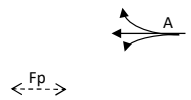
Flow: (pcu/hr)



Group	A,Gp,B,C	A,Gp,B,C	Group	A,Gp,B,C	A,Gp,B,C
y	0.447	0.447	y	0.454	0.454
L (sec)	54	54	L (sec)	48	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.526	0.526	y pract.	0.568	0.568
R.C. (%)	18%	18%	R.C. (%)	25%	25%

Stage / Phase Diagrams

1.



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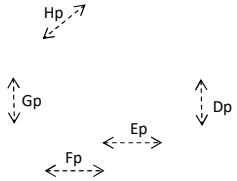

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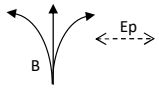

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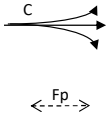


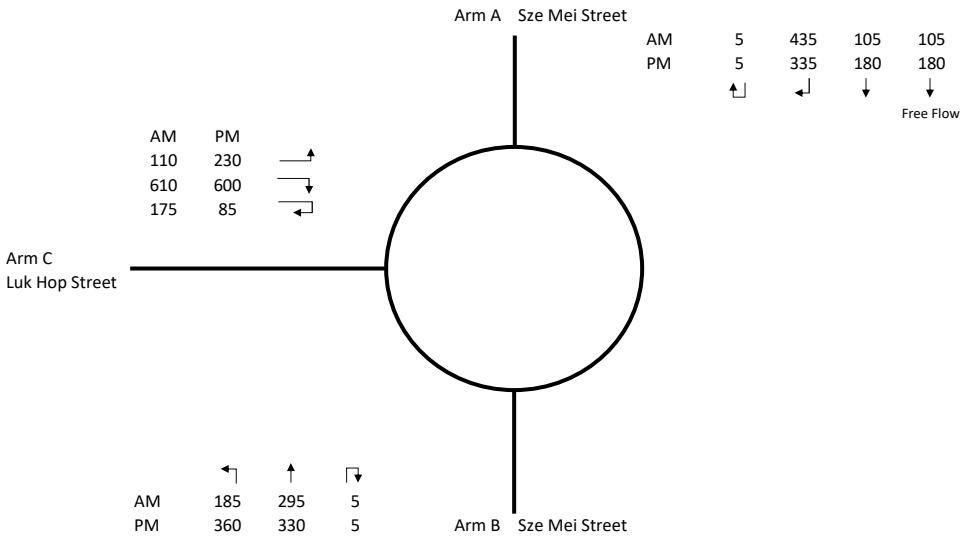
5.

I/G= 11		I/G= 11	17	I/G= 3		I/G= 9	5	I/G=	
I/G= 11		I/G= 11	17	I/G= 3		I/G= 9		I/G=	

Date: JUL, 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:	2033 Design Scenario			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				545	485	895	
Qc	Circulating Flow Across Entry (pcu/hour)				790	615	305	
Qe	= K (F - Fc*Qc)				837	816	1220	
DFC	= Q / Qe	Design Flow / Capacity	0.73		0.65	0.59	**0.73**	
		Total Entry Flows	1,925					
PM RESULT								
Q	Entry Flow (pcu/hour)				520	695	915	
Qc	Circulating Flow Across Entry (pcu/hour)				690	425	340	
Qe	= K (F - Fc*Qc)				898	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,130					
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: 2033

Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

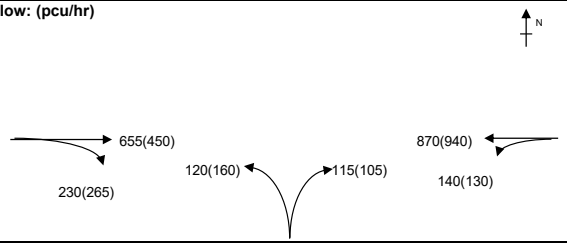
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) AM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) AM	Revised Saturation Flow (pcu/hr) PM	AM Peak Flow (pcu/hr)	AM Peak y Value	AM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	→	A	1	3.650						1980	1980	316	0.160		233	0.118	
	↱	A	1	3.650		26		0%	13%	2120	2105	339	0.160	0.160	248	0.118	0.118
	↴	A	1	3.650		23				1990	1990	230	0.116		234	0.118	
Shing Kai Road (WB)	↰↓ *	E	3	4.500	35			43%	37%	2030	2030	327	0.161		347	0.171	
	←	E	3	3.600						2115	2115	342	0.162	0.162	362	0.171	0.171
	←	E	3	3.600						2115	2115	341	0.161		361	0.171	
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

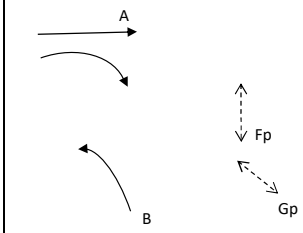
Flow: (pcu/hr)



Group	A,C,E	A,Hp,E	Group	A,C,E	A,Hp,E
y	0.351	0.322	y	0.316	0.289
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. (%)	133%	100%	R.C. (%)	159%	123%

Stage / Phase Diagrams

1.



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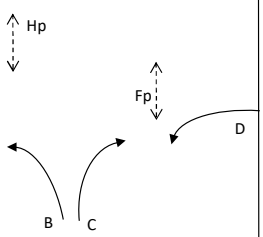

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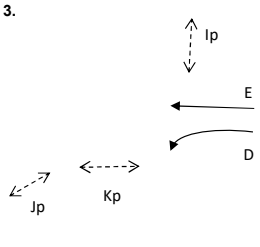


4.

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: JUL, 2024 **Junction:** Shing Kai Road / Slip road of CKR (P)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

Junction: Shing Kai Road / Eastern access to main stadium — Design Year: 2033

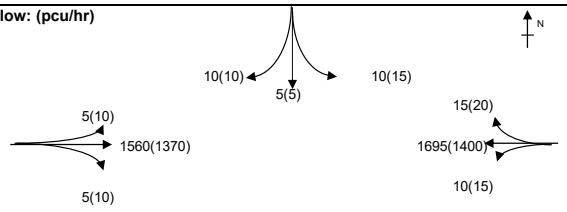
Description: 2033 Design Scenario — Designed By: TCW — Checked By: CHC

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	500	0.251	0.251	442	0.222	0.222
		A	1	3.800						2135	2135	535	0.251		474	0.222	
		A	1	3.800		30		1%	2%	2135	2135	535	0.251		474	0.222	
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	547	0.275		456	0.229	
		B	2	3.800						2135	2135	587	0.275		490	0.230	
		B	2	3.800		30		3%	4%	2130	2130	586	0.275	0.275	489	0.230	0.230
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

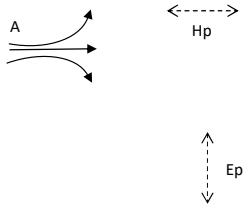
Flow: (pcu/hr)



Group	A,B,Gp	A,B,C,Dp	Group	A,B,Gp	A,B,C,Dp
y	0.526	0.526	y	0.452	0.452
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. (%)	37%	17%	R.C. (%)	59%	36%

Stage / Phase Diagrams

1.



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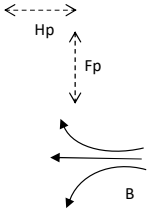

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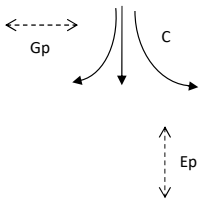

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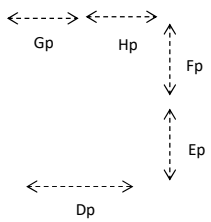


5.

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: JUL, 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: 2033

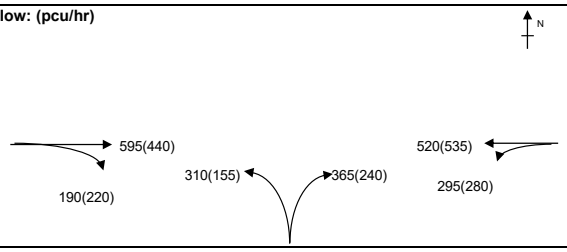
Description: 2033 Design Scenario Designed By: TCW Checked By: CHC

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
Muk Yan Street (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	378	0.206		379	0.205	
	←	C	3	3.650						2120	2120	437	0.206	0.206	436	0.206	0.206
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)

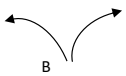


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.665	0.665	y	0.509	0.509
L (sec)	34	37	L (sec)	34	37
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.623	y pract.	0.645	0.623
R.C. (%)	-3%	-6%	R.C. (%)	27%	22%

Stage / Phase Diagrams

1.

2.



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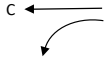

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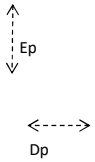


5.

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: JUL, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

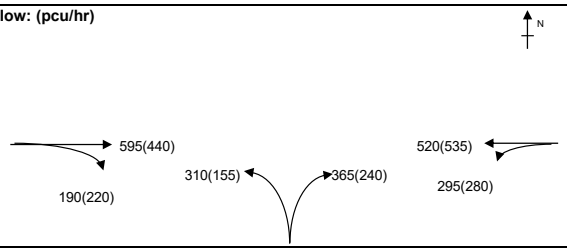
Junction: Olympic Avenue/ Dakota Drive Design Year: 2033

Description: 2033 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
Muk Yan Street	↰	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	378	0.206		379	0.205	
(WB)	←	C	3	3.650						2120	2120	437	0.206	0.206	436	0.206	0.206
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			6	+	10	=	16			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	10	=	16						

Notes:

Flow: (pcu/hr)

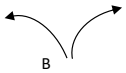


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.521	0.521	y	0.438	0.438
L (sec)	34	37	L (sec)	34	37
C (sec)	120	120	C (sec)	120	120
y pract.	0.645	0.623	y pract.	0.645	0.623
R.C. (%)	24%	20%	R.C. (%)	47%	42%

Stage / Phase Diagrams

1.

2.



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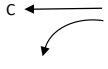

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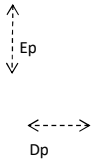


5.

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: JUL, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

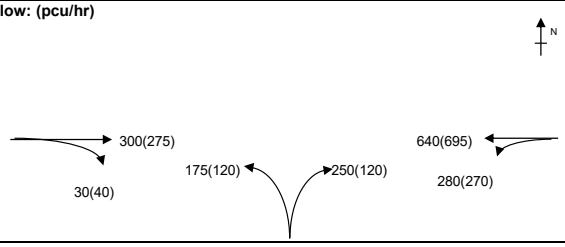
Junction: Olympic Avenue / Muk Lai Street Design Year: 2033

Description: 2033 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	431	0.231	0.231	453	0.242	0.242
(WB)	←	C	3	3.650						2120	2120	489	0.231		512	0.242	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			7	+	13	=	20			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	15	=	21						

Notes:

Flow: (pcu/hr)



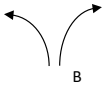
Group	A,C,B,Ep	A,C,B,Dp	Group	A,C,B,Ep	A,C,B,Dp
y	0.536	0.536	y	0.446	0.446
L (sec)	37	42	L (sec)	37	42
C (sec)	120	120	C (sec)	120	120
y pract.	0.623	0.585	y pract.	0.623	0.585
R.C. (%)	16%	9%	R.C. (%)	40%	31%

Stage / Phase Diagrams

1.

2.

3.



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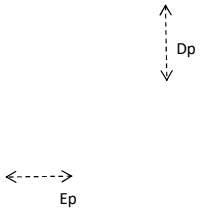


5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	20	I/G=	
I/G= 2		I/G= 7		I/G= 6		I/G= 10	20	I/G=	

Date: JUL, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

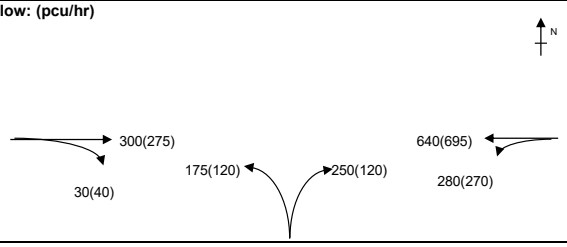
Junction: Olympic Avenue / Muk Lai Street Design Year: 2033

Description: 2033 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	431	0.231	0.231	453	0.242	0.242
(WB)	←	C	3	3.650						2120	2120	489	0.231		512	0.242	
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:

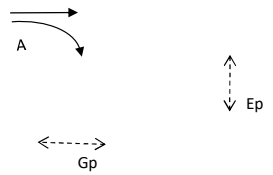
Flow: (pcu/hr)



Group	A,B,Dp	A,B,C	Group	A,B,C	A,Fp,C
y	0.304	0.536	y	0.446	0.319
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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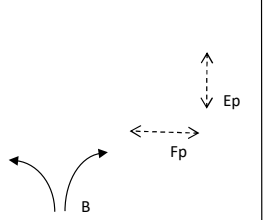

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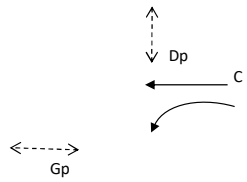


4.

5.

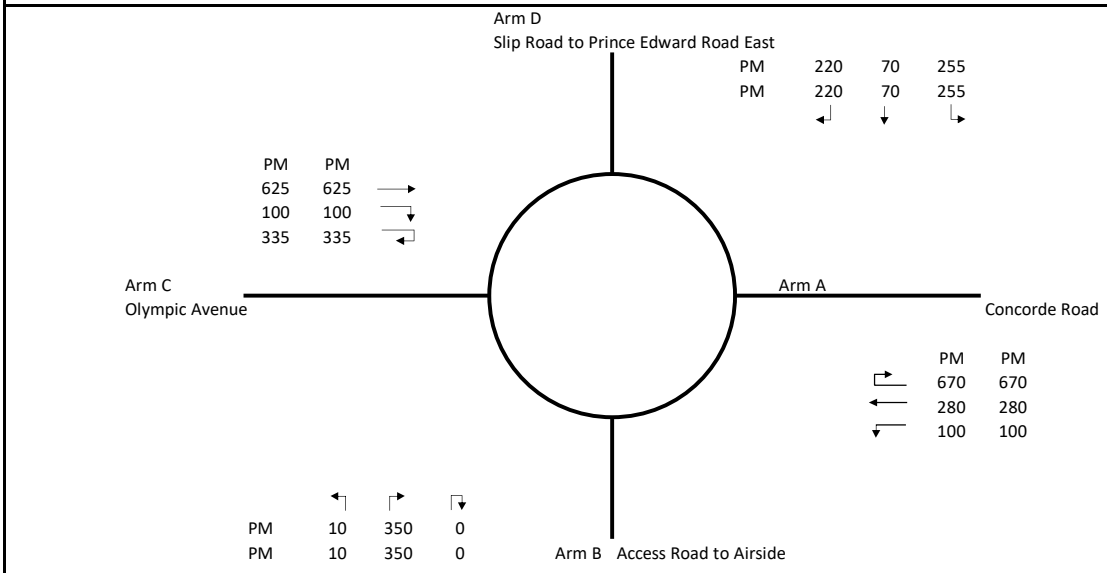
I/G= 6		I/G= 5		I/G= 5		I/G=	I/G=
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=

Date: JUL, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

2033 Design
(Sensitivity Test - Event Start)

Roundabout Capacity Calculation

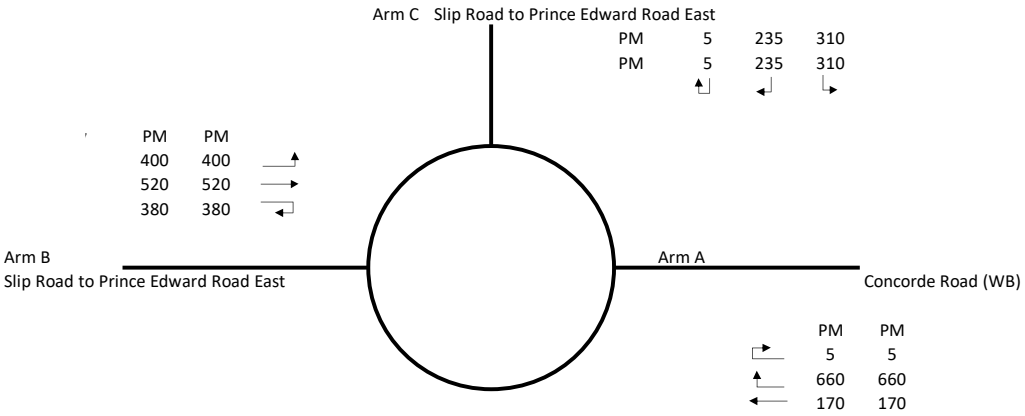
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				1,050	360	1,060	545	
Qc	Circulating Flow Across Entry (pcu/hour)				725	1,505	1,020	2,080	
Qe	= K (F - Fc*Qc)				2152	1299	2154	1222	
DFC	= Q / Qe	Design Flow / Capacity	0.49		0.49	0.28	**0.49**	0.45	
		Total Entry Flows	3,015						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,050	360	1,060	545	
Qc	Circulating Flow Across Entry (pcu/hour)				725	1,505	1,020	2,080	
Qe	= K (F - Fc*Qc)				2152	1299	2154	1222	
DFC	= Q / Qe	Design Flow / Capacity	0.49		0.49	0.28	**0.49**	0.45	
		Total Entry Flows	3,015						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

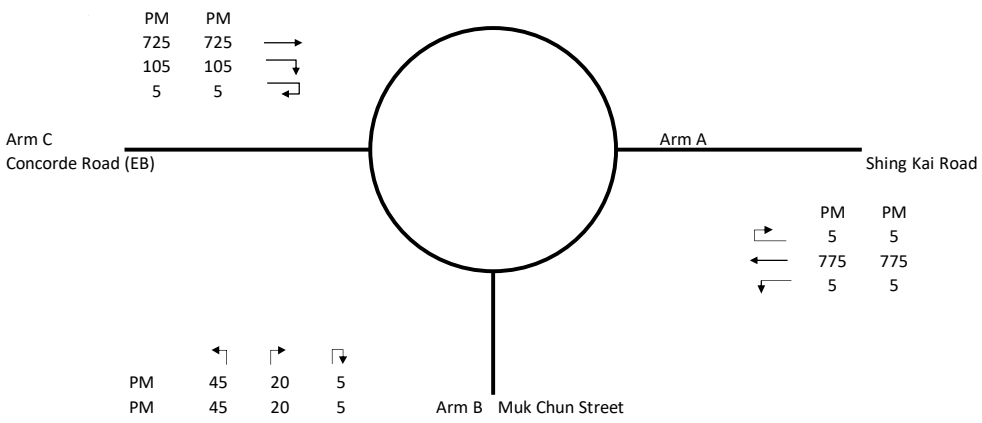
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				835	1,300	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	670	905	
Qe	= K (F - Fc*Qc)				2120	1856	1849	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,685					
PM RESULT								
Q	Entry Flow (pcu/hour)				835	1,300	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	670	905	
Qe	= K (F - Fc*Qc)				2120	1856	1849	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,685					
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:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				785	70	835	
Qc	Circulating Flow Across Entry (pcu/hour)				115	780	30	
Qe	= K (F - Fc*Qc)				1682	1372	2215	
DFC	= Q / Qe	Design Flow / Capacity	0.47		**0.47**	0.05	0.38	
		Total Entry Flows	1,690					
PM RESULT								
Q	Entry Flow (pcu/hour)				785	70	835	
Qc	Circulating Flow Across Entry (pcu/hour)				115	780	30	
Qe	= K (F - Fc*Qc)				1682	1372	2215	
DFC	= Q / Qe	Design Flow / Capacity	0.47		**0.47**	0.05	0.38	
		Total Entry Flows	1,690					
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: 2033

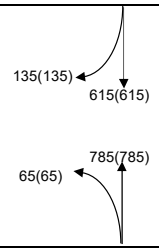
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	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	407	0.209		407	0.209	
(NB)		A	1	3.650						2120	2120	443	0.209	0.209	443	0.209	0.209
Shing Kai Road		B	2	3.650						1980	1980	374	0.189		374	0.189	
(SB)		B	2	3.650		8		36%	36%	1985	1985	376	0.189	0.189	376	0.189	0.189
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

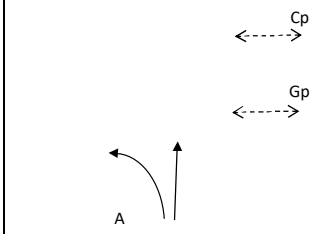
Flow: (pcu/hr)



Group	A,Dp	A,B,Ep	Group	A,Dp	A,B,Ep
y	0.209	0.398	y	0.209	0.398
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. (%)	197%	41%	R.C. (%)	197%	41%

Stage / Phase Diagrams

1.



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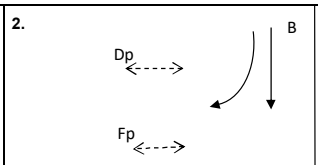

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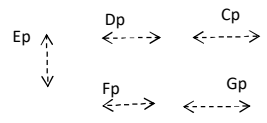


4.

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

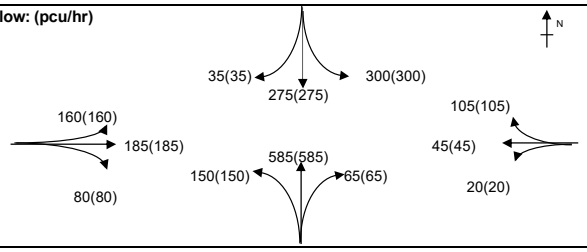
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street (EB)		C	3	3.750	30	25		38% / 19%	38% / 19%	1930	1930	425	0.220	0.220	425	0.220	0.220
Shing Kai Road		B	2	3.650	10			100%	100%	1720	1720	300	0.174	0.174	300	0.174	0.174
(SB)		B	2	3.650		20		11%	11%	2100	2100	310	0.148		310	0.148	
Muk Chui Street		D	4	3.650		20				1970	1970	105	0.053	0.053	105	0.053	0.053
(WB)		D	4	3.650	10			31%	31%	1895	1895	65	0.034		65	0.034	
Shing Kai Road		A	1	3.650	18			39%	39%	1915	1915	382	0.199		382	0.199	
(NB)		A	1	3.650		20		16%	16%	2095	2095	418	0.200	0.200	418	0.200	0.200

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

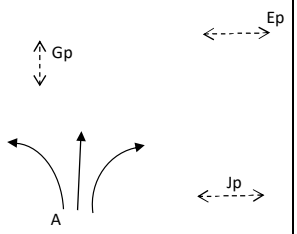
Flow: (pcu/hr)



Group	A,Fp,C,D	A,B,C,D	Group	A,Fp,C,D	A,B,C,D
y	0.473	0.647	y	0.473	0.647
L (sec)	39	29	L (sec)	39	29
C (sec)	120	120	C (sec)	120	120
y pract.	0.608	0.683	y pract.	0.608	0.683
R.C. (%)	28%	5%	R.C. (%)	28%	5%

Stage / Phase Diagrams

1.



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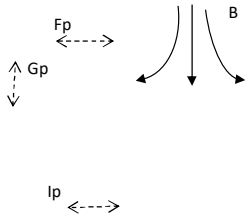

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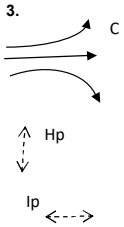

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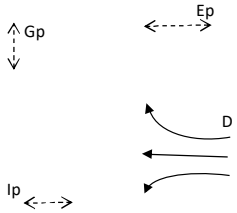


5.

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

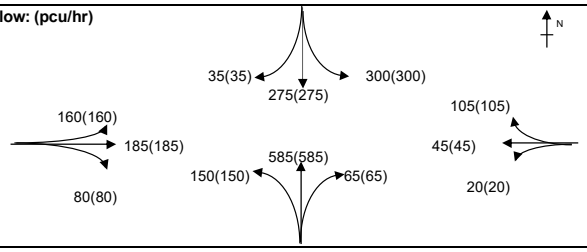
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street	*	C	3	4.000	15			80%	80%	1305	1305	201	0.154	0.154	201	0.154	0.154
(EB)	*	C	3	4.000		17		36%	36%	1460	1460	224	0.153		224	0.153	
Shing Kai Road		B	2	3.650	10			100%	100%	1720	1720	300	0.174	0.174	300	0.174	0.174
(SB)		B	2	3.650		20		11%	11%	2100	2100	310	0.148		310	0.148	
Muk Chui Street		D	4	3.650		20				1970	1970	105	0.053	0.053	105	0.053	0.053
(WB)		D	4	3.650	10			31%	31%	1895	1895	65	0.034		65	0.034	
Shing Kai Road		A	1	3.650	18			39%	39%	1915	1915	382	0.199		382	0.199	
(NB)		A	1	3.650		20		16%	16%	2095	2095	418	0.200	0.200	418	0.200	0.200

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

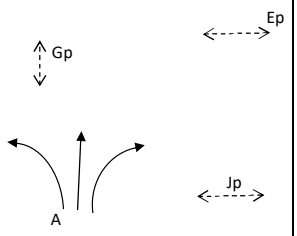
Flow: (pcu/hr)



Group	A,B,Hp,D	A,B,C,D	Group	A,B,Hp,D	A,B,C,D
y	0.427	0.581	y	0.427	0.581
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. (%)	33%	17%	R.C. (%)	33%	17%

Stage / Phase Diagrams

1.



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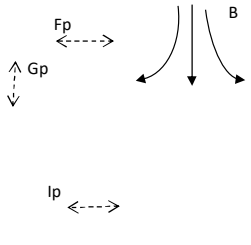

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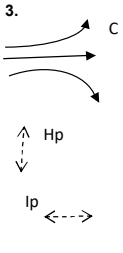

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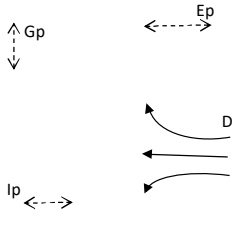


5.

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

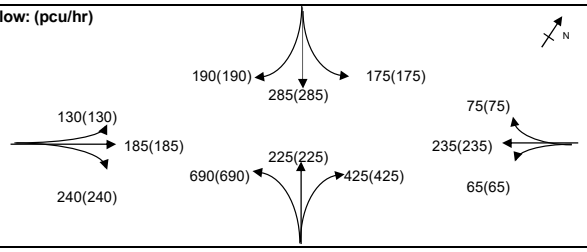
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	2	3.650	18			73%	73%	1865	1865	177	0.095	0.095	177	0.095	0.095
		A	2	3.650		18		30%	30%	2070	2070	196	0.095		196	0.095	
		A	2	3.650		15				1925	1925	182	0.095		182	0.095	
Muk On Street		E	1	3.650	18			56%	56%	1890	1890	313	0.166	0.166	313	0.166	0.166
		E	1	3.650		20		56%	56%	2035	2035	337	0.166		337	0.166	
Shing Kai Road (WB)		D	3	3.650						2120	2120	158	0.075		158	0.075	
		D	3	3.650		20		49%	49%	2045	2045	152	0.074		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	425	0.216	0.216	425	0.216	0.216
		C	4	3.650						2120	2120	225	0.106		225	0.106	
	#	B	1,2,4	4.000	50					1370	1370	690	0.504		690	0.504	

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:

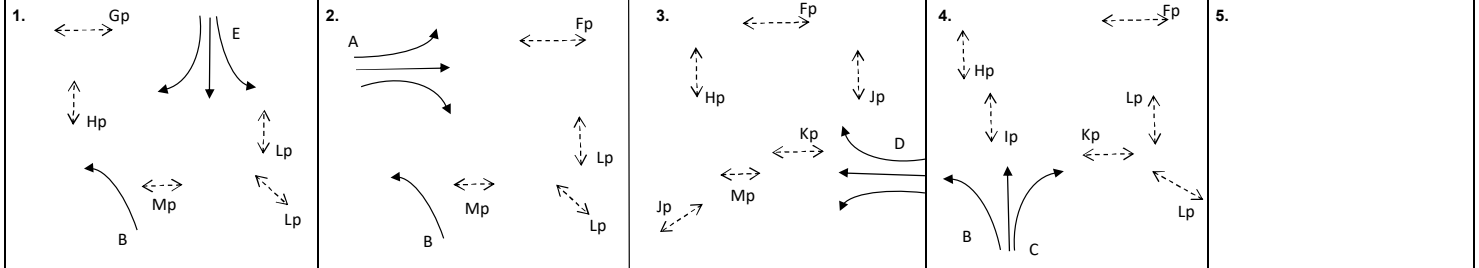
TAC Junction: 130s CT adopted
Site factor 0.7 adopted

Flow: (pcu/hr)



Group	Gp,A,Jp,C	E,A,Jp,C	Group	Gp,A,Jp,C	E,A,Jp,C
y	0.311	0.476	y	0.311	0.476
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. (%)	27%	19%	R.C. (%)	27%	19%

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

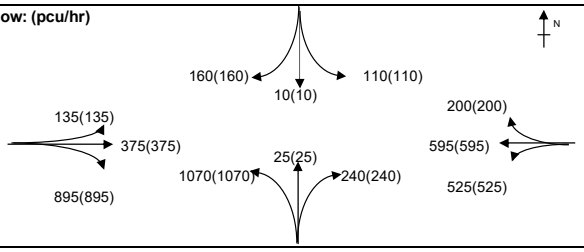
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		B	2	3.650	15			56%	56%	1875	1875	240	0.128		240	0.128	
		B	2	3.500						2105	2105	270	0.128		270	0.128	
		B	2	3.500		20				1960	1960	453	0.231	0.231	453	0.231	0.231
		B	2	3.500		15				1915	1915	442	0.231		442	0.231	
Muk Tai Street	^	A	1	3.750		17				980	980	160	0.163	0.163	160	0.163	0.163
	^	A	1	4.000	22			92%	92%	950	950	120	0.126		120	0.126	
Shing Kai Road (WB)		E	4	3.650						2120	2120	404	0.191		404	0.191	
		E	4	3.650		23		51%	51%	2050	2050	391	0.191	0.191	391	0.191	0.191
		E	4	3.650	25					1870	1870	253	0.135		253	0.135	
		E	4	3.650	28					2010	2010	272	0.135		272	0.135	
Shing Fung Road		C	2,3	3.650	20					1840	1840	515	0.280		515	0.280	
		C	2,3	3.650	22					1985	1985	555	0.280		555	0.280	
		D	3	3.650		23		82%	82%	2010	2010	142	0.071	0.071	142	0.071	0.071
		D	3	3.650		19				1750	1750	123	0.070		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:

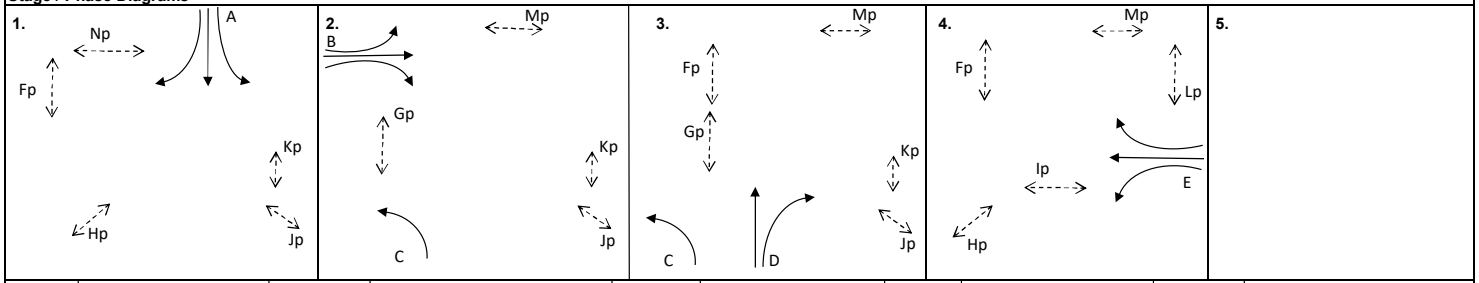
TAC junction : CT 130s adopted
^ Site factor 0.5 added due to flare length

Flow: (pcu/hr)



Group	A,C,E	A,B,D,E	Group	A,C,E	A,B,D,E
y	0.634	0.656	y	0.634	0.656
L (sec)	17	17	L (sec)	17	17
C (sec)	130	130	C (sec)	130	130
y pract.	0.782	0.782	y pract.	0.782	0.782
R.C. (%)	23%	19%	R.C. (%)	23%	19%

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

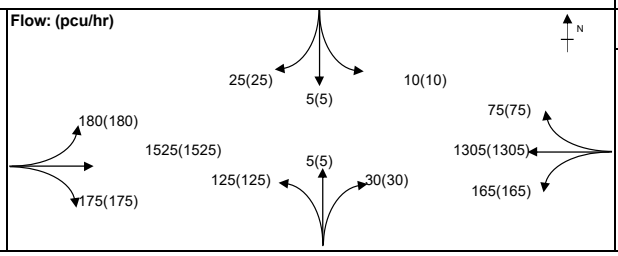
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road EB		A	1	3.650	17.5			30%	30%	1930	1930	592	0.307	0.307	592	0.307	0.307
		A	1	3.650						2120	2120	650	0.307		650	0.307	
		A	1	3.650		22.5		27%	27%	2080	2080	638	0.307		638	0.307	
Shing Kai Road WB		C	3	3.650	17.5			34%	34%	1925	1925	484	0.251	0.251	484	0.251	0.251
		C	3	3.650						2120	2120	533	0.251		533	0.251	
		C	3	3.650		22.5		14%	14%	2100	2100	528	0.251		528	0.251	
Western Access Road to Main Stadium NB		B	2	3.750	15					1810	1810	125	0.069	0.069	125	0.069	0.069
		B	2	3.750		22.5		86%	86%	2015	2015	35	0.017		35	0.017	
Western Access Road to Main Stadium SB		D	4	3.500	20			67%	67%	1870	1870	15	0.008		15	0.008	
		D	4	3.500		32.5				2010	2010	25	0.012		25	0.012	

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

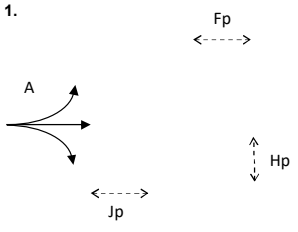
Flow: (pcu/hr)



Group	A,B,Gp,D	A,B,C,D	Group	A,B,Gp,D	A,B,C,D
y	0.376	0.627	y	0.376	0.627
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. (%)	68%	17%	R.C. (%)	68%	17%

Stage / Phase Diagrams

1.



