Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone, at 349 Prince Edward Road West, Kowloon

(Planning Application No. A/K10/276)

Response-to-Comment Table

Comments	Summary & Response
Comments from Transport Department: **(Contact Person: Mr Simon LI Tel: 2399 2512)** **General comments**	
1. The area of influence in the assessment should be agreed by this office. Please include Kowloon City Roundabout and the junction of Prince Edward Road West / La Salle Road in the assessment;	The Kowloon City Roundabout and the junction of Prince Edward Road West / La Salle Road have been assessed and presented in Tables 2.1 and 4.7 of the revised Traffic Impact Assessment (TIA) report **(Appendix II refers)**.
2. Please include the assessment of the V/C ratios of the roads affected by the proposed development;	It should be noted that the Proposed Elderly Home will generate no more than 3 pcu (one-way) per hour. Hence, the Proposed Elderly Home is expected to have **negligible** impact to link capacity of the local road network.
3. Queue length assessment at the critical junctions should be conducted;	It should be noted that the Proposed Elderly Home will generate no more than 3 pcu (one-way) per hour. Hence, the Proposed Elderly Home is expected to have **negligible** impact to queue length of surveyed junctions.
4. Please include the pedestrian trip generation in the assessment; Please also review if the capacity, forms of crossing facilities and Level-of-Service (LOS) of the existing footpaths in the vicinity are capable to cater for the increasing population of the elderly and wheelchair users;	The pedestrian assessment has been conducted and presented in Paragraphs 2.9 – 2.16 and 4.18 – 4.25 of the revised TIA report **(Appendix II refers)**.
5. Separate traffic flow diagram(s) showing the traffic generated / attracted by the proposed development only should be provided;	The flow diagram showing the traffic generated by the Proposed Elderly Home has been presented in Figure 4.1 of the revised TIA report.

Comments	Summary & Response
6. Please provide the traffic impact assessment for construction stage as well. Please show clearly on a plan that the haul routes of all construction traffic generated / attracted by various construction works and carry out assessments on the critical junctions along the routes;	During construction stage, construction vehicles would access the Application Site via Prince Edward Road West. In view that the Proposed Elderly Home is small with total GFA of around 2,915m^2, only a few construction vehicles will be generated on each working day, say 1 veh/hr or 2.5 pcu/hr (one-way). Given the low traffic generation during construction stage, it is anticipated that construction of the Proposed Elderly Home would not cause adverse traffic impact to the local road network from traffic engineering point of view.
7. A modal split analysis on both vehicles and pedestrians to / from the proposed development should be included;	The modal split on vehicles and pedestrians to / from the Proposed Elderly Home is estimated based on the traffic and pedestrian generation surveys conducted at the similar elderly homes, and are presented in Table 1. TABLE 1 MODAL SPLIT ON VEHICLES AND PEDESTRIANS **Transport Mode** / **Percentage** Private Vehicles (e.g. private car / taxi / mini coach) — 14% Pedestrians (e.g. public transport / on foot only) — 86% **Total** — **100%** Table 1 shows that most of visitors, i.e. 86%, use public transport services or walk to the Proposed Elderly Home, and the remaining 14% of visitors use private vehicles.
8. All proposed modifications to public roads should comply with the requirements stipulated in the Transport Planning and Design Manual (TPDM);	Noted.

Comments	Summary & Response
9. The vehicular run-in/run-out should be provided within the specified X, Y, Z points according to the lease, with its clear width not exceeding 5m;	Noted. The width of run-in / out is 5m.
Specific Comment	
10. Section 3.2 – The applicant proposes to adopt the same internal transport facilities approved under the previous S16 application (TPB No. A/K10/261) at the subject site with 91 beds, which is not comparable to the subject application with 141 beds; The proposed provision of only 1 parking space for private cars (accessible) and 1 lay-by for share use by taxi, private car, ambulance, LGV and mini coach is not sufficient;	To understand the operation and to ascertain the parking and loading / unloading needs of the Proposed Elderly Home, traffic generation surveys were conducted on weekday, Saturday and Sunday at 3 elderly homes of similar scale located in Kowloon. The survey findings are presented in Paragraphs 3.4 – 3.11 of the revised TIA report. Based on the survey results, the Proposed Elderly Home is expected to generate no more than 2.1 trips for parking and 8.4 trips for loading / unloading related to pick-up / drop-off and goods delivery on a daily basis. In addition, these vehicles are not expected to arrive at the same time and the average dwell time for loading / unloading and pick-up / drop-off activities are short. Taking into consideration the low parking and loading / unloading demand and the narrow site frontage along Prince Edward Road West, i.e. only around 10m, the provision of one lay-by for shared use of taxi / private car / ambulance / LGV / mini coach and one car parking space for persons with disabilities is adequate for the Proposed Elderly Home with 141 beds.
11. Section 3.4 and Section 4.5 – For determination of the parking and unloading needs of the proposed Elderly Home and estimation of the trip generation rates, the applicant only makes reference to the traffic generation survey which was conducted on 7th June 2024 (Friday) at	Please refer to the abovementioned reply on R-t-C item 10.

Comments	Summary & Response
the adjoining elderly home located at 351 Prince Edward Road West, which does not fully represent the worst scenario. Since visits to elderly homes usually takes place on Saturdays, Sundays and public holidays, traffic generation surveys and parking need assessment for the proposed development should cover those days at 3 similar elderly homes with similar scales & site characteristics;	
12. Section 4.11 – Please check with PlanD for completeness of the planned development in the area;	The comments from Planning Department on the planned developments have been sought and have been incorporated in Table 4.6 of the revised TIA report. Please refer to **Annex A**.
13. The entering / leaving of mini coaches / LGV will require three-point turn within the site near the run-in/out and obstruct other ingress vehicles. Any tail back of vehicles would adversely affect Prince Edward Road West and the nearby signal-controlled crossing located immediately on the upstream side. Please review; and	The car parking space within the Proposed Elderly Home has been rearranged so that egress vehicles could conduct 3-point turn away from the proposed run-in / out. The revised G/F plan is shown in Figure 3.1 and the corresponding swept path analysis drawings are found in Appendix C of the revised TIA report.
14. Appendix A – Junction Capacity Analysis for Prince Edward Road West / Junction Road – Please clarify the derivation of the saturation flow for the exclusive left turn lane of Prince Edward Road West (EB).	According to Volume 4 Chapter 2 of Transport Planning and Design Manual (TPDM), *"when the additional lane at the stopline is available for a distance back from the stopline at least sufficient to contain one full cycle capacity of traffic, the above methods of estimation of saturation flow apply"*, i.e. *"S = 1940 + 100(W – 3.25) for nearside lane"*. The flare lane A1 at the junction of Prince Edward Road West / Junction Road is around 30m long and its average vehicle queue length is only around 18m, i.e. can contain one full cycle capacity of traffic. Hence, normal saturation flow, i.e. S = 1940 + 100(W – 3.25), is applicable for A1.

Comments	Summary & Response
Comments from Drainage Services Department: **(Contact Person: Mr CHEUNG Tsz-wai Tel: 2300 1581)**	
1. Please note that EPD is the planning authority of sewerage infrastructure, submission of sewerage impact assessment (SIA) or any sewerage review shall be circulated to SIG/EPD for their comments and approval. Subject to EPD, it may be required to assess and demonstrate the potential sewerage impact to the existing sewerage system, and formulate appropriate mitigation measures if any adverse sewerage impact is identified;	Noted. The SIA Report has been circulated to EPD for review.
2. Appendix 2.1 Table 3b-2 [Catchment B (Northern Portion)] – Please carry out sewage flow estimation using the methodology/approach in accordance with the Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning published by the EPD. The use of other estimation methodology/approaches should be subject to the views and agreement of the SIG/EPD.	Full-bore assessment with sewage flow adopting the maximum capacity of the sewer discharging sewage from Catchment B (Northern Portion) is regarded as a conservative approach for estimating sewage flow. Please note that EPD has no comments on the current estimation methodology in the SIA Report.
Comments from Hong Kong Police Force: **(Contact Person: Ms Chelsia SHING Tel: 3661 8061)**	
1. 1 Disabled Car Parking Space and 1 Shared Lay-by for Taxi/ Private Car/ Ambulance/ Light Goods Vehicle and Mini Coach within the proposed elderly home area. Considering the lay-by would be occupied for ambulance when there is incident, there is no space for parking the emergency vehicle in the elderly home area. An additional parking space is suggested in the proposed elderly home for emergency service.	In case of emergency and when the shared lay-by is occupied, the 2nd emergency vehicle, say police van, can stop next to the shared lay-by. As shown in **Annex B**, the 2nd emergency vehicle could also enter and leave the Proposed Elderly Home in forward movement.

Comments	Summary & Response
2. Prince Edward Road West is a 'Full length TIA route' connecting KW and KE region, pick up / drop off on Prince Edward Road West (E/B) outside the proposed elderly home for the staff own convenience should be restricted. Double yellow line is suggested to be set on the section of Prince Edward Road West outside the main gate to avoid the issue of vehicle obstruction (for TD consideration).	Noted.
Comments from Social Welfare Department: **(Contact Person: Mr Michael PANG Tel: 2116 5939)** **(a) General** 1. The applicant is reminded that, for a RCHE licence to be issued, the intended RCHE has to comply with the licensing requirements as stipulated in the Residential Care Homes (Elderly Persons) Ordinance, Cap. 459, and its subsidiary legislation and the latest version of the Code of Practice for Residential Care Homes (Elderly Persons) (CoP). **(b) Building Height** 2. According to paragraphs 5.3.3 of the CoP, if an RCHE operator can prove that the RCHE possesses facilities for fire safety, evacuation and rescue, and appropriate evacuation, contingency and fire drill plans to the satisfaction of the Director of Social Welfare (DSW), the DSW may approve the ancillary facilities of the RCHE to which the residents normally do not have access (e.g. kitchen, laundry room, office, staff resting room) to be situated at a height more than 24m above the ground.	Noted. The Proposed RCHE adheres to the relevant requirements stipulated in the CoP. The general RCHE area is located on 1/F to 7/F, which are situated at a height within 24m above ground. Elderly Residents would only have access to 8/F and 9/F for activities under the supervision of RCHE staff.

Comments	Summary & Response
3. It is noted that a physiotherapy room, common area and flat roof which appear to be accessible by elderly residents are located on 8/F, and some ancillary facilities (e.g. general office) and a large flat roof are located on 9/F. According to the indicative section, 8/F and 9/F are apparently situated at a height more than 24 m above the ground. The applicant is required to confirm if any part of the RCHE is situated at a height more than 24 m above the ground of the building. If affirmative, the applicant shall provide necessary justifications and check the latest CoP to confirm that the design of the RCHE could comply with the fire safety requirements.	Elderly Residents would only have access to the ancillary facilities and flat roof on 8/F and 9/F under the supervision of RCHE staff. The general RCHE area is located on 1/F to 7/F, which are situated at a height within 24m above ground.
(c) Fire Safety	
4. The deadend travel distance for RCHE is limited to 12m to the protected exit or to a point, from which travel in different directions to 2 or more protected exits is available; while the maximum travel distance, including any deadend travel distance, is limited to 30m.	The maximum travel distance is limited to 30m to the nearest protected exit for use classification 3a: health care facility, while 2 or more protected exit is available, according to CoP for Fire Safety in Buildings Clause B11.3. the length complies with the requirements.
5. The proposed RCHE should be separated from the remainder of the building by adequate fire resistance rating constructions according to the current Code of Practice for Fire Safety in Buildings.	The staircase and lift lobbies are separated from the resident habitable areas and comply with the statutory requirements.
(d) Building Design	
6. It is noted that there is one level of basement. The applicant shall draw attention to paragraph 5.2.3 of the CoP that RCHEs should not be situated on the basement floor under general circumstances. Nevertheless, the DSW may consider special cases after consulting	Please noted that the basement floor is used exclusively for plant room and water tank only, not by residents.

Comments	Summary & Response
relevant departments. The applicant should clarify what is the primary use of the basement floor.	
7. It is noted that open plan is adopted for dormitories, which is not a desirable design from service perspective. With reference to other planned RCHEs, all dormitory rooms should be partitioned into enclosed areas with a view to providing a favourable living environment for the residents and address their privacy concerns.	The open-plan layout design for RCHE aims to enhance staff convenience and improve management of the facility to ensure quality care for every elderly resident. The design includes single-bed wards and double-bed wards, separated by partition walls to provide personal areas that address privacy concerns. However, these areas are not fully enclosed to allow for efficient emergency response and ensure unobstructed access for staff.
8. Barrier free access and facilities should be provided within the entire RCHE in accordance with section 72 of the Building (Planning) Regulation (B(P)R) and "Design Manual Barrier Free Access 2008".	Statutory requirements of the barrier free access and facilities would be complied.
9. The headroom underside of the ceiling (the ceiling structure and suspended false ceiling) and beam / building services of the RCHE should not be less than 2.5m in height and 2.3m in height respectively. It is observed that the floor to floor height for 1/F to main roof is 3150 mm per floor. The applicant should ensure that sufficient headroom buffer has to be provided in order to comply with all related requirements.	The headroom clearance provided is not less than 2.5m under ceiling and 2.3m under beam.
(e) Lighting and Ventilation	
10. The provision of prescribed windows for the habitable areas including the sick/isolation/quite room in the proposed RCHE in compliance with sections 29, 30, 31, 32, 33 and 36 of the B(P)R for the provision of adequate natural lighting and natural ventilation should be demonstrated.	Prescribed window requirements have been satisfied, refer attached calculation demonstrates full compliance.

Comments	Summary & Response
11. No part of the habitation/dormitory area shall be more than 9m measured from a prescribed window as stipulated in section 32 of the B(P)R.	The wards on North side of the building are satisfied the requirements. the South side wards layout at 2/F, 4/F, 6/F, 7/F have been revised to satisfy the statutory requirements. However, Wards on south side at 1/F,3/F, 5/F would not be fulfilling the requirements unless reduce the No. of beds by 2 for each of these floor (6 in total). Please find the comments on the attached revised layout plan for RCHE.
12. According to Chapter 4 of the CoP, the proposed RCHE should be adequately ventilated, especially when the windows are kept closed under situations such as inclement weather and heavy traffic noise outside. Thus, besides natural ventilation, mechanical ventilation should be provided to the entire RCHE by making reference to "A supplement on Ventilation: Guidelines on Prevention of Communicable Diseases in Residential Care Homes for the Elderly" published by Centre for Health Protection. (*https://www.chp.gov.hk/files/pdf/a_supplement_on_ventilation.pdf*)	The habitable spaces (bed space) are provided with adequate natural ventilation in compliance with prescribed window requirements within building regulation.
Comments from Environmental Protection Department: **(Contact Person: Ms Alice HSU Tel: 2835 1551)** **Comments on Supporting Planning Statement**	
1. Section 4.5.3 - Where is Figure 3.2?	Please refer to Section 3.2 of the Supporting Planning Statement.

Comments	Summary & Response
Comments on Appendix 3 Noise Impact Assessment Technical Comments 1. Table 2.1 a) Please clarify if the wards and isolation rooms in the proposed development have the same nature of wards or diagnostic rooms in residential care homes for the elderly stated in the HKPSG. If so, please update the noise criteria.	Please note that the isolation rooms have the same nature of diagnostic rooms; therefore, the noise criteria of 55 dB(A) have been applied for the isolation rooms in the assessment. However, wards are intended for residential purpose. Their nature is different from that of the diagnostic rooms for RCHE stated in the HKPSG, and thus a noise standard of 70 dB(A) has been applied for the wards in the assessment.
b) Please review the type of use for isolation rooms in the Table 2.1 as they are classified as "office".	Noted. Table 2.1 has been revised to indicate that the type of use for isolation rooms is as dwellings with potential medical treatment.
2. Section 2.4.1 - Written proof of TD's endorsement on the traffic forecast data in Year 2047 should be provided.	Noted. TD's endorsement on traffic forecast data in Year 2047 has been provided in Appendix 2.1 of the Noise Impact Assessment (NIA) **(Appendix IV refers)**.
3. Section 2.5.4 - Please clarify why the mitigation measure designs in ProPECC PN 5/23 cannot be adopted in the proposed development.	Noted. Section 2.5.4 has been revised to clarify why the mitigation measure designs in ProPECC PN 5/23 cannot be adopted in the proposed development.
4. Appendix 2.2 - Please demonstrate the total no. of units is 30 in this proposed development.	The total number of units in the proposed development is 36. Appendix 2.2 of the NIA **(Appendix IV refers)** has been revised accordingly. Below is a table displaying the calculation method used to determine the total number of units for the proposed development.

<table>
<tr><th>Comments</th><th>Summary & Response</th></tr>
<tr><td></td><td>
<table>
<tr><th>Floor</th><th>No. of units</th></tr>
<tr><td>G/F</td><td>1</td></tr>
<tr><td>1/F</td><td>4</td></tr>
<tr><td>2/F - 7/F</td><td>30 (5 units x 6 floors)</td></tr>
<tr><td>9/F</td><td>1</td></tr>
<tr><td>Total no. of units</td><td>36</td></tr>
</table>
</td></tr>
<tr><td>5. Table 2.3 & Appendix 2.3 - The detailed assessment for mitigated road traffic noise for PM is missing in Appendix 2.3.</td><td>Please note that the projected peak hour traffic flow volume and percentage of heavy vehicles during the AM peak hour were used for the noise assessment, as they are generally higher than that in the afternoon. Therefore, assessments for unmitigated and mitigated road traffic noise for the AM period only are provided.</td></tr>
<tr><td>6. Section 3.2.3 - Please review if there are influencing factors in the vicinity of the proposed development, such as Prince Edward Road West and so on. If so, please update the ASR.</td><td>As Prince Edward Road West is a major road which has annual average daily traffic flow of 41,770, it is considered as the influencing factor for the Proposed Development. ASR rating of "C" should be adopted for the NSR facing Prince Edward Road West. Section 3.2.3 has been revised accordingly.</td></tr>
<tr><td>7. S.3.3.1 - Please clarify the methods of identifying the fixed noise sources.</td><td>Desktop study and site survey have been conducted to identify any presence of fixed noise source within 300m assessment area of the Application Site. Section 3.3.1 has been revised to indicate the identification method.</td></tr>
</table>

Comments	Summary & Response
8. Figure 3.1-3.4 & Appendix 3.1 - Please review if the rooftop chillers at EFCC Grace Church, Sheng Kung Hui Holy Trinity Church Centenary Bradbury Centre, Evangel Hospital and Holy Trinity Bradbury Centre Sheng Kung Hui should be considered as fixed noise sources. Please review if there are any fixed noise sources for F33-F35. 	Section 3.3.1 has been revised to indicate that the fixed noise source at EFCC Grace Church, Sheng Kung Hui Holy Trinity Church Centenary Bradbury Centre, Evangel Hospital and Holy Trinity Bradbury Centre Sheng Kui Hui has been fully blocked by surrounding buildings, so they are not included in the assessment. The fixed noise sources for F33-F35 have been removed in the assessment.
9. S.3.5.3 - Please review if corrections for tonality (included in Appendix 3.2 but not in the main text), impulsiveness and intermittency should be considered in the assessment.	The tonal correction of +3 dB(A) has been applied in this assessment and the formula indicated in Section 3.5.3 has been revised. The correction of impulsiveness and intermittency are not applicable to the identified fixed noise sources.

Comments	Summary & Response
10. Appendix 3.1	
a) Please provide proof on the operation time of the fixed noise sources.	The fixed noise source at the rooftop of St. Teresa Hospital and Hong Kong Eye Hospital will be in operation at the same time in both daytime and night-time period. Operation of other noise sources was not observed during night-time. The operation status adopted for these fixed noise sources in the appendix has been revised.
b) Please review the SWL of fixed noise source F07-08, F37-39, and F47-48.	The SWL for F07-08, F34-36 (previous F37-39) and F44-45 (previous F47-48) has been revised to 65dB(A), 88dB(A) and 96dB(A) respectively.
11. Appendix 3.1 – 3.2 - Please review the Z coordinate of the source location in the table.	The corresponding column has been removed from Appendices 3.1 and 3.2 of the NIA **(Appendix IV refers)**.
12. Appendix 3.2 - Please review the screening correction of F36-42 and F49-67 for all representative NSRs.	F33-39 (previous F36-42) are totally screened by Harbourview Garden and Woodland Villa, so the screening correction is -10. For F46-64 (previous F49-67), as these fixed noise sources are 69.7 mPD which is taller than the surrounding buildings, there are no screening corrections for these fixed noise sources.
13. S.3.6.2 - Please include the assessment for planned fixed noise source at the proposed development.	There will be no planned fixed noise sources at the development as split-type air conditioning will be adopted for the Proposed Development.
14. Figure 3.1 – 3.4 - Please provide a full-sized master map for all the fixed noise sources.	Full-sized master map has been provided in Figure 3.1 of the NIA **(Appendix IV refers)**.

Comments	Summary & Response
Noise Model 1. Please seek the latest information from the relevant Authority to demonstrate the validity of the extent of the low noise road surfacing materials on the road sections marked below in the noise assessment model.  	Noted. The extent of the low noise road surfacing materials on the road sections in the model is cross-referenced with EPD's Centralised Environmental Database. The assessment has been updated. Highway Department's confirmation on the extent of the low noise road surfacing materials on the road sections will be provided after receiving it.
Comments on Appendix 4 - Sewerage Impact Assessment <u>General Comment</u> 1. Please provide the full-set softcopy of the report (in pdf) and calculation spreadsheet (in Excel) as well as all Response to Comments from EPD and DSD as appendix. Please also highlight the revised/updated content of the SIA report in next submission to facilitate review.	Noted. The excel spreadsheet has been provided.

Comments	Summary & Response
Specific Comment *Appendix 2.1*	
2. For sewer segments with associated velocity less than 1.2m/s, the ks value for "sewers/drains slimed to about half depth; velocity, when flowing half full, approximately 0.75 m/s" is recommended to be adopted as a conservative approach. Please review and revise the corresponding calculations and remarks accordingly.	Noted. Table 2d has been amended. Corresponding calculations and remarks in Appendix 2.1 of the Sewerage Impact Assessment (SIA) **(Appendix III refers)** have been revised accordingly.
3. Table 1, please provide the relevant reference source(s) to substantiate the assumed area for RCHE (i.e. 247.9m2).	Noted. Please see the table in Appendix 1.1 of the SIA **(Appendix III refers)**.
4. Table 2c, please advise and substantiate the "corrections" applied in the hydraulic calculations, for the sake of clarity.	The invert levels of several manholes are unavailable in the Drainage Record Plan, thus interpolation is adopted to assess the hydraulic capacity of sewers at segment S4-S5-S6-S7. For further clarification, please refer to Note No. 1 below Table 2a in Appendix 2.1.
Appendix 2.2	
5. It is noted that manhole survey was conducted to assess the manhole settings. Please advise if the results of manhole survey have been agreed by DSD.	Please note that the results of the manhole survey were attached to the previously submitted SIA report under the approved planning application No. A/K10/261 for the S16 application. The application was approved by the Town Planning Board and DSD had no comment on the submitted manhole survey. In addition, the same manhole survey has also been submitted in the current application and no comment from DSD has been received.

Comments	Summary & Response
Comments from Urban Design and Landscape Section, Planning Department: **(Contact Person: Ms Isebella TSUI Tel: 3565 3951)**	
1. According to Table 3.1, there are about 141 no. of RCHE bed space under the proposed scheme. Please consider to provide local open space of $1m^2$ per person for the residents.	Not less than $141m^2$ of open space would be provided on the flat roof on 1/F, 8/F and 9/F. Open space on 8/F and 9/F would only be accessed under the supervision of RCHE staff.
2. There is no landscape proposal in the submission. With reference to Appendix 1 (Schematic Architectural Drawings), please consider planting at-grade and on flat roofs of 1/F, 8/F, 9/F and R/F.	Planting areas have been added at the flat roof on 1/F , 8/F and 9/F. Please find updated layout in the attached architectural drawings in **Appendix I**.
Comments from Building Department: **(Contact Person: Ms YU Chi-Ching, Tel: 2115 2204)**	
1. All building works are subject to compliance with the Building Ordinance (BO) and its allied regulations.	Noted.
2. You are reminded that the following issues should be addressed when making application for approval of plans for carrying out of building works under the BO: (a) Residential Care Home for the Elderly (RCHE), which is for habitation, is a domestic use under BO and should be accountable for domestic site coverage and plot ratio under the BO. Subject to compliance with the relevant criteria stipulated in PNAP APP-172, application for modification may be considered at building plan submission stage for treating RCHE as non-	Noted. The requirements as stated in items 2(a) to 2(f) of Building Department's comments would be complied with in the building plan submission stage.

Comments	Summary & Response
domestic building for the purposes of regulations 19, 20, 21 and 22 of the Building (Planning) Regulations (B(P)R) and allowing non-provision of open space for RCHE under regulation 25 of B(P)R. (b) There is no existing lane pattern in the vicinity of the proposed development. BD may, on application, favorably consider exercising discretion under section 42 of the BO to grant modification to permit the non-provision of service lane for the RCHE. (c) Access and facilities for persons with a disability should be provided in accordance with B(P)R 72 and Design Manual: Barrier Free Access 2008 (2024 Edition). (d) Natural lighting and ventilation should be provided to rooms used for habitation and for the purposes of office and kitchen complying with Part IV of B(P)R. (e) Adequate means of escape shall be provided to the subject premises in compliance with the regulation 41(1) if the B(P)R. (f) Emergency Vehicular Access (EVA) should be provided in accordance with B(P)R 41 D and Section 6, Part D of the Code of Practice for Fire Safety in Buildings 2011.	

Comments	Summary & Response
3. Before any new building works are carried out, prior approval and consent from Building Authority (BA) under the BO should be obtained unless the works fall within the scope of designated minor works that can be carried out under the simplified requirements specified in the Building (Minor Works) Regulation or such works are exempted works. An Authorized Person should be appointed to ensure that any building works are implemented in compliance with the BO.	Noted.
4. Detailed comments under the BO on individual sites for private developments such as permissible plot ratio, site coverage, means of escape, fire resisting construction, service lane, emergency vehicular access, natural lighting and ventilation, barrier free access and facilities compliance with sustainable building guidelines, etc. will be formulated at the building plan submission stage.	Noted.

Consolidated by: **KTA Planning Limited**
Date: **27 November 2024**

List of Appendices

Appendix I Updated Schematic Architectural Drawings
Appendix II Revised Traffic Impact Assessment
Appendix III Replacement Pages of Sewerage Impact Assessment
Appendix IV Replacement Pages of Noise Impact Assessment

Annex A –
Email from Planning Department

From: Jenny Wai Ching LAI/PLAND <jwclai@pland.gov.hk>
Sent: Friday, 1 November, 2024 16:57
To: CKM Asia
Cc: Wilson Man; Gladys Ng; Vicki Yue Yan AU/PLAND; Thomas Ho Lun LAU/PLAND
Subject: Re: Proposed Elderly Home at 349 Prince Edward Road West (TPB No. A/K10/276) - TIA : Planned Developments
Attachments: TD comment (2024 10).pdf; extract of TIA (for PlanD).pdf; site location plan.pdf; Appendix I_Email from Consultant.pdf

Importance: High

Dear Mr. TANG,

I refer to the enquiry in your email below seeking our comments on the planned developments extracted from Table 4.6 of the Traffic Impact Assessment (TIA) report please. Reference is also made to your email dated 30.10.2024 (**Appendix I**), providing the 300m study area for the captioned project and clarifying that some major planned developments outside the 300m study area listed in Table 4.6 have also been considered.

[See attachment "Appendix I_Email from Consultant.pdf"]

2. Please find our comments on Table 4.6 of the TIA report.

Ref.	Developments	PlanD's Comments
A	222 Argyle Street	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. You may also make reference to the approved planning application No. Y/K10/5. Relevant information is available from public domain, such as Planning Enquiry Counters, Statutory Planning Portal 3 (SPP3) and Town Planning Board (TPB) websites. It is noted that the development parameter does not tally with that under the approved application.
B	URA Project at Shing Tak Street / Ma Tau Chung Road (CBS-1:KC)	· Please refer to the approved Ma Tau Kok Outline Zoning Plan (OZP) No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites. · Advice from Urban Renewal Authority (URA) should also be sought regarding URA projects.
C	3 - 13 Nga Tsin Long Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
D	4 - 24 Nam Kok Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.

E	URA Project at Nga Tsin Wai Road / Carpenter Road (KC-017)	· Please refer to the approved URA Nga Tsin Wai Road / Carpenter Road Development Scheme Plan (DSP) No. S/K10/URA3/2. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites. · Advice from URA should also be sought regarding URA projects.
F	URA Project at Kai Tak Road / Sa Po Road (KC-015)	· Please refer to the approved URA Kai Tak Road / Sa Po Road DSP No. S/K10/URA1/2. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites. · Advice from URA should also be sought regarding URA projects.
G	Redevelopment of Kowloon City Plaza at New Kowloon Inland Lot No. 6056	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. You may make reference to the approved planning application No. Y/K10/3. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB website. The number of spaces for public vehicle park should tally with that indicated under the Notes of the OZP.
H	26A - B Grampian Road and 13A - B Junction Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
I	84 - 98 Junction Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
J	65, 73 and 75 Lion Rock Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
K	93 - 95 Hau Wong Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
L	452 - 464 Prince Edward Road West	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
M	20 - 20A Grampian Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
N	57A Nga Tsin Wai Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.
O	55 Nga Tsin Wai Road	· Please refer to the approved Ma Tau Kok OZP No. S/K10/30. Relevant information is available from public domain, such as Planning Enquiry Counters, SPP3 and TPB websites.

3. It is observed that there are discrepancies between the development parameters listed in the table and information available from public domain. Please refer to information provided in para. 2 above and verify the parameters of all items.

4. Regarding other developments that should be considered apart from the list in your table, please refer to relevant information available from public domain, including Statutory Planning Portal 3 (https://www.ozp.tpb.gov.hk/) and Town Planning Board website (https://www.tpb.gov.hk/).

Thanks and Regards,

Jenny LAI
TP/K10
K DPO
Planning Department
Tel: 2231 4180

From: CKM Asia <mail@ckmasia.com.hk>
Sent: Tuesday, October 29, 2024 10:55 AM
To: Jenny Wai Ching LAI/PLAND <jwclai@pland.gov.hk>
Cc: Wilson Man <wilsonman@ktaplanning.com>; Gladys Ng <gladysng@ktaplanning.com>
Subject: RE: Proposed Elderly Home at 349 Prince Edward Road West (TPB No. A/K10/276) - TIA : Planned Developments

Attn: Planning Department – Ms Jenny Lai (Town Plnr / Kln 10)
cc: KTA Planning Limited

Dear Ms Lai,

We, CKM Asia Limited, are the Traffic Consultant responsible for TPB No. A/K10/276, i.e. the Proposed Elderly Home at 349 Prince Edward Road West.

The comment from Transport Department on our TIA report is attached for reference. Item (l) refers: *"Section 4.11 – Please check with PlanD for completeness of the planned development in the area".*

In connection to the above, we would like to seek your comment on the planned developments extracted from Table 4.6 of the TIA report. The site location plan is also attached for reference.

We appreciate your reply at the earliest convenience. Should you have any queries, please do not hesitate to contact our Mr Patrick Tang at 2520 5990.

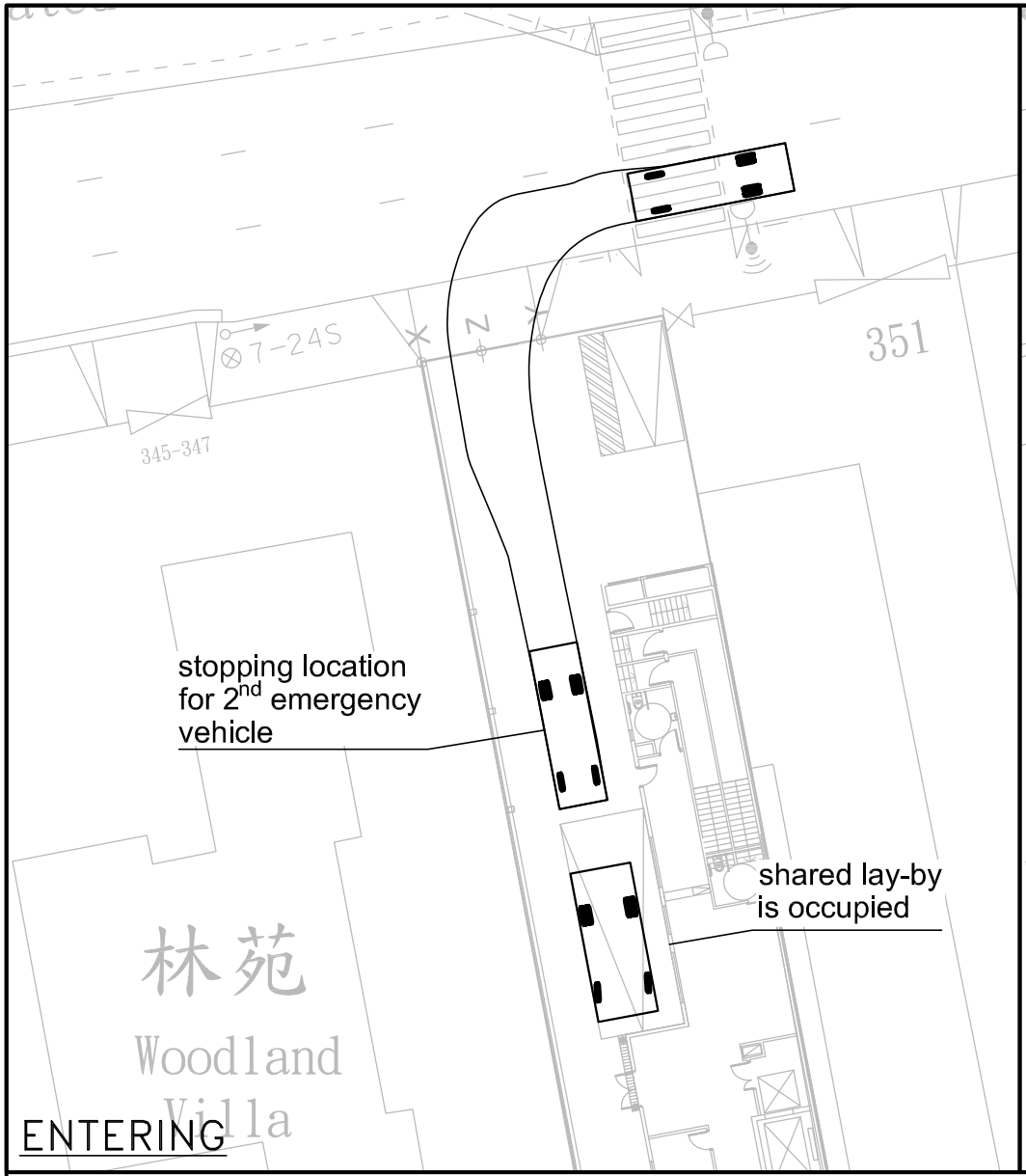
Thank you for your attention.

Regards,

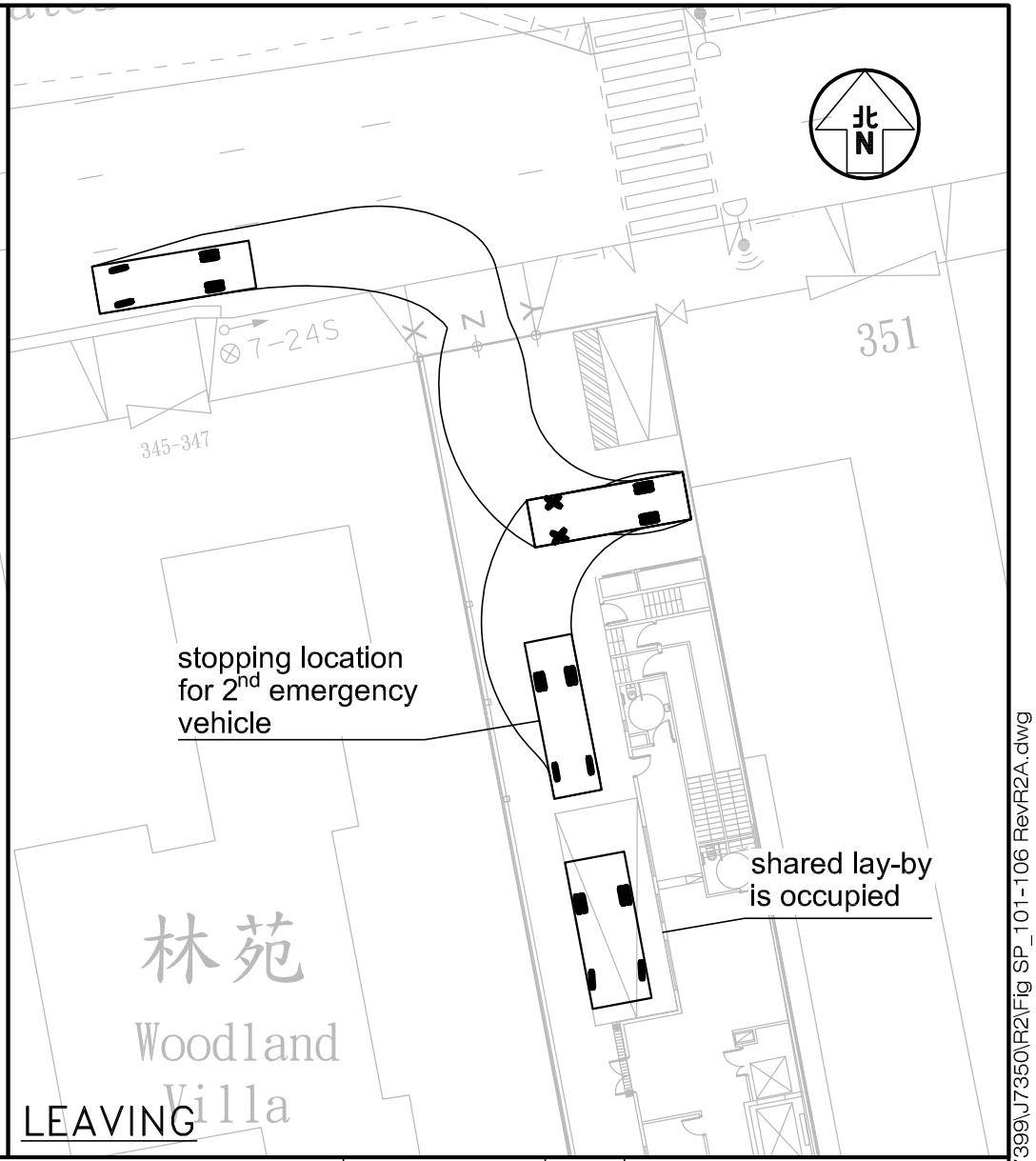
H.C. Tang

CKM Asia Limited
Traffic and Transportation Planning Consultants
Phone: (852) 2520 5990

Annex B – Swept Path of 2nd Emergency Vehicle when the Lay-by is Occupied



ENTERING



LEAVING

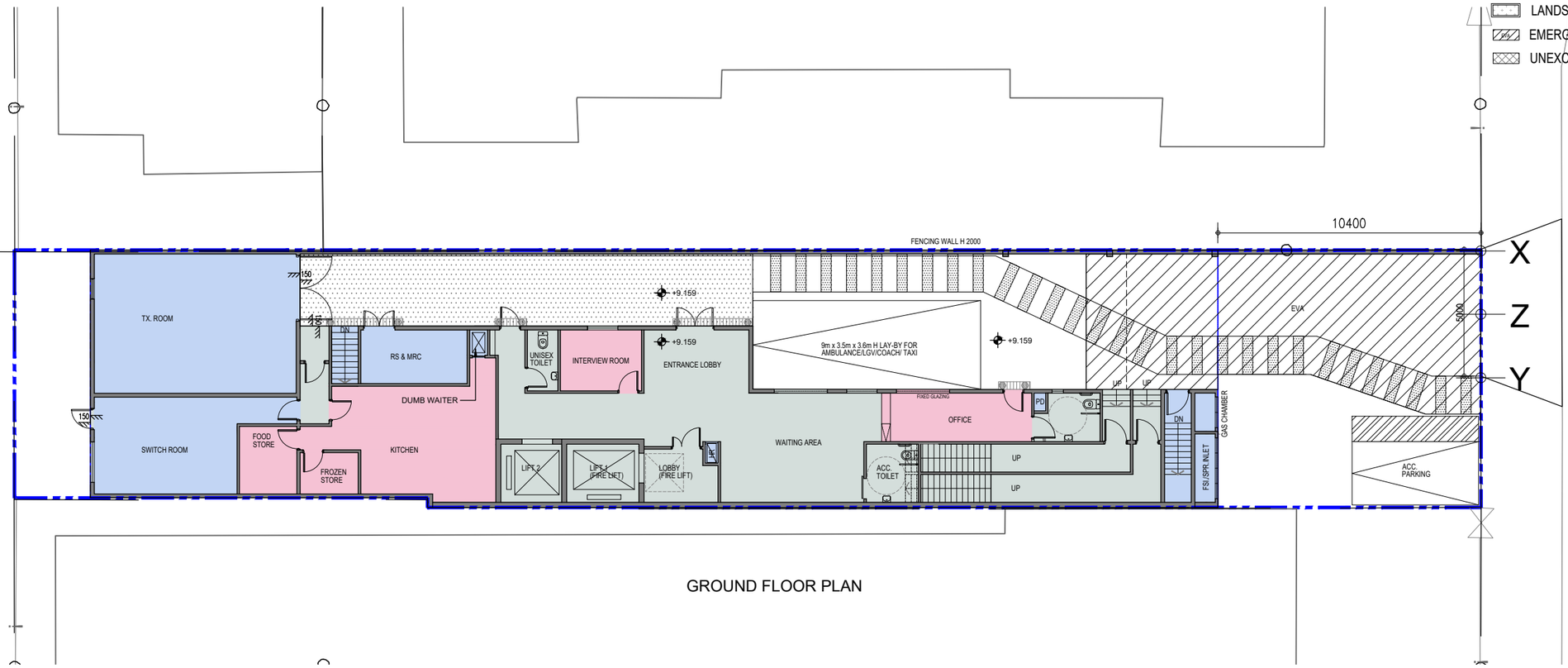
Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. SP/106 Revision R2A
Figure Title	SWEPT PATH OF 2nd EMERGENCY VEHICLE WHEN THE LAY-BY IS OCCUPIED		Designed by T H C / Drawn by C C L / Checked by K C Scale in A4 1 : 300 / Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg

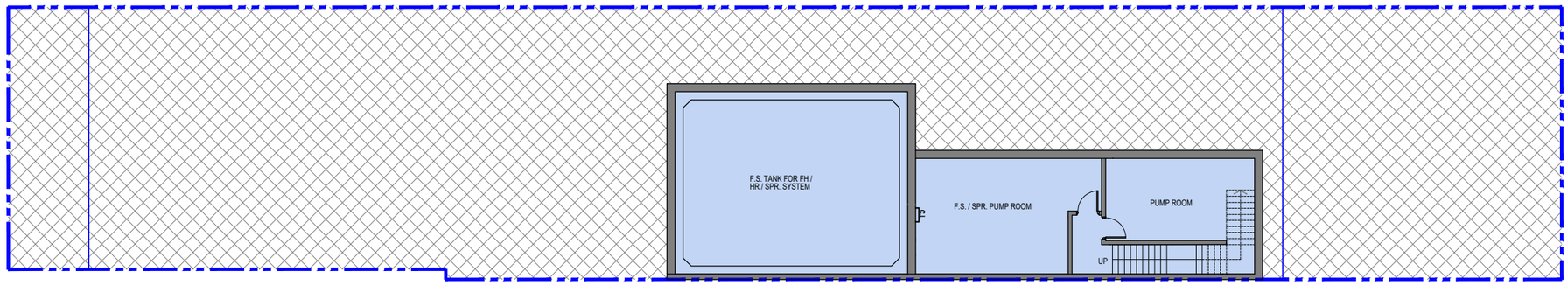
Appendix I

Updated Schematic Architectural Drawings



GROUND FLOOR PLAN

G/F LAYOUT 1:200



B/S LAYOUT 1:200

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

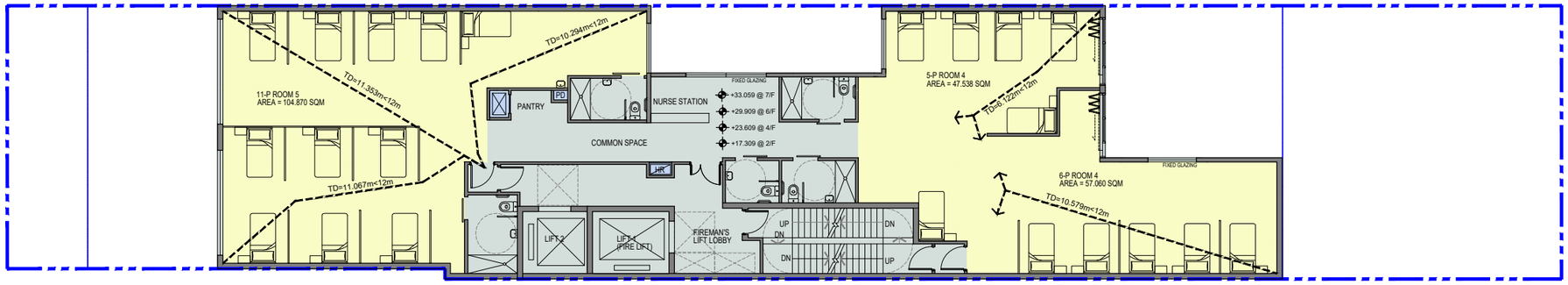
PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

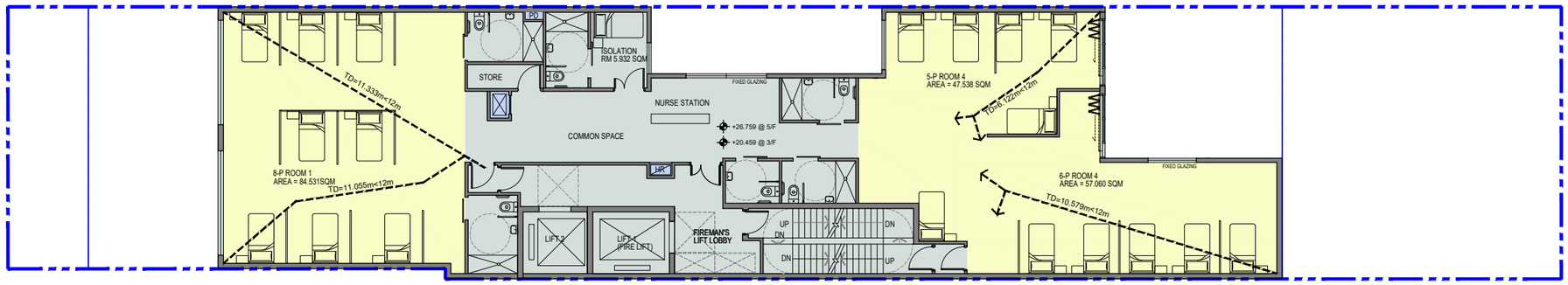
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
GROUND FLOOR PLAN & BASEMENT FLOOR PLAN

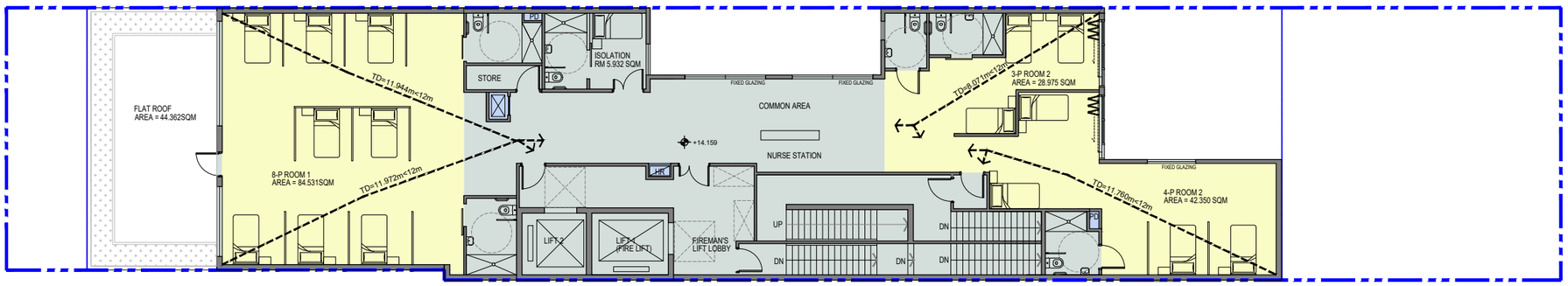
DRAWN BY:	DATE:	
CZ	NOV-2024	
CHECKED BY:	APPROVED BY:	
CMD	KCY	
SCALE:	PAPER SIZE:	
1:200	A3	
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-00	V14



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND

NOS. OF BED (9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

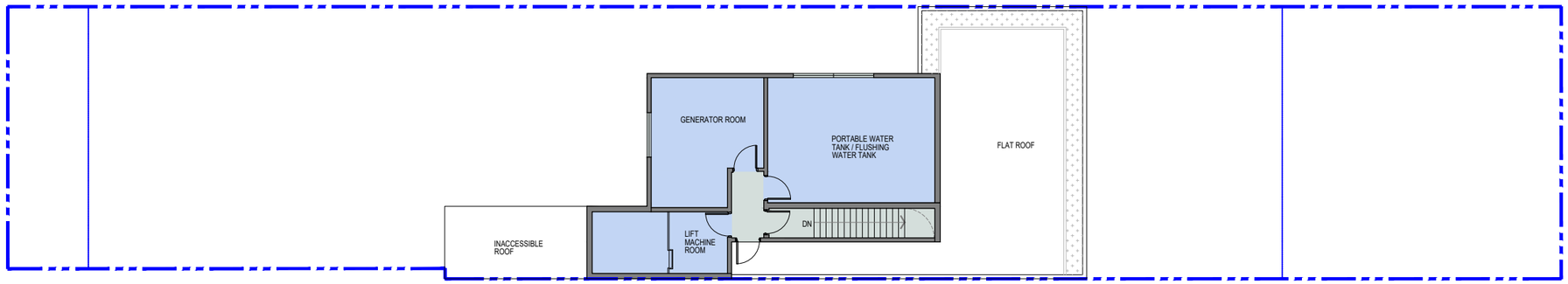
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

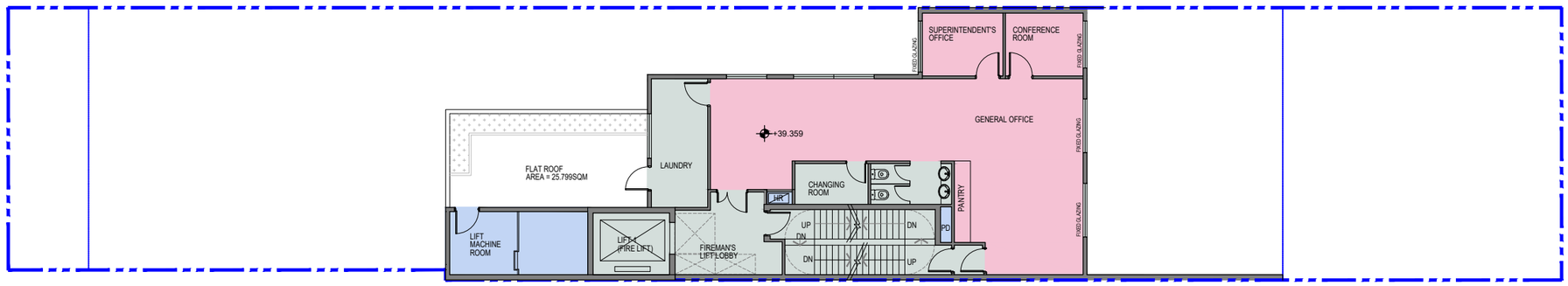
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY:	DATE:
CZ	NOV-2024
CHECKED BY:	APPROVED BY:
CMD	KCY
SCALE:	PAPER SIZE:
1:200	A3

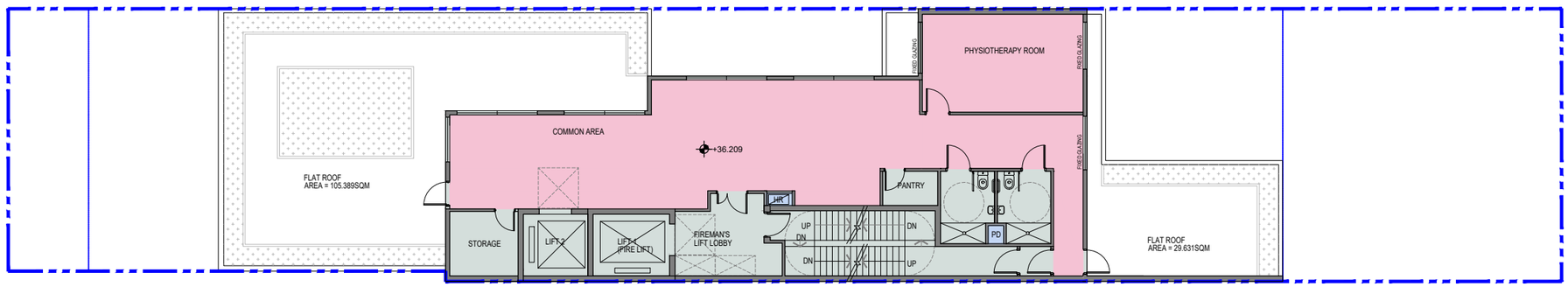
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-01	V14



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND

NOS. OF BED (9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

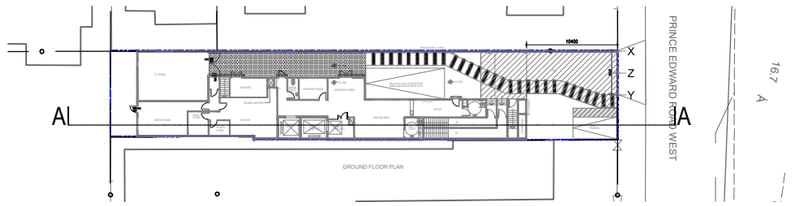
PROJECT LANDSCAPE CONSULTANT:

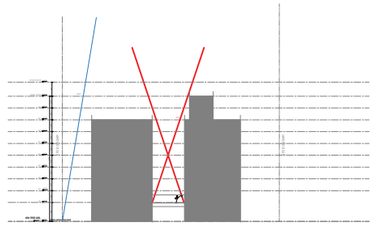
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

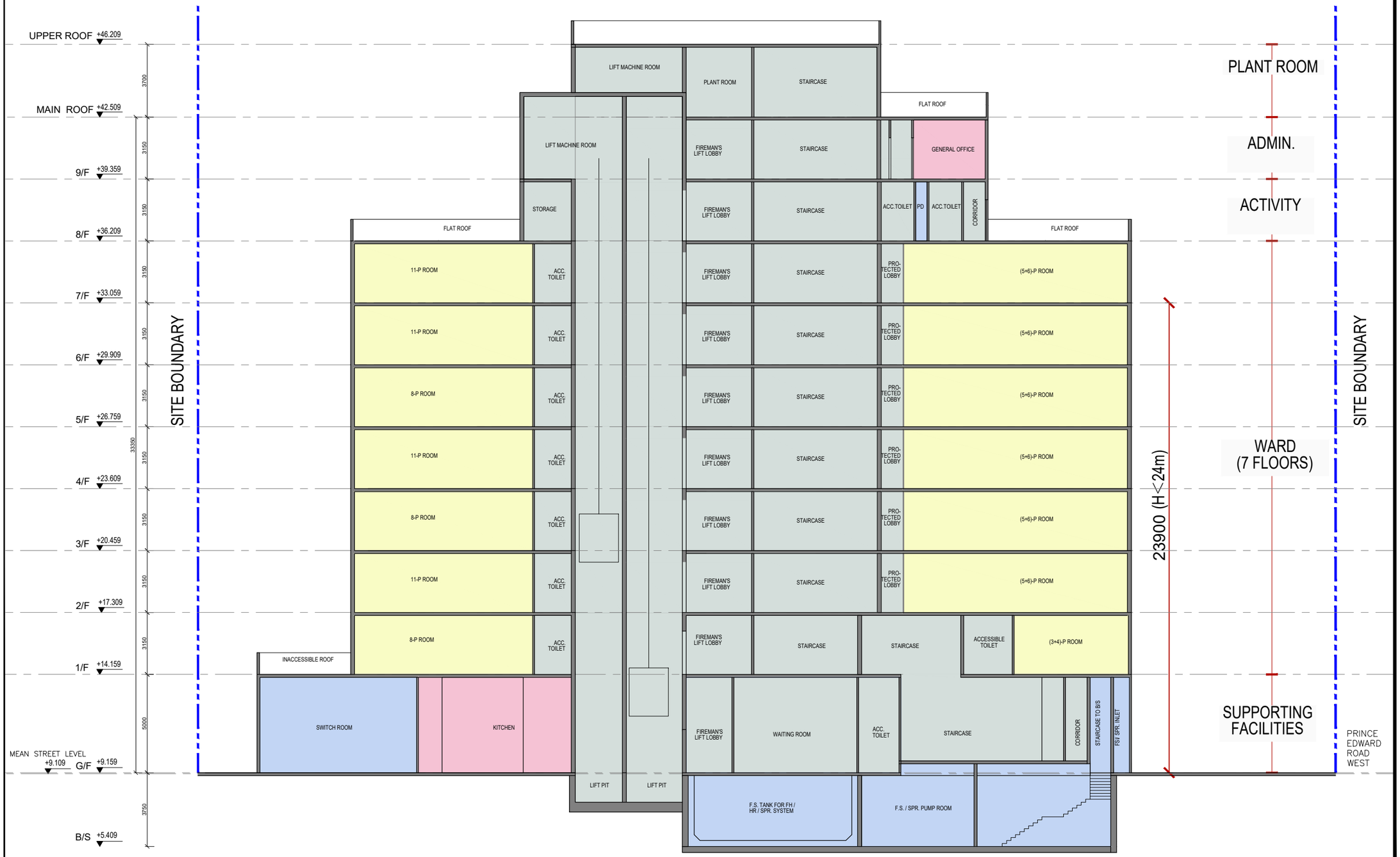
DRAWN BY: CZ	DATE: NOV-2024
CHECKED BY: CMD	APPROVED BY: KCY
SCALE: 1:200	PAPER SIZE: A3
PROJECT: PE 6170	DRAWING: GP-02 REVISION: V14





LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY:	DATE:
CZ	NOV-2024
CHECKED BY:	APPROVED BY:
CMD	KCY
SCALE:	PAPER SIZE:
1:200	A3
PROJECT:	DRAWING: / REVISION:
PE 6170	GP-03 / V14

Appendix II

Revised Traffic Impact Assessment

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

Traffic Impact Assessment

Final Report
November 2024

Prepared by: CKM Asia Limited

Prepared for: Lead Engineering Limited

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

CONTENTS

CHAPTER		PAGE
1.	INTRODUCTION Background Scope of the Assessment Contents of the Report	1
2.	THE EXISTING SITUATION Subject Site and Road Network Manual Classified Counts Operational Performance of the Surveyed Junctions Pedestrian Count Surveys Pedestrian Crossing Performance Footpath Level-of-Service Public Transport Facilities	2
3.	THE PROPOSED ELDERLY HOME Development Schedule Internal Transport Facilities Swept Path Analysis	8
4.	TRAFFIC IMPACT Design Year Analysis on Traffic Generation Planned Developments Traffic Forecast 2031 Junction Capacity Analysis Pedestrian Generation 2031 Pedestrian Crossing Assessment 2031 Level-of-Service Assessment Traffic Impact during Construction	11
5.	CONCLUSION	18
	FIGURES APPENDIX A – JUNCATION CAPACITY ANALYSIS APPENDIX B – RESULT OF TRAFFIC GENERATION SURVEYS APPENDIX C – SWEPT PATH ANALYSIS APPENDIX D – EXTRACT FROM OZP NO. S/K10/30	

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

TABLES

NUMBER

2.1 Existing junction operational performance
2.2 Existing performance of signalised crossing
2.3 Description of pedestrian walkway LOS
2.4 Existing level-of-service assessment
2.5 Road-based public transport services operating near the subject site
3.1 Details of elderly homes surveyed
3.2 Summary of traffic generation surveys
4.1 Trip generation rate for similar elderly home
4.2 Proposed elderly home traffic generation
4.3 Residential trip generation rates from TPDM
4.4 Hypothetical residential building traffic generation
4.5 Comparison of traffic generation
4.6 Details of major planned developments
4.7 2031 Junction operational performance
4.8 Pedestrian generation rates
4.9 Proposed elderly home pedestrian generation
4.10 TPEDM data for Kowloon City
4.11 2031 Performance of signalised crossing
4.12 2031 Level-of-service assessment

Proposed Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon City

FIGURES

NUMBER

1.1 Location of the subject site
2.1 Location of the surveyed junctions
2.2 (J1) Junction of Prince Edward Road West / Junction Road
2.3 (J2) Junction of Prince Edward Road West / Forfar Road
2.4 (J3) Junction of Prince Edward Road West / Lomond Road
2.5 (J4) Junction of Argyle Street / Lomond Road
2.6 (J5) Kowloon City Roundabout
2.7 (J6) Junction of Prince Edward Road West / La Salle Road
2.8 Existing peak hour traffic flows
2.9 Existing peak 15-minute pedestrian flows
2.10 Availability of public transport services in the vicinity of the subject site
3.1 Proposed internal transport layout
4.1 Traffic generation by the Proposed Elderly Home
4.2 2031 peak hour traffic flows without the Proposed Elderly Home
4.3 2031 peak hour traffic flows with the Proposed Elderly Home
4.4 2031 peak 15-minute pedestrian flows without the Proposed Elderly Home
4.5 2031 peak 15-minute pedestrian flows with the Proposed Elderly Home

1.0 INTRODUCTION

Background

1.1 The subject site is located at 349 Prince Edward Road West in Kowloon City. Figure 1.1 shows the location of the subject site.

