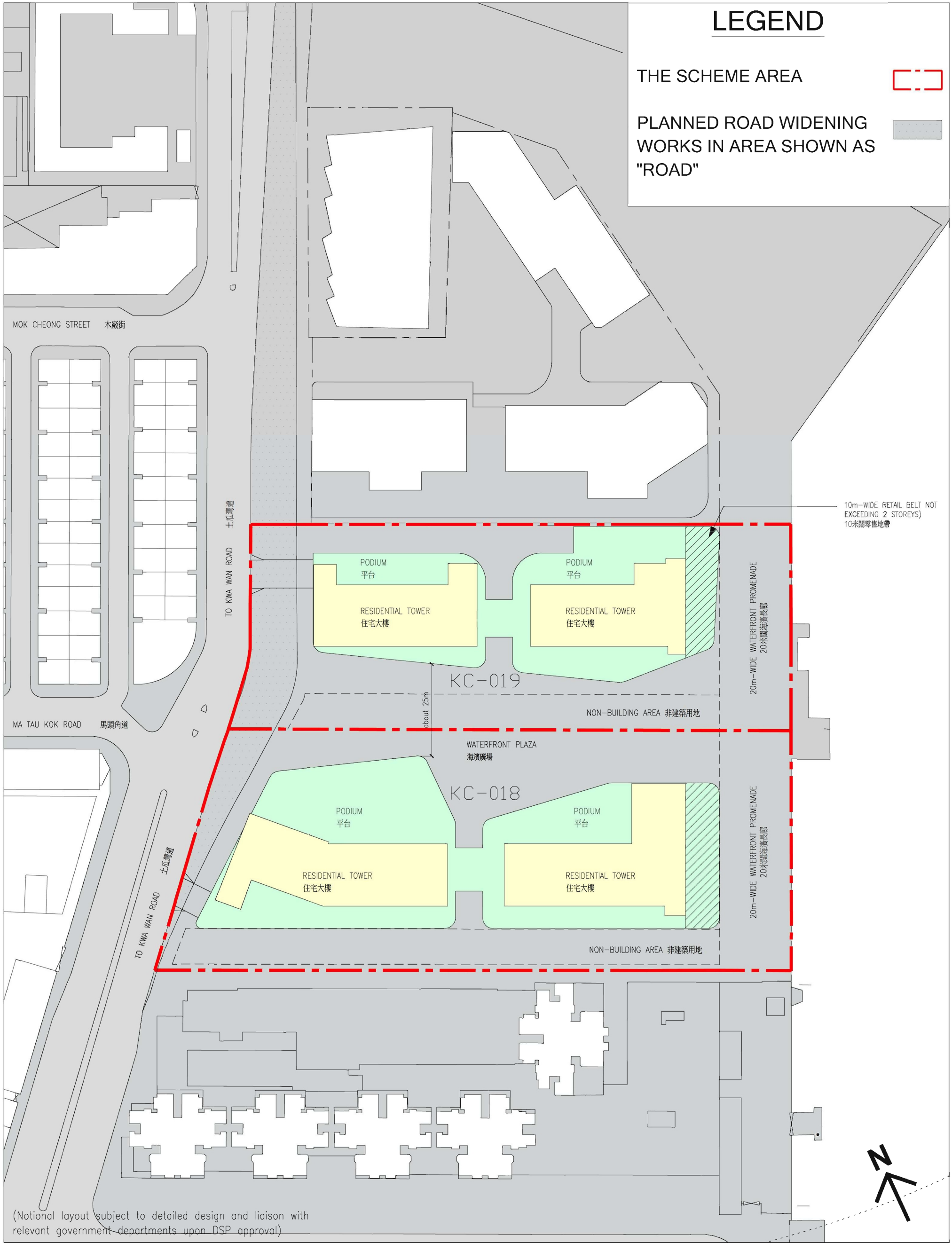


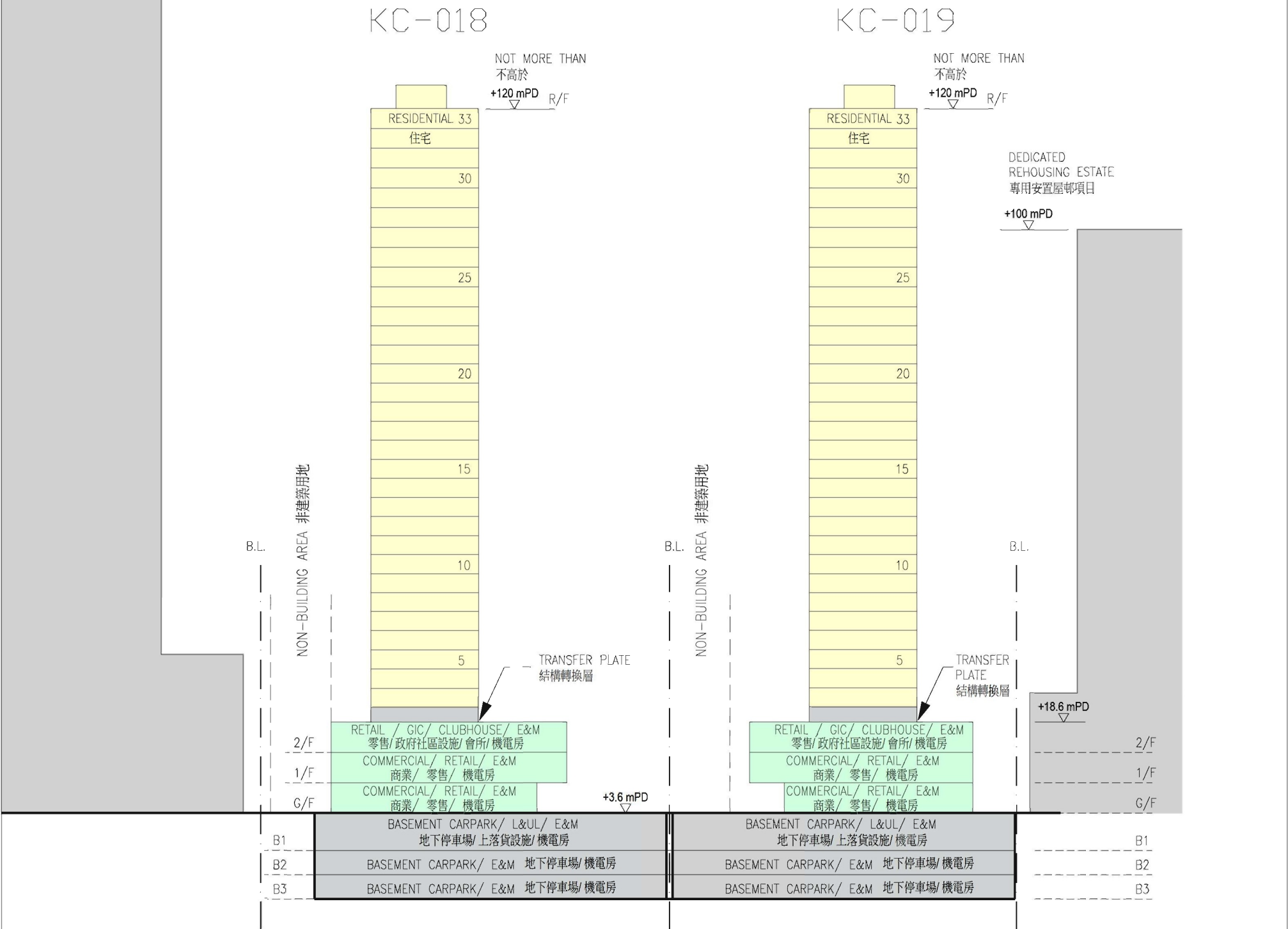
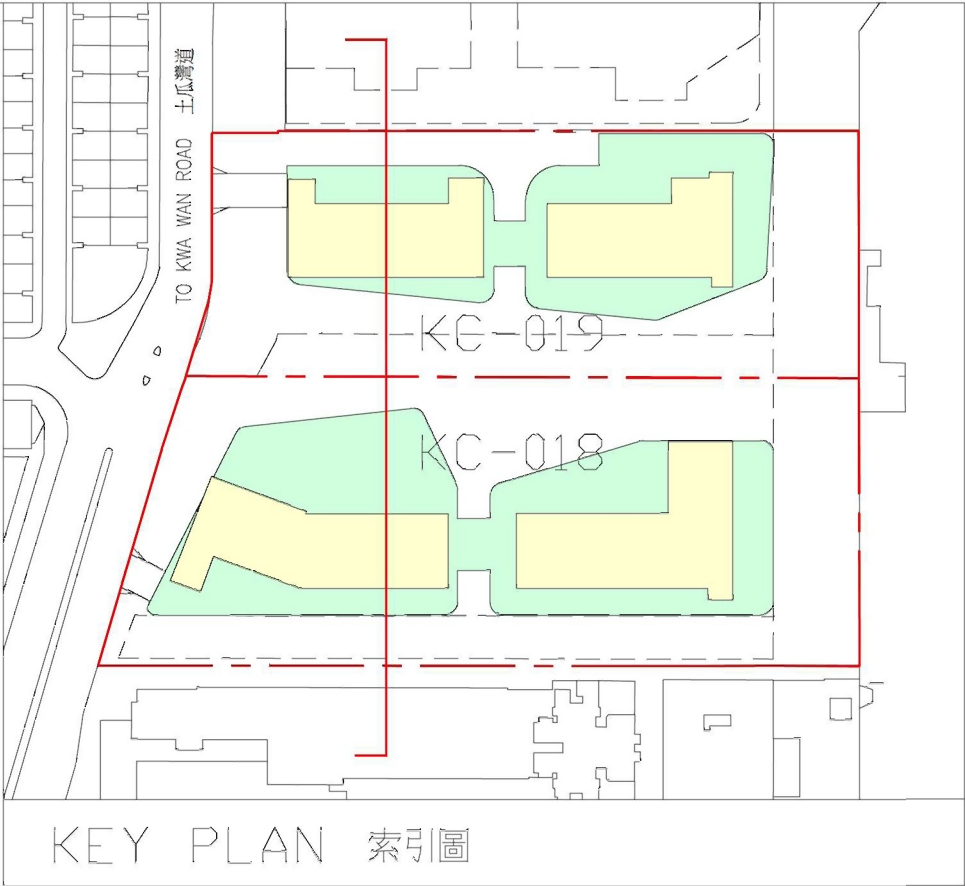
PART 3

SUPPLEMENTARY INFORMATION

Appendix 1

Preliminary Design





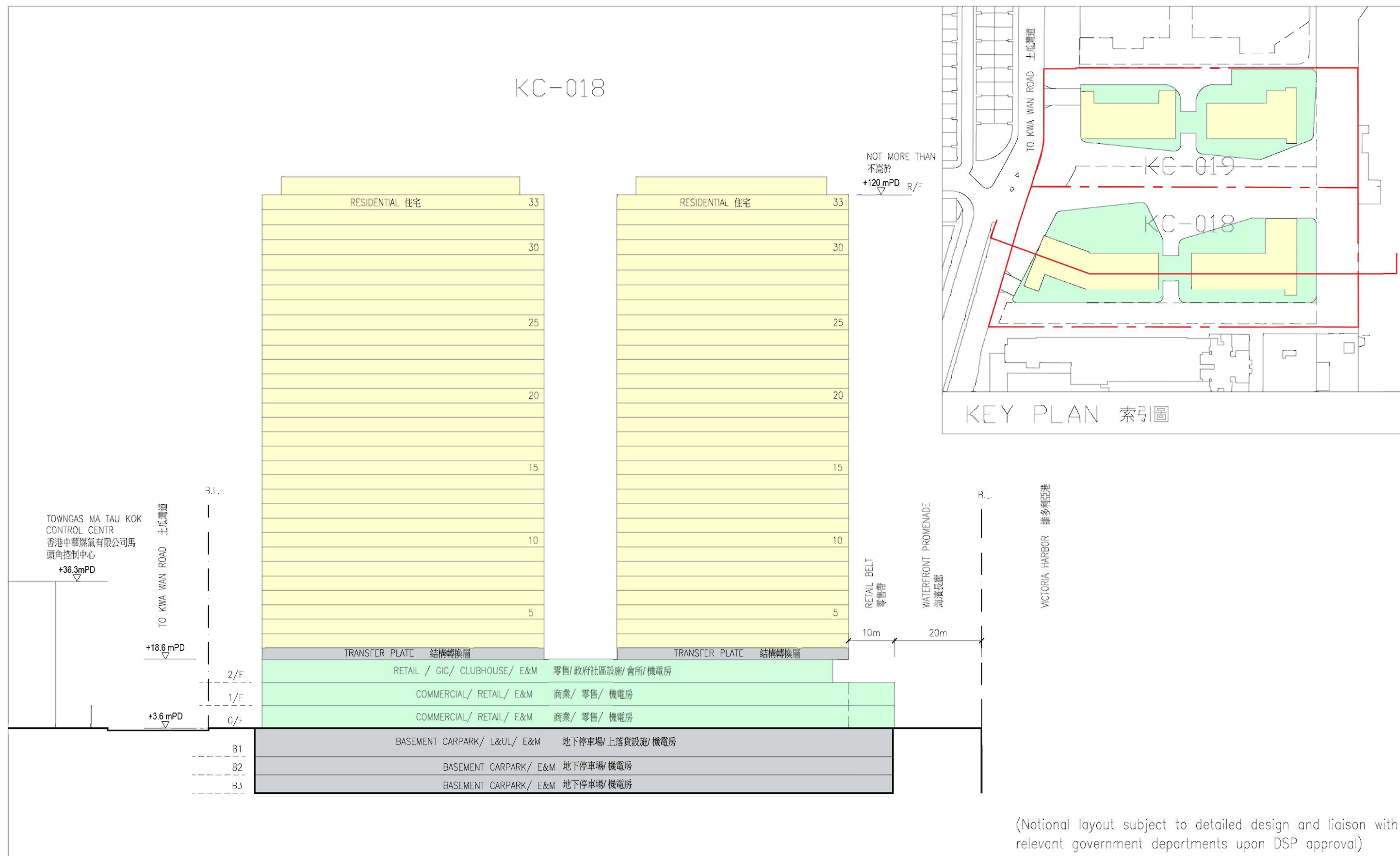
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URA Ming Lun Street/ Ma Tau Kok Road (KC-018)
&
To Kwa Wan Road/ Ma Tau Kok Road (KC-019)
Development Scheme

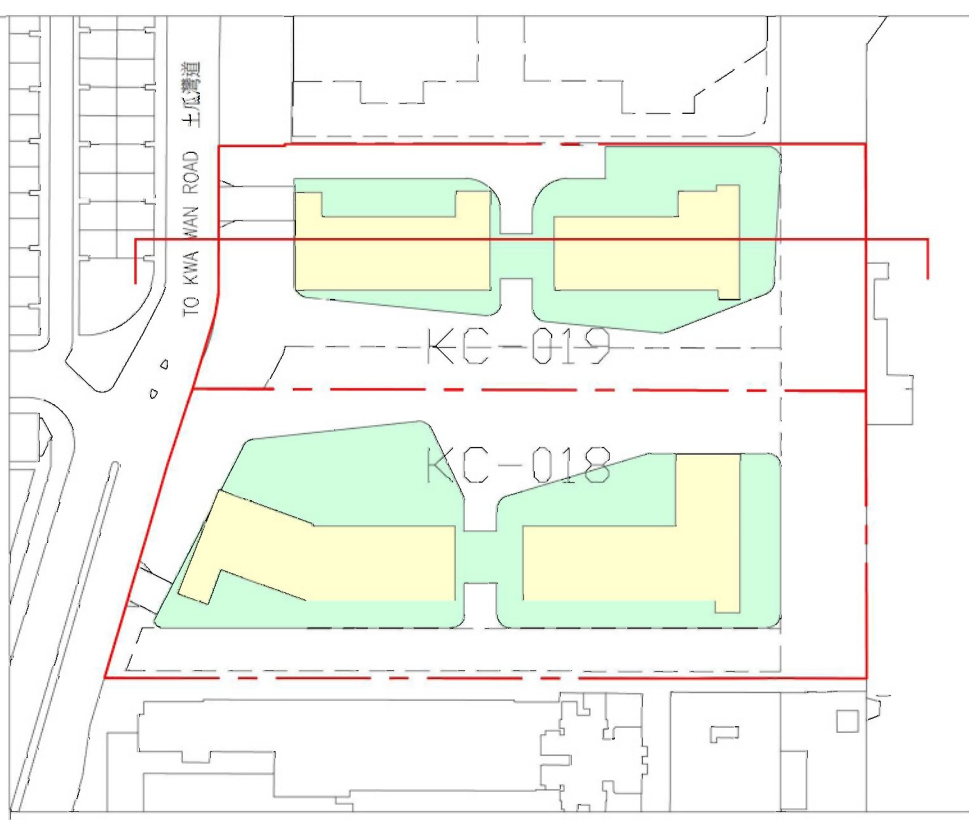
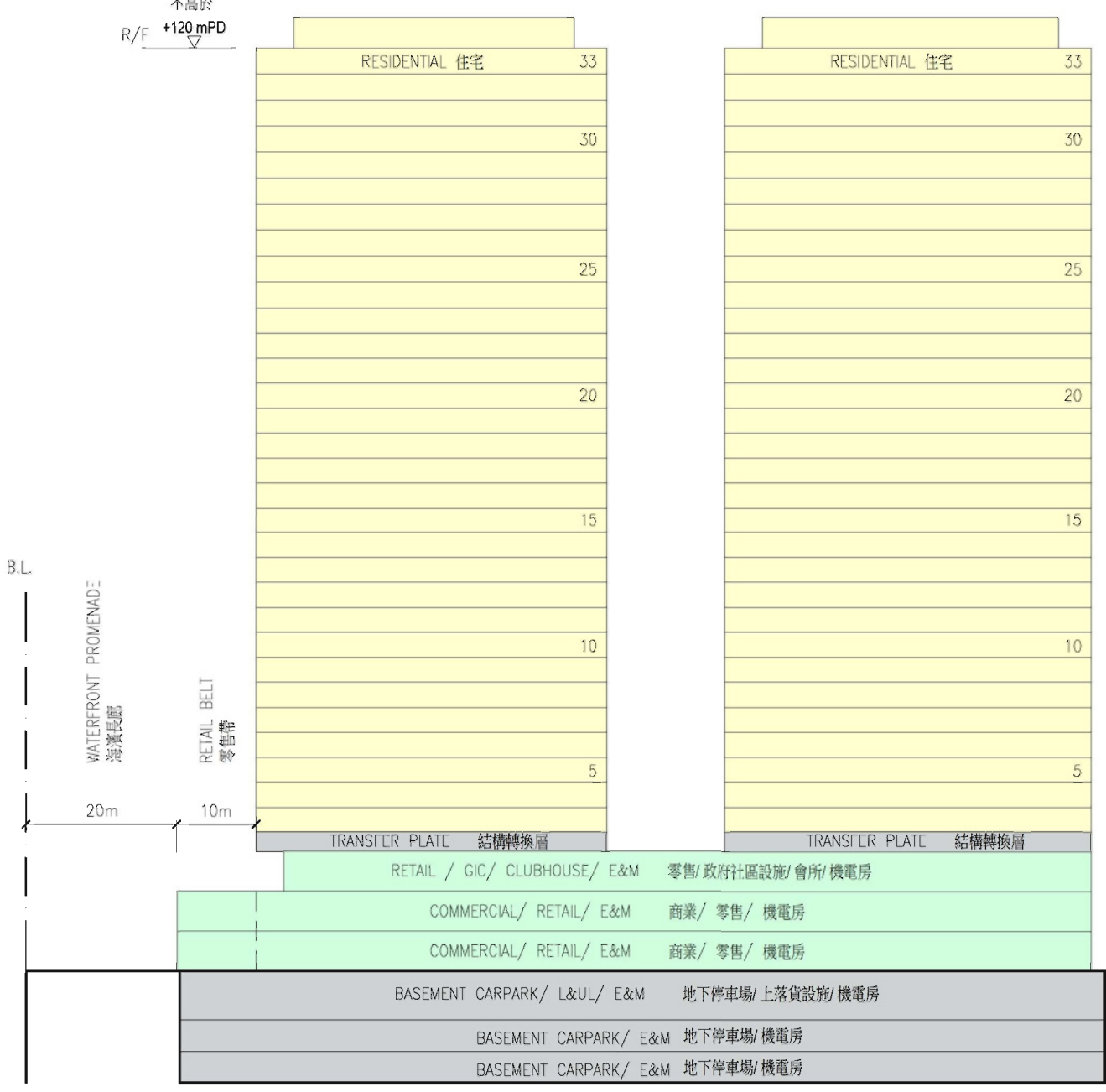
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KC-019

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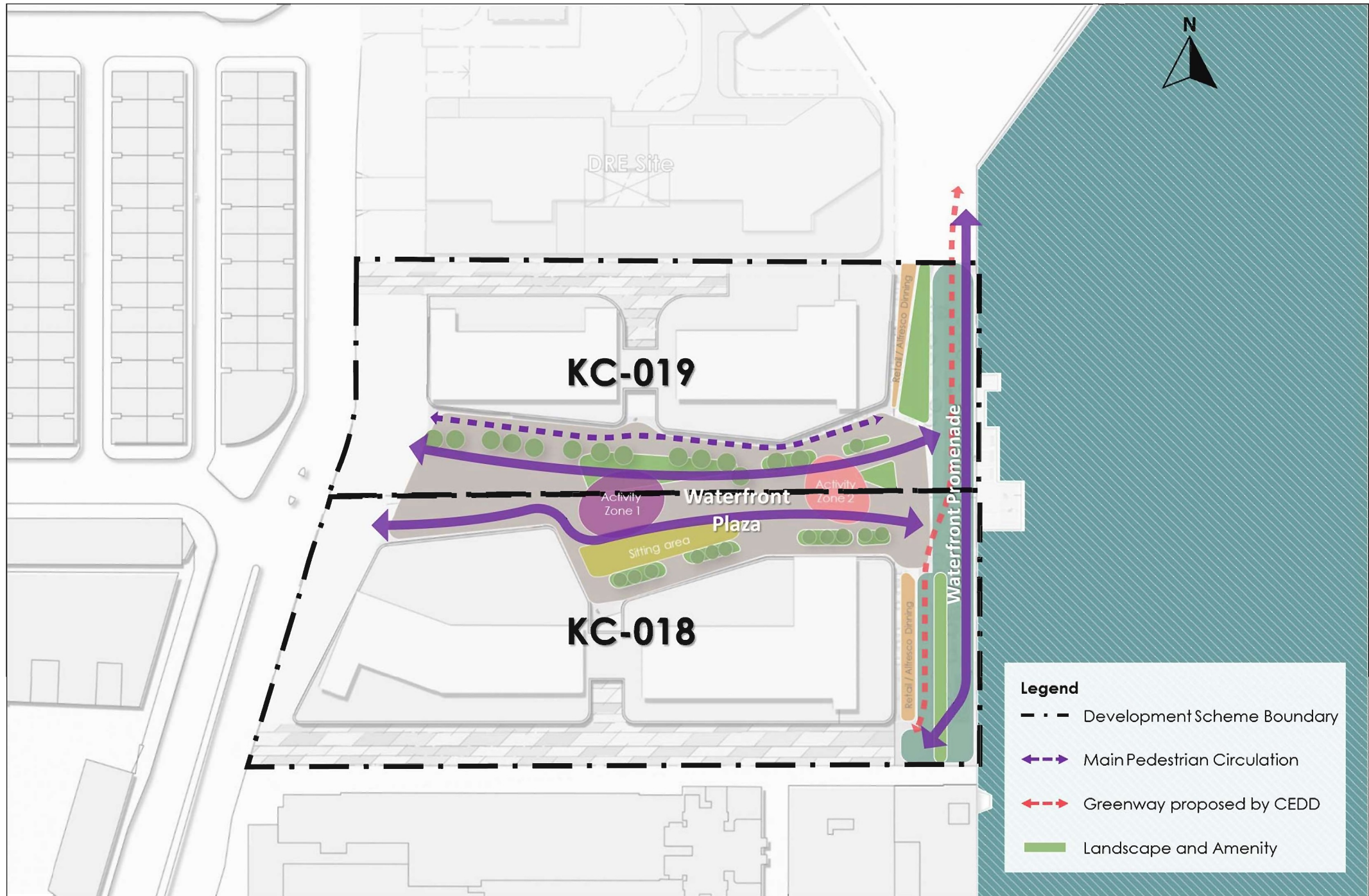
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URA Ming Lun Street/ Ma Tau Kok Road (KC-018)
&
To Kwa Wan Road/ Ma Tau Kok Road (KC-019)
Development Scheme

Notional Design -
Schematic Section

FIGURE
1.4
NOT TO
SCALE



Appendix 2

Visual Impact Assessment
(VIA) Report

Urban Renewal Authority Development Scheme

Prepared under Section 25 (3) of the Urban Renewal Authority Ordinance

Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018) and To Kwa Wan Road / Ma Tau Kok Road Development Scheme (KC-019)

Visual Impact Assessment

October 2022

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1. INTRODUCTION

- 1.1. The Urban Renewal Authority (URA) has proposed two Development Schemes, namely the Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018) (the KC-018 Scheme) and the To Kwa Wan Road / Ma Tau Kok Road Development Scheme (KC-019) (the KC-019 Scheme) under section 25 of the Urban Renewal Authority Ordinance.
- 1.2. The KC-018 and KC-019 Schemes are connected sites which located at a strategic precinct next to the Ma Tau Kok waterfront of Kowloon City District. Under an integrated planning-led approach, both Schemes are considered as one holistic redevelopment which aim to rationalize land use for holistic planning of the area to enable more efficient land use and to bring planning gains to the community.
- 1.3. KC-018 Scheme area is broadly bounded by Ma Tau Kok waterfront to the east, Grand Waterfront to the south, To Kwa Wan Road to the west and Ma Tau Kok Road to the north. It is also known as “5-Street” area, which is currently occupied by building clusters along 5 public streets namely Ming Lun Street, Chung Sun Street, Hing Yin Street, Hing Yan Street, and a portion of Ma Tau Kok Road. The existing Kowloon City District Council sitting-out area as well as the surrounding public pavement area are also included within the KC-018 Scheme area.
- 1.4. To the north of KC-018 Scheme across Ma Tau Kok Road is the KC-019 Scheme. It is broadly bounded by Ma Tau Kok waterfront to the east, Ma Tau Kok Road to the south, To Kwa Wan Road to the west and the Hong Kong Housing Society (HKHS)’s reserved site for dedicated rehousing estate (DRE) to the north. KC-019 Scheme is currently occupied by the Newport Centre Phases I and II which are industrial / commercial buildings. It also includes a portion of Ma Tau Kok Road and adjoining Government land and public pavement.
- 1.5. This VIA report is prepared in support of the submission of the draft Development Scheme Plans (DSPs) under both KC-018 and KC-019 with its planning proposal involving rezoning and relaxation of building height of the Scheme Area to the TPB for consideration. The VIA is prepared to assess the potential visual impact of the notional design of the Scheme in accordance with the TPB Guidelines (TPB PG) No. 41 – Guideline on submission of Visual Impact Assessment for Planning Application to the TPB. Reference will also be made to Chapter 4, 10 and 11 of the Hong Kong Planning Standards and Guidelines (HKPSG) in preparing the VIA.

1.6. This VIA will cover the followings:

Section 2: describes the Proposed Schemes.

Section 3: identifies the area of assessment and the visual context of the Scheme areas.

Section 4: identifies the key visual sensitive receivers.

Section 5: appraises the potential visual impacts induced by the proposed development; and

Section 6: summarises the findings of the VIA.

2. THE PROPOSED SCHEME

- 2.1. The KC-018 and KC-019 Scheme areas are currently zoned “Comprehensive Development Area” (“CDA”), with the western portion shown as “Road” on the draft Kai Tak Outline Zoning Plan (OZP) No. S/K22/7. Under the draft DSPs of KC-018 and KC-019, both areas are proposed to be zoned “R(A)” and with a maximum domestic plot ratio of 6.5 and non-domestic PR of 1.0, as well as maximum building height of 120mPD and site coverage of 65%. To allow spaces for the planned road widening works of To Kwa Wan Road, a strip of land along the western boundary of both Scheme areas are also proposed to be zoned “Road” on the draft DSPs.
- 2.2. As shown in the layout plan of the notional design of both Schemes in **Figure 2.1**, the proposed development comprises four residential towers on top of 2 separate commercial/retail/GIC podia of 3 storeys and ancillary car parking facilities at basement levels. A 20m-wide waterfront promenade is provided at the eastern boundary along the waterfront for public enjoyment under both Schemes, and will be connecting with the adjoining waterfront promenade towards the Kai Tak Development Area (KTDA) at north east. To promote vibrancy, a 10m-wide 2-storeys retail belt abutting the waterfront promenade is provided. Two 10m-wide non-building areas (NBA) will also be provided along the southern boundaries of both Schemes to enhance the visual permeability of the proposed developments. The proposed waterfront promenade, retail belt and the NBAs also conform with the development requirements as stipulated under the current OZP.
- 2.3. In addition, an at-grade Waterfront Plaza will be provided at the central area between KC-018 and KC-019 as a focal point for gathering and place-making opportunities. It will be connected to the proposed retail belt and the waterfront promenade to bring in vibrancy and strengthen the east-west connectivity between the old and new districts. The proposed development parameters of the notional design of both proposed Schemes are shown in **Table 2.1**, which will be subject to adjustments at the detailed design stage after DSP’s approval.

Table 2.1 Major Development Parameters of the Proposed Schemes

Parameters	Overall	KC-018	KC-019
Gross Site Area	About 20,189 sq.m.	About 11,430 sq.m.	About 8,759 sq.m.
Site Area for PR Calculation (subject to survey and detailed design)	About 18,312 sq.m.	About 10,496 sq.m.	About 7,816 sq.m.
Proposed Zonings	“R(A)”, Road		
Proposed Maximum Building Height (at main roof level)	Not more than 120mPD		
Proposed Maximum Domestic GFA (PR)^	About 119,028 sq.m. (PR = 6.5)	About 68,224 sq.m. (PR = 6.5)	About 50,804 sq.m. (PR = 6.5)
Proposed Maximum Non-domestic GFA (excluding GIC Provision) (PR) ^	about 18,312 sq.m. (PR = 1.0)	about 10,496 sq.m. (PR = 1.0)	about 7,816 sq.m. (PR = 1.0)
Proposed Maximum Non-domestic GFA for GIC Provision^ (proposed to be exempted from GFA calculation under DSP)	1,500 sq.m.	1,000 sq.m.	500 sq.m.
Total GFA (about)	138,840 sq.m.	79,720 sq.m.	59,120 sq.m.
No. of Flats@	2,226	1,276	950
Average Flat Size@ (GFA)	About 53.5 sq.m.		
Notes:			
^ The exact GFA and PR are subject to TPB approval, detailed design and prevailing First Schedule of Building (Planning) Regulations.			
@ Indicative only, subject to detailed design at implementation stage.			

2.4. Both Schemes fall within the "5-Streets" area of the "5-Streets" and "13 Streets" area, To Kwa Wan as defined in the Urban Renewal Plan (URP) prepared by KC DURF. Under the URP of KC DURF, the area is recommended as "Redevelopment Priority Area". DURF recommended to sub-divide the "Comprehensive Development Area (CDA)" site at "5-Streets" into two portions based on the existing residential building portion and the industrial / commercial building portion. It is also suggested to increase the plot ratio of the residential building portion from 5 to 6.5. The Scheme, being a redevelopment project, is tally with the recommendations of KC DURF.

2.5. The two Schemes will provide the following planning and environmental benefits:

Link up disjointed waterfront promenade

- 2.6. The Schemes will provide a 20-meters building setback along the eastern boundary creating space for waterfront promenade connecting the missing linkage of the CEDD's Kai Tak GreenWay network project which connects the KTDA in the north. Seaside footpath, cycling facilities and sitting-out areas will also be proposed along the waterfront promenade to further enhance the waterfront experience.

Enhance accessibility to KTDA and inland areas

- 2.7. The proposed boundary setback on the western portion of the two Schemes will reserve space for the planning road widening works of the section of To Kwa Wan Road abutting the site boundaries.
- 2.8. In addition, a possible footbridge connection at the podium level over To Kwa Wan Road is proposed under separate URA's revitalisation initiatives. The proposed footbridge connection will provide opportunity to enhance the walkability and to link up the wider neighbourhood at the inner part of To Kwa Wan.

Tower disposition to enhance accessibility and visual permeability to waterfront

- 2.9. The proposed redevelopment acts as a connector between the built-up Ma Tau Kok area in the west and the waterfront promenade in the east. Two 10m-wide NBAs will be provided along the southern boundaries of both KC-018 and KC-019 to enhance the air ventilation and visual permeability of the proposed redevelopment. It will also provide direct pedestrian access towards the waterfront promenade.

Create a vibrant and appealing waterfront

- 2.10. A Waterfront Plaza, with landscaping features and placemaking initiatives, will be provided between the two sites and served as focal point of the community. Together with the adjoining two-storey retail belt and the waterfront promenade along the eastern site boundaries, it will further enhance the waterfront experience and the robustness and vibrancy of the area. In light of the above planning gains, the Schemes will not only catalyse the improvement works of a section of the waterfront promenade, but will also formulate and contribute to the branding of an appealing waterfront in Kowloon East.
- 2.11. In addition, separate revitalisation works at the adjoining disused pier structure/landing steps outside the DSP boundary is also proposed to achieve a coherent design theme for this part of waterfront promenade for public enjoyment. Detail design and programme of the said works would be subject to the views and agreement with relevant Government departments.

Sensitivity Tests for Visual Assessment

- 2.12. To comprehensively compare the visual impact of the Proposed Schemes, two sensitivity tests, namely Sensitivity Test 1 (with maximum building height permitted in OZP in the surroundings) and Sensitivity 2 (with 20% increase in building height in the surroundings), were also prepared for scenario testing. The two sensitivity tests are for reference only and intend to demonstrate the possible visual changes of the surroundings before and after the proposed developments with assumption of the possible future redevelopments in the nearby area under the two proposed schemes.
- 2.13. This VIA will compare the visual changes of existing buildings with the Proposed Scheme, two abovementioned scenarios and thus appraise the visual impact.

3. AREA OF ASSESSMENT

3.1. Area of Visual Influence (AVI)

- 3.1.1. According to the TPB PG-No.41, the assessment area (i.e. the visual envelop) should cover the area of visual influence within which any part of the proposed development is pronouncedly visible from key sensitive viewers. The assessment area for the VIA is defined by the Visual Envelope (VE) of the Scheme Area. The VE has taken 3 times of the proposed building height of the Scheme (i.e. 120mPD x 3 = 360m) as an assumption. The areas for KC-018 and KC-019 are combined to form the assessment area of this VIA.
- 3.1.2. As indicated in **Figure 3.1**, the assessment area extends to Kai Tak Sports Park to the north, To Kwa Wan Typhoon Shelter to the east, Kwei Chow Street to the south and Kowloon City Road to the west. Apart from the coverage of the assessment area, in order to take into consideration the prominent waterfront location of the Site, a strategic viewing point and two additional viewing points opposite to the Scheme area across Victoria Harbour are also identified, namely Kai Tak Elevated Landscaped Deck, North Point Ferry Pier and Quarry Bay Park (**Figures 3.2 and 3.3**).
- 3.1.3. In gist, the following VPs are identified for assessment:

Local View Points (**Figures 3.2**)

- (1) VP 1: Kai Tak Elevated Landscaped Deck
- (2) VP 2: Junction of Shing Kai Road and Sung Wong Toi Road
- (3) VP 3: Ma Tau Kok Road
- (4) VP 4: Junction of San Shan Road and To Kwa Wan Road
- (5) VP 5: San Ma Tau Street
- (6) VP 6: North Point Ferry Pier

Strategic Viewing Point (**Figure 3.3**)

- (7) Quarry Bay Park

3.2. Visual Context and Character

- 3.2.1. The visual context is shaped by the combined composition of all the visual elements which come into sight of the viewers. Presently the assessment area is predominantly built-up areas at a prominent waterfront location in Ma Tau Kok dominated by following visual element:
- KC-018 Scheme area is currently occupied by five clusters of tenement buildings of 8 storeys, separated by Hing Yan Street, Hing

Yin Street, Chung Sun Street, Ming Lun Street and Ma Tau Kok Road (part), with low visibility and poor accessibility from the main street.

- KC-019 Scheme area is currently occupied by the Newport Centre Phases I and II, an industrial-office complex of 6 storeys, including one basement level. The section of Ma Tau Kok Road within the Site between KC-018 and KC-019 is currently highly occupied by roadside parking and loading/unloading by private and goods vehicles, with poor pedestrian walking environment and low accessibility to the waterfront.
- To the north of the Site is the proposed DRE by HKHS with proposed building height of 100mPD. To the further north is committed and planned development in Kai Tak area such as Kai Tak Sports Park (70mPD), Metro Park, surrounding committed open spaces and recreational facilities, indicating the local visual context and visual amenity will be changed accordingly.
- To the west of the Site are older part of Ma Tau Kok inland area, predominantly mixed commercial/residential in nature with lower floors for commercial uses such as retail shops and eateries, as well as industrial-office buildings. A number of existing and committed medium to high-rise residential and comprehensive development are also considered in the VIA, including proposed developments at CDA(2) and CDA(3) sites along Mok Cheong Street (100mPD), proposed public housing development at the junction of Sung Wong Toi Road and To Kwa Wan Road (100mPD), proposed redevelopment of Factory for the Blind by the Hong Kong Society for the Blind (67.75mPD) and Sky Tower (159mPD). Regarding industrial uses, the Ma Tau Kok Gas Production Plant, located at the junction of To Kwa Wan Road and Ma Tau Kok Road to the west of the Site, has long been operating in the area. Today, it is a storage facility with a small gasification plant as a backup facility. Other industrial-office buildings within the assessment area includes Merit Industrial Centre, New Lee Wah Centre and Shun Luen Factory Building with building height of about 45mPD.
- To the south of the Site is mainly medium to high-rise residential and commercial development including Grand Waterfront (176mPD), proposed commercial development at the junction of San Ma Tau Street and To Kwa Wan Road (100mPD) and Wyler Gardens (about 45mPD). The Kowloon City Ferry Pier providing franchised and licensed ferry services and the Kowloon City Vehicular Ferry Pier are also located to the south of the Site at the waterfront.

- 3.2.2. A number of cultural heritage sites are also identified in the vicinity, including Kowloon City Ferry Pier (Grade 2), Kowloon City Vehicular Ferry Pier (Grade 2), Eastern Cotton Mills Ltd (Grade 3), and Ma Tau Kok Animal Quarantine Depot (Grade 2), which has been revitalised into Cattle Depot Artist Village and Cattle Depot Art Park.
- 3.2.3. Apart from the major visual elements discussed above, a number of recreation grounds and public open spaces are located within the assessment area. Apart from committed open space development in Kai Tak area, the Cattle Depot Art Park, To Kwa Wan Recreation Ground and To Kwa Wan Sports Centre are some other major existing open spaces in the To Kwa Wan area. In addition, some known future recreation developments are also considered in the VIA, including the planned continuous waterfront promenade from Kai Tak to Ma Tau Kok (with about 20m to 35m in wide) , as well as the waterfront open space at the cove of Ma Tau Kok in between the proposed DRE and Sports Park intended to complement the Dining Cove with food and beverage uses on its two sides overlooking the Victoria Harbour as planned under the Kai Tak OZP.
- 3.2.4. With the consideration of the above, it is observed that the Scheme area is situated at the waterfront and is highly urbanised with medium to high-rise development. The heights of building blocks are increasing progressively from the waterfront to the inland and foothill area. This stepped building height profile has already been reflected onto the current OZP. Waterfront area along Ma Tau Kok and Kai Tak is pending for gradual change with implementation of committed development in Kai Tak and redevelopment in Ma Tau Kok area. In particular, planned open spaces at Kai Tak and Kai Tak Sports Park which are under construction will appear as new visual resources in the visual context of Kowloon East. Adjacent to the Site, planned open space “Dining Cove”, and planned promenade extending to To Kwa Wan and Hung Hom also provide another new visual resources to the local visual context.

3.3. Visual Quality of Proposed Scheme

- 3.3.1. The Proposed Scheme will adopt careful design on block sizes, disposition and layout to take into account of building separation to improve permeability at the waterfront location. Under the notional design of both Schemes, the proposed redevelopment comprises 4 residential towers on top of 2 separate commercial / retail / GIC podium, and two 3-level basement car parks with separate ingress/egress for ancillary parking spaces. A maximum building height of 120mPD is proposed under the draft

DSPs taking into account the site constraints, the compatibility with adjoining built environment at the waterfront and the additional planning merits to be brought by the proposed redevelopment. The proposed building height will generally respect the existing urban design and building height profile in the vicinity (including the permissible maximum building height of 100mPD for the various CDA zones in the hinterland, as well as the existing and planned developments including the Grand Waterfront to the immediate south (176mPD) and the DRE site to the immediate north (100mPD). The proposed building height restriction of 120mPD for KC-018 and KC-019 will help create a smooth and progressive building height profile along the waterfront to create visual interest and bring enhancement to the visual quality of the area.

- 3.3.2. A 20m-wide waterfront promenade will be provided along the eastern boundaries of both Schemes for public enjoyment. It will be connected to the 2-storey retail belt as well as the at-grade waterfront plaza, thus creating a wide and welcoming setting and sense of arrival for the waterfront promenade. In addition, two NBAs will be provided along southern boundaries to serve as to facilitate air ventilation as well as creating wider pavement. Building separation between towers with reference to Sustainable Building Design Guidelines (SBD) are proposed to create a wider visual angle to bring more visual and spatial comfort for future pedestrian. With the provision of waterfront promenade, retail belt, waterfront plaza and the two NBAs under both Schemes, an unique and enjoyable pedestrian environment will be created.

4. KEY VISUAL SENSITIVE RECEIVERS AT LOCAL VIEWPOINTS

- 4.1. As per the requirements of TPB PG-No.41, key visually sensitive receivers (VSRs) are those people, who have views of the Scheme area from the most affected viewing points (VP) in the AVI, and these VSRs are likely to be affected most by the proposed visual change. The identified VSRs of the subject VIA include the public at popular areas for outdoor activities, recreation, rest, leisure and prominent travel routes where their visual attention may be caught by the proposed development.
- 4.2. VSRs are categorised based on the characters and what they engage in the public VPs. The sensitivity of receives of visual changes will be influenced by:
- 1) The activities they are engaged in;
 - 2) The duration which the portion of the proposed development remain visible;
 - 3) View towards the change is full or partial, and
 - 4) The public perception towards the portion of the proposed development.
- 4.3. With consideration to the nature of the people who are mostly affected by the proposed visual changes at the key VPs, the selected VSRs of the subject VIA are categorised into two groups, namely;
- Recreation** – General public have sights on the proposed development while engaging in recreational facilities. Their visual sensitivity varies depending on the type of recreational activity they are engaging in.
- Traveller** – General public have sights on the proposed development in public passageways. Their visual experience depends on the speed of travel and whether their views will be continuous or occasional.
- 4.4. Based on the above criteria, the visual sensitivity of the public viewers from the viewing points are categorised into 3 grades (i.e. “High”, “Medium” and “Low”), depending of their duration of stay at the VPs. For example, the visual sensitivity of the viewers from public open space will be classified as “High”, while travellers who are in transient in nature would be classified as “Low”.
- 4.5. **Table 4.1** lists out the visual sensitivity of the selected VSRs at the selected VPs.

Table 4.1 Brief Analysis of Visual Sensitive Receivers at Selected VPs (Existing Condition)

Visually Sensitive Receiver and Type of User (Recreation and/or Traveller)	Approx. Viewing Distance	Quality of Existing View (Good / Fair / Poor)	Degree of Visibility on the Proposed Development (Full / Partial / Glimpsed) Frequency of View towards the Proposed Development (Frequent / Occasional / Rare)	Sensitivity
VP 1: Kai Tak Elevated Landscaped Deck VSR: Tourists/ general public visiting Kai Tak and engage in sightseeing / recreational activities. Type of User: Recreation	About 950m to the southeast of the Schemes	Good – viewing to the eastern boundary of the Schemes with existing view to construction sites in the foreground. Open view to the planned Kai Tak Metro Park, Sports Park and urbanised building skyline along the waterfront of Kai Tak to Ma Tau Kok, with medium to high-rise development in Kowloon City and Ma Tau Kok as backdrop.	Full view – long distance view of the proposed development along the waterfront, which contributed to the stepped building height profile and is compatible with the urban built environment. Rare view – Users of the Kai Tak Elevated Landscaped Deck are transient in nature and mainly focus on leisure and recreational activities with only occasional distant view towards the Scheme area.	Medium
VP 2: Junction of Shing Kai Road and Sung Wong Toi Road VSR: Pedestrians and vehicular travellers from Kai Tak Type of User: Traveller	About 230m to the north of the Schemes	Good – viewing to the north-western boundary of the Schemes. Existing horizontal view mainly with Grand Waterfront (+176mPD) dominating the scene. Future developments such as proposed DRE of HKHS (+100mPD) and committed developments along Sung Wong Toi Road (+100mPD) constructed in the foreground will obstruct some view from this VP.	Glimpsed view – views largely screened by proposed DRE of HKHS in the foreground. Occasional view – Pedestrians and vehicular travellers are transient in nature. Views towards the surrounding development are rare.	Medium
VP 3: Ma Tau Kok Road VSR: Mainly local residents and business operators nearby, bus	About 250m to the west of the Schemes	Fair – Viewing to the western boundary of the Schemes. Existing view is largely screened by existing development such as Ma Tau Kok Gas Production Plant and	Partial view – view towards KC-018 Scheme area is partially screened by the Ma Tau Kok Gas Production Plant. View towards KC-019 Scheme area is fully screened by existing development along Mok Cheong Street (i.e. 13-Street).	Medium

Visually Sensitive Receiver and Type of User (Recreation and/or Traveller)	Approx. Viewing Distance	Quality of Existing View (Good / Fair / Poor)	Degree of Visibility on the Proposed Development (Full / Partial / Glimpsed) Frequency of View towards the Proposed Development (Frequent / Occasional / Rare)	Sensitivity
passengers, pedestrians and visitors to the Cattle Depot Artist Village Type of User: Traveller / Recreation		development along Mok Cheong Street (i.e. 13-Street) in the foreground.	Occasional view – Visitors to the Cattle Depot Artist Village mainly focus in heritage visits and exhibitions with only occasional view towards the Scheme area and the Grand Waterfront (+176mPD) at the backdrop. Furthermore, pedestrians and local residents walking along the street is transient in nature. Views towards the surrounding development are occasional.	
VP 4: Junction of San Shan Road and To Kwa Wan Road VSR: Mainly local residents living nearby, pedestrian passing by, and public accessing the future Scheme area Type of User: Traveller	About 175m southwest of the Schemes	Good – Oblique view towards the south-western edge of the Schemes. Existing views with open sky view, with Ma Tau Kok Gas Production Plant and Grand Waterfront in the foreground.	Partial view – views generally screened by Grand Waterfront in the foreground. Occasional view – people walking along To Kwa Wan Road is transient in nature. Only occasional view towards the surrounding development.	Medium
VP 5: San Ma Tau Street	About 250m to the south of the Schemes	Good – Oblique view along the eastern boundary of the Schemes. Grand Waterfront, bus terminus, pier and a public	Glimpsed view – Major views will be screened by Grand Waterfront (+176mPD) in the foreground with glimpsed view of tower blocks of the Schemes.	Low

Visually Sensitive Receiver and Type of User (Recreation and/or Traveller)	Approx. Viewing Distance	Quality of Existing View (Good / Fair / Poor)	Degree of Visibility on the Proposed Development (Full / Partial / Glimpsed) Frequency of View towards the Proposed Development (Frequent / Occasional / Rare)	Sensitivity
<p>VSR: Mainly pedestrians/ local residents walking in the neighbourhood, bus passengers and ferry passengers. Furthermore, this viewpoint is located along planned open space and waterfront promenade, hence future VSRs include users engage in recreational activities</p> <p>Type of User: Traveller / Recreation</p>		toilet in the foreground, and with open sky view.	<p>Rare view – Public transport passengers are transient in nature. Future users of the waterfront promenade will mainly focus in recreational activities or view across the harbourfront. Only occasional view towards the Scheme area.</p>	
<p>VP 6: North Point Ferry Pier</p> <p>VSR: ferry passengers, public engaging leisure activities along North Point Promenade, residents nearby</p>	About 3km to the south of the Scheme, on the opposite side of the harbour	<p>Good – Long distance panoramic views towards the Scheme area is largely characterized by existing high-rise and high density development in Hung Hom, Ma Tau Kok, KTDA and Kowloon Bay with continuous ridgelines of Lion Rock as backdrop.</p>	<p>Full view – long distance view of the proposed development, which is compatible with the urban built environment along the harbourfront and will contribute to the stepped building height profile.</p> <p>Rare view – ferry passengers are transient in nature. Users of the Promenade will focus on leisure activities and public's view along the promenade mainly focus on Victoria Harbour.</p>	Low

Visually Sensitive Receiver and Type of User (Recreation and/or Traveller)	Approx. Viewing Distance	Quality of Existing View (Good / Fair / Poor)	Degree of Visibility on the Proposed Development (Full / Partial / Glimpsed) Frequency of View towards the Proposed Development (Frequent / Occasional / Rare)	Sensitivity
Type of User: Traveller / Recreation				
VP 7: Quarry Bay Park (Strategic Viewing Point) VSR: Public engaging in recreational activities within the park Type of User: Recreation	About 4.3km to the southeast of the Scheme, on the opposite side of the harbour	Good – Long distance panoramic views towards the Scheme area largely characterized by the existing high-rise and high density development in Kwun Tong, Kowloon Bay and KTDA with continuous ridgelines of Lion Rock as backdrop.	Full view – long distance view of the proposed development, which is compatible with the urban built environment along the harbourfront. Rare view – Public's view along the promenade mainly focus on Victoria Harbour.	Low

5. ASSESSMENT OF VISUAL IMPACTS

5.1. Methodology for the Appraisal of Visual Impact

5.1.1. With reference to the TPB PG-No.41, the appraisal of overall visual impacts to VSRs can be determined by four aspects:

- 1) Visual composition (i.e. to assess the visual effects resulted from the change in massing, heights, disposition, forms, etc viz the overall visual backdrop);
- 2) Visual obstruction (i.e. to assess the degree of visual obstruction and loss of views or visual openness due to the proposed development);
- 3) Effect on Public Viewers (i.e. to assess the visual changes from key public viewing points with direct sightline to the proposed development); and
- 4) Effect on Visual Resources (i.e. to assess the change in visual quality and character of the AVI).

5.1.2. With reference to TPB PG-No.41, the resultant overall visual impact will be classified as follow:

Table 5.1 – Classification of Overall Visual Impact

Classification	Descriptions
Enhanced	The proposed development in overall term will improve the visual quality and complement the visual character of its setting from most of the identified key public VPs.
Partly Enhanced/ Partly Adverse	The proposed development will exhibit enhanced visual effects to some of the identified key public viewing points and at the same time, with or without mitigation measures, exhibit adverse visual effects to some other key public VPs.
Negligible	The proposed development will, with or without mitigation measures, in overall term have insignificant visual effects to most of the identified key public VPs, or the visual effects would be screened or filtered by other distracting visual elements in the assessment area.
Slightly adverse	The proposed development will, with or without mitigation measures, result in overall some negative visual effects to most of the identified key public VPs

Classification	Descriptions
Moderately adverse	The proposed development will, with or without mitigation measures, result in overall term negative visual effects to most of the key identified key public VPs.
Significantly adverse	The proposed development will in overall term cause serious and detrimental visual effects to most of the identified key public VPs even with mitigation measures.

5.2. Appraisal of Visual Impacts of Selected Viewing Points

- 5.2.1. Ma Tau Kok is an old urban area undergoing rapid development and redevelopment. Changes in visual composition, amenities and resources are also expected with the implementation of a number of projects in Kai Tak Development Area (KTDA). In order to better reflect future building height profile and account for potential visual change in the surrounding, two scenarios, namely Sensitivity 1 and 2 are also incorporated in the visual assessment for scenario testing as reference.
- 5.2.2. For the visual assessment of each VPs, photomontages of four development scenarios will be prepared for comparison of the changes before and after the proposed development at the Scheme area, namely:
- Existing Condition** – existing development condition of the VPs will be illustrated.
 - Indicative Proposed Scheme** - This scenario refers to the notional design of the Proposed Scheme of both KC-018 and KC-019 Development Schemes, with a proposed maximum building height of 120mPD for the “R(A)” zone of the Scheme Areas. Committed developments in the surrounding will be taken into account.
 - Sensitivity 1** – Further to the “Indicative Proposed Scheme” scenario, maximum building height permitted in OZP in the surroundings will be taken into account.
 - Sensitivity 2** – Further to the “Indicative Proposed Scheme” scenario, maximum building height permitted in OZP with sensitivity test of 20% increase in building height in the surroundings will be taken into account.
- 5.2.3. For the strategic viewing points, photomontages of the Proposed Scheme will be prepared. The appraisal of visual impacts of each VPs are described in **Table 5.2** below. The corresponding photomontages are attached in **Figures 5.1 to 5.7**. The appraisal of visual impacts in Table 5.2 is conducted

by comparing changes between existing condition and the indicative Proposed Scheme for both KC-018 and KC-019 schemes. Scenarios for Sensitivity 1 and 2 are for reference only.

Table 5.2 – Appraisal of Visual Impacts of Selected Viewing Points

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRs	Resultant Overall Visual Impact
VP 1: Kai Tak Elevated Landscaped Deck	About 950m to the southeast of the Schemes	Recreation	<p>As shown in Figure 5.1, following implementation, visual composition of this VP comprises of open sky view, open view to the planned Metro Park and Kai Tak Sports Park in front and building skyline of Ma Tau Kok in the background. Proposed development will contribute to an overall stepped building height profile descending from Grand Waterfront (176mPD), Sky Tower (159mPD), the proposed KC-018 and KC-019 (120mPD), proposed DRE by HKHS and proposed development along Mok Cheong Street and Ma Tau Kok Road (100mPD) to Kai Tak Sports Park (70mPD).</p> <p>Responsive building design including building disposition, proposed</p>	<p>Although the proposed development will obstruct some views from existing and planned developments at Ma Tau Kok inland area, visual impact is considered minimal with responsive building design measures including building disposition, proposed 120mPD building height to contribute to the stepped BH profile and the two building separation will break the building mass and alleviate visual obstruction. Views to the ridgeline and planned parks at Kai Tak remain unaffected.</p>	<p>The key visual resources from this VP are the existing built-up areas and the sky view. With a compatible building scale, and building separation to break the building mass, the proposed development will blend in well with the existing visual resources and will not create significant visual change to this VP. Existing open sky view and visual openness from this VP can also be generally maintained.</p>	<p>Users at Kai Tak Elevated Landscaped Deck are considered as general public and tourists engaged in recreational activities mainly transient in nature, the effect to public viewers is low.</p>	Negligible to slightly adverse

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			120mPD building height and the two building separation (i.e. two 10m NBAs between Grand Waterfront and between KC-018 and KC-019) would break up the development mass and ensure visual permeability. The existing ridgeline will not be affected from this view. Hence, the proposed development is considered compatible with visual composition of the existing and planned visual context.				
VP 2: Junction of Shing Kai Road and Sung Wong Toi Road	About 230m to the north of the Schemes	Traveller	As shown in Figure 5.2 , the existing visual composition of this VP comprises of open sky view with the To Kwa Wan Road pumping station at the foreground and the Grand Waterfront at the backdrop.	Given the planned and committed development in the Ma Tau Kok and Kai Tak area, visual obstruction to the open sky will be inevitable, resulted from the urbanisation and redevelopment	The proposed development will have slight impact to the visual accessibility to the open sky with the existing Grand Waterfront (176mPD) as the background and the planned DRE	Although cumulative visual change resulted from surrounding development including proposed DRE by HKHS and committed development	Slightly Adverse

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			<p>Building mass under the Indicative Proposed Scheme are visible and the proposed development will be largely screened by the proposed DRE by HKHS and proposed development along Sung Wong Toi Road at the foreground. Some tree plantings within the future public open space at the foreground of the To Kwa Wan Road Pumping Station will also serve as visual relief of the building mass.</p> <p>Visual access to the open sky is inevitably affected by the planned and committed developments as part of the urbanisation and redevelopment process. Hence, the proposed development is considered not incompatible with the surrounding planned developments and the</p>	<p>process of the Kai Tak and Ma Tau Kok area. The proposed development will obstruct some views at street level towards the Grand Waterfront and the open sky. However, as most of the proposed development is largely concealed by the proposed DRE by HKHS in the foreground, together with responsive design measure incorporated, such as building setback along the western boundary of the Site, building separation, and proposed responsive building height of 120mPD, blockage of view resulted by the</p>	<p>by HKHS (100mPD) in the foreground dominating the view. The proposed 120mPD building height and building separation incorporated within KC-018 and KC-019 will contribute to the stepped building height profile and soften the building mass of the proposed development. The proposed building height is also compatible with the surrounding building context.</p>	<p>along Sung Wong Toi Road will be substantial, visual change resulted by proposed development will be slight.</p> <p>VSRs at this viewpoint are mainly pedestrians and vehicular travellers whose views are occasional and transient in nature, the effect to public viewers is relatively low.</p>	

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			visual change resulted will be minimal.	proposed development will become less substantial.			
VP 3: Ma Tau Kok Road	About 250m to the west of the Schemes	Traveller / Recreation	As shown in Figure 5.3 , the existing visual composition of this VP comprises of existing developments along both sides of Ma Tau Kok Road, including the Ma Tau Kok Gas Production Plant, Cattle Depot Artist Village and existing development at the 13-Street area in the foreground and Grand Waterfront at the backdrop. The proposed development is visually aligning with the adjoining developments. Proposed development at KC-019 will be largely shielded by existing development at the foreground, while part of KC-018 will be concealed by Ma Tau Kok Gas Production Plant in the foreground, the top	Part of the proposed development at KC-018 will be concealed by the Ma Tau Kok Gas Production Plant. Although a small portion of open sky will be blocked by the proposed development at KC-018, visual access to the sky view will be generally maintained through the two building gaps (i.e. between KC-018 and Grand Waterfront and the separation between the residential towers between KC-018 and KC-019). Building separation	Proposed development at KC-018 will be visible from this VP, reducing some sky view and visual openness of the existing environment. Responsive building design measures including building separation, setback along western boundary, provision of NBAs and building disposition will mitigate visual impact resulted by proposed development at KC-018. Given	Visual composition from this VP will be slightly affected due to its close proximity to the proposed development. Taking into account responsive design measures including building separation, provision of NBAs, building setback, building disposition and proposed responsive BH of 120mPD incorporated	Slightly Adverse

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			part of the proposed buildings at KC-018 will be visible. The overall impact to the visual composition is considered visually compatible with the surrounding existing and planned urbanised context.	incorporated along the breezeway/ view corridor help to generally maintain visual access to the waterfront. Proposed development at KC-019 will be fully shielded by existing 13-Street buildings in the foreground, and will not reduce visual openness to the sky.	the proposed development at KC-019 will be shielded by existing 13-Street buildings in the foreground, the visual openness towards the sky will not be affected. The historic buildings in Cattle Depot Artist Village would be unaffected. Proposed development will not affect views to the waterfront through building separation and disposition.	and planned development in the surrounding, the effect to public viewers are expected to be negligible.	
VP 4: Junction of San Shan Road and To Kwa Wan Road	About 175m southwest of the Schemes	Traveller	As shown in Figure 5.4 , visual composition of this viewpoint is characterised by To Kwa Wan Road, Grand Waterfront and the Ma Tau Kok Gas	Part of KC-018 will be shielded by Grand Waterfront. The proposed KC-018 and KC-019 will obstruct some	Key visual resources from this VP are existing built-up areas and the sky view.	By virtue of the low elevation view in proximity to the proposed development and surrounding	Moderately Adverse

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			<p>Production Plant in front, proposed KC-018, KC-019 and development along Ma Tau Kok Road in the centre, and proposed development in Kai Tai form the background. The Grand Waterfront (+176mPD) is the dominant feature to the existing sky view and will partly shield the proposed KC-018 and KC-019 development. Due to close viewing distance, the proposed KC-018 and KC-019 will be quite dominant in the view, however, responsive design measures including building disposition, proposed 120mPD building height, building setback along western boundary and building separation has been incorporated to help to break the building mass, alleviate visual obstruction to the sky and contribute</p>	<p>views to the open sky. A small degree of the existing sky view will also be disturbed by the proposed redevelopment by the Hong Kong Society for the Blind (+67.75mPD) to the west of the Proposed Scheme.</p> <p>Responsive design measures including building disposition, proposed 120mPD building height and tower separation will be provided under the Proposed Scheme to reduce building mass, alleviate visual obstruction to the sky and enhance air flow at street level. The building mass is aligned with the adjoining developments</p>	<p>Despite some sky view will be inevitably blocked by the proposed development, with a compatible building scale, the proposed development will blend in well with the existing visual resources to this VP. The overall impact on visual elements and resources from this VP is considered to be moderate.</p>	<p>committed development, change in view to the open sky will be inevitable as a result of redevelopment process in Ma Tau Kok. Given the proposed KC-018 and KC-019 will be partly blocked by Grand Waterfront, responsive building design measures incorporated including building setback along western boundary, building separation, building disposition and the provision of NBAs to soften the building mass of the</p>	

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			<p>to the stepped building height profile.</p> <p>In view of the substantial mass of development that surrounds the Scheme, the change in visual context is considered to be acceptable.</p>	<p>which is considered compatible. The effect to visual permeability is low.</p>		<p>proposed development. Besides, there would be overall enhancement of the pedestrian environment by provision of a coherent landscape design at the proposed waterfront plaza towards the water promenade.</p> <p>In view of the above and taken into account transient nature of public views, the effect to public viewers is moderate.</p>	
VP 5: San Ma Tau Street	About 250m to the south of the Schemes	Traveller	As shown in Figure 5.5 , the visual composition of this viewpoint is characterised by San Ma	Part of the existing sky view has already been disturbed by Grand	The sky view is partially blocked by the proposed development and	The proposed KC-018 and KC-019 will lead to slight change to	Slightly Adverse

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			<p>Tau Street Public Toilet and bus terminus in the foreground, Kowloon City Ferry Pier, a Grade 2 historic building, on the right side, the Grand Waterfront dominating the sky view on the left, and the ridgeline forms the visual backdrop.</p> <p>The proposed KC-018 and KC-019 will be largely screened by Grand Waterfront (+176mPD) in the foreground. Hence, the change in visual context is considered to be acceptable.</p>	<p>Waterfront. Majority of the proposed KC-018 and KC-019 will be shielded by Grand Waterfront as well. Though part of the residential towers will affect some view to the open sky, the view will also be disturbed by proposed DRE by HKHS at the backdrop. Responsive design measures including 20m setback from the waterfront, building disposition, and proposed 120mPD in building height will reduce building mass and improve visual openness.</p>	<p>the proposed DRE by HKHS at the backdrop. The proposed development will be largely screened by the existing developments at the foreground and will not create significant visual change to this VP.</p>	<p>the existing view to the open sky. Yet viewers at this viewpoint are mainly pedestrians, bus and ferry passengers, representing an occasional and transient view. In addition, 20m building setback is proposed along the eastern boundary to alleviate visual impact, hence generally maintain visual permeability to the waterfront and streetscape. Therefore, the effect to public viewers is low to moderate.</p>	

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
VP 6: North Point Ferry Pier	About 3km to the south of the Scheme, on the opposite side of the harbour	Traveller	As shown in Figure 5.6 , Along the urbanised waterfront context, the proposed KC-018 and KC-019 with building height 120mPD is considered compatible with the surrounding existing and planned development of 100 – 120mPD in Ma Tau Kok and 70 – 200mPD in Kai Tak area, including the proposed DRE by HKHS (100mPD), committed redevelopments along Mok Cheong Street and San Ma Tau Street (100mPD). From Whampoa to Ma Tau Kok waterfront, the proposed KC-018 and KC-019 will also contribute to the overall stepped building height profile descending from the Harbourfront Landmark (235mPD) in Whampoa at the west and towards planned developments in KTDA in the east such as the Kai	Although the proposed KC-018 and KC-019 will slightly obstruct some views from existing and planned developments in inland area, responsive design measures including two building separation, setback from the waterfront, building disposition and proposed 120mPD building height will reduce building mass and improve visual permeability and visual openness. The view to the ridgeline, Lion Rock and open sky remain unaffected.	The proposed KC-018 and KC-019 will not affect important visual resources in this viewpoint including view to the sky, planned parks and recreational facilities in Kai Tak, the highly valued Victoria Harbour and the ridgeline.	The proposed KC-018 and KC-019 will integrate with the building skyline in Ma Tau Kok area. As the proposed development is partly concealed by Grand Waterfront, the change of visual amenity and visual composition is not obvious from this distant view. In addition, as most viewers are ferry passengers and users engaged in recreational activities, representing a transient and occasional view, hence the effect to public viewers is low.	Negligible

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			<p>Tak Sports Park (70mPD) at the planned residential developments in R(B)" zones (95-110mPD).</p> <p>Visual change in terms of building mass is considered not detrimental and the highly valued Victoria Harbour and Kowloon ridgeline remain unaffected.</p>				
VP7: Quarry Bay Park (Strategic Viewing Point)	About 4.3km to the southeast of the Scheme, on the opposite side of the harbour	Recreation / Traveller	<p>As shown in Figure 5.7, visual composition of this viewpoint is characterised by the Victoria Harbour in the foreground, medium to high-rise development along the waterfront from To Kwa Wan to Kwun Tong, and ridgeline from Beacon Hill to Kowloon Peak in the background. The proposed KC-018 and KC-019 are located in urbanised waterfront and are considered compatible with the existing and future building height profile with</p>	The Kowloon ridgeline and the view towards the 20% building free zone of the Beacon Hill remain unaffected. View to the open sky and Victoria Harbour are also maintained and unaffected.	The proposed KC-018 and KC-019 will not affect views towards important visual resources including the ridgeline, 20% building free zone of Beacon Hill, open sky, Victoria Harbour, as well as planned parks and recreation facilities in Kai Tak.	The proposed KC-018 and KC-019 will integrate with the building skyline in Ma Tau Kok area. The magnitude of change of visual amenity and visual context is minimal from this distant view. In addition, as most viewers are users engaged in	Negligible

Location of Viewing Points (VPs)	Distance and Direction between the VPs and the Scheme	VSR Type	Visual Composition	Visual Obstruction and Visual Permeability	Effect on Visual Elements and Resources	Effect on VSRS	Resultant Overall Visual Impact
			the surrounding. From Ma Tau Kok to Kai Tak, the building skyline descend from Grand Waterfront (176mPD), Sky Tower (159mPD), proposed KC-018 and KC-019 (120mPD), to proposed DRE by HKHS (100mPD). Therefore the proposed development is considered compatible with the highly urbanised and undulating building skyline from Ma Tau Kok to Kai Tak with the highly valued Victoria Harbour and Kowloon ridgeline remain unaffected.			recreational activities, representing a long ranged, transient and occasional view, hence the effect to public viewers is low.	

