

By Hand and By Email

Our Ref: S3168/LCS/25/010Lg

23 July 2026

Secretary, Town Planning Board
15/F, North Point Government Offices
333 Java Road
North Point
Hong Kong



PLANNING LIMITED
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Dear Sir/Madam,

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in "Commercial (2)" Zone at 8 Lam Chak Street, Kowloon
- S16 Planning Application –
TPB Ref.: A/K22/50**

Reference is made to the captioned S16 Planning Application submitted to the Town Planning Board on 1 June 2026 and various departmental comments received in July 2026.

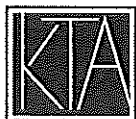
In response to the departmental comments received, please find attached the Further Information ("F.I.") submission. The submission document consists of:

- Appendix I Replacement Pages of the Environmental Assessment
- Appendix II Replacement Pages of the Quantitative Risk Assessment for Dangerous Goods Godown
- Appendix III Revised Traffic Impact Assessment
- Appendix IV Replacement Pages of the Supporting Planning Statement
- Appendix V Replacement Pages of the Visual Impact Assessment
- Appendix VI Replacement Pages of the Landscape Proposal
- Appendix VII Updated Architectural Drawings
- Appendix VIII Replacement Pages of the Drainage & Sewerage Impact Assessment

Meanwhile, should you have any queries in relation to the attached, please do not hesitate to contact Mr Kenneth to or the undersigned at [REDACTED]



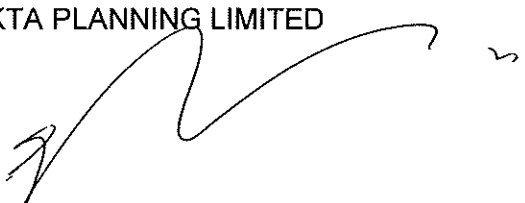
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Date: 23 July 2026



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Thank you for your kind attention.

Yours faithfully
For and on behalf of
KTA PLANNING LIMITED



Gladys Ng

Encl. (4 hard copies)

cc. DPO/K – Ms Helen Ip
the Applicant & Team

KT/GN/vy

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RESPONSE-TO-COMMENT TABLE

Proposed Composite Development (with Flat and Retail/F&B)
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Comments	Response
<u>Comments from Environmental Protection Department:</u> (Contact Person: Ms Alice Hsu; Tel: 2835 1151) <u>Appendix IV Environmental Assessment</u> <u>General Comments on Noise Impact Assessment</u> To facilitate the developers/consultants preparing the Noise Impact Assessment Reports for EPD approval, good-quality submissions of papers/reports can offer shorten the project’s approval time. We advise you to have the Noise Impact Assessment reports checked and verified by a Certified Noise Modelling Professional of the HKIQEP or equivalent before submitting them to the EPD for vetting, to expedite your project’s planning and consideration by relevant authorities. If road traffic noise is the only noise impact identified, please follow the streamlined procedure set out in Section 10(B) of the EPD’s ProPECC PN 4/23. Normally, the EPD will not object on noise grounds to the application as 100% compliance of the road traffic noise standards can be achieved. Additionally, noted that the project is still under early planning stage, the detailed configuration of mitigation measures such as acoustic windows and enhanced acoustic balcony of the proposed development is still under study. Referring to R-to-C #3, the effectiveness of the AW/EAB will be further reviewed and finetuned. Mock-up test will be conducted where necessary to justify the RNR of the finetuned version of the AW/EAB. A detailed assessment will be provided by the consultant during the detailed design stage to update the relative noise reduction (RNR) of the mitigation measures. <u>Technical Comments on Noise Impact Assessment</u> 1. Section 2.3.3.	Noted. Noted.

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The TD endorsement of traffic forecast in Year 2048 is missing.	TD endorsement will be provided once available.
2. Appendix 2.4 a) Room size correction for RNR is missing. b) It appears there are no exceedance for N1-33 to N1-35 but they are included in Appendix 2.4. Please clarify.	Broadbrush approach without room size correction has been presented in this planning application. Please note that in detailed design stage of the project, the effectiveness of the AW/EAB will be further reviewed and finetuned. Mock-up test, where necessary, will be conducted to justify the RNR of the finetuned version of the AW/EAB. Appendix 2.4 has been rectified (<i>Appendix I</i> refers).
3. Appendix 1.1 Please indicate the location of the noise barrier in the figure “Indicative Section A-A”.	Noted, location of noise barrier has been illustrated in Section A-A (<i>Appendix I</i> refers).
4. Section 7 Please confirm the validity and altitude of the flight path for NAH at the north side of the proposed development with the relevant authority.	Civil Aviation Department (CAD) and Government Flying Service (GFS) have been approached for the purpose to confirm this matter. Reply from CAD will be provided once available. According to the reply from GFS, the information of flight path for NAH remain valid. Section 7 has been updated accordingly and a new Appendix 7.1 has been added.
<u>Air Quality Impact Assessment</u> No further comments.	Noted.
<u>Land Contamination Assessment</u> No further comments.	Noted.

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<u>Appendix V Drainage & Sewerage Impact Assessment</u> No further comments on Sewerage Impact Assessment. For Drainage Impact Assessment and implementation of sewerage works, please seek views from DSD.	Noted.
<u>Appendix VIII Quantitative Risk Assessment for Dangerous Goods Godown (from Non-fuel gas DG perspective)</u> 1. Section 4.5 and R-to-C #4: The sentence at Section 4.5 is not completed: “vapour cloud explosion is considered unlikely to contribute significant structural damage to off-site building in cases of outdoor releases of flammable gas/ liquid (i.e. D-LF). Therefore, VCE is not further considered in this study.”. Please clarify. 2. Section 5.4: Please rectify the “Section 0 . 3. Section 7.3 and R-to-C #12(a): The “Error! has not been rectified yet. Please check carefully. 4. Table 15: Please review the entries for D-PF-EX and DG-AT-AE, which currently display duplicated data and cause the total PLL percentage exceed 100%. 5. It is noticed that the values in Table 14 (FN data) and Table 15 (PLL values) are different from the previous version. Please advise if the risk model has been re-run. 6. Section 8: The individual risk at the application site is below 1E-7/year as per Figure 4. Please revise the text in the 2nd paragraph. 7. Please highlight all the changes to facilitate our review.	Section 4.5 has been updated accordingly (<i>Appendix II</i> refers). Section 5.4 has been revised accordingly (<i>Appendix II</i> refers). Section 7.3 has been revised accordingly (<i>Appendix II</i> refers). Please refer to updated Table 15 (<i>Appendix II</i> refers). The risk model had been re-run to rectify error in runrows. Section 7.2 and Section 8 have been updated accordingly (<i>Appendix II</i> refers). Noted and highlighted.

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<u>Comments from Transport Department:</u> (Contact Person: Mr Hei-yu CHAN; Tel: 2399 2772) <u>Supporting Planning Statement</u> - Table 3.1: Bicycle parking is still missing from the internal transport provisions. - Para 4.12.1 to 4.12.3: We note the applicant had conducted a TIA to demonstrate the technical feasibility (i.e. traffic) of the Proposal. Our Office had received a letter from the building management company of Habourside HQ (i.e. the subject site), suggesting a right-turn lane at Cheung Yip Street N/B to Lam Chak Street, as to support the operation of Habourside HQ. Please review and advise the need of this suggestion to cope with the development of 8 Lam Chak Street. Please affirmative, please include the proposal in your planning application and traffic assessment. <u>Appendix I: Schematic Architectural Drawings</u> - Referring to the “Indicative Ground Floor Plan”, please confirm with LandsD on whether provision of L/UL spaces at G/F is permitted under the existing lease conditions of the proposed development. <u>Appendix III: Traffic Impact Assessment</u> - The improvement works (if any) recommended in the TIA must be carried out by the project proponent or its designated works agent.” - Table 2.1 & 2.2: According to “Indicative Second Floor Plan” in Appendix I: Schematic Architectural Drawings, there are four	Table 3.1 has been updated accordingly (<i>Appendix IV</i> refers). Please be confirmed that the right-turn lane at Cheung Yip Street N/B to Lam Chak Street will not be considered in this planning application. Restriction in provision of internal transport facilities shall be further confirmed with the Lands Department in the lease modification. Noted. Should there be any improvement works to be recommended in the TIA (if any in the future), these will be carried out by the project proponent or its designated works agent. Please note that Tower 1A and Tower 1B (or Tower 2A and Tower 2B) share the same corridor, MOE stairs, fireman's lift, refuse room and

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Towers (i.e. Tower 1A, 1B, 2A and 2B) instead of two, where each tower is served by independent residential lobby. Please review the No. of Towers and update the number of visitor parking space & L/UL. - Figure 4.6 & 4.7: Please elaborate how the future traffic generations of the development were assigned onto the road network. ” <u>Supporting Planning Statement</u> - Para 3.2.6 & 4.6.2: Noted it is proposed to have a “landscaped public passage along the north-eastern boundary which will be opened to the public 12 hours a day. In general, public passage refers to a 24-hour public access. Please review the terminology and clarify the opening hours of this passage. ” <u>Appendix I: Schematic Architectural Drawings</u> - Referring to the “Indicative Ground Floor Plan”, please review the area demarcated as “landscape area at ground level / on grade”. It appears that some areas should be paved area for the “public passage” and the outdoor dining area. <u>Appendix III: Traffic Impact Assessment</u> - Table 5.2 & Para 5.1.4: It appears that the queue length at Cheung Yip Street N/B at junction F presented in Table 5.2, has significant variation to the figures presented in CEDD’s recently approved planning application for Kai Tak Area 3E Sites 1 and 2 (your reference traffic flows). Please review on the significant variation.	other essential provisions at the typical floor level, therefore they are considered as one tower. Please refer to Figure A of the revised TIA report in <i>Appendix III</i> for the layout plan. Please note that the future traffic generations of the development were assigned onto the road network with reference to the assignment of BDTM. Minor adjustments were made for major road network without traffic. This passage will be managed and maintained by the Proposed Development but to be made available for public to pass through during specific hours. The design of this area will be subject to detailed design and will be available at a later stage The queue length at Cheung Yip Street N/B at junction F has been reviewed and revised. Please refer to Table 5.2 and Para. 5.1.4 of the revised TIA report in <i>Appendix III</i> for details.

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- Table 6.3 - The figures of total population (3,078ppl) and daily trips generated (from 3,192ppl) are not tally. - Para 6.1.3 - "With consideration that the site is located at a distance from nearby MTR stations, transport mode for MTR, bus and PLB are taken into consideration in calculation of public transport service for the proposed development"- Please advise if that means the passengers taking MTR are expected to take bus/GMB then interchange with MTR station? - Para 6.2.4, Table 6.6 and 6.7 - Under the assumption in para 6.2.4 that commuters generated from the proposed development will not head to Kai Tak Runway direction, please remove Route 5R (Kai Tak Cruise Terminal bound) under bus stop E in all the relevant tables. - Table 6.6 and 6.7 - KMB route 5R (Kwun Tong bound) would observe bus stop B then bus stop F. As such, please remove Route 5R under bus stop B or bus stop F to avoid double counting. - Table 6.5 and Figure 2.2 - It appears that bus stop B is closer to the development than bus stop F. Please clarify. - Table 6.11 - Please clarify the rationale for the breakdown of [G] (boarding passenger from New Acute Hospital). Besides, please consider to tally the naming of New Acute Hospital/Kai Tak Hospital throughout the submission.	The typo has been rectified. Please refer to Table 6.3 of the revised TIA report in <i>Appendix III</i> for details. Please be advised that the passengers taking MTR are expected to take bus/GMB then interchange with MTR. Please refer to the Para. 6.1.3 of the revised TIA report in <i>Appendix III</i> for details. Noted, please note that route 5R (Kai Tak Cruise Terminal bound) under bus stop E has been removed in all relevant tables, please refer to the revised TIA report in <i>Appendix III</i> for details. Noted and please note that Route 5R under bus stop F has been removed, please refer to footnote (1) of Table 6.6 of the revised TIA report for details. Please note that the distance of bus stop B has been reviewed and revised. Please refer to Table 6.5 and Figure 2.2 (Rev A) of the revised TIA report in <i>Appendix III</i> for details. Noted, please refer to Para. 6.3.6 of the revised TIA report for the breakdown of [G] (boarding passenger from New Acute Hospital) and please note that the naming of New Acute Hospital/Kai Tak Hospital has been tally as Kai Tak Hospital.

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- Para 7.1.7 - Please suitably revise according to the above comments. Please consider if any improvement/addition of bus/GMB stop(s) shall be arranged to facilitate the PT needs of the proposed redevelopment. - Figure 2.1(rev) - Please advice if the "shuttle lobby" means a shuttle lift lobby. This is the consolidated reply from Traffic Engineering Kowloon) Division and Transport Operations (Kowloon) Section of TD.	Para. 7.1.7 has been revised. Please refer to the revised TIA report in <i>Appendix III</i> for details. Please be advised that the "shuttle lobby" means a shuttle lift lobby. Noted.
<u>Comments from Social Welfare Department:</u> (Contact Person: Mr Michael Pang; Tel: 2116 5939) The applicant proposes to reserve about 490 square metres in GFA for provision of GIC facilities without mentioning the concrete GIC facilities that she wishes to provide. The applicant should indicate (i) what type of GIC facilities (e.g. welfare, public health, recreational, etc.) she wishes to provide in her s.16 planning application and (ii) the financing mode of the proposed GIC facilities.	The Applicant commits to reserve about 15% of the non-domestic GFA (i.e. about 490m²) for GIC uses to be operated by NGOs. This could serve as youth centre, childcare centre, nursery and etc. Section 3.1.2 has been updated accordingly (<i>Appendix IV</i> refers).
<u>Comments from Urban Design and Landscape Unit, Planning Department:</u> (Contact Person: Ms Sylvia Chan; Tel: 3565 3944) (a) Upon checking the photomontages (i.e. Viewpoint (VP) 1 – Quarry	We have carefully reviewed the photomontage with reference to the

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Bay Park) in the VIA, we have reservation on the proposed scheme as Tower 1A with rooftop structures (at 135mPD) and a portion of Tower 2A (with main roof at 136.45mPD and rooftop structures at 145.45mPD)) would encroach onto the 20% building free zone (BFZ). Encroachment onto the 20% BFZ should be avoided. Detailed comments on the VIA: (b) The VIA should be prepared in accordance with the latest promulgated Town Planning Board Guidelines on Submissions of VIA for Planning Applications to the Town Planning Board (TPB PG-No. 41A). (c) The subject application is for a “proposed composite development rather than a pure residential development. (d) Figure 6.1 (VP 1 – Quarry Bay Park), the proposed development and the height of the proposed development (including rooftop structures) should be clearly outlined and (ii) the annotation of the development as indicated in yellow below should read “Proposed Residential Developments .	relationship between Viewpoint (VP) 1 – Quarry Bay Park, the proposed building and existing buildings visible from VP1 (e.g. Manhattan Place). Please refer to the revised Figure 6.1 of the Visual Impact Assessment in <i>Appendix V</i>. As compared to the existing building, the Proposed Development Scheme would reduce the encroachment into the 20% Building Free Zone (“BFZ”) when viewed from VP1 – Quarry Bay Park. Although the building height of Tower 2A encroaches into the 20% BFZ, this breach is considered acceptable and causes no adverse visual impact. Maintaining a clear 20% BFZ at this specific location would only reveal another high-rise development in the background (i.e. Manhattan Place) rather than the natural ridgeline. Relevant sections have been updated accordingly (<i>Appendix V</i> refers). Relevant sections have been updated accordingly (<i>Appendix V</i> refers). Noted, please refer to the revised Figure 6.1 of the Visual Impact Assessment in <i>Appendix V</i>.

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(e) Figure 6.5 (VP 5 – Kai Tak Bridge Road), the planned residential development adjacent to The Pavilia Forest is missing.	Noted, please refer to the revised Figure 6.5 of the Visual Impact Assessment in <i>Appendix V</i> .
<u>Comments from District Planning Office, Planning Department:</u> (Contact Person: Ms Helen Ip; Tel: 2231 4971) <u>Proposed Scheme</u> 1. It is noted that this redevelopment proposal is predominantly domestic in nature with a total plot ratio (PR) of 7.0 (including a domestic PR of 6.5 and a non-domestic PR of 0.5), with building height (BH) varying from 110mPD (Towers 1B and 2B), 126mPD (Tower 1A) to 136.45mPD (Tower 2A) (all at main roof levels). The towers are all over three storeys of podium (for retail, eating places, recreational, Government, Institution or Community (GIC) facilities, and E&M facilities) and two storeys of basement carpark. The proposed site coverage (SC) is not more than 65% (below 15m) and 40% (above 15m). 2. In the current scheme, key design elements include: (a) a 15m-wide setback from the site boundary abutting Pacific Trade Centre; (b) a 4m-wide public passageway along the northeastern boundary (within the 15m-wide setback) to be opened for public 12 hours a day; (c) two 2.5m-wide setbacks on the sides fronting Lam Chak Street and Kai Hing Road; (d) provision of 1.5m- wide canopy within the 2.5m-wide setback areas; and (e) provision of splayed corner at the junction of Kai Hing Road and Lam Chak Street. 3. Please find our comments and observations below.	Noted. Noted. Please see our responses below.

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<u>Overall layout</u> (a) Please clarify if the 2.5m-wide setback areas fronting Lam Chak Street and Kai Hing Road with the provision of 1.5m canopy above (which fall within site boundary) are meant to be opened for public as public passageway. If affirmative, please advise if there are any opening hours of this passageway and specify in the submission whether the canopy above would be a continuous one. (b) There are various ambiguities regarding the use of the proposed splayed corner at the junction of Lam Chak Street and Kai Hing Road : (i) according to Planning Statement paragraph 3.2.5, this corner will be used “for socializing while passerbys will be able to enjoy a through passage ; (ii) in Appendix II Landscape Proposal, this area is proposed to be used as an outdoor dining area and so indicated on the Landscape Master Plan; and (iii) in Appendix D of Appendix II, this area is counted towards “communal open space . Please clarify the use of this corner area, in particular that it has been presented as a design consideration in the Planning Statement. If this splayed corner is considered to be a planning gain offered by the applicant, please elaborate on its benefits (e.g. if it would enhance local connectivity) and whether the uses mentioned above would create conflicts and how such conflicts could be avoided.	Since the existing pavement on Kai Hing Road, Lam Chak Street and Chak Cheung Street have sufficient width and do not require widening, the proposed setback would be used for socialising and space for landscaping. The splayed corner is designed to create an at-grade open-air space for socialising and landscaping. The annotation of ‘outdoor dining area’ has been removed from the Landscape Proposal to avoid confusion. Please refer to the revised landscape drawings in <i>Appendix VI</i>.

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(c) Similar to the above, please clarify the use of the balcony area on 1/F outside the Retail/F&B, which is shown as ‘Dining Area’ on Landscape Master Plan (1/F) of Appendix II, but has also been counted as ‘communal open space’ in Appendix D of Appendix II. (d) For the 4m-wide corridor to the northern boundary adjacent to Pacific Trade Centre which is proposed to be opened for public 12 hours a day, please elaborate on (i) the reasons for not dedicating the corridor for public access 24-7; (ii) the management mechanism for the 12-hour access, e.g. gates at both ends of the corridor; and (iii) whether there would be any fences or just landscaping on sides of the corridor along its abutments with the residential drop-off area and Pacific Trade Centre. For (ii) and (iii), any features should be clearly marked in relevant figures/drawings.	The annotation of ‘outdoor dining area’ has been removed from the Landscape Proposal to avoid confusion. Please refer to the revised landscape drawings in <i>Appendix VI</i>. (i) The main purpose of the proposed corridor is to enhance accessibility towards the waterfront. Since the likelihood of gaining access towards the waterfront would normally remain during daytime and access in the evening would always be safer along public streets with natural surveillance, the proposed corridor would not be opened to the public 24-7 for better management and to safeguard security of the future residence at the Site. (ii) The property management will consider the necessary arrangement(s) to ensure safety of the future residents. There may be regular petrol, barricade gates, security camera and etc. where and when appropriate. (iii) There will be a vertical green wall along the boundary abutting Pacific Trade Centre. There will also be ample landscaping in between the public passage and the driveway, before arriving at the residential drop-off area.
<u>Proposed Uses</u> (e) It is noted that about 15% of the total non-domestic GFA (i.e. about 490m² out of 3,270.5m²) is now proposed to be allocated for GIC uses. Instead of naming possible uses in the Planning Statement paragraph 3.1.2 in a broad sense (i.e. medical-related services, back offices of various social welfare facilities etc.), the applicant should be specific in the type of GIC uses to be provided with justifications for their provision and the implementation mechanism. You should	The Applicant commits to reserve about 15% of the non-domestic GFA (i.e. about 490m²) for GIC uses to be operated by NGOs. This could serve as youth centre, childcare centre, nursery and etc. Section 3.1.2 has been updated accordingly (<i>Appendix IV</i> refers).

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also refer to relevant comments from Social Welfare Department sent to you on 30.6.2026. <u>Building Height</u> (f) In the current scheme, a stepped building height profile is noted. Please beef up in the Planning Statement (paragraph 3.2.3) and Visual Impact Assessment (Appendix VI, Section 4.3) by demonstrating how the scheme (including roof-top structures) has respected the 20% Building Free Zone (BFZ) when viewed from Strategic Viewing Point 4 at Quarry Bay Park. It is suggested replacing the bottom photomontage in Section 4.3 of Visual Impact Assessment by a new photomontage, showing all the proposed towers (including roof-top structures) against the 20% BFZ clearly. Justifications should be provided if any parts of the proposed towers would infringe into the BFZ. You should also refer to comments from our Urban Design Unit sent to you on 7.7.2026. <u>Other Detailed Comments</u> <u>Planning Statement</u> 4. Table 3.1 – Please incorporate the number of bicycle parking spaces in the table. <u>Appendix I : Drawings</u> 5. Indicative Ground Floor and Second Floor plans – “Shuttle Lobby level is indicated as 19.35mPD on the Ground Floor plan, while its level is indicated as 14.65mPD on the Second Floor plan. Please review and revise as appropriate.	We have carefully reviewed the photomontage with reference to the relationship between Viewpoint (VP) 1 – Quarry Bay Park, the proposed building and existing buildings visible from VP1 (e.g. Manhattan Place). Please refer to the revised Figure 6.1 of the Visual Impact Assessment in <i>Appendix V</i>. As compared to the existing building, the Proposed Development Scheme would reduce the encroachment into the 20% Building Free Zone (“BFZ”) when viewed from VP1 – Quarry Bay Park. Although the building height of Tower 2A encroaches into the 20% BFZ, this breach is considered acceptable and causes no adverse visual impact. Maintaining a clear 20% BFZ at this specific location would only reveal another high-rise development in the background (i.e. Manhattan Place) rather than the natural ridgeline. Table 3.1 has been updated accordingly (<i>Appendix IV</i> refers). The G/F Plan has been updated accordingly (<i>Appendix VII</i> refers).

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6. Sections B-B and C-C – Please indicate the 4m public passageway and the fences/gates separating it from the “Residential Drop-off” and the Pacific Trade Centre (if any).	Sections B-B and C-C have been updated accordingly (<i>Appendix VII</i> refers).
Appendix II : Landscape Proposal	
7. Table 1.0 – The number of car parking space is inconsistent with the rest of the submission.	Table 1.0 has been updated accordingly (<i>Appendix VI</i> refers).
8. Appendix A, Drawing LMP01 – The keys for No. 16 to” No. 18 are missing.	The relevant drawing has been updated accordingly (<i>Appendix VI</i> refers).
9. Appendix A, Drawing LD102 – “children’s play area” instead of “fitness equipment” should be indicated.	The relevant drawing has been updated accordingly (<i>Appendix VI</i> refers).
10. Appendix A, Drawing LMP03 – Please incorporate “creeping plants” with edge planting along 1/F facing public street as indicated on this drawing to all other relevant drawings in Appendix B : Planting Plans.	The relevant drawing has been updated accordingly (<i>Appendix VI</i> refers).
11. Appendix C : Site Coverage of Greenery – (a) Calculation for ‘uncovered planting area G/F’ seems to be inconsistent with the drawing. Please review. (b) A planting area on 1/F seems to have been missed in the calculation. Please review. (c) Due to the above, please review the total common greenery provided at Primary Zone.	The relevant drawing has been updated accordingly (<i>Appendix VI</i> refers). The relevant drawing has been updated accordingly (<i>Appendix VI</i> refers). The relevant drawing has been updated accordingly (<i>Appendix VI</i> refers).

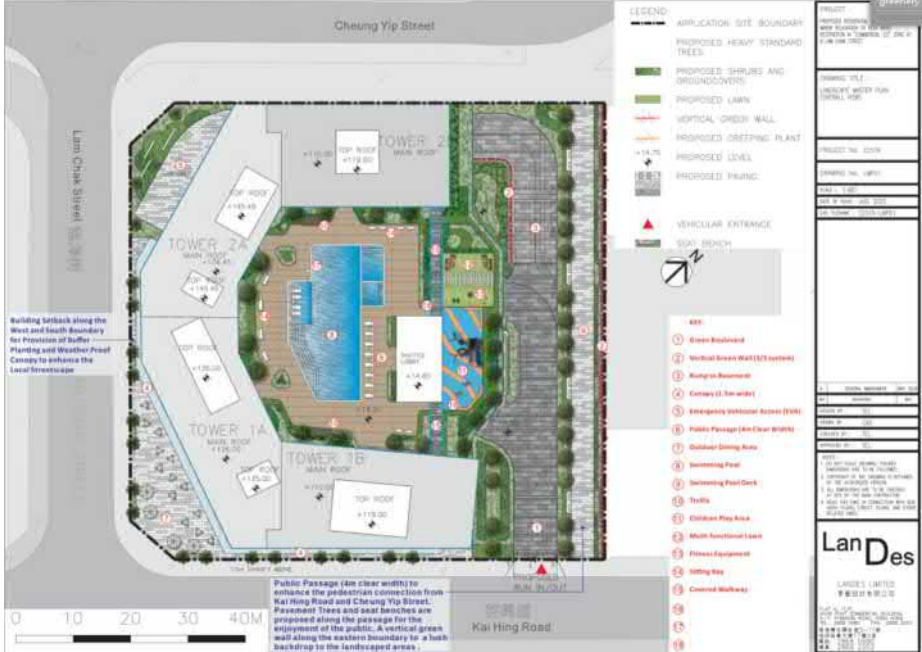
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Comments	Response
<i>Appendix III : TIA</i> 12. Table 2.1 – Please revise ‘commercial GFA’ as ‘non-domestic GFA’. 13. Table 2.2 – Please advise if the possible GIC facilities should also be included in the assessment, in terms of traffic flow and parking requirements.	Table 2.1 has been updated accordingly (<i>Appendix III</i> refers).
<u>Comments from Drainage Services Department:</u> (Contact Person: Ms Afra Liu; Tel: 3965 7301) <u>Other Specific Comments on the Submission:</u> 2. The appended Drainage and Sewerage Impact Assessment should be further fine-tuned to address the following comments for EPD and DSD's satisfaction: <u>For Drainage Impact Assessment</u> (i) Please confirm and ensure that the submission is undertaken under the direction of, and signed and certified by, a registered professional engineer in the civil engineer discipline as required in <DSD Advice Note No. I>. (ii) Para. 2.1.2 - Please append indicative catchment layout for reference. Please also clarify in the report if the 30% greenery coverage proposed would be controlled under planning conditions or other procedure (e.g. compliance with Building BD PNAP to be checked in future BD submission?)	Noted, the submission in detailed design stage will have RPE in civil engineer discipline to certify as required in <DSD Advice Note No. 1>. Under Kai Tak OZP, it is specified that the greenery ratio should be 30% of the site area. Therefore, it is controlled under the OZP. The landscape plan of the Proposed Development is shown below:

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

Comments	Response
(iii) Para. 2.1.3 - Please review the drains proposed to be abandoned - if "SWD4079230" should be corrected as "SWD4079120". Please also further check and verify if the concerned existing drainage pipes to be abandoned (SWD4079120 and SWD4079121) are currently idle or collecting surface runoff for what catchment, and elaborate the associated hydraulic impact if there is change in proposed drainage path of concerned catchments. Relevant hydraulic calculations should be supplemented for review in this case.	 It should refer to drainage pipes SWD4079120 and SWD4079121. These pipes are solely used to receive runoff from the Application Site. Instead of proposing to abandon these pipes, it is now assumed that the flow regime will not be altered. With no change in flow regime and reduced surface runoff due to increased greenery provision, no adverse drainage impact would be anticipated. In case detailed proposal in the detailed design stage deviates from the existing flow regime, hydraulic calculation will be provided to assess the impact due to the design change.

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

Comments	Response
<u>For Sewerage Impact Assessment</u> (iv) As 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's view, 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. (v) Figure 3.2 - please review to present all catchments involved in your assessment (e.g. Catchment C and D mentioned in the hydraulic calculation seemed missing in this Figure). 3. The development is required to verify that downstream existing government drains/sewers, to which connections are proposed, are in normal working conditions and capable for taking the discharge from the site. The development is required to conduct condition survey and arrange mitigation measures (e.g. pipe clearance or rehabilitation works) where needed to ensure sound hydraulic performance. Result of condition survey and associated mitigation measures should be submitted in due course for agreement with DSD. 4. The development is reminded to observe <DSD's Practice Note 2/2023 - Guidelines on Flood Resilience> in planning and detailed design. In particular, for this proposed development at coastal areas, please pay attention to the potential increase of sea level. Sufficient structural prevention should be planned to ensure the flood resilience of the development. sufficient operation arrangement to ensure emergency preparedness should be proposed to ensure the flood resilience of the development if other structural measures were considered impractical.	Noted. The DSIA report has been circulated to all relevant departments including EPD. Comments from EPD, if any, will be addressed accordingly. Catchment C and D have been added in the revised Figure 3.2 (<i>Appendix VIII</i> refers). Noted and verification survey will be conducted at detailed design stage. Noted.

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

Comments	Response
This is a coordinated reply from MSD and LDD of DSD.	

Consolidated by: **KTA Planning Limited**

Date: **23 July 2026**

List of Appendices

- Appendix I Replacement Pages of the Environmental Assessment
- Appendix II Replacement Pages of the Quantitative Risk Assessment for Dangerous Goods Godown
- Appendix III Revised Traffic Impact Assessment
- Appendix IV Replacement Pages of the Supporting Planning Statement
- Appendix V Replacement Pages of the Visual Impact Assessment
- Appendix VI Replacement Pages of the Landscape Proposal
- Appendix VII Updated Architectural Drawings
- Appendix VIII Replacement Pages of the Drainage & Sewerage Impact Assessment

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

Appendix I

Replacement Pages of the Environmental Assessment

APPENDICES

Appendix 1.1	Proposed Development Scheme
Appendix 2.1	Year 2048 Traffic Forecast (15 Years from 2033)
Appendix 2.2	Results of Road Traffic Noise Impact Assessment (Base Case)
Appendix 2.3	Possible Design Cases of Acoustic Window (Baffle Type) and Enhanced Acoustic Balcony (Baffle Type) (extracted from ProPECC PN5/23)
Appendix 2.4	Estimation of Road Traffic Noise Attenuation of Acoustic Window (Baffle Type) and Enhanced Acoustic Balcony (Baffle Type)
Appendix 2.5	Results of Road Traffic Noise Impact Assessment (Mitigated Case)
Appendix 2.6	Proposed Road Traffic Noise Mitigation Measures Schedule
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Appendix 3.3	Letters of Request Information of the Fixed Noise Source to Operator / Owner
Appendix 3.4	Detailed Fixed Noise Impact Assessment
Appendix 3.5	Extract Quarterly Report on the Public Works Programme
Appendix 4.1	Photo Record for the Identified Potential Odour Sources
Appendix 4.2	Correspondence from Environmental Protection Department
Appendix 4.3	TD's Endorsement on the Road Type
Appendix 5.1	Historical Aerial Photo
Appendix 5.2	Correspondence with Various Departments
Appendix 5.3	Screen Capture of BRAVO Record
Appendix 5.4	Site Walkover Checklist
Appendix 5.5	Photo Record
Appendix 5.6	Details of Chemical Waste Producers
Appendix 7.1	Correspondence with CAD/GFS

7. HELICOPTER NOISE IMPACT

7.1 Evaluation of Helicopter Noise Impact

7.1.1 It is understood that a new helipad at the being constructed NAH is proposed (EIA Report: AEIAR-224/2020 – A Rooftop Helipad at New Acute Hospital at Kai Tak Development Area) to the northwest of the Application Site. The proposed helipad (elevated at approximately +119.15mPD) at NAH is separated from the Application Site by around 170m. It is also understood that another helipad for GFS is planned at the tip of ex-Kai Tak Airport runway on southeast side of the Application Site but already separated by around 1km so that potential helicopter noise impact due to future GFS helipad on the Proposed Development is unlikely significant due to long separation distance. **Figure 7.1** illustrates the locations of the helipads of NAH and GFS.

7.1.2 According to the aforementioned EIA Report, NAH helipad will be used under emergency situation only. It means that there is no regular fleet of helicopter operation and the NAH helipad would not generate any noise impact under normal circumstances.

7.1.3 Enquiries were submitted to CAD and GFS in July 2026 for this study to clarify the validity of assumption in the EIA. Reply from CAD and GFS is included in **Appendix 7.1**. According to the advice from GFS, the information of flight path for NAH proposed in the EIA report is valid with no changes.

7.1.4 Helicopter model Airbus H175 will be used at NAH helipad as indicated in the EIA report. For non-lateral helicopter movement at the helipad, the predicted L_{max} noise level at the nearest boundary of the Application Site is derived as follows:

$$\begin{aligned} L_{\max} &= L_{\max}(\text{ref}) + \text{Distance Corr} (20 \times \log(D_{\text{ref}}/D)) + \text{Façade corr} (+3\text{dB(A)}) \\ &= 82.4 + 20 \times \log(150/170) + 3 = 84\text{dB(A)} \end{aligned}$$

whereas horizontal distance of 170m between helipad and nearest boundary of the Application Site is adopted as a conservative approach

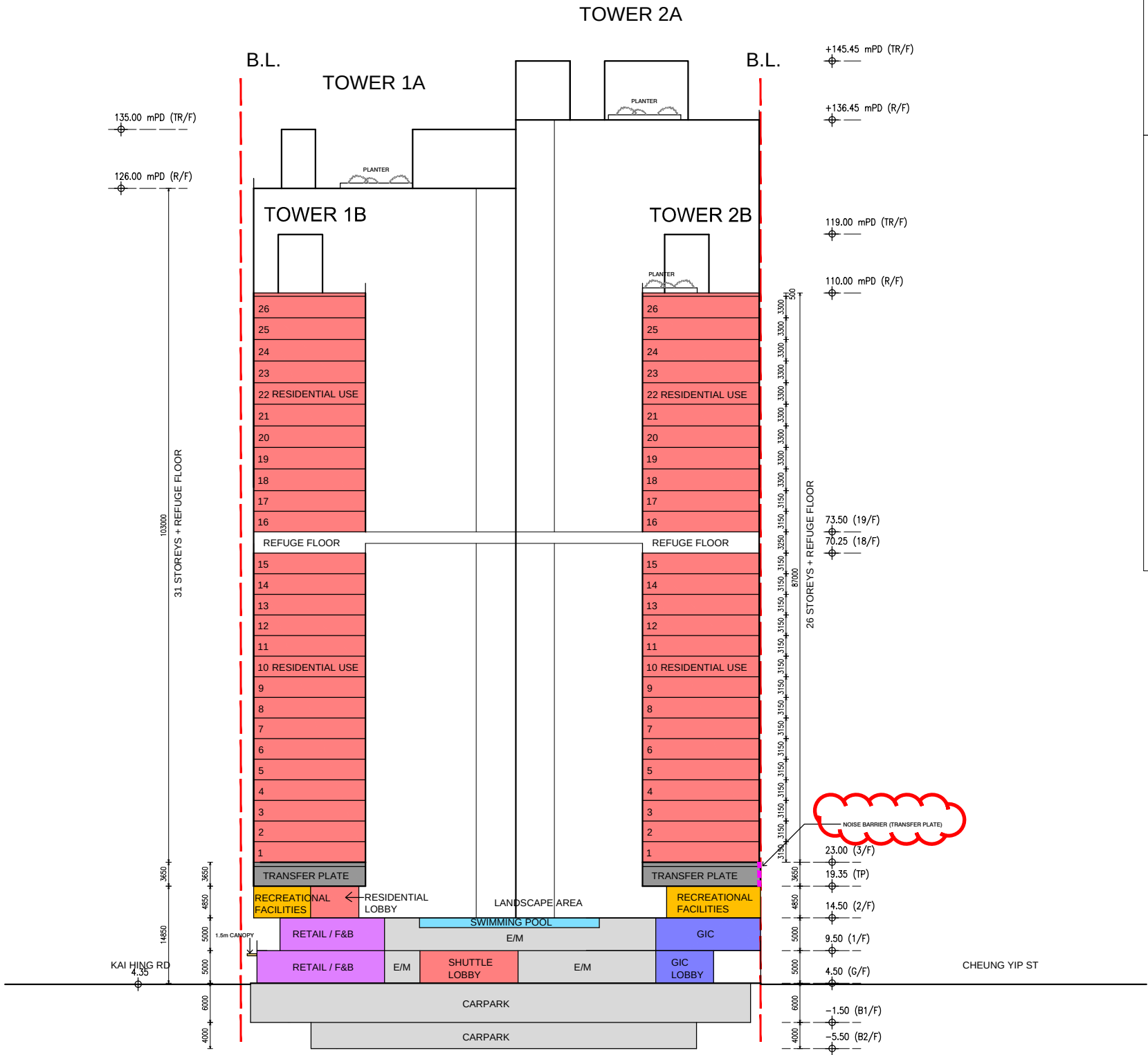
7.1.5 Moreover, there are three possible flight paths (east, southwest and northwest) defined in the EIA Report for its operation (under emergency situation only). The Application Site is located southeast of the NAH helipad. The flight path nearest to the Application Site is east of NAH helipad when helicopter flies over Pacific Trade Centre & the planned residential development at the waterfront site. The remaining flight paths would be away from the Application Site and noise impact arising from using these two remaining flight paths is considered less significant.

7.1.6 Nuisance to the occupants of the proposed development with noise level higher than L_{max} 85dB(A) is expected only under circumstances when there is emergency situation which triggers the use of helicopter as transportation means, and at the same time, the helicopter needs to make use of east flight path.

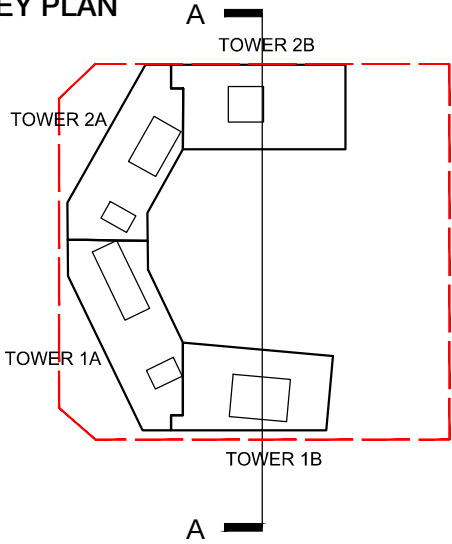
7.1.7 It is reiterated that the proposed helipad at NAH will operate under emergency situation only, which means that there would not be any unacceptable noise impact under normal circumstances.

7.1.8 No persistent environmental noise impact on the Proposed Development is therefore anticipated

7.1.9 Nevertheless, to minimize potential noise nuisance under emergency situation, the Proposed Development is designed to maximise separation from the flight path on northeast side of the Application Site. In addition, better insulation will be provided for the Proposed Development which has equivalent or better noise performance than



KEY PLAN



LEGEND

- APPLICATION SITE BOUNDARY
- LANDSCAPE AREA AT GROUND LEVEL/ ON GRADE
- LANDSCAPE AREA AT PODIUM / ROOF LEVEL
- RETAIL / F&B
- EVA / DRIVEWAY
- DRIVEWAY / L/UL / CARPARK
- E&M
- RECREATIONAL FACILITIES
- RESIDENTIAL USE
- CANOPY
- GIC
- SWIMMING POOL

B.D. REFERENCE		屋宇署檔案	
F.S.D. REFERENCE		消防處檔案	
W.W.O. REFERENCE		水務署檔案	
CAD FILE NAME		檔案編號	
NOTES		注釋	
NO. 修定號	REVISIONS 修定內容	DATE 日期	BY 經手人

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PROJECT 項目名稱

PROPOSED COMPOSITE DEVELOPMENT
AT 8 LAM CHAK STREET, KOWLOON
- N.K.I.L. 6215

TITLE 標題

INDICATIVE SECTION A-A

SCALE 比例 1:800(A3)	DATE MAY 2026	日期
DRAWN BY 製作人 DT	CHECKED BY -	檢查
JOB NO. 工程項目 N3591-H	DRAWING NO. -	圖號

H:\Dwgs\ACAD\Submission Plans (TPB)\2026-07-14 Noise Barrier\2026-07-14 S16 6.5+0.5.dwg, 1:1, Project No.: N3591-H

Road Traffic Noise Impact Assessment
Acoustic Window (Baffle Type) and Enhanced Acoustic Balcony (Baffle Type)
Table of Major Parameters, Room Size and Sound Attenuation Adjustment of "Proposed Case for Proposed Development" and "Corresponding Reference Case"

				Proposed Development						Reference Case								Incident angle, deg	Window / Door: Extra sound attenuation from incident angle, dB(A)	Window: 1.5m Fin	Window: Extra sound attenuation with 1.5m Fin, dB(A)	Relative Noise Reduction, dB(A)	Noise Reduction Required, dB(A)
Tower	Opening	NSRs	Case	Outer opening area, m ²	Air gap, mm	Overlapping length, mm	MPA applied?	SAM applied	Room area (RA), m ²	Outer opening width, mm	Outer opening height, mm	Outer opening area, m ²	Air gap, mm	Overlapping length, mm	MPA applied?	Room area (RAref), m ²	Ref. sound attenuation, dB(A)						
1	W	N1-01	AW-PN	0.5	100	100	No	Yes	7.0	600	870	0.5	100	100	No	8.00	7.5	5	0	No	0	7.5	2.2
1	W	N1-02	AW-PN	0.5	100	100	No	Yes	4.2	600	870	0.5	100	100	No	8.00	7.5	5	0	No	0	7.5	2.1
1	D	N1-03	EAB-PN	2.5	100	100	No	Yes	12.8	1150	2210	2.5	100	100	No	14.00	9.5	5	0	No	0	9.5	2.0
1	D	N1-04	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	5	0	No	0	9.5	1.8
1	W	N1-05	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	5	0	No	0	7.5	1.7
1	W	N1-06	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	5	0	No	0	7.5	1.5
1	D	N1-07	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	5	0	No	0	9.5	1.4
1	D	N1-08	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	5	0	No	0	9.5	1.5
1	W	N1-09	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	5	0	No	0	7.5	1.4
1	W	N1-10	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	5	0	No	0	7.5	1.5
1	D	N1-11	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	5	0	No	0	9.5	1.6
1	D	N1-12	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	5	0	No	0	9.5	1.7
1	W	N1-13	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	5	0	No	0	7.5	1.6
1	W	N1-14	AW-PN	0.5	100	100	No	Yes	8.2	600	870	0.5	100	100	No	8.00	7.5	65	1.0	No	0	8.5	3.4
1	W	N1-15	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	65	1.0	No	0	8.5	3.3
1	W	N1-16	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	65	1.0	No	0	8.5	3.2
1	D	N1-17	EAB-PN	2.5	100	100	No	Yes	19.8	1150	2210	2.5	100	100	No	14.00	9.5	65	3.0	No	0	12.5	3.3
1	W	N1-18	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	25	0	No	0	7.5	2.8
1	D	N1-19	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	25	0	No	0	9.5	2.8
1	D	N1-20	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	25	0	No	0	9.5	2.9
1	W	N1-21	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	25	0	No	0	7.5	2.9
1	W	N1-22	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	25	0	No	0	7.5	3.0
1	D	N1-23	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	25	0	No	0	9.5	3.0
1	D	N1-24	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	25	0	No	0	9.5	3.1
1	W	N1-25	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	25	0	No	0	7.5	3.2
1	W	N1-26	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	25	0	No	0	7.5	3.4
1	D	N1-27	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	25	0	No	0	9.5	3.6
1	D	N1-28	EAB-PN	2.5	100	100	No	Yes	11.7	1150	2210	2.5	100	100	No	14.00	9.5	25	0	No	0	9.5	4.0
1	W	N1-29	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	25	0	No	0	7.5	4.6
1	W	N1-36	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	15	0	No	0	7.5	0.3
1	D	N1-37	EAB-PN	2.5	100	100	No	Yes	12.1	1150	2210	2.5	100	100	No	14.00	9.5	15	0	No	0	9.5	0.5
1	W	N1-38	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	15	0	No	0	7.5	0.7
1	W	N1-39	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	15	0	No	0	7.5	0.9
1	D	N1-40	EAB-PN	2.5	100	100	No	Yes	12.1	1150	2210	2.5	100	100	No	14.00	9.5	15	0	No	0	9.5	1.0
1	W	N1-41	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	15	0	No	0	7.5	1.0
1	D	N1-42	EAB-PN	2.5	100	100	No	Yes	11.9	1150	2210	2.5	100	100	No	14.00	9.5	50	0	No	0	9.5	0.0
1	W	N1-43	AW-PN	0.5	100	100	No	Yes	4.9	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	0.3
1	W	N1-44	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	0.6
1	D	N1-45	EAB-PN	2.5	100	100	No	Yes	12.1	1150	2210	2.5	100	100	No	14.00	9.5	50	3.0	No	0	12.5	0.9
1	W	N1-46	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	1.2
1	W	N1-47	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	1.6
1	D	N1-48	EAB-PN	2.5	100	100	No	Yes	12.1	1150	2210	2.5	100	100	No	14.00	9.5	50	3.0	No	0	12.5	1.8
1	W	N1-49	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	2.1
1	W	N1-50	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	2.3
1	D	N1-51	EAB-PN	2.5	100	100	No	Yes	12.1	1150	2210	2.5	100	100	No	14.00	9.5	50	3.0	No	0	12.5	2.7
1	W	N1-52	AW-PN	0.5	100	100	No	Yes	5.0	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	2.9
1	D	N1-53	EAB-PN	2.5	100	100	No	Yes	12.8	1150	2210	2.5	100	100	No	14.00	9.5	50	3.0	No	0	12.5	3.3
1	W	N1-54	AW-PN	0.5	100	100	No	Yes	4.2	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	3.8
1	W	N1-55	AW-PN	0.5	100	100	No	Yes	7.0	600	870	0.5	100	100	No	8.00	7.5	50	1.0	No	0	8.5	4.0

Appendix 7.1 Correspondence with CAD/GFS

Coco Ma

From: Coco Ma
Sent: 13 July 2026 18:03
To: gfsenq@gfs.gov.hk
Cc: Calvin Chiu; Grace KF Wong
Subject: Harbourside HQ at No. 8 Lam Chak Street, Kowloon Bay - s16 Planning Application - A/K22/50 [Filed 13 Jul 2026 12:09]
Attachments: NAH flight path.pdf; 05 Noise - rev6 - Clean.pdf
Categories: Filed by Mail Manager

Dear Sir or Madam,

We are the environmental noise consultant responsible to prepare noise impact assessment for the captioned site as per a S16 planning application.

For discussion on helicopter noise impact, we have quoted the EIA report for New Acute Hospital at Kai Tak Development Area (NAH-EIA)
(https://www.epd.gov.hk/eia/files/applications/en/pp_311/eia_1922/progress/action_1699/EIA-266_2020.htm)

In Chapter 5 of NAH-EIA, the helicopter fleet type and flight path are shown and extracted in attached (clouded for easy reference).

We have received comments from EPD via LandsD (attached). Comment (4) requires us to confirm with relevant authority on the validity and altitude of the flight path for NAH at the north side of the proposed development.

4. Section 7

Please confirm the validity and altitude of the flight path for NAH at the north side of the proposed development with the relevant authority.

In this regard, please kindly advise if the assumptions in NAH -EIA regarding the validity and altitude of the flight path for NAH are still valid.

In case of any update, please kindly provide the updated details to us for our further action.

Due to the urgency of this matter, your earliest reply is most appreciated.

If there is any query, please feel free to call the undersigned or our Mr Calvin Chiu at 3465 2811.

Kind regards

Coco Ma

Environmental Consultant

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cocoma@ramboll.com

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21st Floor
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Wan Chai
Hong Kong

<https://ramboll.com>

Ramboll Hong Kong Limited

Coco Ma

From: Klemen WONG/GFS <klemenwong@gfs.gov.hk>
Sent: 14 July 2026 15:47
To: Coco Ma
Cc: Calvin Chiu; Grace KF Wong; Ryan YW LO/GFS; Ryan CK LI/GFS; GFS ENQ/GFS; Carrie PK CHENG/GFS
Subject: Re: Harbourside HQ at No. 8 Lam Chak Street, Kowloon Bay - s16 Planning Application

Some people who received this message don't often get email from klemenwong@gfs.gov.hk. [Learn why this is important](#)

Dear Ms Ma,

I am writing in response to your email dated 13 July 2026 regarding helicopter noise impact at NAH.

I can confirm that the information proposed in the EIA report is valid with no changes.

Should you have anymore queries regarding this issue, please feel free to contact the undersigned directly.

Best regards,
Capt. Klemen Wong
Deputy Manager (Flight Operations) 1
Government Flying Service
Tel: (852) 2260 9408

Coco Ma

From: Coco Ma
Sent: 13 July 2026 12:09
To: enquiry@cad.gov.hk
Cc: Calvin Chiu; Grace KF Wong
Subject: Harbourside HQ at No. 8 Lam Chak Street, Kowloon Bay - s16 Planning Application - A/K22/50 [Filed 13 Jul 2026 12:09]
Attachments: EPD Comments_To KTA.pdf; NAH flight path.pdf; 05 Noise - rev6 - Clean.pdf
Categories: Filed by Mail Manager

Dear Sir or Madam,

We are the environmental noise consultant responsible to prepare noise impact assessment for the captioned site as per a S16 planning application.

For discussion on helicopter noise impact, we have quoted the EIA report for New Acute Hospital at Kai Tak Development Area (NAH-EIA)
(https://www.epd.gov.hk/eia/files/applications/en/pp_311/eia_1922/progress/action_1699/EIA-266_2020.htm)

In Chapter 5 of NAH-EIA, the helicopter fleet type and flight path are shown and extracted in attached (clouded for easy reference).

We have received comments from EPD via LandsD (attached). Comment (4) requires us to confirm with relevant authority on the validity and altitude of the flight path for NAH at the north side of the proposed development.

In this regard, please kindly advise if the assumptions in NAH -EIA regarding the validity and altitude of the flight path for NAH are still valid.

In case of any update, please kindly provide the updated details to us for our further action.

Due to the urgency of this matter, your earliest reply is most appreciated.

If there is any query, please feel free to call the undersigned or our Mr Calvin Chiu at 3465 2811.