1.2 ***On 3rd January 2020, the Town Planning Board (TPB) approved the s16 planning application (TPB No. A/K10/261) for construction of an elderly home (the "Proposed Elderly Home") with 91 beds at the subject site.***

1.3 The Applicant has engaged CKM Asia Limited, a traffic and transportation planning consultancy firm, to prepare a traffic impact assessment (TIA) for the Proposed Elderly Home with 141 beds.

Scope of the Assessment

1.4 The main objectives of this study are as follow:

- To assess the existing traffic issues in the vicinity of the subject site; and
- To ensure that adequate internal transport facilities are provided for the Proposed Elderly Home;
- To quantify the amount of traffic generated by the Proposed Elderly Home; and
- To examine the traffic impact of the Proposed Elderly Home on the local road network.

Contents of the Report

1.5 After this introduction, the remaining chapters contain the following:

chapter two – describes the existing situation;
chapter three – presents the Proposed Elderly Home;
chapter four – describes the traffic impact analysis; and
chapter five – gives the overall conclusion.

2.0 THE EXISTING SITUATION

Subject Site and Road Network

2.1 The subject site is located on the southern side of Prince Edward Road West and to the west of Junction Road.

2.2 Prince Edward Road East is classified as a Primary Distributor. It connects with the Kowloon City to the east and Mong Kok to the west. The section of Prince Edward Road East fronting the subject site has 2 – 4 westbound traffic lanes (towards Mong Kok), and 3 – 4 eastbound traffic lanes (towards Wong Tai Sin).

2.3 Junction Road is a District Distributor in Kowloon City running in north-south direction. It is a single carriageway 3-lane road connecting Prince Edward Road West and Carpenter Road.

Manual Classified Counts

2.4 Manual classified counts were conducted on 7th June 2024 (Friday) during the AM and PM peak periods at 6 junctions which are located in the vicinity of the subject site in order to establish the peak hour traffic flows. The surveyed junctions included the following:

- Prince Edward Road West / Junction Road;
- Prince Edward Road West / Forfar Road;
- Prince Edward Road West / Lomond Road;
- Argyle Street / Lomond Street;
- Kowloon City Roundabout; and
- Prince Edward Road West / La Salle Road.

2.5 The traffic counts were classified by vehicle type to enable traffic flows in passenger car units (pcu) to be calculated. The locations and layouts of the surveyed junctions are shown in Figure 2.1 and Figures 2.2 – 2.7 respectively.

2.6 The AM and the PM peak hour traffic flows were found to occur at 0800 – 0900 and 1800 – 1900 hours respectively, and the peak hour traffic flows are illustrated in Figure 2.8.

Operational Performance of the Surveyed Junctions

2.7 The existing operational performance of the surveyed junctions was calculated based on the observed traffic counts and the analysis method found in Volumes 2 and 4 of Transport Planning and Design Manual (TPDM). The analysis results are summarised in Table 2.1 and detailed calculations are found in Appendix A.

TABLE 2.1 EXISTING JUNCTION OPERATIONAL PERFORMANCE

Ref.	Junction	Type of Junction	Performance Indicator [1]	AM Peak	PM Peak
J1	Prince Edward Road West / Junction Road	Signal	RC	49%	44%
J2	Prince Edward Road West / Forfar Road	Priority	RFC	0.294	0.350
J3	Prince Edward Road West / Lomond Road	Signal	RC	68%	75%
J4	Argyle Street / Lomond Street	Signal	RC	38%	47%
J5	Kowloon City Roundabout	Roundabout	RFC	0.698	0.656
J6	Prince Edward Road West / La Salle Road	Signal	RC	59%	47%

Note: [1] RC – Reserve Capacity RFC – Ratio-of-Flow to Capacity

2.8 The above results indicate that the surveyed junctions currently operate with capacities during the AM and PM peak hours.

Pedestrian Count Surveys

2.9 Pedestrian counts were conducted during the AM and PM peak periods on 7th June 2024 (Friday) at footpaths and pedestrian crossings located in the vicinity of the subject site, and these include the following:

Pedestrian Crossing

C1 – Downstream Signalised Crossing at Prince Edward Road West (west of Junction Road)

C2 – Upstream Signalised Crossing at Prince Edward Road West (west of Junction Road)

Footpath

F1 – Southern footpath of Prince Edward Road West (west of C1)

F2 – Southern footpath of Prince Edward Road West (east of C1)

2.10 From the survey results, it was found that the AM and PM peak 15-minute pedestrian flows occurred at 0845 – 0900 and 1800 – 1815 hours respectively. The AM and PM peak 15-minute pedestrian flows are presented in Figure 2.9.

Pedestrian Crossing Performance

2.11 The performance of signalised pedestrian crossings is evaluated by considering their Volume to Capacity Ratio (V/C). The analysis was undertaken using the empirical formula with reference to Volume 4 of the TPDM:

$$PC = K \times GTP \times W$$

where PC = Pedestrian crossing capacity in per/15-min

GTP = Green time proportion

i.e. $\frac{\text{Pedestrian green + Flashing green time}}{\text{Cycle time}}$

W = Lateral width of pedestrian crossing

K = A constant equivalent to saturation flow for pedestrians may be taken as 475 ped/m/15-min

2.12 The performance of signalised crossings are calculated and presented in Table 2.2.

TABLE 2.2 EXISTING PERFORMANCE OF SIGNALISED CROSSING

Ref.	Crossing Width (m)	Peak Period	Green Time (sec)		Cycle Time (sec)	GTP [1]	PC [2] (ped/ 15-min)	Flow (ped/ 15-min)	V/C [3]
			Pedestrian	Flashing					
C1	3.5	AM	10	7	120	0.14	235.5	78	**0.331**
		PM	11	7	115	0.16	260.2	75	**0.288**
C2	4.5	AM	60	7	120	0.56	1193.4	78	**0.065**
		PM	54	7	115	0.53	1133.8	75	**0.066**

Note: [1] GTP = (pedestrian green + flashing green time) ÷ cycle time
[2] PC = K × GTP × W, where K = 475 ped/m/15-min
[3] V/C = pedestrian flow ÷ PC

Index: C1 – Downstream Signalised Crossing at Prince Edward Road West (west of Junction Road)
C2 – Upstream Signalised Crossing at Prince Edward Road West (west of Junction Road)

2.13 The results in Table 2.2 indicate that the signalised pedestrian crossings now operate with capacities during the AM and PM peak periods.

Footpath Level-of-Service

2.14 The level-of-service (LOS) of a pedestrian walkway is dependent on its width and number of pedestrians using the facility. Description of the LOS is obtained from Volume 6 of the TPDM, and is presented in Table 2.3.

TABLE 2.3 DESCRIPTION OF PEDESTRIAN WALKWAY LOS

LOS	Flow Rate (ped/min/m)	Description
A	≤ 16	Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.
B	16 – 23	Sufficient space is provided for pedestrians to freely select their walking speeds, to bypass other pedestrians and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians and to respond to their presence in the selection of walking paths.
C	23 – 33	Sufficient space is available to select normal walking speeds and to bypass other pedestrians primarily in unidirectional stream. Where reverse direction or crossing movement exist, minor conflicts will occur, and speed and volume will be somewhat lower.
D	33 – 49	Freedom to select individual walking speeds and bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflicts is high and its avoidance requires changes of speeds and position. The LOS provides reasonable fluid flow; however considerable friction and interactions between pedestrians are likely to occur.
E	49 – 75	Virtually, all pedestrians would have their normal walking speeds restricted. At the lower range of this LOS, forward movement is possible only by shuffling. Space is insufficient to pass over slower pedestrians. Cross- and reverse-movement are possible only with extreme difficulties. Design volumes approach the limit of walking capacity with resulting stoppages and interruptions to flow.
F	> 75	Walking speeds are severely restricted. Forward progress is made only by shuffling. There are frequent and unavoidable conflicts with other pedestrians. Cross- and reverse-movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristics of queued pedestrians than of moving pedestrian streams.

Source: Volume 6 Chapter 10 of the TPDM

2.15 The LOS assessment is presented in Table 2.4.

TABLE 2.4 EXISTING LEVEL-OF-SERVICE ASSESSMENT

Ref.	Footpath	Total Width	Effective Width [1]	Peak Period	2-way Peak Pedestrian Flows		LOS
					Flow (ped/ 15-min)	Rate (ped/ min/m) [2]	
F1	Southern footpath of Prince Edward Road West (west of C1)	2.0	1.0	AM	186	12.4	A
				PM	195	13.0	A
F2	Southern footpath of Prince Edward Road West (east of C1)	2.5	1.5	AM	178	7.9	A
				PM	192	8.5	A

Note: [1] effective width = total width – (0.5m × 2)
[2] pedestrian flow rate = pedestrian flow ÷ 15 minutes ÷ effective width

2.16 The above results indicate that the surveyed footpaths currently operate with LOS A during the AM and PM peak periods. As stated in the TPDM, *"LOS C is desirable for most design at streets with dominant 'living' pedestrian activities"*. Hence, LOS A is considered as an acceptable level of service.

Public Transport Facilities

2.17 Access to road-based and rail-based public transport services from the subject site is convenient. The Exit B of MTR Sung Wong Toi Station is located around 300m or equivalent to around 5 minutes' walk from the subject site.

2.18 In addition, numerous franchised bus and green minibus routes operate along Prince Edward Road East, Prince Edward Road West and Junction Road, within 500 metres or about 10 minutes' walk away. Details of the road-based public transport services operating close to the subject site are presented in Figure 2.10 and Table 2.5.

TABLE 2.5 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE

Route No.	Routing	Frequency (min)
KMB 1	Star Ferry – Chuk Yuen Estate	8 – 20
KMB 1A	Star Ferry – Sau Mau Ping (Central)	7 – 15
KMB 2A	Mei Foo – Lok Wah	10 – 25
KMB 2D	Tung Tau Estate – Chak On Estate	20 – 30
KMB 2X	Choi Fook – Mei Foo	20 – 30
KMB 3B	Hung Hom Ferry – Tsz Wan Shan (Central)	20 – 30
KMB 5	Star Ferry – Fu Shan	9 – 25
KMB 5A	Kai Tak (Kai Ching Estate) – Star Ferry	25 – 30
KMB 5C	Star Ferry – Tsz Wan Shan (Central)	8 – 20
KMB 5P	Star Ferry – Tsz Wan Shan (Central)	AM & PM peak
KMB 6D	Mei Foo – Ngau Tau Kok	12 – 30
KMB 6P	So Uk – Lei Yue Mun Estate	AM & PM peak
KMB 6X	Shing Tak Street – Mei Foo	PM peak
KMB 7B	Hung Hom (Hung Luen Road) – Lok Fu	20 – 35
KMB 9	Tsim Sha Tsui East (Mody Road) – Choi Fook	15 – 30
KMB 10	Choi Wan – Tai Kok Tsui (Circular)	15 – 30

TABLE 2.5 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE (CONT'D)

Route No.	Routing	Frequency (min)
KMB 11	Kowloon Station – Diamond Hill Station	12 – 30
KMB 11B	Kowloon City Ferry – Kwun Tong (Tsui Ping Road)	12 – 30
KMB 11D	Lok Fu – Kwun Tong Ferry	15 – 30
KMB 11K	Hung Hom Station – Chuk Yuen Estate	20 – 35
KMB 11X	Hung Hom Station – Sau Mau Ping (Upper)	9 – 25
KMB 12A	Whampoa Garden – Cheung Sha Wan (Hoi Tat Estate)	10 – 25
KMB 13D	Tai Kok Tsui (Island Harbourview) – Po Tat	15 – 30
KMB 14	China Ferry Terminal – Lei Yue Mun Estate	12 – 30
KMB 15	Hung Hom (Hung Luen Road) – Ping Tin	12 – 30
KMB 16	Mong Kok (Park Avenue) – Lam Tin (Kwong Tin Estate)	8 – 30
KMB 16P	Mong Kok (Park Avenue) – Kwun Tong Ferry	AM & PM peak
KMB 16X	Mong Kok (Park Avenue) – Lam Tin (Kwong Tin Estate)	AM & PM peak
KMB 17	Ho Man Tin (Oi Man Estate) – Kwun Tong (Yue Man Square)	5 – 25
CTB 20	Kai Tak (Muk On Street) – Cheung Sha Wan (Hoi Tat)	12 – 30
CTB 20A	High Speed Rail West Kowloon Station – Kai Tak Cruise Terminal	25 – 30
KMB 21	Hung Hom Station – Choi Wan	20 – 30
CTB 22	Kai Tak Cruise Terminal – Kowloon Tong	20 – 35
CTB 22M	Kai Tak Cruise Terminal – To Kwa Wan	20 – 30
KMB 24	Kai Yip – Mong Kok (Circular)	20 – 30
KMB 26	Tsim Sha Tsui East – Shun Tin	8 – 25
KMB 27	Shun Tin – Mong Kok (Circular)	6 – 20
KMB 27X	Shun Tin – Olympic Station	AM & PM peak
KMB 28	Star Ferry – Lok Wah	10 – 25
KMB 42	Cheung Hong Estate – Shun Lee	10 – 25
KMB 61X	Kowloon City Ferry – Tuen Mun Central	10 – 25
KMB 75X	Kowloon City Ferry – Tai Po (Fu Shin)	10 – 25
KMB 85	Kowloon City Ferry – Fo Tan Chun Yeung Estate	20 – 30
KMB 85A	Kowloon City Ferry – Kwong Yuen	20 – 30
KMB 85B	Kowloon City Ferry – Chun Shek	AM & PM peak
KMB 85X	Hung Luen Road – Man On Shan Town Centre	9 – 30
KMB 92R	Sai Kung – Star Ferry	weekend
KMB 93K	Mong Kok East Station – Po Lam	17 – 30
KMB 95	Kowloon Station – Tsui Lam	12 – 30
KMB 98C	Mei Foo – Hang Hau (North)	10 – 25
KMB 98E	Mei Foo – Hang Hau (North)	AM & PM peak
KMB 98S	Lohas Park Station – Mei Foo	AM & PM peak
KMB / CTB 101	Kennedy Town – Kwun Tong (Yue Man Square)	4 – 20
KMB / CTB 106	Siu Sai Wan (Island Resort) – Wong Tai Sin	6 – 22
KMB / CTB 106A	Wong Tai Sin – Taikoo (Kornhill Plaza)	AM peak
KMB / CTB 106P	Siu Sai Wan (Island Resort) – Wong Tai Sin	AM & PM peak
KMB / CTB 107	Wah Kwai – Kowloon Bay	5 – 20
KMB 108	Braemar Hill – Kai Yip	10 – 30
KMB / CTB 111	Central (Macau Ferry) – Ping Shek	4 – 30
KMB / CTB 111P	Choi Fook – Central (Macau Ferry)	AM & PM peak
KMB / CTB 113	Kennedy Town (Belcher Bay) – Choi Hung	10 – 29
KMB / CTB 116	Quarry Bay – Tsz Wan Shan (Central)	4 – 18
KMB 203E	Kowloon Station – Choi Hung	15 – 30
KMB 208	Broadcast Drive – Tsim Sha Tsui East	25 – 30
KMB 213D	Sau Mau Ping (Central) – Mong Kok (Circular)	10 – 20

TABLE 2.5 ROAD-BASED PUBLIC TRANSPORT SERVICES OPERATING NEAR THE SUBJECT SITE (CONT'D)

KMB 275X	Tai Po (Fu Shin) – Hung Hom (Hung Luen Road)	AM & PM peak
KMB 293S	Hang Hau (Ngan O Road) – Mei Foo	overnight
KMB 296C	Cheung Sha Wan (Hoi Ying Estate) – Sheung Tak	15 – 30
KMB 296P	Sheung Tak – Lai Chi Kok Station	AM & PM peak
KMB 297	Hung Hom (Hung Luen Road) – Po Lam	15 – 30
KMB 298C	Lohas Park Station – Mei Foo	AM & PM peak
KMB 298X	Hang Hau (North) (Tseung Kwan O Hospital) – Cheung Sha Wan (Kom Tsun Street)	AM & PM peak
CTB 608	Kowloon City (Shing Tak Street) – Shau Kei Wan	10 – 30
CTB 608P	Siu Sai Wan (Island Resort) – Kowloon City (Shing Tak Street)	AM peak
CTB 793	Tseung Kwan O Industrial Estate – So Uk	15 – 20
CTB 796X	Tsim Sha Tsui East – Tseung Kwan O Industrial Estate / Tseung Kwan O Station	12 – 30
CTB A22	Lam Tin Station – Airport	15 – 60
CTB E23	Airport – Tsz Wan Shan (South)	12 – 30
CTB E23A	Tsz Wan Shan (South) – Airport	20 – 30
CTB N20	Island Harbourview – Kai Tak (Muk On Street)	overnight
CTB N23	Tung Chung Station – Tsz Wan Shan (North)	overnight
KMB / CTB N121	Central (Macau Ferry) – Ngau Tau Kok	overnight
KMB N213	Tsim Sha Tsui East (Mody Road) – On Tai (West)	overnight
KMB N216	Hung Hom Station – Yau Tong	overnight
KMB N293	Mong Kok (Park Avenue) – Sheung Tak	20 – 30
CTB N796	Lohas Park – Mong Kok	20 – 30
GMB 2	Whampoa Garden – Festival Walk	10 – 25
GMB 2A	Whampoa Garden – Festival Walk	10 – 25
GMB 13	Kowloon Tong (Broadcast Drive) – Hung Hom Ferry Pier	15 – 30
GMB 17M	Prince Edward Station – Kowloon Hospital	7 – 15
GMB 25A	Kowloon Tong Station – Tung Tau Estate	15 – 20
GMB 25B	The Latitude – Kowloon Tong Station	15 – 18
GMB 25M	Tung Tau Estate – Kowloon Tong Station	6 – 8
GMB 46	Island Harbourview – Richland Gardens	3 – 15
GMB 49	Shun Tin Estate – Kowloon City Ferry Pier	25
GMB 61	Mong Kok Station – Siu Sai Wan (Island Resort)	overnight
GMB 66S	Fu Shan Estate – Mong Kok	overnight
GMB 69	Kowloon City (Lion Rock Road) – Laguna City	20 – 30
GMB 69A	Prince Edward Station – Laguna City	15 – 20
GMB 70	Island Harbourview – Diamond Hill Station	4 – 12
GMB 70A	Olympic Station – Diamond Hill Station	30 – 60
GMB 88	Kai Ching Estate – Wong Tai Sin	12 – 30
GMB 105	To Kwa Wan – Hong Sing Garden	5 – 20
GMB 110	Tiu Keng Leng Station – Kowloon City (Circular)	15 – 30

Note: KMB – Kowloon Motor Bus CTB – Citybus
GMB – Green Minibus

3.0 THE PROPOSED ELDERLY HOME

Development Schedule

3.1 The Proposed Elderly Home consists of 1 block with 141 beds for elderly and is targeted for completion by 2027.

Internal Transport Facilities

3.2 The Hong Kong Planning Standards and Guidelines (HKPSG) have no recommendations on the provision of internal transport facilities for elderly home. Taking into consideration the narrow site frontage along Prince Edward Road West, which is only around 10m, and to satisfy the operational needs, the following internal transport facilities, which is same as TPB No. A/K10/261**,** are recommended:

- 1 lay-by with dimensions 9m(L) × 3.5m(W) × 3.6m(H) for shared use by taxi, private car, ambulance, LGV and mini coach, and
- 1 car parking space for persons with disabilities of dimensions 5m(L) × 3.5m(W) × 2.4m(H).

3.3 A 5m wide run-in / out is proposed, and the proposed ground floor plan is shown in Figure 3.1.

3.4 In order to understand the operation and to ascertain the parking and loading / unloading needs of the Proposed Elderly Home, weekday and weekend traffic generation surveys were conducted at similar elderly homes **located in Kowloon**. Details of the surveyed elderly homes are given in Table 3.1.

TABLE 3.1 DETAILS OF ELDERLY HOMES SURVEYED

Location of Elderly Home	No. of Beds	Accessibility to Public Transport Services	Internal Car Park
(A) 351 Prince Edward Road West, Kowloon City	135	This elderly home is located adjoining to the subject site. Numerous bus and GMB routes operate in the vicinity, and the nearest MTR Sung Wong Toi Station is located within 500m from this elderly home.	Yes
(B) 8 Kung Lok Road, Kwun Tong	266	Access to public transport services from this elderly home is convenient with numerous bus and GMB routes operate in the vicinity. The nearest MTR Ngau Tau Kok Station is located within 500m from this elderly home.	Yes
(C) 88 Kung Lok Road, Kwun Tong	226	Access to public transport services from this elderly home is convenient with numerous bus and GMB routes operate in the vicinity. The nearest MTR Ngau Tau Kok Station is located within 500m from this elderly home.	Yes

3.5 The survey results are summarised in Table 3.2, and detail survey records are presented in Appendix B.

TABLE 3.2 SUMMARY OF TRAFFIC GENERATION SURVEYS

Location of Elderly Home	No. of Beds [a]	Day of Week	No. of Vehicle Observed (veh/day) [b]	Demand Rate (veh/day/bed) [b] ÷ [a]	Dwell Time of Vehicle (min)	
					Average	Maximum
Parking Demand (related to visitation)						
(A) 351 Prince Edward Road West, Kowloon City	135	Weekday	0	0		
		Saturday	2	0.0148	31.5	33
		Sunday	2	0.0148	24.0	32
(B) 8 Kung Lok Road, Kwun Tong	266	Weekday	2	0.0075	23.5	27
		Saturday	3	0.0113	30.3	43
		Sunday	4	0.0150	27.0	46
(C) 88 Kung Lok Road, Kwun Tong	226	Weekday	2	0.0088	39.0	44
		Saturday	1	0.0044	31.0	31
		Sunday	2	0.0088	41.5	42
Maximum Demand for Parking				**0.0150**		
Loading / Unloading Demand (related to pick-up / drop-off and goods delivery)						
(A) 351 Prince Edward Road West, Kowloon City	135	Weekday	8	0.0593	4.4	8
		Saturday	4	0.0296	6.0	14
		Sunday	3	0.0222	2.3	5
(B) 8 Kung Lok Road, Kwun Tong	266	Weekday	13	0.0489	5.3	23
		Saturday	11	0.0414	3.9	11
		Sunday	11	0.0414	3.4	9
(C) 88 Kung Lok Road, Kwun Tong	226	Weekday	11	0.0487	6.9	21
		Saturday	11	0.0487	3.8	15
		Sunday	9	0.0398	6.9	18
Maximum Demand for Loading / Unloading				**0.0593**		

(i) Parking Demand (related to visitation)

3.6 Table 3.2 shows that several private car trips generated per day and these cars stayed for less than an hour. During the survey period, these cars did not arrive at the same time.

3.7 Based on the maximum parking demand obtained from the survey, i.e. 0.0150 veh/day/bed, the Proposed Elderly Home with 141 beds is expected to generate no more than 2.1 parking trips daily [Calculation: 0.0150 × 141], and is considered low.

(ii) Loading / Unloading Demand (related to pick-up / drop-off and goods delivery)

3.8 Several vehicle trips related to goods delivery and passenger pick-up / drop-off were observed during the survey. As shown in Appendix B, these vehicles include taxi, private car, goods van, LGV, mini coach and ambulance. No HGV and coach were observed.

3.9 During the survey period, these vehicles did not arrive at the same time and the average dwell time is short, i.e. stay of only 2.3 – 6.9 minutes.

3.10 Based on the maximum loading / unloading demand i.e. related to pick-up / drop-off and goods delivery, obtained from the survey, i.e. 0.0593 veh/day/bed, the Proposed Elderly Home is expected to generate no more than 8.4 loading / unloading trips related to pick-up / drop-off and goods delivery daily [Calculation: 0.0593 × 141] , which is also low.

3.11 Taking into consideration the low parking demand (related to visitation) and loading / unloading demand (related to pick-up / drop-off and goods delivery) and that the site frontage along Prince Edward Road West is narrow, i.e. only around 10m, the provision of one lay-by for shared use by taxi / private car / ambulance / LGV / mini coach and one car parking space for persons with disabilities, is considered adequate and acceptable from traffic engineering point of view.

Swept Path Analysis

3.12 The CAD-based swept path analysis programme, *Autodesk Vehicle Tracking*, was used to check the ease of manoeuvring of vehicles, and are found to have no problems. The swept path analysis drawings are found in the Appendix C.

4.0 TRAFFIC IMPACT

Design Year

4.1 The completion of the Proposed Elderly Home in 2027 and the design year adopted for the capacity analysis is 2031.

Analysis on Traffic Generation

4.2 The subject site falls within the *"Residential (Group B)"* zone in the Approved Ma Tau Kok Outline Zoning Plan (OZP) No. S/K10/30, and according to the OZP, residential use is always permitted. An extract from OZP No. S/K10/30 is attached in Appendix D.

4.3 In order to assess the potential traffic impact of the Proposed Elderly Home, a traffic generation analysis is conducted to compare the Proposed Elderly Home and a hypothetical residential building (the "Hypothetical Residential Building") at the subject site.

4.4 The traffic generation for the Proposed Elderly Home and Hypothetical Residential Building is estimated below:

(i) Proposed Elderly Home

4.5 To quantify the traffic generated by the Proposed Elderly Home, reference is made to the traffic generation from the similar elderly homes presented in Table 3.1. The survey results are presented in Table 4.1.

TABLE 4.1 TRIP GENERATION RATE FOR SIMILAR ELDERLY HOME

Site	No. of Beds	Traffic Generation (pcu/hr)				Trip Generation Rate (pcu/hr/bed)			
		AM Peak		PM Peak		AM Peak		PM Peak	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Weekday									
(A) 351 Prince Edward Road West in Kowloon City	135	2	2	1.5	1.5	0.0148	0.0148	0.0111	0.0111
(B) 8 Kung Lok Road in Kwun Tong	266	3	3	2.5	2.5	0.0113	0.0113	0.0094	0.0094
(C) 88 Kung Lok Road in Kwun Tong	226	3.5	3.5	3	3	0.0155	0.0155	0.0133	0.0133
Saturday									
(A) 351 Prince Edward Road West in Kowloon City	135	2.5	2.5	1	1	0.0185	0.0185	0.0074	0.0074
(B) 8 Kung Lok Road in Kwun Tong	266	3	3	2	2	0.0113	0.0113	0.0075	0.0075
(C) 88 Kung Lok Road in Kwun Tong	226	2.5	2.5	3	3	0.0111	0.0111	0.0133	0.0133

TABLE 4.1 TRIP GENERATION RATE FOR SIMILAR ELDERLY HOME (CONT'D)

Site	No. of Beds	Traffic Generation (pcu/hr)				Trip Generation Rate (pcu/hr/bed)			
		AM Peak		PM Peak		AM Peak		PM Peak	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Sunday									
(A) 351 Prince Edward Road West in Kowloon City	135	1	1	1	2	0.0074	0.0074	0.0074	0.0148
(B) 8 Kung Lok Road in Kwun Tong	266	2	2	3	3	0.0075	0.0075	0.0113	0.0113
(C) 88 Kung Lok Road in Kwun Tong	226	3.5	3.5	1	1	0.0155	0.0155	0.0044	0.0044
Adopted Trip Generation Rate (maximum)						**0.0185**	**0.0185**	**0.0133**	**0.0133**

4.6 To conduct the worst case scenario, the maximum trip generation rates identified from weekday and weekend surveys are adopted to calculate the traffic generated associated with the Proposed Elderly Home, and the calculated traffic generation is presented in Table 4.2.

TABLE 4.2 PROPOSED ELDERLY HOME TRAFFIC GENERATION

Proposed Elderly Home (with 141 beds)	Unit	AM Peak		PM Peak	
		IN	OUT	IN	OUT
Traffic Generation	pcu/hr	3	3	2	2

(ii) Hypothetical Residential Building

4.7 According to the Authorised Person, the Hypothetical Residential Building has 60 flats with average flat size of around 50m^2. Hence, trip generation rates for "*Private Housing: High-density / R(A)*" from Transport Planning and Design Manual (TPDM) are adopted and these are presented in Table 4.3.

TABLE 4.3 RESIDENTIAL TRIP GENERATION RATES FROM TPDM

Private Housing: High-density / R(A)	Unit	AM Peak		PM Peak	
		IN	OUT	IN	OUT
Trip Generation Rate	pcu/hr/flat	0.0425	0.0718	0.0370	0.0286

4.8 The trip generation rates presented in Table 4.3 are used to calculate the traffic generated associated with the Hypothetical Residential Building, and the calculated traffic generation is presented in Table 4.4.

TABLE 4.4 HYPOTHETICAL RESIDENTIAL BUILDING TRAFFIC GENERATION

Hypothetical Residential Building (with 60 flats)	Unit	AM Peak		PM Peak	
		IN	OUT	IN	OUT
Traffic Generation	pcu/hr	3	5	3	2

4.9 The comparison of traffic generation for the Proposed Elderly Home (Table 4.2) and Hypothetical Residential Building (Table 4.4) is presented in Table 4.5.

TABLE 4.5 COMPARISON OF TRAFFIC GENERATION

Development	Traffic Generation (pcu/hour)					
	AM Peak			PM Peak		
	IN	OUT	2-way	IN	OUT	2-way
Hypothetical Residential Building [a]	3	5	8	3	2	5
Proposed Elderly Home [b]	3	3	6	2	2	4
Difference [b] – [a]	**0 (0%)**	**–2 (–40%)**	**–2 (–25%)**	**–1 (–33%)**	**0 (0%)**	**–1 (–20%)**

4.10 Table 4.5 shows that the Proposed Elderly Home is expected to generate **2 and 1 pcu (2-way) less than** the Hypothetical Residential Building during the AM and PM peak hours respectively, or equivalent to **25% and 20% less traffic**. Hence, **the Proposed Elderly Home is a better-off scheme** compared to the Hypothetical Residential Building.

Planned Developments

4.11 The major planned developments in the vicinity of the Proposed Elderly Home are summarised in Table 4.6.

TABLE 4.6 DETAILS OF MAJOR PLANNED DEVELOPMENTS

Ref.	Location	Use	Development Parameter (Approx.)
A	222 Argyle Street	Hospital	around 118 beds
B	URA Project at Shing Tak Street / Ma Tau Chung Road (CBS-1:KC)	Private Housing	around 640 flats, retail GFA of around 6,449m^2
C	3 – 13 Nga Tsin Long Road	Private Housing	around 110 flats, retail GFA of around 1,190m^2
D	4 – 24 Nam Kok Road	Private Housing	around 313 flats, retail GFA of around 1,826m^2
E	URA Project at Nga Tsin Wai Road / Carpenter Road (KC-017)	Private Housing	around 4,353 flats, retail GFA of around 25,302m^2, G/IC of around 47,000m^2 and public vehicle park of around 360 spaces
F	URA Project at Kai Tak Road / Sa Po Road (KC-015)	Private Housing	around 810 flats, retail GFA of around 8,028m^2 and public vehicle park of around 300 spaces
G	Redevelopment of Kowloon City Plaza at New Kowloon Inland Lot No. 6056	Private Housing	around 850 flats, retail GFA of around 8,882m^2 and public vehicle park of around 414 spaces
H	26A – B Grampian Road and 13A – B Junction Road	Private Housing	around 72 flats
I	84 – 98 Junction Road	Private Housing	around 140 flats, retail GFA of around 1,373m^2
J	65, 73 and 75 Lion Rock Road	Private Housing	around 150 flats, retail GFA of around 640m^2
K	93 – 95 Hau Wong Road	Private Housing	around 50 flats, retail GFA of around 450m^2
L	452 – 464 Prince Edward Road West	Private Housing	domestic GFA of around 5,793m^2 and retail GFA of around 1,159m^2

TABLE 4.6 DETAILS OF MAJOR PLANNED DEVELOPMENTS (CONT'D)

Ref.	Location	Use	Development Parameter (Approx.)
M	20 – 20A Grampian Road	Private Housing	domestic GFA of around 2,168m2
N	57A Nga Tsin Wai Road	Private Housing	around 11 flats
O	55 Nga Tsin Wai Road	Private Housing	domestic GFA of around 1,106m^2

4.12 The major planned developments listed in Table 4.6 have been included in the traffic forecast.

Traffic Forecast

4.13 The 2031 design traffic flows for capacity analysis are derived with reference to the following:

i. 2031 peak hour traffic models from the BDTM;
ii. planned developments located in the vicinity; and
iii. traffic generation of the Proposed Elderly Home.

4.14 The flow diagram showing the traffic generated by the Proposed Elderly Home is presented in Figure 4.1, and the 2031 peak hour traffic flows without and with the Proposed Elderly Home are shown in Figures 4.2 and 4.3 respectively.

2031 Junction Capacity Analysis

4.15 The 2031 junction capacity analysis for the cases without and with the Proposed Elderly Home is summarised in Table 4.7, and detailed calculations are found in Appendix A.

TABLE 4.7 2031 JUNCTION OPERATIONAL PERFORMANCE

Ref.	Junction	Performance Indicator [(1)]	Without Proposed Elderly Home		With Proposed Elderly Home	
			AM Peak	PM Peak	AM Peak	PM Peak
J1	Prince Edward Road West / Junction Road	RC	25%	22%	25%	22%
J2	Prince Edward Road West / Forfar Road	RFC	0.363	0.419	0.364	0.419
J3	Prince Edward Road West / Lomond Road	RC	47%	55%	47%	55%
J4	Argyle Street / Lomond Street	RC	23%	32%	23%	32%
J5	Kowloon City Roundabout	RFC	0.848	0.828	0.848	0.828
J6	Prince Edward Road West / La Salle Road	RC	43%	36%	43%	36%

Note: [(1)] RC – Reserve Capacity RFC – Ratio-of-Flow to Capacity

4.16 The above results indicate that the analysed junctions are expected to operate with sufficient capacity during the peak hours in 2031. The junctions analysed have sufficient capacity to accommodate the (i) expected traffic growth; and (ii) additional traffic generated by the Proposed Elderly Home.

4.17 The traffic generated by the Proposed Elderly Home is expected to have minimal impact to the capacity of the analysed junctions. It can be concluded that the Proposed Elderly Home is acceptable from traffic engineering terms.

Pedestrian Generation

4.18 Pedestrians generated by the Proposed Elderly Home are estimated based on the pedestrian generation surveys conducted. The surveyed and adopted pedestrian generation rates are found in Table 4.8.

TABLE 4.8 PEDESTRIAN GENERATION RATES

Site	No. of Beds	Pedestrian Generation (ped/15-min)				Pedestrian Generation Rate (ped/15-min/bed)			
		AM Peak		PM Peak		AM Peak		PM Peak	
		IN	OUT	IN	OUT	IN	OUT	IN	OUT
Weekday									
(A) 351 Prince Edward Road West in Kowloon City	135	8	8	9	6	0.0593	0.0593	0.0667	0.0444
(B) 8 Kung Lok Road in Kwun Tong	266	11	5	7	21	0.0414	0.0188	0.0263	0.0789
(C) 88 Kung Lok Road in Kwun Tong	226	14	4	3	15	0.0619	0.0177	0.0133	0.0664
Saturday									
(A) 351 Prince Edward Road West in Kowloon City	135	3	5	1	3	0.0222	0.0370	0.0074	0.0222
(B) 8 Kung Lok Road in Kwun Tong	266	6	9	7	26	0.0226	0.0338	0.0263	0.0977
(C) 88 Kung Lok Road in Kwun Tong	226	5	9	3	25	0.0221	0.0398	0.0133	0.1106
Sunday									
(A) 351 Prince Edward Road West in Kowloon City	135	2	4	2	3	0.0148	0.0296	0.0148	0.0222
(B) 8 Kung Lok Road in Kwun Tong	266	13	7	4	22	0.0489	0.0263	0.0150	0.0827
(C) 88 Kung Lok Road in Kwun Tong	226	8	2	3	8	0.0354	0.0088	0.0133	0.0354
Adopted Pedestrian Generation Rate (maximum)						**0.0619**	**0.0593**	**0.0667**	**0.1106**

4.19 To conduct the worst case scenario, the maximum pedestrian generation rates identified from weekday and weekend surveys are adopted to calculate the pedestrians generated associated with the Proposed Elderly Home, and the calculated pedestrian generation is presented in Table 4.9.

TABLE 4.9 PROPOSED ELDERLY HOME PEDESTRIAN GENERATION

Proposed Elderly Home (with 141 beds)	Unit	AM Peak		PM Peak	
		IN	OUT	IN	OUT
Pedestrian Generation	ped/15-min	9	9	10	16

2031 Pedestrian Crossing Assessment

4.20 In order to produce the pedestrian forecast to year 2031, reference is made to the latest *"Territorial Population and Employment Data Matrix"* ("TPEDM") published by Planning Department, and the projected population and employment data is summarised in Table 4.10.

TABLE 4.10 TPEDM DATA FOR KOWLOON CITY

Year	Population	Employment	Total
2019	429,300	212,000	**641,300**
2026	451,100	237,900	**689,000**
2031	420,050	227,850	**647,900**
Annual Growth Rate			**0.09%**

4.21 Table 4.10 shows that the annual growth rate obtained from TPEDM is modest, i.e. 0.09%. To err on the high side, the traffic and pedestrian growth rate of **1%** per annum is adopted to produce the pedestrian forecast for year 2031.

4.22 The 2031 peak 15-minute pedestrian flows without and with the Proposed Elderly Home are shown in Figures 4.4 and 4.5 respectively, and the performance of signalised pedestrian crossings in 2031 is assessed as shown in Table 4.11.

TABLE 4.11 2031 PERFORMANCE OF SIGNALISED CROSSING

Ref.	Crossing Width (m)	Peak Period	Green Time (sec)		Cycle Time (sec)	GTP [1]	PC [2] (ped/ 15-min)	Without Proposed Elderly Home		With Proposed Elderly Home	
			Pedestrian	Flashing				Flow (ped/ 15-min)	V/C [3]	Flow (ped/ 15-min)	V/C [3]
C1	3.5	AM	10	7	120	0.14	235.5	84	**0.357**	91	**0.386**
		PM	11	7	115	0.16	260.2	81	**0.311**	88	**0.338**
C2	4.5	AM	60	7	120	0.56	1193.4	84	**0.070**	91	**0.076**
		PM	54	7	115	0.53	1133.8	81	**0.071**	88	**0.078**

Note: [1] GTP = (pedestrian green + flashing green time) ÷ cycle time
[2] PC = K × GTP × W, where K = 475 ped/m/15-min
[3] V/C = pedestrian flow ÷ PC

Index: C1 – Downstream Signalised Crossing at Prince Edward Road West (west of Junction Road)
C2 – Upstream Signalised Crossing at Prince Edward Road West (west of Junction Road)

4.23 The results in Table 4.11 indicate that the signalised pedestrian crossings would operate with capacities during the AM and PM peak periods in 2031.

2031 Level-of-Service Assessment

4.24 The LOS assessment is presented in Table 4.12.

TABLE 4.12 2031 LEVEL-OF-SERVICE ASSESSMENT

Ref.	Footpath	Peak Period	2-way Peak Pedestrian Flows					
			Without Proposed Elderly Home			With Proposed Elderly Home		
			Flow (ped/ 15-min)	Rate (ped/ min/m)	LOS	Flow (ped/ 15-min)	Rate (ped/ min/m)	LOS
F1	Southern footpath of Prince Edward Road West (west of C1)	AM	200	13.3	A	218	14.5	A
		PM	210	14.0	A	222	14.8	A
F2	Southern footpath of Prince Edward Road West (east of C1)	AM	191	8.5	A	217	9.6	A
		PM	206	9.2	A	223	9.9	A

4.25 The above results indicate that the analysed footpaths are expected to operate with LOS A during the peak hours in 2031. The results show that the footpaths analysed has sufficient capacity to accommodate the (i) expected pedestrian growth; and (ii) additional pedestrians generated by the Proposed Elderly Home.

Traffic Impact during Construction

4.26 During construction stage, construction vehicles would access the subject site via Prince Edward Road West. In view that the Proposed Elderly Home is small with total GFA of around 2,915m^2, the construction traffic is only several vehicles a day, say 1 veh/hr or 2.5 pcu/hr (one-way).

4.27 Given the low traffic generation during construction stage, it is anticipated that construction of the Proposed Elderly Home would not cause adverse traffic impact to the local road network from traffic engineering point of view.

5.0 CONCLUSION

5.1 The subject site is located at 349 Prince Edward Road West in Kowloon City. The Applicant intends to construct an elderly home with 141 beds at the subject site.

5.2 In view of the site constraints and to satisfy the operational needs, the following internal transport facilities are proposed for the Proposed Elderly Home:

- 1 lay-by of dimensions 9m(L) × 3.5m(W) × 3.6m(H) for shared use by taxi, private car, ambulance, LGV and mini coach; and
- 1 car parking space for persons with disabilities of dimensions 5m(L) × 3.5m(W) × 2.4m(H)

5.3 The traffic generation of the Proposed Elderly Home is estimated to be **2 and 1 pcu (2-way) less than** the Hypothetical Residential Building during the AM and PM peak hours respectively, or equivalent to **25% and 20% less traffic**. Compared to the Hypothetical Residential Development, the Proposed Elderly Home is a better-off scheme.

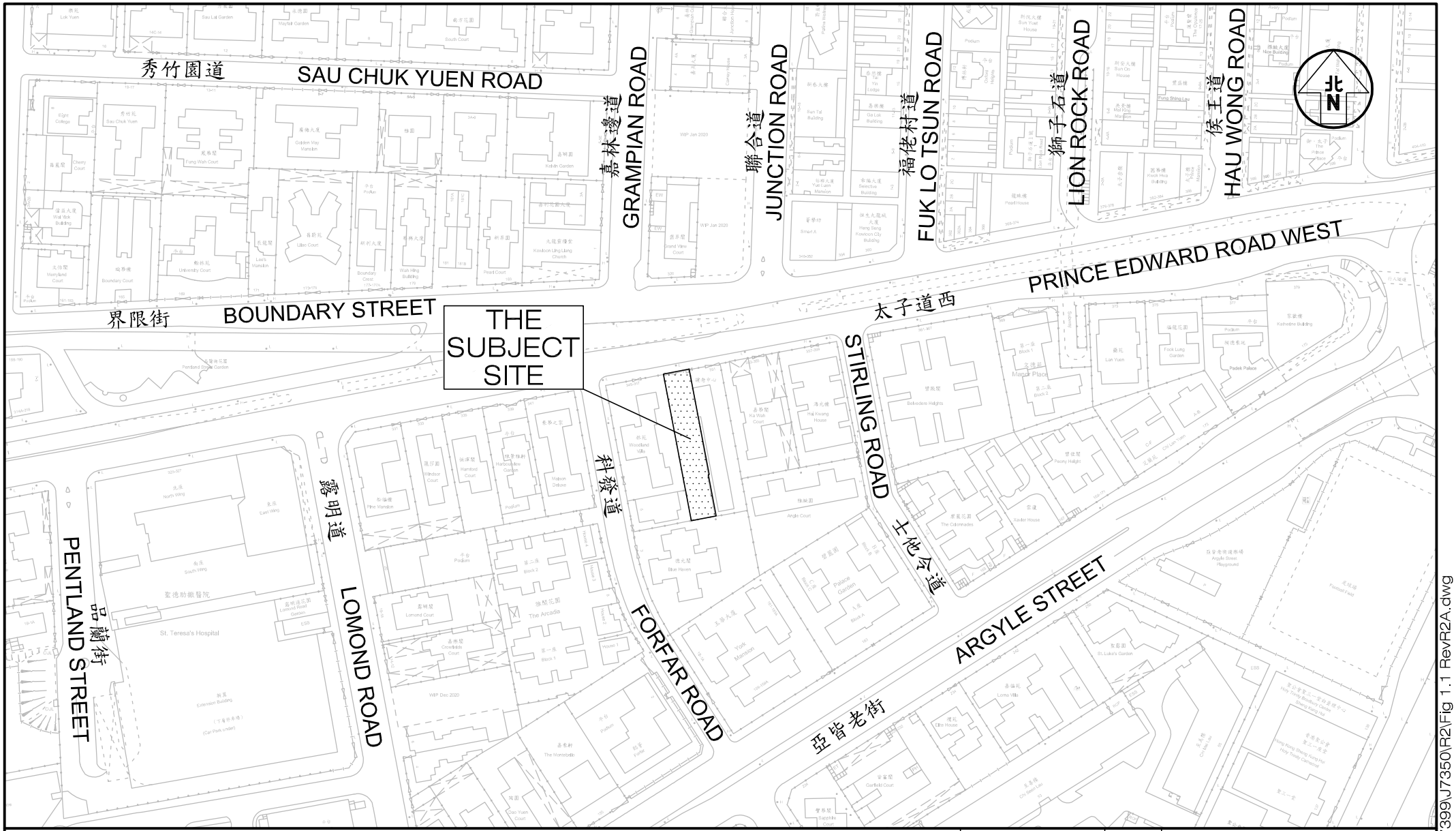
5.4 Manual classified counts were conducted at junctions, which are located in the vicinity in order to establish the existing traffic flows during the AM and PM peak hours. The 2031 design traffic flows are derived with reference to the latest BDTM and have taken into account the planned developments in the vicinity of the subject site.

5.5 The 2031 junction capacity analysis was undertaken for the cases without and with the Proposed Elderly Home. The junctions analysed have sufficient capacity to accommodate the expected traffic flows in 2031 and the traffic generated by the Proposed Elderly Home.

5.6 Pedestrian counts were conducted at the footpaths and pedestrian crossings in the vicinity of the subject site in order to estimate the future pedestrian flows during the AM and PM peak periods. The LOS and pedestrian crossing assessments demonstrate that the analysed footpaths and pedestrian crossings have sufficient capacity to accommodate the estimated pedestrian flows in 2031.

5.7 The TIA concluded that the Proposed Elderly Home will result in **no** adverse traffic impact to the surrounding road network. From traffic engineering grounds, the Proposed Elderly Home is acceptable.

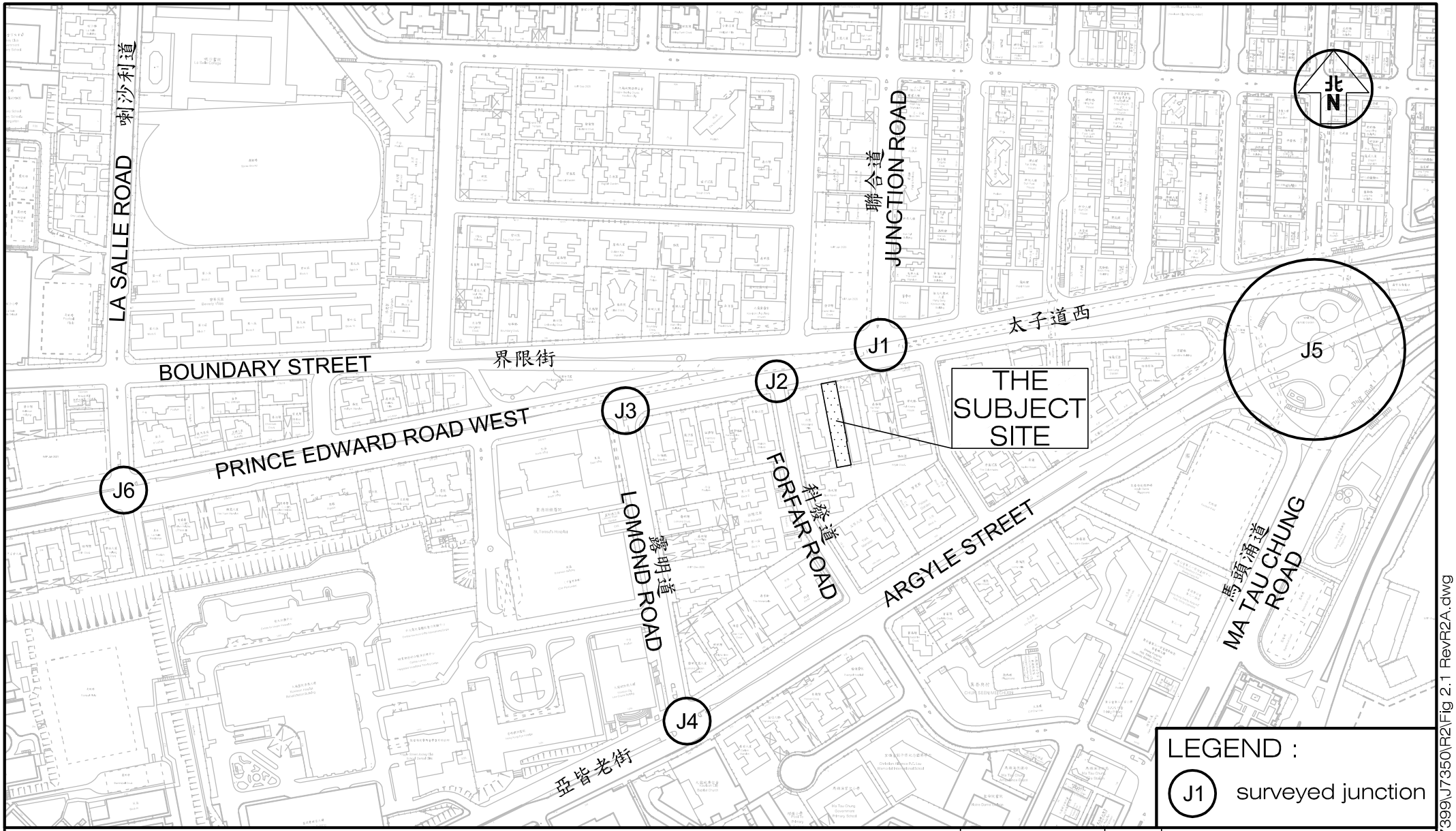
Figures



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 1.1 / Revision R2A
Figure Title	LOCATION OF THE SUBJECT SITE	Designed by THC / Drawn by CCL / Checked by KC	Scale in A4 1 : 4,000 / Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

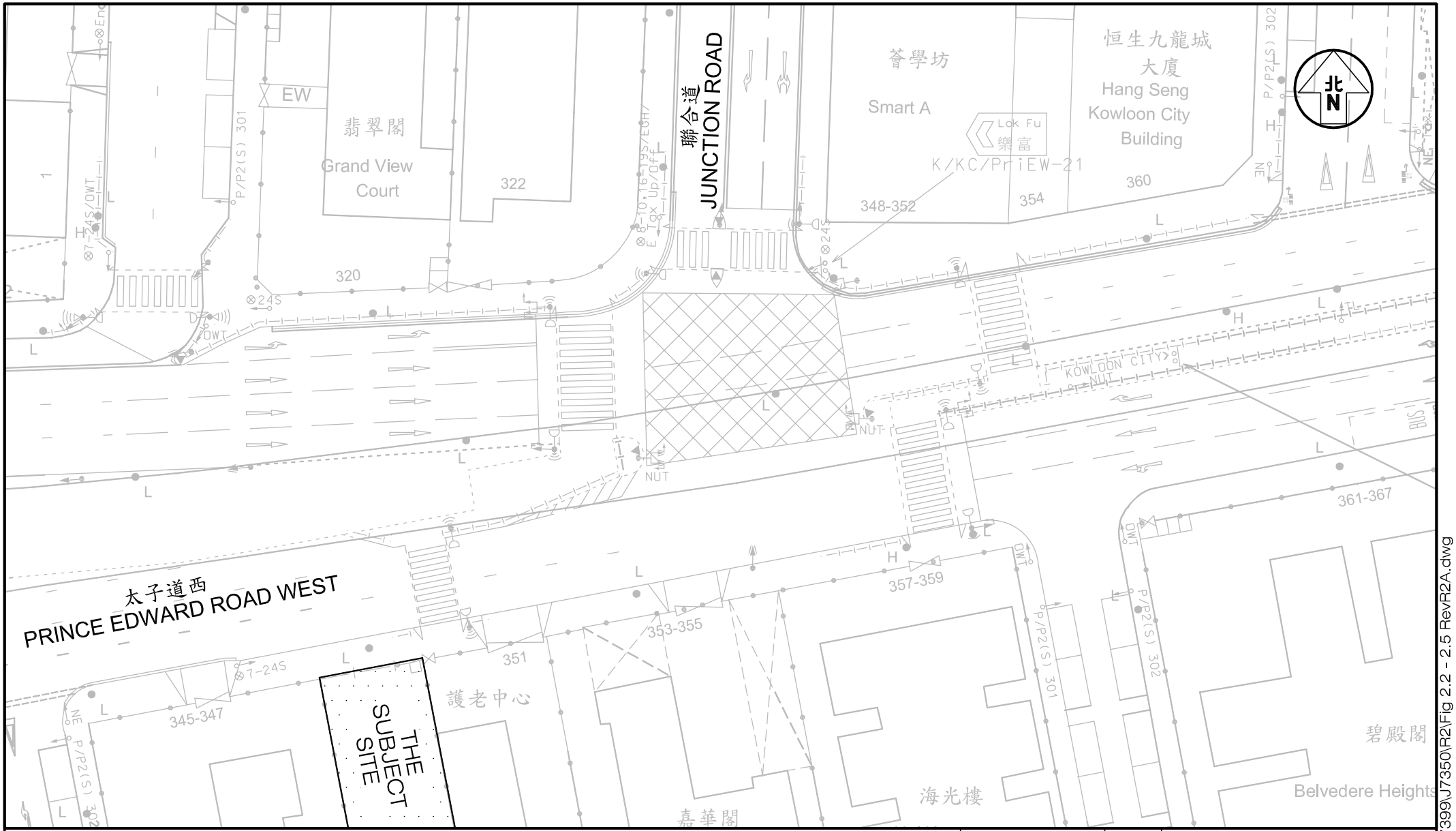
T:\JOB\J7350-J7399\J7350\R2\Fig 1.1 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 2.1 / Revision R2A
Figure Title	LOCATION OF THE SURVEYED JUNCTIONS	Designed by THC / Drawn by CCL / Checked by KC	Scale in A4 1 : 4,000 / Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

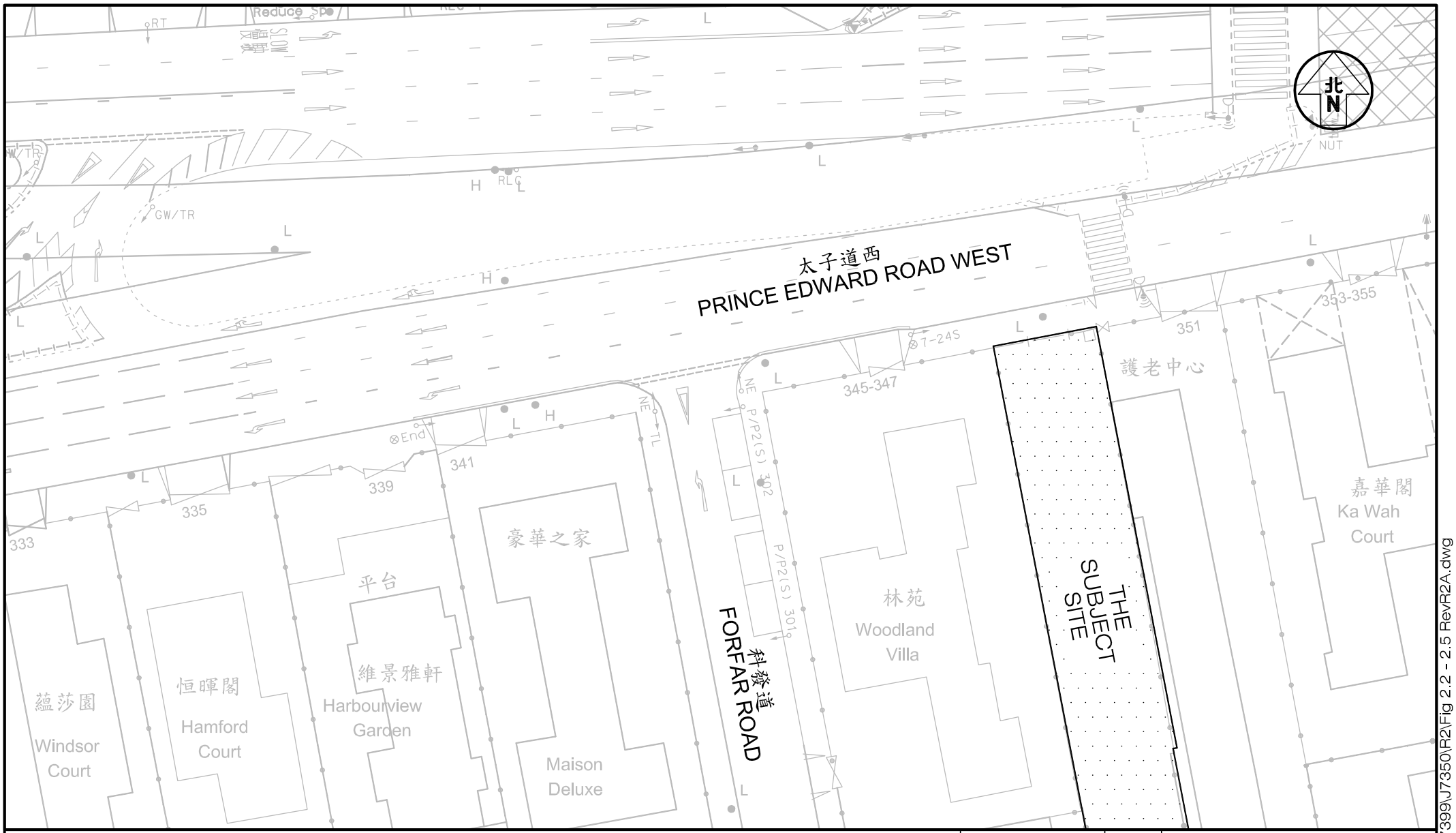
T:\JOB\J7350-J7399\J7350\R2\Fig 2.1 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 2.2 / Revision R2A
Figure Title	(J1) JUNCTION OF PRINCE EDWARD ROAD WEST / JUNCTION ROAD	Designed by THC / Drawn by CCL / Checked by KC	Scale in A4 1 : 500 / Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