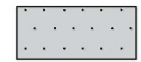
6. EVALUATION OF OVERALL VISUAL IMPACT

- 6.1. This VIA is submitted in order to evaluate the degree of visual impacts on visual sensitive receivers (VSRs) from major public viewing points (VPs) due to the proposed development at KC-018 and KC-019.
- 6.2. By viewing from the 6 selected local VPs, the proposed development with maximum building height of 120mPD in the Proposed Scheme can generally blend in with the surrounding highly-urbanised built environment, which include existing Grand Waterfront (176mPD), Sky Tower (159mPD), proposed DRE by HKHS (100mPD) and other planned development along Mok Cheong Street and Ma Tau Kok Road (100mPD).
- 6.3. The proposed increase of building height to 120mPD and relaxation of site coverage to 65% at KC-018 and KC-019, would allow greater design flexibility of building blocks to accommodate proposed GIC provision, changing building skyline in the surrounding and fulfil stringent development constraint at the waterfront site, including incorporation of two 10m-wide NBAs and a 20m-wide promenade abutting the waterfront for public enjoyment. The proposed relaxation will also contribute to slimmer building bulk. The 20m-wide promenade, together with the adjoining 2-storey retail belt and the waterfront plaza, will not only create a focal point and bring vibrancy to the waterfront area, it will also create visual interests and spatial relief at pedestrian level.
- 6.4. In conclusion, the VIA demonstrates that the proposed developments in KC-018 and KC-019 are considered visually compatible with the surrounding environment and will not create any significant blockage of views from both the strategic VP as recommended in the HKPSG and the key local VPs.

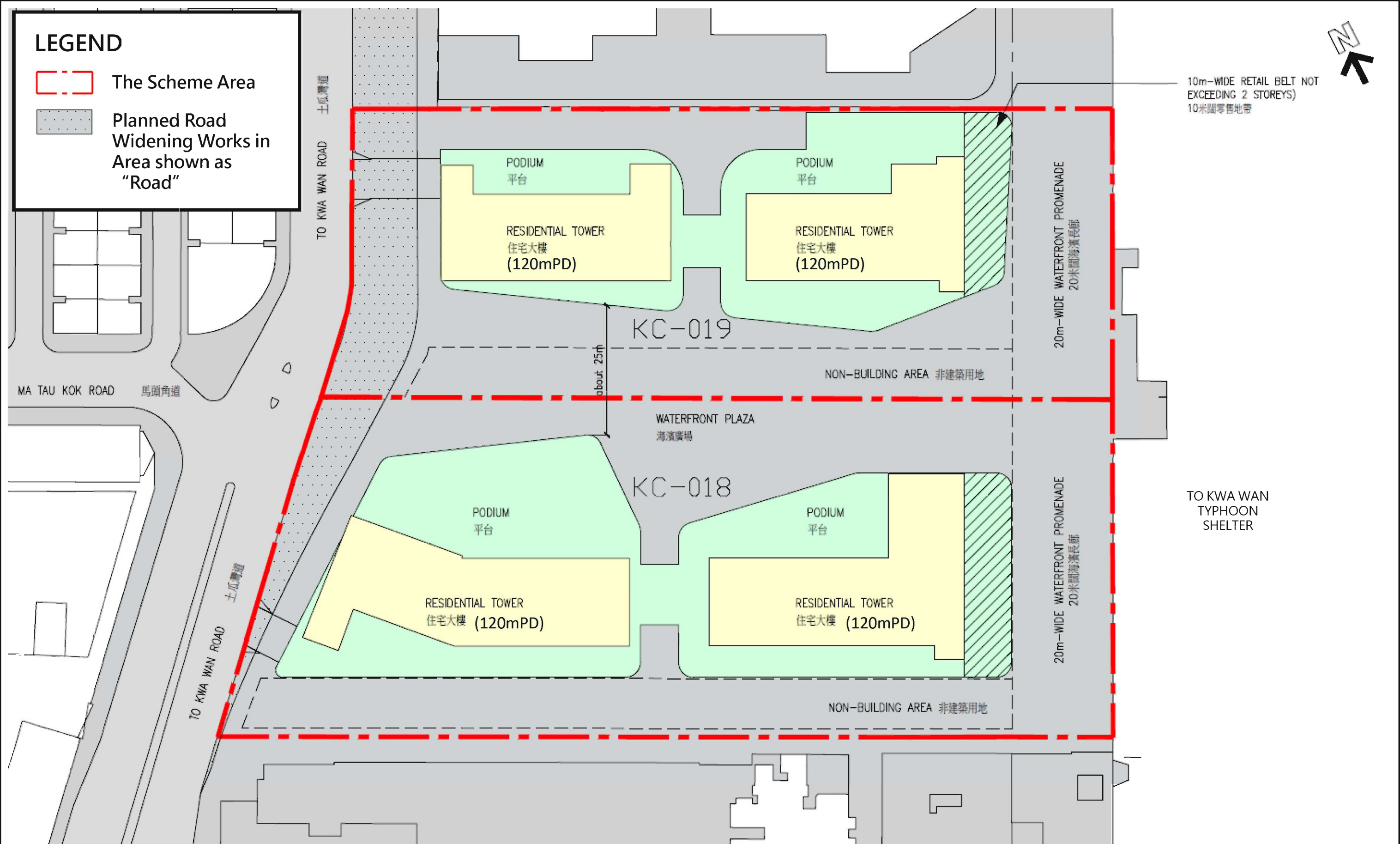
LEGEND



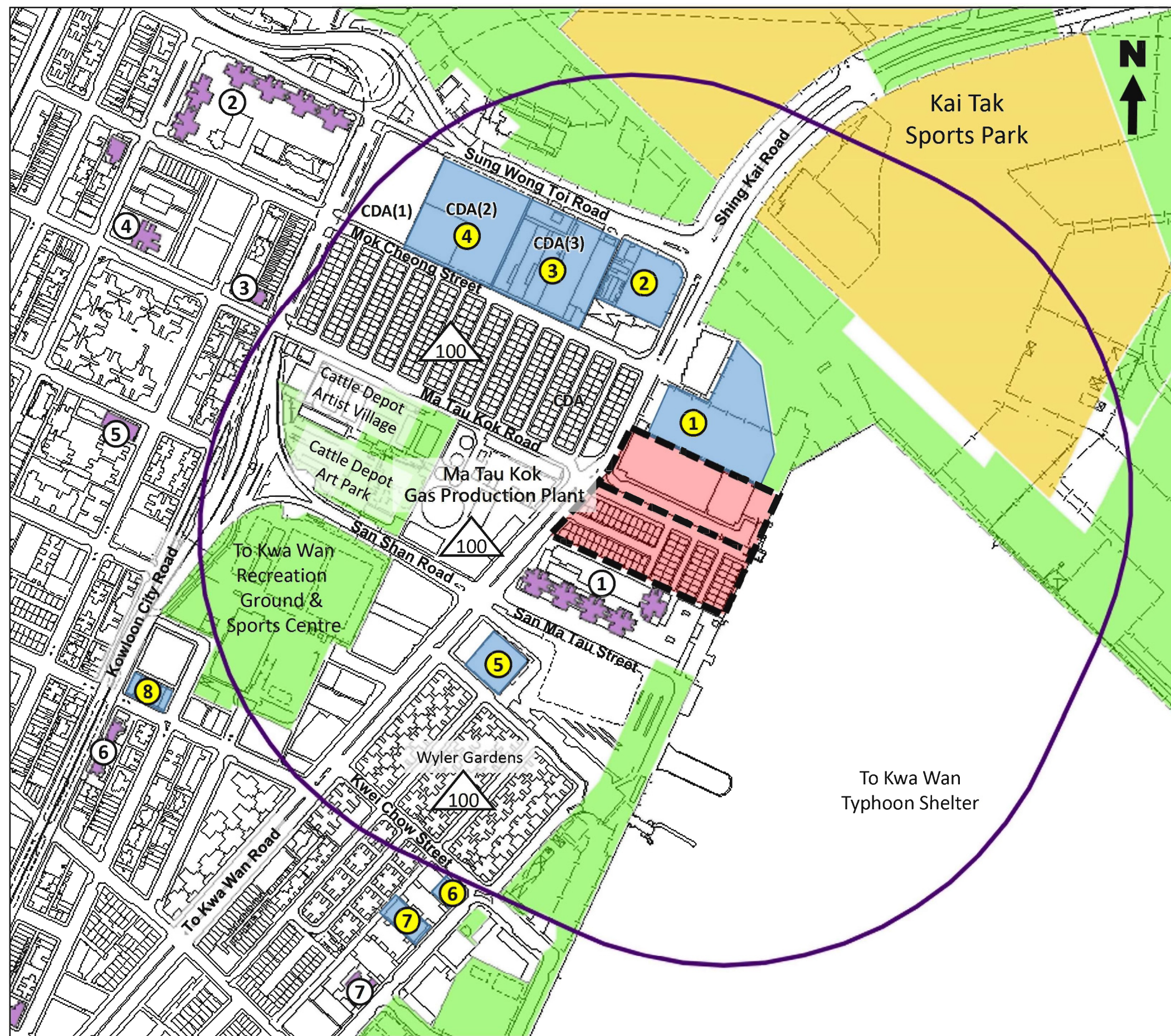
The Scheme Area



Planned Road
Widening Works in
Area shown as
"Road"



(Remarks: For indicative purpose only. KC-018 and KC-019 Notional layout subject to detailed design upon DSP approval.)



LEGEND

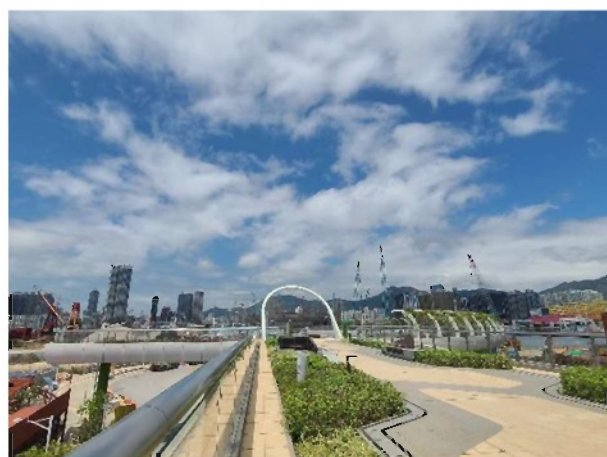
- Scheme Area (KC-018 & KC-019)
- Boundary of the Assessment Area (360 m from the Scheme)
- Major Open Space
- Maximum Building Height stipulated on OZP (mPD)
- Existing Developments of 100mPD or above

- ① Grand Waterfront ~ 176mPD
- ② Sky Tower ~ 159mPD
- ③ The Zutton ~ 100mPD
- ④ Metropolitan Rise ~ 138mPD
- ⑤ 93 Pau Chung Street ~ 100mPD
- ⑥ Artisan Garden ~ 112mPD
- ⑦ Bayview ~ 146mPD

Future Developments of 100mPD or above

- ① Proposed Dedicated Rehousing Estate ~ 100mPD
- ② Proposed Public Housing Development at Sung Wong Toi Rd ~ 100mPD
- ③ KILs 6342, 6344, 7427, 7629, 7630, 7631 and 7632 (A/K10/265) ~ 100mPD
- ④ 5 & 7 Mok Cheong Street and 70-78 Sung Wong Toi Road (A/K10/256 & A/K10/259) ~ 100mPD
- ⑤ Commercial development (Y/K22/3) ~ 100mPD
- ⑥ 21 Yuk Yat Street (A/K10/269) ~ 100mPD
- ⑦ 17 Yuk Yat Street (A/K10/266) ~ 100mPD
- ⑧ 21-31 Sheung Heung Road (odd numbers) (A/K10/267) ~ 120mPD

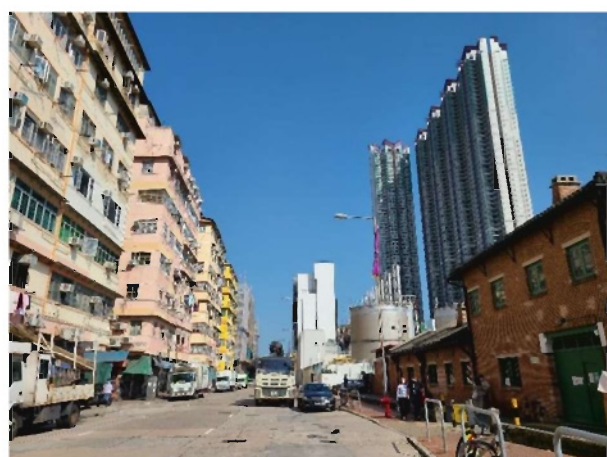
Photos of Viewing Points



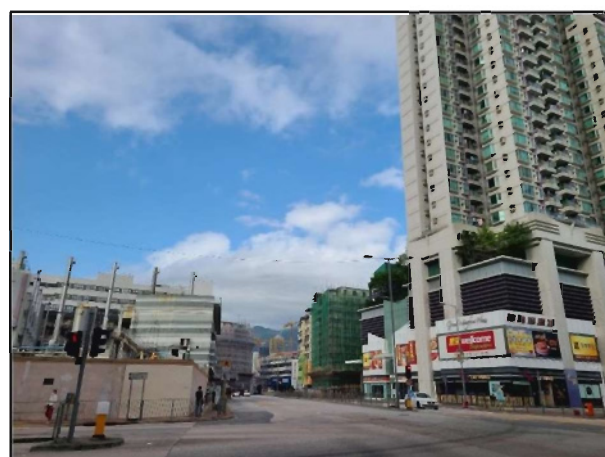
1 Kai Tak Elevated Landscaped Deck



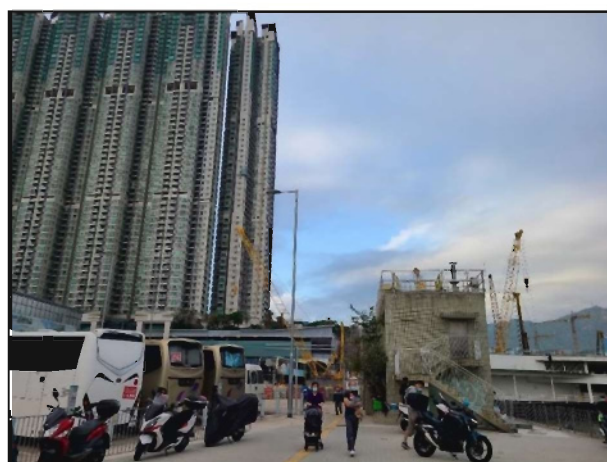
2 Junction of Shing Kai Road and Sung Wong Toi Road



3 Ma Tau Kok Road




4 Junction of San Shan Road and To Kwa Wan Road




5 San Ma Tau Street

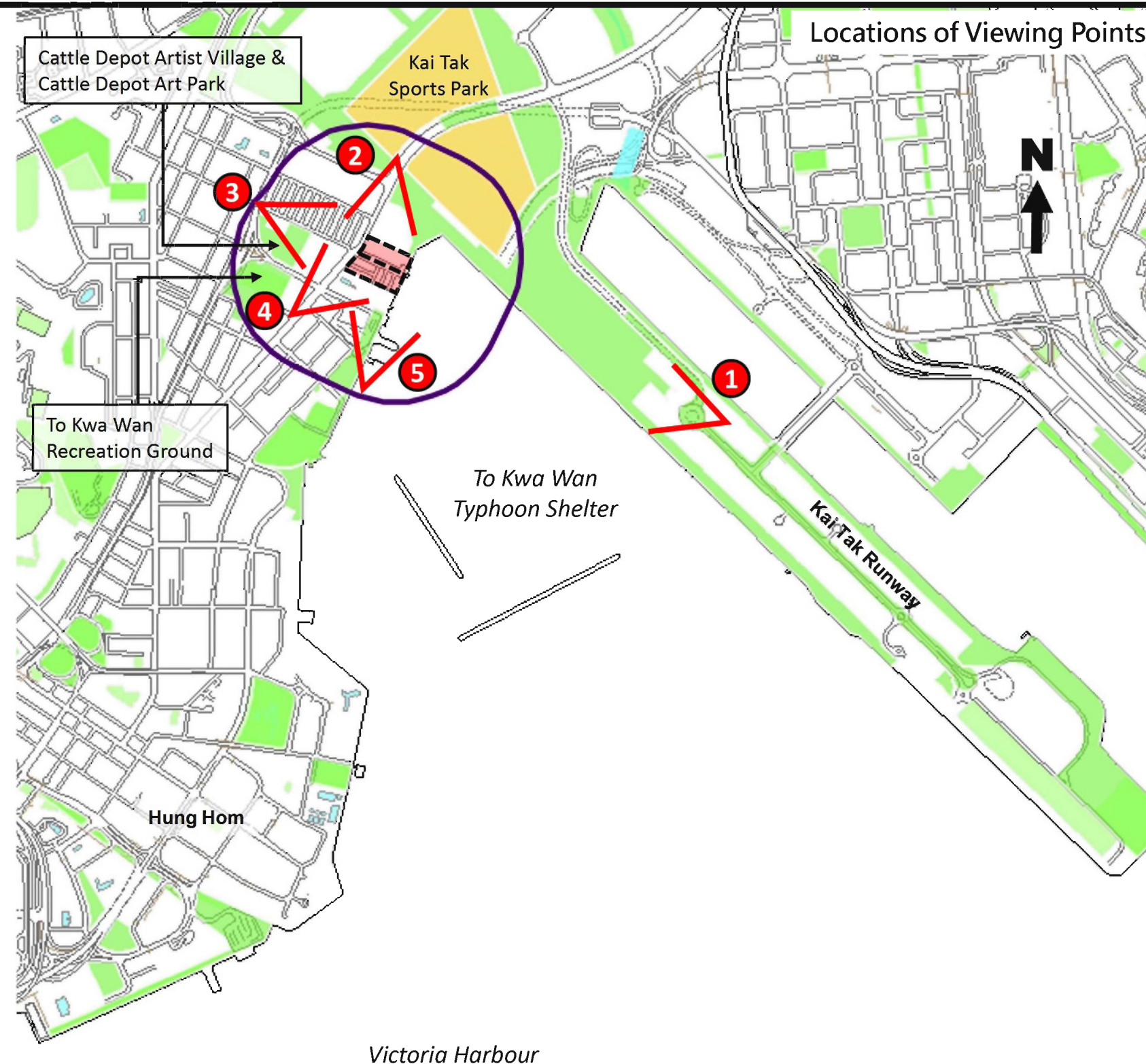


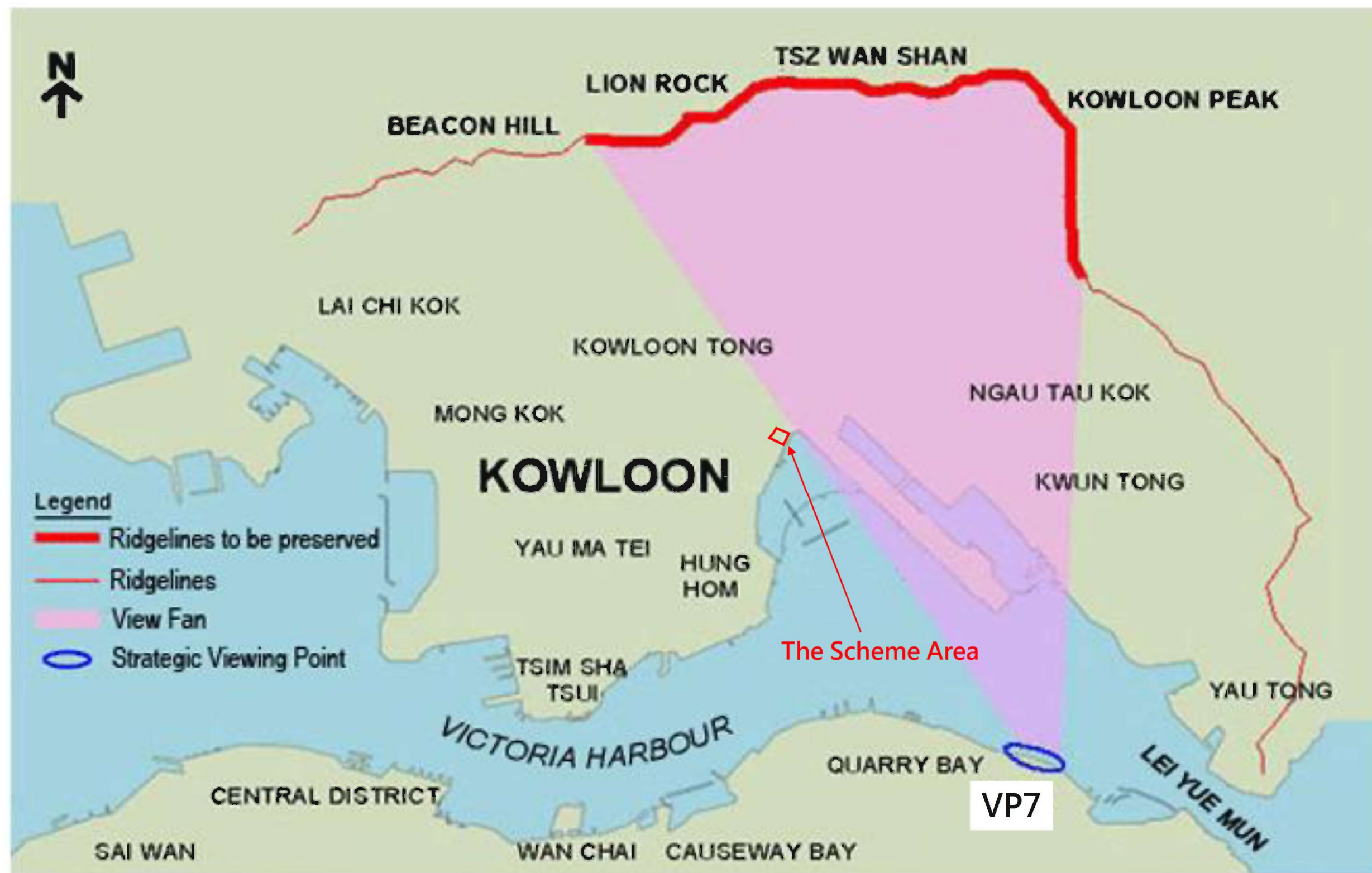
6 North Point Ferry Pier

 Scheme Area (KC-018 & KC-019)

 Boundary of the Assessment Area (360 m from the Scheme)

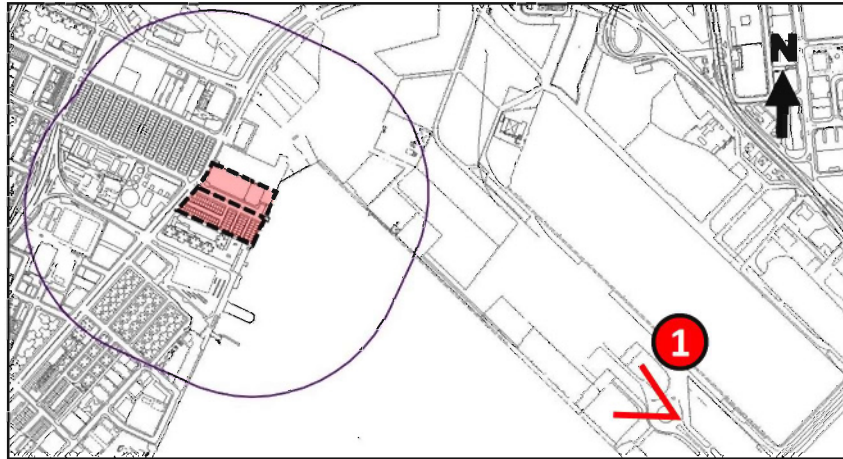
 Major Open Space



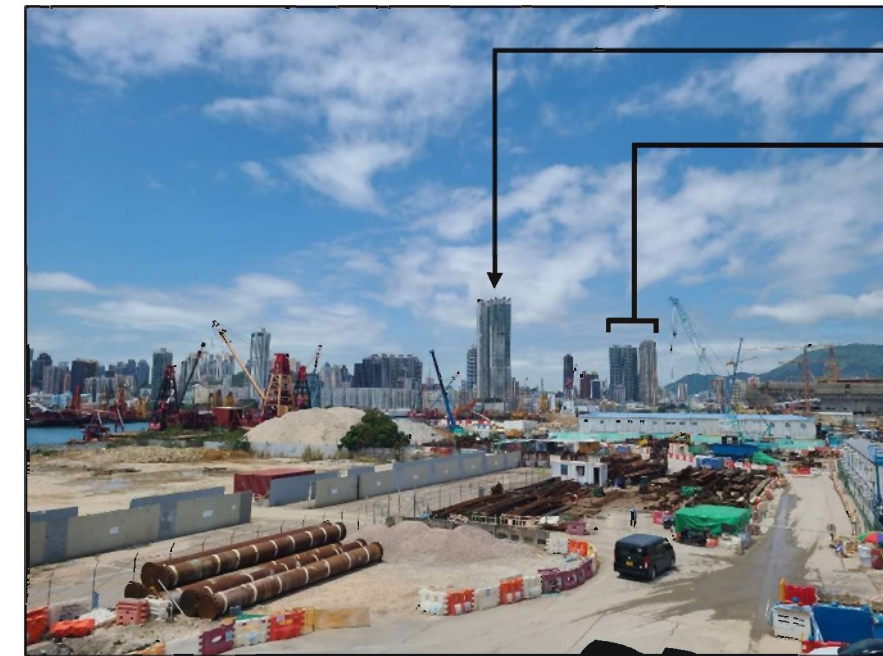


Source:
 Strategic Viewing Points Webpage of Planning Department for the Town Planning Board Guidelines for Submission of Visual Impact Assessment to the Town Planning Board (TPB PG-No. 41) https://www.pland.gov.hk/pland_en/info_serv/via/web/vp_eng.html

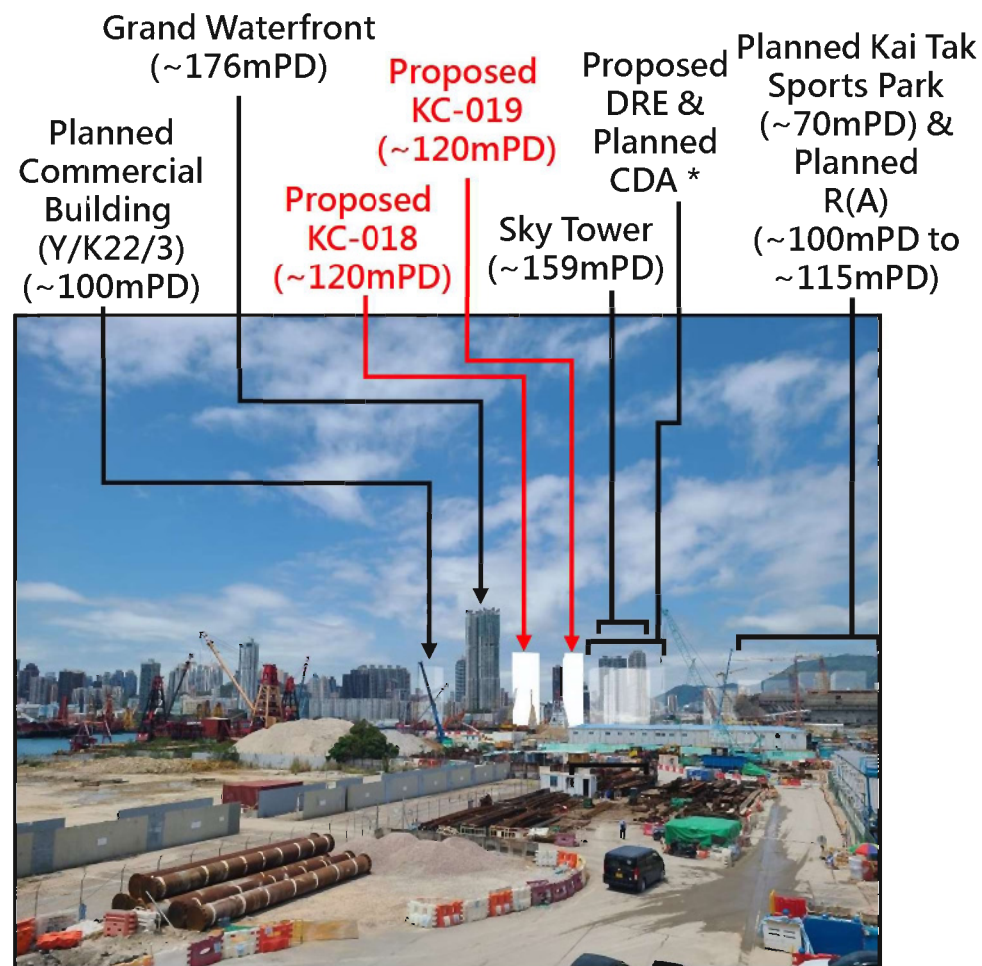
Key Plan



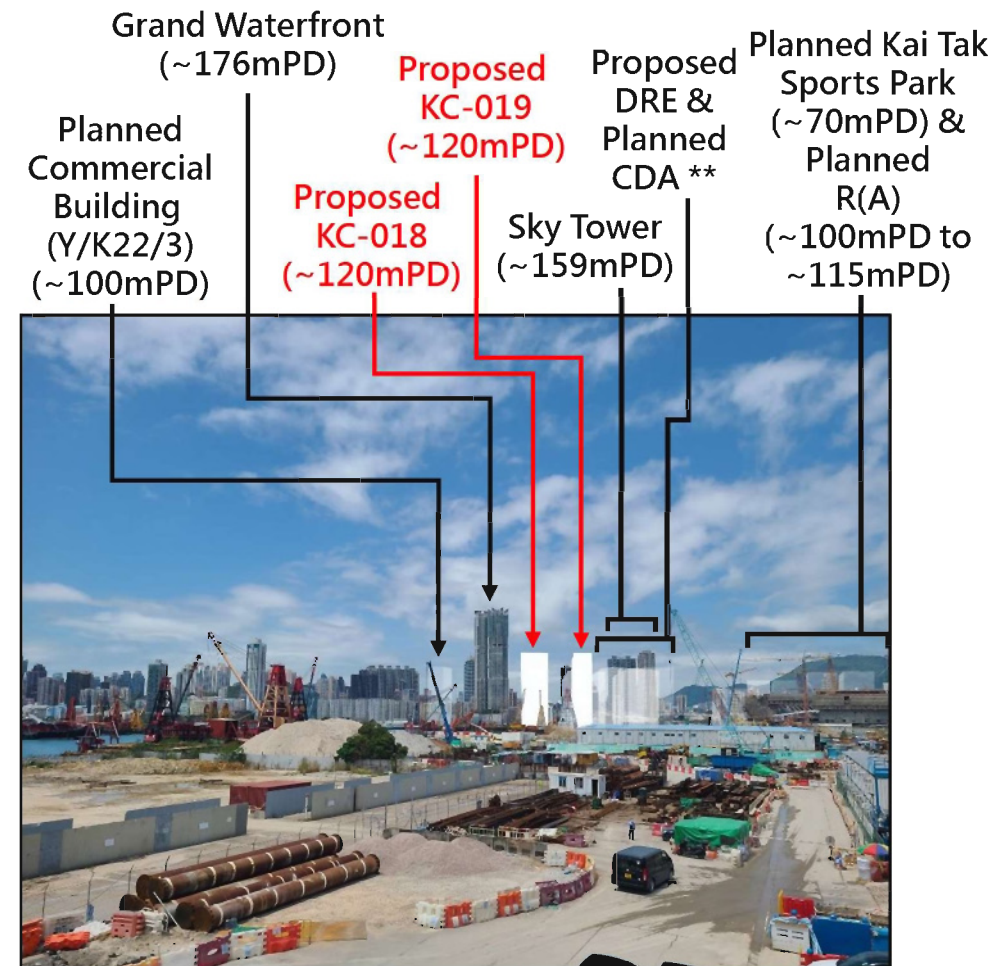
- Scheme Area
- Assessment Area
- < VP1
- (not to scale)



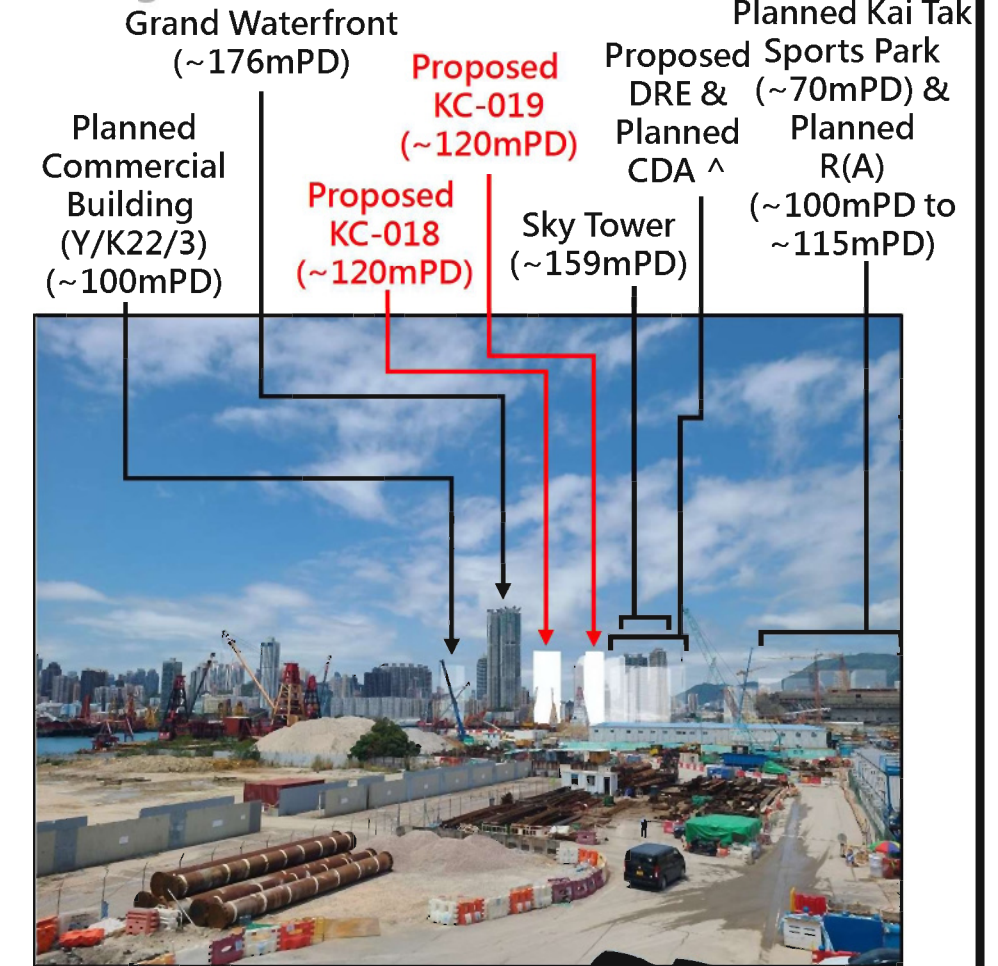
Existing Condition



Proposed Scheme



Sensitivity 1 (for reference only)



Sensitivity 2 (for reference only)

* Proposed Dedicated Rehousing Estate (DRE) (100mPD), planned CDA sites (100mPD) at Mok Cheong Street (A/K10/256, A/K10/259 & A/K10/265), redevelopment by Hong Kong Society for the Blind (HKSB) (67.75mPD) & Proposed Public Housing Development at Sung Wong Toi Rd (100mPD).

** Proposed DRE (100mPD), Planned CDA sites (100mPD) at Mok Cheong Street (A/K10/256, A/K10/259 & A/K10/265), redevelopment by HKSB (67.75mPD), proposed public housing development at Sung Wong Toi Road (100mPD) and maximum BH stipulated in OZP in the surrounding (100mPD).

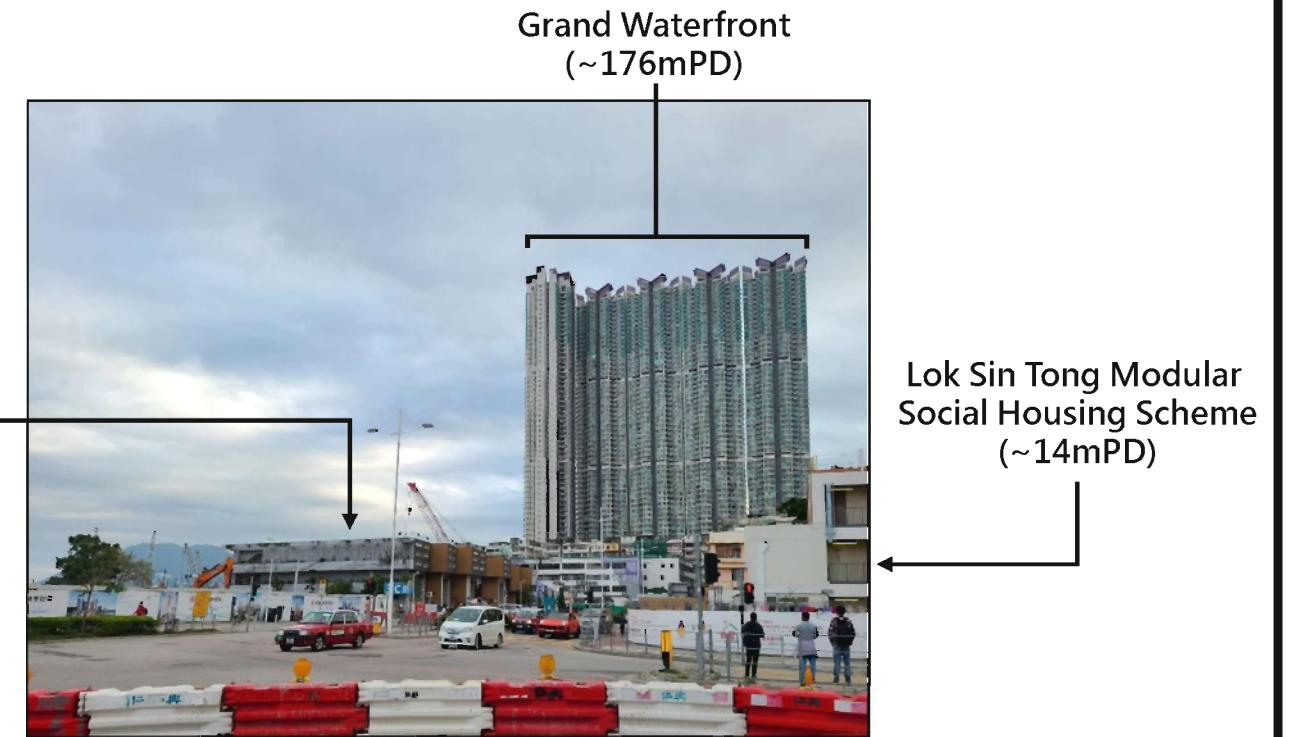
^ Proposed DRE (100mPD), Planned CDA sites (100mPD) at Mok Cheong Street (A/K10/256, A/K10/259 & A/K10/265), redevelopment by HKSB (67.75mPD), proposed public housing development at Sung Wong Toi Road (100mPD) and maximum BH stipulated in OZP in the surrounding with sensitivity test of 20% increase (120mPD).

Key Plan

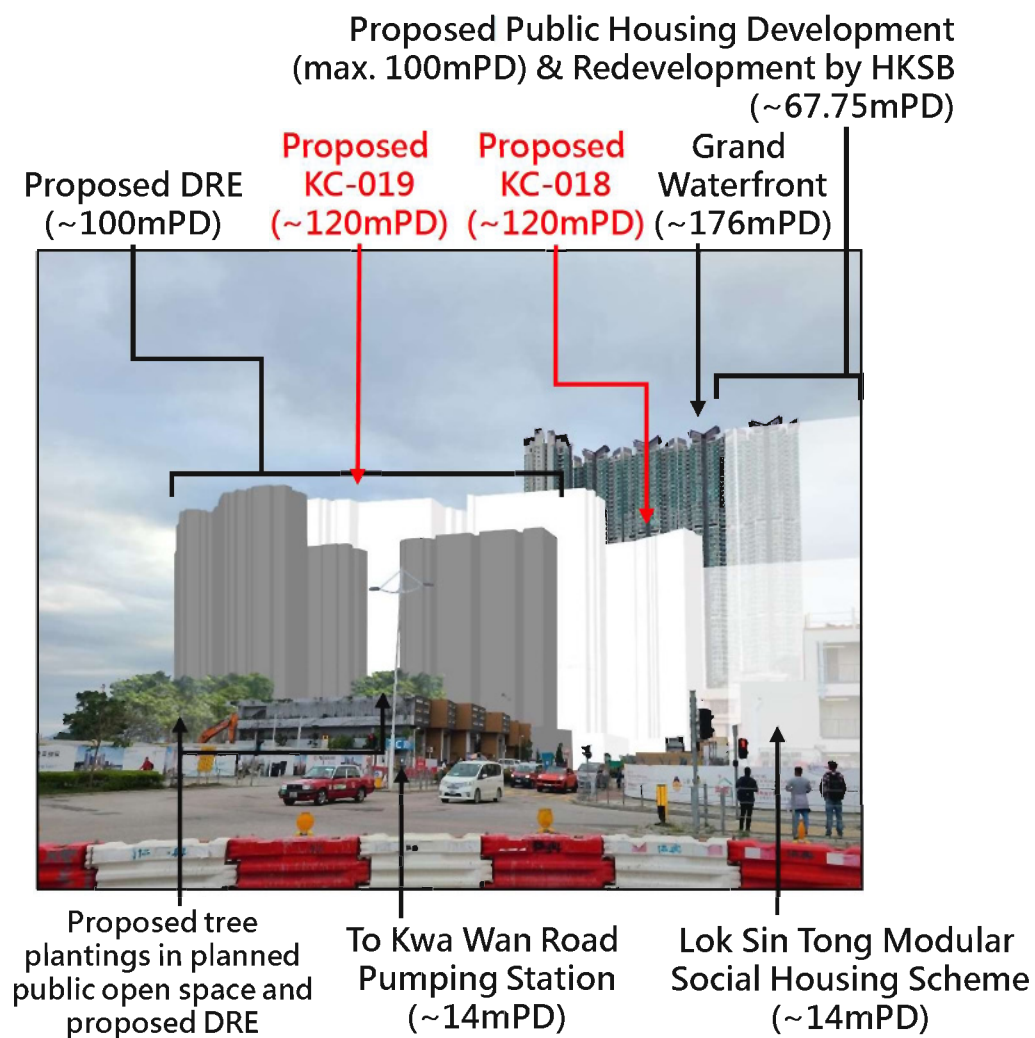


- Scheme Area
- Assessment Area
- < VP2
- (not to scale)

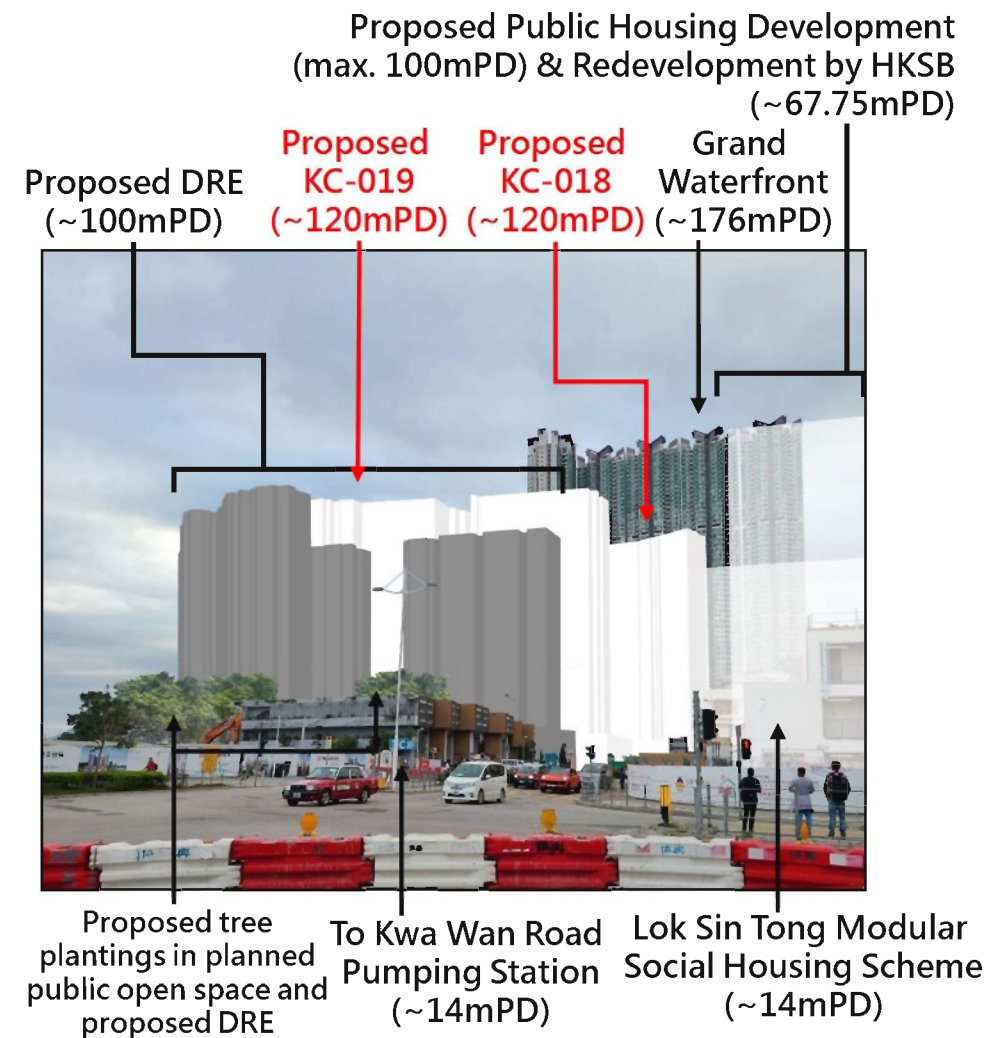
To Kwa Wan Road
Pumping Station
(~14mPD)



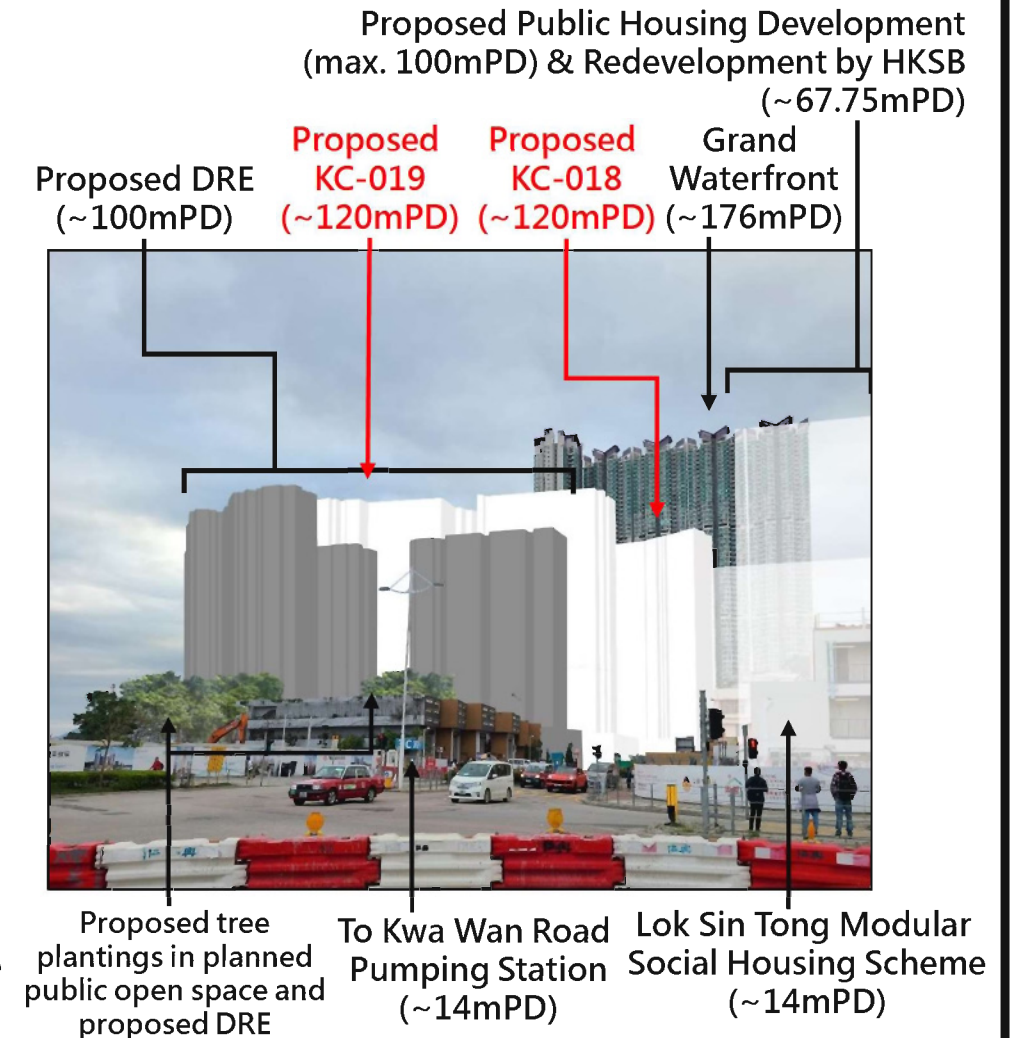
Existing Condition



Proposed Scheme



Sensitivity 1 (for reference only)



Sensitivity 2 (for reference only)

Key Plan



- Scheme Area
- Assessment Area
- < VP3
- (not to scale)

"13-Streets"
(~30mPD)

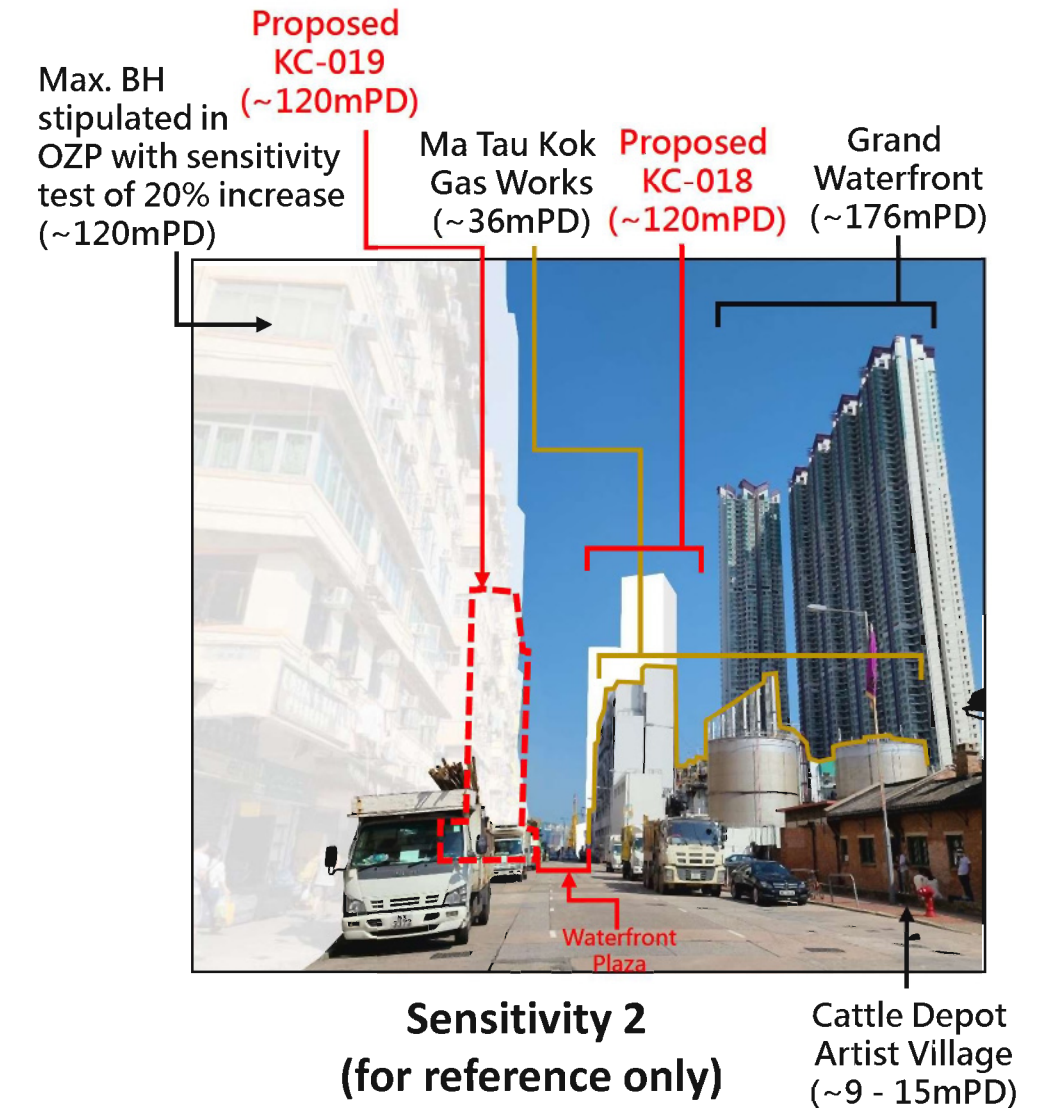
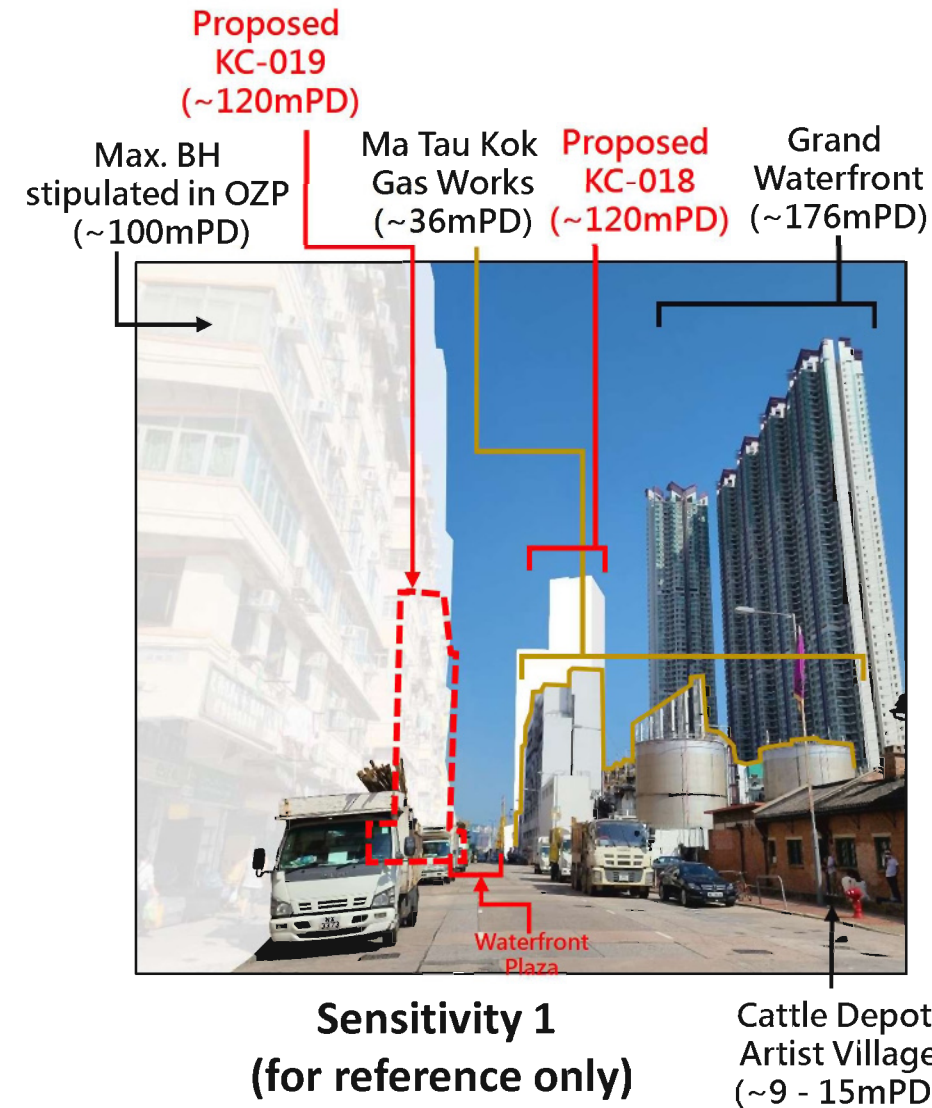
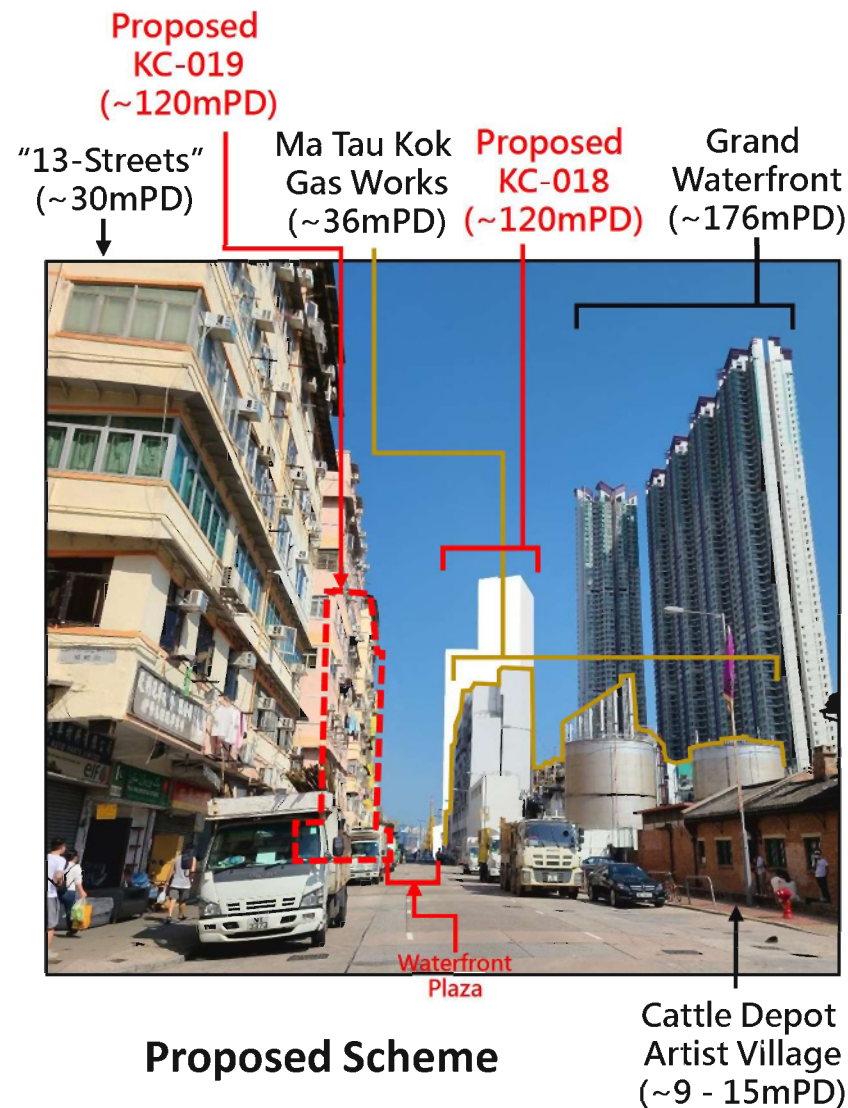


Grand Waterfront
(~176mPD)

Ma Tau Kok Gas Works
(~36mPD)

Cattle Depot Artist Village
(~9 - 15mPD)

Existing Condition



Key Plan

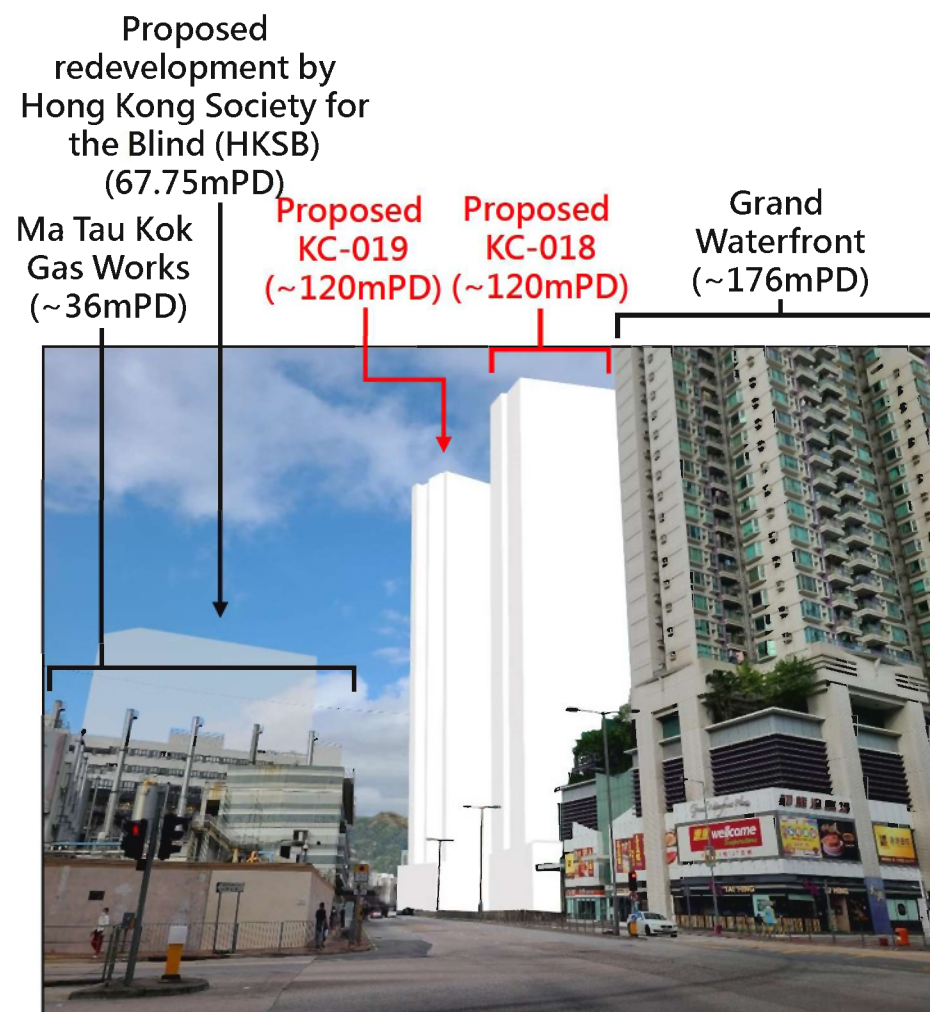


- Scheme Area
- Assessment Area
- < VP4
- (not to scale)