Kind regards

Coco Ma

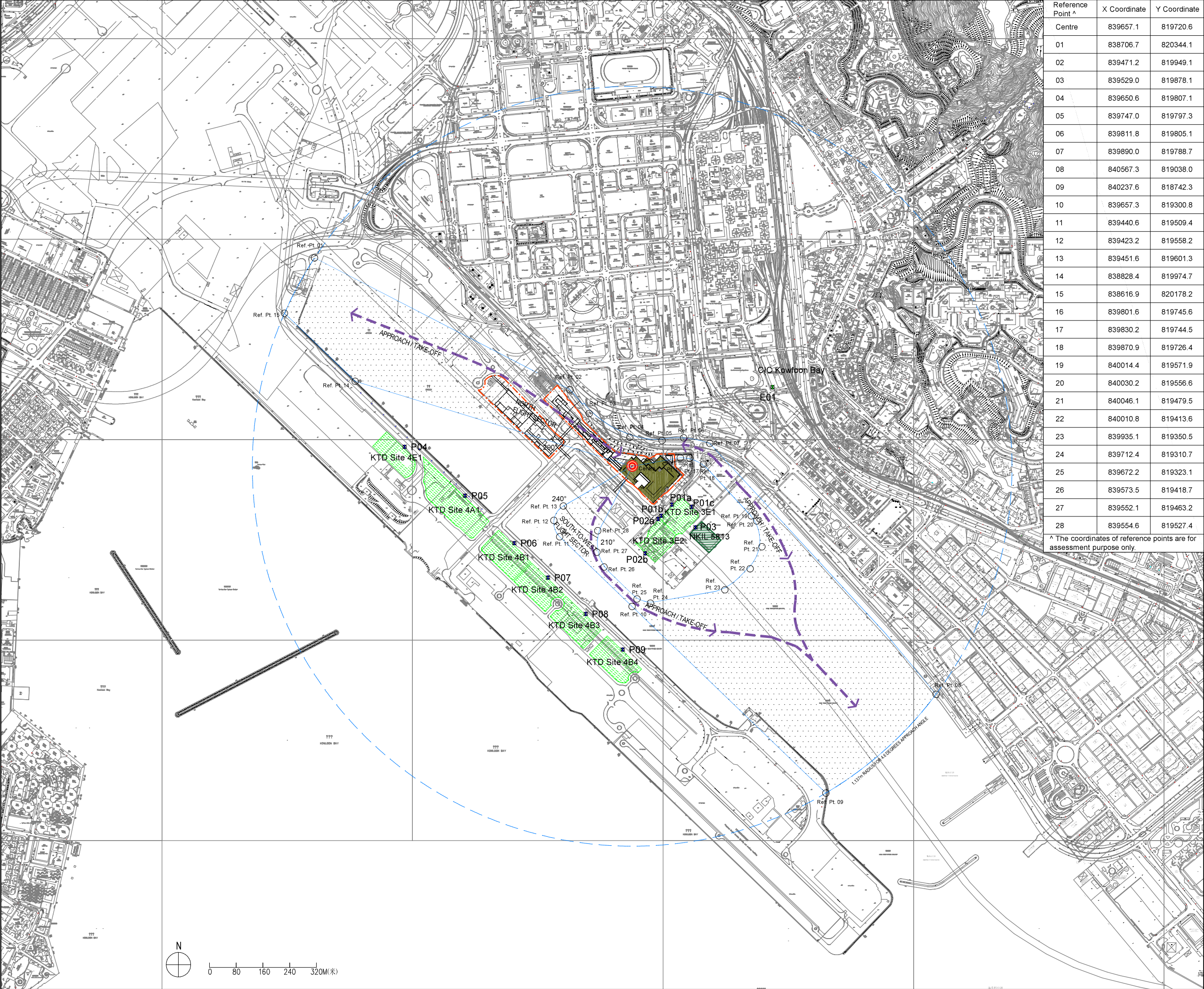
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Reference Point ^	X Coordinate	Y Coordinate
Centre	839657.1	819720.6
01	838706.7	820344.1
02	839471.2	819949.1
03	839529.0	819878.1
04	839650.6	819807.1
05	839747.0	819797.3
06	839811.8	819805.1
07	839890.0	819788.7
08	840567.3	819038.0
09	840237.6	818742.3
10	839657.3	819300.8
11	839440.6	819509.4
12	839423.2	819558.2
13	839451.6	819601.3
14	838828.4	819974.7
15	838616.9	820178.2
16	839801.6	819745.6
17	839830.2	819744.5
18	839870.9	819726.4
19	840014.4	819571.9
20	840030.2	819556.6
21	840046.1	819479.5
22	840010.8	819413.6
23	839935.1	819350.5
24	839712.4	819310.7
25	839672.2	819323.1
26	839573.5	819418.7
27	839552.1	819463.2
28	839554.6	819527.4

^ The coordinates of reference points are for assessment purpose only.

- LEGEND :
- BOUNDARY LINE OF NEW ACUTE HOSPITAL AT KAI TAK DEVELOPMENT AREA
 - PROPOSED ROOFTOP HELIPAD
 - ACUTE BLOCK
 - RESIDENTIAL (LAND USES ACCORDING TO THE APPROVED KAI TAK OUTLINE ZONING PLAN)
 - COMMERCIAL (LAND USES ACCORDING TO THE APPROVED KAI TAK OUTLINE ZONING PLAN)
 - EXISTING NOISE SENSITIVE RECEIVERS
 - PLANNED NOISE SENSITIVE RECEIVERS
 - INDICATIVE FLIGHT PATH
 - APPROACH / TAKE-OFF ZONE

Rev	Amendment	By	Chk.	App.	Date
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Client

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Project
A ROOFTOP HELIPAD AT
NEW ACUTE HOSPITAL AT
KAI TAK DEVELOPMENT AREA

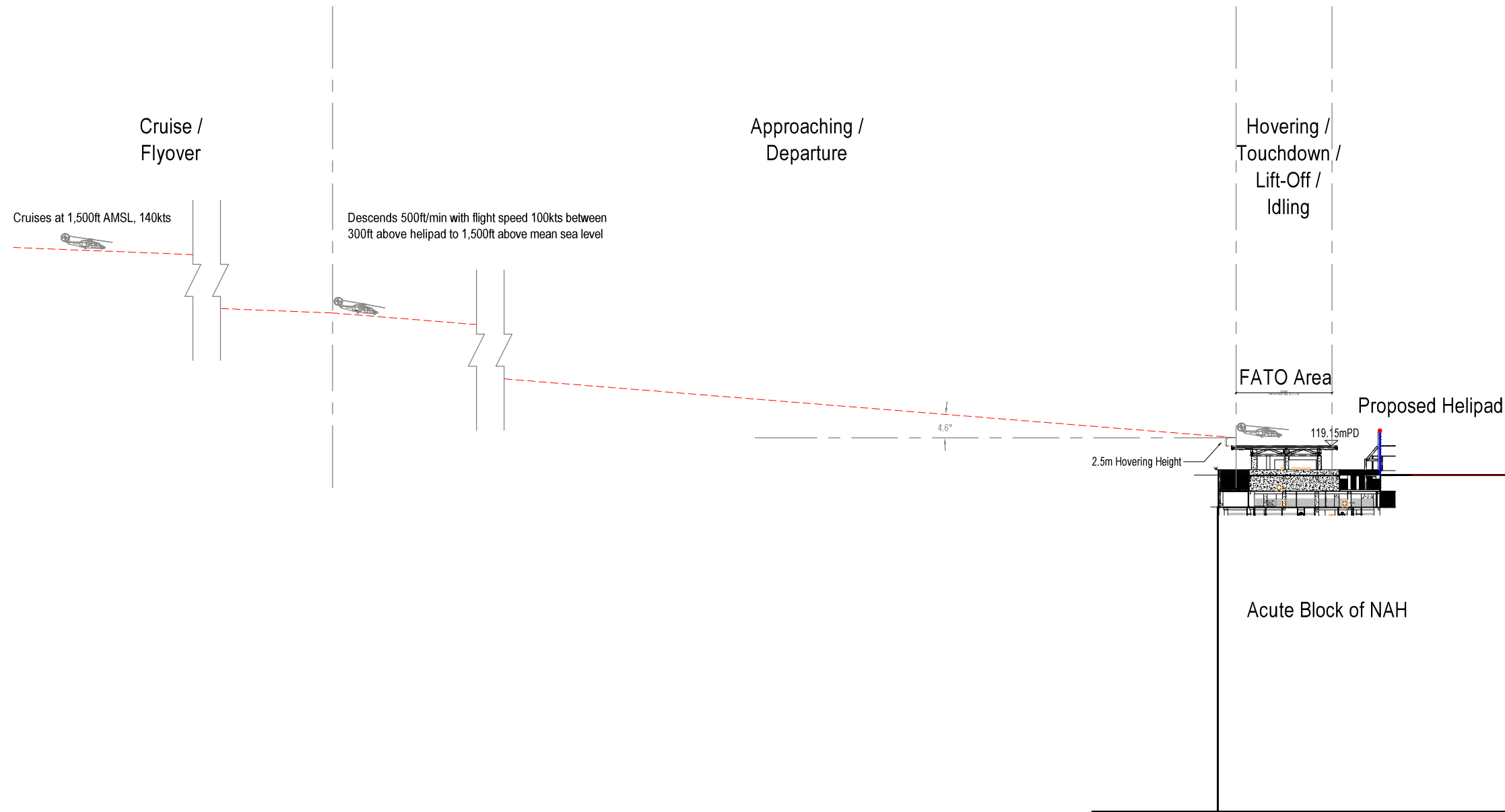
Title
HELICOPTER FLIGHT PATH

Status	Drawn	CAD	Checked	—	Approved	—
	Scale	AS SHOWN (A3)	CAD File Name	First Issued	MAY 2019	
			Drawing No.			Rev.

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FIGURE 5.2

Plot Style : L:\ENVIRON\91524 Kai Tak New Acute Hospital (Wong Tung)\Report\Working Paper\WP on AQIA\Source\Figures\AutoCadPlotstyle\91524-COLOR-A3.ctb
Plot Date & Time : May 9, 2019 2:04 PM
Plotted by : Fredricksim



TYPICAL HELICOPTER OPERATION FOR EMERGENCY (APPROACHING & DEPARTURE)

LEGEND :

----- HELICOPTER FLIGHT PATH

Rev	Amendment	By	Chk.	App.	Date
Client					
		醫院管理局 HOSPITAL AUTHORITY			
Architect					
WONG TUNG & PARTNERS LIMITED ARCHITECTS & PLANNERS  18th Floor, Cityplaza 3, Taikoo Shing, Hong Kong T 852-2803 9888 F 852-2513 1728 www.wongtung.com					
 Meinhardt Infrastructure and Environment Limited 邁達基達環保工程顧問有限公司					
Project					
A ROOFTOP HELIPAD AT NEW ACUTE HOSPITAL AT KAI TAK DEVELOPMENT AREA					
Title					
SCHEMATIC FOR TYPICAL HELICOPTER OPERATION					
Status					
Drawn	CAD	Checked	—	Approved	—
Scale	AS SHOWN (A3)	CAD File Name		First Issued	MAY 2019
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		FIGURE 5.3			—

- Machines and plant that may be in intermittent use should be shut down between works periods or throttled down to a minimum between work periods.
- 5.5.6.2 Besides, the “Recommended Pollution Control Clauses for Construction Contracts” published by the EPD should be adopted in the Contract Specification for the Contractors to follow and implement relevant measures and good site practices in minimising noise impact.

5.5.7 Residual Impacts

- 5.5.7.1 Cumulative construction noise impacts on the representative NSR are assessed and comply with the daytime construction noise standard. No adverse residual impact is anticipated during the construction phase of the Project.

5.6 Operational Noise Impact Assessment

5.6.1 Identification of Potential Noise Impacts

Background

- 5.6.1.1 During the operational phase, the key noise issue would be from the helicopter operations associated with the proposed Helipad. There are no other noise sources associated with the Project in the operational phase. Other potential noise sources proposed for the NAH, such as outdoor building services equipment, shall be assessed under a separate environmental study and designed to fulfill the relevant environmental requirements.

Helicopter Operational Mode

- 5.6.1.2 Noise will be generated by helicopters during manoeuvring over the helipad within the Final Approach and Take-Off (FATO) area, lateral (approaching / departure) flight movements and flyover. The different operational modes that may generate noise are summarised as follows:

Non-lateral Movements

- Hovering: Helicopter turns on the spot over the helipad to achieve the desirable orientation for touchdown / lift-off;
- Touchdown: Helicopter descends on the helipad surface;
- Idling: Helicopter remains on the helipad surface with its rotary blades kept running; and
- Lift-off: Helicopter ascends vertically from the helipad surface to achieve a hover before departure.

Lateral Movements

- Approach: Helicopter approaches the helipad while it is descending at an angle to the helipad surface;
- Take-off: Helicopter leaves the helipad while it is climbing up at an angle to the helipad surface; and

- Flyover: Helicopter cruises before approach or after take-off.

Flight Sectors

5.6.1.3 The selection of flight sectors for the helicopter flights to and from the proposed helipad has been based on the following considerations. The flight sectors in the north-west and south-east, and south have been recommended by the GFS for the proposed helipad. The extent of the flight sectors and the locations of the representative NSRs are presented in [Figure 5.2](#). The GFS has emphasised that the proposed flight sectors are the best compromise with all factors and have been kept to a minimum in size so as to minimise the potential for noise impact on the surroundings. The flight paths to and from the proposed helipad have been carefully defined for helicopters to fly over the Kai Tak Approach Channel or Kwun Tong Typhoon Shelter and away from densely populated areas such as the ex-Kai Tak Runway to the south-west, Kowloon Bay to the north and Kwun Tong to the east. Meanwhile, a minimum horizontal buffer distance of 116m from NSRs could be maintained by the chosen flight paths as illustrated in [Figure 5.4a](#) (Refer to **Section 5.6.4.1**). Relevant advice from GFS is given in [Appendix 5H-2](#). As advised by the GFS, the chosen flight paths during the operation of the helipad may be altered slightly subject to the actual weather conditions and the obstacles clearance to the surroundings, such as movement of birds or unexpected localised turbulence. Furthermore, subject to flight condition, helicopter operations are expected to be in one-way-direction within the selected flight sectors, that is, the arrival flight and departure flight shall be from east to west or east to south-west and vice versa. Using the same flight path for approaching and departure of each operation is not preferred to minimise the overall exposure from helicopter noise at the NSRs.

Flight Profile

5.6.1.4 Based on details from the GFS, in preparing for departure, the helicopter will descend with a gentle slope until it reaches a flight height of 300ft above the helipad. Within 300ft above the helipad, the flight path shall be projected at a gradient of 8% (about 4.6 degrees) for both approaching and departure. The schematic for typical helicopter operation is illustrated in [Figure 5.3](#). Relevant advice from GFS is given in [Appendix 5H-3](#). The summary of the typical flight profiles is as follows:

1. Cruise / Flyover: Typical flight height of 1500ft above mean sea level with flight speed of 140kts, descending 500ft/min with flight speed of 100kts until 300ft above the helipad;
2. Approach: From 300ft above the helipad, flight speed would reduce from 60kts to 0kts with an approach angle of 4.6 degrees within 60 seconds;
3. Hovering (Approach): The desirable orientation for touchdown would be achieved within 5 seconds at around 2.5m above the helipad;
4. Touchdown: Descends on to the helipad within 3 seconds;
5. Idling: 5 minutes for casualty handover under normal circumstances;
6. Lift-off: Ascends from helipad to achieve a hover before departure within 3 seconds;

7. Hovering (Departure): Achieve desirable orientation for take-off within 5 seconds, at around 2.5m above helipad;
8. Take-off: Flight speed increases from 0kts to 60kts with a departure angle of 4.6 degrees within 60 seconds up to 300ft above the helipad; and
9. Cruise / Flyover: Ascends at 500ft/min with a flight speed of 100kts until achieve a typical flight height of 1500ft above mean sea level, at typical flight height, the flight speed increases to 140kts.

Flight Frequency

- 5.6.1.5 As mentioned in **Section 5.1.1.3**, the proposed helipad at the NAH will be solely used for emergency use and not for scheduled helicopter operations except trial flights. **Table 5.7** presents the record of the GFS's emergency helicopter operations at the PYNEH, the current most utilised hospital helipad, between 2015 and 2019. Relevant advice from GFS is given in [Appendix 5H-3](#).

Table 5.7 Emergency Helicopter Landing at PYNEH (2015 – 2019)

PYNEH Helipad	2015			2016			2017			2018			2019		
	D	E	N	D	E	N	D	E	N	D	E	N	D	E	N
No. of flight	152	17	32	153	31	31	218	32	45	164	35	42	175	33	42
Average no. of day(s) per flight	2.4	21.5	11.4	2.4	11.8	11.8	1.7	11.4	8.1	2.2	10.4	8.7	2.1	11.1	8.7
Total in the year:	201			215			295			241			250		

Source:

1. Data are advised by Government Flying Service

Note:

1. D – Daytime (07:00 – 19:00); E – Evening Time (19:00 – 23:00); N – Night-time (23:00 – 07:00).
2. All emergency flights including all type CASEVACs and SAR are presented as reference for the assessment.

- 5.6.1.6 According to **Table 5.7**, the highest annual emergency helicopter landing at PYNEH was found in 2017. The flight records reflected that the average number of daily emergency helicopter landing was less than one, with emergency helicopter landings in the daytime period being about once every one to two days on average. Also, the evening and night-time emergency helicopter landings at the PYNEH were one flight about more than every ten days and eight days respectively on average.
- 5.6.1.7 The proposed helipad at the NAH, together with the planned helipad at QMH upon its completion, shall share the existing number of helicopter landings and, thus, the flight frequency at the PYNEH would be reduced in future. Also, since the existing flight frequency at PYNEH shall be shared by the proposed helipad at NAH, it is expected that the flight frequency at NAH would not be higher than the existing flight frequency at the PYNEH conservatively.
- 5.6.1.8 In preparation for the provision of 24-hour emergency services, trial flights will be conducted by the GFS at least two months (or earlier if the helipad facilities are available) prior to the commissioning of the proposed helipad for the NAH operations. Around 2- 3 trial flights will be arranged per week during the daytime and evening time. The purpose of the trial flights is to confirm the flight perimeters of the flight sectors and for the GFS's aircrew to familiarise themselves with the operational procedures and operating environment. Before the helipad commissioning, the GFS will conduct

trial flights mainly during the daytime to begin with, followed by some evening trials between 19:00 to 23:00. It is noted that the GFS will minimise the evening trials and will not conduct trial flights during the night-time between 23:00 to 07:00 of the next day to reduce the possible noise impacts to the surroundings. When the helipad is fully operational, trial flights will only be arranged on a need basis, that is for pilots away from office during the familiarisation phase, for new GFS pilots or if some major new developments are implemented in the vicinity of the proposed helipad that may cause concerns to flight safety.

5.6.2 Assessment Methodology

- 5.6.2.1 According to Table 1A, Annex 5 of the TM-EIAO, helicopter noise impacts at an NSR shall be assessed in terms of A-weighted maximum sound pressure level $L_{\max}$. The helicopter noise level ($L_{\max}$) at an NSR can be calculated using the following formula:

$$L_{\max} = L_{\max}(\text{ref}) + C_D + C_B + C_F$$

Where,

$L_{\max}$ – Helicopter noise level at 1m from the external façade of NSR, dB(A);

$L_{\max}(\text{ref})$ – Sound Pressure Level at reference distance, dB(A);

C_D – Distance correction, dB(A);

C_B – Barrier correction, dB(A);

C_F – Façade correction, dB(A).

- 5.6.2.2 Since all the identified NSRs are located at some distance, over 150m, from the FATO of the proposed helipad and the helicopter flight paths, the helicopter can be considered as a 'point' source for noise assessment. Therefore, the sound pressure level at NSRs has been evaluated based on standard acoustic principles of a 'point' source, that is, the sound pressure received at NSRs will be inversely proportional to the square of the distance between the noise source and the NSR. The distance correction C_D can be calculated using the following formula:

$$C_D = -20\log_{10}(R / R(\text{ref}))$$

Where,

R – Shortest distance from a noise source to NSR, m;

$R(\text{ref})$ – Reference distance from a noise source to a measurement point, m.

- 5.6.2.3 A barrier correction of -5dB(A) has been applied where the representative NSRs are screened with no direct line of sight by a substantial barrier. A façade correction of +3dB(A) has, also, been assumed at the representative NSRs in order to account for the reflection effect due to building façades.
- 5.6.2.4 Wind speed and direction can influence sound propagation especially over long distances. However, the wind speed and wind direction are unpredictable as they are not steady and can vary from time to time. As detailed in **Sections 5.6.1.4 and 5.6.1.6**, the emergency helicopter operations are expected to be less than once a day on average and the duration of different operational modes range from 2-3 seconds to 5 minutes. According to the QMH Helipad EIA, the co-existence of wind, which will enhance the sound perceived, that is, wind bending down after blowing above a ridge line, and the GFS's helicopter operations should be rare. The "Transportation Noise Reference Book" (P. M. Nelson, 1987, England: Butterworths) mentions that the prediction of aircraft noise traditionally and consciously avoids the wind effect by stating noise levels for a "still air" situation. Reference to overseas practices,

including Japan and Australia, have been made in the QMH Helipad EIA and states that helicopter noise standards and assessments do not take account of the effects of wind. In addition, according to the practices detailed in the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM) issued under the NCO, noise measurements should not be carried out at a time and location which is affected by wind as it would generate noise/affect the measurement results. Therefore, it is considered inappropriate to include the wind effect in the helicopter noise impact assessment for the reasonable worst case scenarios and the adoption of the correction for wind effect is not considered in the assessment.

5.6.3 Helicopter Noise Levels

5.6.3.1 As mentioned in **Section 2.2.3.1**, the three Super Puma AS332 L2 helicopters and four Dauphin EC155 B1 helicopters previously utilised for emergency evacuations have been replaced by seven medium-sized single-model helicopters Airbus H175 by the GFS, and these Airbus H175 helicopters will be used at the new helipad at the NAH. Also, the three Super Puma AS332 L2 helicopters were entered into retirement starting from 7th April 2020. Relevant confirmation from GFS is given in [Appendix 5H-1](#).

5.6.3.2 The new Airbus H175 helicopters will be equipped with more advanced engines resulting in quieter flight noise compared with the Super Puma AS332 L2 and Dauphin EC155 B1. The Airbus H175 will comply with the latest standards on noise for helicopters as stipulated by the International Civil Aviation Organization (ICAO). The ICAO has stipulated noise standards for lateral movements of helicopters, including approach, take-off and flyover. The maximum Effective Perceived Noise Levels (EPNLs) for helicopters' lateral movements operating at full load conditions is used as the noise certification standard adopted by the ICAO Council. The relevant noise certificate for the Airbus H175 with advice from GFS are presented in [Appendix 5D](#) and the EPNLs data are summarised in **Table 5.8**.

Table 5.8 Noise Data of Airbus H175 – Lateral Movements

Operation Mode	Reference Distance, m	Noise Level	
		EPNL, EPNdB ^[1]	L _{max} , dB(A) ^[2]
Approach	120	95.1	82.1
Take-off	150	89.8	76.8
Flyover	150	91.0	78.0

Note:

1. The EPNLs are determined under conditions prescribed in Chapter 8 and Appendix 4 of Annex 16 of ICAO, and prescribed in 14 CFR 36 Appendix.
2. L_{max} = ENPL – 13 dB(A) with reference to the "Transportation Noise Reference Book" (P. M. Nelson, 1987, England: Butterworths).

5.6.3.3 However, the noise data for non-lateral movements are not available in the Noise Certificate for the Airbus H175. In order to obtain representative noise data for non-lateral movements of the Airbus H175 for assessment purposes, a helicopter noise survey was carried out on 22 May 2019 at Lo Wu Shooting Range. The detailed helicopter noise survey report is presented in [Appendix 5E](#), and the measurement results are summarised in **Table 5.9**.

Table 5.9 Noise Measurement Results of Airbus H175 – Non-lateral Movements

Operation Mode	Reference Distance, m	Measured Highest Noise Level L_{max} of Airbus H175, dB(A)	Highest Noise Level L_{max} of Replaced Helicopters, dB(A) ^[1]
Idling	150	75.4	82.0
Lift-off	150	82.4	89.0
Hovering	150	83.5	90.6
Touchdown	150	78.9	89.0

Note:

- As mentioned in **Section 5.6.3.1**, replaced helicopters include Super Puma AS332 L2 and Dauphin EC155 B1. The highest noise levels among the replaced helicopters are represented by Super Puma AS332 L2 as extracted from the Table 4.10 of QMH Helipad EIA (Register No. AEIAR-208/2017).

5.6.3.4 Based on the noise measurement results for non-lateral movements of Airbus H175, it is found that its highest noise levels are around 7dB(A) – 10dB(A) lower than that of the replaced helicopters.

5.6.4 Noise Impacts in Daytime – Unmitigated Scenario

Helicopter and Helipad Buffer Distances

5.6.4.1 In order to keep the noise impact not higher than the daytime criterion L_{max} 85dB(A), the minimum buffer distances required between identified residential NSRs and the Airbus H175 helicopter in different operation modes have been estimated. Assuming no barrier correction, backward calculation of the equations in **Section 5.6.2** and the noise data presented in **Table 5.8** and **Table 5.9** have been adopted. NSRs outside the minimum buffer distances would not be subject to adverse helicopter noise impacts in the daytime. The estimated buffer distances are presented in **Table 5.10**.

Table 5.10 Minimum Buffer Distance Required for Airbus H175

Operation Mode		Estimated Buffer Distance, m	Buffer Distance Required, m
Non-Lateral Movements at FATO of Helipad	Hovering	170	170
	Lift-off	150	
	Touchdown	100	
	Idling	67	
Lateral Movements along Flight Path	Approach	116	116
	Take-off	79	
	Flyover	90	

Lateral Movements of Airbus H175 along Flight Path

5.6.4.2 Based on the 116m buffer distance required from the flight path for lateral movements of the Airbus H175, a horizontal buffer zone of flight path has been determined. The buffer zone of the flight path and the locations of the NSRs are shown in **Figure 5.4a**.

5.6.4.3 It is found that all representative NSRs are located outside the buffer zone. Therefore, adverse helicopter noise impacts on all representative NSRs are not anticipated during lateral movements.

Non-Lateral Movements of Airbus H175 at FATO of Helipad

5.6.4.4 Based on the 170m buffer distance from FATO of the helipad for non-lateral movements of the Airbus H175, a horizontal buffer zone of FATO has been

determined. The buffer zone of the FATO and the locations of NSRs are shown in [Figure 5.4b](#).

- 5.6.4.5 It is found that three NSR, namely P01a and P01b for KTD Site 3E1 and P02a for KTD Site 3E2, fall within the horizontal FATO buffer zone. Therefore, adverse helicopter noise impacts on these NSRs may be anticipated during non-lateral movements of the helicopter, subject to actual slant distances and presence of screening structures, if any. All other representative NSRs are located outside the FATO buffer zone.

Predicted Noise Levels

- 5.6.4.6 The noise levels at NSRs due to helicopter operations have been predicted. The highest predicted noise levels and the corresponding operation mode are summarised in **Table 5.11** and detailed calculations are presented in [Appendix 5F](#).

Table 5.11 Predicted Unmitigated Helicopter Noise Levels

NSR ID	Description	Highest Predicted Noise Level $L_{max}^{(1)}$, dB(A)	Operation Mode	Compliance (Y/N)
<i>Existing NSR</i>				
E01	Construction Industry Council Kowloon Bay Training Centre (CIC Kowloon Bay)	78	Approach	Y
<i>Planned NSRs</i>				
P01a	Kai Tak Development Site 3E1 (KTD Site 3E1)	85	Approach	Y
P01b		86	Hovering	N
P01c		85	Approach / Hovering	Y
P02a	Kai Tak Development Site 3E2 (KTD Site 3E2)	85	Hovering	Y
P02b		84	Approach	Y
P03	Proposed Residential Development at Kerry Dangerous Goods Warehouse (Kowloon Bay) (NKIL 5813)	85	Approach	Y
P04	Kai Tak Development Site 4E1 (KTD Site 4E1)	83	Approach	Y
P05	Kai Tak Development Site 4A1 (KTD Site 4A1)	82	Approach	Y
P06	Kai Tak Development Site 4B1 (KTD Site 4B1)	85	Approach	Y
P07	Kai Tak Development Site 4B2 (KTD Site 4B2)	85	Approach	Y
P08	Kai Tak Development Site 4B3 (KTD Site 4B3)	84	Approach	Y
P09	Kai Tak Development Site 4B4 (KTD Site 4B4)	84	Approach	Y

Note:

1. Bold noise levels indicate exceedance of the daytime noise criterion of L_{max} 85 dB(A)

- 5.6.4.7 Based on the assessment results, the predicted highest helicopter noise levels range from L_{max} 78 dB(A) to 86 dB(A) at the NSRs. Daytime noise exceedances of 1dB(A) are predicted at NSR P01b during helicopter hovering at the proposed helipad. It is

predicted that approximate the top 12 floors of NSR P01b would be subjected to these noise exceedances.

5.6.5 Noise Mitigation Measures

- 5.6.5.1 In order to mitigate helicopter noise impact at the NSR, noise mitigation measures, including setback of helipad and installation of noise barrier and noise reducers on the top edge of the noise screening structure/barrier, have been considered, and proposed as far as practicable for the proposed helipad. GFS has advised on the practicality of the mitigation measures in terms of helicopter operations, as documented in [Appendix 5H-3](#).

Setback of Helipad

- 5.6.5.2 As mentioned in **Section 2.4.2**, the proposed helipad has been intentionally located on the western side of the rooftop of Acute Block of the NAH in order to reduce the noise impacts and direct lines of sight at nearby NSRs. Setback has, therefore, been provided for the nearest NSRs, i.e. P01a and P01b of KTD Site 3E1. The separation distances between the helipad and these NSRs have been maximised.
- 5.6.5.3 Besides, screening could be provided by the top edge of south-east roof structure of Acute Block for NSR P01a due to this setback. Illustration of the screening is shown in [Appendix 5G](#). This setback has already been taken account of in the unmitigated scenario of the helicopter noise impact assessment.

Screening by Noise Barrier and Noise Reducers

- 5.6.5.4 Installation of noise barrier at the rooftop of the Acute Block of the NAH can provide noise screening from the proposed helipad for nearby NSR, where the roof edge of Acute Block is not sufficient. The noise barrier can reduce the direct lines of sight between the NSR and the helicopter during non-lateral movements on the helipad, achieving a minimum 5dB(A) noise reduction. In order to further improve the noise shielding effect, noise reducers are proposed along the top edge of the noise screening structures, including the proposed noise barrier and the south-east roof structure of the Acute Block. Noise reducers can improve the noise reducing performance of the noise screening structure by modifying the upper sound diffracting edge. Specification of the proposed noise barrier and noise reducers are given below:

Noise Barrier

- The noise barrier shall be made of materials having a surface mass density of at least 15kg/m²; and
- The noise barrier shall be free of gaps or openings.

Noise Reducers

- Insertion loss performance of the Noise Reducers shall be tested in accordance with ISO 10847 to achieve not less than 2dB(A); and
- Sound absorption performance of the Noise Reducers shall be tested in accordance with ISO 354 to achieve not less than 0.7 at 400 Hz.

- 5.6.5.5 Nevertheless, the practicality on the proposed location of noise barrier and reducers on the roof of Acute Block have been considered. The proposed noise barrier and noise reducers should not affect approaching and departure operations of helicopters. Maximum height of the noise barrier and noise reducers is also subject to building height restriction under the current OZP. Therefore, proposed horizontal and vertical extent of the noise barrier and noise reducers have been maximized under the above constraints.
- 5.6.5.6 The extent of the proposed noise barrier and noise reducers are summarised in **Table 5.12** and shown in [Figure 5.5](#). Illustration of screening by the noise barrier with noise reducer on top for NSR P01b is shown in [Appendix 5G](#). PlanD's advice on the acceptability of noise barrier proposed at the rooftop of the Acute Block is given in [Appendix 2A](#).

Table 5.12 Summary of Proposed Noise Barrier and Noise Reducers

Location	Noise Mitigation Measure	Approx. Length (m)	Top Level (mPD)
Approx. 10m from Helipad to the Southeast	Noise Barrier with Noise Reducer on Top	21.6	+123.9 ^[1]
Top Edge of Southeast Roof Structure of Acute Block	Noise Reducer	89.5	Min. +110.0 ^[2]

Note:

1. Around 4.75m above the proposed helipad surface at +119.15 mPD.
2. Based on the latest information provided by the Architectural Consultant for the design of the NAH, the level of the south-east roof of Acute Block is +110.0mPD. However, an additional solid structure, such as a solid wall, might be proposed on and along the south-east roof edge, and its height is not confirmed at the time of preparing this EIA report and subject to further design of Acute Block. Nonetheless, it is agreed that the noise reducer should be mounted on the top of the highest solid structure on the roof at the south-east side. Therefore, it is conservatively assumed that the minimum level of this noise reducer is +110.0mPD. In case the additional solid structure is proposed, the noise reducer will be proposed on top of it, subject to the height constraints as mentioned in **Section 5.6.5.5**.

5.6.6 Noise Impacts in Daytime – Mitigated Scenario

- 5.6.6.1 With the implementation of the above mitigation measures, the mitigated noise levels at the NSRs due to helicopter operations associated with the proposed helipad have been predicted. The highest predicted noise levels and the corresponding operation mode are summarised in **Table 5.13** and detailed calculations are presented in [Appendix 5F](#).

Table 5.13 Predicted Mitigated Helicopter Noise Levels

NSR ID	Description	Highest Predicted Noise Level L _{max} , dB(A)	Operation Mode	Compliance (Y/N)
<i>Existing NSR</i>				
E01	Construction Industry Council Kowloon Bay Training Centre (CIC Kowloon Bay)	78	Approach	Y
<i>Planned NSRs</i>				
P01a	Kai Tak Development Site 3E1 (KTD Site 3E1)	85	Approach	Y
P01b		85	Approach	Y
P01c		85	Approach / Hovering	Y
P02a	Kai Tak Development Site 3E2 (KTD Site 3E2)	85	Hovering	Y
P02b		84	Approach	Y

NSR ID	Description	Highest Predicted Noise Level L_{max} , dB(A)	Operation Mode	Compliance (Y/N)
P03	Proposed Residential Development at Kerry Dangerous Goods Warehouse (Kowloon Bay) (NKIL 5813)	85	Approach	Y
P04	Kai Tak Development Site 4E1 (KTD Site 4E1)	83	Approach	Y
P05	Kai Tak Development Site 4A1 (KTD Site 4A1)	82	Approach	Y
P06	Kai Tak Development Site 4B1 (KTD Site 4B1)	85	Approach	Y
P07	Kai Tak Development Site 4B2 (KTD Site 4B2)	85	Approach	Y
P08	Kai Tak Development Site 4B3 (KTD Site 4B3)	84	Approach	Y
P09	Kai Tak Development Site 4B4 (KTD Site 4B4)	84	Approach	Y

5.6.6.2 With the implementation of the mitigation measures, the predicted highest helicopter noise levels range from L_{max} 78 dB(A) to 85 dB(A) at the NSRs. All NSRs predicted with exceedance of daytime helicopter noise criteria in the unmitigated scenario, i.e. approximate the top 12 floors of NSR P01b, could be protected by the direct noise mitigation measures. Thus, adverse helicopter noise impacts at the NSRs during the daytime period are not anticipated.

5.6.6.3 Noise contours, in terms of L_{max} at four different mPD levels including the general ground level, and the levels of lowest, middle and the highest representative NSRs, are presented in [Figure 5.6a to Figure 5.6d](#) to show the distribution of the highest predicted helicopter noise levels among all non-lateral operation modes under mitigated scenario. While noise contours for highest predicted helicopter noise levels among all lateral operation modes are presented in [Figure 5.7a to Figure 5.7d](#).

5.6.7 Noise Impacts in Evening and Night-time

5.6.7.1 Since there are no relevant noise criteria in the TM-EIAO, nor in any overseas/international guidelines applicable to emergency helicopter operations in the evening and night-time periods, the helicopter noise impact during such time periods has not been quantitatively assessed. As mentioned in **Section 5.2.3.5**, the emergency helicopter operations during the evening and night-time periods are generally exempted from flight restrictions based on international practices.

5.6.7.2 Nonetheless, all practicable noise mitigation measures have been exhausted and adopted at the proposed helipad to minimise the helicopter noise. The new Airbus H175 helicopters with lower noise levels have been adopted by the GFS. The design and selection of flight paths have been optimised to avoid flying over the noise sensitive areas. The setback of the helipad and installation of noise barrier and noise reducers have, also, been utilised to provide screening and noise attenuation. The proposed helipad has been designed and its operation has been planned in a practicable manner to avoid adverse helicopter noise impact.

5.6.7.3 In accordance with the Civil Aviation (Aircraft Noise) Ordinance (Cap. 312), if the Director-General of Civil Aviation considers it appropriate, for the purpose of avoiding,

limiting or mitigating the effect of noise and vibration connected with the taking off or landing of aircraft at an aerodrome, to prohibit aircraft from taking off or landing, or to limit the number of occasions on which they may take off or land, at an aerodrome during certain periods, he may by notice in the Gazette to prohibit aircraft of descriptions specified in the notice from taking off or landing at the aerodrome (otherwise than in an emergency) during periods so specified; or specify the maximum number of occasions on which aircraft of descriptions so specified may be permitted to take off or land at the aerodrome (otherwise than in an emergency) during periods so specified. Since the use of the proposed helipad at NAH is for emergency service, which will be on an as needed basis that cannot be controlled, restrictions such as limiting the number of helicopter flights in evening and night-time periods or restrictions on the operating hours of the helipad are not practical. The proposed helipad at NAH will be available 24 hours a day for emergency uses with no scheduled helicopter operation. As mentioned in **Section 5.6.1.6**, the evening and night-time emergency helicopter landings at the PYNEH were one flight about more than every ten days and eight days respectively on average and the frequency would be expected to be less for the NAH. The longest duration among different operation modes of helicopter is 5 minutes. According to the QMH Helipad EIA, the noise complaints about the helipad operation of TMH and PYNEH were rarely received and total 7 noise complaints were received by HA and CAD in the years between 2011 to 2015, as presented in **Table 5.14**. From 2016 to 2019, there were 5 noise complaints received by CAD about the helipad operation of PYNEH. It showed the general understanding to such critical services and tolerance to the emergency helicopter operation within the community.

Table 5.14 Statistics of Helicopter Noise Complaint of TMH and PYNEH

Hospital	Commencement Year	No. of Noise Complaints Received by HA	No. of Noise Complaints Received by CAD	
		2011 - 2015 ^[1, 2]	2011 - 2015 ^[1]	2016 - 2019
TMH	1992	0	0	0
PYNEH	2004	1	6	5

Note:

1. Data are extracted from the QMH Helipad EIA (Register No. AEIAR-208/2017)
2. As advised by HA, the statistics of helicopter noise complaints received by HA in 2016-2019 are not available.

5.6.8 Cumulative Helicopter Noise Impacts

- 5.6.8.1 As advised by GFS, there is no other existing helipads or regular helicopter flight routes identified in the vicinity of the proposed helipad.
- 5.6.8.2 However, it is noted that the GFS Kai Tak Division (GFS KTD) is planned at the tip of the ex-Kai Tak Runway, which is about 1.5km to the south-east of the NAH site. GFS have confirmed that the flight paths of the proposed helipad and the GFS KTD would not overlap with each other concurrently for flight safety reasons. Communications between helicopters and the GFS control base will be on-going throughout all flight operations to ensure the availability of flight paths. Hence, cumulative helicopter noise impacts are not anticipated.

5.6.9 Evaluation of Residual Helicopter Noise Impacts

- 5.6.9.1 The proposed helipad has been designed and its operation has been planned in practicable manner to minimise helicopter noise impact. A new helicopter fleet with quieter operational noise levels has been adopted by the GFS. Flight sectors have

been chosen for helicopter movements and the flight paths have been designed to maintain buffer distances from the NSRs. With the implementation of the proposed practicable mitigation measures, including the setback of helipad, noise barrier and noise reducers, helicopter noise impacts on the representative NSRs have been mitigated as far as practicable. Also, the predicted helicopter noise levels comply with the relevant helicopter noise standard as detailed in **Table 5.2**.

- 5.6.9.2 Typical flight height of the GFS's helicopter during flyover is 1500ft above mean sea level and the duration of the flyover noise event is about 2-3 seconds. Under normal circumstances, the duration of helicopter idling at the proposed helipad will not be more than 5 minutes for casualty handover. Noise event of hovering at a height around 2.5m above the helipad will be within 5 seconds before touchdown or after lift-off.
- 5.6.9.3 The helicopter operation for emergency medical services provided by GFS occurs randomly over the year. With reference to the past helicopter flight records, the average number of daily emergency helicopter operation was less than one. The operation during daytime period is about once every one to two days on average, and the operation during evening and night-time period are expected not more than one flight in ten days and eight days on average respectively.
- 5.6.9.4 Based on the above, it is considered that all practicable noise mitigation measures have been exhausted and adopted in the operation design of the proposed helipad. Helicopter noise impacts have been minimised, and thus, adverse residual noise impacts are not anticipated during the operational phase of the Project.

5.6.10 Assessment of Side Effects and Constraints

- 5.6.10.1 Due to the inclusion of proposed noise barrier and noise reducers to the Project, potential visual and air quality impacts are identified as the potential side effects. Visual Impact Assessment for the Project and the associated structures, including the proposed noise barrier and noise reducers are detailed in **Section 7**. Air Quality Impact Assessment in **Section 3** has also taken into account the proposed noise barrier.
- 5.6.10.2 As mentioned in the **Section 5.6.5.1** and [Appendix 5H-3](#), GFS has no objection on the noise mitigation measures in terms of helicopter operation. Potential constraint on the NAH building itself and other developments nearby due to the inclusion of proposed noise barrier and noise reducers is not anticipated.

5.7 Environmental Monitoring and Audit

- 5.7.1.1 As no construction phase noise exceedances are anticipated, therefore, construction phase noise monitoring is not considered as being required. However, regular site inspections during the construction phase, of at least once per week, are recommended to ensure good working practices are being effectively implemented to minimise any construction noise as far as possible.
- 5.7.1.2 During the operational phase, with the implementation of mitigation measures, there would be no noise exceedances of the relevant noise criterion at the representative NSRs. Also, the proposed helipad is solely for emergency use only with no scheduled flights and the anticipated frequency of usage is less than once per day. As such, operational phase noise monitoring is not considered necessary.

- 5.7.1.3 The Environmental Monitoring and Audit (EM&A) requirements and implementation of noise mitigation measures are detailed in the stand-alone Project EM&A Manual.

5.8 Conclusions

- 5.8.1.1 The potential noise impacts associated with the Project in the construction and operational phases have been assessed.
- 5.8.1.2 The noise impacts arising from daytime construction activities for the Project have been evaluated. No evening or nighttime construction works will be scheduled. Cumulative construction noise impacts with concurrent project have also been considered. It is shown that the predicted noise levels at the one representative NSR will comply with the relevant construction noise criterion and no specific mitigation measures will be required. Nonetheless, the adoption of good site practices and use of quieter PMEs have been recommended to minimise the construction noise impacts. Hence, no adverse construction noise impacts are anticipated.
- 5.8.1.3 In the operational phase, the noise impacts arising from GFS's helicopter operation associated with the Project have been evaluated. The helicopter noise impact assessment was conducted using a conservative approach under the worst-case scenario. All practicable measures, including carefully chosen flight sectors and one-way-direction for approaching and take-off subject to flight condition, and maintaining buffer distance for flight paths to fly away from NSRs, have been utilized for helicopter operation. With the implementation of direct noise mitigation measures, including setback of helipad and installation of noise barrier and noise reducers, the helicopter noise impacts have been minimized, and the predicted helicopter noise levels at the representative NSRs are within the criteria in **Table 5.2**. Nonetheless, the emergency medical helicopter operation occurs randomly over the year, it is anticipated that the average helipad usage will be less than once per day, while the duration of each emergency use will be about 7 minutes as detailed in **Section 5.6.1.4**.
- 5.8.1.4 The proposed helipad in NAH will share the landing frequency for emergency medical services at the existing and planned helipad facilities at public hospitals. The Project enables point-to-point direct and speedy transfers of patients / survivors that require special care to the NAH. It is critical to lifesaving and significant for provision of timely treatment to patients. It is also an essential infrastructure development in Hong Kong to cater for the change in population and to maintain a high quality of medical services which shall be generally agreed by the public.

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

Appendix II

Replacement Pages of the Quantitative Risk Assessment for Dangerous Goods Godown

4.5 Outcome of hazardous material release

Leakage or rupture scenarios of storage equipment handling flammable and toxic materials can result in a flammable/ toxic gas cloud, which may be ignited if it encounters an ignition source while its concentration lies within the flammable range. In some cases, static discharge may also cause immediate ignition of flammable gas release. For the unignited case, a toxic dispersion cloud will be formed.

Hazardous scenarios evaluated in this QRA Study include:

- Flash fire;
- Pool fire;
- Fireball; and
- Toxic Impacts.

In events of jet fire impingement, pool fire engulfment and even vehicle fires, knock-on effect of the fires is possible to cause failure of other DG cylinder / containers in form of Boiling liquid expanding vapor explosion (BLEVE) or failure of containment. The outcomes of knock-on effect of fires are considered immediately ignited. Therefore, knock-on impact of LPG fire is considered in form of BLEVE of compressed cylinders resulting in multiple fireballs of LPG cylinders. While the knock-on impact of pentane fire is considered as loss of containment releasing addition inventory into fire to form large pool fire.

Vapour cloud explosion (VCE) may be resulted if a flammable vapour cloud is ignited in a congested / confined area. The probability of explosion in a delayed ignition depends on the degree of confinement. Considering that the Kerry DG Godown is located at harbour front with low level of confinement, vapour cloud explosion is considered unlikely to contribute significant structural damage to off-site building in cases of outdoor releases of flammable gas / liquid (i.e. D-LF-AE, D-LF-CE, D-PF-AE, D-PF-CE). Therefore, VCE is not further considered in this study.

other flammable inventories handling at the loading bay area [5]. A probability of 0.01 is also applied to reflect spillage failure of multiple cylinders [19].

5.3.3 Vehicle Fires

Frequency for vehicle fires including truck / forklift is estimated as 2.9×10^{-4} per vehicle year with a conservative assumption of 10 forklifts and 5 trucks at any time [5]. Account has also been taken for the operational hours of the warehouse, assuming operation 6 days per week for 12 hours a day.

The proportion of each flammable inventory type, i.e. 40 tonne Class 2.1 inventory and 8,015 tonne other flammable inventories, compared to the overall warehouse inventory is also taken into consideration for the frequency estimation.

Knock-on effect may lead to failure of more cylinders in the event of vehicle fire, leading to potential BLEVE outcomes in form of fireball for pressurised cylinders of Class 2.1 inventory, and pool fire for flammable liquid drum of other flammable inventory. The probabilities of the BLEVE outcomes including fireball resulting from multiple BLEVE of single cylinder failure at the same time, and a single large pool fire arising from the coalescence of multiple pool fires. The impact of the single large pool fire on vehicle is confined within site and has no offsite impact. Hence it is not further considered in this QRA study.

5.4 Toxic Warehouse Releases

Toxic hazards associated with combustion products from warehouse fires are considered. Additional scenarios were identified in **Table 8**, which relate to a loss of containment from pressurized toxic inventories (nominally Chlorine and Ammonia).

As mentioned in **Section 5.1**, the probability of storing toxic inventory is estimated to be 2.74×10^{-4} per year.

5.4.1 Loss of containment of single container in store (DG-CT-CI and DG-AT-CI)

The likelihood of a generic/spontaneous loss of pressurized toxic container has been taken as the rupture frequency for a single cylinder, which are taken as 6.8×10^{-6} per vessel year for Ammonia [5]. The instantaneous failure frequency of Chlorine is taken as 6.38×10^{-5} per vessel year for cylinder rupture and medium leak (7.5mm) failure [5].

200 Chlorine cylinders and 2,000 Ammonia cylinders are estimated based on the assumptions of maximum inventories of 10 tonne for Chlorine and 100 tonne for Ammonia, and nominally assuming 50 kg containers throughout.

5.4.2 Loss of containment of single container in loading bay (DG-CT-CE and DG-AT-CE)

For generic/spontaneous loss of containment of toxic pressurized cylinders in the loading bay, a similar approach to that described in **Section 5.4.1** has been applied, assuming generic failure rates of 6.8×10^{-6} per cylinder year for Ammonia and 6.38×10^{-5} per cylinder year for Chlorine. A nominal of 5 cylinders (250 kg) are assumed to be at the loading bay being handled at any one time for the chlorine and ammonia scenarios.

7.0 Risk Assessment

7.1 Risk Summation

Risk summation combines the likelihood and consequence of hazardous event, as well as meteorological data and population in the hazard effect zones, to give a numerical measure of risks around the DG Godown. The risk analysis is conducted by the simulation software – SAFETI 8.9 developed by DNV and the outcome results are presented in terms of IR contours and Societal Risk (as F-N curves). The risk outcomes are compared to the criteria set out in the risk guidelines, as specified in **Section 1.2.1**.

7.2 Results of Individual Risk

The IR contours for overall DG Godown and individual scenarios (LPG, Toxic, Warehouse Fire, and Pentane Fire) are presented in **Figure 4 - Figure 8**. The individual risk contour of 1×10^{-5} per year of the DG Godown is considered well confined within the site boundary of the DG Godown. The offsite risk of the DG Godown is less than 1×10^{-5} per year and thus, the criteria set in the Hong Kong Risk Guidelines is satisfied.

The individual risk level at the Application Site is between 1×10^{-6} to 1×10^{-8} per year.

7.3 Results of Societal Risk

The societal risk results of the overall DG Godown and individual scenarios (LPG, Toxic, Warehouse Fire, and Pentane Fire) are presented in the form of **Figure 9 to Figure 12** with detailed data presented in **Table 14** for comparison to the Government Risk Guidelines. Case 1 represents the risk level in year 2033 without redevelopment of the Proposed Development (i.e. as existing commercial building) while Case 2 represents the risk level in year 2032 with the construction of the Proposed Development, and Case 3 represents the risk level in year 2033 with the redevelopment of the Proposed Development.

The F-N curves of all cases fall within the “ACCEPTABLE” region and satisfy the requirement of the HKPSG. With implementation of the Proposed Development, the population brought by the Proposed Development cause slightly increase to the overall risk level of the DG Godown.

Table 14 F-N Data

No. of fatality	Frequency (per year)		
	Case 1 – Base Case in Year 2033	Case 2 - Construction Case in Year 2032	Case 3 – Operation Case in Year 2033
1	5.25E-07	5.17E-07	5.39E-07
2	3.77E-07	3.74E-07	4.05E-07
3	3.26E-07	3.23E-07	3.57E-07
4	2.78E-07	2.76E-07	3.13E-07
5	2.30E-07	2.28E-07	2.65E-07
6	1.86E-07	1.85E-07	2.18E-07
8	1.41E-07	1.41E-07	1.60E-07
10	1.20E-07	1.20E-07	1.29E-07

Table 15 Breakdown of PLL

Hazardous Scenario		Case 1 – Base Case		Case 2 – Construction Case		Case 3 – Operation Case	
		PLL (no. of fatality per year)	% of total PLL	PLL (no. of fatality per year)	% of total PLL	PLL (no. of fatality per year)	% of total PLL
D-PF-EX	Pentane fire loss of warehouse (building collapsed)	3.20E-06	45.92%	3.17E-06	46.09%	3.24E-06	42.48%
DG-CT-AE	Chlorine – loss of area external	1.07E-06	15.32%	1.06E-06	15.38%	1.19E-06	15.58%
DG-CT-AI	Chlorine – loss of area internal	9.63E-07	13.84%	9.47E-07	13.80%	1.13E-06	14.88%
D-WF-EX	Major warehouse fire (building collapsed)	6.19E-07	8.89%	5.99E-07	8.72%	8.53E-07	11.18%
DG-AT-AE	Ammonia – loss of area external	3.99E-07	5.73%	3.98E-07	5.80%	4.17E-07	5.47%
Others		7.16E-07	10.30%	7.01E-07	10.21%	7.94E-07	10.41%
Total PLL		6.96E-06	100%	6.87E-06	100%	7.63E-06	100%
Total PLL in Site 11a & 11b (existing land use of the Proposed Development)		1.87E-07	2.68%	-	-	-	-
Total PLL in the Proposed Development		-	-	8.24E-08	1.20%	9.26E-07	12.14%
Total PLL of other population		6.77E-06	97.32%	6.78E-06	98.80%	6.70E-06	87.86%

8.0 Conclusion

An Application Site at 8 Lam Chak Street, Kowloon – N.K.I.L. 6215 is proposed to convert from existing commercial use to comprehensive residential development. A Quantitative Risk Assessment (QRA) has studied the risk impact of a DG Godown, located at 7 Kai Hing Road, Kai Tak, posed to the surrounding populations to the surrounding population, including the additional population brought by the redevelopment of the Application Site.

The result revealed that the offsite individual risk of the DG Godown is below 1×10^{-5} per year, in which the individual risk at the Application Site is below 1×10^{-7} per year.

With the redevelopment of the Application Site, the societal risk of the DG Godown remains within "Acceptable" region of the criteria in the Hong Kong Risk Guidelines.

**Proposed Composite Development (with Flat and Retail/F&B)
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S16 Planning Application**

(Planning Application No: A/K22/50)

Appendix III

Revised Traffic Impact Assessment

**S16 Planning Application for
Proposed Composite Development of Harbourside HQ
at 8 Lam Chak Street, Kowloon – N.K.I.L. 6215**

Revised TIA Report

July 2026



CTA Consultants Limited

志達顧問有限公司



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Figure A Block Plan of Proposed Development

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APPENDIX

Appendix A Junction Calculation Sheets



1. INTRODUCTION

1.1 Background

1.1.1 CTA Consultants Limited was commissioned as the traffic consultant to prepare a Traffic Impact Assessment Report for proposed composite development of Harbourside HQ at 8 Lam Chak Street, Kowloon – N.K.I.L. 6215 (hereafter called “proposed development”).

1.1.2 The site is currently Harbourside HQ, a commercial building and is planned to demolish and redevelop into composite development of residential and commercial uses.

1.1.3 The location of the proposed development is shown in **Figure 1.1**.

1.2 Study Objectives

1.2.1 The main objectives of this study are as follows:

- To assess the existing traffic conditions in the vicinity of the proposed development;
- To forecast traffic demands on the adjacent road network in the design year;
- To estimate the likely traffic generated by the proposed development;
- To assess the impacts of traffic generated by the proposed development on the adjacent road network; and
- To recommend improvement measures, if necessary, to alleviate any traffic problems on the road network

2. THE DEVELOPMENT

2.1 Site Location

2.1.1 The proposed development is located at 8 Lam Chak Street, Kowloon – N.K.I.L. 6215, which is bounded by Kai Hing Road to the east, Lam Chak Street to the southwest, Cheung Yip Street to the west and Pacific Trade Centre to the north as shown in **Figure 1.1**.

2.1.2 The site is currently Harbourside HQ, a commercial building and is planned to demolish and redevelop into composite development of residential and commercial uses.

2.2 Proposed Development

2.2.1 Development parameters of the proposed development are summarized in **Table 2.1**.

Table 2.1 Development Parameters of the Proposed Development

Site Location	8 Lam Chak Street, Kowloon – N.K.I.L. 6215 (existing Harbourside HQ)
Proposed Use	Residential
Site Area	6,541m ²
No. of Towers	2
Number of Units	Flat size <40m ² : 498 nos. 40m ² <Flat size ≤70m ² : 642 nos. Total: 1,140 nos.
Non-domestic GFA	3,270.5 m ²

2.2.2 It is anticipated that the proposed development will be completed by 2033 tentatively. Therefore, design year 2036 (i.e. 3 years after the planned commencement year of the proposed development) is adopted assessments.