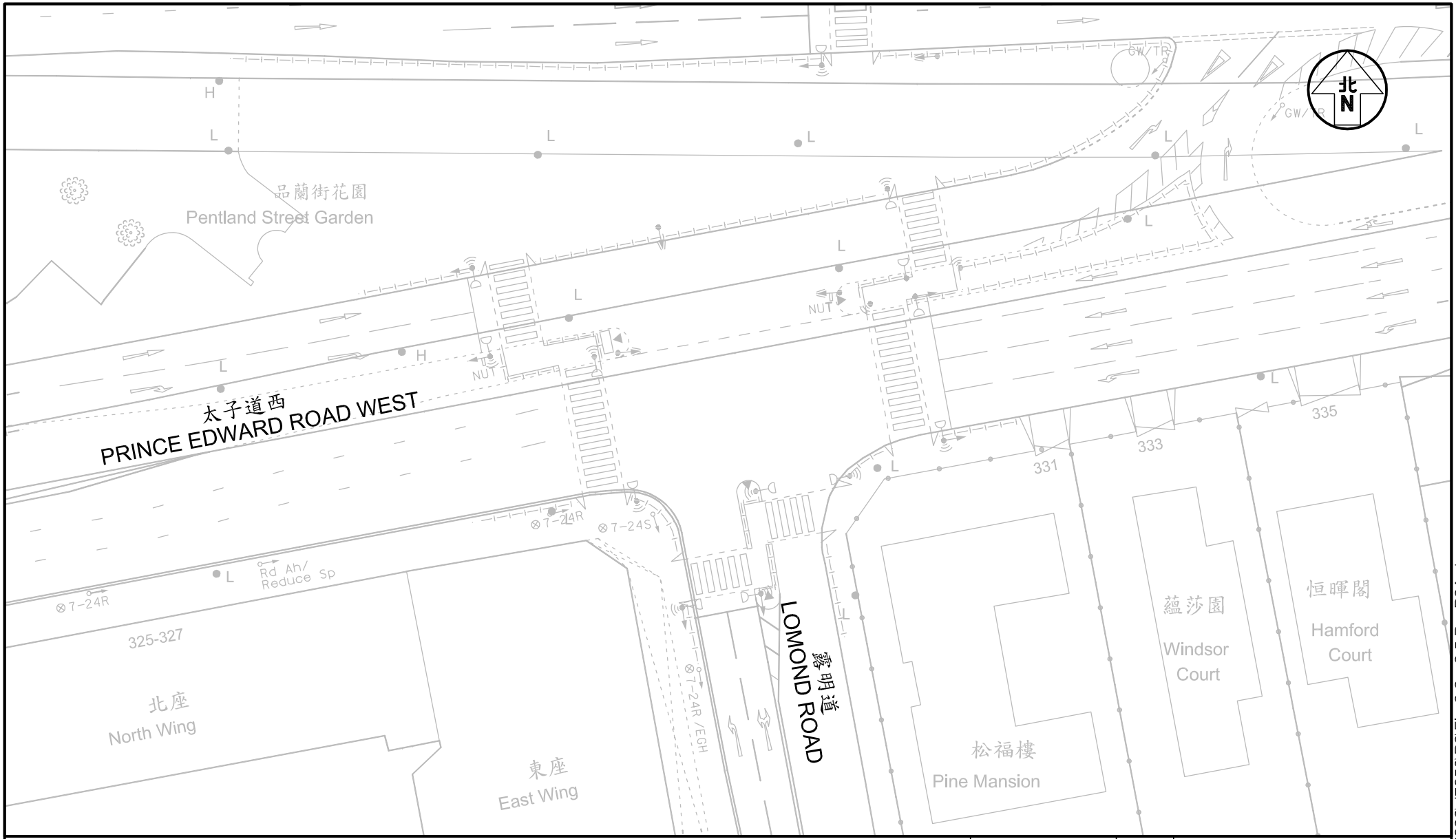
T:\JOB\J7350-J7399\J7350\R2\Fig 2.2 - 2.5 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 2.3 / Revision R2A
Figure Title	(J2) JUNCTION OF PRINCE EDWARD ROAD WEST / FORFAR ROAD	Designed by T H C / Drawn by C C L / Checked by K C	Scale in A4 1 : 500 / Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

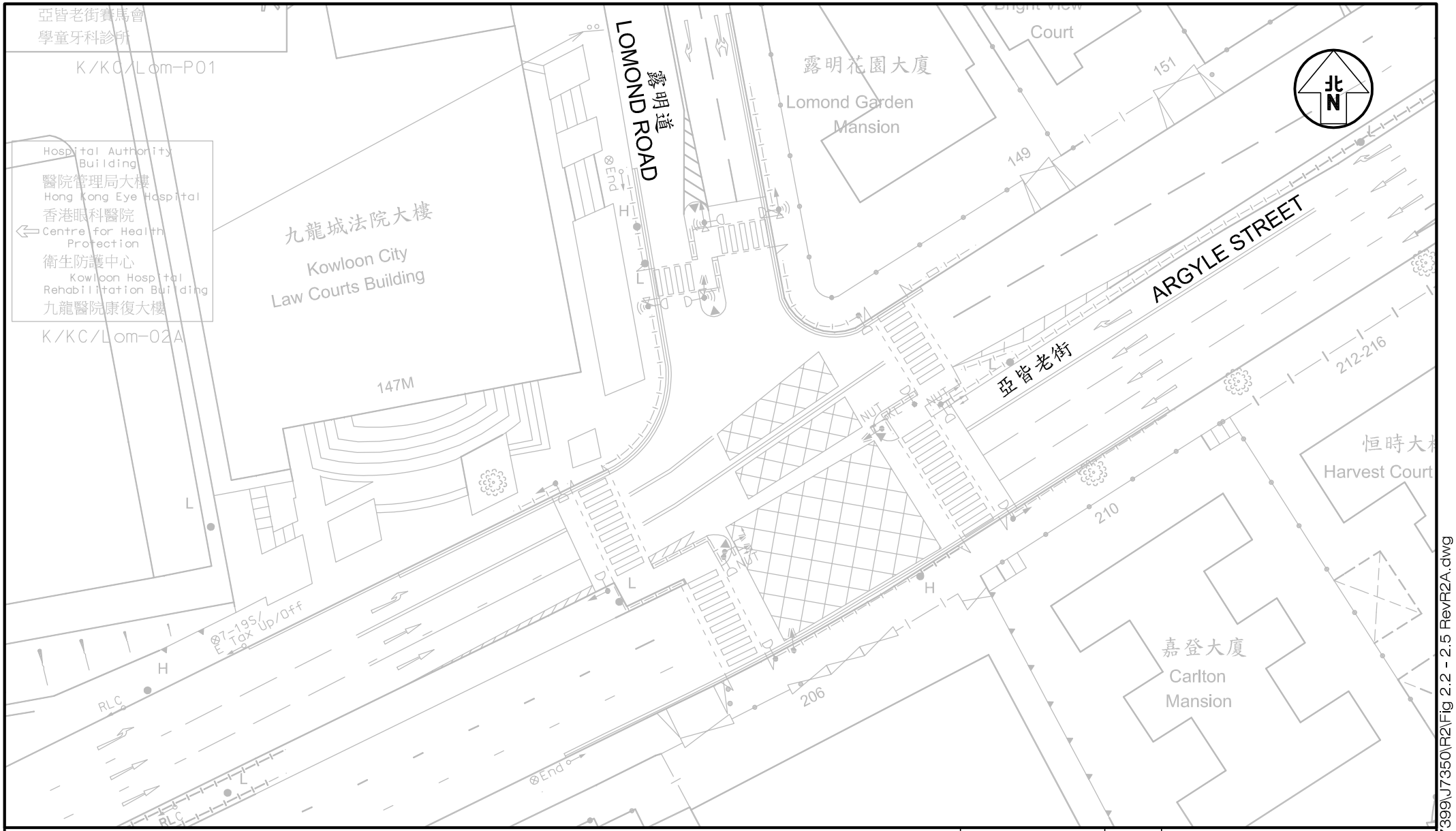
T:\JOB\J7350-J7399\J7350\R2\Fig 2.2 - 2.5 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 2.4 / Revision R2A
Figure Title	(J3) JUNCTION OF PRINCE EDWARD ROAD WEST / LOMOND ROAD		Designed by THC / Drawn by CCL / Checked by KC
			Scale in A4 1 : 500 / Date 18 NOV 2024

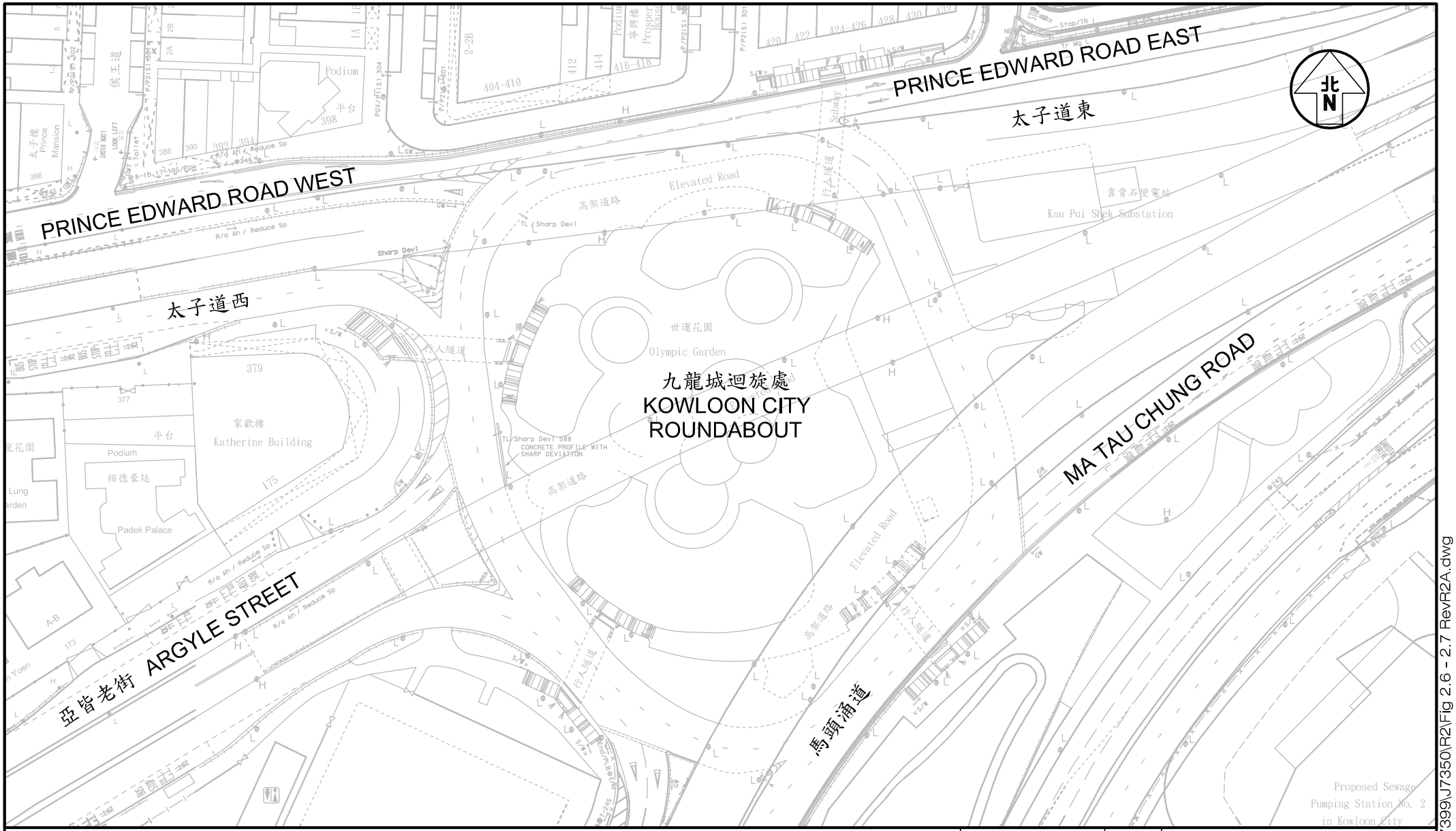
CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.2 - 2.5 RevR2A.dwg



Project Title: PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 2.5	Revision R2A	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
Figure Title: (J4) JUNCTION OF ARGYLE STREET / LOMOND ROAD		Designed by: T H C / Drawn by: C C L / Checked by: K C Scale in A4: 1 : 500 Date: 18 NOV 2024		

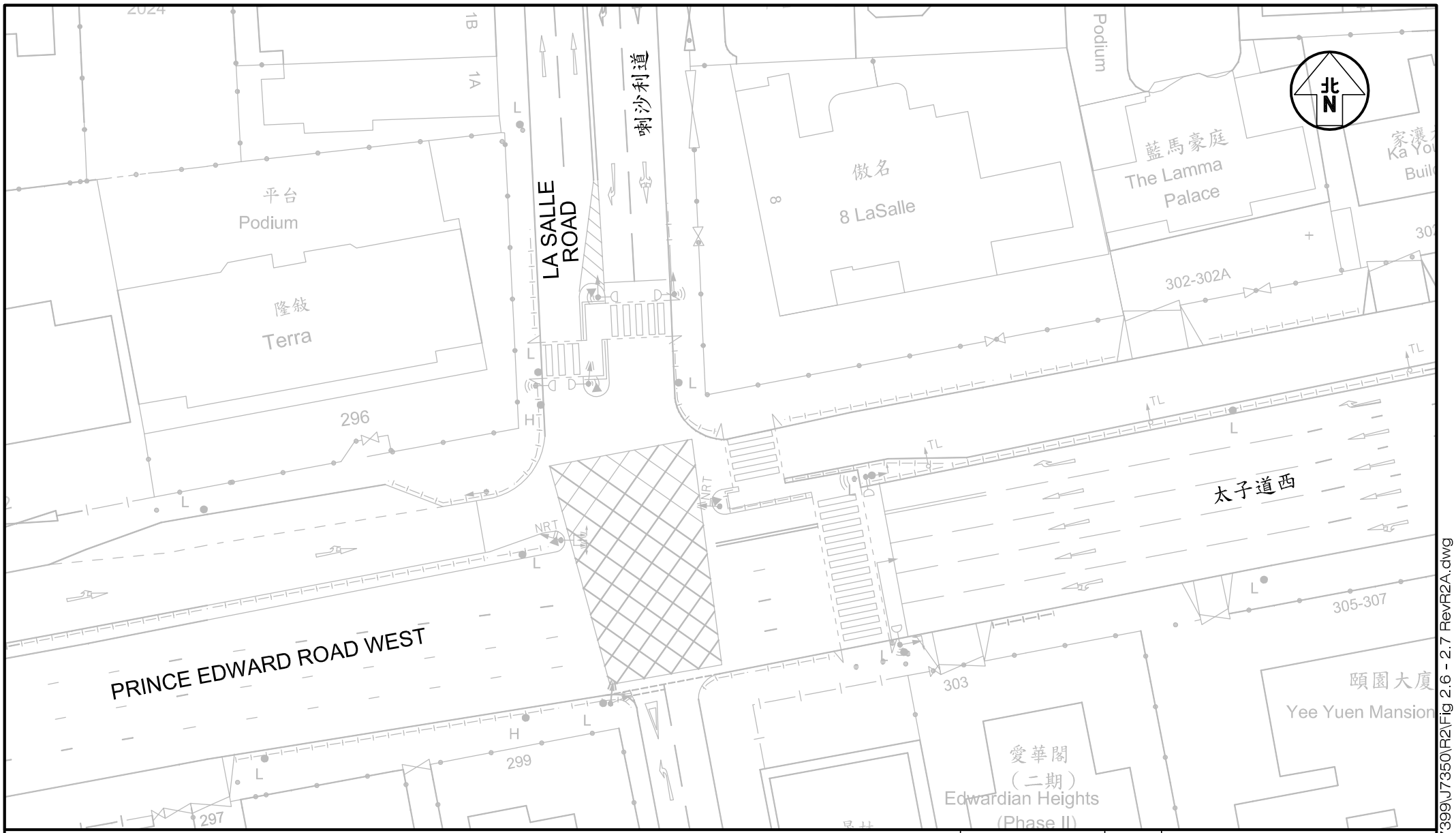
T:\JOB\J7350-J7399\J7350\R2\Fig 2.2 - 2.5 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	
Figure Title	(J5) KOWLOON CITY ROUNDABOUT	Figure No. 2.6	Revision R2A
		Designed by T H C / Drawn by C C L / Checked by K C	
		Scale in A4 1 : 1,000 / Date 18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

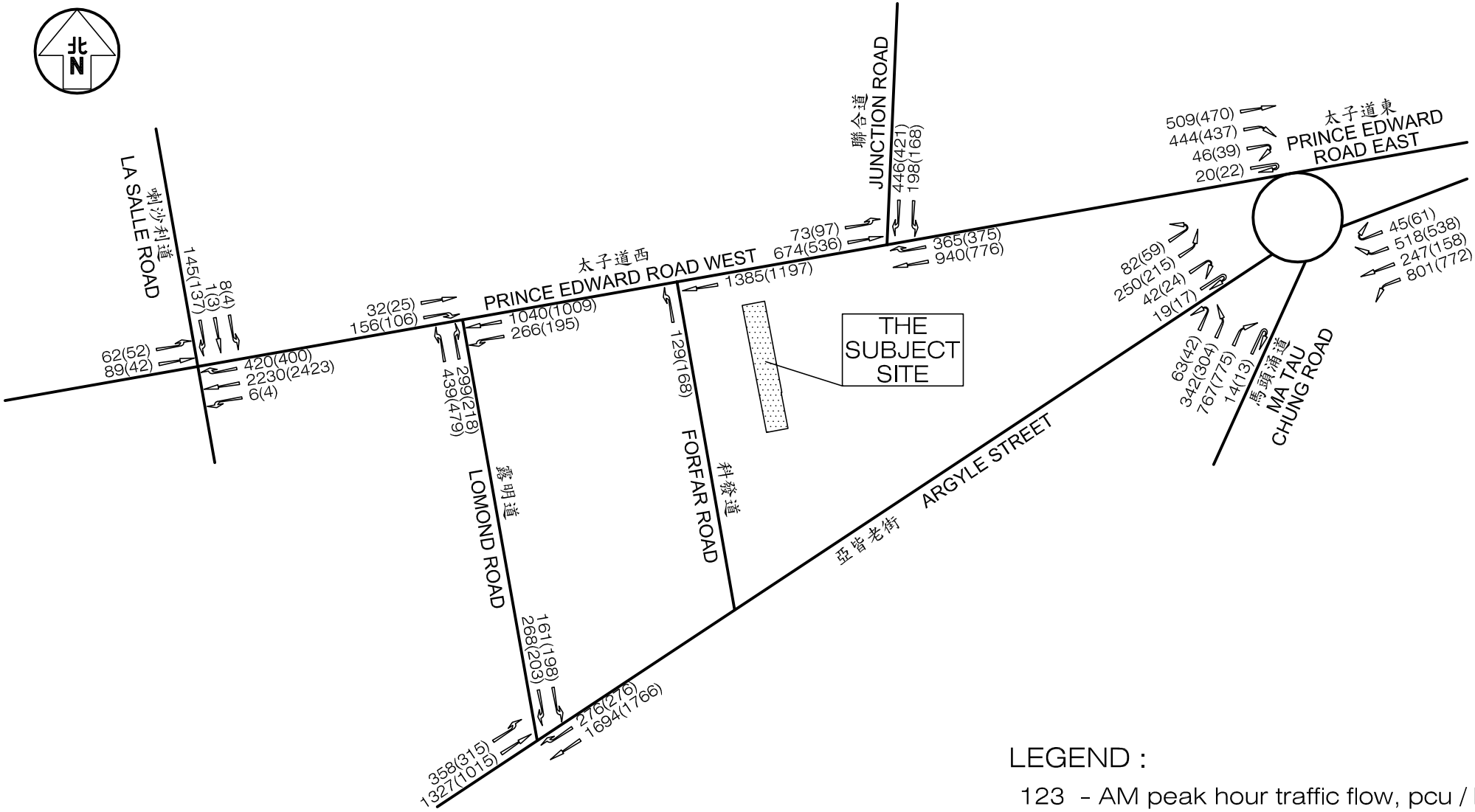
T:\JOB\J7350-J7399\J7350\R2\Fig 2.6 - 2.7 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 2.7 / Revision R2A
Figure Title	(J6) JUNCTION OF PRINCE EDWARD ROAD WEST / LA SALLE ROAD	Designed by THC / Drawn by CCL / Checked by KC	Scale in A4 1 : 500 / Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.6 - 2.7 RevR2A.dwg



LEGEND :

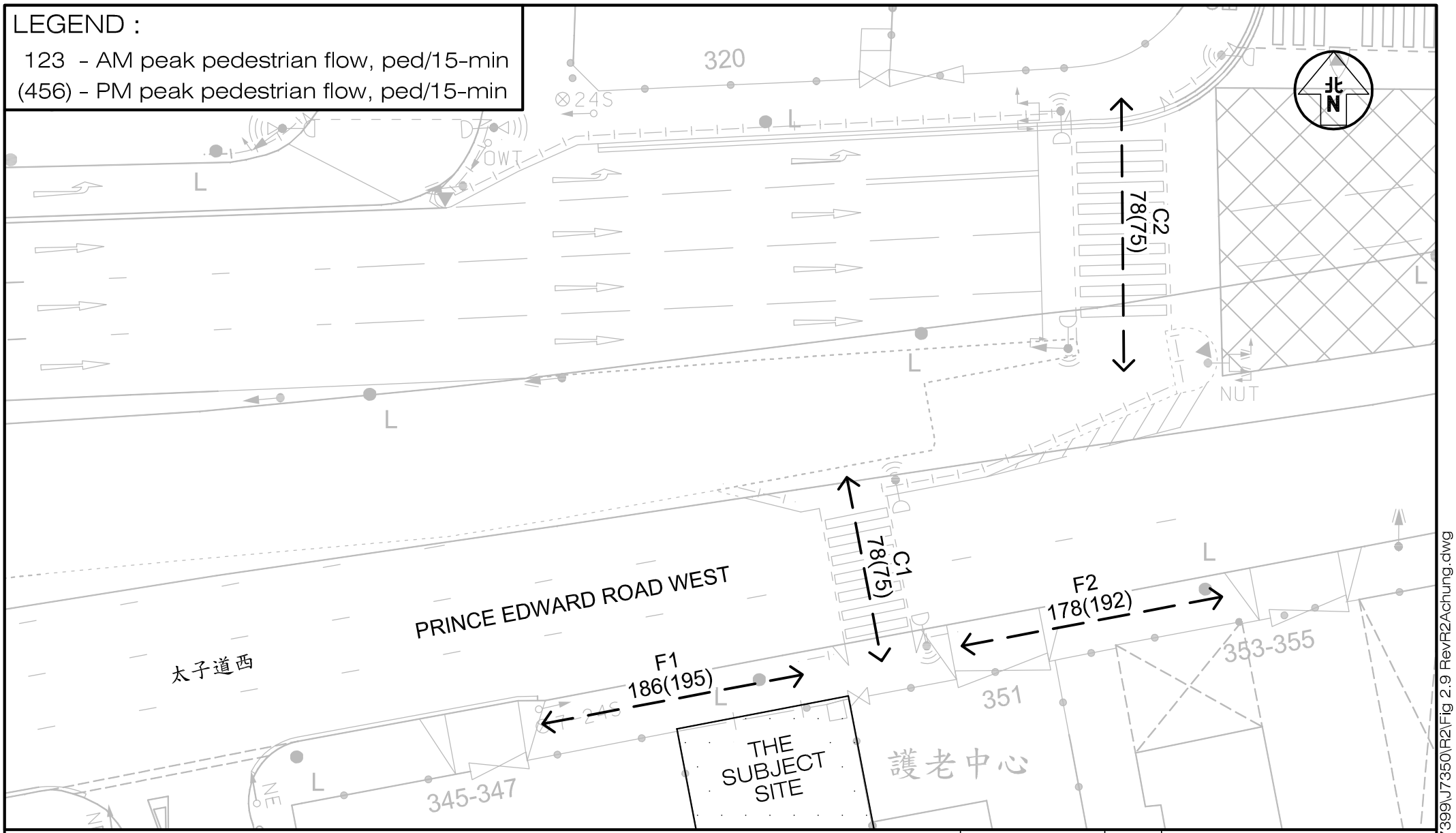
123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 2.8 / Revision R2A
Figure Title	EXISTING PEAK HOUR TRAFFIC FLOWS	Designed by T H C / Drawn by C C L / Checked by K C	Scale in A4 N.T.S. / Date 18 NOV 2024

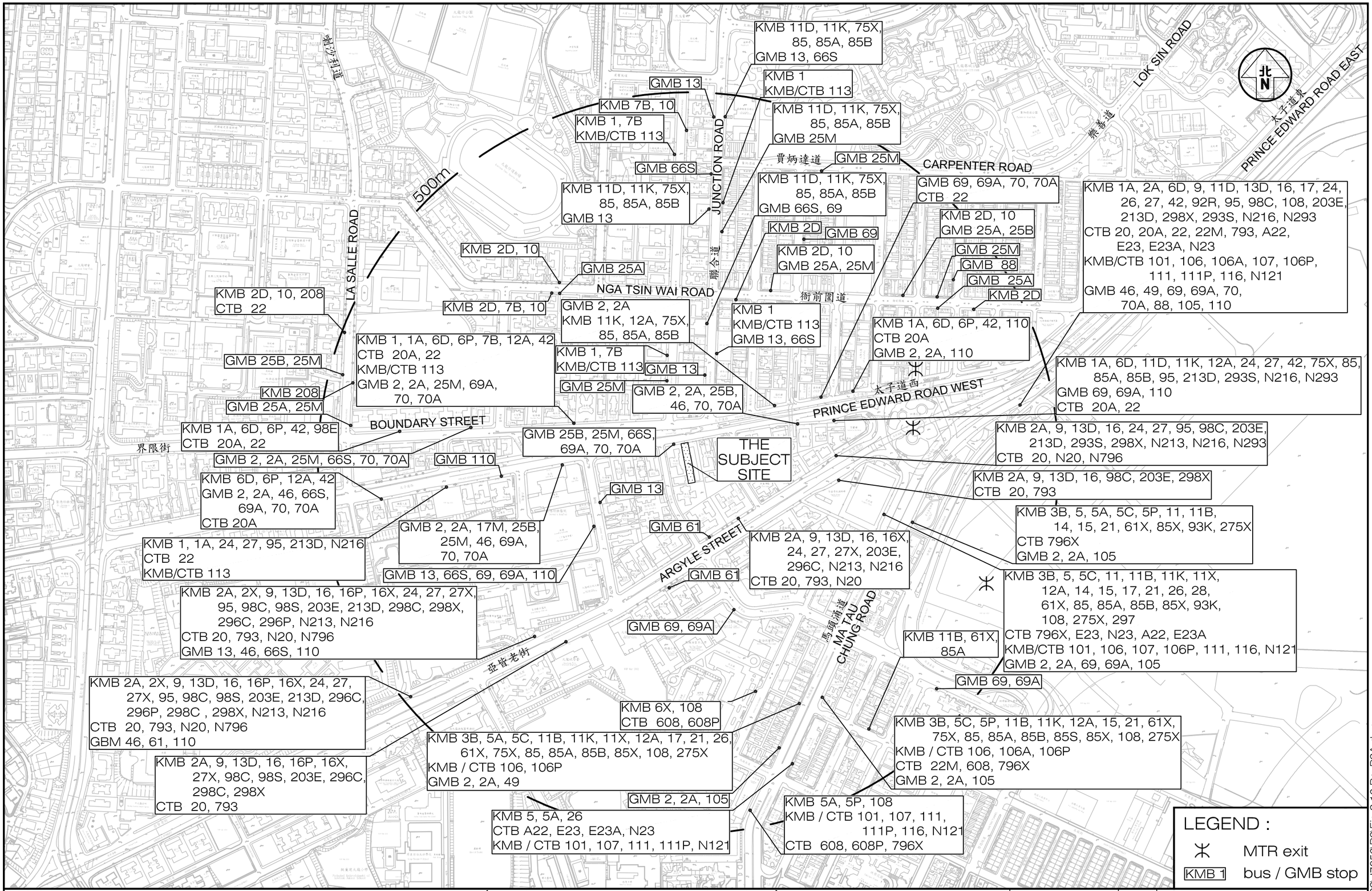
CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.8 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 2.9	Revision R2A	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
Figure Title	EXISTING PEAK 15-MINUTE PEDESTRIAN FLOWS		Designed by T H C / Drawn by C C L / Checked by K C Scale in A4 1 : 500 / Date 18 NOV 2024		

T:\JOB\J7350-J7399\J7350\R2\Fig 2.9 RevR2Achung.dwg



Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

AVAILABILITY OF PUBLIC TRANSPORT SERVICES IN THE VICINITY OF THE SUBJECT SITE

Figure No. 2.10

Revision R2A

Designed by	Drawn by	Checked by
T H C	C C L	K C

Scale in A3: N.T.S.

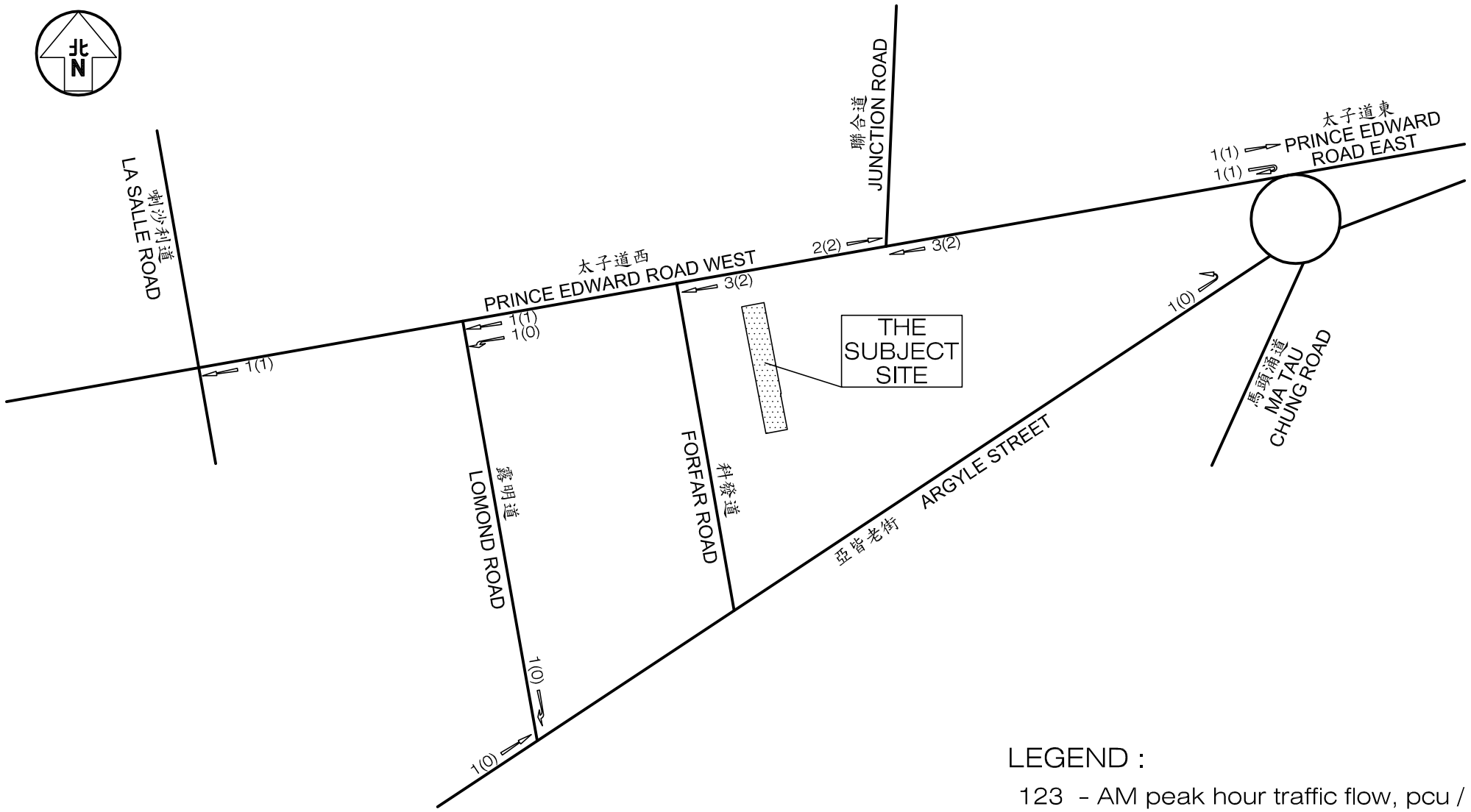
Date: 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 2.10 RevR2A.dwg

Project Title: PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	Job No. J7350	Figure No. 3.1			Scale in A4 1 : 300
	Designed by T H C	Drawn by C C L	Checked by K C	Revision R2A	Date 18 NOV 2024
Figure Title: PROPOSED INTERNAL TRANSPORT LAYOUT	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk				

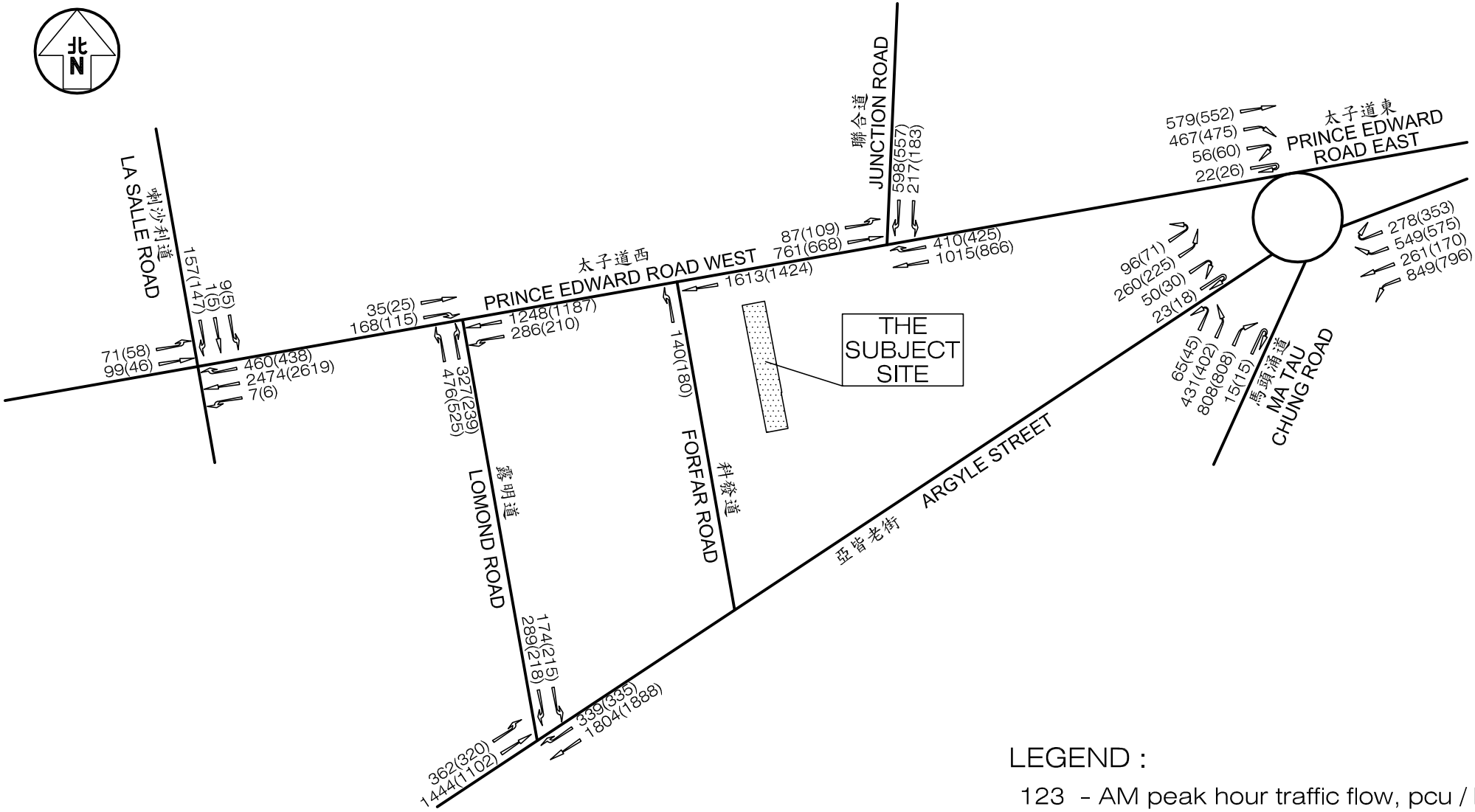
T:\JOB\J7350-J7399\J7350\R2\Fig 3.1 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 4.1	Revision R2A
Figure Title	TRAFFIC GENERATED BY THE PROPOSED ELDERLY HOME		Designed by T H C / Drawn by C C L / Checked by K C	
			Scale in A4 N.T.S. / Date 18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 4.1 - 4.3 RevR2A.dwg



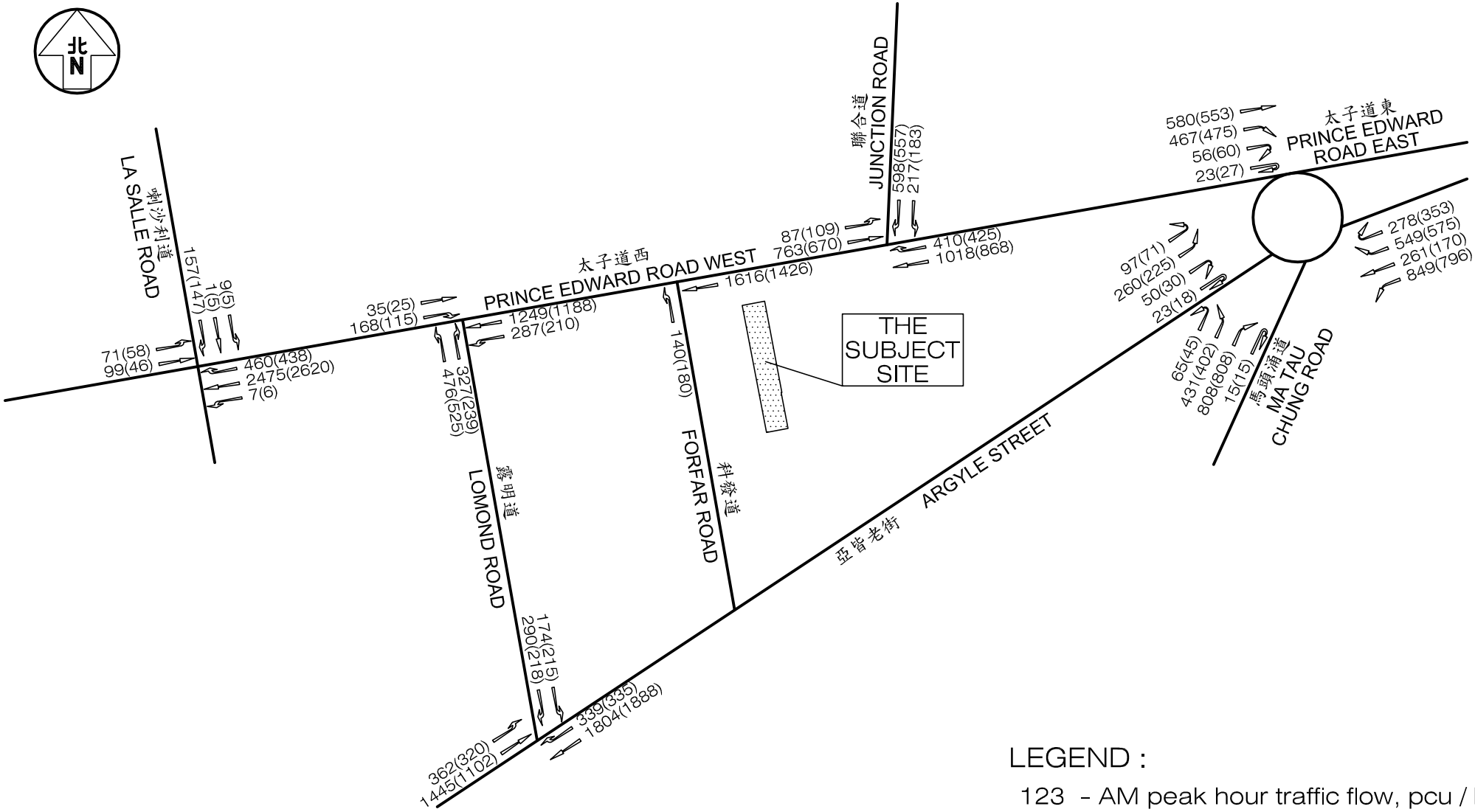
LEGEND :

123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title: PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY — J7350	Figure No. 4.2	Revision R2A	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
Figure Title: 2031 PEAK HOUR TRAFFIC FLOWS WITHOUT THE PROPOSED ELDERLY HOME	Designed by: T H C / Drawn by: C C L / Checked by: K C		
	Scale in A4: N.T.S.	Date: 18 NOV 2024	

T:\JOBs\J7350-J7399\J7350\R2\Fig 4.1 - 4.3 RevR2A.dwg



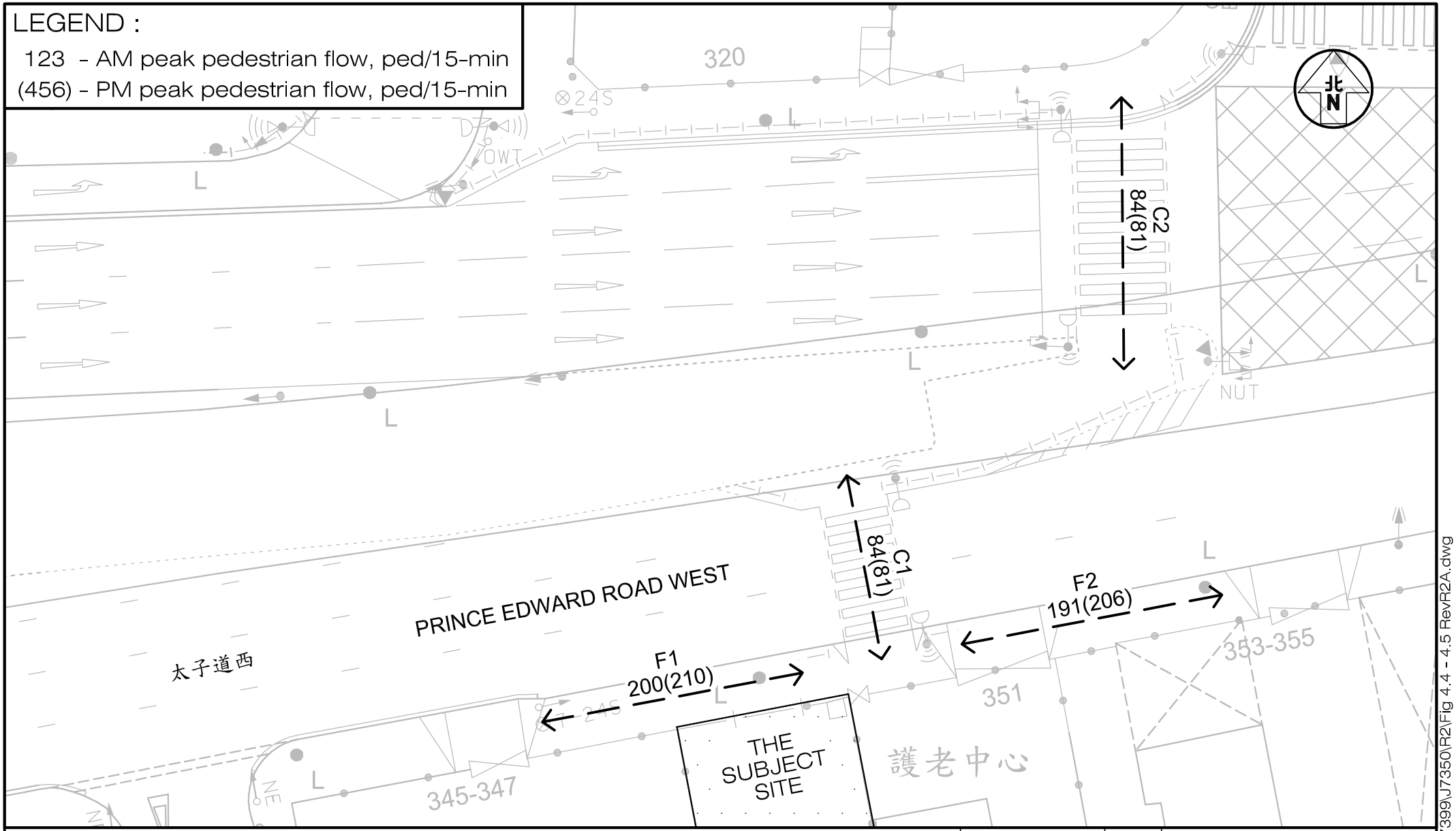
LEGEND :

123 - AM peak hour traffic flow, pcu / hr

(456) - PM peak hour traffic flow, pcu / hr

Project Title: PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY — J7350	Figure No. 4.3	Revision R2A	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
Figure Title: 2031 PEAK HOUR TRAFFIC FLOWS WITH THE PROPOSED ELDERLY HOME	Designed by T H C / Drawn by C C L / Checked by K C		
	Scale in A4 N.T.S.	Date 18 NOV 2024	

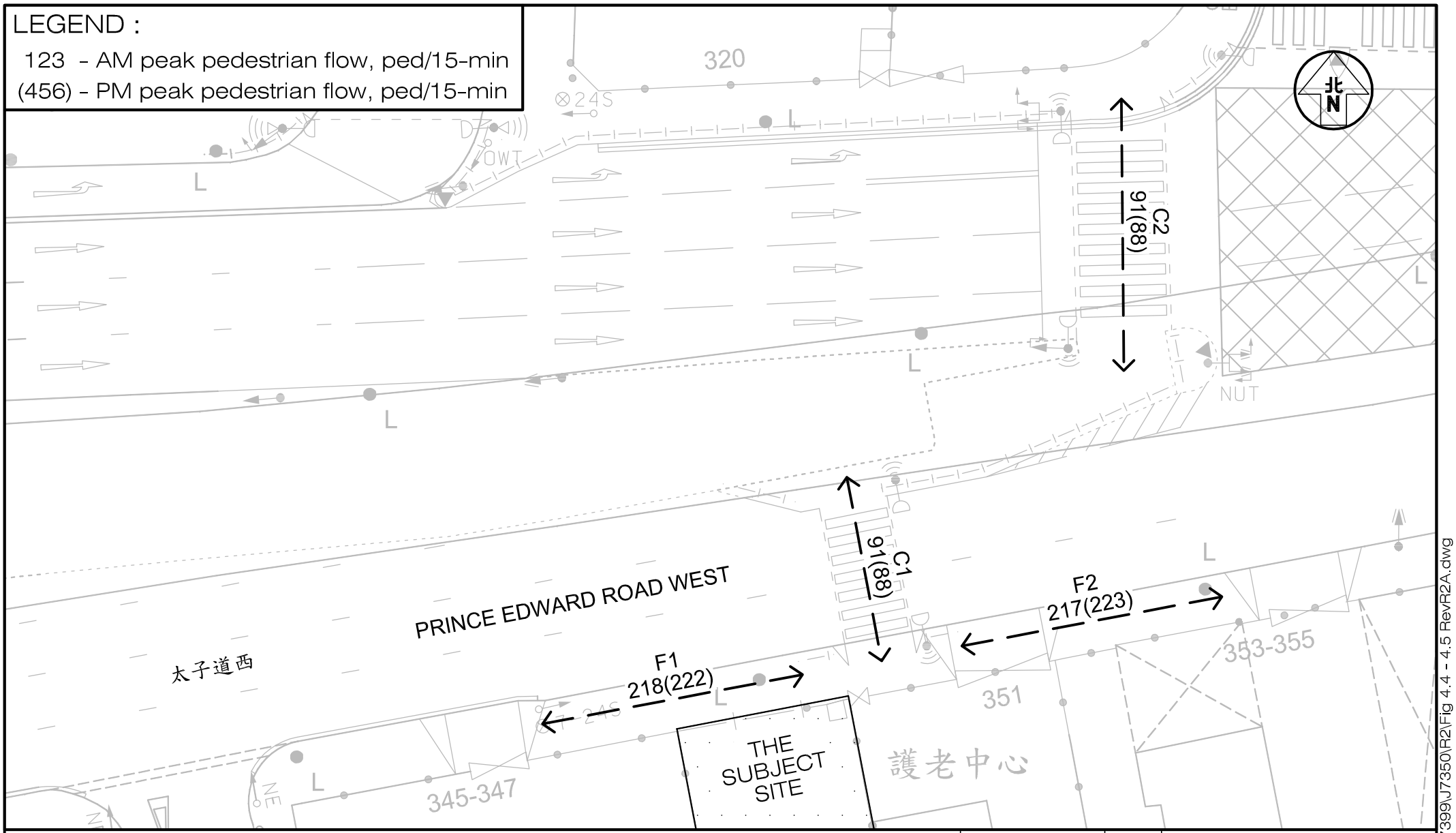
T:\JOB\J7350-J7399\J7350\R2\Fig 4.1 - 4.3 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 4.4	Revision R2A
Figure Title	2031 PERK 15-MINUTE PEDESTRIAN FLOWS WITHOUT THE PROPOSED ELDERLY HOME		Designed by T H C / Drawn by C C L / Checked by K C	
			Scale in A4 1 : 500 / Date 18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 4.4 - 4.5 RevR2A.dwg



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. 4.5	Revision R2A
Figure Title	2031 PERK 15-MINUTE PEDESTRIAN FLOWS WITH THE PROPOSED ELDERLY HOME		Designed by T H C / Drawn by C C L / Checked by K C	
			Scale in A4 1 : 500 / Date 18 NOV 2024	

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig 4.4 - 4.5 RevR2A.dwg

Appendix A – Junction Capacity Analysis

Signal Junction Analysis

Junction: Prince Edward Road West / Junction Road — Job Number: J7350

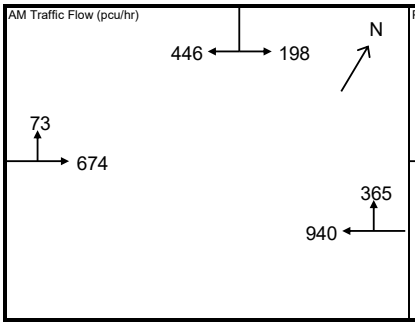
Scenario: Existing Condition — R2 / P.1-1

Design Year: 2024 — Designed By: — Checked By: — Date: 18 November 2024

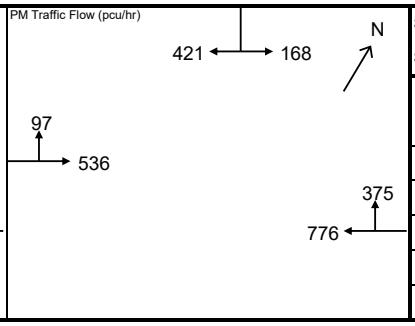
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB	LT	A1	2	3.30	10.0		100	1691	73	0.043		100	1691	97	0.057	
	SA	A2	1,2	3.30				2085	225	0.108			2085	179	0.086	
	SA	A3	1,2	3.30				2085	225	0.108	0.108		2085	179	0.086	0.086
	SA	A4	1,2	3.30				2085	224	0.107			2085	178	0.085	
Prince Edward Road West WB	SA	B1	2,3	3.30				1945	453	0.233			1945	375	0.193	
	SA	B2	2,3	3.30				2085	487	0.233			2085	401	0.192	
	RT	B3	3	3.30	20.0		100	1940	365	0.188	0.188	100	1940	375	0.193	0.193
Junction Road SB	LT+RT	C1	4	3.20	10.0		100	1683	298	0.177	0.177	100	1683	272	0.162	0.162
	RT	C2	4	3.20	25.0		100	1958	346	0.177		100	1958	317	0.162	

pedestrian phase	P1	3, 4		min crossing time =	7	sec GM +	13	sec FGM =	20	sec
	P2	3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	1,4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1		min crossing time =	7	sec GM +	5	sec FGM =	12	sec
	P5	1		min crossing time =	7	sec GM +	7	sec FGM =	14	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

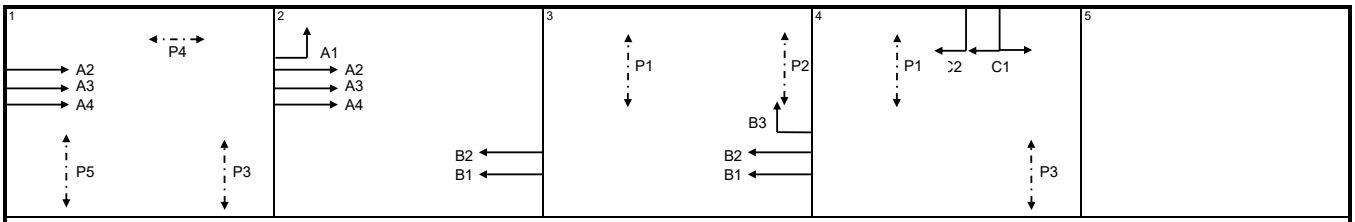


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.473	0.408	0.441	0.412
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	71%	49%	83%	44%



AM	G =	I/G =	5	G =	I/G =	G =	I/G =	5	G =	I/G =	5	G =	I/G =	G =	I/G =	
	G =	I/G =		G =	I/G =	G =	I/G =		G =	I/G =		G =	I/G =	G =	I/G =	
PM	G =	I/G =	5	G =	I/G =	G =	I/G =	5	G =	I/G =	5	G =	I/G =	G =	I/G =	
	G =	I/G =		G =	I/G =	G =	I/G =		G =	I/G =		G =	I/G =	G =	I/G =	

Signal Junction Analysis

Junction: Prince Edward Road West / Junction Road — Job Number: J7350

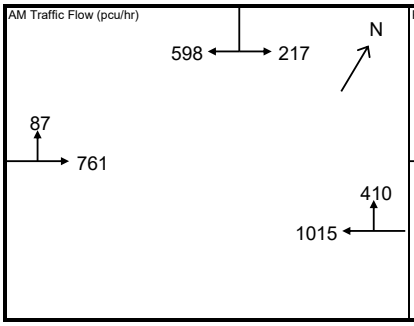
Scenario: without Proposed Elderly Home — R2 / P.1-2

Design Year: 2031 — Designed By: — Checked By: — Date: 18 November 2024

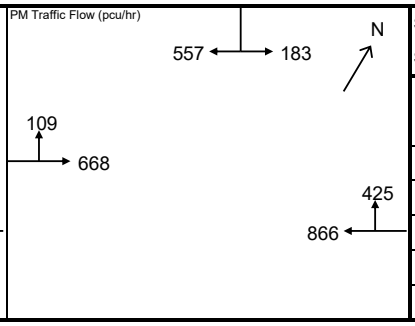
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB	LT	B1	2	3.30	10.0		100	1691	87	0.051		100	1691	109	0.065	
	SA	B2	1,2	3.30				2085	254	0.122			2085	223	0.107	
	SA	B3	1,2	3.30				2085	254	0.122	0.122		2085	223	0.107	0.107
	SA	B4	1,2	3.30				2085	253	0.121			2085	222	0.107	
Prince Edward Road West WB	SA	B1	2,3	3.30				1945	490	0.252			1945	418	0.215	
	SA	B2	2,3	3.30				2085	525	0.252			2085	448	0.215	
	RT	B3	3	3.30	20.0		100	1940	410	0.211	0.211	100	1940	425	0.219	0.219
Junction Road SB	LT+RT	C1	4	3.20	10.0		100	1683	377	0.224	0.224	100	1683	342	0.203	0.203
	RT	C2	4	3.20	25.0		100	1958	438	0.224		100	1958	398	0.203	

pedestrian phase	P1	3, 4		min crossing time =	7	sec GM +	13	sec FGM =	20	sec
	P2	3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	1,4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1		min crossing time =	7	sec GM +	5	sec FGM =	12	sec
	P5	1		min crossing time =	7	sec GM +	7	sec FGM =	14	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

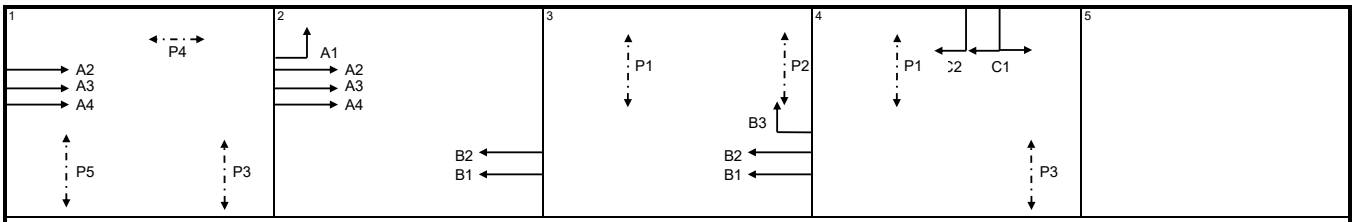


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.557	0.486	0.529	0.487
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	45%	25%	52%	22%



AM	G =		I/G =	5	G =		I/G =		G =		I/G =	5	G =		I/G =	5	G =		I/G =		
	G =	14	I/G =	2	G =		I/G =	5	G =		I/G =	5	G =		I/G =	16	G =		I/G =		
PM	G =		I/G =	5	G =		I/G =		G =		I/G =	5	G =		I/G =	5	G =		I/G =		
	G =		I/G =		G =		I/G =		G =		I/G =		G =		I/G =		G =		I/G =		