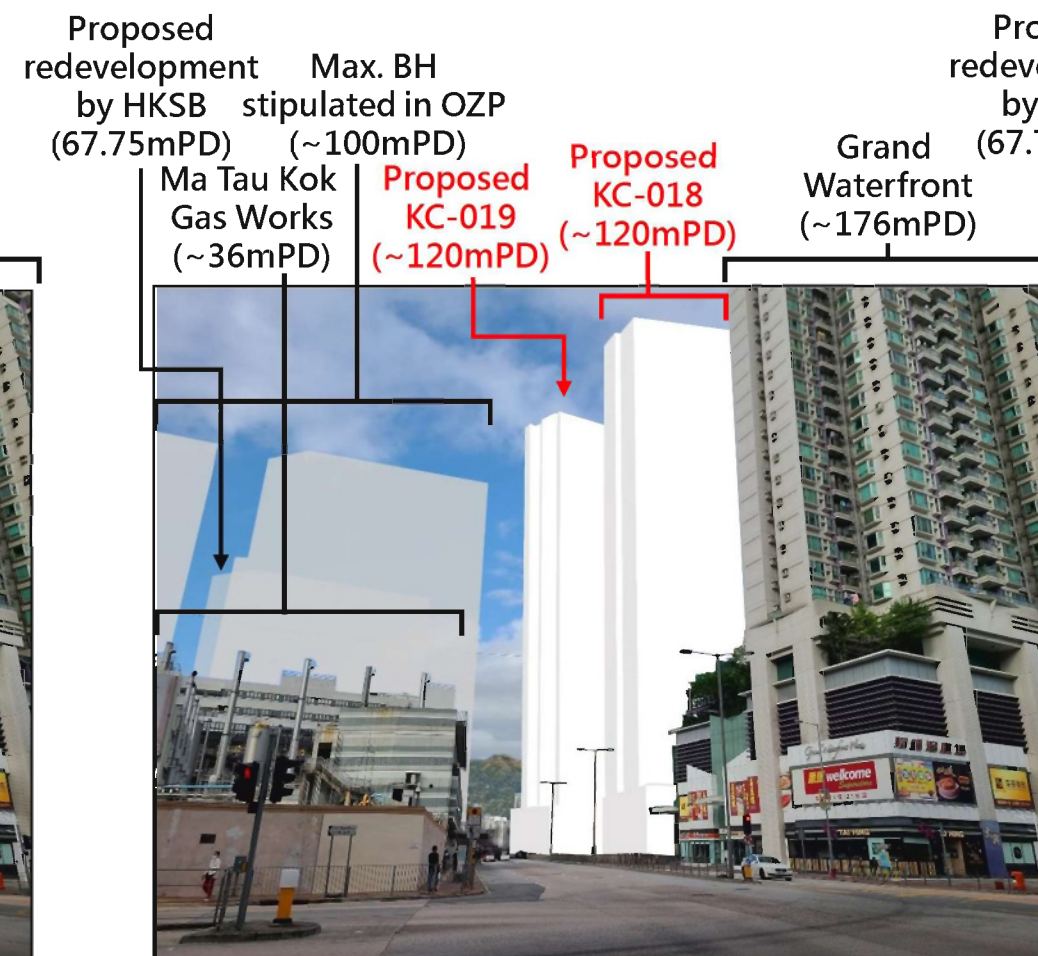
Ma Tau Kok Gas Works (~36mPD) "13-Streets" (~30mPD) Grand Waterfront (~176mPD)



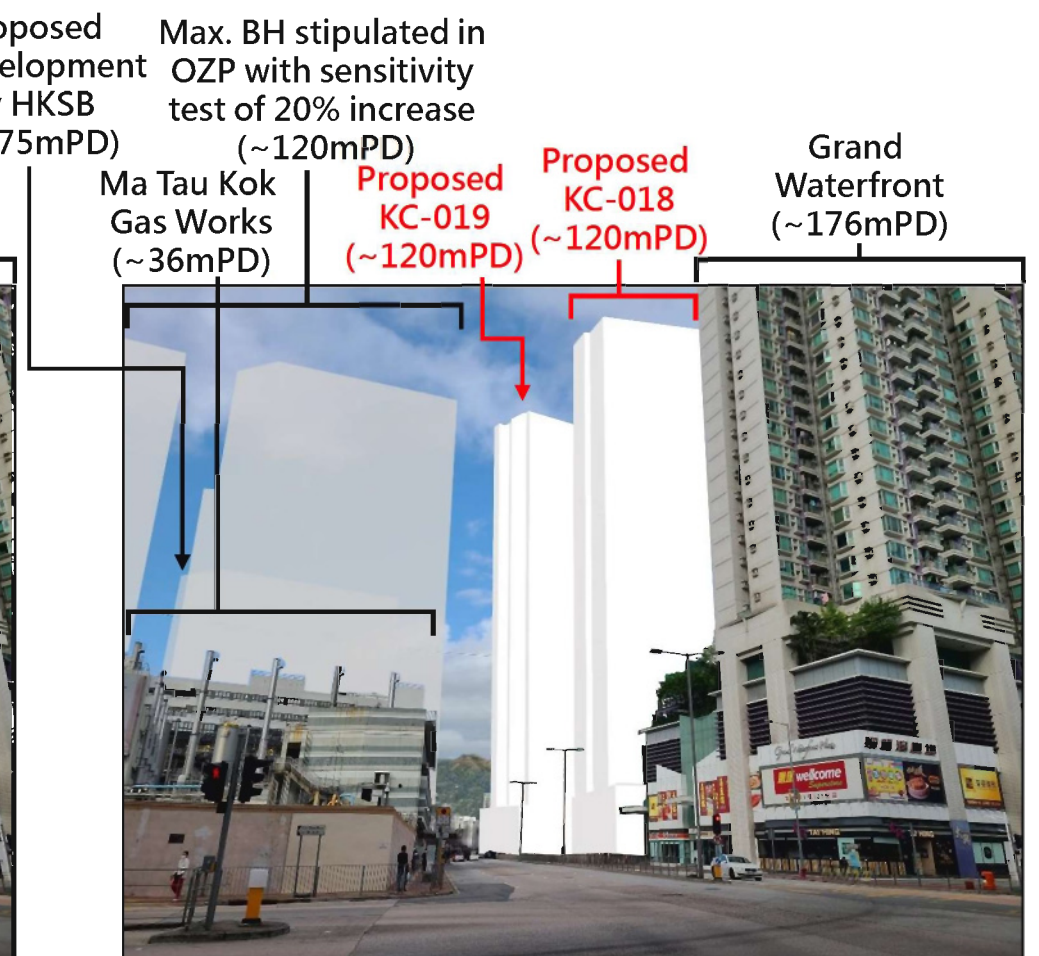
Existing Condition



Proposed Scheme

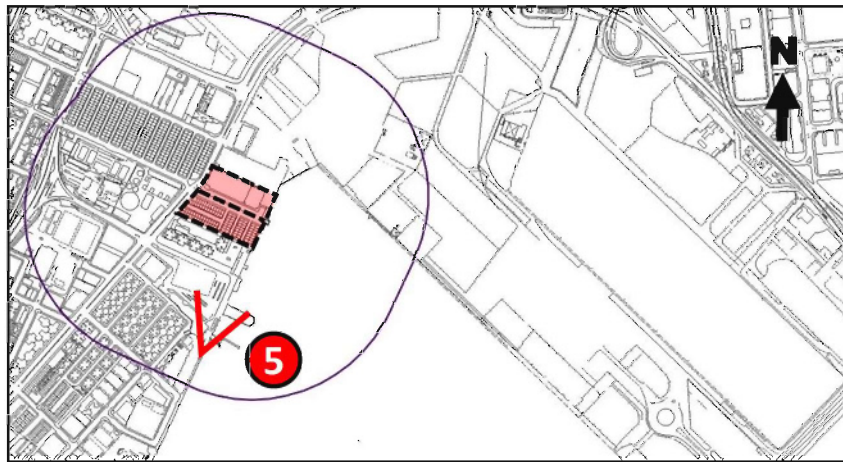


Sensitivity 1 (for reference only)



Sensitivity 2 (for reference only)

Key Plan

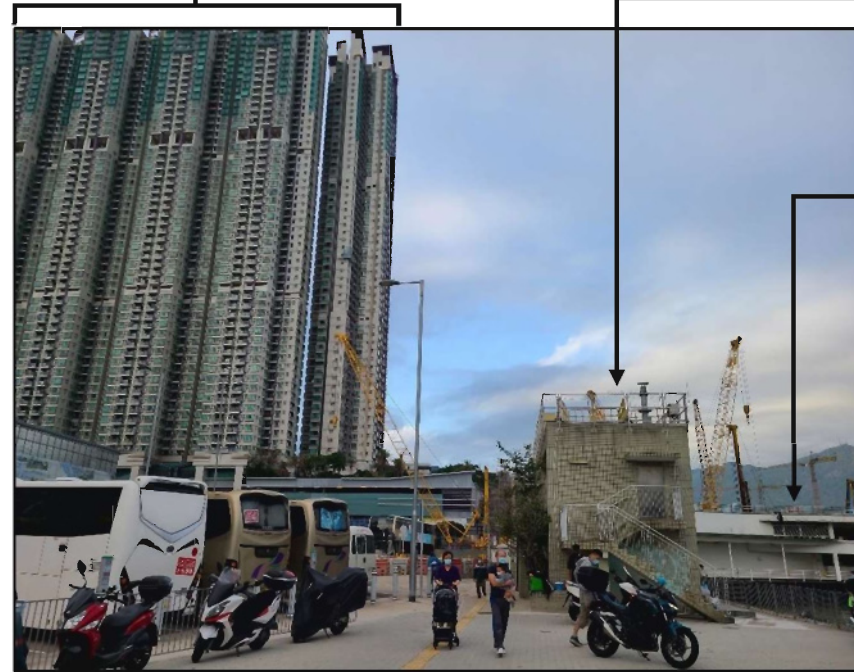


- Scheme Area
- Assessment Area
- < VP5
- (not to scale)

Grand Waterfront
(~176mPD)

San Ma Tau
Street Public Toilet
(~10mPD)

Kowloon City
Ferry Pier
(Grade 2
Historic Building)



Existing Condition

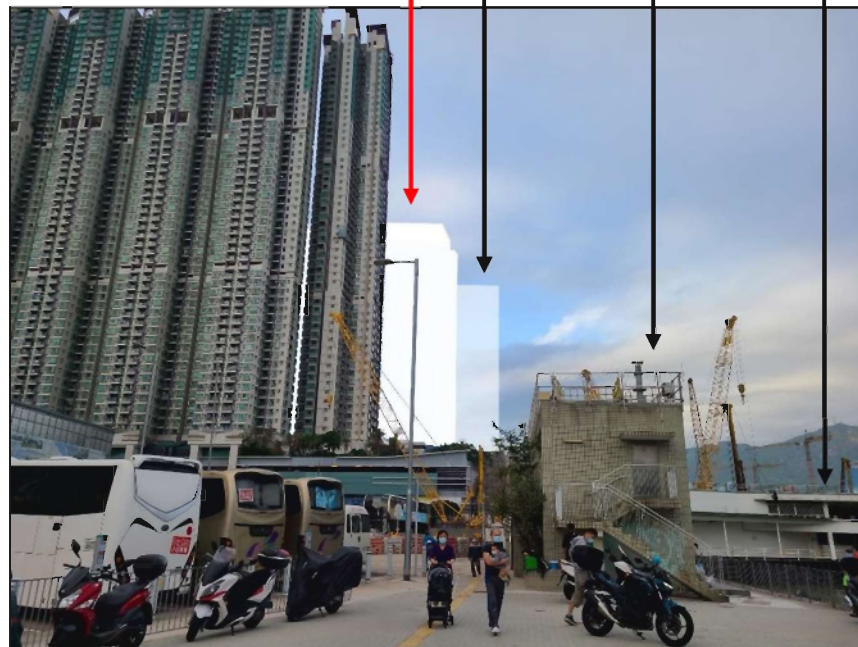
Proposed
KC-018 & KC-019
(~120mPD)

San Ma Tau
Street Public
Toilet
(~10mPD)

Kowloon City
Ferry Pier
(Grade 2
Historic Building)

Grand Waterfront
(~176mPD)

Proposed DRE
(~100mPD)



Proposed Scheme

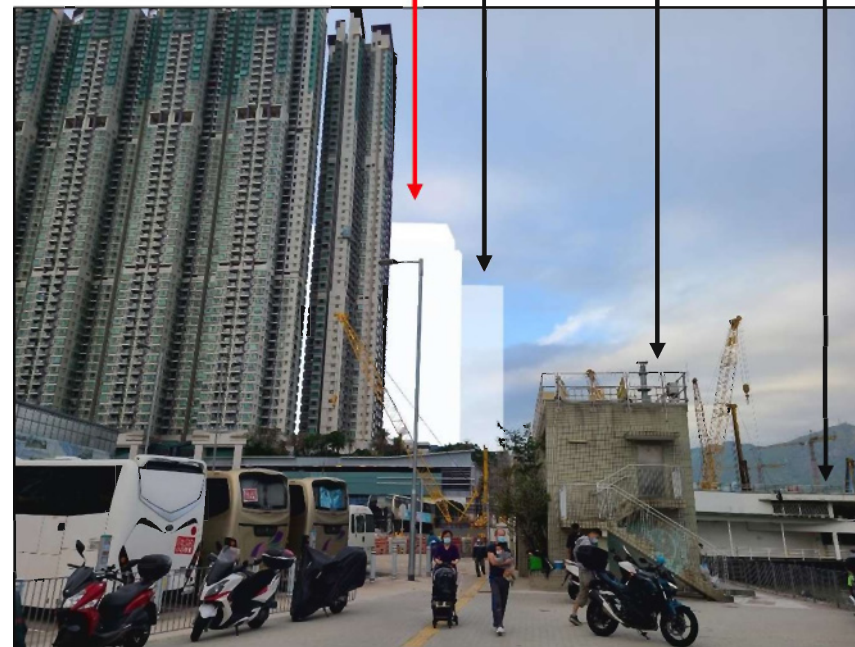
Proposed
KC-018 & KC-019
(~120mPD)

San Ma Tau
Street Public
Toilet
(~10mPD)

Kowloon City
Ferry Pier
(Grade 2
Historic Building)

Grand Waterfront
(~176mPD)

Proposed DRE
(~100mPD)



Sensitivity 1 (for reference only)

Proposed
KC-018 & KC-019
(~120mPD)

San Ma Tau
Street Public
Toilet
(~10mPD)

Kowloon City
Ferry Pier
(Grade 2
Historic Building)

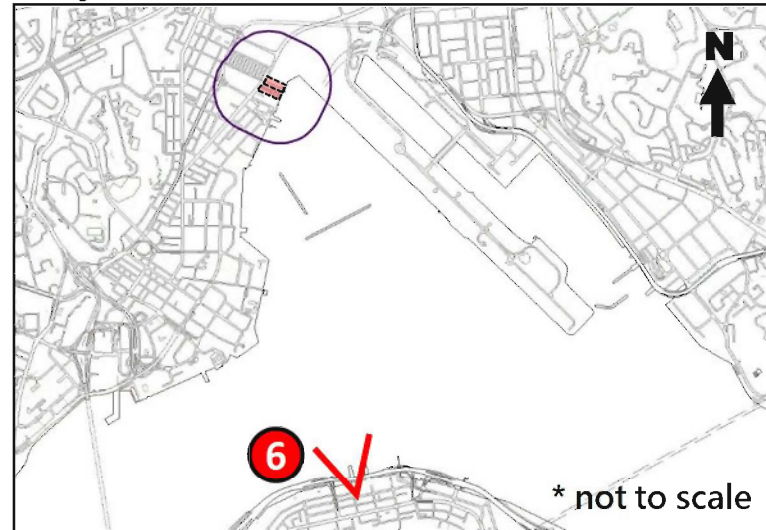
Grand Waterfront
(~176mPD)

Proposed DRE
(~100mPD)



Sensitivity 2 (for reference only)

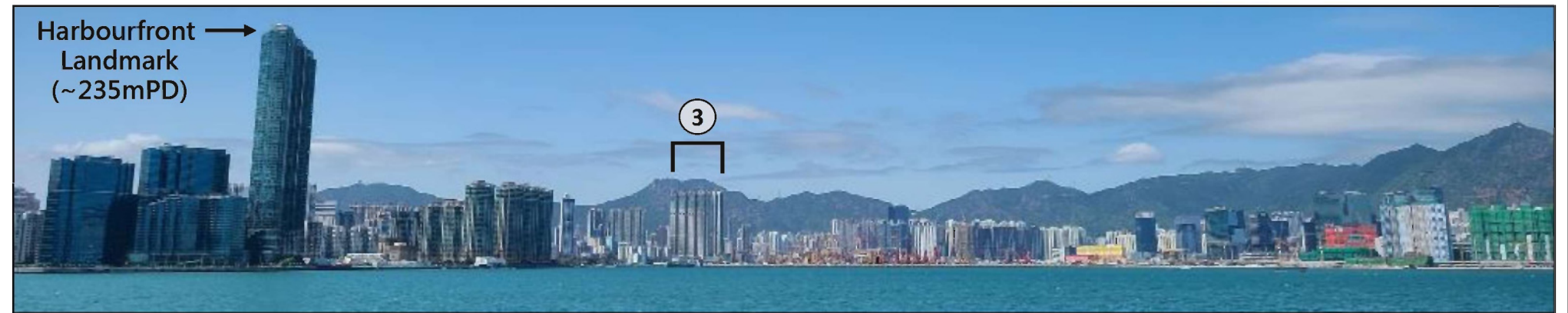
Key Plan



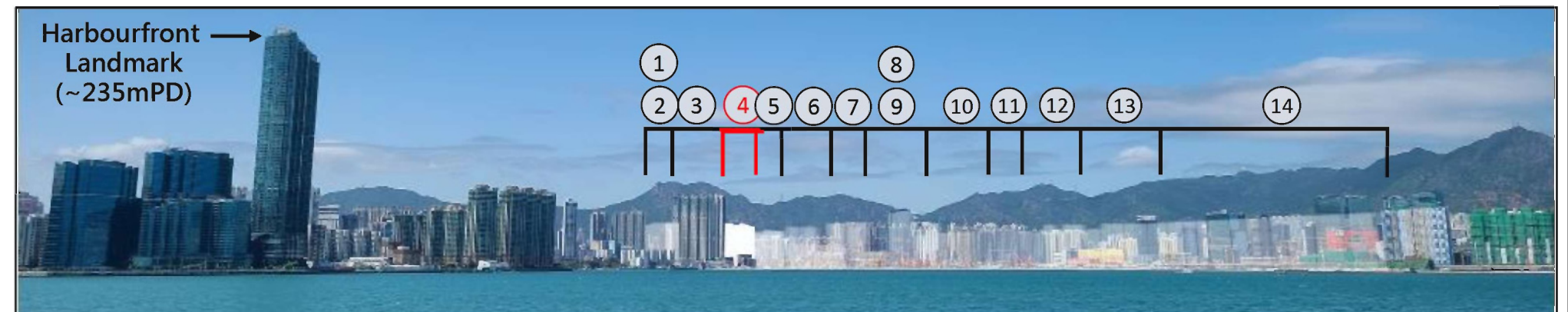
Scheme Area
 Assessment Area

VP6

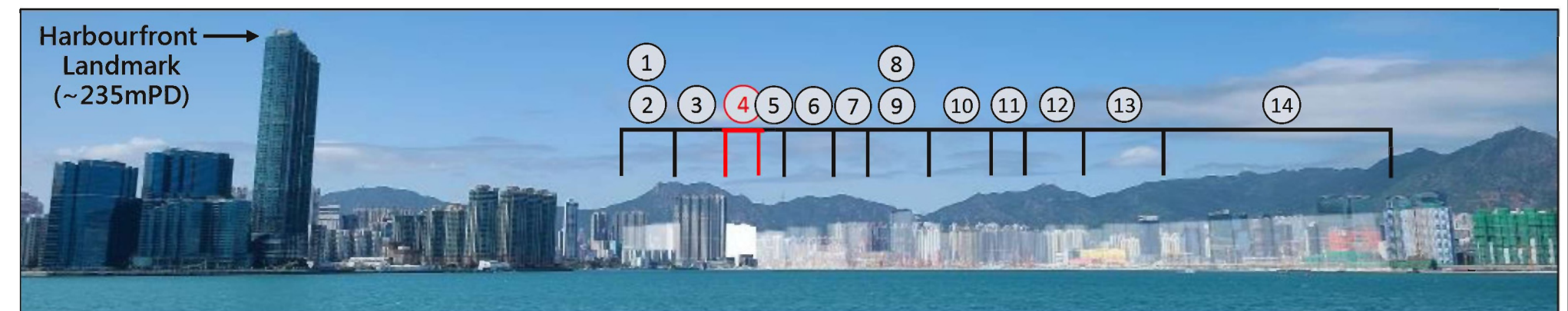
- ① Planned CDA sites (100mPD) at Mok Cheong Street (A/K10/256, A/K10/259 & A/K10/265), Redevelopment by Hong Kong Society for the Blind (HKSBB) (67.75mPD) & Proposed public housing at Sung Wong Toi Rd (100mPD).
Sensitivity 1: Max. BH stipulated in OZP along Ma Tau Kok Rd (~100mPD)
Sensitivity 2: Max. BH stipulated in OZP along Ma Tau Kok Rd with sensitivity test of 20% increase (~120mPD)
- ② Planned Commercial Building (Y/K22/3) (~100mPD)
- ③ Grand Waterfront (~176mPD)
- ④ **Proposed KC-018 & KC-019 (~120mPD)**
- ⑤ Proposed DRE (~100mPD)
- ⑥ Planned R(A) (S/K22/6) (~115mPD)
- ⑦ Planned R(B) (~125mPD) & Planned CDA (~135mPD) (S/K22/6)
- ⑧ Kai Tak Sports Park (70mPD) & Planned R(B) 95 - 110mPD) (S/K22/6)
- ⑨ Planned CDA (~200mPD) (S/K22/6)
- ⑩ Planned R(B) (~110mPD) (S/K22/6)
- ⑪ Planned R(B) (~120mPD) (S/K22/6)
- ⑫ Planned R(B) (~110mPD) (S/K22/6)
- ⑬ Planned R(B) (~95mPD) (S/K22/6)
- ⑭ Planned R(B) (95 - 108mPD) (S/K22/6 & S/K22/7)



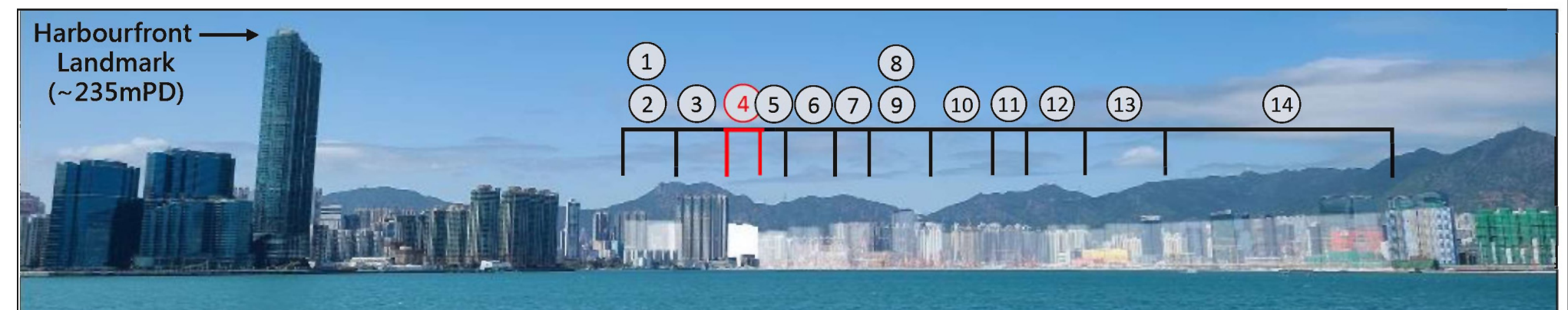
Existing Condition



Proposed Scheme



Sensitivity 1 (for reference only)



Sensitivity 2 (for reference only)



Source:

Strategic Viewing Points Webpage of Planning Department for the Town Planning Board Guidelines for Submission of Visual Impact Assessment to the Town Planning Board (TPB PG-No. 41) https://www.pland.gov.hk/pland_en/info_serv/via/web/vp_eng.html

Appendix 3a
KC-018 Social Impact Assessment
(Stage 1) Report



Urban Renewal Authority Development Scheme
Prepared under Section 25 (3) of the Urban Renewal Authority Ordinance

**Ming Lun Street / Ma Tau Kok Road
(KC-018)**

**Stage 1 Social Impact Assessment
October 2022**

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1 INTRODUCTION

- 1.1 According to the Urban Renewal Strategy (URS) issued by the Government in February 2011, the Urban Renewal Authority (URA) will carry out Social Impact Assessment (SIA) studies in the form of “a Stage 1 social impact assessment before the publication of any proposed redevelopment project in the Government Gazette”, and “a Stage 2 social impact assessment after the proposed project has been published in the Government Gazette”. This Stage 1 SIA is prepared by the URA **for the proposed Ming Lun Street / Ma Tau Kok Road Development Scheme KC-018 (the Scheme)**.
- 1.2 The URS also states “*Early social impact assessments will be initiated and conducted by DURF (District Urban Renewal Forum) before redevelopment is recommended as the preferred option. The URA will update these assessments by DURF before implementing any specific redevelopment project.*” As the Scheme falls within the study area of Kowloon City District Urban Renewal Forum (“KC DURF”), consultants for the KC DURF had completed a DURF SIA report of the Urban Renewal Plan (URP) for Kowloon City in 2014. This Stage 1 SIA is prepared with reference to the DURF SIA report, where appropriate.
- 1.3 According to the URS, the main elements of the Stage 1 SIA conducted by the URA before the publication of a proposed project should include:
- the population characteristics of the area;
 - the socio-economic characteristics of the area;
 - the housing conditions in the area;
 - the characteristics of local business activities, including small shops and street stalls;
 - the degree of overcrowding in the area;
 - the availability of amenities, community and welfare facilities in the area;
 - the historical background of the area;
 - the cultural and local characteristics of the area;
 - an initial assessment of the potential social impact of the proposed project; and
 - an initial assessment of the mitigation measures required.

- 1.4 The Stage 2 SIA will be conducted after the publication of the Scheme based on the factual information collected in the Freezing Survey (FS) upon project commencement. The URS stipulates the URA should submit both Stage 1 and Stage 2 SIA reports to the Town Planning Board (TPB) under section 25 of the Urban Renewal Authority Ordinance (URAO), and should release the reports for public information.

2 THE DEVELOPMENT SCHEME

- 2.1 The Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018) (the Scheme) is located in To Kwa Wan of Kowloon City (KC) District, which is bounded by Ma Tau Kok Road in the north, Ma Tau Kok waterfront in the east, Grand Waterfront in the south and To Kwa Wan Road in the west (**Figure 2.1** refers).
- 2.2 The Scheme, also known as the “5-Street” area, covers 101 street numbers of buildings comprising Nos. 91-113 Ma Tau Kok Road (odd nos.), 1-28A Ming Lun Street, 1-15 Chung Sun Street (odd nos.), 1-16 Hing Yin Street, 1-17 Hing Yan Street, and 19-31 Hing Yan Street (odd nos). The Scheme area also involves five public streets, including Ma Tau Kok Road (part), and the whole of Ming Lun Street, Chung Sun Street, Hing Yin Street, Hing Yan Street, the existing Kowloon City District Council Sitting-out Area as well as the surrounding public pavement. The total gross site area of the Scheme is about 11,430 sq.m. Subject to site survey and detailed design, the net site area for Plot Ratio (PR) calculation is about 10,496 sq.m.
- 2.3 The Scheme forms part of the proposed holistic redevelopment with the adjoining land parcels at To Kwa Wan Road / Ma Tau Kok Road which will be implemented under the separate To Kwa Wan Road / Ma Tau Kok Road Development Scheme (KC-019). A separate Stage 1 SIA has been prepared for To Kwa Wan Road / Ma Tau Kok Road Development Scheme KC-019.

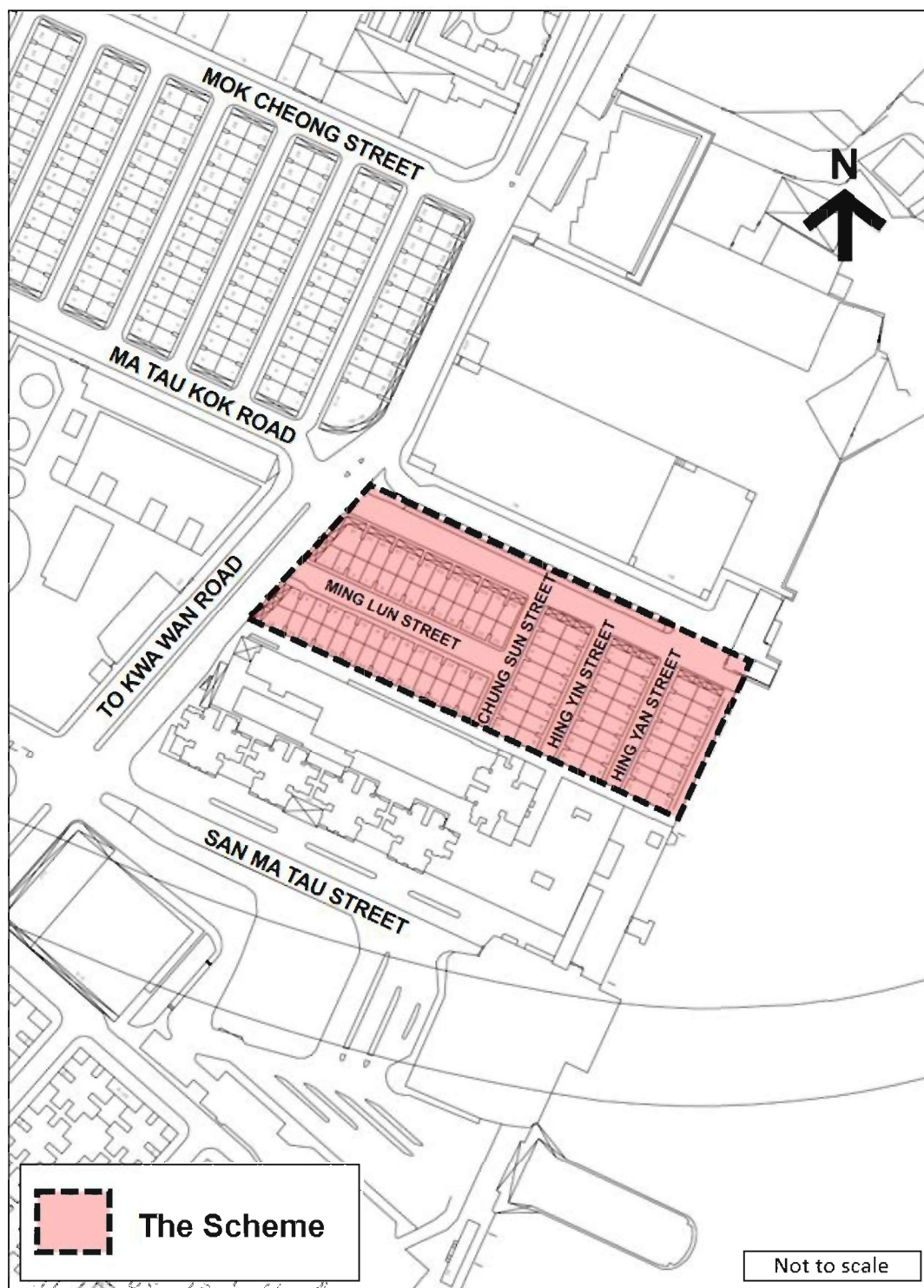


Figure 2.1 Location Plan

Planning Objectives

- 2.4 The Scheme, together with the adjoining To Kwa Wan Road / Ma Tau Kok Road Development Scheme KC-019, aims to rationalize land use by adopting an integrated planning-led approach for holistic planning of the area to enable more efficient land use and to bring planning gains to the local community. The URS issued in 2011 promulgates a comprehensive and holistic approach to carry out urban renewal with the following objectives:
- Restructuring and replanning of concerned urban areas;
 - Designing more effective and environmentally-friendly local transport and road networks within the concerned urban areas;
 - Rationalising land uses within the concerned urban areas;
 - Redeveloping dilapidated buildings into new buildings of modern standard and environmentally-friendly design;
 - Providing more open space and community / welfare facilities; and
 - Enhancing the townscape with attractive landscape and urban design.
- 2.5 The Scheme falls within the “5-Streets” area of the “5-Streets” and “13 Streets” area, To Kwa Wan as defined in the Urban Renewal Plan (URP) prepared by KC DURF. Under the URP of KC DURF, the area is recommended as “*Redevelopment Priority Area*”. DURF recommended to sub-divide the “Comprehensive Development Area (CDA)” site at “5-Streets” into two portions based on the existing residential building portion and the industrial / commercial building portion. The Scheme, being a redevelopment project, is tally with the recommendations of KC DURF.
- 2.6 To achieve the objectives in URS and to address the recommendations of KC DURF as well as public aspirations and views from local stakeholders to expedite the redevelopment of the area, the Scheme will include the following key proposals:
- i. Under a planning-led approach, the Scheme aim to rationalize land use for holistic planning of the area to enable more efficient land use and to bring planning gains to the local community. The Scheme will optimise the land uses into the long-awaited comprehensive designed waterfront developments fitting in with the redevelopment intention of the Ma Tau Kok waterfront area. A 20m-wide waterfront promenade is provided at the eastern boundary of the Scheme along the waterfront for public enjoyment.

The proposed waterfront promenade will be connecting with the adjoining planned waterfront promenade / waterfront developments at the Kai Tak Development Area (KTDA) in the northeast, thus enabling a continuous waterfront at the Kowloon East area and helping the Government to achieve its vision for public enjoyment.

- ii. To promote vibrancy, a 2-storeys retail belt abutting the waterfront promenade is provided. In addition, an at grade open-air central waterfront plaza with not less than 25m wide will be provided between the Scheme and the adjoining To Kwa Wan Road / Ma Tau Kok Road Development Scheme KC-019, serving as a focal point for gathering and place-making opportunities. It will be connected to the proposed retail belt and waterfront promenade to bring in vibrancy and strengthen the east-west pedestrian connectivity.
 - iii. Through restructuring and re-planning of existing land uses, buildings of the proposed developments will be setback from To Kwa Wan Road to allow sufficient space to align with Government's planned road widening works of the existing To Kwa Wan Road from a four-lane road to a six-lane road. Detailed design and implementation programme of the planned road widening will be subject to the local views and agreement from relevant Government departments.
 - iv. Under the current notional design, it is proposed to provide not less than 1,000sq.m. non-domestic GFA for "Government, Institution or Community" ("GIC") facilities within the Scheme to meet the community's needs and to align with the "Single site, Multiple Use" model promoted by the Government to enhance planning gains.
- 2.7 In addition to the proposed redevelopment under the Scheme, URA will explore the possibility to revitalize the adjoining abandoned Government's pier structure/landing steps located outside the Scheme boundary under separate revitalization urban renewal initiatives, subject to further study and liaison with relevant Government departments.

URA Projects in the Vicinity

- 2.8 The Scheme is located close to various completed and on-going URA projects in the To Kwa Wan area (See **Figure 2.2**). To the immediate north of the Scheme is the To Kwa Wan Road/ Ma Tau Kok Road Development Scheme (KC-019) which is commenced on the same day as the Scheme. The Scheme will create synergy with KC-019 to formulate a comprehensive land-use restructuring together to create more planning gains in the area.
- 2.9 A number of completed URA's projects can be found to the further west and southeast of the Scheme. These projects include the Pak Tai Street / Mok Cheong Street Development Project (named "My Place"), Pak Tai Street / San Shan Road Project (named "Downtown 38") and San Shan Road / Pau Chung Street Project (named "93 Pau Chung Street"), Kowloon City Road / Sheung Heung Road Development Project (KC-007) (named "Artisan Garden"), Chi Kiang Street / Ha Heung Road Development Project (TKW/1/001) (named "City Hub").
- 2.10 To the further southeast of the Scheme, the area in the vicinity of Wing Kwong Street of To Kwa Wan was being identified by URA as the Kowloon City Action Area 1 (KCAA1) for holistic planning of urban renewal works. A total of 8 projects were commenced in the KCAA1 area in recent years, forming a cluster of URA's redevelopment projects of the existing tenement buildings concentrated in the area. These projects include:
- Bailey Street / Wing Kwong Street Development Project (KC-009)
 - Hung Fook Street / Ngan Hon Street Development Scheme (KC-010)
 - Kai Ming Street Demand-Led Redevelopment Project (DL-8:KC)
 - Hung Fook Street / Kai Ming Street Development Project (KC-011)
 - Wing Kwong Street Development Project (KC-012)
 - Kai Ming Street / Wing Kwong Street Development Project (KC-013)
 - Wing Kwong Street / Sung On Street Development Project (KC-014)
 - To Kwa Wan Road / Wing Kwong Street Development Scheme (KC-016)
- 2.11 URA's projects in the vicinity also include two pilot projects in Kowloon City to redevelop buildings under the Civil Servants' Co-operative Building Society Scheme, which are the Shing Tak Street / Ma Tau Chung Road Development Project (CBS-1: KC) approved by Secretary for Development in June 2021 and

the Kau Pui Lung Road / Chi Kiang Street Development Scheme (CBS-2:KC) commenced in May 2020.

- 2.12 The Scheme, which forms part of holistic planning approach, will continue to contribute as a vital part of the comprehensive urban renewal of this part of Kowloon City District.

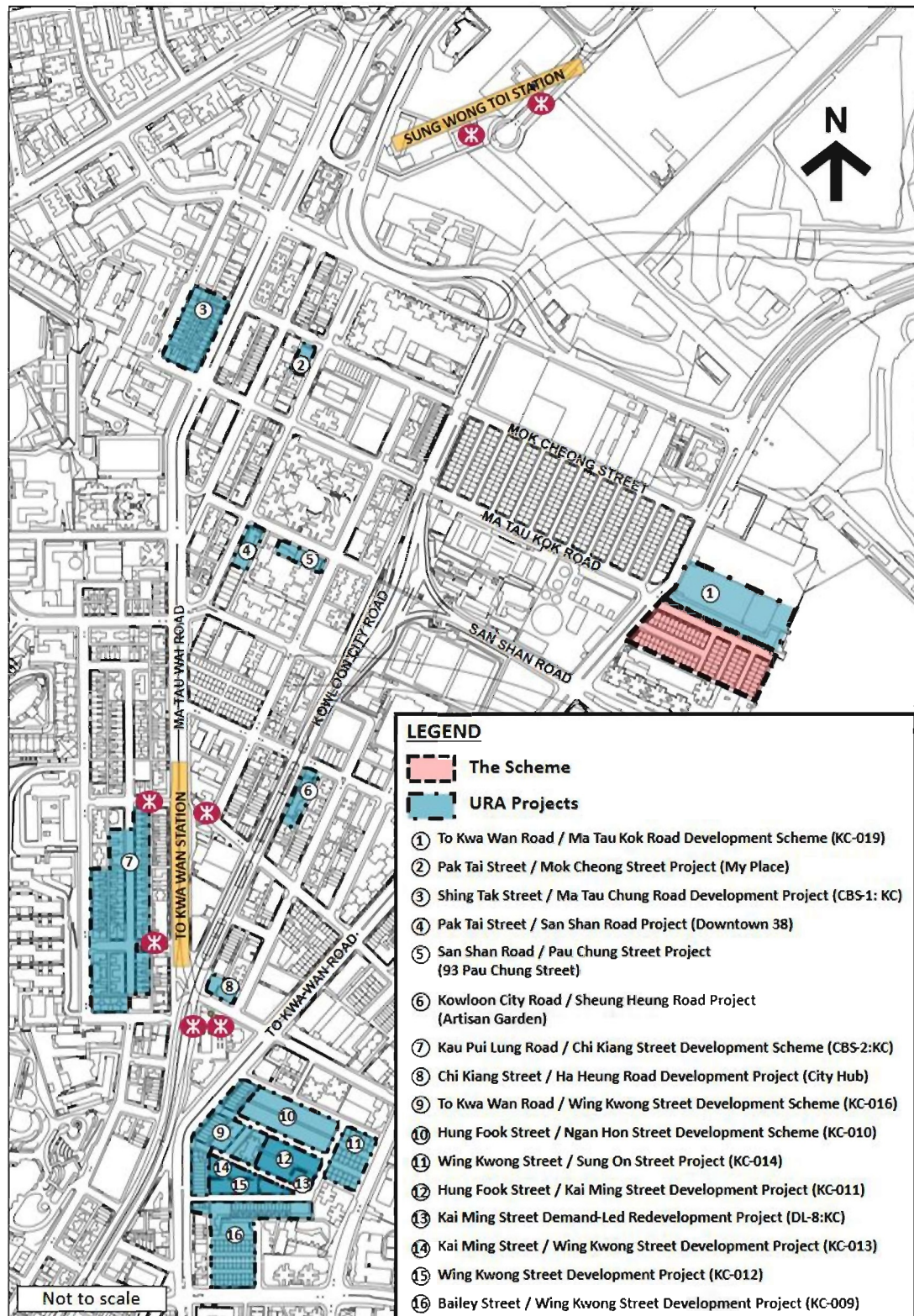


Figure 2.2 URA Projects in the Vicinity

3 HISTORICAL BACKGROUND AND LOCAL CHARACTERISTICS

Historical Background

- 3.1 Before the 1890s, To Kwa Wan was a bay lined by beaches and mud-flats with a stream originated from the hinterland named Ma Tau Chung where flowed closely along the existing Ma Hang Chung Road. The headland to the north of the bay is Ma Tau Kok, which might be named after the long pier of Kowloon Walled City nearby. A string of agricultural and stone-cutter villages along the coast of To Kwa Wan Bay sharing the name of To Kwa Wan Village was believed to be the largest village in the Hung Hom and To Kwa Wan area. Quarrying became active in the mid-18th century that Quarry Hill and San Shan (new quarry) Road were believed to commemorate these activities.
- 3.2 After the reclamation undertaken in the 1890s, To Kwa Wan started being developed by industrial activities extended from Hung Hom and the ex-Whampoa Docks. Streets including Mok Cheong (timber factory) Street and Pau Cheung (firecracker) Street were believed to commemorate the factory development in the early 20th century.
- 3.3 The second large-scale reclamation of To Kwa Wan started in the 1950s while industrial activities in Kowloon became more prosperous. The Schemes and its vicinity became inland and were then transformed into a mixture of residential developments and industrial uses including manufacturing, car-repairing, weaving, bleaching and dyeing, printing and electroplating. Today, industrial buildings still scatter along roads/streets within the area.
- 3.4 **Figure 3.1** shows the locations of places with historical background identified and local characters in this part of To Kwa Wan.

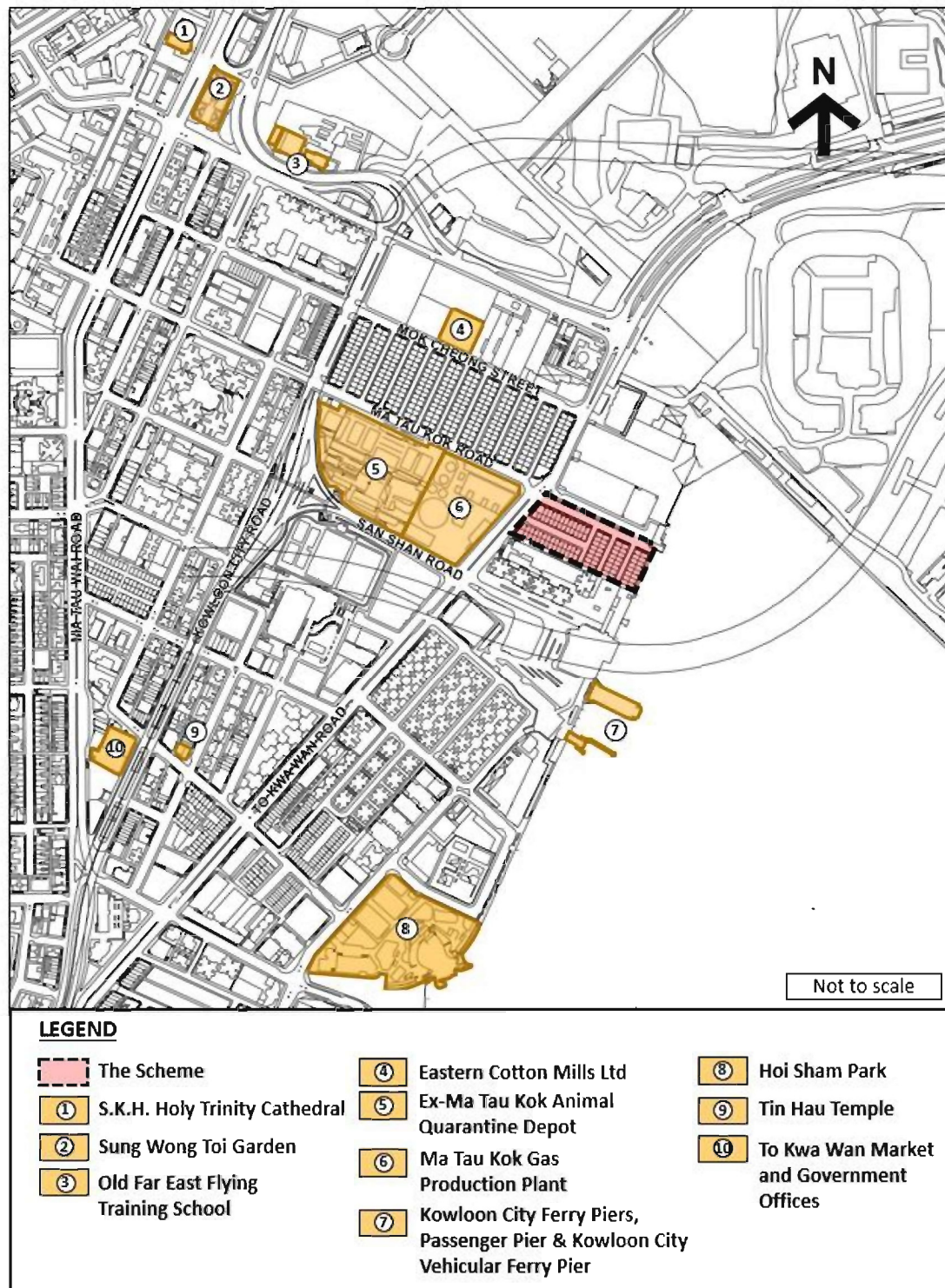


Figure 3.1 Places with Historical Background and Local Characters in To Kwa Wan

Source: KC DUF's URP and Geographic Information System on Hong Kong Heritage, as of June 2022.

Ex-Ma Tau Kok Animal Quarantine Depot

- 3.5 The ex-Ma Tau Kok Animal Quarantine Depot (commonly known as the “Cattle Depot”) located at the further west of the Scheme was originally located in Hung Hom, which was moved to Ma Tau Kok due to the construction of Kowloon–Canton Railway and was built in 1908. It was owned by the Government and was used as a cattle quarantine and slaughter centre for more than 90 years. In 1999, the Cattle Depot was ceased operation due to expressed concerns by the neighbouring residents about hygiene problems. The Cattle Depot was renovated and developed into an artist village in 2001, and is now home of around 20 art groups. Under the “Revitalisation of the Rear Portion of the Cattle Depot” project proposed by the Kowloon City District Council (KCDC) in 2016, the Cattle Depot Art Park provides a venue for recreational purpose and community art promotion. The Cattle Depot Art Park inherits the elements of its history as a cattle depot, the ex-Ma Tau Kok Animal Quarantine Depot is classified as Grade II historic building by the Antiquities Advisory Board (AAB).

Ma Tau Kok Gas Production Plant

- 3.6 The Ma Tau Kok Gas Production Plant (South Plant) was originally built in the 1930s at the location just south of the Scheme. In the 1956, with the growing demand due to the increasing industrial activities it was then expanded to the other side of To Kwa Wan Road, namely the North Plant at its current location. The South Plant operates until 1994, and was subsequently redeveloped into a comprehensive residential development (named “Grand Waterfront”) in early 2000’s while the North Plant remains in operation till now but serve as a backup facility only. According to the website of Towngas Company Limited, “Over 98% of town gas is supplied from the Tai Po Plant, with the Ma Tau Kok Plant making up the rest.”

Kowloon City Ferry Piers, Passenger Pier & Kowloon City Vehicular Ferry Pier

- 3.7 Along the coastline of To Kwa Wan, the Passenger Pier and Vehicular Pier were completed in 1956 and 1965, witnessing the development of transportation and eastern Kowloon in the second half of the 20th century. The Passenger Pier was the first of its kind built in Hong Kong’s urban areas after the World War II, with no notable or significant alterations made since its completion. Together with

the adjacent bus terminus and car park, the Passenger Pier formed a public transport interchange serving commuters between the two sides of the Victoria Harbour, to various parts of the city and the former Kai Tak Airport. The Vehicular Pier was built to ease the demand of cross harbour vehicular ferry service in Central, and is one of the four vehicular ferry piers remaining in Hong Kong. The Passenger Pier and the Vehicular Ferry Pier have been graded the Grade II status by the AAB.

Themed Walking Trail of KC DURF

- 3.8 The URP of KC DURF has proposed a “Themed Walking Trail” to strengthen and highlight the historic and cultural characters of the district. The trail is subdivided into four sub-trails in accordance with its characters, aiming to attract potential visitors and create a distinctive image for the district (refers to **Figure 3.2**).



Figure 3.2 Themed Walking Trail of KC DURF (Extract of the KC DURF URP)

4 POPULATION AND SOCIO-ECONOMIC CHARACTERISTICS

- 4.1 The DURF SIA completed in 2014 had provided an overview of the population and socio-economic characteristics of the “*Proposed Redevelopment Priority Area*” in the KC DURF’s URP where the Scheme falls within. To further update and analyse these characteristics of the Scheme, a combination of the 2021 Population Census results and the experience from other URA projects are used to assess the population and socio-economic characteristics. The accommodation assessment is then based on inspection of approved building plans and on-site non-obtrusive observation. Given the general and non-obtrusive nature of data sources available to carry out this Stage 1 SIA, the assessments derived should only be considered as indicative and for reference use only and subject to the Freezing Survey upon project commencement.
- 4.2 The Census and Statistics Department’s (C&SD) website provides the 2021 Population Census results. Depending on the type of information, the most disaggregated data available are down to various geographical division levels, including Tertiary Planning Units (TPU), District Council Constituencies, Large Subunit Groups (LSG) and Small Subunit Groups (SSG).
- 4.3 The Scheme is within the Tertiary Planning Unit 247. It falls within Sung Wong Toi (G02) constituency of the Kowloon City (KC) District (**Figure 4.1**).
- 4.4 The Scheme lies within LSG 247/11-13 and SSG 247/11-13, sharing the same boundary, which is bounded by To Kwa Wan Road to the west, the planned Kai Tak Sports Park (under construction) to the north, To Kwa Wan Typhoon Shelter to the east and Grand Waterfront to the south (**Figure 4.2**). The boundary covers buildings within the Scheme, the KC-019 Scheme (i.e. Newport Centre Phases I and II) and the To Kwa Wan Road Pumping Station. Based on non-obtrusive on-site observation, there is no population and household identified in Newport Centre Phases I and II.
- 4.5 The DURF SIA report has suggested that the average household size within its study area is around 2.6-2.9. However, such figure corresponds to the wider study area of KC DURF, which may be less representative for older, dilapidated buildings with sub-divided flats that are in need for redevelopment. Based on URA’s past experience, the average household size of those within the Scheme is assumed to be around 2.1. The tenure split between owner-occupied and

tenanted households is assumed to be 30:70 for this Stage 1 SIA. Site observation indicates some existing units in the Scheme appear to have been converted into sub-divided units or cubicle apartments. Given similar sub-division situation found in various past URA projects, it is estimated that the degree of sharing in the Scheme is about 2 based on URA experience. Actual numbers will be ascertained as far as practicable at the Stage 2 SIA.

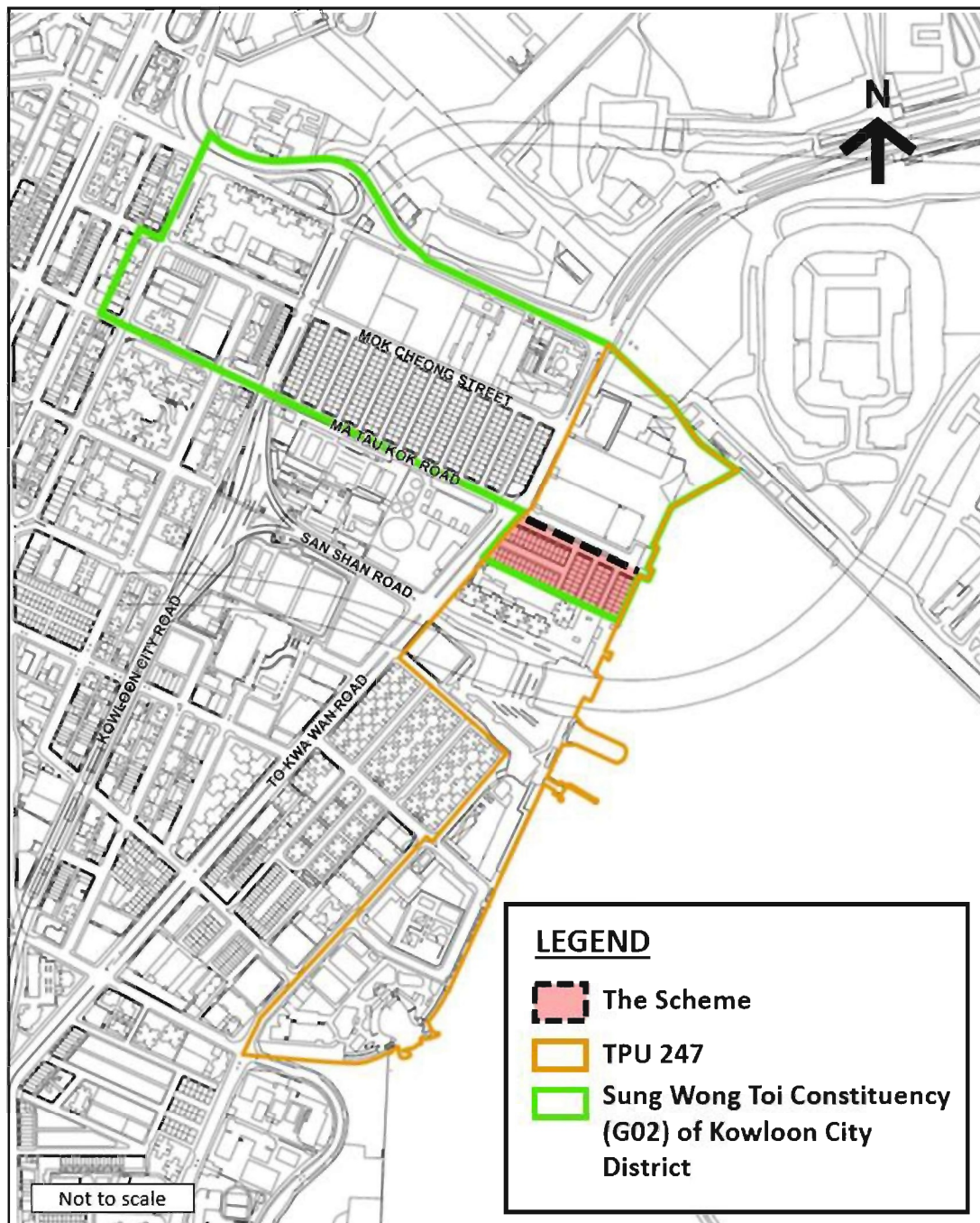


Figure 4.1 Boundaries of Sung Wong Toi Constituency (G02) and Tertiary Planning Unit (TPU) 247

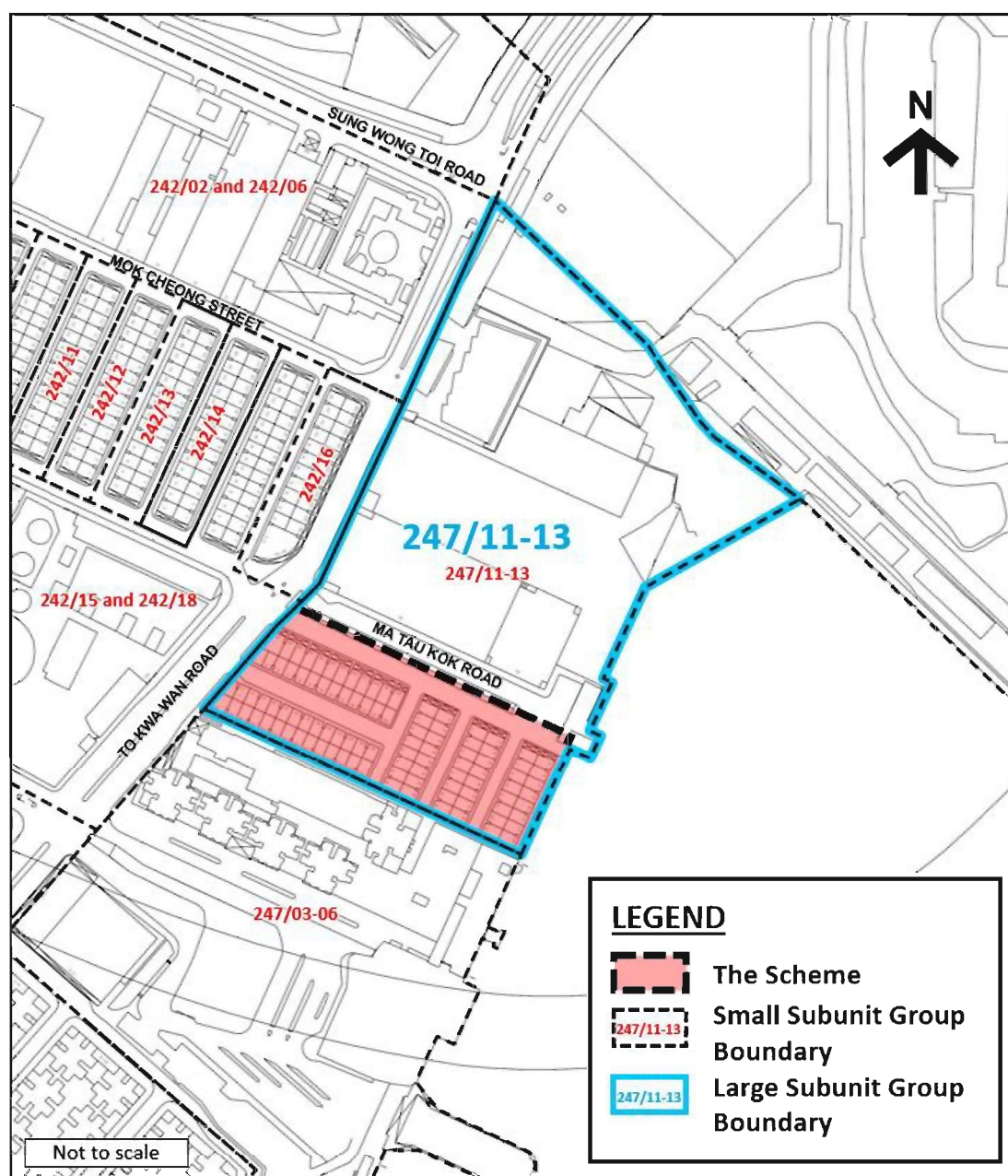


Figure 4.2 Subunits Boundaries Covering the Scheme

Overview of Housing & Population Characteristics of Kowloon City District

- 4.6 As revealed in the 2021 Population Census, the overall KC district has a population of about 410,634. In terms of monthly household income, the DURF SIA in 2014 reported that the particular “5 Streets” and “13 Streets” Area which covers the Scheme has a median monthly household income of \$17,919. Though the figure has increased to \$26,700 in 2021 Census, it is still lower than that of the whole KC District (\$30,010). The DURF SIA explained that the low income

level might be related to the residents' occupations and the high proportion of residents with low educational attainment. The household income level, including nos. of households with Comprehensive Social Security Assistance (CSSA) Recipients, and the social characteristics of the affected in the Scheme will be ascertained in the Freezing Survey (FS) upon commencement.

- 4.7 According to the 2021 Population Census, private housing blocks are the major type of living quarters in KC District (about 73%) which is higher than the territorial percentage of about 53%. On the other hand, there are only 26% of living quarters in public rental housings / subsidized home ownership housings which is lower than the territorial average of 46%. Public housings in KC District are mainly public rental housings which account for about 24% of living quarters of the district. There is no Public Rental Housing (PRH) or Home Ownership Scheme (HOS) within the Scheme, TPU 247 nor Sung Wong Toi Constituency (G02). Being mainly built in the 1950s and 1960s, quite a number of private residential blocks in KC District appear to be lack of proper maintenance and management.

Household Composition

- 4.8 In accordance with approved General Building Plans (GBPs) of the buildings in the Scheme, the total number of upper floor residential units (excluding ground floor units for shops, and/or office uses) within the Scheme is 707 units. Based on the 2021 Population Census, the degree of sharing of KC District and territory is 1.0 (i.e. one household per unit). However, based on URA experience, the degree of sharing within redevelopment projects is generally about 2 due to the existing of sub-divided units. By adopting the degree of sharing of 2, the total number of households within the Scheme is estimated to be about 1,414 households with overcrowded and unsatisfactory living conditions which are commonly found in URA redevelopment projects. The actual number of domestic units may be different from that under the approved GBPs. The household composition will be verified in the Freezing Survey upon commencement.

- 4.9 According to the 2021 Census, the overall proportion of singleton (30%) in LSG (which is the closest area coverage as the Scheme) is higher than the Territorial and KC District level. While Doubletons (20%) in LSG are lower than the Territorial and KC District level. 3-person or above households (50%) in the LSG are similar to the proportions under the various geographical division levels (**Table 4.1**). The actual proportion of household types in the Scheme will be verified in Stage 2 SIA.

Table 4.1 Proportions of Singletons, Doubletons, and 3-person or above Households by Geographical Division Levels

	Singletons	Doubletons	3-person or above households
LSG 247/11-13	30%	20%	50%
TPU 247	26%	25%	49%
Sung Wong Toi (G02) Constituency	28%	27%	45%
KC District	22%	28%	50%
Territorial	20%	29%	51%

- 4.10 Based on the Census results and URA experience as stated in Para. 4.5 above, the average household size within the Scheme is estimated to be around 2.1, which is lower than the average household sizes of KC District (2.7) and the territory (2.7). The assessment adopts a lower household size to reflect the presence of lots of sub-divided units and/or cubicle apartments in previous URA projects, which can be assumed to be occupied by some singleton and doubleton households.

Population

- 4.11 According to paragraph 4.8, the estimated number of households within the Scheme is about 1,414. With the estimated average household size of 2.1, the number of residents living within the Scheme is estimated to be around 2,970 persons. The Stage 2 SIA will verify the number of households, living quarters and population affected.
- 4.12 **Table 4.2** compares the distribution of the percentage of working population and elderly residents (aged 65 or above) among the various geographical division levels. The LSG data, which covers the Scheme, indicates that the percentage of working population is slightly lower than that of wider district / territory. Besides, the percentage of elderly residents of the LSG is higher than that of TPU and DC Constituency, but lower than that of district and territorial levels. Despite so, particular attention would be paid to elderly residents and their needs when the Scheme is implemented.

Table 4.2 Percentages of Working Population and Elderly Residents by Geographical Division Levels

	Percentage of working population	Percentage of elderly residents
LSG 247/11-13	47.4%	16.2%
TPU 247	55.1%	11.3%
Sung Wong Toi (G02) Constituency	51.4%	11.1%
KC District	49.7%	20.1%
Territorial	49.6%	19.6%

4.13 As presented in **Table 4.3**, the percentages of ethnic minorities residing in the LSG, TPU 247 and Sung Wong Toi (G02) constituency are similar with the territorial percentage, while the percentage of the KC district was above 10% which was higher than the territorial percentage. Nevertheless, special attention would be paid to residents of ethnic minorities and their needs when the Scheme is implemented. The FS and Stage 2 SIA will ascertain the actual number of households and residents of ethnic minorities as far as practicable.

Table 4.3 Percentages of Ethnic Minorities by Geographical Division Levels

	Percentage of ethnic minorities
LSG 247/11-13	6.4%
TPU 247	8.9%
Sung Wong Toi (G02) Constituency	7.9%
KC District	10.7%
Territorial	8.4%

4.14 **Table 4.4** shows the comparison of percentages of owner-occupiers and tenanted occupiers among the various geographical division levels. In accordance with the LSG data, percentages of tenanted occupiers within the Scheme may probably be higher than that at other geographical division levels. Based on the URA's experience obtained from previous redevelopment projects, a higher proportion of tenanted households (70%) is assumed in the Scheme in consideration of existence of sub-divided units which are mainly for rental in the tenement buildings in the older district. The composition will be ascertained in the FS and reported in the Stage 2 SIA.

Table 4.4 Percentages of Owner-Occupiers and Tenanted Occupiers by Geographical Division Levels

	Percentage of owner-occupiers	Percentage of tenanted occupiers
LSG 247/11-13	42%	58%
TPU 247	60%	40%
Sung Wong Toi (G02) Constituency	46%	54%
KC District	47%	53%
Territorial	49%	51%

4.15 Higher median monthly rents were recorded in the LSG, TPU and the constituency than KC District and the whole territory. However, as there is no subsidized public housing in the LSG, TPU and the constituency, and only a

transitional housing project of 110 units within the constituency boundary, the assessment further compares the median monthly household rents of private permanent housings. **Table 4.5** shows that the median rents of private housings at LSG and constituency levels are much lower than the KC district and territorial levels. This is probably caused by the relatively poor building condition and living environment of the Scheme's vicinity as compared to the general private housings and therefore the median rent is lower. While TPU level, median monthly household rent is similar with the KC district and territorial levels. This is probably due to inclusion of a private residential redevelopment in 2006, the Grand Waterfront, within the boundary of TPU, leading to a significant increase in median monthly household rent.