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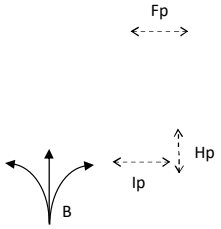

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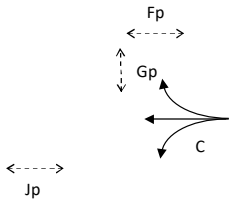

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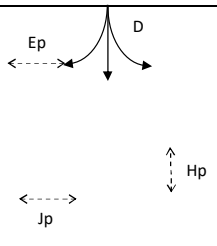


5.

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

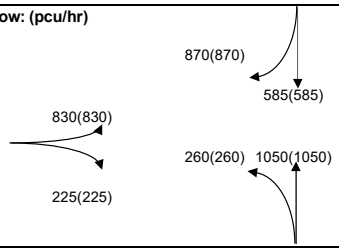
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		C	1	3.600	18			41%	41%	1910	1910	631	0.330		631	0.330	
(NB)		C	1	3.000						2055	2055	679	0.330	0.330	679	0.330	0.330
Shing Kai Road		A	2	3.500						1965	1965	472	0.240	0.240	472	0.240	0.240
(SB)		A	2	3.650		32		77%	77%	2045	2045	491	0.240		491	0.240	
		A	2	4.000		30				2050	2050	492	0.240		492	0.240	
Sung Wong Toi		B	3	3.650	18					1830	1830	399	0.218		399	0.218	
Road		B	3	3.650	20	24		100% / 0%	100% / 0%	1970	1970	431	0.219	0.219	431	0.219	0.219
(EB)		B	3	3.650		22				1985	1985	225	0.113		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

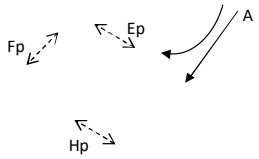
Flow: (pcu/hr)



Group	A,Gp,C	A,B,C	Group	A,Gp,C	A,B,C
y	0.571	0.789	y	0.571	0.789
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. (%)	23%	3%	R.C. (%)	23%	3%

Stage / Phase Diagrams

1.



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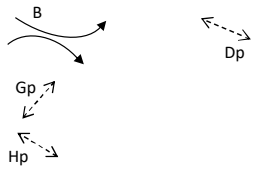

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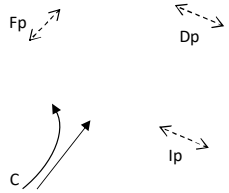


4.

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: JUL, 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: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road — Design Year: 2033

Description: 2033 Design Flow (Sensitivity Scenario) (With proposed junction improvement) — Designed By: TCW — Checked By: CHC

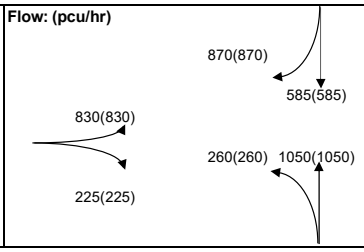
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		D	4	3.600	18			41%	41%	1910	1910	631	0.330		631	0.330	
(NB)		D	4	3.000						2055	2055	679	0.330	0.330	679	0.330	0.330
Shing Kai Riad (SB)		A	1,2	3.500						1965	1965	472	0.240	0.240	472	0.240	0.240
		A	1,2	3.650		32		77%	77%	2045	2045	491	0.240		491	0.240	
		A	1,2	4.000		30				2050	2050	492	0.240		492	0.240	
To Kwa Wan Road	*	C	2,3	3.500	18					1630	1630	377	0.231		377	0.231	
(EB)		C	2,3	3.500	20					1960	1960	453	0.231		453	0.231	
		B	3	3.500		30				2005	2005	113	0.056	0.056	113	0.056	0.056
		B	3	3.500		28				2000	2000	112	0.056		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

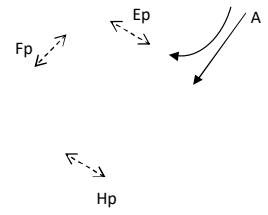
Flow: (pcu/hr)



Group	Ep,C,Ip	A,B,D	Group	Ep,C,Ip	A,B,D
y	0.231	0.627	y	0.231	0.627
L (sec)	30	15	L (sec)	30	15
C (sec)	130	130	C (sec)	130	130
y pract.	0.692	0.796	y pract.	0.692	0.796
R.C. (%)	199%	27%	R.C. (%)	199%	27%

Stage / Phase Diagrams

1.



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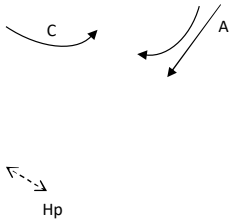

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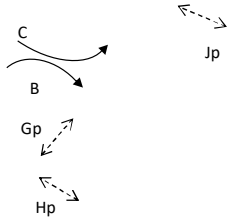

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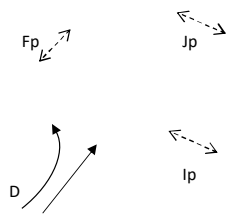


5.

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: JUL, 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: 2033

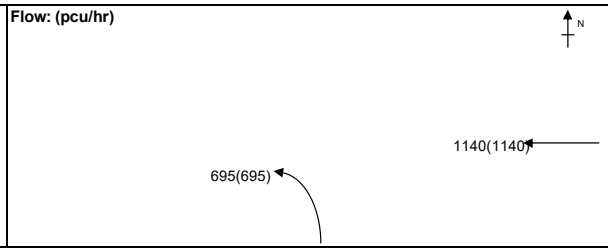
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	←	A	1	3.650						1585	1585	553	0.349	0.349	553	0.349	0.349
	←	A	1	3.500						1685	1685	587	0.348		587	0.348	
Kowloon City Road	↰	B	2	4.500	10					1435	1435	332	0.231	0.231	332	0.231	0.231
	↰	B	2	4.500	12					1570	1570	363	0.231		363	0.231	
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

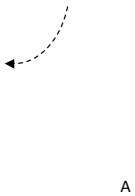
Flow: (pcu/hr)



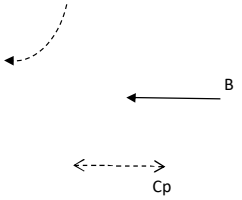
Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.349	0.580	y	0.349	0.580
L (sec)	27	10	L (sec)	27	10
C (sec)	65	65	C (sec)	65	65
y pract.	0.526	0.762	y pract.	0.526	0.762
R.C. (%)	51%	31%	R.C. (%)	51%	31%

Stage / Phase Diagrams

1.



2.



3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=		I/G=	

Date: JUL, 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: 2033

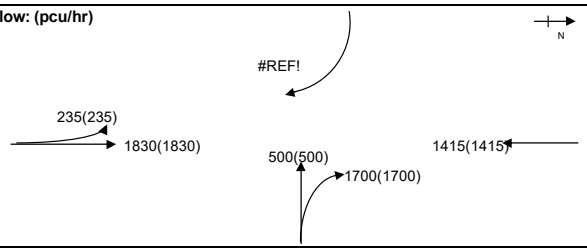
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	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	534	0.299	0.299	534	0.299	0.299
	↱	D	2,3	3.500		20				1960	1960	586	0.299		586	0.299	
	↱	D	2,3	3.000		25				1940	1940	580	0.299		580	0.299	
	↑	E	2	3.500						1965	1965	241	0.123		241	0.123	
	↑	E	2	3.500						2105	2105	259	0.123		259	0.123	
Ma Tau Chung Rd (NB)	↗	A	1	3.500	10			37%	37%	1860	1860	633	0.340	0.340	633	0.340	0.340
	→	A	1	3.500						2105	2105	716	0.340		716	0.340	
	→	A	1	3.500						2105	2105	716	0.340		716	0.340	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	482	0.229		482	0.229	
	←	B	1	3.500						2105	2105	483	0.229		483	0.229	
	←	B	1	3.500						1965	1965	450	0.229		450	0.229	
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:

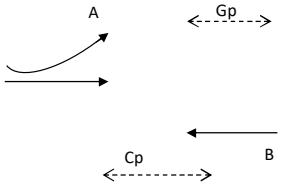
Flow: (pcu/hr)



Group	B,D,I	A,D,I	Group	B,D,I	A,D,I
y	0.529	0.639	y	0.529	0.639
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. (%)	47%	21%	R.C. (%)	47%	21%

Stage / Phase Diagrams

1.



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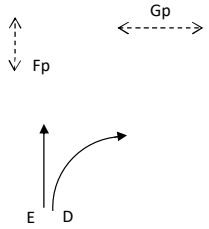

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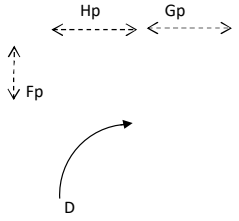

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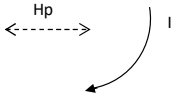


5.

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: JUL, 2024 **Junction:** (K) Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

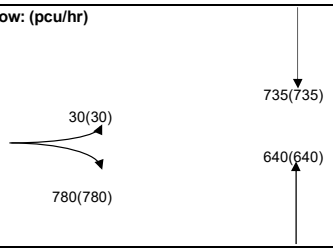
Junction: Olympic Avenue / Hang Wan Road Design Year: 2033

Description: 2033 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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	↑	A	1,2	3.500						1965	1965	309	0.157		309	0.157	
(NB)	↑	A	1,2	3.500						2105	2105	331	0.157		331	0.157	
Olympic Avenue	↓	B	1,2	3.650						1980	1980	355	0.179	0.179	355	0.179	0.179
(SB)	↓	B	1,2	3.650						2120	2120	380	0.179		380	0.179	
Hang Wan Road	↑*	C	2,3	5.000	13					1895	1895	30	0.016		30	0.016	
	↓*	D	3	3.300		25				1965	1965	392	0.199		392	0.199	
	↓*	D	3	3.300		20				1940	1940	388	0.200	0.200	388	0.200	0.200
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:

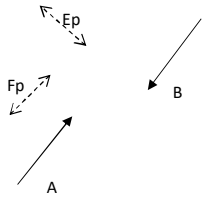
Flow: (pcu/hr)



Group	A,D	B,D	Group	A,D	B,D
y	0.357	0.379	y	0.357	0.379
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. (%)	114%	94%	R.C. (%)	114%	94%

Stage / Phase Diagrams

1.



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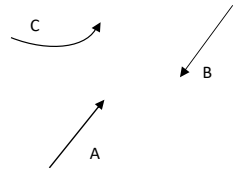

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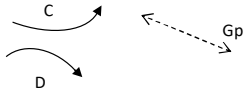


4.

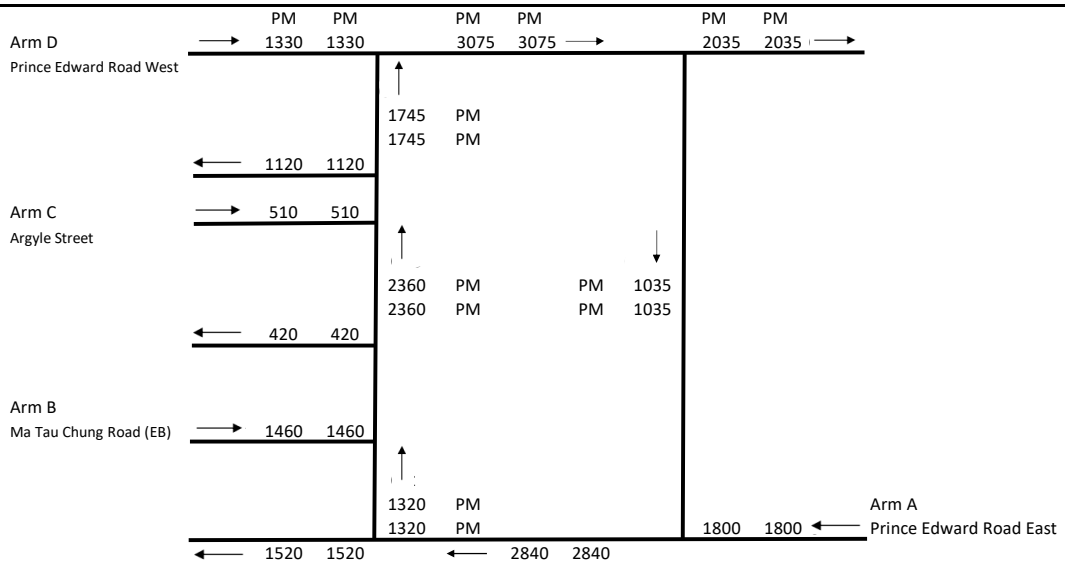
5.

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: JUL, 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:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				1,800	1,460	510	1,330	
Qc	Circulating Flow Across Entry (pcu/hour)				1,035	1,320	2,360	1,745	
Qe	= K (F - Fc*Qc)				2234	1983	955	1510	
DFC	= Q / Qe	Design Flow / Capacity	0.88		0.81	0.74	0.53	**0.88**	
		Total Entry Flows	5,100						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,800	1,460	510	1,330	
Qc	Circulating Flow Across Entry (pcu/hour)				1,035	1,320	2,360	1,745	
Qe	= K (F - Fc*Qc)				2234	1983	955	1510	
DFC	= Q / Qe	Design Flow / Capacity	0.88		0.81	0.74	0.53	**0.88**	
		Total Entry Flows	5,100						

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**

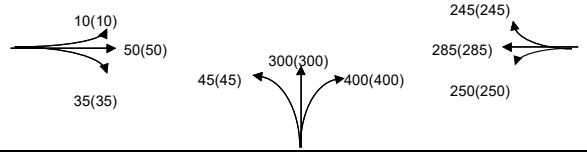
Junction: Kai San Road / Tsat Po Street Design Year: 2033

Description: 2033 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	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	95	0.047	0.047
Tsat Po Street (WB)		A	1	3.600	10			69%	69%	1790	1790	364	0.203		364	0.203	
		A	1	3.600		25		59%	59%	2045	2045	416	0.203	0.203	416	0.203	0.203
Kai San Road (NB)		B	2	4.000		15				1960	1960	400	0.204	0.204	400	0.204	0.204
		B	2	4.000	10			13%	13%	1975	1975	345	0.175		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:

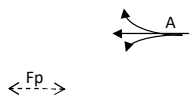
Flow: (pcu/hr)



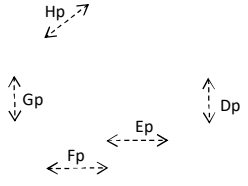
Group	A,Gp,B,C	A,Gp,B,C	Group	A,Gp,B,C	A,Gp,B,C
y	0.454	0.454	y	0.454	0.454
L (sec)	48	48	L (sec)	48	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.568	0.568	y pract.	0.568	0.568
R.C. (%)	25%	25%	R.C. (%)	25%	25%

Stage / Phase Diagrams

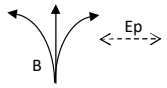
1.



2.



3.



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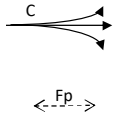


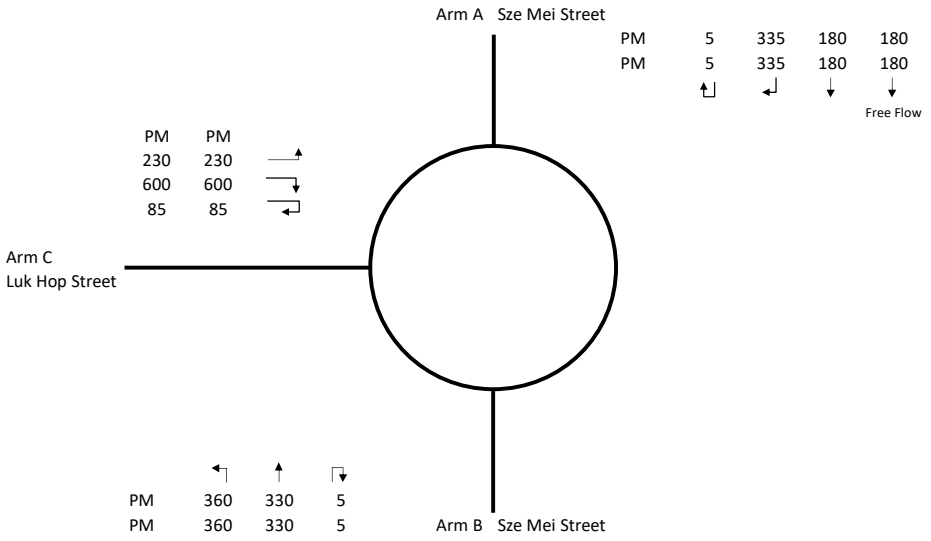
5.

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: JUL, 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:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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	915	
Qc	Circulating Flow Across Entry (pcu/hour)				690	425	340	
Qe	= K (F - Fc*Qc)				898	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,130					
PM RESULT								
Q	Entry Flow (pcu/hour)				520	695	915	
Qc	Circulating Flow Across Entry (pcu/hour)				690	425	340	
Qe	= K (F - Fc*Qc)				898	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,130					
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: 2033

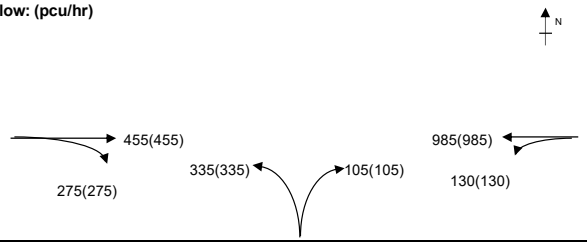
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	→	A	1	3.650						1980	1980	238	0.120	0.120	238	0.120	0.120
	→↱	A	1	3.650		26		14%	14%	2105	2105	253	0.120		253	0.120	
	↱	A	1	3.650		23				1990	1990	239	0.120		239	0.120	
Shing Kai Road (WB)	←↰ *	E	3	4.500	35			36%	36%	2035	2035	362	0.178		362	0.178	
	←	E	3	3.600						2115	2115	377	0.178	0.178	377	0.178	0.178
	←	E	3	3.600						2115	2115	376	0.178		376	0.178	
Slip Road of CKR	↰	B	1,2	5.000	35					2030	2030	335	0.165		335	0.165	
	↱	C	2	3.600		18				1950	1950	52	0.027		52	0.027	
	↱	C	2	3.600		20				1965	1965	53	0.027		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

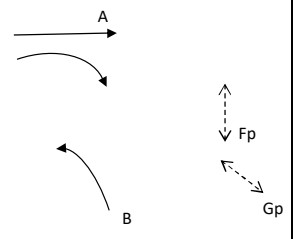
Flow: (pcu/hr)



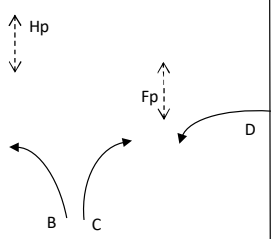
Group	B,E	A,Hp,E	Group	B,E	A,Hp,E
y	0.343	0.298	y	0.343	0.298
L (sec)	8	37	L (sec)	8	37
C (sec)	130	130	C (sec)	130	130
y pract.	0.845	0.644	y pract.	0.845	0.644
R.C. (%)	146%	116%	R.C. (%)	146%	116%

Stage / Phase Diagrams

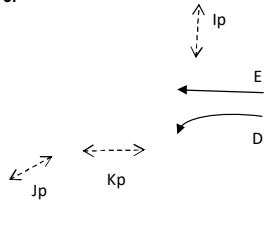
1.



2.



3.



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: JUL, 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: 2033

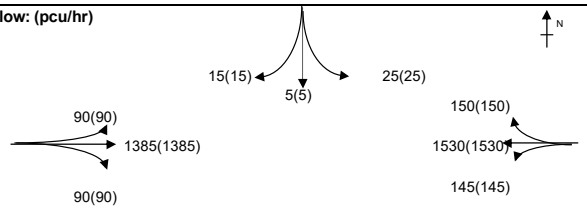
Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

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	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	494	0.252	0.252	494	0.252	0.252
		A	1	3.800						2135	2135	538	0.252		538	0.252	
		A	1	3.800		30		17%	17%	2115	2115	533	0.252		533	0.252	
Eastern Access to main stadium		C	3	3.650	10					1720	1720	25	0.015		25	0.015	
		C	3	3.650		15		75%	75%	1970	1970	20	0.010		20	0.010	
Shing Kai Road (WB)		B	2	3.800	15			25%	25%	1945	1945	574	0.295	0.295	574	0.295	0.295
		B	2	3.800						2135	2135	629	0.295		629	0.295	
		B	2	3.800		30		24%	24%	2110	2110	622	0.295		622	0.295	
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

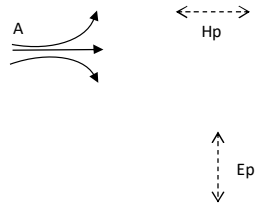
Flow: (pcu/hr)



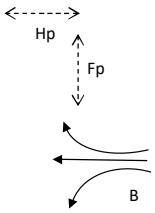
Group	A,B,Gp	A,B,C,Dp	Group	A,B,Gp	A,B,C,Dp
y	0.547	0.547	y	0.547	0.547
L (sec)	26	41	L (sec)	26	41
C (sec)	130	130	C (sec)	130	130
y pract.	0.720	0.616	y pract.	0.720	0.616
R.C. (%)	32%	13%	R.C. (%)	32%	13%

Stage / Phase Diagrams

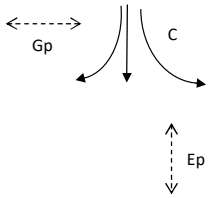
1.



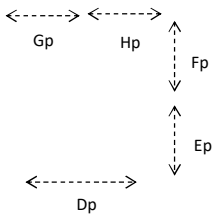
2.



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: JUL, 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: 2033

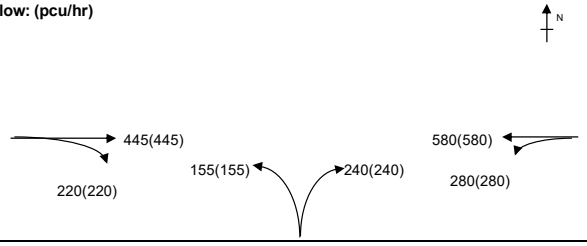
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	215	0.109		215	0.109	
	→	A	1	3.650						2120	2120	230	0.108		230	0.108	
	↓	A	1	3.650		24		100%	100%	1995	1995	220	0.110	0.110	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	395	0.194	0.194
Olympic Avenue (WB)	↓	C	3	3.650	16			70%	70%	1860	1860	402	0.216	0.216	402	0.216	0.216
	←	C	3	3.650						2120	2120	458	0.216		458	0.216	
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)

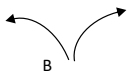


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.520	0.520	y	0.520	0.520
L (sec)	35	39	L (sec)	35	39
C (sec)	120	120	C (sec)	120	120
y pract.	0.638	0.608	y pract.	0.638	0.608
R.C. (%)	23%	17%	R.C. (%)	23%	17%

Stage / Phase Diagrams

1.

2.



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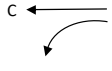
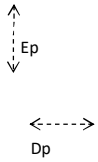


4.



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: JUL, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

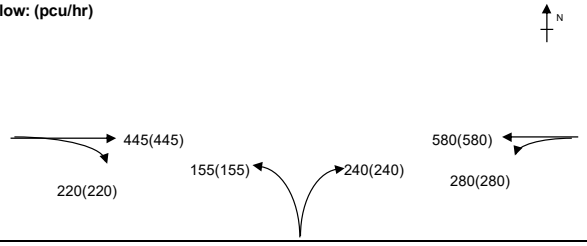
Junction: Olympic Avenue/ Dakota Drive Design Year: 2033

Description: 2033 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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	215	0.109		215	0.109	
(EB)	→	A	1	3.650						2120	2120	230	0.108		230	0.108	
	↓	A	1	3.650		23		100%	100%	1990	1990	220	0.111	0.111	220	0.111	0.111
Muk Yan Street	↰	B	2	3.500	16					1795	1795	155	0.086		155	0.086	
(NB)	↱	B	2	3.500		18				1945	1945	240	0.123	0.123	240	0.123	0.123
Olympic Avenue	↓	C	3	3.650	16			70%	70%	1860	1860	402	0.216	0.216	402	0.216	0.216
(WB)	←	C	3	3.650						2120	2120	458	0.216		458	0.216	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			9	+	9	=	18			*			*
		Ep	4	MIN GREEN + FLASH =			9	+	8	=	17						

Notes:

Flow: (pcu/hr)

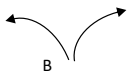


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.450	0.450	y	0.450	0.450
L (sec)	35	39	L (sec)	35	39
C (sec)	120	120	C (sec)	120	120
y pract.	0.638	0.608	y pract.	0.638	0.608
R.C. (%)	42%	35%	R.C. (%)	42%	35%

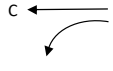
Stage / Phase Diagrams

1.

2.



3.



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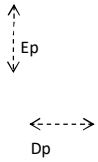


5.

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: JUL, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

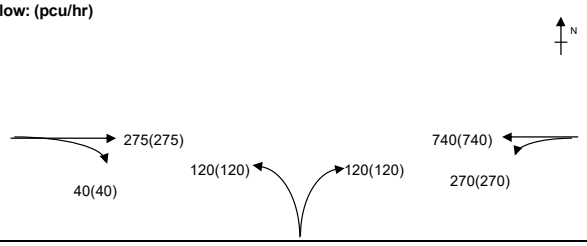
Junction: Olympic Avenue / Muk Lai Street Design Year: 2033

Description: 2033 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	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	154	0.078	0.078
(EB)	→↓	A	1	3.650		19		25%	25%	2080	2080	161	0.077		161	0.077	
Muk Lai Street (NB)	↑→	B	2	4.500	16	19		50% / 50%	50% / 50%	1900	1900	240	0.126	0.126	240	0.126	0.126
Olympic Avenue	↓←	C	3	3.650	16			57%	57%	1880	1880	475	0.253	0.253	475	0.253	0.253
(WB)	←	C	3	3.650						2120	2120	535	0.252		535	0.252	
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			7	+	13	=	20			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	15	=	21						

Notes:

Flow: (pcu/hr)



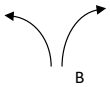
Group	A,C,B,Ep	A,C,B,Dp	Group	A,C,B,Ep	A,C,B,Dp
y	0.457	0.457	y	0.457	0.457
L (sec)	37	42	L (sec)	37	42
C (sec)	120	120	C (sec)	120	120
y pract.	0.623	0.585	y pract.	0.623	0.585
R.C. (%)	36%	28%	R.C. (%)	36%	28%

Stage / Phase Diagrams

1.

2.

3.



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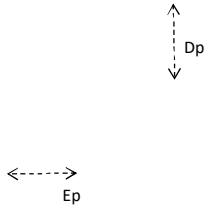


5.