Signal Junction Analysis

Junction: Prince Edward Road West / Junction Road — Job Number: J7350

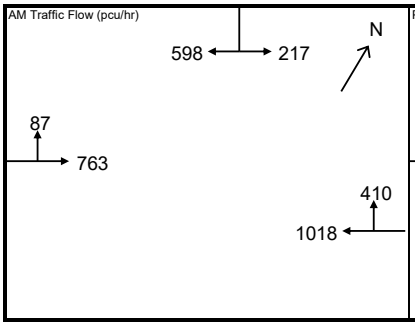
Scenario: with Proposed Elderly Home — R2 / P.1-3

Design Year: 2031 — Designed By: — Checked By: — Date: 18 November 2024

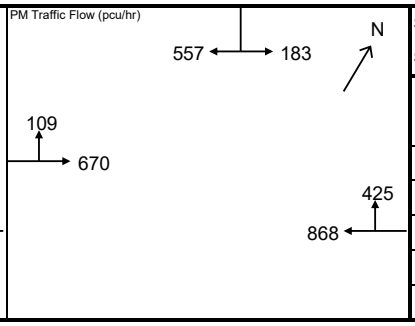
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB	LT	B1	2	3.30	10.0		100	1691	87	0.051		100	1691	109	0.065	
	SA	B2	1,2	3.30				2085	254	0.122			2085	223	0.107	
	SA	B3	1,2	3.30				2085	254	0.122	0.122		2085	223	0.107	0.107
	SA	B4	1,2	3.30				2085	255	0.122			2085	224	0.108	
Prince Edward Road West WB	SA	B1	2,3	3.30				1945	491	0.252			1945	419	0.215	
	SA	B2	2,3	3.30				2085	527	0.253			2085	449	0.216	
	RT	B3	3	3.30	20.0		100	1940	410	0.211	0.211	100	1940	425	0.219	0.219
Junction Road SB	LT+RT	C1	4	3.20	10.0		100	1683	377	0.224	0.224	100	1683	342	0.203	0.203
	RT	C2	4	3.20	25.0		100	1958	438	0.224		100	1958	398	0.203	

pedestrian phase	P1	3, 4		min crossing time =	7	sec GM +	13	sec FGM =	20	sec
	P2	3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P3	1,4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
	P4	1		min crossing time =	7	sec GM +	5	sec FGM =	12	sec
	P5	1		min crossing time =	7	sec GM +	7	sec FGM =	14	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

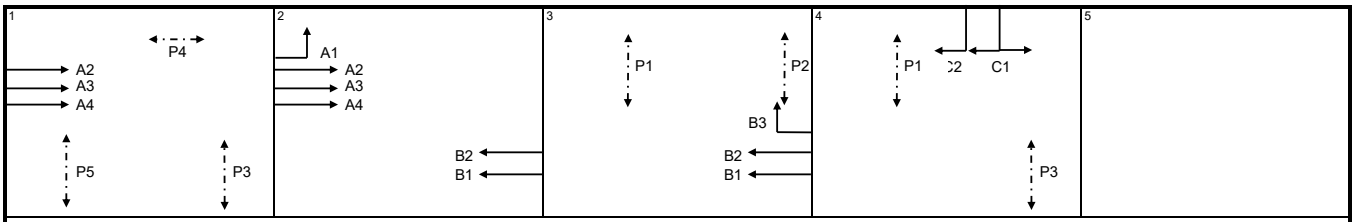


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

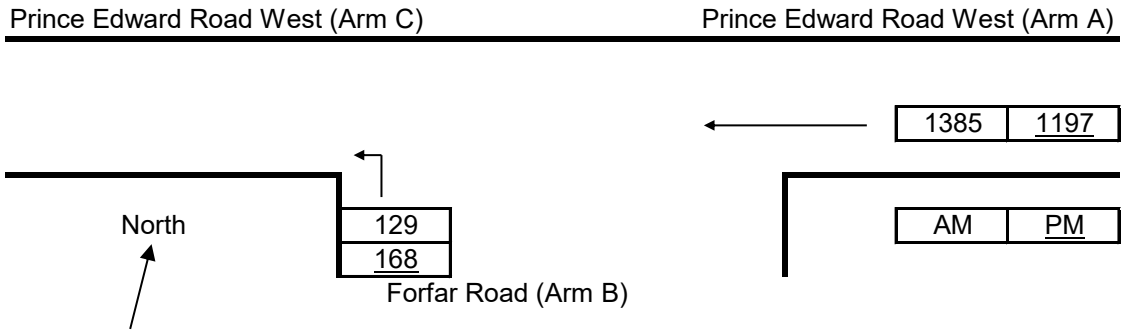
	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.557	0.486	0.529	0.487
L (s)	12	39	12	39
C (s)	120	120	115	115
practical y	0.810	0.608	0.806	0.595
R.C. (%)	45%	25%	52%	22%



AM	G =		I/G =	5	G =		I/G =		G =		I/G =	5	G =		I/G =	5	G =		I/G =		
	G =	14	I/G =	2	G =		I/G =	5	G =		I/G =	5	G =		I/G =	16	G =		I/G =		
PM	G =		I/G =	5	G =		I/G =		G =		I/G =	5	G =		I/G =	5	G =		I/G =		
	G =		I/G =		G =		I/G =		G =		I/G =		G =		I/G =		G =		I/G =		

Priority Junction Analysis

Junction:	Prince Edward Road West / Forfar Road				R2 / P.2-1
Design Year:	2024	Job Number:	J7350	Date:	18 November 2024
Scenario:	Existing Condition				



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	11.00	V-rBA		w-BA		D	0.5332
	W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143
			V-rBC	100	w-CB		F	0.5860
			V-rCB				Y	0.6205

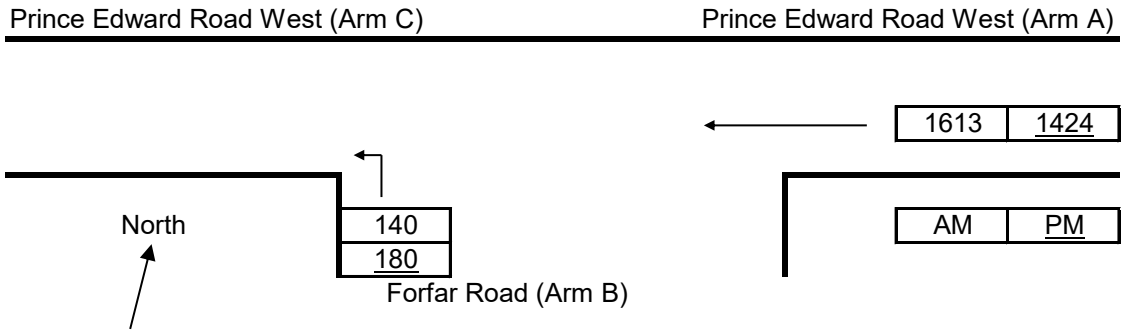
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	168	190
q-CB	0	0	Q-BC	438	481
q-AB	0	0	Q-CB	253	278
q-AC	1385	1197	Q-BAC	438	481
q-BA	0	0			
q-BC	129	168			
f	1.000	1.000			

Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.294	0.350
C-B	0.000	0.000
B-AC	0.294	0.350

Priority Junction Analysis

Junction:	Prince Edward Road West / Forfar Road				R2 / P.2-2
Design Year:	2031	Job Number:	J7350	Date:	18 November 2024
Scenario:	without Proposed Elderly Home				



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	11.00	V-rBA		w-BA		D	0.5332
	W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143
			V-rBC	100	w-CB		F	0.5860
			V-rCB				Y	0.6205

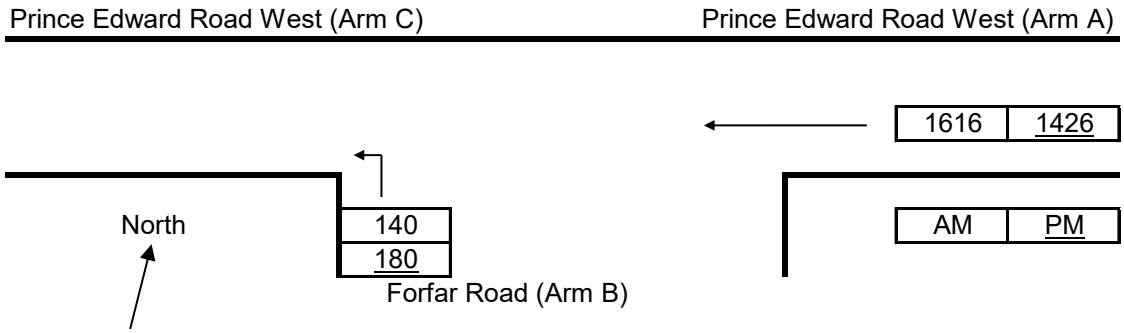
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	140	163
q-CB	0	0	Q-BC	386	430
q-AB	0	0	Q-CB	223	248
q-AC	1613	1424	Q-BAC	386	430
q-BA	0	0			
q-BC	140	180			
f	1.000	1.000			

Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.363	0.419
C-B	0.000	0.000
B-AC	0.363	0.419

Priority Junction Analysis

Junction:	Prince Edward Road West / Forfar Road				R2 / P.2-3
Design Year:	2031	Job Number:	J7350	Date:	18 November 2024
Scenario:	with Proposed Elderly Home				



The predictive equations of capacity of movement are:

Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]

Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]

Q-CB = F[745 - 0.364Y(q-AC + q-AB)]

The geometric parameters represented by D, E, F are:

D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-lBA - 150)]

E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]

F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]

where Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-lBA, etc = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input		Input		Input		Calculated	
	W	11.00	V-rBA		w-BA		D	0.5332
	W-CR	0.00	V-lBA		w-BC	4.00	E	1.0143
			V-rBC	100	w-CB		F	0.5860
			V-rCB				Y	0.6205

Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	0	0	Q-BA	140	163
q-CB	0	0	Q-BC	386	429
q-AB	0	0	Q-CB	223	248
q-AC	1616	1426	Q-BAC	386	429
q-BA	0	0			
q-BC	140	180			
f	1.000	1.000			

Ratio-of-flow to Capacity	AM	PM
B-A	0.000	0.000
B-C	0.364	0.419
C-B	0.000	0.000
B-AC	0.364	0.419

Signal Junction Analysis

Junction: Prince Edward Road West / Lomond Road Job Number: J7350

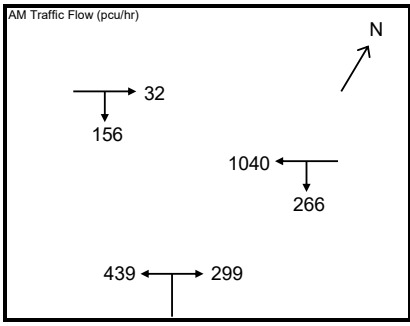
Scenario: Existing Condition R2 / P.3-1

Design Year: 2024 Designed By: Checked By: Date: 18 November 2024

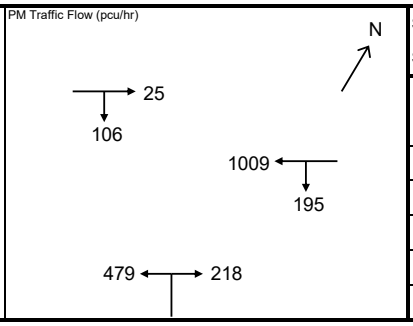
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Lomond Road NB	LT	A1	2	3.10	10.0		100	1674	348	0.208	0.208	100	1674	329	0.197	0.197
	LT+RT	A2	2	3.10	15.0		100	1877	391	0.208		100	1877	368	0.196	
Prince Edward Road West EB	SA	B1	3	3.30				1945	32	0.016			1945	25	0.013	
	RT	B2	3	4.00	25.0		100	2033	156	0.077	0.077	100	2033	106	0.052	0.052
Prince Edward Road West WB	LT	C1	1	3.10	15.0		100	1750	266	0.152		100	1750	195	0.112	
	SA	C2	1	3.10				2065	347	0.168			2065	336	0.163	
	SA	C3	1	3.10				2065	347	0.168	0.168		2065	336	0.163	
	SA	C4	1	3.10				2065	346	0.167			2065	337	0.163	0.163

pedestrian phase	P1	1,3		min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P2	1,2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P3	1		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P4	3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P5	2,3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P6	2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

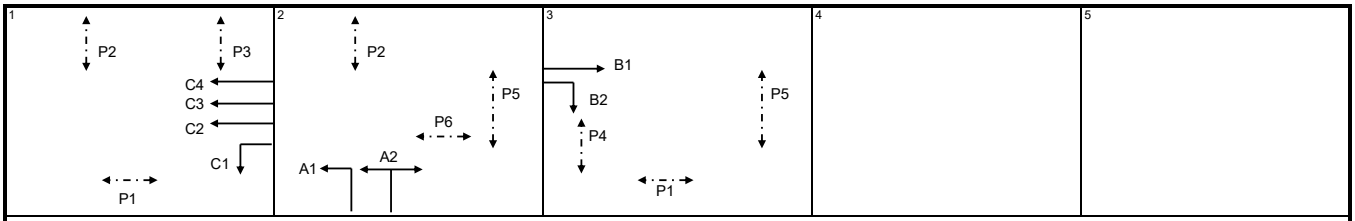


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.453	0.376	0.412	0.359
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	70%	68%	87%	75%



AM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =	G =	I/G =				
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =						
PM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =	G =	I/G =				
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =						

Signal Junction Analysis

Junction: Prince Edward Road West / Lomond Road Job Number: J7350

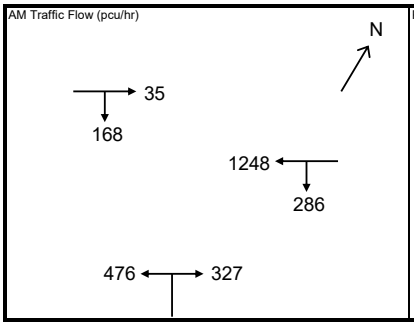
Scenario: without Proposed Elderly Home R2 / P.3-2

Design Year: 2031 Designed By: Checked By: Date: 18 November 2024

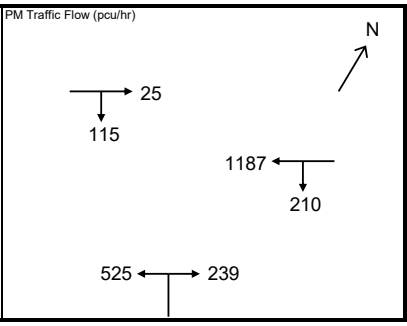
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Lomond Road NB	LT	A1	2	3.10	10.0		100	1674	378	0.226	0.226	100	1674	360	0.215	0.215
	LT+RT	A2	2	3.10	15.0		100	1877	424	0.226		100	1877	404	0.215	
Prince Edward Road West EB	SA	B1	3	3.30				1945	35	0.018			1945	25	0.013	
	RT	B2	3	4.00	25.0		100	2033	168	0.083	0.083	100	2033	115	0.057	0.057
Prince Edward Road West WB	LT	C1	1	3.10	15.0		100	1750	286	0.163		100	1750	210	0.120	
	SA	C2	1	3.10				2065	416	0.201			2065	396	0.192	
	SA	C3	1	3.10				2065	416	0.201			2065	396	0.192	0.192
	SA	C4	1	3.10				2065	416	0.202	0.202		2065	395	0.191	

pedestrian phase	P1	1,3		min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P2	1,2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P3	1		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
	P4	3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P5	2,3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec
	P6	2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

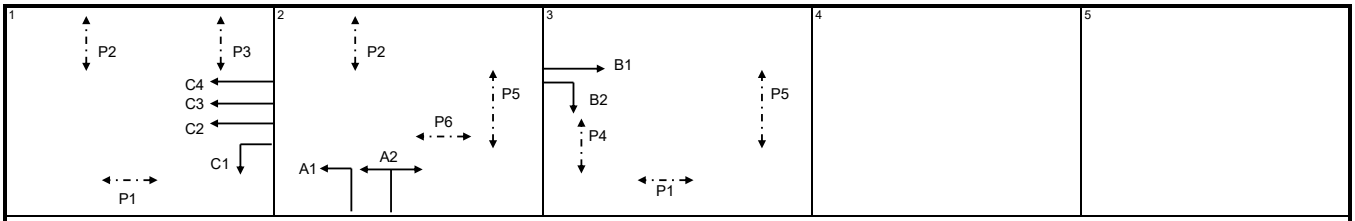


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.510	0.427	0.463	0.407
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	51%	47%	66%	55%



AM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =	G =	I/G =				
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =						
PM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 8	G =	I/G =	G =	I/G =	G =	I/G =				
	G =	I/G = 6	G =	I/G = 8	G = 19	I/G = 2	G =	I/G =	G =	I/G =						

Signal Junction Analysis

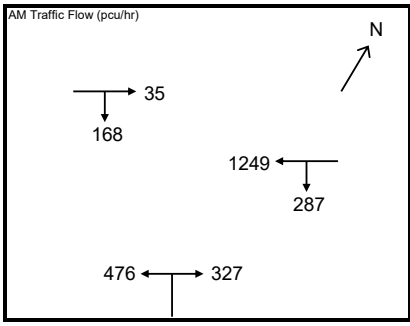
Junction: Prince Edward Road West / Lomond Road Job Number: J7350

Scenario: with Proposed Elderly Home R2 / P.3-3

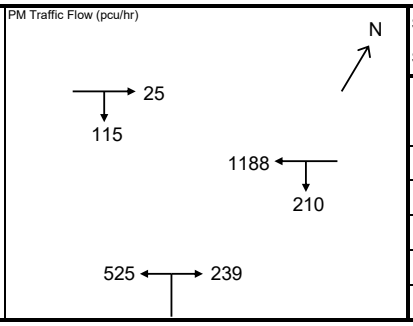
Design Year: 2031 Designed By: Checked By: Date: 18 November 2024

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Lomond Road NB	LT	A1	2	3.10	10.0		100	1674	378	0.226	0.226	100	1674	360	0.215	0.215
	LT+RT	A2	2	3.10	15.0		100	1877	424	0.226		100	1877	404	0.215	
Prince Edward Road West EB	SA	B1	3	3.30				1945	35	0.018			1945	25	0.013	
	RT	B2	3	4.00	25.0		100	2033	168	0.083	0.083	100	2033	115	0.057	0.057
Prince Edward Road West WB	LT	C1	1	3.10	15.0		100	1750	287	0.164		100	1750	210	0.120	
	SA	C2	1	3.10				2065	416	0.201			2065	396	0.192	
	SA	C3	1	3.10				2065	416	0.201			2065	396	0.192	0.192
	SA	C4	1	3.10				2065	417	0.202	0.202		2065	396	0.192	
pedestrian phase		P1	1,3		min crossing time =		6	sec GM +	6	sec FGM =	12	sec				
		P2	1,2		min crossing time =		5	sec GM +	7	sec FGM =	12	sec				
		P3	1		min crossing time =		5	sec GM +	7	sec FGM =	12	sec				
		P4	3		min crossing time =		8	sec GM +	11	sec FGM =	19	sec				
		P5	2,3		min crossing time =		8	sec GM +	11	sec FGM =	19	sec				
		P6	2		min crossing time =		5	sec GM +	7	sec FGM =	12	sec				

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

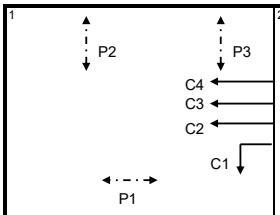


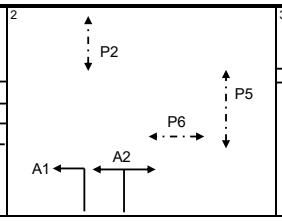
$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

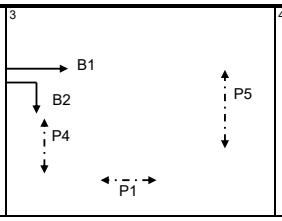
$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.511	0.428	0.463	0.407
L (s)	16	33	16	33
C (s)	110	110	110	110
practical y	0.769	0.630	0.769	0.630
R.C. (%)	51%	47%	66%	55%







4

5

AM	G =		I/G =	6	G =		I/G =	5	G =		I/G =	8	G =		I/G =		G =		I/G =
	G =		I/G =	6	G =		I/G =	8	G =	19	I/G =	2	G =		I/G =		G =		I/G =
PM	G =		I/G =	6	G =		I/G =	5	G =		I/G =	8	G =		I/G =		G =		I/G =
	G =		I/G =	6	G =		I/G =	8	G =	19	I/G =	2	G =		I/G =		G =		I/G =

Signal Junction Analysis

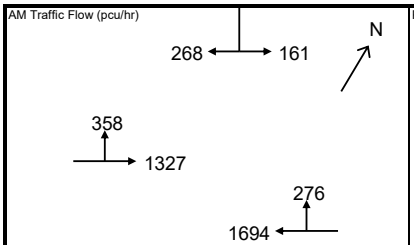
Junction: Argyle Street / Lomond Road — Job Number: J7350

Scenario: Existing Condition — R2 / P.4-1

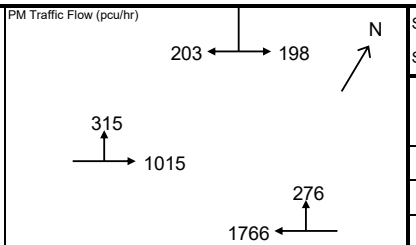
Design Year: 2024 — Designed By: — Checked By: — Date: 18 November 2024

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	358	0.202		100	1768	315	0.178	
	SA	A2	1	3.50				2105	663	0.315			2105	508	0.241	
	SA	A3	1	3.50				2105	664	0.315	0.315		2105	507	0.241	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	202	0.121		100	1665	189	0.113	
	RT	B2	3	3.00	15.0		100	1868	227	0.122	0.122	100	1868	212	0.113	0.113
Argyle Street WB	SA	C1	1	3.30				1945	539	0.277			1945	562	0.289	0.289
	SA	C2	1	3.30				2085	577	0.277			2085	602	0.289	
	SA	C3	1	3.30				2085	578	0.277			2085	602	0.289	
	RT	C4	2	3.30	15.0		100	1895	276	0.146	0.146	100	1895	276	0.146	0.146
pedestrian phase		P1	2,3		min crossing time =		5	sec GM +	9	sec FGM =	14	sec				
		P2	2		min crossing time =		5	sec GM +	9	sec FGM =	14	sec				
		P3	3		min crossing time =		8	sec GM +	11	sec FGM =	19	sec				
		P4	2		min crossing time =		8	sec GM +	9	sec FGM =	17	sec				
		P5	1,2		min crossing time =		5	sec GM +	7	sec FGM =	12	sec				
		P6	3		min crossing time =		5	sec GM +	5	sec FGM =	10	sec				

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

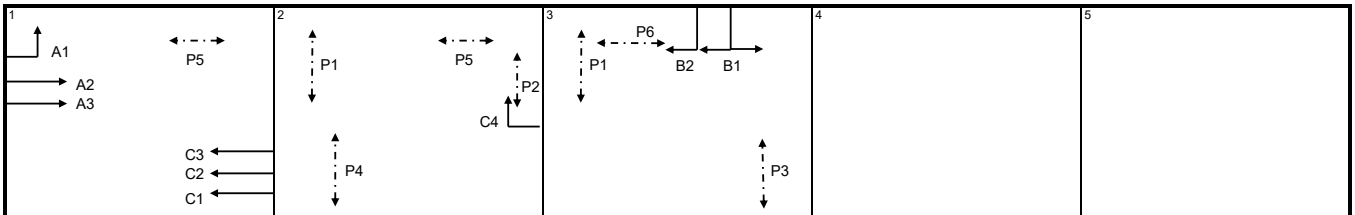


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.583		0.548	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	38%		47%	

Note:



AM	G =	I/G =	5	G =	I/G =	5	G =	I/G =	7	G =	I/G =	G =	I/G =						
	G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =	G =	I/G =						
PM	G =	I/G =	5	G =	I/G =	5	G =	I/G =	7	G =	I/G =	G =	I/G =						
	G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =	G =	I/G =						

Signal Junction Analysis

Junction: Argyle Street / Lomond Road Job Number: J7350

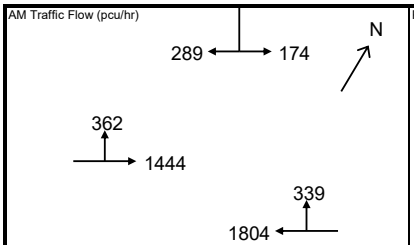
Scenario: without Proposed Elderly Home R2 / P.4-2

Design Year: 2031 Designed By: Checked By: Date: 18 November 2024

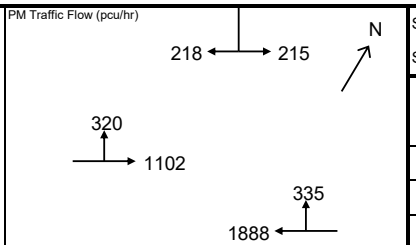
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	362	0.205		100	1768	320	0.181	
	SA	A2	1	3.50				2105	722	0.343			2105	551	0.262	
	SA	A3	1	3.50				2105	722	0.343	0.343		2105	551	0.262	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	218	0.131		100	1665	204	0.123	
	RT	B2	3	3.00	15.0		100	1868	245	0.131	0.131	100	1868	229	0.123	0.123
Argyle Street WB	SA	C1	1	3.30				1945	574	0.295			1945	601	0.309	0.309
	SA	C2	1	3.30				2085	615	0.295			2085	644	0.309	
	SA	C3	1	3.30				2085	615	0.295			2085	643	0.309	
	RT	C4	2	3.30	15.0		100	1895	339	0.179	0.179	100	1895	335	0.177	0.177

pedestrian phase	P1	2,3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P2	2		min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P3	3		min crossing time =	8	sec GM +	11	sec FGM =	19	sec	
	P4	2		min crossing time =	8	sec GM +	9	sec FGM =	17	sec	
	P5	1,2		min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P6	3		min crossing time =	5	sec GM +	5	sec FGM =	10	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

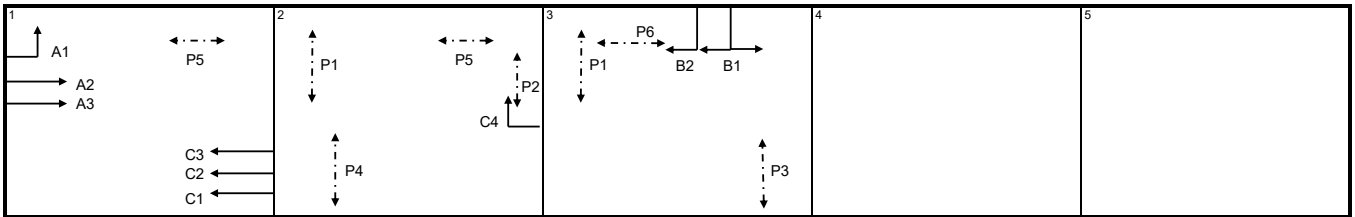


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.653		0.608	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	23%		32%	



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =					
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =					
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =					
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =					

Signal Junction Analysis

Junction: Argyle Street / Lomond Road — Job Number: J7350

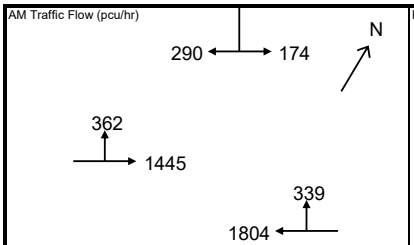
Scenario: with Proposed Elderly Home — R2 / P.4-3

Design Year: 2031 — Designed By: — Checked By: — Date: 18 November 2024

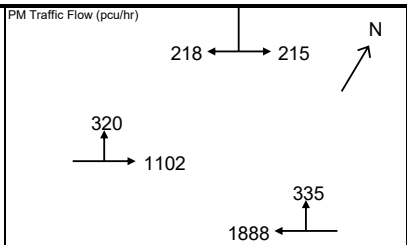
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Argyle Street EB	LT	A1	1	3.30	15.0		100	1768	362	0.205		100	1768	320	0.181	
	SA	A2	1	3.50				2105	723	0.343			2105	551	0.262	
	SA	A3	1	3.50				2105	722	0.343	0.343		2105	551	0.262	
Lomond Road SB	LT+RT	B1	3	3.00	10.0		100	1665	218	0.131		100	1665	204	0.123	
	RT	B2	3	3.00	15.0		100	1868	246	0.131	0.131	100	1868	229	0.123	0.123
Argyle Street WB	SA	C1	1	3.30				1945	574	0.295			1945	601	0.309	0.309
	SA	C2	1	3.30				2085	615	0.295			2085	644	0.309	
	SA	C3	1	3.30				2085	615	0.295			2085	643	0.309	
	RT	C4	2	3.30	15.0		100	1895	339	0.179	0.179	100	1895	335	0.177	0.177

pedestrian phase	P1	2,3	min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P2	2	min crossing time =	5	sec GM +	9	sec FGM =	14	sec	
	P3	3	min crossing time =	8	sec GM +	11	sec FGM =	19	sec	
	P4	2	min crossing time =	8	sec GM +	9	sec FGM =	17	sec	
	P5	1,2	min crossing time =	5	sec GM +	7	sec FGM =	12	sec	
	P6	3	min crossing time =	5	sec GM +	5	sec FGM =	10	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

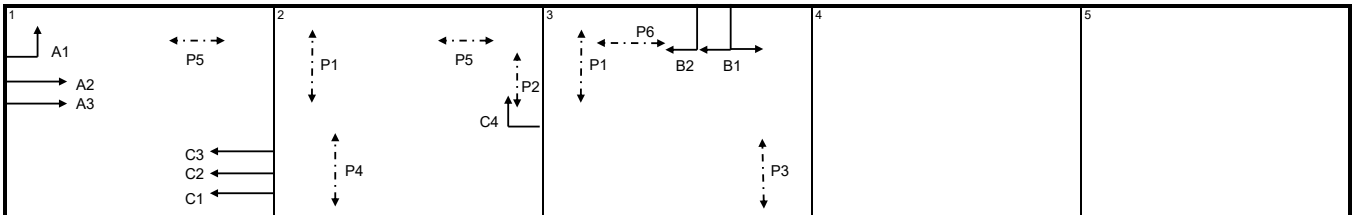


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.653		0.608	
L (s)	14		14	
C (s)	130		130	
practical y	0.803		0.803	
R.C. (%)	23%		32%	



AM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =						
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =						
PM	G =	I/G = 5	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =						
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =						

Roundabout Analysis

Location: Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street — R2 / P.5-1

Scenario: existing condition

Design Year: 2024 | Job Number: J7350 | Date: 18 November 2024

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	14	63	342	767					1187.05	895.55
From B	42	19	82	250					393.2	1707.4
From C	444	46	20	336					845.727	1137.95
From D	801	247	518	45					1611.95	585.45
From E										
From F										
From G										
From H										
Total	1301.85	375.2	962.65	1398.227					4037.927	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	13	42	304	775					1134.65	834.65
From B	24	17	59	215					315.4	1713.85
From C	437	39	22	310					808.481	1106.2
From D	772	158	538	61					1528.95	552.35
From E										
From F										
From G										
From H										
Total	1246.65	255.45	923.05	1362.331					3787.481	

Legend

Arm	Road (in clockwise order)
A	Ma Tau Chung Road
B	Argyle Street
C	Prince Edward Road West
D	Prince Edward Road East
E	
F	
G	
H	

Geometric Parameters

Arm	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
From A	10.2	7.3	30.0	13.2	100	40	0.4
From B	7.8	5.4	25.0	6.6	100	20	0.6
From C	9.6	7.2	100.0	12.6	100	30	0.3
From D	9.6	7.2	100.0	60.0	100	60	0.1
From E							
From F							
From G							
From H							

Predictive Equation $Q_E = K(F - f_c q_c)$

Q_E	Entry Capacity
q_c	Circulating Flow across the Entry
K	= 1-0.00347(∅-30)-0.978[(1/r)-0.05]
F	= $303x_2$
f_c	= $0.210t_D(1+0.2x_2)$
t_D	= 1+0.5/(1+M)
M	= exp[(D-60)/10]
x_2	= v+(e-v)/(1+2S)
S	= 1.6(e-v)/L

Limitation

e	Entry Width	4.0 - 15.0 m
v	Approach Half Width	2.0 - 7.3 m
r	Entry Radius	6.0 - 100.0 m
L	Effective Length of Flare	1.0 - 100.0 m
D	Inscribed Circle Diameter	15 - 100 m
∅	Entry Angle	10° - 60°
S	Sharpness of Flare	0.0 - 3.0

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2156	2191	1187	1135	0.551	0.518
From B	6.509	54.598	1.009	1.044	1972.301	0.488	1190	1187	393	315	0.330	0.266
From C	8.691	54.598	1.009	1.039	2633.411	0.580	2050	2070	846	808	0.412	0.391
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2310	2329	1612	1529	0.698	0.656
From E												
From F												
From G												
From H												

Roundabout Analysis

Location: Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street — R2 / P.5-2

Scenario: without proposed development

Design Year: 2031 | Job Number: J7350 | Date: 18 November 2024

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	15	65	431	808					1320	1189
From B	50	23	96	260					429	2103
From C	467	56	22	382					929	1435
From D	849	261	549	278					1936	634
From E										
From F										
From G										
From H										
Total	1381	405	1098	1729					4612.963	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	15	45	402	808					1269	1202
From B	30	18	71	225					344	2179
From C	475	60	26	364					925	1448
From D	796	170	575	353					1894	624
From E										
From F										
From G										
From H										
Total	1316	293	1074	1749					4432	

Legend

Arm	Road (in clockwise order)
A	Ma Tau Chung Road
B	Argyle Street
C	Prince Edward Road West
D	Prince Edward Road East
E	
F	
G	
H	

Geometric Parameters

Arm	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
From A	10.2	7.3	30.0	13.2	100.0	40.0	0.4
From B	7.8	5.4	25.0	6.6	100.0	20.0	0.6
From C	9.6	7.2	100.0	12.6	100.0	30.0	0.3
From D	9.6	7.2	100.0	60.0	100.0	60.0	0.1
From E							
From F							
From G							
From H							

Predictive Equation $Q_E = K(F - f_c q_c)$

Q_E	Entry Capacity
q_c	Circulating Flow across the Entry
K	= 1-0.00347(∅-30)-0.978[(1/r)-0.05]
F	= $303x_2$
f_c	= $0.210t_D(1+0.2x_2)$
t_D	= 1+0.5/(1+M)
M	= exp[(D-60)/10]
x_2	= v+(e-v)/(1+2S)
S	= 1.6(e-v)/L

Limitation

e	Entry Width	4.0 - 15.0 m
v	Approach Half Width	2.0 - 7.3 m
r	Entry Radius	6.0 - 100.0 m
L	Effective Length of Flare	1.0 - 100.0 m
D	Inscribed Circle Diameter	15 - 100 m
∅	Entry Angle	10° - 60°
S	Sharpness of Flare	0.0 - 3.0

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	1985	1977	1320	1269	0.665	0.642
From B	6.509	54.598	1.009	1.044	1972.301	0.488	988	950	429	344	0.434	0.362
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1871	1863	929	925	0.496	0.497
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2283	2288	1936	1894	0.848	0.828
From E												
From F												
From G												
From H												

Roundabout Analysis

Location: Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street — R2 / P.5-3

Scenario: without proposed development

Design Year: 2031 | Job Number: J7350 | Date: 18 November 2024

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	15	65	431	808					1320	1190
From B	50	23	96	260					429	2104
From C	467	56	23	383					930	1435
From D	849	261	549	278					1936	635
From E										
From F										
From G										
From H										
Total	1381	405	1099	1730					4614.623	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q_c
From A	15	45	402	808					1269	1203
From B	30	18	71	225					344	2180
From C	475	60	27	365					928	1448
From D	796	170	575	353					1894	625
From E										
From F										
From G										
From H										
Total	1316	293	1075	1751					4435	

Legend

Arm	Road (in clockwise order)
A	Ma Tau Chung Road
B	Argyle Street
C	Prince Edward Road West
D	Prince Edward Road East
E	
F	
G	
H	

Geometric Parameters

Arm	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
From A	10.2	7.3	30.0	13.2	100.0	40.0	0.4
From B	7.8	5.4	25.0	6.6	100.0	20.0	0.6
From C	9.6	7.2	100.0	12.6	100.0	30.0	0.3
From D	9.6	7.2	100.0	60.0	100.0	60.0	0.1
From E							
From F							
From G							
From H							

Predictive Equation $Q_E = K(F - f_c q_c)$

Q_E	Entry Capacity
q_c	Circulating Flow across the Entry
K	= 1-0.00347(∅-30)-0.978[(1/r)-0.05]
F	= $303x_2$
f_c	= $0.210t_D(1+0.2x_2)$
t_D	= 1+0.5/(1+M)
M	= exp[(D-60)/10]
x_2	= v+(e-v)/(1+2S)
S	= 1.6(e-v)/L

Limitation

e	Entry Width	4.0 - 15.0 m
v	Approach Half Width	2.0 - 7.3 m
r	Entry Radius	6.0 - 100.0 m
L	Effective Length of Flare	1.0 - 100.0 m
D	Inscribed Circle Diameter	15 - 100 m
∅	Entry Angle	10° - 60°
S	Sharpness of Flare	0.0 - 3.0

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	1985	1977	1320	1269	0.665	0.642
From B	6.509	54.598	1.009	1.044	1972.301	0.488	988	950	429	344	0.434	0.362
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1871	1863	930	928	0.497	0.498
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2282	2288	1936	1894	0.848	0.828
From E												
From F												
From G												
From H												

Signal Junction Analysis

Junction: Prince Edward Road West / La Salle Road Job Number: J7350

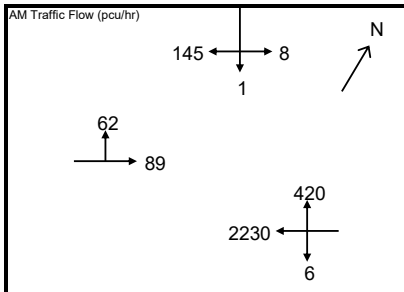
Scenario: Existing Condition R2 / P.6-1

Design Year: 2024 Designed By: Checked By: Date: 18 November 2024

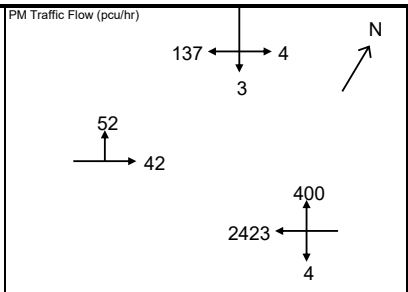
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Prince Edward Road West EB LT+SA	A1	1	5.00	10.0		41	1992	151	0.076		55	1954	95	0.048	
La Salle Road SB LT+SA+RT	B1	3	3.10	6.0		100	1540	70	0.045	0.045	95	1556	66	0.042	0.042
RT	B2	3	3.00	14.0		100	1856	83	0.045		100	1856	78	0.042	
Prince Edward Road West WB LT+SA	C1	1,2	3.20	5.0		1	1931	714	0.370	0.370	1	1932	776	0.402	
SA	C2	1,2	3.00				2055	760	0.370			2055	825	0.401	0.401
SA	C3	1,2	3.00				2055	761	0.370			2055	826	0.402	
RT	C5	2	3.00	12.0		100	1827	420	0.230		100	1827	400	0.219	

pedestrian phase	P1	2		min crossing time =	5	sec GM +	5	sec FGM =	10	sec	
	P2	3		min crossing time =	13	sec GM +	17	sec FGM =	30	sec	
	P3	1,2		min crossing time =	6	sec GM +	6	sec FGM =	12	sec	
	P4	3		min crossing time =	5	sec GM +	5	sec FGM =	10	sec	

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

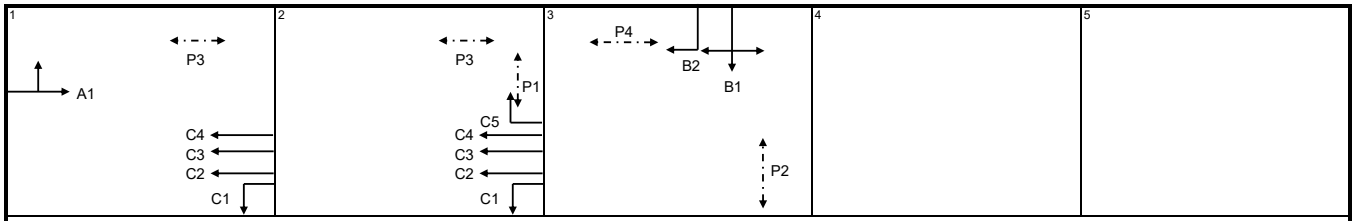


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.415	0.370	0.444	0.401
L (s)	10	38	10	38
C (s)	110	110	110	110
practical y	0.818	0.589	0.818	0.589
R.C. (%)	97%	59%	84%	47%



AM	G =	I/G =	G =	I/G =	5	G =		I/G =	7	G =	I/G =	G =	I/G =		
	G =	I/G =	G =	I/G =	5	G =	30	I/G =	4	G =	I/G =	G =	I/G =		
PM	G =	I/G =	G =	I/G =	5	G =		I/G =	7	G =	I/G =	G =	I/G =		
	G =	I/G =	G =	I/G =	5	G =	30	I/G =	4	G =	I/G =	G =	I/G =		

Signal Junction Analysis

Junction: Prince Edward Road West / La Salle Road — Job Number: J7350

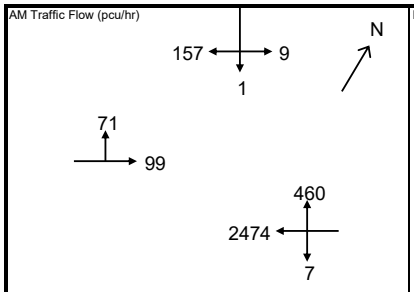
Scenario: without Proposed Elderly Home — R2 / P.6-2

Design Year: 2031 — Designed By: — Checked By: — Date: 18 November 2024

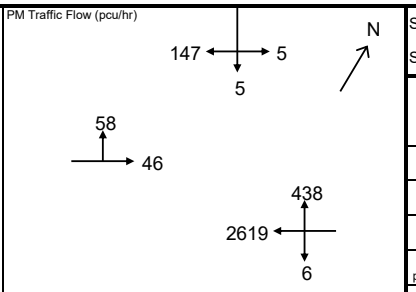
Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB LT+SA	A1	1	5.00	10.0		42	1990	169	0.085		55	1954	104	0.053	
La Salle Road SB LT+SA+RT	B1	3	3.10	6.0		100	1540	76	0.049	0.049	93	1562	72	0.046	0.046
RT	B2	3	3.00	14.0		100	1856	92	0.049		100	1856	85	0.046	
Prince Edward Road West WB LT+SA	C1	1,2	3.20	5.0		1	1930	793	0.411	0.411	1	1931	839	0.434	
SA	C2	1,2	3.00				2055	844	0.411			2055	893	0.435	0.435
SA	C3	1,2	3.00				2055	844	0.410			2055	893	0.435	
RT	C5	2	3.00	12.0		100	1827	460	0.252		100	1827	438	0.240	

pedestrian phase	P1	2		min crossing time =	5	sec GM +	5	sec FGM =	10	sec
	P2	3		min crossing time =	13	sec GM +	17	sec FGM =	30	sec
	P3	1,2		min crossing time =	6	sec GM +	6	sec FGM =	12	sec
	P4	3		min crossing time =	5	sec GM +	5	sec FGM =	10	sec

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

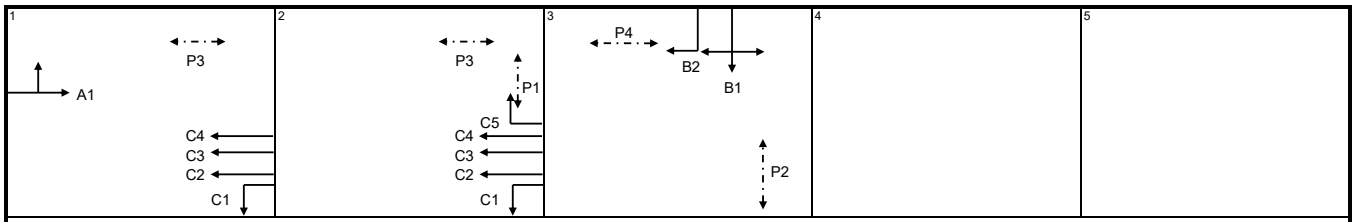


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.460	0.411	0.481	0.435
L (s)	10	38	10	38
C (s)	110	110	110	110
practical y	0.818	0.589	0.818	0.589
R.C. (%)	78%	43%	70%	36%



AM	G =	I/G =	G =	I/G =	5	G =		I/G =	7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	5	G =	30	I/G =	4	G =	I/G =	G =	I/G =
PM	G =	I/G =	G =	I/G =	5	G =		I/G =	7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	5	G =	30	I/G =	4	G =	I/G =	G =	I/G =

Signal Junction Analysis

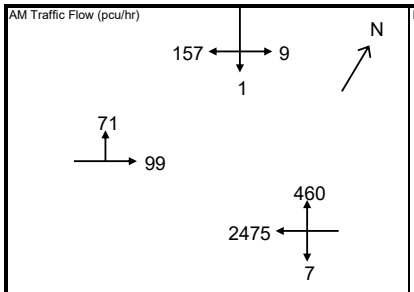
Junction: Prince Edward Road West / La Salle Road — Job Number: J7350

Scenario: with Proposed Elderly Home — R2 / P.6-3

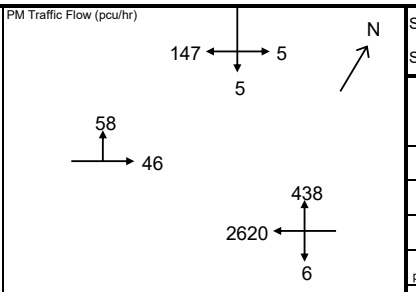
Design Year: 2031 — Designed By: — Checked By: — Date: 18 November 2024

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Prince Edward Road West EB LT+SA	A1	1	5.00	10.0		42	1990	169	0.085		55	1954	104	0.053	
La Salle Road SB LT+SA+RT	B1	3	3.10	6.0		100	1540	76	0.049	0.049	93	1562	72	0.046	0.046
RT	B2	3	3.00	14.0		100	1856	92	0.049		100	1856	85	0.046	
Prince Edward Road West WB LT+SA	C1	1,2	3.20	5.0		1	1930	793	0.411	0.411	1	1931	839	0.434	
SA	C2	1,2	3.00				2055	844	0.411			2055	893	0.435	0.435
SA	C3	1,2	3.00				2055	845	0.411			2055	894	0.435	
RT	C5	2	3.00	12.0		100	1827	460	0.252		100	1827	438	0.240	
pedestrian phase	P1	2		min crossing time =		5	sec GM +	5	sec FGM =		10	sec			
	P2	3		min crossing time =		13	sec GM +	17	sec FGM =		30	sec			
	P3	1,2		min crossing time =		6	sec GM +	6	sec FGM =		12	sec			
	P4	3		min crossing time =		5	sec GM +	5	sec FGM =		10	sec			

AM Traffic Flow (pcu/hr)



PM Traffic Flow (pcu/hr)

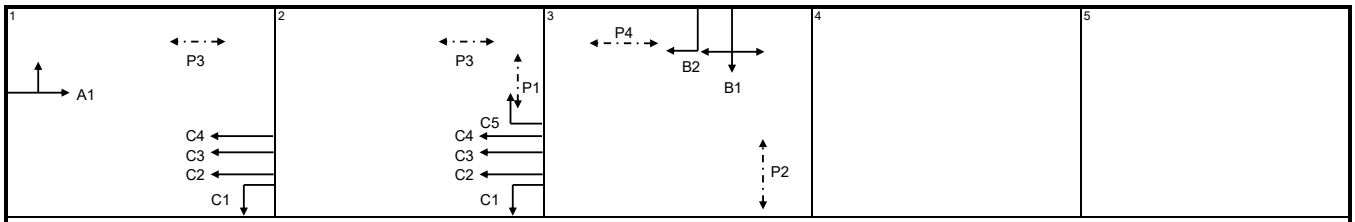


$S=1940+100(W-3.25)$ $S=2080+100(W-3.25)$

$S_M=S\div(1+1.5f/r)$ $S_M=(S-230)\div(1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.460	0.411	0.481	0.435
L (s)	10	38	10	38
C (s)	110	110	110	110
practical y	0.818	0.589	0.818	0.589
R.C. (%)	78%	43%	70%	36%



AM	G =	I/G =	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G = 5	G = 30	I/G = 4	G =	I/G =	G =	I/G =
PM	G =	I/G =	G =	I/G = 5	G =	I/G = 7	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G = 5	G = 30	I/G = 4	G =	I/G =	G =	I/G =

Appendix B – Result of Traffic Generation Surveys

TABLE B1 TRAFFIC GENERATED BY (A) 351 PRINCE EDWARD ROAD WEST IN KOWLOON CITY

No.	Vehicle Type	Arrival Time (hours)	Departure Time (hours)	Duration (min)	Activity
	Weekday				
1	LGV	08:46	08:48	2	Goods Delivery
2	Private Car	10:22	10:30	8	Pick-up / Drop-off
3	Goods Van	10:48	10:54	6	Goods Delivery
4	Mini Coach	11:57	11:58	1	Pick-up / Drop-off
5	Private Car	12:00	12:05	5	Pick-up / Drop-off
6	Mini Coach	13:55	13:56	1	Pick-up / Drop-off
7	Private Car	16:33	16:41	8	Pick-up / Drop-off
8	Private Car	18:09	18:13	4	Pick-up / Drop-off
	Saturday				
1	LGV	9:24	9:28	4	Goods Delivery
2	Taxi	10:34	10:38	2	Pick-up / Drop-off
3	Ambulance	10:43	10:57	14	Pick-up / Drop-off
4	Private Car	14:42	15:12	30	Parking
5	Private Car	16:44	17:17	33	Parking
6	Private Car	19:08	19:12	4	Pick-up / Drop-off
	Sunday				
1	Private Car	11:29	11:45	16	Parking
2	Taxi	13:40	13:41	1	Pick-up / Drop-off
3	Private Car	15:35	15:40	5	Pick-up / Drop-off
4	Private Car	16:50	17:22	32	Parking
5	Taxi	17:30	17:31	1	Pick-up / Drop-off

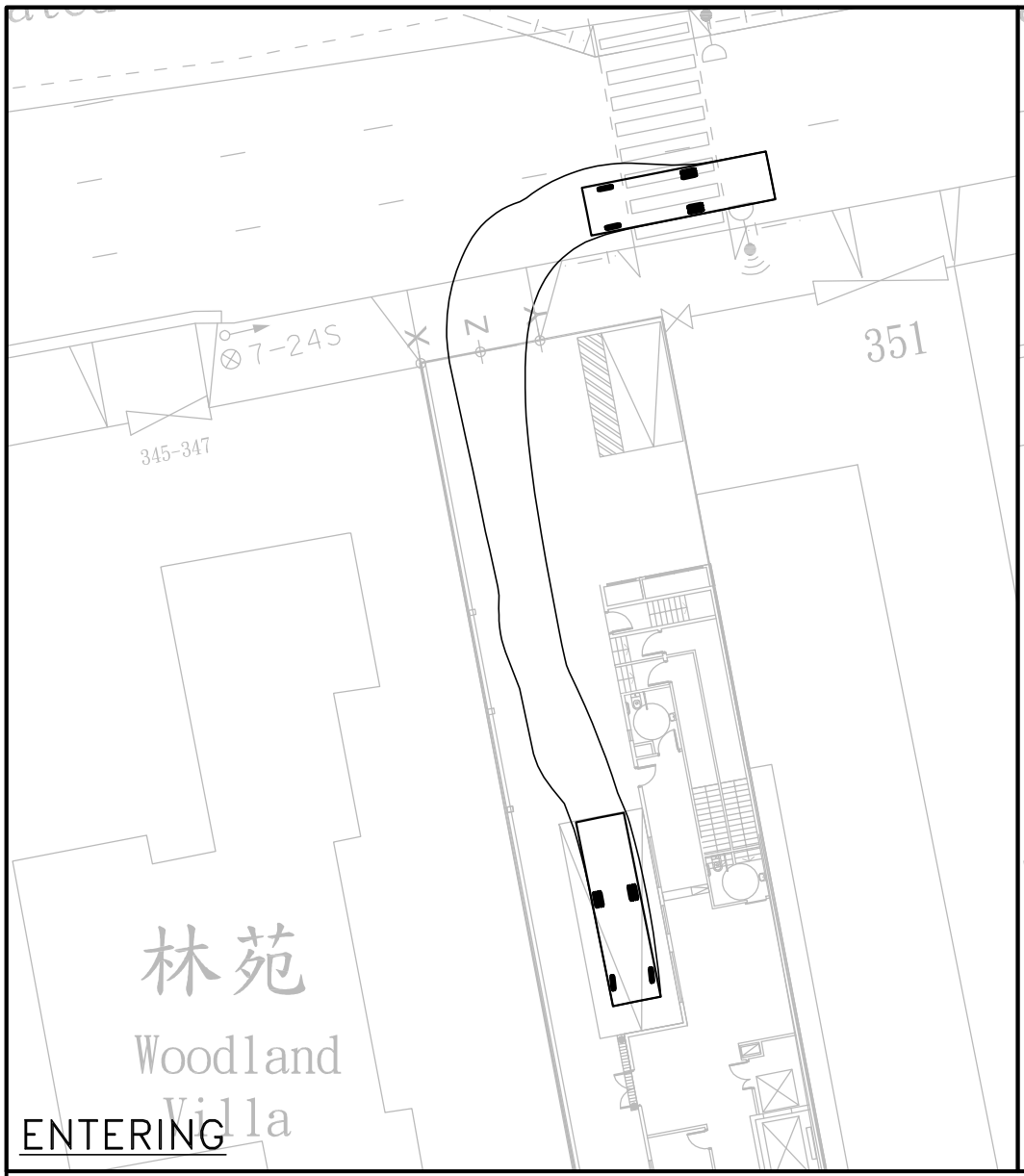
TABLE B2 TRAFFIC GENERATED BY (B) 8 KUNG LOK ROAD IN KWUN TONG

No.	Vehicle Type	Arrival Time (hours)	Departure Time (hours)	Duration (min)	Activity
Weekday					
1	Taxi	08:36	08:37	1	Pick-up / Drop-off
2	Private Car	09:11	09:31	20	Parking
3	Taxi	09:43	09:47	4	Pick-up / Drop-off
4	Goods Van	09:54	09:57	3	Goods Delivery
5	Mini Coach	10:27	10:35	8	Pick-up / Drop-off
6	LGV	12:15	12:19	4	Goods Delivery
7	Taxi	12:54	12:56	2	Pick-up / Drop-off
8	Taxi	13:00	13:01	1	Pick-up / Drop-off
9	LGV	13:14	13:20	6	Goods Delivery
10	Taxi	14:21	14:23	2	Pick-up / Drop-off
11	Mini Coach	14:45	14:47	2	Pick-up / Drop-off
12	Ambulance	15:02	15:25	23	Pick-up / Drop-off
13	Taxi	15:49	15:51	2	Pick-up / Drop-off
14	Mini Coach	16:49	17:00	11	Pick-up / Drop-off
15	Private Car	17:56	18:23	27	Pick-up / Drop-off
Saturday					
1	Taxi	08:32	08:33	1	Pick-up / Drop-off
2	Taxi	10:04	10:08	4	Pick-up / Drop-off
3	Goods Van	11:09	11:12	3	Goods Delivery
4	Taxi	11:35	11:36	1	Pick-up / Drop-off
5	Taxi	11:44	11:46	2	Pick-up / Drop-off
6	Private Car	12:02	12:30	28	Parking
7	LGV	12:58	13:05	7	Goods Delivery
8	Taxi	14:00	14:02	2	Pick-up / Drop-off
9	Private Car	14:05	14:48	43	Parking
10	Taxi	16:00	16:02	2	Pick-up / Drop-off
11	Private Car	16:14	16:34	20	Parking
12	Private Car	17:45	17:53	8	Pick-up / Drop-off
13	Taxi	17:55	17:57	2	Pick-up / Drop-off
14	Private Car	18:14	18:25	11	Pick-up / Drop-off
Sunday					
1	Private Car	08:37	08:39	2	Pick-up / Drop-off
2	Taxi	08:42	08:43	1	Pick-up / Drop-off
3	Taxi	09:52	09:54	2	Pick-up / Drop-off
4	Private Car	10:56	10:58	2	Pick-up / Drop-off
5	Private Car	11:28	11:49	21	Parking
6	Private Car	12:01	12:16	15	Parking
7	Taxi	12:30	12:37	7	Pick-up / Drop-off
8	Taxi	14:07	14:09	2	Pick-up / Drop-off
9	Private Car	14:32	14:58	26	Parking
10	Private Car	15:08	15:15	7	Pick-up / Drop-off
11	Private Car	15:20	15:29	9	Pick-up / Drop-off
12	Taxi	15:46	15:47	1	Pick-up / Drop-off
13	Taxi	16:16	16:18	2	Pick-up / Drop-off
14	Private Car	16:59	17:45	46	Parking
15	Taxi	17:51	17:53	2	Pick-up / Drop-off