Table 4.5 Median Monthly Household Rents by Geographical Division Levels

	Median monthly household rents of all housing types	Median monthly household rents of private permanent housings
LSG 247/11-13	\$6,300	\$6,300*
TPU 247	\$10,000	\$10,000*
Sung Wong Toi (G02) Constituency	\$5,700	\$5,700*
KC District	\$4,000	\$11,470
Territorial	\$2,900	\$11,000

* As the majority of housing in LSG, TPU 247 and the constituency are private permanent housings, the median monthly household rents of private permanent housings are assumed to be the same as the ones of all housing types.

- 4.16 In conclusion, the presence of newer residential developments such as Grand Waterfront within the TPU may possibly have different household composition, which means such data should be used for reference only.
- 4.17 The Stage 2 SIA to be conducted upon project commencement will give clearer and accurate information concerning those living and working within the Scheme.

5 HOUSING AND ENVIRONMENTAL CONDITIONS

Building Age, Building and Living Condition

- 5.1 The Scheme consists of five clusters of tenement buildings with 8 storeys high, completed in 1959 and 1960 (i.e. aged from 62 to 63). According to the GBP records, all the buildings are without lift and the serviceability of these buildings are generally poor.
- 5.2 Based on the ownership records in the Land Registry as of Sept 2022, all the buildings within the Scheme are under multiple ownerships. According to Home Affairs Department's "Database of Private Buildings in Hong Kong" as of April 2022, 69 out of the total of 101 building blocks within the Scheme (about 68%) are "3-nil" buildings without any management body for building management.
- 5.3 Based on the URA's Building Care Management Information System (BCMIS) as of August 2022, 24 out of the 101 buildings within the Scheme (about 24%) are of either "Poor" or "Varied" conditions. Based on the URA's experience and the consultant's advice, major repair works will be required for buildings of "Poor" or "Varied" conditions as their structural elements, components, finishes and facilities are observed in decay condition due to lack of building repairs and ongoing maintenance. Some structures on the roof of the buildings in the Scheme were suspected to be Unauthorized Building Works (UBWs).
- 5.4 77 out of the 101 buildings (about 76%) are projected as "Acceptable" to "Satisfactory" conditions, probably due to the fact that these buildings have recently completed/ carrying out rehabilitation works from 2007 to 2022. BD's records show that 67 out of 101 building blocks within the Scheme (about 66%) have completed building rehabilitation works under Operation Building Bright (OBB1.0) in the last ten years. As at August 2022, there are 73 out of 101 buildings (about 72%) in the Scheme undertaking rehabilitation works under OBB2.0. It is understood that OBB works comprise mainly repairing defects (e.g. major cracks, spalling) in common or public areas of the buildings however repair works to the interior of private units are not included. Based on URA's past experience in rehabilitation works, even buildings that have undergone such repair works / schemes need to undertake comprehensive building rehabilitation regularly in order to avoid deterioration. Appropriate building

repairs and ongoing maintenance works will be required in order to maintain the habitability and avoid further deterioration of the building.

- 5.5 Moreover, according to Buildings Department (BD)'s records as of May 2022, 53 out of 101 buildings within the Scheme (about 53%) have outstanding Fire Safety Directions (FSDN). 15 out of 101 buildings within the Scheme (about 15%) have outstanding building orders issued under S26/S26A Dangerous Buildings under Buildings Ordinance (Cap. 123). 85 out of 101 buildings within the Scheme (about 84%) have outstanding Mandatory Building Inspection notices under S30B of Cap. 123. 7 out of the 101 buildings are carrying out improvement works under Fire Safety Improvement Works Subsidy Scheme (FSWS) under Fire Safety (Buildings) Ordinance (Cap 572). 11 out of 101 buildings within the Scheme (10.9%) have outstanding S28 Drainage Repair orders of Cap. 123, implying hygiene concerns and their vulnerabilities particularly under the COVID-19 pandemic period.
- 5.6 Non-obtrusive site observations conducted in Sept 2022 found that some of the original units as shown in the approved GBPs were suspected to be sub-divided into smaller units, which will be ascertained in the Freezing Surveys.

Existing Uses

- 5.7 Based on non-obtrusive observation site observation conducted in Sept 2022, buildings within the Scheme are mainly residential in nature on the upper floors with a few are occupied by commercial uses / businesses. Commercial premises are occupying the ground floor. These commercial premises are primarily engaging in vehicle repair workshops, eateries, grocery stores and services such as property agencies and laundry services. The detailed uses of the units found within the Scheme will be verified in the Freezing Survey and reported in the SIA 2 as far as practicable.
- 5.8 The Kowloon City District Council Sitting-out Area is located at the eastern boundary of the Scheme next to the waterfront, it is situated behind buildings and of poor visibility and accessibility.

Existing Pedestrian Network

- 5.9 The Scheme is located about 15 minutes walking distance away from both the Sung Wong Toi station and To Kwa Wan station. Public transport services,

including buses and franchised buses are located in proximity of the Scheme area. Local residents of nearby residential developments would walk along the two major pedestrian corridors on To Kwa Wan Road and Ma Tau Kok Road for public transport services.

- 5.10 There are five existing road sections included in the Scheme, portion of Ma Tau Kok Road, and the whole of Ming Lun Street, Chung Sun Street, Hing Yin Street and Hing Yan Street. Except Ming Lun Street, the remaining streets are dead-end roads. The pavement areas are often occupied by on-street parking, car repairing activities, dumping and storage, resulting a congested and unpleasant walking environment.

Environmental and Hygiene Condition

- 5.11 The Scheme is envisaged to be subject to some traffic noise and air pollutants generated from the heavily trafficked road in To Kwa Wan Road.
- 5.12 Vehicle repairing activities, dumping and road-side storage are often found along the inner streets and dead-end roads, including Hing Yan Street, Hing Yin Street, Chung Sun Street, Ming Lun Street and a portion of Ma Tau Kok Road. The noise and hygiene issues caused by these on-street activities create an unpleasant environment and nuisances to pedestrians.
- 5.13 Besides, the pavement area adjoining to the Kowloon City District Council Sitting-out Area located at the eastern boundary of the Scheme is often being blocked by dumping and road side storage, utilization of this sitting-out area is relatively low due to the its unwelcoming setting and hygiene issues.

Planning Intention under Outline Zoning Plan and Planned Developments in the Vicinity

- 5.14 The Scheme is currently zoned “Comprehensive Development Area” (“CDA”) and also shown as “Road” on the Draft Kai Tak Outline Zoning Plan (OZP) No. S/K22/7. The “CDA” zone is intended for comprehensive development / redevelopment of the area for residential and/or commercial uses with the provision of waterfront promenade, open space and other supporting facilities. The “Road” zone is planned for future road widening of To Kwa Wan Road.

- 5.15 To the immediate north of the Scheme is Newport Centre Phases I and II (KC-019). As mentioned in para. 2.3 above, it forms part of the proposed holistic redevelopment with the Scheme and to be implemented under the separate To Kwa Wan Road / Ma Tau Kok Road Development Scheme (KC-019).
- 5.16 To the further north is the reserved site for development of DRE which is currently zoned Residential (Group A)6” (“R(A)6”) under the OZP. According to HKHS, about 1,101 units with commercial uses and G/IC facilities will be provided.
- 5.17 The Hong Kong Society for the Blind (HKSB) site located at the junction of To Kwa Wan Road and Mok Cheong Street will be redeveloped into a new welfare complex with a maximum building height 100mPD. According to HKSB, the demolition works will tentatively commence in 2022 and the completion is expected to be in 2025.
- 5.18 The “Lok Sin Tong Modular Social Housing Scheme”, a completed transitional housing project, is located at the proposed public housing site at the junction of Sung Wong Toi Road and To Kwa Wan Road. It is to provide affordable housing and family supporting services for low-income families that are queuing for public rental housing. According to MPC Paper No. 2/15 dated April 2015, the site will be redeveloped into one residential block of public housing. With proposed building height of 100mPD, maximum domestic plot ratio of 7.5 or plot ratio of 9.0 for a building that is partly domestic and partly non-domestic, the proposed public housing project will provide about 600 flats.
- 5.19 To the further northwest of the Scheme along Mok Cheong Street are a number of factory buildings also zoned CDA. Among these, the Freder Centre and the K.K. Industrial Building are in operation and the former sites of the Eastern Cotton Mills and Good Harvest Air Freight Centre are currently vacant. These land parcels fall within three different “CDA” sites. Planning applications (Nos. A/K10/256 and A/K10/259), submitted by different lot owners, for comprehensive residential and commercial development at the “CDA(2)” site, with maximum building height of 100mPD, covering K.K. Industrial Building and Eastern Cotton Mills, have been approved with conditions by the TPB on 27 May 2016 and 7 December 2018, respectively. According to the proposed scheme of planning application no. A/K10/259, a portion of the front facade of Eastern Cotton Mill (a Grade III historic building) will be preserved and incorporated into

the future development. Another planning application (No. A/K10/265) for comprehensive residential and commercial development at the “CDA(3)” site, with maximum building height of 100mPD, covering 7 land lots, has also been approved with conditions by the TPB on 10 September 2021.

- 5.20 Ma Tau Kok Gas Production Plant located to the west of the Scheme across To Kwa Wan Road is currently zoned as “Residential (Group A)” (“R(A)”) with a planning intention for residential use according to OZP. According to the URP prepared by KC DURF, it is recommended to explore the feasibility of relocating the gas plant in the long term.
- 5.21 To the northwest of the Scheme across To Kwa Wan Road is a cluster of tenement buildings which is known as the “13-Street area”. The area is recommended as a “Proposed Redevelopment Priority Area” under DURF. To the further north and northeast of the Scheme is the Kai Tak Development Area (KTDA), which is under construction and the land is designated for a mix of residential, commercial, tourism, community uses, sports uses supported with infrastructure facilities.

6 CULTURAL AND LOCAL CHARACTERISTICS, AND CHARACTERISTICS OF LOCAL BUSINESS ACTIVITIES

- 6.1 The Scheme is located at an older part of Ma Tau Kok / To Kwa Wan area within the Kowloon City District, and its vicinity is predominantly mixed of residential, industrial and infrastructural developments. Most of the industrial buildings in the area appeared not actively engaged in manufacturing activities but mainly used for office, storage, warehouse, workshop and showroom uses.
- 6.2 To the immediate north is Newport Centre Phases I and II which is under URA Project KC-019. Based on non-obtrusive observation conducted in April and September 2022 and the available information at the building directory, the major uses of the building appear to be office, storage, showroom, car parks and workshops.
- 6.3 To the immediate south of the Scheme is the Grand Waterfront, which comprises of a private residential estate and shopping mall named Grand Waterfront Plaza, with a number of chain stores, supermarket and shops provided in the Grand Waterfront Plaza.
- 6.4 To the northwest of the Scheme across To Kwa Wan Road is the 13-Street area. It comprises of clusters of tenement buildings with ground floor eateries, car repair shops and shops mainly selling groceries, hardware and small electronic parts. To its north across Mok Cheong Street is a string of industrial buildings. By non-obtrusive observation conducted in April 2022, no polluting industries are found operating at these industrial buildings. As mentioned in para. 5.19, some of these industrial buildings are planned for redevelopments into residential / commercial uses.
- 6.5 Based on non-obtrusive site visits conducted in April and Sept 2022, about 103 shops were identified at ground floor of the Scheme area. Uses of the shops are observed mainly to be vehicle repair workshops, workshops, eateries, grocery stores and services such as property agency and laundry service. Several shops were unidentified and suspected vacant, as they were closed during several attempts of site visits. The addresses and business nature of the shops are listed in **Table 6.1** below. The exact number of non-domestic operators, details and nature of the businesses within the Scheme will be verified in the Freezing Survey upon commencement of the Scheme and reported in the Stage 2 SIA.

Table 6.1 Ground Floor Business Activities within the Scheme

	Address	Current Use*
1.	1 Hing Yan Street	Vehicle Repair Workshop
2.	3 Hing Yan Street	Vehicle Repair Workshop
3.	5 Hing Yan Street	(Unidentified)
4.	7 Hing Yan Street	Vehicle Repair Workshop
5.	9 Hing Yan Street	(Unidentified)
6.	11 Hing Yan Street	(Unidentified)
7.	13 Hing Yan Street	(Unidentified)
8.	15 Hing Yan Street	(Unidentified)
9.	17 Hing Yan Street	Vehicle Repair Workshop
10.	19 Hing Yan Street	(Unidentified)
11.	21 Hing Yan Street	(Unidentified)
12.	23 Hing Yan Street	Vehicle Repair Workshop
13.	25 Hing Yan Street	Vehicle Repair Workshop
14.	27 Hing Yan Street	(Unidentified)
15.	29 Hing Yan Street	(Unidentified)
16.	31 Hing Yan Street	Vehicle Repair Workshop
17.	2 Hing Yan Street	Vehicle Repair Workshop
18.	4 Hing Yan Street	Vehicle Repair Workshop
19.	6 Hing Yan Street	Kitchenware Store
20.	8 Hing Yan Street	(Unidentified)
21.	10 Hing Yan Street	Vehicle Repair Workshop
22.	12 Hing Yan Street	Vehicle Repair Workshop
23.	14 Hing Yan Street	(Unidentified)
24.	16 Hing Yan Street	Vehicle Repair and Machinery Workshop
25.	1 Hing Yin Street	Vehicle Repair Workshop
26.	3 Hing Yin Street	(Unidentified)
27.	5 Hing Yin Street	(Unidentified)
28.	7 Hing Yin Street	Vehicle Repair Workshop
29.	9 Hing Yin Street	Workshop
30.	11 Hing Yin Street	Vehicle Repair Workshop
31.	13 Hing Yin Street	(Unidentified)
32.	15 Hing Yin Street	(Unidentified)
33.		(Unidentified)
34.		Air Conditioning Engineering
35.	2 Hing Yin Street	Vehicle Repair Workshop
36.	4 Hing Yin Street	(Unidentified)
37.	6 Hing Yin Street	Vehicle Repair Workshop
38.	8 Hing Yin Street	(Unidentified)
39.	10 Hing Yin Street	Vehicle Repair Workshop
40.	12 Hing Yin Street	Trademark Company
41.	14 Hing Yin Street	Interior Design and Renovation
42.	16 Hing Yin Street	Car Accessories
43.	1 Chung Sun Street	Vehicle Repair Workshop / Car Accessories
44.	3 Chung Sun Street	(Unidentified)
45.	5 Chung Sun Street	(Unidentified)
46.	7 Chung Sun Street	Vehicle Repair Workshop
47.	9 Chung Sun Street	Vehicle Repair Workshop
48.	11 Chung Sun Street	Vehicle Repair Workshop
49.	13 Chung Sun Street	Vehicle Repair Workshop

50.	15 Chung Sun Street	Vehicle Repair Workshop
51.	91 Ma Tau Kok Road	Eatery
52.	93 Ma Tau Kok Road	Car Accessories
53.	95 Ma Tau Kok Road	Massage Establishment
54.	97 Ma Tau Kok Road	Vehicle Repair Workshop / Car Accessories
	99 Ma Tau Kok Road	
55.	101 Ma Tau Kok Road	Decoration and Painting
56.	103 Ma Tau Kok Road	Car Accessories
57.	105 Ma Tau Kok Road	Kitchenware Store / Office
58.	107 Ma Tau Kok Road	Vehicle Repair Workshop
59.	109 Ma Tau Kok Road	(Unidentified)
60.	111 Ma Tau Kok Road	Printing and Design
61.	113 Ma Tau Kok Road	Logistics
62.	1 Ming Lun Street	(Suspected Vacant)
63.	3 Ming Lun Street	Vehicle Repair Workshop
64.	5 Ming Lun Street	(Unidentified)
65.	7 Ming Lun Street	Vehicle Repair Workshop
66.	9 Ming Lun Street	Vehicle Repair Workshop
67.	11 Ming Lun Street	Vehicle Repair Workshop
68.	13 Ming Lun Street	Workshop
69.	15 Ming Lun Street	Air Conditioning Engineering
70.	17 Ming Lun Street	Vehicle Repair Workshop
71.	19 Ming Lun Street	Vehicle Repair Workshop
72.	21 Ming Lun Street	Vehicle Repair Workshop
73.	23 Ming Lun Street	Storage
74.	25 Ming Lun Street	(Unidentified)
75.	2 Ming Lun Street	(Suspected Vacant)
76.	4 Ming Lun Street	Vehicle Repair Workshop
77.	6 Ming Lun Street	Grocery Store
78.	8 Ming Lun Street	Vehicle Repair Workshop
79.	10 Ming Lun Street	Vehicle Repair Workshop
80.	12 Ming Lun Street	Vehicle Repair Workshop
81.	14 Ming Lun Street	Vehicle Repair Workshop
82.	16 Ming Lun Street	Vehicle Repair Workshop
83.	18 Ming Lun Street	Machinery Workshop
84.	20 Ming Lun Street	Vehicle Repair Workshop
85.	22 Ming Lun Street	Vehicle Repair Workshop
86.	24 Ming Lun Street	Vehicle Repair Workshop
87.	26 Ming Lun Street	Vehicle Repair Workshop
88.	28 Ming Lun Street	Vehicle Repair Workshop
89.	2A Ming Lun Street	Property Agency
90.		(Suspected Vacant)
91.	4A Ming Lun Street	Pet Shop
92.	6A Ming Lun Street	Eatery
93.	8A Ming Lun Street	Laundry Service
94.	10A Ming Lun Street	Grocery Store
95.	12A Ming Lun Street	(Unidentified)
96.	14A Ming Lun Street	Property Agency
97.	16A Ming Lun Street	Engineering Services
98.	18A Ming Lun Street	(Unidentified)
99.	20A Ming Lun Street	(Unidentified)
100.	22A Ming Lun Street	Brush Pen Museum
101.	24A Ming Lun Street	(Unidentified)

102.	26A Ming Lun Street	Brush Pen Workshop / Divination Services
103.	28A Ming Lun Street	Vehicle Repair Workshop

(Based on site visits conducted in April and Sept 2022)

** Nature / details of business activities are subject to FS and Stage 2 SIA*

7 RECREATIONAL, AMENITY AND COMMUNITY AND WELFARE FACILITIES

- 7.1 **Figure 7.1** shows the locations of various existing public open spaces, and government, institution and community (GIC) facilities within the 500m radius area of the Scheme. There are a number of public open spaces near the Scheme Area, the closest being Cattle Depot Art Park located to the west, To Kwa Wan Recreation Ground and To Kwa Wan Sports Centre located to the southwest, and Hoi Sham Park to the further south of the Scheme.
- 7.2 A number of planned public open spaces are within the 500m radius from the Scheme. The Kai Tak Sports Park located to the north of the Scheme area is currently under construction with target completion in 2023. With an area of around 28 hectares, the Sports Park will provide a wide variety of sports and leisure facilities to be enjoyed by the public. To the north of the Scheme area at the cove of Ma Tau Kok in between the DRE site and the Sports Park is zoned as “Open Space” (“O”) on the OZP, with an intention to complement the Dining Cove with food and beverage uses for creating a vibrant waterfront environment and unique dining experience. To the south of the Scheme area along the waterfront is also zoned as “O” on the OZP for optimising pedestrian and waterfront environment, as well as for future extension of cycle track network, the GreenWay Network.
- 7.3 Major GIC facilities within 500m radius of the Scheme include the HKSB and the To Kwa Wan Market and Government Offices. There are also a number of educational facilities, mainly primary schools within 500m of the Scheme.
- 7.4 For existing social welfare facilities and services (refer to **Table 7.1**), family and child welfare services, social security field units, services for the elderly, rehabilitation and medical social services, etc. and services for offenders are found in close proximity to the Scheme.
- 7.5 About 1,000 sq.m. non-domestic GFA will be reserved in the podium of the proposed Scheme for appropriate community uses to meet community needs, subject to consultation with relevant Government departments, views from local stakeholders and KCDC.

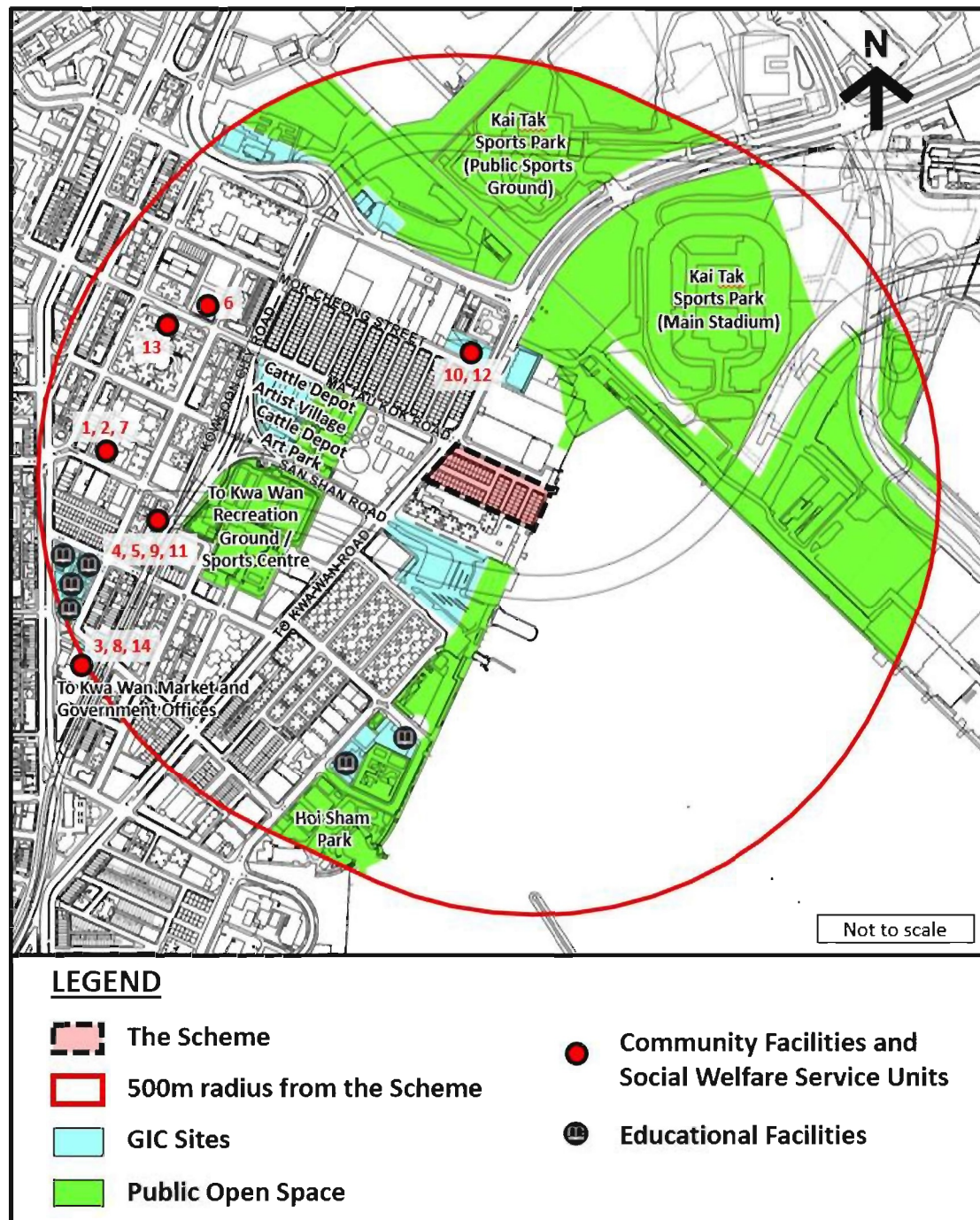


Figure 7.1 Existing Community Facilities, Amenity, and Social Welfare Service Units within 500m Radius from the Scheme

Source: Social Welfare Department's website: Local District Service Profile: Welfare Service Units Managed or Funded by Social Welfare Department (Kowloon City) as of May 2022.

Table 7.1 Community Facilities and Social Welfare Service Units within 500m Radius from the Scheme

Community Facility / Service Unit	Operator	Address
A. Family and Child welfare		
<i>Integrated Family Service Centre</i>		
1. Kai Tak Integrated Family Service Centre	Social Welfare Department	Unit 3, 2/F, Chung Hwa Plaza, 5B-5F Ma Hang Chung Road, To Kwa Wan, Kowloon
2. Ma Tau Wai Integrated Family Service Centre	Social Welfare Department	Unit 3, 2/F, Chung Hwa Plaza, 5B-5F Ma Hang Chung Road, To Kwa Wan, Kowloon
3. To Kwa Wan Integrated Family Service Centre	Social Welfare Department	Unit 903, 9/F, Tokwawan Government Offices, 165 Ma Tau Wai Road, Kowloon
<i>Extended Hours Service</i>		
4. Sik Sik Yuen - Ho Oi Day Nursery (EHS)	Sik Sik Yuen	Shop 1A, 1B 2A & 2B, G/F, Harmony Garden, No. 55-61 Kowloon City Road, Kowloon City, Kowloon
<i>Occasional Child Care Service</i>		
5. Sik Sik Yuen - Ho Oi Day Nursery (OCCS)	Sik Sik Yuen	Shop 1A, 1B 2A & 2B, G/F, Harmony Garden, No. 55-61 Kowloon City Road, Kowloon City, Kowloon
B. Social Security		
<i>Integrated Employment Assistance Programme for Self-reliance</i>		
6. Hong Kong Lutheran Social Service, the Lutheran Church - Hong Kong Synod Limited - Integrated Employment Assistance Programme for Self-reliance	Hong Kong Lutheran Social Service, the Lutheran Church - Hong Kong Synod Limited	Room A103,A108,A109, 8/F, Tung Nam Factory Building, 40 Ma Tau Kok Road, To Kwa Wan, Kowloon
<i>Social Security Field Units</i>		
7. Kowloon City Social Security Field Unit	Social Welfare Department	Unit 2, 2/F, Chung Hwa Plaza, 5B-5F Ma Hang Chung Road, To Kwa Wan, Kowloon
8. To Kwa Wan Social Security Field Unit	Social Welfare Department	7/F, To Kwa Wan Government Offices, 165 Ma Tau Wai Road, Kowloon City, Kowloon
C. Services for the Elderly		
<i>Neighbourhood Elderly Centre</i>		
9. Hong Kong Family Welfare Society - Kowloon City Centre for Active Ageing	Hong Kong Family Welfare Society	1/F, Block 2, Harmony Garden, 55-61 Kowloon City Road, To Kwa Wan, Kowloon
D. Rehabilitation and Medical Social Services		
<i>Care and Attention Home for the Aged Blind</i>		

Community Facility / Service Unit	Operator	Address
10. Hong Kong Society for the Blind (The) - Bradbury Care and Attention Home for the Aged Blind	Hong Kong Society for the Blind (The)	19 Mok Cheong Street, To Kwa Wan, Kowloon
<i>Integrated Programme in Kindergarten-cum-Child Care Centre</i>		
11. Sik Sik Yuen - Ho Oi Day Nursery (IP)	Sik Sik Yuen	Shop 1A, 1B 2A & 2B, G/F, Harmony Garden, No. 55-61 Kowloon City Road, Kowloon City, Kowloon
<i>Sheltered Workshops</i>		
12. Hong Kong Society for the Blind (The) - Factory for the Blind	Hong Kong Society for the Blind (The)	19 Mok Cheong Street, To Kwa Wan, Kowloon
13. Hong Chi Association - Ma Tau Kok Workshop	Hong Chi Association	Podium 2, Jubilant Place, 33 Ma Tau Kok Road, To Kwa Wan, Kowloon
E. Services for Offenders		
<i>Probation and Community Service Orders Office</i>		
14. Kowloon City Probation and Community Service Orders Office (2)	Social Welfare Department	11/F, To Kwa Wan Government Offices, 165 Ma Tau Wai Road, Kowloon City, Kowloon

Source: Social Welfare Department's website: Local District Service Profile: Welfare Service Units Managed or Funded by Social Welfare Department (Kowloon City) as of May 2022.

8 INITIAL ASSESSMENT OF POTENTIAL SOCIAL IMPACT, AND MITIGATION MEASURES

Potential Social Impact

- 8.1 The Scheme is estimated to affect 1,414 households, with 2,970 residents. About 100 shops were identified in the Scheme during site visits. Based on non-obtrusive observation, there are some original units appeared to be sub-divided into smaller units (sub-divided units / cubicles). The exact number of affected residents and shop operators will be verified in the Stage 2 SIA.
- 8.2 The Scheme, if implemented, will inevitably affect the domestic and non-domestic occupants within the Scheme. The FS and SIA Questionnaire will help identifying needy cases such as households with single elderly, elderly couples, family members with disability or new immigrants worried about the impact of redevelopment on employment, living expenses and social network etc. The Social Service Team (SST) commissioned by the Urban Renewal Fund (URF) is expected to provide assistance to those in need. This SST is independent of the URA and it will directly report to the Board of the URF.

Mitigation Measures

- 8.3 Affected owners would receive an acquisition offer from URA according to the prevailing URA Acquisition Policies. For affected tenanted households, rehousing or ex-gratia allowance would be offered. The URA will arrange briefing session(s) / recording video(s) to the owners and tenants to explain the URA acquisition, rehousing and ex-gratia allowance policies. An in-house URA engagement team will visit the affected owners and tenants accordingly as to care for those who are unclear about the URA's policies and require any other assistance.
- 8.4 If affected residents and/or business operators are not clear about the URA acquisition, rehousing and ex-gratia allowance policies or future arrangement, the SST will endeavour to clarify their doubts with full support from the URA. If the affected residents and/or business operators are ethnic minorities who are not familiar with Chinese or English languages, the URA will arrange translation services as far as practicable to alleviate their concerns on the redevelopment.

- 8.5 In handling problems related to different kinds of livelihood problems, the SST, apart from offering counselling, will mobilise different community resources to liaise closely with Government departments and work with the URA to resolve the residents' and operators' problems and reduce their anxiety. The SST will also provide orientation assistance for those in needs after moving home such as familiarisation with new neighbourhood, accommodation and local facilities.
- 8.6 For the vulnerable groups (including the elderly, disabled and single parent families), arrangements for assistance such as child care/ foster services, domestic help services, etc. offered by the Social Welfare Department, and other social service agencies would be made. For the low-income households, arrangement could be made with the Hong Kong Housing Authority or the Hong Kong Housing Society on public rental housing allocation if they are eligible. Domestic tenants who do not fulfil the rehousing eligibility criteria maybe re-housed on compassionate grounds if they have genuine hardship arising from factors such as health, disability or special family circumstances.
- 8.7 If the Scheme is to be implemented, the URA will ensure the construction works follow and fulfil the mitigation measures and practices as stipulated by Environmental Protection Department (EPD) for construction site. Appropriate measures will be proposed to mitigate potential noise and dust impact during the construction phase of the Scheme.

Acquisition & Rehousing Policies for Domestic Premises

- 8.8 The URA will offer an owner of domestic property the market value of his/her property plus the applicable allowances for domestic properties such as Home Purchase Allowance (HPA), Supplementary Allowance (SA), incidental cost allowance and allowance for vacant property for purchase of his/her property.
- 8.9 The URA may also offer "flat-for-flat" (FFF) (subject to any changes in the relevant legislations or Urban Renewal Strategy) in a URA new development in-situ or in the same district or at available site(s) (as URA may select for the purpose provided that necessary approval / authorization has been obtained at the time of FFF offer), as an additional choice to cash acquisition offers to eligible owner-occupiers of domestic units. The amount of cash compensation and allowance offered to an owner-occupier will not be changed by his/her

- choice of using that amount, or part of it, to join the flat-for-flat arrangement or otherwise.
- 8.10 According to the new URS, the URA will offer an allowance to eligible elderly owners of tenanted domestic properties on compassionate ground in exceptional circumstances such as elderly owners who rely on the rental income from their properties for a living.
- 8.11 Eligible domestic tenants affected by URA's redevelopment projects are provided with rehousing to public housing, if eligible, or units at URA's rehousing blocks, subject to meeting URA's requirements, or the applicable allowance.
- 8.12 The URA has also introduced the "Domestic Tenants Compassionate Assistance Programme" to take care of those domestic tenants whose tenancies commenced before the FS of this Scheme and moved out from the properties because they have been required to move out from their properties by their landlords upon expiry or termination of their tenancies and before URA purchases the properties. In general, eligible domestic tenants who meet the criteria under this programme will be offered special allowance or special rehousing such as public housing, if eligible, or units at URA's rehousing blocks, subject to meeting URA's requirements.

Acquisition Policies and Allowances for Non-Domestic Premises

- 8.13 The URA will offer an owner of non-domestic property the market value of his/her property plus the applicable allowances for non-domestic properties. For owner-occupied non-domestic premises, an allowance of 4 times the rateable value or 35% of the market value of the affected property, whichever is the higher, an Ex-gratia Business Allowance (EGBA) and an incidental cost allowance will be offered; the owner-occupiers may alternatively lodge a claim for business loss in lieu of the allowances. For owners of tenanted or vacant non-domestic properties, an allowance of 1 time the rateable value or 10% of the market value of the affected property, whichever is the higher and incidental cost allowance will be offered. In addition, the owners of vacant non-domestic properties will be offered an allowance for vacant property at 2 times the rateable value, subject to meeting certain criteria.
- 8.14 For non-domestic tenants of non-domestic premises, an allowance of 3 times the rateable value of the affected premises or an allowance equals to the

prevailing ex-gratia allowance offered by the Lands Department on resumption by the Government, whichever is higher will be offered. An additional payment of EGBA is also payable to tenants who commenced occupying the premises for business before the date of FS. Those non-domestic tenant-operators who have occupied the properties before FS and are evicted by their landlords before acquisition of the properties by the URA, can apply for the Special EGBA. The minimum payment of EGBA will be subject to annual review.

- 8.15 According to the new URS, if requested, the URA will help identify suitable premises in the district of the redevelopment projects to enable the affected shop operators to relocate and continue operation in the same district as far as practicable.

Review of Measures and Policies

- 8.16 The acquisition, rehousing and ex-gratia allowance policies are subject to prevailing policies at the time of issuing acquisition policies. The policies are published on the URA's website and will be communicated to affected persons when acquisition of property interests for this Scheme commences. Prevailing policies relating to property acquisition, rehousing and ex-gratia allowances will be reviewed by the URA from time to time.
- 8.17 The Stage 2 SIA to be conducted after the FS will further assess the impact of the Scheme in detail on both domestic and non-domestic occupants and propose mitigation measures. It may also be able to highlight the psychological stress and worry for some of the affected within the Scheme. Special measures may have to be adopted under exceptional circumstances.

9 CONCLUSION

- 9.1 The local community and the surrounding neighbourhoods are likely to experience gains and losses due to the proposed redevelopment. Residents, business operators and their employees within the Scheme will be affected in different ways and to various degrees depending on their particular circumstances. Those who currently live in overcrowded or poor building condition within the Scheme may welcome the opportunity to improve their living environment through cash compensation or rehousing if eligible; whilst others (e.g. some business operators) may prefer to remain un-disturbed and maintain the status quo. The various degrees of concerns and social impacts to the affected residents, business operators and their employees within the Scheme will be assessed in the Stage 2 SIA in detail.
- 9.2 For non-domestic uses, a number of ground floor shops are witnessed in the Scheme, whereas the upper floor non-domestic uses, if any, are to be recorded in the FS upon commencement of the Scheme under section 23 of the URAO. The needs of the affected non-domestic occupants will be assessed in the Stage 2 SIA.
- 9.3 This Stage 1 SIA study provides a general profile of the Scheme and the surrounding area. Based on URA's experience of similar scale and context of redevelopment projects, it can be expected that there will be some sharing of living quarters and a relatively low average household income for those within the Scheme. The assumptions in this report will be verified by the Stage 2 SIA to be carried out after the FS. The Stage 2 SIA will assess needs of the affected households and operators and to propose appropriate mitigation measures to minimise major adverse social impact, if any.

Appendix 3b

KC-019 Social Impact Assessment

(Stage 1) Report



Urban Renewal Authority Development Scheme

Prepared under Section 25 (3) of the Urban Renewal Authority Ordinance

To Kwa Wan Road / Ma Tau Kok Road (KC-019)

Stage 1 Social Impact Assessment
October 2022

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1 INTRODUCTION

1.1 According to the Urban Renewal Strategy (URS) issued by the Government in February 2011, the Urban Renewal Authority (URA) will carry out Social Impact Assessment (SIA) studies in the form of “a *Stage 1 social impact assessment before the publication of any proposed redevelopment project in the Government Gazette*”, and “a *Stage 2 social impact assessment after the proposed project has been published in the Government Gazette*”. This Stage 1 SIA is prepared by the URA **for the proposed To Kwa Wan Road / Ma Tau Kok Road Development Scheme KC-019 (the Scheme)**.

1.2 The URS also states “*Early social impact assessments will be initiated and conducted by District Urban Renewal Forum (DURF) before redevelopment is recommended as the preferred option. The URA will update these assessments by DURF before implementing any specific redevelopment project.*” As the Scheme falls within the study area of Kowloon City District Urban Renewal Forum (“KC DURF”), consultants for the KC DURF had completed a DURF SIA report of the Urban Renewal Plan (URP) for Kowloon City in 2014. This Stage 1 SIA report is prepared with reference to the DURF SIA, where appropriate.

1.3 According to the URS, the main elements of the Stage 1 SIA conducted by the URA before the publication of a proposed project should include:

- the population characteristics of the area;
- the socio-economic characteristics of the area;
- the housing conditions in the area;
- the characteristics of local business activities, including small shops and street stalls;
- the degree of overcrowding in the area;
- the availability of amenities, community and welfare facilities in the area;
- the historical background of the area;
- the cultural and local characteristics of the area;

- an initial assessment of the potential social impact of the proposed project; and
 - an initial assessment of the mitigation measures required.
- 1.4 The Stage 2 SIA will be conducted after the publication of the Scheme based on the factual information collected in the Freezing Survey (FS) upon project commencement. The URS stipulates the URA should submit both Stage 1 and Stage 2 SIA reports to the Town Planning Board (TPB) under Section 25 of the Urban Renewal Authority Ordinance (URAO), and should release the reports for public information.

2 THE PROJECT BACKGROUND

- 2.1 The To Kwa Wan Road / Ma Tau Kok Road Development Scheme (KC-019) (the Scheme) is located in To Kwa Wan of Kowloon City (KC) District, which is bounded by the Hong Kong Housing Society's (HKHS) reserved site for development of dedicated rehousing estate (DRE) in the north, Ma Tau Kok waterfront in the east, Ma Tau Kok Road in the south and To Kwa Wan Road in the west (**Figure 2.1** refers).
- 2.2 The Scheme covers Newport Centre Phases I and II, located at Nos. 116-118 Ma Tau Kok Road (even nos.), portion of Ma Tau Kok Road, adjoining Government land and the surrounding public pavement. The total gross site area of the Scheme is about 8,759 sq.m. Subject to site survey and detailed design, the net site area for Plot Ratio (PR) calculation is about 7,816 sq.m.
- 2.3 The Scheme forms part of the proposed holistic redevelopment with the adjoining land parcels at Ming Lun Street / Ma Tau Kok Road which will be implemented under the separate Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018). A separate Stage 1 SIA has been prepared for Ming Lun Street / Ma Tau Kok Road Development Scheme KC-018.

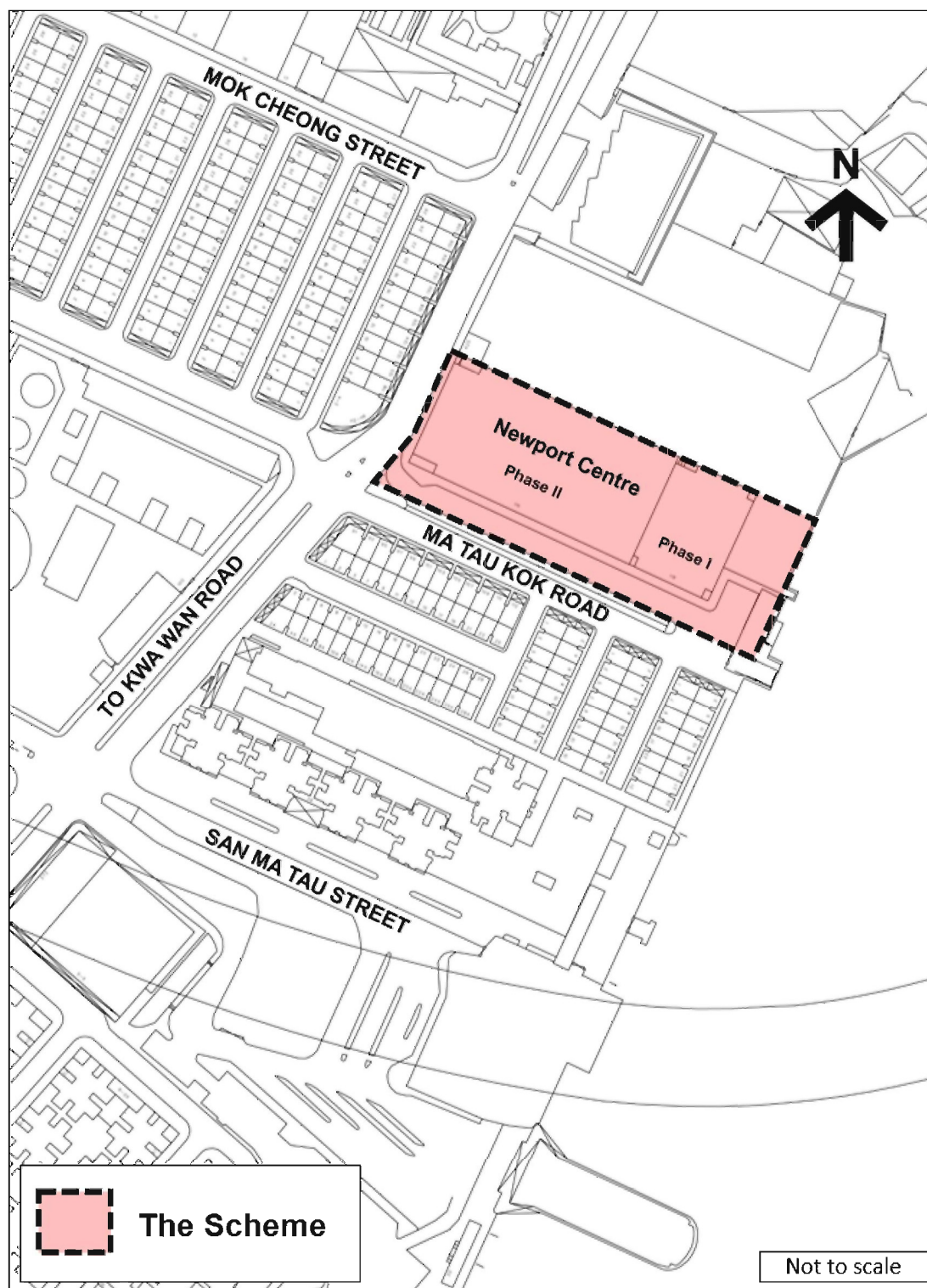


Figure 2.1 Location Plan

Planning Objectives

2.4 The Scheme, together with the adjoining Ming Lun Street / Ma Tau Kok Road Development Scheme KC-018, aims to rationalize land use by adopting an integrated planning-led approach for holistic planning of the area to enable more efficient land use and to bring planning gains to the local community. The URS issued in 2011 promulgates a comprehensive and holistic approach to carry out urban renewal with the following objectives:

- Restructuring and re-planning of concerned urban areas;
- Designing more effective and environmentally-friendly local transport and road networks within the concerned urban areas;
- Rationalising land uses within the concerned urban areas;
- Redeveloping dilapidated buildings into new buildings of modern standard and environmentally-friendly design;
- Providing more open space and community / welfare facilities; and
- Enhancing the townscape with attractive landscape and urban design.

2.5 The Scheme falls within the “5-Street” area of the “5-Street” and “13 Street” area, To Kwa Wan as defined in the Urban Renewal Plan (URP) prepared by KC DURF. Under the URP of KC DURF, the area is recommended as “*Redevelopment Priority Area*”. DURF recommended to sub-divide the “Comprehensive Development Area (CDA)” site at “5-Street” into two portions based on the existing residential building portion and the industrial / commercial building portion. The Scheme, being a redevelopment project, is tally with the recommendations of KC DURF.

2.6 To achieve the objectives in URS and to address the recommendations of KC DURF as well as public aspirations and views from local stakeholders to expedite the redevelopment of the area, the Scheme will include the following key proposals:

- i. Under a planning-led approach, the Scheme aim to rationalize land use for holistic planning of the area to enable more efficient land use and to bring planning gains to the local community. The Scheme will

optimise the land uses into the long-awaited comprehensive designed waterfront developments fitting in with the redevelopment intention of the Ma Tau Kok waterfront area. A 20m-wide waterfront promenade is provided at the eastern boundary of the Scheme along the waterfront for public enjoyment. The proposed waterfront promenade will be connecting with the adjoining planned waterfront promenade / waterfront developments at the Kai Tak Development Area (KTDA) in the northeast, thus enabling a continuous waterfront at the Kowloon East area and helping the Government to achieve its vision in shaping the Victoria Harbour as a world-class asset for public enjoyment.

- ii. To promote vibrancy, a 2-storeys commercial belt abutting the waterfront promenade is provided. In addition, an at grade open-air central waterfront plaza with not less than 25m wide will be provided between the Scheme and the adjoining Ming Lun Street / Ma Tau Kok Road Development Scheme KC-018, serving as a focal point for gathering and place-making opportunities. It will be connected to the proposed commercial belt and waterfront promenade to bring in vibrancy and strengthen the east-west pedestrian connectivity.
- iii. Through restructuring and re-planning of existing land uses, buildings of the proposed developments will be setback from To Kwa Wan Road to allow sufficient space to align with Government's planned road widening works of the existing To Kwa Wan Road from a single carriageway four-lane road to a dual carriageway three-lane road. Detailed design and implementation programme of the planned road widening will be subject to the local views and agreement from relevant Government departments.
- iv. Under the current notional design, it is proposed to provide not less than 500sq.m. non-domestic GFA for "Government, Institution or Community" ("GIC") facilities within the Scheme to meet the

community's needs and to align with the "Single site, Multiple Use" model promoted by the Government and enhance planning gains.

- 2.7 In addition to the proposed redevelopment under the Scheme, URA will explore the possibility to revitalize the adjoining abandoned Government's pier structure/landing steps located outside the Scheme boundary as well as to provide footbridge connection over To Kwa Wan Road to enhance pedestrian connectivity under separate revitalization urban renewal initiatives, subject to further study and liaison with relevant Government departments.

URA Projects in the Vicinity

- 2.8 The Scheme is located close to various completed and on-going URA projects in the To Kwa Wan area (See **Figure 2.2**). To the immediate south of the Scheme is the Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018) which is commenced on the same day as the Scheme.
- 2.9 A number of completed URA's projects can be found to the further west and southeast of the Scheme. These projects include the Pak Tai Street / Mok Cheong Street Development Project (named "My Place"), Pak Tai Street / San Shan Road Project (named "Downtown 38") and San Shan Road / Pau Chung Street Project (named "93 Pau Chung Street"), Kowloon City Road / Sheung Heung Road Development Project (KC-007) (named "Artisan Garden"), Chi Kiang Street / Ha Heung Road Development Project (TKW/1/001) (named "City Hub").
- 2.10 To the further southeast of the Scheme, the area in the vicinity of Wing Kwong Street of To Kwa Wan was being identified by URA as the Kowloon City Action Area 1 (KCAA1) for holistic planning of urban renewal works. A total of eight-projects were commenced in the KCAA1 area in recent years, forming a cluster of URA's redevelopment projects of the existing tenement buildings concentrated in the area. These projects include:

- Bailey Street / Wing Kwong Street Development Project (KC-009)
- Hung Fook Street / Ngan Hon Street Development Scheme (KC-010)
- Kai Ming Street Demand-Led Redevelopment Project (DL-8:KC)
- Hung Fook Street / Kai Ming Street Development Project (KC-011)
- Wing Kwong Street Development Project (KC-012)
- Kai Ming Street / Wing Kwong Street Development Project (KC-013)
- Wing Kwong Street / Sung On Street Development Project (KC-014)
- To Kwa Wan Road / Wing Kwong Street Development Scheme (KC-016)

2.11 On-going URA's projects also include the Shing Tak Street / Ma Tau Chung Road Development Project (CBS-1: KC), which was approved by Secretary for Development in June 2021 and the Kau Pui Lung Road / Chi Kiang Street Development Scheme (CBS-2:KC) which is currently under planning.

2.12 The Scheme, which forms part of holistic planning approach, will continue to contribute as a vital part of the comprehensive urban renewal of this part of Kowloon City District.

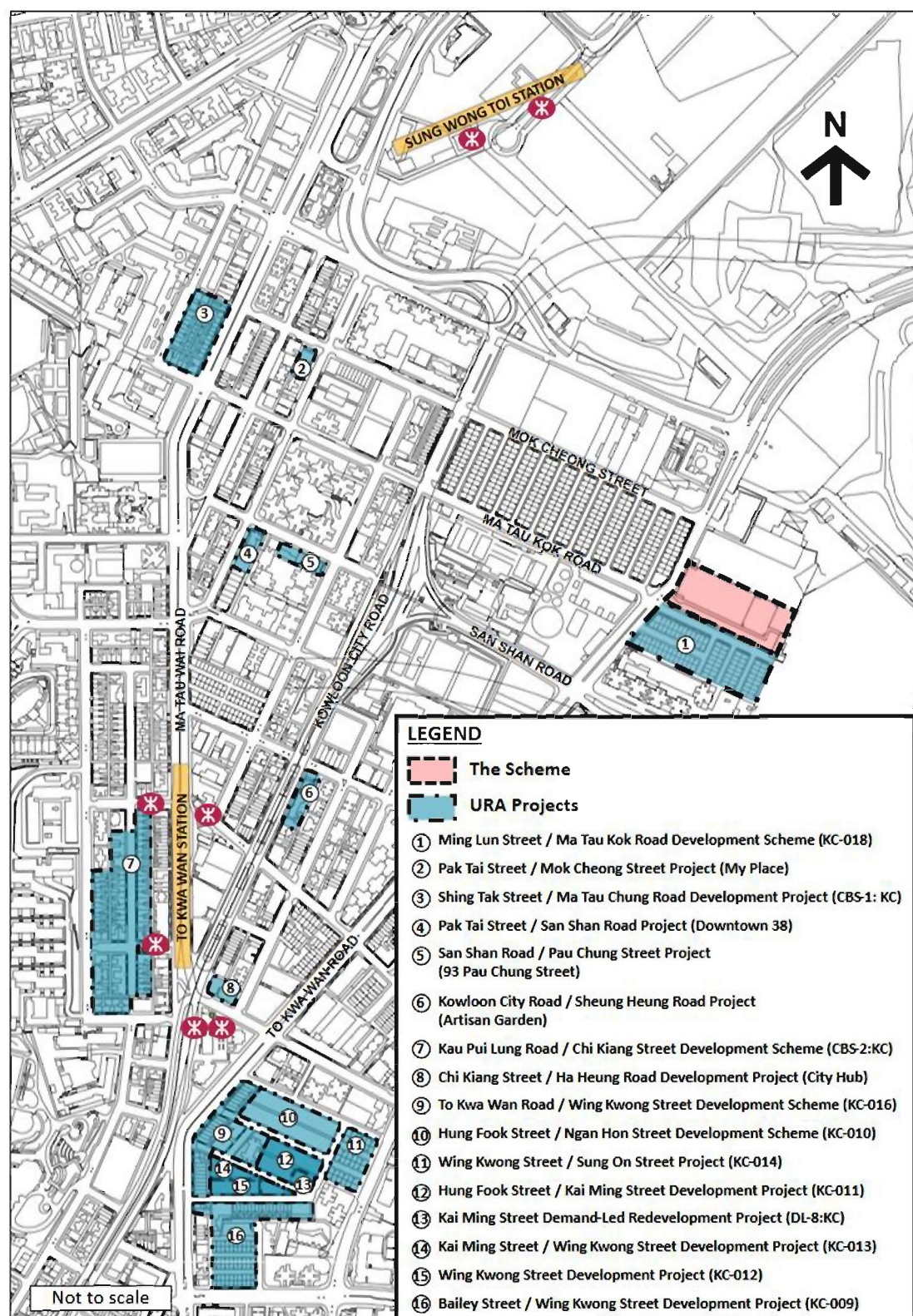


Figure 2.2 URA Projects in the Vicinity

3 HISTORICAL BACKGROUND AND LOCAL CHARACTERISTICS

Historical Background

- 3.1 Before the 1890s, To Kwa Wan was a bay lined by beaches and mud-flats with a stream originated from the hinterland named Ma Tau Chung where flowed closely along the existing Ma Hang Chung Road. The headland to the north of the bay is Ma Tau Kok, which might be named after the long pier of Kowloon Walled City nearby. A string of agricultural and stone-cutter villages along the coast of To Kwa Wan Bay sharing the name of To Kwa Wan Village was believed to be the largest village in the Hung Hom and To Kwa Wan area. Quarrying became active in the mid-18th century that Quarry Hill and San Shan (new quarry) Road were believed to commemorate these activities.
- 3.2 After the reclamation undertaken in the 1890s, To Kwa Wan started being developed by industrial activities extended from Hung Hom and the ex-Whampoa Docks. Streets including Mok Cheong (timber factory) Street and Pau Cheung (firecracker) Street were believed to commemorate the factory development in the early 20th century.
- 3.3 The second large-scale reclamation of To Kwa Wan started in the 1950s while industrial activities in Kowloon became more prosperous. The Schemes and its vicinity became inland and were then transformed into a mixture of residential developments and industrial uses including manufacturing, vehicular-repairing, weaving, bleaching and dyeing, printing and electroplating. Today, industrial buildings still scatter along roads/streets within the area.
- 3.4 **Figure 3.1** shows the locations of places with historical background identified and local characters in this part of To Kwa Wan.

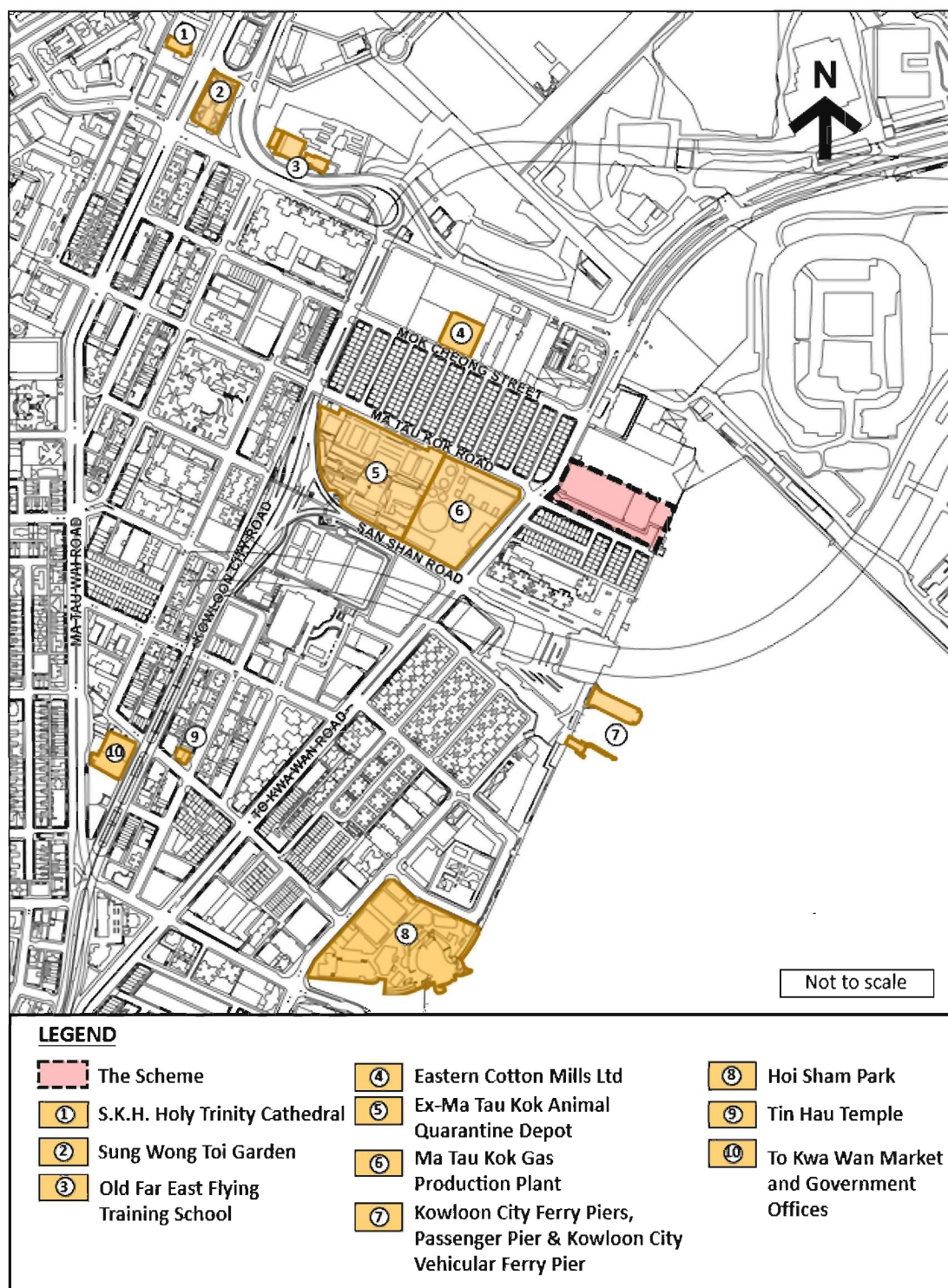


Figure 3.1 Places with Historical Background and Local Characters in To Kwa Wan

Source: KC DURF's URP and Geographic Information System on Hong Kong Heritage, as of June 2022.

Ex-Ma Tau Kok Animal Quarantine Depot

- 3.5 The ex-Ma Tau Kok Animal Quarantine Depot (commonly known as the “Cattle Depot”) located at the further west of the Scheme was originally located in Hung Hom, which was moved to Ma Tau Kok due to the construction of Kowloon–Canton Railway and was built in 1908. It was owned by the Government and was used as a cattle quarantine and slaughter centre for more than 90 years. In 1999, the Cattle Depot was ceased operation due to expressed concerns by the neighbouring residents about hygiene problems. The Cattle Depot was renovated and developed into an artist village in 2001, and is now home of around 20 art groups. Under the “Revitalisation of the Rear Portion of the Cattle Depot” project proposed by the Kowloon City District Council (KCDC), the Cattle Depot Art Park provides a venue for recreational purpose and community art promotion. The Cattle Depot Art Park inherits the elements of its history as a cattle depot, the ex-Ma Tau Kok Animal Quarantine Depot is classified as Grade II historic building by the Antiquities Advisory Board (AAB).

Ma Tau Kok Gas Production Plant

- 3.6 The Ma Tau Kok Gas Production Plant (South Plant) was originally built in the 1930s at the location just south of KC-018. In the 1956, with the growing demand due to the increasing industrial activities it was then expanded to the other side of To Kwa Wan Road, namely the North Plant at its current location. The South Plant operates until 1994, and was subsequently redeveloped into a comprehensive residential development (named “Grand Waterfront”) in early 2000’s while the North Plant remains in operation till now but serve as a backup facility only. According to the website of The Hong Kong and China Gas Company Limited (Towngas), “In Hong Kong, town gas is produced at two production plants. Over 98% is supplied from the Tai Po Plant, with the Ma Tau Kok Plant making up the rest”.

Kowloon City Ferry Piers, Passenger Pier & Kowloon City Vehicular Ferry Pier

- 3.7 Along the coastline of To Kwa Wan, the Passenger Pier and Vehicular Pier were completed in 1956 and 1965, witnessing the development of transportation and eastern Kowloon in the second half of the 20th century. The Passenger Pier was the first of its kind built in Hong Kong's urban areas after the World War II, with no notable or significant alterations made since its completion. Together with the adjacent bus terminus and car park, the Passenger Pier formed a public transport interchange serving commuters between the two sides of the Victoria Harbour, to various parts of the city and the former Kai Tak Airport. The Vehicular Pier was built to the typical design of vehicular Ferry piers in the 1950s to ease the demand of cross harbour vehicular ferry service in Central, and is one of the four vehicular ferry piers remaining in Hong Kong. The Passenger Pier and the Vehicular Ferry Pier have been graded the Grade II status by the AAB.

Themed Walking Trail of KC DURF

- 3.8 The URP of KC DURF has proposed a "Themed Walking Trail" to strengthen and highlight the historic and cultural characters of the district. The trail is sub-divided into four sub-trails in accordance with its characters, aiming to attract potential visitors and create a distinctive image for the district (refers to **Figure 3.2**).



Figure 3.2 Themed Walking Trail of KC DUF (Extract of the KC DUF URP)

4 POPULATION AND SOCIO-ECONOMIC CHARACTERISTICS

- 4.1 Based on non-obtrusive on-site observation, there is no residential population and household identified in the Scheme. It will be confirmed at the Stage 2 SIA.
- 4.2 As stated in paragraph 2.2, the Scheme is currently occupied by Newport Centre Phases I and II. According to the approved General Building Plans, the buildings are in general permitted for warehouses, showrooms, repair garage and offices. Hence, no household is included in the Scheme. Detailed information will be ascertained after FS and incorporated in the Stage 2 SIA report.
- 4.3 For socio-economic characteristics, the major business activities within the Newport Centre Phases I and II are warehouse with or without ancillary office use, storage, workshop, showroom and office use. It does not appear to anticipate any significant heavy manufacturing activities taking place. Besides, 11 units within Newport Centre are the subject of an approved planning application (No. A/K22/33) which were proposed to be converted into office uses. The said planning application was approved by the TPB on 18 March 2022.

5 HOUSING AND ENVIRONMENTAL CONDITIONS

- 5.1 No housing is located within the Scheme area. The degree of overcrowding in the Scheme area is not applicable.

Building Age and Building Conditions

- 5.2 The Scheme consists of Newport Centre Phases I and II, built in 1979 (43 years old) and 1981 (41 years old) respectively, and are both six storeys including one- basement level, lower and upper ground floors, and 1st to 3rd floor. Based on the ownership records in Land Registry as at July 2022, both Newport Centre Phases I and II are under multiple ownerships. According to Home Affairs Department's "Database of Private Buildings in Hong Kong" as at July 2022, the Newport Centre Phases I and II have Owners' Corporation (OC) for building management.
- 5.3 Based on the latest building conditions recorded by URA's Building Care Management Information System (BCMIS) and non-obtrusive site observation conducted in August 2022, Newport Centre Phases I and II are of "Varied" condition.
- 5.4 Phases I and II are internally connected and lifts services are available in both Phases. The two buildings are mainly for industrial/ commercial uses including offices, storage/godowns, workshops, showrooms and service providers such as electronics repair shops, etc. Detailed information on actual uses will be ascertained after the FS.
- 5.5 According to the latest Buildings Department (BD)'s records held by URA, there are no outstanding Fire Safety Notices (FSDN), Mandatory Building Inspection Statutory Notices building orders under S30B of Buildings Ordinance and outstanding building orders under S28 for Newport Centre Phases I and II.

Existing Pedestrian Network

- 5.6 The Scheme is located about 15 minutes walking distance away from both the MTR Sung Wong Toi Station and MTR To Kwa Wan Station. Public transport services, including buses and franchised buses are located in proximity of the Scheme area. Local residents of nearby residential development would walk along the two major pedestrian corridors on To Kwa Wan Road and Ma Tau Kok Road for public transport services.
- 5.7 The current pedestrian movement is mainly restricted to along the southern portion of Ma Tau Kok Road abutting the “5-Street” area (KC-018). Part the existing promenade area in the east is being fenced off and not accessible by the public.

Environmental and Hygiene Condition

- 5.8 The Scheme is envisaged to be subject to some traffic noise and air pollutants generated from the heavily trafficked road in To Kwa Wan Road.
- 5.9 The portion of Ma Tau Kok Road within the Scheme is a dead-end road which is often being occupied by vehicles and used for loading/unloading activities. The noise and hygiene issues caused by these on-street activities at Ma Tau Kok Street creates an unpleasant environment and nuisances to pedestrians.

Planning Intention under Outline Zoning Plan and Planned Developments in the Vicinity

- 5.10 The Scheme is currently zoned “Comprehensive Development Area” (“CDA”) and also shown as “Road” on the Draft Kai Tak Outline Zoning Plan (OZP) No. S/K22/7. The “CDA” zone is intended for comprehensive development / redevelopment of the area for residential and/or commercial uses with the provision of waterfront promenade, open space and other supporting facilities. The “Road” zone is planned for future road widening of To Kwa Wan Road.