2.3 Proposed Access Road and Vehicular Access

2.3.1 Similar to the vehicular access of the existing site, the vehicular access of the proposed development will be located at Kai Hing Road. Location of the vehicular access is



shown diagrammatically in **Figure 2.1 (Rev B)**. The width of the vehicular access will be 7.3m. Swept path analysis demonstrates it is feasible to maneuver HGV in/out the proposed vehicular access is shown in **Figure SP-01 (Rev B)**.

2.4 Internal Transport Facilities Provision

2.4.1 According to the requirements as stipulated under the latest Hong Kong Planning Standards and Guidelines (HKPSG), the proposed development shall provide the following internal transport facilities as summarized in **Table 2.2**.

Table 2.2 Proposed Parking Provision

Development Parameters No. of Towers: 2 No. of Flats: 1,140 Retail GFA: 3,270.5m ²		Parking Requirement						Loading/Unloading Requirement	
Residential (Total Required)									
Average Flat Size (m ²)	No. of Flats	Private Car Parking Space (5m x 2.5m)						L/UL for Goods Vehicles (HGV: 11m x 3.5m)	
		Residents					Visitors		
		GPS 1 car space per 4-7 flats	R1	R2	R3	GPS x R1 x R2 x R3 ⁽¹⁾	More than 75 units per block should be provided at 5 visitor spaces per block		
FS<40	498	4-7	0.5	1.0	0.9	33 to 57	10	1 per 800 flats or part thereof, subject to a minimum of 1 bay for each housing block	2
40<FS≤70	642	4-7	1.2	1.0	0.9	100 to 174			
Total	1,140	-	-	-	-	143 to 241			
		Motorcycle Parking Space (2.4m x 1m)			Bicycle Parking Space				
		1 per 100-150 flats		8 to 12		within a 0.5-2km radius of a rail station, 1 bicycle parking space for every 15 flats with flat size smaller than 70m ²	76		



Development Parameters No. of Towers: 2 No. of Flats: 1,140 Retail GFA: 3,270.5m ²		Parking Requirement			Loading/Unloading Requirement	
Non-Residential (Total Required)						
Use	GFA	Private Car Parking Space (5m x 2.5m)		L/UL for Goods Vehicles		
Retail	GFA: 3,270.5m ²	1 car space per 150 - 300m ² GFA	11 to 22	1 loading/ unloading bay for goods vehicles for every 800 to 1,200m ² , or part thereof, GFA	3 to 5	
		Motorcycle Parking Space (2.4m x 1m)				
		5 to 10% of Total Provision for Private Cars	1 to 3			
Total (Residential + Non-residential)		Private Car Parking Space ⁽²⁾ (5m x 2.5m)	Bicycle Parking Space	Motorcycle Parking Space (2.4m x 1m)	L/UL for LGV (7m x 3.5m)	L/UL for HGV 11m x 3.5m)
Total Required	Residential	143 to 241	76	8 to 12	-	2
	Non- residential	11 to 22	-	1 to 3	2 to 3	1 to 2
	Total	154 to 263	76	9 to 15	2 to 3	3 to 4
Total Proposed	Residential	241	76	12	-	2
	Non- residential	22	-	3	3	2
	Total	263	76	15	3	4

Notes:

(1) GPS = Global Parking Standard; R1 = Demand Adjustment Ratio; R2 = Accessibility Adjustment Ratio; R3 = Development Intensity Adjustment Ratio.

(2) Including minimum 4 accessible car parking spaces for 251-350 car parking spaces.

2.5 Public Transport Services in the Vicinity

2.5.1 Numerous road-based public transport services are provided in vicinity of the proposed development. Details of the current services of franchised buses and GMB routes are listed in **Table 2.3 and Figure 2.2 (Rev A)**. It is revealed that the site is well-served by public transport services in the vicinity.

Table 2.3 Road-Based Public Transport Services in the Vicinity

Service	Route	Origin – Destination
Franchised Bus	5R ⁽¹⁾	Kwun Tong (APM) - Kai Tak Cruise Terminal
	14X ⁽¹⁾	Yau Tong (Shung Tak Wai) - Tsim Sha Tsui
	15A	Ping Tin - Tsz Wan Shan (north)
	16P	Kwun Tong Ferry - Mong Kok (Park Avenue)
	20A	High Speed Rail West Kowloon Station - Kai Tak Cruise Terminal
	22	Kowloon Tong (Festival Walk) - Kai Tak Cruise Terminal
	22M ⁽¹⁾	To Kwa Wan - Kai Tak Cruise Terminal
	38P	Ping Tin - Kwai Shing (Central)
	55	Kwun Tong Ferry - Tuen Mun (Ching Tin and Wo Tin)
	234D	Kwun Tong (Tsui Ping North Estate) - Tsing Lung Tau
	258X	Kwun Tong Ferry - Tuen Mun (Po Tin Estate)
	259X	Kwun Tong Ferry - Tuen Mun (Lung Mun Oasis)
	268P	Kwun Tong Ferry - Long Ping Station
	269S	Kwun Tong Ferry - Tin Shui Wai Town Centre
	797 ⁽¹⁾	LOHAS Park - San Po Kong
	E22S	Tseung Kwan O (Po Lam) - Tung Chung (Mun Tung Estate)
	X6C	Mei Foo - Hong Kong Children's Hospital
GMB	22A	Lok Wah Estate - Kwun Tong Ferry
	68 ⁽¹⁾	Choi Wan Estate - Kowloon Bay
	86 ⁽¹⁾	Cruise Terminal - Kowloon Bay (Telford Garden)
	88A ⁽¹⁾	Hong Kong Children's Hospital - Wong Tai Sin Station
	90A	Hong Kong Children's Hospital - Yau Tong (Yau Lai Estate)
	90B	Hong Kong Children's Hospital - Sau Mau Ping

Notes:

(1) Circular route.

3. THE EXISTING TRAFFIC CONDITIONS

3.1 Critical Junctions

3.1.1 As shown in **Figure 3.1 (Rev B)**, 8 junctions were identified to be critical for assessment of traffic impact due to the proposed development. They are listed in **Table 3.1** and their existing junction layout arrangements are shown in **Figures 3.2** to **3.9** respectively.

Table 3.1 Identified Critical Junctions

Ref.	Junction	Method of Control	Figure No.
A	Shun Yip Street/ Wai Yip Street	Signal	3.2
B	Hoi Bun Road/ Shun Yip Street	Signal	3.3
C	Kai Hing Road/ Hoi Bun Road	Signal	3.4
D	Hoi Bun Road/ Wang Chiu Road/ Cheung Yip Street	Signal	3.5
F	Cheung Yip Street/ Shing Cheong Road	Signal	3.6
G	Wang Chiu Road/ Sheung Yee Road	Signal	3.7
H	Shing Cheong Road/ Kai Tak Bridge Road	Roundabout	3.8
I	Shing Fung Road/Kai Tak Bridge Road	Signal	3.9

3.1.2 In order to establish the existing traffic condition in the above-mentioned critical junctions, traffic survey in form of manual classified count was conducted during the AM and PM peak periods (7:30am to 9:30am and 5:00pm to 7:00pm) on a typical weekday, 6 June 2025. Analysis of the existing traffic data indicates that the AM and PM peak hour flows occurred from 8:15am to 9:15am and 5:30pm to 6:30pm respectively. The existing traffic flows is presented in **Figure 3.10**.

3.1.3 Central Kowloon Bypass (Yau Ma Tei Section) was commissioned in December 2025. It is an alternative express route, alleviating the traffic congestion of the existing major east-west transport corridors in central Kowloon. It is noted that the Central Kowloon Bypass (Yau Ma Tei Section) was not opened at the time of traffic survey.

3.1.4 Existing operational performance of the identified critical junctions and road links were assessed. The results are summarized in **Table 3.2**, **Table 3.3** and the junction calculation sheets are attached in **Appendix A**.

Table 3.2 Junction Performance of Identified Critical Junctions in Year 2025

Junction	Junction Location	Method of Control	Year 2025 RC ⁽¹⁾ /RFC ⁽²⁾	
			AM Peak	PM Peak
A	Shun Yip Street/ Wai Yip Street	Signal	74%	66%
B	Hoi Bun Road/ Shun Yip Street	Signal	96%	58%
C	Kai Hing Road/ Hoi Bun Road	Signal	>100%	>100%
D	Hoi Bun Road/ Wang Chiu Road/ Cheung Yip Street	Signal	33%	51%
F	Cheung Yip Street/ Shing Cheong Road	Signal	>100%	>100%
G	Wang Chiu Road/ Sheung Yee Road	Signal	26%	27%
H	Shing Cheong Road/ Kai Tak Bridge Road	Roundabout	0.19	0.19
I	Shing Fung Road/Kai Tak Bridge Road	Signal	>100%	>100%

Note:

(1) RC = Reserve Capacity for Signalized Junction

RFC = Ratio of Flow to Capacity for Priority Junction

3.1.5 The assessment results in **Table 3.2** indicate that all critical junctions are at present operating within their capacities during peak hours.

4. THE FUTURE TRAFFIC CONDITIONS

4.1 Design Year

- 4.1.1 The proposed development is anticipated to be completed by year 2033 tentatively. Year 2036 (i.e. 3 years after completion) is therefore adopted as the design year for assessment purpose.

4.2 Future Road Network

- 4.2.1 It is understood that few road works are planned and currently under construction in Kowloon Bay and Kai Tak Development Area.
- 4.2.2 The Kai Tak Development Area spanned a total planning area of over 320 hectares, covering a mix of community, housing, business, tourism and infrastructural uses.
- 4.2.3 The Trunk Road T2 (Kai Tak to Cha Kwo Ling) connects CKR to the west and the main tunnel of the Tseung Kwan O – Lam Tin Tunnel (TKO-LTT) to the east, anticipated to be completed in year 2026.
- 4.2.4 The Smart and Green Mass Transit System in Kai Tak is about 3.5 km mass transit system in Kai Tak. It serves as a light and green feeder service to nearby railway station within the area to strengthen connections among the residential and commercial developments, facilities focused on tourism, culture and recreation, sports and the community within the area, as well as the connection with the railway network, anticipated to be completed in year 2031.

4.3 Planned Junction Layout under Planned Project

- 4.3.1 Junction Hoi Bun Road/ Shun Yip Street (B), Junction Hoi Bun Road/ Wang Chiu Road/ Cheung Yip Street (D), Junction Wang Chiu Road/ Sheung Yee Road (G) and will be modified under KBAA Project and the details are presented in **Table 4.1**, **Figure 4.1** to **Figure 4.3** respectively. Junction Shing Cheong Road/ Kai Tak Bridge Road (H) will be modified by CEDD and presented in **Figure 4.4**. It is anticipated that

all improvement works would be completed before 2033 (the commissioned year of the proposed development), hence it is assumed that the planned junction layouts would be in place for reference and design years for the assessments.

Table 4.1 Planned Junction Layouts under Planned Development

Ref.	Junction	Detail	Anticipated Completion Year
B	Hoi Bun Road/ Shun Yip Street	As shown in Figure 4.1	2031
D	Hoi Bun Road/ Wang Chiu Road/ Cheung Yip Street	As shown in Figure 4.2	2031
G	Wang Chiu Road/ Sheung Yee Road	As shown in Figure 4.3	2031
H	Shing Cheong Road/ Kai Tak Bridge Road	As shown in Figure 4.4	2026

4.4 Traffic Generations and Attractions of Proposed Development

4.4.1 The site is existing Harbourside HQ, a grade A office building currently in operation. The trips of the traffic generation and attraction of existing use has been made reference to the trip generation rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of the latest T.P.D.M. published by Transport Department summarized in **Table 4.2**.

Table 4.2 Traffic Generation and Attraction of Existing Use

Existing Use	Unit	AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
Commercial (~65,000m²)	pcu/hr/100m ²	0.2296	0.2434	0.31	0.3563
	pcu/hr	111	160	103	77

4.4.2 To estimate the traffic generation and attraction of the proposed development, reference has been made to the trip generation rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of the latest T.P.D.M. published by Transport Department. The adopted trip rates are summarized in **Table 4.3**.

Table 4.3 Trip Rates of Proposed Development

Development Parameters	Unit	AM Peak		PM Peak	
		Generation	Attraction	Generation	Attraction
Residential	pcu/hr/flat	0.0718	0.0425	0.0286	0.0370
Retail	pcu/hr/100m ²	0.2296	0.2434	0.3100	0.3563

4.4.3 Based on **Table 2.1** and **Table 4.3**, the estimated traffic generation and attraction due to the proposed development are summarized in **Table 4.4**.

Table 4.4 Estimated Traffic Generation and Attraction of Proposed Development

Development Parameters		AM Peak		PM Peak	
		Generation (pcu/hr)	Attraction (pcu/hr)	Generation (pcu/hr)	Attraction (pcu/hr)
Residential	1,140 units	82	49	33	43
Retail	3,270.5m ²	8	8	11	12
Total	-	90	57	44	55

4.4.4 It is anticipated that the proposed development would generate and attract 90 pcu/hr and 57 pcu/hr during AM peak hour respectively, and generate and attract 44 pcu/hr and 55 pcu/hr during PM peak hour respectively.

4.4.5 Based on the overall traffic generation listed in **Table 4.2** and **Table 4.4**, difference of the trip generation and attraction between the existing use and the proposed development is summarized in **Table 4.5**.

Table 4.5 Difference of Traffic Generation and Attraction between Existing Use and Proposed Development

Development Parameters	AM Peak		PM Peak	
	Generation (pcu/hr)	Attraction (pcu/hr)	Generation (pcu/hr)	Attraction (pcu/hr)
Existing Use [A]	111	160	103	77
Proposed Development [B]	90	57	44	55
Net Difference [B] – [A]	-21 (say -20)	-103 (say -100)	-59 (say -60)	-22 (say -20)

- 4.4.6 Comparing with the existing commercial use, it is anticipated that the proposed development would generate and attract -21 pcu/hr and -103 pcu/hr during AM peak hour respectively, and generate and attract -59 pcu/hr and -22 pcu/hr during PM peak hour respectively.

4.5 Reference Traffic Flows

- 4.5.1 Due to the changes in road network in the coming years mentioned in **Section 4.2**, the future traffic flows cannot simply forecasted by growth factor. In view of the reduction of traffic flows to the adjacent road network due to the proposed development and the complexity of the traffic modelling due to the future road network, reference traffic flows of this TIA for 2036 has made reference to 2036 design traffic flows of the recent approved planning application (approved in 2025) for the Proposed Minor Relaxation of PR and BH Restrictions for Permitted Private Housing Development with Proposed Eating Place, Shop and Services and Social Welfare Facilities at Kai Tak Area 3E Sites 1 and 2 by CEDD (adjacent site of the proposed development).
- 4.5.2 2036 design traffic flows of the abovementioned study has been adopted as 2036 reference traffic flows of this TIA and presented diagrammatically in **Figure 4.5**.

4.6 Design Traffic Flows

- 4.6.1 The future traffic generations of the proposed development were then assigned onto the road network and superimposed onto the 2036 reference traffic flows (without proposed development) to derive the 2036 design traffic forecasts (with proposed development).

$$\begin{array}{l} \text{2036 Design Traffic Flows} \\ \text{(With Proposed} \\ \text{Development)} \end{array} = \begin{array}{l} \text{2036 Reference Traffic Flows} \\ \text{(Without Proposed} \\ \text{Development)} \end{array} + \begin{array}{l} \text{Proposed} \\ \text{Development} \\ \text{Traffic Flows} \end{array}$$



4.6.2 Year 2036 development traffic flow attraction and generation, and design traffic flows (with proposed development) are shown in **Figure 4.6**, **Figure 4.7 (Rev A)** and **Figure 4.8** respectively.

5. TRAFFIC IMPACT ASSESSMENT

5.1 Operational Assessment

5.1.1 To assess the potential traffic impact due to the proposed development, capacity analysis of the identified critical junction and road links for both reference (without proposed development) and design scenarios (with proposed development) in year 2036 were carried out. The results are summarized in **Table 5.1**, **Table 5.2** and the junction calculation sheets are attached in **Appendix A**.

**Table 5.1 Junction Performance of Identified Critical Junctions in Year 2036
(With and Without Proposed Development)**

Ref.	Junction	Method of Control	Year 2036 RC/RFC ⁽¹⁾			
			Reference Scenario (Without Proposed Development)		Design Scenario (With Proposed Development)	
			AM Peak	PM Peak	AM Peak	PM Peak
A	Shun Yip Street/ Wai Yip Street	Signal	65%	81%	66%	84%
B ⁽²⁾	Hoi Bun Road/ Shun Yip Street	Signal	58%	72%	59%	75%
C	Kai Hing Road/ Hoi Bun Road	Signal	27%	74%	28%	80%
D ⁽²⁾	Hoi Bun Road/ Wang Chiu Road/ Cheung Yip Street	Signal	16%	16%	22%	18%
F	Cheung Yip Street/ Shing Cheong Road	Signal	67%	43%	67%	44%
G ⁽²⁾	Wang Chiu Road/ Sheung Yee Road	Signal	16%	15%	18%	17%
H ⁽²⁾	Shing Cheong Road/ Kai Tak Bridge Road	Roundabout	0.65	0.59	0.65	0.59
I	Shing Fung Road/Kai Tak Bridge Road	Signal	16%	16%	16%	16%

Notes:

(1) RC = Reserve Capacity for Signalized Junction

RFC = Ratio of Flow to Capacity for Priority Junction

(2) Reference has been made to the planned junction improvement works mentioned in **Section 4.5**.



- 5.1.2 The assessment results in **Table 5.1** revealed that all critical junctions would still operate within their capacities in both reference scenario (without proposed development) and design scenario (with proposed development) in 2036 during the peak hours.
- 5.1.3 Queue length assessments of the critical signalized junctions are carried out for both reference scenario (without proposed development) and design scenario (with proposed development) in year 2036. The results are summarized in **Table 5.2** and **Table 5.3** respectively.



**Table 5.2 Average Queue Length of Identified Critical Signalized Junctions
in Year 2036 - Without Proposed Development**

Ref	Junction	Direction	Length of Road Segment (m)	Year 2036 Reference scenario (Without Proposed Development) Queue Length (m)	
				AM Peak Hour	PM Peak Hour
A	Wai Yip Street/ Shun Yip Street	Wai Yip Street (EB)	60	55	55
		Wai Yip Street WB (ST)	300	41	47
		Shun Yip Street SB (LT & RT)	50	39	46
B	Ho Bun Road / Shun Yip Street	Ho Bun Road WB (RT)	90	41	85
		Ho Bun Road WB (ST)	90	55	80
		Ho Bun Road EB (LT & ST)	80	57	76
C	Kai Hing Street / Hoi Bun Road	Hoi Bun Road EB (ST)	150	59	53
		Hoi Bun Road WB (ST)	60	41	37
		Kai Hing Road NB (LT & RT)	150	33	26
D	Wang Chiu Road / Hoi Bun Road / Cheung Yip Street	Wang Chiu Road EB (ST & RT)	195	66	62
		Hoi Bun Road WB (ST)	130	34	45
		Hoi Bun Road WB (LT)	130	31	25
		Cheung Yip Street NB (LT)	180	62	57
		Cheung Yip Street NB (RT)	180	53	51
E	Cheung Yip Street/ Shing Cheong Road	Shing Cheong Road EB (LT)	270	37	49
		Shing Cheong Road EB (RT)	270	8	6



Ref	Junction	Direction	Length of Road Segment (m)	Year 2036 Reference scenario (Without Proposed Development) Queue Length (m)	
				AM Peak Hour	PM Peak Hour
		Cheung Yip Street NB (LT & ST)	25	6	15
		Cheung Yip Street SB (RT & ST)	90	41	48
G	Wang Chiu Road / Sheung Yee Road	Sheung Yee Road EB (LT & ST & RT)	90	45	58
		Wang Chiu Road NB (ST)	100	45	57
		Wang Chiu Road NB (RT)	100	47	58
		Wang Chiu Road SB (LT & ST)	80	51	41
		Sheung Yee Road WB (LT & RT)	40	31	32
I	Shing Fung Road/Kai Tak Bridge Road	Shing Fung Road WB (ST)	130	25	15
		Shing Fung Road WB (RT)	130	27	20
		Kai Tak Bridge Road SB (LT)	300	21	16
		Kai Tak Bridge Road SB (RT)	300	15	14
		Shing Fung Road EB (LT & ST)	170	21	18



**Table 5.3 Average Queue Length of Identified Critical Signalized Junctions
in Year 2036 - With Proposed Development**

Ref	Junction	Direction	Length of Road Segment (m)	Year 2036 Design Scenario (With Proposed Development) Queue Length (m)	
				AM Peak Hour	PM Peak Hour
A	Wai Yip Street/ Shun Yip Street	Wai Yip Street (EB)	60	55	55
		Wai Yip Street WB (ST)	300	41	47
		Shun Yip Street SB (LT & RT)	50	39	45
B	Ho Bun Road / Shun Yip Street	Ho Bun Road WB (RT)	90	41	82
		Ho Bun Road WB (ST)	90	54	76
		Ho Bun Road EB (LT & ST)	80	56	74
C	Kai Hing Street / Hoi Bun Road	Hoi Bun Road EB (ST)	150	59	51
		Hoi Bun Road WB (ST)	60	39	36
		Kai Hing Road NB (LT & RT)	150	32	22
D	Wang Chiu Road / Hoi Bun Road / Cheung Yip Street	Wang Chiu Road EB (ST & RT)	195	64	61
		Hoi Bun Road WB (ST)	130	32	42
		Hoi Bun Road WB (LT)	130	29	23
		Cheung Yip Street NB (LT)	180	59	56
		Cheung Yip Street NB (RT)	180	52	50
F	Cheung Yip Street/ Shing Cheong Road	Shing Cheong Road EB (LT)	270	37	48
		Shing Cheong Road EB (RT)	270	8	6

Ref	Junction	Direction	Length of Road Segment (m)	Year 2036 Design Scenario (With Proposed Development) Queue Length (m)	
				AM Peak Hour	PM Peak Hour
		Cheung Yip Street NB (LT & ST)	25	6	15
		Cheung Yip Street SB (RT & ST)	90	41	47
G	Wang Chiu Road / Sheung Yee Road	Sheung Yee Road EB (LT & ST & RT)	90	44	57
		Wang Chiu Road NB (ST)	100	45	57
		Wang Chiu Road NB (RT)	100	46	56
		Wang Chiu Road SB (LT & ST)	80	49	41
		Sheung Yee Road WB (LT & RT)	40	31	32
I	Shing Fung Road/Kai Tak Bridge Road	Shing Fung Road WB (ST)	130	25	15
		Shing Fung Road WB (RT)	130	27	20
		Kai Tak Bridge Road SB (LT)	300	21	16
		Kai Tak Bridge Road SB (RT)	300	15	14
		Shing Fung Road EB (LT & ST)	170	21	18

5.1.4 **Table 5.2** and **Table 5.3** revealed that the queue length of the critical junction in both reference scenario (without proposed development) and design scenario (with proposed development) in 2036 during the peak hours will be within their available length of road segment in both reference scenario (without proposed development) and design scenario (with proposed development). Queue lengths at these junctions could be more or less be cleared shortly.

6. PUBLIC TRANSPORT ASSESSMENT

6.1 Public Transport Demand in Year 2036

6.1.1 Reference is made to the modal split from Census 2021 published by Census and Statistics Department as shown in **Table 6.1** and **Table 6.2** to derive the estimated public transport demand due to the proposed development.

Table 6.1 Working Population for Main Mode of Transport to Place of Work in Kwun Tong Area

Mode	No. of Persons ⁽¹⁾	%
MTR (Local line)	99,580	43.2%
Bus	68,140	29.6%
Walk	24,659	10.7%
Private car	7,322	3.2%
PLB	19,054	8.3%
Company bus/Van	5,781	2.5%
Taxi	1,844	0.8%
Residential Service	1,597	0.7%
Ferry	429	0.2%
Others	1,943	0.8%
Total	230,349	100%

Note:

(1) From Census 2021 Table C204.

Table 6.2 Working District of Working Population in Kwun Tong

Location	%
Work in the same district	29.2%
Hong Kong Island	26.0%
Kowloon	25.8%
Work in another district (New Towns)	15.2%
Work in another district (Other areas in the New Territories)	3.9%
Total	100%

Note:

(1) From Census 2021 Table C204.

6.1.2 The calculation of peak hour trips for public transport services is summarized in **Table 6.3**.

Table 6.3 Calculation of Peak Hour Trips of Public Transport Services

Calculation	Results
No. of Flats	1,140
Average household size	2.7 ppl/unit ⁽¹⁾
Total Population	~3,078
Trip Rate per Person	1.69 ⁽²⁾
Daily trips generated from proposed development	= 3,078 ppl x 1.69 = 5,202 passengers
% of Daily trips in peak hours	AM Peak Hour: 13% ⁽³⁾ PM Peak Hour: 14% ⁽³⁾
Peak hour Passenger trips	AM Peak Hour: = 5,202 passengers x 13% = 677 passengers/hr PM Peak Hour: = 5,202 passengers x 14% = 729 passengers/hr

Notes:

(1) Extracted from E2.2 of Travel Characteristics Survey (TCS) Report 2022.

(2) Extracted from Table E.2 of TCS Report 2022.

(3) Extracted from E2.13 of TCS Report 2022.

6.1.3 The calculation of peak hour trips for public transport services by mode is summarized in **Table 6.4**. With consideration that the site is located at a distance from nearby MTR stations, passengers taking MTR are expected to take bus/GMB then interchange with MTR station and taken into consideration in calculation of public transport service for the proposed development.

6.1.4 Since bus and PLB of the surveyed bus stops for public transport assessment have similar destination groups, passengers tend to board the public transport mode whichever arrive first, therefore bus and PLB are assessed as one category.

Table 6.4 Calculation of Peak Hour Trips of Public Transport Services by Mode

Peak hour Passenger trips for Public Transport by Mode	%	AM Peak Hour		PM Peak Hour	
		GEN	ATT	GEN	ATT
Bus and PLB	81.1% ⁽¹⁾	= 677 x 81.1% = 550	= 677 x 81.1% = 550	= 729 x 81.1% = 592	= 729 x 81.1% = 592

Notes:

(1) From Table 6.1, MTR 43.2% + bus 29.6% + PLB 8.3% = 81.1%.

6.2 Survey on Existing Public Transport Service in the Vicinity

6.2.1 Existing bus/PLB stops to be assessed on impacts due to the proposed development is shown in **Figure 2.2 (Rev A)**, which is expected to serve the residents of the proposed development.

6.2.2 A preliminary and localized public transport survey was carried out. The survey was carried out during the morning peak period and evening peak periods (7:30am to 9:30am and 5:00pm to 7:00pm) on a typical weekday on 16 October 2025.

6.2.3 **Table 6.5** summarized the walking distance and walking time from the proposed development to the public transport stops (A to F).

Table 6.5 Walking Distance and Time between Proposed Development and Different Public Transport Stops

Stop	Approximate Walking Distance (m)	Approximate Time (min)
A	390	6
B	320	5
C	210	3
D	120	2
E	320	5
F	320	5

- 6.2.4 It is assumed that there is no boarding passengers from the proposed development at bus stops towards Kai Tak runway development, i.e. Hong Kong Children's Hospital, Shing Cheong Road WB (Stop A) and Cheung Yip Street near Harbourside SB (Stop D), therefore these two bus stops would not be assessed.
- 6.2.5 As stipulated in the TPDM, the ideal walking distance to a bus stop should not exceed 400m in urban areas, therefore Stops B, C, E and F would be included in the assessment.
- 6.2.6 The bus stops information and finding are presented in **Table 6.6** and **Table 6.7**. The surveyed bus frequencies as in **Table 6.7** have been checked and are within the normal schedule range during peak periods listed in bus company's website.

Table 6.6 Bus/PLB Stops Information

Bus Stop B: Hong Kong Children's Hospital, Shing Cheong Road EB			
Mode	Route No.	Origin	Destination
Bus	5R	Kai Tak Cruise Terminal	Kwun Tong (APM)
	22	Kai Tak Cruise Terminal	Kowloon Tong (Festival Walk)
	22M	Kai Tak Cruise Terminal	To Kwa Wan
	X6C	Hong Kong Children's Hospital	Mei Foo

Bus Stop C: Cheung Yip Street near Kai Tak Fire Station NB			
Mode	Route No.	Origin	Destination
GMB	22A	Lok Wah Estate	Kwun Tong Ferry
	86	Cruise Terminal	Kowloon Bay (Telford Garden)
	88A	Hong Kong Children's Hospital	Wong Tai Sin Station
	90A	Hong Kong Children's Hospital	Yau Tong (Yau Lai Estate)
	90B	Hong Kong Children's Hospital	Sau Mau Ping

Bus Stop E: Kwun Tong Promenade, Hoi Bun Road WB			
Mode	Route No.	Origin	Destination
Bus	14X	Yau Tong (Shung Tak Wai)	Tsim Sha Tsui
	15A	Ping Tin	Tsz Wan Shan (north)
	16P	Kwun Tong Ferry	Mong Kok (Park Avenue)
	38P	Ping Tin	Kwai Shing (Central)
	55	Kwun Tong Ferry	Tuen Mun (Ching Tin and Wo Tin)
	234D	Kwun Tong (Tsui Ping North Estate)	Tsing Lung Tau
	258X	Kwun Tong Ferry	Tuen Mun (Po Tin Estate)
	259X	Kwun Tong Ferry	Tuen Mun (Lung Mun Oasis)
	268P	Kwun Tong Ferry	Long Ping Station
	269S	Kwun Tong Ferry	Tin Shui Wai Town Centre
	797	LOHAS Park	San Po Kong
	E22S	Tseung Kwan O (Po Lam)	Tung Chung (Mun Tung Estate)

Bus Stop F: Hoi Bun Road Park, Hoi Bun Road EB			
Mode	Route No.	Origin	Destination
Bus	5R ⁽¹⁾	Kai Tak Cruise Terminal	Kwun Tong (APM)
	E22S	Tung Chung	Tseung Kwan O (Po Lam)

Note:

(1) Bus route no. 5R would observe bus stop B then bus stop F, passengers tend to go to the earlier arriving bus stop along the bus route, therefore assessment at bus stop F would be omitted.

Table 6.7 Observed Occupancy of Existing Bus/PLB Stops during AM and PM Peak Hours

AM Peak Hour								
Mode	Bus Destination Location Group	Route No.	Observed Vehicular Trips/hr [A]	Total Approx. passengers on board arriving bus stop/hr [B]	Boarding		Total No. of Alighting Passengers/hr (by route) [D]	Total Surplus Capacity/hr
					Total No. of Boarding Passengers/hr (by route)	Total No. of Boarding Passengers/hr (by Bus Destination Location Group) [C]		
Bus Stop B: Hong Kong Children's Hospital, Shing Cheong Road EB								
Bus	Work in the same district & Hong Kong Island	5R	3	36	3	3	0	321
	Kowloon	22	2	24	0	3	0	669
		22M	2	24	2		0	
		X6C	2	0	1		0	
	Sub-total	-	-	-	6	6	-	-
GMB Stop C: Cheung Yip Street near Kai Tak Fire Station NB								
GMB	Work in the same district & Hong Kong Island	86	12	50	0	0	0	298
		22A	5	3	0		0	
		90A	2	1	0		0	
		90B	3	0	0		0	
	Kowloon	88A	2	0	0	0	0	32
	Sub-total	-	-	-	0	0	-	-
Bus Stop E: Kwun Tong Promenade, Hoi Bun Road WB								
Bus	Kowloon	797	3	300	0	1	116	373
		14X	2	156	1		24	
		15A	2	180	0		30	
	Sub-total	-	-	-	1	1	-	-
Bus Stop F: Hoi Bun Road Park, Hoi Bun Road EB								
Bus	Work in another district (New Towns)	E22S	3	252	4	4	62	166
	Sub-total	-	-	-	4	4	-	-
Total	-	-	-	-	11	11	-	-



PM Peak Hour								
Mode	Bus Destination Location Group	Route No.	Observed Vehicular Trips/hr [A]	Total Approx. passengers on board arriving bus stop/hr [B]	Boarding		Total No. of Alighting Passengers/hr (by route) [D]	Total Surplus Capacity/hr
					Total No. of Boarding Passengers/hr (by route)	Total No. of Boarding Passengers/hr (by Bus Destination Location Group) [C]		
Bus Stop B: Hong Kong Children's Hospital, Shing Cheong Road EB								
Bus	Work in the same district & Hong Kong Island	5R	3	168	53	53	0	139
	Kowloon	22	3	48	34	94	0	794
		22M	2	24	24		0	
		X6C	3	0	36		0	
	Sub-total	-	-	-	147	147	-	-
GMB Stop C: Cheung Yip Street near Kai Tak Fire Station NB								
GMB	Work in the same district & Hong Kong Island	86	13	206	1	4	0	7
		22A	3	33	3		0	
		90A	1	16	0		0	
		90B	4	70	0		0	
	Kowloon	88A	3	33	0	0	0	15
	Sub-total	-	-	-	4	4	-	-
Bus Stop E: Kwun Tong Promenade, Hoi Bun Road WB								
Bus	Kowloon	15A	3	144	12	74	0	670
		797	3	36	5		0	
		14X	2	144	55		0	
		16P	1	12	2		0	
	Work in another district (New Towns)	55	3	84	9	105	0	855
		258X	1	12	11		0	
		259X	2	120	9		0	
		268P	2	120	26		0	
		269S	3	84	32		0	
		E22S	1	60	18		0	



PM Peak Hour								
Mode	Bus Destination Location Group	Route No.	Observed Vehicular Trips/hr [A]	Total Approx. passengers on board arriving bus stop/hr [B]	Boarding		Total No. of Alighting Passengers/hr (by route) [D]	Total Surplus Capacity/hr
					Total No. of Boarding Passengers/hr (by route)	Total No. of Boarding Passengers/hr (by Bus Destination Location Group) [C]		
	Work in another district (Other areas in the New Territories)	38P	1	12	10	21	0	147
		234D	1	60	11		0	
		Sub-total	-	-	200	200	-	-
	Total	-	-	-	351	351	-	-

Notes:

- (1) Assumed 120-seat for all franchised bus services.
- (2) Assumed 16-seat for all GMB service.

6.3 Future Public Transport Service in the Vicinity

- 6.3.1 It is noted that the Kai Tak Hospital will tentatively scheduled to open in October 2026, its travel demand is the largest individual development adjacent to the proposed development and the growth rate may not cover the travel demand, therefore the passenger demand of the Kai Tak Hospital has to take into account. It is anticipated that the majority of passenger trips generated by the Kai Tak Hospital will depend on public transport services.
- 6.3.2 According to LCQ8 New Acute Hospital in Kai Tak (i.e. Kai Tak Hospital) dated 14 May 2025, most of the clinical in-patient services of the Queen Elizabeth Hospital (QEH), including the accident and emergency (A&E) services, will be relocated to the Kai Tak Hospital while the Ambulatory Care Centre Extension of the QEH will remain at the King's Park site.
- 6.3.3 There will be 2,400 beds when in full operation. It is estimated that about 2,000 to 3,000 people entering and leaving the Kai Tak Hospital daily in the first phase.
- 6.3.4 A preliminary and localized public transport survey was carried out during the morning peak period and evening peak periods (7:30am to 9:30am and 5:00pm to 7:00pm) on a typical weekday on 23 January 2026 for bus/PLB stops near Queen Elizabeth Hospital.
- 6.3.5 In view of the close proximity between QEH and Jordan MTR station, a much higher ratio of staff, patients and visitors would therefore take MTR and walk to the hospital directly. As the Kai Tak Hospital is further away from the MTR station(s), the staff, patients and visitors are expected to be more rely on the feeder services connecting to the MTR station. Therefore the assessment would also take into account the passengers taking MTR to QEH. According to Travel Characteristics Survey 2022 published by the Transport Department, bus/PLB accounted a total of 37% (i.e. 26% for bus and 11% for PLB) and railway accounted for 35%. Therefore the estimated number of boarding passengers of bus/PLB for QEH would be doubled as reference for the Kai Tak Hospital.
- 6.3.6 The bus destination location groups for bus/PLB stops near Queen Elizabeth Hospital can be classified as Queen Elizabeth Hospital, Kowloon/HK Island. For assessment

purpose, the counts for Queen Elizabeth Hospital (within short walking distance) would be omitted. It is assumed the remaining boarding passengers will share the equally among the bus/PLB stops for easy assessment purpose as shown in **Table 6.11**.

- 6.3.7 In view of the increasing population intake of the residential development of Kai Tak Runway area, its estimated number of boarding passengers of bus/PLB would be also be included for the assessment.
- 6.3.8 The estimated number of boarding passengers of the Kai Tak Hospital and the residential development of Kai Tak Runway area would be included in 2036 reference passenger flows (without proposed development) in the assessment.
- 6.3.9 According to “*Legco CB(2)1454/2024(02) Administration's response to issues raised at the meeting on 7 October 2024*”, TD has planned two new bus routes in view of development of Kai Tak Runway area in-take rate: bus route no. 20X between Kai Tak Cruise Terminal and Tsim Sha Tsui (Circular) (headway of 20min-30min in peak hour) and bus route no. 22S between Kai Tak Cruise Terminal and Kai Tak PTI (headway of 15min-20min in peak hour). The planned assumptions would be included in the assessments for Stop B (i.e. Hong Kong Children's Hospital, Shing Cheong Road EB). It is assumed that the passenger loading arriving at Stop B similar to the survey result for the existing bus route no. 20A.

6.4 Traffic Forecasts

Estimated Traffic Growth Rate for Public Transport Survey Data from 2025 to 2035

- 6.4.1 Reference is made to the 2021-based Territorial Population and Employment Data Matrix (“TPEDM”) data produced by the Planning Department for Kwun Tong District, which are for 2021, 2026 and 2031 and are presented in **Table 6.8**.

Table 6.8 2021-Based TPEDM Data Produced by Planning Department for Kwun Tong District

Kwun Tong	TPEDM Planning Data from 2021 to 2031		
Year	2021	2026	2031
Population	673,150	682,500	690,750
Employment	395,900	400,050	441,300
Total	1,069,050	1,082,550	1,132,050
Avg. Annual Growth Rate	-	From 2021 to 2026: <u>+0.25%</u> From 2021 to 2031: <u>+0.57%</u>	From 2026 to 2031: <u>+0.9%</u>

6.4.2 Based the result shown in **Table 6.8**, the planning data indicates that the highest total population and employment data of the study area is expected to grow with an average annual growth rate of +0.90% from 2026 to 2031. As a conservative approach, annual growth rate of +1% per annum is adopted for forecasting future passenger flows.

6.4.3 Based on the observed passenger flows, the adopted growth rate of +1%, the future reference passenger flows (without proposed development) in Year 2036 are estimated and summarized in the equation below:

$$\begin{array}{l}
 \text{2036 Reference Passenger Flows (Without Proposed Development)} \\
 = (\text{2025 Passenger Flows} \times \text{Adopted Growth Factor (i.e. +1 \%^{(1)} p.a. for 11 years)}) + \text{Passenger Flows of Planned Adjacent Development}
 \end{array}$$

Notes:

(1) From **Para. 6.4.2**.

6.4.4 The passenger flows generated by the proposed development was then superimposed onto the 2036 reference passenger flows including the passenger flows of the estimated Kai Tak (without proposed development) to derive the 2036 design passenger flows (with proposed development).

$$\begin{array}{l}
 \text{2036 Design Passenger Flows (With Proposed Development)} \\
 = \text{2036 Reference Passenger Flows (without proposed development)} + \text{Proposed Development Passenger Flows}
 \end{array}$$

6.4.5 Since the current developments along Shing Cheong Road or Hoi Bun Road are not residential development, the traveling and transportation demand have made reference to Census 2021.

6.4.6 It is assumed that the passengers to take public transport to/from Kowloon Bay or Kwun Tong and interchange MTR to Hong Kong Island, therefore the public transport to Kowloon Bay and Kwun Tong would be categorized as “Work in the same district” and “Hong Kong Island”. For calculation purposes, the abovementioned categories would be assessed as one category.

6.4.7 Based on **Table 6.2** and **Table 6.4**, the estimated number of boarding passenger from the proposed development by locations is shown in **Table 6.9**.

Table 6.9 Estimated Boarding Passengers of Proposed Development by Locations

Location	% ⁽¹⁾	AM Peak Hour	PM Peak Hour
Work in the same district + Hong Kong Island	55.2%	304	327
Kowloon	25.8%	142	152
Work in another district (New Towns)	15.2%	83	90
Work in another district (Other areas in the New Territories)	3.9%	21	23
Total	100%	550⁽²⁾	592⁽²⁾

Notes:

(1) From **Table 6.2**.

(2) From **Table 6.4**.

6.4.8 Based on **Table 6.7** and **Table 6.9**, the estimated number of boarding passenger from the proposed development by public transport stops is shown in **Table 6.10**.

Table 6.10 Estimated Boarding Passengers of Proposed Development by Public Transport Stops

Bus Destination Location Group	Peak Hour	Existing Boarding Passengers by Stops					%					Estimated Boarding Passengers of Proposed Development by Stops				
		B	C	E	F	Total	B	C	E	F	Total	B	C	E	F	Total
Work in the same district & Hong Kong Island	AM	3	0	0	0	3	100%	0%	0%	0%	100%	304	0	0	0	304
	PM	53	4	0	0	57	93%	7%	0%	0%	100%	305	23	0	0	328
Kowloon	AM	3	0	1	0	4	75%	0%	25%	0%	100%	107	0	36	0	142
	PM	94	0	74	0	168	56%	0%	44%	0%	100%	85	0	67	0	152
Work in another district (New Towns)	AM	0	0	0	4	4	0%	0%	0%	100%	100%	0	0	0	104	104 ⁽¹⁾
	PM	0	0	105	0	105	0%	0%	100%	0%	100%	0	0	90	0	90
Work in another district (Other areas in the New Territories)	AM	0	0	0	0	0	0%	0%	0%	0%	0%	0	0	0	0	0 ⁽¹⁾
	PM	0	0	21	0	21	0%	0%	100%	0%	100%	0	0	23	0	23

Note:

- (1) No boarding passengers for “Work in another district (Other areas in the New Territories)” from survey, therefore boarding passengers of the proposed development during AM peak hour as in Table 6.9 is added to “Work in another district (New Towns)”, i.e. 83+21=104.

6.4.9 Based on Table 6.7 and Table 6.9, the expected demand of public transport in Year 2036 without and with proposed development is shown in Table 6.11.

Table 6.11 Expected Occupancy of Bus/PLB Stops during 2036 AM and PM Peak Hours in Reference Scenario (Without Proposed Development) and Design Scenario (With Proposed Development)

AM Peak Hour										
Mode	Bus Destination Location Group	Route No.	Observed Vehicular Trips/hr [A]	Reference Scenario (Without Proposed Development)					Design Scenario (With Proposed Development)	
				Total Approx. passengers on board arriving bus stop/hr [E]= [B]x(1+1%) ¹¹	Total No. of Boarding Passengers/hr (by Bus Destination Location Group) [F]= [C]x(1+1%) ¹¹	No. of Boarding Passengers from Kai Tak Hospital & Planned Adjacent Developments [G]	Total No. of Alighting Passengers/hr (by route) [H]= [D]x(1+1%) ¹¹	Total Surplus Capacity/hr [I]	No. of Boarding Passengers from Proposed Development [J]	Total Surplus Capacity hr [I]-[J]
Bus Stop B: Hong Kong Children's Hospital, Shing Cheong Road EB										
Bus	Work in the same district & Hong Kong Island	5R	3	41	3	36	0	814	304 ⁽³⁾	510
		22S ⁽⁴⁾	4	-		55	-			
	Kowloon	20X ⁽⁴⁾	3	-	3	49	-	938	107 ⁽³⁾	831
		22	2	27		36	0			
		22M	2	27			0			
		X6C	2	0			0			
	Sub-total	-	16	-	7	-	-	-	411	-
GMB Stop C: Cheung Yip Street near Kai Tak Fire Station NB										
GMB	Work in the same district & Hong Kong Island	86	12	56	0	18	0	274	0 ⁽³⁾	274
		22A	5	3			0			
		90A	2	1			0			
		90B	3	0			0			
	Kowloon	88A	2	0	0	2	0	30	0 ⁽³⁾	30
	Sub-total	-	24	-	0	-	-	-	0	-
Bus Stop E: Kwun Tong Promenade, Hoi Bun Road WB										
Bus	Kowloon	797	3	335	1	42	129	277	36 ⁽³⁾	241
		14X	2	174			27			
		15A	2	201			33			
	Sub-total	-	7	-	1	-	-	-	36	-
Bus Stop F: Hoi Bun Road Park, Hoi Bun Road EB										
Bus	Work in another district (New Towns)	E22S	3	281	4	18	69	144	104 ⁽³⁾	40
	Sub-total	-	3	-	4	-	-	-	104	-
Total	-	-	50	-	12	-	-	-	550	-



PM Peak Hour										
Mode	Bus Destination Location Group	Route No.	Observed Vehicular Trips/hr [A]	Reference Scenario (Without Proposed Development)					Design Scenario (With Proposed Development)	
				Total Approx. passengers on board arriving bus stop/hr [E]=[B]x(1+1%) ¹¹	Total No. of Boarding Passengers/hr (by Bus Destination Location Group) [F]=[C] x(1+1%) ¹¹	No. of Boarding Passengers from Kai Tak Hospital & Planned Adjacent Developments [G]	Total No. of Alighting Passengers/hr (by route) [H]=[D]x(1+1%) ¹¹	Total Surplus Capacity/hr [I]	No. of Boarding Passengers from Proposed Development [J]	Total Surplus Capacity/hr [I]-[J]
Bus Stop B: Hong Kong Children's Hospital, Shing Cheong Road EB										
Bus	Work in the same district & Hong Kong Island	5R	3	188	59	108	0	126	305 ⁽³⁾	-179
		22S ⁽⁴⁾	4	-		359	-			
	Kowloon	20X ⁽⁴⁾	3	-	105	335	-	607	85 ⁽³⁾	607
		22	3	54		192	0			
		22M	2	27			0			
		X6C	3	0			0			
	Sub-total	-	18	-	164	-	-	-	390	-
GMB Stop C: Cheung Yip Street near Kai Tak Fire Station NB										
GMB	Work in the same district & Hong Kong Island	86	13	230	4	67	0	-98	23 ⁽³⁾	-121
		22A	3	37			0			
		90A	1	18			0			
		90B	4	78			0			
	Kowloon	88A	3	37	0	10	0	2	0 ⁽³⁾	2
	Sub-total	-	24	-	4	-	-	-	23	-
Bus Stop E: Kwun Tong Promenade, Hoi Bun Road WB										
Bus	Kowloon	15A	3	161	83	216	0	407	67 ⁽³⁾	340
		797	3	40			0			
		14X	2	161			0			
		16P	1	13			0			
	Work in another district (New Towns)	38P	1	13	117	240	0	388	90 ⁽³⁾	298
		55	3	94			0			
		234D	1	67			0			
		258X	1	13			0			
		259X	2	134			0			
		268P	2	134			0			
	Work in another district (Other areas in the New Territories)	269S	3	94	23	96	0	200	23 ⁽³⁾	177
		E22S	1	67			0			

PM Peak Hour										
Mode	Bus Destination Location Group	Route No.	Observed Vehicular Trips/hr [A]	Reference Scenario (Without Proposed Development)					Design Scenario (With Proposed Development)	
				Total Approx. passengers on board arriving bus stop/hr [E]= [B]x(1+1%) ¹¹	Total No. of Boarding Passengers/hr (by Bus Destination Location Group) [F]= [C]x(1+1%) ¹¹	No. of Boarding Passengers from Kai Tak Hospital & Planned Adjacent Developments [G]	Total No. of Alighting Passengers/hr (by route) [H]= [D]x(1+1%) ¹¹	Total Surplus Capacity/hr [I]	No. of Boarding Passengers from Proposed Development [J]	Total Surplus Capacity/hr [I]-[J]
	Sub-total		23		223				180	
Total			65		392				592	

Notes:

- (1) Assumed 120-seat for all franchised bus services.
- (2) Assumed 16-seat for all GMB service.
- (3) From **Table 6.10**.
- (4) As in Para. 6.3.8, TD has planned two new bus routes in view of development of Kai Tak Runway area in-take rate: bus route no. 20X between Kai Tak Cruise Terminal and Tsim Sha Tsui (Circular) (headway of 20min-30min in peak hour) and bus route no. 22S between Kai Tak Cruise Terminal and Kai Tak PTI (headway of 15min-20min in peak hour).

6.4.10 Assessments in **Table 6.11** indicate that there are surplus capacities for the most of the bus/PLB stops during AM and PM peak hours in 2036 with the proposed development except the following:

PM Peak Hour

- Bus Stop B: Hong Kong Children's Hospital, Shing Cheong Road EB - Work in the same district & Hong Kong Island, +2 bus is required with the proposed development; and
- GMB Stop C: Cheung Yip Street near Kai Tak Fire Station NB - Work in the same district & Hong Kong Island, +8 GMB is required with the proposed development.

7. SUMMARY AND CONCLUSION

7.1 Summary

- 7.1.1 CTA Consultants Limited (CTA) is commissioned as the traffic consultant to prepare the Traffic Impact Assessment Report and provide technical justifications in supporting the proposed development from traffic engineering point of view.
- 7.1.2 To appraise the existing traffic condition, manual-classified counting surveys were conducted at critical junctions in 2025. Current operational performance of the critical junctions has been assessed. The results reveal all critical junctions are at present operating within their capacities during peak hours.
- 7.1.3 The assessment results revealed that all critical junctions would still operate within their capacities in both reference scenario (without proposed development) and design scenario (with proposed development) in 2036 during the peak hours.
- 7.1.4 Queue length of the critical junction in both reference scenario (without proposed development) and design scenario (with proposed development) in 2036 during the peak hours will be within their available length of road segment. Queue lengths at these junctions could be more or less be cleared shortly.
- 7.1.5 Comparing with the existing commercial use, it is anticipated that the proposed development would generate and attract -21 pcu/hr and -103 pcu/hr during AM peak hour respectively, and generate and attract -59 pcu/hr and -22 pcu/hr during PM peak hour respectively.
- 7.1.6 The proposed development is anticipated to generate negative peak-hour traffic (i.e., a reduction in traffic demand compared to the reference scenario). This will result in reduced traffic impact on the surrounding road network. Accordingly, no junction improvement works will be proposed by the proposed development.
- 7.1.7 Assessments indicate that there are surplus capacities for the most of the bus/PLB stops during AM and PM peak hours in 2036 with the proposed development except the following:



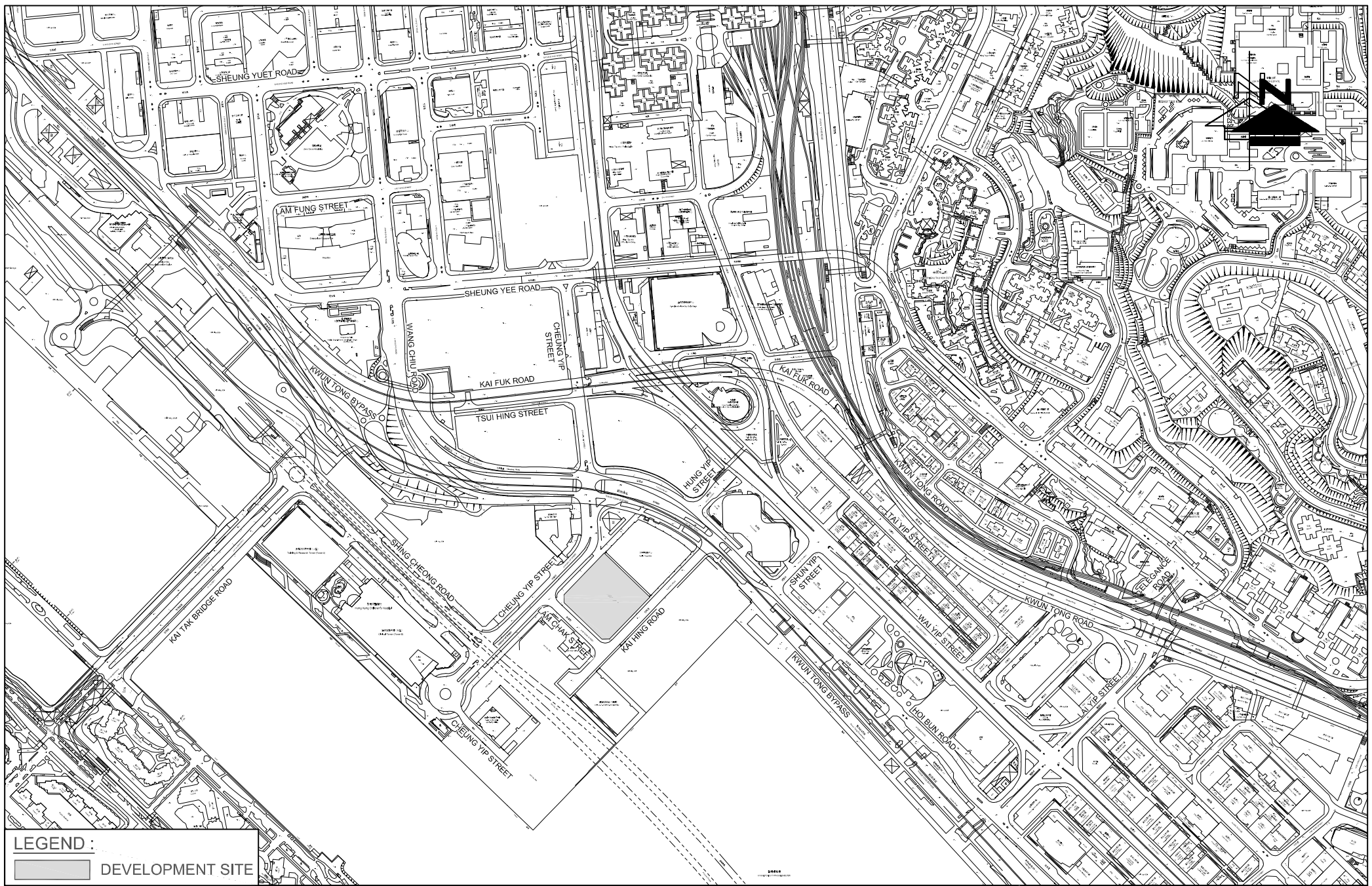
PM Peak Hour

- Bus Stop B: Hong Kong Children's Hospital, Shing Cheong Road EB - Work in the same district & Hong Kong Island, +2 bus is required with the proposed development; and
- GMB Stop C: Cheung Yip Street near Kai Tak Fire Station NB - Work in the same district & Hong Kong Island, +8 GMB is required with the proposed development.