I/G= 2		I/G= 7		I/G= 6		I/G= 10	20	I/G=	
I/G= 2		I/G= 7		I/G= 6		I/G= 10	20	I/G=	

Date: JUL, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

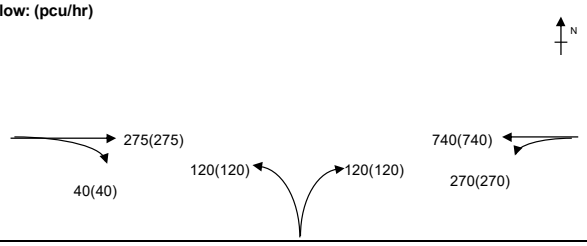
Junction: Olympic Avenue / Muk Lai Street Design Year: 2033

Description: 2033 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	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	154	0.078	0.078
	→↓	A	1	3.650		19		25%	25%	2080	2080	161	0.077		161	0.077	
Muk Lai Street (NB)	↑→	B	2	4.500	16	19		50% / 50%	50% / 50%	1900	1900	240	0.126		240	0.126	
Olympic Avenue (WB)	↓	C	3	3.650	16			57%	57%	1880	1880	475	0.253	0.253	475	0.253	0.253
	←	C	3	3.650						2120	2120	535	0.252		535	0.252	
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:

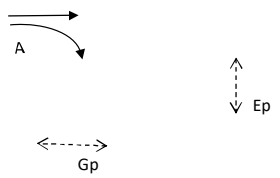
Flow: (pcu/hr)



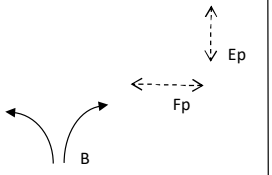
Group	A,B,C	A,Fp,C	Group	A,B,C	A,Fp,C
y	0.457	0.330	y	0.457	0.330
L (sec)	13	39	L (sec)	13	39
C (sec)	90	90	C (sec)	90	90
y pract.	0.770	0.510	y pract.	0.770	0.510
R.C. (%)	69%	54%	R.C. (%)	69%	54%

Stage / Phase Diagrams

1.



2.



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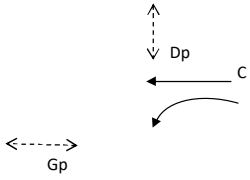


4.

5.

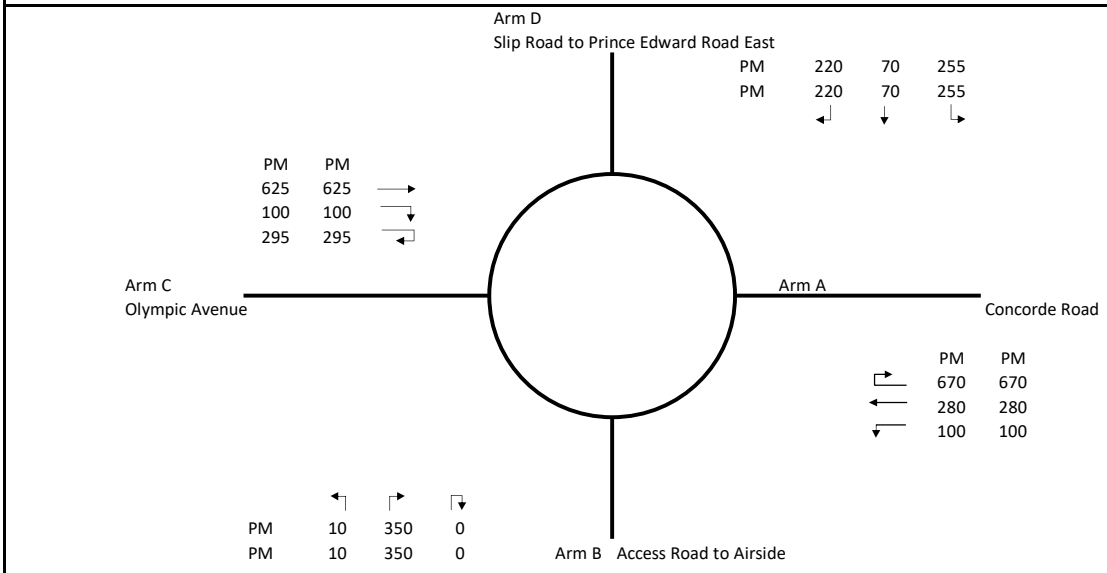
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=
I/G= 6		I/G= 9	21	I/G= 5		I/G=	I/G=

Date: JUL, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

2033 Design
(Sensitivity Test - Event Dispersal)

Roundabout Capacity Calculation

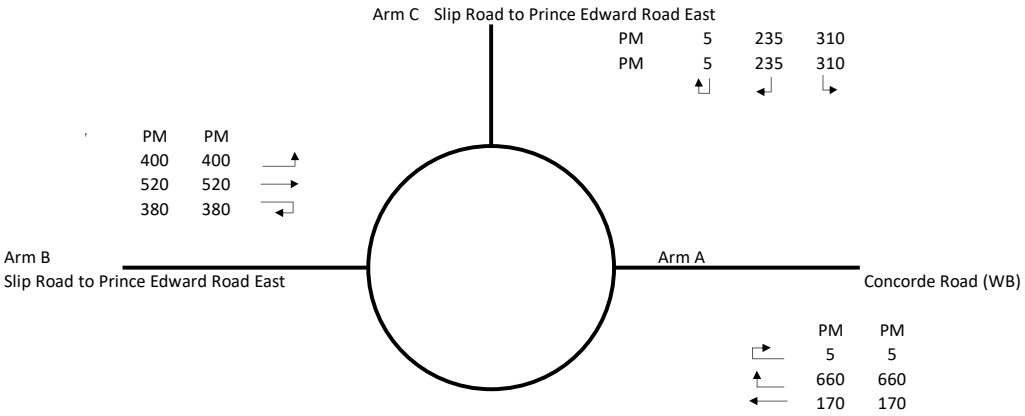
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road of Prince Edward Road East (Kowloon City) / Olympic Avenue / Concorde Road			Designed by:	TCW
Scheme:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				1,050	360	1,020	545	
Qc	Circulating Flow Across Entry (pcu/hour)				685	1,465	1,020	2,040	
Qe	= K (F - Fc*Qc)				2182	1326	2154	1252	
DFC	= Q / Qe	Design Flow / Capacity	0.48		**0.48**	0.27	0.47	0.44	
		Total Entry Flows	2,975						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,050	360	1,020	545	
Qc	Circulating Flow Across Entry (pcu/hour)				685	1,465	1,020	2,040	
Qe	= K (F - Fc*Qc)				2182	1326	2154	1252	
DFC	= Q / Qe	Design Flow / Capacity	0.48		**0.48**	0.27	0.47	0.44	
		Total Entry Flows	2,975						
All the above formulas are in accordance to T.P.D.M. Vol.2 Chp.4 Sec 4.5.9									

Roundabout Capacity Calculation

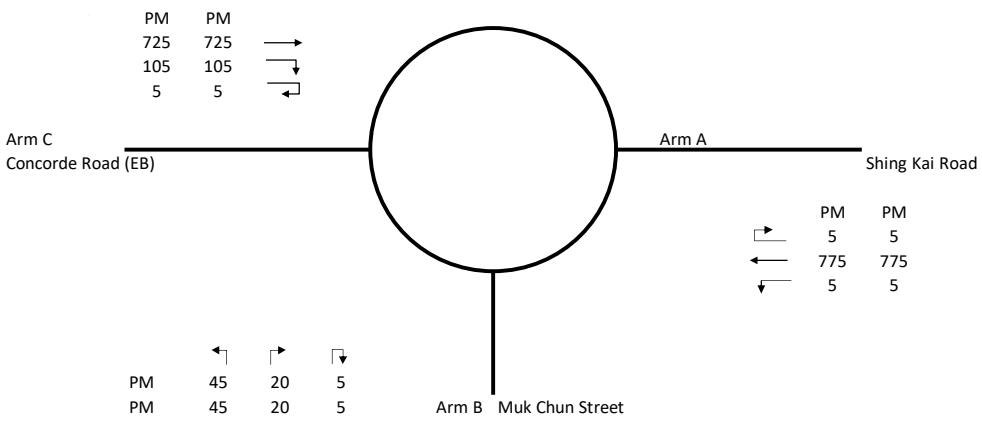
Job Title:	Proposed Comprehensive Development Including Flat, Shop & Services and Eating Place in CDA(4) Zone, Kai Tak Area 2A Site 2				
Junction:	Slip Road to Prince Edward Road East (San Po Kong) / Concorde Road			Designed by:	TCW
Scheme:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				835	1,300	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	670	905	
Qe	= K (F - Fc*Qc)				2120	1856	1849	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,685					
PM RESULT								
Q	Entry Flow (pcu/hour)				835	1,300	550	
Qc	Circulating Flow Across Entry (pcu/hour)				620	670	905	
Qe	= K (F - Fc*Qc)				2120	1856	1849	
DFC	= Q / Qe	Design Flow / Capacity	0.70		0.39	**0.70**	0.30	
		Total Entry Flows	2,685					
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:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				785	70	835	
Qc	Circulating Flow Across Entry (pcu/hour)				115	780	30	
Qe	= K (F - Fc*Qc)				1682	1372	2215	
DFC	= Q / Qe	Design Flow / Capacity	0.47		**0.47**	0.05	0.38	
		Total Entry Flows	1,690					
PM RESULT								
Q	Entry Flow (pcu/hour)				785	70	835	
Qc	Circulating Flow Across Entry (pcu/hour)				115	780	30	
Qe	= K (F - Fc*Qc)				1682	1372	2215	
DFC	= Q / Qe	Design Flow / Capacity	0.47		**0.47**	0.05	0.38	
		Total Entry Flows	1,690					
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: 2033

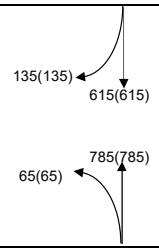
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	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	407	0.209		407	0.209	
(NB)		A	1	3.650						2120	2120	443	0.209	0.209	443	0.209	0.209
Shing Kai Road		B	2	3.650						1980	1980	374	0.189		374	0.189	
(SB)		B	2	3.650		8		36%	36%	1985	1985	376	0.189	0.189	376	0.189	0.189
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

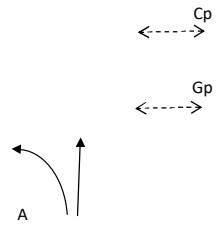
Flow: (pcu/hr)



Group	A,Dp	A,B,Ep	Group	A,Dp	A,B,Ep
y	0.209	0.398	y	0.209	0.398
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. (%)	197%	41%	R.C. (%)	197%	41%

Stage / Phase Diagrams

1.



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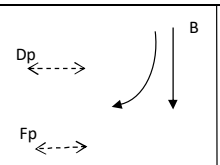

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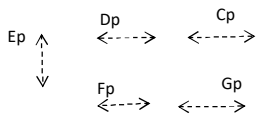


4.

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

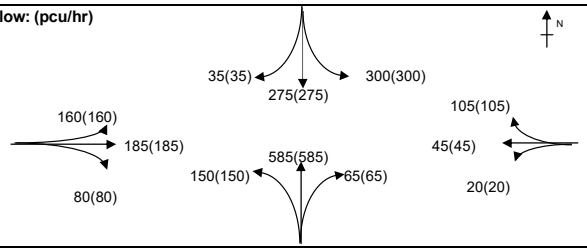
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street (EB)		C	3	3.750	30	25		38% / 19%	38% / 19%	1930	1930	425	0.220	0.220	425	0.220	0.220
Shing Kai Road		B	2	3.650	10			100%	100%	1720	1720	300	0.174	0.174	300	0.174	0.174
(SB)		B	2	3.650		20		11%	11%	2100	2100	310	0.148		310	0.148	
Muk Chui Street		D	4	3.650		20				1970	1970	105	0.053	0.053	105	0.053	0.053
(WB)		D	4	3.650	10			31%	31%	1895	1895	65	0.034		65	0.034	
Shing Kai Road		A	1	3.650	18			39%	39%	1915	1915	382	0.199		382	0.199	
(NB)		A	1	3.650		20		16%	16%	2095	2095	418	0.200	0.200	418	0.200	0.200

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

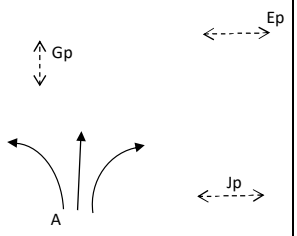
Flow: (pcu/hr)



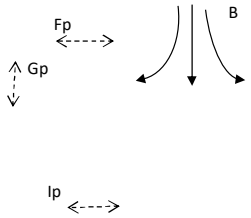
Group	A,Fp,C,D	A,B,C,D	Group	A,Fp,C,D	A,B,C,D
y	0.473	0.647	y	0.473	0.647
L (sec)	39	29	L (sec)	39	29
C (sec)	120	120	C (sec)	120	120
y pract.	0.608	0.683	y pract.	0.608	0.683
R.C. (%)	28%	5%	R.C. (%)	28%	5%

Stage / Phase Diagrams

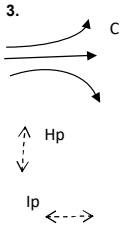
1.



2.



3.



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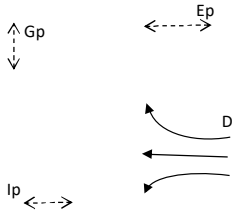


5.

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) (With proposed junction improvement) Designed By: TCW Checked By: CHC

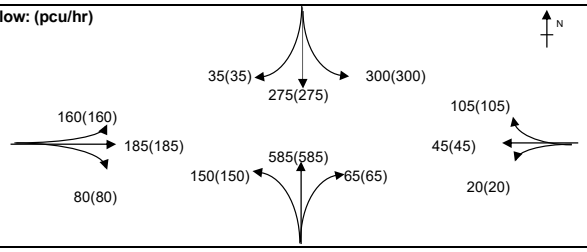
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Muk Chui Street	*	C	3	4.000	15			80%	80%	1305	1305	201	0.154	0.154	201	0.154	0.154
(EB)	*	C	3	4.000		17		36%	36%	1460	1460	224	0.153		224	0.153	
Shing Kai Road		B	2	3.650	10			100%	100%	1720	1720	300	0.174	0.174	300	0.174	0.174
(SB)		B	2	3.650		20		11%	11%	2100	2100	310	0.148		310	0.148	
Muk Chui Street		D	4	3.650		20				1970	1970	105	0.053	0.053	105	0.053	0.053
(WB)		D	4	3.650	10			31%	31%	1895	1895	65	0.034		65	0.034	
Shing Kai Road		A	1	3.650	18			39%	39%	1915	1915	382	0.199		382	0.199	
(NB)		A	1	3.650		20		16%	16%	2095	2095	418	0.200	0.200	418	0.200	0.200

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

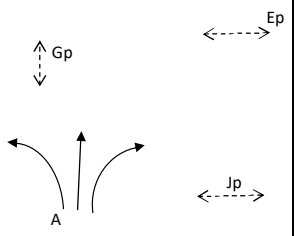
Flow: (pcu/hr)



Group	A,B,Hp,D	A,B,C,D	Group	A,B,Hp,D	A,B,C,D
y	0.427	0.581	y	0.427	0.581
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. (%)	33%	17%	R.C. (%)	33%	17%

Stage / Phase Diagrams

1.



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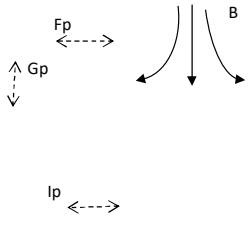
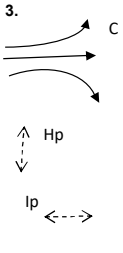


3.



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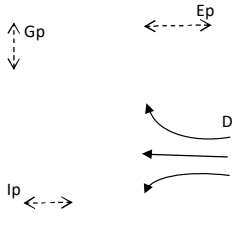


5.

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

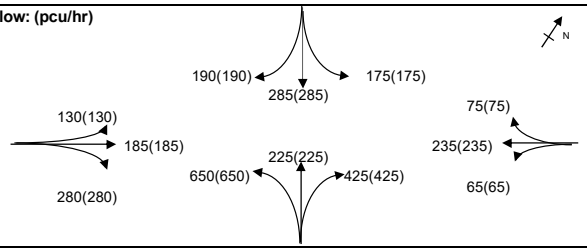
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	2	3.650	18			68%	68%	1875	1875	191	0.102	0.102	191	0.102	0.102
		A	2	3.650		18		40%	40%	2050	2050	208	0.101		208	0.101	
		A	2	3.650		15				1925	1925	196	0.102		196	0.102	
Muk On Street		E	1	3.650	18			56%	56%	1890	1890	313	0.166	0.166	313	0.166	0.166
		E	1	3.650		20		56%	56%	2035	2035	337	0.166		337	0.166	
Shing Kai Road (WB)		D	3	3.650						2120	2120	158	0.075		158	0.075	
		D	3	3.650		20		49%	49%	2045	2045	152	0.074		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	425	0.216	0.216	425	0.216	0.216
		C	4	3.650						2120	2120	225	0.106		225	0.106	
	#	B	1,2,4	4.000	50					1370	1370	650	0.474		650	0.474	

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:

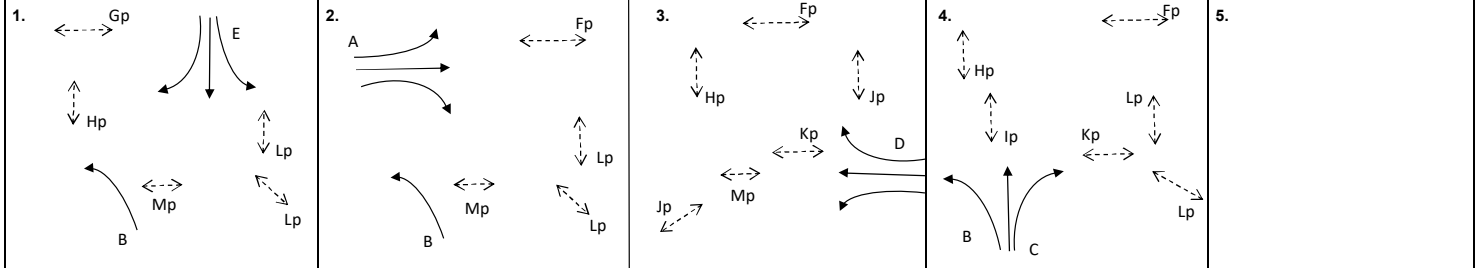
TAC Junction: 130s CT adopted
Site factor 0.7 adopted

Flow: (pcu/hr)



Group	Gp,A,Jp,C	E,A,Jp,C	Group	Gp,A,Jp,C	E,A,Jp,C
y	0.318	0.483	y	0.318	0.483
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. (%)	24%	17%	R.C. (%)	24%	17%

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

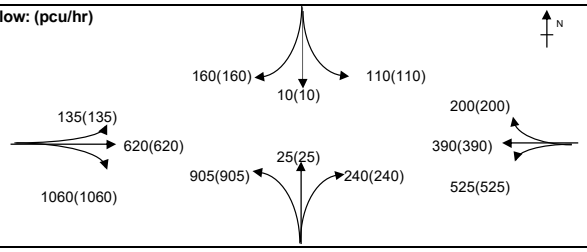
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		B	2	3.650	15			38%	38%	1910	1910	359	0.188		359	0.188	
		B	2	3.500						2105	2105	396	0.188		396	0.188	
		B	2	3.500		20				1960	1960	536	0.273		536	0.273	
		B	2	3.500		15				1915	1915	524	0.274	0.274	524	0.274	0.274
Muk Tai Street	^	A	1	3.750		17				980	980	160	0.163	0.163	160	0.163	0.163
	^	A	1	4.000	22			92%	92%	950	950	120	0.126		120	0.126	
Shing Kai Road (WB)		E	4	3.650						2120	2120	302	0.142	0.142	302	0.142	0.142
		E	4	3.650		23		69%	69%	2030	2030	288	0.142		288	0.142	
		E	4	3.650	25					1870	1870	253	0.135		253	0.135	
		E	4	3.650	28					2010	2010	272	0.135		272	0.135	
Shing Fung Road		C	2,3	3.650	20					1840	1840	435	0.236		435	0.236	
		C	2,3	3.650	22					1985	1985	470	0.237		470	0.237	
		D	3	3.650		23		82%	82%	2010	2010	142	0.071	0.071	142	0.071	0.071
		D	3	3.650		19				1750	1750	123	0.070		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:

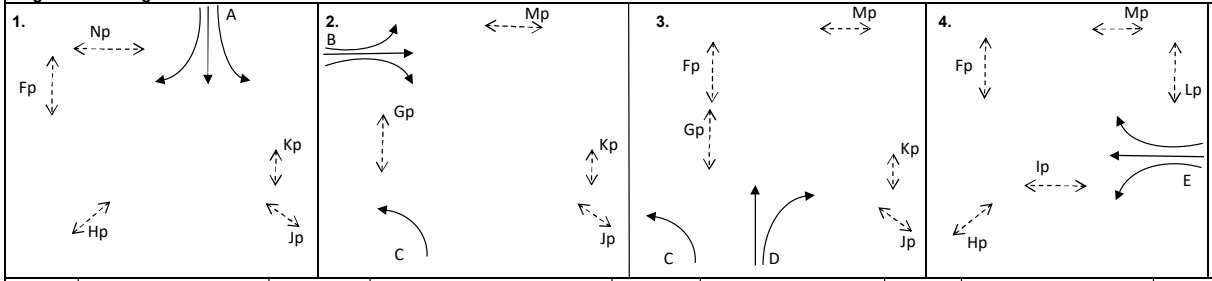
TAC junction : CT 130s adopted
^ Site factor 0.5 added due to flare length

Flow: (pcu/hr)



Group	A,B,D,Lp	A,B,D,E	Group	A,B,D,Lp	A,B,D,E
y	0.508	0.650	y	0.508	0.650
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. (%)	23%	20%	R.C. (%)	23%	20%

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: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

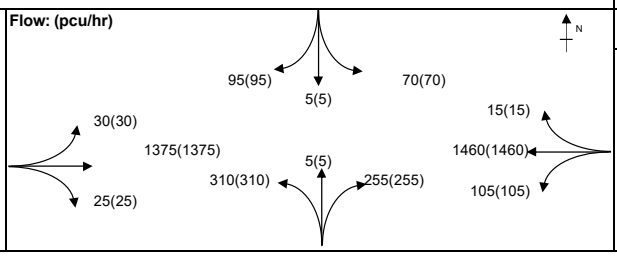
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road EB		A	1	3.650	17.5			7%	7%	1970	1970	454	0.230		454	0.230	
		A	1	3.650						2120	2120	489	0.231	0.231	489	0.231	0.231
		A	1	3.650		22.5		5%	5%	2115	2115	487	0.230		487	0.230	
Shing Kai Road WB		C	3	3.650	17.5			21%	21%	1945	1945	497	0.256		497	0.256	
		C	3	3.650						2120	2120	542	0.256		542	0.256	
		C	3	3.650		22.5		3%	3%	2115	2115	541	0.256	0.256	541	0.256	0.256
Western Access Road to Main Stadium NB		B	2	3.750	15					1810	1810	310	0.171	0.171	310	0.171	0.171
		B	2	3.750		22.5		98%	98%	2000	2000	260	0.130		260	0.130	
Western Access Road to Main Stadium SB		D	4	3.500	20			93%	93%	1835	1835	75	0.041		75	0.041	
		D	4	3.500		32.5				2010	2010	95	0.047	0.047	95	0.047	0.047

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

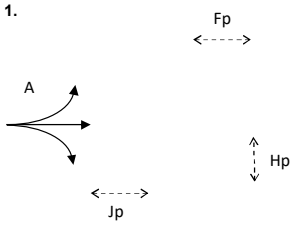
Flow: (pcu/hr)



Group	A,B,Gp,D	A,B,C,D	Group	A,B,Gp,D	A,B,C,D
y	0.449	0.705	y	0.449	0.705
L (sec)	33	18	L (sec)	33	18
C (sec)	130	130	C (sec)	130	130
y pract.	0.672	0.775	y pract.	0.672	0.775
R.C. (%)	49%	10%	R.C. (%)	49%	10%

Stage / Phase Diagrams

1.



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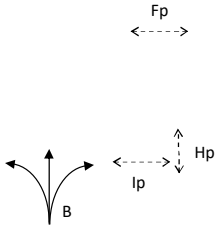

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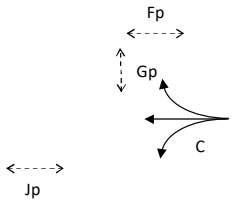

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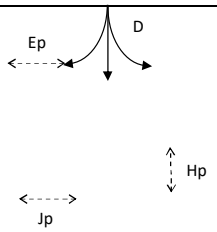


5.

I/G= 5		I/G= 5		I/G= 5		I/G= 7	
I/G= 5		I/G= 5		I/G= 5		I/G= 7	

I/G= | I/G=

Date: JUL, 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: 2033

Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

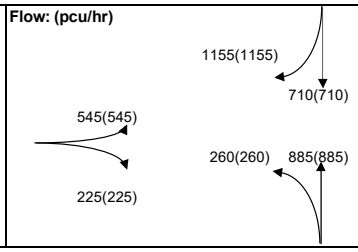
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		C	1	3.600	18			47%	47%	1900	1900	550	0.289		550	0.289	
(NB)		C	1	3.000						2055	2055	595	0.290	0.290	595	0.290	0.290
Shing Kai Road		A	2	3.500						1965	1965	605	0.308		605	0.308	
(SB)		A	2	3.650		32		83%	83%	2040	2040	629	0.308	0.308	629	0.308	0.308
		A	2	4.000		30				2050	2050	631	0.308		631	0.308	
Sung Wong Toi		B	3	3.650	18					1830	1830	262	0.143		262	0.143	
Road		B	3	3.650	20	24		100% / 0%	100% / 0%	1970	1970	283	0.144	0.144	283	0.144	0.144
(EB)		B	3	3.650		22				1985	1985	225	0.113		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

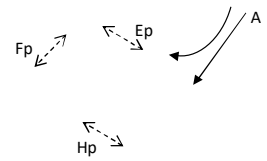
Flow: (pcu/hr)



Group	A,Gp,C	A,B,C	Group	A,Gp,C	A,B,C
y	0.598	0.742	y	0.598	0.742
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. (%)	17%	9%	R.C. (%)	17%	9%

Stage / Phase Diagrams

1.



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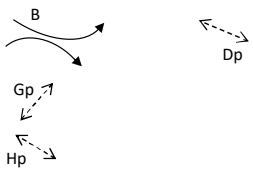

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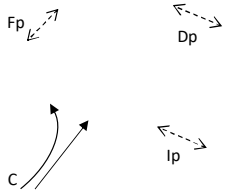


4.

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: JUL, 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: To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road — Design Year: 2033

Description: 2033 Design Flow (Sensitivity Scenario) (With proposed junction improvement) — Designed By: TCW — Checked By: CHC

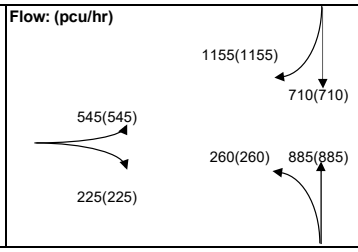
Approach	Movements	Phase	Stage	Width (m)	Radius (m) Left	Radius (m) Right	Gradient (%)	Pro. Turning (%) PM	Pro. Turning (%) PM	Revised Saturation Flow (pcu/hr) PM	Revised Saturation Flow (pcu/hr) PM	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
To kwa Wan Road		D	4	3.600	18			47%	47%	1900	1900	550	0.289		550	0.289	
(NB)		D	4	3.000						2055	2055	595	0.290	0.290	595	0.290	0.290
Shing Kai Riad (SB)		A	1,2	3.500						1965	1965	605	0.308		605	0.308	
		A	1,2	3.650		32		83%	83%	2040	2040	629	0.308	0.308	629	0.308	0.308
		A	1,2	4.000		30				2050	2050	631	0.308		631	0.308	
To Kwa Wan Road	*	C	2,3	3.500	18					1630	1630	247	0.152		247	0.152	
(EB)		C	2,3	3.500	20					1960	1960	298	0.152		298	0.152	
		B	3	3.500		30				2005	2005	113	0.056	0.056	113	0.056	0.056
		B	3	3.500		28				2000	2000	112	0.056		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

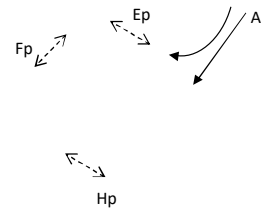
Flow: (pcu/hr)



Group	A,Jp	A,B,D	Group	A,Jp	A,B,D
y	0.308	0.654	y	0.308	0.654
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. (%)	145%	22%	R.C. (%)	145%	22%

Stage / Phase Diagrams

1.



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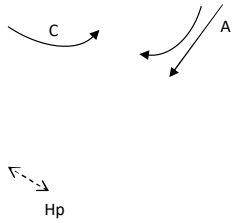

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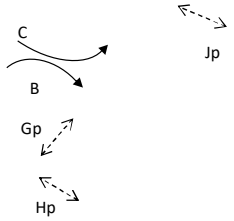

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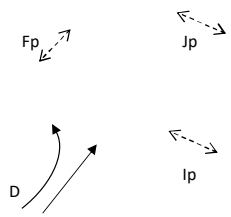


5.

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: JUL, 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: 2033

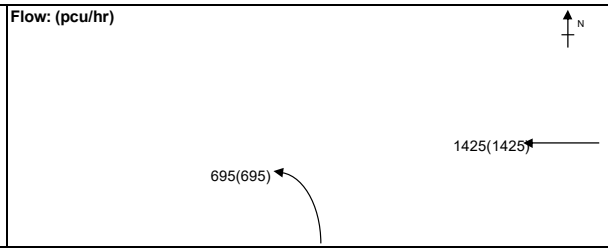
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Sung Wong Toi Rd	←	A	1	3.650						1585	1585	691	0.436	0.436	691	0.436	0.436
	←	A	1	3.500						1685	1685	734	0.436		734	0.436	
Kowloon City Road	↰	B	2	4.500	10					1435	1435	332	0.231	0.231	332	0.231	0.231
	↰	B	2	4.500	12					1570	1570	363	0.231		363	0.231	
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

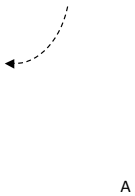
Flow: (pcu/hr)



Group	A,Cp	A,B	Group	A,Cp	A,B
y	0.436	0.667	y	0.436	0.667
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. (%)	21%	14%	R.C. (%)	21%	14%

Stage / Phase Diagrams

1.



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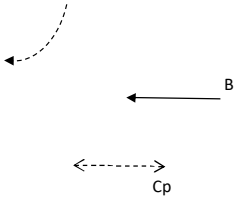


3.

4.

5.