- 5.11 To the immediate south of the Scheme is known as the 5-Street area (KC-018). It consists of five-blocks of eight-storey tenement buildings along 5 public streets including Ming Lun Street, Chung Sun Street, Hing Yin Street, Hing Yan Street and Ma Tau Kok Road. As mentioned in para. 2.3 above, it forms part of the proposed holistic redevelopment with the Scheme and to be implemented under the separate Ming Lun Street / Ma Tau Kok Road Development Scheme (KC-018).
- 5.12 To the immediate north is the reserved site for development of DRE which is currently zoned Residential (Group A)6” (“R(A)6”) under the OZP. According to HKHS, about 1,101 units with commercial uses and G/IC facilities will be provided.
- 5.13 The Hong Kong Society for the Blind (HKSB) site located at the junction of To Kwa Wan Road and Mok Cheong Street will be redeveloped into a new welfare complex with a maximum building height of 100mPD. According to HKSB, the demolition works will tentatively commence in 2022 and the completion is expected to be in 2025.
- 5.14 The “Lok Sin Tong Modular Social Housing Scheme”, a completed transitional housing project, is located at the proposed public housing site at the junction of Sung Wong Toi Road and To Kwa Wan Road. It is to provide affordable housing and family supporting services for low-income families that are queuing for public rental housing. According to the proposed amendment paper to the approved Ma Tau Kok Outline Zoning Plan No. S/K10/20 (MPC Paper No. 2/15), the site will be redeveloped into one residential block of public housing. With proposed building height of 100mPD, maximum domestic plot ratio of 7.5 or plot ratio of 9.0 for a building that is partly domestic and partly non-domestic, the proposed public housing project will provide about 600 flats.
- 5.15 To the further northwest of the Scheme along Mok Cheong Street are a number of factory buildings also zoned CDA. Among these, the Freder Centre and the K.K. Industrial Building are in operation and the former sites of the Eastern Cotton Mills and Good Harvest Air Freight Centre are

currently vacant. These land parcels fall within three different “CDA” sites. Planning applications (Nos. A/K10/256 and A/K10/259), submitted by different applicants, for comprehensive residential and commercial development at the “CDA(2)” site, with maximum building height of 100mPD, covering K.K. Industrial Building and Eastern Cotton Mills, have been approved with conditions by the TPB on 27 May 2016 and 7 December 2018, respectively. According to the proposed scheme of planning application no. A/K10/259, a portion of the front facade of Eastern Cotton Mill (a Grade III historic building) will be preserved and incorporated into the future development. Another planning application (No. A/K10/265) for comprehensive residential and commercial development at the “CDA(3)” site, with maximum building height of 100mPD, covering seven-land-lots, has also been approved with conditions by the TPB on 10 September 2021.

- 5.16 Ma Tau Kok Gas Production Plant located to the west of the Scheme across To Kwa Wan Road is currently zoned as “Residential (Group A)” (“R(A)”) with a planning intention for residential use according to OZP. According to the URP prepared by KC DURF, it is recommended to explore the feasibility of relocating the gas plant in the long term.
- 5.17 To the northwest of the Scheme across To Kwa Wan Road is a cluster of tenements building which is known as the “13-Street area”. The area is recommended as a “Proposed Redevelopment Priority Area” under DURF. To the further north and northeast of the Scheme is the Kai Tak Development Area (KTDA), which is under construction and the land is designated for a mix of residential, commercial, tourism, community uses, sports uses supported with infrastructure facilities.

6 CULTURAL AND LOCAL CHARACTERISTICS, AND CHARACTERISTICS OF LOCAL BUSINESS ACTIVITIES

- 6.1 The Scheme is located at an old urban district of Ma Tau Kok / To Kwa Wan area within the Kowloon City District, and its vicinity is predominantly mixed of residential, industrial and infrastructural developments. Most of the industrial buildings in the area appeared not actively engaged in manufacturing activities but mainly used for office, storage, warehouse, workshop and showroom uses.
- 6.2 To the immediate south is the 5-Street area which is under URA Project KC-018. It comprises of clusters of tenement buildings with ground floor shops mainly used for vehicular repairing services, workshops, eateries and shops mainly selling groceries, hardware and small electronic parts, and upper floors mainly for domestic uses. By non-obtrusive observation conducted in April and September 2022, no polluting industries are found operating inside the buildings.
- 6.3 To the further south of the Scheme is the Grand Waterfront, which comprises of a private residential estate and shopping mall named Grand Waterfront Plaza. With a number of chain stores, supermarket and shops provided in the Grand Waterfront Plaza, it is a major shopping hub for the local residents.
- 6.4 To the northwest of the Scheme across To Kwa Wan Road is the 13-Street area. It comprises of clusters of tenement buildings with ground floor eateries, vehicular repairing shops and shops mainly selling groceries, hardware and small electronic parts. To its north across Mok Cheong Street is a string of industrial buildings. By non-obtrusive observation conducted in April 2022, no polluting industries are found operating at these industrial buildings. As mentioned in para. 5.14, some of these industrial buildings are planned for redevelopments into residential / commercial uses.

6.5 As mentioned in para. 5.1 above, Newport Centre comprises of Phase I and II which are internally connected. The building is of 6 storeys high, including a basement level, lower and upper ground floors and 1st to 3rd floor. Based on non-obtrusive site visits conducted in June and September 2022 and information available at the building directory of Newport Centre Phases I and II, about 94 businesses were identified within the Scheme area. The main business activities are warehouse with or without ancillary office use, storage, showroom, workshop and office use. It does not appear to anticipate any significant heavy manufacturing activities taking place. Several units unidentified and were suspected to be vacant, as there were no evidence of operation in several attempts of site visits. The addresses and business activities on lower/upper ground floors of Newport Centre are listed in **Table 6.1** below. The exact number of non-domestic operators / details and nature of the businesses within the Scheme will be verified in the FS upon commencement of the Scheme and will be reported in the Stage 2 SIA.

Table 6.1 Business Activities at Lower Ground and Upper Ground Floors within the Scheme

	Address	Current Use*
1.	Lower Ground Floor, Newport Centre Phase I, 118 Ma Tau Kok Road, Kowloon	Carpark
2.	Workshop A, Upper Ground Floor, Newport Centre Phase I, 118 Ma Tau Kok Road, Kowloon	(Unidentified)
3.	Workshop B, Upper Ground Floor, Newport Centre Phase I, 118 Ma Tau Kok Road, Kowloon	(Unidentified)
4.	Workshop 1, Lower Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Workshop
5.	Workshop 2, Lower Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Showroom, Warehouse, Storage, Workshop
6.	Workshop 3, Lower Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	(Unidentified)
7.	Workshop 4, Lower Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	(Unidentified)

8.	Workshop 5, Lower Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Office
9.	Workshop 6, Lower Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	(Unidentified)
10.	Unit 1, Upper Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Showroom, Office
11.	Units 2, 3 and 4 Upper Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Showroom
12.	Unit 5, Upper Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Workshop
13.	Unit 6, Upper Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Showroom
14.	Units 7 and 8, Upper Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Office
15.	Unit 9, Upper Ground Floor, Newport Centre Phase II, 116 Ma Tau Kok Road, Kowloon	Logistics, Warehouse

(Based on non-obtrusive site visits conducted in June and September 2022 and building directory at lift lobby)

* Nature / details of business activities are subject to FS and Stage 2 SIA

6.6 In addition, the major uses and businesses activities at other levels of the building, including basement, 1/F to 3/F, identified based on non-obtrusive site visits conducted in June and September 2022 and building directory at the lift lobby, are listed in **Table 6.2** (see photo in **Appendix 1**). The exact number of non-domestic operators / details and nature of the businesses within the Scheme will be verified in the FS upon commencement of the Scheme and will be reported in the Stage 2 SIA.

Table 6.2 Business Activities at Basement, 1/F to 3/F within the Scheme

Floor	Existing Uses	No. of Businesses (About)
Basement	Car Park, Storage, Warehouse, Unidentified/Suspected vacant	8
1/F	Office, Warehouse, Storage, Workshop, Showroom, Wholesale,	22

	Research Centre, Unidentified/Suspected vacant	
2/F	Office, Warehouse, Storage, Workshop, Studio, Food Factory, Wholesale, Unidentified/Suspected vacant	27
3/F	Office, Warehouse, Storage, Workshop, Studio, Religious-related centre, Unidentified/Suspected vacant	22

*(Based on non-obtrusive site visits conducted in June and September 2022
and building directory at the lift lobby)*

** Nature / details of business activities are subject to FS and Stage 2 SIA*

7 RECREATIONAL, AMENITY AND COMMUNITY AND WELFARE FACILITIES

- 7.1 **Figure 7.1** shows the locations of various existing public open spaces, and GIC facilities within the 500m radius area of the Scheme. There are a number of public open spaces near the Scheme Area, the closest being Cattle Depot Art Park located to the west, To Kwa Wan Recreation Ground and To Kwa Wan Sports Centre located to the southwest, and Hoi Sham Park to the further south of the Scheme.
- 7.2 A number of planned public open spaces are within the 500m radius from the Scheme. The Kai Tak Sports Park located to the north of the Scheme area is currently under construction with target completion in 2023. With an area of around 28 hectares, the Sports Park will provide a wide variety of sports and leisure facilities to be enjoyed by the public. To the north of the Scheme area at the cove of Ma Tau Kok in between the DRE site and the Sports Park is zoned as “Open Space” (“O”) on the OZP, with an intention to complement the Dining Cove with food and beverage uses for creating a vibrant waterfront environment and unique dining experience. Outdoor seating accommodation for alfresco dining may be provided under administrative mechanism. To the south of the Scheme area along the waterfront is also zoned as “O” on the OZP for optimising pedestrian and waterfront environment, as well as for future extension of cycle track network, the GreenWay Network.
- 7.3 Major GIC facilities within 500m radius of the Scheme include the HKSB and the To Kwa Wan Market and Government Offices. There are also a number of educational facilities, mainly primary schools within 500m of the Scheme.
- 7.4 For existing social welfare facilities and services (refer to **Table 7.1**), family and child welfare services, social security field units, services for the elderly and rehabilitation and medical social services, etc. are found in close proximity to the Scheme.

- 7.5 About 500 sq.m. non-domestic GFA will be reserved in the podium of the proposed Scheme for appropriate community uses to meet community needs, subject to consultation with relevant Government departments, views from local stakeholders and KCDC.

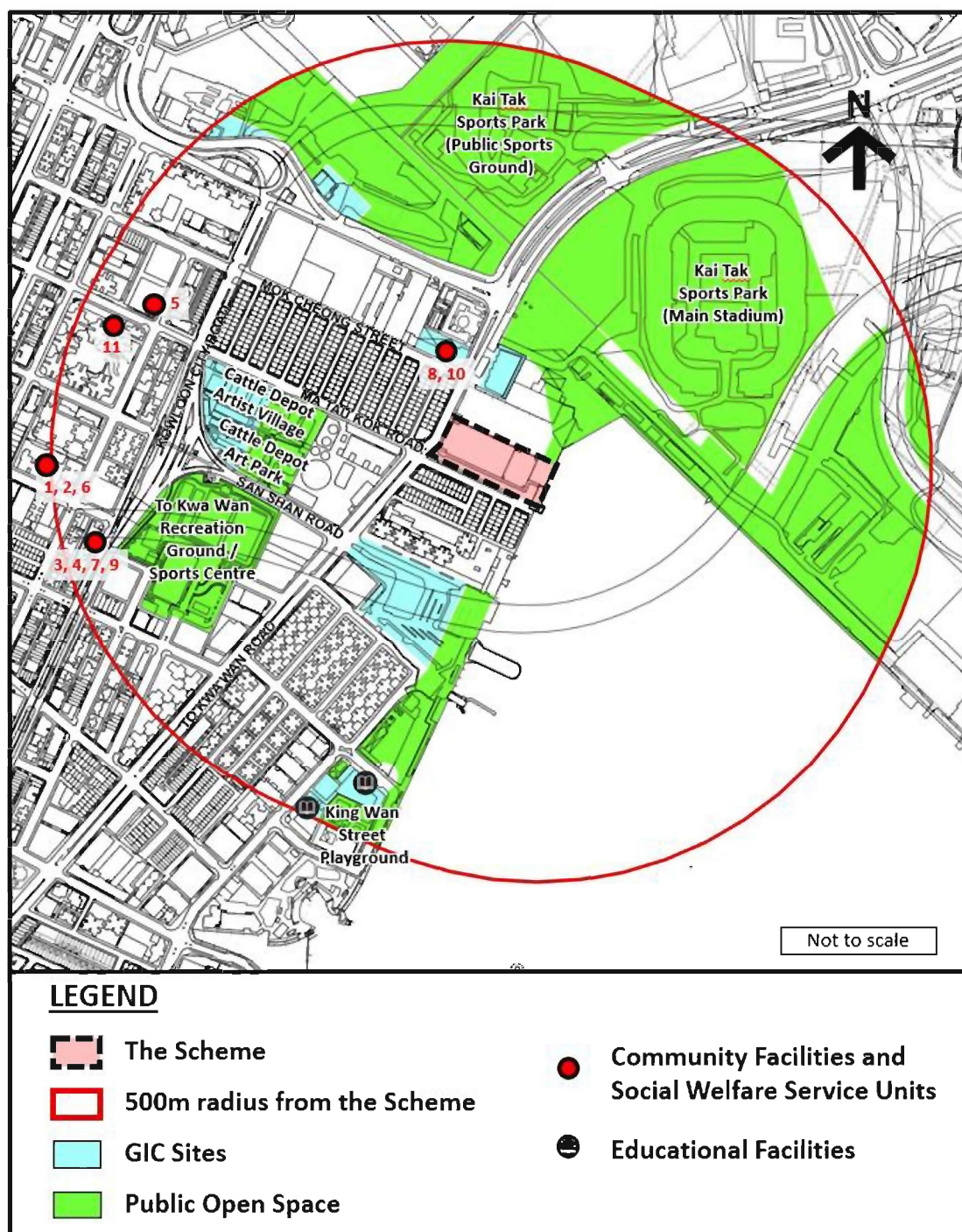


Figure 7.1 Existing Community Facilities, Amenity, and Social Welfare Service Units within 500m Radius from the Scheme

Source: Social Welfare Department's website: Local District Service Profile: Welfare Service Units Managed or Funded by Social Welfare Department (Kowloon City) as of May 2022.

Table 7.1 Existing Community Facilities and Social Welfare Service Units within 500m Radius from the Scheme

Community Facility / Service Unit	Operator	Address
A. Family and Child Welfare Services		
<i>Integrated Family Service Centres</i>		
1. Kai Tak Integrated Family Service Centre	Social Welfare Department	Unit 3, 2/F, Chung Hwa Plaza, 5B-5F Ma Hang Chung Road, To Kwa Wan, Kowloon
2. Ma Tau Wai Integrated Family Service Centre	Social Welfare Department	Unit 3, 2/F, Chung Hwa Plaza, 5B-5F Ma Hang Chung Road, To Kwa Wan, Kowloon
<i>Extended Hours Service</i>		
3. Sik Sik Yuen - Ho Oi Day Nursery (EHS)	Sik Sik Yuen	Shop 1A, 1B 2A & 2B, G/F, Harmony Garden, No. 55-61 Kowloon City Road, Kowloon City, Kowloon
<i>Occasional Child Care Service</i>		
4. Sik Sik Yuen - Ho Oi Day Nursery (OCCS)	Sik Sik Yuen	Shop 1A, 1B 2A & 2B, G/F, Harmony Garden, No. 55-61 Kowloon City Road, Kowloon City, Kowloon
B. Social Security		
<i>Integrated Employment Assistance Programme for Self-reliance</i>		
5. Hong Kong Lutheran Social Service, the Lutheran Church - Hong Kong Synod Limited - Integrated Employment Assistance Programme for Self-reliance	Hong Kong Lutheran Social Service, the Lutheran Church - Hong Kong Synod Limited	Room A103,A108,A109, 8/F, Tung Nam Factory Building, 40 Ma Tau Kok Road, To Kwa Wan, Kowloon
<i>Social Security Field Unit</i>		
6. Kowloon City Social Security Field Unit	Social Welfare Department	Unit 2, 2/F, Chung Hwa Plaza, 5B-5F Ma Hang Chung Road, To Kwa Wan, Kowloon
C. Services for the Elderly		
<i>Neighbourhood Elderly Centre</i>		

Community Facility / Service Unit	Operator	Address
7. Hong Kong Family Welfare Society - Kowloon City Centre for Active Ageing	Hong Kong Family Welfare Society	1/F, Block 2, Harmony Garden, 55-61 Kowloon City Road, To Kwa Wan, Kowloon
D. Rehabilitation and Medical Social Services		
<i>Care and Attention Home for the Aged Blind</i>		
8. Hong Kong Society for the Blind (The) - Bradbury Care and Attention Home for the Aged Blind	Hong Kong Society for the Blind (The)	19 Mok Cheong Street, To Kwa Wan, Kowloon
<i>Integrated Programme in Kindergarten-cum-Child Care Centre</i>		
9. Sik Sik Yuen - Ho Oi Day Nursery (IP)	Sik Sik Yuen	Shop 1A, 1B 2A & 2B, G/F, Harmony Garden, No. 55-61 Kowloon City Road, Kowloon City, Kowloon
<i>Sheltered Workshops</i>		
10. Hong Kong Society for the Blind (The) - Factory for the Blind	Hong Kong Society for the Blind (The)	19 Mok Cheong Street, To Kwa Wan, Kowloon
11. Hong Chi Association - Ma Tau Kok Workshop	Hong Chi Association	Podium 2, Jubilant Place, 33 Ma Tau Kok Road, To Kwa Wan, Kowloon

Source: Social Welfare Department's website: Local District Service Profile: Welfare Service Units Managed or Funded by Social Welfare Department (Kowloon City) as of May 2022.

8 INITIAL ASSESSMENT OF POTENTIAL SOCIAL IMPACT, AND MITIGATION MEASURES

Potential Social Impact

- 8.1 Based on non-obstructive site visits conducted in June 2022 and information on the business directory at the lift lobby of Newport Centre Phases I and II, the Scheme is estimated to affect about 94 businesses identified. The exact number of affected business operators will be verified in the Stage 2 SIA.
- 8.2 The Scheme, if implemented, will inevitably affect the non-domestic operators within the Scheme. The FS and SIA Questionnaire will help identifying needy cases. The Social Service Team (SST) commissioned by the Urban Renewal Fund (URF) is expected to provide assistance to those in need. This SST is independent of the URA and it will directly report to the Board of the URF.

Mitigation Measures and Acquisition Policies and Allowances for Industrial Properties

- 8.3 The acquisition policies of industrial properties and the allowances to owners and tenants are currently under review; the URA will communicate to the affected persons the prevailing policies before issuance of acquisition offers.
- 8.4 In principle, the URA will offer to an affected owner the market value of his/her property plus applicable allowances for owners for purchase of his/her property. For affected operators (either owner-occupiers or tenant-operators), the URA will offer applicable allowances to them. Alternatively, owner-occupiers and tenants may claim business loss in lieu of the allowances if the property is used for a user in compliance with the government lease.
- 8.5 The URA is conducting a feasibility study on making available to registered owner(s) who, as at the date of Notification of Commencement

- of the Scheme gazetted by URA, own not less than the URA-prescribed quantity of properties in the Scheme and also satisfy the URA-prescribed criteria for participating in the development of the Scheme as an alternative other than receiving the market value and applicable allowances by selling their properties to URA. URA will announce further details to the owners of the Scheme after completion of the study.
- 8.6 The URA will arrange briefing session(s) / recording video(s) to the owners and tenants to explain the URA acquisition policies and the allowances. An in-house URA engagement team will visit the affected owners and tenants accordingly as to care for those who are unclear about the policies and require any other assistance.
- 8.7 If affected owners and/or business operators are not clear about the URA policies or future arrangement, the SST will endeavour to clarify their doubts with full support from the URA. If the affected owners and/or business operators are ethnic minorities who are not familiar with Chinese or English languages, the URA will arrange translation services as far as practicable to alleviate their concerns on the redevelopment.
- 8.8 If the Scheme is to be implemented, the URA will ensure the construction works follow and fulfil the mitigation measures and practices as stipulated by Environmental Protection Department for construction site. Appropriate measures will be proposed to mitigate potential noise and dust impact during the construction phase of the Scheme.
- 8.9 According to the new URS, if requested, the URA will help identify suitable premises in the district of the redevelopment projects to enable the affected operators to relocate and continue operation in the same district as far as practicable.

9 CONCLUSION

- 9.1 The local community and the surrounding neighbourhoods are likely to experience gains and losses due to the proposed redevelopment. Business operators and their employees within the Scheme will be affected in different ways and to various degrees depending on their particular circumstances. Various degrees of concerns and social impacts to the affected business operators and their employees within the Scheme will be assessed in the Stage 2 SIA in detail.
- 9.2 This Stage 1 SIA study has been modified to reflect the current uses/business activities of the building to be redeveloped. This Stage 1 SIA report can only provide a general profile of the Scheme and the surrounding area. Based on non-obtrusive observation and the available information, no occupiers for domestic use are observed and the business activities within the Scheme appear to be those commonly found within many industrial buildings in the vicinity which is possible for most of them to be relocated in the surrounding area.
- 9.3 The assumptions in this report will be verified by the Stage 2 SIA to be carried out after the Freezing Survey. The Stage 2 SIA will assess needs of the affected occupants and operators and to propose appropriate mitigation measures to minimise major adverse social impact, if any.

URBAN RENEWAL AUTHORITY
October 2022

Appendix 1: Directory at Newport Centre Phases I and II

新實工商中心一期 Newport Centre Phase I			
Directory 目錄			
地庫LG室	合亮控股有限公司	2樓21室	合孚行
UG A室	金城營造集團		東輝集團有限公司
		2樓22室	先進混凝土鑽切有限公司
UG B室	金城營造集團		Advance Concrete Drill Cut Co., Ltd.
		2樓23室	東鴻模具有限公司
1樓A室	合亮控股有限公司	2樓24室	金城營造集團
		2樓25室	金城營造集團
1樓B室	金城營造集團	3樓A室	基士絲印器材有限公司
		3樓B室	金城營造集團

新實工商中心二期 Newport Centre Phase II			
Directory 目錄			
地庫A室	恒建工程有限公司	101室	德國寶集團有限公司
地庫A1室	凌豐工程服務有限公司	102室	德國寶集團有限公司
地庫B室	恒建工程有限公司	103室	力成電產公司
地庫C室		104室	恒建工程有限公司
地庫D室		105室	天豐洋酒香港有限公司
地庫E室	先進混凝土鑽切有限公司	106室	德國寶集團有限公司
地庫F室	凌豐工程服務有限公司	107室	MAX STRONG LTD.
	聯源貿易有限公司	108室	德國寶集團有限公司
低層LG1	恒建工程有限公司	109室	德國寶集團有限公司
低層LG2	恒建工程有限公司	110室	建聯建築工程有限公司
低層LG3	ACS	111室	德國寶集團有限公司
低層LG4	合亮控股有限公司	112室	合亮控股有限公司
低層LG5	香港國際超級俱樂部	113室	德國寶集團有限公司
低層LG6	香港國際超級俱樂部	114室	駿英人車顧問有限公司
低層LG7	合亮控股有限公司	115室	德國寶集團有限公司
高層UG1	恒建工程有限公司	116室	合亮控股有限公司
高層UG2	德國寶集團有限公司	117室	德國寶集團有限公司
高層UG3	德國寶集團有限公司	118室	合亮控股有限公司
高層UG4	德國寶集團有限公司	119室	德國寶集團有限公司
高層UG5		120室	合亮控股有限公司
高層UG6			
高層UG7	合亮控股有限公司	201室	沁源美全亞洲有限公司
高層UG8	合亮控股有限公司	202室	WORLD WIND ELITE EXPRESS
高層UG9	連力資產有限公司	203室	
		204室	恒建工程有限公司
		205室	亞牛工程有限公司
		206室	
		207室	俊達亞洲系統有限公司
		208室	
		209室	先進混凝土鑽切有限公司
		210A室	華能嘉樂裝飾有限公司
		210B室	
		211室	凌豐工程服務有限公司
		212室	金城營造集團
		213室	
		214室	ACTION EVENT PLANNER HK LTD.
		215室	天開手工餃子
		216室	卓然工程有限公司
		217室	潮派美食集團有限公司
		218室	泓豐集團有限公司, 聯源貿易有限公司
		219室	
		220室	福豐科技有限公司
		301室	華福會
		302室	森匯建築有限公司/城源工程公司
		303室	
		304室	合亮控股有限公司
		305室	WORLD WIND ELITE EXPRESS
		306室	合亮控股有限公司
		307室	WORLD WIND ELITE EXPRESS
		308室	合亮控股有限公司
		309室	HONG KONG CSL LTD.
		310室	溢泰工程服務有限公司
		311室	PROFESSIONAL PRINTING LTD.
		312室	地王月餅印務有限公司
		313室	恒基佛道社有限公司
		314室	
		315室	WORLD WIND ELITE EXPRESS
		316室	頂好制品有限公司
		317室	港迪口草(香港)有限公司
		318室	
		319室	港迪口草(香港)有限公司
		320室	利興電子實業有限公司

Appendix 4
Traffic Impact Assessment
(TIA) Report

**URA Ming Lun Street / Ma Tau Kok Road (KC-018) and
To Kwa Wan Road / Ma Tau Kok Road (KC-019)**

Traffic Impact Assessment

**Final Report
September 2022**

Prepared by: CKM Asia Limited

Prepared for: Urban Renewal Authority

URA Ming Lun Street / Ma Tau Kok Road (KC-018) and To Kwa Wan Road / Ma Tau Kok Road (KC-019)

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URA Ming Lun Street / Ma Tau Kok Road (KC-018) and To Kwa Wan Road / Ma Tau Kok Road (KC-019)

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1.0 INTRODUCTION

Background

- 1.1 Under a holistic planning approach, the Urban Renewal Authority (URA) has proposed two Development Schemes at Ming Lun Street / Ma Tau Kok Road (KC-018) and To Kwa Wan Road / Ma Tau Kok Road (KC-019) (the Schemes). URA's intention is to implement the 2 Schemes as 1 inclusive redevelopment. A comprehensive notional scheme is prepared considering the 2 connecting sites as one redevelopment. These two sites will be redeveloped into residential developments with retail uses and Government, Institution or Community (G/IC) facilities.
- 1.2 KC-018 and KC-019 comprise of the old buildings bounded by at: (i) Ma Tau Kok Road; (ii) Ming Lun Street; (iii) Chung Sun Street; (iv) Hing Yin Street; and (v) Hing Yan Street. The locations of KC-018 and KC-019 are shown in Figure 1.1.
- 1.3 At present, KC-018 and KC-019 are zoned as "Comprehensive Development Area" ("CDA") and shown as "Road" in the Kai Tak Outline Zoning Plan (OZP) No. S/K22/7. Under the Development Scheme Plan (DSP) submissions, it is proposed to rezone KC-018 and KC-019 as "Residential (Group A)" ("R(A)") and to areas shown as "Road".
- 1.4 As part of the DSP submissions, CKM Asia Limited, a traffic and transportation planning consultancy firm, was commissioned by the URA to prepare a Traffic Impact Assessment (TIA) in support of redevelopment of KC-018 and KC-019.

Scope of Study

- 1.5 The main objectives of this study are as follows:
 - To assess the existing traffic issues in the vicinity of KC-018 and KC-019;
 - To quantify the internal transport facilities for KC-018 and KC-019;
 - To quantify the amount of traffic generated by KC-018 and KC-019;
 - To examine the associated traffic impact on the local road network; and
 - To identify deficiencies in the road network in accommodating the expected additional traffic associated with KC-018 and KC-019.

Contents of the Report

- 1.6 After this introduction, the remaining chapters contain the following:

- chapter two – describes the existing conditions;
- chapter three – presents the master layout plan for KC-018 and KC-019;
- chapter four – describes the traffic and pedestrian impact; and
- chapter five – gives the overall conclusion.

2.0 EXISTING SITUATION

Existing Road Network

2.1 The existing roads located in the vicinity of KC-018 and KC-019 includes the following:

- To Kwa Wan Road is a north-south road classified as District Distributor connecting Ma Tau Kok and Hung Hom. The section of To Kwa Wan Road between Ma Tau Wai Road and Ma Tau Kok Road is of dual carriageway 3-lane standard. The section between Sung Wong Toi Road and Ma Tau Kok Road is of single carriageway 4-lane standard.
- Mok Cheong Street is a single carriageway road and it is classified as a District Distributor. It has 2 eastbound lanes and connects Ma Tau Chung Road with To Kwa Wan Road.
- Ma Tau Kok Road is classified as a District Distributor, and is of single carriageway standard with 3 westbound traffic lanes. It connects with To Kwa Wan Road and Shing Tak Street.

Traffic and Pedestrian Surveys

2.2 Traffic and pedestrian counts were conducted on Thursday 9th January 2020 and Monday 6th September 2021. On the survey days, there were **no** public events, and **no** government announced school suspension or work-from-home arrangements.

Manual Classified Traffic Counts

2.3 To establish the peak hour traffic flows, manual classified counts were conducted during the AM and PM peak periods at junctions A – I, which are located in the vicinity of KC-018 and KC-019. The locations and layouts of the surveyed junctions are shown in Figure 2.1 and Figures 2.2 – 2.11 respectively.

TABLE 2.1 SURVEYED JUNCTIONS

Ref.	Junction Location	Figure No.
A	Kowloon City Road / Sung Wong Toi Road	2.2
B	Kowloon City Road / Mok Cheong Street	2.3
C	Kowloon City Road / Ma Tau Kok Road	2.4
D	To Kwa Wan Road / San Shan Road / San Ma Tau Street	2.5
E	To Kwa Wan Road / Ma Tau Kok Road	2.6
F	To Kwa Wan Road / Mok Cheong Street	2.7
G	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	2.8
H	Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road	2.9
I	Ma Tau Chung Road / Ma Tau Kok Road	2.10
J	Olympic Garden Roundabout (i.e. Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street)	2.11

2.4 The traffic counts were classified by vehicle type to enable traffic flows in passenger car units (pcu) to be calculated. The AM and PM peak hour traffic flows were found to occur at 0800 – 0900 and 1730 – 1830 hours respectively, and the peak hour traffic flows are shown in Figure 2.12.

Existing Junction and Link Operational Performance

- 2.5 The existing operational performance of the surveyed junctions was calculated based on the observed traffic counts and the analysis method found in Volumes 2 and 4 of the Transport Planning and Design Manual (TPDM). The analysis results are summarised in Table 2.2 and detailed calculations are found in Appendix A.

TABLE 2.2 EXISTING JUNCTION OPERATIONAL PERFORMANCE

Ref.	Junction	Type of Junction	Performance Indicator	AM Peak	PM Peak
A	Kowloon City Road / Sung Wong Toi Road	Signal	RC	> 100%	> 100%
B	Kowloon City Road / Mok Cheong Street	Signal	RC	> 100%	> 100%
C	Kowloon City Road / Ma Tau Kok Road	Signal	RC	> 100%	> 100%
D	To Kwa Wan Road / San Shan Road / San Ma Tau Street	Signal	RC	55%	53%
E	To Kwa Wan Road / Ma Tau Kok Road	Signal	RC	> 100%	> 100%
F	To Kwa Wan Road / Mok Cheong Street	Signal	RC	> 100%	99%
G	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Signal	RC	> 100%	81%
H	Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road	Signal	RC	64%	47%
I	Ma Tau Chung Road / Ma Tau Kok Road	Signal	RC	> 100%	> 100%
J	Olympic Garden Roundabout	Roundabout	RFC	0.683	0.643

Note: RC – Reserve Capacity

RFC – Ratio-of-Flow to Capacity

- 2.6 The above results indicate that the analysed junctions currently operate with capacities during the AM and PM peak hours.
- 2.7 The existing link capacity for the local road network is assessed, and the link capacity analysis results are shown in Table 2.3.

TABLE 2.3 EXISTING LINK CAPACITY ASSESSMENT

Road Section	Direction	Capacity (veh/hr)	Traffic Flows (veh/hr)		Volume to Capacity Ratio	
			AM Peak	PM Peak	AM Peak	PM Peak
Ma Tau Kok Road	Westbound	2,700 ⁽²⁾	332	475	0.12	0.18
Mok Cheong Street	Eastbound	1,800 ⁽²⁾	382	480	0.21	0.27
San Shan Road	Two-way	2,200	912	772	0.41	0.35
Sung Wong Toi Road	Two-way	3,800	643	830	0.17	0.22
To Kwa Wan Road (fronting KC-018)	Northbound	3,240 ⁽²⁾	662	868	0.20	0.27
	Southbound	3,240 ⁽²⁾	675	626	0.21	0.19
To Kwa Wan Road (fronting KC-019)	Two-way	3,534 ⁽¹⁾	1,123	1,143	0.32	0.32
Kowloon City Road	Northbound	2,850	441	581	0.15	0.20

Note: ⁽¹⁾ with reduction factor of 7% for heavy vehicle percentage between 15 – 20%

⁽²⁾ with reduction factor of 10% for heavy vehicle percentage between 20 – 25%

- 2.8 Table 2.3 shows that the analysed road links currently operate with capacities during the AM and PM peak hours.

Level-of-Service of Pedestrian Facilities

- 2.9 To quantify the existing pedestrian flows, pedestrian counts were conducted during the weekday AM and PM peak periods at footpaths connecting KC-018 and KC-019 and Pak Tai Street, and these include the following:

- F1 – Eastern footpath of To Kwa Wan Road (north of Ma Tau Kok Road)
- F2 – Northern footpath of Mok Cheong Street (east of Kowloon City Road)
- F3 – Northern footpath of Mok Cheong Street (west of Kowloon City Road)
- F4 – Eastern footpath of Pak Tai Street
- F5 – Eastern footpath of To Kwa Wan Road (south of Ma Tau Kok Road)
- F6 – Southern footpath of Ma Tau Kok Road (east of Kowloon City Road)
- F7 – Southern footpath of Ma Tau Kok Road (west of Kowloon City Road)

- 2.10 The level-of-service (LOS) of a pedestrian walkway is dependent on its width and number of pedestrians using the facility. Description of the LOS is obtained from Volume 6 of the TPDM, and is presented in Table 2.4.

TABLE 2.4 DESCRIPTION OF PEDESTRIAN WALKWAY LOS

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

Source: Volume 6 Chapter 10 of the TPDM

2.11 The peak 15-minute pedestrian flows are illustrated in Figure 2.13, and the corresponding LOS assessment is presented in Table 2.5.

TABLE 2.5 EXISTING LEVEL-OF-SERVICE ASSESSMENT

Ref.	Footpath	Total Width	Effective Width ⁽¹⁾	Peak Period	2-way Peak Pedestrian Flows ⁽²⁾		LOS
					Flow (ped/15-min)	Rate (ped/min/m) ⁽³⁾	
F1	Eastern footpath of To Kwa Wan Road (north of Ma Tau Kok Road)	3.5m	2.5m	AM	145	3.87	A
				PM	131	3.49	A
F2	Northern footpath of Mok Cheong Street (east of Kowloon City Road)	3.5m	2.5m	AM	94	2.51	A
				PM	89	2.37	A
F3	Northern footpath of Mok Cheong Street (west of Kowloon City Road)	3m	2m	AM	97	3.23	A
				PM	90	3.00	A
F4	Eastern footpath of Pak Tai Street	3m	2m	AM	104	3.47	A
				PM	127	4.23	A
F5	Eastern footpath of To Kwa Wan Road (south of Ma Tau Kok Road)	3.5m	2.5m	AM	233	6.21	A
				PM	211	5.63	A
F6	Southern footpath of Ma Tau Kok Road (east of Kowloon City Road)	3m	2m	AM	166	5.53	A
				PM	145	4.83	A
F7	Southern footpath of Ma Tau Kok Road (west of Kowloon City Road)	3.5m	2.5m	AM	129	3.44	A
				PM	249	6.64	A

Note: ⁽¹⁾ effective width = total width – (0.5m × 2)

⁽²⁾ highest pedestrian flows along the whole section of footpath

⁽³⁾ pedestrian flow rate = pedestrian flow ÷ 15 minutes ÷ effective width

2.12 The above results indicate that the surveyed footpaths currently operate with LOS A during the AM and PM peak hours. As stated in the TPDM, “LOS C is desirable for most design at streets with dominant ‘living’ pedestrian activities”. Hence, LOS A is considered as an acceptable level of service:

Public Transport Facilities

2.13 At present, KC-018 and KC-019 are well-served by various public transport services, including franchised bus, green minibus and public light bus. These services operate along Mok Cheong Street, Ma Tau Kok Road and To Kwa Wan Road. In addition, the Kowloon City Ferry Pier and bus terminus is located within 300m or equivalent to around 5 minutes’ walk from KC-018 and KC-019.

2.14 Apart from the road-based public transport services, MTR Sung Wong Toi Station of Tuen Ma Line is located in the vicinity of KC-018 and KC-019, which is 700m or equivalent to within 10 minutes’ walk away. Details of the public transport services operating close to KC-018 and KC-019 are presented in Figure 2.14 and Table 2.6.

TABLE 2.6 PUBLIC TRANSPORT SERVICES OPERATING CLOSE TO KC-018
AND KC-019

Route No.	Routing	Frequency (min)
KMB 2E	Kowloon City Ferry – Pak Tin	15 – 25
KMB 3B	Tsz Wan Shan (Central) – Hung Hom (Hung Luen Road)	12 – 25
KMB 5	Star Ferry – Fu Shan	7 – 15
KMB 5A	Kai Tak (Kai Ching Estate) – Star Ferry	12 – 20
KMB 5C	Tsz Wan Shan (Central) – Star Ferry	6 – 12
KMB 5D	Telford Gardens – Hung Hom (Circular)	15 – 35
KMB 5P	Tsz Wan Shan (Central) – Star Ferry	AM & PM peak
KMB 6C	Kowloon City Ferry – Mei Foo	7 – 12
KMB 6F	Kowloon City Ferry – Lai Kok	20 – 30
KMB 11	Diamond Hill Station – Kowloon Station	9 – 20
KMB 11B	Kwun Tong (Tsui Ping Road) – Kowloon City Ferry	10 – 20
KMB 11K	Chuk Yuen Estate – Hung Hom Station	12 – 20
KMB 11X	Sau Mau Ping (Upper) – Hung Hom Station	10 – 20
KMB 12A	Whampoa Garden – Cheung Sha Wan (Sham Mong Road)	8 – 20
KMB 14	Lei Yue Mun Estate – China Ferry Terminal	12 – 20
KMB 15	Ping Tin – Hung Hom (Hung Luen Road)	12 – 20
KMB 15X	Lam Tin (Kwong Tin Estate) – Hung Hom Station	AM & PM peak
KMB 17	Kwun Tong (Yue Man Square) – Oi Man	5 – 20
KMB 21	Choi Wan – Hung Hom Station	15 – 20
KMB 26	Shun Tin – Tsim Sha Tsui East	7 – 20
KMB 28	Lok Wah – Tsim Sha Tsui East (Mody Road)	8 – 15
KMB 41	Cheung Ching – Kowloon City Ferry	20 – 35
KMB 45	Kowloon City Ferry – Lai Yiu	20 – 30
KMB 61X	Tuen Mun Central – Kowloon City Ferry	9 – 20
KMB 75X	Fu Shin Estate Bus Terminus – Kowloon City Ferry	8 – 15
KMB 85A	Kwong Yuen – Kowloon City Ferry	15 – 25
KMB 85B	Chun Shek – Kowloon City Ferry	AM & PM peak
KMB 85S	Yiu On – Hung Hom (Hung Luen Road)	AM peak
KMB 85X	Ma On Shan Town – Hung Hom (Hung Luen Road)	10 – 20
KMB 93K	Po Lam – Mong Kok East Station	15 – 25
KMB / NWB 101	Kwun Tong (Yue Man Square) – Kennedy Town	3 – 15
KMB / NWB 106	Wong Tai Sin – Siu Sai Wan (Island Resort)	4 – 12
KMB / NWB 106A	Wong Tai Sin – Tai Koo (Kornhill Plaza)	AM Peak
KMB / NWB 106P	Wong Tai Sin – Siu Sai Wan (Island Resort)	AM & PM peak
KMB / CTB 107	Kowloon Bay – Wah Kwai	5 – 20
KMB 108	Kai Yip – Braemar Hill	10 – 20
KMB / NWB 111	Ping Shek – Central (Macau Ferry)	3 – 12
KMB / NWB 111P	Choi Fook – Central (Macau Ferry)	AM peak
KMB / NWB 115	Kowloon City Ferry – Central (Macau Ferry)	6 – 20
KMB / NWB 116	Tsz Wan Shan (Central) – Quarry Bay (Yau Man Street)	4 – 12
KMB 297	Hang Hau (North) – Hung Hom (Hung Luen Road)	12 – 25
KMB 297P	Hang Hau (North) – Hung Hom (Hung Luen Road)	AM peak
NWB 796X	Tseung Kwan O Industrial Centre – Tsim Sha Tsui East	11 – 25
CTB A22	Airport – Lam Tin Station	15 – 20
CTB E23	Airport – Tsz Wan Shan (South)	12 – 20
CTB N23	Tung Chung Station – Tsz Wan Shan (South)	overnight
KMB / NWB N121	Central (Macau Ferry) – Ngau Tau Kok	overnight
GMB 2	Whampoa Garden – Festival Walk	10 – 15
GMB 2A	Whampoa Garden – Festival Walk	10 – 15

TABLE 2.6 PUBLIC TRANSPORT SERVICES OPERATING CLOSE TO KC-018
AND KC-019 (CONT'D)

Route No.	Routing	Frequency (min)
GMB 13	Kowloon Tong (Broadcast Drive) – Hung Hom (Hung Luen Road)	10 – 15
GMB 28M	Wyler Gardens – Mong Kok Station	7 – 15
GMB 28MS	Wyler Gardens – Ho Man Tin Station	10 – 15
GMB 49	Shun Tin Estate – Kowloon City Ferry Pier	AM & PM peak
GMB 69	Laguna City – Kowloon City (Lion Rock Road)	12 – 20
GMB 69A	Laguna City – Prince Edward Station	15
GMB 105	Tseung Kwan O – To Kwa Wan	5 – 9
GMB 105S	Tseung Kwan O – To Kwa Wan	overnight
Sun Ferry	North Point – Kowloon City	30

Note: KMB – Kowloon Motor Bus NWB – New World First Bus
CTB – CityBus GMB – Green Minibus

- 2.15 In view of the comprehensive coverage and choice of public transport services, accessibility of KC-018 and KC-019 via the public transport services is considered convenient.

3.0 MASTER LAYOUT PLAN OF KC-018 AND KC-019

Development Schedule

- 3.1 The planned development parameters for KC-018 and KC-019 are presented in Table 3.1, and the residential flats are grouped into various unit size categories with details found in Table 3.2.

TABLE 3.1 DEVELOPMENT SCHEDULE FOR KC-018 AND KC-019

Item	Development Parameters (approx.)	
	KC-018	KC-019
Gross Site Area	11,430m ²	8,759m ²
Domestic Plot Ratio	6.5	6.5
Non-Domestic Plot Ratio	1.0	1.0
Domestic GFA	68,224m ²	50,804m ²
No. of Housing Block	2	2
No. of Residential Flat	1,276	950
Average Flat Size	around 53.5m ²	around 53.5m ²
GFA for Retail	10,496m ²	7,816m ²
GFA for G/IC	1,000m ²	500m ²
Completion Year	2033	2033

TABLE 3.2 UNIT SIZE CATEGORIES

Unit Size (in GFA)	No. of Residential Flat	
	KC-018	KC-019
< 40m ²	372	102
40 – 70m ²	692	775
70 – 100m ²	186	73
100 – 130m ²	26	0
Total	<u>1,276</u>	<u>950</u>

Internal Transport Facilities

- 3.2 The internal transport facilities for the residential and retail uses within KC-018 and KC-019 are provided in accordance to the Hong Kong Planning Standards and Guidelines (HKPSG) and are presented in Tables 3.3.

TABLE 3.3 INTERNAL TRANSPORT FACILITIES

Item	Type	HKPSG Recommendations	KC-018		KC-019	
			Calculation ⁽¹⁾	Provision	Calculation ⁽¹⁾	Provision
Private Car	Residential	$GPS \times R1 \times R2 \times R3$ GPS = 1 car space per 4 – 7 flats R1 = 0.5 for flat size $\leq 40m^2$ = 1.2 for flat size 40 – $70m^2$ = 2.4 for flat size 70 – $100m^2$ = 4.1 for flat size 100 – $130m^2$ R2 = 1 for development outside 500m of rail station R3 = 0.9 for domestic plot ratio 5 – 8	Min = $(372 \times 0.5 + 692 \times 1.2 + 186 \times 2.4 + 26 \times 4.1) \div 7 \times 0.9$ = 202 nos. Max = $(372 \times 0.5 + 692 \times 1.2 + 186 \times 2.4 + 26 \times 4.1) \div 4 \times 0.9$ = 354 nos.	354 nos.	Min = $(102 \times 0.5 + 775 \times 1.2 + 73 \times 2.4) \div 7 \times 0.9$ = 149 nos. Max = $(102 \times 0.5 + 775 \times 1.2 + 73 \times 2.4) \div 4 \times 0.9$ = 261 nos.	261 nos.
	Visitors	5 visitor car parking spaces for developments with more than 75 units per block	No. = 2×5 = 10 nos.	10 nos.	No. = 2×5 = 10 nos.	10 nos.
	Retail	1 space per 150 – $300m^2$ GFA	Min = $10496 \div 300$ = 35 nos. Max = $10496 \div 150$ = 70 nos.	70 nos.	Min = $7816 \div 300$ = 27 nos. Max = $7816 \div 150$ = 53 nos.	53 nos.
	Total		Min = 202 + 10 + 35 = 247 nos. Max = 354 + 10 + 70 = 434 nos.	434 nos.⁽²⁾	Min = 149 + 10 + 27 = 186 nos. Max = 261 + 10 + 53 = 324 nos.	324 nos.⁽³⁾
Goods Vehicle	Residential	Minimum 1 bay for every 800 flats or part thereof, subject to minimum 1 bay for each housing block	No. = 2 nos.	2 nos. (2 HGV)	No. = 2 nos.	2 nos. (2 HGV)
	Retail	1 space per 800 – $1,200m^2$, or part thereof, of GFA	Min = $10496 \div 1200$ = 9 nos. Max = $10496 \div 800$ = 14 nos.	14 nos. (5 HGV + 9 LGV)	Min = $7816 \div 1200$ = 7 nos. Max = $7816 \div 800$ = 10 nos.	10 nos. (4 HGV + 6 LGV)
	Total		Min = 2 + 9 = 11 nos. Max = 2 + 14 = 16 nos.	16 nos. (7 HGV + 9 LGV)	Min = 2 + 7 = 9 nos. Max = 2 + 10 = 12 nos.	12 nos. (6 HGV + 6 LGV)
Motorcycle	Residential	1 space per 100 – 150 flats	Min = $1276 \div 150$ = 9 nos. Max = $1276 \div 100$ = 13 nos.	13 nos.	Min = $950 \div 150$ = 7 nos. Max = $950 \div 100$ = 10 nos.	10 nos.
	Retail	5 – 10% of total provision of car parking space	Min = $70 \times 5\%$ = 4 nos. Max = $70 \times 10\%$ = 7 nos.	7 nos.	Min = $53 \times 5\%$ = 3 nos. Max = $53 \times 10\%$ = 6 nos.	6 nos.
	Total		Min = 9 + 4 = 13 nos. Max = 13 + 7 = 20 nos.	20 nos.	Min = 7 + 3 = 10 nos. Max = 10 + 6 = 16 nos.	16 nos.

Note: ⁽¹⁾ Min – Minimum

Max – Maximum

⁽²⁾ include 5 car parking spaces for persons with disabilities for KC-018

⁽³⁾ include 4 car parking spaces for persons with disabilities for KC-019

- 3.3 Subject to the detailed design, the internal transport facilities for KC-018 and KC-019 would comply with the **higher end of the HKPSG recommendations**.
- 3.4 The HKPSG has **no** recommendation on the provision of internal transport facilities for welfare facilities, i.e. G/IC use. To meet the operational needs, URA would liaise with Social Welfare Department during the detailed design stage on the provision of internal transport facilities.

Internal Transport Layout

- 3.5 The notional layout plan showing the internal transport facilities, i.e. basement 1st – 3rd floors, are presented in Figures 3.1 – 3.3. Access to the basement car parks is via the vehicle ramps.
- 3.6 KC-018 and KC-019 are individual project sites and will be redeveloped under two urban renewal projects. Hence, separate run-in / out is required for each development site. The run-in / out of KC-018 is provided at To Kwa Wan Road around 30m south of Ma Tau Kok Road, and the run-in / out of KC-019 is provided at To Kwa Wan Road around 30m north of Ma Tau Kok Road.
- 3.7 According to Volume 2 of TPDM, *“the width of run-ins should be kept to the minimum compatible with satisfactory operation of vehicles using the run-in. The minimum width should be such that a vehicle can enter the run in from the near side lane without encroachment onto an adjacent lane”*. As shown in Figure 3.4, the 8m run-in / out is required so that HGV could enter KC-018 and KC-019 **without encroaching into the adjacent traffic lane along To Kwa Wan Road**.
- 3.8 According to the TPDM, the visibility distance should be at least 50m for a road with speed of 50km/h. As shown in Figure 3.5, the measured visibility distances from the run-in / outs of KC-018 and KC-019 are more than 50m, which agree with the TPDM requirement.
- 3.9 The CAD-based swept path analysis programme, *Autodesk Vehicle Tracking*, was used to check the ease of manoeuvring of vehicles, and are found to have no problems. The swept path analysis drawings are found in Appendix B of the revised TIA report.

Potential Widening of To Kwa Wan Road

- 3.10 The Kai Tak OZP No. S/K22/7 indicates that a strip of area zoned as “Road” is provided along the eastern side of To Kwa Wan Road between Sung Wong Toi Road and Ma Tau Kok Road which is reserved for potential road widening. Extract of the Kai Tak OZP is found in Appendix C.
- 3.11 To be in-line with the OZP, KC-018 and KC-019 are located adjoining the “Road” zone and the two redevelopment projects provide opportunities to widen the existing To Kwa Wan Road from a single carriageway 4-lane road to a dual carriageway 3-lane road when the need arises in future.

4.0 TRAFFIC IMPACT

Design Year

- 4.1 It is expected that KC-018 and KC-019 will be completed in 2033, thus, the design year adopted for the capacity analysis is 2036, i.e. 3 years after its planned completion.
- 4.2 In order to produce the traffic and pedestrian forecasts up to year 2036, reference is made to the latest *"Territorial Population and Employment Data Matrix"* ("TPEDM") published by Planning Department, and the projected population and employment data is summarised in Table 4.1.

TABLE 4.1 TPEDM DATA FOR KOWLOON CITY AND KWUN TONG

Year	Population	Employment	Total
2019	1,123,200	607,350	1,730,550
2026	1,220,500	648,450	1,868,950
2031	1,161,350	636,100	1,797,450
Annual Growth Rate			<u>0.32%</u>

- 4.3 Table 4.1 shows that the annual growth rate obtained from TPEDM is modest, i.e. 0.32%. Hence, the traffic and pedestrian growth rate is assumed to be 0.5% per annum.

Traffic Generation

- 4.4 To estimate traffic generation of KC-018 and KC-019, trip generation rates for residential and retail found in Volume 1 of the TPDM are adopted. The TPDM has no trip generation rates for G/IC use, therefore, reference is made to the Data Record (DR) No. 439, published by Transport Department. The adopted trip generation rates are presented in Table 4.2.

TABLE 4.2 TRIP GENERATION RATES

Use	Unit	Trip Generation Rates			
		AM Peak		PM Peak	
		IN	OUT	IN	OUT
Residential (average flat size = 60m ²) ⁽¹⁾	pcu/hour/flat	0.0425	0.0718	0.0370	0.0286
Retail ⁽¹⁾	pcu/hour/100m ²	0.2434	0.2296	0.3563	0.3100
G/IC ⁽²⁾	pcu/hour/100m ²	0.2350	0.2350	0.1150	0.1150

Note: ⁽¹⁾ extracted from Volume 1 of TPDM

⁽²⁾ extracted from DR 439

- 4.5 The trip generation rates presented in Table 4.2 are used to calculate the traffic generated associated with KC-018 and KC-019, and the calculated traffic generation is presented in Table 4.3.

TABLE 4.3 TRAFFIC GENERATION OF KC-018 AND KC-019

TABLE 1.5 TRAFFIC GENERATION OF KC-018 AND KC-019						
Site	Use	Quantity	Traffic Generation (pcu/hour)			
			AM Peak		PM Peak	
			IN	OUT	IN	OUT
KC-018	Residential	1,276 flats	55	92	48	37
	Retail	10,496m ² GFA	26	25	38	33
	G/IC	1,000m ² GFA	3	3	2	2
	Total [a]		84	120	88	72
KC-019	Residential	950 flats	41	69	36	28
	Retail	7,816m ² GFA	20	18	28	25
	G/IC	500m ² GFA	2	2	1	1
	Total [b]		63	89	65	54
Overall [a + b]			147	209	153	126

Traffic Forecast

4.6 KC-018 and KC-019 are located within the K2 Base District Traffic Model (BDTM), and the BDTM traffic forecast for 2026 is used as the base. To produce the traffic forecast for year 2036, traffic flows are estimated with reference to the following:

- i. 2026 peak hour traffic models from the BDTM;
- ii. traffic growth rates from 2026 to 2036, i.e. 0.5% per annum;
- iii. planned developments located in the vicinity; and
- iv. traffic generation of KC-018 and KC-019.

4.7 It should be noted that the completion of Shatin-Central Link has been included in the BDTM. Hence, East West Line (EWL) and North South Line (NSL) of the Shatin-Central Link, i.e. currently known as Tuen Ma Line and East Rail Line Cross-Harbour Extension, have been taken into account in the traffic forecast.

4.8 The 2036 peak hour traffic flows without and with KC-018 and KC-019 are shown in Figures 4.1 and 4.2 respectively.

Planned Developments

4.9 According to the "Agreement No. TD 302/2015 – Base District Traffic Models for the Urban Area – 2016 Update" (the "BDTM Study") obtained from Transport Department, Kai Tak Development (KTD) has been included in the 2026 BDTM.

4.10 With reference to Town Planning Board (TPB) Paper No. 10192: "Review Study of Kai Tak Development" published in 2016 and MPC Paper No. 9/21: "Proposed Amendments to the Approved Kai Tak Outline Zoning Plan No. S/K22/6" published in 2021, it is noted that the development intensity of each site in KTD has been increased.

4.11 The increase of development parameters for each site under the KTD Studies are attached in Appendix D. To reflect the increase of traffic generation from KTD, the BDTM was updated by applying the corresponding growths.

4.12 Apart from the KTD, other major planned developments in the vicinity of KC-018 and KC-019 are summarised in Table 4.4.

TABLE 4.4 DETAILS OF MAJOR PLANNED DEVELOPMENTS

Ref.	Location	Land Use	Development Parameters (Approx.)
A	URA Project at Kai Ming Street (DL-8:KC)	Private Housing	around 72 flats and retail GFA of around 308m ²
B	URA Project at Pak Tai Street / San Shan Road (KC-006)	Private Housing	around 228 flats and retail GFA of around 1,630m ²
C	URA Project at Kowloon City Road / Sheung Heung Road (KC-007)	Private Housing	around 294 flats and retail GFA of around 2,076m ²
D	URA Project at Chun Tin Street / Sung Chi Street (KC-008A)	Private Housing	around 260 flats and retail GFA of around 1,447m ²
E	URA Project at Bailey Street / Wing Kwong Street (KC-009)	Private Housing	around 1,150 flats and retail GFA of around 11,105m ²
F	URA Project at Hung Fook Street / Ngan Hon Street (KC-010)	Private Housing	around 750 flats and retail GFA of around 6,843m ²
G	URA Project at Hung Fook Street / Kai Ming Street (KC-011)	Private Housing	around 400 flats and retail GFA of around 3,660m ²
H	URA Project at Kai Ming Street / Wing Kwong Street (KC-012 and KC-013)	Private Housing	around 414 flats and retail GFA of around 3,721m ²
I	URA Project at Wing Kwong Street / Sung On Street (KC-014)	Private Housing	around 560 flats and retail GFA of around 4,286m ²
J	URA Project at Ma Tau Wai Road / Chun Tin Street (TKW/1/002)	Private Housing	around 493 flats and retail GFA of around 3,114m ²
K	5 Mok Cheong Street	Private Housing	around 825 flats and retail GFA of around 9,262m ²
L	3 – 5 San Ma Tau Street	Mixed Use	office GFA of around 18,479m ² and retail GFA of around 5,979m ²
M	New Kowloon Inland Lot No. 6607, Shing Kai Road	Mixed Use	office GFA of around 14,450m ² , retail GFA of around 1,550m ² and not more than 440 hotel rooms
N	Junction of Sung Wong Toi Road / To Kwa Wan Road	Public Housing	around 600 flats
O	URA Project at To Kwa Wan Road / Wing Kwong Street (KC-016)	Private Housing	around 900 flats and retail GFA of around 8,322m ²
P	Dedicated Rehousing Estate at Ma Tau Kok (by HK Housing Society)	Subsidised Housing	around 1,100 flats and retail GFA of around 8,500m ²
Q	9 – 17 Mok Cheong Street (A/K10/265)	Private Housing	around 746 flats and retail GFA of around 7,599m ²
R	URA Project at Shing Tak Street / Ma Tau Chung Road (CBS-1:KC)	Private Housing	residential GFA of around 32,243m ² and retail GFA of around 6,449m ²
S	URA Project at Kau Pui Lung Road / Chi Kiang Street (CBS-2:KC)	Private Housing	residential GFA of around 122,263m ² and retail GFA of around 12,232m ²
T	60 Ko Shan Road	Subsidised Housing	around 110 flats
U	21 Yuk Yat Street	Private Housing	around 110 flats and retail GFA of around 810m ²
V	17 Yuk Yat Street	Private Housing	around 208 flats and retail GFA of around 700m ²

4.13 The major planned developments listed in Table 4.4 have been included in the traffic forecast.

2036 Junction and Link Capacity Analysis

- 4.14 The 2036 junction capacity analysis for the cases without and with KC-018 and KC-019 are summarised in Table 4.5, and detailed calculations are found in Appendix A.

TABLE 4.5 2036 JUNCTION OPERATIONAL PERFORMANCE

Ref.	Junction ⁽¹⁾	Without KC-018 and KC-019		With KC-018 and KC-019	
		AM Peak	PM Peak	AM Peak	PM Peak
A	Kowloon City Road / Sung Wong Toi Road	89%	85%	86%	83%
B	Kowloon City Road / Mok Cheong Street	> 100%	> 100%	> 100%	> 100%
C	Kowloon City Road / Ma Tau Kok Road	> 100%	93%	> 100%	78%
D	To Kwa Wan Road / San Shan Road / San Ma Tau Street	32%	33%	15% (27%) ⁽¹⁾	22% (31%) ⁽¹⁾
E	To Kwa Wan Road / Ma Tau Kok Road	> 100%	> 100%	> 100%	> 100%
F	To Kwa Wan Road / Mok Cheong Street	64%	58%	50%	48%
G	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	40%	32%	34%	29%
H	Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road	35%	28%	35%	27%
I	Ma Tau Chung Road / Ma Tau Kok Road	89%	> 100%	94%	> 100%
J	Olympic Garden Roundabout	0.778	0.766	0.782	0.770

Note: ⁽¹⁾ refer to Table 2.2 on the type of junction and performance indicator

⁽²⁾ () – reserve capacity with traffic improvement scheme as shown in Figure 4.3

- 4.15 A possible traffic improvement scheme is identified for Junction D as shown in Figure 4.3. The operational performance could be improved by (i) widening and realignment of the existing traffic lanes at San Shan Road; and (ii) realignment of central divider at San Ma Tau Street to provide an additional traffic lane.

- 4.16 The 2036 link capacity for the local road network is also assessed and the results are shown in Table 4.6.

TABLE 4.6 2036 LINK CAPACITY ASSESSMENT

Road Section	Direction	Without KC-018 and KC-019				With KC-018 and KC-019			
		Traffic Flows (veh/hr)		V/C Ratio ⁽¹⁾⁽²⁾		Traffic Flows (veh/hr)		V/C Ratio ⁽¹⁾⁽²⁾	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Ma Tau Kok Road	WB	394	525	0.15	0.19	431	501	0.16	0.19
Mok Cheong Street	EB	527	600	0.29	0.33	555	632	0.31	0.35
San Shan Road	Two-way	1129	981	0.51	0.45	1172	993	0.53	0.45
Sung Wong Toi Road	Two-way	1425	1609	0.38	0.42	1426	1622	0.38	0.43
To Kwa Wan Road (fronting KC-018)	NB	900	1130	0.28	0.35	976	1193	0.30	0.37
	SB	921	860	0.28	0.27	1010	896	0.31	0.28
To Kwa Wan Road (fronting KC-019)	Two-way	1563	1592	0.44	0.45	1623	1638	0.46	0.46
Kowloon City Road	NB	562	738	0.20	0.26	638	805	0.22	0.28

Note: EB – eastbound

SB – southbound

WB – westbound

NB – northbound

⁽¹⁾ V/C Ratio – Volume to Capacity Ratio

⁽²⁾ refer to Table 2.3 for the capacity of each road

- 4.17 The above results indicate that the analysed junctions and road links are expected to operate with capacities during the peak hours in 2036. The junctions and links analysed have sufficient capacity to accommodate the (i) expected traffic growth; and (ii) traffic generated by KC-018 and KC-019.
- 4.18 The design year queue length analyses for critical junctions are conducted as shown in Appendix E. As shown in the queue length diagrams, vehicle queues at the signalised junctions do not block their upstream junctions, and no operational issue is anticipated.
- 4.19 It can be concluded that KC-018 and KC-019 will **not** have adverse traffic impact to the surrounding road network. In addition, the potential widening of To Kwa Wan Road as described in Paragraphs 3.10 and 3.11 is **not** necessary for the redevelopment of KC-018 and KC-019.

Pedestrian Generation

- 4.20 The pedestrian generation of KC-018 and KC-019 is estimated based on pedestrian generation surveys conducted at similar developments. The surveyed developments are comparable in terms of use, class and accessibility to public transport services. The adopted pedestrian generation rates are presented in Table 4.7.

TABLE 4.7 PEDESTRIAN GENERATION RATES

Use	Unit	Pedestrian Generation Rates			
		AM Peak		PM Peak	
		IN	OUT	IN	OUT
Residential ⁽¹⁾	ped/15-min/flat	0.0202	0.0875	0.0853	0.0348
Retail ⁽²⁾	ped/15-min/100m ² GFA	1.0561	0.9571	1.4604	1.1799
G/IC ⁽³⁾	ped/15-min/100m ² GFA	0.2651	0.0482	0.2048	0.2892

Source: ⁽¹⁾ Survey at Grand Waterfront (with 1,782 flats and average flat size of around 51m²) at 38 San Ma Tau Street in To Kwa Wan

⁽²⁾ Survey at Grand Waterfront Plaza (with retail GFA of around 12,120m²) at 38 San Ma Tau Street in To Kwa Wan

⁽³⁾ Survey at Caritas Community Centre – Tsuen Wan (with GFA of around 8,300m²) at 9 Shing Mun Road, Tsuen Wan

- 4.21 The pedestrian generation rates presented in Table 4.7 are used to calculate the pedestrian generated by KC-018 and KC-019, and the calculated pedestrian generation is presented in Table 4.8.

TABLE 4.8 PEDESTRIAN GENERATION OF KC-018 AND KC-019

Site	Use	Quantity	Pedestrian Generation (ped/15-min)			
			AM Peak		PM Peak	
			IN	OUT	IN	OUT
KC-018	Residential	1,276 flats	26	112	109	45
	Retail	10,496m ² GFA	111	101	154	124
	G/IC	1,000m ² GFA	3	1	3	3
	Total [a]		140	214	266	172
KC-019	Residential	950 flats	20	84	82	34
	Retail	7,816m ² GFA	83	75	115	93
	G/IC	500m ² GFA	2	1	2	2
	Total [b]		105	160	199	129
Overall [a + b]			245	374	465	301

2036 Level-of-Service Assessment

- 4.22 Prior to completion of Exit C of MTR Sung Wong Toi Station at Pak Tai Street, passengers would use Olympic Avenue and the signal crossing near Tam Kung Road to / from Exit D. To reflect the change in walking pattern after completion of Exit C, the pedestrian flows using the signal crossing near Tam Kung Road have been added into the 2036 level-of-service assessment.
- 4.23 The 2036 peak 15-minute pedestrian flows without and with KC-018 and KC-019 are shown in Figures 4.4 and 4.5 respectively, and the corresponding LOS assessment is presented in Table 4.9.

TABLE 4.9 2036 LEVEL-OF-SERVICE ASSESSMENT

Ref.	Footpath	Peak Period	2-way Peak Pedestrian Flows ⁽¹⁾					
			Without KC-018 and KC-019			With KC-018 and KC-019		
			Flow (ped/15-min)	Rate (ped/min/m)	LOS	Flow (ped/15-min)	Rate (ped/min/m)	LOS
F1	Eastern footpath of To Kwa Wan Road	AM	473	12.6	A	889	23.7	C
		PM	527	14.1	A	1,106	29.5	C
F2	Northern footpath of Mok Cheong Street (east of Kowloon City Road)	AM	240	6.4	A	505	13.5	A
		PM	265	7.1	A	593	15.8	A
F3	Northern footpath of Mok Cheong Street (west of Kowloon City Road)	AM	244	8.1	A	509	17.0	B
		PM	266	8.9	A	594	19.8	B
F4	Eastern footpath of Pak Tai Street	AM	371	12.4	A	636	21.2	B
		PM	414	13.8	A	742	24.7	C
F5	Eastern footpath of To Kwa Wan Road (south of Ma Tau Kok Road)	AM	271	7.2	A	625	16.7	B
		PM	245	6.5	A	683	18.2	B
F6	Southern footpath of Ma Tau Kok Road (east of Kowloon City Road)	AM	367	12.2	A	721	24.0	C
		PM	381	12.7	A	819	27.3	C
F7	Southern footpath of Ma Tau Kok Road (west of Kowloon City Road)	AM	324	8.6	A	678	18.1	B
		PM	502	13.4	A	940	25.1	C

Note: ⁽¹⁾ highest pedestrian flows along the whole section of footpath

- 4.24 The above results indicate that the analysed footpaths are expected to operate with LOS A to C during the peak periods in 2036. The results show that the footpaths analysed have sufficient capacity to accommodate the (i) expected pedestrian growth; and (ii) additional pedestrians generated by KC-018 and KC-019.