7.2 Conclusion

7.2.1 In conclusion, this Traffic Impact Assessment Report has demonstrated that the related traffic trips related to the proposed development can reduce the traffic to the nearby road network and no significant traffic impact will be induced.

7.2.2 Therefore, the proposed development is reckoned feasible from traffic engineering point of view.



LEGEND :
 [Grey Shaded Area] DEVELOPMENT SITE

FIGURE NO.: 1.1
 PROJECT NO.: 25046HK
 SCALE: 1 : 6200 @A4
 DATE: 11 JUL 2025

PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay
 DRAWING TITLE: SITE LOCATION PLAN

CTA Consultants Limited
 志達顧問有限公司



FIGURE NO.: 2.1 (REV B)		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	
PROJECT NO.: 25046HK		DRAWING TITLE: G/F LAYOUT PLAN	
SCALE: 1 : 700 @A4	DATE: 01 JUN 2026	 CTA Consultants Limited 志達顧問有限公司	

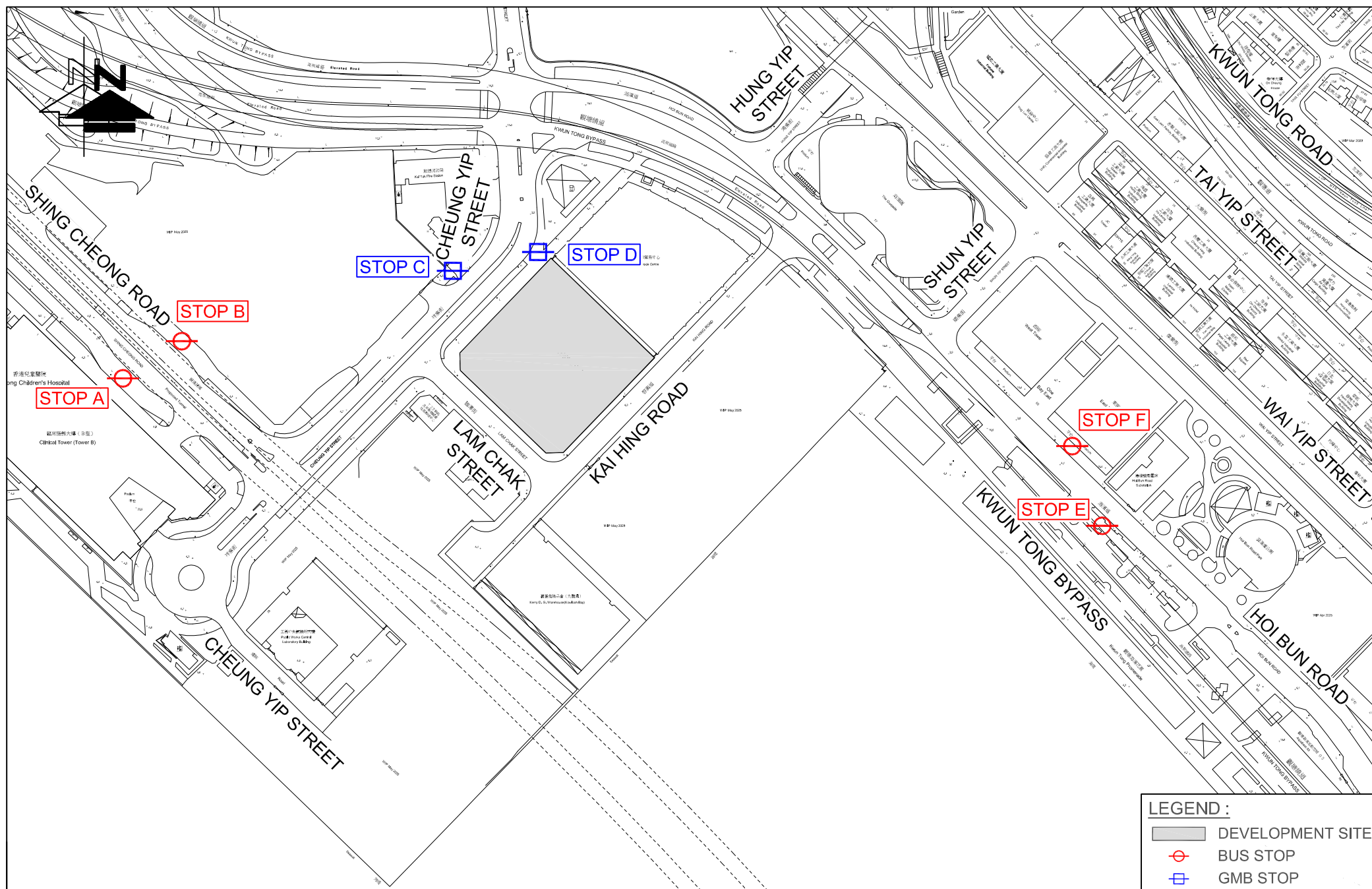


FIGURE NO.: 2.2(REV A)		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay		 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK		DRAWING TITLE: EXISTING PUBLIC TRANSPORT FACILITIES		
SCALE: 1 : 2750 @A4	DATE: 14 JUL 2026			

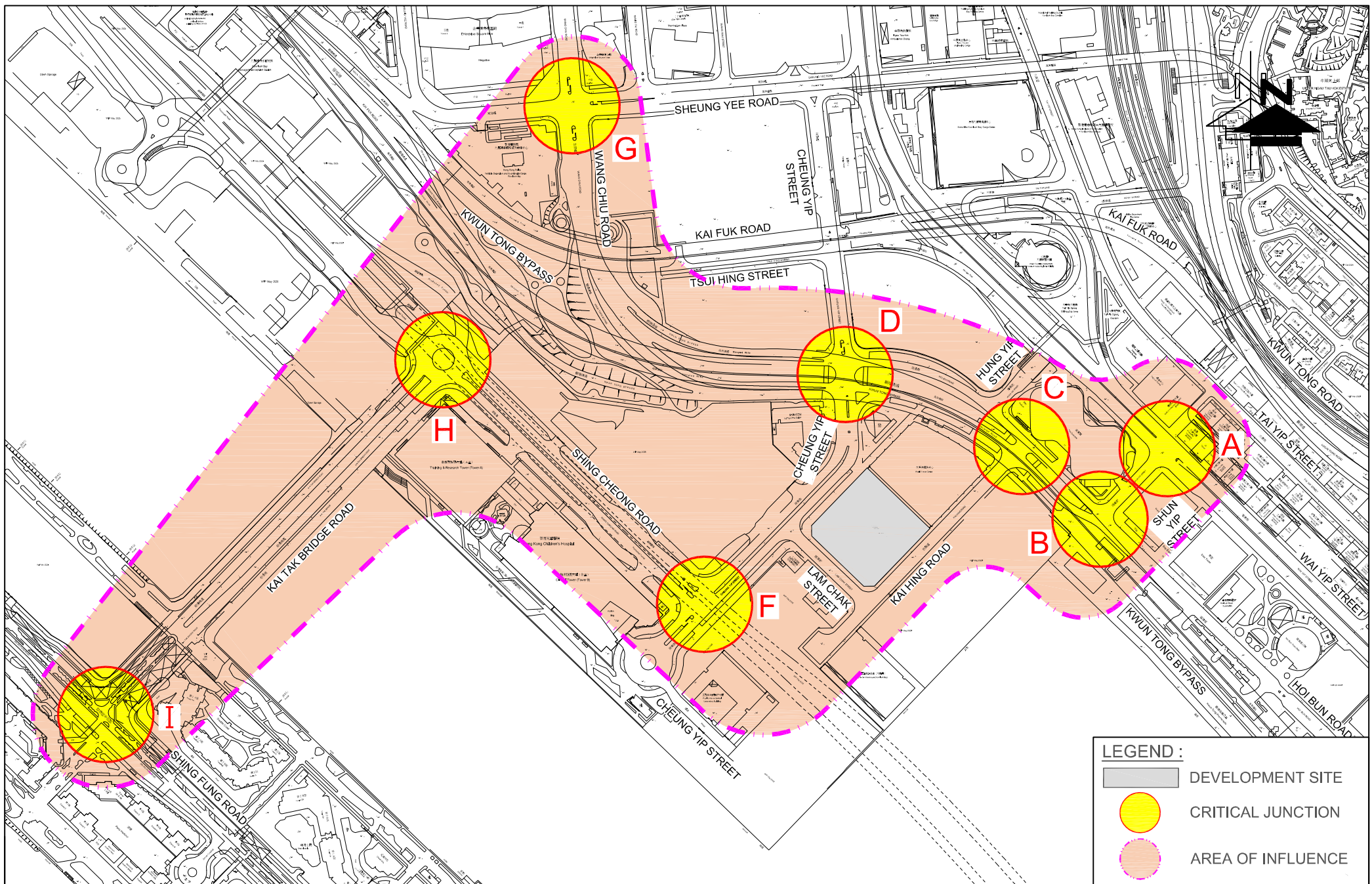


FIGURE NO.: 3.1 (REV B)	PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK	DRAWING TITLE: AREA OF INFLUENCE	
SCALE: 1 : 4500 @A4	DATE: 25 FEB 2026	

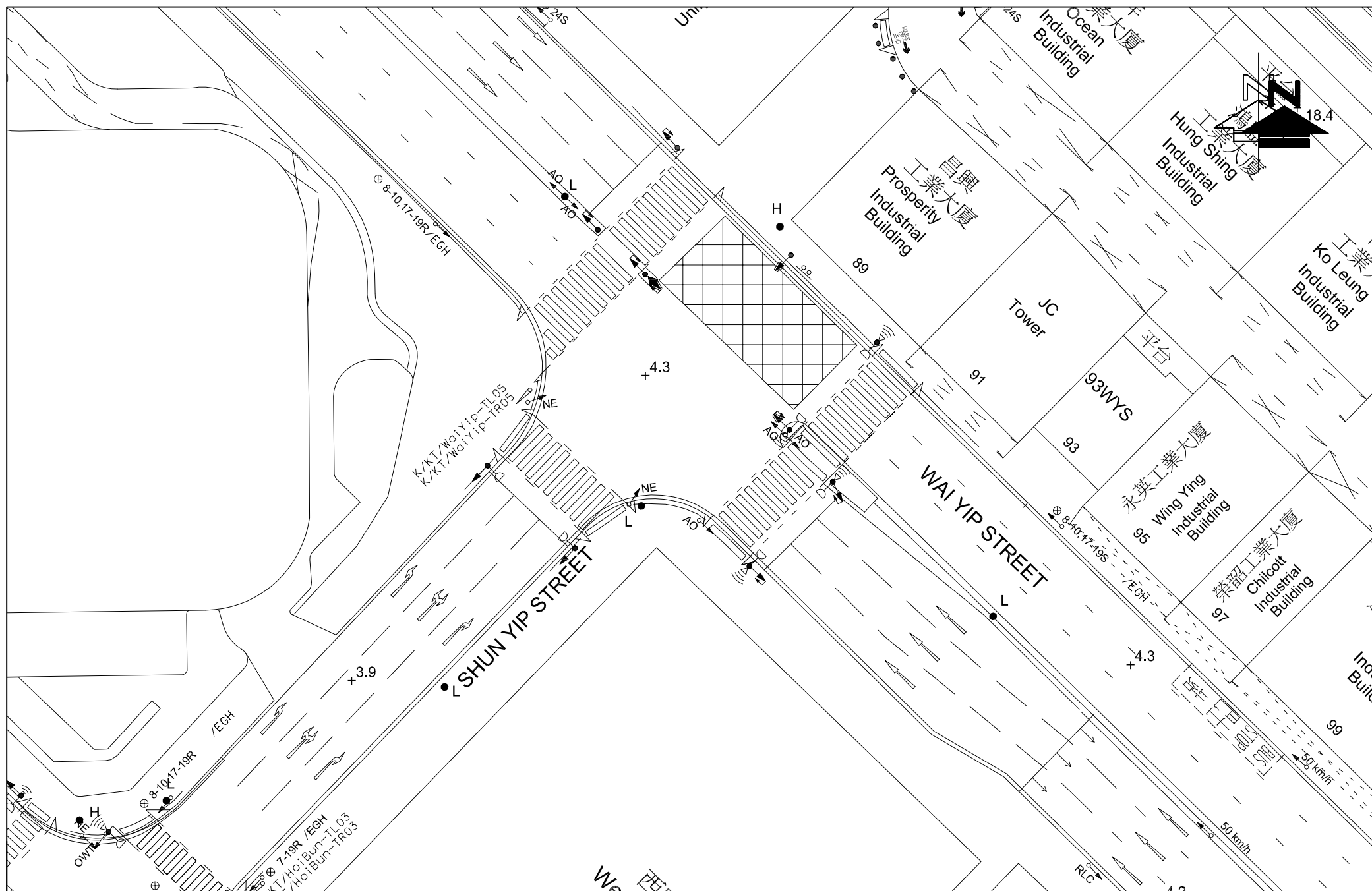


FIGURE NO.: 3.2		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay		 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF WAI YIP STREET / SHUN YIP STREET (A)		
SCALE: 1 : 500 @A4	DATE: 13 AUG 2025			

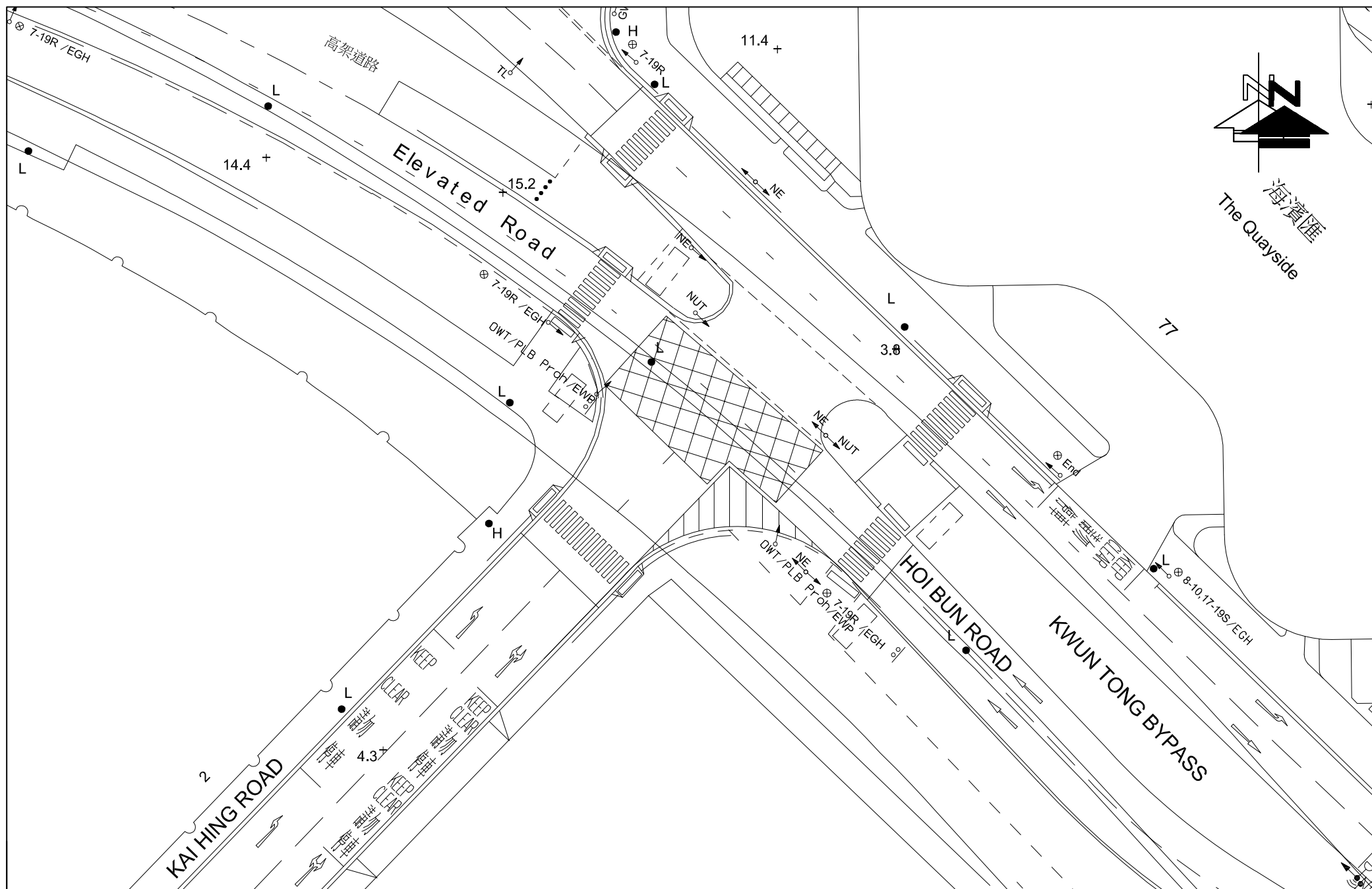


FIGURE NO.: 3.4		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay		 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF HOI BUN ROAD / KAI HING ROAD (C)		
SCALE: 1 : 500 @A4	DATE: 13 AUG 2025			

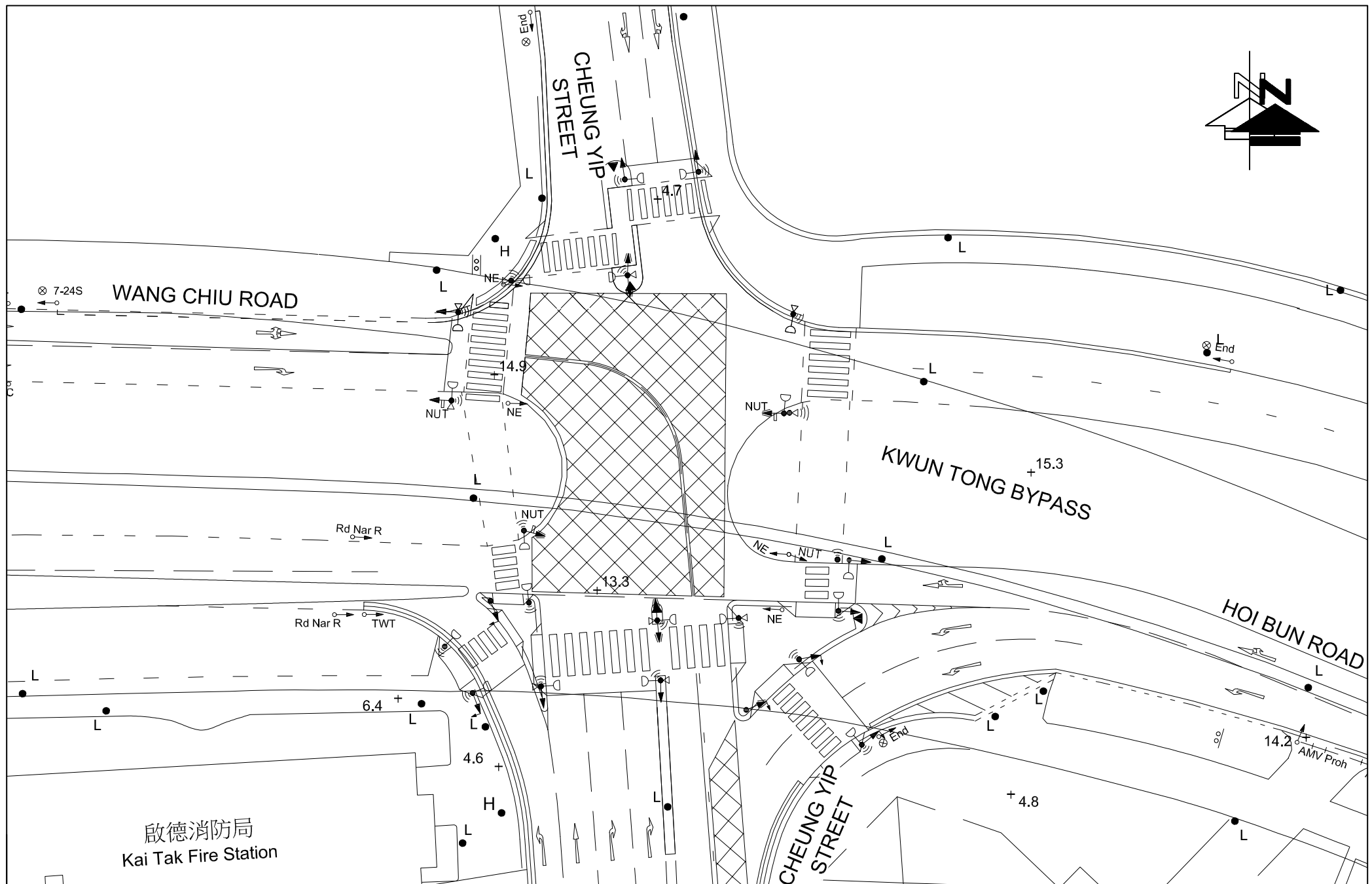


FIGURE NO.: 3.5	PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF HOI BUN ROAD / WANG CHIU ROAD / CHEUNG YIP STREET (D)	
SCALE: 1 : 500 @A4	DATE: 22 AUG 2025	

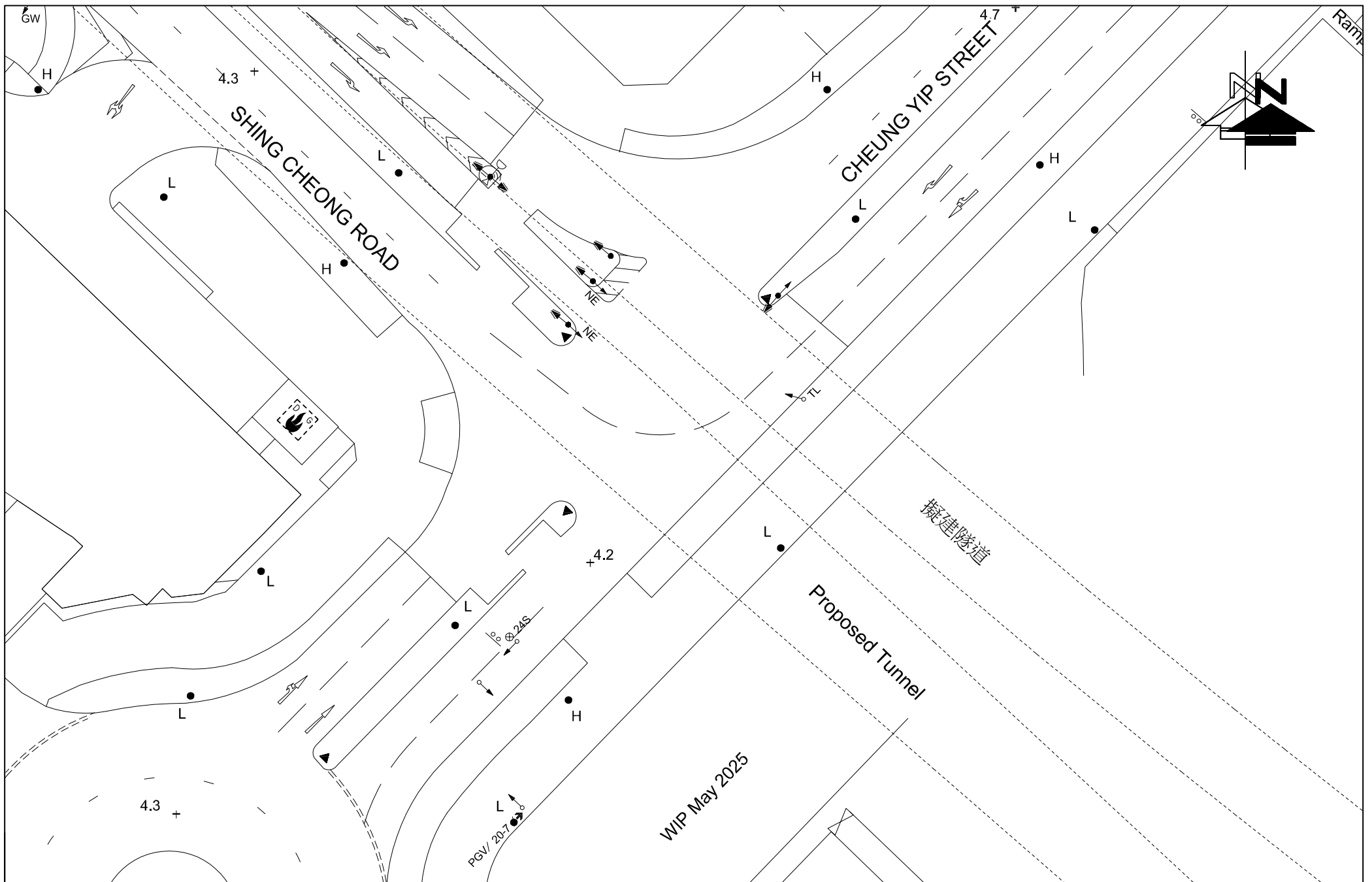


FIGURE NO.: 3.6		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF SHING CHEONG ROAD / CHEUNG YIP STREET (F)	
SCALE: 1 : 500 @A4	DATE: 12 AUG 2025		

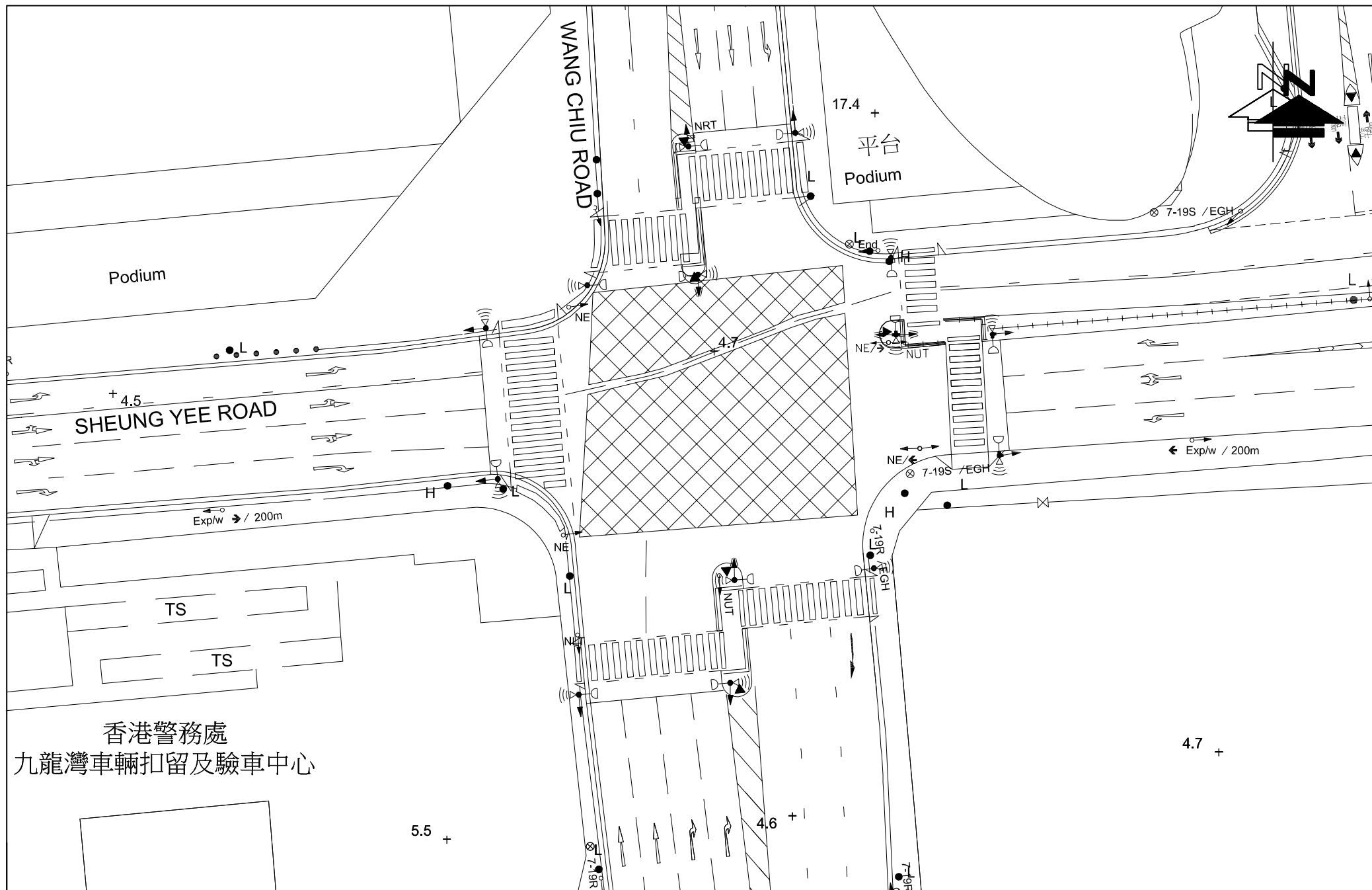


FIGURE NO.: 3.7		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay		 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF WANG CHIU ROAD / SHEUNG YEE ROAD (G)		
SCALE: 1 : 500 @A4	DATE: 12 AUG 2025			

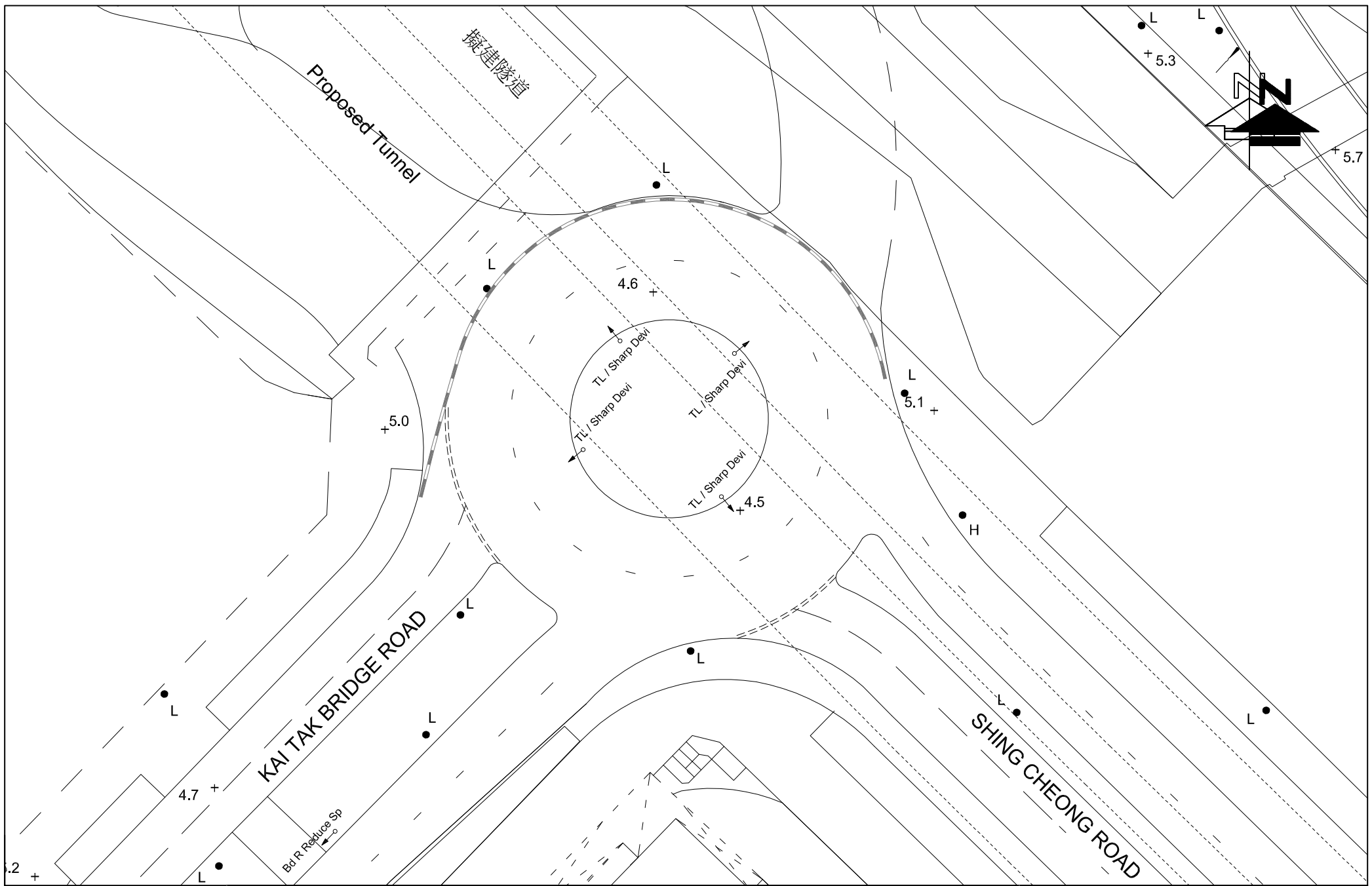
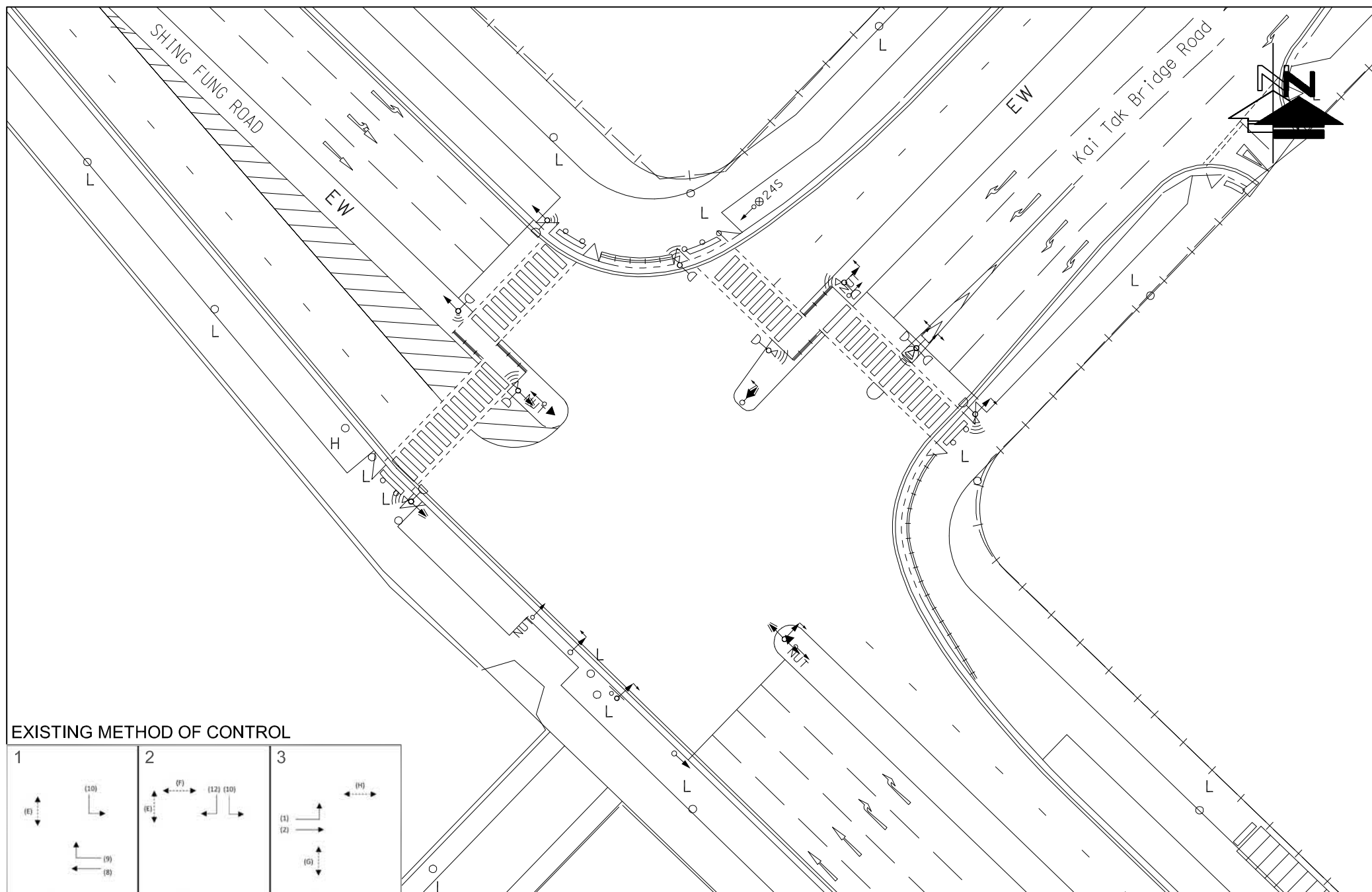


FIGURE NO.: 3.8		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	
PROJECT NO.: 25046HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF SHING CHEONG ROAD / KAI TAK BRIDGE ROAD (H)	
SCALE: 1 : 500 @A4	DATE: 12 AUG 2025		



EXISTING METHOD OF CONTROL

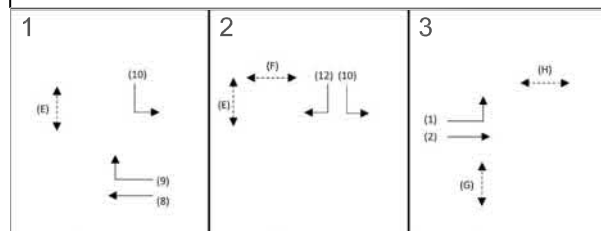


FIGURE NO.: 3.9		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF KAI TAK BRIDGE ROAD / SHING FUNG ROAD (I)	
SCALE: 1 : 650 @A4	DATE: 17 NOV 2025		

LEGEND :

DEVELOPMENT SITE

250(185)

AM(PM) PEAK HOUR

TRAFFIC FLOW (IN PCU / HR)

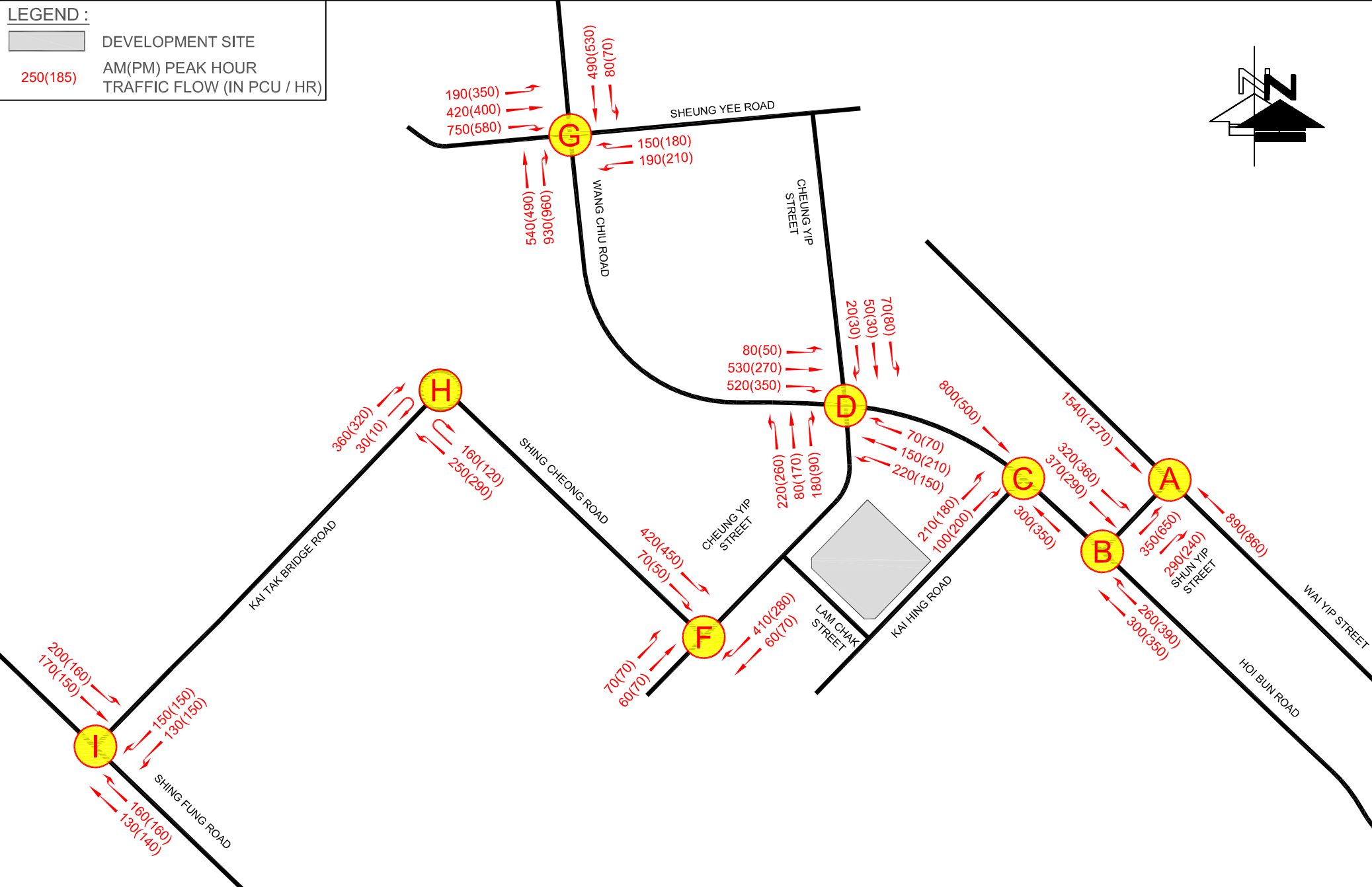


FIGURE NO.:	3.10	PROJECT TITLE:	S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay
PROJECT NO.:	25046HK	DRAWING TITLE:	2025 EXISTING TRAFFIC FLOWS
SCALE:	DATE:		
N.T.S. @A4	26 NOV 2025		

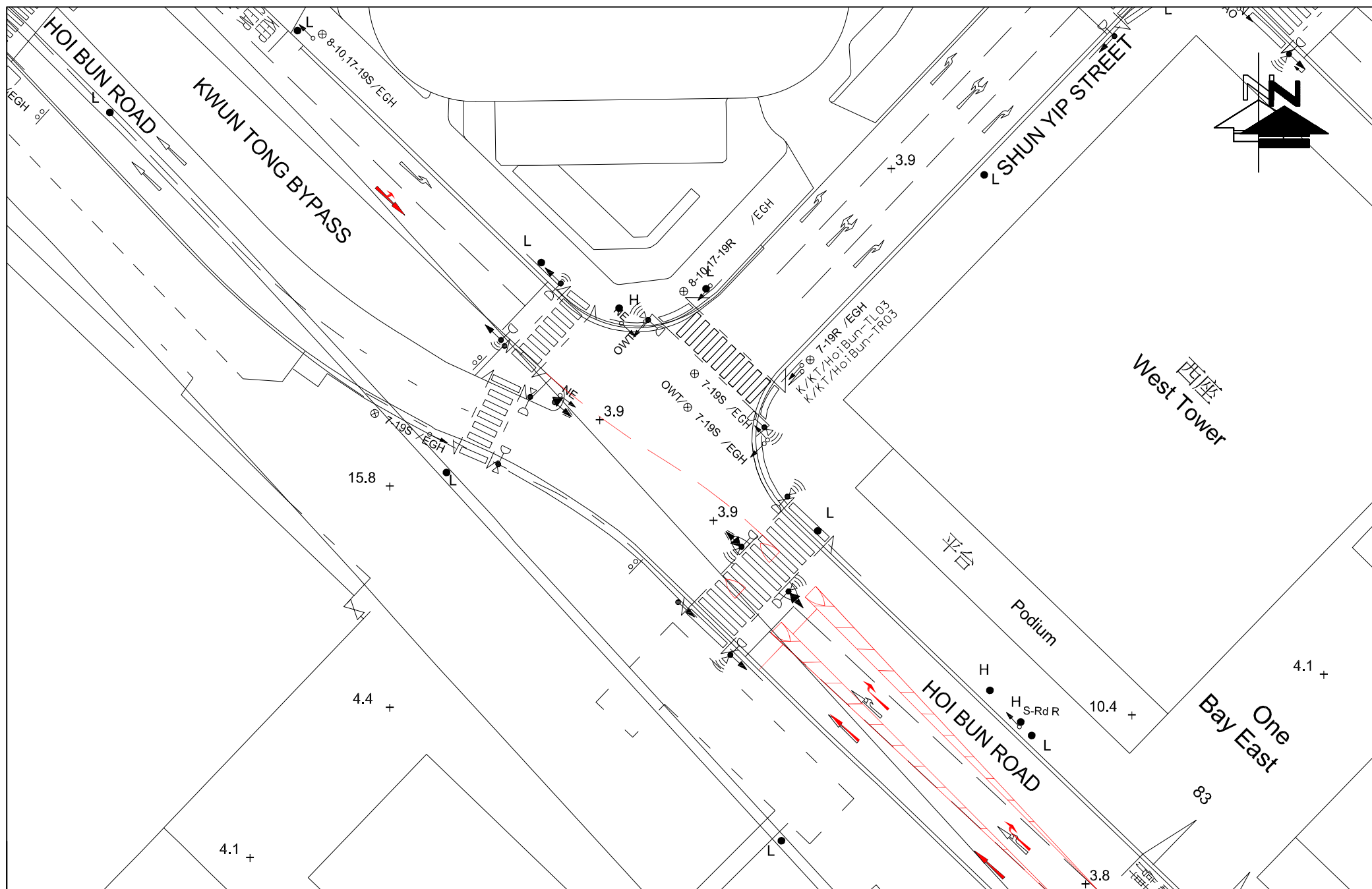


FIGURE NO.: 4.1		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK		DRAWING TITLE: PLANNED JUNCTION IMPROVEMENT LAYOUT OF HOI BUN ROAD / SHUN YIP STREET (B)	
SCALE: 1 : 500 @A4	DATE: 11 MAR 2026		

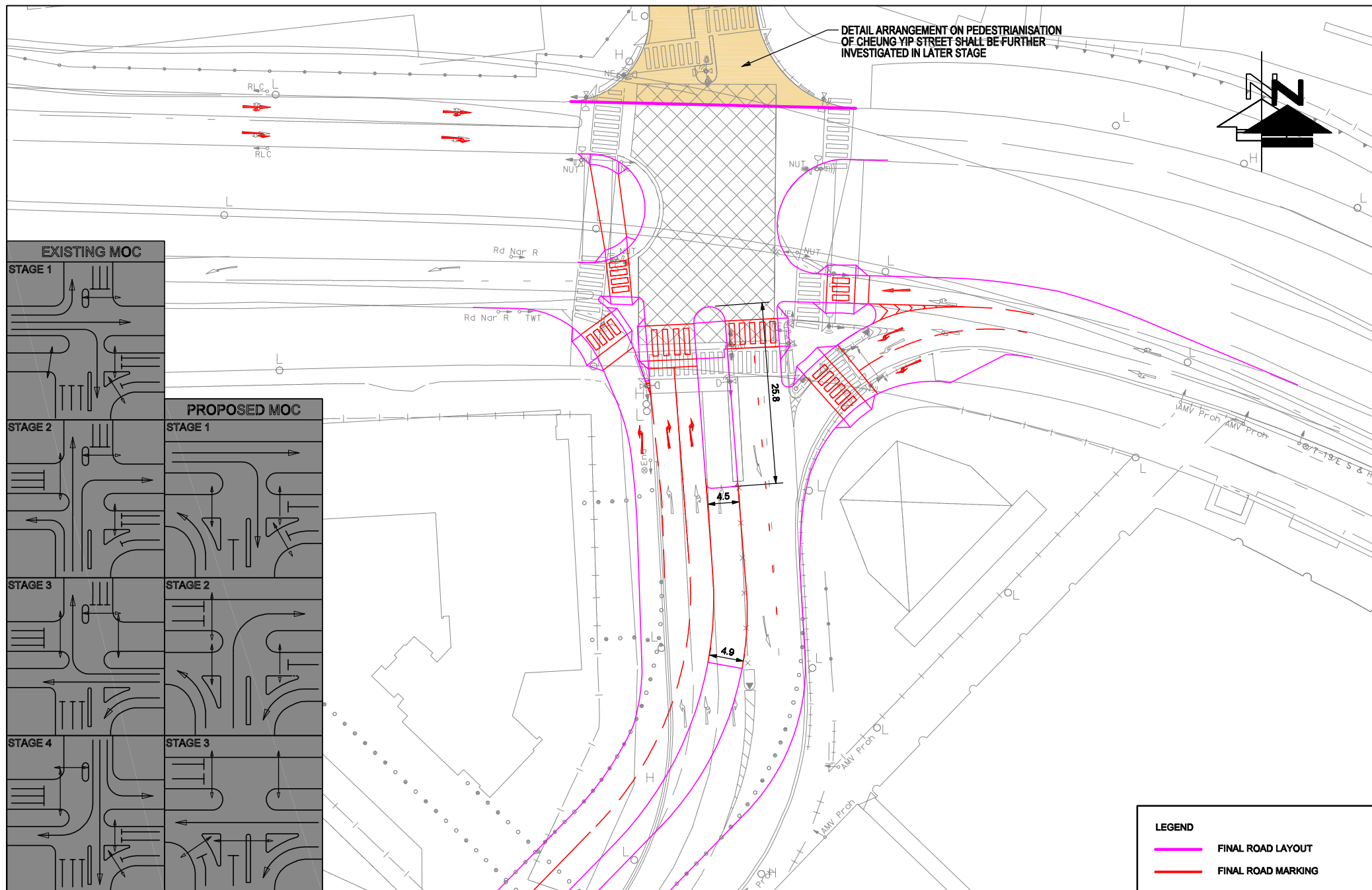


FIGURE NO.:	4.2
PROJECT NO.:	25046HK
SCALE:	DATE:
N.T.S. @A4	11 MAR 2026

PROJECT TITLE:	S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay
DRAWING TITLE:	PLANNED JUNCTION IMPROVEMENT LAYOUT OF HOI BUN ROAD / WANG CHIU ROAD / CHEUNG YIP STREET (D)