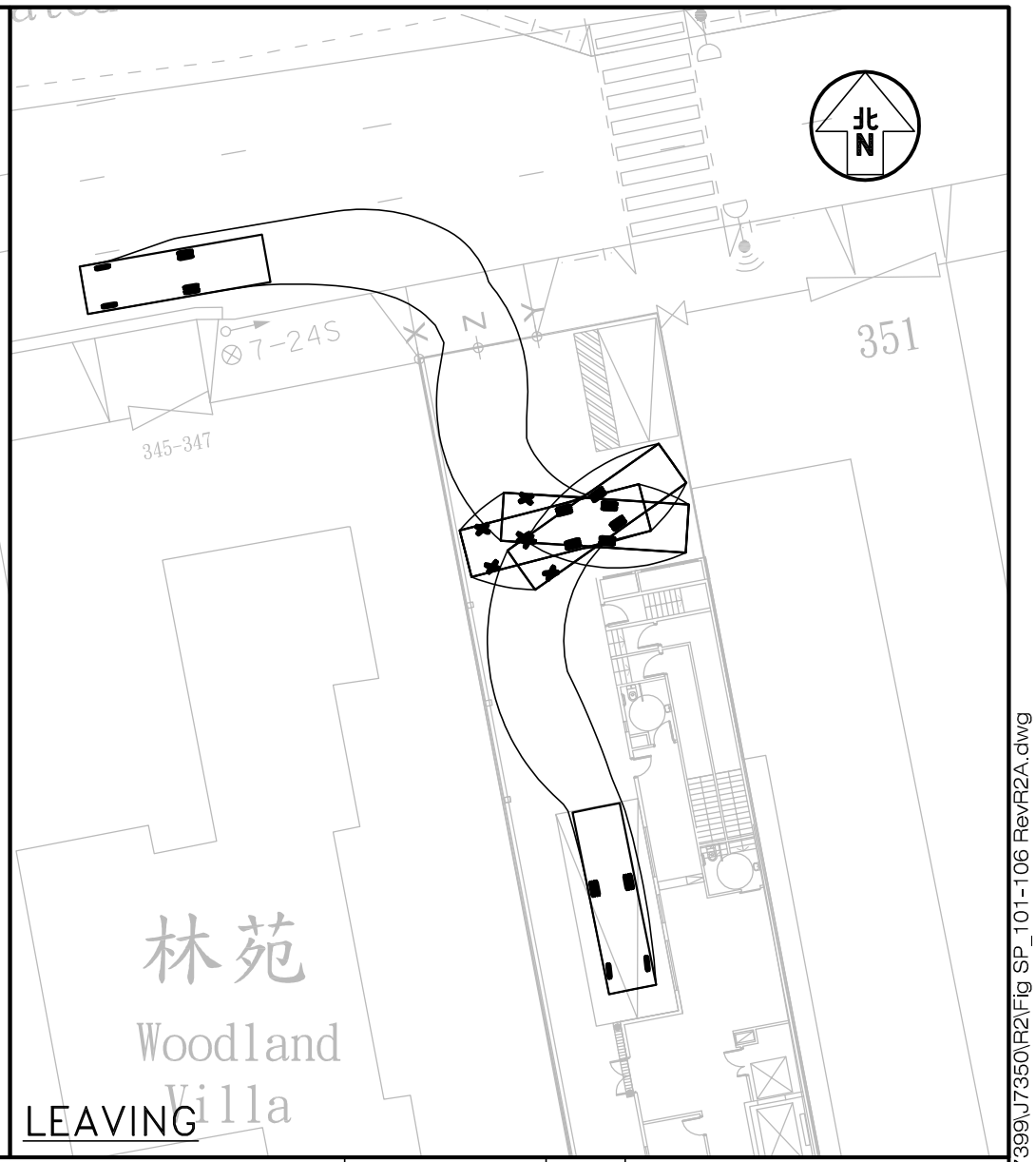
TABLE B3 TRAFFIC GENERATED BY (C) 88 KUNG LOK ROAD IN KWUN TONG

No.	Vehicle Type	Arrival Time (hours)	Departure Time (hours)	Duration (min)	Activity
	Weekday				
1	Taxi	09:07	09:08	1	Pick-up / Drop-off
2	LGV	09:35	09:46	11	Goods Delivery
3	Taxi	09:55	09:56	1	Pick-up / Drop-off
4	Taxi	10:02	10:03	1	Pick-up / Drop-off
5	Mini Coach	10:13	10:34	21	Pick-up / Drop-off
6	Mini Coach	11:19	11:38	19	Pick-up / Drop-off
7	Taxi	12:18	12:19	1	Pick-up / Drop-off
8	Goods Van	12:35	12:40	5	Goods Delivery
9	Private Car	12:47	12:48	1	Pick-up / Drop-off
10	Taxi	13:02	13:08	6	Pick-up / Drop-off
11	Mini Coach	13:14	13:23	9	Pick-up / Drop-off
12	Private Car	14:39	15:23	44	Parking
13	Private Car	16:48	17:22	34	Parking
	Saturday				
1	Taxi	08:27	08:28	1	Pick-up / Drop-off
2	LGV	08:44	08:48	4	Goods Delivery
3	Taxi	09:24	09:25	1	Pick-up / Drop-off
4	Taxi	11:17	11:18	1	Pick-up / Drop-off
5	Goods Van	12:10	12:23	13	Goods Delivery
6	Taxi	12:55	12:56	1	Pick-up / Drop-off
7	Goods Van	13:14	13:29	15	Goods Delivery
8	Taxi	13:39	13:40	1	Pick-up / Drop-off
9	Goods Van	13:51	13:54	3	Goods Delivery
10	Taxi	14:13	14:14	1	Pick-up / Drop-off
11	Private Car	15:39	16:10	31	Parking
12	Taxi	16:57	16:58	1	Pick-up / Drop-off
	Sunday				
1	Taxi	08:01	08:09	8	Pick-up / Drop-off
2	Ambulance	08:15	08:33	18	Pick-up / Drop-off
3	Taxi	09:13	09:16	3	Pick-up / Drop-off
4	Mini Coach	09:42	09:49	7	Pick-up / Drop-off
5	Private Car	09:54	09:59	5	Pick-up / Drop-off
6	Taxi	10:01	10:10	9	Pick-up / Drop-off
7	LGV	10:20	10:26	6	Goods Delivery
8	Private Car	10:35	10:39	4	Pick-up / Drop-off
9	Private Car	13:05	13:46	41	Parking
10	Private Car	14:26	14:28	2	Pick-up / Drop-off
11	Private Car	16:27	17:09	42	Parking

Appendix C – Swept Path Analysis



ENTERING

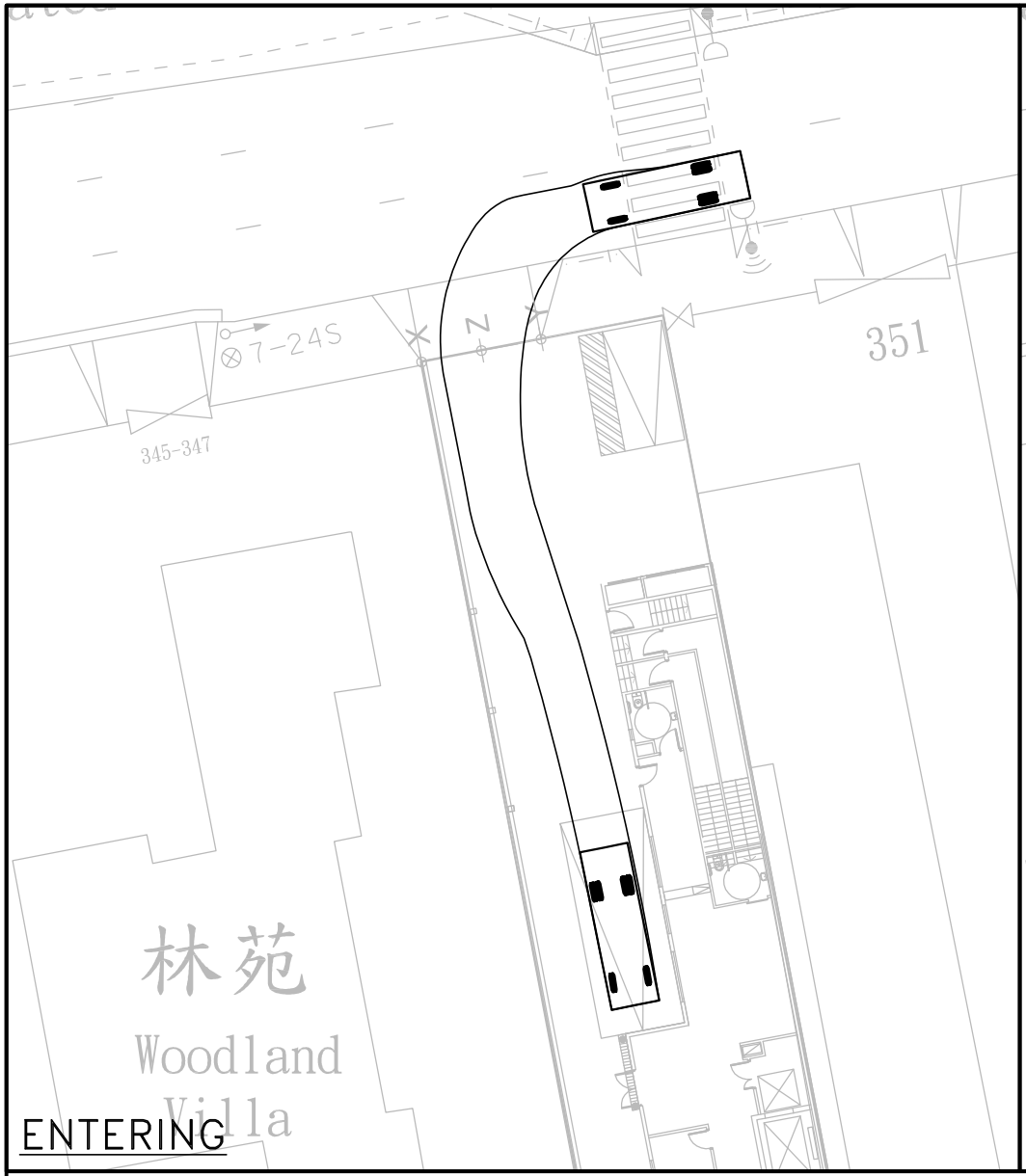


LEAVING

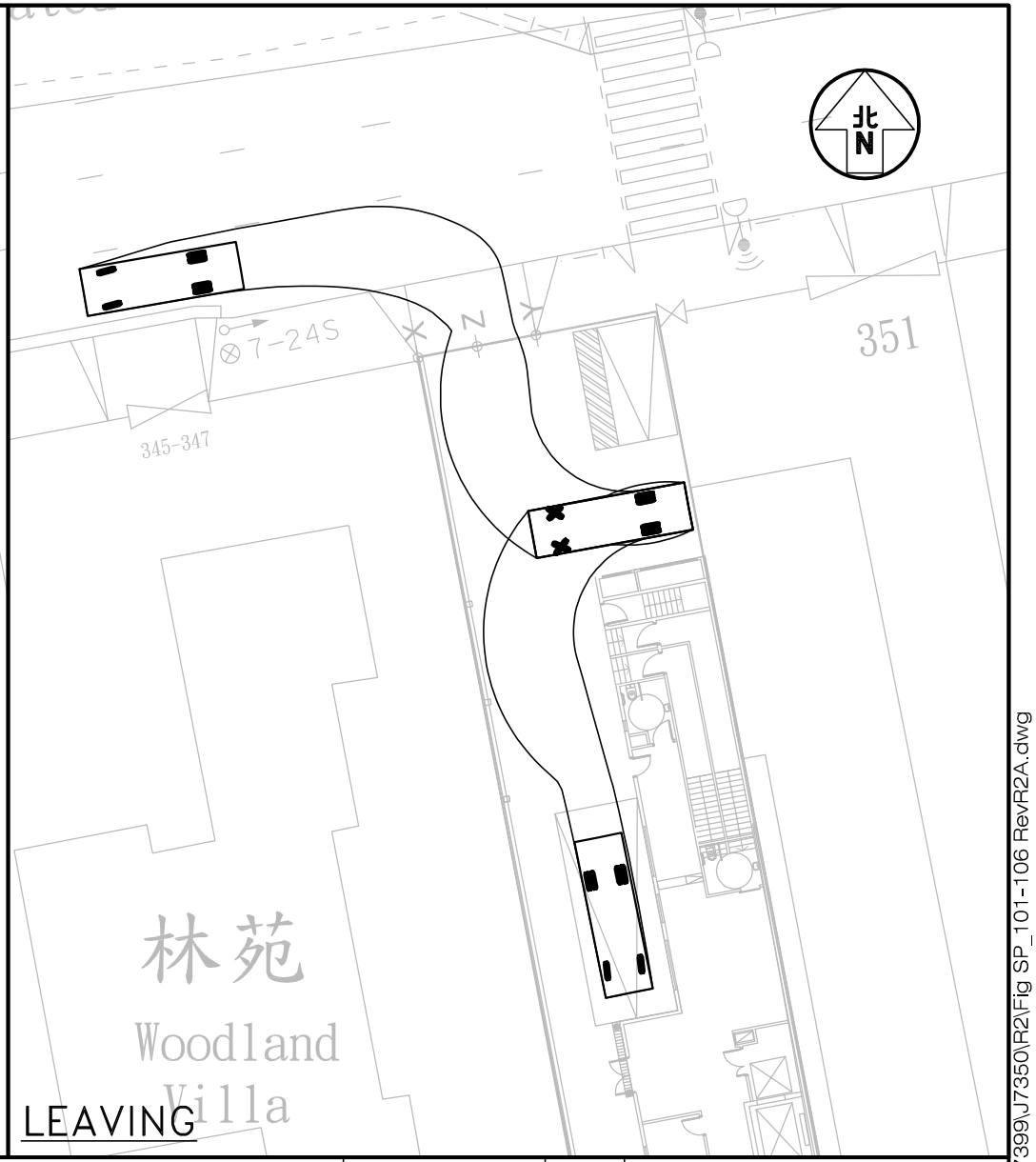
Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. SP/101 Revision R2A
Figure Title	SWEPT PATH OF 8m MINI COACH ENTERING AND LEAVING THE LAY-BY		Designed by T H C; Drawn by C C L; Checked by K C; Scale in A4 1 : 300; Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg



ENTERING

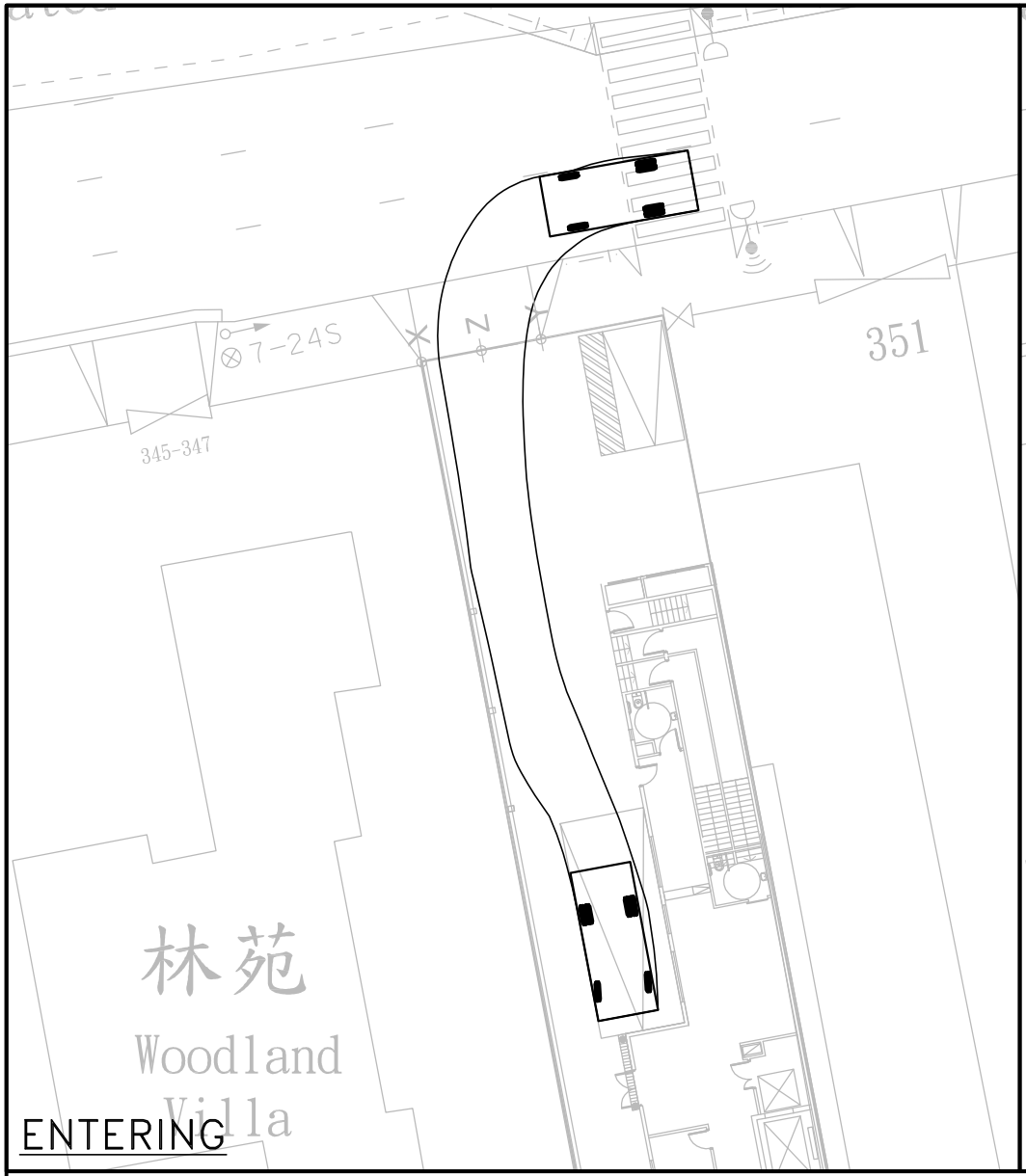


LEAVING

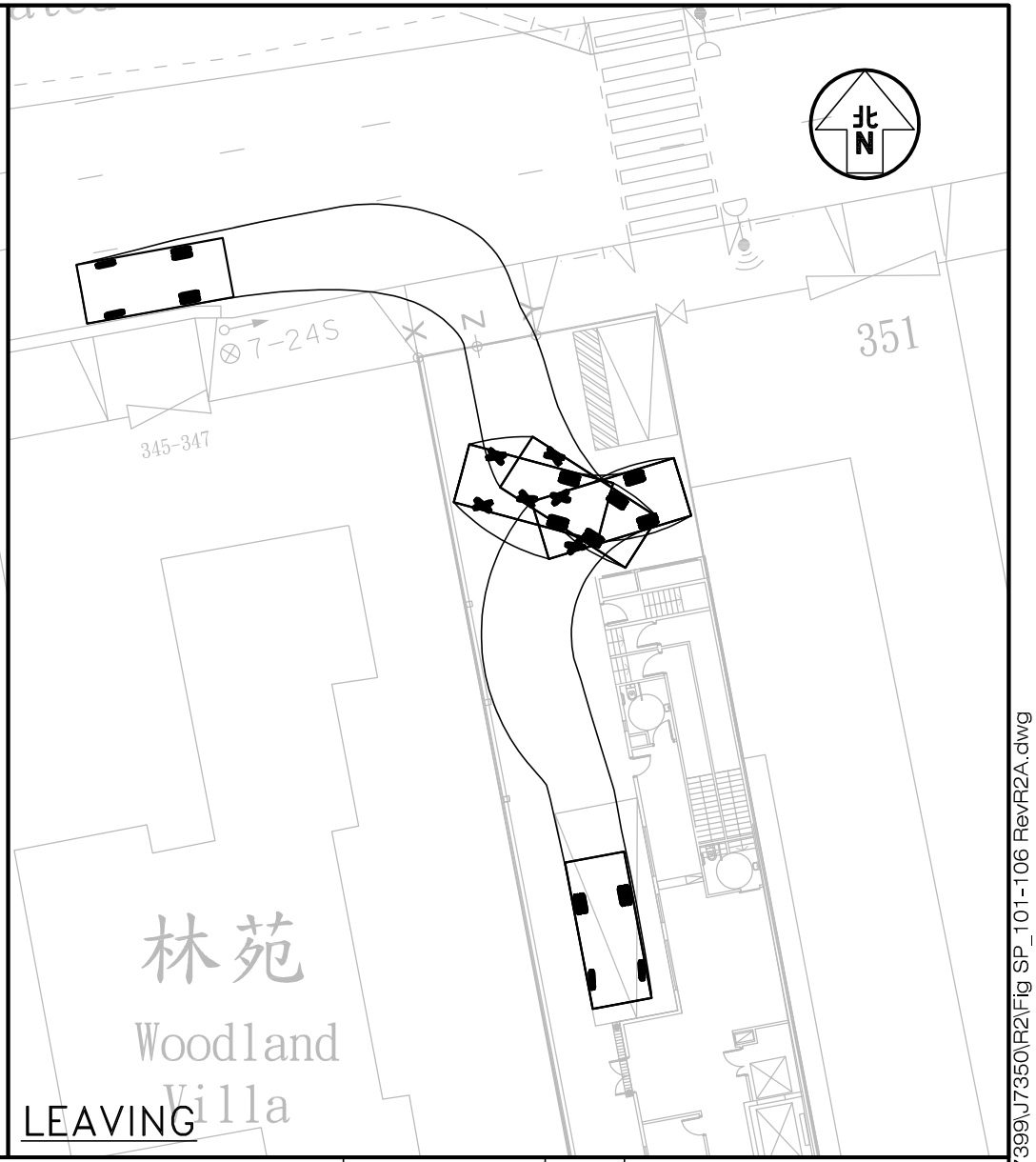
Project Title: PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. SP/102	Revision R2A
Figure Title: SWEPT PATH OF 7m LIGHT GOODS VEHICLE ENTERING AND LEAVING THE LAY-BY		Designed by T H C / Drawn by C C L / Checked by K C	
		Scale in A4: 1 : 300	Date: 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg



ENTERING



LEAVING

Project Title

PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY)
IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY

J7350

Figure Title

SWEPT PATH OF 6.5m AMBULANCE ENTERING AND LEAVING THE LAY-BY

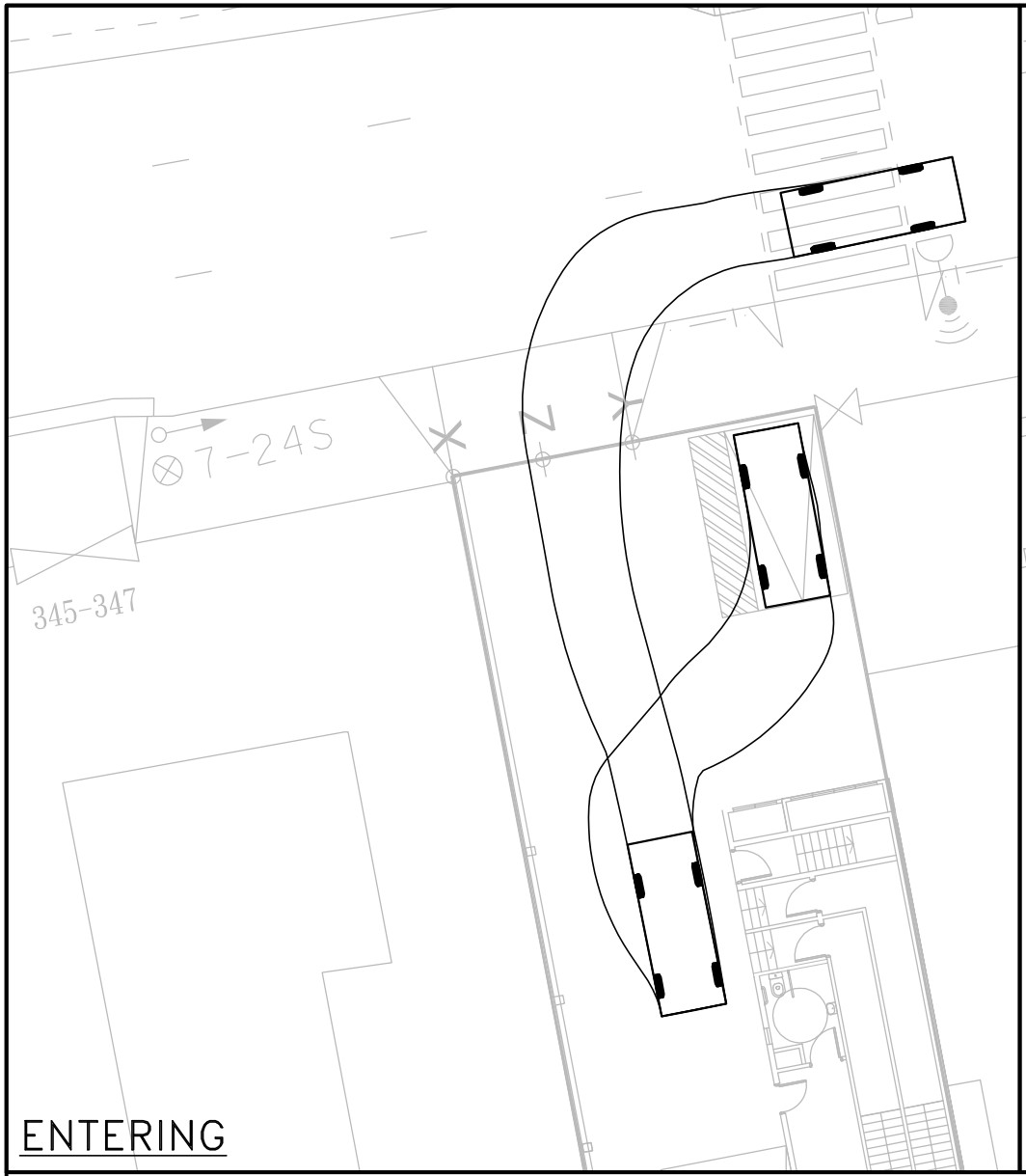
Figure No.	Revision
SP/103	R2A

Designed by	Drawn by	Checked by
T H C	C C L	K C

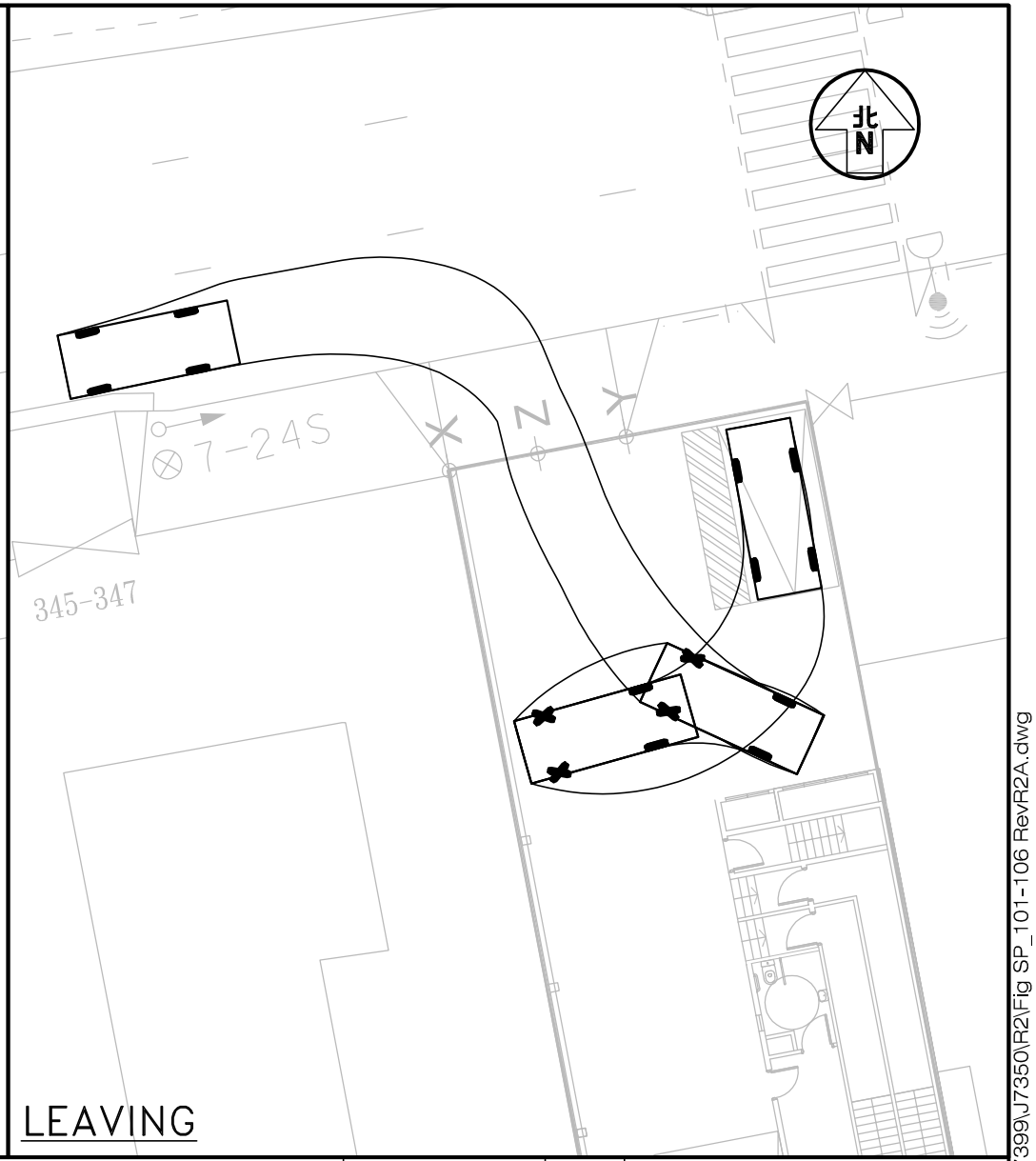
Scale in A4	Date
1 : 300	18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road,
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg



ENTERING

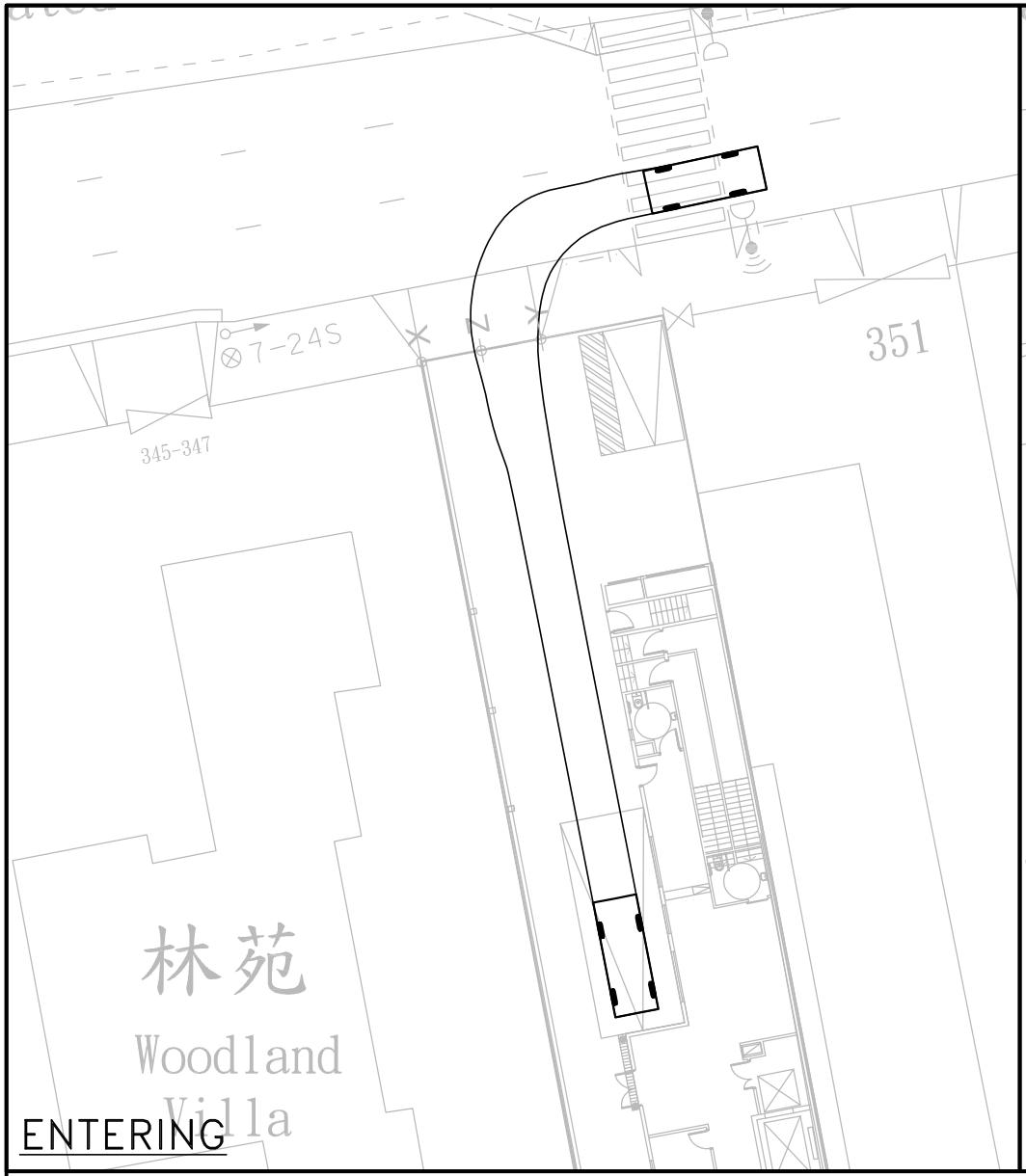


LEAVING

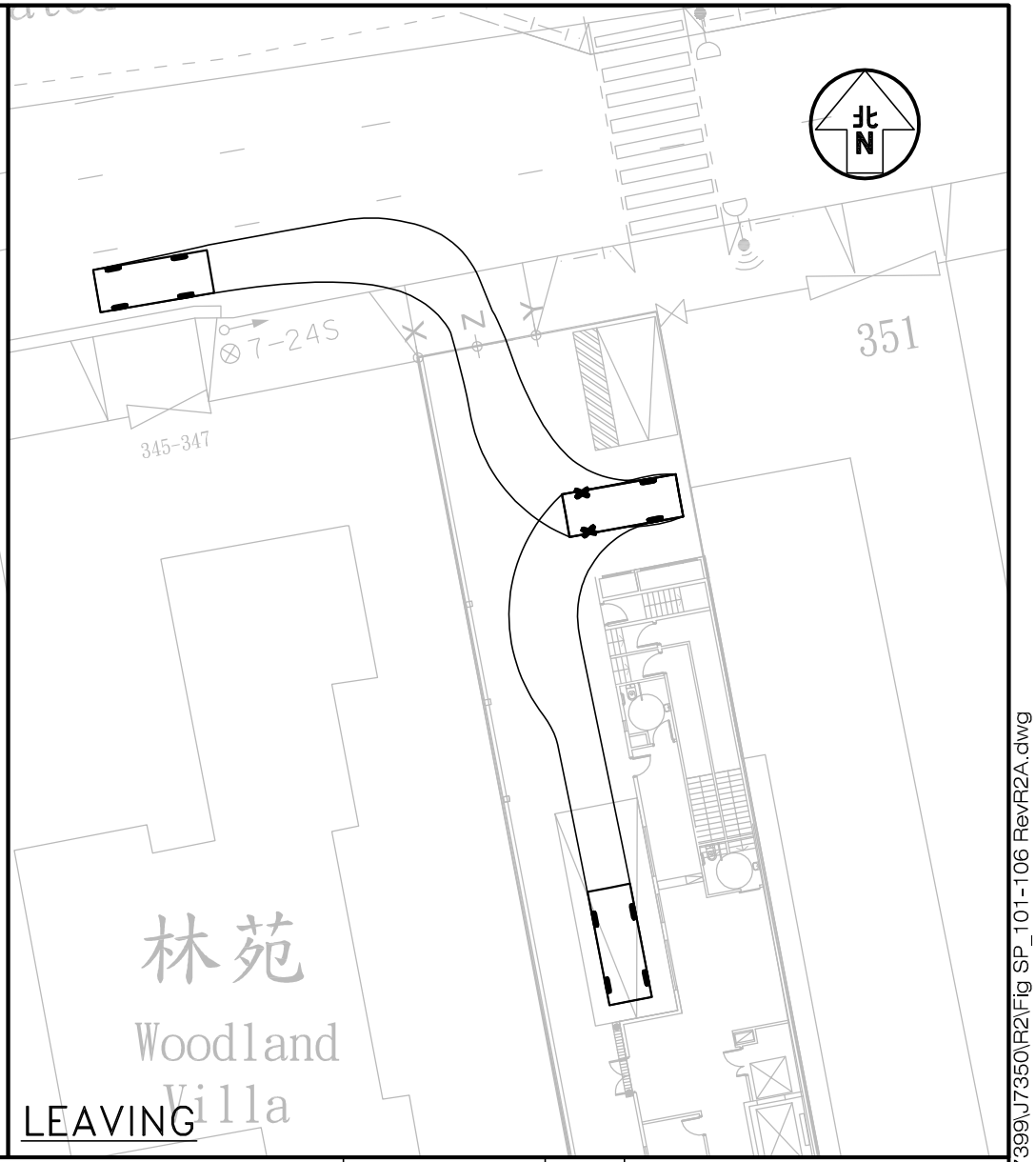
Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. SP/104 Revision R2A
Figure Title	SWEPT PATH OF 5m PRIVATE CAR ENTERING AND LEAVING THE CAR PARKING SPACE		Designed by T H C; Drawn by C C L; Checked by K C; Scale in A4 1 : 200; Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg



ENTERING



LEAVING

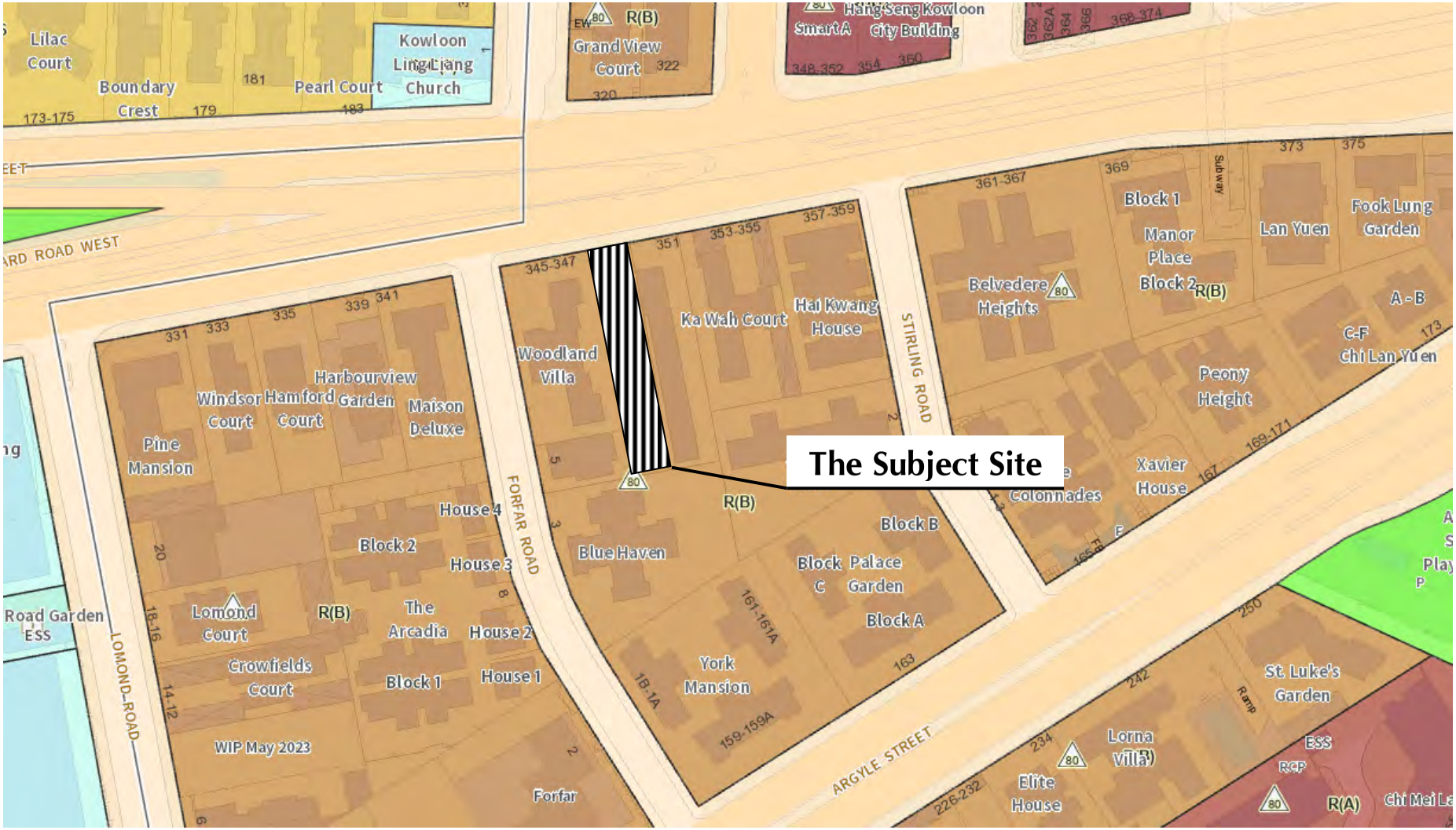
Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) IN "RESIDENTIAL (GROUP B)" ZONE AT 349 PRINCE EDWARD ROAD WEST, KOWLOON CITY	J7350	Figure No. SP/105 Revision R2A
Figure Title	SWEPT PATH OF 5m TAXI / PRIVATE CAR ENTERING AND LEAVING THE LAY-BY		Designed by THC Drawn by CCL Checked by KC Scale in A4 1 : 300 Date 18 NOV 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOB\J7350-J7399\J7350\R2\Fig SP_101-106 RevR2A.dwg

Appendix D – Extract from OZP No. S/K10/30

APPROVED MA TAU KOK OUTLINE ZONING PLAN NO. S/K10/30



RESIDENTIAL (GROUP B)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Flat Government Use (Police Reporting Centre, Post Office only) House Library Residential Institution School (in free-standing purpose-designed building only) Social Welfare Facility (on land designated "R(B)1" only) Utility Installation for Private Project	Ambulance Depot Eating Place Educational Institution Government Refuse Collection Point Government Use (not elsewhere specified) Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Off-course Betting Centre Office Petrol Filling Station Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution School (not elsewhere specified) Shop and Services Social Welfare Facility (not applicable to land designated "R(B)1") Training Centre

Planning Intention

This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board.

(Please see next page)

Appendix III

Replacement Pages of Sewerage Impact Assessment

CHAPTERS

Page

1. INTRODUCTION 1-2
   1.1 Background and Objectives 1-2
   1.2 Subject Site and its Environs 1-2
   1.3 Proposed Development 1-2
2. SEWERAGE IMPACT ASSESSMENT 2-1
   2.1 Scope of Work 2-1
   2.2 Existing Sewerage System 2-1
   2.3 Assessment Criteria and Methodology 2-1
   2.4 Assessment of Sewerage Impact 2-1
   2.5 Discussion 2-3
3. OVERALL CONCLUSION 3-1
   3.1 Conclusion 3-1

TABLES

Table 2.1 Estimated Peak Flow of the Proposed Development 2-3

FIGURES

Figure 1.1 Location of the Subject Site and its Environs

Figure 2.1 Existing Sewerage System in the vicinity of the Subject Site

Figure 2.2 Existing Sewerage System and Catchment Area in the vicinity of the Subject Site

APPENDICES

Appendix 1.1 Indicative MLP of the Proposed Development

Appendix 2.1 Detailed Sewerage Impact Assessment Calculations

Appendix 2.2 Manhole Survey Report

ground level). A new Ø225mm polyethylene (PE) pipe is proposed to connect the Proposed Development and the existing government manhole FMH4027438 (S1) of the public sewerage system. The proposed sewage pipe and the existing sewerage system in the vicinity of the subject site is shown in Figure 2.1 while the catchment in the vicinity of the Subject Site is shown in Figure 2.2.

2.4.4 Calculation of the sewage generation rate for the proposed development is given in Table 2.1.

Table 2.1 Estimated Peak Flow of the Proposed Development

Calculation for Sewage Generation Rate of the Proposed Development			
1. Proposed Elderly Home			
1a. Total number of beds	=	141	beds
1b. Total number of elderlies	=	141	people
1c. Design flow	=	190	litre/person/day -- (Special class in Table T-1 of GESF)
1d. Sewage Generation rate	=	26.8	m^3/day
2a. Total number of nursing staff	=	21	staff (Estimated based on Code of Practice for Residential Care Homes (Nursing Homes) for the Elderly)
2b. Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
2c. Sewage Generation rate	=	5.9	m^3/day
3a. Assumed area for RCHE communal facilities	=	247.3	m^2
3b. Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
3c. Total number of employees	=	8	employees
3d. Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
3e. Sewage generation rate	=	2.3	m^3/day
Total Flow from Proposed Development			
Flow Rate	=	35.0	m^3/day
Contributing Population	=	129	people
Peaking factor	=	8	Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow	=	3.2	litre/sec

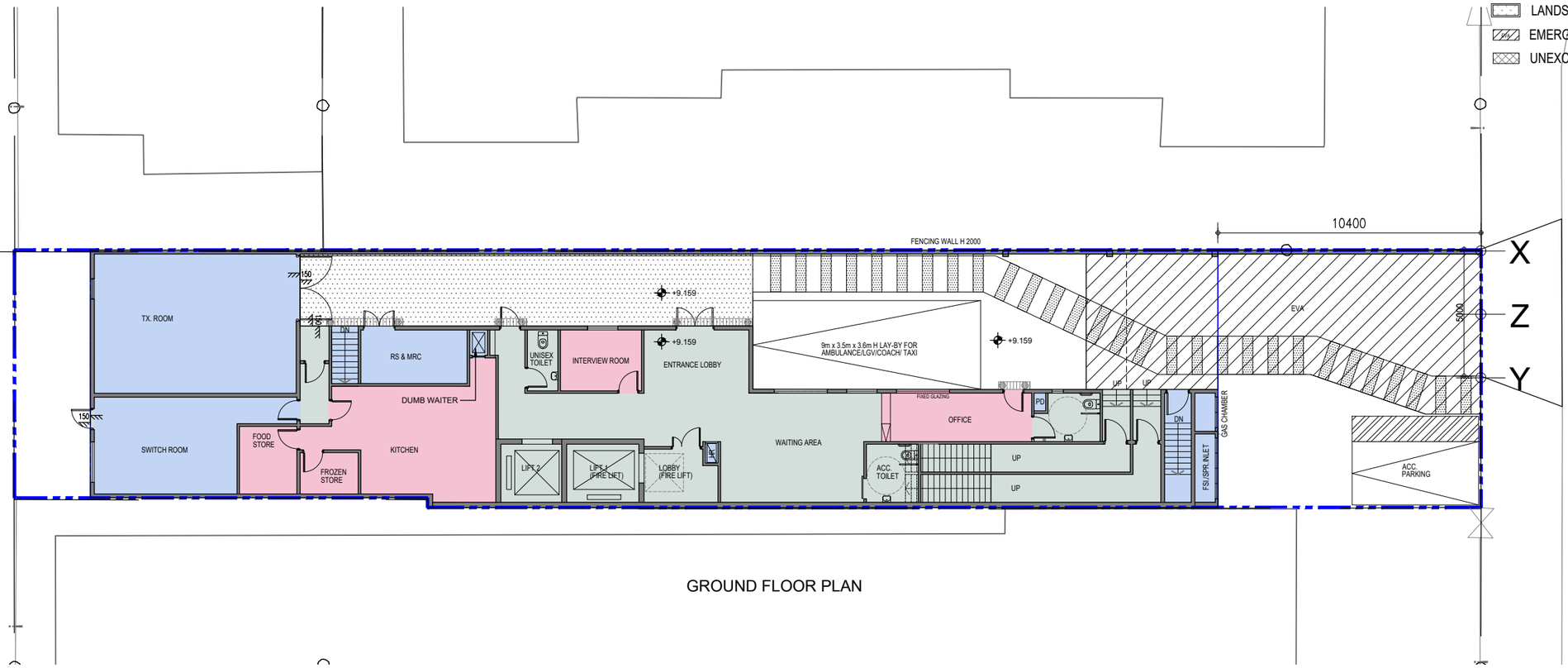
2.5 Discussion

2.5.1 The average and peak flow rates from the proposed development are about 35 m^3/day and 3.2 litre/sec respectively.

2.5.2 After calculating the appropriate capacities as mentioned above, the estimated sewage flow from the proposed development has been compared with the capacity of the existing sewerage system to determine whether it has adequate spare capacity to accommodate the flow from the proposed development and existing catchment area.

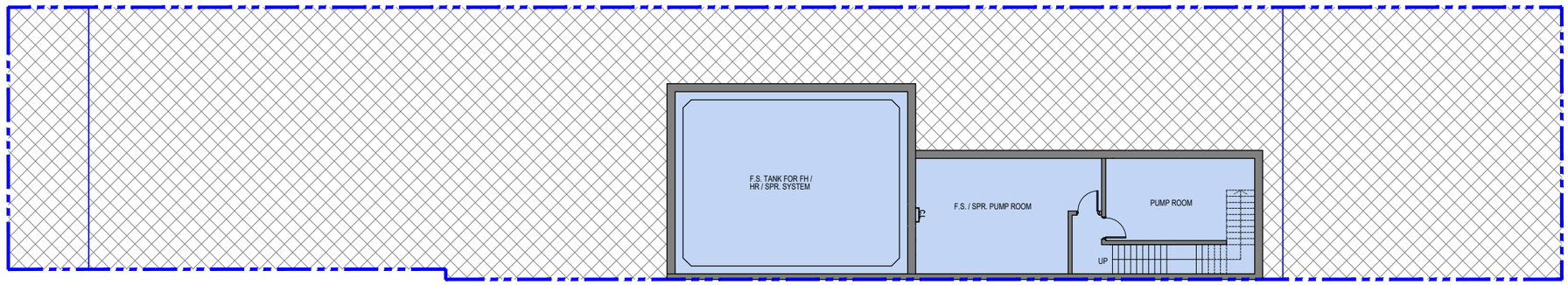
2.5.3 According to Table 4 of Appendix 2.1, it is found that the contribution from the sewage generated from the proposed development and surrounding catchment areas will be within 90% of the existing sewage system capacity. Therefore, the existing sewerage system is sufficient to cater for the sewage generated from the proposed development.

Appendix 1.1 Indicative MLP of the Proposed Development



GROUND FLOOR PLAN

G/F LAYOUT 1:200



B/S LAYOUT 1:200

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

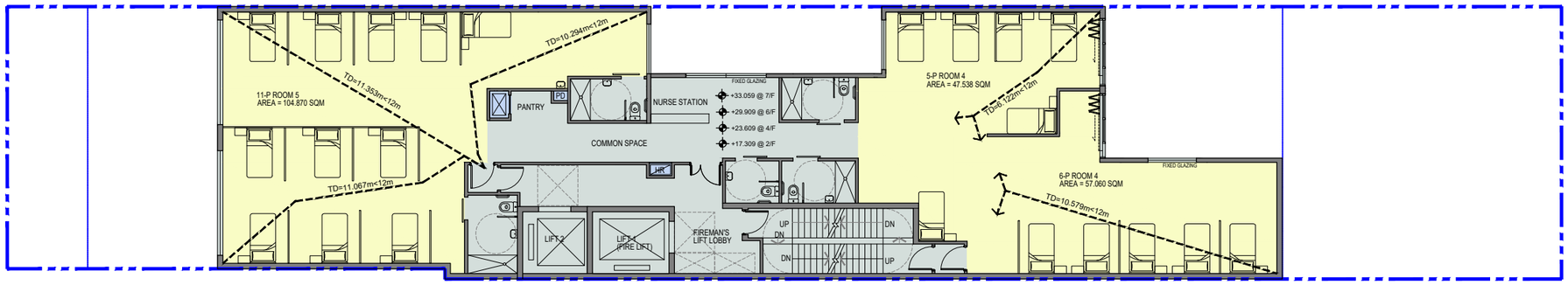
PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

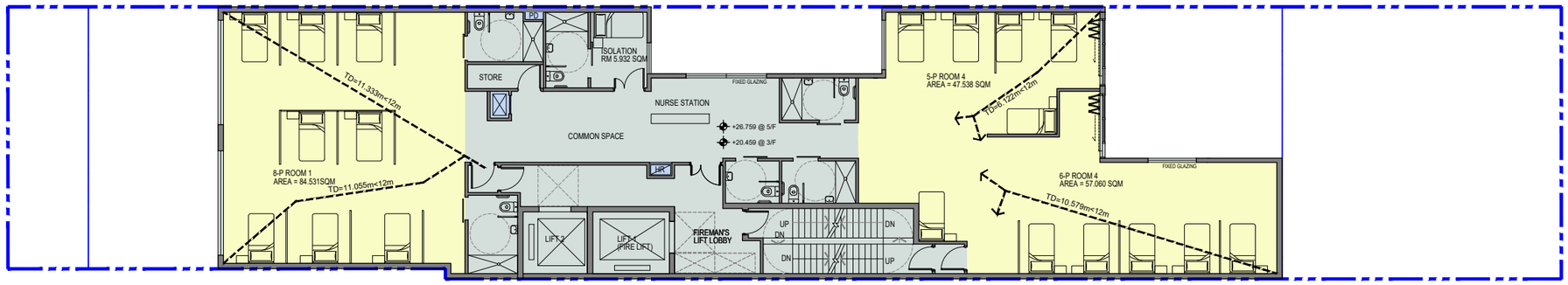
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
GROUND FLOOR PLAN & BASEMENT FLOOR PLAN

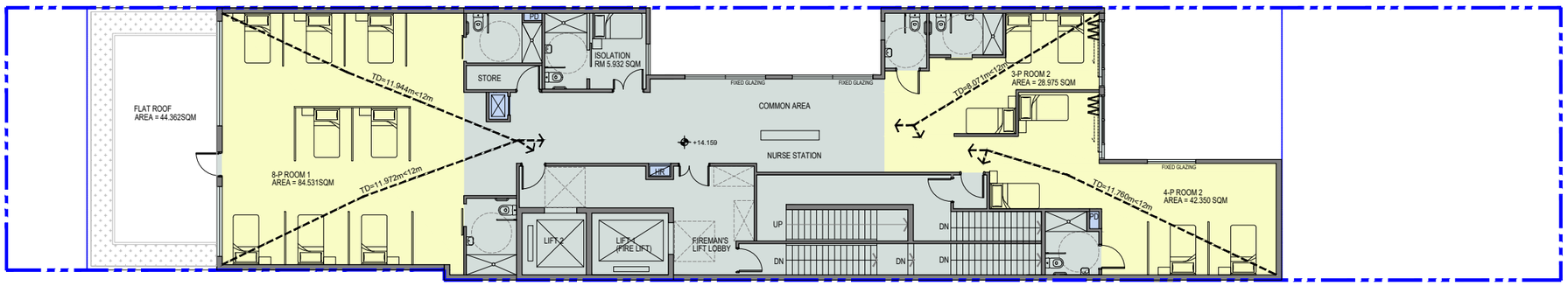
DRAWN BY:	DATE:	
CZ	NOV-2024	
CHECKED BY:	APPROVED BY:	
CMD	KCY	
SCALE:	PAPER SIZE:	
1:200	A3	
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-00	V14



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND

NOS. OF BED (9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

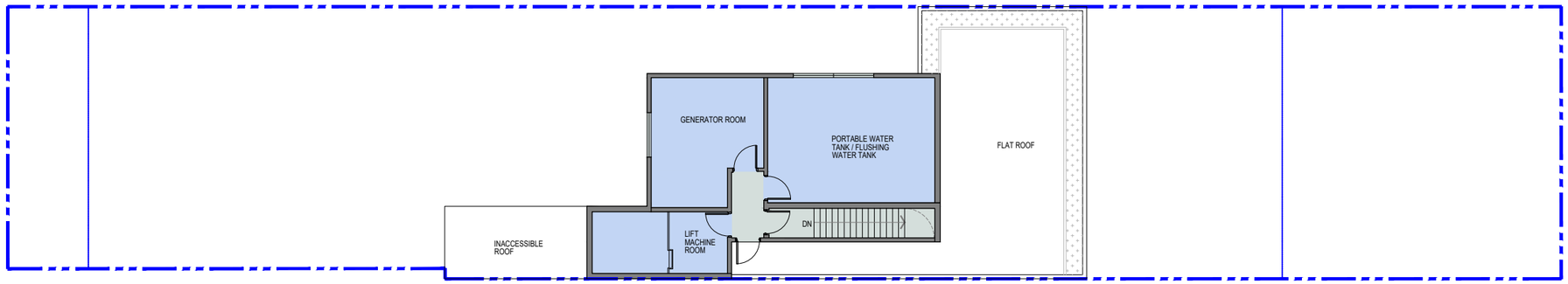
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

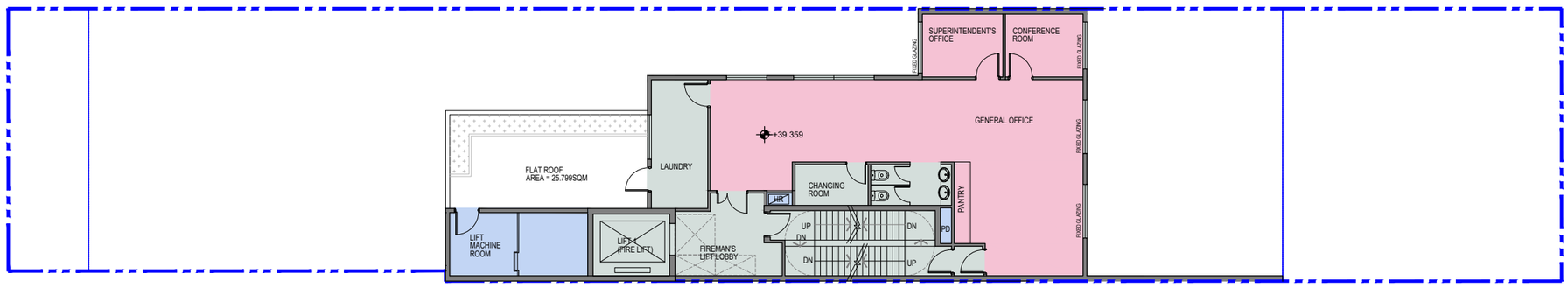
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY:	DATE:
CZ	NOV-2024
CHECKED BY:	APPROVED BY:
CMD	KCY
SCALE:	PAPER SIZE:
1:200	A3

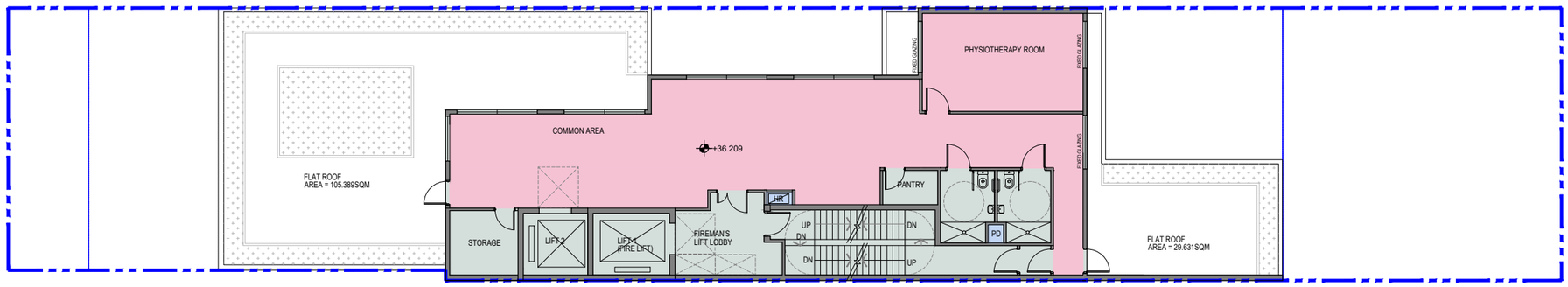
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-01	V14



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND

NOS. OF BED (9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

ANCILLARY AREA	
Floor Level	Area (m²)
G/F	59.183
1/F	0
2/F	0
3/F	0
4/F	0
5/F	0
6/F	0
7/F	0
8/F	108.709
9/F	79.448
TOTAL	247.338

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

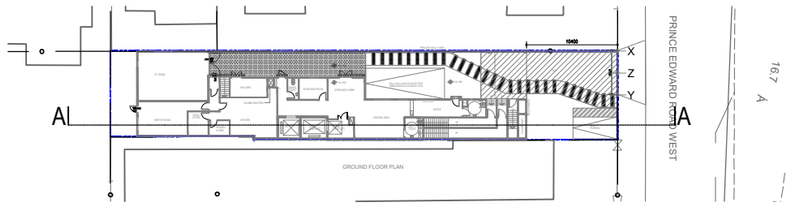
PROJECT LANDSCAPE CONSULTANT:

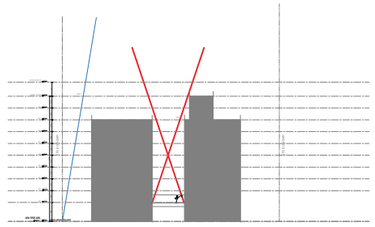
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

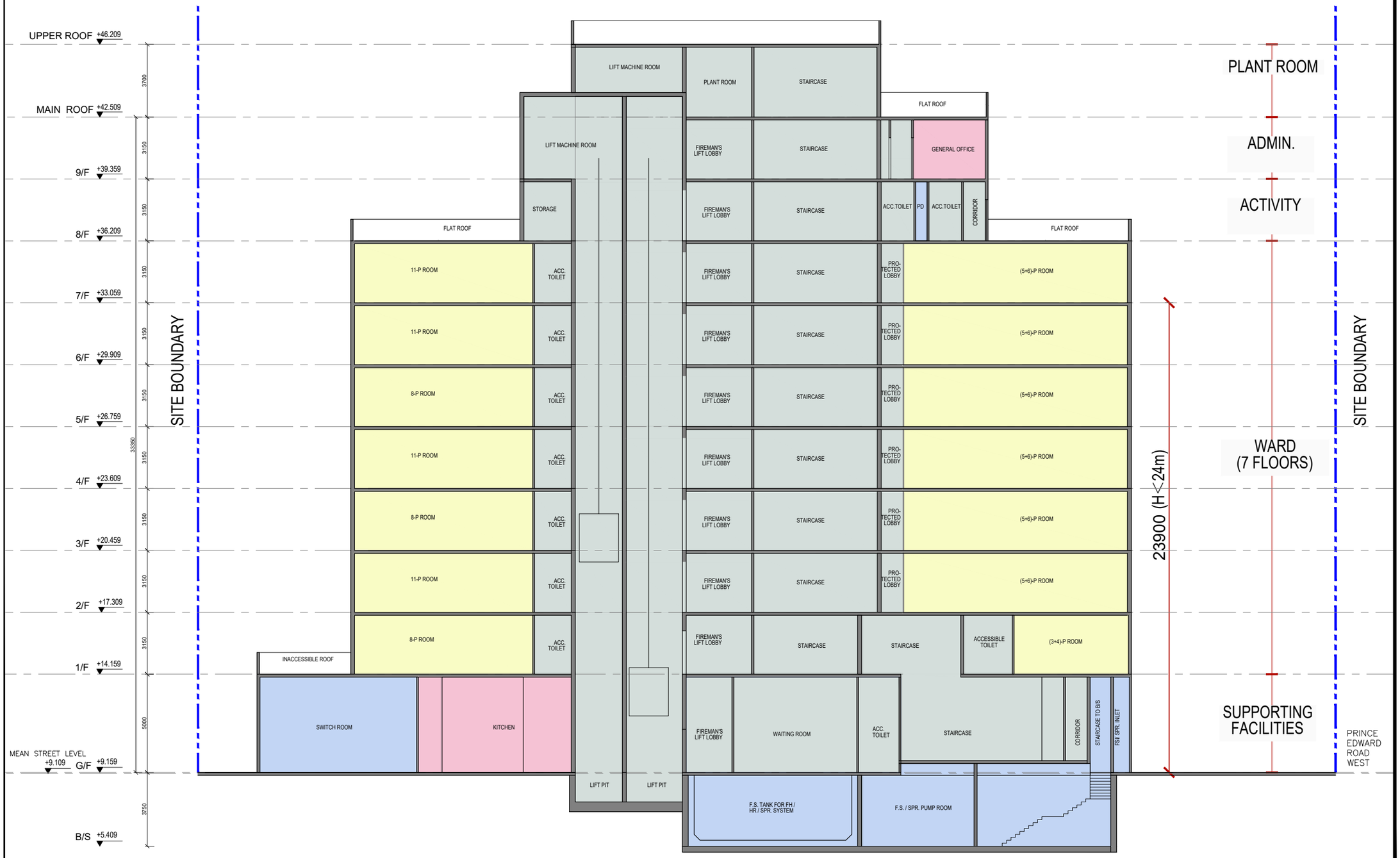
DRAWN BY: CZ	DATE: NOV-2024
CHECKED BY: CMD	APPROVED BY: KCY
SCALE: 1:200	PAPER SIZE: A3
PROJECT: PE 6170	DRAWING: GP-02 REVISION: V14





LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY:	DATE:
CZ	NOV-2024
CHECKED BY:	APPROVED BY:
CMD	KCY
SCALE:	PAPER SIZE:
1:200	A3
PROJECT:	DRAWING: / REVISION:
PE 6170	GP-03 / V14

Appendix 2.1 Detailed Sewerage Impact Assessment Calculations

Table 1 Calculation for Sewage Generation Rate of the Proposed Development at the Application Site

Proposed Development

1. Proposed Elderly Home

1a. Total number of beds	=	141	beds
1b. Total number of elderlies	=	141	people
1c. Design flow	=	190	litre/person/day -- (Institutional and special class in Table T-1 of GESF)
1d. Sewage Generation rate	=	**26.8**	m^3/day
2a. Total number of nursing staff	=	21	staff (Estimated based on Code of Practice for Residential Care Homes (Nursing Homes) for the Elderly)
2b. Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
2c. Sewage Generation rate	=	**5.9**	m^3/day
3a. Assumed area for RCHE communal facilities	=	247.3	m^2
3b. Assumed floor area per employee	=	30.3	m^2 per employee -- (refer to Table 8 of CIFSUS - Community, Social & Personal Services)
3c. Total number of employees	=	8	employees
3d. Design flow	=	280	litre/employee/day -- (refer to Table T-2 of GESF - J11 Community, Social & Personal Services)
3e. Sewage generation rate	=	**2.3**	m^3/day

Total Flow from Proposed Development

Flow Rate	=	35.0	m^3/day
Contributing Population	=	129	people
Peaking factor	=	8	Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow	=	**3.2**	litre/sec

Table 2a Hydraulic Capacity of Existing Sewers at Prince Edward Road West

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Cover Level 1[2]	Cover Level 2[2]	Depth 1	Depth 2	Invert Level 1[3]	Invert Level 2[3]	g	k_s	s	v	V	Area	Q	Estimated Capacity
			mm	m	mPD	mPD	m	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
S1-S2	FMH4027438	FMH4067900	300	12.2	9.38	9.10	1.7	1.7	7.80	7.40	9.81	0.0006	0.033	0.000001	2.86	0.07	0.20	202
S2-S3	FMH4067900	FMH4050809	300	1.8	9.10	9.10	1.7	2.2	7.40	6.90	9.81	0.0006	0.281	0.000001	8.39	0.07	0.59	593
S3-S4	FMH4050809	FMH4048825	675	4.9	9.10	9.06	2.2	2.2	6.89	6.85	9.81	0.003	0.009	0.000001	2.02	0.36	0.72	722
S4-S5	FMH4048825	FMH4048826	675	25.1	9.06	8.80	2.2	-	6.86	-	9.81	0.003	-	0.000001	-	0.36	-	-
S5-S6	FMH4048826	FMH4050810	675	25.0	8.80	8.94	-	-	-	-	9.81	0.003	-	0.000001	-	0.36	-	-
S6-S7	FMH4050810	FMH4048827	675	7.3	8.94	8.36	-	-	-	-	9.81	0.003	-	0.000001	-	0.36	-	-
S4-S7'	FMH4048825	FMH4048827	600	57.9	-	8.36	-	-	5.21	4.33	9.81	0.003	0.015	0.000001	2.43	0.28	0.69	687

Note:

[1] According to the Drainage Record Plans (DSD), the invert levels of several manholes are missing. According to planning application no. A/K10/261, a manhole survey was conducted to determine the depth and alignment of the concerned manholes. The survey results show that manhole FMH4067900 (S2) is connected to FMH4050809 (S3), which is different from the online Drainage Record Plans published by DSD. Since the invert levels of manholes downstream of S4 are not available in the Drainage Record Plan, interpolation is adopted to assess the hydraulic capacity of sewers at segment S4-S5-S6-S7 as shown in **Table 2b**.