5.0 CONCLUSION

- 5.1 KC-018 and KC-019 comprise of the old buildings bounded by at: (i) Ma Tau Kok Road; (ii) Ming Lun Street; (iii) Chung Sun Street; (iv) Hing Yin Street; and (v) Hing Yan Street. The URA intends to rezone KC-018 and KC-019 in Ma Tau Kok from "CDA" and 'Road' to "R(A)" and 'Road'. The two sites will be redeveloped into residential developments with retail uses and G/IC facilities.
- 5.2 Subject to the detailed design, the internal transport facilities provided for KC-018 and KC-019 comply with the **higher end of the HKPSG recommendations** as summarised in Table 5.1.

TABLE 5.1 SUMMARY OF INTERNAL TRANSPORT FACILITIES

Item	KC-018	KC-019	Overall
Car Parking Space	434 ⁽¹⁾	324 ⁽²⁾	758
HGV Loading / Unloading Bay	7	6	13
LGV Loading / Unloading Bay	9	6	15
Motorcycle Parking Space	20	16	36

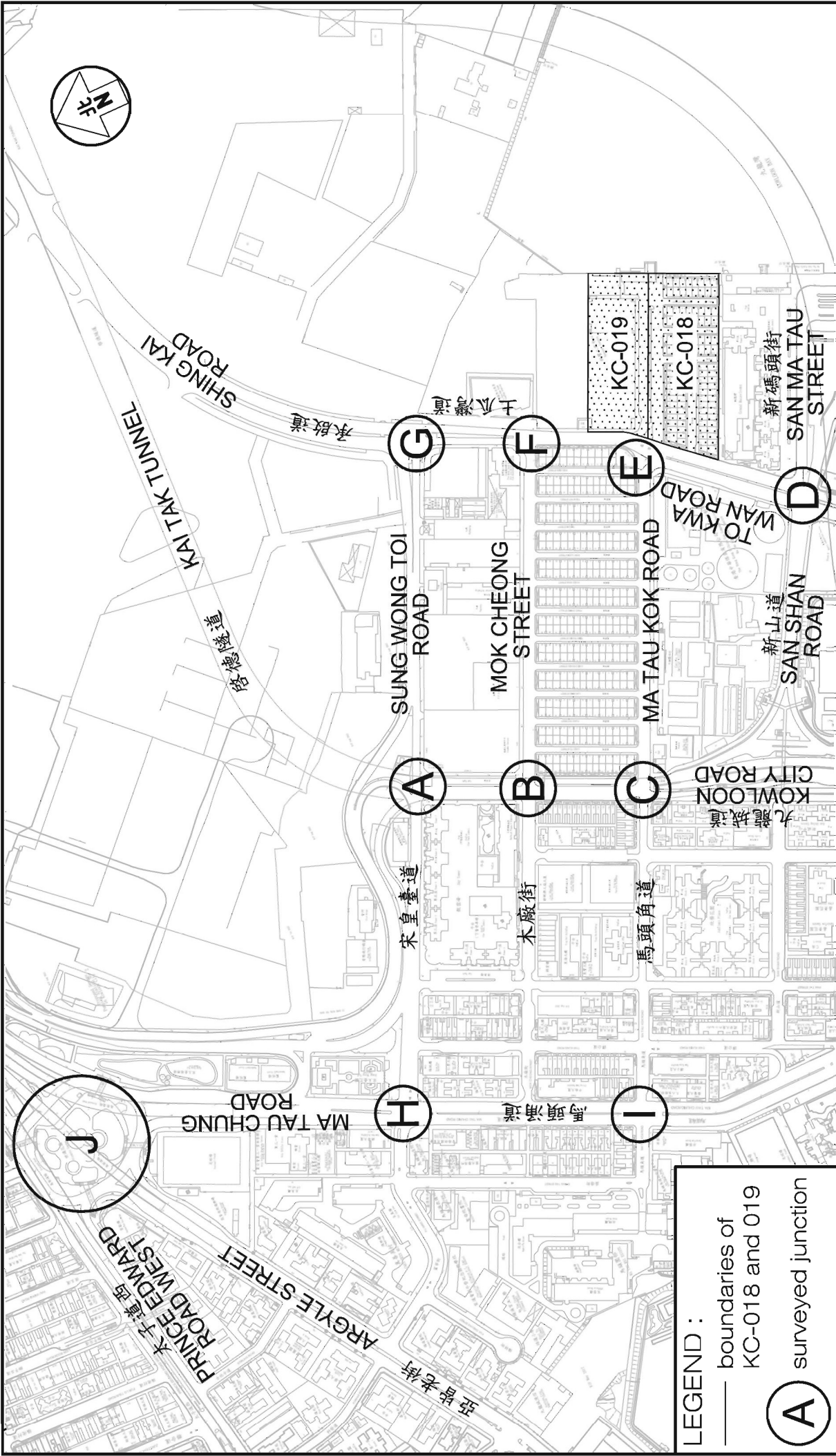
Note: ⁽¹⁾ include 5 car parking spaces for persons with disabilities

⁽²⁾ include 4 car parking spaces for persons with disabilities

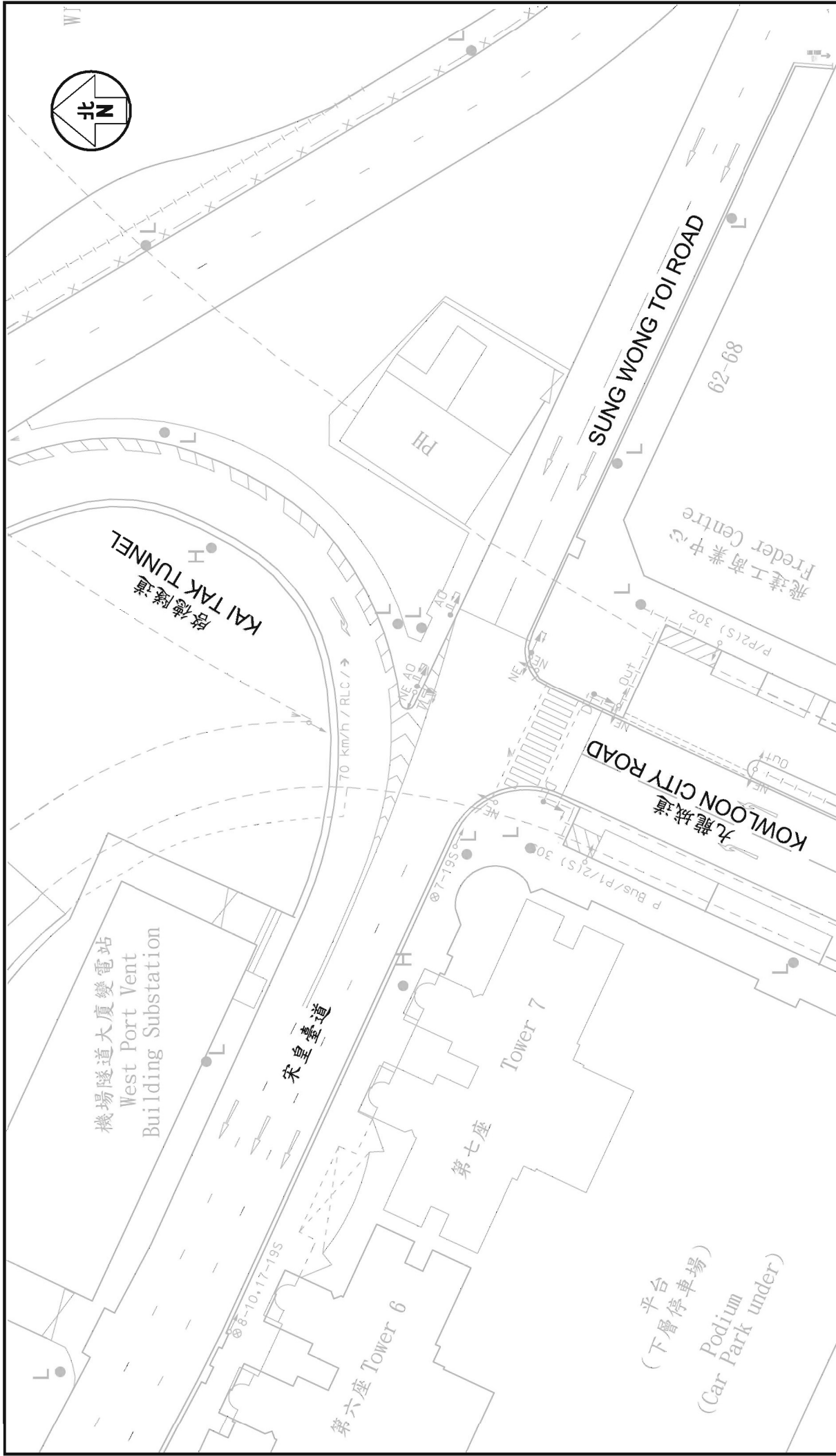
- 5.3 Manual classified counts were conducted at key junctions, which are located in the vicinity of KC-018 and KC-019 in order to establish the existing traffic flows during the AM and PM peak hours. The 2036 design traffic flows are derived with reference to the BDTM and have taken into account the planned developments and road network in the vicinity.
- 5.4 To be in line with the OZP, the redevelopment of KC-018 and KC-019 adjoining the "Road" zone provides an opportunity to widen the existing To Kwa Wan Road from a single carriageway 4-lane road to a dual carriageway 3-lane road when the need arises in future.
- 5.5 The 2036 junction capacity analysis was undertaken for the cases with and without KC-018 and KC-019. The junctions analysed have sufficient capacity to accommodate the expected 2036 traffic flows and the traffic generated by KC-018 and KC-019. Hence, the potential widening of To Kwa Wan Road is **not** necessary for redevelopment of KC-018 and KC-019.
- 5.6 Pedestrian counts were conducted at the footpaths in the vicinity of the subject site in order to estimate the future pedestrian flows during the AM and PM peak periods. The LOS assessment demonstrates that the analysed footpaths have sufficient capacity to accommodate the estimated pedestrian flows in 2036.
- 5.7 The TIA concludes that KC-018 and KC-019 will result in **no** adverse traffic impact to the surrounding planned road network, and is acceptable from traffic engineering grounds.



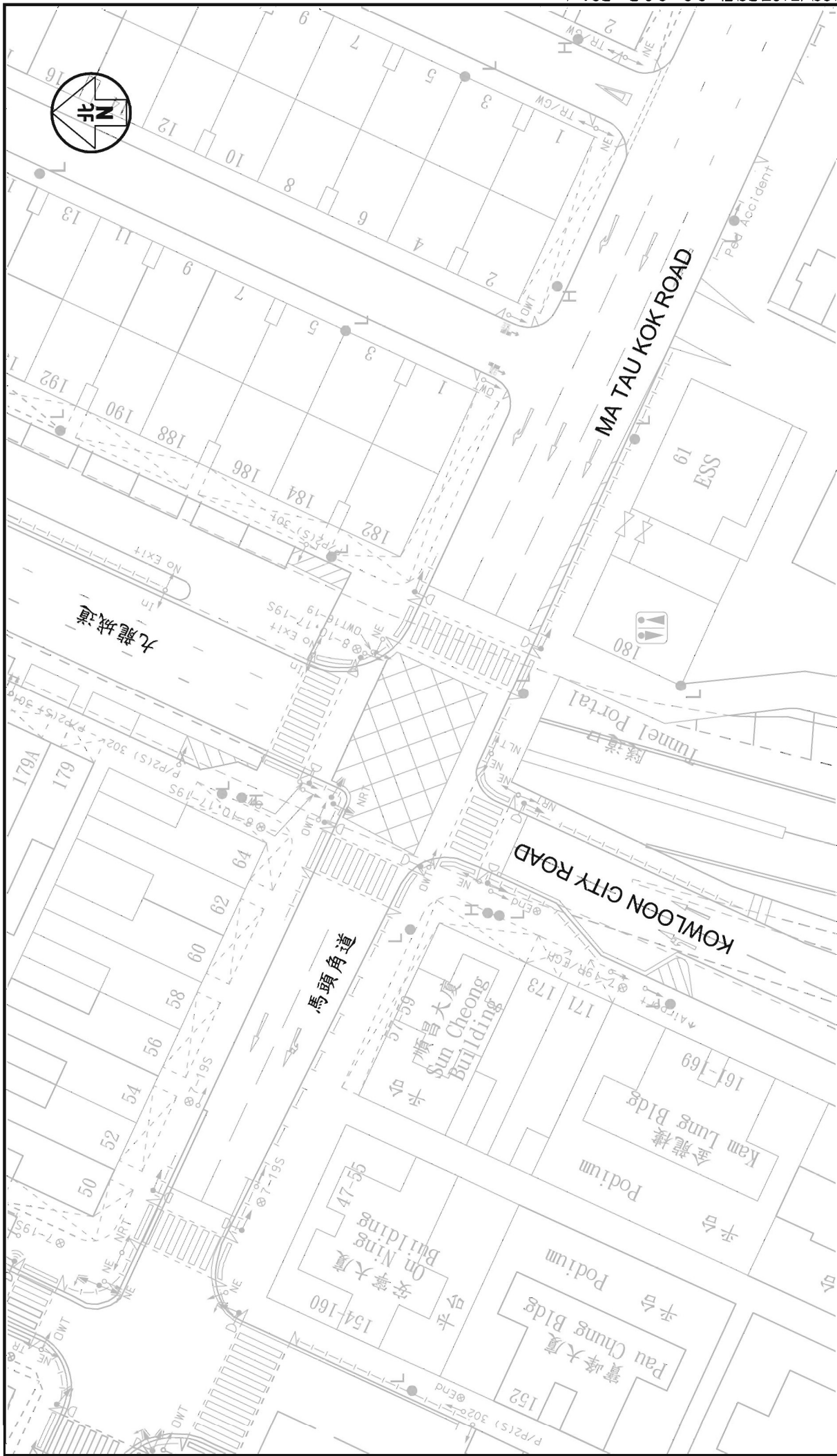
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	LOCATION OF KC-018 AND KC-019											Designed by	T H C				Checked by	K C		
													Drawn by					C C L		
													Scale in A4					1 : 3,000		Date
Figure Title																				



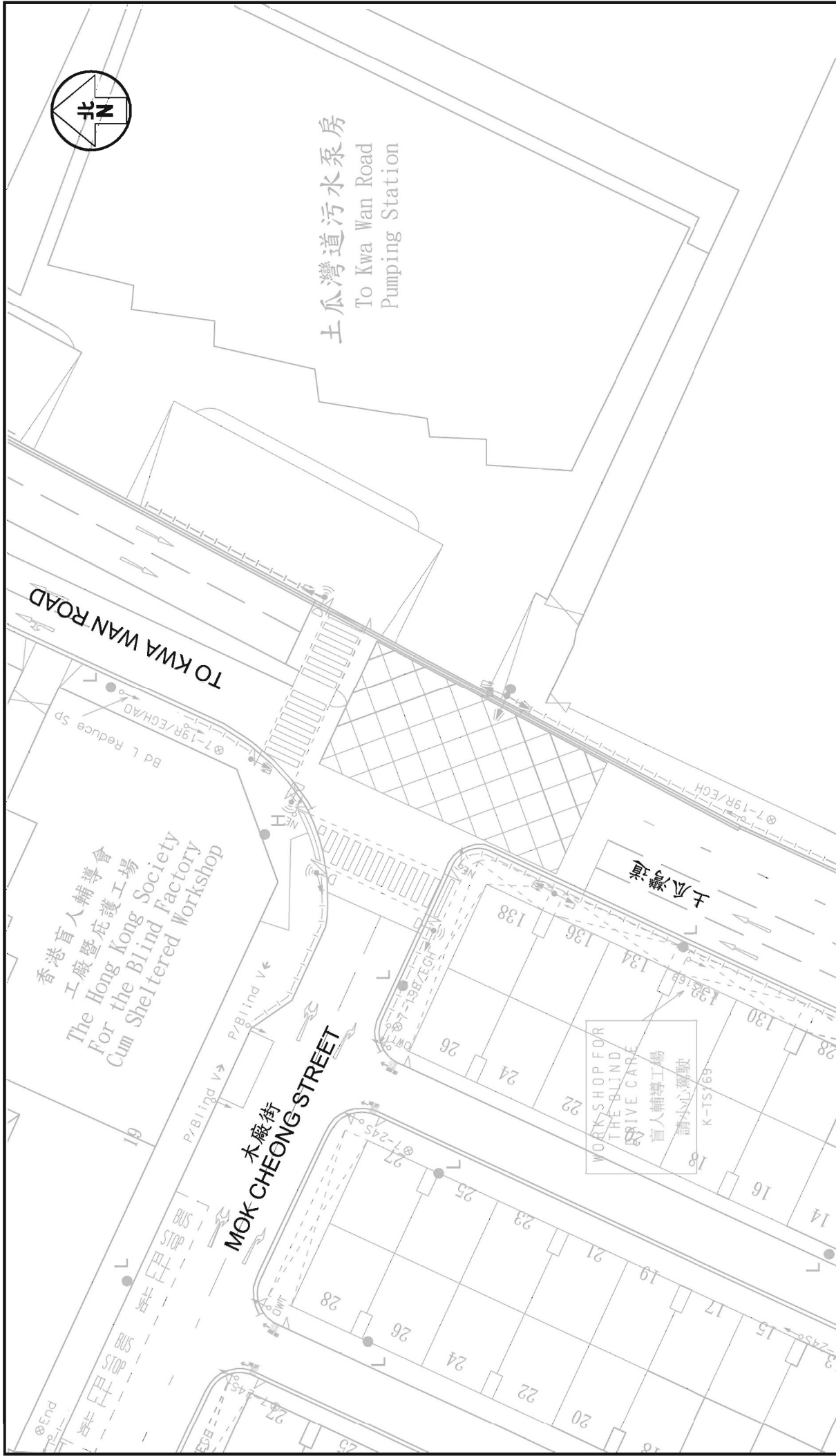
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						Drawn by		C C L		K C			
						Scale in A4		1 : 4,000		Date		29 SEP 2022	



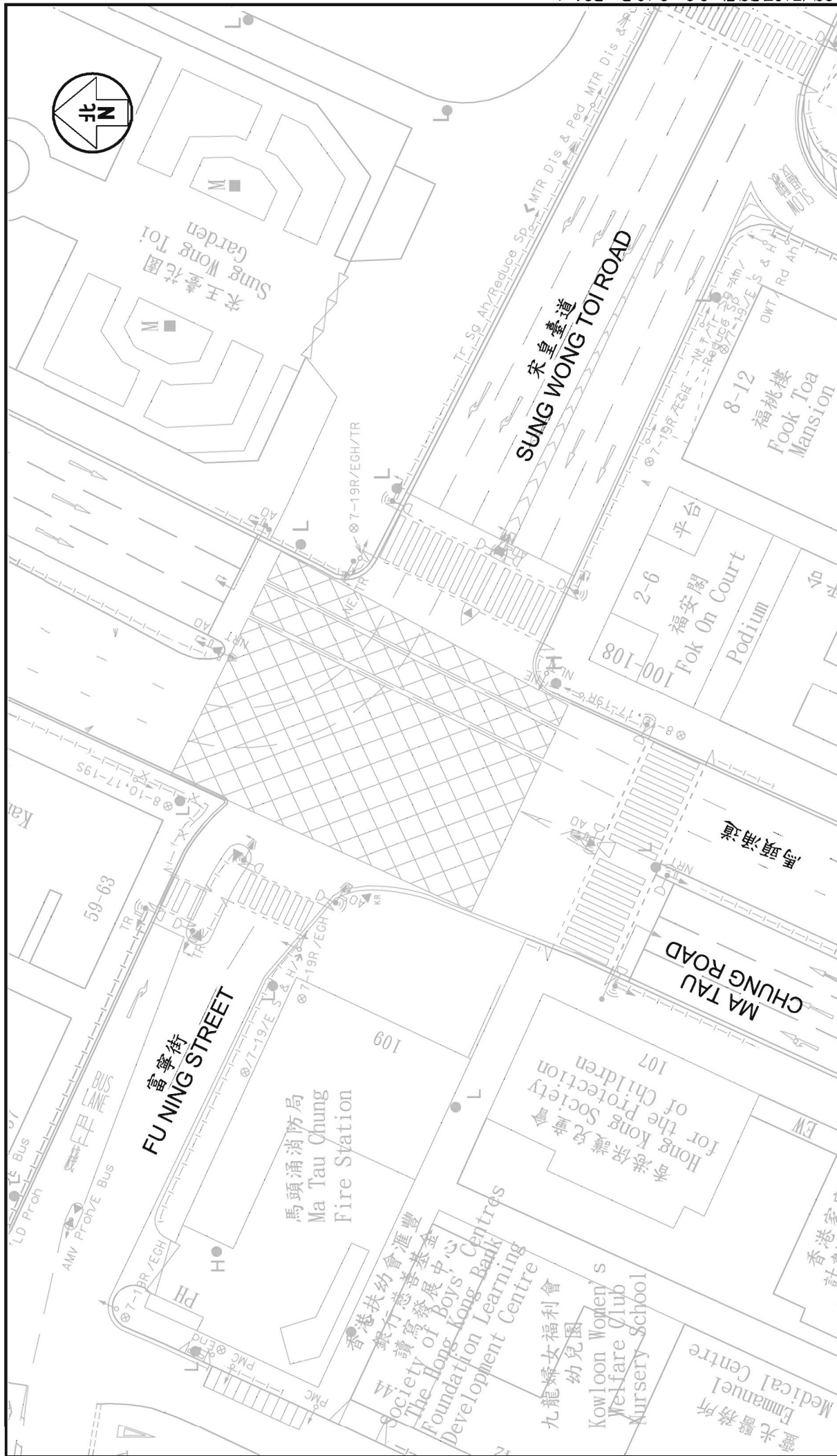
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	(A) JUNCTION OF KOWLOON CITY ROAD / SUNG WONG TOI ROAD																	
Figure Title												Designed by	T H C	Drawn by	C C L	Checked by	K C	21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
											Scale in A4		Date		1 : 500		21 SEP 2022	



Project Title	URA KC-018 AND KC-019 IN MA TAU KOK				Figure No.		Revision									
Figure Title	(C) JUNCTION OF KOWLOON CITY ROAD / MA TAU KOK ROAD				J7167		2.4		R2A							
					Designed by		T H C		Drawn by		C C L		Checked by		K C	
							Scale in A4		1 : 500		Date		21 SEP 2022			
					CKM Asia Limited											
					Traffic and Transportation Planning Consultants											
					21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong											
					Tel : (852) 2520 5990 Fax : (852) 2528 6343											
Email : mail@ckmasia.com.hk																

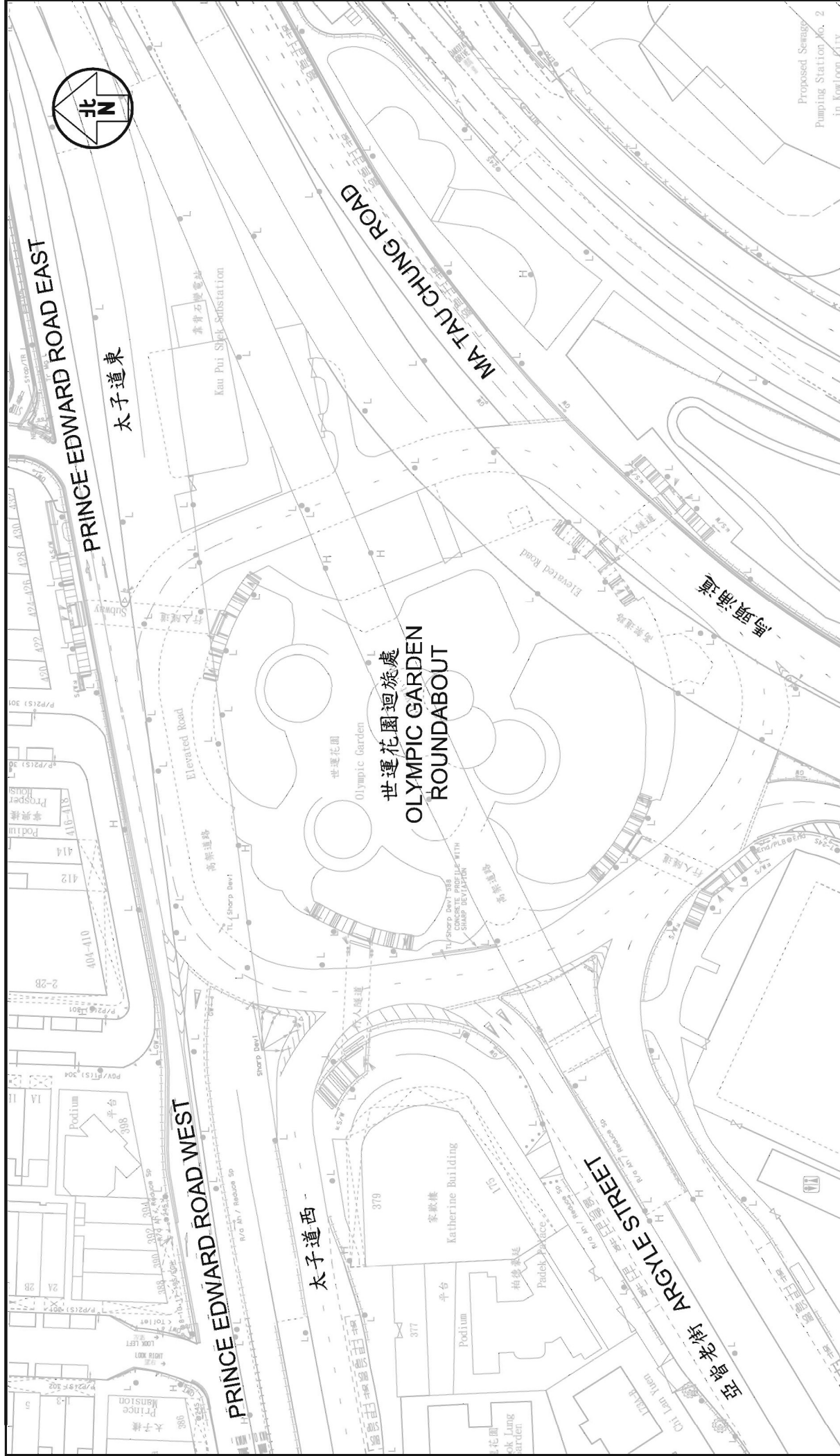


Project Title	URA KC-018 AND KC-019 IN MA TAU KOK	Figure No.	2.7	Revision	R2A
Figure Title	(F) JUNCTION OF TO KWA WAN ROAD / MOK CHEONG STREET	Designed by	T H C	Drawn by	C C L
		Scale in A4	1 : 500	Date	21 SEP 2022
		CKM Asia Limited			
		Traffic and Transportation Planning Consultants			
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		Tel : (852) 2520 5990 Fax : (852) 2528 6343			
		Email : mail@ckmasia.com.hk			



Project Title	URA KC-018 AND KC-019 IN MA TAU KOK			Figure No.	2.9	Revision	R2A	CKM Asia Limited		
	(H) JUNCTION OF MA TAU CHUNG ROAD /			Designed by	T H C	Drawn by	C C L	Traffic and Transportation Planning Consultants		
	FU NING STREET / SUNG WONG TOI ROAD			Checked by	K C	Date		21 SEP 2022		
				Scale in A4		1 : 500		21 SEP 2022		

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Project Title	URA KC-018 AND KC-019 IN MA TAU KOK										J7167	
	(J) OLYMPIC GARDEN ROUNDABOUT											
Figure Title												
	Figure No.		2.11			Revision		R2A				
	Designed by		T H C		Drawn by		C C L		Checked by		K C	
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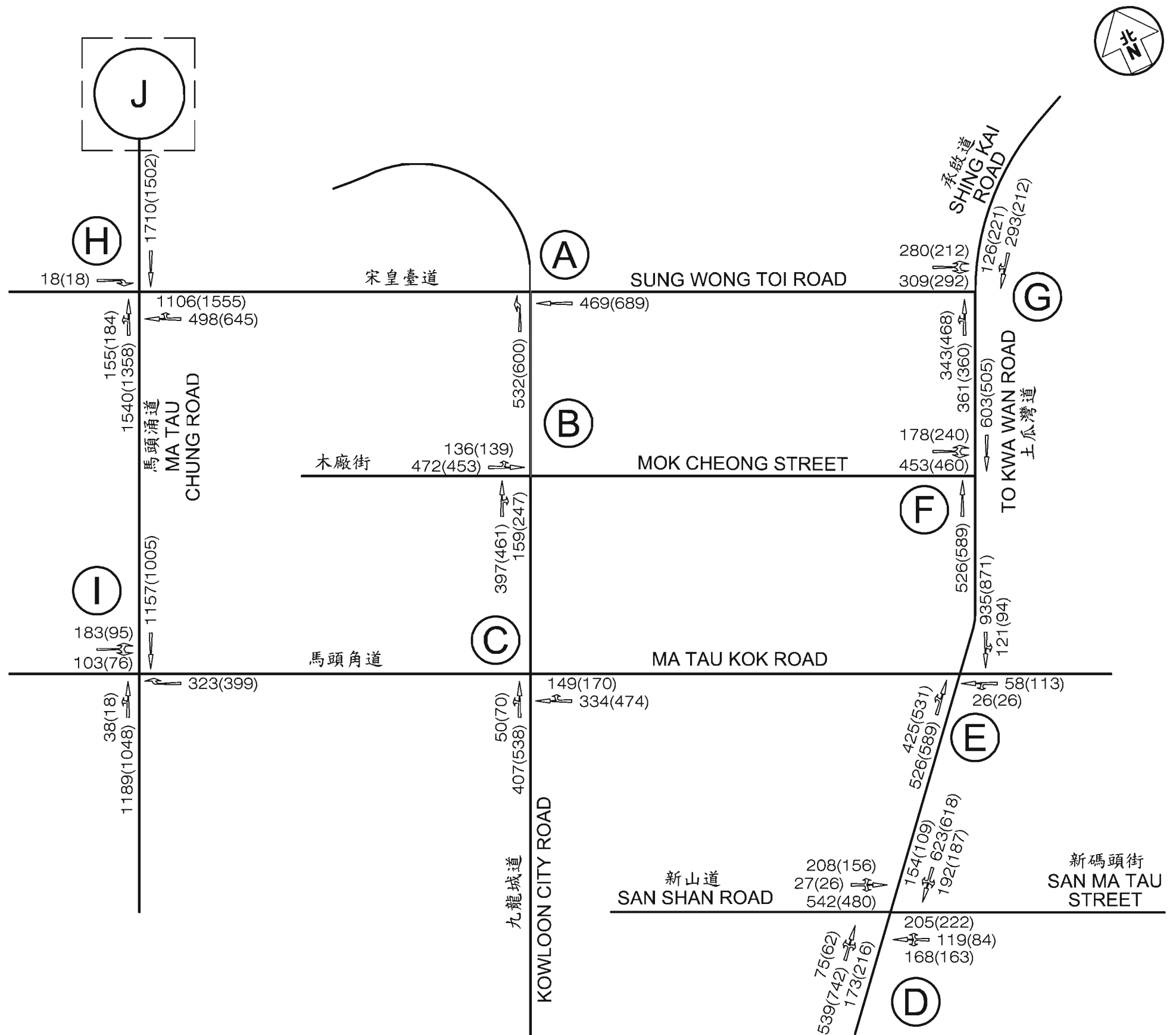
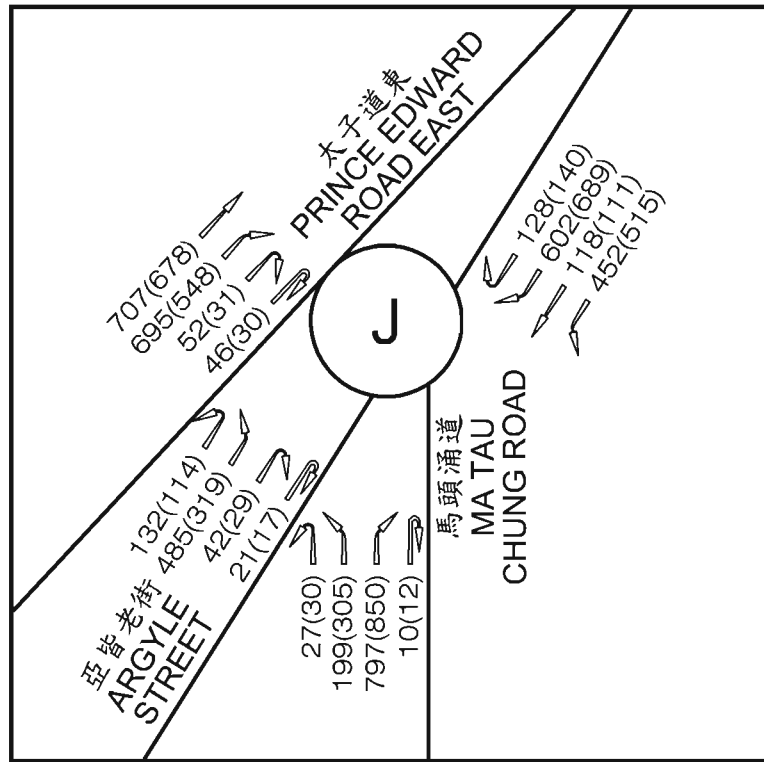
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LEGEND :

(A) surveyed junction

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

Project Title	URA KC-018 AND KC-019 IN MA TAU KOK	Figure No.	2.12	Revision	R2A	CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk		
Figure Title	EXISTING PEAK HOUR TRAFFIC FLOWS	Designed by	THC	Drawn by	CC L		Checked by	K C
		Scale in A3	N.T.S.		Date		21 SEP 2022	

LEGEND :

- 123 - AM peak 15-minute pedestrian flow, ped / 15-min
(456) - PM peak 15-minute pedestrian flow, ped / 15-min



MTR SUNG WONG TOI STATION
港鐵宋皇臺站

MA TAU CHUNG ROAD

宋皇臺道

SUNG WONG TOI ROAD

F4
104
(127)

F3
97(90)

F2
94(89)

馬頭涌道

MOK CHEONG STREET

F7

129(249)

馬頭角道

F6

166(145)

MA TAU KOK ROAD

F1
145
(131)

TO KWA
WAN ROAD

F5
233
(211)

土瓜灣道

Project Title

URA KC-018 AND KC-019 IN MA TAU KOK

J7167

Figure No. 2.13

Revision R2A

Checked by

Designed by T H C

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Date 21 SEP 2022

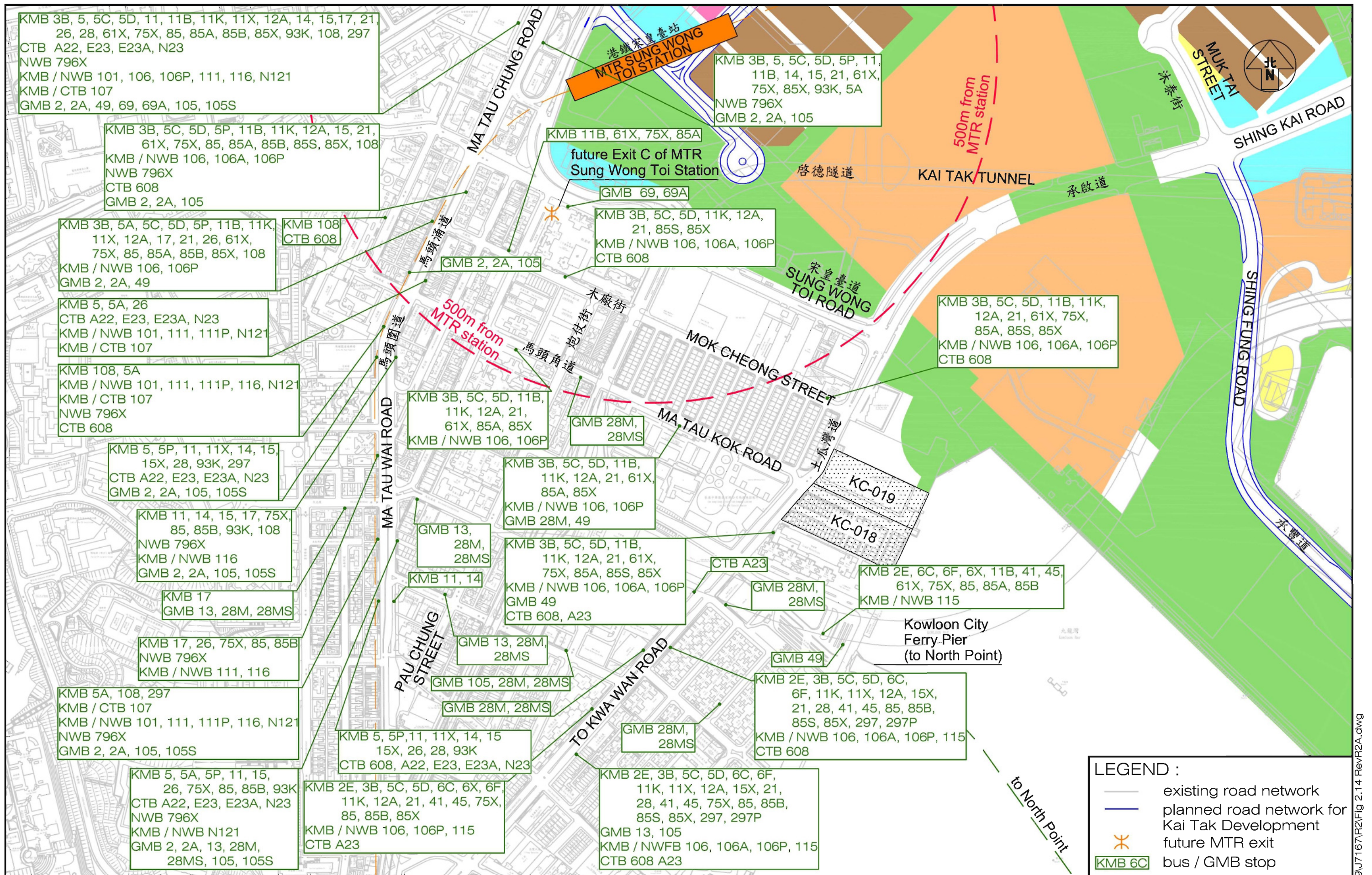
CKM Asia Limited

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Figure Title

EXISTING PEAK 15-MINUTE PEDESTRIAN FLOWS

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INTERNAL TRANSPORT FACILITIES :

MOTORCYCLE PARKING SPACE
@2.4m(L) X 1m(W) X 2.4m(H)

CAR PARKING SPACE
@5m(L) X 2.5m(W) X 2.4m(H)

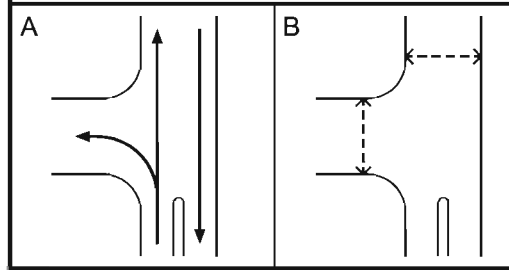
CAR PARKING SPACE FOR
PERSONS WITH DISABILITIES
@5m(L) X 3.5m(W) X 2.4m(H)

LGV LOADING / UNLOADING BAY
@7m(L) x 3.5m(W) x 3.6m(H)

HGV LOADING / UNLOADING BAY
@11m(L) x 3.5m(W) x 4.7m(H)

RCV LOADING / UNLOADING BAY
@12m(L) X 5m(W) X 4.5m(H)

PROPOSED METHOD OF CONTROL



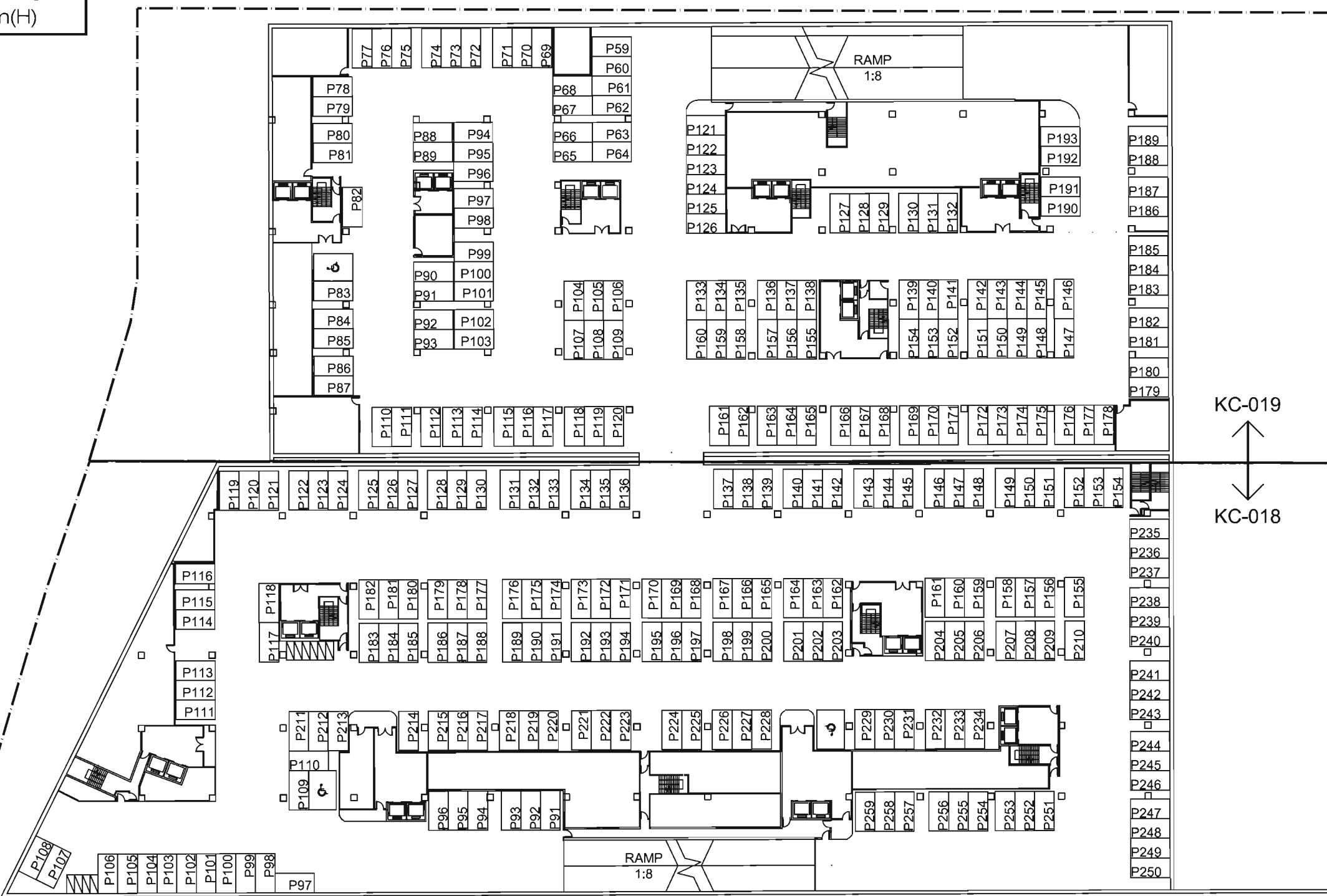
LEGEND :

- boundaries of KC-018 and 019
- Yellow box "Road" zone

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INTERNAL TRANSPORT FACILITIES :

-  MOTORCYCLE PARKING SPACE
@2.4m(L) X 1m(W) X 2.4m(H)
-  CAR PARKING SPACE
@5m(L) X 2.5m(W) X 2.4m(H)
-  CAR PARKING SPACE FOR
PERSONS WITH DISABILITIES
@5m(L) X 3.5m(W) X 2.4m(H)



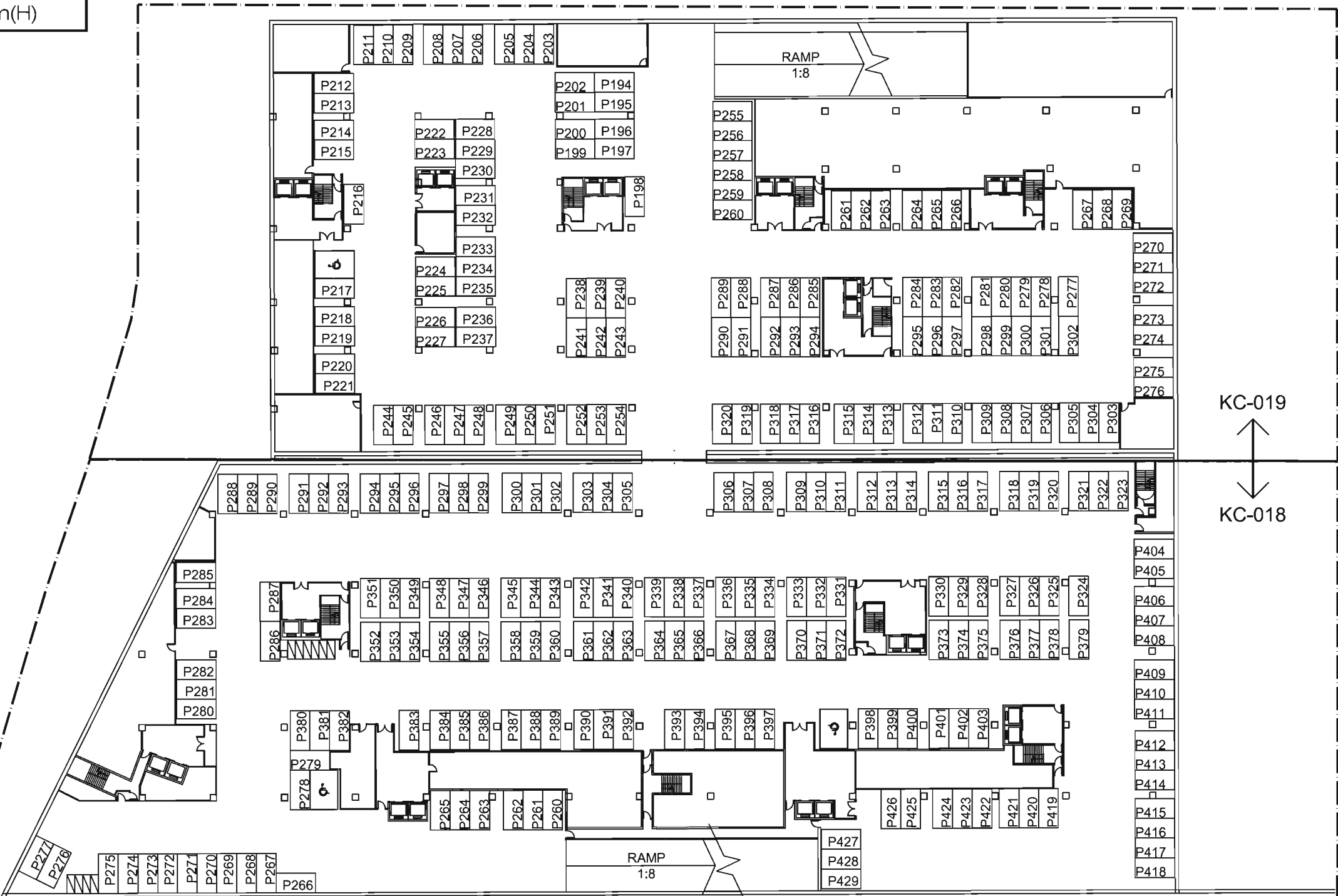
KC-019
↑
KC-018
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LEGEND :
--- boundaries of
KC-018 and 019

Project Title				URA KC-018 AND KC-019 IN MA TAU KOK				Figure No.		Revision		CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk					
								J7167		3.2						R2B	
Figure Title				NOTIONAL INTERNAL TRANSPORT LAYOUT – BASEMENT 2 FLOOR				Designed by		Drawn by						Checked by	
								T H C		C C L						K C	
								Scale in A3		Date							
								1 : 600		29 SEP 2022							

INTERNAL TRANSPORT FACILITIES :

-  MOTORCYCLE PARKING SPACE
@2.4m(L) X 1m(W) X 2.4m(H)
-  CAR PARKING SPACE
@5m(L) X 2.5m(W) X 2.4m(H)
-  CAR PARKING SPACE FOR
PERSONS WITH DISABILITIES
@5m(L) X 3.5m(W) X 2.4m(H)



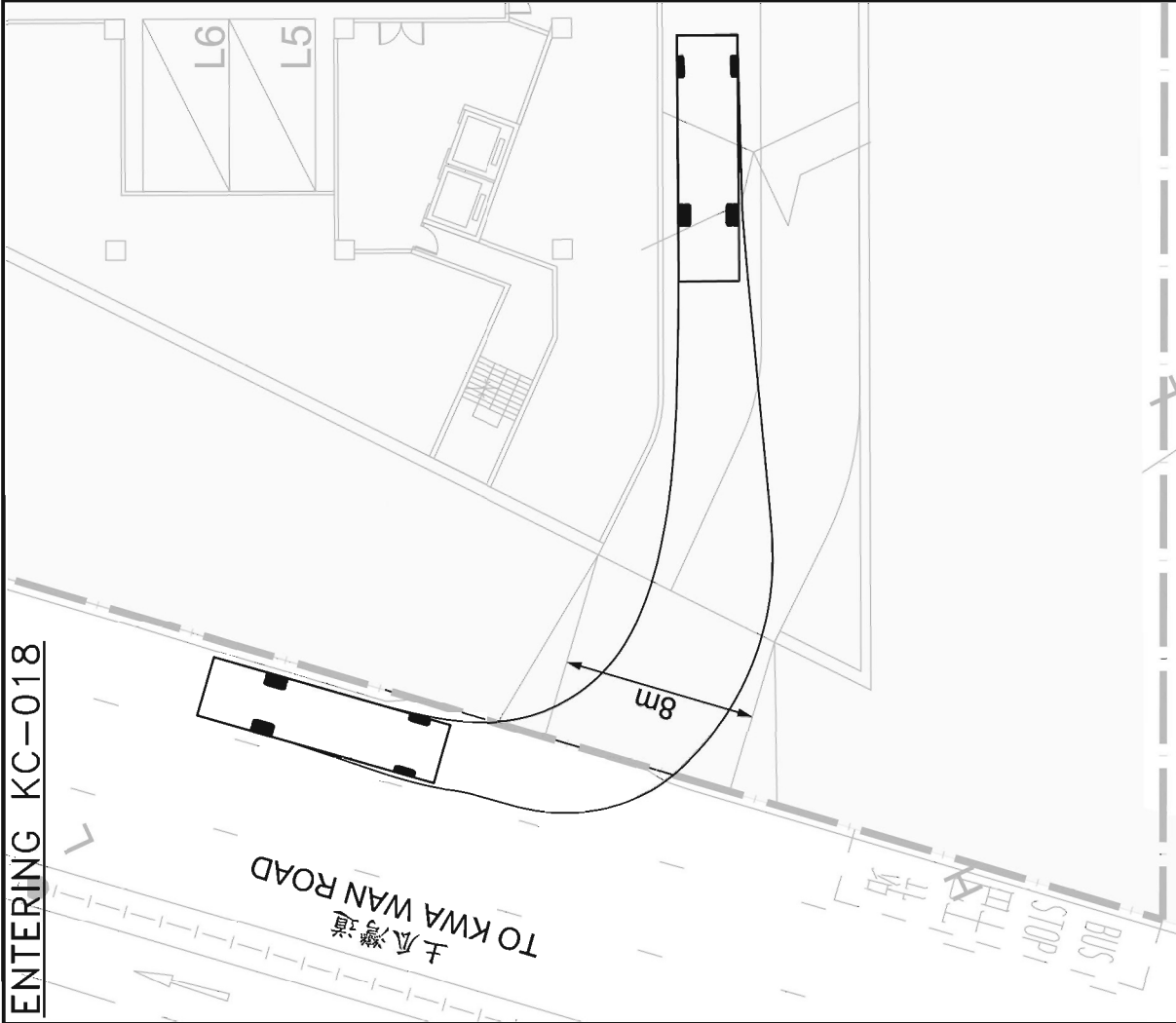
KC-019
↑
KC-018
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LEGEND :
--- boundaries of
KC-018 and 019

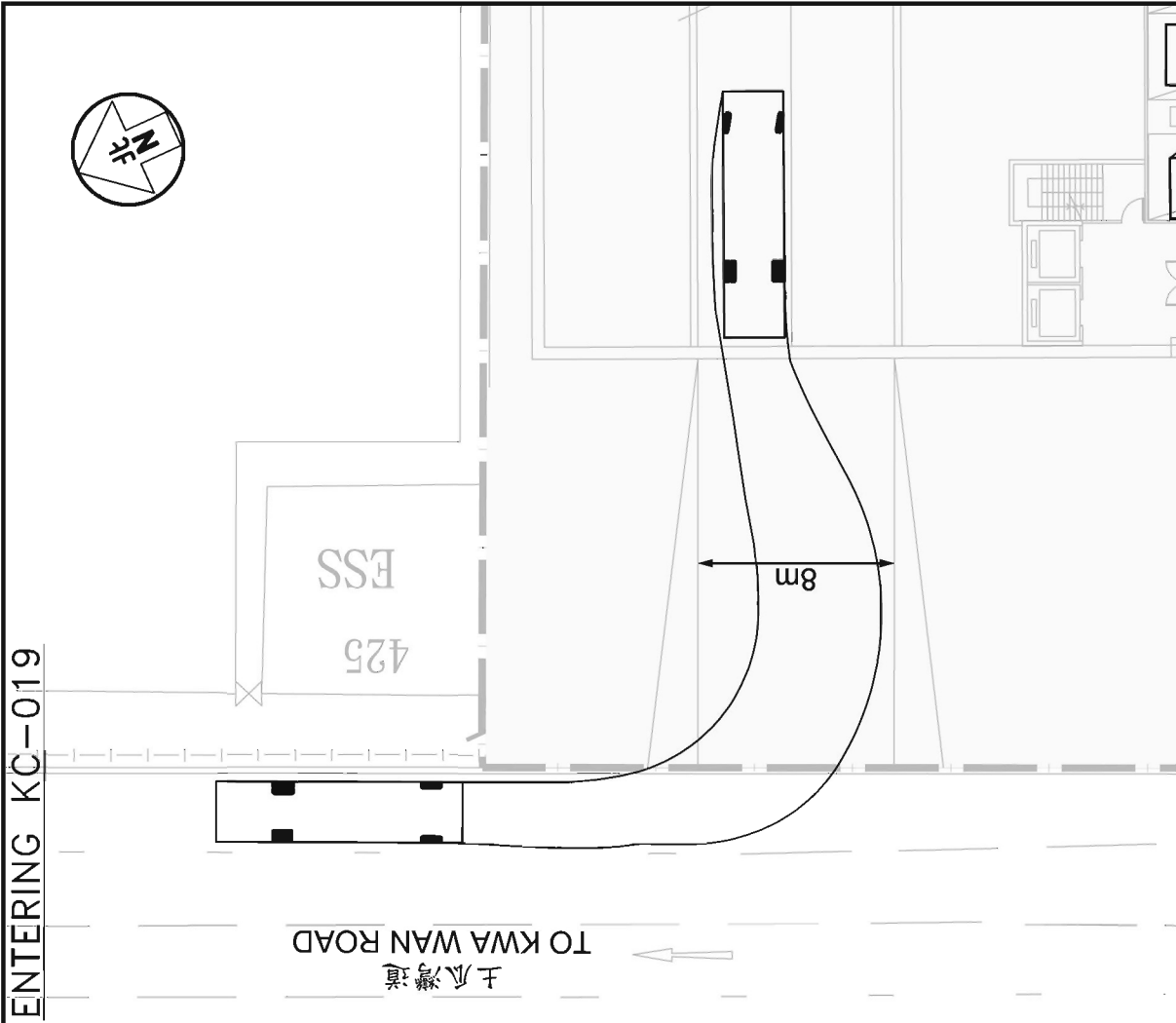
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Figure Title										Designed by T H C		Drawn by C C L						Checked by K C	
NOTIONAL INTERNAL TRANSPORT LAYOUT – BASEMENT 3 FLOOR										Scale in A3 1 : 600		Date 29 SEP 2022							

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ENTERING KC-018



ENTERING KC-019



Project Title

URA KC-018 AND KC-019 IN MA TAU KOK

Figure No.

J7167

Revision

R2B

Figure No.

3.4

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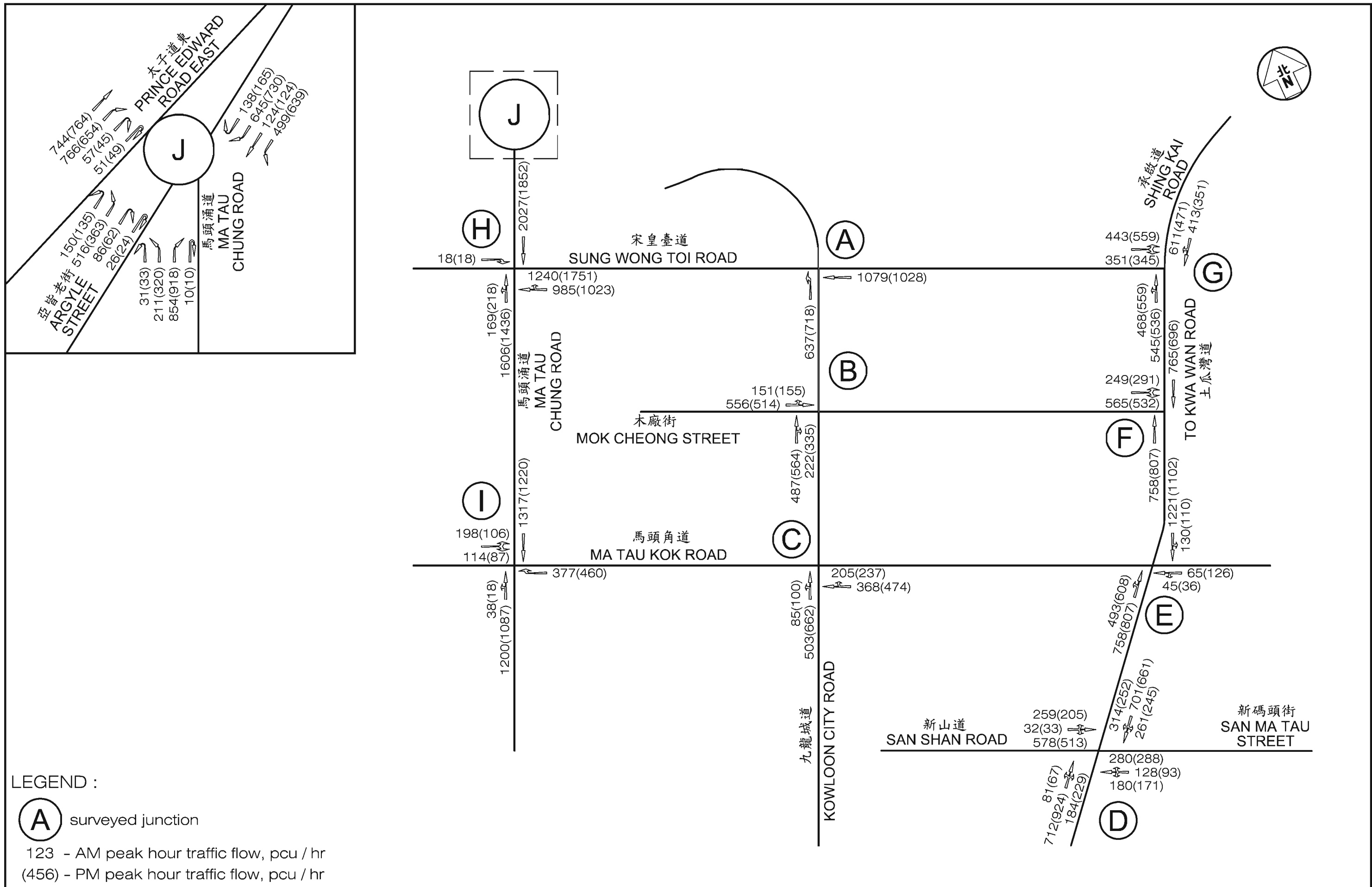
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Figure Title

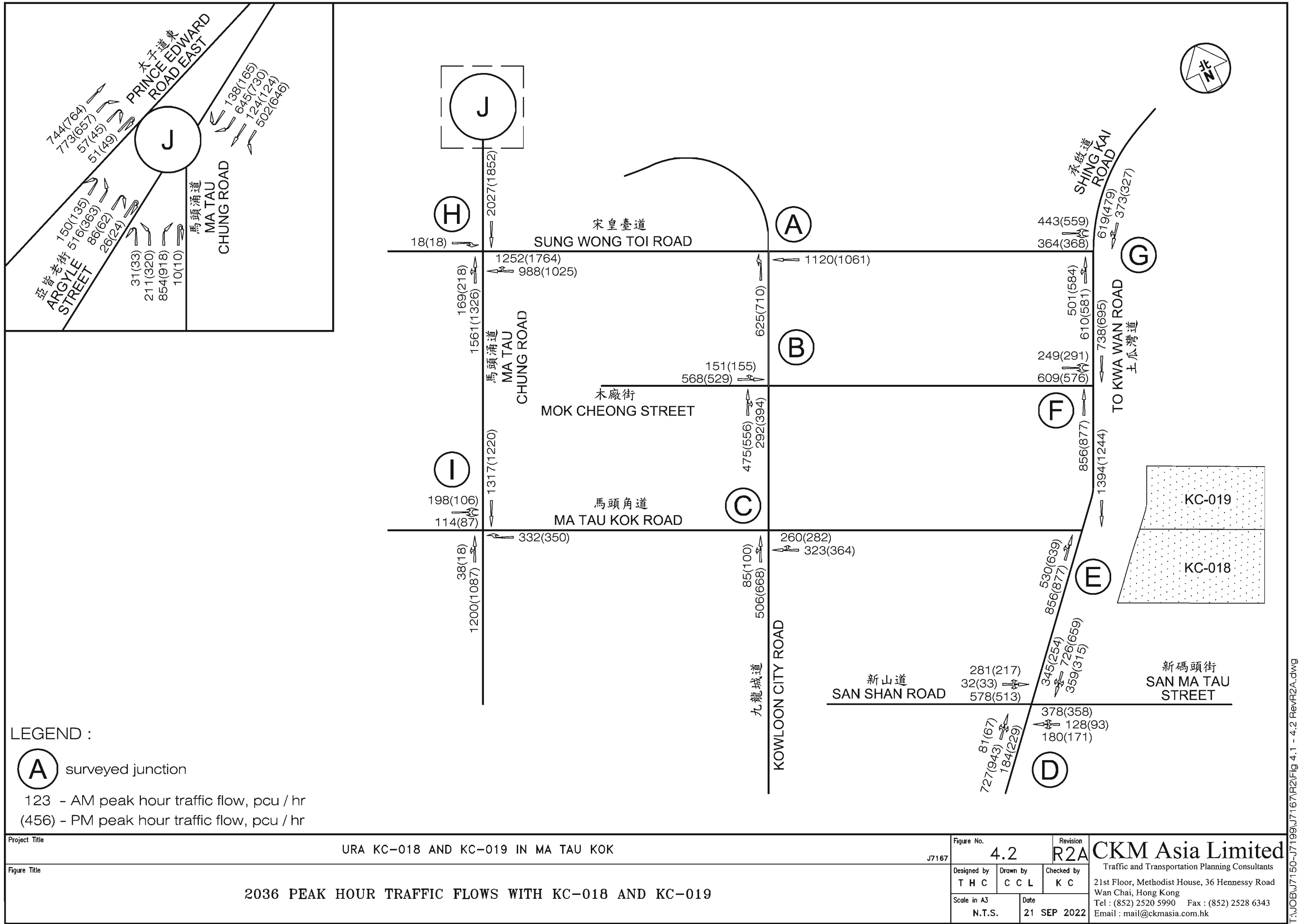
SWEPT PATHS OF HGV ENTERING KC-018 AND KC-019

CKM Asia Limited

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



Project Title		URA KC-018 AND KC-019 IN MA TAU KOK		Figure No.		Revision		CKM Asia Limited		
		J7167		4.1		R2A				
Figure Title		2036 PEAK HOUR TRAFFIC FLOWS WITHOUT KC-018 AND KC-019		Designed by	Drawn by	Checked by				
				T H C	C C L	K C				
				Scale in A3	Date		Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk			
				N.T.S.	21 SEP 2022					



LEGEND :

existing road network

planned road network for the CKR project (by others)

possible traffic improvement

NOTE:

The traffic arrangement scheme is conceptual and subject to detailed design and studies.