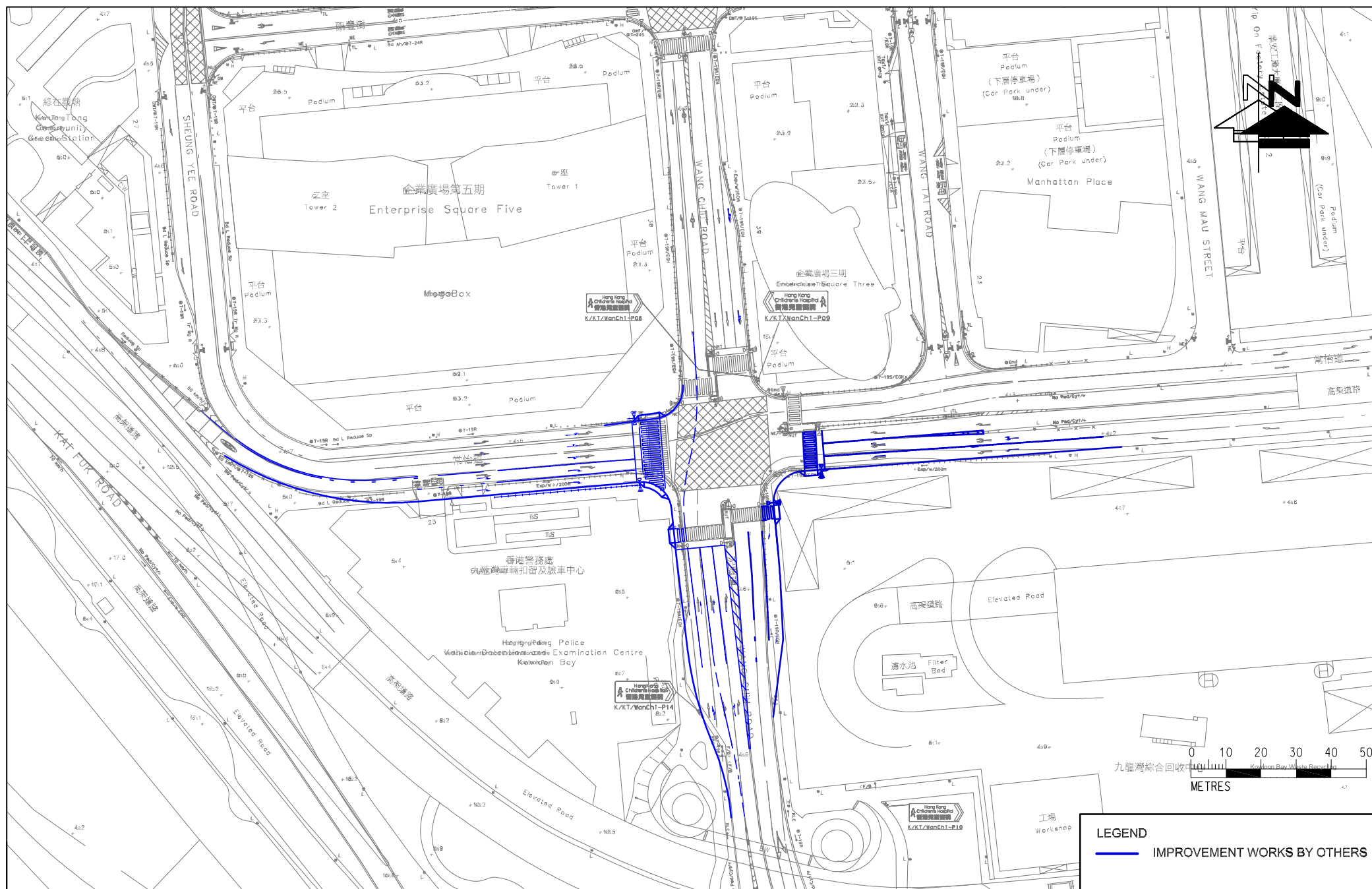


FIGURE NO.: 4.3		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay		CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK		DRAWING TITLE: PLANNED JUNCTION IMPROVEMENT LAYOUT OF WANG CHIU ROAD / SHEUNG YEE ROAD (G)		
SCALE: N.T.S. @A4	DATE: 11 MAR 2026			

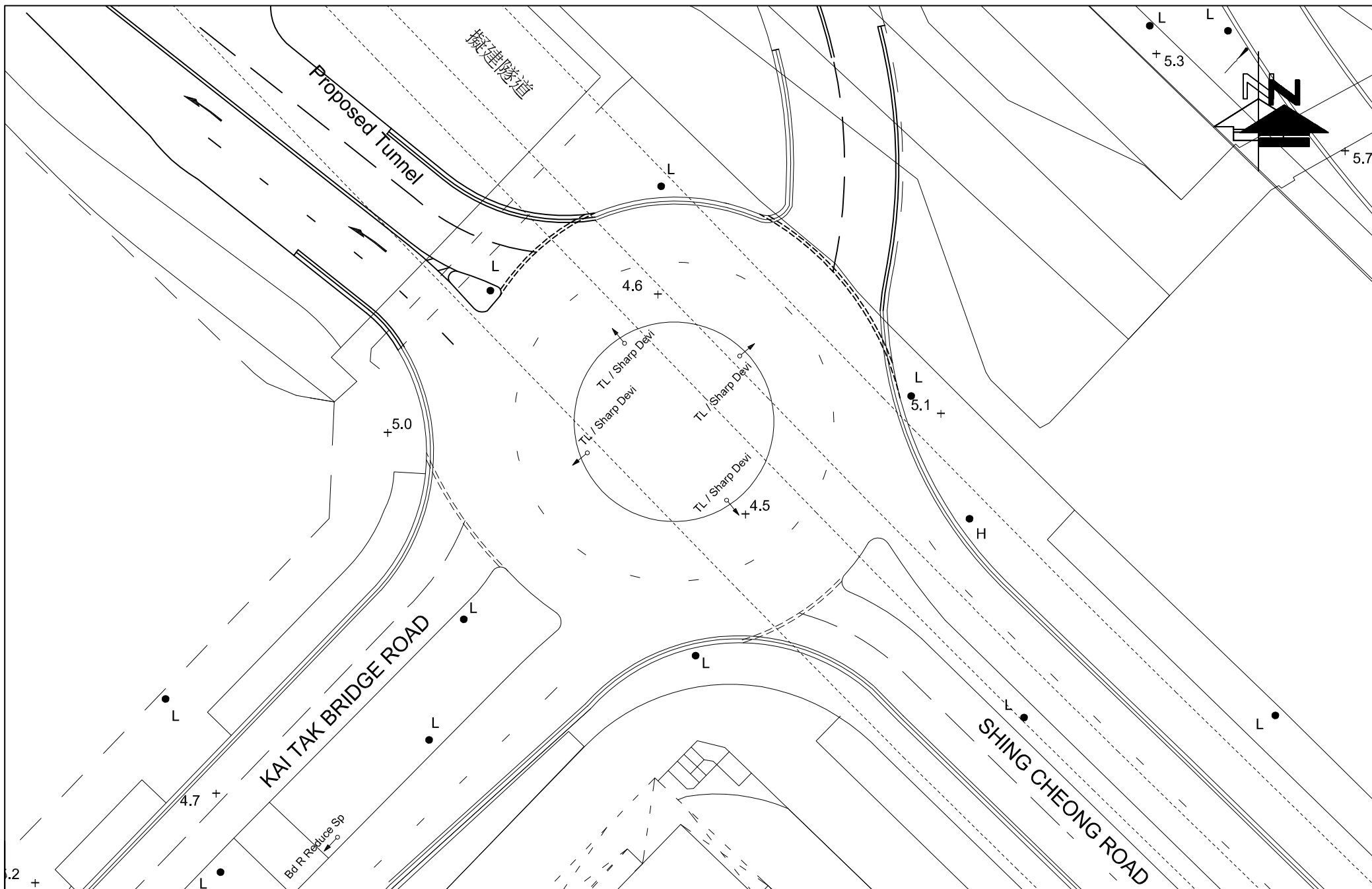
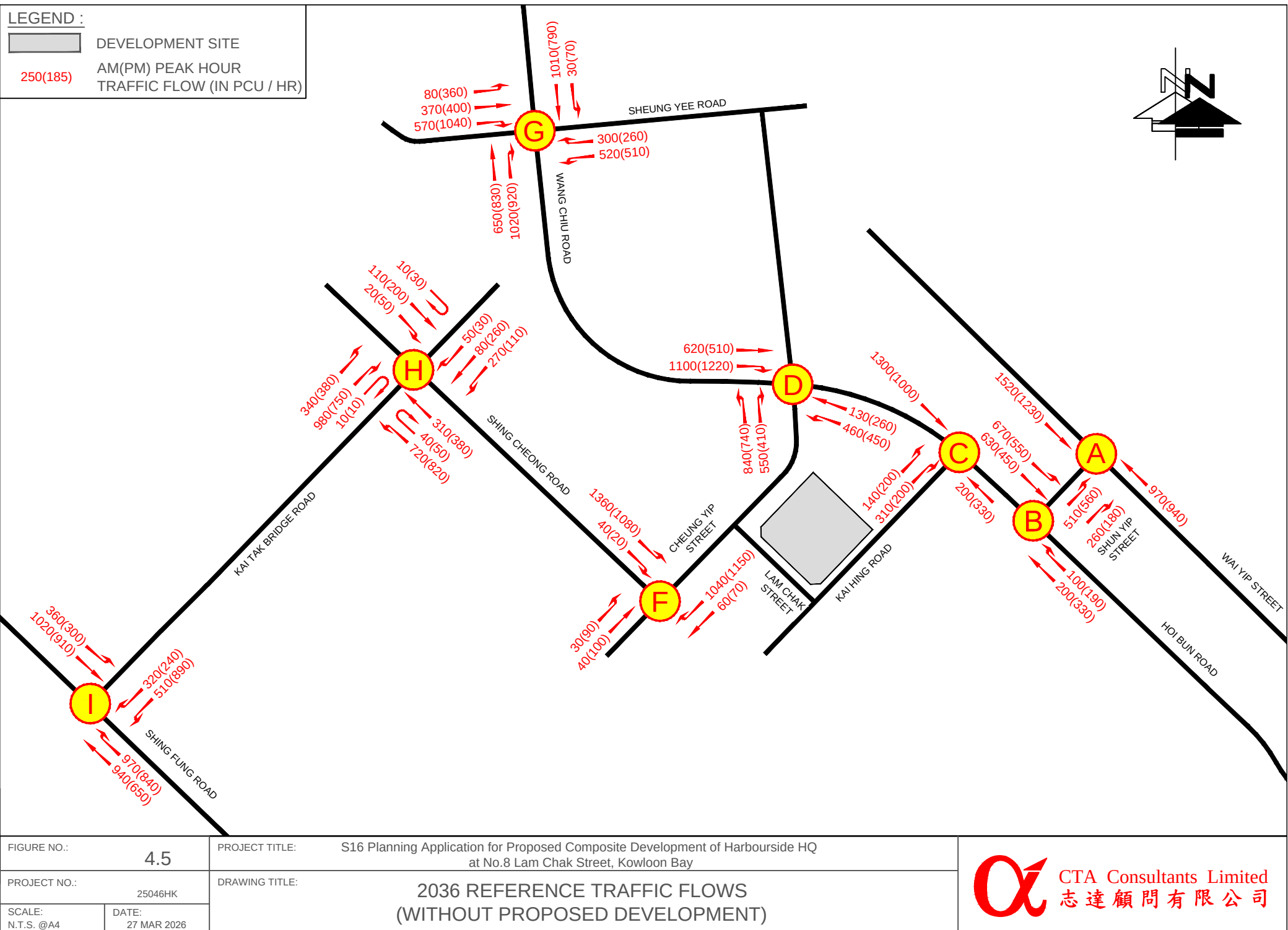


FIGURE NO.: 4.4		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	
PROJECT NO.: 25046HK		DRAWING TITLE: PLANNED JUNCTION IMPROVEMENT LAYOUT OF SHING CHEONG ROAD / KAI TAK BRIDGE ROAD (H)	
SCALE: 1 : 500 @A4	DATE: 11 MAR 2026		



LEGEND :

DEVELOPMENT SITE

250(185)

AM(PM) PEAK HOUR
TRAFFIC FLOW (IN PCU / HR)

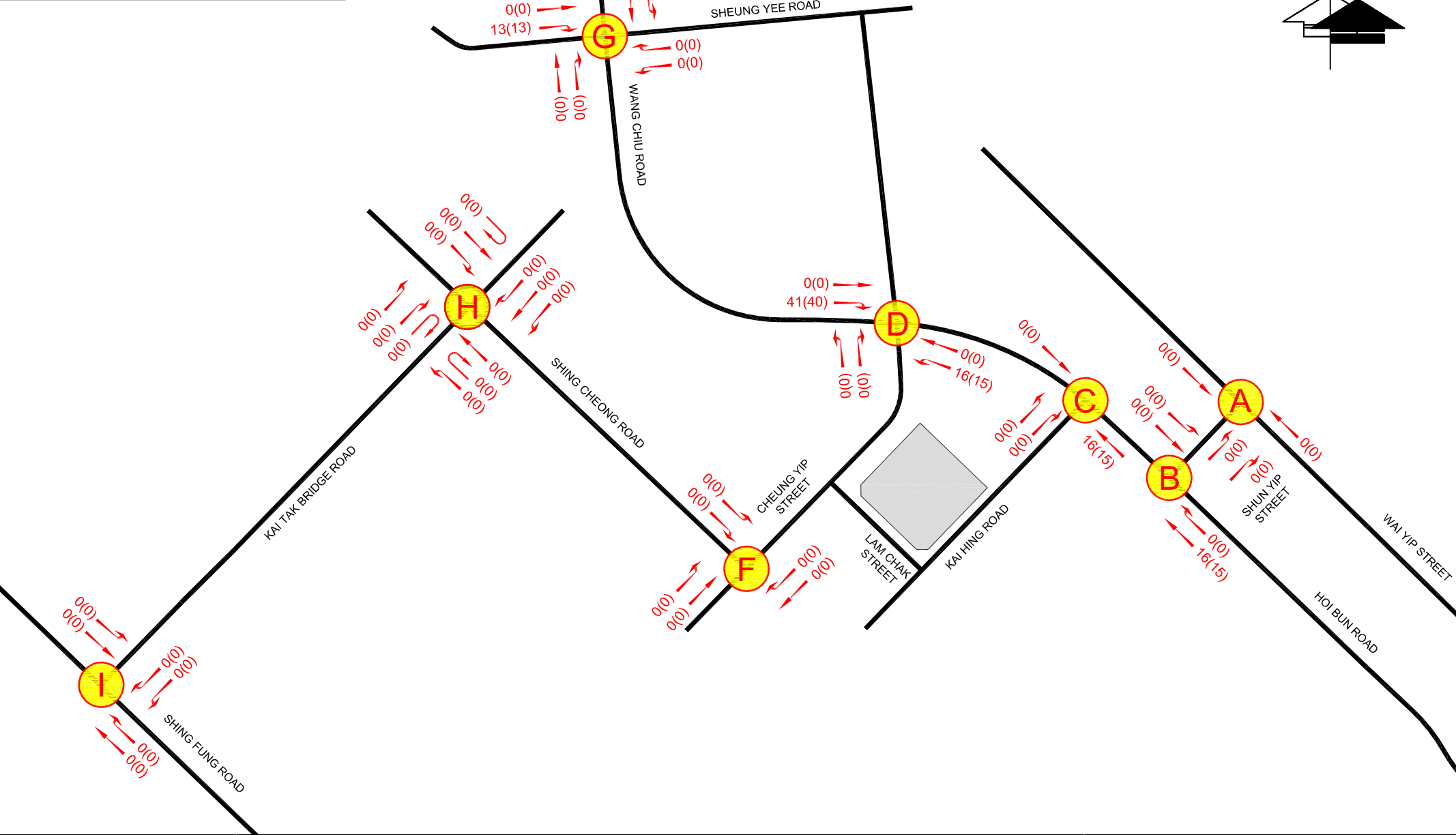


FIGURE NO.:	4.6	PROJECT TITLE:	S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.:	25046HK	DRAWING TITLE:	2036 DEVELOPMENT TRAFFIC FLOWS - ATTRACTION	
SCALE:	N.T.S. @A4	DATE:	11 MAR 2026	

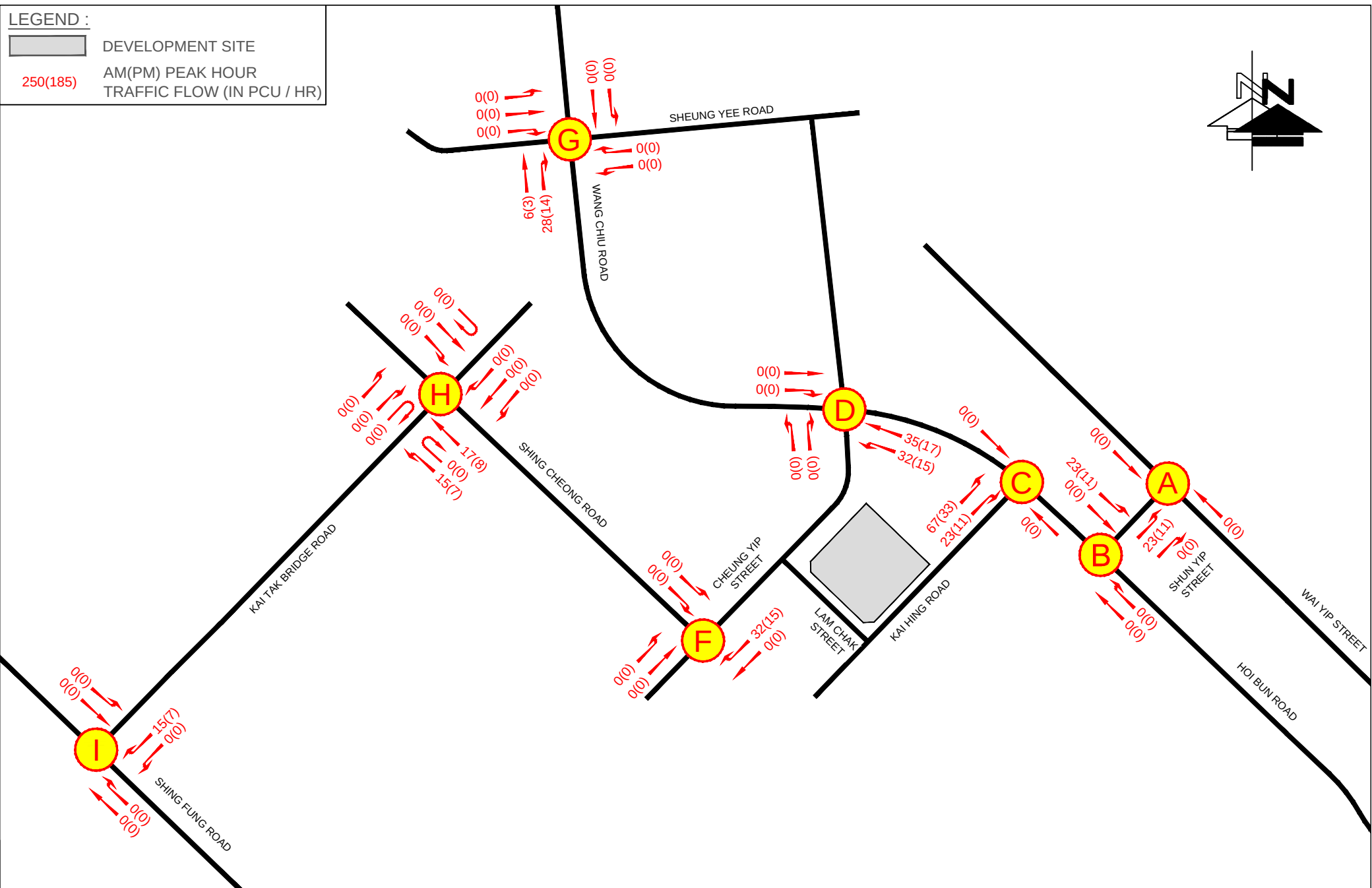
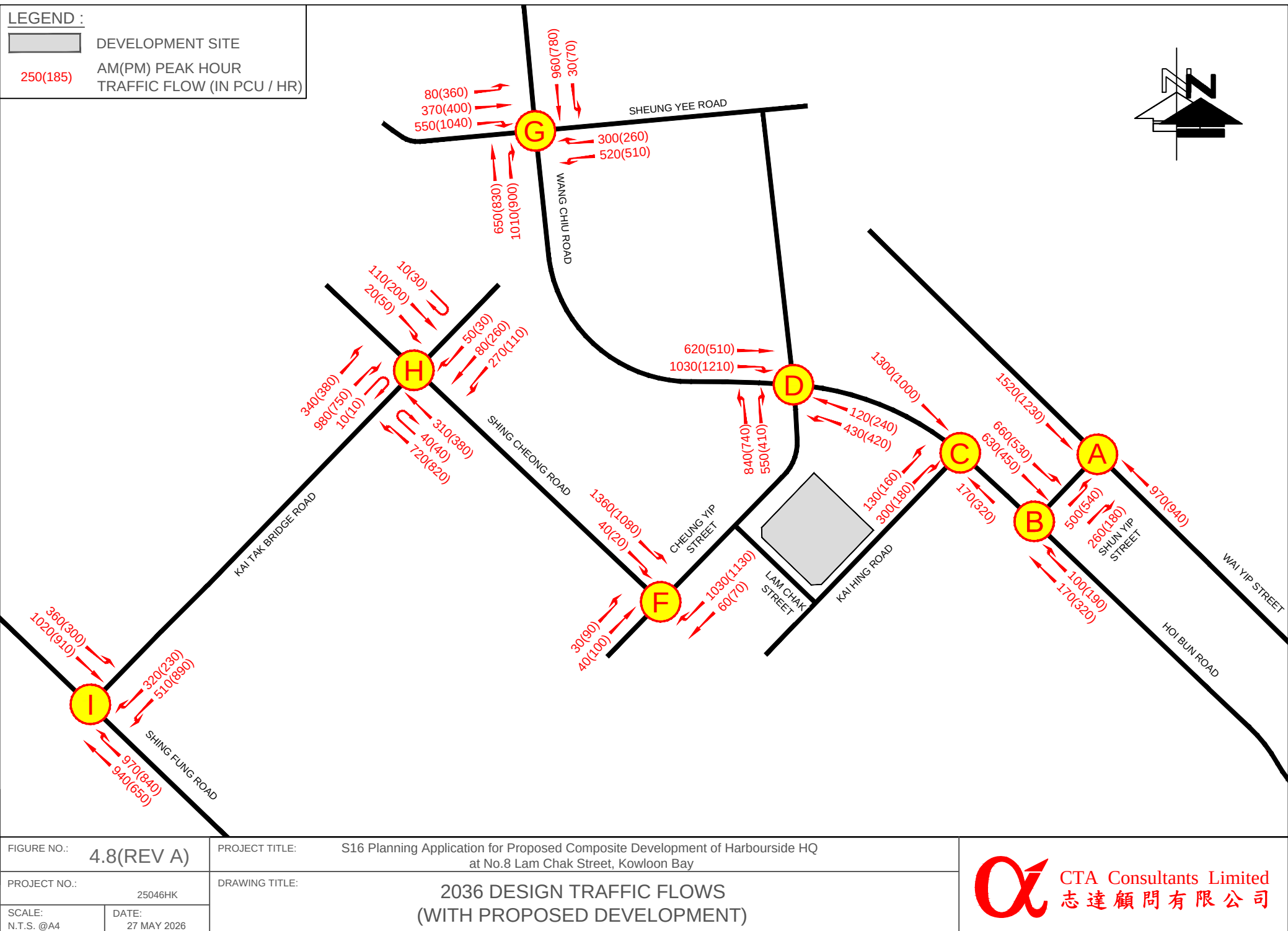
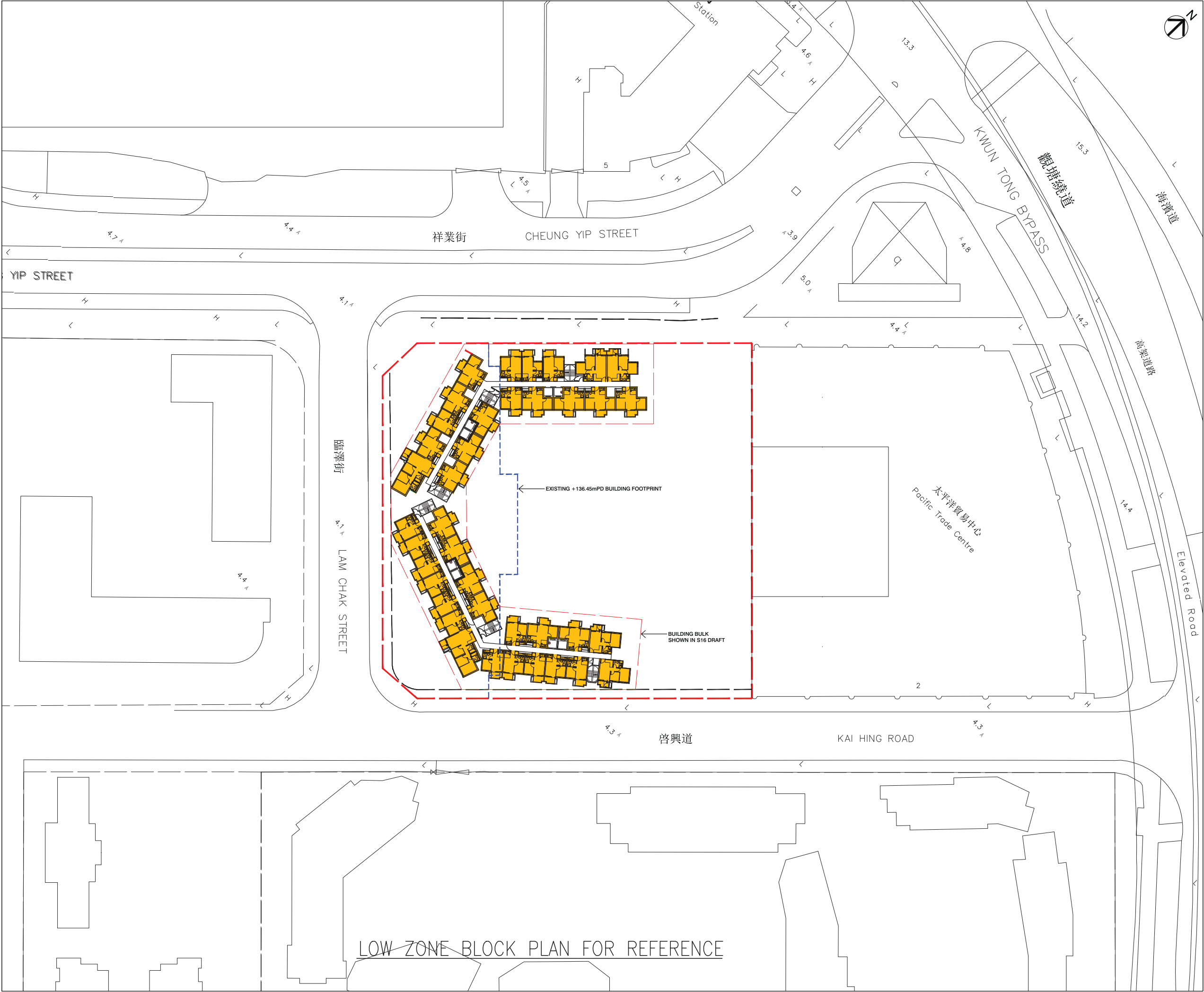


FIGURE NO.: 4.7 (REV A)	PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25046HK	DRAWING TITLE: 2036 DEVELOPMENT TRAFFIC FLOWS - GENERATION	
SCALE: N.T.S. @A4	DATE: 27 MAY 2026	





B.D. REFERENCE		屋宇署檔案	
F.S.D. REFERENCE		消防處檔案	
W.W.O. REFERENCE		水務署檔案	
CAD FILE NAME		檔案編號	
NOTES		注釋	
NO. 修定號	REVISIONS 修定內容	DATE 日期	BY 經手人
DLN DLN Architects Limited 劉榮廣伍振民建築師有限公司 46-47 Floor, Tower One, Times Square Maheon Street, Causeway Bay, Hong Kong 香港銅鑼灣勿地臣街 時代廣場一座46至47樓 t +852 2895 6888 f +852 2576 4074 email general@dln.com.hk www.dln.com.hk			
ALL MEASUREMENTS MUST BE CHECKED AT THE WORK BY THE CONTRACTOR 所有尺寸應由承建商於工地核實 DO NOT SCALE FROM DRAWINGS 尺寸不應由圖紙直接量度 ALL PRINTS, SPECIFICATIONS AND THEIR COPYRIGHT ARE THE PROPERTY OF THE ARCHITECT AND SHALL BE RETURNED AT THE COMPLETION OF THE WORK 所有印刷、規格說明及所有的版權屬於建築師及應在工程完結後歸還建築師			
PROJECT		項目名稱	
PROPOSED COMPOSITE DEVELOPMENT AT 8 LAM CHAK STREET, KOWLOON - N.K.I.L. 6215			
TITLE		標題	
BLOCK PLAN FOR REFERENCE			
SCALE 1:800(A3)	比例	DATE AUG 2025	日期
DRAWN BY	製作人	CHECKED BY	檢查
JOB NO.	工程項目	DRAWING NO.	圖號

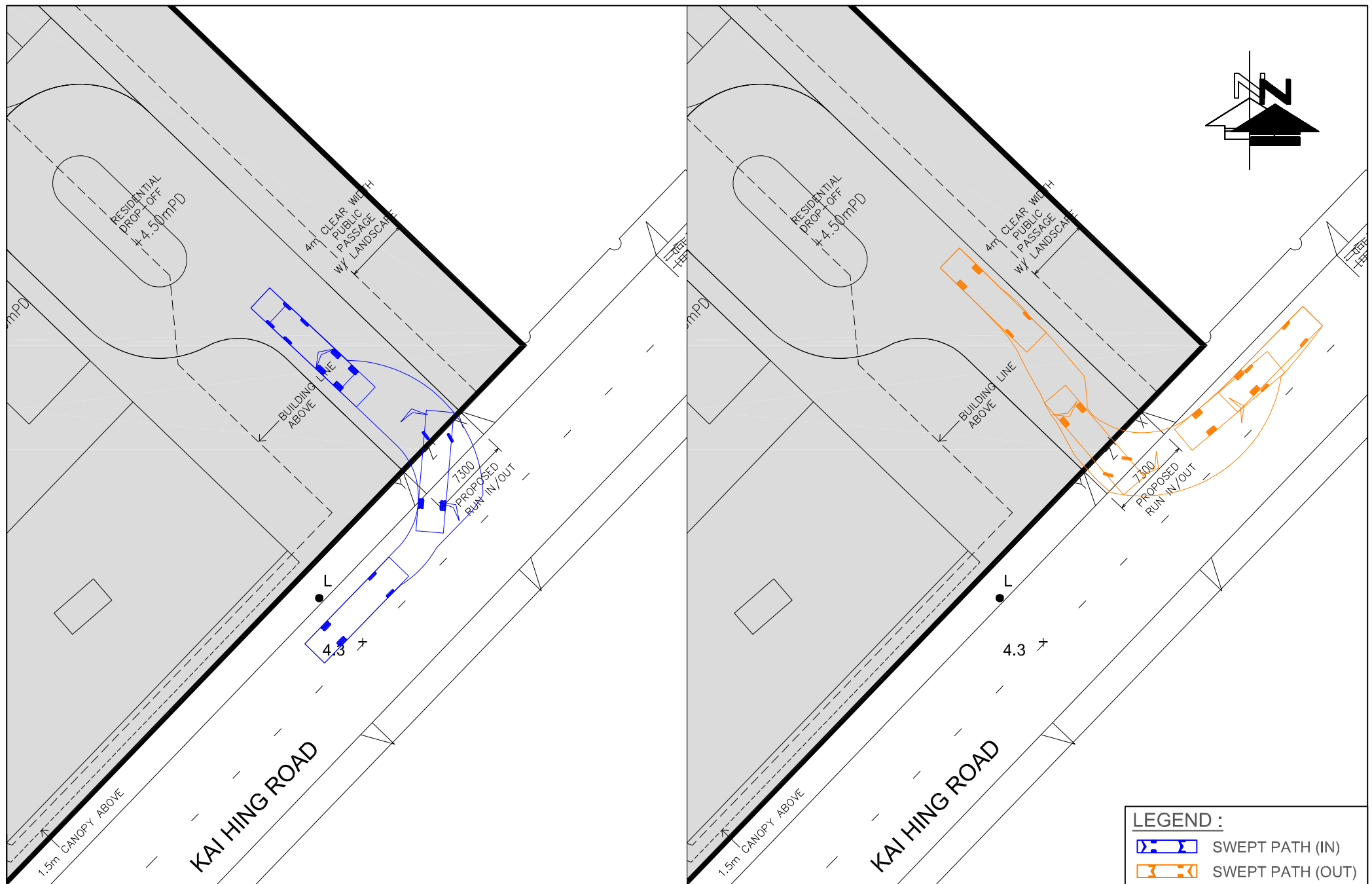


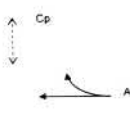
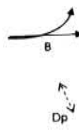
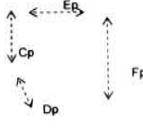
FIGURE NO.: SP01 (REV B)		PROJECT TITLE: S16 Planning Application for Proposed Composite Development of Harbourside HQ at No.8 Lam Chak Street, Kowloon Bay	
PROJECT NO.: 25046HK		DRAWING TITLE: SWEPT PATH ANALYSIS OF HGV	
SCALE: 1 : 450 @A4	DATE: 01 JUN 2026	 CTA Consultants Limited 志達顧問有限公司	



APPENDIX A

Junction Calculation Sheets

TRAFFIC SIGNALS CALCULATION										Job No: 25046HK										CTA Consultants Ltd.													
Junction: Wai Yip Street/ Shun Yip Street (A)																																	
Description: 2025 Observed Traffic Flows																																	
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak													
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y											
Wai Yip Street	E	→	A	2	3.3	0	0	1	0%	0%	1945	6115	1945	1945	6115	6115	490	0.252	0.252	404	0.208	0.208											
Wai Yip Street	E	→	A	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	525	0.252		433	0.208												
Wai Yip Street	E	→	A	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	525	0.252		433	0.208												
Wai Yip Street	W	←	B	2	3.3	0	0	1	0%	0%	1945	6115	1945	1945	6115	6115	283	0.146		274	0.141												
Wai Yip Street	W	←	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	303	0.146		293	0.141												
Wai Yip Street	W	←	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	303	0.146		293	0.141												
Shun Yip Street	S	↻	C	4	3.5	11	0	1	100%	100%	1965	6225	1720	1720	5520	5520	199	0.116	0.116	306	0.178	0.178											
Shun Yip Street	S	↻	C	4	3.5	18	18	0	57% / 33%	100% / 0%	2105	0	1940	1940	0	0	225	0.116		344	0.178												
Shun Yip Street	S	↻	C	4	4.0	0	10	0	100%	100%	2155	0	1860	1860	0	0	216	0.116		240	0.129												
Pedestrian Crossing			Dp	2,3	Min. Crossing Time = 11Gm + 11FGm =22s																												
			Ep	3	Min. Crossing Time = 12Gm + 9FGm = 21s																												
			Fp	3	Min. Crossing Time = 13Gm + 12FGm =25s																												
Notes:												Traffic Flow (pcu / hr) AM(PM)										A.M. Check Phase				P.M. Check Phase							
												1540(1270) → ← 890(860)										Ey 0.368				Ey 0.385							
												↙ ↘										L (sec) 34				L (sec) 34							
												350(650) 290(240)										C (sec) 118				C (sec) 118							
																						y pract. 0.641				y pract. 0.641							
																						R.C. (%) 74%				R.C. (%) 66%							
Stage / Phase Diagrams																																	
1.					2.					3.																							
I/G = 6s					I/G = 8s					I/G = 20+2s																							

TRAFFIC SIGNALS CALCULATION												Job No: 25046HK										CTA Consultants Ltd.									
Junction: Ho Bun Road / Shun Yip Street (B)																															
Description: 2025 Observed Traffic Flows																															
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak											
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y									
Hoi Bun Road	W		A	1	3.4	0	0	1	0%	0%	1955	4050	1955	1955	3880	3870	282	0.144	0.144	350	0.179										
Hoi Bun Road	W		A	1	3.4	0	16	0	94%	100%	2095	0	1925	1915	0	0	278	0.144		390	0.204	0.204									
Hoi Bun Road	E		B	2	3.5	18	0	0	100%	100%	2105	2105	1940	1940	1940	1940	320	0.165		360	0.186	0.186									
Hoi Bun Road	E		B	2	3.5	0	0	1	0%	0%	1965	1965	1965	1965	1965	1965	370	0.188	0.188	290	0.148										
Pedestrian Crossing			Cp	1,3	Min. Crossing Time = 5Gm + 5FGm = 10s																										
			Dp	2,3	Min. Crossing Time = 5Gm + 7FGm = 12s																										
			Ep	3	Min. Crossing Time = 5Gm + 10FGm = 15s																										
			Fp	3	Min. Crossing Time = 13Gm + 12FGm =25s																										
Notes:												Traffic Flow (pcu / hr)				AM(PM)				A.M. Check Phase				P.M. Check Phase							
												320(360)  370(290) 				 				260(390) 300(350)				Ey 0.333 L (sec) 33 C (sec) 120 y pract. 0.653 R.C. (%) 96%				Ey 0.389 L (sec) 34 C (sec) 108 y pract. 0.617 R.C. (%) 58%			
Stage / Phase Diagrams																															
1. 						2. 						3. 																			
I/G =8s						I/G = 9s						I/G = 14+3s																			

TRAFFIC SIGNALS CALCULATION											Job No: 25046HK				CTA Consultants Ltd.								
Junction: Kai Hing Street / Hoi Bun Road (C)																							
Description: 2025 Observed Traffic Flows																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Hoi Bun Road	E	→	A	1,2	3.5	0	0	1	0%	0%	1965	4070	1965	1965	4070	4070	386	0.197	0.197	241	0.123	0.123	
Hoi Bun Road	E	→	A	1,2	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	414	0.197		259	0.123		
		→																					
Hoi Bun Road	W	←	B	1,4	3.3	0	0	1	0%	0%	1945	4030	1945	1945	4030	4030	145	0.074		169	0.087		
Hoi Bun Road	W	←	B	1,4	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	155	0.074		181	0.087		
		←																					
Kai Hing Road	N	↕	C	3	5.0	13	0	1	100%	100%	2115	4230	1890	1890	3820	3815	153	0.081	0.081	180	0.095		
Kai Hing Road	N	↕	C	3	5.0	18	15	1	5% / 64% / 100%		2115	0	1930	1925	0	0	157	0.081		200	0.104	0.104	
		↕																					
Pedestrian Crossing		↕	Dp	3,4		Min. Crossing Time = 7Gm + 7FGm =14s																	
		↕	Ep	2		Min. Crossing Time = 5Gm + 16FGm = 21s																	
			Fp	4		Min. Crossing Time = 5Gm + 16FGm = 21s																	
			Gp	2,3		Min. Crossing Time = 5Gm + 11FGm =16s																	
			Hp	1,2,4		Min. Crossing Time = 7Gm + 12FGm =19s																	
Notes:											Traffic Flow (pcu / hr)					AM(PM)		A.M. Check Phase			P.M. Check Phase		
																		εy 0.278 L (sec) 42 C (sec) 130 y pract. 0.609 R.C. (%) 119%			εy 0.227 L (sec) 42 C (sec) 130 y pract. 0.609 R.C. (%) 169%		
											800(500) →					↙ ↘ 210(180) 100(200)		← 300(350)					
Stage / Phase Diagrams																							
I/G =21s				I/G = 12s				I/G = 11s															

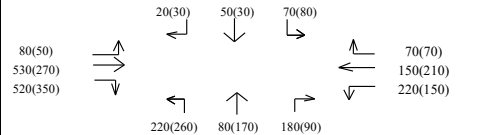
TRAFFIC SIGNALS CALCULATION

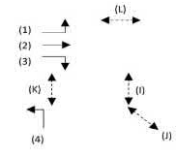
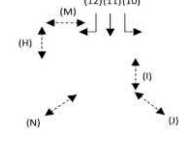
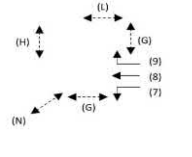
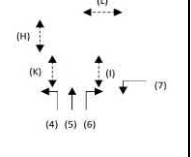
Job No: 25046HK

CTA Consultants Ltd.

Junction: **Wang Chiu Road / Hoi Bun Road (D)**
Description: **2025 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wang Chiu Road	E		1	A	4.0	18	30	1	13% / 0%	15% / 3%	2015	4170	1995	1985	4030	4020	610	0.306	0.306	331	0.167	0.167
Wang Chiu Road	E		1	A	4.0	0	25	0	100%	100%	2155	0	2035	2035	0	0	520	0.256		339	0.167	
Hoi Bun Raod	W		3	E	3.5	0	15	0	32%	25%	2105	2105	2040	2055	2040	2055	220	0.108	0.108	280	0.136	0.136
Hoi Bun Raod	W		3, 4	D	3.4	15	0	1	100%	100%	1955	1955	1775	1775	1775	1775	220	0.124		150	0.085	
Cheung Yip Street	N		1,4	B	3.5	15	0	1	100%	100%	1965	1965	1785	1785	1785	1785	220	0.123		260	0.146	
Cheung Yip Street	N		4	C	3.3	0	0	0	0%	0%	2085	2085	2085	2085	2085	2085	80	0.038	0.038	170	0.082	0.082
Cheung Yip Street	N		4	C	3.5	0	33	0	100%	100%	2105	4210	2015	2015	4020	4020	90	0.045		45	0.022	
Cheung Yip Street	N		4	C	3.5	0	30	0	100%	100%	2105	0	2005	2005	0	0	90	0.045		45	0.022	
Cheung Yip Street	S		2	F	4.0	40	0	1	100%	100%	2015	4170	1940	1940	4060	4030	70	0.036	0.036	80	0.041	0.041
Cheung Yip Street	S		2	F	4.0	0	25	0	29%	50%	2155	0	2120	2090	0	0	70	0.033		60	0.029	
Pedestrian crossing			Gp 3 Hp 2,3,4 Ip 1,2,4 Jp 1,2 Kp 1, 4 Lp 1,3,4 Mp 2 Np 2,3		Min. Crossing Time = 10Gm + 9FGm =19s Min. Crossing Time = 5Gm + 6FGm =11s Min. Crossing Time = 5Gm + 6FGm =11s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 6FGm =11s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 6FGm =11s																	

Notes:	Traffic Flow (pcu / hr) 	A.M. Check Phase ey 0.488 L (sec) 36 C (sec) 130 y pract. 0.651 R.C. (%) 33%	P.M. Check Phase ey 0.426 L (sec) 36 C (sec) 125 y pract. 0.641 R.C. (%) 51%
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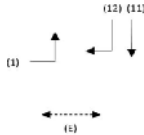
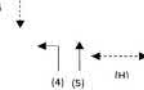
Stage / Phase Diagrams						
						
AM: I/G = 9	AM: I/G = 12	AM: I/G = 12	AM: I/G = 8			
PM: I/G = 9	PM: I/G = 12	PM: I/G = 12	PM: I/G = 7			

Junction: **Cheung Yip Street/ Shing Cheong Road (F)**

Description: **2025 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shing Cheong Road	E		A	1,2	3.5	15	0	1	100%	100%	1965	4070	1785	1785	3730	3730	201	0.113		215	0.121	
Shing Cheong Road	E		A	1,2	3.5	18	0	0	100%	100%	2105	0	1945	1945	0	0	219	0.113		235	0.121	
Shing Cheong Road	E		D	2	3.5	0	10	0	100%	100%	2105	2105	1830	1830	1830	1830	70	0.038	0.038	50	0.027	0.027
Cheung Yip Street	N		C	3	3.5	15	0	1	100%	100%	1965	4070	1785	1785	3890	3890	70	0.039	0.039	70	0.039	0.039
Cheung Yip Street	N		C	3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	60	0.029		70	0.033	
Cheung Yip Street	S		B	1	3.5	0	15	1	75%	60%	1965	4050	1830	1855	3645	3670	236	0.129	0.129	177	0.095	0.095
Cheung Yip Street	S		B	1	3.3	0	10	0	100%	100%	2085	0	1815	1815	0	0	234	0.129		173	0.095	
Pedestrian crossing			Ep	1,2		Min. Crossing Time = 5Gm + 8FGm =13s																
			Fp	2		Min. Crossing Time = 6Gm + 8FGm =14s																
			Gp	3		Min. Crossing Time = 10Gm + 8FGm =18s																
			Hp	3		Min. Crossing Time = 5Gm + 7FGm =12s																

Notes:	Traffic Flow (pcu / hr)															A.M. Check Phase			P.M. Check Phase		
	420(450)  70(50)  410(280)  60(70)  70(70)  60(70) 															ey 0.206			ey 0.162		
																L (sec) 29			L (sec) 29		
																C (sec) 120			C (sec) 120		
																y pract. 0.683			y pract. 0.683		
																R.C. (%) 231%			R.C. (%) 322%		

Stage / Phase Diagrams																							
																							
I/G = 6				I/G = 7				I/G = 5															

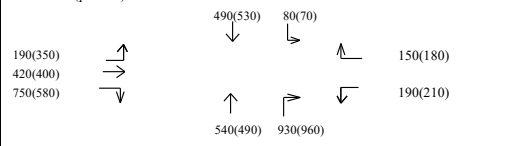
Junction: Wang Chiu Road / Sheung Yee Road (G)

Description: 2025 Observed Traffic Flows

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Sheung Yee Road	E		B	2	3.5	15	0	1	100%	100%	1965	8140	1785	1785	7655	7665	190	0.106		310	0.174	
Sheung Yee Road	E		B	2	3.5	18	0	0	0%	11%	2105	0	2105	2085	0	0	420	0.199	0.199	362	0.174	0.174
Sheung Yee Road	E		B	2	3.5	0	20	0	100%	77%	2105	0	1960	1990	0	0	390	0.199		345	0.173	
Sheung Yee Road	E		B	2	3.5	0	17	1	0%	0%	1965	0	1805	1805	0	0	360	0.199		313	0.174	
Wang Chiu Road	N		A	1	3.5	0	0	1	0%	0%	1825	3930	1825	1825	3930	3930	251	0.137		228	0.125	
Wang Chiu Road	N		A	1	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	289	0.137		262	0.125	
Wang Chiu Road	N		A	1	3.5	0	28	0	100%	100%	2105	4210	2000	2000	3985	3985	467	0.233	0.233	482	0.241	0.241
Wang Chiu Road	N		A	1	3.5	0	25	0	100%	100%	2105	0	1985	1985	0	0	463	0.233		478	0.241	
Sheung Yee Road	W		D	4	3.5	15	0	1	100%	100%	1965	6175	1785	1785	5665	5670	107	0.060		123	0.069	
Sheung Yee Road	W		D	4	3.5	20	25	0	70% / 30%	64% / 36%	2105	0	1965	1970	0	0	118	0.060		135	0.069	
Sheung Yee Road	W		D	4	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	115	0.060		132	0.069	
Wang Chiu Road	S		C	3	3.5	0	0	0	0%	0%	1965	4070	1965	1965	4070	4070	237	0.120	0.120	256	0.130	0.130
Wang Chiu Road	S		C	3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	253	0.120		274	0.130	
Wang Chiu Road	S		C	3	3.5	15	0	1	100%	100%	1965	1965	1785	1785	1785	1785	80	0.045		70	0.039	
Pedestrian crossing			Ep Fp Gp Hp Ip Jp Kp	1,3,4 3 1,2,4 1,2,3 1 2,3,4 4	Min. Crossing Time = 5Gm + 9FGm =14s Min. Crossing Time = 5Gm + 7FGm =12s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 7FGm =12s																	

Notes:

Traffic Flow (pcu / hr)

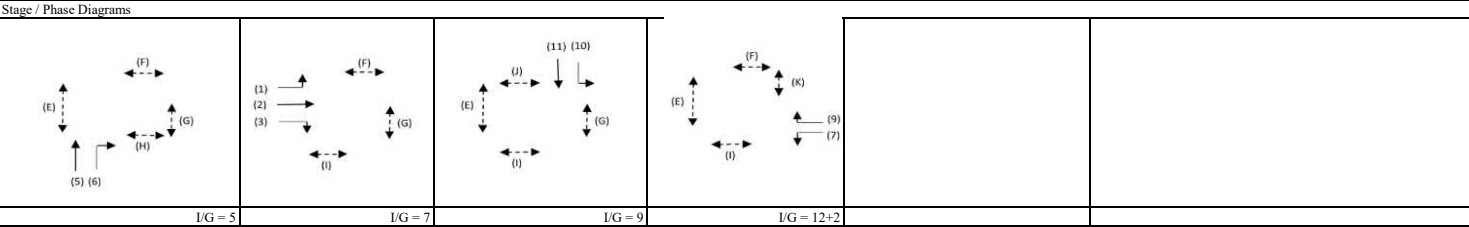


A.M. Check Phase

ey 0.553
L (sec) 32
C (sec) 140
y pract. 0.694
R.C. (%) 26%

P.M. Check Phase

ey 0.545
L (sec) 32
C (sec) 140
y pract. 0.694
R.C. (%) 27%

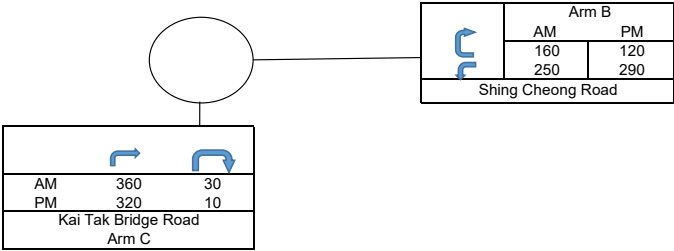


Roundabout Junction Calculation

Roundabout Junction : Shing Cheong Road / Kai Tak Bridge Road (H)

Project No. 25046HK

Design Year : 2025 Observed Traffic Flows



Input Parameters		Arm B - Shing Cheong Road		Arm C - Kai Tak Bridge Road		
		AM	PM	AM	PM	
V	=	Approach half width (m)	7.3	7.3	7.3	7.3
E	=	Entry width (m)	7.3	7.3	7.3	7.3
L	=	Effective length of flare (m)	1	1	1	1
R	=	Entry radius	15	15	15	15
D	=	Inscribed circle diameter (m)	45	45	45	45
A	=	Entry angle (degree)	30	30	30	30
Q	=	Entry flow (pcu/hr)	410	410	390	330
Qc	=	Circulating flow across entry (pcu/hr)	30	10	160	120

Output Parameters		Arm B		Arm C		
		AM	PM	AM	PM	
S	=	Sharepness of flare = 1.6*(E-V)/L	0.00	0.00	0.00	0.00
K	=	1-0.00347*(A-30)-0.978*(1/R-0.05)	0.98	0.98	0.98	0.98
X2	=	V+((E-V)/(1+2*S))	7.30	7.30	7.30	7.30
M	=	Exp((D-60)/10)	0.22	0.22	0.22	0.22
F	=	303*X2	2212	2212	2212	2212
Td	=	1+(0.5/(1+M))	1.41	1.41	1.41	1.41
Fc	=	0.21*Td*(1+0.2*X2)	0.73	0.73	0.73	0.73
Qe	=	Capacity = K*(F-Fc*Qc)	2154	2169	2061	2090
DFC	=	Entry Flow/Capacity = Q/Qe	0.19	0.19	0.19	0.16

DFC of Critical Approach	=	AM	PM
		0.19	0.19

CTA

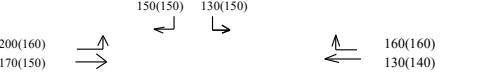
TRAFFIC SIGNALS CALCULATION

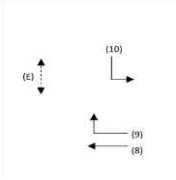
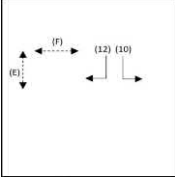
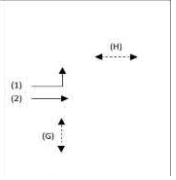
Job No: 25046HK

CTA Consultants Ltd.