I/G= 6		I/G= 6		I/G=		I/G=		I/G=	
I/G= 6		I/G= 6		I/G=		I/G=		I/G=	

Date: JUL, 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: 2033

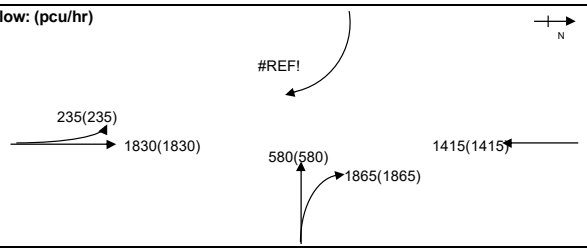
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	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	586	0.328	0.328	586	0.328	0.328
	↱	D	2,3	3.500		20				1960	1960	643	0.328		643	0.328	
	↱	D	2,3	3.000		25				1940	1940	636	0.328		636	0.328	
	↑	E	2	3.500						1965	1965	280	0.142		280	0.142	
	↑	E	2	3.500						2105	2105	300	0.143		300	0.143	
Ma Tau Chung Rd (NB)	↗	A	1	3.500	10			37%	37%	1860	1860	633	0.340	0.340	633	0.340	0.340
	→	A	1	3.500						2105	2105	716	0.340		716	0.340	
	→	A	1	3.500						2105	2105	716	0.340		716	0.340	
Ma Tau Chung Rd (SB)	←	B	1	3.500						2105	2105	482	0.229		482	0.229	
	←	B	1	3.500						2105	2105	483	0.229		483	0.229	
	←	B	1	3.500						1965	1965	450	0.229		450	0.229	
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:

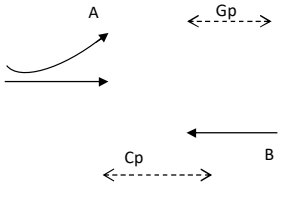
Flow: (pcu/hr)



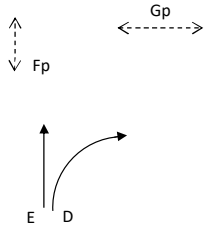
Group	B,D,I	A,D,I	Group	B,D,I	A,D,I
y	0.558	0.669	y	0.558	0.669
L (sec)	18	18	L (sec)	18	18
C (sec)	130	130	C (sec)	130	130
y pract.	0.775	0.775	y pract.	0.775	0.775
R.C. (%)	39%	16%	R.C. (%)	39%	16%

Stage / Phase Diagrams

1.



2.



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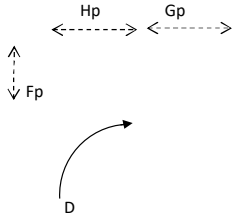

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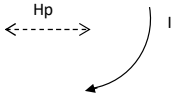


5.

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: JUL, 2024 **Junction:** (K) Ma Tau Chung Road / Sung Wong Toi Road / Fu Ning Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

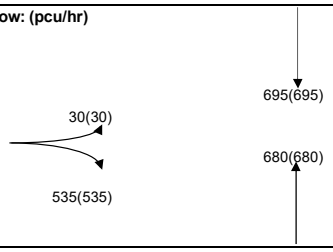
Junction: Olympic Avenue / Hang Wan Road Design Year: 2033

Description: 2033 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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	↑	A	1,2	3.500						1965	1965	328	0.167		328	0.167	
(NB)	↑	A	1,2	3.500						2105	2105	352	0.167		352	0.167	
Olympic Avenue	↓	B	2,3	3.650						1980	1980	336	0.170	0.170	336	0.170	0.170
(SB)	↓	B	2,3	3.650						2120	2120	359	0.169		359	0.169	
Hang Wan Road	↑*	C	2,3	5.000	13					1895	1895	30	0.016		30	0.016	
	↓*	D	3	3.300		25				1965	1965	269	0.137		269	0.137	
	↓*	D	3	3.300		20				1940	1940	266	0.137	0.137	266	0.137	0.137
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:

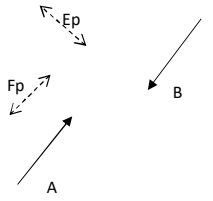
Flow: (pcu/hr)



Group	A,D	B,D	Group	A,D	B,D
y	0.304	0.307	y	0.304	0.307
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. (%)	151%	140%	R.C. (%)	151%	140%

Stage / Phase Diagrams

1.



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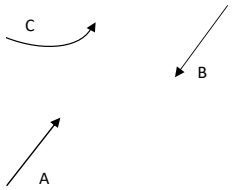
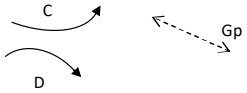


3.



4.

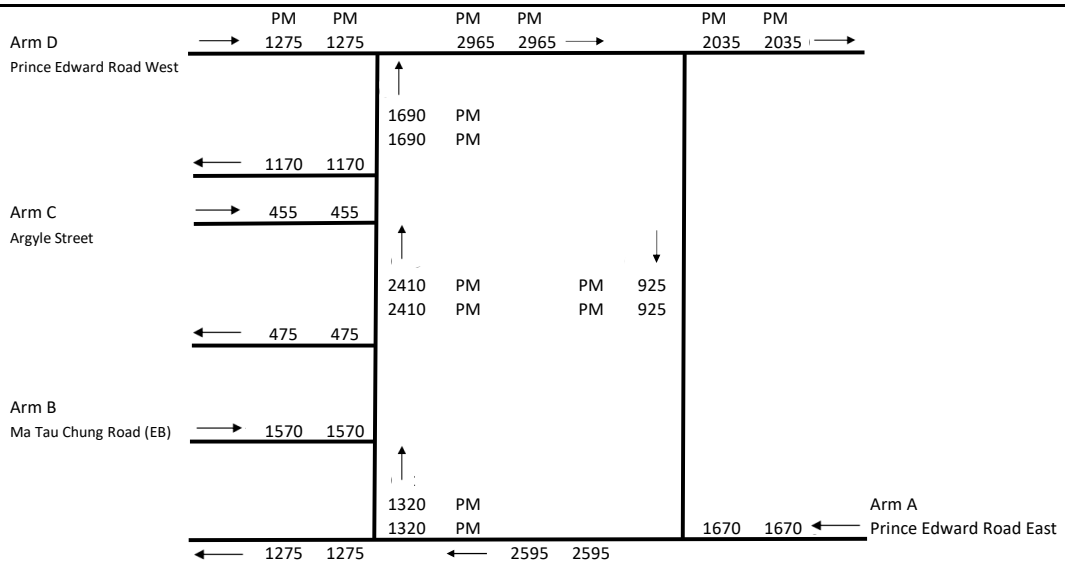
5.

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: JUL, 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:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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)				1,670	1,570	455	1,275	
Qc	Circulating Flow Across Entry (pcu/hour)				925	1,320	2,410	1,690	
Qe	= K (F - Fc*Qc)				2304	1983	928	1541	
DFC	= Q / Qe	Design Flow / Capacity	0.83		0.72	0.79	0.49	**0.83**	
		Total Entry Flows	4,970						
PM RESULT									
Q	Entry Flow (pcu/hour)				1,670	1,570	455	1,275	
Qc	Circulating Flow Across Entry (pcu/hour)				925	1,320	2,410	1,690	
Qe	= K (F - Fc*Qc)				2304	1983	928	1541	
DFC	= Q / Qe	Design Flow / Capacity	0.83		0.72	0.79	0.49	**0.83**	
		Total Entry Flows	4,970						

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**

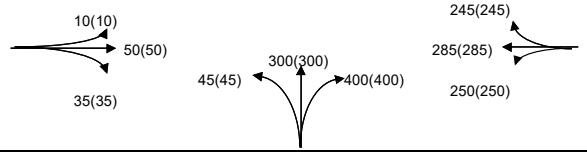
Junction: Kai San Road / Tsat Po Street Design Year: 2033

Description: 2033 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	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	95	0.047	0.047
Tsat Po Street		A	1	3.600	10			69%	69%	1790	1790	364	0.203		364	0.203	
(WB)		A	1	3.600		25		59%	59%	2045	2045	416	0.203	0.203	416	0.203	0.203
Kai San Road		B	2	4.000		15				1960	1960	400	0.204	0.204	400	0.204	0.204
(NB)		B	2	4.000	10			13%	13%	1975	1975	345	0.175		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:

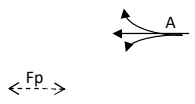
Flow: (pcu/hr)



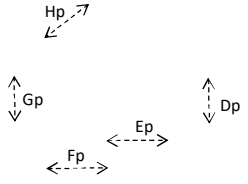
Group	A,Gp,B,C	A,Gp,B,C	Group	A,Gp,B,C	A,Gp,B,C
y	0.454	0.454	y	0.454	0.454
L (sec)	48	48	L (sec)	48	48
C (sec)	130	130	C (sec)	130	130
y pract.	0.568	0.568	y pract.	0.568	0.568
R.C. (%)	25%	25%	R.C. (%)	25%	25%

Stage / Phase Diagrams

1.



2.



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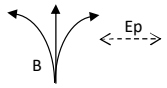

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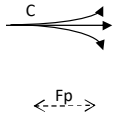


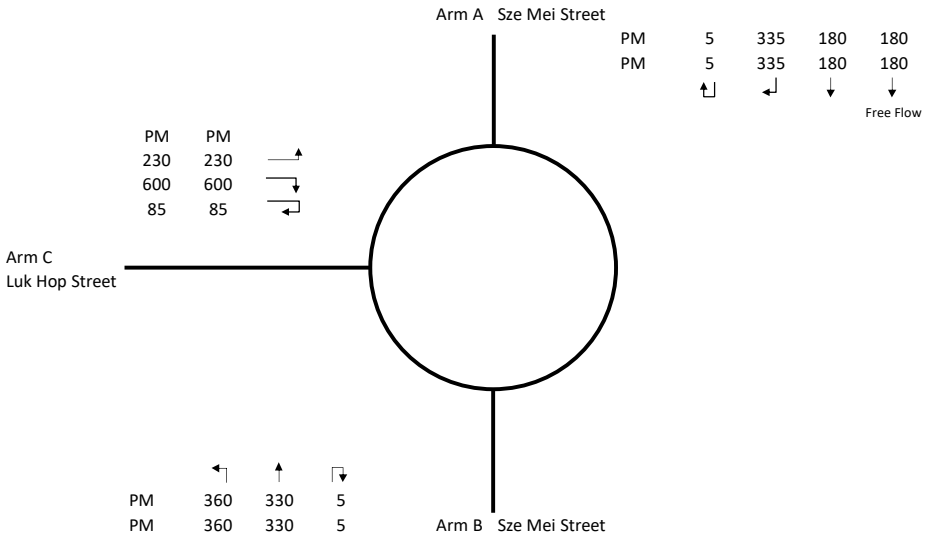
5.

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: JUL, 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:	2033 Design Flow (Sensitivity Scenario)			Checked by:	CHC
Design Year:	2033	Job No.: CHK50786310		Date:	JUL, 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	915	
Qc	Circulating Flow Across Entry (pcu/hour)				690	425	340	
Qe	= K (F - Fc*Qc)				898	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,130					
PM RESULT								
Q	Entry Flow (pcu/hour)				520	695	915	
Qc	Circulating Flow Across Entry (pcu/hour)				690	425	340	
Qe	= K (F - Fc*Qc)				898	927	1200	
DFC	= Q / Qe	Design Flow / Capacity	0.76		0.58	0.75	**0.76**	
		Total Entry Flows	2,130					
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: 2033

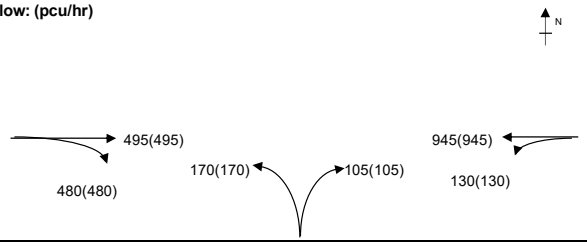
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)	→	A	1	3.650						1980	1980	320	0.162		320	0.162	
	→↓	A	1	3.650		26		47%	47%	2065	2065	333	0.161		333	0.161	
	↓	A	1	3.650		23				1990	1990	322	0.162	0.162	322	0.162	0.162
Shing Kai Road (WB)	←↑ *	E	3	4.500	35			37%	37%	2035	2035	349	0.171		349	0.171	
	←	E	3	3.600						2115	2115	363	0.172	0.172	363	0.172	0.172
	←	E	3	3.600						2115	2115	363	0.172		363	0.172	
Slip Road of CKR	↰	B	1,2	5.000	35					2030	2030	170	0.084		170	0.084	
	↱	C	2	3.600		18				1950	1950	52	0.027		52	0.027	
	↱	C	2	3.600		20				1965	1965	53	0.027		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

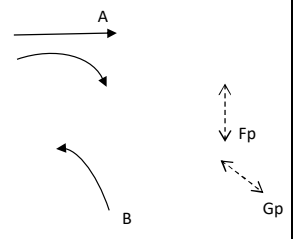
Flow: (pcu/hr)



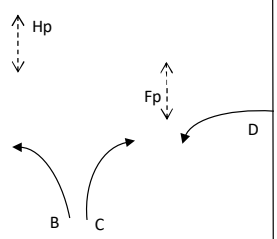
Group	A,C,E	A,Hp,E	Group	A,C,E	A,Hp,E
y	0.360	0.333	y	0.360	0.333
L (sec)	12	37	L (sec)	12	37
C (sec)	130	130	C (sec)	130	130
y pract.	0.817	0.644	y pract.	0.817	0.644
R.C. (%)	127%	93%	R.C. (%)	127%	93%

Stage / Phase Diagrams

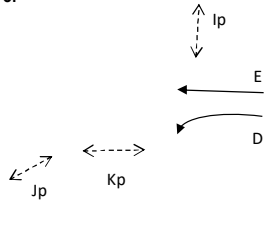
1.



2.



3.



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: JUL, 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: 2033

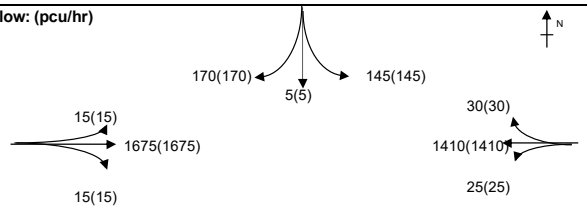
Description: 2033 Design Flow (Sensitivity Scenario) — Designed By: TCW — Checked By: CHC

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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Shing Kai Road (EB)		A	1	3.800	15			3%	3%	1990	1990	542	0.272		542	0.272	
		A	1	3.800						2135	2135	582	0.273		582	0.273	
		A	1	3.800		30		3%	3%	2130	2130	581	0.273	0.273	581	0.273	0.273
Eastern Access to main stadium		C	3	3.650	10					1720	1720	145	0.084		145	0.084	
		C	3	3.650		15		97%	97%	1930	1930	175	0.091	0.091	175	0.091	0.091
Shing Kai Road (WB)		B	2	3.800	15			5%	5%	1985	1985	465	0.234		465	0.234	
		B	2	3.800						2135	2135	501	0.235	0.235	501	0.235	0.235
		B	2	3.800		30		6%	6%	2130	2130	499	0.234		499	0.234	
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

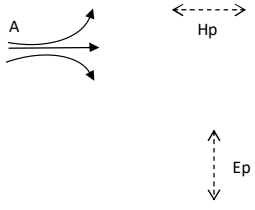
Flow: (pcu/hr)



Group	A,B,Gp	A,B,C,Dp	Group	A,B,Gp	A,B,C,Dp
y	0.507	0.598	y	0.507	0.598
L (sec)	26	35	L (sec)	26	35
C (sec)	130	130	C (sec)	130	130
y pract.	0.720	0.658	y pract.	0.720	0.658
R.C. (%)	42%	10%	R.C. (%)	42%	10%

Stage / Phase Diagrams

1.



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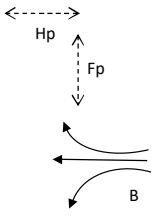
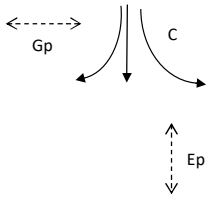
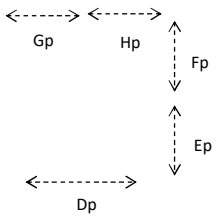


3.



4.



5.

I/G= 5		I/G= 7		I/G= 6		I/G= 5	15	I/G=			
I/G= 5		I/G= 7		I/G= 6		I/G= 5	15	I/G=			

Date: JUL, 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: 2033

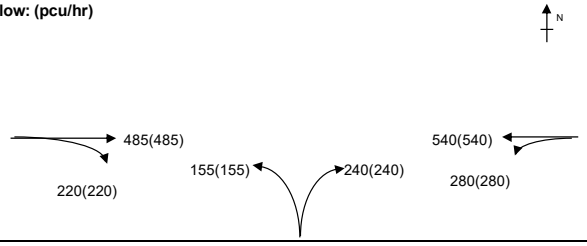
Description: 2033 Design Flow (Sensitivity Scenario) Designed By: TCW Checked By: CHC

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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue (EB)	→	A	1	3.650						1980	1980	229	0.116	0.116	229	0.116	0.116
	→	A	1	3.650						2120	2120	245	0.116		245	0.116	
	↓	A	1	3.650		24		95%	95%	2000	2000	231	0.116		231	0.116	
Muk Tan Street (NB)	↑ *	B	2	4.500	16	19		39% / 61%	39% / 61%	2040	2040	395	0.194	0.194	395	0.194	0.194
Olympic Avenue (WB)	↓	C	3	3.650	16			73%	73%	1855	1855	382	0.206		382	0.206	
	←	C	3	3.650						2120	2120	438	0.207	0.207	438	0.207	0.207
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)

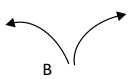


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.516	0.516	y	0.516	0.516
L (sec)	35	39	L (sec)	35	39
C (sec)	120	120	C (sec)	120	120
y pract.	0.638	0.608	y pract.	0.638	0.608
R.C. (%)	24%	18%	R.C. (%)	24%	18%

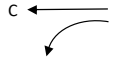
Stage / Phase Diagrams

1.

2.



3.



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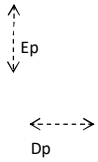


5.

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: JUL, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

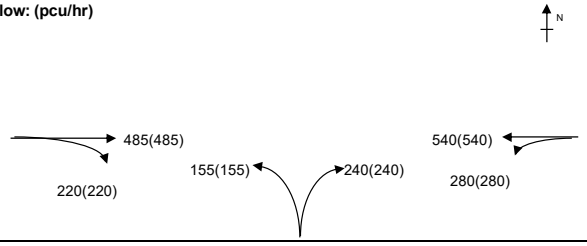
Junction: Olympic Avenue/ Dakota Drive Design Year: 2033

Description: 2033 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	PM Peak Flow (pcu/hr)	PM Peak y Value	PM Peak Critical y
Olympic Avenue	→	A	1	3.650						1980	1980	229	0.116		229	0.116	
(EB)	→	A	1	3.650						2120	2120	245	0.116		245	0.116	
	↓	A	1	3.650		23		95%	95%	1995	1995	231	0.116	0.116	231	0.116	0.116
Muk Yan Street	↰	B	2	3.500	16					1795	1795	155	0.086		155	0.086	
(NB)	↱	B	2	3.500		18				1945	1945	240	0.123	0.123	240	0.123	0.123
Olympic Avenue	↓	C	3	3.650	16			73%	73%	1855	1855	382	0.206		382	0.206	
(WB)	←	C	3	3.650						2120	2120	438	0.207	0.207	438	0.207	0.207
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			9	+	9	=	18			*			*
		Ep	4	MIN GREEN + FLASH =			9	+	8	=	17						

Notes:

Flow: (pcu/hr)

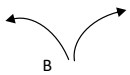


Group	A,B,C,Ep	A,B,C,Dp	Group	A,B,C,Ep	A,B,C,Dp
y	0.446	0.446	y	0.446	0.446
L (sec)	35	39	L (sec)	35	39
C (sec)	120	120	C (sec)	120	120
y pract.	0.638	0.608	y pract.	0.638	0.608
R.C. (%)	43%	36%	R.C. (%)	43%	36%

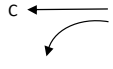
Stage / Phase Diagrams

1.

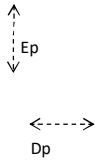
2.



3.



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: JUL, 2024 **Junction:** Olympic Avenue/ Dakota Drive (R)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

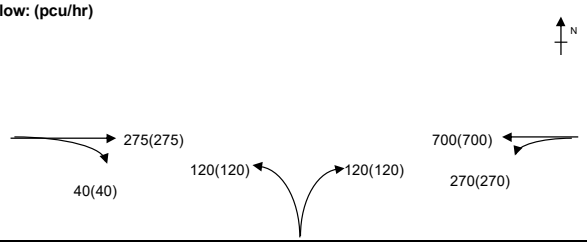
Junction: Olympic Avenue / Muk Lai Street Design Year: 2033

Description: 2033 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	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	154	0.078	0.078
(EB)	→↓	A	1	3.650		19		25%	25%	2080	2080	161	0.077		161	0.077	
Muk Lai Street (NB)	↑→	B	2	4.500	16	19		50% / 50%	50% / 50%	1900	1900	240	0.126	0.126	240	0.126	0.126
Olympic Avenue	↓←	C	3	3.650	16			59%	59%	1875	1875	455	0.243		455	0.243	
(WB)	←	C	3	3.650						2120	2120	515	0.243	0.243	515	0.243	0.243
Pedestrian Crossing		Dp	4	MIN GREEN + FLASH =			7	+	13	=	20			*			*
		Ep	4	MIN GREEN + FLASH =			6	+	15	=	21						

Notes:

Flow: (pcu/hr)



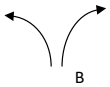
Group	A,C,B,Ep	A,C,B,Dp	Group	A,C,B,Ep	A,C,B,Dp
y	0.447	0.447	y	0.447	0.447
L (sec)	37	42	L (sec)	37	42
C (sec)	120	120	C (sec)	120	120
y pract.	0.623	0.585	y pract.	0.623	0.585
R.C. (%)	39%	31%	R.C. (%)	39%	31%

Stage / Phase Diagrams

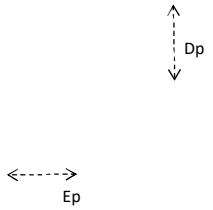
1.

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: JUL, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50786310 **MVA HONG KONG LIMITED**

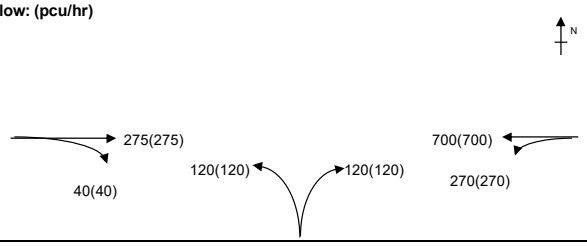
Junction: Olympic Avenue / Muk Lai Street Design Year: 2033

Description: 2033 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	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	154	0.078	0.078
	→↓	A	1	3.650		19		25%	25%	2080	2080	161	0.077		161	0.077	
Muk Lai Street (NB)	↑→	B	2	4.500	16	19		50% / 50%	50% / 50%	1900	1900	240	0.126		240	0.126	
Olympic Avenue (WB)	↓	C	3	3.650	16			59%	59%	1875	1875	455	0.243		455	0.243	
	←	C	3	3.650						2120	2120	515	0.243	0.243	515	0.243	0.243
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:

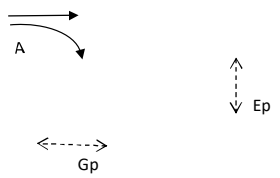
Flow: (pcu/hr)



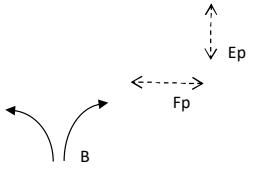
Group	A,B,C	A,Fp,C	Group	A,B,C	A,Fp,C
y	0.447	0.321	y	0.447	0.321
L (sec)	13	39	L (sec)	13	39
C (sec)	90	90	C (sec)	90	90
y pract.	0.770	0.510	y pract.	0.770	0.510
R.C. (%)	72%	59%	R.C. (%)	72%	59%

Stage / Phase Diagrams

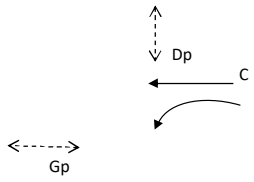
1.



2.



3.



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: JUL, 2024 **Junction:** (S) Olympic Avenue / Muk Lai Street

LEE Charles

From: Nga Ching YIP <ngachingyip@td.gov.hk>
Sent: Monday, July 29, 2024 9:53 AM
To: LEE Charles
Cc: TSANG Andy; heiyuchan@td.gov.hk; Rick Kin Wai LIU
Subject: Fw: [For Comment] Fw: NKIL 6590 Kai Tak CDA(4) - Traffic Impact Assessment for S16 Planning Application (A/K22/38)
Attachments: Section 5.5.pdf; Section 3.3.pdf; Section 4.3 (para 4.3.6).pdf

Dear Charles,

Thank you for the clarification. I have no further comments.

Regards,
Cynthia YIP
Transport Department
Tel: 3583 3988
----- Forwarded by Nga Ching YIP/TD/HKSARG on 26/07/2024 20:33 -----

From: LEE Charles <clee@systra.com>
To: Nga Ching YIP <ngachingyip@td.gov.hk>, TSANG Andy <atsang@systra.com>
Cc: "heiyuchan@td.gov.hk" <heiyuchan@td.gov.hk>
Date: 25/07/2024 14:14
Subject: RE: NKIL 6590 Kai Tak CDA(4) - Traffic Impact Assessment for S16 Planning Application (A/K22/38)

Dear Cynthia,

Please kindly be advised that the description of the existing public transport services has been included in section 3.3 of the TIA report, while the updating of traffic model based on the BRPP 24-25 has been mentioned in section 4.3 (para. 4.3.6) of the TIA. Besides, a review on future public transport has been presented in section 5.5 of the TIA report.

The above-mentioned sections are extracted from the submitted TIA report for your easy reference.

In case of the download link in our previous email on 17 Jul has been expired, the full TIA report can also be downloaded from the following link:
http://www.mvaasia.com/download/L2400937_2A_Site2_TIA_Report.pdf

Grateful if you could offer us your division's advice/agreement at your earliest convenience. Your support in this matter is greatly appreciated.

Thanks!

Best Regards,

Charles Lee
Associate Director
Tel: +852 2864 6320 (Direct Line) • Gen: +852 2529 7037 • Fax: +852 2527 8490

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www.mvaasia.com

From: Nga Ching YIP <ngachingyip@td.gov.hk>
Sent: Thursday, July 25, 2024 12:00 PM
To: TSANG Andy <atsang@systra.com>
Cc: LEE Charles <clee@systra.com>; heiyuchan@td.gov.hk
Subject: RE: NKIL 6590 Kai Tak CDA(4) - Traffic Impact Assessment for S16 Planning Application (A/K22/38)

Dear Andy,

Tried to call but no luck to reach you. It seems that there is not much mention on PT services in the TIA, grateful for your advice and feel free to call back for further discussion. Thank you.

(ps. I will be out for meeting this afternoon and tomorrow morning)

Regards,
Cynthia YIP
Transport Department
Tel: 3583 3988

From: TSANG Andy <atsang@systra.com>
To: Nga Ching YIP <ngachingyip@td.gov.hk>
Cc: LEE Charles <clee@systra.com>, "heiyuchan@td.gov.hk" <heiyuchan@td.gov.hk>
Date: 23/07/2024 11:51
Subject: RE: NKIL 6590 Kai Tak CDA(4) - Traffic Impact Assessment for S16 Planning Application (A/K22/38)

Dear Cynthia,

As discussed, please find attached the relevant sections 4.3.6 – 4.3.12, which includes the Tables 4.6 (Adopted Trip Rates) and 4.7 (Kai Tak Development and Other Planned Developments Updated in the LATM), as extracted from the TIA report for your easy reference.

Should you have any queries, please feel free to call me anytime.

Thank you very much!

Best Regards,
Andy Tsang
Senior Traffic Engineer
Tel: +852 2864 6359 (Direct Line) • Gen: +852 2529 7037 • Fax: +852 2527 8490

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Please consider the environment before printing.

From: TSANG Andy
Sent: Wednesday, July 17, 2024 9:07 PM
To: Nga Ching YIP <ngachingyip@td.gov.hk>
Cc: LEE Charles <clee@systra.com>; heiyuchan@td.gov.hk
Subject: NKIL 6590 Kai Tak CDA(4) - Traffic Impact Assessment for S16 Planning Application (A/K22/38)

Dear Cynthia,

We, MVA Hong Kong Limited, has been commissioned to conduct a Traffic Impact Assessment (TIA) in support of the Section 16 Planning Application for the CDA(4) Site at NKIL 6590 at Kai Tak.

To conduct the traffic forecast, we have reviewed on the land uses at Sites 1M1, 1M2, 2A1 and part of open space. It is noted that while the sites are intended for commercial uses and arts & performance related uses in long-term planning, light public housing will be implemented to fill the short-term gap of public housing supply. In view of that, traffic induced by the two planning schemes were compared in order to identify the more conservative scenario for assessment.

As per the comments as received from Traffic Engineering Division (Mr. Alvin Chan), we would like to seek your division's advice/agreement on the estimation of road-based public transport demand of the Light Public Housing as mentioned in the sections 4.3.9 – 4.3.12 of the TIA. Relevant pages are extracted in the attachment for your easy review, and the full report can be downloaded from the link below.
https://sendto.systra.com/pickup?claimID=MtHaExPp5aWcBmPZ&claimPasscode=dsWNVuuhVfbsdz2v

We would be grateful if you could offer us your division's advice/agreement at your earliest convenience. Your support in this matter is greatly appreciated.

Should you have any queries, please feel free to call me anytime.

Thank you very much for your kind attention!

Best Regards,
Andy Tsang
Senior Traffic Engineer
Tel: +852 2864 6359 (Direct Line) • Gen: +852 2529 7037 • Fax: +852 2527 8490

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Appendix 3

Replacement Pages of Air Ventilation Assessment

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(3) 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 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 +118.1 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**.

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).

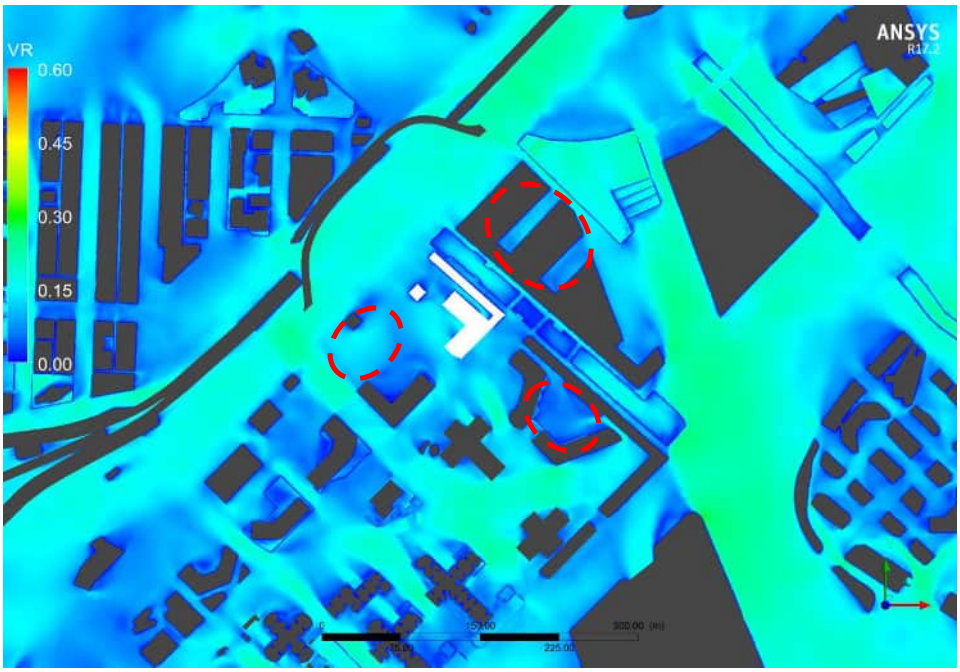
2.2.4 **Table 2.2** highlights the building height of the nearby developments.