TO KWA WAN ROAD / SAN SHAN ROAD / SAN MA TAU STREET

Project Title	URA KC-018 AND KC-019 IN MA TAU KOK				Figure No.	4.3	Revision	R2A	CKM Asia Limited							
	POSSIBLE TRAFFIC IMPROVEMENT SCHEME FOR JUNCTION (D)				Designed by	T H C	Drawn by	C C L	Checked by	K C	Traffic and Transportation Planning Consultants					
Figure Title					Scale in A4	1 : 500	Date	21 SEP 2022	21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong							
										Tel : (852) 2520 5990 Fax : (852) 2528 6343						
										Email : mail@ckmasia.com.hk						

T:\JOB\J7150-J7199\J7167\R2\Fig 4.3 RevR2A.dwg

LEGEND :

- 123 - AM peak 15-minute pedestrian flow, ped / 15-min
- (456) - PM peak 15-minute pedestrian flow, ped / 15-min



MTR SUNG WONG TOI STATION
港鐵宋皇臺站

MA TAU CHUNG ROAD

宋皇臺道

SUNG WONG TOI ROAD

F4

636
(742)

F3

509(594)

F2

505(593)

F1

889
(1106)

馬頭涌道

F7

678(940)

F6

721(819)

F5

625
(683)

MOK CHEONG STREET

MA TAU KOK ROAD

馬頭角道

MA TAU KOK ROAD

KC-019

KC-018

TO KWA
WAN ROAD

Project Title

URA KC-018 AND KC-019 IN MA TAU KOK

J7167

Figure No. 4.5

Revision R2A

CKM Asia Limited

Figure Title

2036 PEAK 15-MINUTE PEDESTRIAN FLOWS
WITH KC-018 AND KC-019

Designed by T H C

Drawn by C C L

Checked by K C

Date 21 SEP 2022

Scale in A4 1 : 4,000

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

T:\JOB\J7150-J7199\J7167\R2\Fig 4.5 RevR2A.dwg

Appendix A – Junction Capacity Analysis

Signal Junction Analysis

Junction: A. Sung Wong Toi Road / Kowloon City Road

Job Number: J7167

Scenario: without KC-018 and KC-019

R2 / P.1-2

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$																															
$S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$																															
	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 15%;"></th> <th style="width: 15%;">AM Peak</th> <th style="width: 15%;">Check Pedestrian Phase</th> <th style="width: 15%;">PM Peak</th> <th style="width: 15%;">Check Pedestrian Phase</th> </tr> <tr> <td>Sum y</td> <td style="text-align: center;">0.439</td> <td></td> <td style="text-align: center;">0.448</td> <td></td> </tr> <tr> <td>L (s)</td> <td style="text-align: center;">10</td> <td></td> <td style="text-align: center;">10</td> <td></td> </tr> <tr> <td>C (s)</td> <td style="text-align: center;">130</td> <td></td> <td style="text-align: center;">130</td> <td></td> </tr> <tr> <td>practical y</td> <td style="text-align: center;">0.831</td> <td></td> <td style="text-align: center;">0.831</td> <td></td> </tr> <tr> <td>R.C. (%)</td> <td style="text-align: center;">89%</td> <td></td> <td style="text-align: center;">85%</td> <td></td> </tr> </table>		AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase	Sum y	0.439		0.448		L (s)	10		10		C (s)	130		130		practical y	0.831		0.831		R.C. (%)	89%		85%	
	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase																											
Sum y	0.439		0.448																												
L (s)	10		10																												
C (s)	130		130																												
practical y	0.831		0.831																												
R.C. (%)	89%		85%																												

1	2	3	4	5
AM	G = I/G = 6	G = I/G = 6	G = I/G =	G = I/G =
	G = I/G =	G = I/G =	G = I/G =	G = I/G =
PM	G = I/G = 6	G = I/G = 6	G = I/G =	G = I/G =
	G = I/G =	G = I/G =	G = I/G =	G = I/G =

Signal Junction Analysis

Junction: A. Sung Wong Toi Road / Kowloon City Road

Job Number: J7167

Scenario: with KC-018 and KC-019

R2 / P.1-3

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.446		0.454	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	86%		83%	

Note:

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

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

	1	2	3	4	5
AM	G = I/G = 6	G = I/G = 6	G = I/G =	G = I/G =	G = I/G =
	G = I/G =	G = I/G =	G = I/G =	G = I/G =	G = I/G =
PM	G = I/G = 6	G = I/G = 6	G = I/G =	G = I/G =	G = I/G =
	G = I/G =	G = I/G =	G = I/G =	G = I/G =	G = I/G =

Signal Junction Analysis

Junction: B. Kowloon City Road / Mok Cheong Street

Job Number: J7167

Scenario: existing condition

R2 / P.2-1

Design Year: 2019 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.219		0.273	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	279%		204%	

1		2		3		4		5		
<p>A1 A2 A3</p> <p>B1 B2 B3</p> <p>P3</p>										
AM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: B. Kowloon City Road / Mok Cheong Street

Job Number: J7167

Scenario: without KC-018 and KC-019

R2 / P.2-2

Design Year: 2036 Designed By:

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)


PM Traffic Flow (pcu/hr)

Note:

$S = 1940 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$

$S = 2080 + 100(W - 3.25)$
 $S_M = (S - 230) \div (1 + 1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.281		0.347	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	195%		140%	

1		2		3		4		5		
										
AM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: B. Kowloon City Road / Mok Cheong Street

Job Number: J7167

Scenario: with KC-018 and KC-019

R2 / P.2-3

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.331		0.390	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	151%		113%	

AM	G =	I/G =	6	G =	I/G =	6	G =	I/G =	G =	I/G =	
	G =	I/G =		G =	I/G =		G =	I/G =	G =	I/G =	
PM	G =	I/G =	6	G =	I/G =	6	G =	I/G =	G =	I/G =	
	G =	I/G =		G =	I/G =		G =	I/G =	G =	I/G =	

Signal Junction Analysis

Junction: C. Kowloon City Road / Ma Tau Kok Road

Job Number: J7167

Scenario: existing condition

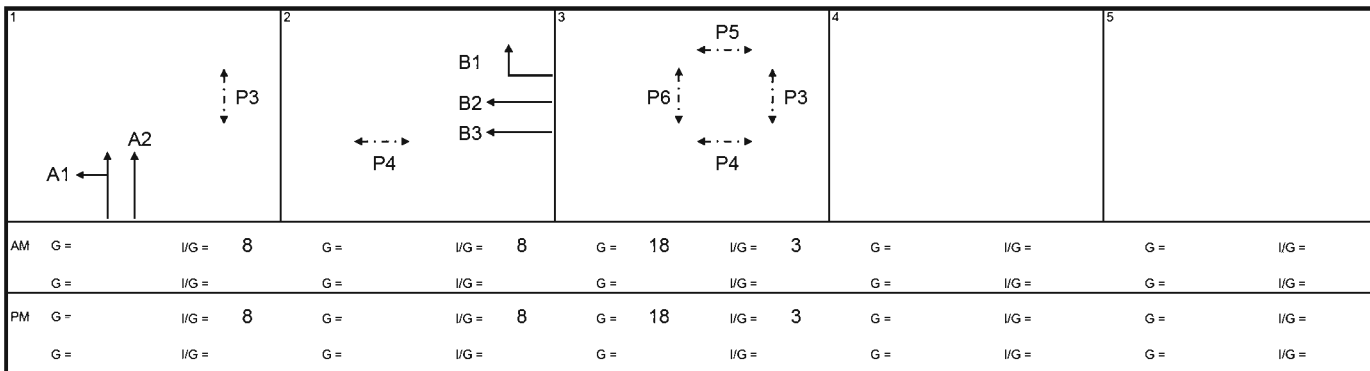
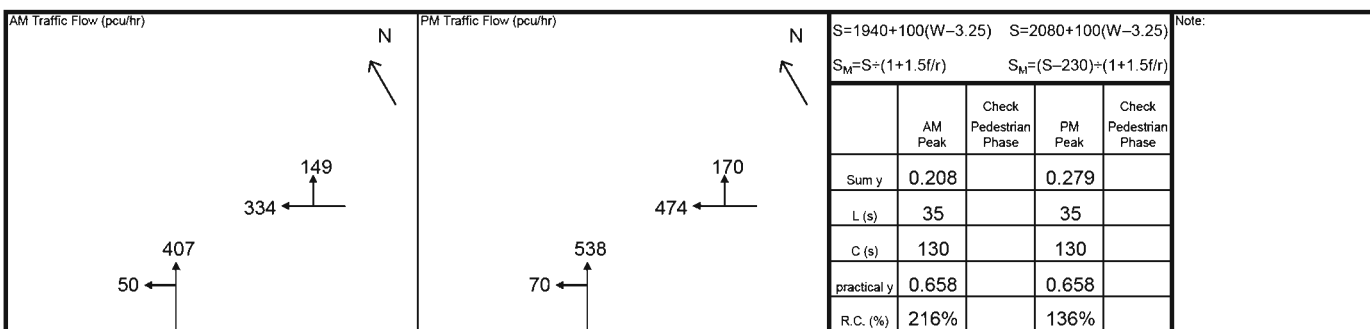
R2 / P.3-1

Design Year: 2019

Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

Signal Junction Analysis

Junction: C. Kowloon City Road / Ma Tau Kok Road

Job Number: J7167

Scenario: without KC-018 and KC-019

R2 / P.3-2

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.277		0.341	
L (s)	35		35	
C (s)	130		130	
practical y	0.658		0.658	
R.C. (%)	137%		93%	

	1	2	3	4	5
AM	G = I/G = 8	G = I/G = 8	G = 18 I/G = 3	G = I/G =	G = I/G =
	G = I/G =	G = I/G =	G = I/G =	G = I/G =	G = I/G =
PM	G = I/G = 8	G = I/G = 8	G = 18 I/G = 3	G = I/G =	G = I/G =
	G = I/G =	G = I/G =	G = I/G =	G = I/G =	G = I/G =

Signal Junction Analysis

Junction: C. Kowloon City Road / Ma Tau Kok Road

Job Number: J7167

Scenario: with KC-018 and KC-019

R2 / P.3-3

Design Year: 2036 Designed By:

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

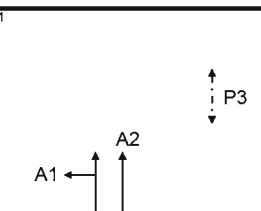
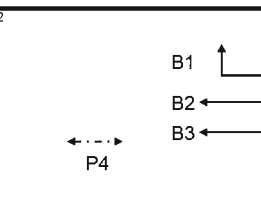
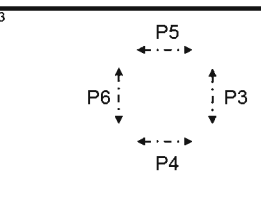
PM Traffic Flow (pcu/hr)

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.310		0.369	
L (s)	35		35	
C (s)	130		130	
practical y	0.658		0.658	
R.C. (%)	112%		78%	

Note:

	1	2	3	4	5			
								
AM	$G =$ $G =$	$I/G = 8$ $I/G =$	$G =$ $G =$	$I/G = 8$ $I/G =$	$G = 18$ $G =$	$I/G = 3$ $I/G =$	$G =$ $G =$	$I/G =$ $I/G =$
PM	$G =$ $G =$	$I/G = 8$ $I/G =$	$G =$ $G =$	$I/G = 8$ $I/G =$	$G = 18$ $G =$	$I/G = 3$ $I/G =$	$G =$ $G =$	$I/G =$ $I/G =$

Signal Junction Analysis

Junction: D. To Kwa Wan Road / San Shan Road / San Ma Tau Street Job Number: J7167
 Scenario: existing condition R2 / P.4-1
 Design Year: 2019 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
To Kwa Wan Road NB	LT+SA	A1	1	3.00	10.0	42	1802	180	0.100		26	1843	238	0.129	
	SA	A2	1	3.00			2055	206	0.100			2055	265	0.129	
	SA	A3	1	3.00			2055	206	0.100			2055	265	0.129	
	RT+SA	A4	1	3.00	25.0	89	1951	195	0.100	0.100	86	1954	252	0.129	0.129
San Shan Road	LT+SA	B1	2	3.00	10.0	89	1689	235	0.139		86	1696	182	0.107	
	RT+SA	B2	2	3.00	16.0	100	1879	267	0.142		100	1879	237	0.126	
	RT	B3	2	3.00	24.0	100	1934	275	0.142	0.142	100	1934	243	0.126	0.126
To Kwa Wan Road SB	LT+SA	C1	3	3.00	10.0	80	1710	239	0.140		79	1712	237	0.138	0.138
	SA	C2	3	3.00			2055	288	0.140	0.140		2055	284	0.138	
	SA	C3	3	3.00			2055	288	0.140			2055	284	0.138	
	RT	C4	3	3.00	30.0	100	1957	154	0.079		100	1957	109	0.056	
San Ma Tau Street	LT	D1	4	3.00	10.0	100	1665	145	0.087		100	1665	139	0.083	
	LT+SA+RT	D2	4	3.40	16.0	32	2034	176	0.087		49	2003	167	0.083	
	RT	D3	4	3.40	24.0	100	1972	171	0.087	0.087	100	1972	163	0.083	0.083
pedestrian phase						P1	1		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
						P2	2, 3, 4		min crossing time =	8	sec GM +	15	sec FGM =	23	sec
						P3	4		min crossing time =	5	sec GM +	7	sec FGM =	12	sec
						P4	1, 2, 3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
						P5	1, 3, 4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec
						P6	2		min crossing time =	5	sec GM +	8	sec FGM =	13	sec

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

$S=1940+100(W-3.25)$
 $S_M=S \div (1+1.5f/r)$

$S=2080+100(W-3.25)$
 $S_M=(S-230) \div (1+1.5f/r)$

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.469	0.383	0.476	0.394
L (s)	25	38	25	38
C (s)	130	130	130	130
practical y	0.727	0.637	0.727	0.637
R.C. (%)	55%	66%	53%	62%

1	2	3	4	5
AM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =
PM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =

Signal Junction Analysis

Junction: D. To Kwa Wan Road / San Shan Road / San Ma Tau Street Job Number: J7167
 Scenario: without KC-018 and KC-019 R2 / P.4-2
 Design Year: 2036 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
To Kwa Wan Road NB	LT+SA	A1	1	3.00	10.0		36	1817	225	0.124		24	1848	285	0.154
	SA	A2	1	3.00				2055	254	0.124			2055	316	0.154
	SA	A3	1	3.00				2055	254	0.124			2055	316	0.154
	RT+SA	A4	1	3.00	25.0		75	1967	244	0.124	0.124	76	1965	303	0.154
San Shan Road	LT+SA	B1	2	3.00	10.0		98	1670	264	0.158		89	1689	230	0.136
	RT+SA	B2	2	3.00	16.0		91	1893	299	0.158		97	1884	257	0.136
	RT	B3	2	3.00	24.0		100	1934	306	0.158	0.158	100	1934	264	0.136
To Kwa Wan Road SB	LT+SA	C1	3	3.00	10.0		94	1678	279	0.166		93	1681	263	0.156
	SA	C2	3	3.00				2055	342	0.166	0.166		2055	322	0.157
	SA	C3	3	3.00				2055	341	0.166			2055	321	0.156
	RT	C4	3	3.00	30.0		100	1957	314	0.160		100	1957	252	0.129
San Ma Tau Street	LT	D1	4	3.00	10.0		100	1665	173	0.104		100	1665	163	0.098
	LT+SA+RT	D2	4	3.40	16.0		39	2021	210	0.104		53	1996	196	0.098
	RT	D3	4	3.40	24.0		100	1972	205	0.104	0.104	100	1972	193	0.098
pedestrian phase		P1	1		min crossing time =	5	sec GM +	9	sec FGM =	14	sec				
		P2	2, 3, 4		min crossing time =	8	sec GM +	15	sec FGM =	23	sec				
		P3	4		min crossing time =	5	sec GM +	7	sec FGM =	12	sec				
		P4	1, 2, 3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec				
		P5	1, 3, 4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec				
		P6	2		min crossing time =	5	sec GM +	8	sec FGM =	13	sec				

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

AM
Peak

Check
Pedestrian
Phase

PM
Peak

Check
Pedestrian
Phase

Sum y

0.553

0.449

0.545

0.447

L (s)

25

38

25

38

C (s)

130

130

130

130

practical y

0.727

0.637

0.727

0.637

R.C. (%)

32%

42%

33%

42%

S=1940+100(W-3.25)

S=2080+100(W-3.25)

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

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

Note:

1	2	3	4	5
AM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =
PM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =

Signal Junction Analysis

Junction: D. To Kwa Wan Road / San Shan Road / San Ma Tau Street Job Number: J7167
 Scenario: with KC-018 and KC-019 R2 / P.4-3
 Design Year: 2036 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
To Kwa Wan Road NB	LT+SA	A1	1	3.00	10.0		36	1817	228	0.125		23	1851	289	0.156
	SA	A2	1	3.00				2055	258	0.126			2055	321	0.156
	SA	A3	1	3.00				2055	258	0.126			2055	321	0.156
	RT+SA	A4	1	3.00	25.0		74	1968	248	0.126	0.126	74	1968	308	0.157
San Shan Road	LT+SA	B1	2	3.00	10.0		100	1665	281	0.169	0.169	93	1681	233	0.139
	RT+SA	B2	2	3.00	16.0		89	1897	302	0.159		94	1889	262	0.139
	RT	B3	2	3.00	24.0		100	1934	308	0.159		100	1934	268	0.139
To Kwa Wan Road SB	LT+SA	C1	3	3.00	10.0		100	1665	359	0.216	0.216	100	1665	315	0.189
	SA	C2	3	3.00				2055	363	0.177			2055	330	0.161
	SA	C3	3	3.00				2055	363	0.177			2055	329	0.160
	RT	C4	3	3.00	30.0		100	1957	345	0.176		100	1957	254	0.130
San Ma Tau Street	LT	D1	4	3.00	10.0		100	1665	202	0.121		100	1665	184	0.110
	LT+SA+RT	D2	4	3.40	16.0		48	2005	244	0.122		58	1987	220	0.111
	RT	D3	4	3.40	24.0		100	1972	240	0.122	0.122	100	1972	218	0.111
pedestrian phase		P1	1		min crossing time =	5	sec GM +	9	sec FGM =	14	sec				
		P2	2, 3, 4		min crossing time =	8	sec GM +	15	sec FGM =	23	sec				
		P3	4		min crossing time =	5	sec GM +	7	sec FGM =	12	sec				
		P4	1, 2, 3		min crossing time =	5	sec GM +	9	sec FGM =	14	sec				
		P5	1, 3, 4		min crossing time =	5	sec GM +	9	sec FGM =	14	sec				
		P6	2		min crossing time =	5	sec GM +	8	sec FGM =	13	sec				

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

AM Peak

Check Pedestrian Phase

PM Peak

Check Pedestrian Phase

Sum y

0.632

0.510

0.595

0.484

L (s)

25

38

25

38

C (s)

130

130

130

130

practical y

0.727

0.637

0.727

0.637

R.C. (%)

15%

25%

22%

31%

S=1940+100(W-3.25)

S=2080+100(W-3.25)

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

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

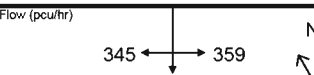

Note:

1	2	3	4	5
AM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =
PM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =

Signal Junction Analysis

Junction: D. To Kwa Wan Road / San Shan Road / San Ma Tau Street Job Number: J7167
 Scenario: with KC-018 and KC-019 (with improvement scheme) R2 / P.4-4
 Design Year: 2036 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
To Kwa Wan Road NB	LT+SA	A1	1	3.00	10.0		36	1817	228	0.125		23	1851	289	0.156
	SA	A2	1	3.00				2055	258	0.126			2055	321	0.156
	SA	A3	1	3.00				2055	258	0.126			2055	321	0.156
	RT+SA	A4	1	3.00	25.0		74	1968	248	0.126	0.126	74	1968	308	0.157
San Shan Road	LT	B1	2	3.00	10.0		100	1665	270	0.162		100	1665	231	0.139
	LT+SA+RT	B2	2	3.00	16.0		90	1895	307	0.162		87	1900	264	0.139
	RT	B3	2	3.00	24.0		100	1934	314	0.162	0.162	100	1934	268	0.139
To Kwa Wan Road SB	LT+SA	C1	3	3.00	10.0		117	1629	308	0.189		114	1635	277	0.169
	SA	C2	3	3.00				2055	389	0.189	0.189		2055	348	0.169
	SA	C3	3	3.00				2055	388	0.189			2055	349	0.170
	RT	C4	3	3.00	30.0		100	1957	345	0.176		100	1957	254	0.130
San Ma Tau Street	LT	D1	4	3.00	10.0		100	1665	138	0.083		100	1665	119	0.071
	LT+SA	D2	4	3.40	16.0		25	2047	170	0.083		36	2027	145	0.072
	RT	D3	4	3.40	24.0		100	1972	190	0.096		100	1972	180	0.091
	RT	D4	4	3.40	20.0		100	1949	188	0.096	0.096	100	1949	178	0.091
pedestrian phase						P1	1		min crossing time = 5		sec GM +	9	sec FGM = 14		sec
						P2	2, 3, 4		min crossing time = 8		sec GM +	15	sec FGM = 23		sec
						P3	4		min crossing time = 5		sec GM +	7	sec FGM = 12		sec
						P4	1, 2, 3		min crossing time = 5		sec GM +	11	sec FGM = 16		sec
						P5	1, 3, 4		min crossing time = 5		sec GM +	9	sec FGM = 14		sec
						P6	2		min crossing time = 5		sec GM +	6	sec FGM = 11		sec

AM Traffic Flow (pcu/hr)		PM Traffic Flow (pcu/hr)		<div>$S=1940+100(W-3.25)$ $S_M=S \div (1+1.5f/r)$</div> <div>$S=2080+100(W-3.25)$ $S_M=(S-230) \div (1+1.5f/r)$</div>				Note: with possible improvement scheme for San Ma Tau Street and San Shan Road	
									
				AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase		
				Sum y	0.574	0.478	0.556		0.465
				L (s)	25	38	25		38
				C (s)	130	130	130		130
				practical y	0.727	0.637	0.727		0.637
				R.C. (%)	27%	33%	31%	37%	

1	2	3	4	5
AM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =
PM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =

Signal Junction Analysis

Junction: E. To Kwa Wan Road / Ma Tau Kok Road

Job Number: J7167

Scenario: existing condition

R2 / P.5-1

Design Year: 2019 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.290	0.264	0.291	0.241
L (s)	8	23	8	23
C (s)	130	130	130	130
practical y	0.845	0.741	0.845	0.741
R.C. (%)	191%	180%	191%	208%

Note: $S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

	1		2		3		4		5	
AM	G =	I/G =	G =	I/G =	5	G =	I/G =	5	G =	I/G =
	G =	I/G =	G =	I/G =	5	G =	I/G =	3	G =	I/G =
PM	G =	I/G =	G =	I/G =	5	G =	I/G =	5	G =	I/G =
	G =	I/G =	G =	I/G =	5	G =	I/G =	3	G =	I/G =

Signal Junction Analysis

Junction: E. To Kwa Wan Road / Ma Tau Kok Road

Job Number: J7167

Scenario: without KC-018 and KC-019

R2 / P.5-2

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.366	0.337	0.358	0.302
L (s)	8	23	8	23
C (s)	130	130	130	130
practical y	0.845	0.741	0.845	0.741
R.C. (%)	131%	120%	136%	145%

	1		2		3		4		5	
AM	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G = 5	G = 16	I/G = 3	G =	I/G =	G =	I/G =
PM	G =	I/G =	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G = 5	G = 16	I/G = 3	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: E. To Kwa Wan Road / Ma Tau Kok Road

Job Number: J7167

Scenario: with KC-018 and KC-019

R2 / P.5-3

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

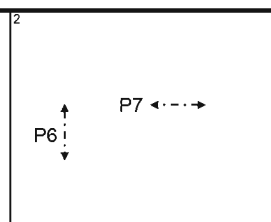
[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.343		0.306	
L (s)	23		23	
C (s)	130		130	
practical y	0.741		0.741	
R.C. (%)	116%		142%	

Note: $S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

				
AM G = I/G = 5 G = 16 I/G = 3 G = I/G = G = I/G = G = I/G =	G = I/G = G = I/G = G = I/G = G = I/G = G = I/G =			
AM G = I/G = 5 G = 16 I/G = 3 G = I/G = G = I/G = G = I/G =	G = I/G = G = I/G = G = I/G = G = I/G = G = I/G =			

Signal Junction Analysis

Junction: F. To Kwa Wan Road / Mok Cheong Street

Job Number: J7167

Scenario: existing condition

R2 / P.6-1

Design Year: 2019 Designed By:

Checked By:

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.315		0.333	
L (s)	34		34	
C (s)	130		130	
practical y	0.665		0.665	
R.C. (%)	111%		99%	

Note: $S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S \div (1 + 1.5f/r)$ $S_M = (S - 230) \div (1 + 1.5f/r)$

	1		2		3		4		5	
AM	G =	I/G = 7	G =	I/G = 8	G = 18	I/G = 3	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 7	G =	I/G = 8	G = 18	I/G = 3	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: F. To Kwa Wan Road / Mok Cheong Street

Job Number: J7167

Scenario: without KC-018 and KC-019

R2 / P.6-2

Design Year: 2036 Designed By:

Checked By:

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$ $S_M = S \div (1 + 1.5f/r)$ $S_M = (S - 230) \div (1 + 1.5f/r)$				
	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.406		0.421	
L (s)	34		34	
C (s)	130		130	
practical y	0.665		0.665	
R.C. (%)	64%		58%	

	1		2		3		4		5	
AM	G =	I/G = 7	G =	I/G = 8	G = 18	I/G = 3	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 7	G =	I/G = 8	G = 18	I/G = 3	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: F. To Kwa Wan Road / Mok Cheong Street

Job Number: J7167

Scenario: with KC-018 and KC-019

R2 / P.6-3

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S \cdot (1 + 1.5f/r)$ $S_M = (S - 230) \cdot (1 + 1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.443		0.450	
L (s)	34		34	
C (s)	130		130	
practical y	0.665		0.665	
R.C. (%)	50%		48%	

AM	G = 17 I/G = 17	G = 18 I/G = 18	G = 19 I/G = 19	G = 20 I/G = 20	G = 21 I/G = 21	G = 22 I/G = 22	G = 23 I/G = 23	G = 24 I/G = 24	
PM	G = 17 I/G = 17	G = 18 I/G = 18	G = 19 I/G = 19	G = 20 I/G = 20	G = 21 I/G = 21	G = 22 I/G = 22	G = 23 I/G = 23	G = 24 I/G = 24	

Signal Junction Analysis

Junction: G. To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

Job Number: J7167

Scenario: existing condition

R2 / P.7-1

Design Year: 2019 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.358	0.286	0.411	0.338
L (s)	13	32	13	32
C (s)	100	100	100	100
practical y	0.783	0.612	0.783	0.612
R.C. (%)	119%	114%	91%	81%

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

	1		2		3		4		5	
AM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =
	G = 17	I/G = 2	G =	I/G = 5	G =	I/G = 10	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =
	G = 17	I/G = 2	G =	I/G = 5	G =	I/G = 10	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: G. To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

Job Number: J7167

Scenario: without KC-018 and KC-019

R2 / P.7-2

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

	S=1940+100(W-3.25) S=2080+100(W-3.25)			
	$S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$			
	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.560	0.424	0.593	0.438
L (s)	13	34	13	32
C (s)	100	100	100	100
practical y	0.783	0.594	0.783	0.612
R.C. (%)	40%	40%	32%	40%

	1		2		3		4		5	
AM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =
	G =	I/G = 12	G = 16	I/G = 3	G =	I/G = 5	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =
	G = 17	I/G = 2	G =	I/G = 5	G =	I/G = 10	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: G. To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

Job Number: J7167

Scenario: with KC-018 and KC-019

R2 / P.7-3

Design Year: 2036

Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.582	0.443	0.608	0.449
L (s)	13	34	13	32
C (s)	100	100	100	100
practical y	0.783	0.594	0.783	0.612
R.C. (%)	35%	34%	29%	36%

Note: $S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S \div (1 + 1.5f/r)$ $S_M = (S - 230) \div (1 + 1.5f/r)$

	1		2		3		4		5	
AM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =
	G =	I/G = 12	G = 16	I/G = 3	G =	I/G = 5	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =
	G = 17	I/G = 2	G =	I/G = 5	G =	I/G = 10	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: H. Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road
 Scenario: existing condition
 Design Year: 2019 Designed By: _____ Checked By: _____

Job Number: J7167

R2 / P.8-1

Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak					
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	
Ma Tau Chung Road NB	SA+LT	A1	1	3.50	15.0		29	1910	529	0.277	0.277	38	1893	478	0.253	
	SA	A2	1	3.50				2105	583	0.277			2105	532	0.253	
	SA	A3	1	3.50				2105	583	0.277			2105	532	0.253	0.253
Fu Ning Street	RT	B1	4	3.50	25.0		100	1854	18	0.010	0.010	100	1854	18	0.010	0.010
Ma Tau Chung Road SB	SA	C1	1	3.50				1965	544	0.277			1965	478	0.243	
	SA	C2	1	3.50				2105	583	0.277			2105	512	0.243	
	SA	C3	1	3.50				2105	583	0.277			2105	512	0.243	
Sung Wong Toi Road	SA	D1	2	3.20				1935	237	0.122			1935	307	0.159	
	SA	D2	2	3.75				2130	261	0.123			2130	338	0.159	
	RT	D3	2, 3	3.00	30.0		100	1957	374	0.191		100	1957	526	0.269	
	RT	D4	2, 3	3.50	26.0		100	1990	380	0.191		100	1990	535	0.269	0.269
	RT	D5	2, 3	3.50	22.0		100	1840	352	0.191	0.191	100	1840	494	0.269	
pedestrian phase	P1	1				min crossing time =	10	sec	GM +	9		sec	FGM =	19	sec	
	P2	1, 2, 3				min crossing time =	5	sec	GM +	5		sec	FGM =	10	sec	
	P3	2, 3				min crossing time =	10	sec	GM +	9		sec	FGM =	19	sec	
	P4	3, 4				min crossing time =	7	sec	GM +	8		sec	FGM =	15	sec	

Signal Junction Analysis

Junction: H. Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road Job Number: J7167
 Scenario: without KC-018 and KC-019 R2 / P.8-2
 Design Year: 2036 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak					
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	
Ma Tau Chung Road NB	SA+LT	A1	1	3.50	15.0		31	1906	553	0.290		43	1884	511	0.271	
	SA	A2	1	3.50				2105	611	0.290			2105	571	0.271	
	SA	A3	1	3.50				2105	611	0.290			2105	572	0.272	
Fu Ning Street	RT	B1	4	3.50	25.0		100	1854	18	0.010	0.010	100	1854	18	0.010	0.010
Ma Tau Chung Road SB	SA	C1	1	3.50				1965	645	0.328			1965	589	0.300	
	SA	C2	1	3.50				2105	691	0.328			2105	631	0.300	0.300
	SA	C3	1	3.50				2105	691	0.328	0.328		2105	632	0.300	
Sung Wong Toi Road	SA	D1	2	3.20				1935	469	0.242			1935	487	0.252	
	SA	D2	2	3.75				2130	516	0.242	0.242		2130	536	0.252	
	RT	D3	2, 3	3.00	30.0		100	1957	419	0.214		100	1957	592	0.302	
	RT	D4	2, 3	3.50	26.0		100	1990	426	0.214		100	1990	602	0.302	
	RT	D5	2, 3	3.50	22.0		100	1840	395	0.215		100	1840	557	0.303	0.303
pedestrian phase	P1	1				min crossing time =		10		sec GM +	9		sec FGM =	19	sec	
	P2	1, 2, 3				min crossing time =		5		sec GM +	5		sec FGM =	10	sec	
	P3	2, 3				min crossing time =		10		sec GM +	9		sec FGM =	19	sec	
	P4	3, 4				min crossing time =		7		sec GM +	8		sec FGM =	15	sec	

Signal Junction Analysis

Junction: H. Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road Job Number: J7167
 Scenario: with KC-018 and KC-019 R2 / P.8-3
 Design Year: 2036 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Ma Tau Chung Road NB	SA+LT	A1	1	3.50	15.0		31	1906	539	0.283		46	1879	476	0.253	
	SA	A2	1	3.50				2105	595	0.283			2105	534	0.254	
	SA	A3	1	3.50				2105	596	0.283			2105	534	0.254	
Fu Ning Street	RT	B1	4	3.50	25.0		100	1854	18	0.010	0.010	100	1854	18	0.010	0.010
Ma Tau Chung Road SB	SA	C1	1	3.50				1965	645	0.328			1965	589	0.300	
	SA	C2	1	3.50				2105	691	0.328			2105	631	0.300	0.300
	SA	C3	1	3.50				2105	691	0.328	0.328		2105	632	0.300	
Sung Wong Toi Road	SA	D1	2	3.20				1935	470	0.243			1935	488	0.252	
	SA	D2	2	3.75				2130	518	0.243	0.243		2130	537	0.252	
	RT	D3	2, 3	3.00	30.0		100	1957	423	0.216		100	1957	597	0.305	0.305
	RT	D4	2, 3	3.50	26.0		100	1990	431	0.217		100	1990	607	0.305	
	RT	D5	2, 3	3.50	22.0		100	1840	398	0.216		100	1840	560	0.304	
pedestrian phase	P1	1				min crossing time =		10		sec GM +	9		sec FGM =	19	sec	
	P2	1, 2, 3				min crossing time =		5		sec GM +	5		sec FGM =	10	sec	
	P3	2, 3				min crossing time =		10		sec GM +	9		sec FGM =	19	sec	
	P4	3, 4				min crossing time =		7		sec GM +	8		sec FGM =	15	sec	

Signal Junction Analysis

Junction: I. Ma Tau Chung Road / Ma Tau Kok Road

Job Number: J7167

Scenario: existing condition

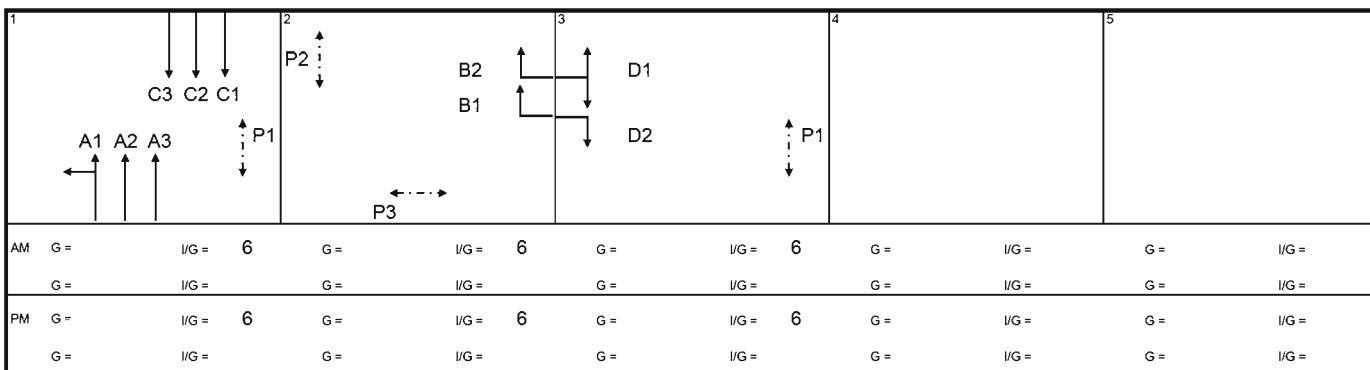
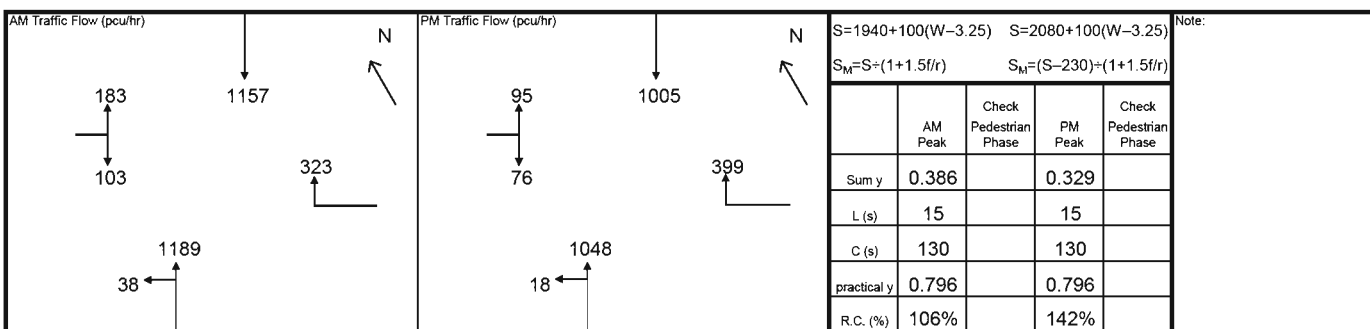
R2 / P.9-1

Design Year: 2019

Designed By:

Checked By:

Date: 19 September 2022

[illegible]

Signal Junction Analysis

Junction: I. Ma Tau Chung Road / Ma Tau Kok Road

Job Number: J7167

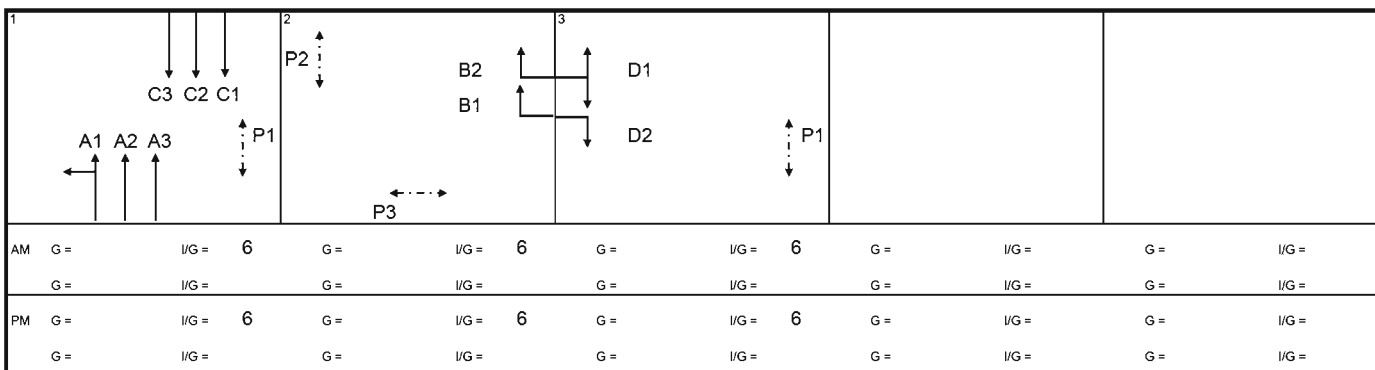
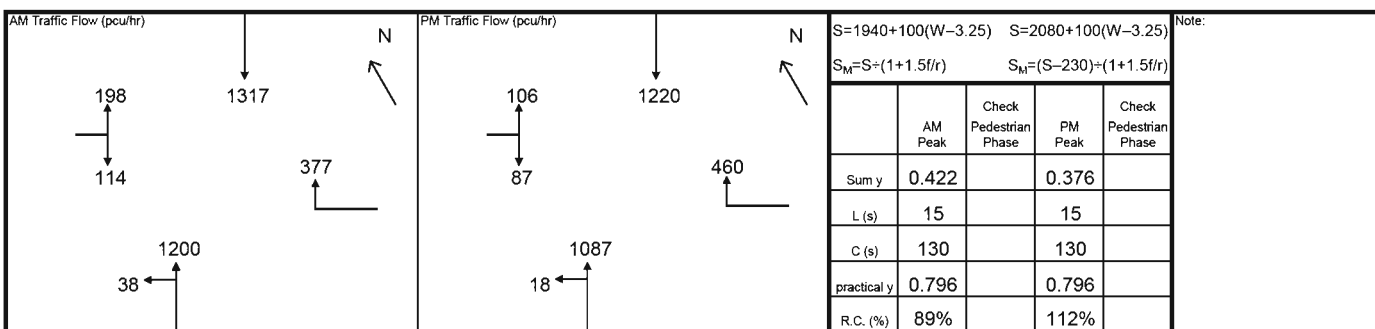
Scenario: without KC-018 and KC-019

R2 / P.9-2

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

Signal Junction Analysis

Junction: I. Ma Tau Chung Road / Ma Tau Kok Road

Job Number: J7167

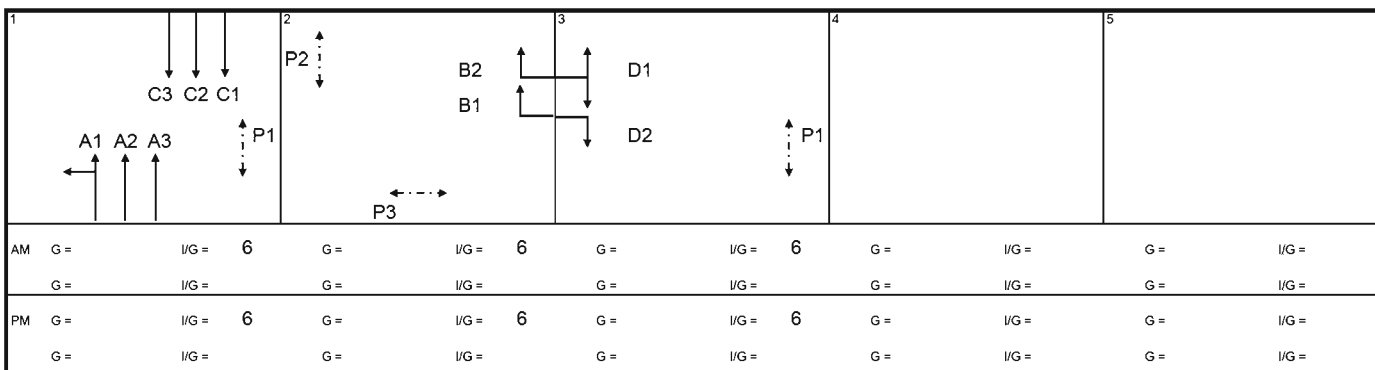
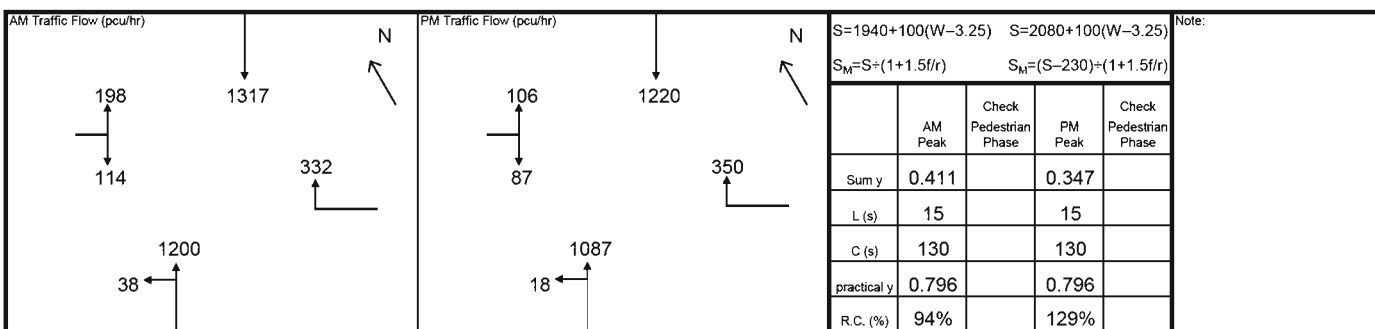
Scenario: with KC-018 and KC-019

R2 / P.9-3

Design Year: 2036 Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

Roundabout Analysis

Location J. Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street R2 / P.10-1
 Scenario existing condition
 Design Year 2019 Job Number J7167 Date 19 September 2022

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	27	199	797					1033	967
From B	42	21	132	485					680	1782
From C	695	52	46	466					1259	1483
From D	452	118	602	128					1300	866
From E										
From F										
From G										
From H										
Total	1199	218	979	1876					4272	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	12	30	305	850					1197	1018
From B	29	17	114	319					479	2026
From C	548	31	30	448					1057	1367
From D	515	111	689	140					1455	667
From E										
From F										
From G										
From H										
Total	1104	189	1138	1757					4188	

Legend

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

Geometric Parameters

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

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

Q _E	Entry Capacity
q _c	Circulating Flow across the Entry
K	$= 1 - 0.00347(\emptyset - 30) - 0.978[(1/r) - 0.05]$
F	$= 303x_2$
f _c	$= 0.210t_D(1 + 0.2x_2)$
t _D	$= 1 + 0.5/(1 + M)$
M	$= \exp[(D - 60)/10]$
x ₂	$= v + (e - v)/(1 + 2S)$
S	$= 1.6(e - v)/L$

Limitation

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

Ratio-of-Flow to Capacity (RFC)

Arm							Q _E		Entry Flow		RFC	
	x ₂	M	t _D	K	F	f _c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2114	2085	1033	1197	0.489	0.574
From B	6.509	54.598	1.009	1.044	1972.301	0.488	1152	1028	680	479	0.590	0.466
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1842	1912	1259	1057	0.683	0.553
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2151	2264	1300	1455	0.604	0.643
From E												
From F												
From G												
From H												

Roundabout Analysis

Location J. Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street R2 / P.10-2
 Scenario without KC-018 and KC-019
 Design Year 2036 Job Number J7167 Date 19 September 2022

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	31	211	854					1106	1041
From B	86	26	150	516					778	1909
From C	766	57	51	491					1365	1630
From D	499	124	645	138					1406	996
From E										
From F										
From G										
From H										
Total	1361	238	1057	1999					4655	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	33	320	918					1281	1137
From B	62	24	135	363					584	2192
From C	654	45	49	504					1252	1542
From D	639	124	730	165					1658	844
From E										
From F										
From G										
From H										
Total	1365	226	1234	1950					4775	

Legend

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

Geometric Parameters

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

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

Q _E	Entry Capacity
q _c	Circulating Flow across the Entry
K	$= 1 - 0.00347(\emptyset - 30) - 0.978[(1/r) - 0.05]$
F	$= 303x_2$
f _c	$= 0.210t_D(1 + 0.2x_2)$
t _D	$= 1 + 0.5/(1 + M)$
M	$= \exp[(D - 60)/10]$
x ₂	$= v + (e - v)/(1 + 2S)$
S	$= 1.6(e - v)/L$

Limitation

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

Ratio-of-Flow to Capacity (RFC)

Arm							Q _E		Entry Flow		RFC	
	x ₂	M	t _D	K	F	f _c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2071	2015	1106	1281	0.534	0.636
From B	6.509	54.598	1.009	1.044	1972.301	0.488	1088	943	778	584	0.715	0.619
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1754	1807	1365	1252	0.778	0.693
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2077	2163	1406	1658	0.677	0.766
From E												
From F												
From G												
From H												

Roundabout Analysis

Location J. Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street R2 / P.10-3
 Scenario with KC-018 and KC-019
 Design Year 2036 Job Number J7167 Date 19 September 2022

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	31	211	854					1106	1041
From B	86	26	150	516					778	1909
From C	773	57	51	491					1372	1630
From D	502	124	645	138					1409	1003
From E										
From F										
From G										
From H										
Total	1371	238	1057	1999					4665	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	33	320	918					1281	1137
From B	62	24	135	363					584	2192
From C	657	45	49	504					1255	1542
From D	646	124	730	165					1665	847
From E										
From F										
From G										
From H										
Total	1375	226	1234	1950					4785	

Legend

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

Geometric Parameters

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

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

Q _E	Entry Capacity
q _c	Circulating Flow across the Entry
K	$= 1 - 0.00347(\emptyset - 30) - 0.978[(1/r) - 0.05]$
F	$= 303x_2$
f _c	$= 0.210t_D(1 + 0.2x_2)$
t _D	$= 1 + 0.5/(1 + M)$
M	$= \exp[(D - 60)/10]$
x ₂	$= v + (e - v)/(1 + 2S)$
S	$= 1.6(e - v)/L$

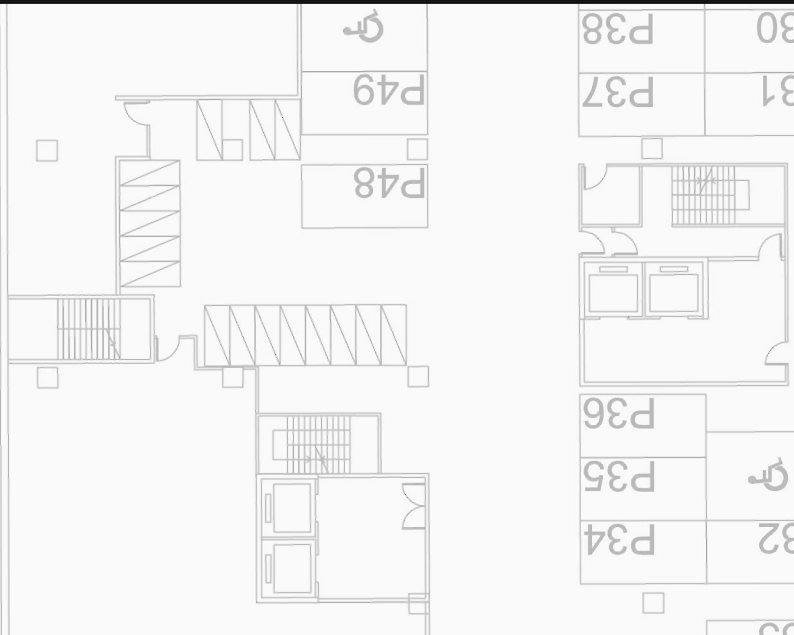
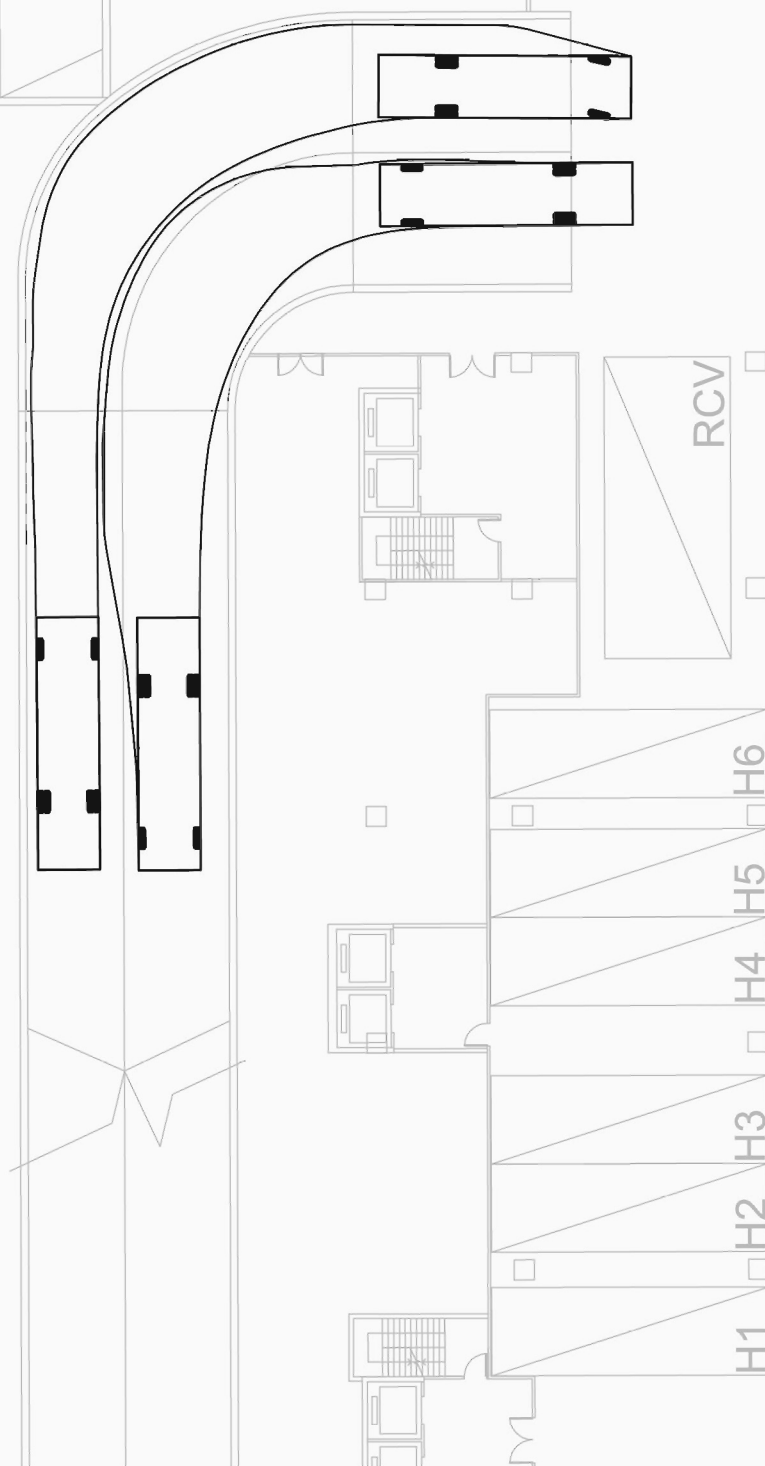
Limitation

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

Ratio-of-Flow to Capacity (RFC)

Arm							Q _E		Entry Flow		RFC	
	x ₂	M	t _D	K	F	f _c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2071	2015	1106	1281	0.534	0.636
From B	6.509	54.598	1.009	1.044	1972.301	0.488	1088	943	778	584	0.715	0.619
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1754	1807	1372	1255	0.782	0.695
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2073	2162	1409	1665	0.680	0.770
From E												
From F												
From G												
From H												

Appendix B – Swept Path Analysis



Project Title

URA KC-018 AND KC-019 IN MA TAU KOK

Figure Title

SWEPT PATHS OF HGV AT RAMP TO B1/F IN KC-019

J7167

Figure No.

SP/B1/101

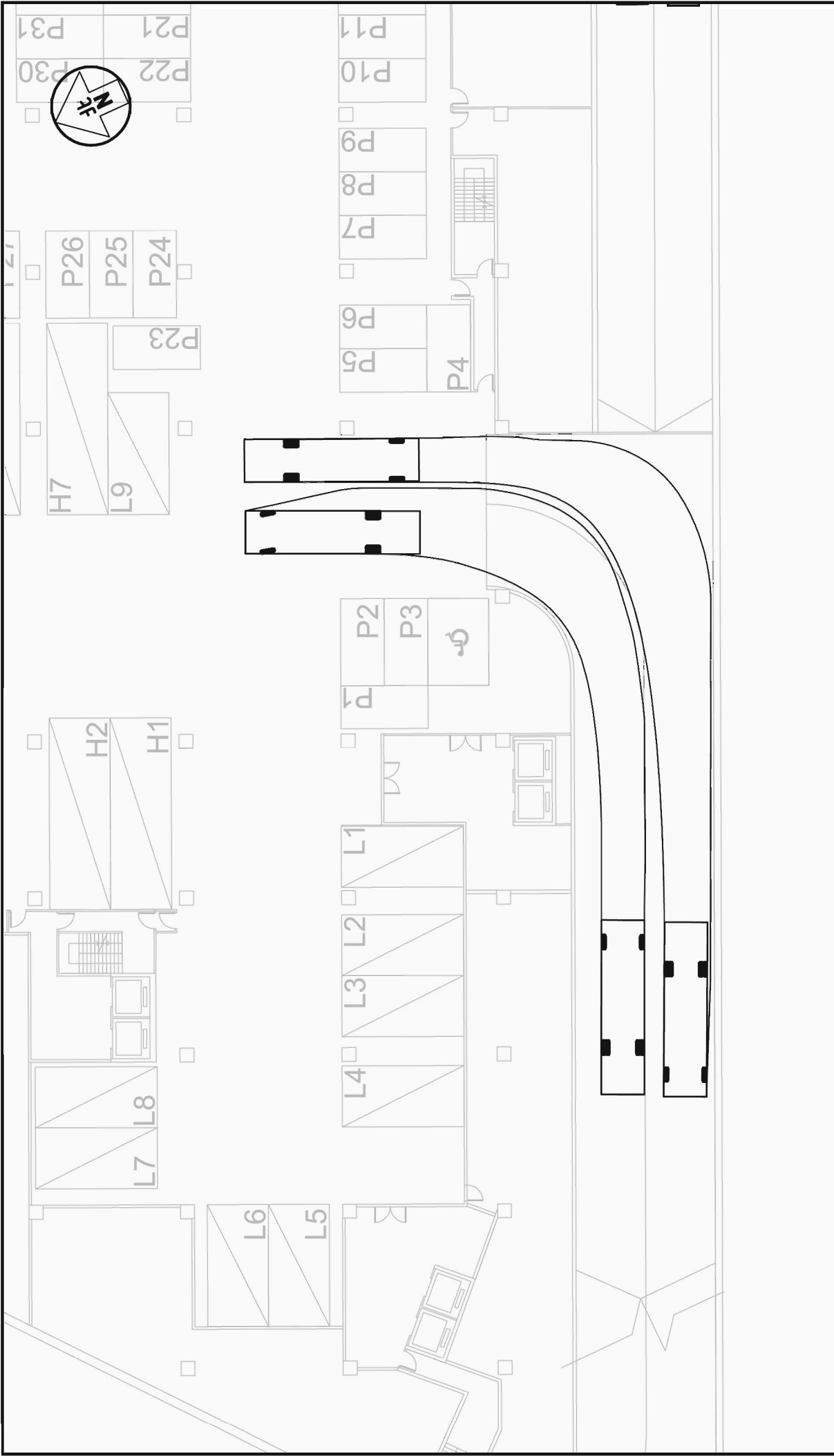
Revision

R2B

Designed by T H C	Drawn by C C L	Checked by K C
Scale in A4 1 : 300		Date 29 SEP 2022

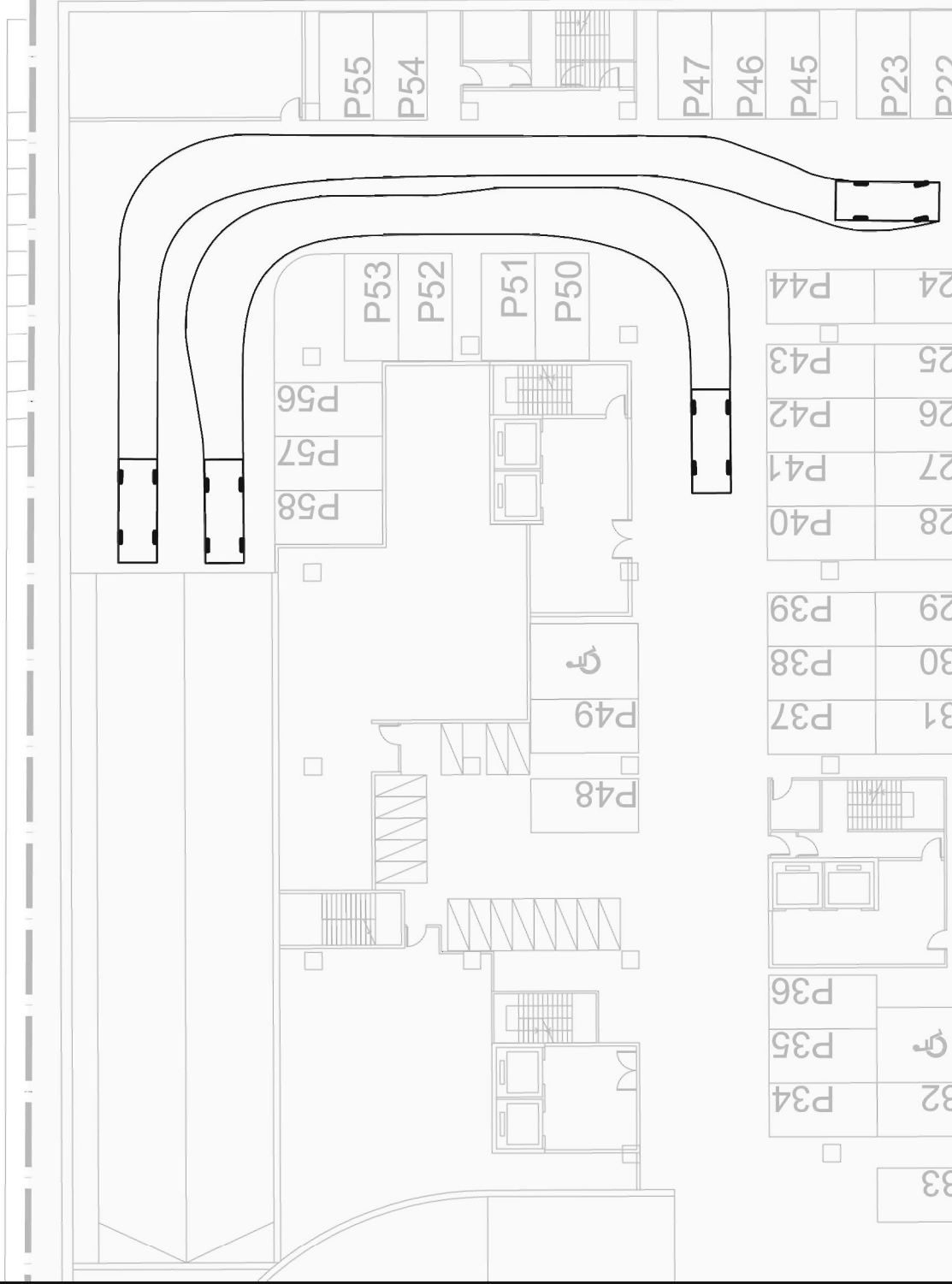
CKM Asia Limited

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Project Title	URA KC-018 AND KC-019 IN MA TAU KOK		Figure No.		Revision	
	J7167		SP/B1/102		R2B	
			Designed by	Drawn by	Checked by	
Figure Title	SWEPT PATHS OF HGV AT RAMP TO B1/F IN KC-018		T H C	C C L	K C	
			Scale in A4		Date	
			1 : 300		29 SEP 2022	

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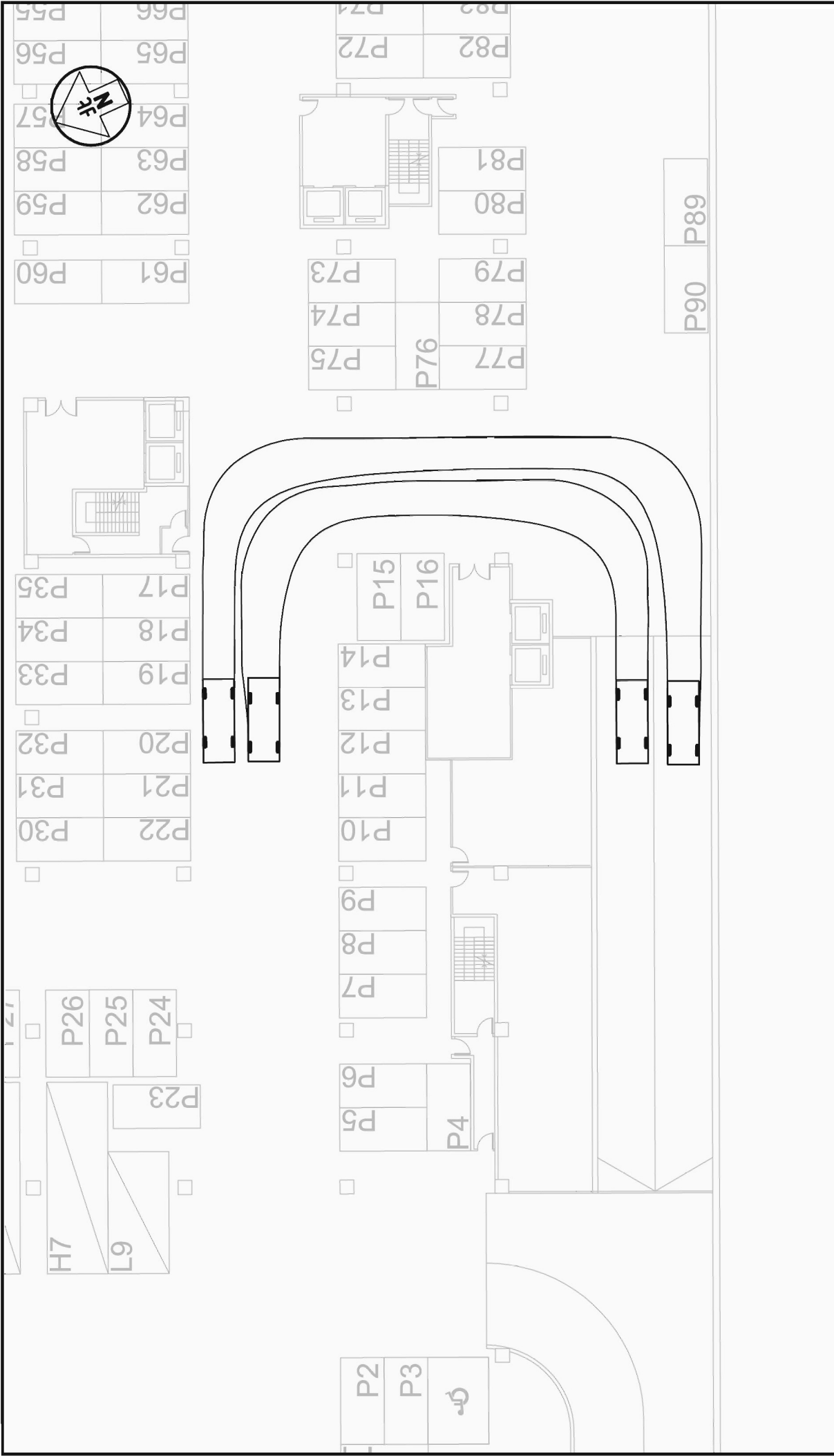
CKM Asia Limited
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Figure No.		Revision	
SP/B1/103		R2B	
Designed by T H C	Drawn by C C L	Checked by K C	
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Project Title
URA KC-018 AND KC-019 IN MA TAU KOK

Figure Title
J7167

SWEPT PATHS OF PRIVATE CAR ON B1/F IN KC-019

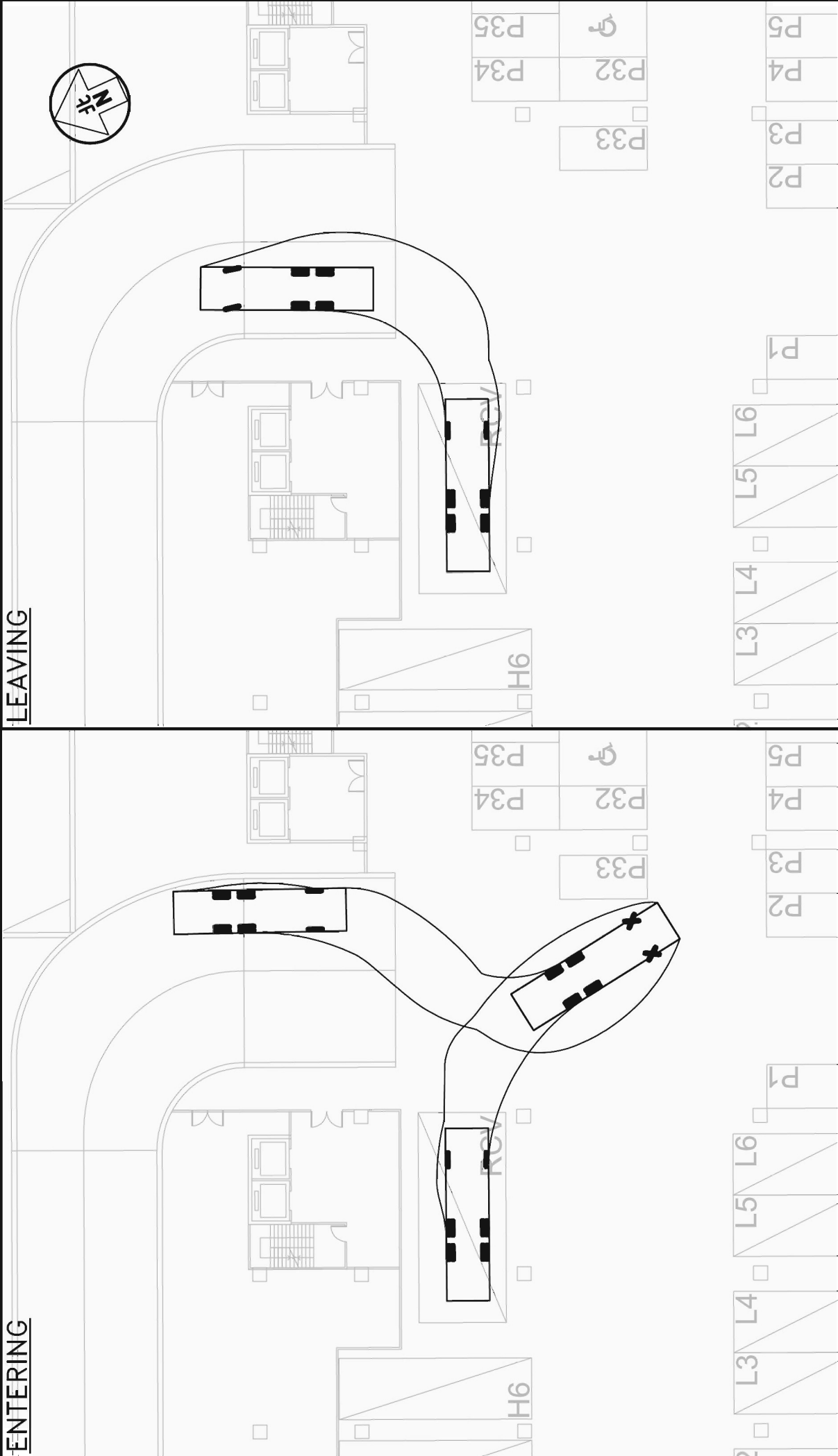


Project Title	URA KC-018 AND KC-019 IN MA TAU KOK		Figure No.		Revision	
	SWEPT PATHS OF PRIVATE CAR ON B1/F IN KC-018		SP/B1/104		R2B	
			Designed by	Drawn by	Checked by	
Figure Title			T H C	C C L	K C	
			Scale in A4		Date	
			1 : 300		29 SEP 2022	

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ENTERING

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Project Title

URA KC-018 AND KC-019 IN MA TAU KOK

Figure No.