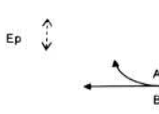
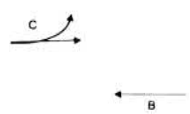
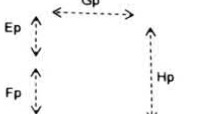
Junction: **Shing Fung Road/Kai Tak Bridge Road (I)**
Description: **2025 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shing Fung Road	W		A	1	3.5	0	18	0	100%	100%	2105	4210	1945	1945	3860	3860	81	0.041	0.041	81	0.041	0.041
Shing Fung Road	W		A	1	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	79	0.041		79	0.041	
Shing Fung Road	W		A	1	3.3	0	0	1	0%	0%	1805	3890	1805	1805	3890	3890	60	0.033		65	0.036	
Shing Fung Road	W		A	1	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	70	0.033		75	0.036	
Kai Tak Bridge Road	S		C	2	3.5	0	15	0	100%	100%	2105	4210	1915	1915	3830	3830	75	0.039	0.039	75	0.039	0.039
Kai Tak Bridge Road	S		C	2	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	75	0.039		75	0.039	
Kai Tak Bridge Road	S		B	1,2	3.5	12	0	1	100%	100%	1965	1965	1745	1745	1745	1745	130	0.074		150	0.086	
Shing Fung Road	E		D	3	3.5	25	0	1	94%	90%	2995	5100	2835	2840	4940	4945	212	0.075	0.075	178	0.063	0.063
Shing Fung Road	E		D	3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	158	0.075		132	0.063	
Pedestrian crossing			Ep	1,2	Min. Crossing Time = 7Gm + 10FGm =17s																	
			Fp	2	Min. Crossing Time = 7Gm + 11FGm =18s																	
			Gp	3	Min. Crossing Time = 8Gm + 12FGm =20s																	
			Hp	3	Min. Crossing Time = 8Gm + 7FGm =15s																	

Notes:	Traffic Flow (pcu / hr)		A.M. Check Phase ey 0.156 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 382%	P.M. Check Phase ey 0.143 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 423%

Stage / Phase Diagrams					
					
I/G = 5	I/G = 13	I/G = 5			

TRAFFIC SIGNALS CALCULATION										Job No: 25046HK										CTA Consultants Ltd.									
Junction: Wai Yip Street/ Shun Yip Street (A)																													
Description: 2036 Reference Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Wai Yip Street	E	→	A	2	3.3	0	0	1	0%	0%	1945	6115	1945	1945	6115	6115	483	0.249	0.249	391	0.201	0.201							
Wai Yip Street	E	→	A	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	518	0.249		419	0.201								
Wai Yip Street	E	→	A	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	518	0.249		419	0.201								
Wai Yip Street	W	←	B	2	3.3	0	0	1	0%	0%	1945	6115	1945	1945	6115	6115	309	0.159		299	0.154								
Wai Yip Street	W	←	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	331	0.159		321	0.154								
Wai Yip Street	W	←	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	331	0.159		321	0.154								
Shun Yip Street	S	↻	C	1	3.5	11	0	1	100%	100%	1965	6225	1720	1720	5520	5520	240	0.140	0.140	263	0.153	0.153							
Shun Yip Street	S	↻	C	1	3.5	18	18	0	100% / 0%	100% / 0%	2105	0	1940	1940	0	0	271	0.139		297	0.153								
Shun Yip Street	S	↻	C	1	4.0	0	10	0	100%	100%	2155	0	1860	1860	0	0	260	0.140		180	0.097								
Pedestrian Crossing			Dp	2,3	Min. Crossing Time = 11Gm + 11FGm =22s																								
			Ep	3	Min. Crossing Time = 12Gm + 9FGm = 21s																								
			Fp	3	Min. Crossing Time = 13Gm + 12FGm =25s																								
Notes:										Traffic Flow (pcu / hr) AM(PM)										A.M. Check Phase					P.M. Check Phase				
										1520(1230) → ← 970(940) ↙ ↘ 510(560) 260(180)										Ey 0.388 L (sec) 34 C (sec) 118 y pract. 0.641 R.C. (%) 65%					Ey 0.354 L (sec) 34 C (sec) 118 y pract. 0.641 R.C. (%) 81%				
Stage / Phase Diagrams																													
1.					2.					3.																			
I/G = 6s					I/G = 8s					I/G = 20+2s																			

TRAFFIC SIGNALS CALCULATION										Job No: 25046HK										CTA Consultants Ltd.																													
Junction: Ho Bun Road / Shun Yip Street (B)																																																	
Description: 2036 Reference Traffic Flows (With Planned Junction Improvement)																																																	
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak																													
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																											
Hoi Bun Road	W		A	1	3.5	0	25	0	100%	100%	2105	2105	1985	1985	1985	1985	100	0.050	0.050	190	0.096	0.096																											
Hoi Bun Road	W		B	1,2	3.3	0	0	1	0%	0%	1945	1945	1945	1945	1945	1945	200	0.103		330	0.170																												
Hoi Bun Road	E		C	2	3.5	18	0	1	100%	100%	1965	4070	1810	1810	3900	3890	603	0.333		465	0.257																												
Hoi Bun Road	E		C	2	3.5	20	0	0	10%	16%	2105	0	2090	2080	0	0	697	0.333	0.333	535	0.257	0.257																											
Pedestrian Crossing			Ep	1,3	Min. Crossing Time = 5Gm + 7FGm = 12s																																												
			Fp	3	Min. Crossing Time = 5Gm + 7FGm = 12s																																												
			Gp	3	Min. Crossing Time = 11Gm + 12FGm = 23s																																												
			Hp	3	Min. Crossing Time = 8Gm + 10FGm = 18s																																												
Notes:										Traffic Flow (pcu / hr)										AM(PM)																													
										670(550)  630(450) 										 100(190)  200(330)										A.M. Check Phase Ey 0.384 L (sec) 39 C (sec) 120 y pract. 0.608 R.C. (%) 58%										P.M. Check Phase Ey 0.353 L (sec) 39 C (sec) 120 y pract. 0.608 R.C. (%) 72%									
Stage / Phase Diagrams																																																	
1.					2.					3.																																							
																																																	
I/G = 7s					I/G = 9s					I/G = 23+2s																																							

CTA Consultants Ltd.

Description: **2036 Reference Traffic Flows**

Stage / Phase Diagrams					
$I/G = 21s$	$I/G = 12s$	$I/G = 11s$			

Junction: Wang Chiu Road / Hoi Bun Road / Cheung Yip Street (D)

Description: 2036 Reference Traffic Flows (With Planned Junction Improvement)

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wang Chiu Road	E		A	1	3.5	0	35	1	27%	40%	1965	4070	1945	1930	3950	3935	846	0.435	0.435	849	0.440	0.440
Wang Chiu Road	E		A	1	3.5	0	30	0	100%	100%	2105	0	2005	2005	0	0	874	0.436		881	0.439	
Hoi Bun Road	W		E	3	3.5	0	0	1	0%	0%	1965	1965	1965	1965	1965	1965	130	0.066		260	0.132	
Hoi Bun Raod	W		D	2,3	3.5	30	0	1	100%	100%	1965	1965	1870	1870	1870	1870	460	0.246	0.246	450	0.241	0.241
Cheung Yip Street	N		B	1,2	3.5	15	0	1	100%	100%	1965	1965	1785	1785	1785	1785	840	0.471		740	0.415	
Cheung Yip Street	N		C	2	3.5	0	35	0	100%	100%	2105	4210	2020	2020	4025	4025	276	0.137		206	0.102	
Cheung Yip Street	N		C	2	3.5	0	30	0	100%	100%	2105	0	2005	2005	0	0	274	0.137		204	0.102	
Pedestrian crossing			Fp	3	Min. Crossing Time = 5Gm + 7FGm =12s																	
			Gp	2,3	Min. Crossing Time = 5Gm + 9FGm =14s																	
			Hp	3	Min. Crossing Time = 5Gm + 17FGm =22s																	
			Ip	1,2	Min. Crossing Time = 5Gm + 4FGm =9s																	
			Jp	1	Min. Crossing Time = 5Gm + 7FGm =12s																	
			Kp	1,2	Min. Crossing Time = 5Gm + 5FGm =10s																	
			Lp	3	Min. Crossing Time = 5Gm + 4FGm =9s																	

Notes:	Traffic Flow (pcu / hr)	A.M. Check Phase		P.M. Check Phase	
		ey	0.681	ey	0.681
		L (sec)	15	L (sec)	15
		C (sec)	120	C (sec)	120
		y pract.	0.788	y pract.	0.788
		R.C. (%)	16%	R.C. (%)	16%

620(510)



1100(1220)





840(740)



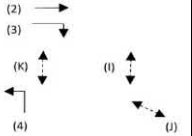
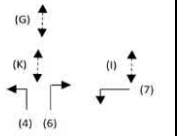
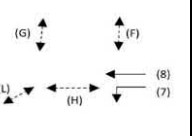
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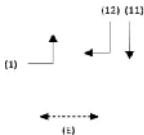
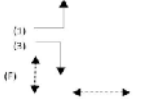
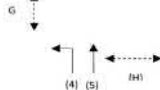


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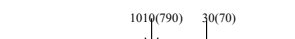


460(450)

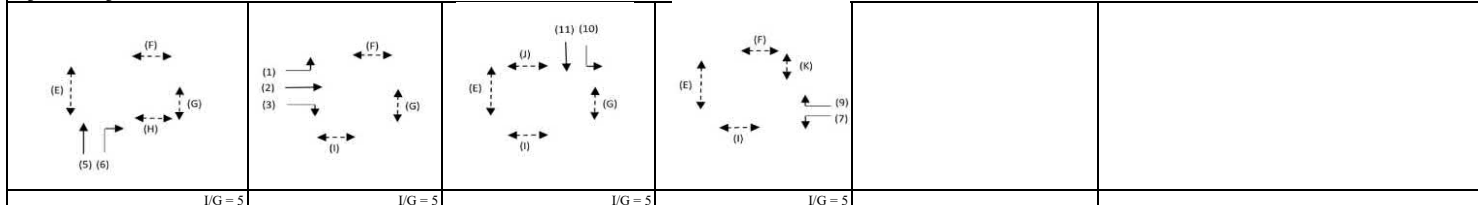
Stage / Phase Diagrams					
					
1/G = 3		1/G = 5			

TRAFFIC SIGNALS CALCULATION										Job No: 25046HK										CTA Consultants Ltd.									
Junction: Cheung Yip Street/ Shing Cheong Road (F)																													
Description: 2036 Reference Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Shing Cheong Road	E		A	1,2	3.5	15	0	1	100%	100%	1965	4070	1785	1785	3730	3730	651	0.365	0.365	517	0.290								
Shing Cheong Road	E		A	1,2	3.5	18	0	0	100%	100%	2105	0	1945	1945	0	0	709	0.365		563	0.290								
Shing Cheong Road	E		D	2	3.5	0	10	0	100%	100%	2105	2105	1830	1830	1830	1830	40	0.022		20	0.011 0.011								
Cheung Yip Street	N		C	3	3.5	15	0	1	93%	100%	1965	4070	1800	1785	3905	3890	32	0.018	0.018	90	0.050 0.050								
Cheung Yip Street	N		C	3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	38	0.018		100	0.048								
Cheung Yip Street	S		B	1	3.5	0	15	1	89%	88%	1965	4050	1805	1805	3620	3620	548	0.304		608	0.337 0.337								
Cheung Yip Street	S		B	1	3.3	0	10	0	100%	100%	2085	0	1815	1815	0	0	552	0.304		612	0.337								
Pedestrian crossing			Ep	1,2	Min. Crossing Time = 5Gm + 8FGm =13s																								
			Fp	2	Min. Crossing Time = 6Gm + 8FGm =14s																								
			Gp	3	Min. Crossing Time = 10Gm + 8FGm =18s																								
			Hp	3	Min. Crossing Time = 5Gm + 7FGm =12s																								
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase				
										1360(1080) 40(20)   1040(1150) 60(70)   30(90) 40(100)  										ey 0.383 L (sec) 35 C (sec) 120 y pract. 0.638 R.C. (%) 67%					ey 0.398 L (sec) 44 C (sec) 120 y pract. 0.570 R.C. (%) 43%				
Stage / Phase Diagrams																													
																													
					AM: I/G = 5					AM: I/G = 8																			
PM: I/G = 11					PM: I/G = 5					PM: I/G = 8																			

Description: **2036 Reference Traffic Flows (With Planned Junction Improvement)**

Notes:	Traffic Flow (pcu / hr)		A.M. Check Phase		P.M. Check Phase	
	80(360) 370(400) 570(1040) 	1019(790) 30(70) 300(260) 520(510) 650(830) 1020(920)	ey 0.688 L (sec) 16 C (sec) 140 y pract. 0.797 R.C. (%) 16%	ey 0.693 L (sec) 16 C (sec) 140 y pract. 0.797 R.C. (%) 15%		

Stage / Phase Diagrams

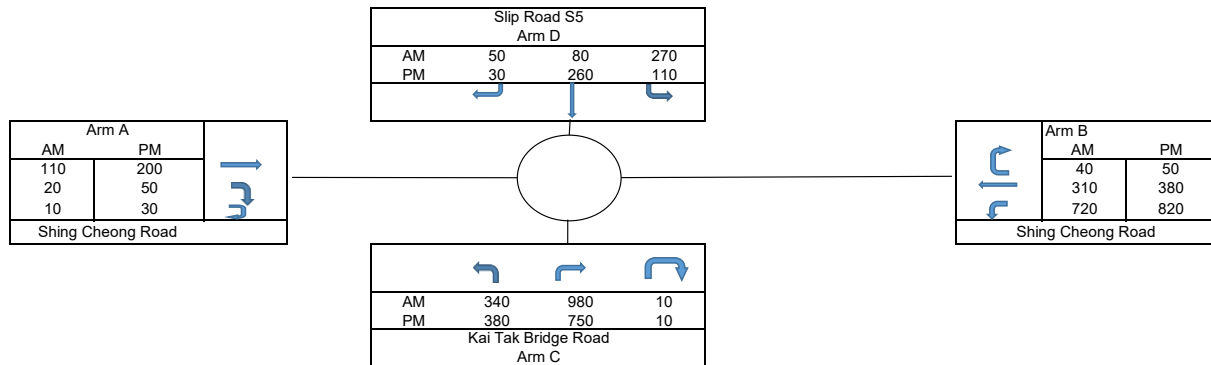


Roundabout Junction Calculation

Roundabout Junction : **Shing Cheong Road / Kai Tak Bridge Road (H)**

Project No. 25046HK

Design Year : **2036 Reference Traffic Flows**



Input Parameters			Arm A - Shing Cheong Road		Arm B - Shing Cheong Road		Arm C - Kai Tak Bridge Road		Arm D - Slip Road S5	
			AM	PM	AM	PM	AM	PM	AM	PM
V	=	Approach half width (m)	7.5	7.5	7.5	7.5	7.6	7.6	3.7	3.7
E	=	Entry width (m)	10	10	10	10	8	8	8.3	8.3
L	=	Effective length of flare (m)	10	10	10	10	11.4	11.4	15	15
R	=	Entry radius	25	25	25	25	25	25	25	25
D	=	Inscribed circle diameter (m)	46	46	46	46	46	46	46	46
A	=	Entry angle (degree)	10	10	10	10	30	30	30	30
Q	=	Entry flow (pcu/hr)	140	280	1070	1250	1330	1140	400	400
Qc	=	Circulating flow across entry (pcu/hr)	1030	810	170	380	410	490	1170	1090
Output Parameters			Arm A		Arm B		Arm C		Arm D	
			AM	PM	AM	PM	AM	PM	AM	PM
S	=	Sharepness of flare = $1.6 \cdot (E-V)/L$	0.40	0.40	0.40	0.40	0.06	0.06	0.49	0.49
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	1.08	1.08	1.08	1.08	1.01	1.01	1.01	1.01
X2	=	$V + ((E-V)/(1+2 \cdot S))$	8.89	8.89	8.89	8.89	7.96	7.96	6.02	6.02
M	=	$\text{Exp}((D-60)/10)$	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
F	=	$303 \cdot X2$	2693	2693	2693	2693	2412	2412	1825	1825
Td	=	$1 + (0.5/(1+M))$	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.82	0.82	0.82	0.82	0.76	0.76	0.65	0.65
Qe	=	Capacity = $K \cdot (F - Fc) \cdot Qc$	1998	2192	2757	2571	2120	2058	1076	1129
DFC	=	Entry Flow/Capacity = Q/Qe	0.07	0.13	0.39	0.49	0.63	0.55	0.37	0.35
DFC of Critical Approach			AM	PM						
			0.63	0.55						

CTA

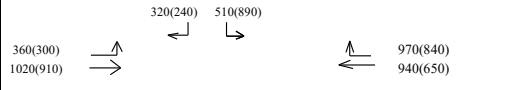
Junction: **Shing Fung Road/Kai Tak Bridge Road (I)**

Description: **2036 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shing Fung Road	W		A	1	3.5	0	18	0	100%	100%	2105	4210	1945	1945	3860	3860	489	0.251	0.251	423	0.218	
Shing Fung Road	W		A	1	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	481	0.251		417	0.218	
Shing Fung Road	W		A	1	3.3	0	0	1	0%	0%	1805	3890	1805	1805	3890	3890	436	0.242		302	0.167	
Shing Fung Road	W		A	1	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	504	0.242		348	0.167	
Kai Tak Bridge Road	S		C	2	3.5	0	15	0	100%	100%	2105	4210	1915	1915	3830	3830	160	0.084	0.084	120	0.063	
Kai Tak Bridge Road	S		C	2	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	160	0.084		120	0.063	
Kai Tak Bridge Road	S		B	1,2	3.3	15	0	1	100%	100%	2235	2235	2030	2030	2030	2030	510	0.251		890	0.438	0.438
Shing Fung Road	E		D	3	3.3	20	0	1	50%	47%	2395	4490	2310	2315	4405	4410	724	0.313	0.313	635	0.274	0.274
Shing Fung Road	E		D	3	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	656	0.313		575	0.274	
Pedestrian crossing			Ep Fp Gp Hp	1,2 2 3 3		Min. Crossing Time = 7Gm + 10FGm =17s Min. Crossing Time = 7Gm + 11FGm =18s Min. Crossing Time = 8Gm + 12FGm =20s Min. Crossing Time = 8Gm + 7FGm =15s																

Notes:

Traffic Flow (pcu / hr)

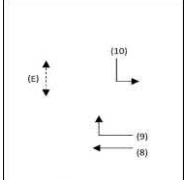
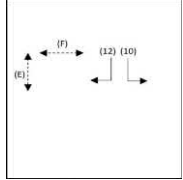


A.M. Check Phase

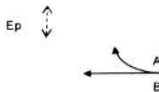
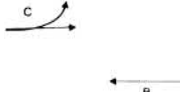
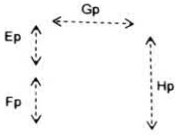
ey 0.648
L (sec) 20
C (sec) 120
y pract. 0.750
R.C. (%) **16%**

P.M. Check Phase

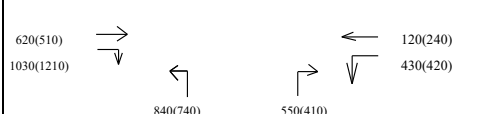
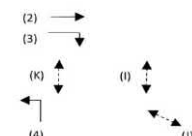
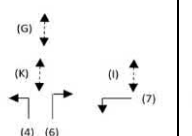
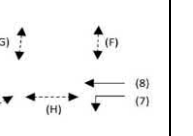
ey 0.713
L (sec) 10
C (sec) 120
y pract. 0.825
R.C. (%) **16%**

Stage / Phase Diagrams					
					
AM: I/G = 5		AM: I/G = 13 PM: I/G = 7		AM: I/G = 5	

TRAFFIC SIGNALS CALCULATION										Job No: 25046HK										CTA Consultants Ltd.									
Junction: Wai Yip Street/ Shun Yip Street (A)																													
Description: 2036 Design Traffic Flows																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Wai Yip Street	E	→	A	2	3.3	0	0	1	0%	0%	1945	6115	1945	1945	6115	6115	483	0.249	0.249	391	0.201	0.201							
Wai Yip Street	E	→	A	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	518	0.249		419	0.201								
Wai Yip Street	E	→	A	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	518	0.249		419	0.201								
Wai Yip Street	W	←	B	2	3.3	0	0	1	0%	0%	1945	6115	1945	1945	6115	6115	309	0.159		299	0.154								
Wai Yip Street	W	←	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	331	0.159		321	0.154								
Wai Yip Street	W	←	B	2	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	331	0.159		321	0.154								
Shun Yip Street	S	↻	C	1	3.5	11	0	1	100%	100%	1965	6225	1720	1720	5520	5520	237	0.138	0.138	254	0.148	0.148							
Shun Yip Street	S	↻	C	1	3.5	18	18	0	99% / 1%	100% / 0%	2105	0	1940	1940	0	0	267	0.138		286	0.147								
Shun Yip Street	S	↻	C	1	4.0	0	10	0	100%	100%	2155	0	1860	1860	0	0	256	0.138		180	0.097								
Pedestrian Crossing			Dp	2,3	Min. Crossing Time = 11Gm + 11FGm =22s																								
			Ep	3	Min. Crossing Time = 12Gm + 9FGm = 21s																								
			Fp	3	Min. Crossing Time = 13Gm + 12FGm =25s																								
Notes:										Traffic Flow (pcu / hr) AM(PM)										A.M. Check Phase					P.M. Check Phase				
										1520(1230) → ← 970(940) 500(540) 260(180)										Ey 0.386 L (sec) 34 C (sec) 118 y pract. 0.641 R.C. (%) 66%					Ey 0.349 L (sec) 34 C (sec) 118 y pract. 0.641 R.C. (%) 84%				
Stage / Phase Diagrams																													
1.					2.					3.																			
I/G = 6s					I/G = 8s					I/G = 20+2s																			

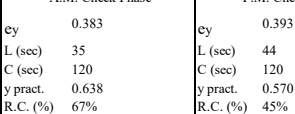
TRAFFIC SIGNALS CALCULATION										Job No: 25046HK										CTA Consultants Ltd.																													
Junction: Ho Bun Road / Shun Yip Street (B)																																																	
Description: 2036 Design Traffic Flows (With Planned Junction Improvement)																																																	
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside O/I	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak																													
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																											
Hoi Bun Road	W		A	1	3.5	0	25	0	100%	100%	2105	2105	1985	1985	1985	1985	100	0.050	0.050	190	0.096	0.096																											
Hoi Bun Road	W		B	1,2	3.3	0	0	1	0%	0%	1945	1945	1945	1945	1945	1945	170	0.087		320	0.165																												
Hoi Bun Road	E		C	2	3.5	18	0	1	100%	100%	1965	4070	1810	1810	3900	3895	599	0.331		456	0.252																												
Hoi Bun Road	E		C	2	3.5	20	0	0	9%	14%	2105	0	2090	2085	0	0	691	0.331	0.331	524	0.251	0.251																											
Pedestrian Crossing			Ep	1,3	Min. Crossing Time = 5Gm + 7FGm = 12s																																												
			Fp	3	Min. Crossing Time = 5Gm + 7FGm = 12s																																												
			Gp	3	Min. Crossing Time = 11Gm + 12FGm = 23s																																												
			Hp	3	Min. Crossing Time = 8Gm + 10FGm = 18s																																												
Notes:										Traffic Flow (pcu / hr)										AM(PM)																													
										660(530)  630(450) 										 100(190)  170(320)										A.M. Check Phase Ey 0.381 L (sec) 39 C (sec) 120 y pract. 0.608 R.C. (%) 59%										P.M. Check Phase Ey 0.347 L (sec) 39 C (sec) 120 y pract. 0.608 R.C. (%) 75%									
Stage / Phase Diagrams																																																	
1.					2.					3.																																							
																																																	
I/G = 7s					I/G = 9s					I/G = 23+2s																																							

TRAFFIC SIGNALS CALCULATION										Job No: 25046HK				CTA Consultants Ltd.											
Junction: Kai Hing Street / Hoi Bun Road (C)																									
Description: 2036 Design Traffic Flows																									
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak					
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y			
Hoi Bun Road	E	→	A	1,2	3.5	0	0	1	0%	0%	1965	4070	1965	1965	4070	4070	628	0.319	0.319	483	0.246	0.246			
Hoi Bun Road	E	→	A	1,2	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	672	0.319		517	0.246				
Hoi Bun Road	W	←	B	1,4	3.3	0	0	1	0%	0%	1945	4030	1945	1945	4030	4030	82	0.042		154	0.079				
Hoi Bun Road	W	←	B	1,4	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	88	0.042		166	0.079				
Kai Hing Road	N	↕	C	3	5.0	13	0	1	100%	100%	2115	4230	1890	1890	3815	3815	130	0.069		160	0.085				
Kai Hing Road	N	↕	C	3	5.0	18	15	1	% / 100% / 100%		2115	0	1925	1925	0	0	300	0.156	0.156	180	0.094	0.094			
Pedestrian Crossing		↕	Dp	3,4		Min. Crossing Time = 7Gm + 7FGm =14s																			
			Ep	2		Min. Crossing Time = 5Gm + 16FGm = 21s																			
			Fp	4		Min. Crossing Time = 5Gm + 16FGm = 21s																			
			Gp	2,3		Min. Crossing Time = 5Gm + 11FGm =16s																			
			Hp	1,2,4		Min. Crossing Time = 7Gm + 12FGm =19s																			
Notes:												Traffic Flow (pcu / hr)				AM(PM)		A.M. Check Phase			P.M. Check Phase				
												1300(1000)				→		← 170(320)		εy 0.475			εy 0.339		
																↙ ↘				L (sec) 42			L (sec) 42		
																130(160) 300(180)				C (sec) 130			C (sec) 130		
																				y pract. 0.609			y pract. 0.609		
																				R.C. (%) 28%			R.C. (%) 80%		
Stage / Phase Diagrams																									
I/G = 21s				I/G = 12s				I/G = 11s																	

TRAFFIC SIGNALS CALCULATION										Job No: 25046HK										CTA Consultants Ltd.									
Junction: Wang Chiu Road / Hoi Bun Road / Cheung Yip Street (D)																													
Description: 2036 Design Traffic Flows (With Planned Junction Improvement)																													
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak									
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y							
Wang Chiu Road	E		A	1	3.5	0	35	1	24%	40%	1965	4070	1945	1930	3950	3935	813	0.418	0.418	844	0.437	0.437							
Wang Chiu Road	E		A	1	3.5	0	30	0	100%	100%	2105	0	2005	2005	0	0	837	0.418		876	0.437								
Hoi Bun Road	W		E	3	3.5	0	0	1	0%	0%	1965	1965	1965	1965	1965	1965	120	0.061		240	0.122								
Hoi Bun Raod	W		D	2,3	3.5	30	0	1	100%	100%	1965	1965	1870	1870	1870	1870	430	0.230	0.230	420	0.225	0.225							
Cheung Yip Street	N		B	1,2	3.5	15	0	1	100%	100%	1965	1965	1785	1785	1785	1785	840	0.471		740	0.415								
Cheung Yip Street	N		C	2	3.5	0	35	0	100%	100%	2105	4210	2020	2020	4025	4025	276	0.137		206	0.102								
Cheung Yip Street	N		C	2	3.5	0	30	0	100%	100%	2105	0	2005	2005	0	0	274	0.137		204	0.102								
Pedestrian crossing			Fp	3	Min. Crossing Time = 5Gm + 7FGm =12s																								
			Gp	2,3	Min. Crossing Time = 5Gm + 9FGm =14s																								
			Hp	3	Min. Crossing Time = 5Gm + 17FGm =22s																								
			Ip	1,2	Min. Crossing Time = 5Gm + 4FGm =9s																								
			Jp	1	Min. Crossing Time = 5Gm + 7FGm =12s																								
			Kp	1,2	Min. Crossing Time = 5Gm + 5FGm =10s																								
			Lp	3	Min. Crossing Time = 5Gm + 4FGm =9s																								
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase			P.M. Check Phase						
																				ey 0.648			ey 0.662						
																				L (sec) 15			L (sec) 15						
																				C (sec) 120			C (sec) 120						
																				y pract. 0.788			y pract. 0.788						
																				R.C. (%) 22%			R.C. (%) 19%						
Stage / Phase Diagrams																													
																													
1/G = 3										1/G = 5																			

Description: **2036 Design Traffic Flows**[illegible]

P.M. Check Phase



PM: $I/G = 11$	AM: $I/G = 5$ PM: $I/G = 5$	AM: $I/G = 8$ PM: $I/G = 8$			

Junction: Wang Chiu Road / Sheung Yee Road (G)

Description: 2036 Design Traffic Flows (With Planned Junction Improvement)

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Sheung Yee Road	E		B	2	3.5	15	0	1	100%	100%	1965	8280	1785	1785	7935	7875	80	0.045		331	0.185	
Sheung Yee Road	E		B	2	3.5	18	0	0	0%	7%	2105	0	2105	2090	0	0	248	0.118	0.118	388	0.186	0.186
Sheung Yee Road	E		B	2	3.5	0	30	0	41%	89%	2105	0	2060	2015	0	0	242	0.117		373	0.185	
Sheung Yee Road	E		B	2	3.5	0	25	0	100%	100%	2105	0	1985	1985	0	0	234	0.118		368	0.185	
Sheung Yee Road	E		B	2	3.5	0	20	1	100%	100%	1965	0	1830	1830	0	0	216	0.118		340	0.186	
Wang Chiu Road	N		A	1	3.5	0	0	1	0%	0%	1825	3930	1825	1825	3930	3930	302	0.165		385	0.211	
Wang Chiu Road	N		A	1	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	348	0.165		445	0.211	
Wang Chiu Road	N		A	1	3.5	0	28	0	100%	100%	2105	4210	2000	2000	3985	3985	507	0.253	0.253	452	0.226	0.226
Wang Chiu Road	N		A	1	3.5	0	25	0	100%	100%	2105	0	1985	1985	0	0	503	0.253		448	0.226	
Sheung Yee Road	W		D	4	3.5	15	0	1	100%	100%	1965	6175	1785	1785	5660	5660	259	0.145		243	0.136	0.136
Sheung Yee Road	W		D	4	3.5	20	25	0	92% / 8%	100% / 0%	2105	0	1960	1960	0	0	284	0.145	0.145	267	0.136	
Sheung Yee Road	W		D	4	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	277	0.145		260	0.136	
Wang Chiu Road	S		C	3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	339	0.161	0.161	292	0.139	0.139
Wang Chiu Road	S		C	3	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	339	0.161		292	0.139	
Wang Chiu Road	S		C	3	3.5	15	0	1	10%	26%	1965	6175	1945	1915	6155	6125	313	0.161		266	0.139	
Pedestrian crossing			Ep Fp Gp Hp Ip Jp Kp	1,3,4 3 1,2,4 1,2,3 1 2,3,4 4	Min. Crossing Time = 5Gm + 9FGm =14s Min. Crossing Time = 5Gm + 7FGm =12s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 5FGm =10s Min. Crossing Time = 5Gm + 7FGm =12s																	

Notes:

Traffic Flow (pcu / hr)

80(360)
370(400)
550(1040)

960(780)
30(70)

300(260)
520(510)

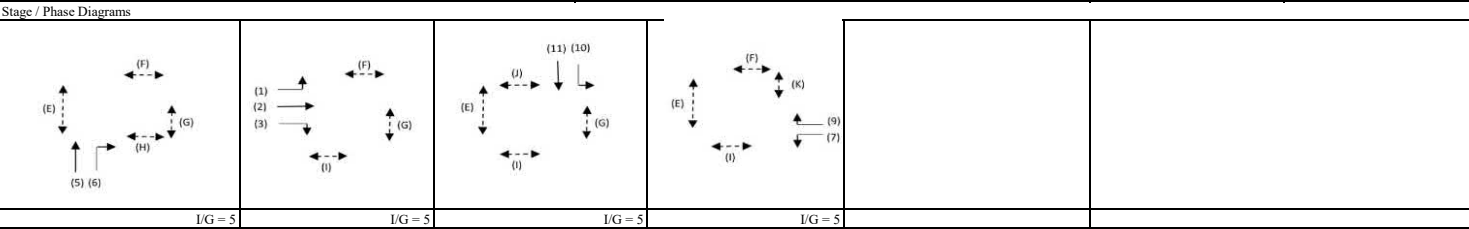
650(830)
1010(900)

A.M. Check Phase

ey 0.677
L (sec) 16
C (sec) 140
y pract. 0.797
R.C. (%) 18%

P.M. Check Phase

ey 0.687
L (sec) 16
C (sec) 140
y pract. 0.797
R.C. (%) 16%

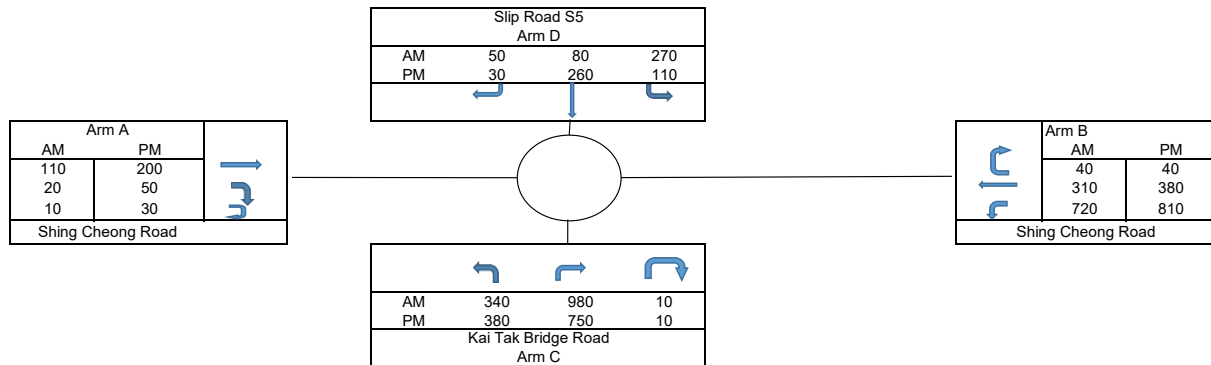


Roundabout Junction Calculation

Roundabout Junction : **Shing Cheong Road / Kai Tak Bridge Road (H)**

Project No. 25046HK

Design Year : **2036 Design Traffic Flows**



Input Parameters			Arm A - Shing Cheong Road		Arm B - Shing Cheong Road		Arm C - Kai Tak Bridge Road		Arm D - Slip Road S5	
			AM	PM	AM	PM	AM	PM	AM	PM
V	=	Approach half width (m)	7.5	7.5	7.5	7.5	7.6	7.6	3.7	3.7
E	=	Entry width (m)	10	10	10	10	8	8	8.3	8.3
L	=	Effective length of flare (m)	10	10	10	10	11.4	11.4	15	15
R	=	Entry radius	25	25	25	25	25	25	25	25
D	=	Inscribed circle diameter (m)	46	46	46	46	46	46	46	46
A	=	Entry angle (degree)	10	10	10	10	30	30	30	30
Q	=	Entry flow (pcu/hr)	140	280	1070	1230	1330	1140	400	400
Qc	=	Circulating flow across entry (pcu/hr)	1030	800	170	380	410	480	1170	1080
Output Parameters			Arm A		Arm B		Arm C		Arm D	
			AM	PM	AM	PM	AM	PM	AM	PM
S	=	Sharepness of flare = $1.6 \cdot (E-V)/L$	0.40	0.40	0.40	0.40	0.06	0.06	0.49	0.49
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	1.08	1.08	1.08	1.08	1.01	1.01	1.01	1.01
X2	=	$V + ((E-V)/(1+2 \cdot S))$	8.89	8.89	8.89	8.89	7.96	7.96	6.02	6.02
M	=	$\text{Exp}((D-60)/10)$	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
F	=	$303 \cdot X2$	2693	2693	2693	2693	2412	2412	1825	1825
Td	=	$1 + (0.5/(1+M))$	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.82	0.82	0.82	0.82	0.76	0.76	0.65	0.65
Qe	=	Capacity = $K \cdot (F - Fc) \cdot Qc$	1998	2201	2757	2571	2120	2066	1076	1135
DFC	=	Entry Flow/Capacity = Q/Qe	0.07	0.13	0.39	0.48	0.63	0.55	0.37	0.35
DFC of Critical Approach			AM	PM						
			0.63	0.55						

CTA

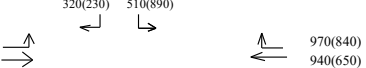
TRAFFIC SIGNALS CALCULATION

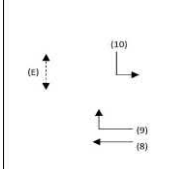
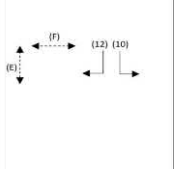
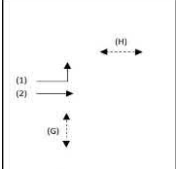
Job No: 25046HK

CTA Consultants Ltd.

Junction: **Shing Fung Road/Kai Tak Bridge Road (I)**
Description: **2036 Design Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Shing Fung Road	W		A	1	3.5	0	18	0	100%	100%	2105	4210	1945	1945	3860	3860	489	0.251	0.251	423	0.218	
Shing Fung Road	W		A	1	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	481	0.251		417	0.218	
Shing Fung Road	W		A	1	3.3	0	0	1	0%	0%	1805	3890	1805	1805	3890	3890	436	0.242		302	0.167	
Shing Fung Road	W		A	1	3.3	0	0	0	0%	0%	2085	0	2085	2085	0	0	504	0.242		348	0.167	
Kai Tak Bridge Road	S		C	2	3.5	0	15	0	100%	100%	2105	4210	1915	1915	3830	3830	160	0.084	0.084	115	0.060	
Kai Tak Bridge Road	S		C	2	3.5	0	15	0	100%	100%	2105	0	1915	1915	0	0	160	0.084		115	0.060	
Kai Tak Bridge Road	S		B	1,2	3.3	15	0	1	100%	100%	2235	2235	2030	2030	2030	2030	510	0.251		890	0.438	0.438
Shing Fung Road	E		D	3	3.3	20	0	1	50%	47%	2395	4490	2310	2315	4405	4410	724	0.313	0.313	635	0.274	0.274
Shing Fung Road	E		D	3	3.4	0	0	0	0%	0%	2095	0	2095	2095	0	0	656	0.313		575	0.274	
Pedestrian crossing			Ep Fp Gp Hp	1,2 2 3 3	Min. Crossing Time = 7Gm + 10FGm =17s Min. Crossing Time = 7Gm + 11FGm =18s Min. Crossing Time = 8Gm + 12FGm =20s Min. Crossing Time = 8Gm + 7FGm =15s																	

Notes:	Traffic Flow (pcu / hr) 	A.M. Check Phase ey 0.648 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 16%	P.M. Check Phase ey 0.713 L (sec) 10 C (sec) 120 y pract. 0.825 R.C. (%) 16%
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Stage / Phase Diagrams					
					
AM: I/G = 5	AM: I/G = 13 PM: I/G = 7	AM: I/G = 5 PM: I/G = 5			

Junction: Wai Yip Street/ Shun Yip Street (A)

Description: 2036 Reference Traffic Flows

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda\frac{X}{S})} + \frac{X}{2q(1-X)} - 0.65 \frac{1}{q^2} (c)^{\frac{1}{3}} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Wai Yip Street (EB)		Wai Yip Street (WB)		Shun Yip Street SB (LT & RT)					
	AM	PM	AM	PM	AM	PM				
q (veh/hr)	1,525	1,267	800	967	800	1,092				
g (sec)	53	41	28	31	31	43				
c (sec)	118	118	118	118	118	118				
s (veh/hr)	5,096	5,096	5,096	5,096	4,600	4,600				
λ	0.45	0.34	0.24	0.26	0.26	0.37				
x	0.66	0.72	0.66	0.72	0.66	0.65				
M=qc	49.99	41.52	26.22	31.69	26.22	35.78				
Delay										
d	26.01	34.50	41.43	40.45	39.65	31.58				
Junction Delay (sec)	33.4	35.3								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Wai Yip Street (EB)		Wai Yip Street (WB)		Shun Yip Street SB (LT & RT)					
r (sec)	65	77	90	87	87	75				
N (veh)	27	27	20	23	19	23				
Average Queue length (m)	55.0	54.4	40.1	46.7	38.7	45.3				

Junction: Ho Bun Road / Shun Yip Street (B)

Description: 2036 Reference Traffic Flows (With Planned Junction Improvement)

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda/X)} + \frac{X}{2q(1-X)} - 0.65 \left(\frac{c}{q}\right)^{\frac{1}{3}} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Ho Bun Road WB (RT)		Ho Bun Road WB (ST)		Ho Bun Road EB (LT & ST)					
	AM	PM	AM	PM	AM	PM				
q (veh/hr)	258	483	467	408	1,025	1,042				
g (sec)	27	39	49	33	54	42				
c (sec)	120	120	120	120	120	120				
s (veh/hr)	1,654	1,654	1,621	1,621	3,246	3,233				
λ	0.22	0.32	0.41	0.28	0.45	0.35				
x	0.70	0.91	0.70	0.91	0.70	0.91				
M=qc	8.61	16.11	15.56	13.61	34.17	34.72				
Delay d	48.12	64.75	32.49	72.69	27.59	47.72				
Junction Delay (sec)	31.9	57.3								

From TPDM Vol4 Table 4.2.5
Average Queue N calculated by
N=q(r/2+d) or qr, whichever the greater

where
r = effective red time
q = flow (in same units as r and d)
d = average delay per vehicle

Approach:	Ho Bun Road WB (RT)		Ho Bun Road WB (ST)		Ho Bun Road EB (LT & ST)					
r (sec)	93	81	71	87	66	78				
N (veh)	7	14	9	13	19	25				
Average Queue length (m)	40.8	85.0	54.9	79.0	56.2	75.1				

Junction: Kai Hing Street / Hoi Bun Road (C)

Description: 2036 Reference Traffic Flows

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda X)} + \frac{X}{2q(1-X)} - 0.65 \frac{(c)^{\frac{1}{3}}}{q^{\frac{2}{3}}} X^{(2+\frac{5}{3}\lambda)}$$

where d = average delay per vehicle on the particular arm
 λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f g/c
 x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/Es where S = saturation flow in veh/hour
 c = Cycle time in seconds
 g = Effective green time in seconds
 q should be the flow in vehicles per second to give delay in seconds

Approach:	Hoi Bun Road EB (ST)		Hoi Bun Road WB (ST)		Kai Hing Road NB (LT & RT)			
	AM	PM	AM	PM	AM	PM		
q (veh/hr)	1,083	1,017	475	433	367	283		
g (sec)	65	68	29	29	23	20		
c (sec)	130	130	130	130	130	130		
s (veh/hr)	3,392	3,392	3,358	3,358	3,179	3,183		
λ	0.50	0.52	0.22	0.22	0.18	0.15		
x	0.64	0.57	0.64	0.57	0.64	0.57		
M=qc	39.12	36.71	17.15	15.65	13.24	10.23		
Delay								
d	25.03	21.99	47.18	45.69	50.94	52.03		
Junction Delay (sec)	35.4	32.8						

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Hoi Bun Road EB (ST)		Hoi Bun Road WB (ST)		Kai Hing Road NB (LT & RT)			
r (sec)	65	62	101	101	107	110		
N (veh)	20	18	13	12	11	9		
Average Queue length (m)	59.0	52.7	40.1	36.4	32.6	25.9		

Junction: Wang Chiu Road / Hoi Bun Road / Cheung Yip Street (D)

Description: 2036 Reference Traffic Flows (With Planned Junction Improvement)

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda)\frac{X}{q}} + \frac{X}{2q(1-\lambda)} - \frac{0.65}{q^2} \left(\frac{c}{3}\right)^{\frac{1}{3}} X^{(2-\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Wang Chiu Road (ST & RT)		Hoi Bun Road WB (ST)		Hoi Bun Road WB (LT)		Cheung Yip Street NB (LT)		Cheung Yip Street NB (RT)			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM		
q (veh/hr)	1,417	1,100	158	267	450	308	508	583	708	683		
g (sec)	64	53	14	25	43	31	51	61	31	32		
c (sec)	120	120	120	120	120	120	120	120	120	120		
s (veh/hr)	3,275	3,271	1,638	1,638	1,558	1,558	1,488	1,488	3,354	3,354		
λ	0.54	0.44	0.12	0.21	0.36	0.26	0.42	0.51	0.26	0.27		
x	0.81	0.77	0.81	0.77	0.81	0.77	0.81	0.77	0.81	0.77		
M=qe	47.22	36.67	5.28	8.89	15.00	10.28	16.94	19.44	23.61	22.78		
Delay												
d	24.92	30.30	75.28	53.41	42.69	49.00	37.45	28.12	45.44	43.26		
Junction Delay (sec)	36.3	36.9										

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qe,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Wang Chiu Road (ST & RT)		Hoi Bun Road WB (ST)		Hoi Bun Road WB (LT)		Cheung Yip Street NB (LT)		Cheung Yip Street NB (RT)			
r (sec)	56	67	106	95	77	89	69	59	89	88		
N (veh)	22	21	6	7	10	8	10	9	18	17		
Average Queue length (m)	65.8	61.8	33.8	44.7	30.5	24.0	61.1	57.0	53.0	50.2		

Junction: Cheung Yip Street/ Shing Cheong Road (F)

Description: 2036 Reference Traffic Flows

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda\frac{X}{S})} + \frac{X}{2q(1-X)} - 0.65 \frac{1}{q^{\frac{1}{3}}} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Shing Cheong Road EB (LT)		Shing Cheong Road EB (RT)		Cheung Yip Street NB (LT & ST)		Cheung Yip Street SB (RT & ST)			
	AM	PM	AM	PM	AM	PM	AM	PM		
q (veh/hr)	975	825	33	17	100	508	1,250	958		
g (sec)	51	35	4	1	5	33	68	42		
c (sec)	120	120	120	120	120	120	120	120		
s (veh/hr)	3,108	3,108	1,525	1,525	3,338	3,242	3,025	3,013		
λ	0.43	0.29	0.03	0.01	0.04	0.27	0.56	0.35		
x	0.73	0.92	0.73	0.92	0.73	0.57	0.73	0.92		
M=qc	32.50	27.50	1.11	0.56	3.33	16.94	41.67	31.94		
Delay										
d	30.27	57.22	129.61	1067.60	75.72	38.34	21.01	51.11		
Junction Delay (sec)	28.7	57.8								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Shing Cheong Road EB (LT)		Shing Cheong Road EB (RT)		Cheung Yip Street NB (LT & ST)		Cheung Yip Street SB (RT & ST)			
r (sec)	69	85	116	119	115	87	52	78		
N (veh)	19	23	2	5	4	12	18	24		
Average Queue length (m)	55.8	68.7	10.4	31.3	11.1	36.9	54.7	72.1		

Junction: Wang Chiu Road / Sheung Yee Road (G)

Description: 2036 Reference Traffic Flows (With Planned Junction Improvement)

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda/X)} + \frac{X}{2q(1-X)} - 0.65 \left(\frac{c}{q}\right)^{\frac{1}{3}} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Sheung Yee Road (LT & ST & RT)		Wang Chiu Road NB (ST)		Wang Chiu Road NB (RT)		Wang Chiu Road SB (LT & ST)		Sheung Yee Road (LT & RT)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
q (veh/hr)	1,258	1,733	492	675	517	683	875	633	467	475
g (sec)	34	41	32	40	33	40	36	24	21	19
c (sec)	140	140	140	140	140	140	140	140	140	140
s (veh/hr)	6,604	6,613	3,275	3,275	3,321	3,321	5,104	5,092	4,738	4,733
λ	0.24	0.29	0.23	0.28	0.23	0.28	0.26	0.17	0.15	0.14
x	0.78	0.89	0.66	0.73	0.66	0.73	0.66	0.73	0.65	0.73
M=qc	48.94	67.41	19.12	26.25	20.09	26.57	34.03	24.63	18.15	18.47
Delay										
d	50.51	50.93	50.63	47.06	49.84	47.06	46.95	56.18	56.71	59.68
Junction Delay (sec)	50.4	51.5								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Sheung Yee Road (LT & ST & RT)		Wang Chiu Road NB (ST)		Wang Chiu Road NB (RT)		Wang Chiu Road SB (LT & ST)		Sheung Yee Road (LT & RT)	
r (sec)	106	99	108	100	107	100	104	116	119	121
N (veh)	37	48	15	19	15	19	25	20	15	16
Average Queue length (m)	44.5	58.0	44.4	56.5	46.2	57.2	50.5	40.8	30.8	31.9

Junction: Shing Fung Road/Kai Tak Bridge Road (I)

Description: 2036 Reference Traffic Flows

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda\frac{X}{S})} + \frac{X}{2q(1-X)} - 0.65 \frac{1}{q^2} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm

λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c

x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour

c = Cycle time in seconds

g = Effective green time in seconds

q should be the flow in vehicles per second to give delay in seconds

Approach:	Shing Fung Road WB (ST)		Shing Fung Road WB (RT)		Kai Tak Bridge Road SB (LT)		Kai Tak Bridge Road SB (RT)		Shing Fung Road EB (LT & ST)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
q (veh/hr)	367	192	450	292	283	575	167	175	417	358
g (sec)	41	27	51	42	34	87	19	25	30	33
c (sec)	120	120	120	120	120	120	120	120	120	120
s (veh/hr)	3,242	3,242	3,217	3,217	3,050	3,050	3,192	3,192	4,946	4,979
λ	0.34	0.23	0.42	0.35	0.28	0.72	0.16	0.21	0.25	0.28
x	0.33	0.26	0.33	0.26	0.33	0.26	0.33	0.26	0.33	0.26
M=qc	12.22	6.39	15.00	9.72	9.44	19.17	5.56	5.83	13.89	11.94
Delay										
d	29.93	38.68	23.84	28.55	34.91	5.98	45.57	40.16	36.81	34.21
Junction Delay (sec)	32.4	24.2								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Shing Fung Road WB (ST)		Shing Fung Road WB (RT)		Kai Tak Bridge Road SB (LT)		Kai Tak Bridge Road SB (RT)		Shing Fung Road EB (LT & ST)	
r (sec)	79	93	69	78	86	33	101	95	90	87
N (veh)	8	5	9	6	7	5	5	5	10	9
Average Queue length (m)	24.2	14.8	26.0	19.0	20.4	16.0	14.0	13.8	20.7	17.3

Junction: Wai Yip Street/ Shun Yip Street (A)

Description: 2036 Design Traffic Flows

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda/X)} + \frac{X}{2q(1-X)} - 0.65 \left(\frac{c}{q} \right)^{1/3} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Wai Yip Street (EB)		Wai Yip Street (WB)		Shun Yip Street SB (LT & RT)					
	AM	PM	AM	PM	AM	PM				
q (veh/hr)	1,525	1,267	800	967	792	1,075				
g (sec)	53	41	28	31	31	43				
c (sec)	118	118	118	118	118	118				
s (veh/hr)	5,096	5,096	5,096	5,096	4,600	4,600				
λ	0.45	0.35	0.24	0.27	0.26	0.36				
x	0.66	0.71	0.66	0.71	0.66	0.64				
M=qc	49.99	41.52	26.22	31.69	25.95	35.24				
Delay										
d	25.85	34.08	41.32	40.08	39.74	31.79				
Junction Delay (sec)	33.3	35.1								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Wai Yip Street (EB)		Wai Yip Street (WB)		Shun Yip Street SB (LT & RT)			
r (sec)	65	77	90	87	87	75		
N (veh)	27	27	20	23	19	22		
Average Queue length (m)	54.8	54.1	40.0	46.5	38.4	44.8		

Junction: Ho Bun Road / Shun Yip Street (B)

Description: 2036 Design Traffic Flows (With Planned Junction Improvement)

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda/X)} + \frac{X}{2q(1-X)} - 0.65 \left(\frac{c}{q}\right)^{\frac{1}{3}} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Ho Bun Road WB (RT)		Ho Bun Road WB (ST)		Ho Bun Road EB (LT & ST)					
	AM	PM	AM	PM	AM	PM				
q (veh/hr)	258	483	442	400	1,017	1,025				
g (sec)	27	39	47	33	54	42				
c (sec)	120	120	120	120	120	120				
s (veh/hr)	1,654	1,654	1,621	1,621	3,246	3,238				
λ	0.22	0.32	0.39	0.27	0.45	0.35				
x	0.70	0.90	0.70	0.90	0.70	0.90				
M=qc	8.61	16.11	14.72	13.33	33.89	34.17				
Delay										
d	47.85	61.12	33.89	69.44	27.61	46.56				
Junction Delay (sec)	32.3	55.0								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Ho Bun Road WB (RT)		Ho Bun Road WB (ST)		Ho Bun Road EB (LT & ST)					
r (sec)	93	81	73	87	66	78				
N (veh)	7	14	9	13	19	24				
Average Queue length (m)	40.6	81.9	53.7	75.3	55.9	73.0				

Junction: Kai Hing Street / Hoi Bun Road (C)

Description: 2036 Design Traffic Flows

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda X)} + \frac{X}{2q(1-X)} - 0.65 \frac{(c)^{\frac{1}{3}}}{q^2} X^{(2+\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/SEs where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Hoi Bun Road EB (ST)		Hoi Bun Road WB (ST)		Kai Hing Road NB (LT & RT)			
	AM	PM	AM	PM	AM	PM		
q (veh/hr)	1,083	1,017	450	425	350	233		
g (sec)	65	71	27	30	23	17		
c (sec)	130	130	130	130	130	130		
s (veh/hr)	3,392	3,392	3,358	3,358	3,183	3,183		
λ	0.50	0.54	0.21	0.23	0.17	0.13		
x	0.63	0.55	0.63	0.55	0.63	0.55		
M=qc	39.12	36.71	16.25	15.35	12.64	8.43		
Delay								
d	24.43	20.05	47.82	44.93	51.33	53.77		
Junction Delay (sec)	35.0	31.1						

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Hoi Bun Road EB (ST)		Hoi Bun Road WB (ST)		Kai Hing Road NB (LT & RT)			
r (sec)	65	59	103	100	107	113		
N (veh)	19	17	13	12	10	7		
Average Queue length (m)	58.3	50.2	38.5	35.5	31.3	21.9		

Junction: Wang Chiu Road / Hoi Bun Road / Cheung Yip Street (D)

Description: 2036 Design Traffic Flows (With Planned Junction Improvement)

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda)\frac{X}{q}} + \frac{X}{2q(1-\lambda)} - \frac{0.65}{q^2} \left(\frac{c}{3}\right)^{\frac{1}{3}} X^{(2-\frac{1}{3})\lambda}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Wang Chiu Road (ST & RT)		Hoi Bun Road WB (ST)		Hoi Bun Road WB (LT)		Cheung Yip Street NB (LT)		Cheung Yip Street NB (RT)			
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM		
q (veh/hr)	1,358	1,092	150	242	425	292	508	583	708	683		
g (sec)	64	54	14	24	42	30	52	63	32	33		
c (sec)	120	120	120	120	120	120	120	120	120	120		
s (veh/hr)	3,275	3,271	1,638	1,638	1,558	1,558	1,488	1,488	3,354	3,354		
λ	0.53	0.45	0.12	0.20	0.35	0.25	0.44	0.52	0.27	0.27		
x	0.78	0.75	0.78	0.75	0.78	0.75	0.78	0.75	0.78	0.75		
M=qe	45.28	36.39	5.00	8.06	14.17	9.72	16.94	19.44	23.61	22.78		
Delay												
d	24.42	29.16	71.23	53.67	41.67	48.47	34.70	26.31	43.57	42.05		
Junction Delay (sec)	34.9	35.6										

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qe, whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Wang Chiu Road (ST & RT)		Hoi Bun Road WB (ST)		Hoi Bun Road WB (LT)		Cheung Yip Street NB (LT)		Cheung Yip Street NB (RT)			
r (sec)	56	66	106	96	78	90	68	57	88	87		
N (veh)	21	20	5	7	10	8	10	9	17	17		
Average Queue length (m)	63.8	60.4	31.1	41.0	28.6	22.7	58.0	55.4	51.7	49.7		

Junction: Cheung Yip Street/ Shing Cheong Road (F)

Description: 2036 Design Traffic Flows

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda\frac{X}{S})} + \frac{X}{2q(1-X)} - 0.65 \frac{1}{q^{\frac{1}{3}}} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Shing Cheong Road EB (LT)		Shing Cheong Road EB (RT)		Cheung Yip Street NB (LT & ST)		Cheung Yip Street SB (RT & ST)			
	AM	PM	AM	PM	AM	PM	AM	PM		
q (veh/hr)	975	825	33	17	100	508	1,250	950		
g (sec)	51	35	4	1	5	33	68	41		
c (sec)	120	120	120	120	120	120	120	120		
s (veh/hr)	3,108	3,108	1,525	1,525	3,338	3,242	3,025	3,013		
λ	0.43	0.29	0.03	0.01	0.04	0.28	0.56	0.35		
x	0.73	0.91	0.73	0.91	0.73	0.57	0.73	0.91		
M=qc	32.50	27.50	1.11	0.56	3.33	16.94	41.67	31.67		
Delay										
d	30.27	55.85	129.61	1003.12	75.72	38.20	21.01	50.19		
Junction Delay (sec)	28.7	56.5								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Shing Cheong Road EB (LT)		Shing Cheong Road EB (RT)		Cheung Yip Street NB (LT & ST)		Cheung Yip Street SB (RT & ST)			
r (sec)	69	85	116	119	115	87	52	79		
N (veh)	19	23	2	5	4	12	18	24		
Average Queue length (m)	55.8	67.7	10.4	29.5	11.1	36.8	54.7	70.8		

Junction: Wang Chiu Road / Sheung Yee Road (G)

Description: 2036 Design Traffic Flows (With Planned Junction Improvement)

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda/X)} + \frac{X}{2q(1-X)} - 0.65 \left(\frac{c}{q}\right)^{\frac{1}{3}} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Sheung Yee Road (LT & ST & RT)		Wang Chiu Road NB (ST)		Wang Chiu Road NB (RT)		Wang Chiu Road SB (LT & ST)		Sheung Yee Road (LT & RT)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
q (veh/hr)	1,242	1,733	492	675	508	658	833	625	467	475
g (sec)	34	42	32	40	33	39	35	24	22	20
c (sec)	140	140	140	140	140	140	140	140	140	140
s (veh/hr)	6,604	6,613	3,275	3,275	3,321	3,321	5,100	5,092	4,738	4,733
λ	0.25	0.30	0.23	0.29	0.24	0.28	0.25	0.17	0.15	0.14
x	0.77	0.88	0.65	0.72	0.65	0.72	0.65	0.72	0.64	0.72
M=qc	48.29	67.41	19.12	26.25	19.77	25.60	32.41	24.31	18.15	18.47
Delay										
d	49.82	49.54	49.89	46.36	49.44	47.31	47.32	55.88	56.17	59.14
Junction Delay (sec)	50.0	50.7								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Sheung Yee Road (LT & ST & RT)		Wang Chiu Road NB (ST)		Wang Chiu Road NB (RT)		Wang Chiu Road SB (LT & ST)		Sheung Yee Road (LT & RT)	
r (sec)	106	98	108	100	107	101	105	116	118	120
N (veh)	36	47	15	19	15	19	24	20	15	16
Average Queue length (m)	43.7	57.0	44.1	56.1	45.3	55.6	48.5	40.3	30.7	31.8

Junction: Shing Fung Road/Kai Tak Bridge Road (I)

Description: 2036 Design Traffic Flows

TRRL Method (Transport Road Research Laboratory)

$$d = \frac{c(1-\lambda)^2}{2(1-\lambda/X)} + \frac{X}{2q(1-X)} - 0.65 \frac{1}{q^2} (c)^{\frac{1}{3}} X^{(2+5\lambda)}$$

where d = average delay per vehicle on the particular arm
λ = proportion of the cycle which is effectively green for the phase under consideration i.e.f/g/c
x = The degree of saturation. This is the ratio of actual flow to the maximum possible flow under the given setting of signals and equals 3600q/S where S = saturation flow in veh/hour
c = Cycle time in seconds
g = Effective green time in seconds
q should be the flow in vehicles per second to give delay in seconds

Approach:	Shing Fung Road WB (ST)		Shing Fung Road WB (RT)		Kai Tak Bridge Road SB (LT)		Kai Tak Bridge Road SB (RT)		Shing Fung Road EB (LT & ST)	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
q (veh/hr)	367	192	450	292	283	575	167	175	417	358
g (sec)	41	27	51	42	34	87	19	25	30	33
c (sec)	120	120	120	120	120	120	120	120	120	120
s (veh/hr)	3,242	3,242	3,217	3,217	3,050	3,050	3,192	3,192	4,946	4,979
λ	0.34	0.23	0.42	0.35	0.28	0.72	0.16	0.21	0.25	0.28
x	0.33	0.26	0.33	0.26	0.33	0.26	0.33	0.26	0.33	0.26
M=qc	12.22	6.39	15.00	9.72	9.44	19.17	5.56	5.83	13.89	11.94
Delay										
d	29.93	38.68	23.84	28.55	34.91	5.98	45.57	40.16	36.81	34.21
Junction Delay (sec)	32.4	24.2								

From TPDM Vol4 Table 4.2.5

Average Queue N calculated by

N=q(r/2+d) or qr,whichever the greater

where

r = effective red time

q = flow (in same units as r and d)

d = average delay per vehicle

Approach:	Shing Fung Road WB (ST)		Shing Fung Road WB (RT)		Kai Tak Bridge Road SB (LT)		Kai Tak Bridge Road SB (RT)		Shing Fung Road EB (LT & ST)	
r (sec)	79	93	69	78	86	33	101	95	90	87
N (veh)	8	5	9	6	7	5	5	5	10	9
Average Queue length (m)	24.2	14.8	26.0	19.0	20.4	16.0	14.0	13.8	20.7	17.3

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

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- 3.1. The Proposed Development Scheme
- 3.2. Key Design Considerations
- 3.3. Landscape Design Considerations
- 3.4. Access and Provision of Internal Transport Facilities
- 3.5. Determination of Proposed Building Mass and Building Height

4. PLANNING MERITS AND JUSTIFICATIONS

- 4.1. The The Proposed Composite Development Responds to the Market Demand and is In-line with Government's Policies of Increasing Housing Supply
- 4.2. Minimal Impact to the Energising Kowloon East
- 4.3. The Proposed Residential Use is Compatible with the Surrounding Planned Land Uses
- 4.4. The Site and the Proposed Development Contain Special Characteristics and Would Not Generate Significant Precedent Effect
- 4.5. The Proposed Composite Development Would Bring a Better Street Environment than the Existing Building
- 4.6. The Proposed Development Scheme Adopts Design Strategies to Enhance Livability and Safety
- 4.7. The Proposed Composite Development Provides Retail Floor Space to the Meet Growing Demand and Contributes to the Development of Kai Tak
- 4.8. The Scale of Relaxation Sought is Acceptable and In Line with the Recommendations of the Hong Kong Planning Standards and Guidelines and the Planned Development Intensity of the Area
- 4.9. The Proposed Development Scheme Complies with the Urban Design Concept for Kai Tak Development Area
- 4.10. The Proposed Composite Development Adopts the Vision Statement and Complies with the Harbour Planning Principles

3. THE PROPOSED DEVELOPMENT SCHEME

3.1 The Proposed Development Scheme

- 3.1.1 Schematic drawings for the Proposed Composite Development are presented in **Appendix 1** of this Supporting Planning Statement. The Site of an area of about 6,541m² yields a total GFA of approximately 45,787m² at PR 7.0 to produce to a total of 1,140 residential units. The Proposed Composite Development comprises two residential towers with a building height of 34 domestic floors (max., excluding 1 refuge floor), over one storey of recreational facilities, two storeys of retail/F&B and GIC floors and two storeys of underground carpark. The proposed max. building height maintains at +136.45mPD (main roof level).
- 3.1.2 The Applicant commits to reserve about 15% of the non-domestic GFA (i.e. about 490m²) for GIC uses **to be operated by NGOs**. This could serve as youth centre, childcare centre, nursery and etc.
- 3.1.3 Major development parameters and proposed floor uses of the Proposed Composite Development are summarised in **Table 3.1** and **Table 3.2**, respectively.