[2] The cover levels of S2, S5 and S6 are referenced from the previous planning application no. A/K10/261.

[3] The incoming invert levels of S1-S2 and S2-S3, and outgoing invert levels of S2-S3 and S4-S5 are deduced by subtracting the depth from the cover level.

[4] g=gravitational acceleration; ks=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity

[5] The value of k_s = 0.6mm or 3mm are used for the calculation of slimed clayware sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

[6] The value of k_s = 3mm or 6mm are used for the calculation of slimed concrete sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

[7] The value of k_s = 1.5mm are used for the calculation of slimed PE sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

[8] The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)

[9] Equation used: $V=-\sqrt{(8gDs)}\log\left(\frac{k_s}{3.7D}+\frac{2.51v}{D\sqrt{(2gDs)}}\right)$

Table 2b Hydraulic Capacity of Existing Sewers at Prince Edward Road West - Overall hydraulic capacity of several segments

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
			mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
S4-S5	FMH4048825	FMH4048826	675	25.1	6.86	6.48	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160
S5-S6	FMH4048826	FMH4050810	675	25.0	6.48	6.09	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160
S6-S7	FMH4050810	FMH4048827	675	7.3	6.09	5.98	9.81	0.0006	0.015	0.000001	3.24	0.36	1.16	1160

Note:

[1] The invert levels are calculated based on the assumption that S4-S5, S5-S6, and S6-S7 has the same gradient ("s") as S4-S7'.

Table 2c Hydraulic Capacity of Existing Sewers at Prince Edward Road West - after corrections

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
			mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
S1-S2	FMH4027438	FMH4067900	300	12.2	7.80	7.40	9.81	0.0006	0.033	0.000001	2.86	0.07	0.20	202
S2-S3	FMH4067900	FMH4050809	300	1.8	7.40	6.90	9.81	0.0006	0.281	0.000001	8.39	0.07	0.59	593
S3-S4	FMH4050809	FMH4048825	675	4.9	6.89	6.85	9.81	0.003	0.009	0.000001	2.02	0.36	0.72	722
S4-S5	FMH4048825	FMH4048826	675	25.1	6.86	6.48	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S5-S6	FMH4048826	FMH4050810	675	25.0	6.48	6.09	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S6-S7	FMH4050810	FMH4048827	675	7.3	6.09	5.98	9.81	0.003	0.015	0.000001	2.62	0.36	0.94	939
S4-S7'	FMH4048825	FMH4048827	600	57.9	5.21	4.33	9.81	0.003	0.015	0.000001	2.43	0.28	0.69	687

Table 2d Hydraulic Capacity of Proposed Sewers at Prince Edward Road West

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
			mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
S0-S1	Proposed TM	FMH4027438	225	6.2	7.85	7.80	9.81	0.0015	0.008	0.000001	1.03	0.04	0.04	41

Table 3a Calculation for Sewage Generation Rate of the Existing Surrounding Building

Catchment A

1. Windsor Court (333 Prince Edward Road West)

1a. Total number of residential units	=	18	units
1b. Total number of residents	=	49	people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow	=	270	litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate	=	**13.1**	m^3/day

2. Hamford Court (335 Prince Edward Road West)

1a. Total number of residential units	=	24	units
1b. Total number of residents	=	65	people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow	=	270	litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate	=	**17.5**	m^3/day

3. Harbourview Garden (339 Prince Edward Road West)

1a. Total number of residential units	=	34	units
1b. Total number of residents	=	92	people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow	=	270	litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate	=	**24.8**	m^3/day

4. Maison Deluxe (341 Prince Edward Road West)

1a. Total number of residential units	=	33	units
1b. Total number of residents	=	89	people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow	=	270	litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate	=	**24.1**	m^3/day

5. Woodland Vila (345-347 Prince Edward Road West)

1a. Total number of residential units	=	35	units
1b. Total number of residents	=	95	people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow	=	270	litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate	=	**25.5**	m^3/day

Sub-total Flow of Catchment A

Flow Rate	=	105.0	m^3/day
Contributing Population	=	389	people
Peaking factor	=	8	Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow	=	**9.7**	litre/sec

Total Flow at Manhole S1 (FMH4027438), including Proposed Development

Flow Rate	=	139.9	m^3/day
Contributing Population	=	518	people
Peaking factor	=	8	Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow	=	**13.0**	litre/sec

Table 3b-1 Full-bore assessment for the northern part of catchment B (Northern Portion)

Manhole Reference	Manhole Reference	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k_s	s	v	V	Area	Q	Estimated Capacity
		mm	m	mPD	mPD	m/s^2	m		m^2/s	m/s	m^2	m^3/s	L/s
FMH4048815	FMH4050983	675	11.5	8.05	7.94	9.81	0.003	0.009	0.000001	2.01	0.36	0.72	718
FMH4050983	FMH4048817	675	13.5	7.94	7.82	9.81	0.003	0.009	0.000001	2.01	0.36	0.72	718
FMH4048817	FMH4048818	675	22.9	7.82	7.66	9.81	0.003	0.007	0.000001	1.77	0.36	0.63	635
FMH4048818	FMH4048820	675	10.7	7.66	7.60	9.81	0.003	0.006	0.000001	1.61	0.36	0.58	577
FMH4048820	FMH4051340	675	3.5	7.60	7.22	9.81	0.003	0.110	0.000001	7.03	0.36	2.52	2516
FMH4051340	FMH4048821	675	3.0	6.66	6.30	9.81	0.003	0.119	0.000001	7.34	0.36	2.63	2625
FMH4048821	FMH4048823	450	22.6	5.70	5.60	9.81	0.0006	0.004	0.000001	1.35	0.16	0.21	214
FMH4048823	FMH4050807	675	9.5	7.35	7.23	9.81	0.003	0.012	0.000001	2.37	0.36	0.85	849
FMH4050807	FMH4048824	675	3.4	7.05	7.03	9.81	0.003	0.0058	0.000001	1.62	0.36	0.58	**581**
FMH4048824	FMH4050808	675	14.3	7.03	6.92	9.81	0.003	0.0080	0.000001	1.90	0.36	0.68	678
FMH4050808	FMH4050809	675	2.3	6.92	6.89	9.81	0.003	0.0130	0.000001	2.42	0.36	0.87	866

Remarks:

(1) g=gravitational acceleration; k_s=equivalent sand roughness; s=gradient; v=kinematic viscosity of water; V=mean velocity

(2) Table 1a: The value of k_s = 3mm is used for the calculation of slimed **concrete** sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

(2) Table 1a: The value of k_s = 0.6mm is used for the calculation of slimed **clayware** sewer, poor condition (based on Table 5: Recommended roughness values in Sewerage Manual)

(4) The value of velocity (V) is referred to the Tables for the hydraulic design of pipes, sewers and channels (8th edition)

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

Table 3b-2 Calculation for Sewage Generation Rate of the Existing Surrounding Building

Catchment B (Southern Portion)

1. Ka Wah Court

1a. Total number of residential units	=	27	units
1b. Total number of residents	=	73	people -- (2023 Population Census: Kowloon City District of 2.7)
1c. Design flow	=	270	litre/person/day -- (Private R2 in Table T-1 of GESF)
1d. Sewage Generation rate	=	**19.7**	m^3/day

2. Prince Home for the Elderly (Prince Edward Road West 351, G/F) Reference: https://elderlyinfo.swd.gov.hk/en/content/prince-home-elderly

1a. Total number of bedspaces	=	40	spaces
1b. Design flow	=	190	litre/person/day -- (Institutional and special class in Table T-1 of GESF)
1a. Total number of Elderly Care Employee	=	12	employees
1b. Design flow	=	280	litre/person/day -- (J11 in Table T-2 of GESF)
1d. Sewage Generation rate	=	**11.0**	m^3/day

3. Hung To for the Home (Prince Edward Road West 351, 1/F) Reference: https://www.elderlyinfo.swd.gov.hk/en/content/hung-home

1a. Total number of bedspaces	=	48	spaces
1b. Design flow	=	190	litre/person/day -- (Institutional and special class in Table T-1 of GESF)
1a. Total number of Elderly Care Employee	=	9	employees
1b. Design flow	=	280	litre/person/day -- (J11 in Table T-2 of GESF)
1d. Sewage Generation rate	=	**11.6**	m^3/day

4. Kin Tat Home for the Aged (Prince Edward Road West 351, 2/F) Reference: https://www.elderlyinfo.swd.gov.hk/en/content/kin-tat-home-aged

1a. Total number of bedspaces	=	47	spaces
1b. Design flow	=	190	litre/person/day -- (Institutional and special class in Table T-1 of GESF)
1a. Total number of Elderly Care Employee	=	13	employees
1b. Design flow	=	280	litre/person/day -- (J11 in Table T-2 of GESF)
1d. Sewage Generation rate	=	**12.6**	m^3/day

Catchment B (Northern Portion)

Sewage Generated from the northern portion of Catchment B	=	**581**	litre/sec

Sub-total Flow of Catchment B

Flow Rate	=	54.9	m^3/day
Contributing Population	=	203	people
Peaking factor	=	8	Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow	=	**5.1**	litre/sec
Peak Flow with the northern portion of Catchment B	=	**585.8**	litre/sec

Total Flow at Manhole S3 (FMH4050809), including Proposed Development

Flow Rate	=	194.8	m^3/day
Contributing Population	=	721	people
Peaking factor	=	8	Refer to Table T-5 of GESF for population <1,000 incl. stormwater allowance
Peak Flow	=	**18.0**	litre/sec
Peak Flow with the northern portion of Catchment B	=	**598.7**	litre/sec

Table 4 Comparison of the Hydraulic Capacity of Existing and Proposed Sewers for the Sewage generated from the Proposed Development and Surrounding Catchment Areas

Segment	Pipe Dia. (mm)	Pipe Length (m)	Gradient	Estimated Capacity (L/s)	Peak Flow from the Proposed Development only (L/s)	Contribution from the Proposed Development only (%)	Status	Peak Flow from the Proposed Development and Catchment Areas (L/s)	Contribution from the Proposed Development and the Surrounding Catchment Areas (%)	Status
S0-S1	225	6.2	0.008	41	3.2	7.9%	OK	3.2	7.9%	OK
S1-S2	300	12.2	0.033	202	3.2	1.6%	OK	13.0	6.4%	OK
S2-S3	300	1.8	0.281	593	3.2	0.5%	OK	13.0	2.2%	OK
S3-S4	675	4.9	0.009	722	3.2	0.4%	OK	598.7	82.9%	OK
S4-S5	675	25.1	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S5-S6	675	25.0	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S6-S7	675	7.3	0.015	939	3.2	0.3%	OK	598.7	63.8%	OK
S4-S7'	600	57.9	0.015	687	3.2	0.5%	OK	598.7	87.1%	OK

Remark:

According to a manhole survey conducted under planning application no. A/K10/261, the outlet of S5 is blocked and unable to be surveyed any further. For conservative purposes, both the calculations of S4-S5-S6-S7 and S4-S7' are shown in the above table, with no exceedance in either route. It should be noted that the sewage will be preferentially discharged to S4-S5-S6-S7, instead of S4-S7', due to the lower incoming invert level of the former.

Appendix IV

Replacement Pages of Noise Impact Assessment

2. TRAFFIC NOISE IMPACT ASSESSMENT

2.1 Introduction

2.1.1 In this assessment, road traffic noise impact from roads within 300m radius on the Proposed Development has been assessed. Practicable environmental mitigation measures have been recommended as appropriate.

2.2 Assessment Criteria

2.2.1 According to Chapter 9 of the HKPSG which provides guidance for environmental considerations in the planning of both public and private developments and the noise standards are prescribed, the maximum allowed road traffic noise level, measured in terms of L_{10} (1 hr), at typical facade of new dwellings and office uses is recommended to be 70 dB(A) and for isolation room with potential diagnostic treatment to be 55 dB(A).

2.3 Noise Sensitive Receivers for Road Traffic Noise Assessment

2.3.1 The proposed RCHE at the Application Site is a noise sensitive receiver (NSR) of road traffic noise impact. Representative assessment points have been assigned to the rooms with prescribed window for ventilation within G/F to 7/F and 9/F of the Proposed Development. The assessment area is provided in Figure 2.1. The locations and details of the representative NSRs selected for assessment are provided in Figures 2.2a to Figures 2.2e and Table 2.1 below, respectively.

Table 2.1 Representative NSRs for Road Traffic Noise Assessment

NSR	Description	Type of Use / Noise Criteria dB(A)	Assessment Level, mPD
RG01	Interview Room	Office/ 70	G/F at 10.4 mPD
R101	Wards	Dwelling/ 70	1/F at 15.4 mPD
R102	Wards	Dwelling/ 70	
R103	Isolation Room	Dwelling with potential medical treatment/ 55	
R104	Wards	Dwelling/ 70	
R105	Wards	Dwelling/ 70	
RT01	Wards	Dwelling/ 70	Typical Floors from 2/F to 7/F at 18.5 mPD to 34.3 mPD
RT02	Wards	Dwelling/ 70	
RT03	Wards	Dwelling/ 70	
RT04a	Wards	Dwelling/ 70	
RT04b	Isolation Room	Dwelling with potential medical treatment/ 55	
RT05	Wards	Dwelling/ 70	
RT06	Wards	Dwelling/ 70	
R901	General Office	Office/ 70	9/F at 40.6 mPD
R902	General Office	Office/ 70	

2.4 Assessment Methodology

2.4.1 As discussed in Section 2.2, according to HKPSG, the standard for road traffic noise level expressed in terms of L_{10}(1 hr) at the typical façades of the Proposed

Development is recommended to be 70 dB(A) for dwellings and office uses and 55 dB(A) for isolation room. The assessment is based on the prediction of the maximum L_{10} (1 hr) traffic noise level at NSRs of the Proposed Development due to the projected traffic on the adjacent road network for year 2042, which is considered as the maximum traffic projections within 15 years upon occupation of the Proposed Development in 2027. Traffic data was predicted by the project traffic consultant. Details of information on peak hour traffic volume and percentage of heavy vehicle of the road network within the 300m assessment area provided by the Project traffic consultant is presented in Appendix 2.1, which represents the worst-case scenario of the projected traffic flows. The projected peak hour traffic flow volume and percentage of heavy vehicles during the AM peak hour were used for the noise assessment, as they are generally higher than those in the afternoon.

2.4.2 The UK Department of Transport's procedures - "Calculation of Road Traffic Noise" (CRTN) has been used in the prediction of the road traffic noise at the representative NSRs of the Proposed Development within the Application Site. The existing topographic details, such as the existing houses and structures near the Application Site, have been considered in the assessment.

2.4.3 The noise prediction has been carried out using the *Road Noise Module 2.7.2 of Noise Map Enterprise Edition* software, which is a computerised model developed on the basis of the U.K. Department of Transport's CRTN procedures, and is acceptable to the EPD.

2.5 Prediction and Evaluation of Noise Impacts

2.5.1 An assessment on the road traffic noise level at the NSRs based on the above traffic flow data has been conducted. Noise mitigation measure which has already been incorporated in the design of the layout, and considered in the unmitigated scenario include the setback of RCHE block from the site boundary. The Proposed Development is also partially shielded by other surrounding existing buildings in the area.

2.5.2 A summary of the predicted road traffic noise levels at the representative NSRs is provided in Table 2.2. The predicted road traffic noise levels at some NSRs would exceed the relevant noise criteria of 70 dB(A) by up to 6 dB(A). The detailed unmitigated results are provided in Appendix 2.2.

Table 2.2 Summary of Predicted Unmitigated Road Traffic Noise Levels at Representative NSRs (AM peak)

NSR	Predicted Road Traffic Noise Level, $L_{10\ (1\text{-hour})}$, dB(A) (Unmitigated)
	AM
RG01	70
R101	76
R102	75
R103	49
R104	59
R105	61
RT01	75 - 76
RT02	75
RT03	50 - 51
RT04a	55 - 56
RT04b	49

NSR	Predicted Road Traffic Noise Level, $L_{10\ (1\text{-hour})}$, dB(A) (Unmitigated)
	AM
RT05	59 - 63
RT06	61 - 63
R901	57
R902	57

[1] Bolded values exceed the noise criteria of 55 dB(A) or 70 dB(A).

2.5.3 To mitigate the traffic noise impact, baffle type acoustic window are proposed in order to alleviate the noise levels to comply with the noise criteria.

Baffle Type Acoustic Balcony

2.5.4 Innovative noise mitigation measures are being explored in recent years. It is noted that EPD has published *ProPECC PN5/23 Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact*. According to EPD's website regarding innovative noise mitigation design and measures (http://www.epd.gov.hk/epd/Innovative/greeny/eng/index.html), different balconies and special design window systems have been implemented in public rental housing, private residential and hostel developments.

2.5.5 Based on the current proposed development, the setting and dimensions of the baffle-type acoustic design in ProPECC PN5/23 cannot be accommodated, and therefore it is not adopted. As a result, the design of acoustic window is drawn from another reference case with a more applicable design to suit the Proposed Development. The acoustic window (baffle type) from a reference case, i.e. approved planning application A/K22/29, is proposed to be equipped at the wards on the first floor to seventh floor of the RCHE which are directly facing Prince Edward Road West. The location of these acoustic window (baffle type) has been indicated in Figure 2.3a and Figure 2.3b.

2.5.6 According to the EA report of the approved planning application A/K22/29, a sound attenuation performance of 8.8 dB(A) can be achieved to a room of 38.3m^2 in area by an acoustic window (baffle type) with an outer opening size of 3.2m^2, 100mm gap width and 275mm overlapping width. The relevant pages of the said report have been extracts in Appendix 2.5.

2.5.7 For the proposed acoustic window (baffle type), the outer window opening shall be equal or smaller than 3.2m^2, the overlapping width shall be larger or equal to 275mm, while 100mm gap width shall be provided. The indicative design of the proposed acoustic window (baffle type) can be referred to Figure 2.4. Furthermore, the room sizes of the wards at the RCHE proposed with acoustic window (baffle type) range from around 29m^2 to 47.7m^2. In theory, the smaller the room size designed, the less will be the sound attenuation after adjustment. The sound attenuation for individual ward has been adjusted based on comparison of room size of the case in this Proposed Development and the reference case. Sound attenuation of the baffle type acoustic window adopted for the Proposed Development is estimated based on the reference project and presented in Appendix 2.4. The acoustic window (baffle type) is expected to provide at least 7.6 dB(A) of sound attenuation for the dormitories that are smaller in size than the reference case, after adjusting the sound attenuation. Meanwhile, the room sizes of the dormitories at the RCHE proposed with the acoustic window (baffle type) are larger than the one used in the reference case (A/K22/29). Therefore, the sound attenuation performance of the proposed acoustic window (baffle type) is not expected to be less than the reference case, which is equivalent to 8.8 dB(A). As a

3. FIXED NOISE IMPACT ASSESSMENT

3.1 Introduction

3.1.1 In this assessment, potential noise impacts arising from the nearby fixed noise sources within 300m radius on the Proposed Development has been assessed by general acoustic principle and Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (IND-TM). Practicable environmental mitigation measures would be recommended, where necessary.

3.2 Government Legislation and Standards

Noise Control Ordinance (NCO)

3.2.1 The Noise Control Ordinance (NCO) provides the statutory framework for the control of fixed plant. The Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM) sets the criteria, Acceptable Noise Level (ANL), for governing noise from existing fixed plant / industrial noise sources.

Hong Kong Planning Standards and Guidelines (HKPSG)

3.2.2 The NCO requires that noise impacts from existing fixed noise sources shall comply with the Acceptable Noise Levels (ANL) laid down in Table 2 of IND-TM, which is influenced by the Area Sensitivity Rating (ASR) determined by the type of area containing the NSR.

3.2.3 The Application Site is located in an urban area and it is bounded by Prince Edward Road West to the north. According to The Annual Traffic Census 2022 published by Transport Department, Prince Edward Road West has an annual average daily traffic flow (AADT) of 41770. As the AADT is in excess of 30,000, Prince Edward Road West is considered as the influencing factor. An ASR of "C" will be adopted for façade facing Prince Edward Road West, and ASR of "B" will be adopted for the façade facing away from Prince Edward Road West. The ANL for ASRs "B" and "C" are depicted in Table 3.1.

Table 3.1 Relevant Noise Standard for Fixed Noise Sources

	Criteria in Relevant Time Periods	Acceptable Noise Level (ANL)
"B"	Day and Evening (07:00 – 23:00)	65 dB(A)
	Night (23:00 – 07:00)	55 dB(A)
"C"	Day and Evening (07:00 – 23:00)	70 dB(A)
	Night (23:00 – 07:00)	60 dB(A)

3.2.4 The ASRs proposed in this NIA are intended for assessment only. Nothing in the NIA shall bind the Noise Control Authority in the context of enforcement against any of the fixed plant / industrial noise sources identified and assessed in the future under the NCO.

3.2.5 Since the observed fixed noise sources (Section 3.3 refers) are existing uses, the ANL criteria is relevant and has been adopted.

3.3 Identification of Potential Noise Impacts

Fixed Noise Sources

3.3.1 Desktop study has been conducted to identify any presence of fixed noise source within 300m radius from the boundary of the Application Site. Site survey has been conducted in May 2024 to verify the presence of the fixed noise source. The locations of the existing fixed noise sources to be included in this assessment are indicated in Figure 3.1 to Figure 3.4. Fixed noise sources have also been found in the rooftop of EFCC Grace Church, Sheng Kung Hui Holy Trinity Church Centenary Bradbury Centre, Evangel Hospital and Holy Trinity Bradbury Centre Sheng Kui Hui. Since these fixed noise sources are fully blocked by surrounding buildings, they are not included in this assessment. The noise assessment assumed all equipment will be operating simultaneously and continuously as a worst-case scenario. The sound power level of the noise sources was referenced from product catalogues. The details of the fixed noise sources are presented in Appendix 3.1.

3.4 Noise Sensitive Receivers for Fixed Noise Assessment

3.4.1 Representative assessment points have been assigned to the wards of the Proposed Development overlooking the industrial noise sources. The NSRs are selected at 1m away from the façade of openable window for ventilation purpose. The locations and details of the representative NSRs selected for assessment are provided in Figure 3.5 and Table 3.2 below, respectively.

Table 3.2 Representative NSRs for Fixed Noise Assessment

NSR	Description
FN01	Ward
FN02	Ward
FN03	Ward
FN04	Ward
FN05	Ward

3.5 Assessment Methodology

3.5.1 As the premises were not accessible for site measurement, information such as types of noise source and Sound Power Levels (SWLs) of noisy equipment were referenced from representative catalogues available in the market (Appendix 3.1 refers). The potential type of noise sources and SWLs were assumed to be same as other facilities of similar operation.

3.5.2 To predict the noise level at the future noise sensitive uses, the following correction factors have been accounted for:

- Distance correction: based on the shortest horizontal distance between the identified noise sources and the NSR, the distance correction is projected based on standard acoustical principle for point source;
- Although it is unlikely that all the identified fixed noise sources will be in operation simultaneously, to be conservative, it has been assumed that all the identified noise sources are in operation at the same time, which also represents a worst-case scenario. Noise sources are assumed to operate continuously instead of in occasion as observed onsite and all noise sources are regarded as point source;

- Façade correction: a +3dB(A) correction is applied to account for noise reflection from façade.
- Tonal correction: +3 dB(A) correction is applied to account for the presence of certain tonal Components of the noise.

3.5.3 Corrected Noise Level (CNL) at the representative NSRs of the Proposed Development can be calculated by applying the above corrections to the measured SWL of the noise sources in accordance with the following formula:

$$CNL = SWL + C_{dist} + C_{fac} + C_{bar} + C_{tone}$$

Where,

CNL is the corrected noise level at the Assessment Point in dB(A)

SWL is the sound power level of the fixed plant in dB(A)

C_{dist} is the distance correction in dB(A) in accordance with the Technical Memorandum on Noise from Construction Works Other than Percussive Piling

C_{fac} is façade correction, +3 dB(A)

C_{bar} is screening correction, -5 dB(A) for partial screening and -10 dB(A) for complete screening by structure

C_{tone} is the tonal correction.

3.6 Prediction and Evaluation of Noise Impacts

Fixed Noise Assessment Results

3.6.1 Based on the assumptions mentioned above and information of noise sources in Section 3.3, noise level estimation for the selected NSRs at the Application Site has been conducted. The predicted industrial noise levels at the representative NSRs are summarised in Table 3.3. The details are presented in Appendix 3.2.

Table 3.3 Predicted Unmitigated Fixed Noise Levels at Representative NSRs

NSR[1]	Acceptable Noise Level (ANL)		Predicted Unmitigated Noise Level, dB(A)	
	Day and Evening	Night	Day and Evening (07:00 – 23:00)	Night (23:00 – 07:00)
FN01	70	60	52	49
FN02	65	55	53	49
FN03	65	55	53	49
FN04	65	55	53	49
FN05	65	55	52	45

Notes:
[1] The assessment only includes NSRs which reply on opened windows for ventilation.

3.6.2 Based on the proposed layout, the calculated fixed noise levels at all NSRs comply with the noise criteria. No adverse fixed noise impact is anticipated at the Application Site.

3.7 Conclusion

3.7.1 Noise impacts due to existing fixed noise sources within 300m radius of the Application Site have been examined. Based on the proposed layout, no adverse fixed noise impact on the Proposed Development is anticipated.

Figures

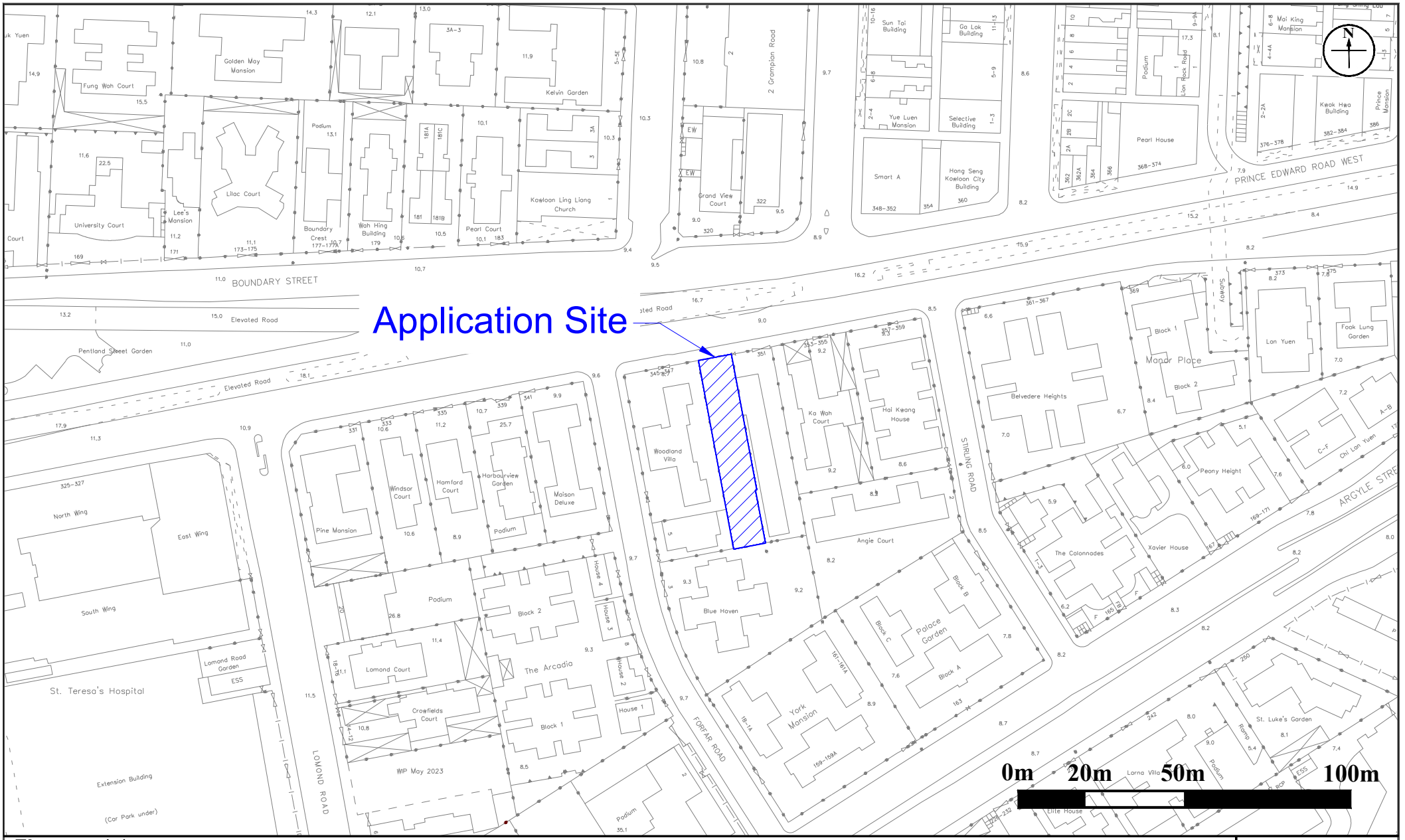


Figure: 1.1	RAMBOLL
Title: Application Site & Its Environ	Drawn by: VS
	Checked by: KY
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 1.1
	Date: Aug 2024

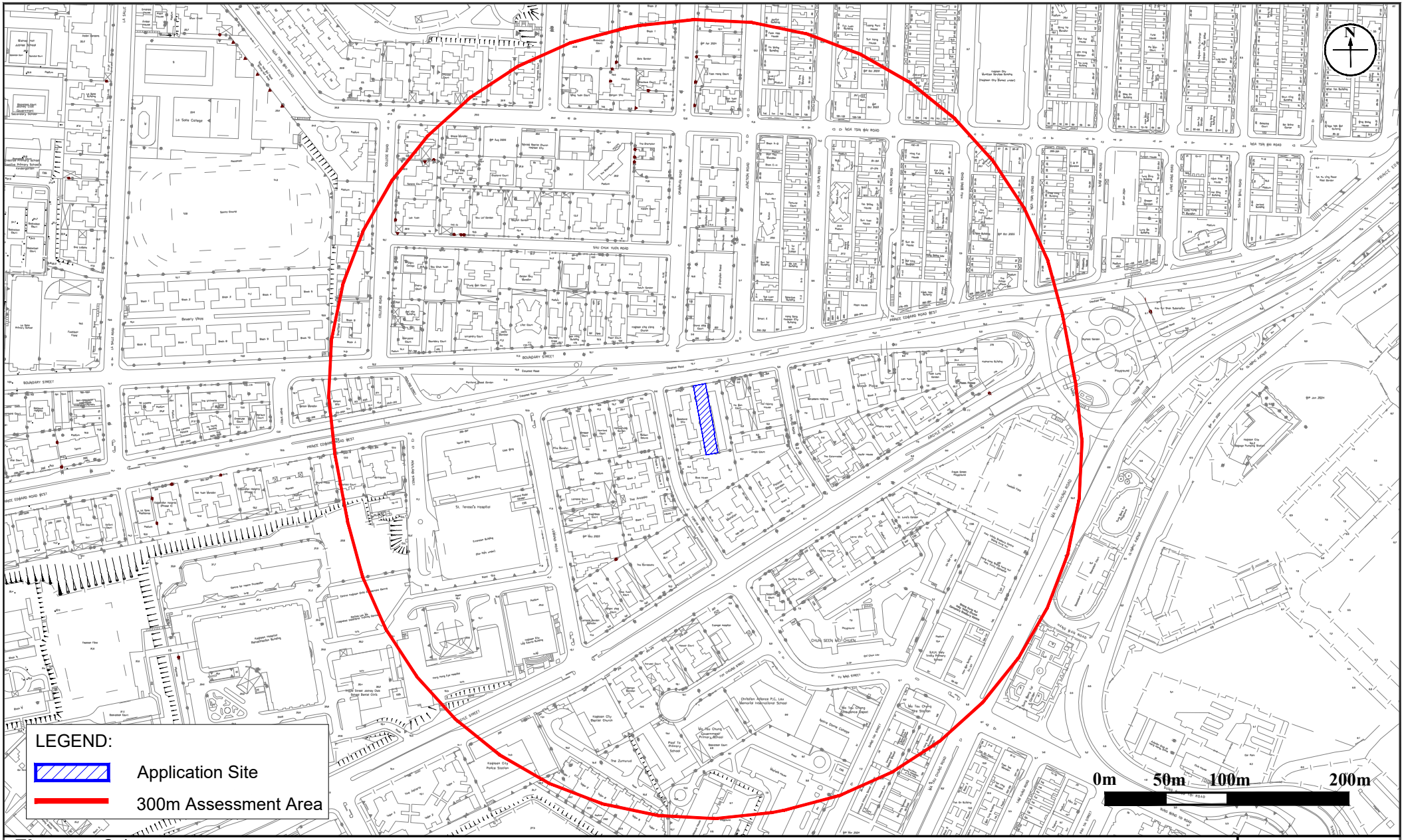


Figure: 2.1

Title: Traffic Noise Assessment Area

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 1.1

Date: Aug 2024

Figure: 2.2a		RAMBOLL
Title: Representative NSRs for Traffic Noise Impact Assessment (G/F)		Drawn by: VS
		Checked by: KY
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon		Rev.: 2.0
		Date: Nov 2024

Figure: 2.2b

Title: Representative NSRs for Traffic Noise Impact Assessment (1/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 2.0

Date: Nov 2024

Figure:	2.2c	RAMBOLL
Title:	Representative NSRs for Traffic Noise Impact Assessment (Typical Floors - 2/F, 4/F, 6/F & 7/F)	Drawn by: VS Checked by: KY
Project:	Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 2.0 Date: Nov 2024

Figure: 2.2d

Title: Representative NSRs for Traffic Noise Impact Assessment (Typical Floors - 3/F & 5/F)

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: VS

Checked by: KY

Rev.: 2.0

Date: Nov 2024

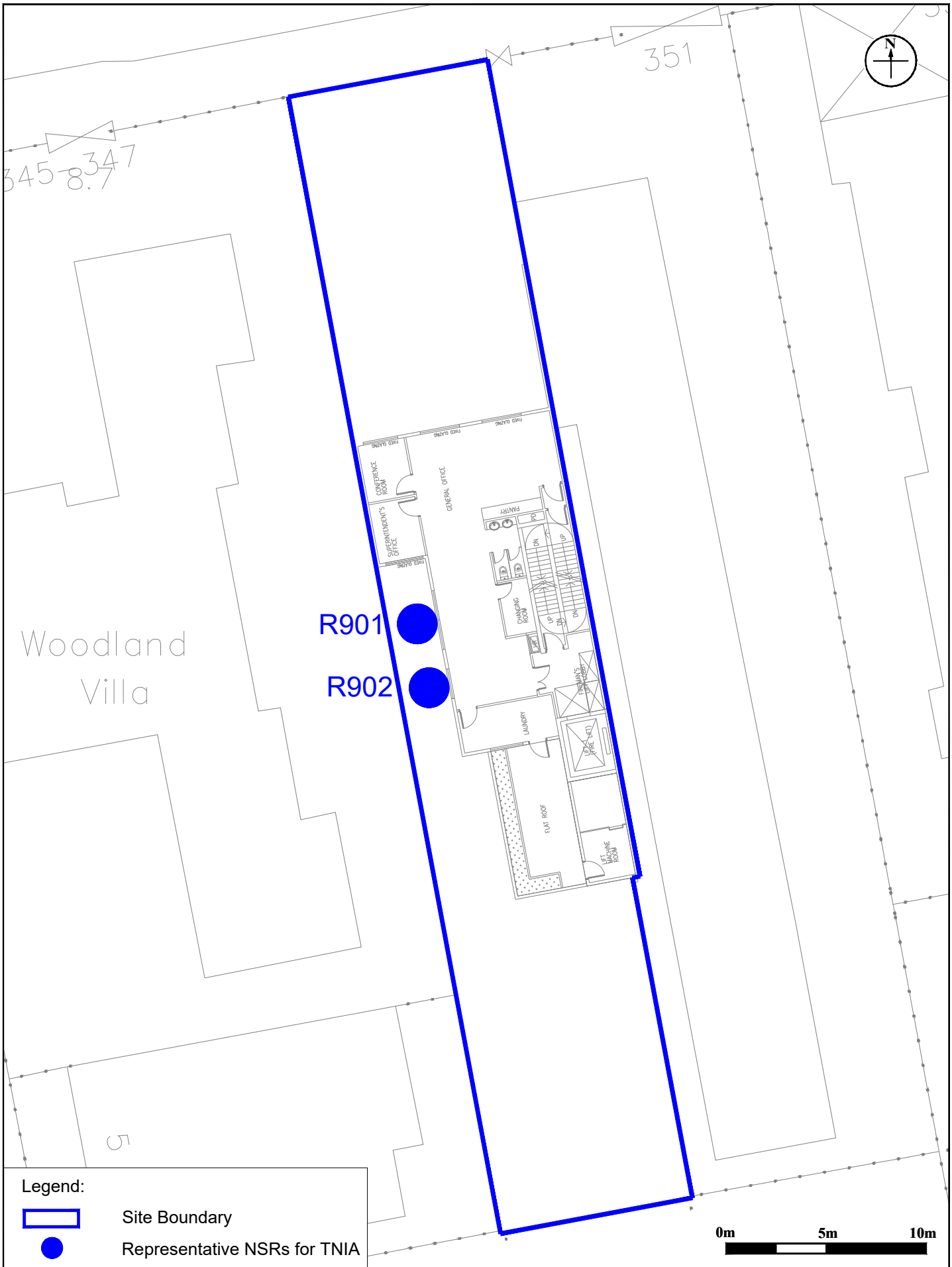
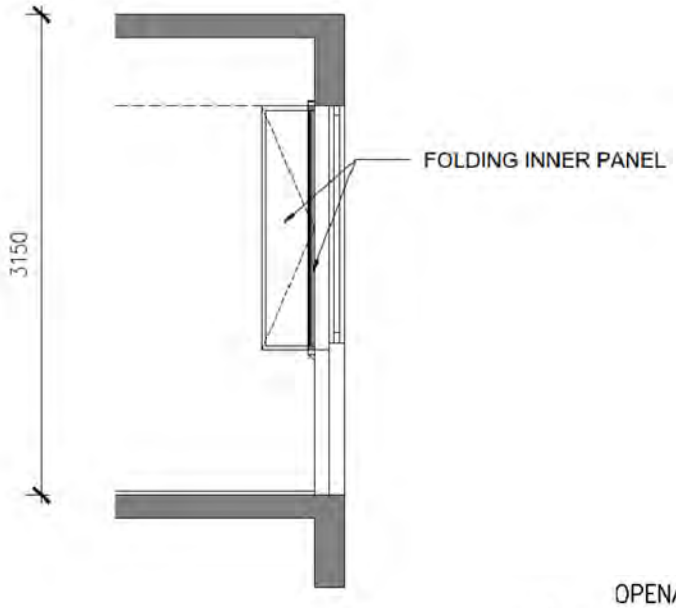


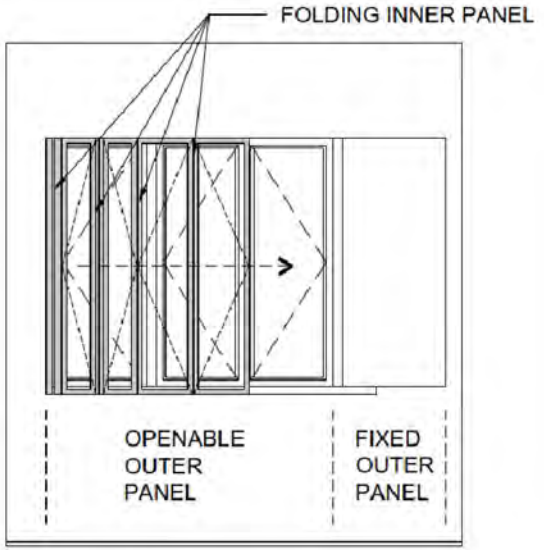
Figure: 2.2e	RAMBOLL
Title: Representative NSRs for Traffic Noise Impact Assessment (9/F)	Drawn by: VS Checked by: KY
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 2.0 Date: Nov 2024

Figure: 2.3a	RAMBOLL
Title: Proposed Noise Mitigation Measures for Traffic Noise Impact Assessment (1/F)	Drawn by: VS Checked by: KY
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 2.0 Date: Nov 2024

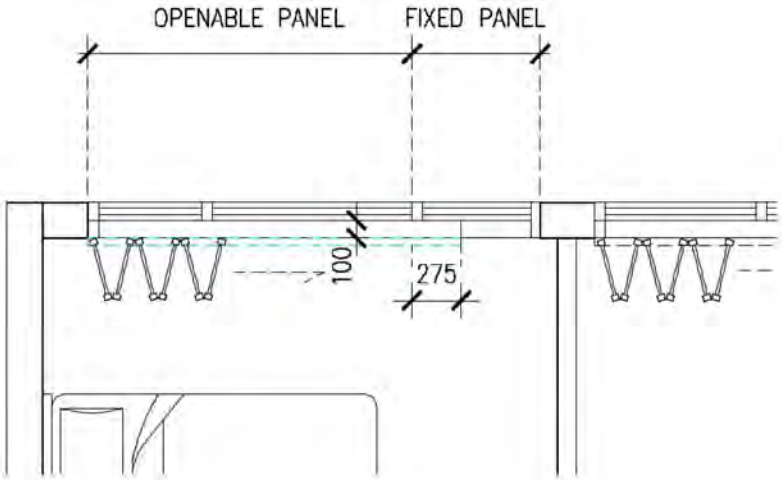
Figure:	2.3b	RAMBOLL
Title:	Proposed Noise Mitigation Measures for Traffic Noise Impact Assessment (Typical Floors - 2/F to 7/F)	Drawn by: VS Checked by: KY
Project:	Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 2.0 Date: Nov 2024



SECTION 1:50



ELEVATION (VIEW FROM INSIDE) 1:50



PLAN 1:50

Figure:	2.4	RAMBOLL
Title:	Indicative Design of Baffle Type Acoustic Window	Drawn by: VS Checked by: KY
Project:	Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 1.1 Date: Aug 2024

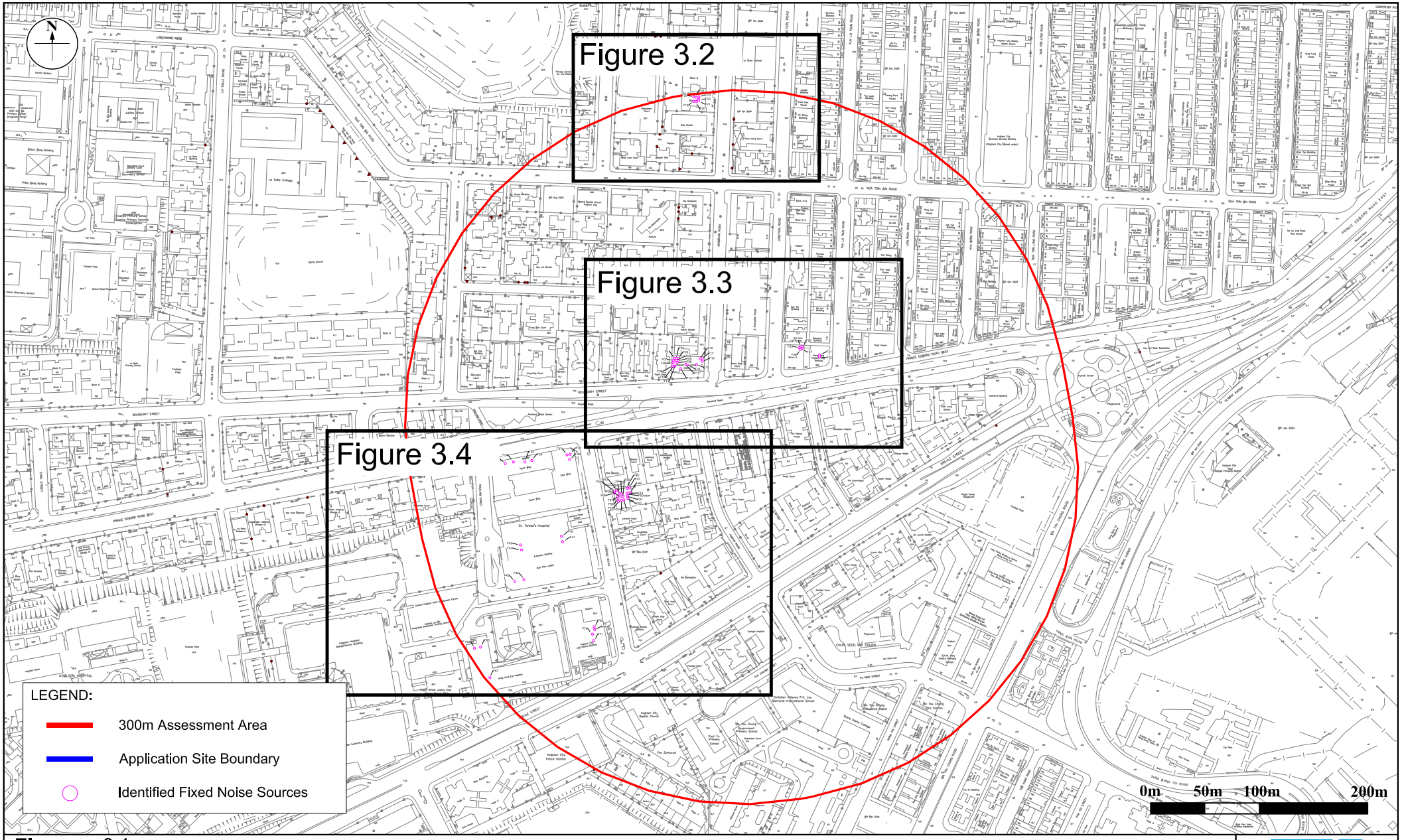


Figure: 3.1	RAMBOLL
Title: Location of Fixed Noise Sources (Sheet 1 of 4)	Drawn by: EC Checked by: KY
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 2.0 Date: Nov 2024

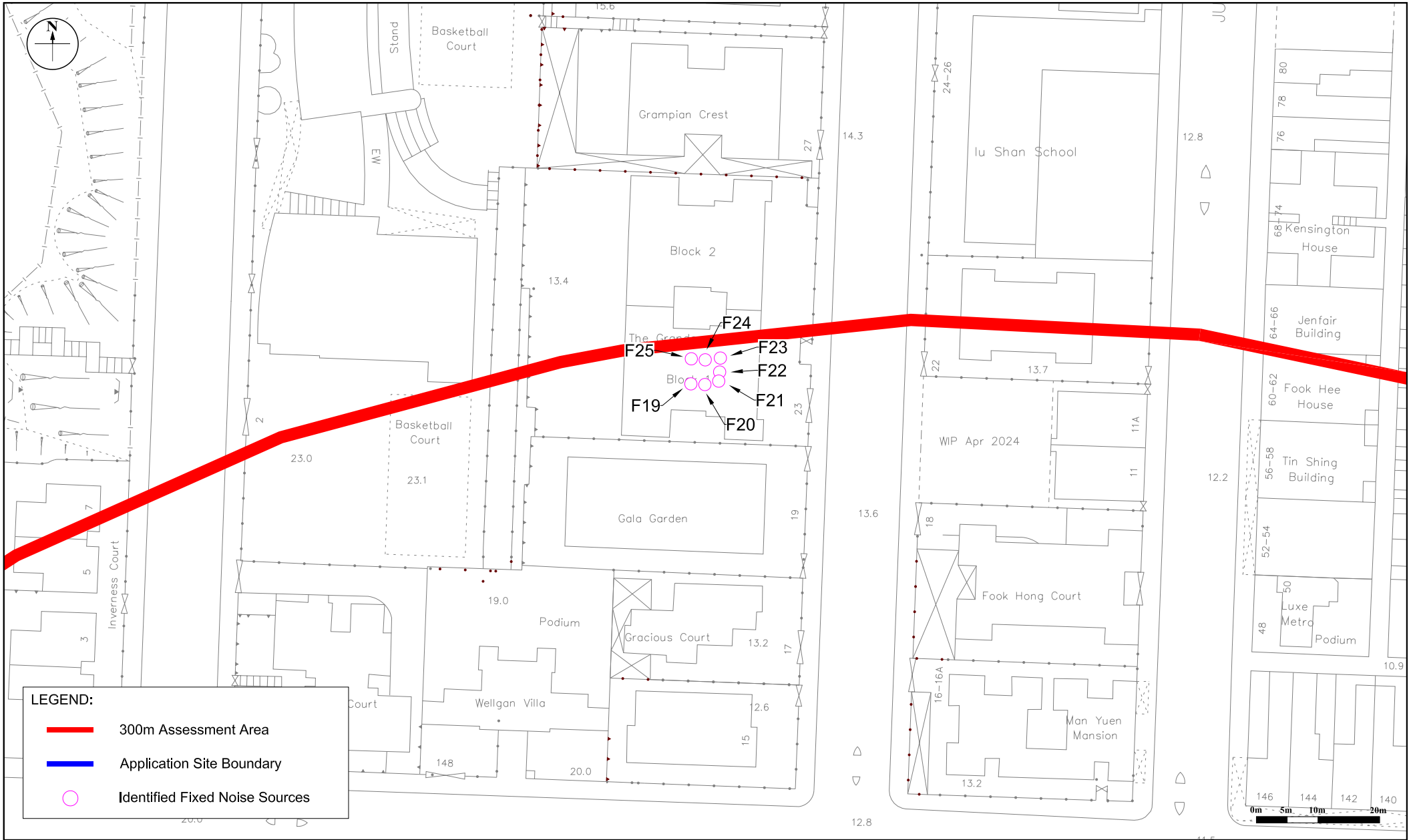


Figure: 3.2	RAMBOLL
Title: Location of Fixed Noise Sources (Sheet 2 of 4)	Drawn by: EC
	Checked by: KY
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 2.0
	Date: Nov 2024