Table 2.2 Building Height of the Surrounding Developments

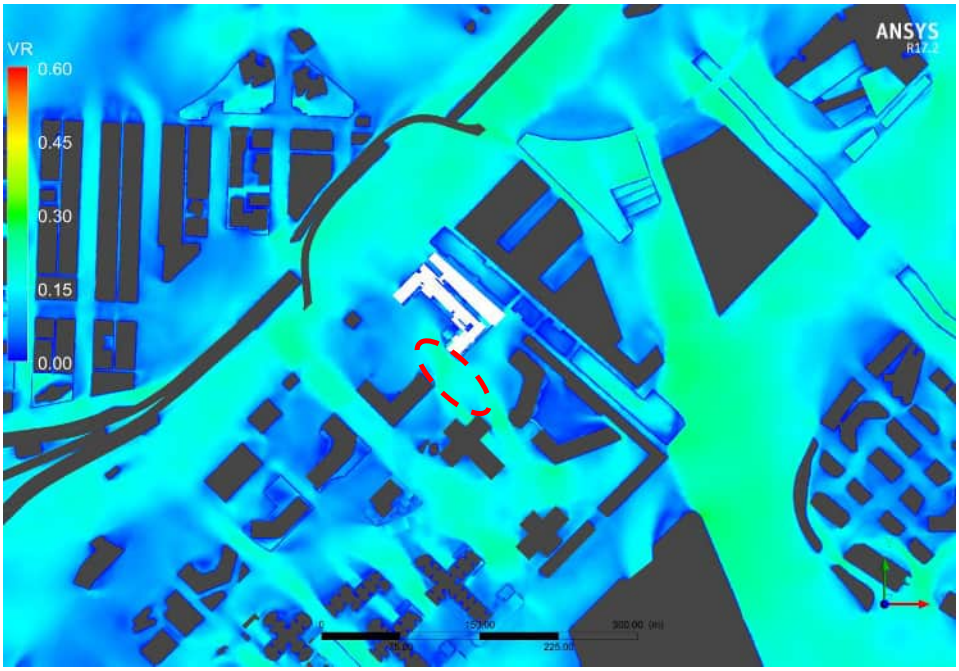
Name of Development	Max. Building Height (mPD)	Location from Site
Future CDA Site 1M1and 1M2	15 – 40	Northeast
Future CDA (3)	100	Northeast
Future Residential Site 2A3	114.95	Southwest
Future Kai Tak Sports Park	31 - 70	Southeast
Future Housing Society Site 2B1	135	Southeast
Future Public Housing Sites 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

Name of Development	Max. Building Height (mPD)	Location from Site
Prince Ritz	126.1	West
KC-017	20 to 160	West
Low to medium existing buildings along Tak Ku Ling Road, South Wall Road and Lung Kong Road	~ 10.9 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	15 - 130	Southeast
Upper River Bank	15 – 130	Southeast

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, CDA(3) zone, 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.

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 CDA (3). 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.

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 CDA (3) due to the channelized effect.

f. Situated in the downwind area of the Subject Site, CDA (3) 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.

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, CDA (3) and Site 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

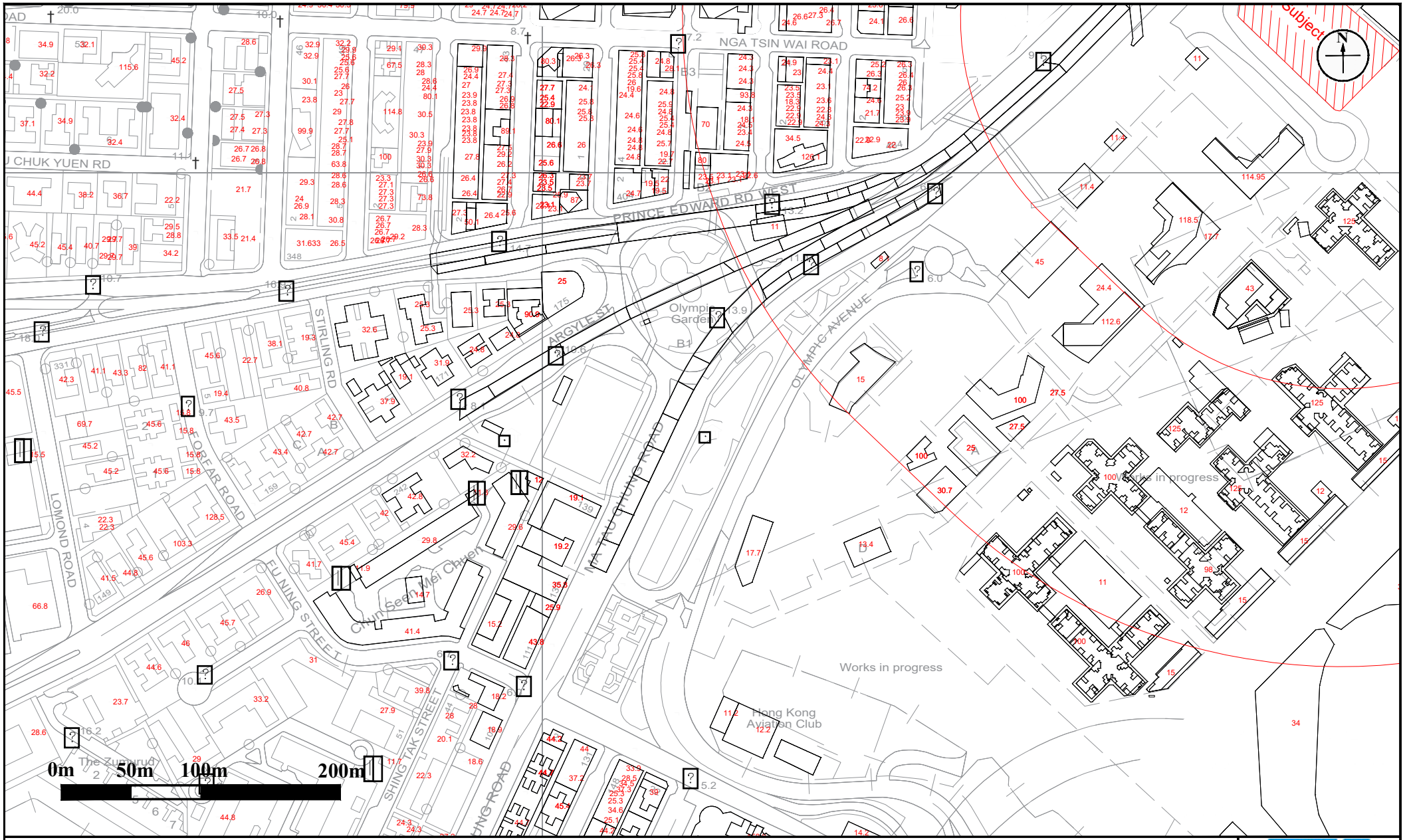


Figure: 2c

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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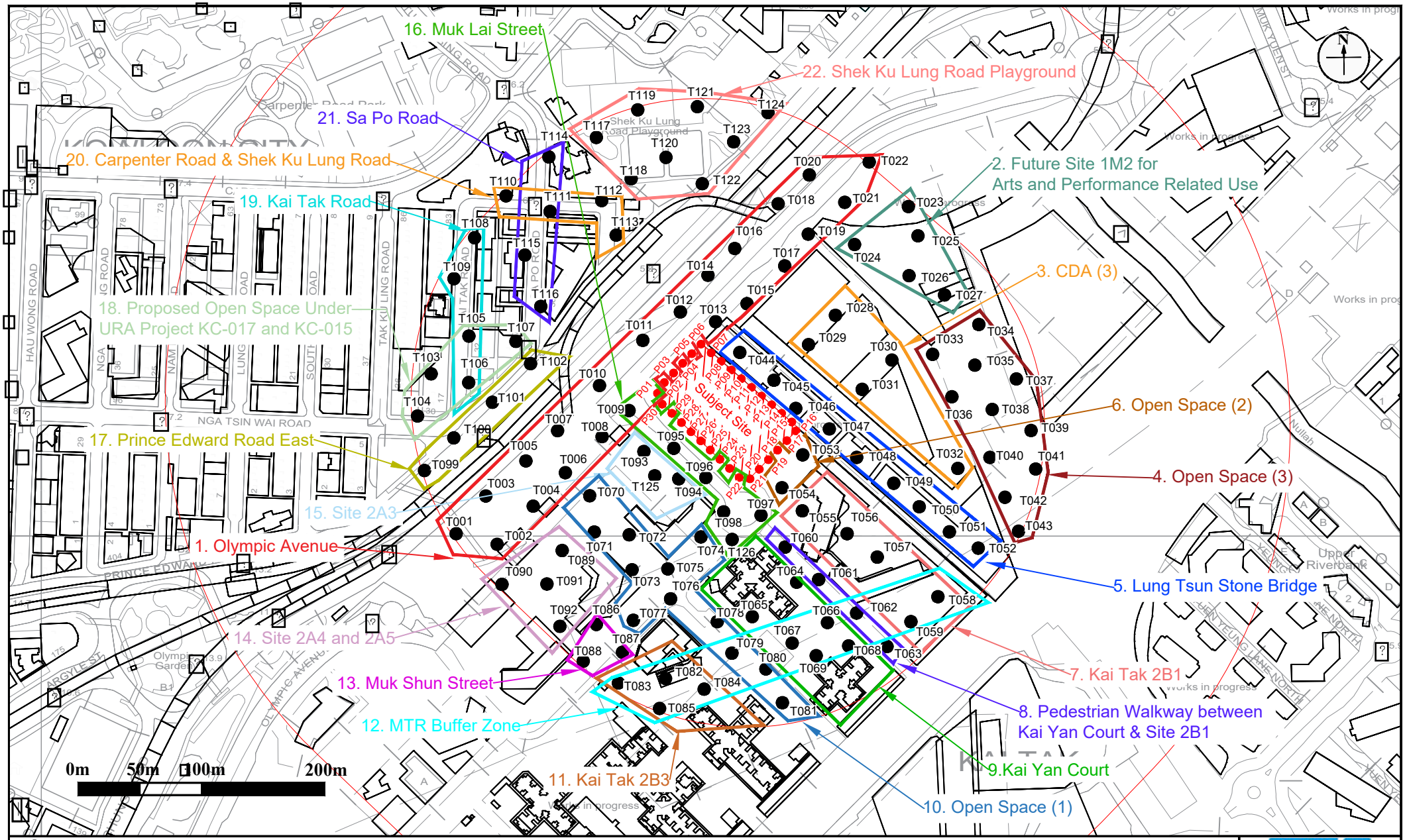

Figure: 6

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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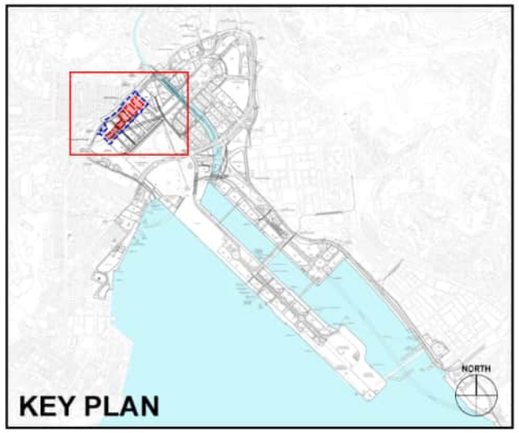
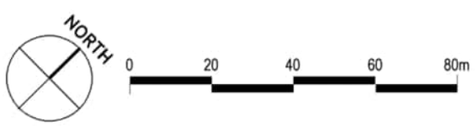
Appendix 1

Master Layout Plan for Baseline Scheme





LEGEND

- Development Sites - North Apron
- Study Area
- Proposed Buildings
- Non-Building Areas (NBAs)

AECOM

B H A
B A R R I E H O
ARCHITECTURE · INTERIORS

Ubis 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

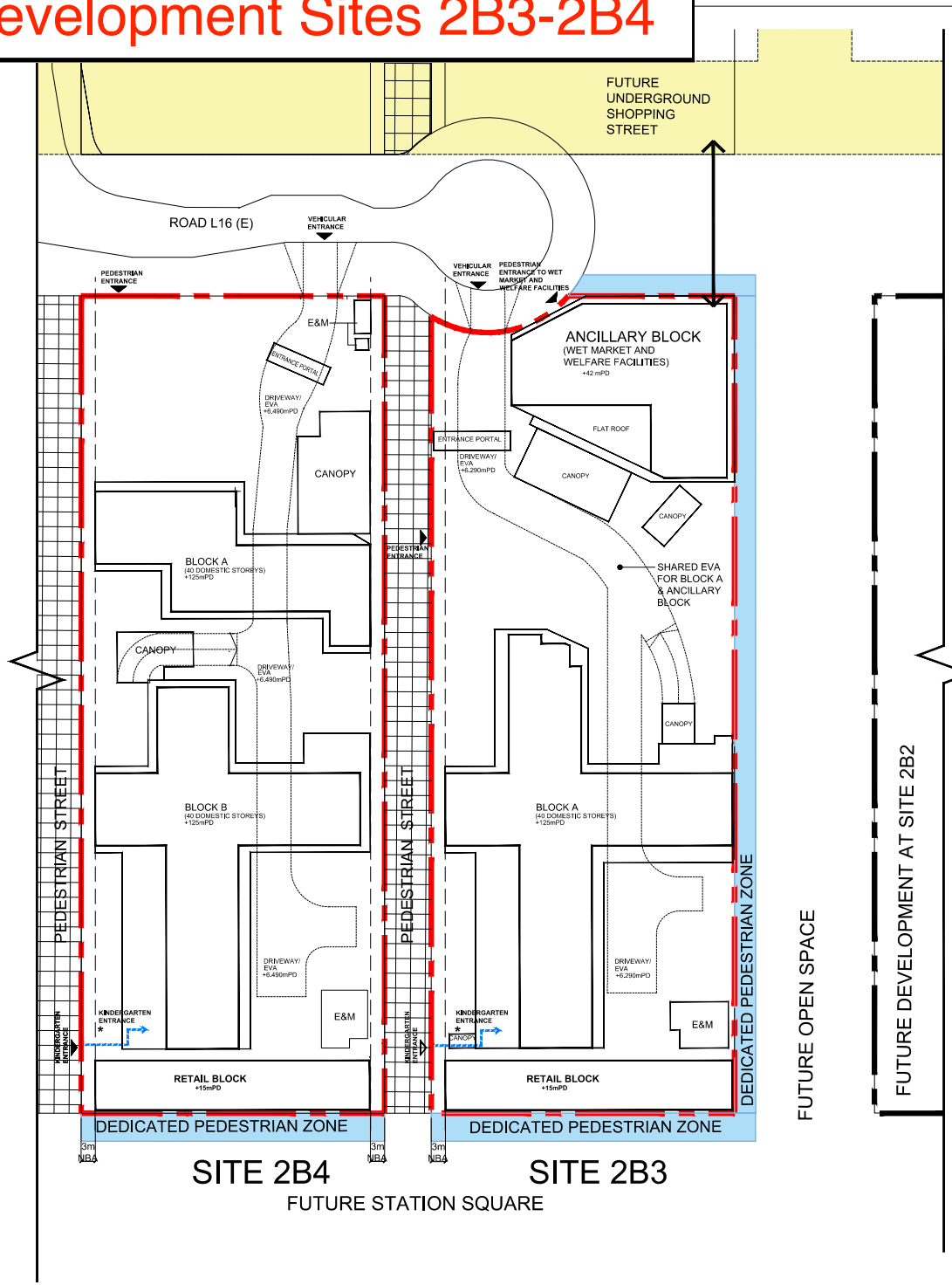
Title: **Proposed Scheme - Former North Apron Area**

Scale	Date	Figure No.
1:1,500 @ A3	November 2021	**5.6b**

Appendix 6

Supplementary Document for Future/ Committed Developments

2b. Public Housing Development Sites 2B3-2B4



* ROUTE TO KINDERGARTEN ENTRANCE SUBJECT TO CHANGE IN DETAIL DESIGN.

LEGEND:

- SITE BOUNDARY
- PROPOSED PEDESTRIAN STREET (PS)
- NBA — NON-BUILDING AREA
- FUTURE UNDERGROUND SHOPPING STREET (USS)
- DEDICATED PEDESTRIAN ZONE
- PROPOSED UNDERGROUND CONNECTION TO USS

NOTES

REVISIONS		INITIAL AND DESIGNATION		
NO	DESCRIPTION AND DATE	DWN	CKD	AUTH

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORIZED	HAMIDAH HAROON CA/4		

andrew lee king fun
& associates architects ltd.

AUTHORIZED	DOUGLAS LEE ARCHITECT		
ENDORSED	ANTHONY LEUNG ARCHITECT		
CHECKED	P.M. TANG TECHNICAL OFFICER		
DRAWN	C.K. FAN TECHNICAL OFFICER		

PROJECT
PROPOSED PUBLIC HOUSING DEVELOPMENT AT KAI TAK SITE 2B3, 2B4

JOB NO. A-2201

DRAWING TITLE
MASTER LAYOUT PLAN

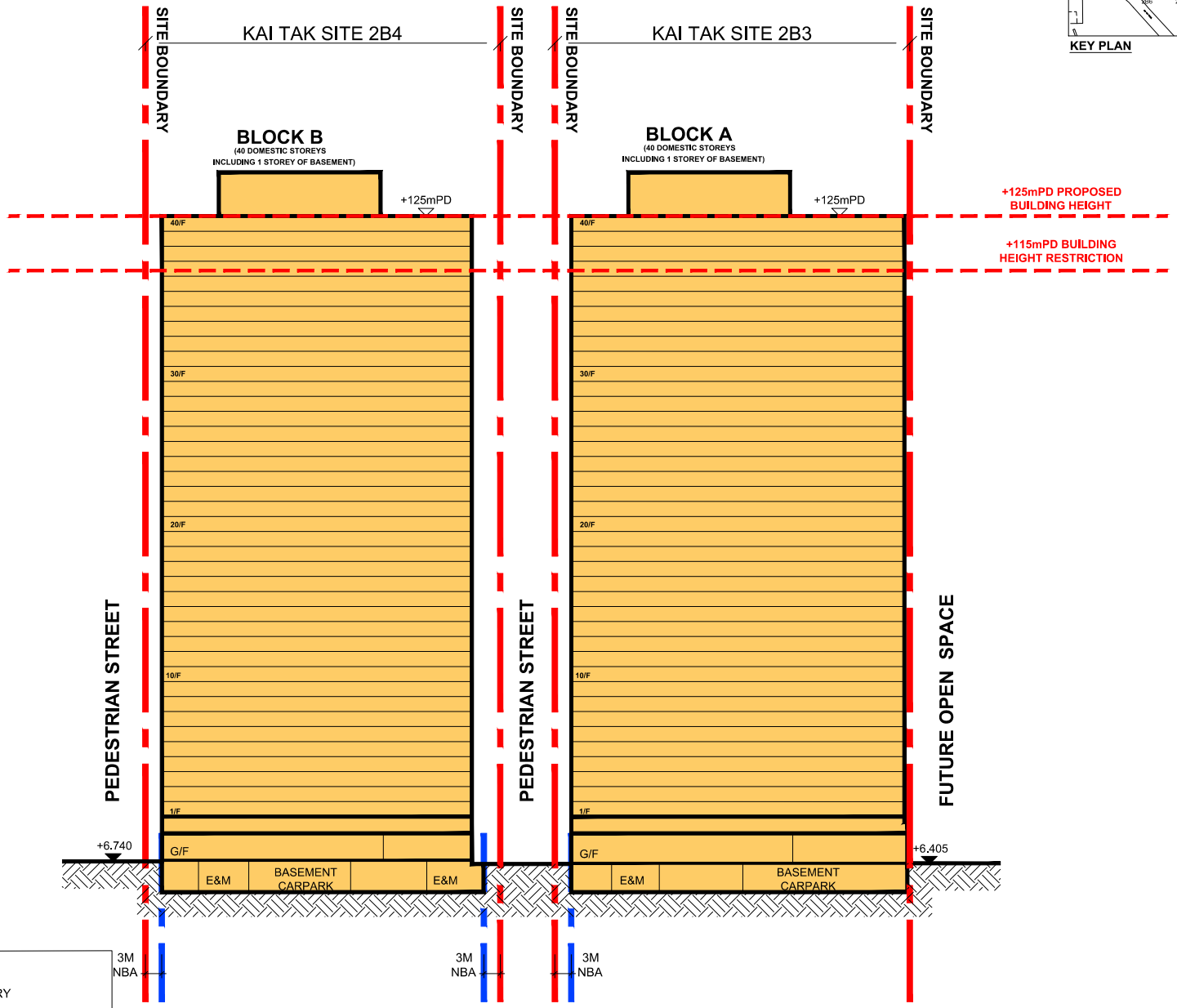
SCALE 1 : 1000 @ A3

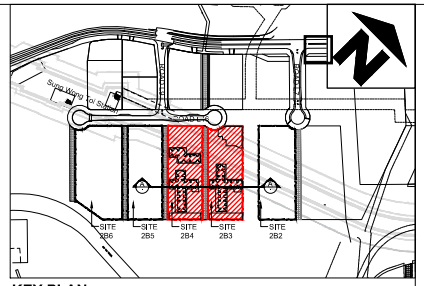
DRAWING NO.
PLAN 1

SOURCE

ICU NO.

HOUSING DEPARTMENT





KEY PLAN

LEGEND:

SITE BOUNDARY

NOTES

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DRAWN	C.K. FAN TECHNICAL OFFICER		

PROJECT
PROPOSED PUBLIC HOUSING DEVELOPMENT AT KAI TAK SITE 2B3, 2B4

JOB NO. A-2201

DRAWING TITLE
SECTION A-A

SCALE 1 : 800 @ A3

DRAWING NO.
PLAN 2

SOURCE

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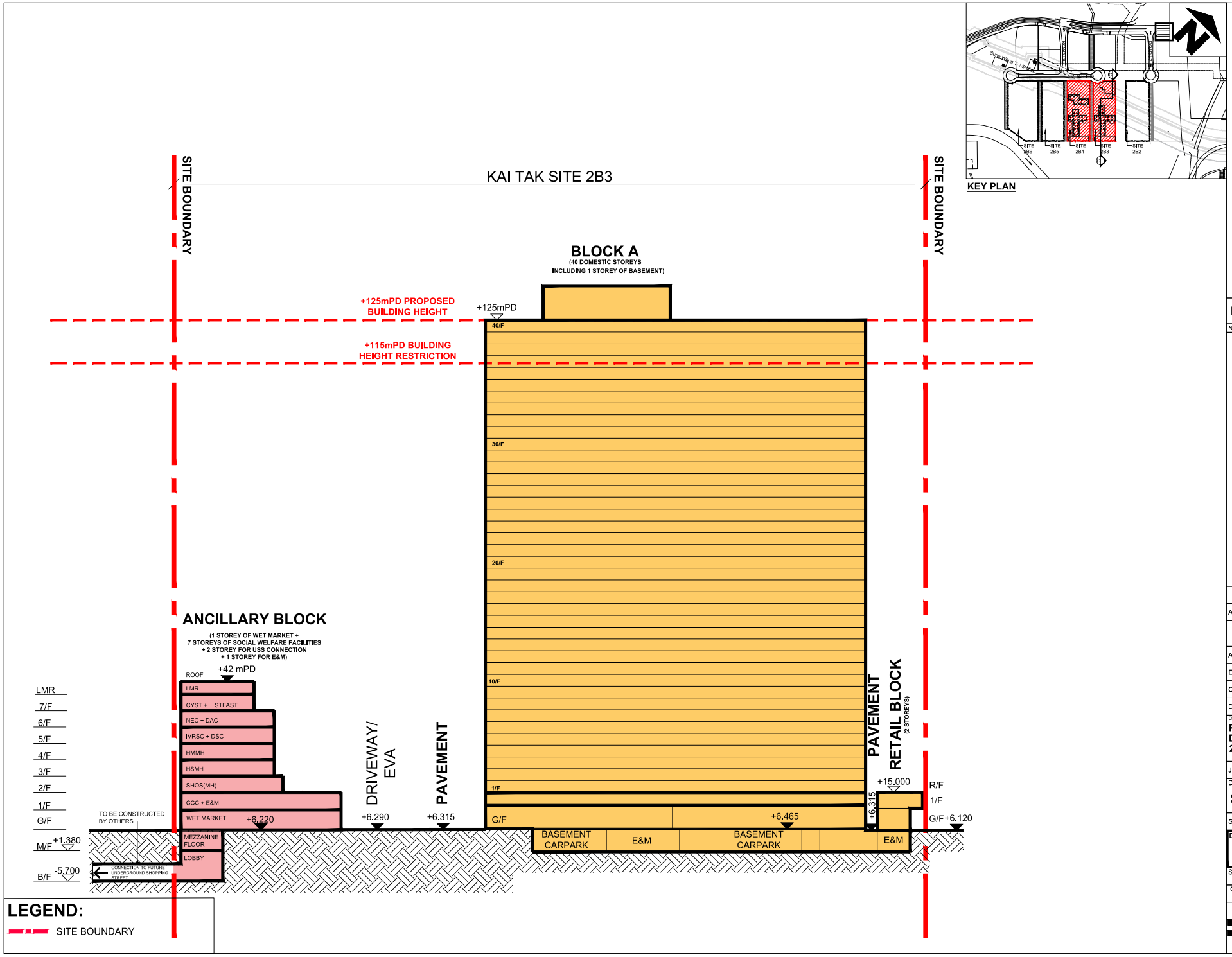
HOUSING DEPARTMENT



LEGEND:

SITE BOUNDARY

KEY PLAN

NOTES

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DRAWN	C.K. FAN TECHNICAL OFFICER		

PROJECT
PROPOSED PUBLIC HOUSING DEVELOPMENT AT KAI TAK SITE 2B3, 2B4

JOB NO. A-2201

DRAWING TITLE
SECTION C-C

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SOURCE

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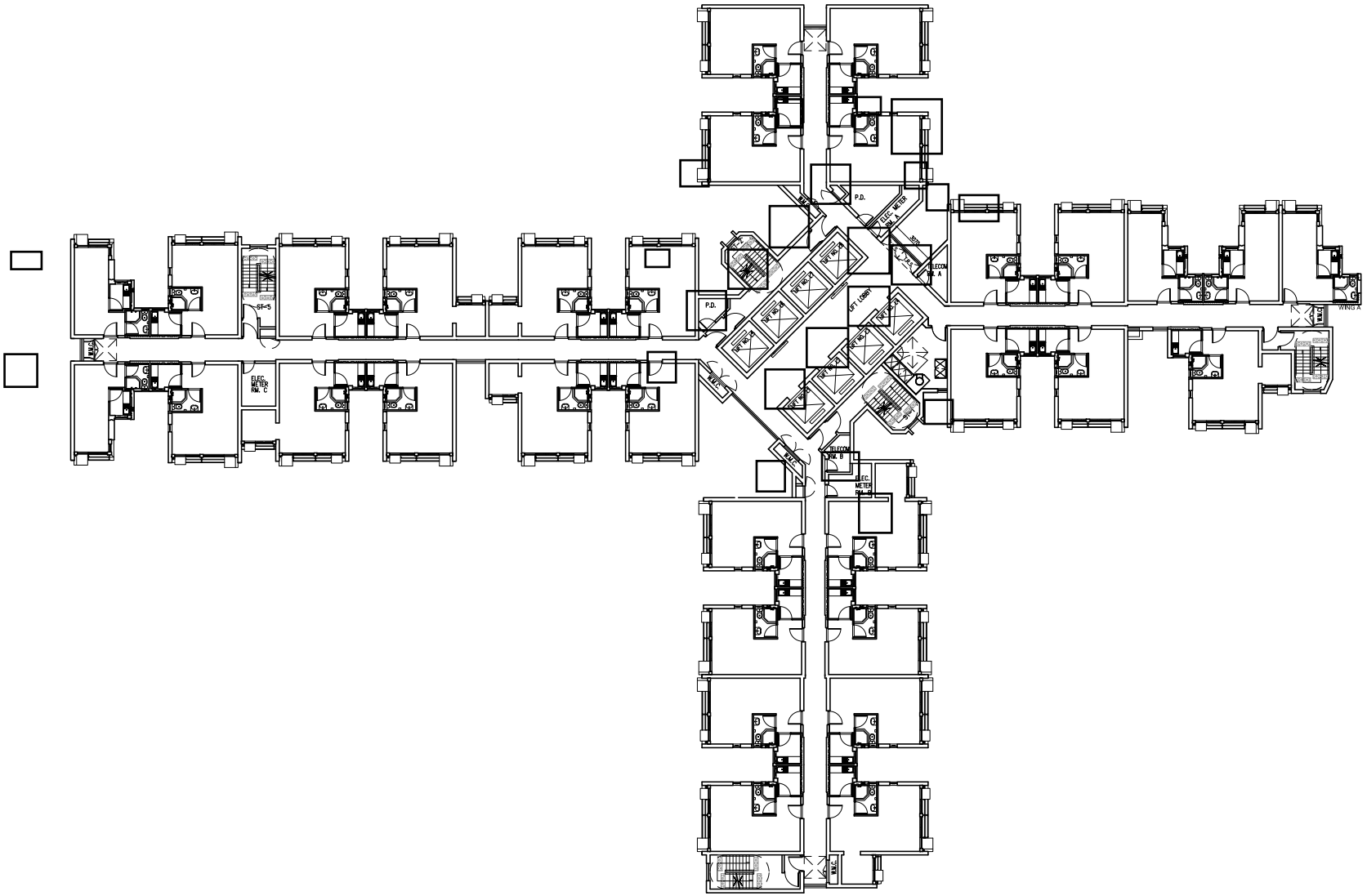
HOUSING DEPARTMENT



NOTES

1. FOR ILLUSTRATION ONLY

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	NAME AND DESIGNATION	INITIAL	DATE
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PROJECT
PROPOSED PUBLIC HOUSING DEVELOPMENT AT KAI TAK SITE 2B3, 2B4

JOB NO. A-2201

DRAWING TITLE
BLOCK A - TYPICAL FLOOR PLAN (1ST TO 40TH FLOOR) (SITE 2B3)