Table 3.1 Key Development Parameters

	Proposed Development Scheme
Major Development Parameters	
Total Site Area	About 6,541m ²
Plot Ratio	Total: 7.0 Domestic: 6.5 Non-domestic: 0.5
Total GFA	Total: 45,787m ² Domestic: 42,516.5m ² Non-domestic: 3,270.5m ² GIC Facilities: about 490m ² Shop/F&B: about 2,780.5m ²
No. of Unit	1,140
Average Flat Size	About 37.3m ²
Maximum Building Height	Not more than +136.45mPD
No. of Storeys	Not more than 38 (plus 2 storeys of underground carpark)
Site Coverage	15m and below: Not more than 65% Above 15m: Not more than 40%
No. of Block	2
Private Open Space	Not less than 2,850m ²
Internal Transport Provisions	

	Residential	Non-residential	Total
Car Parking Space	241	22	263
Motorcycle Parking Space	12	3	15
Bicycle Parking Space	76	-	76
Loading/Unloading Space	2 HGV	3 LGV + 2 HGV	3 LGV + 4 HGV

Table 3.2 Proposed Floor Uses

	Tower 1B & 2B		Tower 1A		Tower 2A
Floor	Proposed Uses	Floor	Proposed Uses	Floor	Proposed Uses
21-29/F	Residential Units	21-34/F	Residential Units	21-37/F	Residential Units
20/F	Refuge Floor				
3-19/F	Residential Units				
2/F	Landscape Area & Recreational Facilities				
G-1/F	Retail/ F&B Facilities, GIC Facilities and E&M				
B1-B2/F	Carpark and E&M				

3.2 Key Design Considerations

3.2.1 In formulating the Proposed Development Scheme, the schematic design has taken into account site constraints (e.g. setback from the LPG filling station and noise) as well as design considerations to ensure the Proposed Composite Development creates a high-quality development in harmony with the surrounding environment and with the planning themes of Kai Tak Development. The Proposed Development Scheme has incorporated the following design considerations:

Provision of Building Setback and Canopy along Lam Chak Street and Kai Hing Road

3.2.2 As a planning gain, the Proposed Development Scheme provides a low-level setback of about 2.5m on Kai Hing Road and a 2.5m setback on Lam Chak Street. These setbacks would allow more space along the footpath on Kai Hing Road and Lam Chak Street (to about 5m). The more spacious pedestrian walkway would enhance the walking experience along the Site, aligning with the principles of pedestrian-friendliness and accessibility set out in the Kai Tak UDGMs and HPPs. Coupled with the provision of canopy of 1.5m in width, walking experience would be significantly enhanced.

Adopting a Varying Building Height Design

3.2.3 The maximum building height of the Proposed Composite Development remains not more than +136.45mPD, which is consistent with the height of the existing building at the Site. To give visual interest to the skyline, the Proposed

- Establishment of pleasant landscape areas which meet the varying needs of users; and
- Minimization of future maintenance requirements.

3.3.2 A green boulevard has been proposed at the main entrance at G/F to create a welcoming and aesthetically pleasing approach that guides residents and visitors toward the residential lobby. Directly opposite the residential lobby, a water feature is situated at the drop-off area. This feature not only enhances the visual appeal of the entrance but also provides a calming focal point, creating a strong sense of arrival and orientation for occupants and visitors. The design of these spaces aims to promote relaxation, social interaction, and a high-quality building environment.

3.3.3 Communal open space of not less than 2,850m² will be provided on G/F to 2/F to serve the future residents at a ratio of not less than 1m² per person. The majority of open spaces at 2/F would be designed to foster social interaction and recreational activities. A range of recreational facilities are proposed within these areas, including a swimming pool, sitting gardens, multi-functional lawn, a gathering courtyard, and fitness trails

3.4 Access and Provision of Internal Transport Facilities

3.4.1 The vehicular run-in/out point will continue to be located on Kai Hing Road.

3.4.2 Internal transport facilities, including private car parking spaces, loading/unloading bays and visitor car parking spaces, will be provided in compliance with the Hong Kong Planning Standards and Guidelines. The car park will be in a form of underground car park. Details of the internal transport provision are summarised in **Table 3.1** above and in **Appendix III**.

3.5 Determination of Proposed Building Mass and Building Height

3.5.1 Noted that the Application Site is located near the waterfront and form part of the backdrop of the Victoria Harbour. The Proposed Composite Development tries to adopt a responsive, context-aware design approach that balances development potential with public interest when viewing from across the Harbour. Not least, it also tries to respect the 20% Building Free Zone as mentioned in Chapter 11 of the Hong Kong Planning Standards and Guidelines, which is to preserve views to ridgelines.

3.5.2 Currently, the existing building erected at the Application Site reaches +136.45mPD and has encroached into the 20% Building Free Zone when viewing from the Strategic Viewpoint Point at Quarry Bay Park (see diagram on the right). As abovementioned, the Proposed Development Scheme aims at striking a balance between development potential with public interest, thus the Applicant explored possibilities to reduce the encroachment.



3.5.3 There are numerous high-rise buildings nearby, in which Manhattan Place (+173mPD) partly overlaps with the Application Site when viewing from Quarry Bay Park (highlighted in yellow). In other words, proposing a building height that appears below the 20% Building Free Zone will only reveal the visual axis towards an existing building, not any natural visual resources such as the mountain backdrop. Keeping building height away from the 20% Building Free Zone at this particular portion would not bring improvements from visual impact point of view.



3.5.4 With the understanding from the above, the area highlighted in yellow, could be maintained at +136.45mPD (i.e. as per the existing building) without bringing adverse visual impact. However, having reviewed the future developments with the locality, it would be more suitable to provide building setback at this area (referring to the southwestern corner of the Site, i.e. the corner of Lam Chak Street and Cheung Yip Street). This would bring openness and visual relieve at pedestrian level. As such, instead of occupying the entire area coloured in yellow, the Proposed Development Scheme opens up views towards the backdrop for a bit and only build upon the area outside the 20% Building Free Zone and the area that shares the same visual axis with Manhattan Place.

3.5.5

In light of the above, a 3-tier stepping height has been adopted in the Proposed Development Scheme to minimise encroachment into the 20% Building Free Zone. Tower 2A (at +136.15mPD) would encroach into the 20% Building Free Zone, but it would not affect natural resources since this portion of the building overlaps with Manhattan Place behind when viewing from

Quarry Bay Park. Tower 1A then steps down by 10m to +126mPD and Tower 1B steps further down by 16m to +110mPD. Overall speaking, as compared to the existing building, the Proposed Scheme reduces the encroachment into the 20% Building Free Zone when viewed from Quarry Bay Park.



the Kai Tak development in addressing the housing shortage in the short- to medium-term.

- 4.9.7 Considering the importance of efficient utilisation of land resources for providing housing units, the comparable permitted PR, and precedents in minor relaxation of PR at a similar scale, the proposed PR is considered reasonable and appropriate.
- 4.9.8 At the same time, **Figures 4.6 and 4.7** as well as the Visual Impact Assessment in **Appendix VI** all demonstrate that the Proposed Composite Development would not bring adverse visual impact than the existing development. The proposed building height has been meticulously evaluated and optimized through a context-aware design approach, specifically respecting the 20% Building Free Zone guidelines mandated by Chapter 11 of the Hong Kong Planning Standards and Guidelines which aims to protect views to ridgelines. By conducting a detailed visual analysis from the strategic viewpoint at Quarry Bay Park prior to devising the Proposed Development Scheme, the scheme has been designed to replace the existing bulky commercial building with a 3-tier stepping height profile—comprising Tower 2A (+136.45mPD), Tower 1A (+126mPD), and Tower 1B (+110mPD). This reduces the encroachment into the 20% Building Free Zone and open up views toward the natural ridgelines. This calibrated height distribution satisfies public interest objectives by shielding the necessary massing by the existing massing of some existing developments, while revealing the natural visual resource where appropriate.

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

Appendix V

Replacement Pages of the Visual Impact Assessment

Approved Kai Tak OZP No. S/K22/8

Proposed Composite Residential Development with Minor Relaxation of Plot Ratio Restriction in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon

Visual Impact Assessment

1. INTRODUCTION

1.1 Purpose

- 1.1.1 This Visual Impact Assessment (“VIA”) report is prepared in support of the Section 16 of the Town Planning Ordinance for the Proposed Residential Development with Minor Relaxation of Plot Ratio Restriction at no. 8 Lam Chak Street in Kowloon (“Application Site”/the “Site”) (**Figure 1.1** refers). The Site is zoned “Commercial (2)” (“C(2)”) zone on the Approved Kai Tak Outline Zoning Plan (“Approved OZP”) No. S/K22/8.
- 1.1.2 This VIA evaluates, in accordance with the “*Town Planning Board Guidelines on Submission of Visual Impact Assessment for Planning Applications to TPB*” (“**TPB PG-No. 41A**”), the anticipated visual impacts of the Proposed Development on public viewers relevant to the Site and concludes with recommendation on mitigation measures if necessary.

1.2 Report Structure

- 1.2.1 Following this introductory section, the methodology adopted in this assessment will be set out in Section 2. The baseline review of the assessment area is included in Section 3. Section 4 includes the Proposed Development Scheme and discussion on the design merits. Visual envelope, visually sensitive receivers and their representative viewpoints will be identified and analysed in Section 5, followed by assessment of the visual impacts, if any in Section 6. Section 7 concludes this VIA.

2. METHODOLOGY

2.1 Visual Impact Assessment Approach

- 2.1.1 This VIA aims at evaluating the potential visual impact of the Proposed Residential Development on public viewers.
- 2.1.2 According to **TPB PG-No. 41A**, Visual Impacts shall be assessed based on i) the sensitivity of the key public viewers; ii) visual resources and visual amenities likely to be affected; iii) the magnitude, extent and duration of impact and any resultant improvement or degradation in the visual quality and character of the surrounding area; and iv) the planning intention and known planned developments of the area. Visual Impacts could be either beneficial or adverse.
- 2.1.3 Visual sensitivity of public viewers is determined taking into account the activity of the public viewers, the duration and distance over which the Proposed Residential Development would remain visual, and the public perception of the value attached to the view being assessed. Visual sensitivity is qualitatively graded from high to low.
- 2.1.4 Visual changes could be positive or negative and they are not necessarily mutually exclusive. In considering the effect of visual changes, it covers the following four aspects:
- the total effect on the **Visual Composition** of the surrounding context;
 - the degree of **Visual Obstruction** to key public viewing points;
 - the visual **Effect on Public Viewers**; and
 - the **Effect on Visual Resources**.
- 2.1.5 The magnitude of visual changes will be qualitatively graded as Substantial, Moderate, Slight or Negligible.
- 2.1.6 The VIA will be undertaken in the following steps:
- A baseline review will be conducted to capture the existing visual elements in the surroundings and the planning context of the Site.
 - The Proposed Residential Development Scheme for the Site will be briefly presented.
 - The Visual Envelope ("VE") will be determined and appropriate public viewpoints ("VPs") to represent the view from public viewers will be identified.
 - Each VP and potential visual impacts of the Proposed Residential Development Scheme on the public viewers will be analysed based on the photomontages prepared from the selected VPs.
 - The overall visual impact will be assessed and conclusion on the visual acceptability of the Proposed Residential Development will be made.

	Residential	Non-residential	Total
Car Parking Space	241	22	263
Motorcycle Parking Space	12	3	15
Bicycle Parking Space	76	-	76
Loading/Unloading Space	2 HGV	3 LGV + 2 HGV	3 LGV + 4 HGV

Table 4.2 Proposed Floor Uses

	Tower 1B & 2B		Tower 1A		Tower 2A
Floor	Proposed Uses	Floor	Proposed Uses	Floor	Proposed Uses
21-29/F	Residential Units	21-34/F	Residential Units	21-37/F	Residential Units
20/F	Refuge Floor				
3-19/F	Residential Units				
2/F	Landscape Area & Recreational Facilities				
G-1/F	Retail/ F&B Facilities				
B1-B2/F	Carpark and E&M				

- 4.1.4 Communal open spaces and private recreation facilities will be provided on G/F to 2/F. The total area of the communal open space would be not less than 2,850m².

4.2 Key Design Considerations

- 4.2.1 In formulating the Proposed Development Scheme, the schematic design has taken into account site constraints (e.g. setback from the LPG filling station and noise) as well as design considerations to ensure the Proposed Residential Development creates a high-quality development in harmony with the surrounding environment and with the planning themes of Kai Tak Development. The Proposed Development Scheme has incorporated the following design considerations:

Provision of Building Setback and Canopy along Lam Chak Street and Kai Hing Road

- 4.2.2 As a planning gain, the Proposed Development Scheme provides a low-level setback of about 2.5m on Kai Hing Road and a 2.5m setback on Lam Chak Street. These setbacks would allow more space along the footpath on Kai Hing Road and Lam Chak Street (to about 5m). The more spacious pedestrian walkway would enhance the walking experience along the Site, aligning with the principles of pedestrian-friendliness and accessibility set out in the Kai Tak UDGMs and HPPs. Coupled with the provision of canopy of 1.5m in width, walking experience would be significantly enhanced.

4.3 Determination of Proposed Building Mass and Building Height

4.3.1 Noted that the Application Site is located near the waterfront and form part of the backdrop of the Victoria Harbour. The Proposed Composite Development tries to adopt a responsive, context-aware design approach that balances development potential with public interest when viewing from across the Harbour. Not least, it also tries to respect the 20% Building Free Zone as mentioned in Chapter 11 of the Hong Kong Planning Standards and Guidelines, which is to preserve views to ridgelines.

4.3.2 Currently, the existing building erected at the Application Site reaches +136.45mPD and has encroached into the 20% Building Free Zone when viewing from the Strategic Viewpoint Point at Quarry Bay Park (see diagram on the right). As abovementioned, the Proposed Development Scheme aims at striking a balance between development potential with public interest, thus the Applicant explored possibilities to reduce the encroachment.



4.3.3 There are numerous high-rise buildings nearby, in which Manhattan Place (+173mPD) partly overlaps with the Application Site when viewing from Quarry Bay Park (highlighted in yellow). In other words, proposing a building height that appears below the 20% Building Free Zone will only reveal the visual axis towards an existing building, not any natural visual resources such as the mountain backdrop.



Keeping building height away from the 20% Building Free Zone at this particular portion would not bring improvements from visual impact point of view.

4.3.4 With the understanding from the above, the area highlighted in yellow, could be maintained at +136.45mPD (i.e. as per the existing building) without bringing adverse visual impact. However, having reviewed the future developments with the locality, it would be more suitable to provide building setback at this area (referring to the southwestern corner of the Site, i.e. the corner of Lam Chak Street and Cheung Yip Street). This would bring openness and visual relieve at pedestrian level. As such, instead of occupying the entire area coloured in yellow, the Proposed Development

Scheme opens up views towards the backdrop for a bit and only build upon the area outside the 20% Building Free Zone and the area that shares the same visual axis with Manhattan Place.

- 4.3.5 In light of the above, a 3-tier stepping height has been adopted in the Proposed Development Scheme to minimise encroachment into the 20% Building Free Zone. Tower 2A (at +136.15mPD) would encroach into the 20% Building Free Zone, but it would not affect natural resources since this portion of the building overlaps with Manhattan Place behind when viewing from Quarry Bay Park. Tower 1A then steps down by 10m to +126mPD and Tower 1B steps further down by 16m to +110mPD. Overall speaking, as compared to the existing building, the Proposed Scheme reduces the encroachment into the 20% Building Free Zone when viewed from Quarry Bay Park.



5 IDENTIFICATION OF VISUAL SENSITIVE RECEIVERS AND SELECTION OF VIEWPOINTS

5.1 Identifying Visual Envelope and Visual Sensitive Receivers

5.1.1 The Visual Envelope ("VE") or the zone of visual influence of the Proposed Development is determined by the existing topography and building in the vicinity of the Site. As prescribed in the **TPB PG-NO. 41A**, the viewers will tend to see the building as part of a group rather than as a single building when the viewing distance equals to three times the height of the building from the Site (i.e. the 3H zone). The 3H zone adopted in the current assessment is 395.85m (H = 131.95m) (**Figure 5.1** refers).

5.1.2 The zone of visual influence covers the area where direct sight towards the Application Site is presented in **Figure 5.1**. Since protecting private view is not the duty of the TPB, this VIA focuses primarily on public viewers only and no private viewers, such as residents of private development and users of developments with restricted/exclusive accesses (e.g. school and office, etc.) will be identified.

5.2 Selection of Visual Sensitive Viewpoints

5.2.1 Representative VPs within the VE were selected for assessing the visual impact to the public viewers. Selected VPs shall cover public views from easily accessible and popular area from different directions. When selecting VPs, priority shall be given to major public open space, public focal points, open spaces, existing/future pedestrian node, key pedestrian/vehicular corridor, and existing major vistas will be considered as major visual sensitive viewpoints.

5.2.2 In this VIA, a total of six VPs have been selected for further assessment on the visual impact of the Proposed Composite Development, which are summarized in **Table 5.1** and shown in **Figure 5.1**. The VPs included both close-up and distant views which cover the views from different directions.

Table 5.1 Selected Visually Sensitive Viewpoints

Viewpoint No.	Description
VP1	Quarry Bay Park
VP2	North Point Pier
VP3	Hoi Sham Park
VP4	Kai Tak Cruise Terminal Park Landscape Deck
VP5	Kai Tak Bridge Road
VP6	Kwun Tong Promenade

backdrop (and skyview) from this direction as Manhattan Place is located behind the proposed building; instead, it reveals a small portion of ridgeline that is currently being blocked by the existing building at the Site. The magnitude of change as compared with the existing condition is slight.

Visual Change

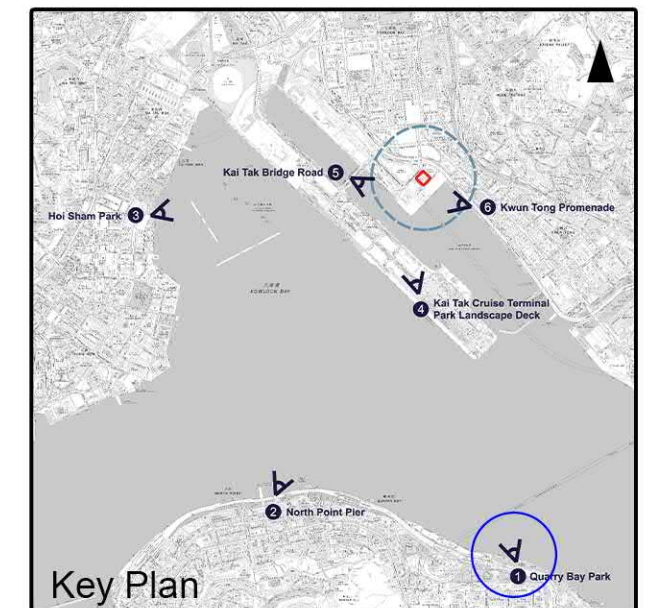
- 6.2.3 The public viewers of this viewpoint would mainly be the visitors to Quarry Bay Park, particularly to the viewing deck. Their visual sensitivity is considered to be high. Having said that, the frequency of visiting this viewing deck would be occasional, thus their focus would probably be on the new developments in Kai Tak Development rather than single redevelopment at the back of these new buildings. Given the Proposed Composite Development would only take up a minute part in the cityscape, the Proposed Composite Development is considered in harmony with the urban fabric and the effect on the visual experience is slight.
- 6.2.4 The major visual resources from this viewpoint are the Victoria Harbour, cityscape, sky view and the ridgelines from Lion Rock to Kowloon Peak. All of these features will be maintained upon development of the Proposed Composite Development, without mentioning a small portion of the mountain backdrop will be revealed under the Proposed Development Scheme. Therefore, it is considered that the visual condition, quality and character will be maintained.



Existing Condition



Proposed Scheme



6.3 VP2 – North Point Pier (Figure 6.2 refers)

Visual Composition

- 6.3.1 VP2 is distant viewpoint taken from the southwest of the Application Site with the distance of about 2.6km. Similar to VP1, this viewpoint captures the view towards the Victoria Harbour in the foreground, the urban skyline and ridgelines of Kowloon Peak to Tai Sheung Tok. The existing building at the Site is located behind some residential developments in Kai Tak Development and only the top part of the building would be visible in the current condition. The Proposed Composite Development would blend in with the cityscape and appear in harmony with the rest of the high-rise developments in the area.

Visual Obstruction

- 6.3.2 The main roof of 2A would remain at +136.45mPD as per the existing building, yet the height of Tower 1B would step down to +126mPD and Tower 2B would drop further to +110mPD. Instead of causing visual obstruction, the Proposed Composite Development with varied building height design would slightly reveal a little bit more of the green backdrop. Nonetheless, natural visual resources such as the Victoria Harbour and the ridgelines would remain intact.

Visual Change

- 6.3.3 This VP is selected to represent the views from the southwest. The visual sensitivity of daily patrons of the ferry service to Kwun Tong is considered low, yet to also consider this viewpoint would also represent the public along North Point Promenade, the visual sensitivity has therefore been adjusted to high. As discussed above, the existing building will be transformed into a building that would not exceed the existing building height, provide a varied building height profile and continue to be in harmony with the high-rise buildings in the surrounding. Hence, the visual change to be experienced by the public viewers from this VP would be slight.
- 6.3.4 The major visual resources from this viewpoint are the Victoria Harbour, urban skyline, sky view and the ridgelines from Kowloon Peak to Tai Sheung Tok. All of these features will be maintained upon development of the Proposed Composite Development. Therefore, the Proposed Composite Development would not bring any changes to the visual condition, quality and character of the area.

6.4 VP3 – Hoi Sham Park

Visual Composition

- 6.4.1 VP3 offers a view toward the water and the Application Site from the west. This viewpoint contains To Kwa Wan Typhoon Shelter and the Victoria Harbour in the foreground and existing high-rise developments in Kai Tak Development and Kowloon Bay are also clearly visible. High-rise developments in Yau Tong and Lei Yue Mun are also visible in the background. Neither the existing building nor proposed building at the Site is visible from this viewpoint. Thus, the Proposed Composite Building would bring no change to the visual composition of this viewpoint.

Visual Obstruction and Visual Change

- 6.4.2 As shown in **Figure 6.3**, the openness towards water will be maintained. Since the view towards the Proposed Composite Development from this viewpoint would be completely blocked by some existing residential developments in Kai Tak Development, the degree of visual obstruction and effect on public viewers by the Proposed Composite Development to this viewpoint is considered negligible.
- 6.4.3 The condition, quality and character of the assessment area will be maintained since the Proposed Composite Development will be completely blocked by some existing high-rise developments.

6.5 VP4 – Kai Tak Cruise Terminal Park Landscape Deck

Visual Composition

- 6.5.1 VP4 comprises various different visual elements, including existing and planned high-rise residential development in the Runway Precinct, mid to high-rise GIC uses and some high-rise commercial buildings in Kowloon Bay and Kwun Tong. This piece of urban fabric is complemented by ample vegetation within Kai Tak Development, the green backdrop as well as the openness provided by Kwun Tong Typhoon Shelter. The skyview visible from this viewpoint contains a conventional urban townscape. There will be more residential developments to take place in Kai Tak Development (both in the Runway Precinct and South Apron Corner), but the mixed characteristic would remain the same. The Proposed Composite Development is considered compatible with the visual composition of the area.

Visual Obstruction

- 6.5.2 According to **Figure 6.4**, major elements that are visible at this VP create a skyline of a different height. Since the building height Proposed Composite Development would not exceed the height of the existing building, it would not cause further blockage towards the sky nor the ridgeline. Instead, the proposed stepped building height profile would allow visual access to a small portion of additional skyview. Public viewers will continue to enjoy the existing panoramic view towards the urban townscape as well as landscaping and openness in the foreground. The degree of visual obstruction is considered negligible.

Visual Change

- 6.5.3 The visual sensitivity of the public viewers on this VP is high as these people are mostly visitors who are visiting the new landmark – Kai Tak Cruise Terminal Park. The cityscape would continue to dominate the view from this viewpoint and the openness would not be affected. The Proposed Composite Development with a stepped building height profile above some future developments, would have possible effects on public viewers.
- 6.5.4 The condition, quality and character of the assessment area would be largely maintained upon completion of the Proposed Composite Development. The Victoria Harbour in the left, openness in the foreground, Kowloon Peak in the background as well as the cityscape would all be remained intact. Whilst the maximum building height will be maintained at +136.45mPD as per the existing building and providing a stepping building height profile (together with the planned developments nearby), more visual interest would be added to the sky view.

6.6 VP5 – Kai Tak Bridge Road

Visual Composition

- 6.6.1 VP5 is taken at a close distance, just 490m away from the Site to the west. It captures the existing and future developments in the South Apron Corner on the left and Runway Precinct on the right. Existing and planned buildings in the South Apron Corner jointly create a stepping profile which descends towards the water from inland. The Proposed Composite Development, although only having a small part of the building will be visible on top of the hospitals, would echo with the stepping height profile of the area and would not be considered out-of-context. Thus, the Proposed Composite Development would have negligible to no impact to the visual composition including the sky view at this VP.

Visual Obstruction

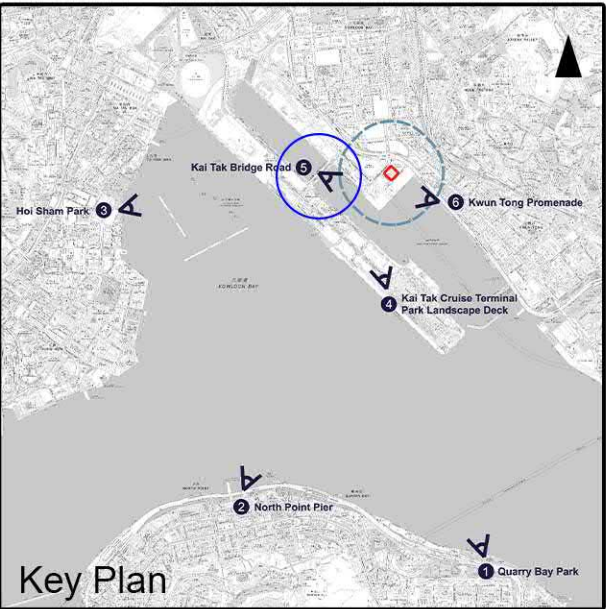
- 6.6.2 As shown in **Figure 6.5** and as compared between the existing condition and proposed scheme, the transformation from the existing building into the Proposed Composite Development with a varied building height profile would in fact reveal more sky view above the Hong Kong Children's Hospital (only the small portion of Tower 2A is visible from this viewpoint). Instead of visual obstruction, the Proposed Composite Development would bring a slight positive change to the visual amenity.

Visual Change

- 6.6.3 The visual sensitivity of the public viewers on VP5 is low as pedestrians would most probably be jogging and would only have a glimpse on the surrounding settings. Even they do, only a small part of the Proposed Composite Development would be visible on top of the Hong Kong Children's Hospital; therefore, the effect on public viewers is negligible.
- 6.6.4 The openness over the water will certainly be maintained. The skyline on both sides will be constantly changing due to the completion of the planned developments. While the form of the building at the Site would be changed from elongated to V-shaped, only a small portion of the Proposed Composite Development would be visible from this viewpoint. The condition, quality and character of the assessment area will largely be maintained at this viewpoint and public viewers would have access to slightly more sky view due to the change in built form.



Existing Condition



Proposed Scheme



Viewpoint 5 – Kai Tak Bridge Road

Proposed Composite Development
(with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone
at 8 Lam Chak Street, Kowloon

Visual Impact Assessment

Figure 6.5

Date: 23 July 2026

6.7 VP6 - Kwun Tong Promenade

Visual Composition

- 6.7.1 This is another closer-range viewpoint amongst others. It is located along Kwun Tong Promenade which is an open space for recreational purpose and also the daily passage to and from MTR Ngau Tau Kok Station. This viewpoint provides a direct view towards the South Apron Corner of Kai Tak Development, while some high-rise developments in the Runway Precinct and in Kowloon Bay and Kwun Tong Business Area are also visible. The openness of the viewpoint allows the viewer to have visual access to the skyview. The existing erected at the Site would probably be considered a sore-thumb building as it is substantially taller than other existing buildings nearby. However, with the planned development along the waterfront (TPB Ref.: A/K22/31 refers) as well as the future developments at Sites 3E1 and 3E2 (TPB Ref.: A/K22/43 refers), the Proposed Composite Development would be barely visible from this viewpoint.

Visual Obstruction

- 6.7.2 The existing building at the Site appears to be the first row of building along the waterfront. However, upon implementation of the approved developments mentioned above, these buildings would block much visual access towards this direct, as well as the proposed building. The Proposed Composite Development would not bring much visual obstruction.

Visual Change

- 6.7.3 The visual sensitivity of the public viewers at this viewpoint has been considered as high, taking into account Kwun Tong Promenade is an existing open space yet views towards the Hong Kong Island/Kai Tak Cruise Terminal would be more iconic and viewers would be transient in nature as they would probably be jogging or walking home. The Proposed Composite Development would be barely visible behind the planned development on the first row in front of the waterfront. The effect on public viewers would be negligible to slight and the visual change would be dominated by the planned developments in the foreground rather than the Proposed Composite Development.

7 CONCLUSION

7.1.1 Based on the analysis on the appraisal of visual impact on Visual Composition, Visual Obstruction, Effect on Public Views and Effect on Visual Resources, **Table 7.1** below presents the overall visual impact caused by the Proposed **Composite** Development to the public viewers represented in each VP.

Table 7.1 Summary of Assessment of Visual Impact at the Viewpoints

Viewpoint	Location	Sensitivity of the Public Viewers	Magnitude of Visual Change	Visual Impact due to Proposed Composite Development
VP1	Quarry Bay Park	High	Slight	Slight
VP2	North Point Pier	High	Negligible	Negligible
VP3	Hoi Sham Park	High	Negligible	Negligible
VP4	Kai Tak Cruise Terminal Park Landscape Deck	High	Negligible	Negligible
VP5	Kai Tak Bridge Road	Medium	Negligible	Negligible
VP6	Kwun Tong Promenade	High	Negligible	Negligible

7.1.2 VP1 to VP5 capture the view of the overall cityscape and urban skyline of Kowloon East, particularly Kai Tak Development and Kowloon Bay/Kwun Tong Business Areas. For VP1, the existing building encroaches into the 20% Building Free Zone and is very close to the ridgeline; yet the Proposed Composite Development would not create additional obstruction to the ridgeline but to bring slight increase in visual access towards the mountain backdrop and skyview due to the adoption of stepped building height profile. The existing urban fabric and skyline captured in all these viewpoints would be largely remained intact as the proposed building of the Proposed Composite Development would be largely blocked by the planned and approved developments within Kai Tak Development, either in the Runway Precinct or the South Apron Corner. For VP5, more sky view above the Hong Kong Children's Hospital will be available as the uniform height of the existing building will be replaced by a varied building height in the Proposed Composite Development (only a small portion of Tower 2 will be visible). Thus, the visual impact to be brought by the Proposed Composite Development would be slight to negligible from these viewpoints.

7.1.3 Lastly, although not solely contributed by the Proposed Composite Development, there will be a substantial change in the skyline when viewing from VP6 upon development of the planned and approved developments on the waterfront. The Proposed Composite Development alone would make negligible change to the condition, quality and character of the area and give no impact to the streetscape and public realm within Kwun Tong Promenade.

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

Appendix VI

Replacement Pages of the Landscape Proposal

3.0 THE PROPOSED DEVELOPMENT

- 3.1 The proposed development comprises two residential towers with stepping height ranging from 26 to 34 storeys, situated atop a 3-storey commercial arcade (including a mezzanine floor underneath the portion below Tower 1 and Tower 2), with parking facilities located in two basements. Drawings of the Proposed Development can be referred to in the building plans submitted with the planning application, and the development schedule is outlined as follows:

Table 1.0 Development Schedule

Total Site Area	About 6,541m ²		
Plot Ratio	Total: 7.0 Domestic: 6.5 Non-domestic: 0.5		
Total GFA	Total: 45,787 m ² Domestic: 42,516.5 m ² Non-domestic: 3,270.5 m ² GIC Facilities: about 490 m ² Shop/F&NB: about 2,780.5 m ²		
Total No. of Unit	1,140		
Average Flat Size	About 37.3 m ²		
Maximum Building Height	Not more than +136.45mPD		
No. of Storeys	Not more than 38 (plus 2 storeys of underground carpark)		
Site Coverage	15m and below: Not more than 65% Above 15m: Not more than 40%		
No. of Block	2		
Private Open Space	Not less than 2,850 m ²		
	Residential	Non-residential	Total
Car Parking Space	241	22	263
Bicycle Parking Space	76	-	76
Motorcycle Parking Space	12	3	15
Loading/Unloading Space	2 HGV	3 LGV + 2 HGV	3 LGV + 4HGV



- LEGEND:
- APPLICATION SITE BOUNDARY
 - PROPOSED HEAVY STANDARD TREES
 - PROPOSED SHRUBS AND GROUNDCOVERS
 - PROPOSED LAWN
 - VERTICAL GREEN WALL
 - PROPOSED CREEPING PLANT
 - PROPOSED LEVEL
 - PROPOSED PAVING
 - VEHICULAR ENTRANCE
 - SEAT BENCH



- KEY:
- 1 Green Boulevard
 - 2 Vertical Green Wall (S/S system)
 - 3 Ramp to Basement
 - 4 Canopy (1.5m wide)
 - 5 Emergency Vehicular Access (EVA)
 - 6 Public Passage (4m Clear Width)
 - 7 Outdoor Sitting Area
 - 8 Swimming Pool
 - 9 Swimming Pool Deck
 - 10 Trellis
 - 11 Children Play Area
 - 12 Multi-functional Lawn
 - 13 Fitness Equipment
 - 14 Sitting Bay
 - 15 Covered Walkway

PROJECT :

PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION IN "COMMERCIAL (2)" ZONE AT 8 LAM CHAK STREET

DRAWING TITLE :

LANDSCAPE MASTER PLAN (OVERALL VIEW)

PROJECT No. C2519

DRAWING No. LMP01

SCALE : 1:400

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2519-LMP01

A	GENERAL AMENDMENT	NOV 2025
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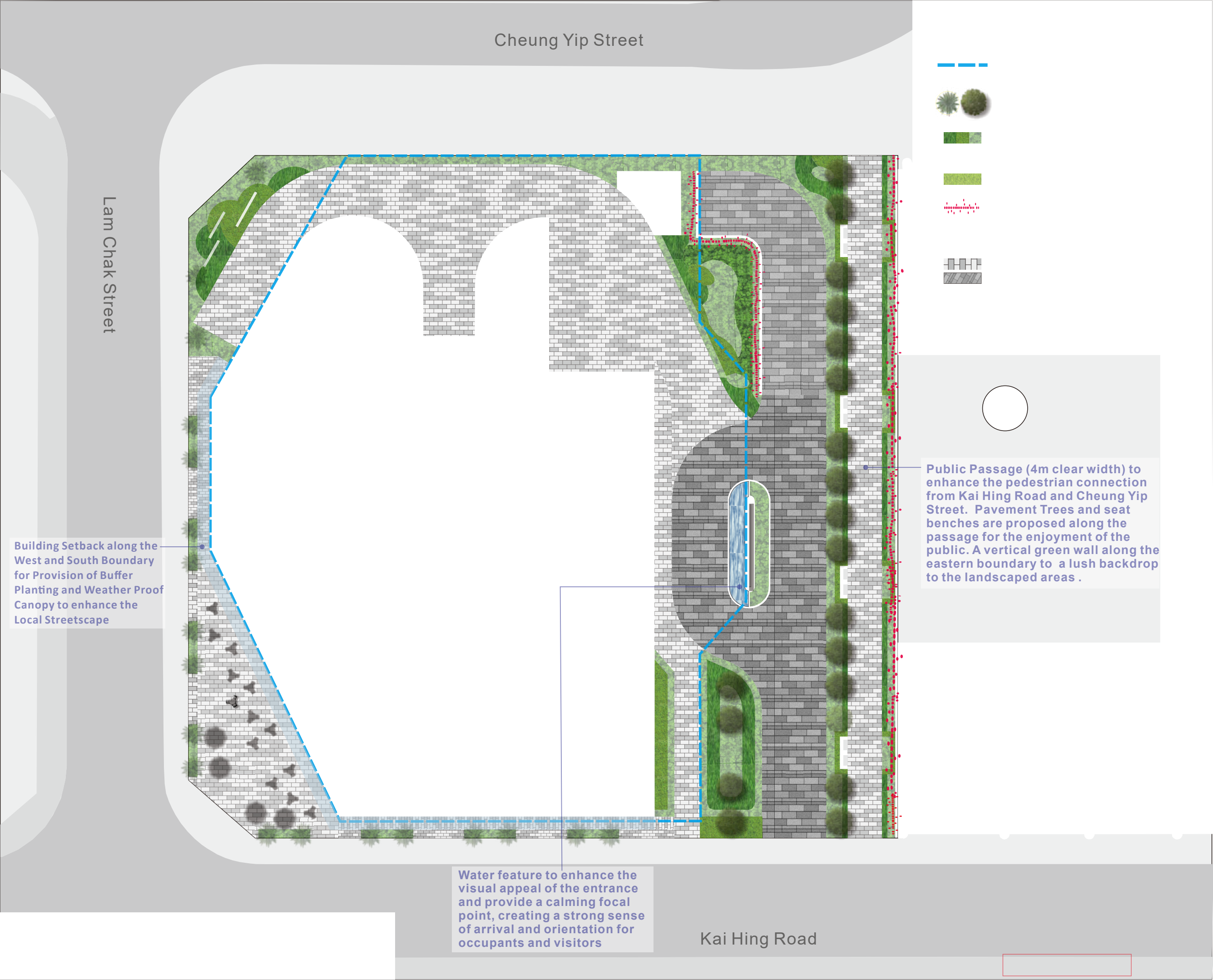
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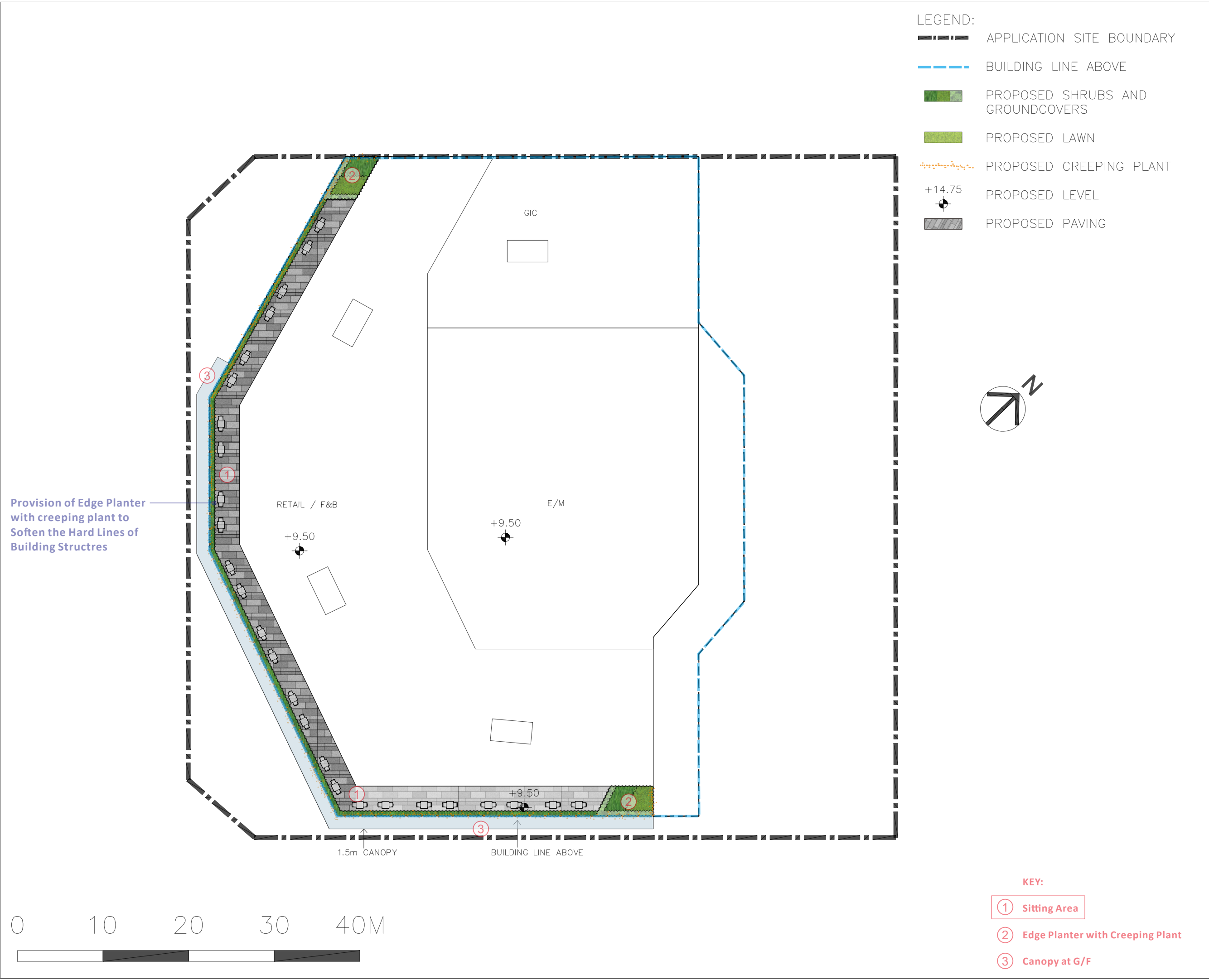
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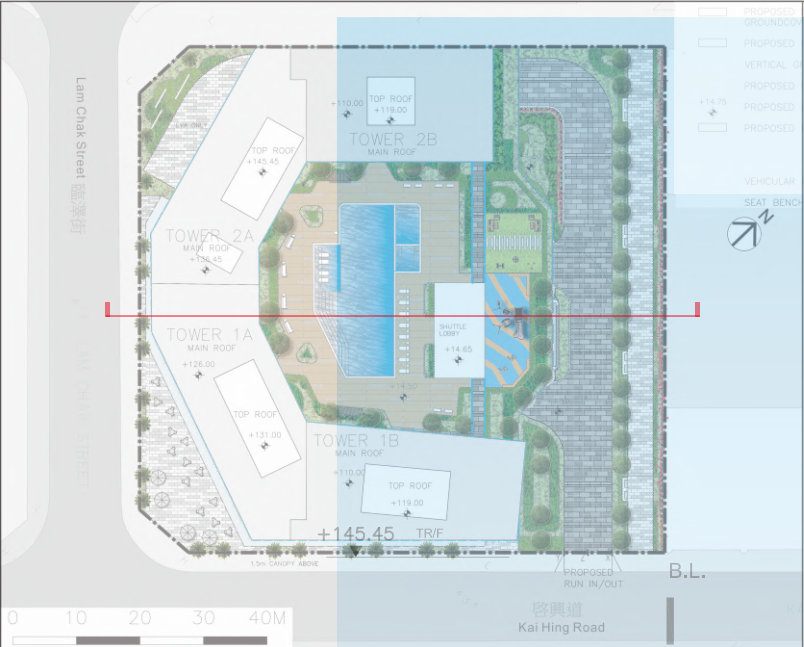
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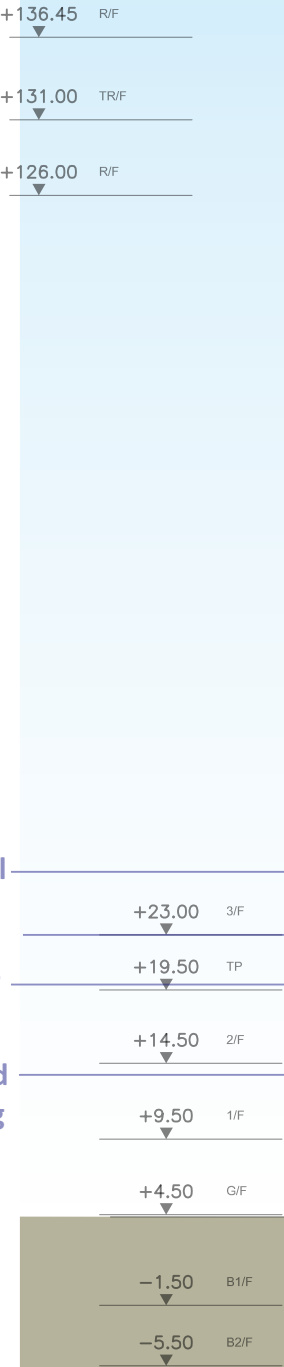
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香港灣仔譚臣道5-11號
信邦商業大廈17樓A室
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KEY PLAN



TOWER 2A

TOWER 2B

B.L.