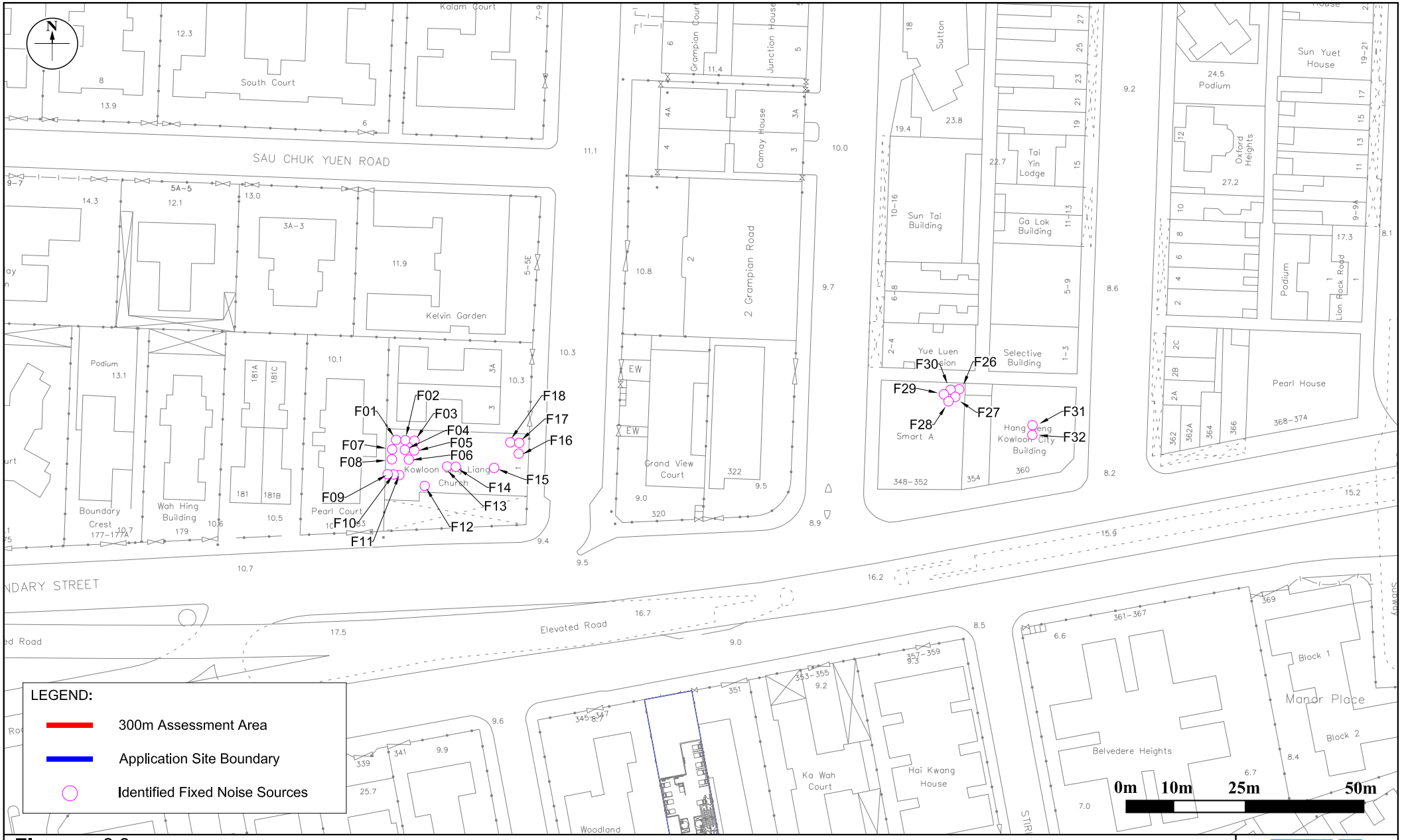


Figure: 3.3

Title: Location of Fixed Noise Sources (Sheet 3 of 4)

RAMBOLL

Drawn by: EC

Checked by: KY

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

Rev.: 2.0

Date: Nov 2024

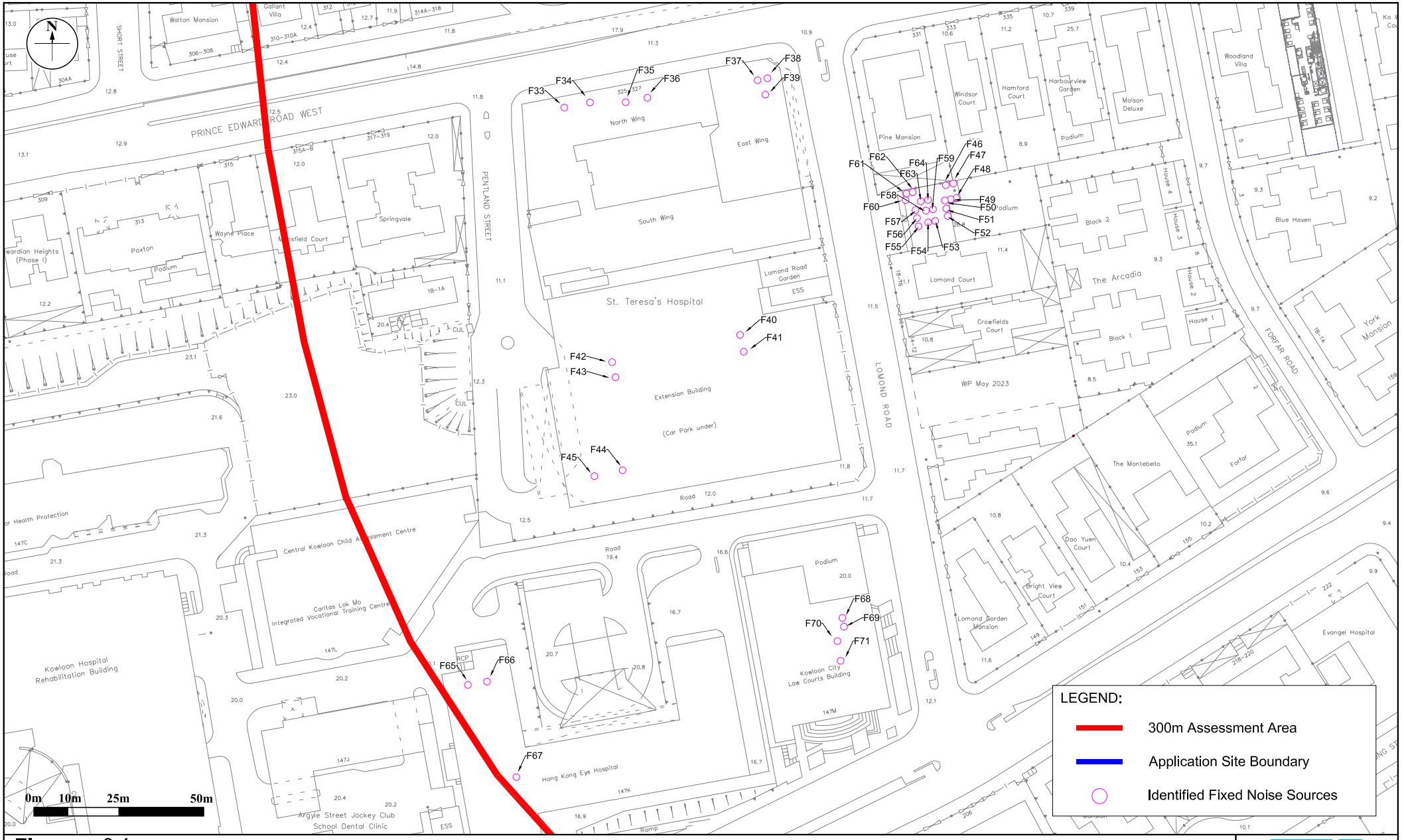


Figure: 3.4	RAMBOLL
Title: Location of Fixed Noise Sources (Sheet 4 of 4)	Drawn by: EC
	Checked by: KY
Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon	Rev.: 2.0
	Date: Nov 2024

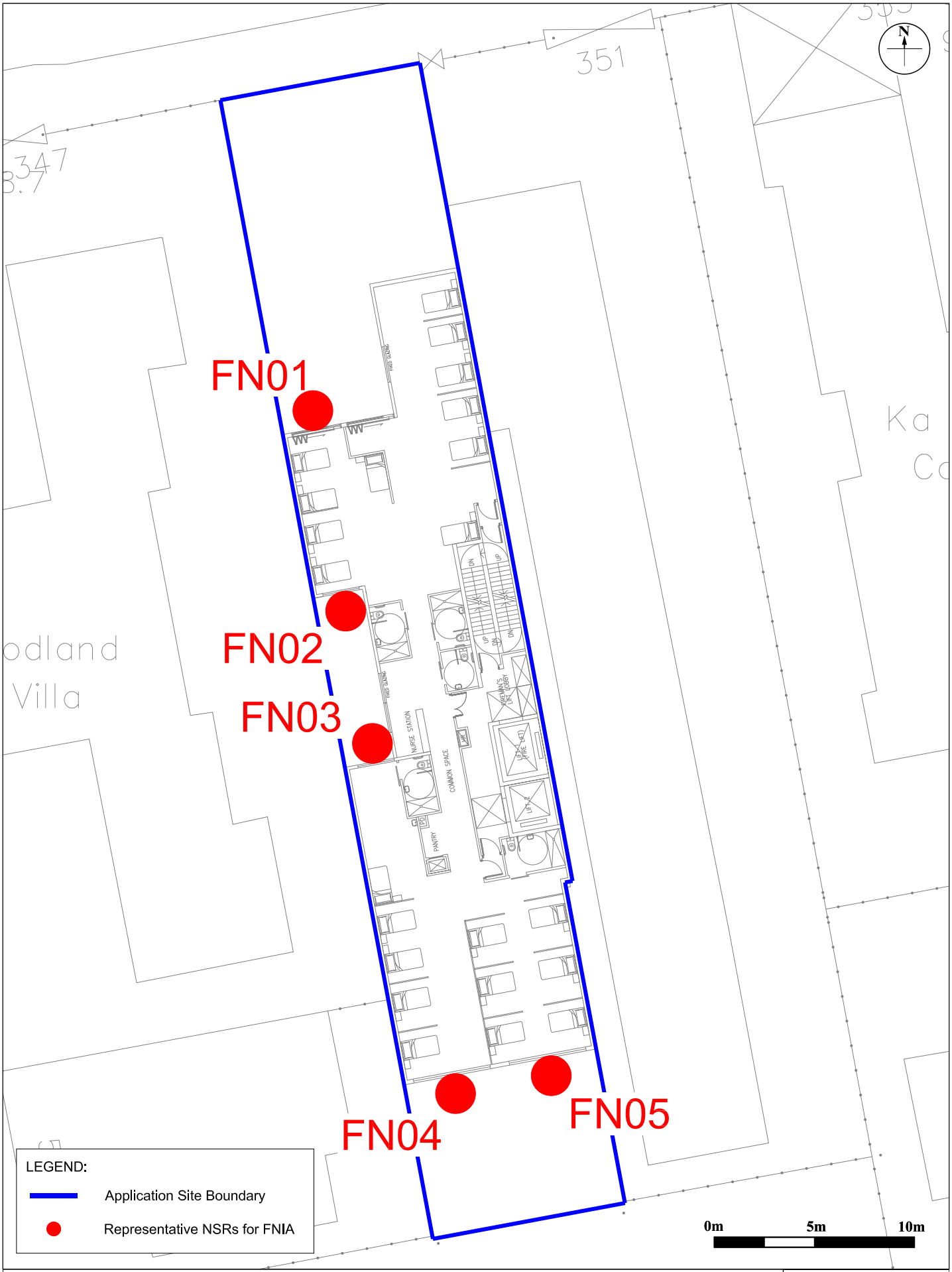


Figure: 3.5

Title: Location of Representative Noise Sensitive Receivers for Fixed Noise Impact Assessment

Project: Amendment to the Approved Social Welfare Facility (Residential Care Home for the Elderly) in "Residential (Group B)" Zone at 349 Prince Edward Road West, Kowloon

RAMBOLL

Drawn by: EC

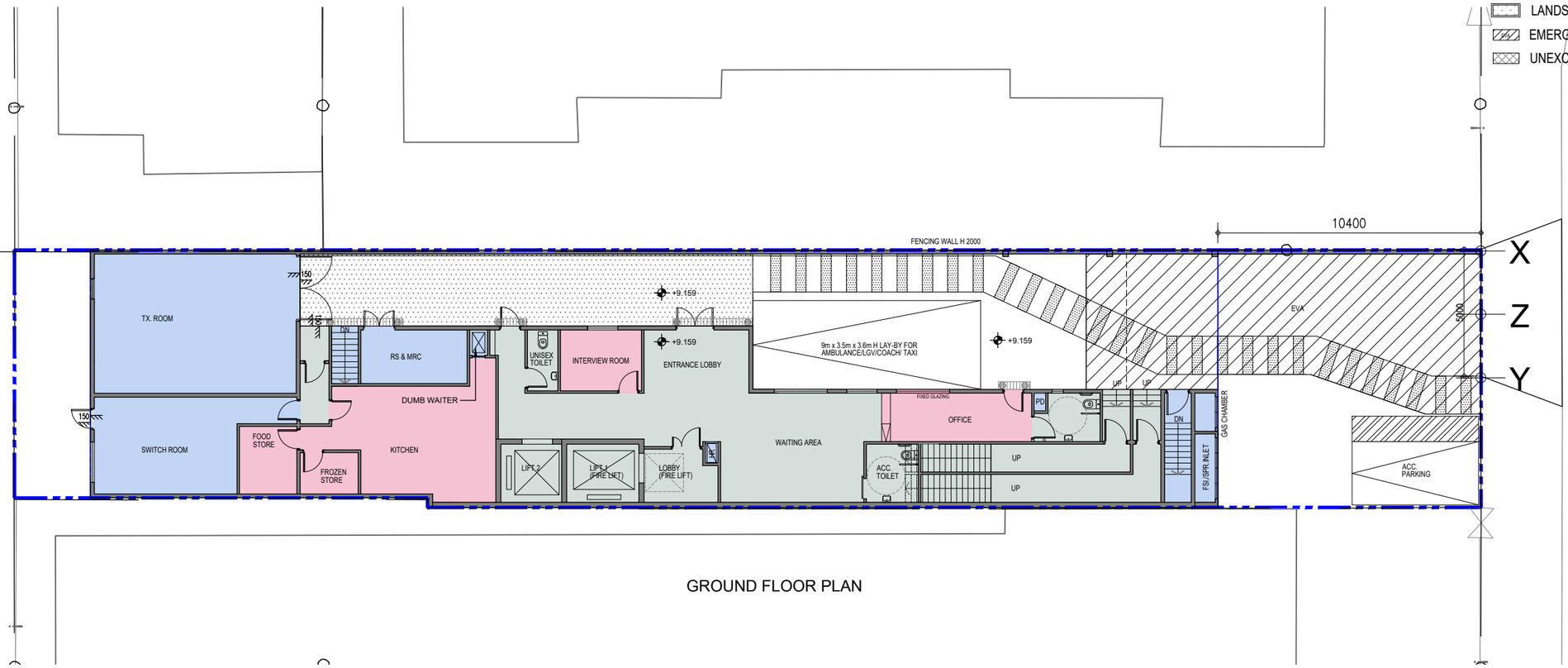
Checked by: KY

Rev.: 2.0

Date: Nov 2024

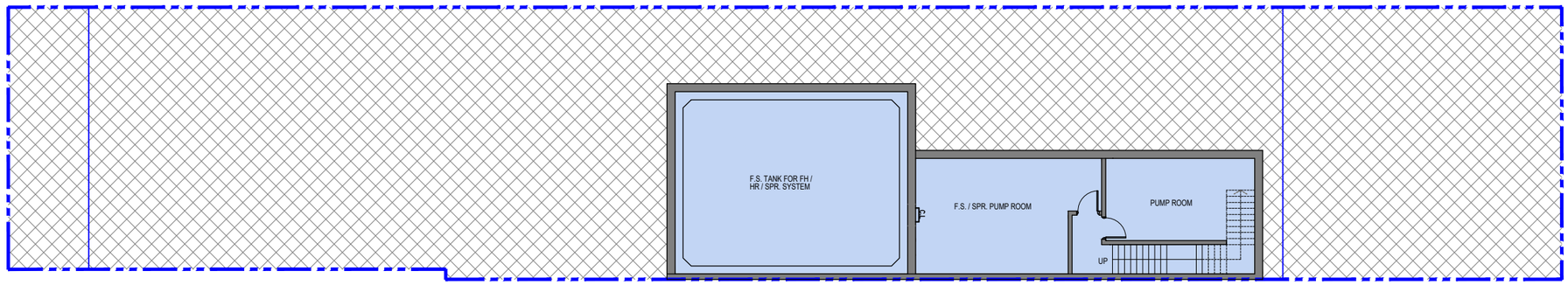
Appendix 1.1

Detailed Layout of the Proposed Development



GROUND FLOOR PLAN

G/F LAYOUT 1:200



B/S LAYOUT 1:200

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:
馬海
馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:
張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

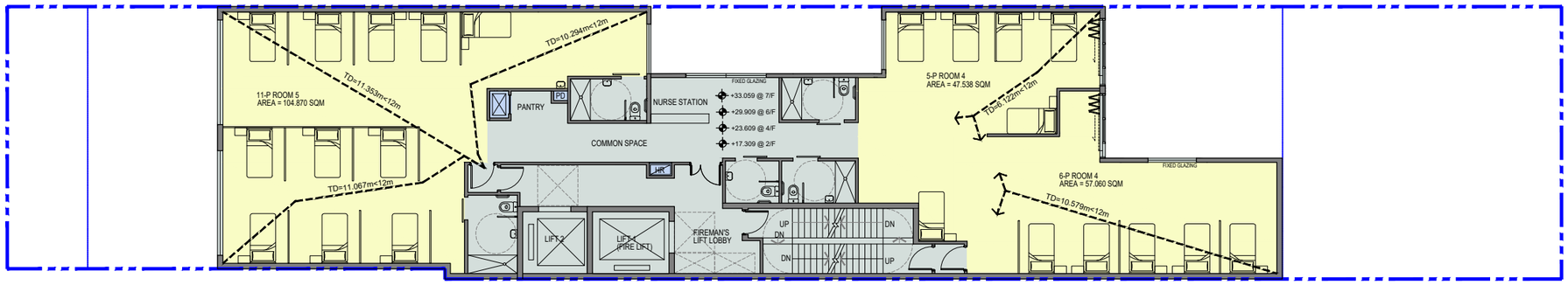
PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

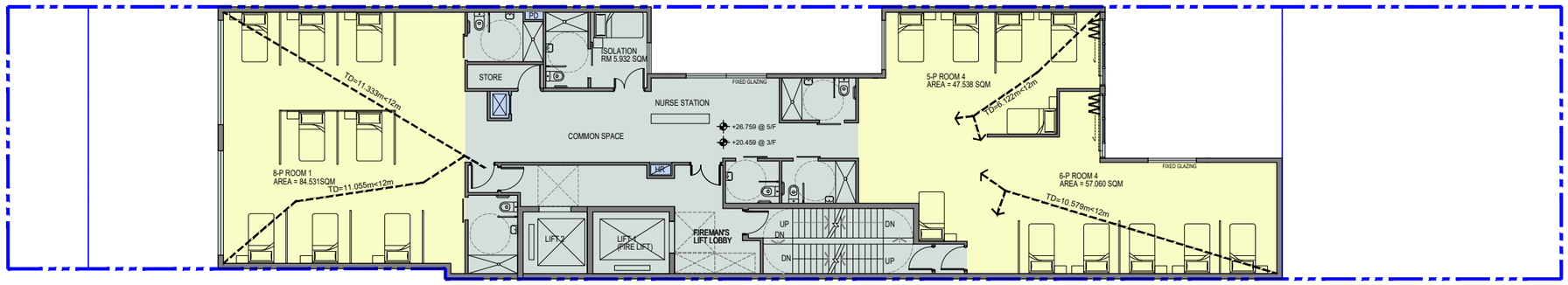
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
GROUND FLOOR PLAN & BASEMENT FLOOR PLAN

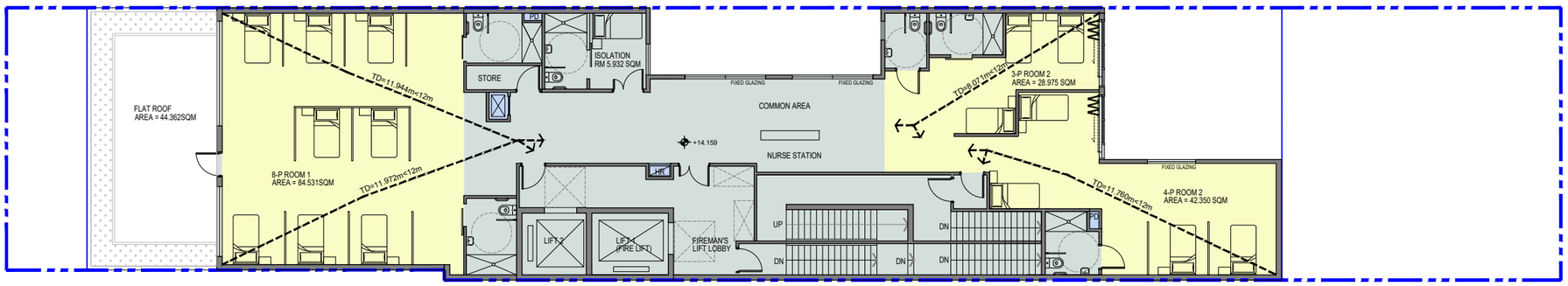
DRAWN BY:	DATE:	
CZ	NOV-2024	
CHECKED BY:	APPROVED BY:	
CMD	KCY	
SCALE:	PAPER SIZE:	
1:200	A3	
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-00	V14



2/F, 4/F, 6/F, 7/F LAYOUT 1:200



3/F, 5/F LAYOUT 1:200



1/F LAYOUT 1:200

LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND

NOS. OF BED (9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

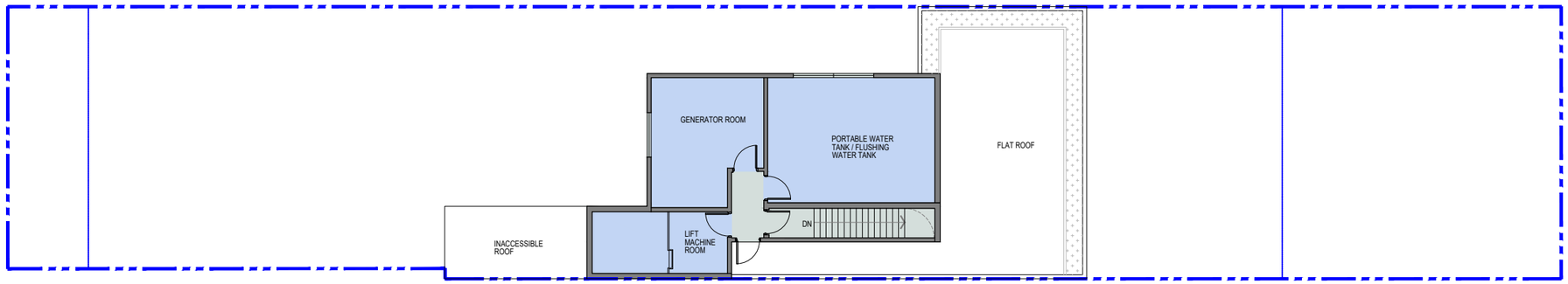
PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:

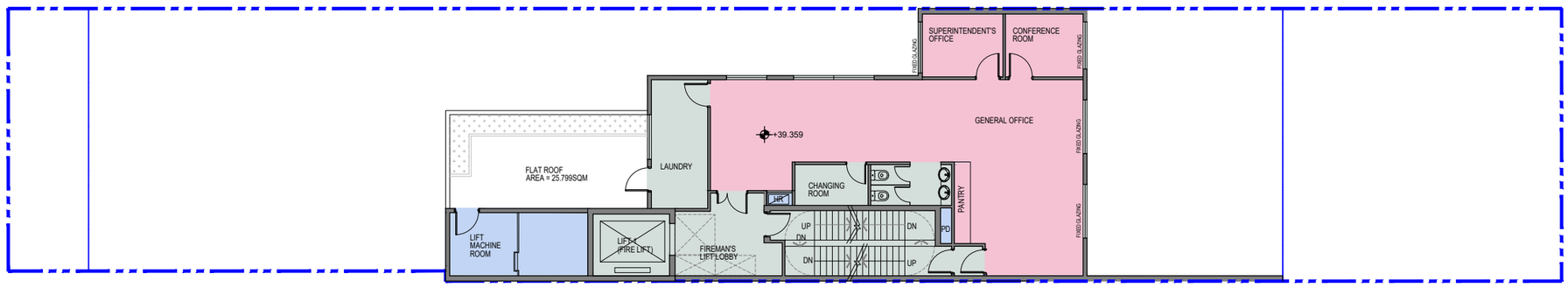
FIRST FLOOR PLAN &
TYPICAL FLOOR PLAN (3/F,5/F) &
TYPICAL FLOOR PLAN (2/F,4/F,6/F& 7/F)

DRAWN BY:	DATE:
CZ	NOV-2024
CHECKED BY:	APPROVED BY:
CMD	KCY
SCALE:	PAPER SIZE:
1:200	A3

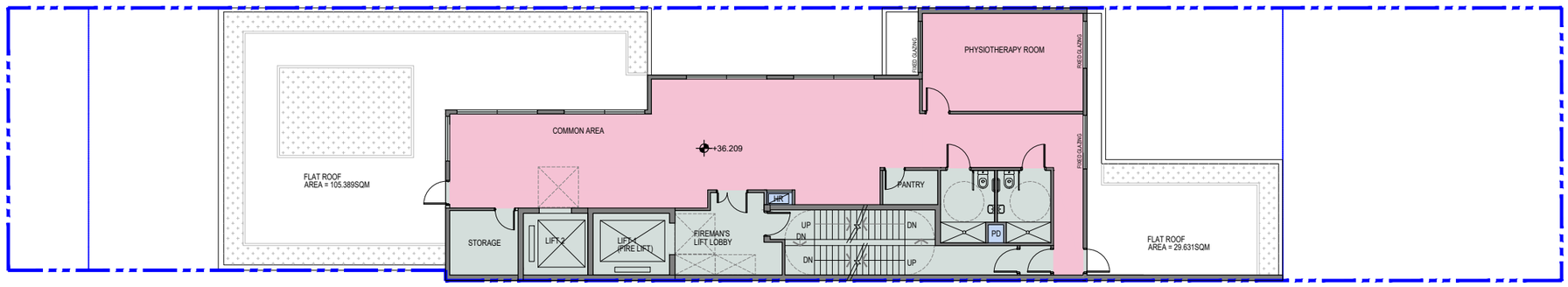
PROJECT:	DRAWING:	REVISION:
PE 6170	GP-01	V14



ROOF LAYOUT 1:200



9/F LAYOUT 1:200



8/F LAYOUT 1:200

LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND

NOS. OF BED (9.5m²/ppl)

G/F	0
1/F	15
2/F	22
3/F	19
4/F	22
5/F	19
6/F	22
7/F	22
TOTAL	141

ANCILLARY AREA	
Floor Level	Area (m²)
G/F	59.183
1/F	0
2/F	0
3/F	0
4/F	0
5/F	0
6/F	0
7/F	0
8/F	108.709
9/F	79.448
TOTAL	247.338

N

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:
1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

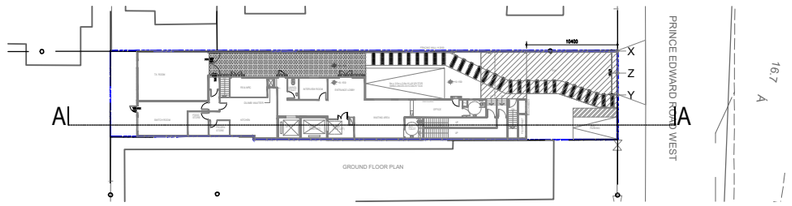
PROJECT LANDSCAPE CONSULTANT:

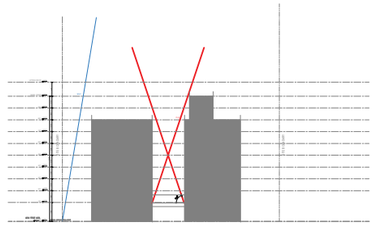
PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
8/F & 9/F FLOOR PLAN &
ROOF FLOOR PLAN

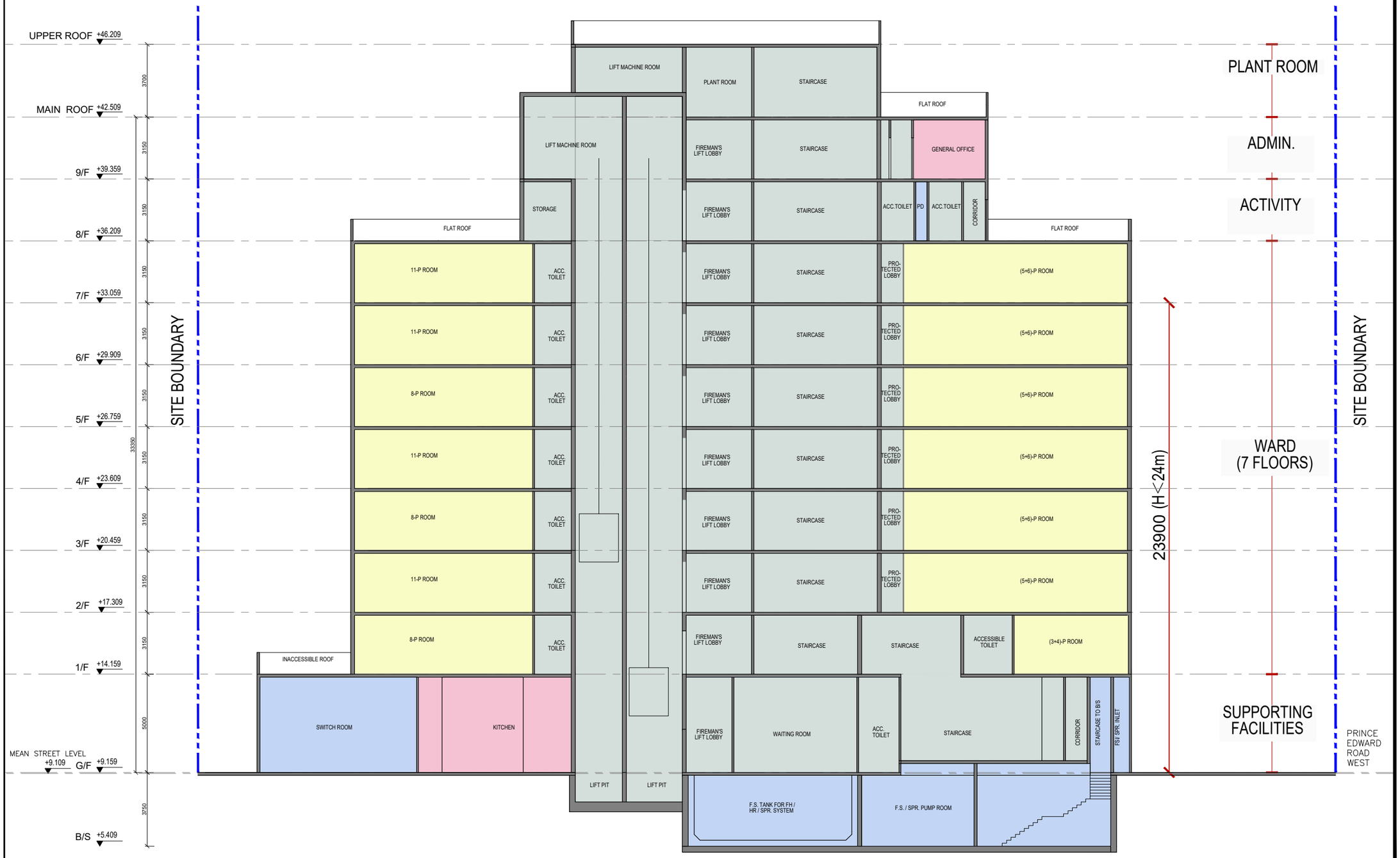
DRAWN BY: CZ	DATE: NOV-2024
CHECKED BY: CMD	APPROVED BY: KCY
SCALE: 1:200	PAPER SIZE: A3
PROJECT: PE 6170	DRAWING: GP-02 REVISION: V14





LEGEND:

- SITE BOUNDARY
- WARD
- ANCILLARY AREA
- COMMON / CIRCULATION SPACE
- PLANT ROOM/ STAIRCASE TO U/G PLANT ROOM
- FOOTPATH
- LANDSCAPE
- EMERGENCY VEHICULAR ACCESS
- UNEXCAVATED GROUND



SECTION A-A 1:200

BD REF. NO.:

FSD REF. NO.:

REVISIONS AND SUBMISSIONS:

NO.:	DATE:	DETAILS:	CHECKED:

NOTES:

1. CONTENTS ON THIS DRAWING SHOW DESIGN INTENT ONLY CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN OF THE INTERIOR FITTING-OUT. CONTRACTOR IS REQUIRED TO SUBMIT FULL SET SHOP DRAWINGS FOR ARCHITECT'S APPROVAL PRIOR TO FABRICATION AND SITE INSTALLATION.
2. STRUCTURAL CALCULATIONS IF REQUIRED AND RELATED SUPPORTING DATA SHOULD BE SUBMITTED FOR REVIEW AND APPROVAL.
3. TRUE COLOR SAMPLES OF MATERIALS SHOULD BE SUBMITTED FOR ARCHITECT'S APPROVAL PRIOR TO PROCUREMENT.
4. ALL FITTING/ ASSEMBLY AND MATERIALS SHOULD BE DESIGN & INSTALLED TO CONTRACT DRAWINGS AND SPECIFICATION, AND IN COMPLIANCE WITH ALL RELEVANT STATUTORY REQUIREMENTS.
5. DIMENSIONS BASED ON ON SITE MEASUREMENTS.
6. FINAL MATERIALS & FINISHES OF WALL,FLOOR,CEILING,WALL FIXTURE ETC. SHOULD BE REFER TO FINISHES AND MATERIALS SCHEDULE UNDER THE SPECIFICATION PROVIDED.

CLIENT/EMPLOYER:

PROJECT ARCHITECT/AUTHORIZED PERSON:

馬海(建築顧問)有限公司
Spence Robinson Limited

PROJECT STRUCTURAL ENGINEER/
PROJECT GEO-TECHNICAL ENGINEER:

張耀新建築工程師有限公司
Wilson & Associates Ltd

PROJECT E/M ENGINEER:

PROJECT LANDSCAPE CONSULTANT:

PROJECT QUANTITY SURVEYOR:

PROJECT:
PURPOSE BUILT C&A HOME DEVELOPMENT AT 349 PRINCE EDWARD ROAD WEST

DRAWING TITLE:
SECTION

DRAWN BY:	DATE:
CZ	NOV-2024
CHECKED BY:	APPROVED BY:
CMD	KCY
SCALE:	PAPER SIZE:
1:200	A3
PROJECT:	DRAWING: / REVISION:
PE 6170	GP-03 / V14

Appendix 2.1

Traffic Forecast

By Fax
2528 6343

運輸署
Transport Department

本署檔案 Our Ref. : (KRKZ8) in TD KR146/193/P-43
來函檔號 Your Ref. : J7350/3
電　　話 Tel. : 2399 2512
圖文傳真 Fax : 2397 8046
電　　郵 Email :

27 September 2024

CKM Asia Limited
21st Floor, Methodist House
36 Hennessy Road, Wan Chai
Hong Kong
(Attn. Mr. CHIN Kim Meng)

Dear Sir/Madam,

Proposed Residential Care Home for the Elderly
at 349 Prince Edward Road West, Kowloon City
Traffic Forecast for Traffic Noise Impact Assessment

I refer to your captioned submission dated 10.9.2024.

I have no comment on the methodology of the traffic forecast from traffic engineering point of view provided that the traffic volume estimated in the forecast will only be used for conducting Noise Impact Assessment.

Yours faithfully,

(LI Hon-yeung, Simon)
for Commissioner for Transport

市區(九龍)及新界分區辦事處
Urban (Kln.) & NT Regional Office
九龍聯運街三十號旺角政府合署七樓及八樓
7th & 8th Floors, Mong Kok Government Offices, 30 Luen Wan Street, Kowloon.
圖文傳真 Fax No.: 2381 3799 (新界區) (NTRO) 2397 8046 (九龍市區) (U(K)RO)
網址 Web Site: http://www.td.gov.hk

Vicky Shek

From: CKM Asia <mail@ckmasia.com.hk>
Sent: Monday, November 25, 2024 3:37 PM
To: Vicky Shek
Cc: Ava Lo; Zhu Chong De; Chi Mai Dao; Katie Yu; Jolene Wong; Gladys Ng
Subject: RE: 349 Prince Edward Road West - Traffic Forecast

Dear Ramboll,

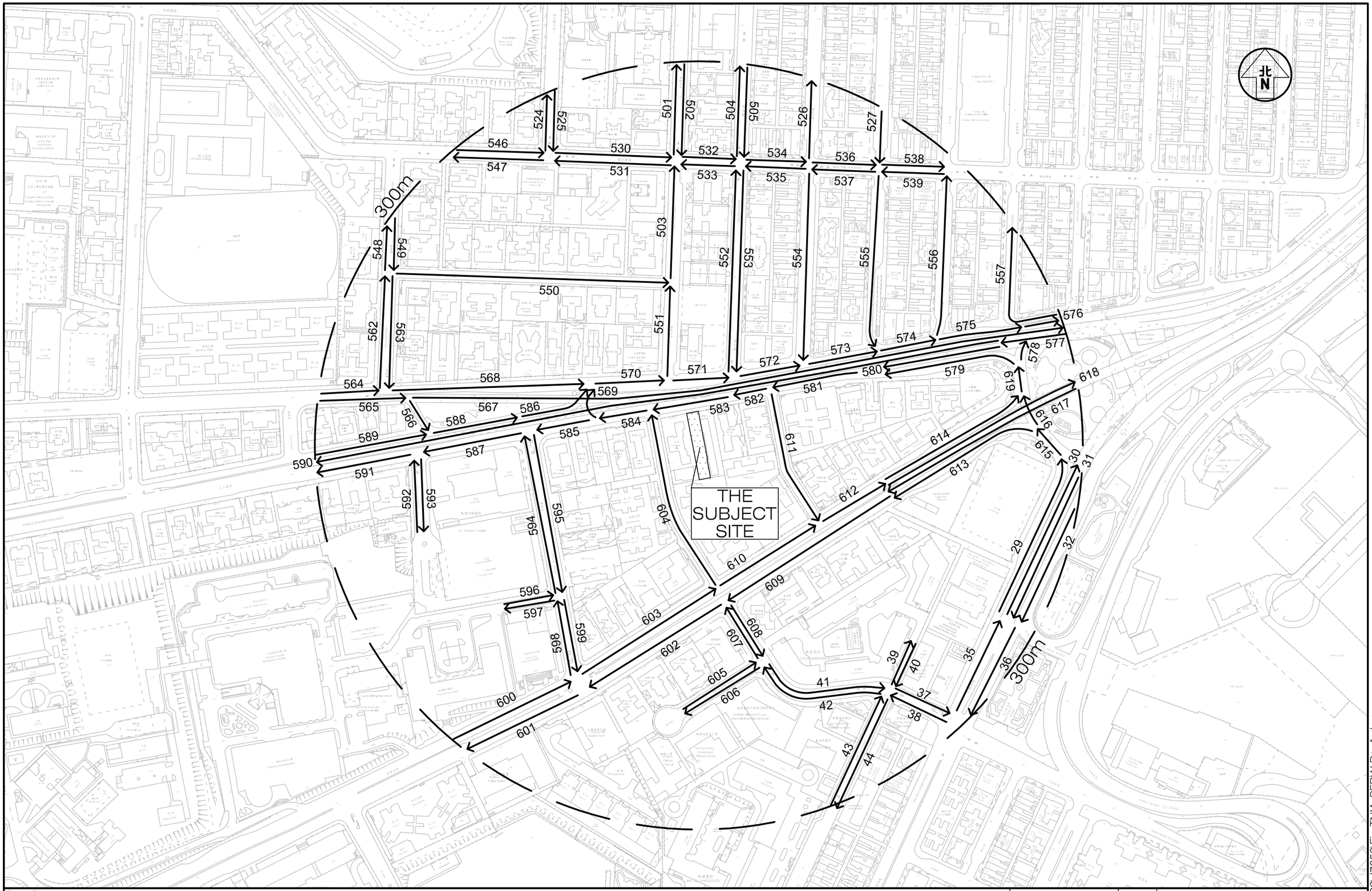
Further to our email of 30th September 2024, we confirm that the traffic forecasting methodology endorsed by Transport Department has been strictly adopted in producing the 2042 traffic forecast for the Traffic Noise Impact Assessment study.

Thank you for your attention.

Regards,

H.C. Tang

CKM Asia Limited
Traffic and Transportation Planning Consultants
Phone: (852) 2520 5990
Fax: (852) 2528 6343
Email: mail@ckmasia.com.hk
Website: www.ckmasia.com.hk
Address: 21/F, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong



Project Title	PROPOSED SOCIAL WELFARE FACILITY (RESIDENTIAL CARE HOME FOR THE ELDERLY) AT 349 PRINCE EDWARD ROAD WEST, KOWLOON	J7350	Figure No. TNIA/PERW Revision A
Figure Title	LOCATION OF TRAFFIC DATA FOR TRAFFIC NOISE IMPACT ASSESSMENT		Designed by Y C K; Drawn by C C L; Checked by T H C; Scale in A3 1 : 3,000; Date 10 SEP 2024

CKM Asia Limited
Traffic and Transportation Planning Consultants
21st Floor, Methodist House, 36 Hennessy Road
Wan Chai, Hong Kong
Tel : (852) 2520 5990 Fax : (852) 2528 6343
Email : mail@ckmasia.com.hk

T:\JOBJ7350-J7399\J7350\Fig TNIA_PERW RevA.dwg

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	AM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L029	Ma Tau Chung Road (NB)	Ma Tau Chung Road	Kowloon City Roundabout	50	1,250	70%	30%
L030	Ma Tau Chung Road Flyover (NB)	Ma Tau Chung Road	Prince Edward Road East	50	1,200	78%	22%
L031	Ma Tau Chung Road Flyover (SB)	Prince Edward Road East	Ma Tau Chung Road	50	1,000	78%	22%
L032	Ma Tau Chung Road (SB)	Kowloon City Roundabout	Hang Wan Road	50	1,250	68%	32%
L035	Ma Tau Chung Road (NB)	Sung Wong Toi Road	Ma Tau Chung Road Flyover	50	2,400	74%	26%
L036	Ma Tau Chung Road (SB)	Hang Wan Road	Sung Wong Toi Road	50	1,650	72%	28%
L037	Fu Ning Street (EB)	Shing Tak Street	Ma Tau Chung Road	50	50	0%	100%
L038	Fu Ning Street (WB)	Ma Tau Chung Road	Shing Tak Street	50	700	83%	17%
L039	Access Road to Chun Seen Mei Chuen (NB)	Fu Ning Street	Cul de sac	50	50	87%	13%
L040	Access Road to Chun Seen Mei Chuen (SB)	Cul de sac	Fu Ning Street	50	50	73%	27%
L041	Fu Ning Street (EB)	Fuk Cheung Street	Shing Tak Street	50	250	86%	14%
L042	Fu Ning Street (WB)	Shing Tak Street	Fuk Cheung Street	50	600	83%	17%
L043	Shing Tak Street (NB)	Ma Tau Kok Road	Fu Ning Street	50	50	0%	100%
L044	Shing Tak Street (SB)	Fu Ning Street	Ma Tau Kok Road	50	350	84%	16%
L501	Grampian Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	300	72%	28%
L502	Grampian Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	150	84%	16%
L503	Grampian Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	600	68%	32%
L504	Junction Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	300	70%	30%
L505	Junction Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	800	75%	25%
L524	Inverness Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	350	84%	16%
L525	Inverness Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	250	89%	11%
L526	Fuk Lo Tsun Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	250	75%	25%
L527	Lion Rock Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	350	84%	16%
L530	Nga Tsin Wai Road (EB)	Inverness Road	Grampian Road	50	350	89%	11%
L531	Nga Tsin Wai Road (WB)	Grampian Road	Inverness Road	50	700	83%	17%
L532	Nga Tsin Wai Road (EB)	Grampian Road	Junction Road	50	550	77%	23%
L533	Nga Tsin Wai Road (WB)	Junction Road	Grampian Road	50	500	84%	16%
L534	Nga Tsin Wai Road (EB)	Junction Road	Fuk Lo Tsun Road	50	750	80%	20%
L535	Nga Tsin Wai Road (WB)	Fuk Lo Tsun Road	Junction Road	50	450	84%	16%
L536	Nga Tsin Wai Road (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	300	70%	30%
L537	Nga Tsin Wai Road (WB)	Lion Rock Road	Fuk Lo Tsun Road	50	550	84%	16%
L538	Nga Tsin Wai Road (EB)	Lion Rock Road	Hau Wong Road	50	400	73%	27%
L539	Nga Tsin Wai Road (WB)	Hau Wong Road	Lion Rock Road	50	550	83%	17%
L546	Nga Tsin Wai Road (EB)	College Road	Inverness Road	50	450	86%	14%
L547	Nga Tsin Wai Road (WB)	Inverness Road	College Road	50	700	83%	17%
L548	College Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	250	80%	20%
L549	College Road (SB)	Nga Tsin Wai Road	Sau Chuk Yuen Road	50	300	92%	8%
L550	Sau Chuk Yuen Road (EB)	College Road	Grampian Road	50	200	96%	4%
L551	Grampian Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	450	57%	43%
L552	Junction Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	500	77%	23%
L553	Junction Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	750	76%	24%
L554	Fuk Lo Tsun Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	300	95%	5%
L555	Lion Rock Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	250	83%	17%
L556	Hau Wong Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	400	91%	9%
L557	Nga Tsin Long Road (NB)	Nga Tsin Wai Road	Nga Tsin Wai Road	50	100	86%	14%
L562	College Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	300	84%	16%
L563	College Road (SB)	Sau Chuk Yuen Road	Boundary Street	50	200	90%	10%
L564	Boundary Street (EB)	Short Street	College Road	50	850	63%	37%
L565	Boundary Street (EB)	Short Street	Pentland Street	50	1,700	81%	19%
L566	Pentland Street (SB)	Boundary Street	Prince Edward Road West	50	150	95%	5%
L567	Boundary Street Flyover (EB)	Pentland Street	Prince Edward Road East	50	1,550	80%	20%
L568	Boundary Street (EB)	College Road	Prince Edward Road East	50	700	60%	40%
L569	Slip Road of Prince Edward Road West (EB)	Prince Edward Road East	Boundary Street	50	250	82%	18%
L570	Boundary Street (EB)	Slip Road of Prince Edward Road	Grampian Road	50	1,300	72%	28%
L571	Prince Edward Road West (EB)	Grampian Road	Junction Road	50	900	80%	20%
L572	Prince Edward Road West (EB)	Junction Road	Fuk Lo Tsun Road	50	1,000	78%	22%
L573	Prince Edward Road West (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	1,300	82%	18%
L574	Prince Edward Road West (EB)	Lion Rock Road	Hau Wong Road	50	1,550	82%	18%
L575	Prince Edward Road West (EB)	Hau Wong Road	Kowloon City Roundabout	50	1,150	79%	21%
L576	Kowloon City Roundabout (EB)	Prince Edward Road West	Prince Edward Road West	50	2,350	74%	26%
L577	Prince Edward Road West Flyover (WB)	Prince Edward Road East	Slip Road of Prince Edward Road	50	1,900	78%	22%
L578	Kowloon City Roundabout (NB)	Prince Edward Road West	Prince Edward Road West	50	1,250	70%	30%
L579	Slip Road of Prince Edward Road West (WB)	Kowloon City Roundabout	Prince Edward Road West	50	1,100	71%	29%
L580	Slip Road of Prince Edward Road West (WB)	Prince Edward Road West Flyover	Prince Edward Road West	50	600	78%	22%
L581	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Stirling Road	50	1,650	74%	26%
L582	Prince Edward Road West (WB)	Stirling Road	Junction Road	50	1,400	73%	27%
L583	Prince Edward Road West (WB)	Junction Road	Forfar Road	50	1,600	73%	27%
L584	Prince Edward Road West (WB)	Forfar Road	Slip Road of Prince Edward Road	50	1,700	72%	28%
L585	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Lomond Road	50	1,500	71%	29%
L586	Prince Edward Road West (EB)	Lomond Road	Boundary Street	50	400	88%	12%
L587	Prince Edward Road West (WB)	Lomond Road	Pentland Street	50	1,650	69%	31%
L588	Prince Edward Road West (EB)	Pentland Street	Lomond Road	50	250	90%	10%
L589	Prince Edward Road West (EB)	Short Street	Pentland Street	50	100	83%	17%
L590	Prince Edward Road West Flyover (WB)	Slip Road of Prince Edward Road	Prince Edward Road West	50	1,350	78%	22%
L591	Prince Edward Road West (WB)	Pentland Street	Prince Edward Road West	50	1,550	68%	32%
L592	Pentland Street (NB)	Cul de sac	Prince Edward Road West	50	150	94%	6%
L593	Pentland Street (SB)	Prince Edward Road West	Cul de sac	50	250	96%	4%
L594	Lomond Road (NB)	Access Road to Hong Kong Eye	Prince Edward Road West	50	800	80%	20%
L595	Lomond Road (SB)	Prince Edward Road West	Access Road to Hong Kong Eye	50	500	87%	13%
L596	Access Road to Hong Kong Eye Hospital (EB)	Cul de sac	Lomond Road	50	350	83%	17%
L597	Access Road to Hong Kong Eye Hospital (WB)	Lomond Road	Cul de sac	50	250	91%	9%
L598	Lomond Road (NB)	Argyle Street	Access Road to Hong Kong Eye	50	700	83%	17%

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	AM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L599	Lomond Road (SB)	Access Road to Hong Kong Eye	Argyle Street	50	500	87%	13%
L600	Argyle Street (EB)	Tin Kwong Road	Lomond Road	50	1,650	70%	30%
L601	Argyle Street (WB)	Lomond Road	Tin Kwong Road	50	2,100	82%	18%
L602	Argyle Street (WB)	Fu Ning Street	Lomond Road	50	2,150	81%	19%
L603	Argyle Street (EB)	Lomond Road	Forfar Road	50	1,500	69%	31%
L604	Forfar Road (NB)	Argyle Street	Prince Edward Road West	50	150	54%	46%
L605	Fuk Cheung Street (EB)	Cul de sac	Fu Ning Street	50	100	69%	31%
L606	Fuk Cheung Street (WB)	Fu Ning Street	Cul de sac	50	100	73%	27%
L607	Fu Ning Street (NB)	Fuk Cheung Street	Argyle Street	50	600	82%	18%
L608	Fu Ning Street (SB)	Argyle Street	Fuk Cheung Street	50	250	85%	15%
L609	Argyle Street (WB)	Argyle Street Flyover	Fu Ning Street	50	1,800	81%	19%
L610	Argyle Street (EB)	Forfar Road	Stirling Road	50	1,350	70%	30%
L611	Stirling Road (SB)	Prince Edward Road West	Argyle Street	50	250	77%	23%
L612	Argyle Street (EB)	Stirling Road	Argyle Street Flyover	50	1,600	71%	29%
L613	Argyle Street (WB)	Kowloon City Roundabout	Argyle Street	50	350	70%	30%
L614	Argyle Street (EB)	Argyle Street	Kowloon City Roundabout	50	400	75%	25%
L615	Kowloon City Roundabout (NB)	Ma Tau Chung Road	Argyle Street	50	2,300	70%	30%
L616	Kowloon City Roundabout (NB)	Argyle Street	Argyle Street	50	1,950	70%	30%
L617	Argyle Street Flyover (WB)	Prince Edward Road West	Argyle Street	50	1,450	84%	16%
L618	Argyle Street Flyover (EB)	Argyle Street	Prince Edward Road West	50	1,250	70%	30%
L619	Kowloon City Roundabout (NB)	Argyle Street	Prince Edward Road West	50	2,300	71%	29%

Note: "LV" includes motorcycle, private car and taxi

"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	PM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L029	Ma Tau Chung Road (NB)	Ma Tau Chung Road	Kowloon City Roundabout	50	1,250	72%	28%
L030	Ma Tau Chung Road Flyover (NB)	Ma Tau Chung Road	Prince Edward Road East	50	1,250	82%	18%
L031	Ma Tau Chung Road Flyover (SB)	Prince Edward Road East	Ma Tau Chung Road	50	1,000	80%	20%
L032	Ma Tau Chung Road (SB)	Kowloon City Roundabout	Hang Wan Road	50	1,200	74%	26%
L035	Ma Tau Chung Road (NB)	Sung Wong Toi Road	Ma Tau Chung Road Flyover	50	2,450	77%	23%
L036	Ma Tau Chung Road (SB)	Hang Wan Road	Sung Wong Toi Road	50	1,700	75%	25%
L037	Fu Ning Street (EB)	Shing Tak Street	Ma Tau Chung Road	50	50	0%	100%
L038	Fu Ning Street (WB)	Ma Tau Chung Road	Shing Tak Street	50	750	88%	12%
L039	Access Road to Chun Seen Mei Chuen (NB)	Fu Ning Street	Cul de sac	50	50	95%	5%
L040	Access Road to Chun Seen Mei Chuen (SB)	Cul de sac	Fu Ning Street	50	50	96%	4%
L041	Fu Ning Street (EB)	Fuk Cheung Street	Shing Tak Street	50	150	87%	13%
L042	Fu Ning Street (WB)	Shing Tak Street	Fuk Cheung Street	50	650	89%	11%
L043	Shing Tak Street (NB)	Ma Tau Kok Road	Fu Ning Street	50	50	0%	100%
L044	Shing Tak Street (SB)	Fu Ning Street	Ma Tau Kok Road	50	200	85%	16%
L501	Grampian Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	250	78%	22%
L502	Grampian Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	100	63%	37%
L503	Grampian Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	600	78%	22%
L504	Junction Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	350	74%	26%
L505	Junction Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	700	80%	20%
L524	Inverness Road (NB)	Nga Tsin Wai Road	Dumbarton Road	50	200	79%	21%
L525	Inverness Road (SB)	Dumbarton Road	Nga Tsin Wai Road	50	200	88%	12%
L526	Fuk Lo Tsun Road (NB)	Nga Tsin Wai Road	Carpenter Road	50	250	91%	9%
L527	Lion Rock Road (SB)	Carpenter Road	Nga Tsin Wai Road	50	400	89%	11%
L530	Nga Tsin Wai Road (EB)	Inverness Road	Grampian Road	50	200	81%	19%
L531	Nga Tsin Wai Road (WB)	Grampian Road	Inverness Road	50	600	85%	15%
L532	Nga Tsin Wai Road (EB)	Grampian Road	Junction Road	50	450	76%	24%
L533	Nga Tsin Wai Road (WB)	Junction Road	Grampian Road	50	450	87%	13%
L534	Nga Tsin Wai Road (EB)	Junction Road	Fuk Lo Tsun Road	50	650	80%	20%
L535	Nga Tsin Wai Road (WB)	Fuk Lo Tsun Road	Junction Road	50	500	83%	17%
L536	Nga Tsin Wai Road (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	300	67%	33%
L537	Nga Tsin Wai Road (WB)	Lion Rock Road	Fuk Lo Tsun Road	50	650	83%	17%
L538	Nga Tsin Wai Road (EB)	Lion Rock Road	Hau Wong Road	50	350	71%	29%
L539	Nga Tsin Wai Road (WB)	Hau Wong Road	Lion Rock Road	50	650	83%	17%
L546	Nga Tsin Wai Road (EB)	College Road	Inverness Road	50	300	79%	21%
L547	Nga Tsin Wai Road (WB)	Inverness Road	College Road	50	700	86%	14%
L548	College Road (NB)	Sau Chuk Yuen Road	Nga Tsin Wai Road	50	200	75%	25%
L549	College Road (SB)	Nga Tsin Wai Road	Sau Chuk Yuen Road	50	150	90%	10%
L550	Sau Chuk Yuen Road (EB)	College Road	Grampian Road	50	100	92%	8%
L551	Grampian Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	500	76%	24%
L552	Junction Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	550	81%	19%
L553	Junction Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	700	79%	21%
L554	Fuk Lo Tsun Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	300	86%	14%
L555	Lion Rock Road (SB)	Nga Tsin Wai Road	Prince Edward Road West	50	350	89%	11%
L556	Hau Wong Road (NB)	Prince Edward Road West	Nga Tsin Wai Road	50	350	93%	7%
L557	Nga Tsin Long Road (NB)	Nga Tsin Wai Road	Nga Tsin Wai Road	50	150	86%	14%
L562	College Road (NB)	Boundary Street	Sau Chuk Yuen Road	50	200	76%	24%
L563	College Road (SB)	Sau Chuk Yuen Road	Boundary Street	50	100	88%	13%
L564	Boundary Street (EB)	Short Street	College Road	50	900	75%	25%
L565	Boundary Street (EB)	Short Street	Pentland Street	50	1,550	86%	14%
L566	Pentland Street (SB)	Boundary Street	Prince Edward Road West	50	150	92%	8%
L567	Boundary Street Flyover (EB)	Pentland Street	Prince Edward Road East	50	1,450	85%	15%
L568	Boundary Street (EB)	College Road	Prince Edward Road East	50	800	76%	24%
L569	Slip Road of Prince Edward Road West (EB)	Prince Edward Road East	Boundary Street	50	200	77%	23%
L570	Boundary Street (EB)	Slip Road of Prince Edward Road	Grampian Road	50	1,300	79%	21%
L571	Prince Edward Road West (EB)	Grampian Road	Junction Road	50	800	81%	19%
L572	Prince Edward Road West (EB)	Junction Road	Fuk Lo Tsun Road	50	850	80%	20%
L573	Prince Edward Road West (EB)	Fuk Lo Tsun Road	Lion Rock Road	50	1,150	82%	18%
L574	Prince Edward Road West (EB)	Lion Rock Road	Hau Wong Road	50	1,450	84%	16%
L575	Prince Edward Road West (EB)	Hau Wong Road	Kowloon City Roundabout	50	1,150	81%	19%
L576	Kowloon City Roundabout (EB)	Prince Edward Road West	Prince Edward Road West	50	2,400	76%	24%
L577	Prince Edward Road West Flyover (WB)	Prince Edward Road East	Slip Road of Prince Edward Road	50	1,800	81%	19%
L578	Kowloon City Roundabout (NB)	Prince Edward Road West	Prince Edward Road West	50	1,250	72%	28%
L579	Slip Road of Prince Edward Road West (WB)	Kowloon City Roundabout	Prince Edward Road West	50	1,150	74%	26%
L580	Slip Road of Prince Edward Road West (WB)	Prince Edward Road West Flyover	Prince Edward Road West	50	400	81%	19%
L581	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Stirling Road	50	1,500	76%	24%
L582	Prince Edward Road West (WB)	Stirling Road	Junction Road	50	1,350	75%	25%
L583	Prince Edward Road West (WB)	Junction Road	Forfar Road	50	1,500	75%	25%
L584	Prince Edward Road West (WB)	Forfar Road	Slip Road of Prince Edward Road	50	1,650	75%	25%
L585	Prince Edward Road West (WB)	Slip Road of Prince Edward Road	Lomond Road	50	1,450	75%	25%
L586	Prince Edward Road West (EB)	Lomond Road	Boundary Street	50	300	90%	10%
L587	Prince Edward Road West (WB)	Lomond Road	Pentland Street	50	1,750	75%	25%
L588	Prince Edward Road West (EB)	Pentland Street	Lomond Road	50	200	94%	6%
L589	Prince Edward Road West (EB)	Short Street	Pentland Street	50	50	95%	5%
L590	Prince Edward Road West Flyover (WB)	Slip Road of Prince Edward Road	Prince Edward Road West	50	1,400	81%	19%
L591	Prince Edward Road West (WB)	Pentland Street	Prince Edward Road West	50	1,750	75%	25%
L592	Pentland Street (NB)	Cul de sac	Prince Edward Road West	50	200	99%	1%
L593	Pentland Street (SB)	Prince Edward Road West	Cul de sac	50	200	98%	2%
L594	Lomond Road (NB)	Access Road to Hong Kong Eye	Prince Edward Road West	50	800	86%	14%
L595	Lomond Road (SB)	Prince Edward Road West	Access Road to Hong Kong Eye	50	400	93%	7%
L596	Access Road to Hong Kong Eye Hospital (EB)	Cul de sac	Lomond Road	50	300	75%	25%
L597	Access Road to Hong Kong Eye Hospital (WB)	Lomond Road	Cul de sac	50	100	93%	7%
L598	Lomond Road (NB)	Argyle Street	Access Road to Hong Kong Eye	50	700	87%	13%

TABLE 1 – PEAK HOUR TRAFFIC FLOW AND VEHICLE COMPOSITION

YEAR 2042 TRAFFIC FORECAST

Date : 10 September 2024 **Job No.: J7350**

Link ID	Road Section	From Road	To Road	Speed Limit (km/hr)	PM Peak Hour		
					Traffic Flows (veh/hr)	Vehicle Composition	
						LV	HV
L599	Lomond Road (SB)	Access Road to Hong Kong Eye	Argyle Street	50	500	85%	15%
L600	Argyle Street (EB)	Tin Kwong Road	Lomond Road	50	1,350	76%	24%
L601	Argyle Street (WB)	Lomond Road	Tin Kwong Road	50	2,250	89%	11%
L602	Argyle Street (WB)	Fu Ning Street	Lomond Road	50	2,350	89%	11%
L603	Argyle Street (EB)	Lomond Road	Forfar Road	50	1,250	73%	27%
L604	Forfar Road (NB)	Argyle Street	Prince Edward Road West	50	200	79%	21%
L605	Fuk Cheung Street (EB)	Cul de sac	Fu Ning Street	50	100	91%	9%
L606	Fuk Cheung Street (WB)	Fu Ning Street	Cul de sac	50	50	83%	17%
L607	Fu Ning Street (NB)	Fuk Cheung Street	Argyle Street	50	700	90%	10%
L608	Fu Ning Street (SB)	Argyle Street	Fuk Cheung Street	50	150	85%	15%
L609	Argyle Street (WB)	Argyle Street Flyover	Fu Ning Street	50	1,800	88%	12%
L610	Argyle Street (EB)	Forfar Road	Stirling Road	50	1,050	72%	28%
L611	Stirling Road (SB)	Prince Edward Road West	Argyle Street	50	200	82%	18%
L612	Argyle Street (EB)	Stirling Road	Argyle Street Flyover	50	1,250	73%	27%
L613	Argyle Street (WB)	Kowloon City Roundabout	Argyle Street	50	300	77%	23%
L614	Argyle Street (EB)	Argyle Street	Kowloon City Roundabout	50	300	73%	27%
L615	Kowloon City Roundabout (NB)	Ma Tau Chung Road	Argyle Street	50	2,350	73%	27%
L616	Kowloon City Roundabout (NB)	Argyle Street	Argyle Street	50	2,100	73%	27%
L617	Argyle Street Flyover (WB)	Prince Edward Road West	Argyle Street	50	1,550	90%	10%
L618	Argyle Street Flyover (EB)	Argyle Street	Prince Edward Road West	50	950	74%	26%
L619	Kowloon City Roundabout (NB)	Argyle Street	Prince Edward Road West	50	2,400	73%	27%

Note: "LV" includes motorcycle, private car and taxi

"HV" includes light / medium / heavy goods vehicle, public / private light bus, non-franchised bus and franchised bus

Appendix 2.2

Traffic Noise Impact Assessment Results

(Unmitigated Scenario)

Appendix 2.2 - Predicted Road Traffic Noise Levels at Representative NSRs For Year 2042 AM Peak Hour (Unmitigated Scenario)

RCHE - G/F

	NSR	RG01
Floor	**mPD**	L10 1-hour, dB(A)
G/F	10.4	70
Noise Criteria		70
Compliance ?		Yes

RCHE - 1/F

	NSR	R101	R102	R103	R104	R105
Floor	**mPD**	L10 1-hour, dB(A)				
1/F	15.4	76	75	49	59	61
Noise Criteria		70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes

RCHE - Typical Floors (2/F-7/F)

	NSR	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06
Floor	**mPD**	L10 1-hour, dB(A)						
2/F	18.5	76	75	50	55	-	59	61
3/F	21.7	76	75	50	-	49	60	61
4/F	24.8	76	75	50	55	-	61	61
5/F	28.0	76	75	50	-	49	62	62
6/F	31.1	76	75	50	55	-	62	62
7/F	34.3	75	75	51	56	-	63	63
Max. Level,dB(A)		76	75	51	56	49	63	63
Noise Criteria		70	70	70	70	55	70	70
Compliance ?		No	No	Yes	Yes	Yes	Yes	Yes

RCHE - 9/F

	NSR	R901	R902
Floor	**mPD**	L10 1-hour, dB(A)	
9/F	40.6	57	57
Noise Criteria		70	70
Compliance ?		Yes	Yes

Compliance Rate

No. of units counted with noise exceedance:	14
Total no. of units at Application Site	36
Compliance Rate (%):	61.1%

Appendix 2.3

Traffic Noise Impact Assessment Results

(Mitigated Scenario)

Appendix 2.3 - (AM Peak) Predicted Road Traffic Noise Reduction Level (L10, dB(A)) during AM Peak Hour of Year 2042 with Noise Mitigation Measures at Proposed Development - Mitigated Scenario

<table>
<tr><td colspan="2"></td><td>RG01</td><td>R101</td><td>R102</td><td>R103</td><td>R104</td><td>R105</td><td>RT01</td><td>RT02</td><td>RT03</td><td>RT04a</td><td>RT04b</td><td>RT05</td><td>RT06</td><td>R901</td><td>R902</td></tr>
<tr><td colspan="2">Noise Mitigation</td><td>-</td><td>Acw</td><td>Acw</td><td>-</td><td>-</td><td>-</td><td>Acw</td><td>Acw</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Floor</td><td>mPD</td><td colspan="15">L10 1-hour, dB(A)</td></tr>
<tr><td>G/F</td><td>10.4</td><td>-</td><td colspan="5">/</td><td colspan="9" rowspan="2">/</td><td rowspan="8">/</td></tr>
<tr><td>1/F</td><td>15.4</td><td rowspan="8">/</td><td>7.6</td><td>8.8</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>2/F</td><td>18.5</td><td colspan="5" rowspan="7">/</td><td>8.8</td><td>8.8</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>3/F</td><td>21.7</td><td>8.8</td><td>8.8</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>4/F</td><td>24.8</td><td>8.8</td><td>8.8</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>5/F</td><td>28</td><td>8.8</td><td>8.8</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>6/F</td><td>31.1</td><td>8.8</td><td>8.8</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>7/F</td><td>34.3</td><td>8.8</td><td>8.8</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>9/F</td><td>40.6</td><td colspan="9">/</td><td>-</td><td>-</td></tr>
</table>

Noise mitigation measures: Baffle Type Acoustic Window (Acw)

**Please refer to Appendix 2.4 for the above calculated noise reduction level for Baffle Type Acoustic Window.

Appendix 2.3 - (AM Peak) Predicted Road Traffic Noise Reduction Level (L10, dB(A)) during AM Peak Hour of Year 2042 with Noise Mitigation Measures at Proposed Development - Mitigated Scenario

		RG01	R101	R102	R103	R104	R105	RT01	RT02	RT03	RT04a	RT04b	RT05	RT06	R901	R902
Noise Mitigation		-	Acw	Acw	-	-	-	Acw	Acw	-	-	-	-	-	-	-
Floor	mPD	L10 1-hour, dB(A)														
G/F	10.4	70	/					/							/	
1/F	15.4	/	69	67	49	59	61									
2/F	18.5		/					67	67	50	55	-	59	61		
3/F	21.7							67	66	50	-	49	60	61		
4/F	24.8							67	66	50	55	-	61	61		
5/F	28							67	66	50	-	49	62	62		
6/F	31.1							67	66	50	55	-	62	62		
7/F	34.3							67	66	51	56	-	63	63		
9/F	40.6							/							57	57
Max. Level,dB(A)		70	69	67	49	59	61	67	67	51	56	49	63	63	57	57
Noise Criteria		70	70	70	55	70	70	70	70	70	70	55	70	70	70	70
Compliance?		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**The predicted noise level is not the actual noise level at the external facade after the application of baffle type acoustic window . These predicted noise levels are the equivalent noise levels at 1m from the external facade after accounting the reduction in noise levels inside the flat offered by the proposed baffle type acoustic window.