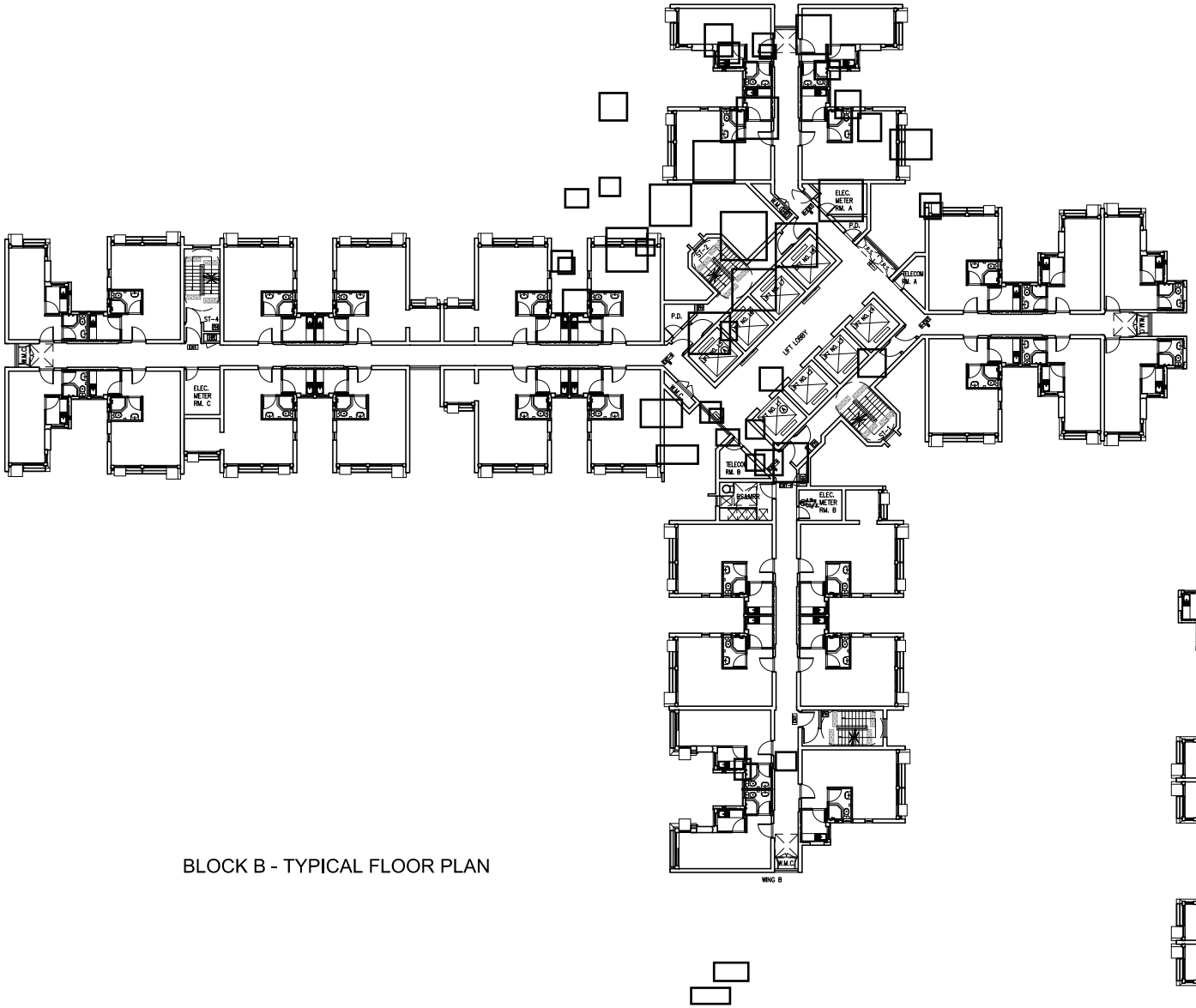
SCALE 1 : 300 @ A3

DRAWING NO.
PLAN 8

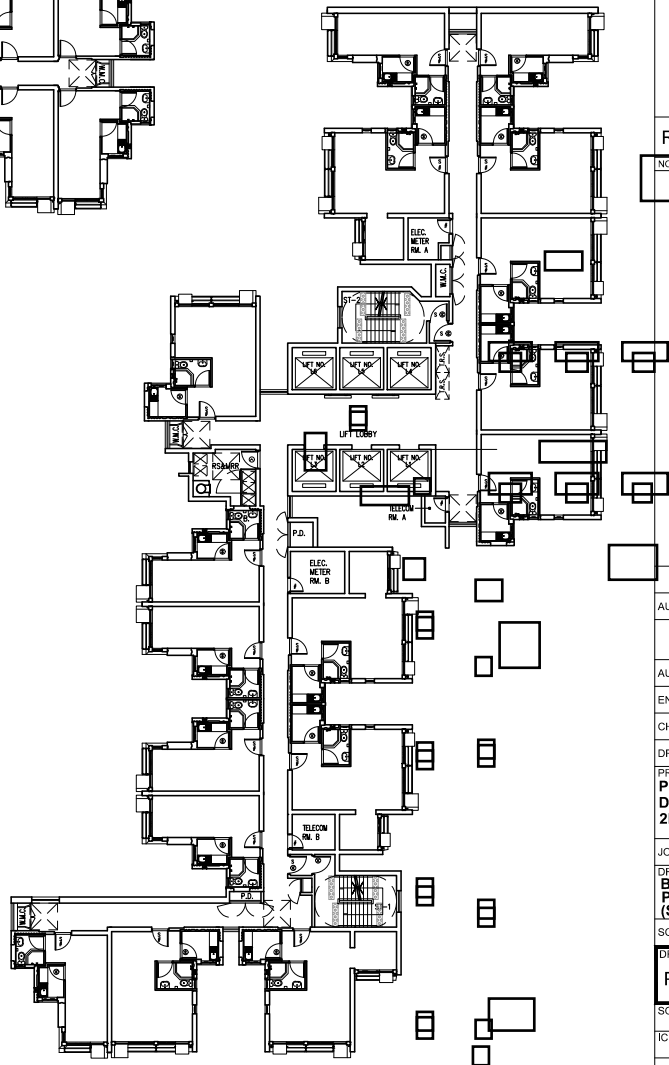
SOURCE

ICU NO.

HOUSING DEPARTMENT



BLOCK B - TYPICAL FLOOR PLAN



BLOCK A - TYPICAL FLOOR PLAN

NOTES

1. FOR ILLUSTRATION ONLY

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	NAME AND DESIGNATION	INITIAL	DATE
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andrew lee king fun
& associates architects ltd.

AUTHORIZED	DOUGLAS LEE ARCHITECT		
ENDORSED	ANTHONY LEUNG ARCHITECT		
CHECKED	P.M. TANG TECHNICAL OFFICER		
DRAWN	C.K. FAN TECHNICAL OFFICER		

PROJECT
PROPOSED PUBLIC HOUSING DEVELOPMENT AT KAI TAK SITE 2B3, 2B4

JOB NO. A-2201

DRAWING TITLE
BLOCK A & B - TYPICAL FLOOR PLAN (1ST TO 40TH FLOOR) (SITE 2B4)

SCALE 1 : 300 @ A3

DRAWING NO.
PLAN 9

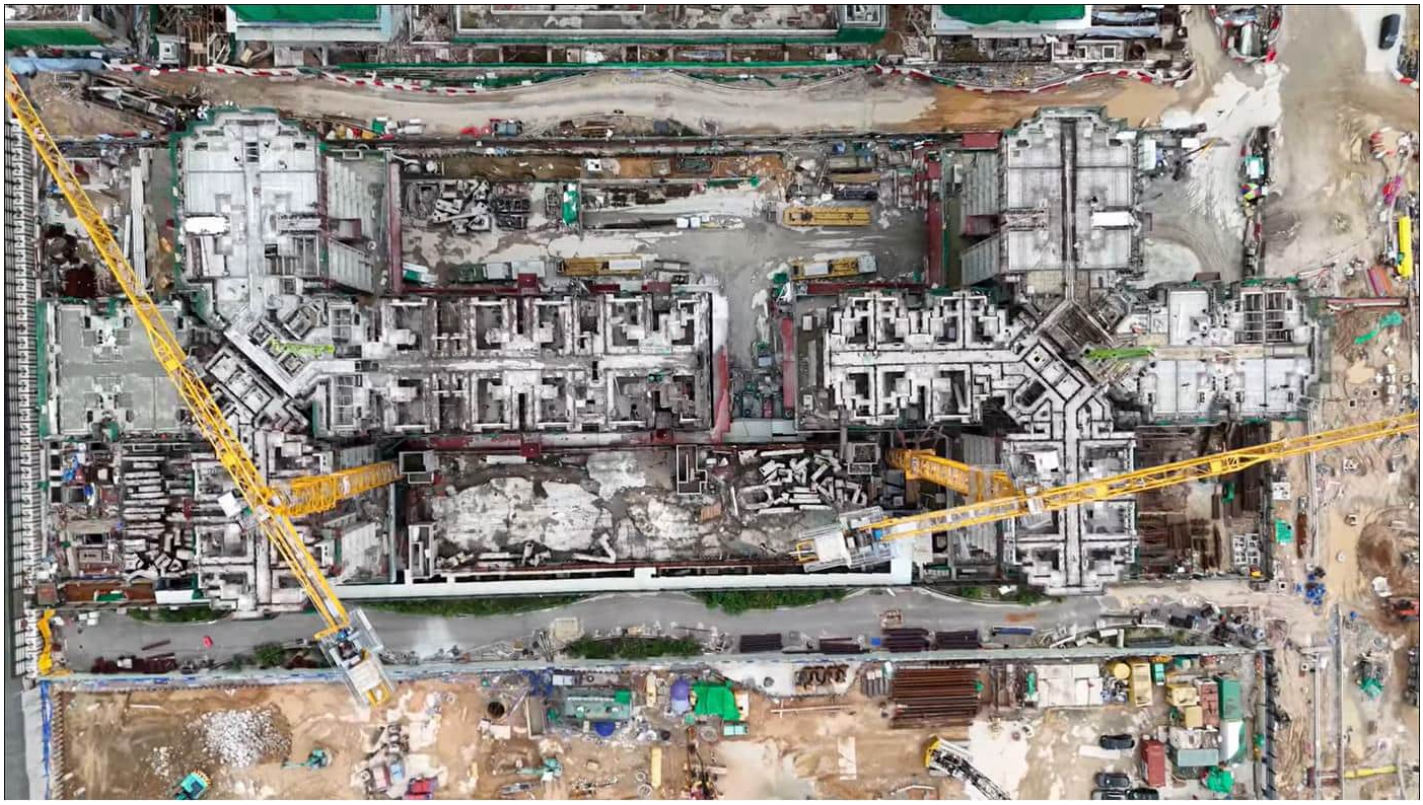
SOURCE

ICU NO.

HOUSING DEPARTMENT

2c. Public Housing Development Sites 2B5

Top View



Top view_zoom in

North view

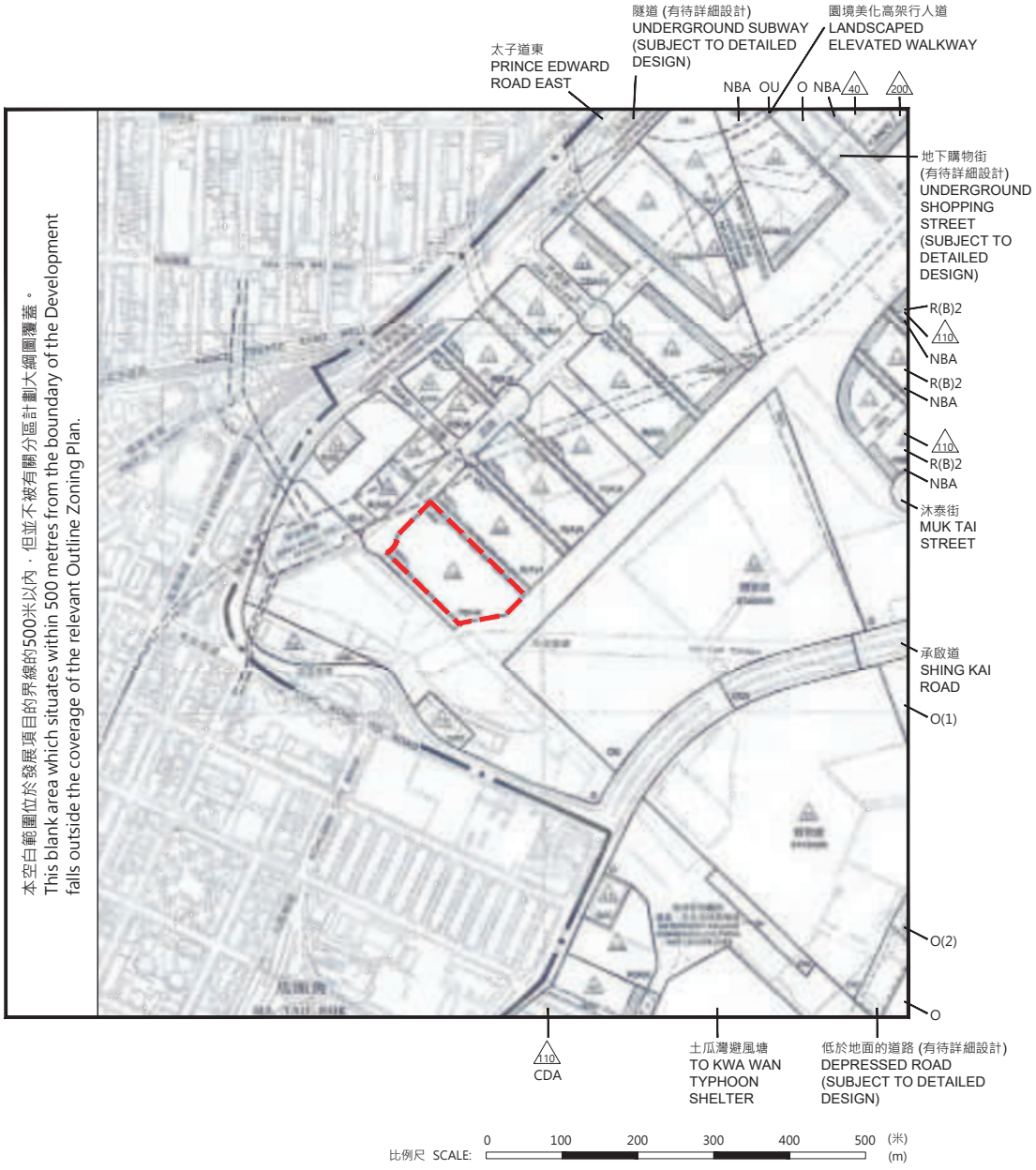
East View

South view

West View

2c. Public Housing Development Sites 2B6 (Kai Yuet Court)

09 關於發展項目的分區計劃大綱圖
Outline Zoning Plan Relating to the Development



N

啟悅苑
Kai Yuet Court

圖例 NOTATION

地帶 ZONES					
C	商業	Commercial	G/IC	政府、機構或社區	Government, Institution or Community
CDA	綜合發展區	Comprehensive Development Area	O	休憩用地	Open Space
R(A)	住宅(甲類)	Residential (Group A)	OU	其他指定用途	Other Specified Uses
R(B)	住宅(乙類)	Residential (Group B)	OU(A)	其他指定用途 (美化市容地帶)	Other Specified Uses (Amenity Area)

交通 COMMUNICATIONS					
車站 Station	鐵路及車站(地下)	Railway and Station (Underground)		高架道路	Elevated Road
車站 Station	鐵路及車站(高架)	Railway and Station (Elevated)		行人專用區或街道	Pedestrian Precinct/Street
	主要道路及路口	Major Road and Junction			

其他 MISCELLANEOUS					
	規劃範圍界線	Boundary of Planning Scheme	NBA	非建築用地	Non-Building Area
	建築物高度管制區界線	Building Height Control Zone Boundary		指定為「海濱長廊」的地區	Area Designated for 'Waterfront Promenade'
PFS	加油站	Petrol Filling Station		只限於指定為「商店及服務行業」和「食肆」用途的地區	Area Designated for 'Shop and Services' and 'Eating Place' uses only
15	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)			

摘錄自2022年10月28日刊憲之啟德分區計劃大綱核准圖，圖則編號為S/K22/8。

Adopted from part of the approved Kai Tak Outline Zoning Plan No. S/K22/8 gazetted on 28 October 2022.

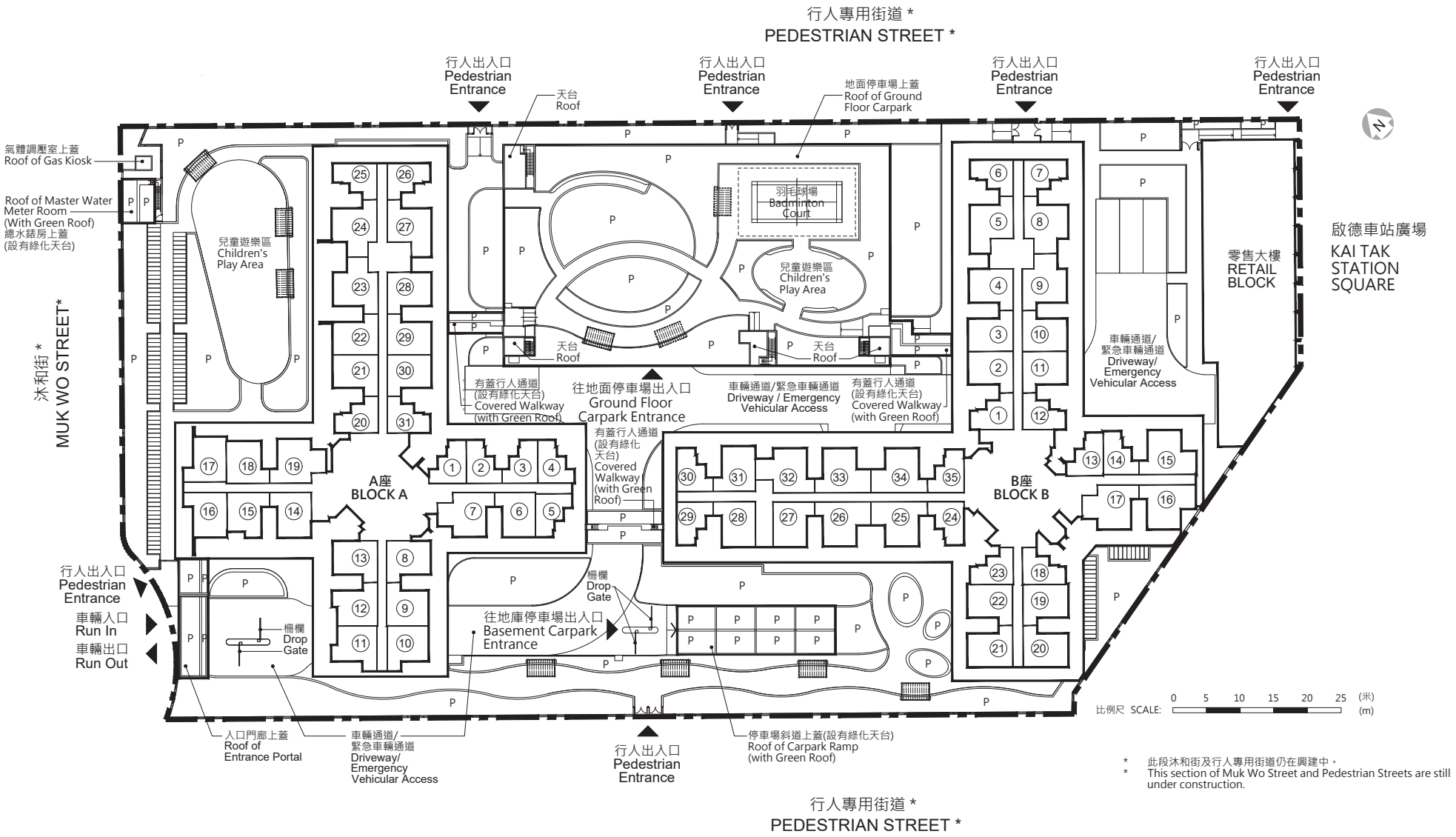
註：

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。
3. 政府可根據《城市規劃條例》，隨時更改分區計劃大綱圖。
4. 在售樓說明書印製日期適用的最新版本的分區計劃大綱圖可於房委會客務中心開放時間內免費查閱。

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.
3. The Government may revise the Outline Zoning Plan in accordance with the Town Planning Ordinance as and when necessary.
4. The latest version of Outline Zoning Plan as at the date of printing of the sales brochure is available for free inspection during opening hours at the HA Customer Service Centre.

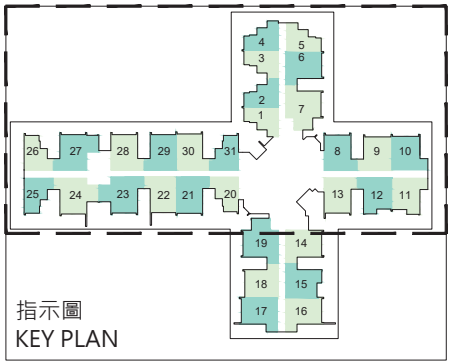
10 發展項目的布局圖
Layout Plan of the Development



* 此段沐和街及行人專用街道仍在興建中。
* This section of Muk Wo Street and Pedestrian Streets are still under construction.

11 發展項目的住宅物業的樓面平面圖
Floor Plans of Residential Properties in the Development

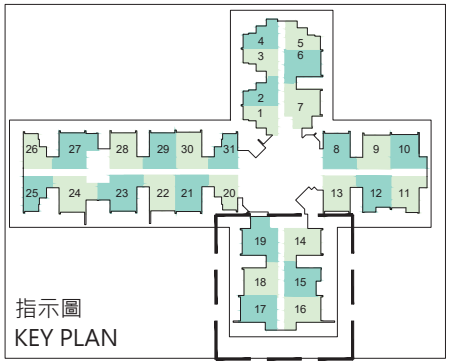
A座1樓平面圖
Block A 1/F Floor Plan



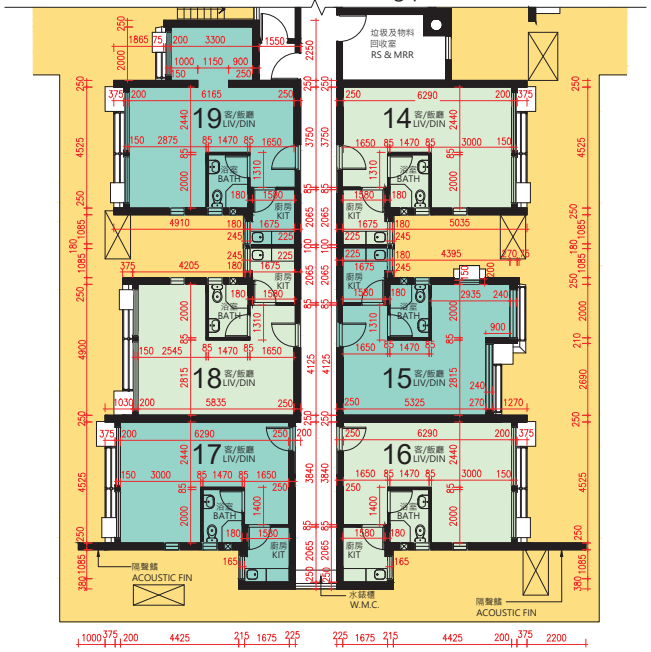
其餘部分參考第24頁
Refer to P.24 for remaining part

比例尺 SCALE: 0 5 (米) (m)

A座1樓平面圖
Block A 1/F Floor Plan

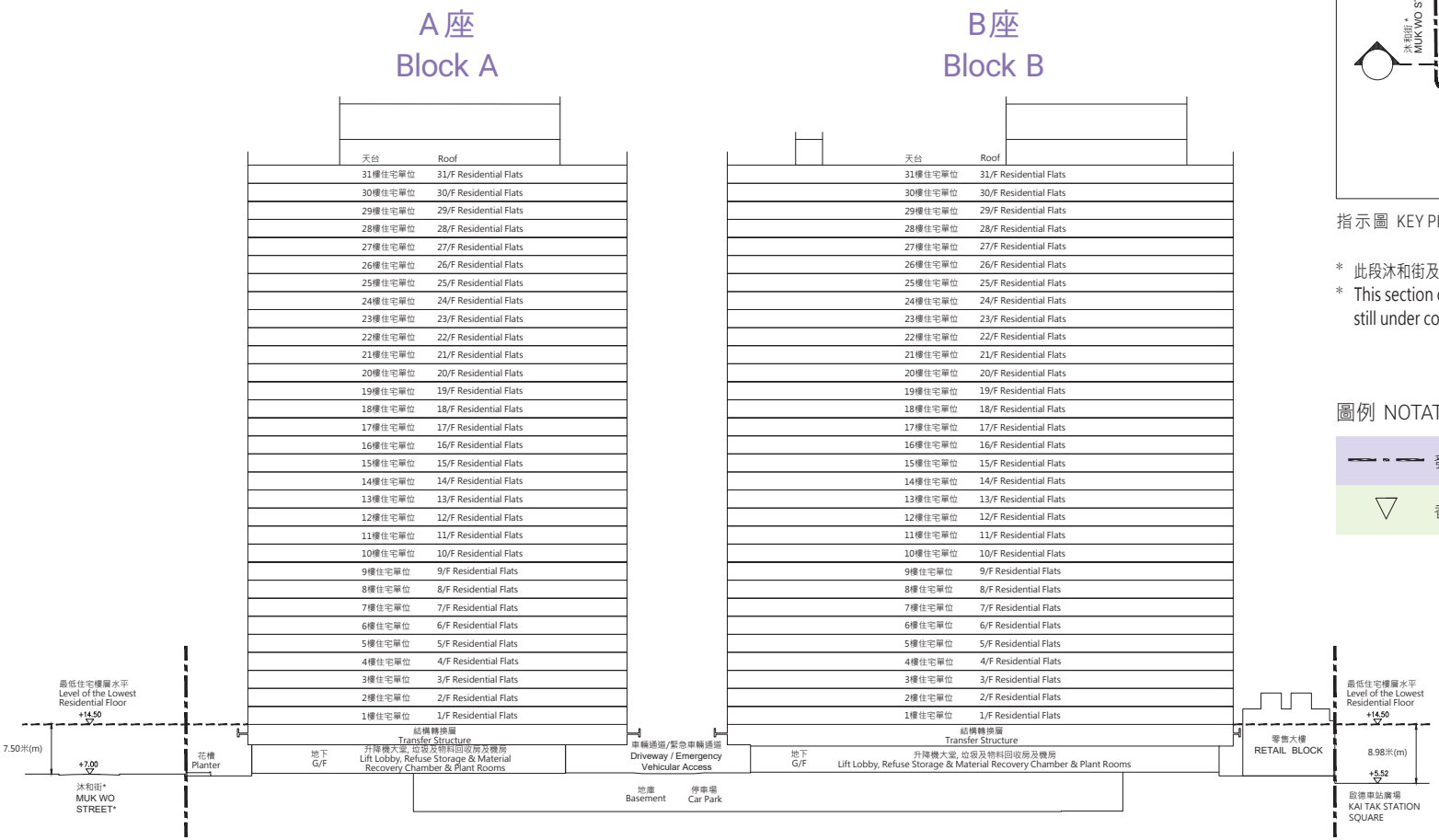


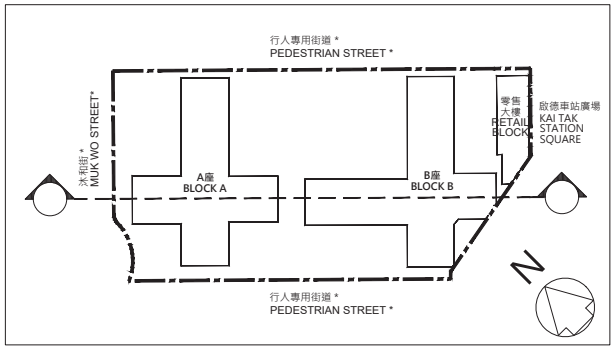
其餘部分參考第22頁
Refer to P.22 for remaining part



比例尺 SCALE: 0 5 (米) (m)

19 發展項目中的建築物的橫截面圖
Cross-section Plan of Building in the Development





指示圖 KEY PLAN

* 此段沐和街及行人專用街道仍在興建中。

* This section of Muk Wo Street and Pedestrian Streets 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

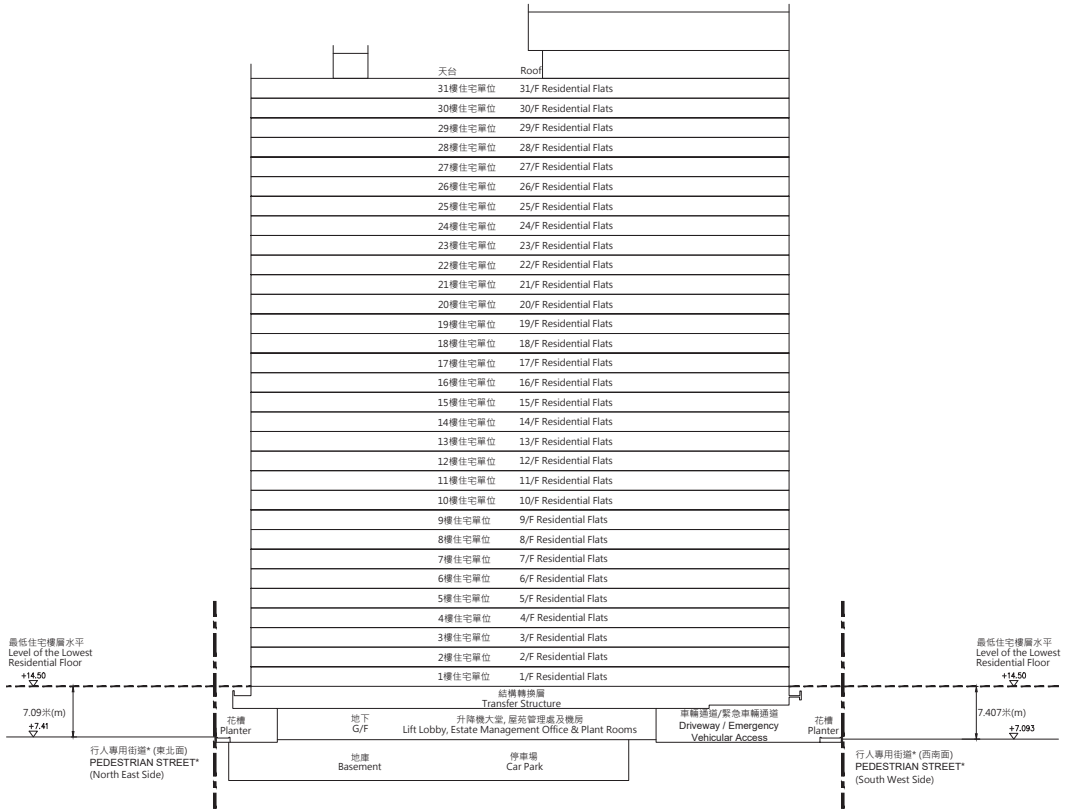
1. 毗連建築物(A座)的一段沐和街*為香港主水平基準以上7.00米。

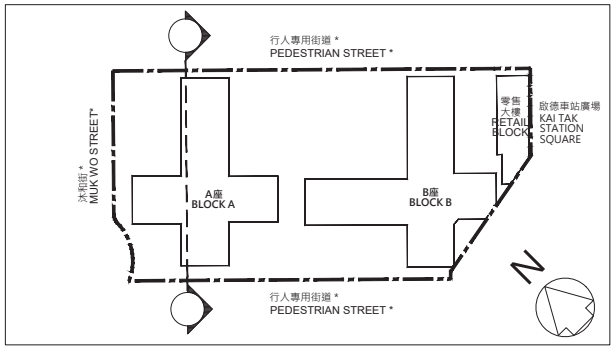
   The part of Muk Wo Street* adjacent to the building (Block A) is 7.00 metres above the Hong Kong Principal Datum.