PACIFIC TRADE CENTRE

Swimming Pool

Edge Planter
2.5m Setback
for Canopy and
Buffer Planting

Raised Planter
with Tree Planting

Children Play Area

Water Feature

Public Passage
(4m Clear Width)

PROJECT :
PROPOSED RESIDENTIAL DEVELOPMENT WITH
MINOR RELAXATION OF PLOT RATIO
RESTRICTION IN "COMMERCIAL (2)" ZONE AT
8 LAM CHAK STREET

DRAWING TITLE :
LANDSCAPE SECTION

PROJECT No. C2519

DRAWING No. LD102

SCALE : 1:500

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2519-LD102

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REV	DESCRIPTION	DATE

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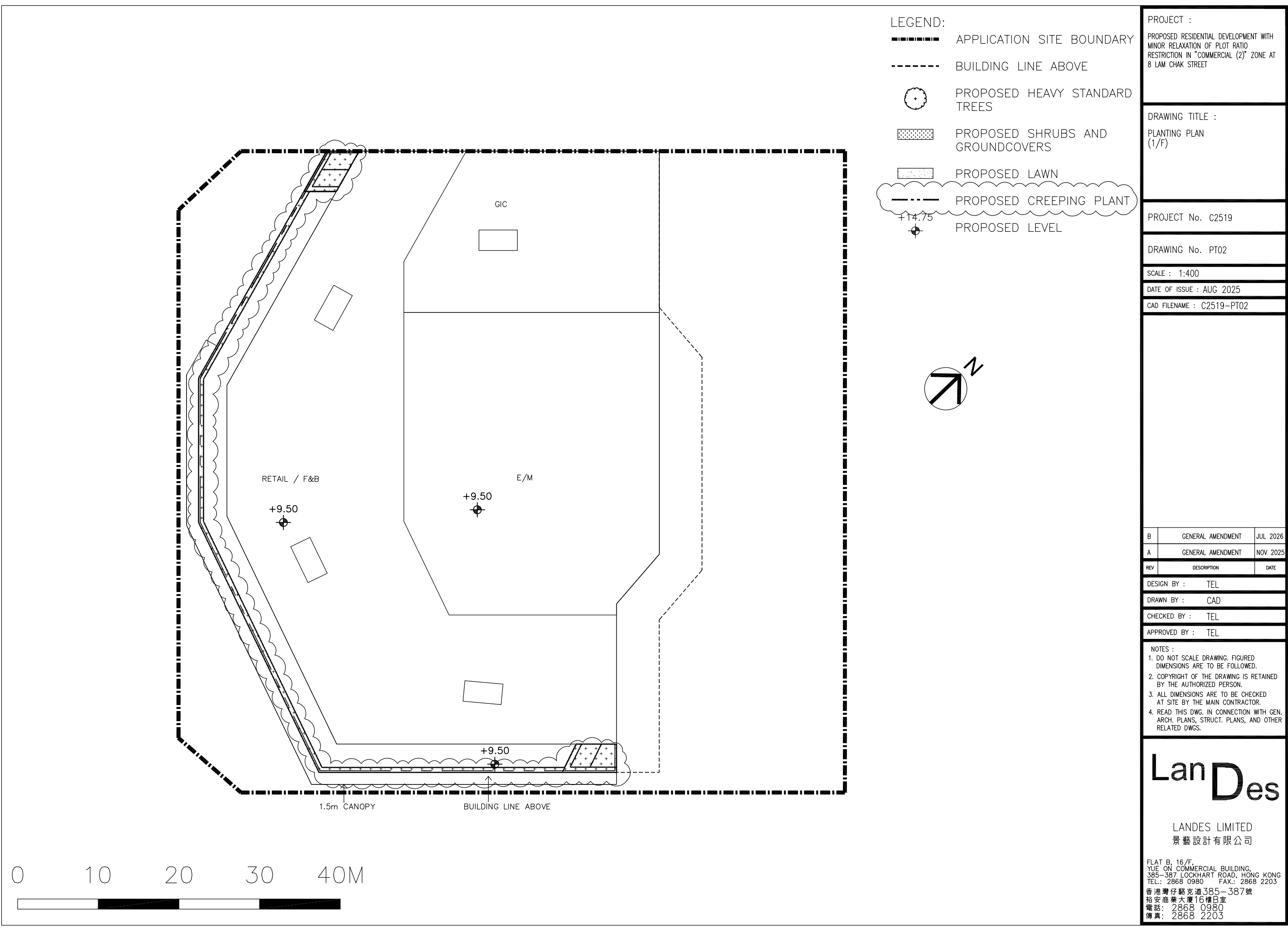
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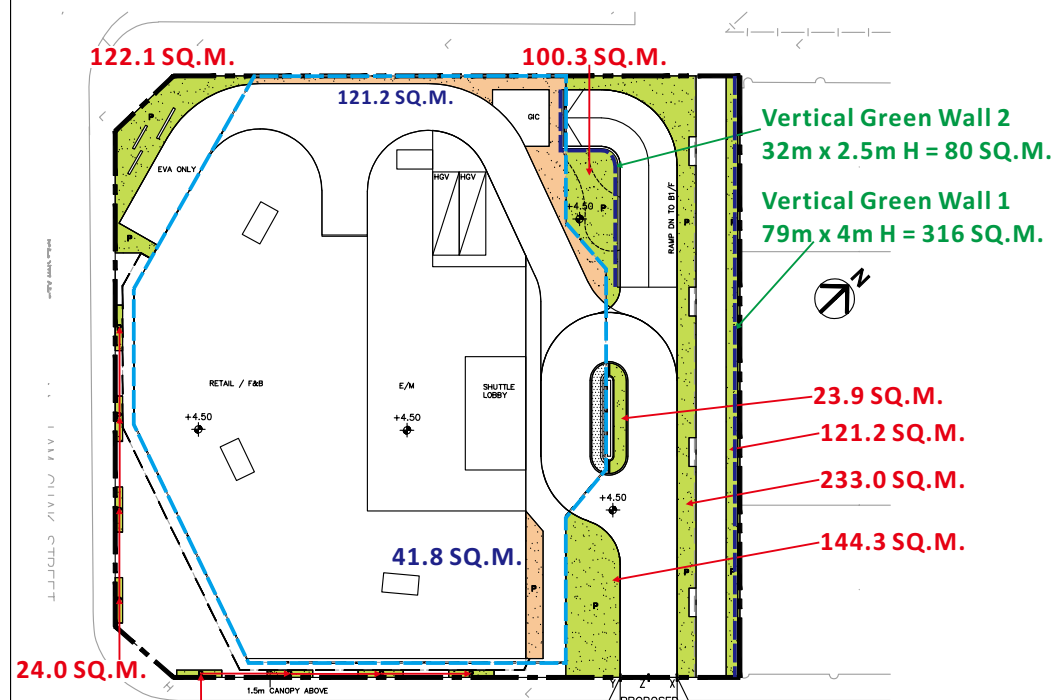
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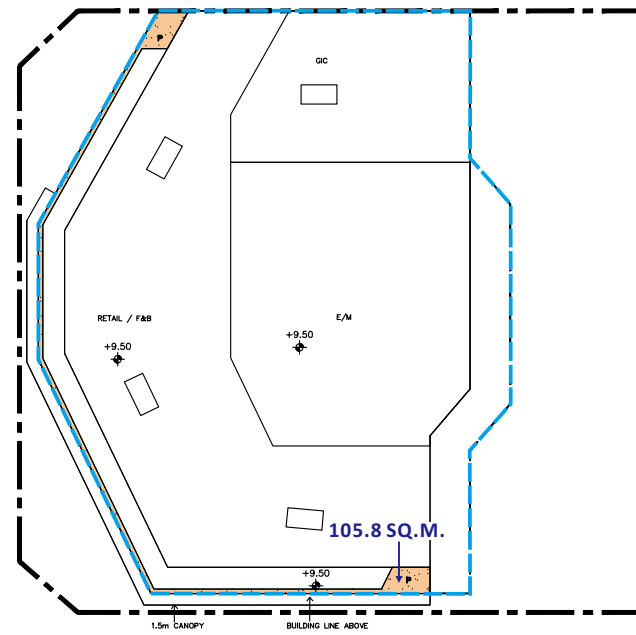
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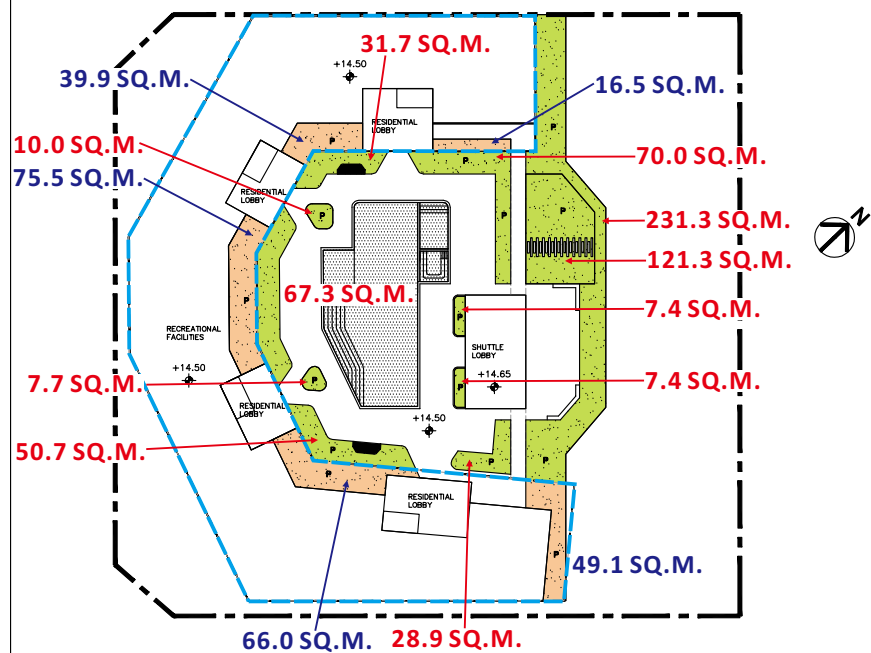




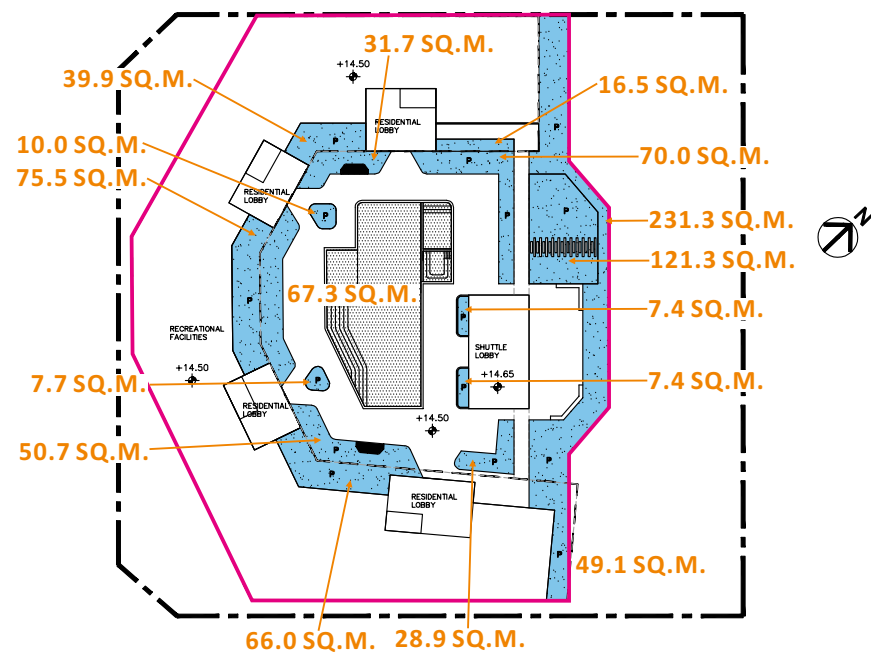
A GREENERY AT G/F
SCALE 1:1000



B GREENERY AT 1/F
SCALE 1:1000



C GREENERY AT 2/F
SCALE 1:1000



D GREENERY AT ROOF (2/F)
SCALE 1:1000

LEGEND:

- APPLICATION SITE BOUNDARY
- UNCOVERED GREENERY AT PRIMARY ZONE
- COVERED GREENERY AT PRIMARY ZONE
- GREENERY AT ROOF
- +14.75 PROPOSED LEVEL

Development Parameter		
Site Area:	6,515.0	m ²
Roof Area:	4,148.0	m ²
Allowable Greenery Features (Not more than 30% of the Total Common Greenery in accordance with PNAP APP-152)	390.90	m ²

In accordance with the requirement in the ES of the OZP

Required Common Greenery	Area	Unit
1. Total Common Greenery within Site (30% of Site Area):	1,954.5	m ²
2. Common Greenery at Primary Zone (20% of Site Area):	1,303.0	m ²
3. Common Greenery on Roof (20% of the Roof Area):	829.6	m ²

Common Greenery at Primary Zone:	Area	Unit
Uncovered Planitng Area (G/F)	792.8	m ²
Uncovered Planitng Area (2/F)	633.7	m ²
Vertical Green Wall (G/F)	396.0	m ²
	(>390.90)	
Covered Planitng Area (G/F) (With 0.5 reduction factor)	81.5	m ²
Covered Planitng Area (1/F) (With 0.5 reduction factor)	52.9	m ²
Covered Planitng Area (2/F) (With 0.5 reduction factor)	123.5	m ²

Provided Common Greenery at Primary Zone	2,075.3	m²
Fulfilment of Requirement item 2	(>1,303.0)	m ²
Greenery Ratio at Primary Zone	31.85%	

Greenery at Other Areas	Area	Unit
Provided Greenery at Other Areas	0.0	m²
Greenery Ratio at Other Areas	0.00%	

Provided Total Common Greenery	2,075.3	m²
Fulfilment of Requirement item 1	(>1,954.5)	m ²
Total Greenery Ratio	31.85%	

Common Greenery at Roof Area	Area	Unit
Provided Common Greenery at Roof Area	880.7	m²
Fulfilment of Requirement item 3	(>829.6)	m ²
Greenery Ratio at Roof:	21.23%	

Provided Greenery Features:	Area	Unit
Vertical Green Wall (G/F)	396.0	m ²
Total Greenery Feature:	396.0	m²
	(>390.90)	m ²

PROJECT :

PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION IN "COMMERCIAL (2)" ZONE AT 8 LAM CHAK STREET

DRAWING TITLE :

GREENERY PROVISION (G/F, 1/F & 2/F)

PROJECT No. C2519

DRAWING No. GC01

SCALE : 1:1000

DATE OF ISSUE : AUG 2025

CAD FILENAME : C2519-GC01

A GENERAL AMENDMENT NOV 2025

REV DESCRIPTION DATE

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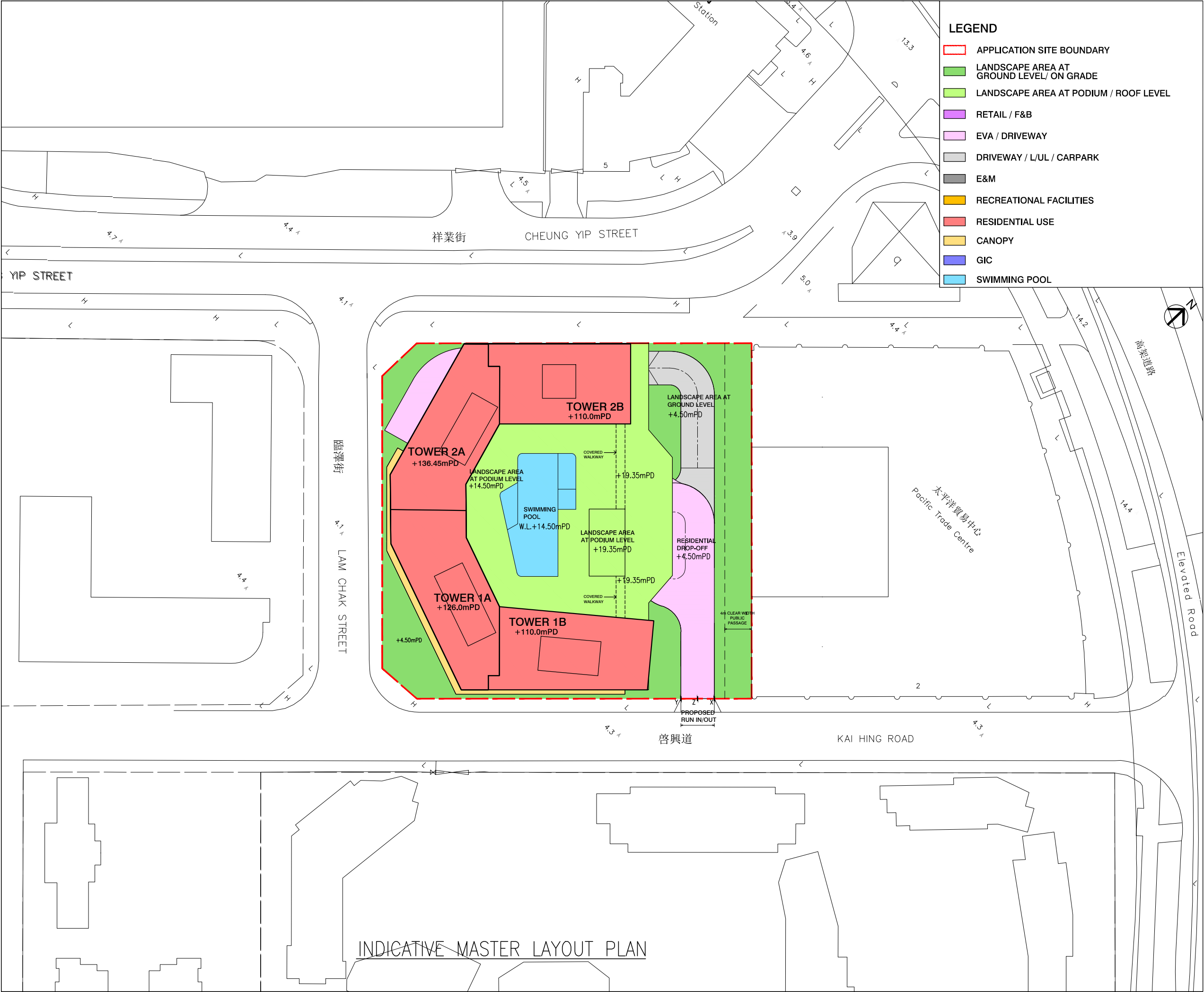
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**Proposed Composite Development (with Flat and Retail/F&B)
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in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

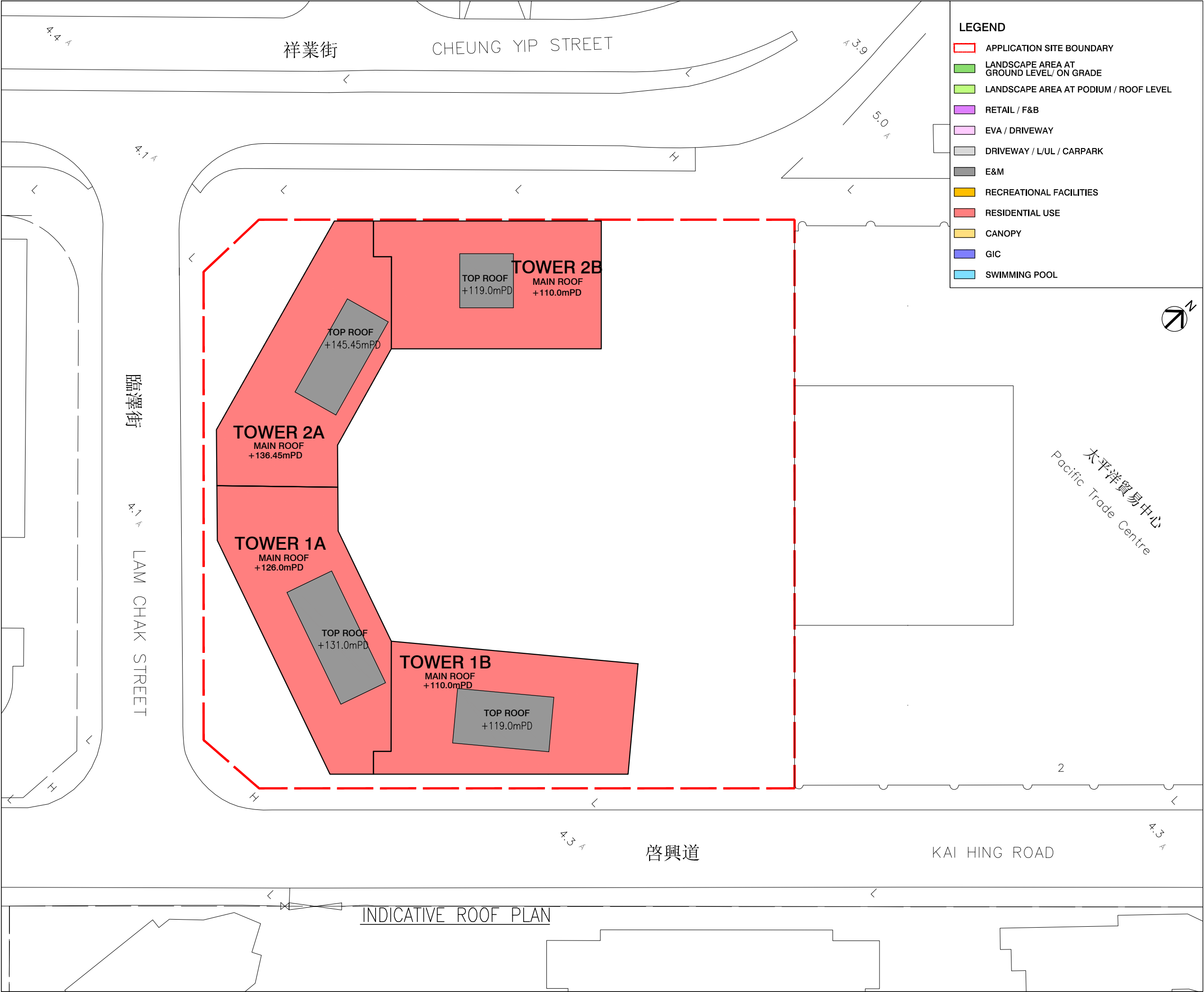
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Appendix VII

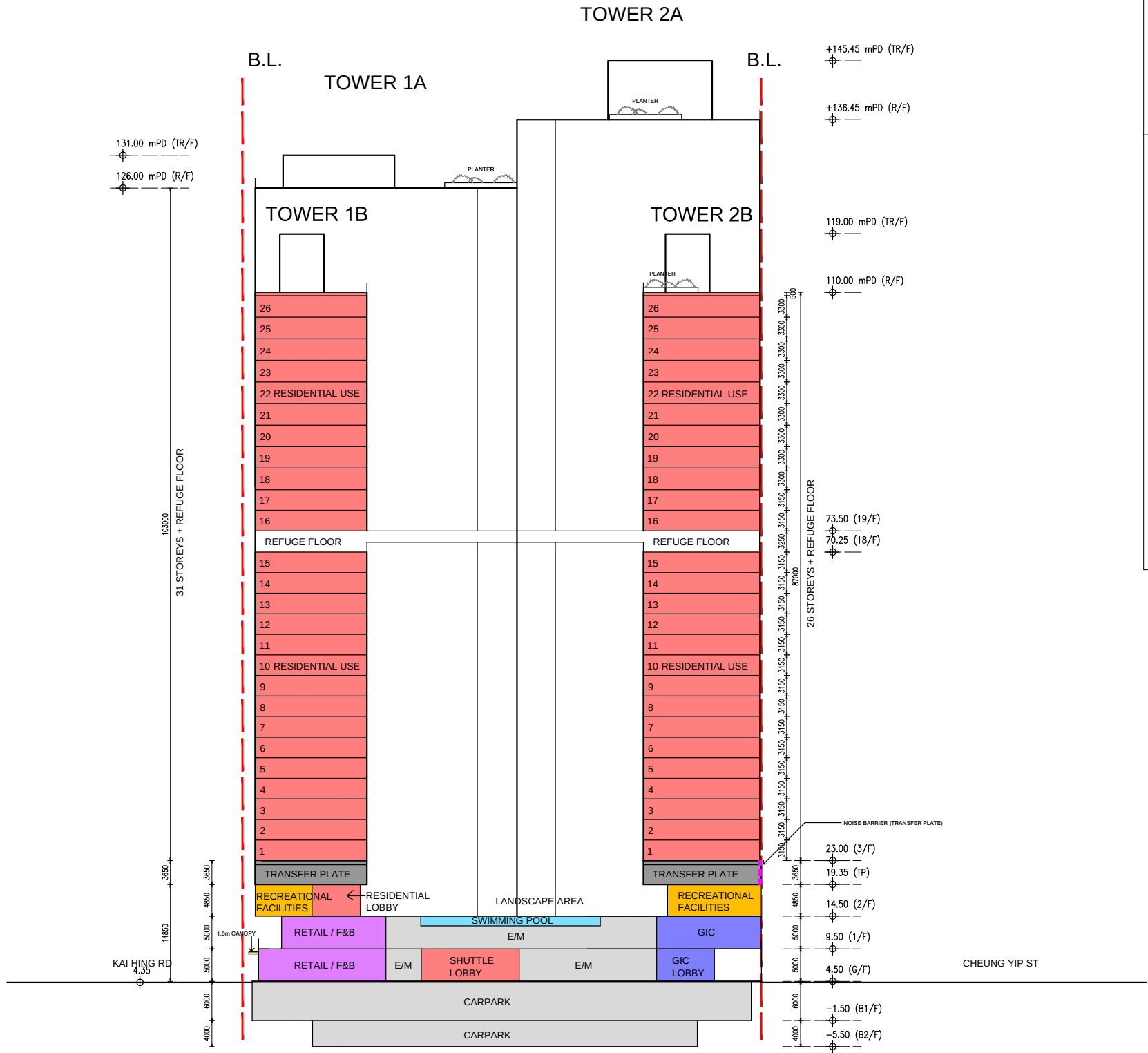
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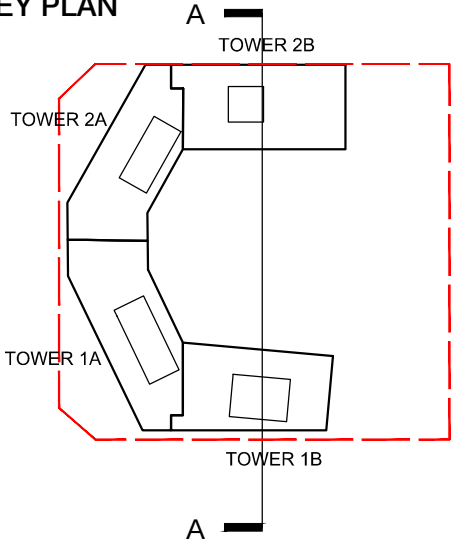
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TITLE		標題	
INDICATIVE MASTER LAYOUT PLAN			
SCALE 1:800(A3)	比例	DATE MAY 2026	日期
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TITLE		標題	
INDICATIVE ROOF FLOOR PLAN			
SCALE 1:500(A3)	比例	DATE MAY 2026	日期
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JOB NO. N3591–H	工程項目	DRAWING NO. –	圖號



KEY PLAN



LEGEND

- APPLICATION SITE BOUNDARY
- LANDSCAPE AREA AT GROUND LEVEL/ ON GRADE
- LANDSCAPE AREA AT PODIUM / ROOF LEVEL
- RETAIL / F&B
- EVA / DRIVEWAY
- DRIVEWAY / L/UL / CARPARK
- E&M
- RECREATIONAL FACILITIES
- RESIDENTIAL USE
- CANOPY
- GIC
- SWIMMING POOL

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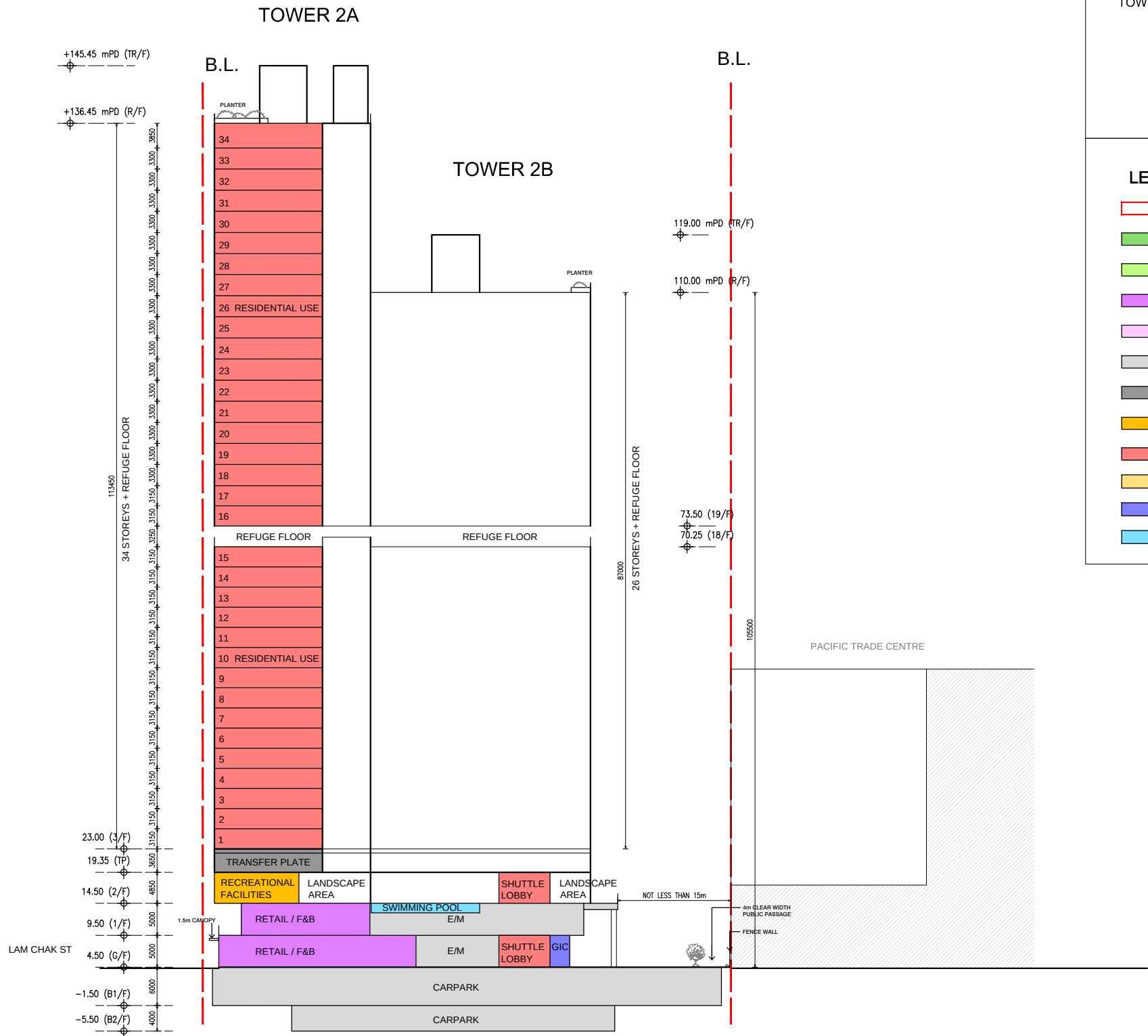
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PROPOSED COMPOSITE DEVELOPMENT
AT 8 LAM CHAK STREET, KOWLOON
- N.K.I.L. 6215

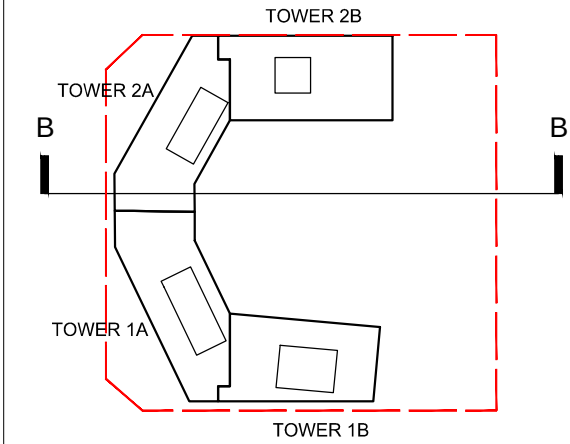
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INDICATIVE SECTION A-A

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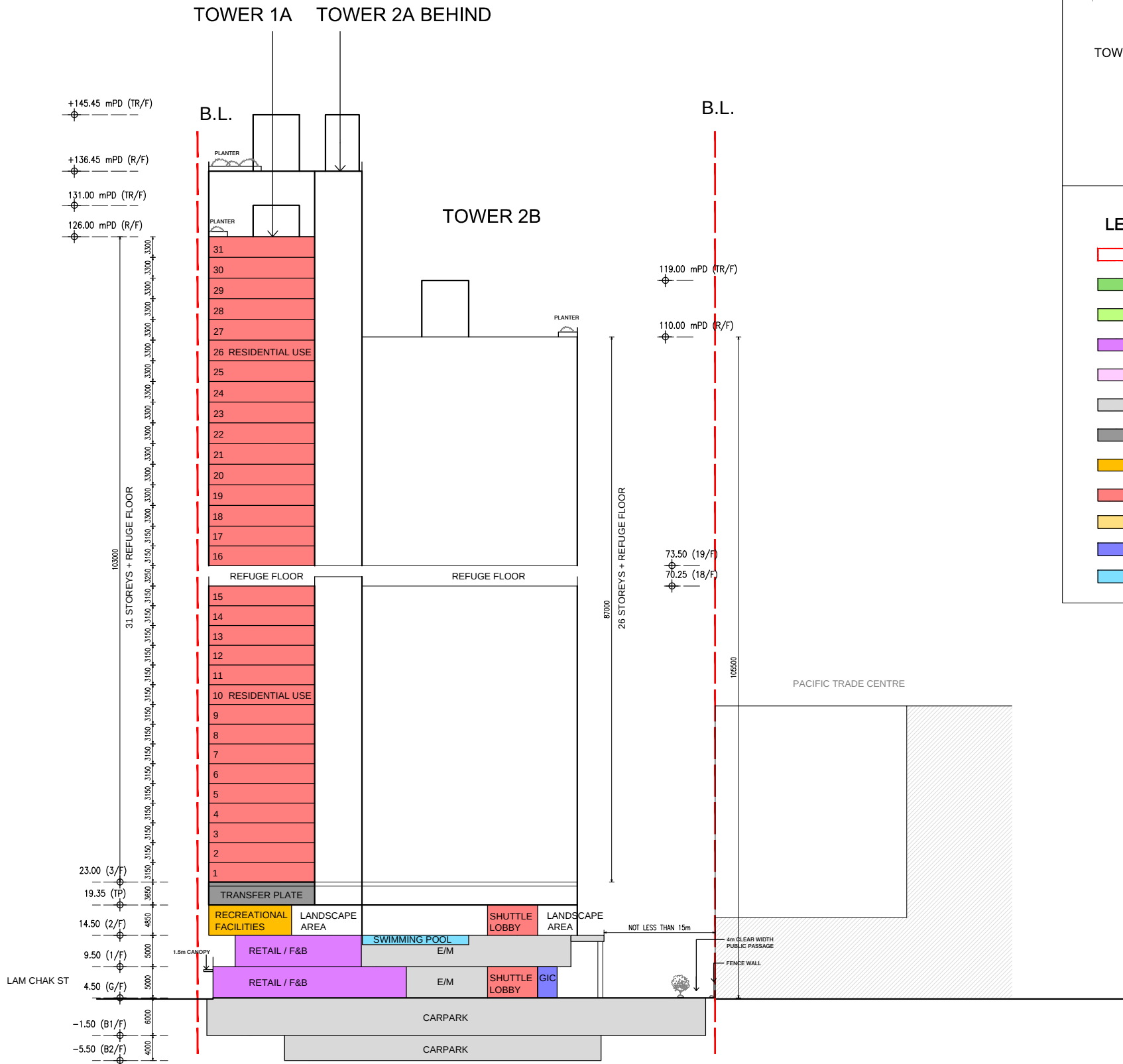
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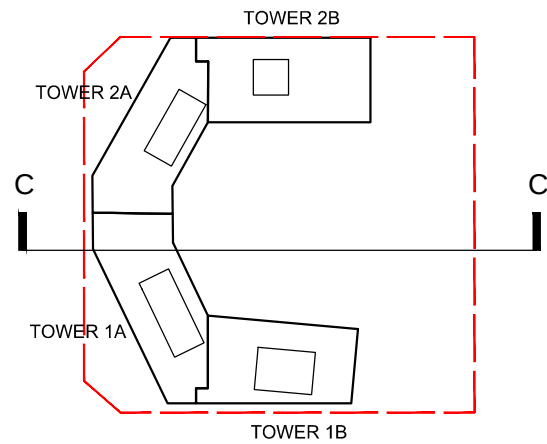
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- APPLICATION SITE BOUNDARY
- LANDSCAPE AREA AT GROUND LEVEL / ON GRADE
- LANDSCAPE AREA AT PODIUM / ROOF LEVEL
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PROJECT		項目名稱	
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TITLE		標題	
INDICATIVE SECTION B-B			
SCALE 1:800(A3)	比例	DATE MAY 2026	日期
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JOB NO. N3591-H	工程項目	DRAWING NO. -	圖號



KEY PLAN



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PROJECT 項目名稱

PROPOSED COMPOSITE DEVELOPMENT
AT 8 LAM CHAK STREET, KOWLOON
- N.K.I.L. 6215

TITLE 標題

INDICATIVE SECTION C-C

SCALE 1:800(A3)	比例 1:800(A3)	DATE MAY 2026	日期
DRAWN BY DT	製作人 DT	CHECKED BY -	檢查
JOB NO. N3591-H	工程項目 N3591-H	DRAWING NO. -	圖號

**Proposed Composite Development (with Flat and Retail/F&B)
with Minor Relaxation of Plot Ratio Restriction
in “Commercial (2)” Zone at 8 Lam Chak Street, Kowloon
S16 Planning Application**

(Planning Application No: A/K22/50)

Appendix VIII

Replacement Pages of the Drainage & Sewerage Impact Assessment

2. DRAINAGE IMPACT ASSESSMENT

2.1 Appraisal of Drainage Impact

- 2.1.1 The Application Site is served by existing public drainage system. There are Ø600 mm drainage pipes (SWD4079122 and SWD4079123), and Ø500 mm and Ø525 mm drainage pipes (SWD4079120 and SWD4079121), which receive runoff from the Application Site. These pipes are connected to the existing Ø1200 mm drainage pipe (SWD4055086) along Kai Hing Road and the existing Ø1800 mm drainage pipe (SWD4055067) along Cheung Yip Street, respectively. The Application Site currently is 100% paved and occupied by office building.
- 2.1.2 The estimated surface runoff under the existing and future conditions of the Application Site is shown in **Appendix 2.1**. 30% greenery coverage would be provided for the Proposed Development as a resilient measure. The peak 1 in 50-year runoff from the site is expected to decrease from 0.343m³/s to approximately 0.308m³/s after development. In other words, there will be a reduction of surface runoff when compared with the existing condition due to increased greenery. The surface runoff generated from the Application Site will be collected and connected to the aforementioned drainage pipe (existing manhole SMH4067261 and SMH4067260).
- 2.1.3 A proposed 300mm peripheral channel will be provided as shown in **Figure 2.1**. The details of the peripheral channel will be designed in detailed design stage.
- 2.1.4 With no change in flow regime and reduced surface runoff due to increased greenery provision, no adverse drainage impact is anticipated.
- 2.1.5 In addition, the ground level will be raised to 4.5mPD as another measure to ensure flood resilience of the development.

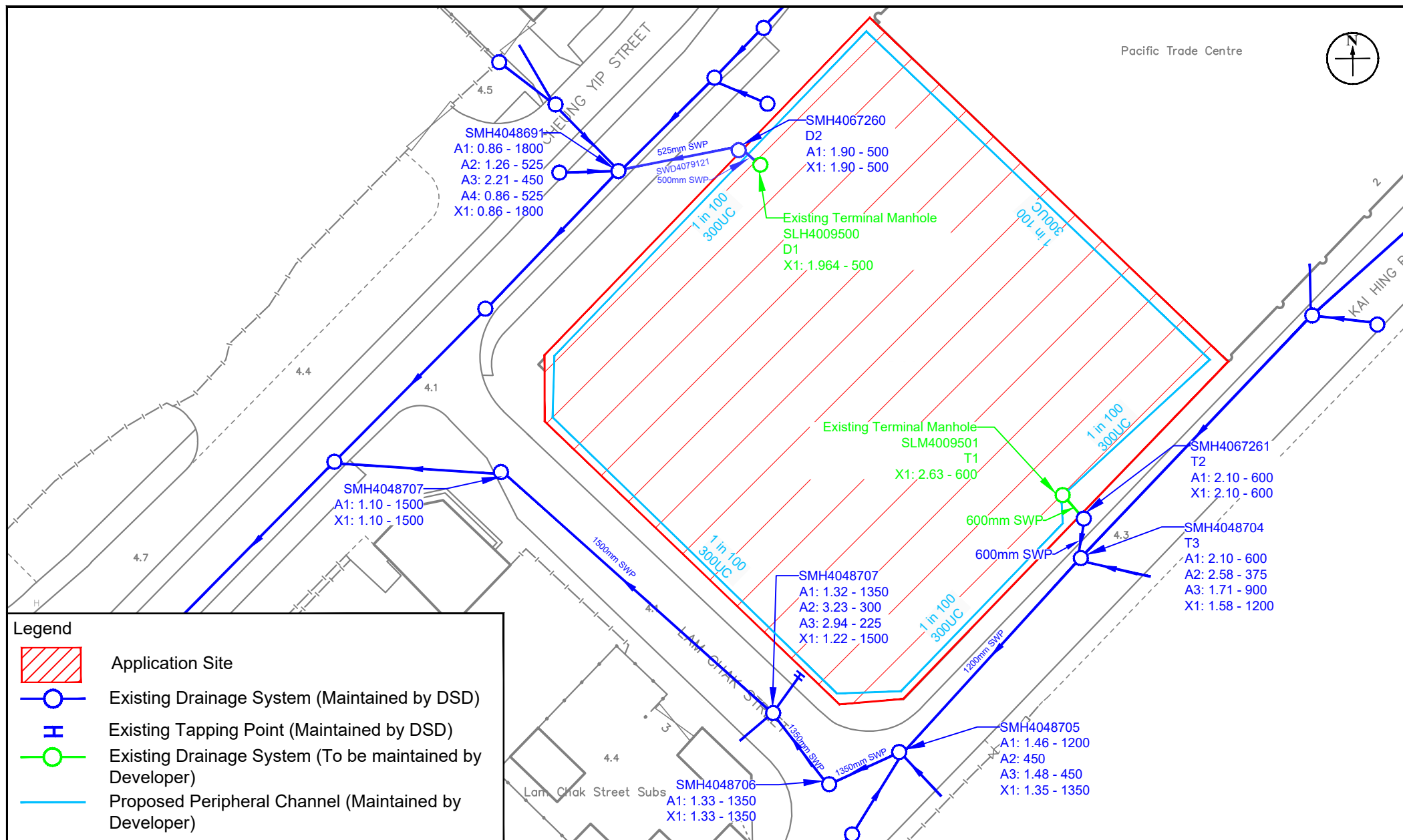


Figure: 2.1

Title: Existing and Proposed Drainage System in the Vicinity of the Application Site

Project: Proposed Comprehensive Development at 8 Lam Chak Street, Kowloon - N.K.I.L. 6215

RAMBOLL

Drawn by: GW

Checked by: CC

Rev.: 1.3

Date: Jul 2026

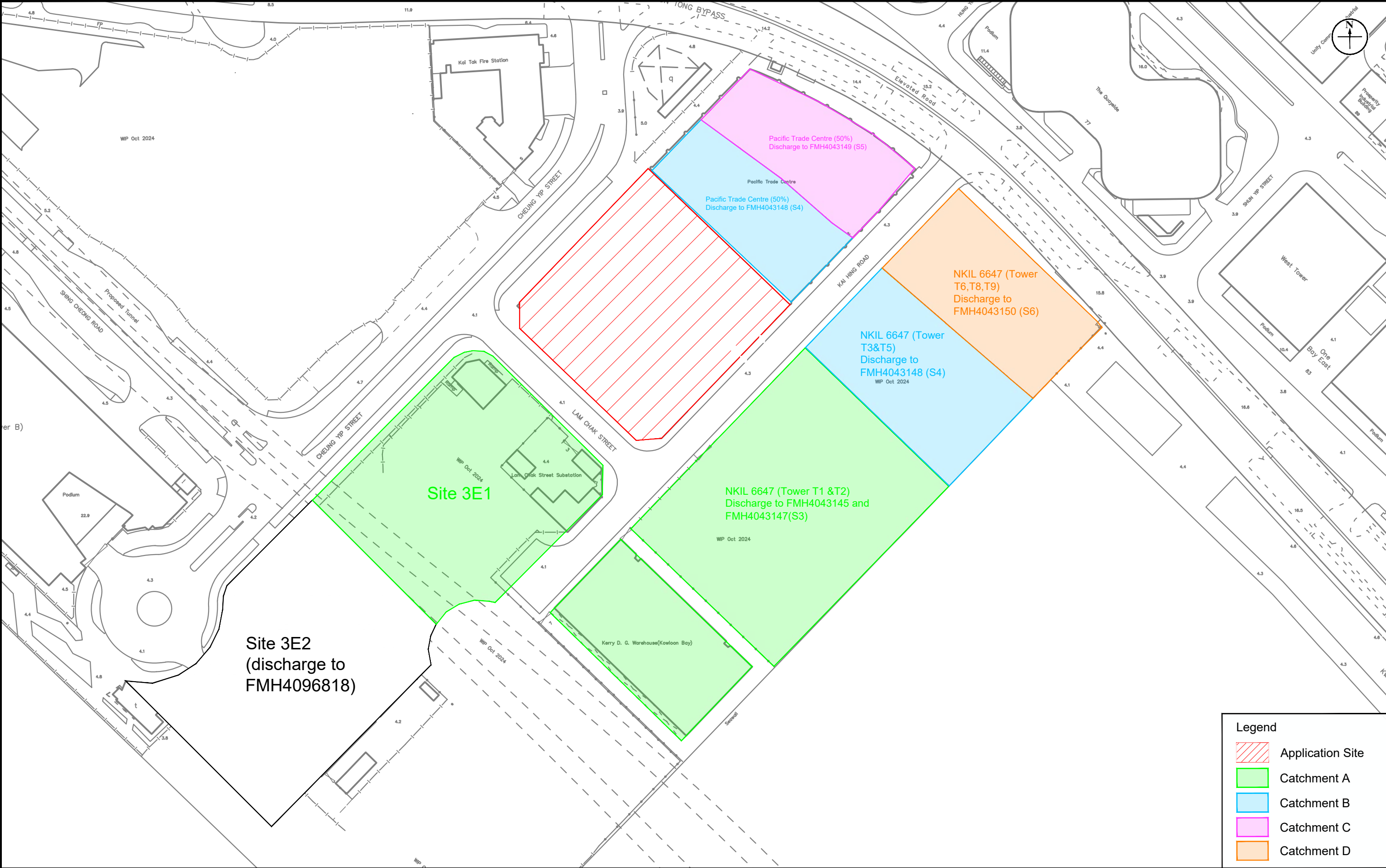


Figure: 3.2
Title: Catchment Area in the Vicinity of the Application Site

Project: Proposed Comprehensive Development at 8 Lam Chak Street, Kowloon - N.K.I.L. 6215

RAMBOLL	
Drawn by:	MW
Checked by:	CC
Rev.:	1.3
Date:	Jul 2026

Proposed Composite Development at Harbourside HQ at No. 8 Lam Chak Street, Kowloon Bay

Table 1 - Proposed Catchment Areas and Run-off (1 in 50 year)

Notes:

Site Area 6,541 m²

$Q_p = 0.278 \ C \ i \ A$

where Q_p = peak runoff in m³/s
 C = runoff coefficient (dimensionless)
 i = rainfall intensity in mm/hr
 A = catchment area in km²

Catchments are small, so Rational Method is appropriate

1 in 50-year (according to Table 3 of DSD Manual)

a= 505.5

b= 3.29

c= 0.355

Surface Characteristics	Runoff coefficient, C*
Asphalt	0.70 - 0.95
Concrete	0.80 - 0.95
Brick	0.70 - 0.85
Grassland (heavy soil**)	
Flat	0.13 - 0.25
Steep	0.25 - 0.35
Grassland (sandy soil)	
Flat	0.05 - 0.15
Steep	0.15 - 0.20

	Catchment	Discharge Manhole	Paved	Unpaved	Area	Total t _c	Intensity	Weighted Runoff Coefficient	Run-off	Run-off ²	Run-off ³
					(m ²)	(min)	(mm/h)		(m ³ /s)	(m ³ /s)	(m ³ /s)
Existing	Subject Site										
	S1	T1	100%	0%	6,541	5.00	239	0.95	0.412	0.458	0.478
Future	Subject Site										
	S1	T1, D1	70%	30%	6,541	5.00	239	0.71	0.308	0.342	0.357

Remarks:

- 1. Assumed Time of Concentration
- 2. Runoff includes rainfall increase due to Climate Change 11.1% in the mid 21st Century
- 3. Runoff includes rainfall increase due to Climate Change 16% in the end of 21st Century

Proposed Composite Development at Harbourside HQ at No. 8 Lam Chak Street, Kowloon Bay
Hydraulic Calculations of Proposed Drainage System

Table 2a - 1 in 50 year Runoff of Future Catchments (m³/s)

Runoff at	Catchment	
	S1	Total
T1	0.154	0.15
T2	0.154	0.15
D1	0.154	0.15

Table 3a - Hydraulic Capacities for Existing Drainage System

Segment	Manhole Reference	Manhole Reference	Type of Channel	Pipe Dia.	Pipe Length	Invert Level 1	Invert Level 2	g	k _s	s	Gradient	v	V	Area	Q	Q _{silt} ¹
				mm	m	mPD	mPD	m/s ²	m		1 in	m ² /s	m/s	m ²	m ³ /s	m ³ /s
T1 - T2	SLH4009501	SMH4067261	Circular	600	4.2	2.63	2.10	9.81	0.0030	0.125	8	0.000001	6.97	0.28	1.97	1.87
T2 - T3	SMH4067261	SMH4048704	Circular	600	5.5	2.10	1.58	9.81	0.0030	0.095	11	0.000001	6.05	0.28	1.71	1.63
D1 - D2	SLH4009500	SMH4067260	Circular	500	3.3	1.96	1.90	9.81	0.0030	0.0197	51	0.000001	2.45	0.20	0.48	0.43

Table 3b - Hydraulic Capacities for Proposed Drainage System (UC)

Segment	Type of Channel	Pipe Dia. (D)	Depth (H)	Slope	Gradient	Manning's roughness coefficient	Cross Section Area	Wetted Perimeter	Hydraulic Radius (R)	V	Q	Q _{silt} ¹
		m	m		1 in		m ²	m	m	m/s	m ³ /s	m ³ /s
Proposed Peripheral Channel	U-channel	0.600	0.300	0.010	100	0.016	0.231	1.242	0.186	2.04	0.47	0.45

Table 4a - Comparison of Runoff from Proposed Catchments and Hydraulic Capacities of Existing Drainage System

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Q _{silt} ¹	Catchment Involved	Runoff	Occupancy	Sufficient Capacity?	Runoff [2]	Occupancy	Sufficient Capacity?	Runoff [3]	Occupancy	Sufficient Capacity?	Runoff [4]	Occupancy	Sufficient Capacity?
			mm	m ³ /s		m ³ /s			m ³ /s			m ³ /s			m ³ /s		
T1 - T2	SLH4009501	SMH4067261	600	1.87	S1 (50%)	0.15	8.2%	YES	0.17	9.1%	YES	0.18	9.5%	YES	0.20	10.7%	YES
T2 - T3	SMH4067261	SMH4048704	600	1.63	S1 (50%)	0.15	9.5%	YES	0.17	10.5%	YES	0.18	11.0%	YES	0.20	12.3%	YES
D1 - D2	SLH4009500	SMH4067260	500	0.43	S1 (50%)	0.15	35.6%	YES	0.17	39.5%	YES	0.18	41.3%	YES	0.20	46.3%	YES

Table 4b - Comparison of Runoff from Proposed Catchments and Hydraulic Capacities of Proposed Drainage System

Segment	Manhole Reference	Manhole Reference	Pipe Dia.	Q _{silt} ¹	Catchment Involved	Runoff	Occupancy	Sufficient Capacity?	Runoff [2]	Occupancy	Sufficient Capacity?	Runoff [3]	Occupancy	Sufficient Capacity?	Runoff [4]	Occupancy	Sufficient Capacity?
			mm	m ³ /s		m ³ /s			m ³ /s			m ³ /s			m ³ /s		
Proposed Peripheral Channel	-	-	300	0.45	S1	0.15	34.4%	YES	0.17	38.2%	YES	0.18	39.9%	YES	0.20	44.7%	YES

Remarks:

1. Q_{silt}: 10% reduction in flow for gradient is not greater than 1 in 25, 5% reduction in flow for gradient greater than 1 in 25.

Runoff [2] represents the situation in Mid 21st Century of 11.1%

Runoff [3] represents the situation in Late 21st Century of 16.0%

Runoff [4] represents the situation in Late 21st Century due to design allowance with additional runoff of 12.1%

Proposed Composite Development at Harbourside HQ at No. 8 Lam Chak Street, Kowloon Bay

Table 5 - Sea Level

50-year sea level (North Point/Quarry Bay)	=	3.66 mPD	(Table 8 of SDM Corrigendum No. 1/2022)
Mean Sea Level Rise due to Climate Change (End of 21st Century)	=	0.47 m	(Table 29 of SDM Corrigendum No. 1/2022)
Storm Surge Increase in End of 21st Century	=	0.14 m	(Table 30b of SDM Corrigendum No. 1/2022)
	=	4.27 mPD	

The lowest site formation level is 4.50mPD, therefore no adverse drainage impact is anticipated due to tidal effect.