Compliance Rate

No. of units counted with noise exceedance:	0
Total no. of units at Subject Site	36
Compliance Rate (%):	100.0%

Appendix 2.4

Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Appendix 2.4 - Estimation of Maximum Allowed Sound Attenuation of Baffle Type Acoustic Window

Table of Major Parameters and Room Size of Proposed Development and Corresponding Reference Case, and Sound Attenuation Adjustment

Floor	Room	NSR IDs	Window/ Door	Proposed Development						Reference Case							Adjustment: 10xlog(RA / RAref) (adjust downward only), dB(A) (RAref)	Adjusted sound attenuation, dB(A)
				Outer opening area, m2	Inner opening area, m2	Air gap, m	Overlapping length, m	MPA applied? ***	Room area (RA), m2	Outer opening area, m2	Inner opening area, m2	Air gap, m	Overlapping length, m	MPA applied?	Room area (RAref), m2	Ref. sound attenuation, dB(A)		
1/F	Ward	R101	Window	2.33	1.12	0.1	0.275	No	28.98	3.2	3.8	0.1	0.275	No	38.3	8.8	-1.2	7.6
1/F	Ward	R102	Window	3.18	0.12	0.1	0.275	No	42.35	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8
2/F-7-F	Ward	RT01	Window	2.33	1.12	0.1	0.275	No	47.65	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8
2/F-7-F	Ward	RT02	Window	3.18	0.12	0.1	0.275	No	47.80	3.2	3.8	0.1	0.275	No	38.3	8.8	0.0	8.8

The dimensions of major parameters for the proposed baffle type acoustic window for the Proposed Development as shown in the above table, are subject to detailed design stage.

Appendix 2.5

Extracted Pages from Approved Planning Application A/K22/29

3.7 Proposed Noise Mitigation Measures

3.7.1 The following noise mitigation measures are considered and incorporated in the MLP.

a. Acoustic Window (Baffle Type)

According to a precedent case of redevelopment of ex-North Point Estate site to comprehensive development with residential uses (hereinafter referred to as the "Reference Case" for simplicity's sake), acoustic windows (baffle type) are adopted for flats facing roads (Island Eastern Corridor) for the purpose of reducing road traffic noise impact. According to onsite noise measurement, such innovate acoustic window system (opening size of 3.2m^2; 100mm gap; 275mm overlapping) at living room area (about 38.3m^2) can reduce noise level by 8.8 dB(A).

Acoustic window (baffle type) refers to the type of window that has an inner glass panel behind an outer window, both readily openable, for creating an air gap for the supply of fresh air with noise mitigation effect (see Appendix 3.5). It comprises two glazing:

i. The outer window opening; and
ii. The inner panel.

The "designed setting" to reduce noise entry to indoor area is that the inner panel is installed behind the outer window opening so that noise outside cannot pass through the opening window and enter indoor area directly. Noise needs to pass through the gap between the inner panel and outer façade in order to enter indoor area. The design can enable natural ventilation through the gap between the outer façade and inner sliding panel on one hand (although extent of natural ventilation may be inferior to the case without the inner sliding panel behind) and prevent most noise from entering indoor environment on the other hand.

In the Proposed Development, the configurations of the optimised acoustic windows design are shown in Appendix 3.5. With the optimised configurations, the noise reduction effectiveness of the acoustic windows in this Proposed Development (i.e. opening size and gap not more than Reference Case; overlapping not less than Reference Case) should not be worse than the Reference Case, it is anticipated that the proposed acoustic window (Baffle Type) should have at least the same noise reduction performance when noise enters from outdoor to indoor area.

The sound attenuation performance of acoustic window is determined with reference to the redevelopment project of ex-North Point Estate. The noise reduction of enhanced acoustic balcony without MPA applied at living room of reference case reaches 8.8 dB(A) (For living room of 38.3m^2, with outer opening of about 3.2m^2, air gap of 100mm and overlapping length of 275mm). The outer window opening of dormitory is around 3.14 m^2, which is smaller than that of the reference case of 3.2m^2. In addition, air gap of 100mm and overlapping length of 375mm will be provided which is no worse than the reference case (see Appendix 3.5).

It is noted that the room size of typical dormitories is ranged from approximately 40 m^2 to 50m^2, which is larger than the living room of 38.3m^2 in reference case. Therefore, the base case of RCHE supposed with larger window opening will

even perform worse, leading to higher noise reduction of the acoustic window system. Therefore, the maximum sound reduction performance of the acoustic window applied at typical dormitories should not be less than that in reference case, which is equivalent to 8.8 dB(A).

As for the Staff Dormitory/ Sleep-in Room at 3/F, its room size is around 25m^2, which is smaller than the living room area of the reference case. It is considered that the amount of sound energy that can enter to room indoors should be proportional to the area of the window opening and in turn correlated to the room size. Therefore, an adjustment on the sound attenuation of acoustic window is made using ratio of room size of Staff Dormitory and Reference Case (which represents the ratio of sound energy that can enter indoor area) and then converted to decibel scale using 10 x log function. In this case, the sound attenuation of acoustic window in staff dormitory is determined as 6.9 dB(A) (i.e. 8.8 + 10 x log(25/38.3)), which is higher than the required noise reduction by 0.4 dB(A).

For Isolation/ Quiet Room, acoustic window (Baffle Type) is proposed where noise exceedance is found (with maximum of 2 dBA exceedance). It is noted that the room size of these room is ranged from around 9m^2 to 10m^2, which is larger than the bedroom in reference case (room size of about 6.8m^2 with outer opening of about 0.7 m^2 and noise reduction performance of 6.9 dB(A)). Same principle for dormitories applies to these Isolation/ Quiet Room should not be worse than that of the reference case and can attain the noise reduction of maximum 6.9 dB(A).

b. Fixed Glazing

For some locations where ventilation opening is not necessary but exposing to the major road traffic noise source that possibly lead to noise exceedance, they will be dedicated as fixed glazing.

3.7.2 Figure 3.2 shows the proposed noise mitigation measures.

3.8 Assessment Result with Proposed Noise Mitigation Measures

3.8.1 The predicted road traffic noise levels at the selected representative NSRs based on the noise mitigation measures discussed above were assessed.

3.8.2 The result in Appendix 3.4 indicated no non-compliance of road traffic noise standard is found with the proposed noise mitigation measures in place.

3.9 Conclusion

3.9.1 Road traffic noise impact assessment has been carried out for the proposed development.

3.9.2 Practical and effective noise mitigation measures have been explored which include and acoustic window (baffle type) and fixed glazing. With the proposed noise mitigation measures in place, the road traffic noise level can comply with relevant standards.

Appendix 3.1

Inventory of Potential Fixed Noise Sources

Noise Source ID	Description of Noise Sources	Sources	SWL, dB(A), L_{eq} (30 min)				Source Location		Directivity Factor (Q)	No. of Plant
		Existing/ Planned	Daytime & Evening Time (0700-2300)	Ref	Nighttime (2300-0700)	Ref	X	Y		
F01	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837213.04	820947.14	2	1
F02	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837214.96	820947.08	2	1
F03	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837216.91	820946.96	2	1
F04	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837214.89	820945.05	2	1
F05	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[19]	OFF	[19]	837216.86	820944.91	2	1
F06	VRV at the roof of Kowloon Ling Liang Church	Existing	71	[20]	OFF	[20]	837215.72	820942.99	2	1
F07	VRV at the roof of Kowloon Ling Liang Church	Existing	65	[21]	OFF	[21]	837212.22	820945.13	2	1
F08	VRV at the roof of Kowloon Ling Liang Church	Existing	65	[21]	OFF	[21]	837212.14	820943.05	2	1
F09	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837211.27	820939.92	2	1
F10	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837212.50	820939.85	2	1
F11	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[16]	OFF	[16]	837213.72	820939.72	2	1
F12	VRV at the roof of Kowloon Ling Liang Church	Existing	58	[11]	OFF	[11]	837219.06	820937.44	2	1
F13	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837223.80	820941.55	2	1
F14	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	57	[17]	OFF	[17]	837225.61	820941.47	2	1
F15	Condensing Unit at the roof of Kowloon Ling Liang Church	Existing	67	[18]	OFF	[18]	837233.69	820941.23	2	1
F16	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837238.86	820944.23	2	1
F17	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837238.98	820946.53	2	1
F18	VRV at the roof of Kowloon Ling Liang Church	Existing	68	[22]	OFF	[22]	837237.10	820946.61	2	1
F19	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837231.03	821184.01	2	1
F20	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837233.30	821183.90	2	1
F21	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.54	821184.46	2	1
F22	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.70	821185.93	2	1
F23	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837235.81	821188.20	2	1
F24	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837233.35	821187.91	2	1
F25	Chiller at the roof of The Grandeur (Block 1)	Existing	68	[22]	OFF	[22]	837231.09	821188.08	2	1
F26	Cooling Tower at the roof of Smart A	Existing	82	[1]	OFF	[1]	837331.64	820957.79	2	1
F27	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837330.83	820956.20	2	1
F28	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837329.41	820955.25	2	1
F29	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837328.42	820956.74	2	1
F30	Chiller at the roof of Smart A	Existing	83	[6]	OFF	[6]	837329.83	820957.69	2	1
F31	Chiller at the roof of Hang Seng Kowloon City Building	Existing	92	[9]	OFF	[9]	837347.09	820950.24	2	1
F32	Chiller at the roof of Hang Seng Kowloon City Building	Existing	92	[9]	OFF	[9]	837347.05	820948.18	2	1
F33	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837057.24	820849.86	2	1
F34	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837064.78	820851.35	2	1
F35	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837075.31	820851.44	2	1
F36	Cooling Tower at the roof of St.Teresa Hospital (North Wing)	Existing	88	[2]	88	[2]	837081.72	820852.75	2	1
F37	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837114.21	820857.93	2	1
F38	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837117.13	820858.51	2	1
F39	Chiller at the roof of St.Teresa Hospital (East Wing)	Existing	98	[8]	98	[8]	837116.49	820853.68	2	1
F40	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837109.05	820782.82	2	1
F41	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837110.13	820777.87	2	1
F42	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837071.33	820774.80	2	1
F43	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	85	[10]	85	[10]	837072.30	820770.34	2	1
F44	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	96	[7]	96	[7]	837074.42	820742.90	2	1
F45	Chiller at the roof of St.Teresa Hospital (Extension Building)	Existing	96	[7]	96	[7]	837066.10	820741.17	2	1
F46	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837169.72	820826.96	2	1
F47	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837171.90	820827.47	2	1
F48	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837172.81	820823.15	2	1
F49	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837171.13	820822.82	2	1
F50	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837169.41	820822.47	2	1
F51	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837169.86	820820.07	2	1

Noise Source ID	Description of Noise Sources	Sources	SWL, dB(A), L_{eq} (30 min)				Source Location		Directivity Factor (Q)	No. of Plant
		Existing/ Planned	Daytime & Evening Time (0700-2300)	Ref	Nighttime (2300-0700)	Ref	X	Y		
F52	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837170.27	820817.88	2	1
F53	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	68	[12]	68	[12]	837166.58	820816.43	2	1
F54	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	71	[13]	71	[13]	837164.49	820816.02	2	1
F55	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837161.68	820814.84	2	1
F56	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837161.20	820817.27	2	1
F57	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837160.74	820819.64	2	1
F58	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837163.84	820819.49	2	1
F59	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837165.93	820819.85	2	1
F60	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837157.84	820822.57	2	1
F61	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837158.12	820824.51	2	1
F62	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837159.94	820824.91	2	1
F63	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	72	[15]	72	[15]	837162.33	820822.22	2	1
F64	VRV at the roof of St. Teresa Hospital (Staff Quarter)	Existing	70	[14]	70	[14]	837164.48	820822.63	2	1
F65	Chiller at the roof of Hong Kong Eye Hospital	Existing	97	[5]	97	[5]	837028.79	820679.62	2	1
F66	Chiller at the roof of Hong Kong Eye Hospital	Existing	97	[5]	97	[5]	837034.44	820680.60	2	1
F67	Chiller at the roof of Hong Kong Eye Hospital	Existing	96	[7]	96	[7]	837043.09	820652.45	2	1
F68	Cooling Tower at the roof of Kowloon City Law Courts Building	Existing	92	[3]	OFF	[3]	837139.21	820699.38	2	1
F69	Cooling Tower at the roof of Kowloon City Law Courts Building	Existing	92	[3]	OFF	[3]	837139.68	820696.82	2	1
F70	Chiller at the roof of Kowloon City Law Courts Building	Existing	94	[4]	OFF	[4]	837137.74	820692.56	2	1
F71	Chiller at the roof of Kowloon City Law Courts Building	Existing	94	[4]	OFF	[4]	837138.67	820686.74	2	1

Notes:

[1] The noise level is referenced to Ryowo FT-20.
[2] The noise level is referenced to Ryowo FC-300.
[3] The noise level is referenced to Ryowo FWS-127-7.5.
[4] The noise level is referenced to Trane CGAM 70.
[5] The noise level is referenced to Trane RTAC 300 .
[6] The noise level is referenced to York YLCA 0080 T-TP.
[7] The noise level is referenced to York YLAA 0485SE.
[8] The noise level is referenced to York YCAS 0835 EB.
[9] The noise level is referenced to Carrier 30RB 090R.
[10] The noise level is referenced to McQuay MCS135.1.
[11] The noise level is referenced to Mitsubishi FDC125VS.
[12] The noise level is referenced to Mitsubishi FDC400KXE6.
[13] The noise level is referenced to Mitsubishi FDC450KXE6.
[14] The noise level is referenced to Mitsubishi FDC504KXE6.
[15] The noise level is referenced to Mitsubishi FDC560KXE6.
[16] The noise level is referenced to Daikin RU08K.
[17] The noise level is referenced to Daikin R50GV1.
[18] The noise level is referenced to Daikin R125FU.
[19] The noise level is referenced to Daikin RUXYQ12AB.
[20] The noise level is referenced to Daikin RXYQ216PBYD.
[21] The noise level is referenced to Daikin RXYQ72PBYD.
[22] The noise level is referenced to Daikin RXYQ96PBYD.

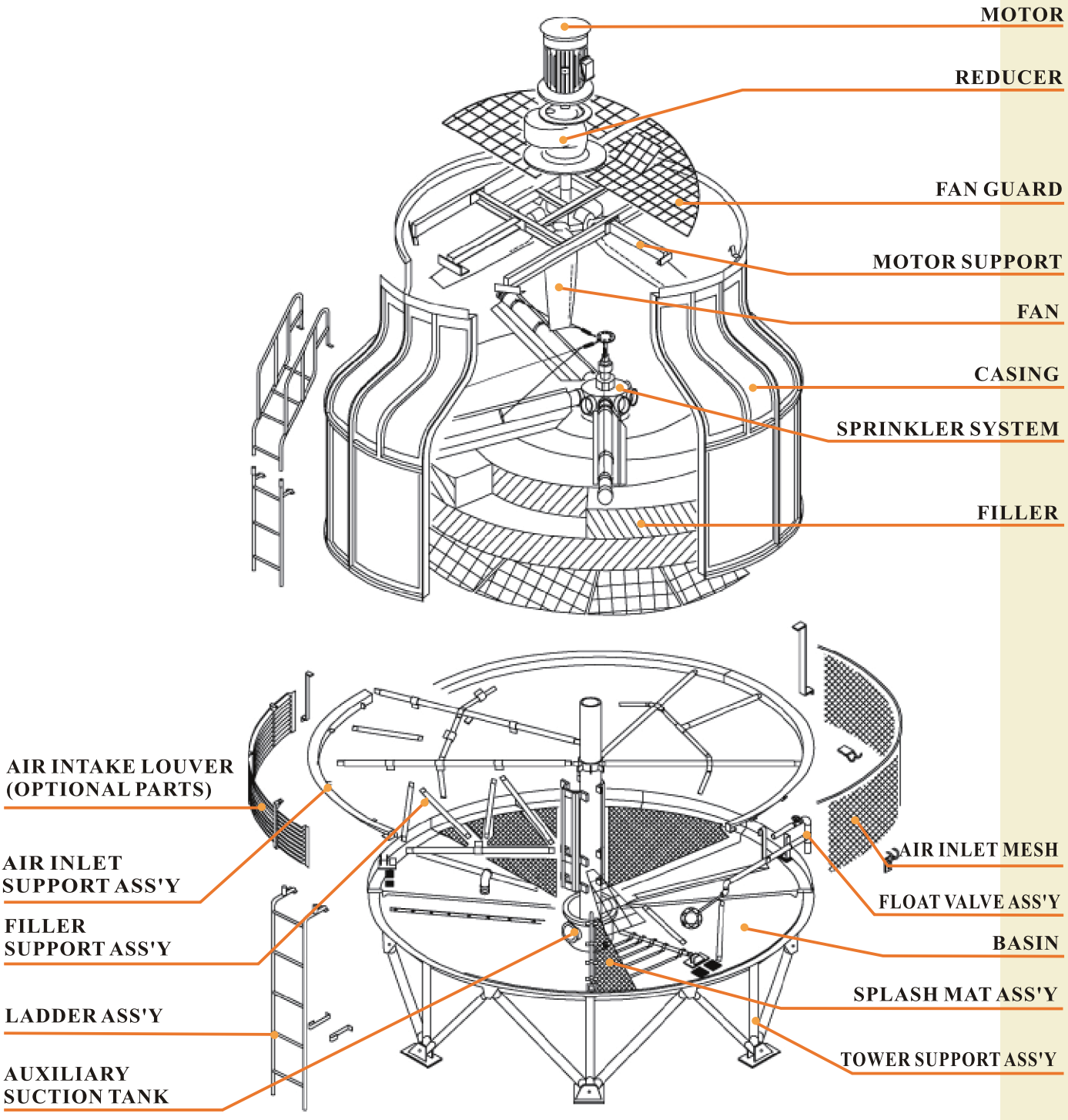
Catalogue of Ryowo FT-20

菱和
ryowo™

FRP COUNTER FLOW FT SERIES

COOLING TOWER

STRUCTURE



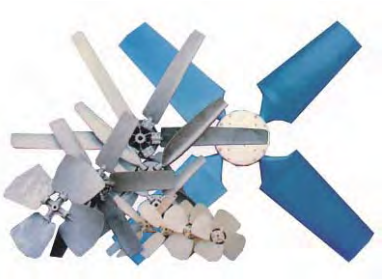
PRINCIPLE OF OPERATION

Hot water is distributed over the filler through the low velocity automatic sprinkler system and is mixed with the upward draft of ambient air causing evaporation and thus heat is removed from the water. The cooled water falls into the basin and is pumped to the heat sources for recirculation.

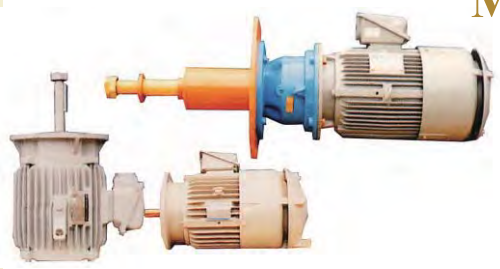
COMPONENT FUNCTION & FEATURE

AXIAL FAN

All fans are induced-draft axial type with adjustable pitch. Material chosen are non-corrosion of plastic, FRP or alu-minium alloy. The high efficiency design ensures low running cost and the lowest possible noise level . Fan blade pitches is factory set and balanced.



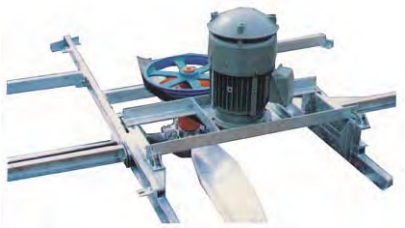
MOTOR



The motors, totally enclosed, fan cooled flange type, 380V/ 3ph/ 50 Hz, induction weather proof, are specially designed for RYOWO. Motors from 5.5 kw and up are Y- start and below are direct-on-line start.

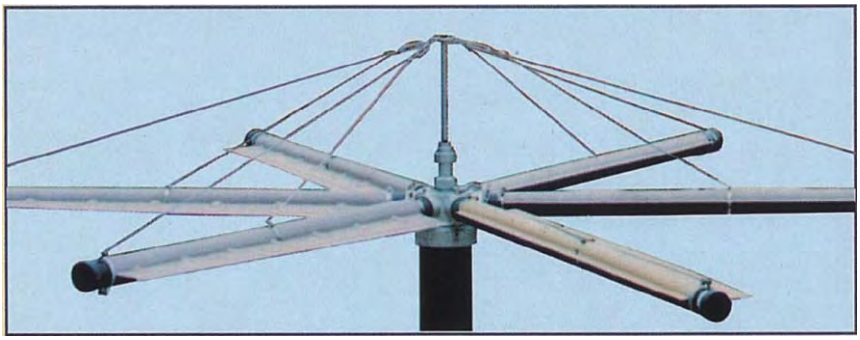
TRANSMISSION SYSTEM

The fans of small models are designed to be driven by low speed motor of 6,8,10 or 12 poles which can minimise the numbers of transmission parts used. For large models, the fans are vee-belt or gear driven with 4 poles motors so the speed of fans can be adjustable to suit various application.



SPRINKLER SYSTEM

Automatic rotary sprinkler system with rotary head and sprinkler pipe distributes the hot water over the entire face area of the filler. Sprinkler pipes are non-clogging, require low-pressure to operate, and assures uniform water flow with minimal operating pump head. The F.R.P. eliminators attached to sprinkler pipes are specifically designed for Low pre Ssure drop and minimises the drift loss of water.

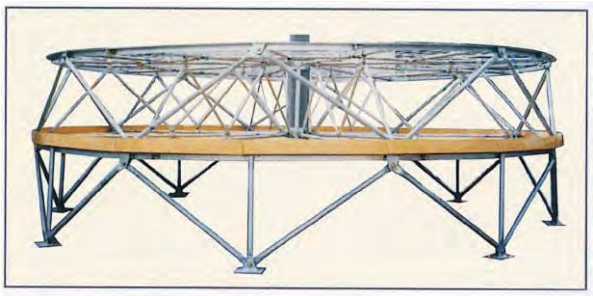


COMPONENT FUNCTION & FEATURE

CASING & BASIN

F.R.P. (fibreglass reinforced polyester) formed casings are durable, non-corrosive, weather-proof, and light weight. Cylindrical form is shaped to fully withstand wind pressure, vibration and such F.R.P. casings obliviate need for painting, reduce maintenance costs and guarantee long dependable service.

Bowl-shape basins are also made from F.R.P. with built in socket or flanged outlets for piping connections. For large models, a F.R.P. aux. suction tank is employed and fitted with piping flanges or sockets.



STEEL STRUCTURE

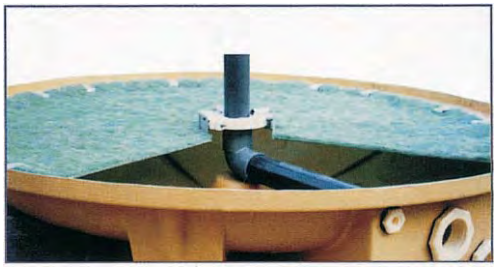
All supporting steel members are hot-dip galvanized to minimise rusting and corrosion ensuring long service life even in corrosive atmosphere. The stainless hardware members are also available upon request.

FILLER

High performance RYOWO V-30 film filler is the heart of the tower. The specially formed PVC sheets maximize the air/water contact area and minimise air pressure drop to assure efficient heat transfer while keeping fan power requirement low. It is virtually immune to corrosion and decay.

Eliminator

Specially made drift eliminator consisted of 2 types of sheets forms a “v” shape path for the transmission of the cooling tower discharge air stream. The small water droplets in the stream impact the surfaces of the drift eliminator sheets and are separated from the stream such that the drift loss ratio maintain at less than 0.001% of circulating water flow rate.



SPLASH MAT (LOW NOISE MODELS)

Specially designed noise absorbing splash mat is provided for low noise models on the water basin to minimise the unpleasant water dripping noise in the basin.

SPECIFICATION FOR FT SERIES

SPECIFICATION FOR FT SERIES

ITEM	MODEL			FT-8	FT-10	FT-15	FT-20	FT-25	FT-30	FT-40	FT-50	FT-60	FT-80	FT-100	FT-125	FT-150	FT-175	FT-200	FT-225	FT-250	FT-300	FT-350	FT-400	FT-500	FT-600	FT-700	FT-800	FT-1000
Capacity	27 ºC WB	Circulating water flow rate	m^3/ hr	6.2	7.8	11.7	15.6	19.5	23.4	31.2	39.1	46.9	62.5	78.1	97.7	117.2	136.7	156.2	175.8	195.3	234.4	273.4	312.5	390.6	468.7	546.8	625.0	781.2
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4	3.9	4.5	5.6	6.7	7.8	8.9	11.2
	28 ºC WB	Circulating water flow rate	m^3/ hr	5.6	7.4	10.6	14.4	17.8	21.5	28.7	36.3	42.5	58.8	70.6	88.2	107.5	125.0	142.5	160.0	176.2	212.5	250.0	287.5	337.5	431.2	512.4	575.0	718.7
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.6	4.1	4.8	6.2	7.3	8.2	10.3
	Air flow rate (Approx.)		m^3/ min	70	85	140	160	230	280	330	420	450	700	830	950	1150	1200	1250	1600	1750	2000	2200	2450	2700	3500	3750	5000	5400
	Hot water temperature		ºC	37																								
	Cold water temperature		ºC	32																								
Overall Dimension	Diameter (ϕ)		mm	920	920	1160	1160	1490	1660	1660	1890	2100	2100	2900	2900	2900	3310	3310	3960	3960	4360	4760	4760	5600	6600	6600	7600	7600
	Height （H）		mm	1560	1700	1585	1835	1945	1885	2035	2110	2300	2475	2910	3110	3110	3300	3450	3920	3920	3990	4195	4255	4590	5310	5510	5660	5860
	Height (w/o motor) (m)		mm	1390	1530	1395	1645	1760	1720	1785	1860	1980	2155	2590	2790	2790	2880	3030	3300	3300	3290	3495	3495	3830	4470	4670	4720	4940
Material	Air inlet mesh			PVC																								
	Basin			FRP																								
	Casing			FRP																								
	Eliminator			FRP																								
	Fan						ABS Plastic					FRP				Aluminium alloy								FRP				
	Filler			PVC																								
	Motor support			Steel (Hot-dip galvanized)																								
	Sprinkler head						ABS Plastic								Aluminium alloy													
	Sprinkler pipe			PVC pipe																								
	Stand pipe			PVC pipe																								
	Structure			Steel (Hot-dip galvanized)																								
Fan	TYPE			Axial-flow																								
	Diameter		mm	550	640			770		930		1200		1500		1800	2400					3000		3400		3700		
	Speed		rpm					970				750				600	450					375		314				
	Driven type			Direct driven													Belt driven							Gear driven				
Motor	TYPE			Totally enclosed fan cooled outdoor 3 phase induction motor																								
	Power source			380V / 3 / 50Hz																								
	Rated output		kw	0.18		0.37		0.75		1.5			2.2			3.7	5.5		7.5		11		15		22			
	No of pole		Pole				6					8				10	4											
Distribution System	TYPE			Automatic sprinkler system																								
	Inlet dia		mm	40		50		80				100		125		150	200							250			300	
	Outlet dia			15		20		40						65			75						100	75			100	
	No of outlet					4						6		4			6							8			10	
Piping	Inlet		mm	40		50		80				100		125		150	200							250			300	
	Outlet		mm	40		50		80				100		125		150	200							250			300	
	Drain		mm	25										50			80							100				
	Overflow		mm	25										50			80							100				
	Float valve		mm	15								20				25	32							50			80	
	Manual make-up		mm	15										20		25	32							50			80	
Weight	Dry weight		Kg	56	65	75	85	105	130	150	180	250	270	500	540	580	870	900	1300	1350	1550	1720	2050	2450	3950	4050	4700	4900
	Operating weight		Kg	140	150	200	210	290	370	390	550	840	860	1600	1640	1680	2170	2200	2700	2750	3350	3720	3950	6150	9350	9450	11900	12100
Noise Level	Sound pressure level		dBA	45.5	47	48	50	52	54	58	59	58	59	61	61.5	62	62	62	63	63	64	64.5	61.5	62	65	66	73	74

NOTE : Nominal cooling capacity is based on 13 ℓ / min / RT (1 RT=3,900 Kcal / hr) at 37ºC inlet water tpmperature, 32ºC outlet water temperature and 27ºC ambient wet bulb temperature.

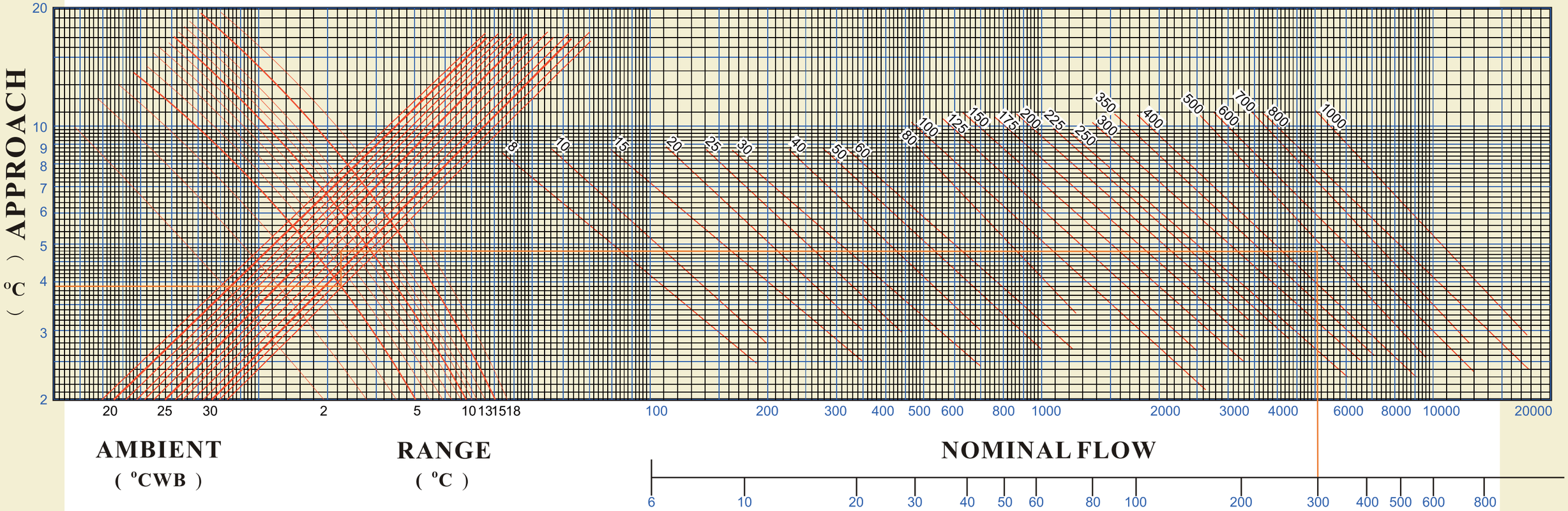
The SPLs are measured 16m horizontally from the edge of the tower at 1.5m above the foundation level.

Pump head is obtained by adding resistance of piping/condenser and the tower height(H).

The unit dimension in this catalogue is metric. Specifications listed in this catalogue are subject to change without further noticefor technical improvement of our products.

FT OR FT/LN SERIES QUICK SELECTION TABLE

(20°CWB~30°CWB)



EXAMPLE:

RATE :300m³/hr

INLET WATER TEMP :37°C

OUTLET WATER TEMP :32°C

WET BULB TEMP :28°C

RANGE: INLET WATER TEMP-OUTLET WATER TEMP
: 37°C - 32°C = 5°C

APPROACH: OUTLET WATER TEMP-WET BULB TEMP
: 37°C - 32°C = 5°C

TOWER SELECTED: FT - 500 OR FT/LN - 500

COOLING TOWER	CT							
NOMINAL FLOW	m³/hr							
INLET WATER	HWT°C							
OUTLET WATER	CWT°C							
AMBIENT WB	WB°C							
RANGE	(HWT-CWT)°C							
APPROACH	(CWT-WB)°C							
MODEL								

SPECIFICATION FOR FT/LN(LOW NOISE TYPE)

SPECIFICATION FOR FT/LN(LOW NOISE TYPE)

ITEM	MODEL			FT/LN 8	FT/LN 10	FT/LN 15	FT/LN 20	FT/LN 25	FT/LN 30	FT/LN 40	FT/LN 50	FT/LN 60	FT/LN 80	FT/LN 100	FT/LN 125	FT/LN 150	FT/LN 175	FT/LN 200	FT/LN 225	FT/LN 250	FT/LN 300	FT/LN 350	FT/LN 400	FT/LN 500	FT/LN 600	FT/LN 700	FT/LN 800	FT/LN 1000
Capacity	27 ºC WB	Circulating water flow rate	m^3/ hr	6.2	7.8	11.7	15.6	19.5	23.4	31.2	39.1	46.9	62.5	78.1	97.7	117.2	136.7	156.2	175.8	195.3	234.4	273.4	312.5	390.6	468.7	546.8	625.0	781.2
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.7	0.9	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4	3.9	4.5	5.6	6.7	7.8	8.9	11.2
	28 ºC WB	Circulating water flow rate	m^3/ hr	5.6	7.1	10.6	14.4	17.8	21.5	28.7	36.3	42.5	58.8	70.6	88.2	107.5	125.0	142.5	160.0	176.2	212.5	250.0	287.5	337.5	431.2	512.4	575.0	718.7
		Make-up water (Approx.)	m^3/ hr	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.3	1.5	1.8	2.0	2.3	2.5	3.0	3.6	4.1	4.8	6.2	7.3	8.2	10.3
	Air flow rate (Approx.)		m^3/ min	70	85	140	160	230	280	330	420	450	700	830	950	1150	1200	1250	1600	1750	2000	2200	2450	2700	3500	3750	5000	5400
	Hot water temperature		ºC	37																								
	Cold water temperature		ºC	32																								
Overall Dimension	Diameter		mm	920	1160	1160	1490	1660	1660	1890	1890	2100	2100	2900	2900	2900	3310	3310	3960	3960	4360	4760	4760	5600	6600	6600	7600	7600
	Height （H）		mm	1755	1620	1870	1945	1885	2145	2220	2220	2340	2515	3060	3260	3260	3450	3600	3920	3920	3990	4195	4255	4590	5310	5510	5660	5860
	Height (w/o motor) (m)		mm	1530	1395	1645	1760	1720	1785	1860	1860	1980	2155	2590	2790	2790	2880	3030	3300	3300	3290	3495	3495	3830	4470	4670	4720	4940
Material	Air inlet mesh			PVC																								
	Basin			FRP																								
	Casing			FRP																								
	Eliminator			FRP																								
	Fan			ABS Plastic					Aluminium alloy															FRP				
	Filler			PVC																								
	Motor support			Steel (Hot-dip galvanized)																								
	Sprinkler head			ABS Plastic										Aluminium alloy														
	Sprinkler pipe			PVC pipe																								
	Stand pipe			PVC pipe																								
	Structure			Steel (Hot-dip galvanized)																								
	Splash mat			Nylon																								
Fan	TYPE			Axial-flow																								
	Diameter		mm	640		770			930			1200		1500			1800		2400			3000		3400		3700		
	Speed		rpm	750					600			500		440			375					314		257				
	Driven type			Direct driven										Belt driven										Gear driven				
Motor	TYPE			Totally enclosed fan cooled outdoor 3 phase induction motor																								
	Power source			380V / 3 / 50Hz																								
	Rated output		kw	0.2		0.37			1.1			1.5		3.7				5.5		7.5		11		15		22		
	No of pole		Pole	8					10			12		4														
Distribution System	TYPE			Automatic sprinkler system																								
	Inlet dia		mm	40	50			80				100		125		150			200				250			300		
	Outlet dia			15	20			40						65					75				100	75		100		
	No of outlet			4								6		4					6					8		10		
Piping	Inlet		mm	40	50			80				100		125		150			200				250			300		
	Outlet		mm	40	50			80				100		125		150			200				250			300		
	Drain		mm	25										50					80				100					
	Overflow		mm	25										50					80				100					
	Float valve		mm	15								20					25		32				50			80		
	Manual make-up		mm	15										20			25		32				50			80		
Weight	Dry weight		Kg	80	85	100	125	145	240	280	290	380	400	600	640	680	970	1000	1400	1450	1700	1920	2250	2650	4250	4350	5100	5300
	Operating weight		Kg	160	205	220	290	375	470	625	635	970	990	1700	1740	1780	2270	2300	2800	2850	3500	3920	4250	6350	9650	9750	12300	12500
Noise Level	Sound pressure level		dBA	40	41	42.5	43.5	44.5	46	47	48	48	49.5	52	52.5	53	54	54.5	55	55	56	57	58	60	62	62.5	65	66

GUARANTEE:

All components are guaranteed against defective material for a period of one (1) year.

When return to RYOWO with transportation prepaid , all parts found by factory inspection to be defective will be repaired replaced without charge , FOB HONG KONG.

No liability will be assumed for loss or damage resulting from misuse of products.

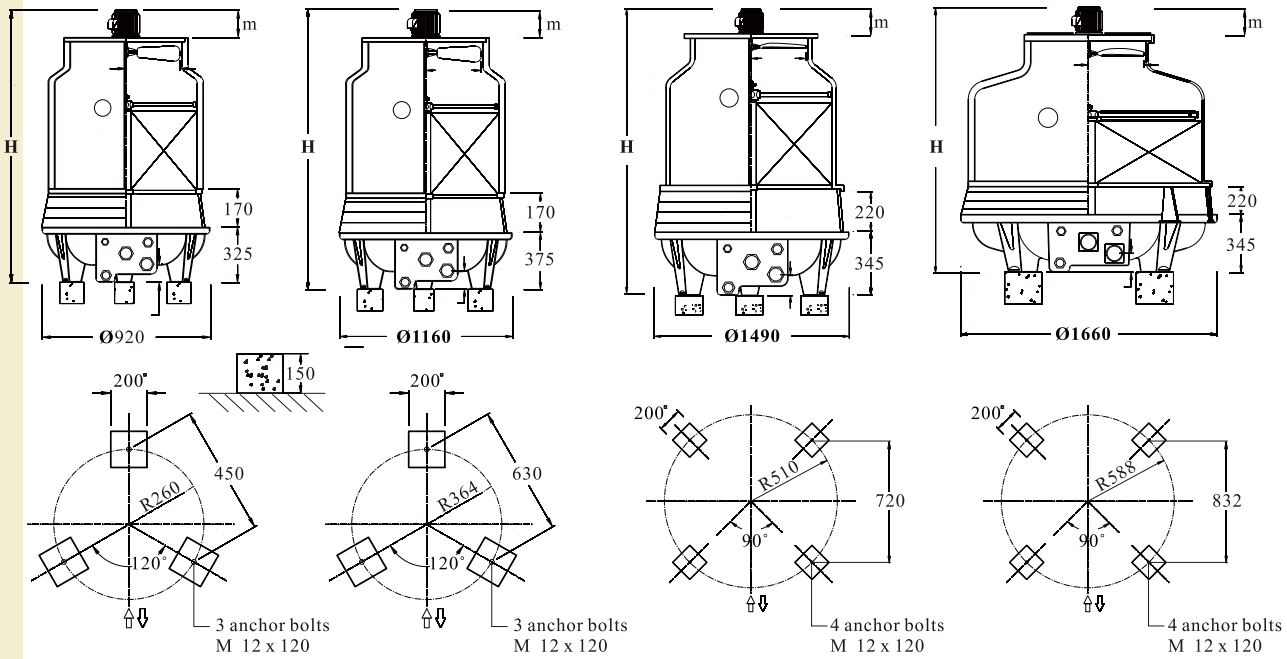
APPLICATION

For inquiry on RYOWO cooling towers , please contact local agents and specify the following conditions:

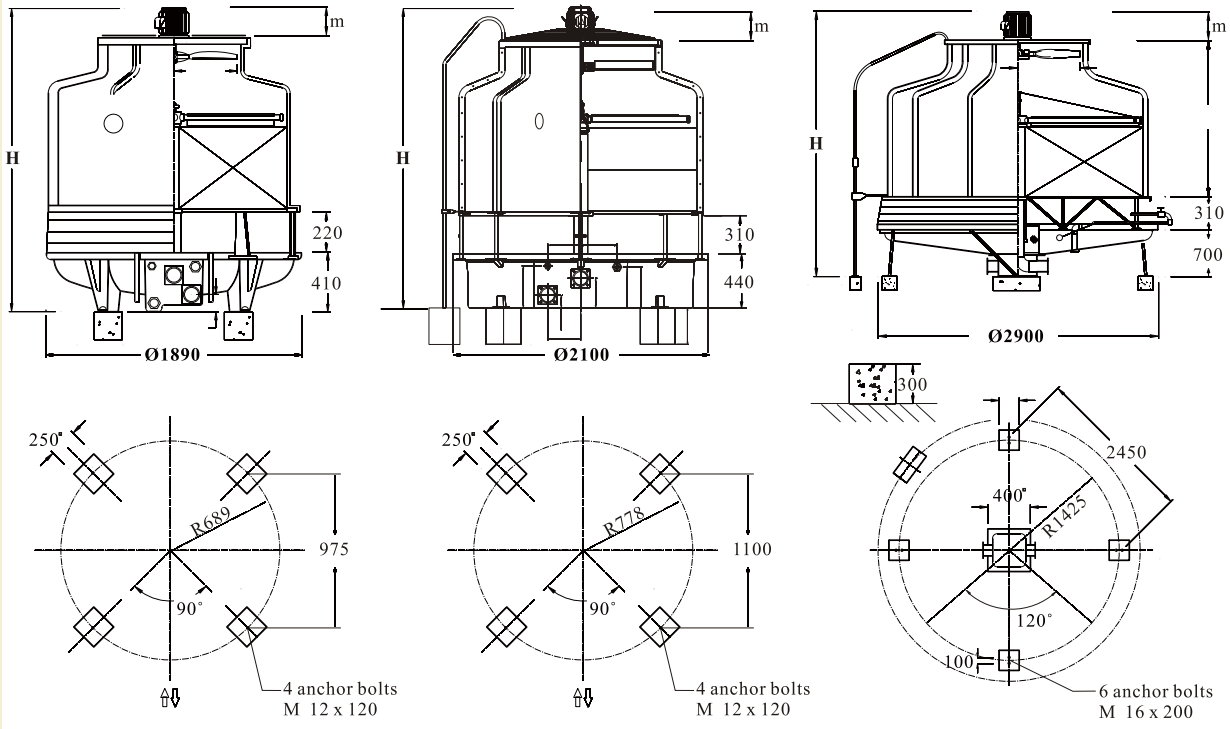
a). Circulating water flow
b). Inlet water temperature
c). outlet water temperature
d). ambient wet bulb temperature
e). power sources-voltage & frequency

TOWER FOUNDATION

FT-8 10 FT/LN-8 FT-15·20 FT/LN-10 15 FT-25 FT/LN-20 FT-30 40 FT/LN-25 30

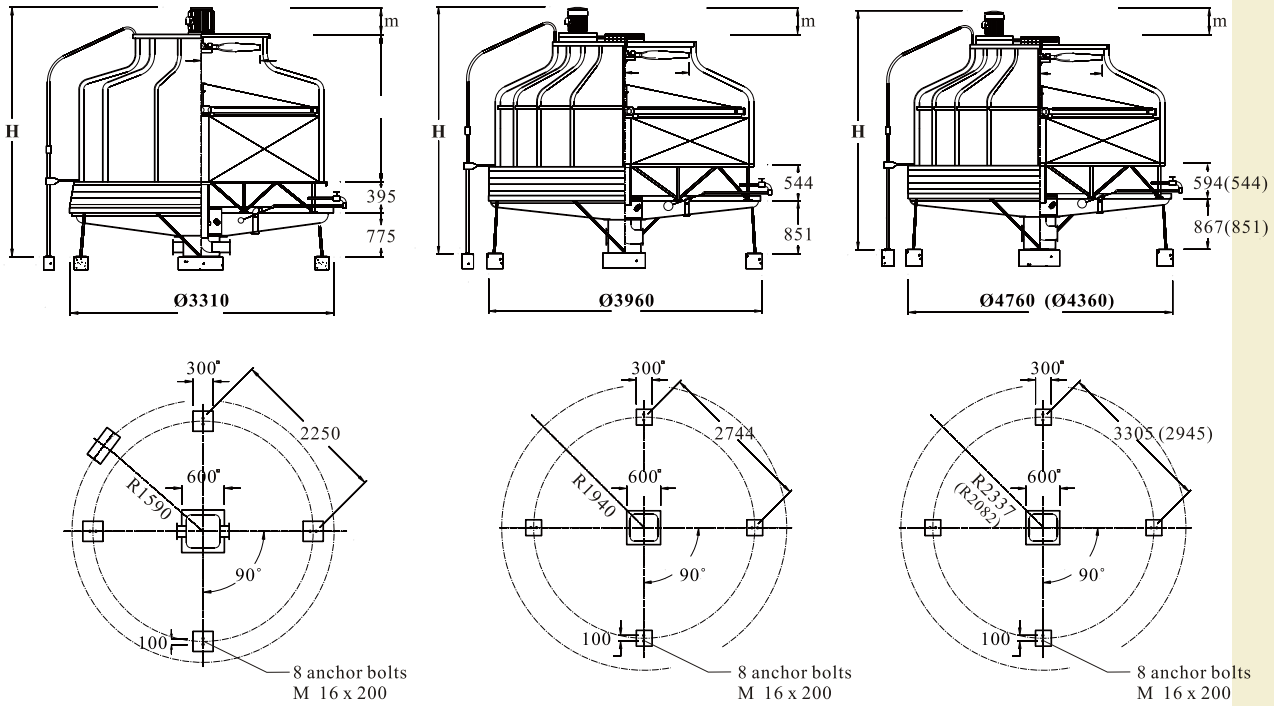


FT-50 FT/LN-40·50 FT· FT/LN-60·80 FT· FT/LN-100·125·150

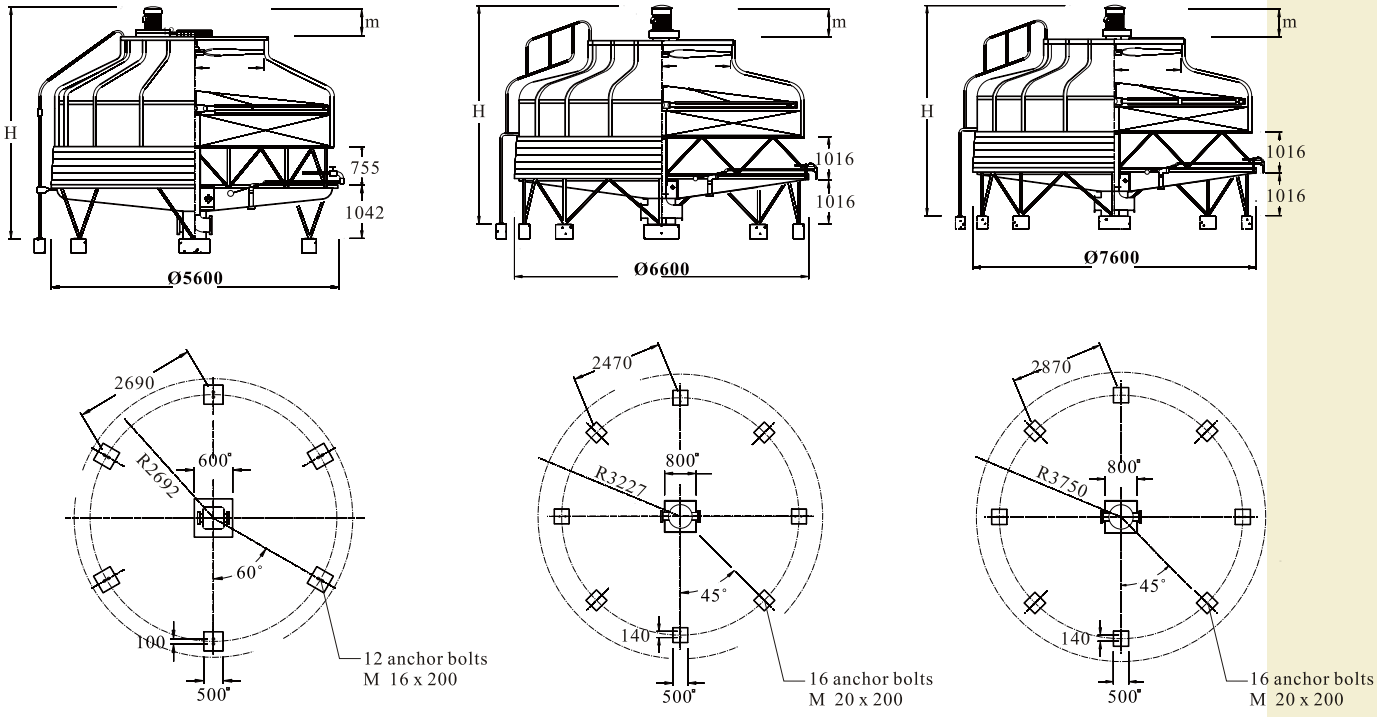


TOWER FOUNDATION

FT· FT/LN-175· 200 **FT· FT/LN-225·250** **FT· FT/LN-(300) ·350·400**



FT· FT/LN- 500 **FT· FT/LN-600 · 700** **FT· FT/LN-800 · 1000**



AVAILABLE OPTIONAL ACCESSORIES

DISCHARGE HOOD

This option is available on small models. It provides another direction of discharge air leaving the tower. It is made of F.R.P. with services door and wiring mesh on the air outlet.

HIGH TEMPERATURE FILLER

For high temperature operation such as waste water treatment , P.P. filler can withstand up to 80℃inlet water. (Special arrangement should be made for other components, please contact us for details.)

STAINLESS STEEL COMPONENTS

As an option, we can provide type 304 stainless steel major steel members, bolts and nuts.

TWO-SPEED MOTOR

As an option, two-speed motor can be provided in 4P/6P single winding configeration. A considerable reduction in noise and energy management can be achieved.

F.R.P. AIR INLET LOUVER

Inlet louver constructed of F.R.P. material can be provided, which matches the rest of tower and prevents water splashing out from the tower.

BASIN HEATERS

Electric immersion heaters with thermostat and control box are available to keep the basin water from freezing in sub-zero weather.

BODY COLOR

Cooling tower installed on the roof of building may be barely noticeable from the ground, and a colored cooling tower matching to building color will make it "good look".

JOB REFERENCES

FT-400 X 2
Bank of China, Shen Zhen

FT/LN-600 X 11
Hotel Lisboa, Macau

FT-1000 X 3
FT-500 X 10
CITIC Plaza, Guangzhou

FT/LN-300 X 6
Hong Kong University

FT-200 X 2
Miami University, U.S.A

RYOWO (HOLDING) CO .,LTD.

Rm. 1218, Angyle Centre 1,
688 Nathan Rd., MongKok,
Kowloon, Hong Kong

Tel : (852) 23918381
Fax: (852) 27893802

Http://www.ryowo.com
e-mail: ryinfo@ryowo.com

DONGGUAN RYOWO COOLING TOWER CO., LTD.

No.263 MeiJing Road West,Dalang,Dongguan,Guangdong,PRC

Tel : (86)-769 89399698
Fax: (86)-769 82973398

(86)-769 89399699
Postal Code: 523795

ryowo™

COOLING TOWER MANUFACTURER SINCE 1978

BROCH -EN-(03)-2013