2. 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5.52米。

   The part of Kai Tak Station Square adjacent to the building (Block B) is 5.52 metres above the Hong Kong Principal Datum.

A座
Block A





指示圖 KEY PLAN

* 此段沐和街及行人專用街道仍在興建中。
* This section of Muk Wo Street and Pedestrian Streets 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

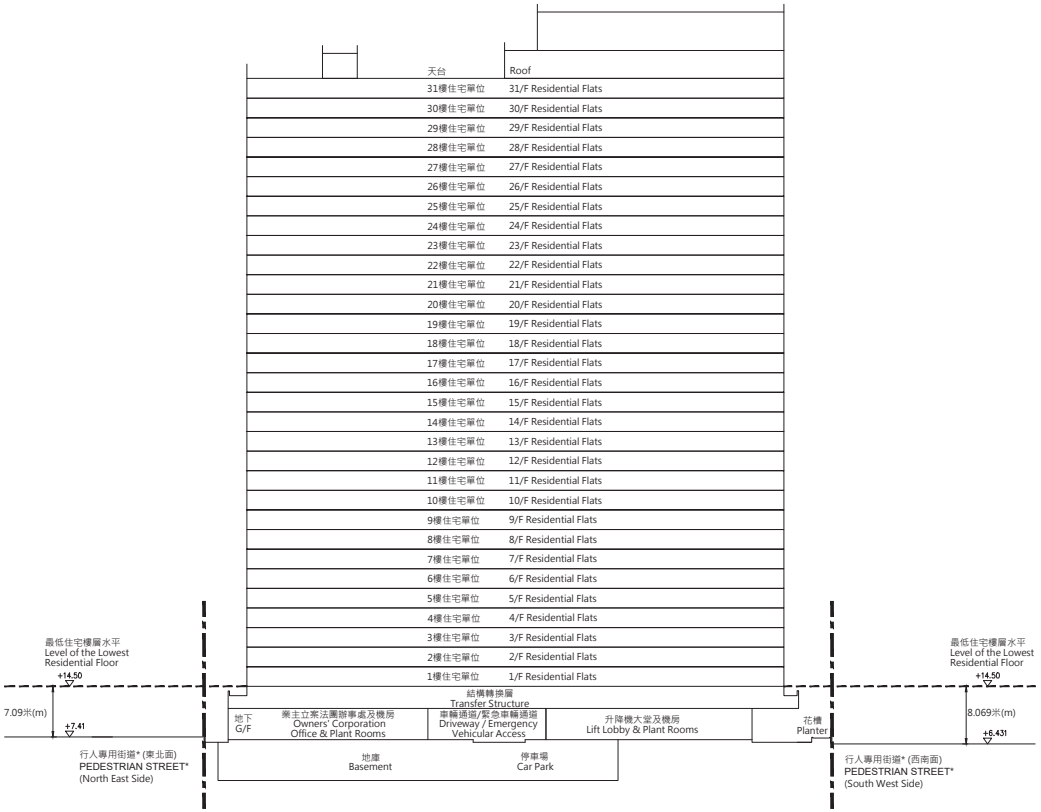
1. 毗連建築物(A座)的一段行人專用街道*(東北面)為香港主水平基準以上7.41米。

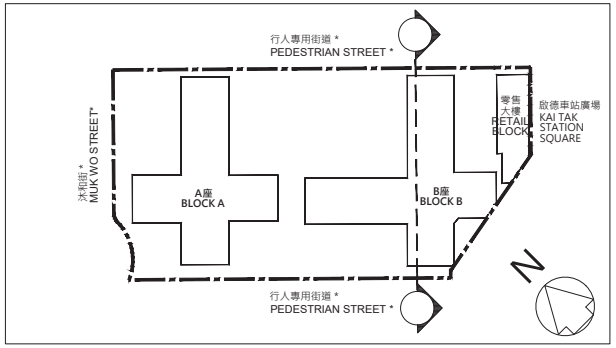
   The part of Pedestrian Street* (North East Side) adjacent to the building (Block A) is 7.41 metres above the Hong Kong Principal Datum..

2. 毗連建築物(A座)的一段行人專用街道*(西南面)為香港主水平基準以上7.093米。

   The part of Pedestrian Street* (South West Side) adjacent to the building (Block A) is 7.093 metres above the Hong Kong Principal Datum.

B座
Block B





指示圖 KEY PLAN

* 此段沐和街及行人專用街道仍在興建中。
* This section of Muk Wo Street and Pedestrian Streets are still under construction.

圖例 NOTATION

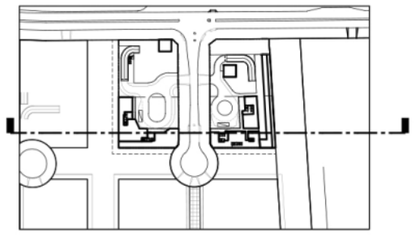
▽	香港主水平基準上高度(米)	Height (in metres) above the Hong Kong Principal Datum

1. 毗連建築物(B座)的一段行人專用街道*(東北面)為香港主水平基準以上7.41米。

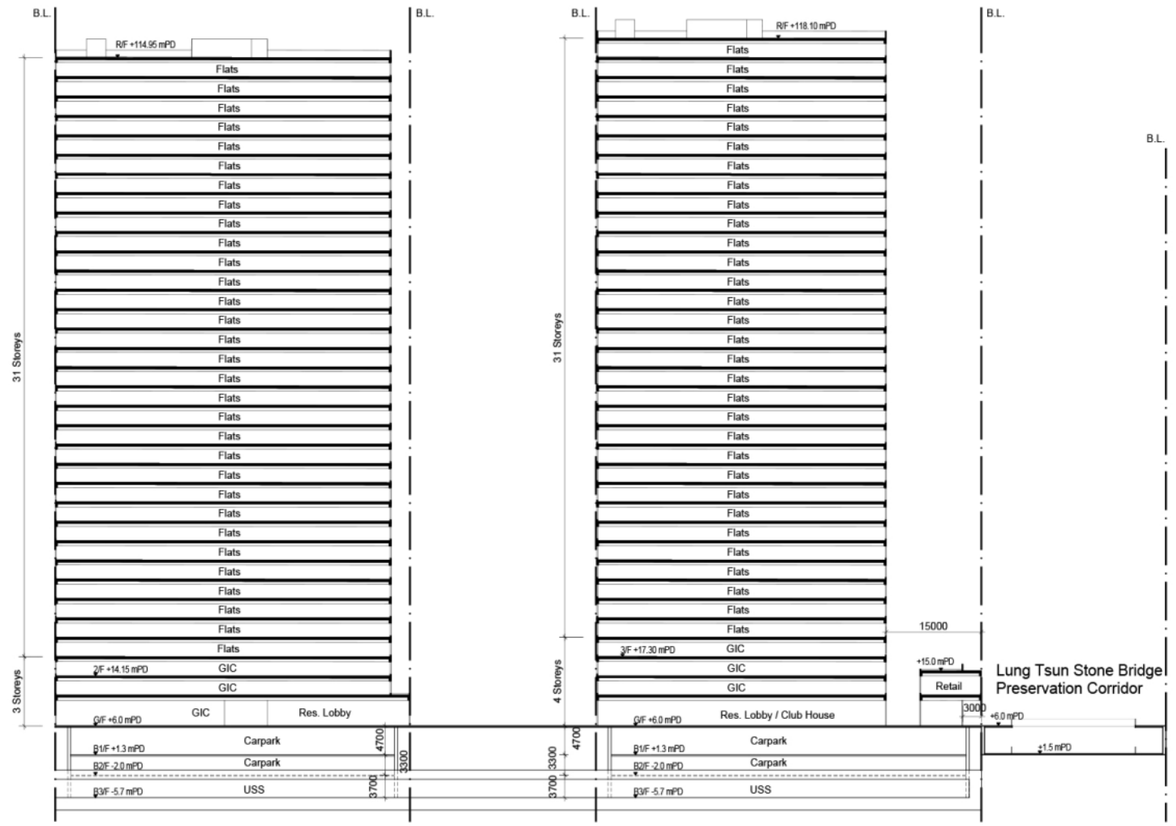
   The part of Pedestrian Street* (North East Side) adjacent to the building (Block B) is 7.41 metres above the Hong Kong Principal Datum.

2. 毗連建築物(B座)的一段行人專用街道*(西南面)為香港主水平基準以上6.431米。

   The part of Pedestrian Street* (South West Side) adjacent to the building (Block B) is 6.431 metres above the Hong Kong Principal Datum.



KEY PLAN



0 10 20 30 40 50m

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

Proposed Building Heights of Subjected Sites at Former North Apron Area - Proposed Scheme (Sheet 2 of 2)

Scale	1:1,000 @ A3	Date	November 2021	Figure No.	**5.8c**

Appendix 4

Replacement Pages of Visual Impact Assessment

LIST OF FIGURES

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 and visitors 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 pedestrian travelling to/from the proposed commercial facilities in this area. Their visual sensitivity of VP2 is considered to be **medium**.

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 visitors 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. 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 (Figure 4)

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. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight to moderate 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.

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 (**Figure 5**)

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. A portion of the open sky view would be obstructed by the proposed development in both schemes, with a slight to moderate 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 **slight to 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 +129.035mPD. 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, 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**.

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. 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**.

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:

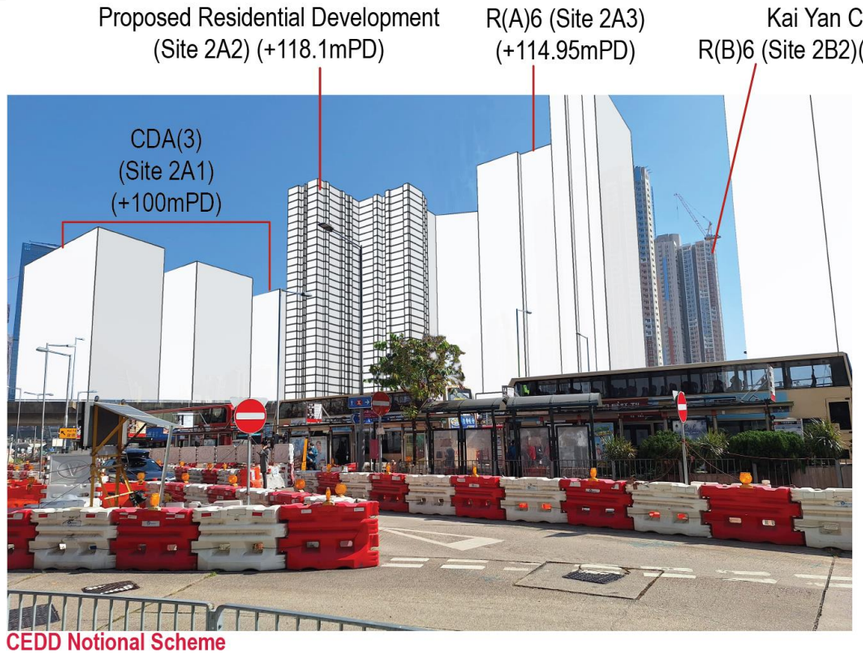
VP	Description	Sensitivity (Low, Medium, High)	Visual Composition	Visual Obstruction	Magnitude of Visual Change on Public Viewers	Effect on Visual Resource	Compatibility of the Proposed Development with the Surrounding Landscape	Visual Impact due to Proposed Scheme	Duration of Impact Under Operation 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 to moderate 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 to moderate 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 to moderate 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 to moderate 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 to moderate increase in obstruction in the proposed scheme as compared to the notional scheme.	slight to 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 to moderate 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

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). 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 +129.035mDP has been taken into account in the assessment. In gist, the overall visual impact arising from the proposed development will be from “negligible” to “slightly to moderately adverse”.

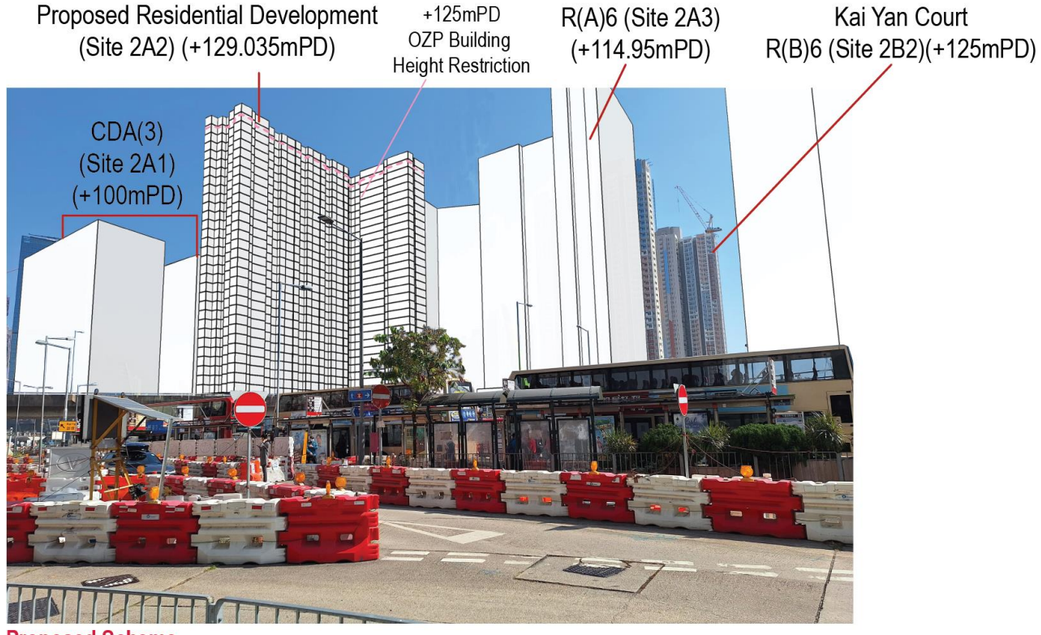
4.2. Assuming that full and appropriate implementation of mitigation measures are carried out during operation phase, the visual impacts are perceived to be **acceptable** with mitigation measures.

- End -

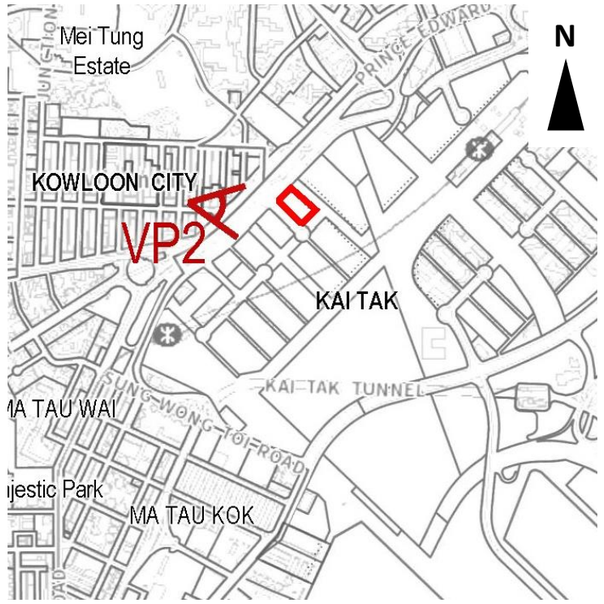


CEDD Notional Scheme

Existing Condition



Proposed Scheme



KEY PLAN

Title:

VP2: VIEW FROM NGA TSIN WAI ROAD

FIGURE 4

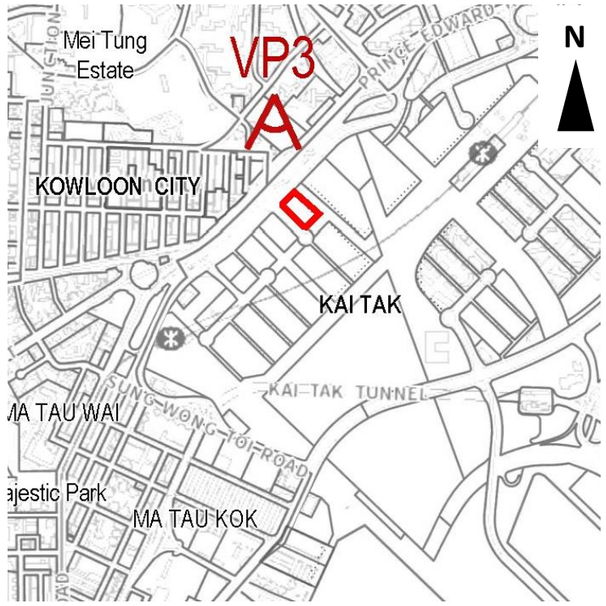
CEDD Notional Scheme

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.

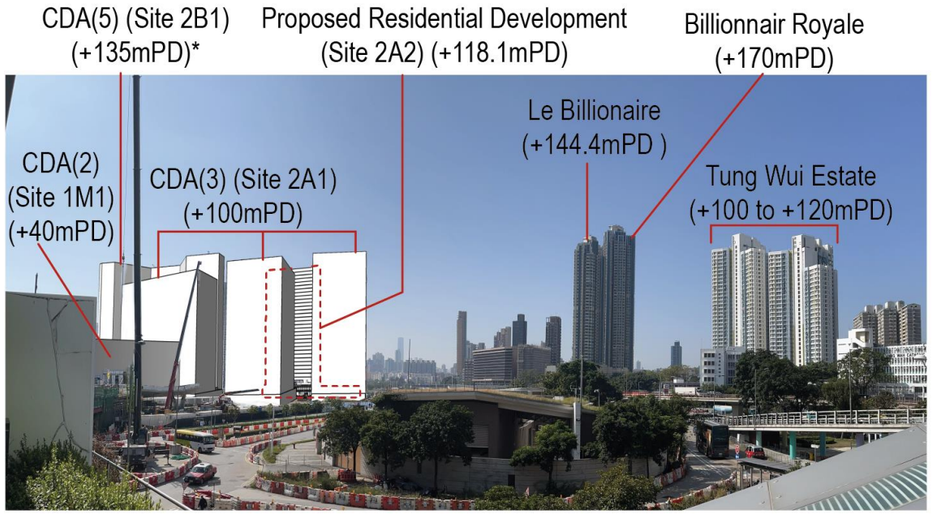


KEY PLAN

Title:

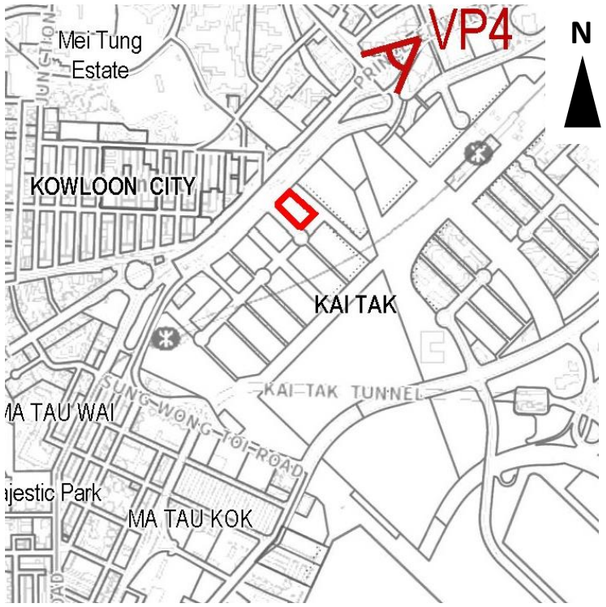
VP3: VIEW FROM SHEK KU LING ROAD PLAYGROUND

FIGURE 5

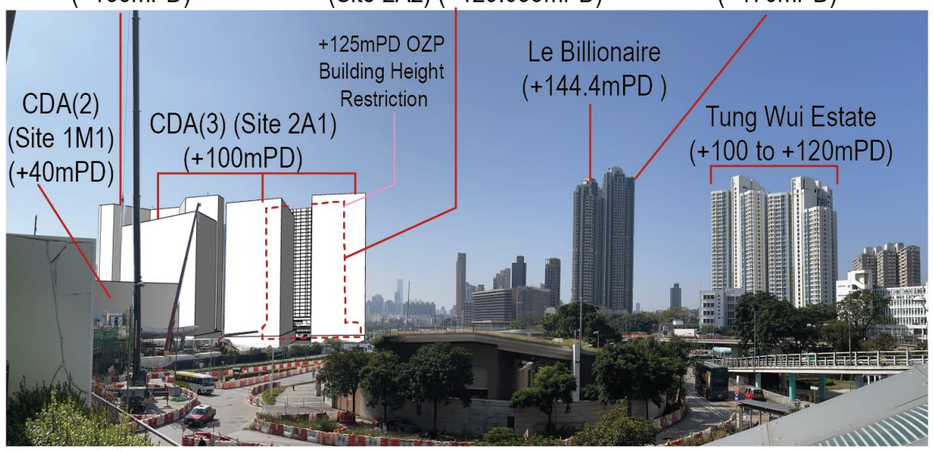


CEDD Notional Scheme

Existing Condition



KEY PLAN



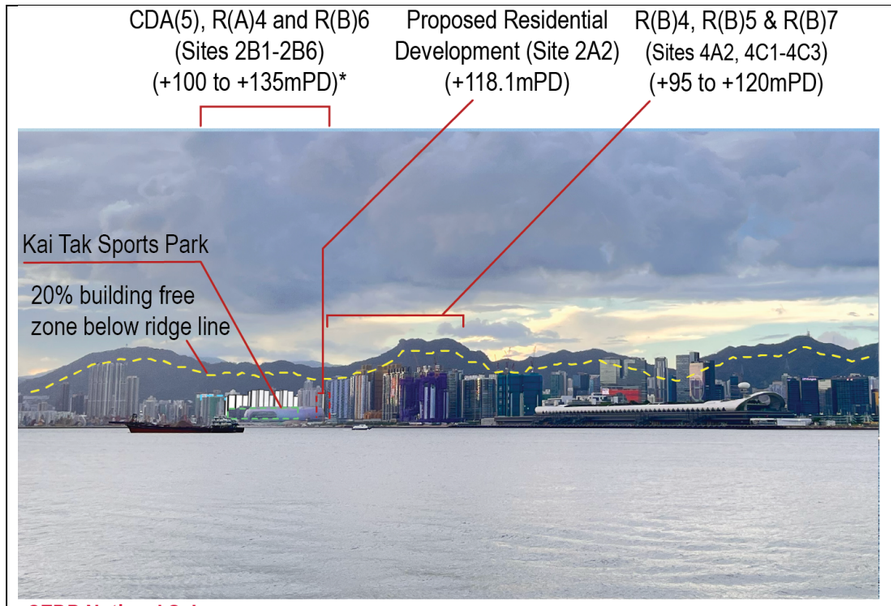
Proposed Scheme

*Under planning application no. A/K22/30.

Title:

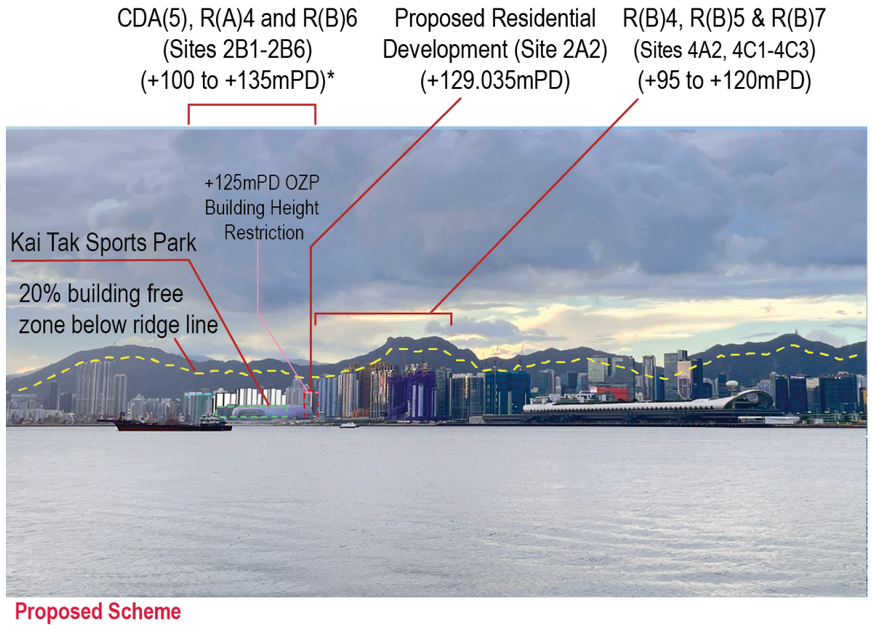
VP4: VIEW FROM PRINCE EDWARD ROAD EAST FOOTBRIDGE

FIGURE 6



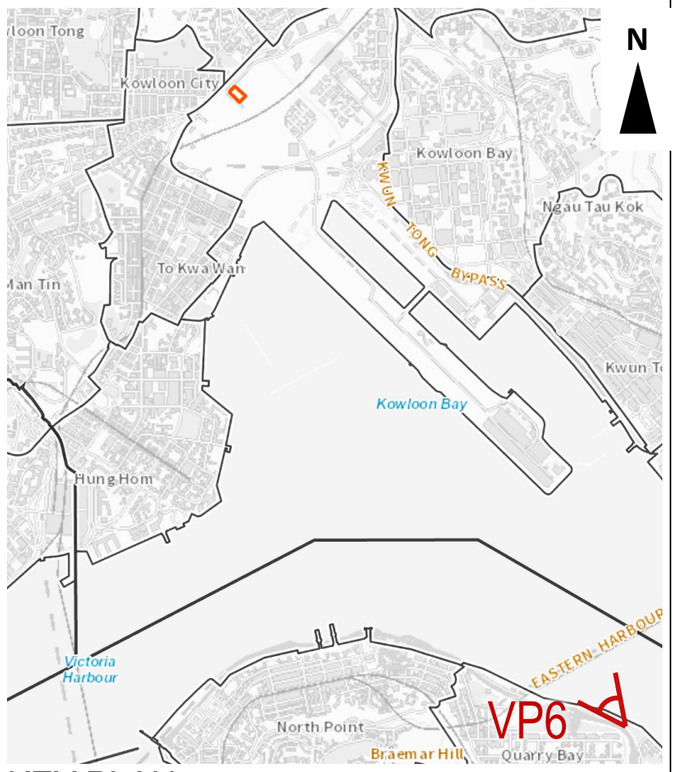
CEDD Notional Scheme

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. CDA(5) is under planning application no. A/K22/30. The blue dotted line is the height of Kai Yuet Court (WIP) R(A)4 (Site 2B6) (+100mPD) after completion.The green dotted line is the lower portion of planned developments of Sites 2B3 to 2B6 that would be screened off by the Kai Tak Sports Park.



KEY PLAN

Title:

VP6: VIEW FROM QUARRY BAY PARK (DISTANT VIEWPOINT)

FIGURE 8

Appendix 5
Supplementary Information of Setback Diagram, and Minor updates in Master Layout Plan, 2/F Plan and G/F Plan

LEGEND

- TOWNSCAPE SETBACK (G/F TO 34/F)
- RESIDENTIAL TOWER SETBACK (3/F TO 34/F)
- RETAIL BELT (G/F TO 1/F)
- PUBLIC PEDESTRIAN PASSAGEWAY (G/F)

+6.0

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR

EXISTING SUBWAY ENTRANCE

+6.0

A2 P7 P8 P9 A3

PUBLIC PEDESTRIAN PASSAGEWAY AT G/F

RETAIL BELT WITH CANTILEVER DESIGN

3m

APPROX. 16m

15m RETAIL BELT

15m

APPROX. 21m

+6.0

+6.0

OLYMPIC AVENUE

15m

APPROX. 27m

APPROX. 86m

15m
TOWNSCAPE SETBACK

A1 A7 Y1 Z1 X1 A6 A5 A4

PUBLIC PEDESTRIAN PASSAGEWAY AT G/F

DEDICATED PEDESTRIAN ZONE

min 3m

3m 4.5m

PUBLIC OPEN SPACE
TO BE CONSTRUCTED BY DEVELOPER

+6.3

+6.3

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR

MUK LAI STREET

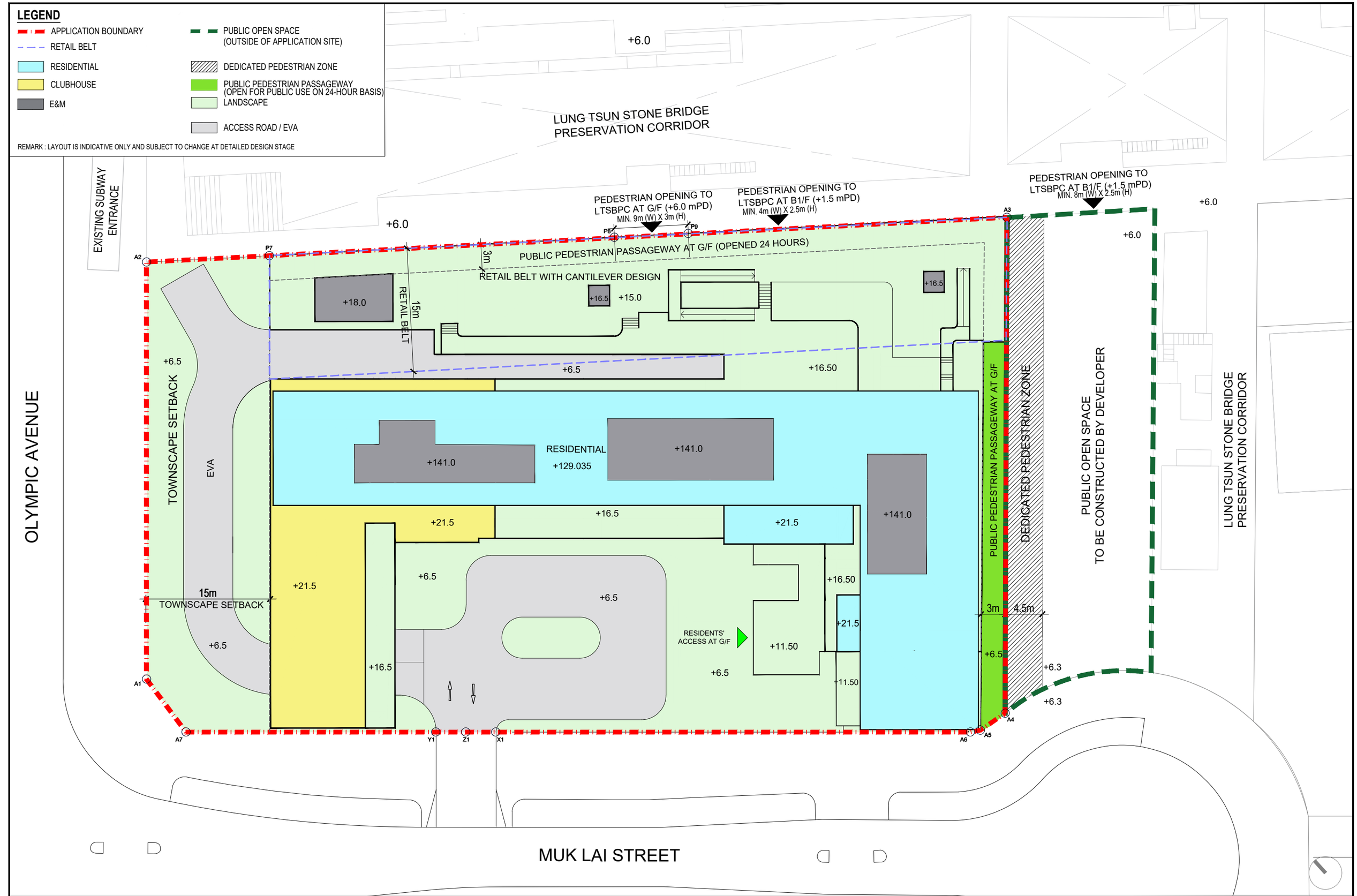
Project PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	Job No. 01864	Drawing Title BUILDING SETBACK DIAGRAM			
		Drawing No. SK-01	Revision No. A	Scale 1:400	Date 29 JUL 2024

LWK + PARTNERS

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	Job No.	Drawing Title					
PROPOSED COMPREHENSIVE DEVELOPMENT AT KAI TAK AREA 2A SITE 2, KAI TAK DEVELOPMENT AREA, KOWLOON	01864	MASTER LAYOUT PLAN					
		Drawing No.	Revision No.	Scale	Date		
		MLP-01	B	1:400	29 JUL 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

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

LANDSCAPED ROOF

+15.00

+18.0

+16.5

+16.50

CLUBHOUSE

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	
		P-03	B	1:400	29 JUL 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

+6.0

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR

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

P8 P9

A3

+6.0

EXIST EN

+6.444

P7

A2

+6.0

PUBLIC PEDESTRIAN PASSAGEWAY

+6.0

15 M

+6.15

OLYMPIC AVENUE

TOWNSCAPE SETBACK

EVA

CLUBHOUSE

E&M

E&M

15m
TOWNSCAPE SETBACK

+6.2
RAMP DN
TO B1/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

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. C	Scale 1:400	Date 29 JUL 2024

LWK +PARTNERS

Appendix 6
Supplementary Elaboration on MiC

Supplementary Information on MiC

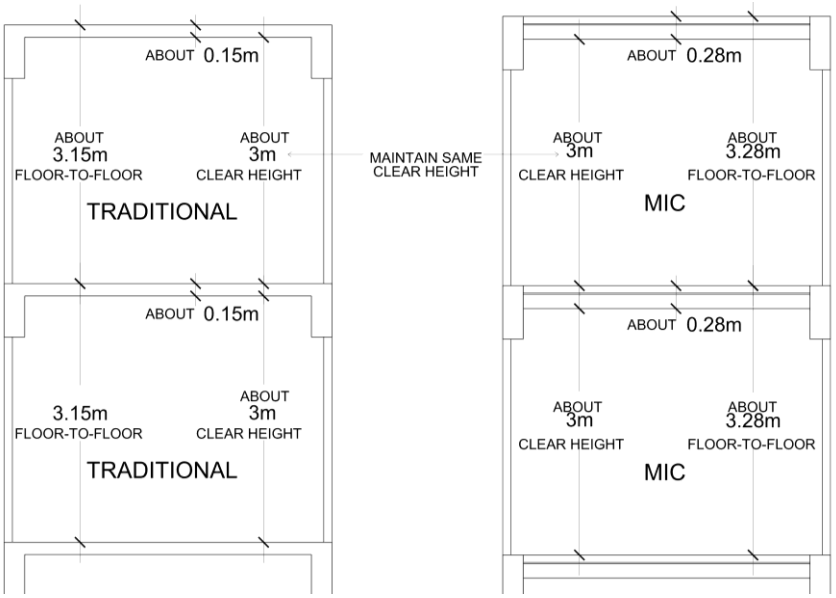
The Proposed Scheme contains a minor relaxation of the BHR from 125mPD to +129.035mPD, i.e. about 4.035m, solely for the purpose of adopting MiC into its residential tower portion (proposed MiC is not adopted in other areas including the three-storey podium with clubhouse, covered landscape area, residential lobbies, E&M, and shops and services and eating place in the proposed development). The adoption of MiC involves thickened double slabs between MiC modules, resulting in an increase in storey height of MiC floor and hence in the overall BH of the building. In the proposed development, the height of residential tower increases from 100.950m to 104.985m (less than 4% increase) due to the increase in thickness of 32 no. of individual slab from about 15cm to about 28 cm under MiC (as compared to the conventional building method without MiC) (i.e. about 12.609cm increase per slab x 32 slabs = about 4.035m total increase in BH), resulting in the total increase in building height of the proposed development from +125mPD to +129.035mPD.

Conventional Scheme Floor Height
Clear ceiling height : about 3m
Slab thickness : about 0.15m
Floor-to-floor height : about 3.15m

Scenario without MIC
Transfer plate top level : about 24.05mPD
32 Non-MIC floors : about 100.95m
Main roof level : 125mPD
BH : 125mPD

MIC Floor Height
Clear ceiling height : about 3m
Double Slab Thickness : about 0.28m
Floor-to-floor height : about 3.28m

Scenario with MIC in current scheme
Transfer plate top level : about 24.05mPD
32 MIC floors : about 104.985m
Main roof level : 129.035mPD
BH relaxation required : 4.035m



Remark: Illustration above is indicative and subject to change at detailed design stage.

Appendix 7

Minor revision in Landscape Master Plan

(updated only to reflect the omission of the footbridge on retail belt roof in plans and key plans in sections)

LEGEND:
VEHICULAR ACCESS
PEDESTRIAN ACCESS
24-HOUR PEDESTRIAN CONNECTION
CARPARK ENTRANCE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)
Pedestrian Opening to LTSPBC at +6.00mPD
TO LTSBPC
+6.00mPD
+6.00mPD
+6.00mPD
COMMERCIAL +6.15mPD
OLYMPIC AVENUE
DOWN TO BASEMENT CARPARK
CLUBHOUSE +6.50mPD
E&M
E&M
15m
3m
PUBLIC OPEN SPACE (For reference only)
LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)
VERTICAL CONNECTION FROM B3/F TO G/F
Building Line Above
+6.50mPD
+6.50mPD
COMMERCIAL +6.50mPD
+6.30mPD
+6.30mPD
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 - G/F (+6.50mPD)

Dwg. No. : 2023208-CDP-03b

Date : AUG 2024
(A3-size)

axxa group

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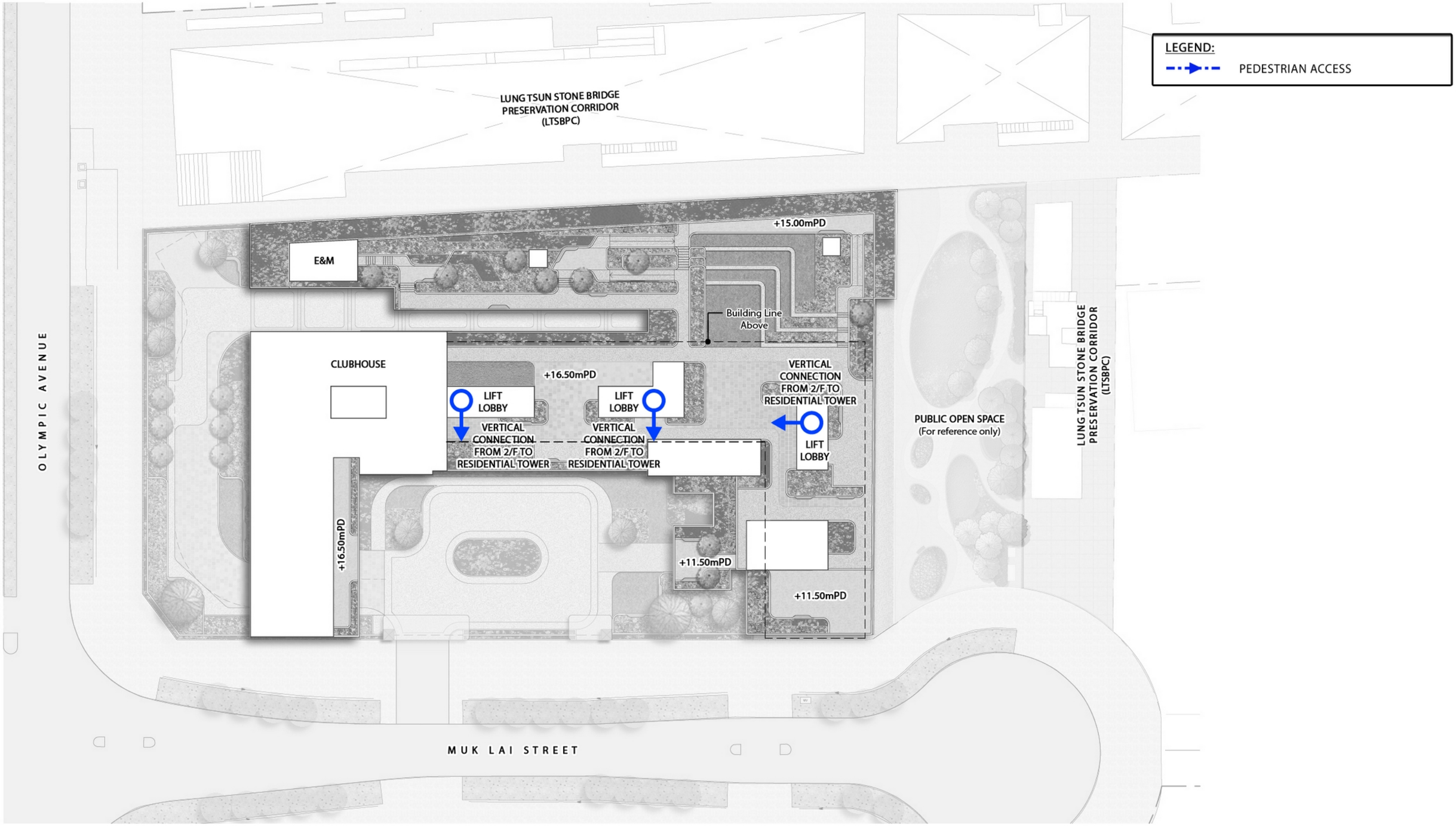

N

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 : AUG 2024
(A3-size)

axxa group

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

+6.00mPD

+6.00mPD

+6.00mPD

COMMERCIAL
+6.15mPD

CLUBHOUSE
+6.50mPD

E&M

E&M

+6.50mPD

+6.50mPD

Building Line
Above

COMMERCIAL
+6.50mPD

PUBLIC OPEN SPACE
(For reference only)

+6.30mPD

+6.30mPD

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

OLYMPIC AVENUE

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)

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 : AUG 2024
(A3-size)

axxa group

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LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

OLYMPIC AVENUE

E&M

CLUBHOUSE

+15.00mPD

+16.50mPD

+16.50mPD

LIFT LOBBY

LIFT LOBBY

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 : AUG 2024
(A3-size)

axxa group

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

OLYMPIC AVENUE

+18.00mPD

+16.50mPD

+15.00mPD

+16.50mPD

+21.50mPD

+21.50mPD

PUBLIC OPEN SPACE
(For reference only)

LUNG TSUN STONE BRIDGE
PRESERVATION CORRIDOR
(LTSBPC)

MUK LAI STREET

LEGEND:

APPLICATION SITE BOUNDARY

PUBLIC OPEN SPACE BOUNDARY

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 : AUG 2024
(A3-size)

axxa group

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

OLYMPIC AVENUE

MUK LAI STREET

PUBLIC OPEN SPACE (For reference only)

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

+6.00mPD

+18.00mPD

+16.50mPD

+15.00mPD

+141.00mPD

+129.035mPD

+21.50mPD

+6.50mPD

+11.50mPD

+6.30mPD

2.5m H Fence Wall

15m

3m

Entrance to Residential Units

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 : AUG 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

+6.50mPD

+6.50mPD

To
Basement
Carpark

Building Line
Above

Entrance to
Residential Units

COMMERCIAL
+6.50mPD

3m

+6.30mPD

+6.30mPD

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 (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 : AUG 2024
(A3-size)

axxa group

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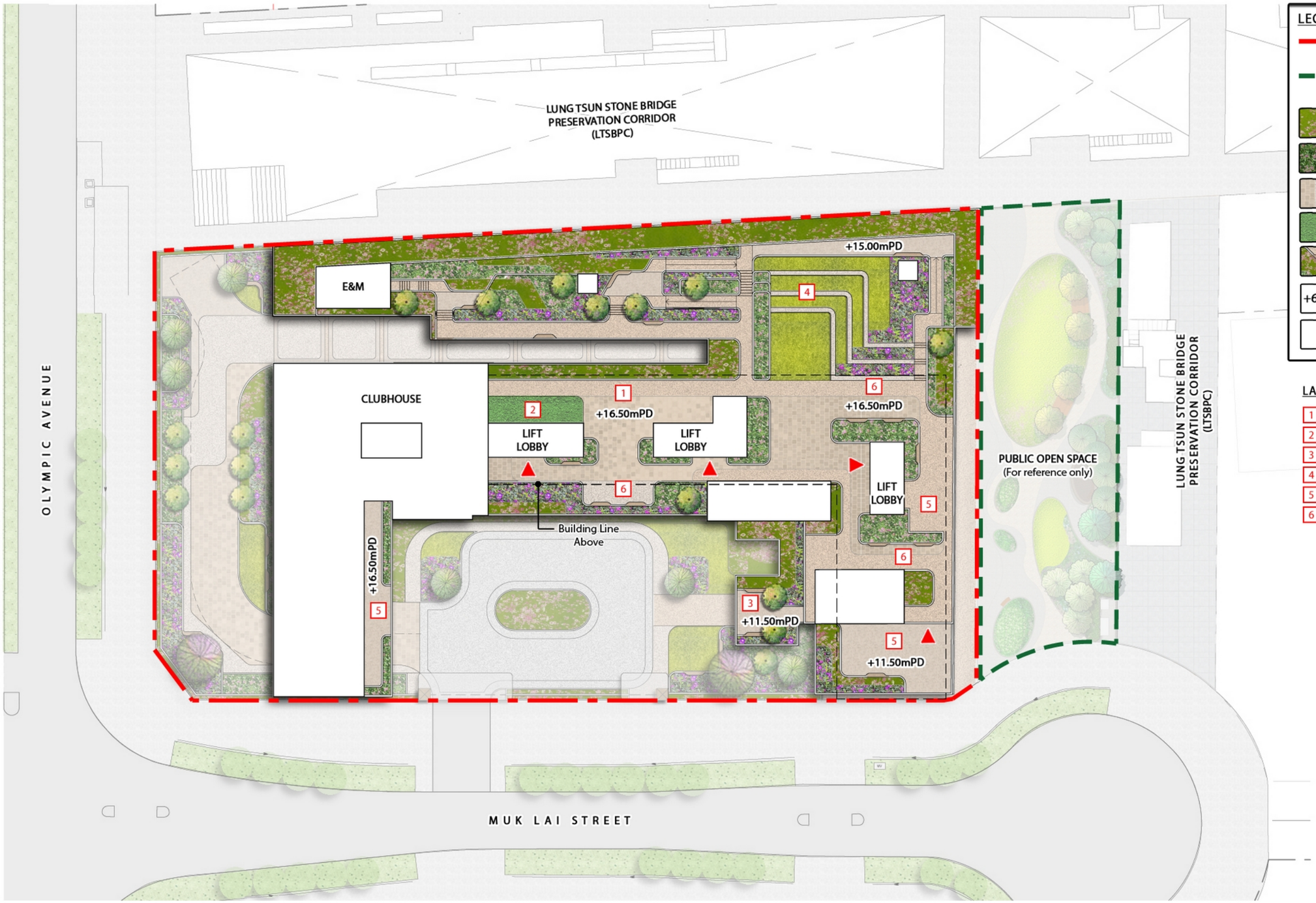

LEGEND:

- 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 : AUG 2024
(A3-size)

axxa group

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

+18.00mPD

+15.00mPD

+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)

+6.30mPD

+6.30mPD

OLYMPIC AVENUE

LUNG TSUN STONE BRIDGE PRESERVATION CORRIDOR (LTSBPC)

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 : AUG 2024
(A3-size)

axxa group

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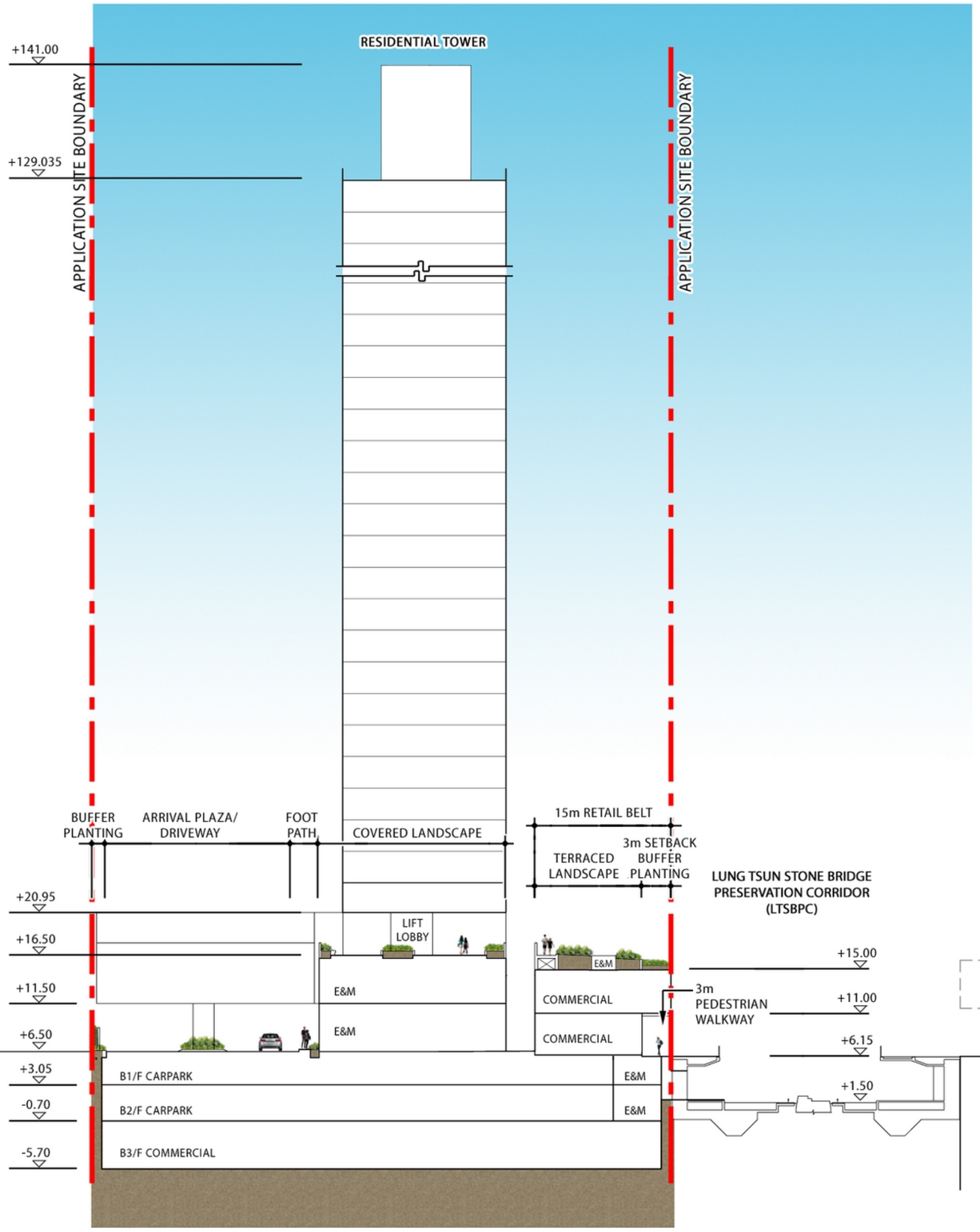
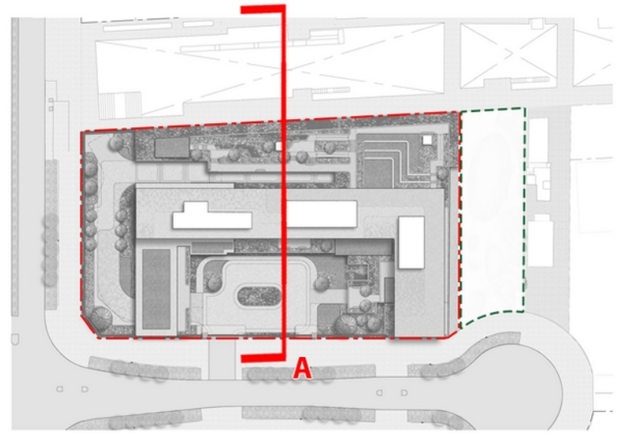




KEYPLAN

LANDSCAPE SECTION A

0m 2m 5m 10m 20m

SCALE : 1:500 (A3)

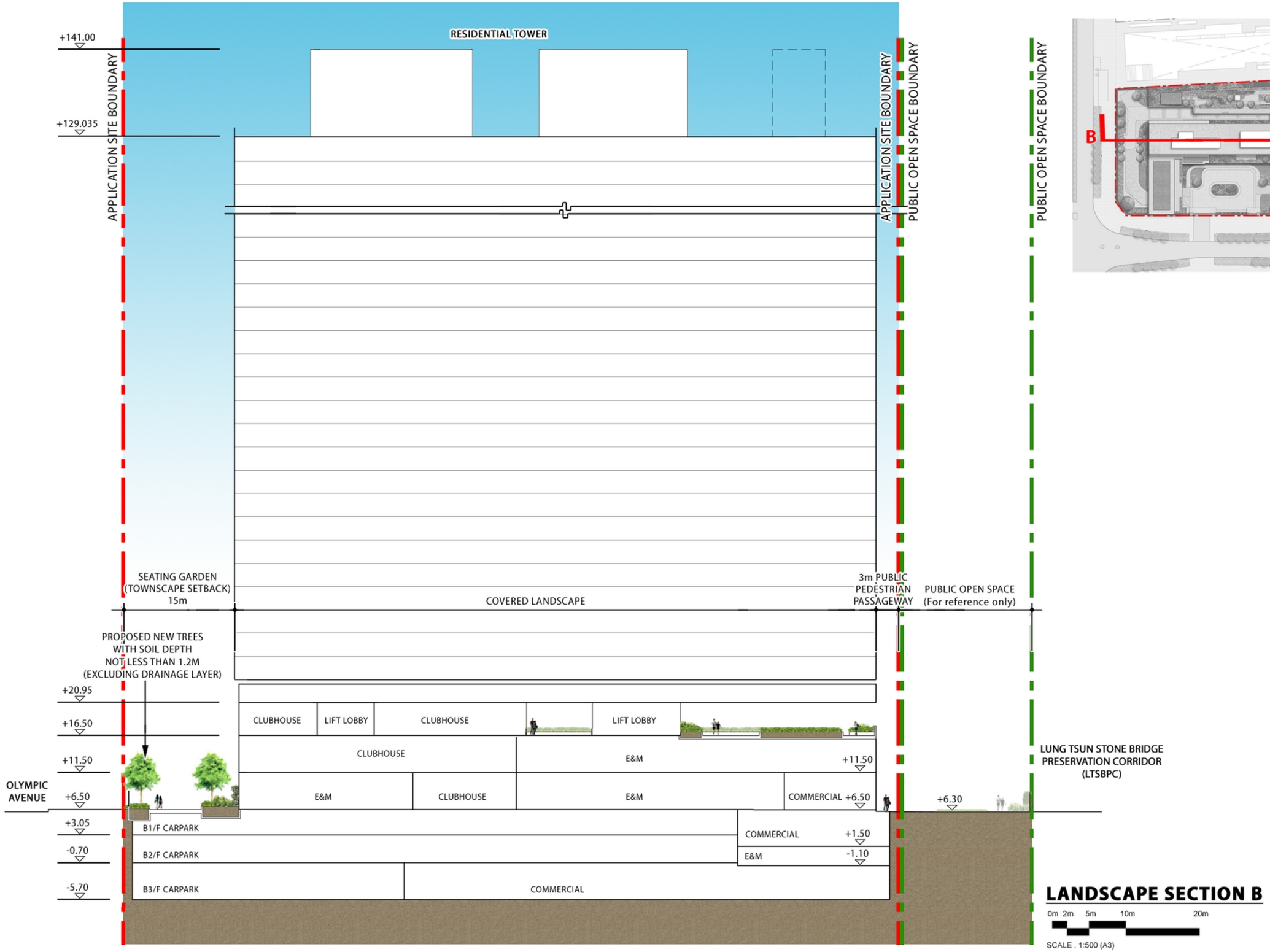
Proposed Comprehensive Development including Flat, Shop & Services and Eating Place in "Comprehensive Development Area (4)" zone, Kai Tak Area 2A Site 2, Kai Tak Development Area, Kowloon (Master Layout Plan Submission)

Landscape Section

Dwg. No. : 2023208-SEC-01b

Date : AUG 2024
(A3-size)

axxa group



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 : AUG 2024
(A3-size)

axxa group

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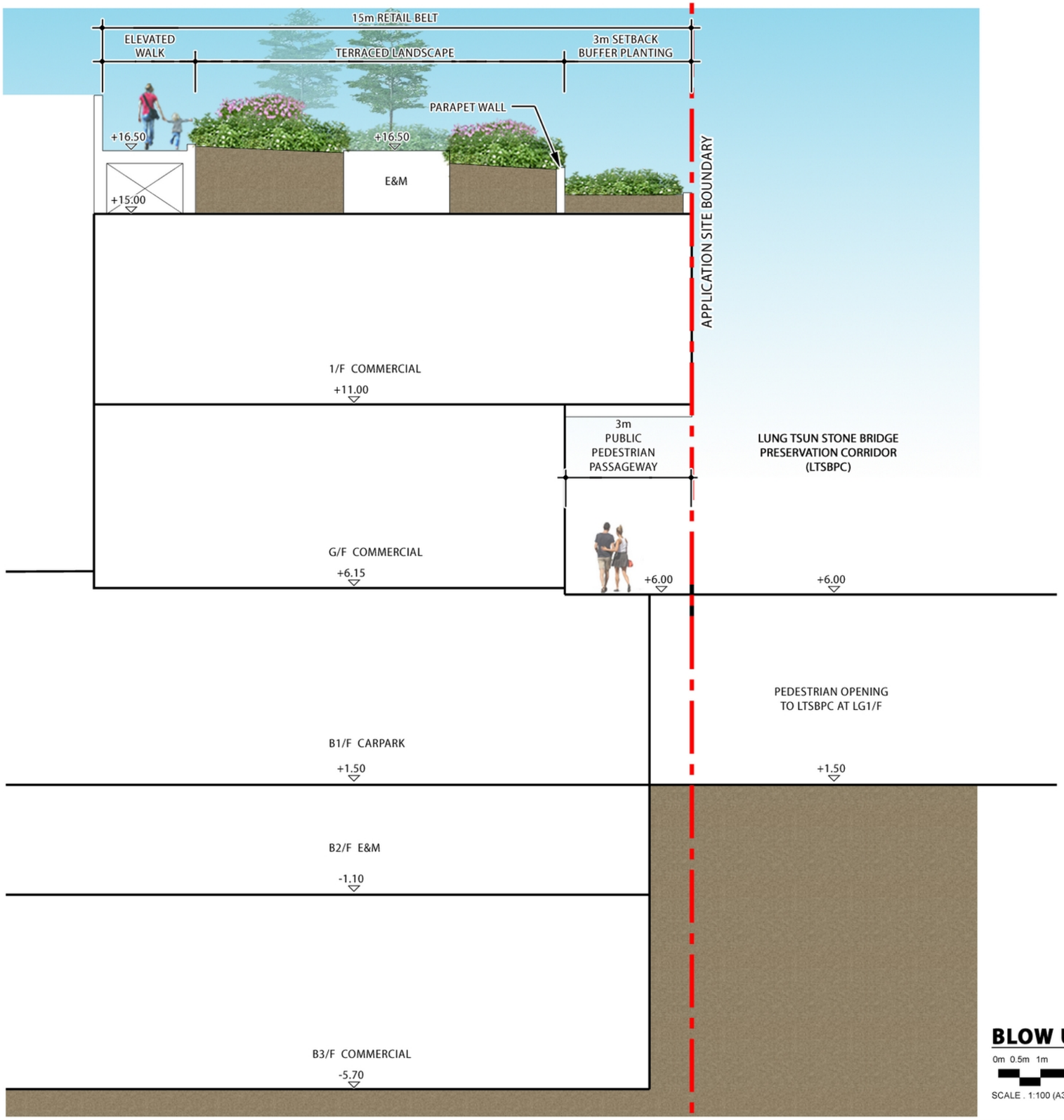

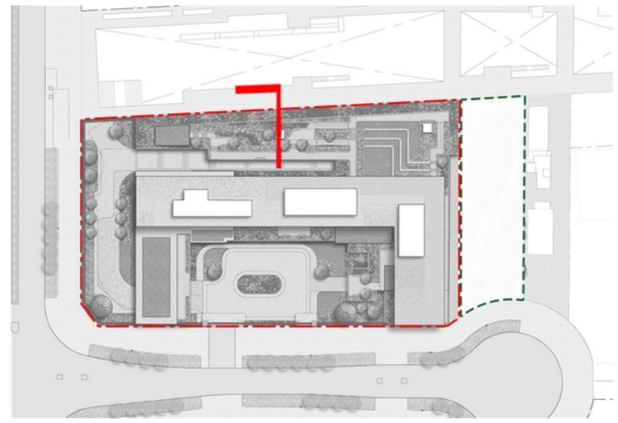

KEYPLAN

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 : AUG 2024
(A3-size)

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