J7167

SP/B1/105

R2B

Revision

Figure Title

SWEPT PATH OF RCV ENTERING AND LEAVING RCV BAY IN KC-019

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1 : 300

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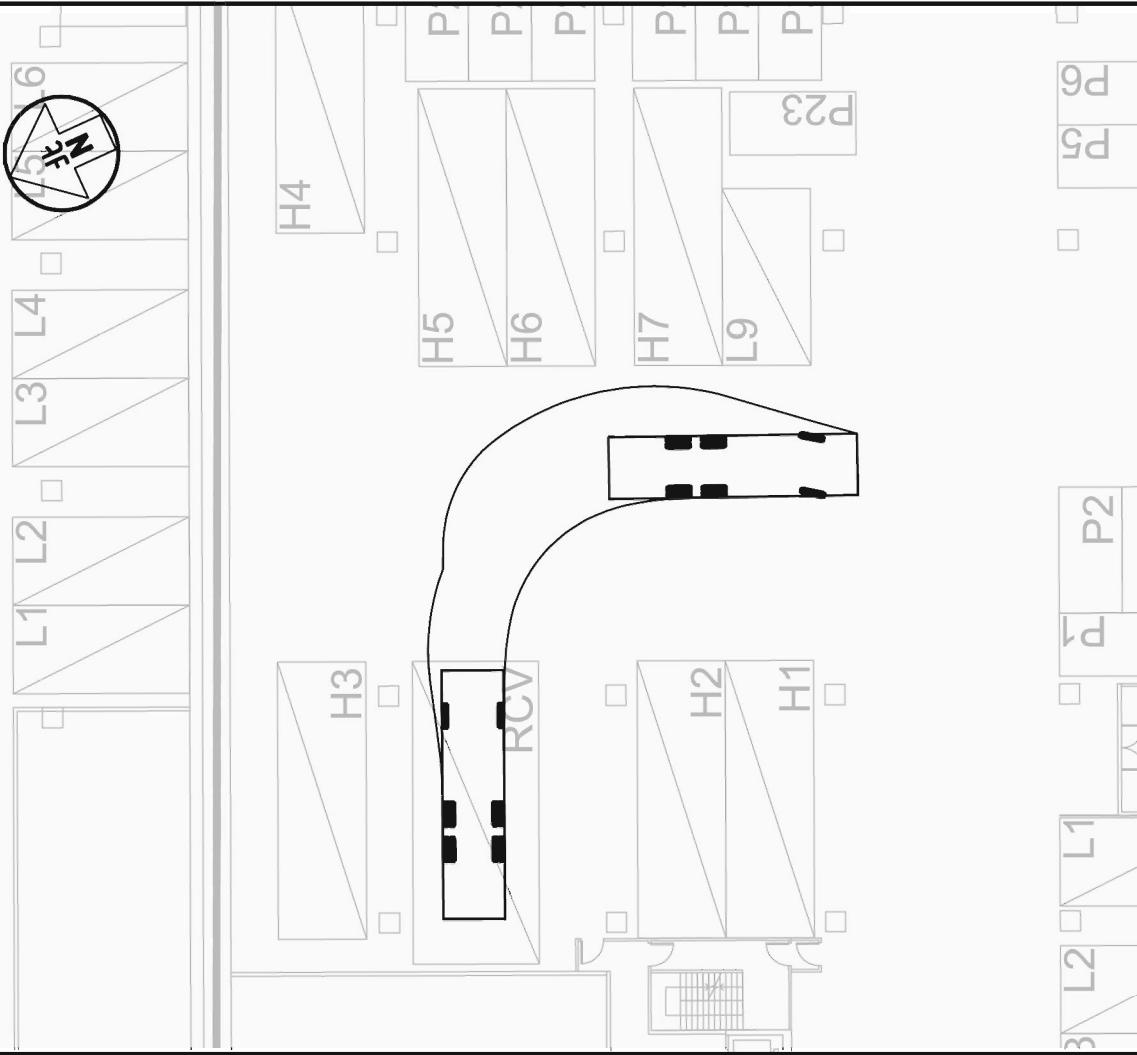
Checked by

K C

Date

29 SEP 2022

LEAVING



J7167

URA KC-018 AND KC-019 IN MA TAU KOK

SWEPT PATH OF RCV ENTERING AND LEAVING RCV BAY IN KC-018

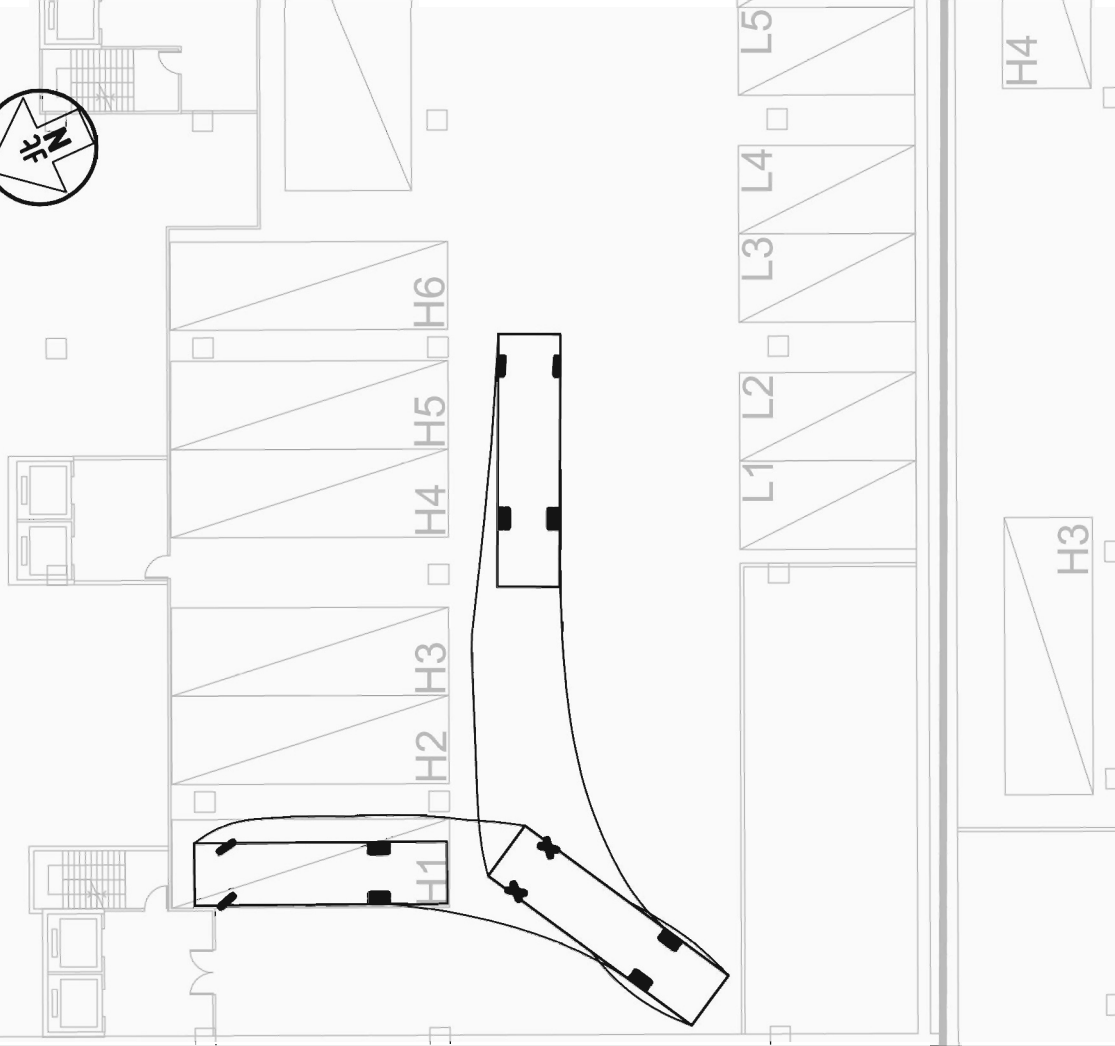
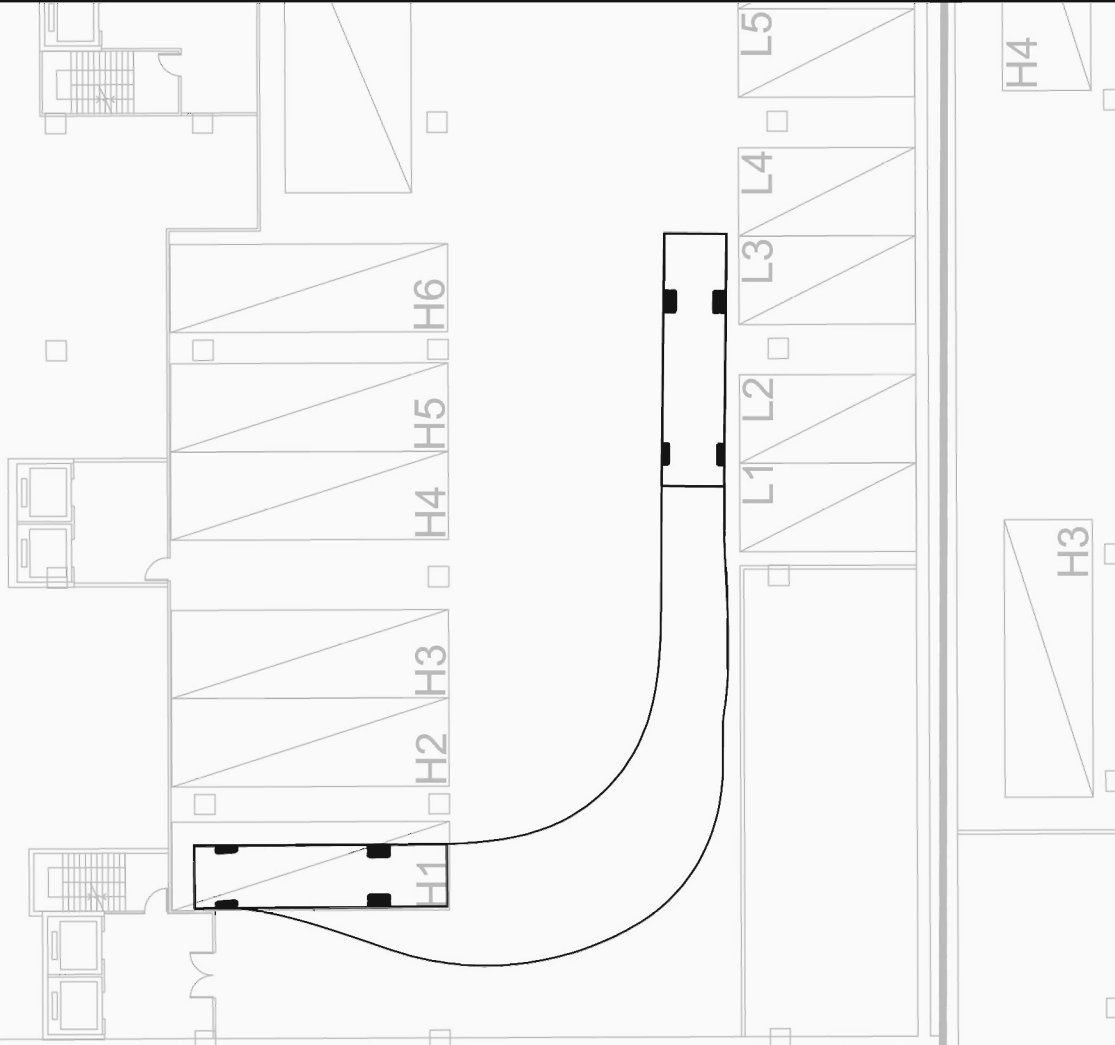
Revision
R2B

checked by	K C	P 2022
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ENTERING

LEAVING



Project Title

URA KC-018 AND KC-019 IN MA TAU KOK

Figure No.
J7167

Figure No.
SP/B1/107

Revision
R2B

Designed by
T H C

Drawn by
C C L

Checked by
K C

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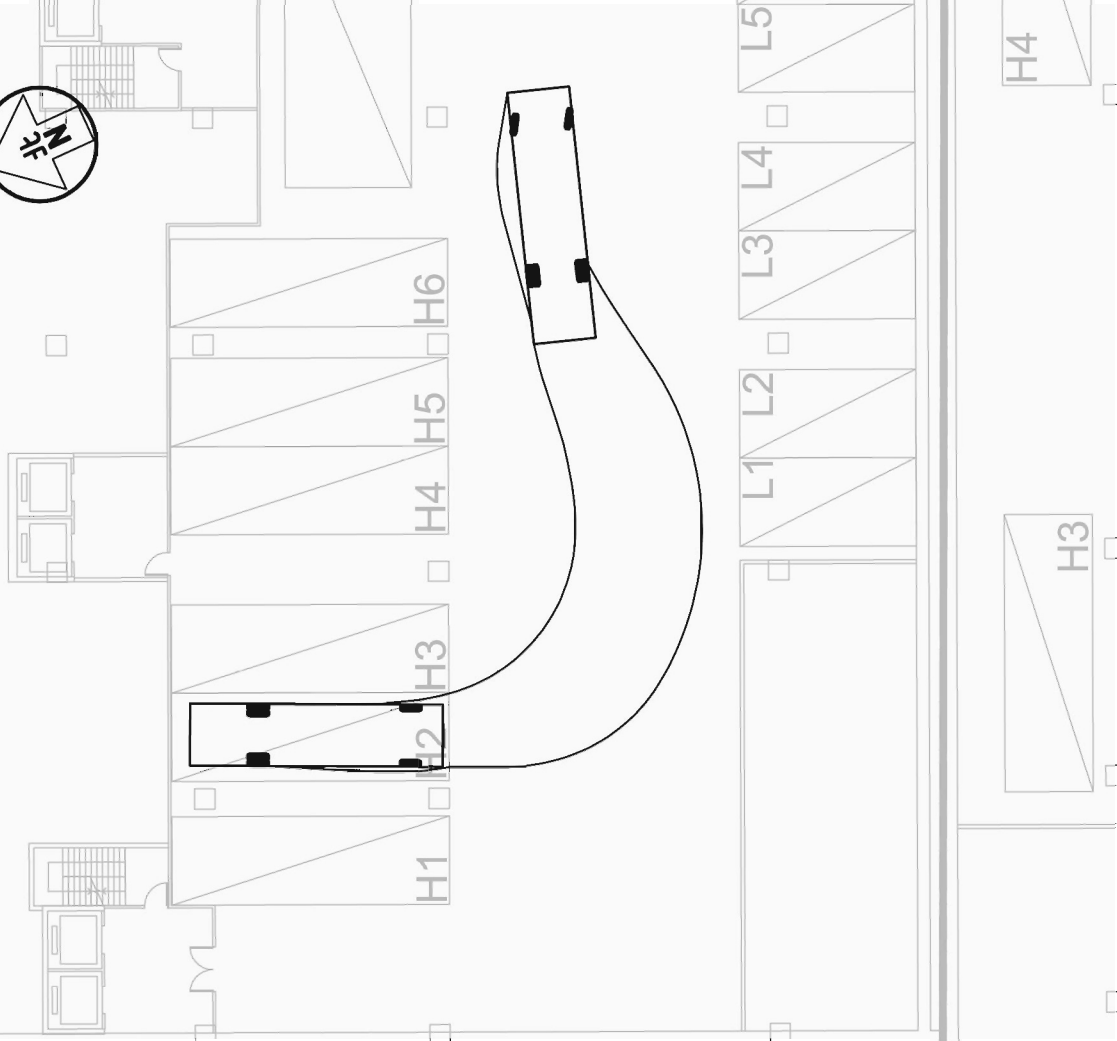
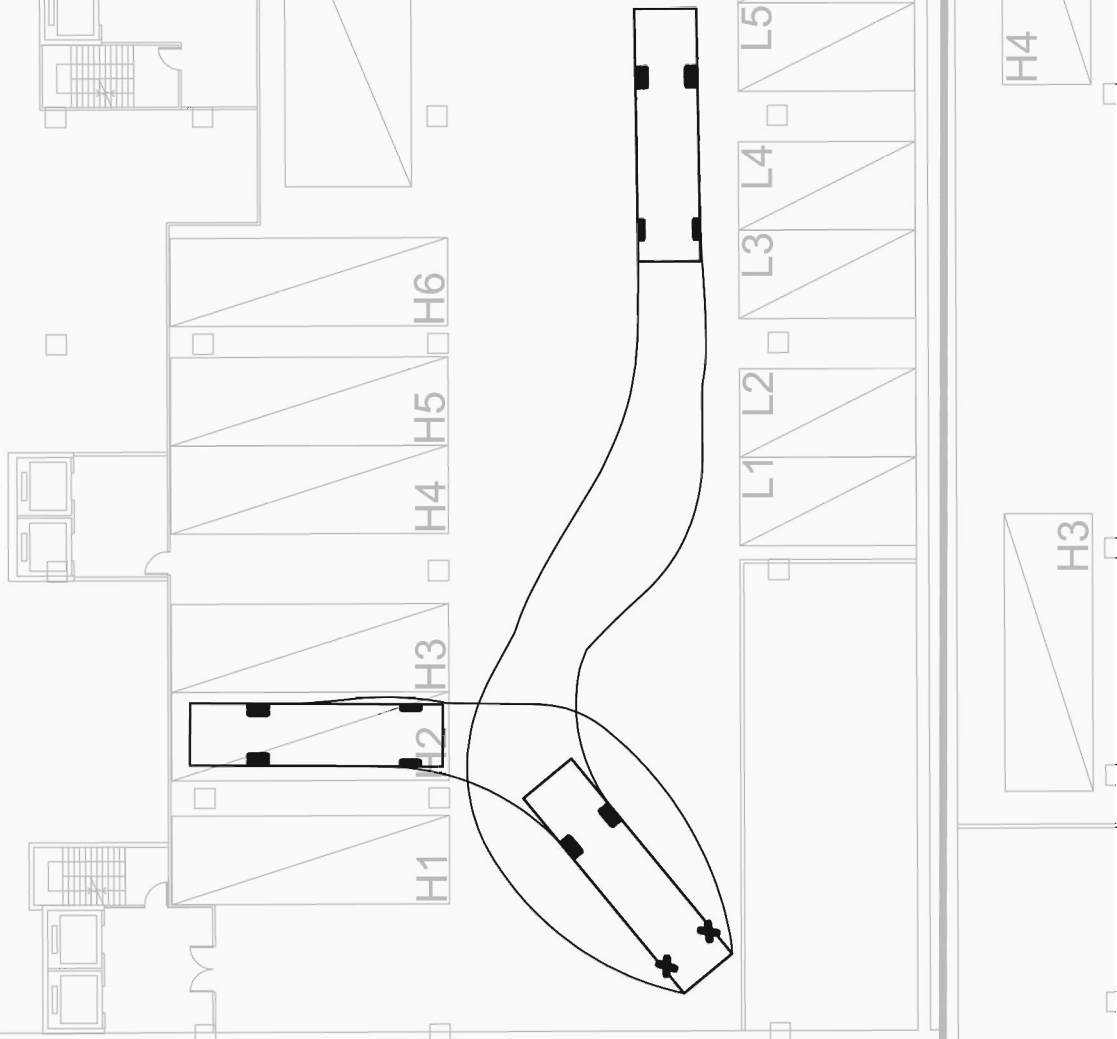
Email : mail@ckmasia.com.hk

Figure Title

SWEPT PATH OF HGV ENTERING AND LEAVING H1 IN KC-019

ENTERING

LEAVING



Project Title

URA KC-018 AND KC-019 IN MA TAU KOK

Figure No.
J7167

Figure No.
SP/B1/108

Revision
R2B

Designed by
T H C

Drawn by
C C L

Checked by
K C

Date
29 SEP 2022

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1 : 300

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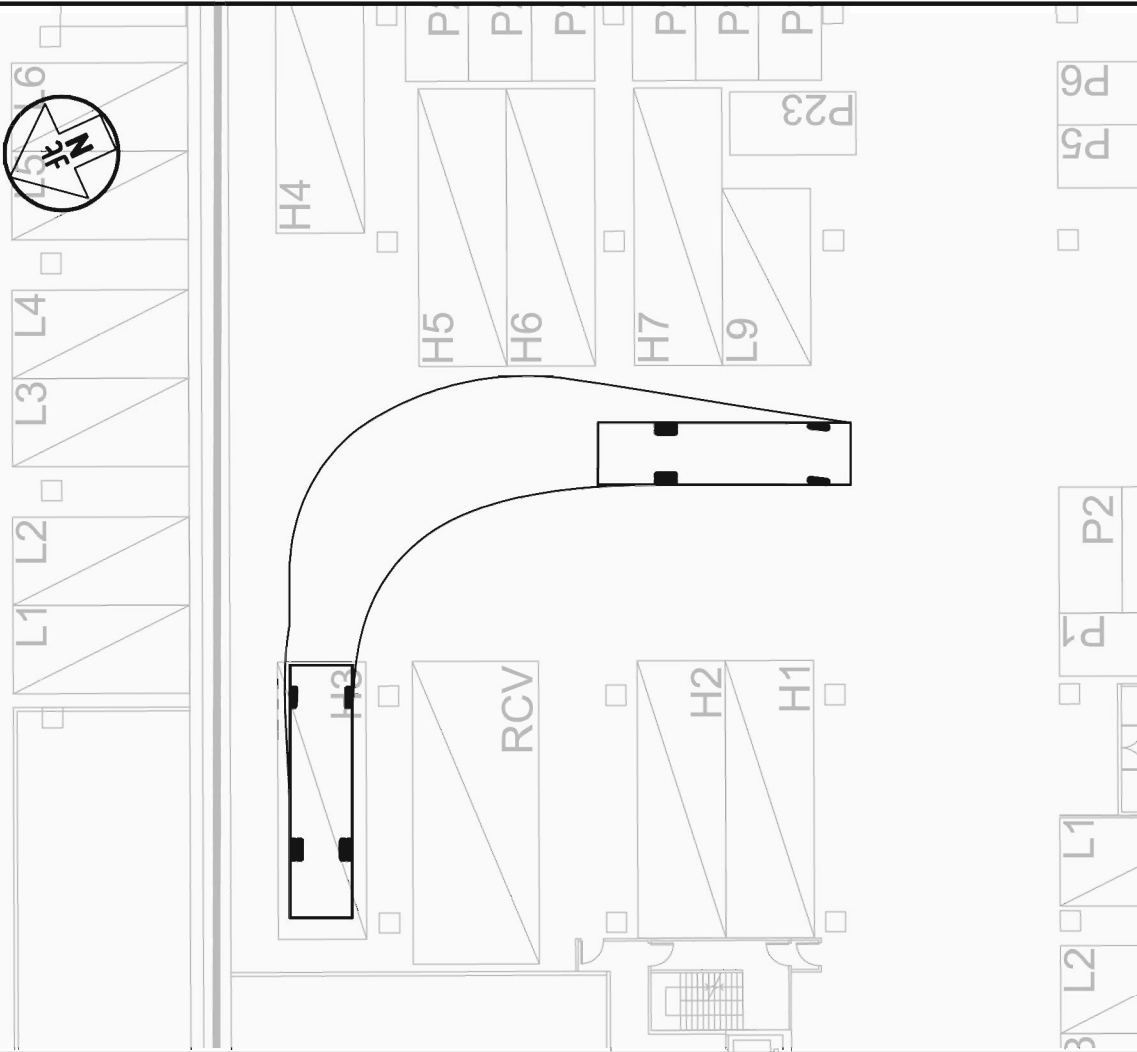
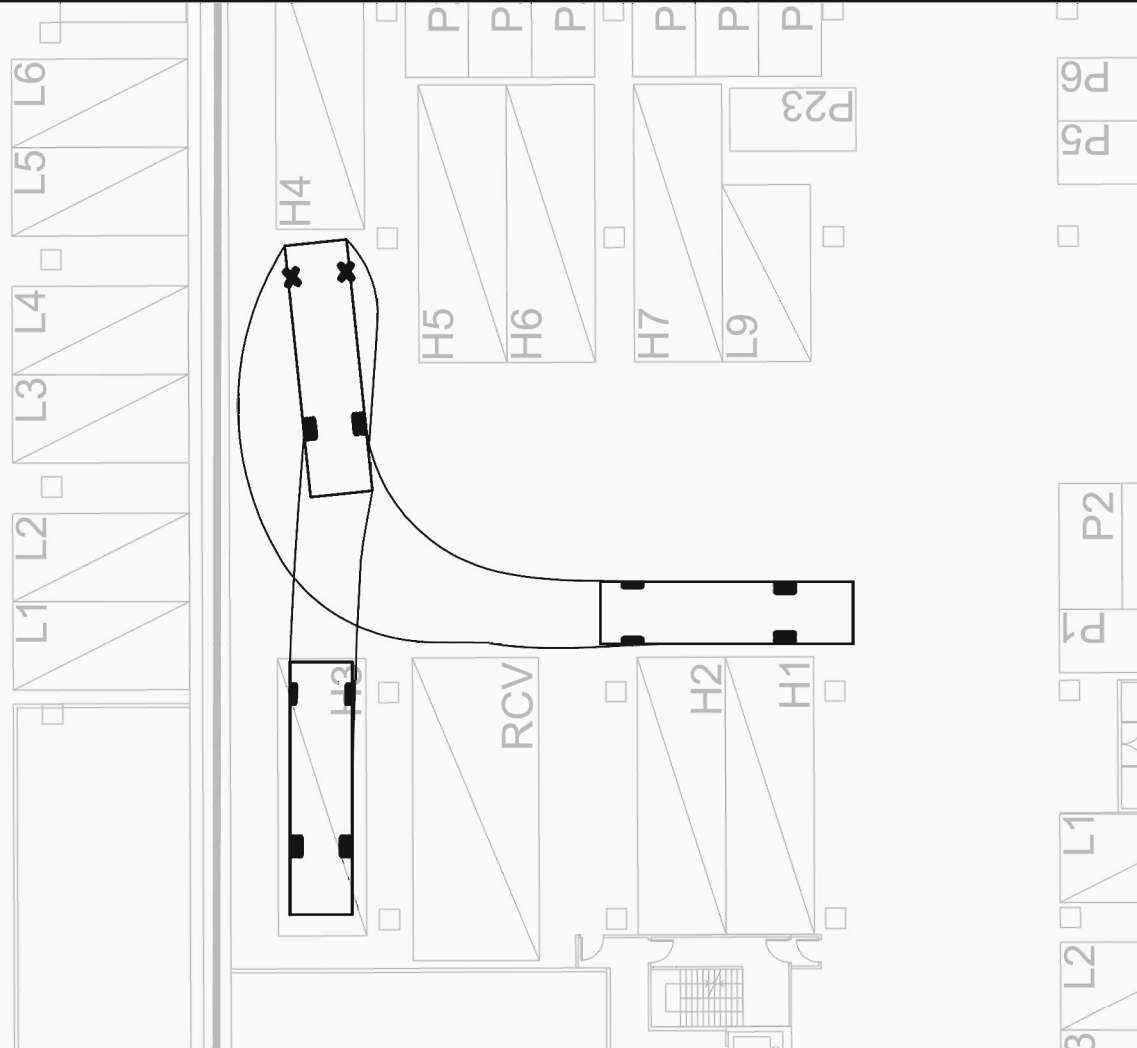
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SWEPT PATH OF HGV ENTERING AND LEAVING H2 IN KC-019

Figure Title

ENTERING

LEAVING



Project Title

URA KC-018 AND KC-019 IN MA TAU KOK

Figure No.

J7167

Figure No.

SP/B1/109 R2B

Revision

R2B

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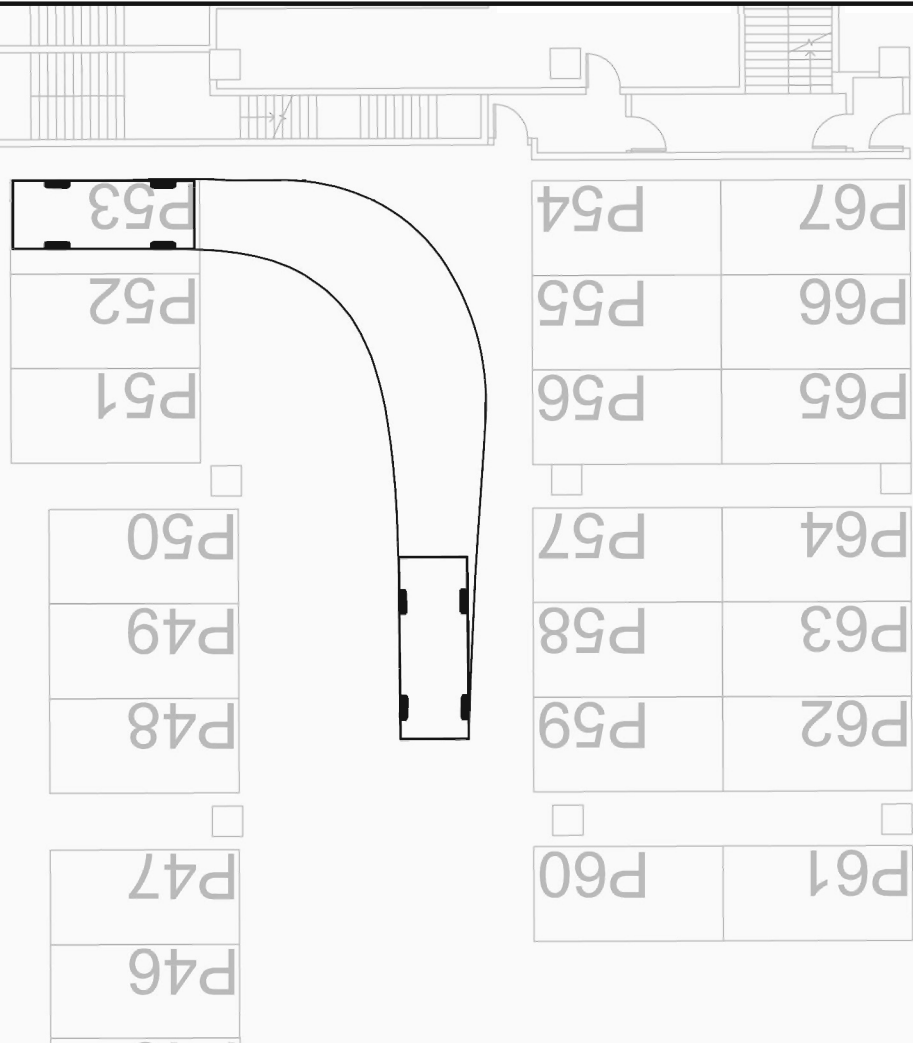
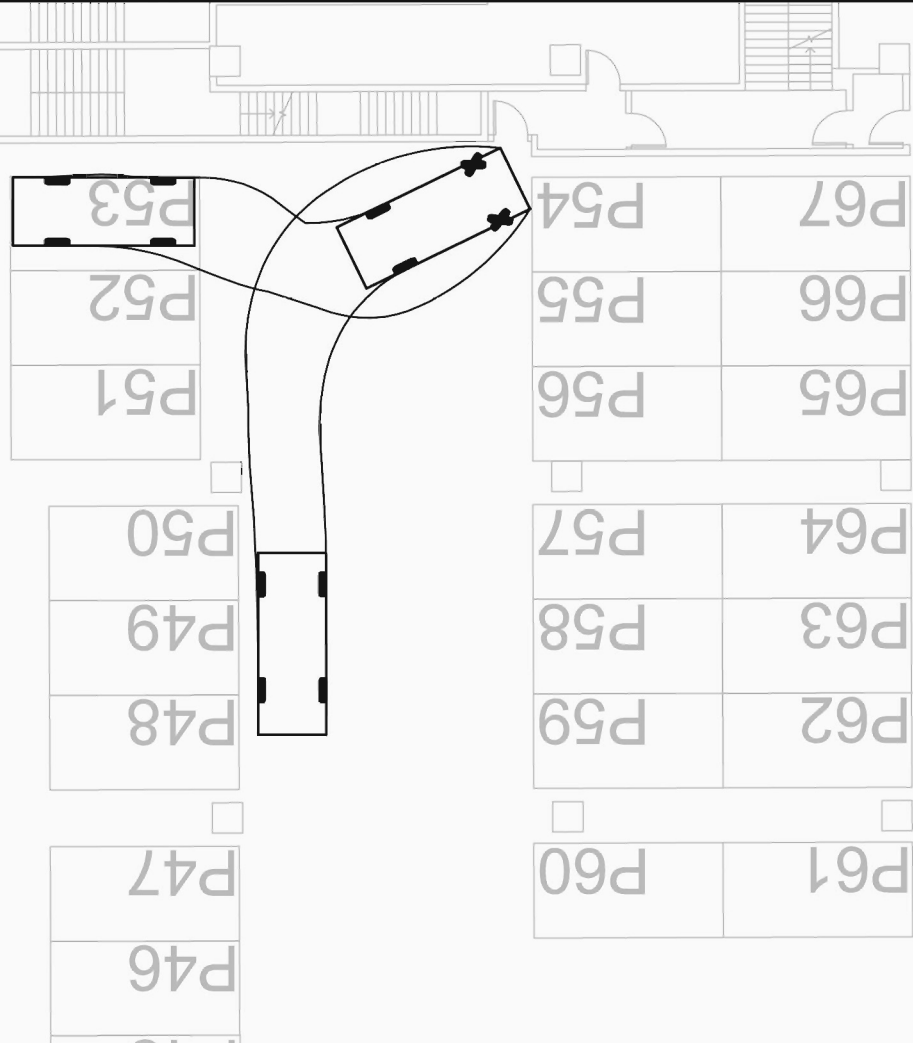
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P1 P14 P15 P16 P17 P18 P19



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J7167

Figure No.
SP/B1/113R2B

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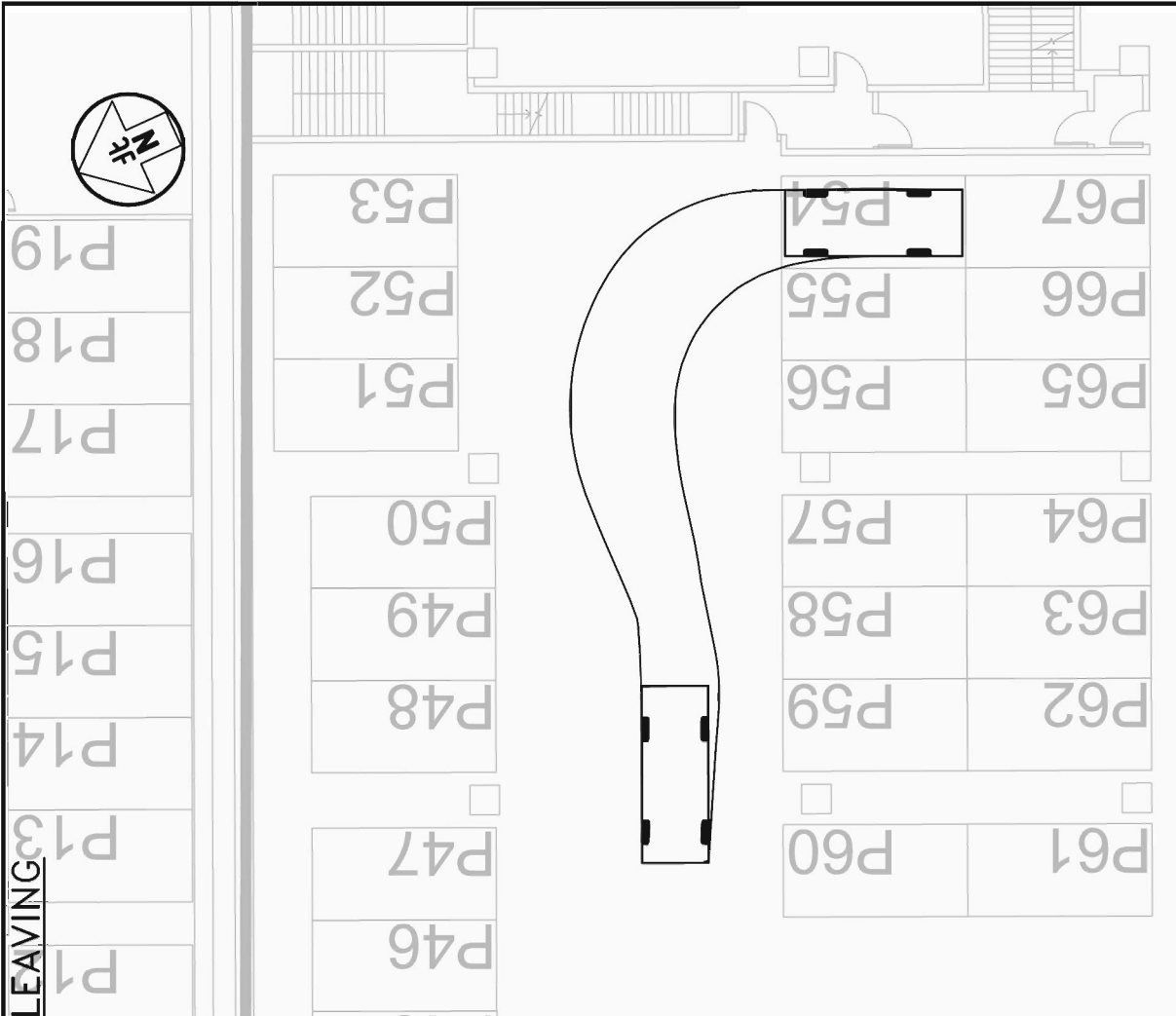
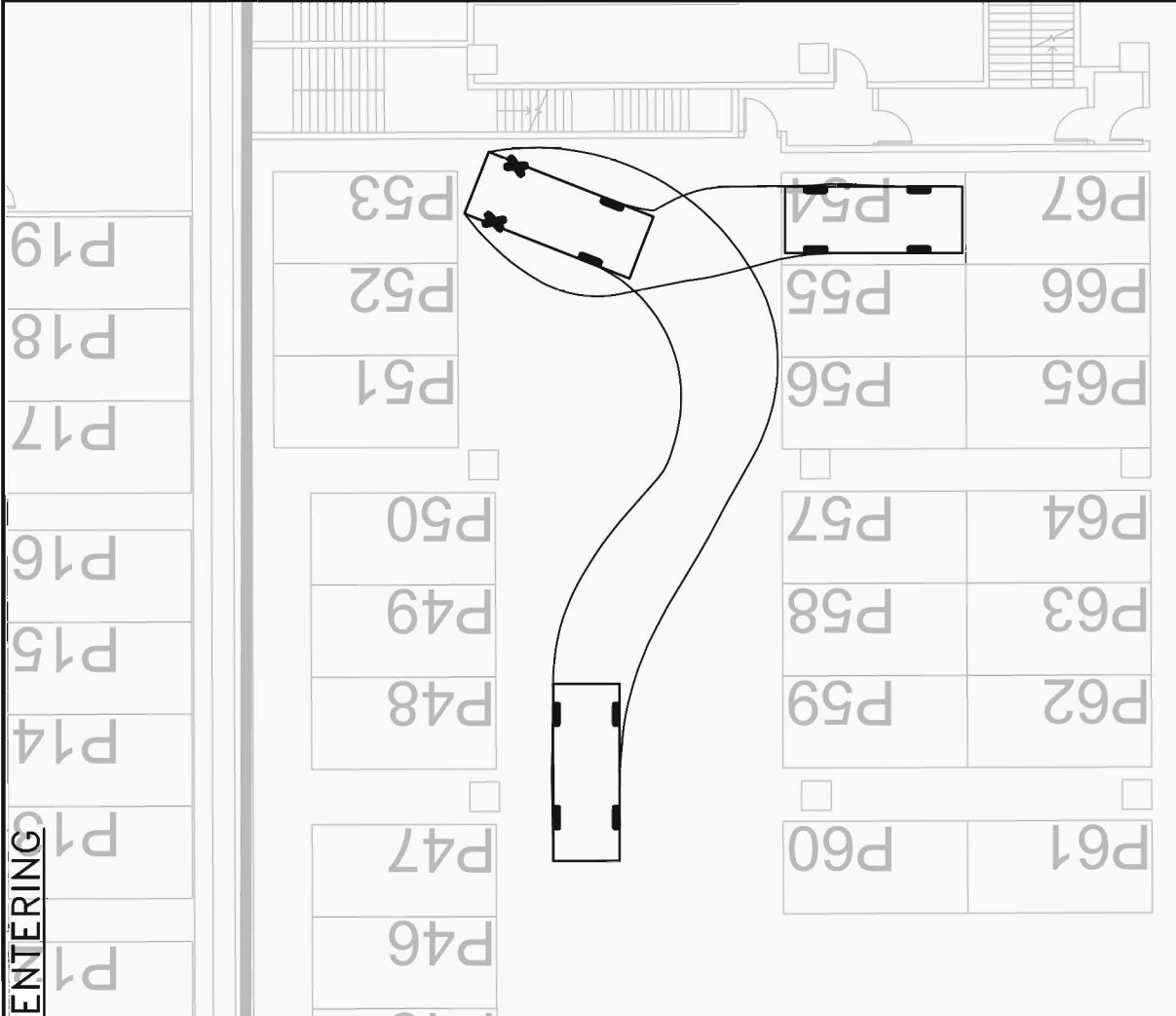
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Figure Title

SWEPT PATH OF PRIVATE CAR ENTERING
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Figure Title

SWEPT PATH OF PRIVATE CAR ENTERING
AND LEAVING P54 IN KC-018

J7167

Figure No.
SP/B1/114

Revision

R2B

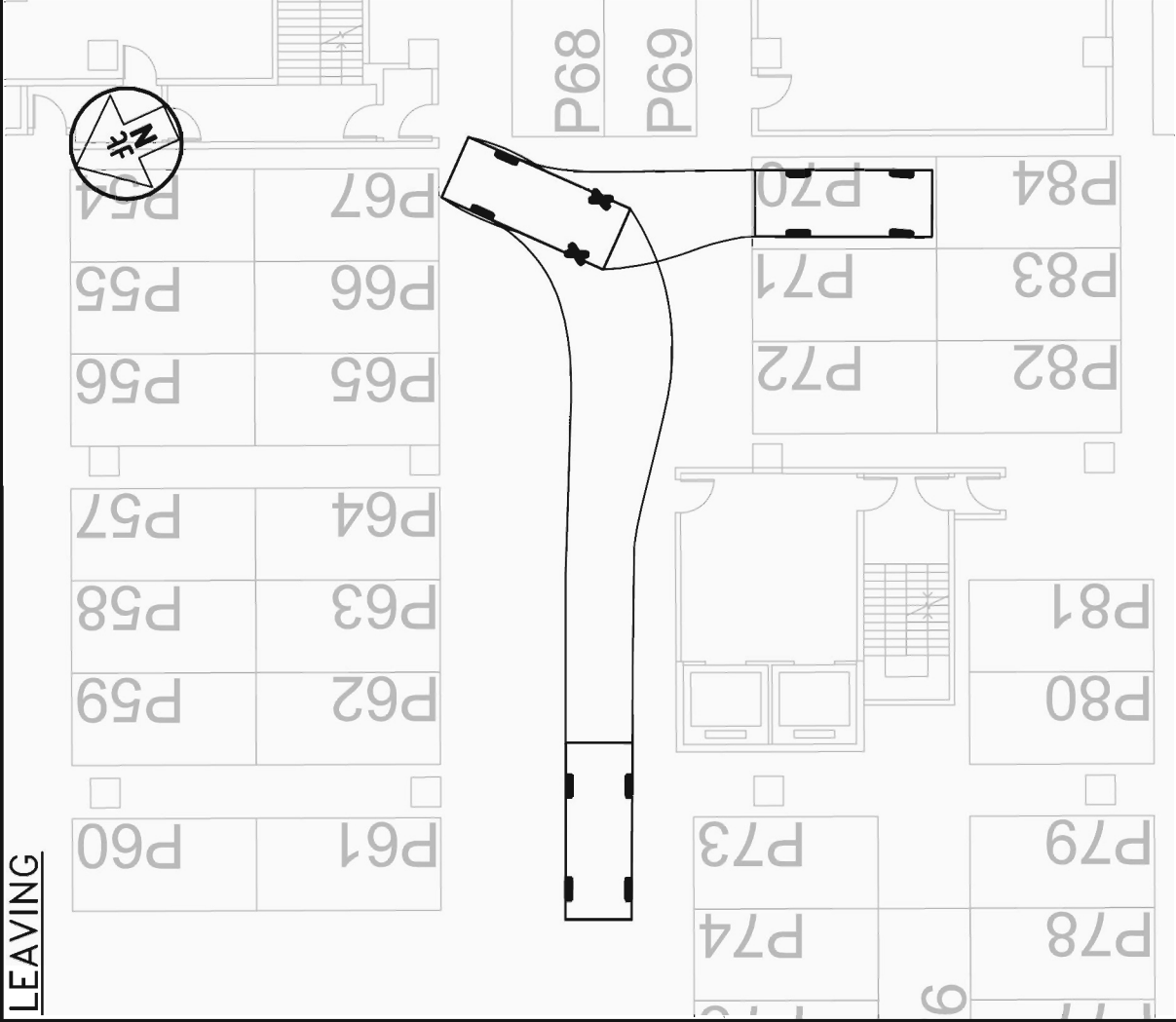
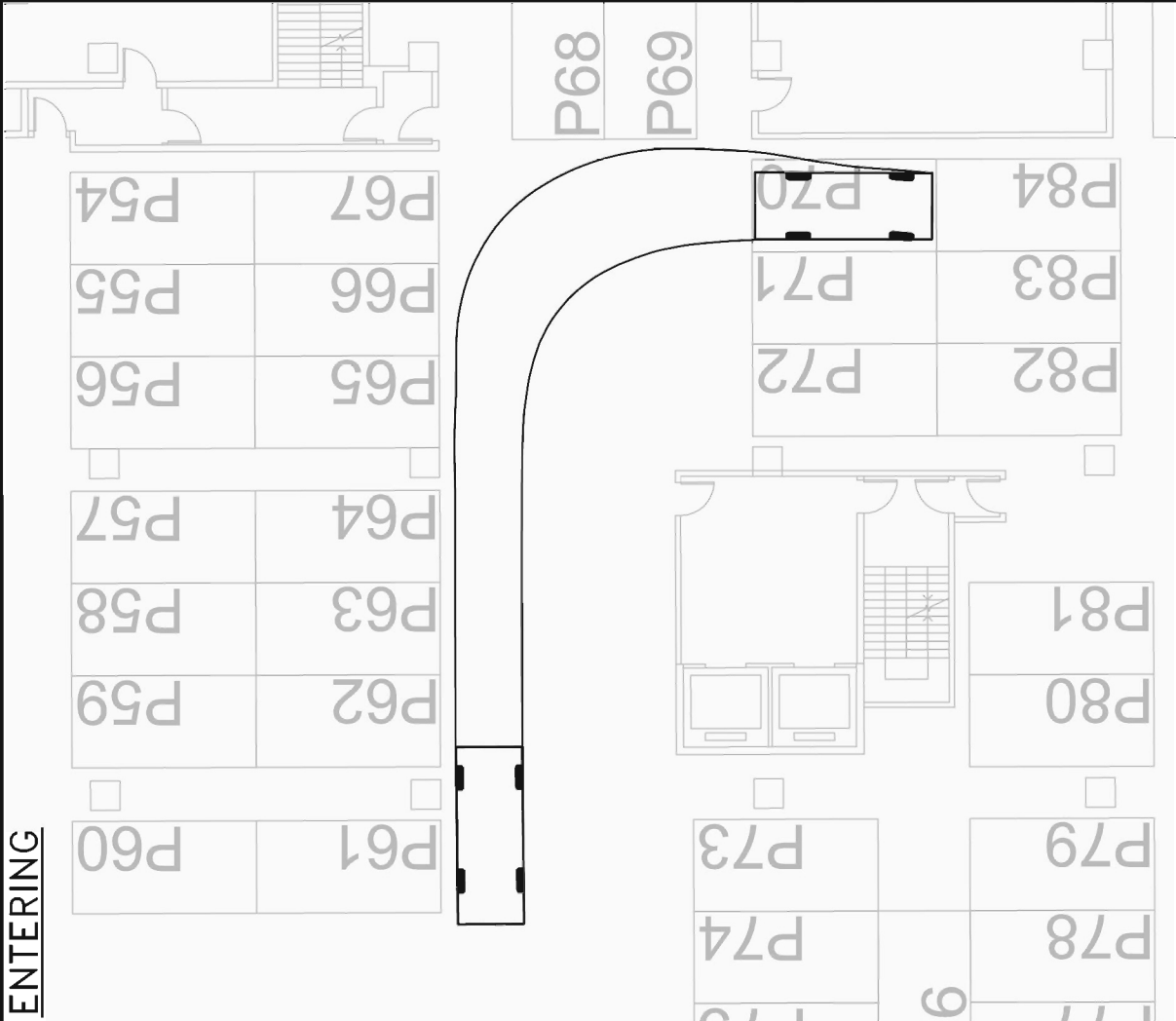
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URA KC-018 AND KC-019 IN MA TAU KOK

Figure No.

J7167

Figure No.

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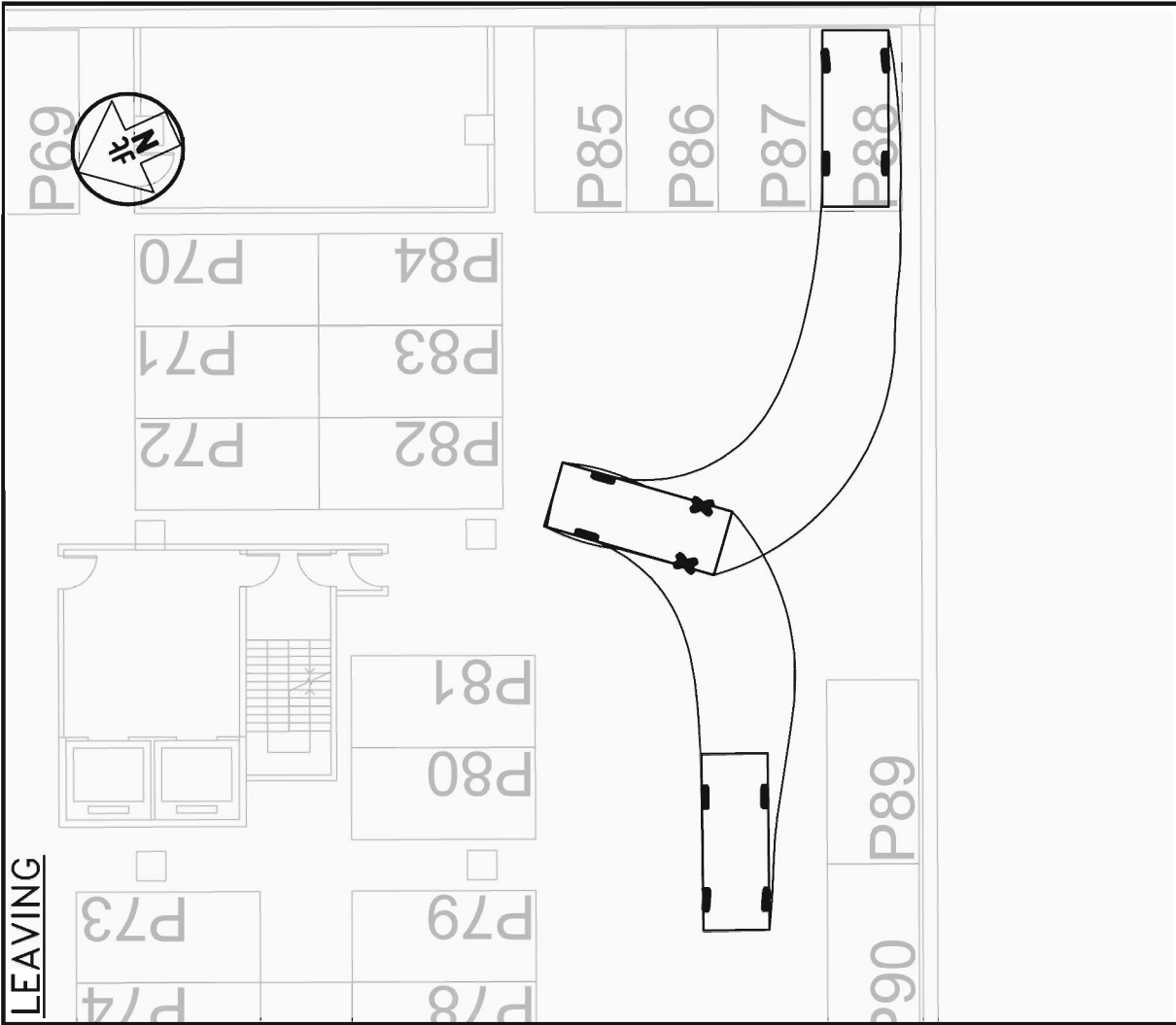
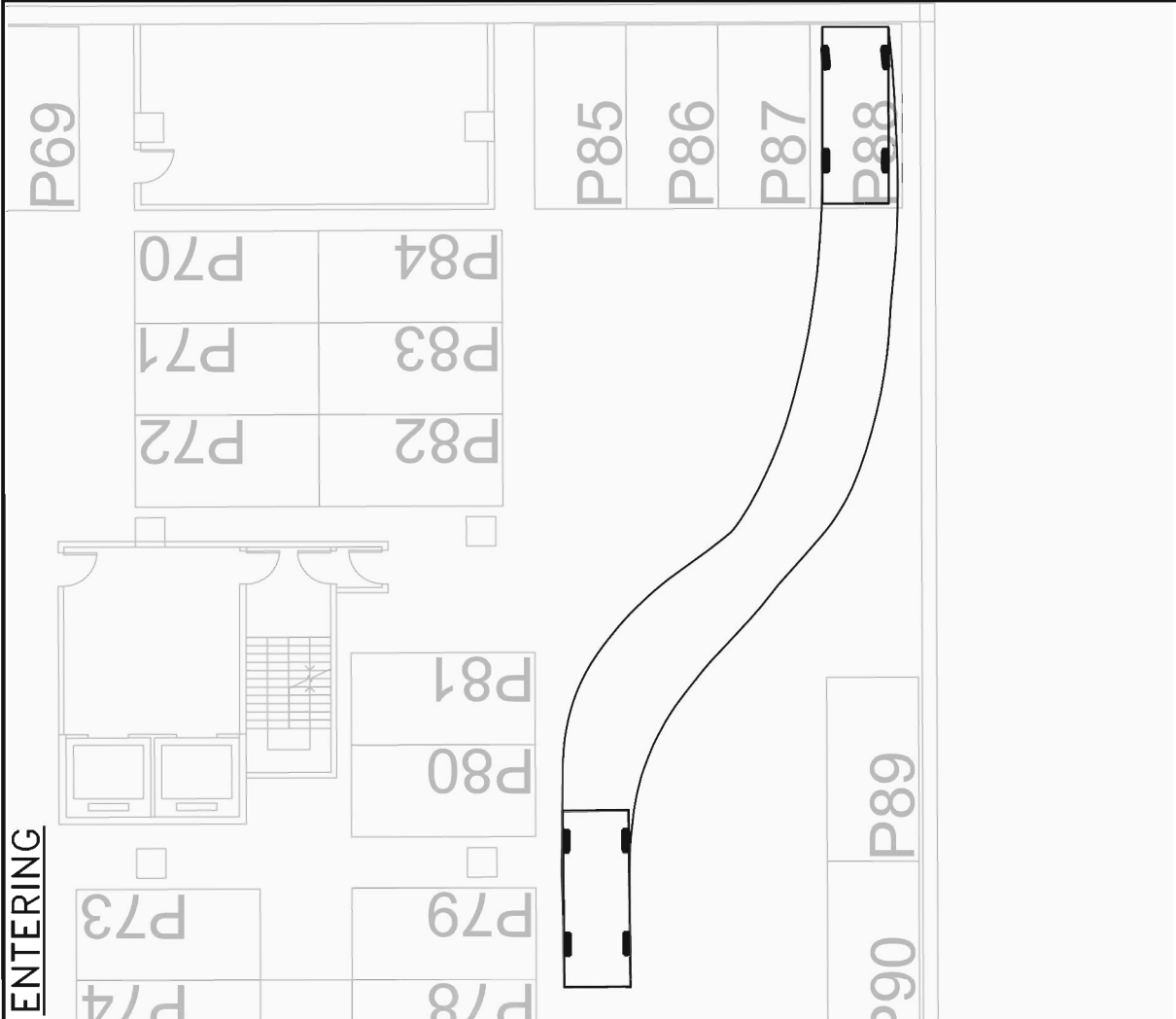
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Figure No.

J7167

Figure No.

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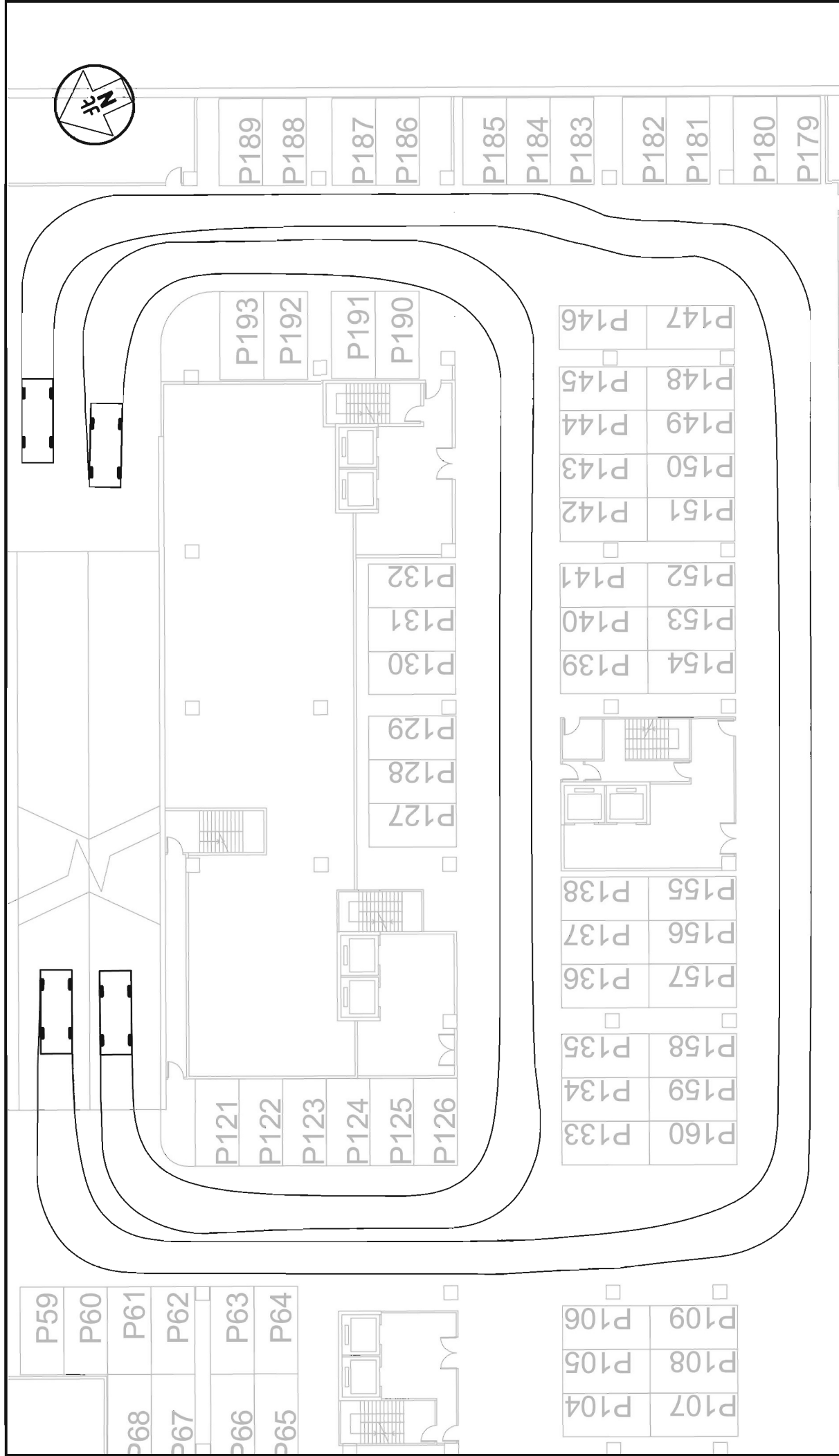
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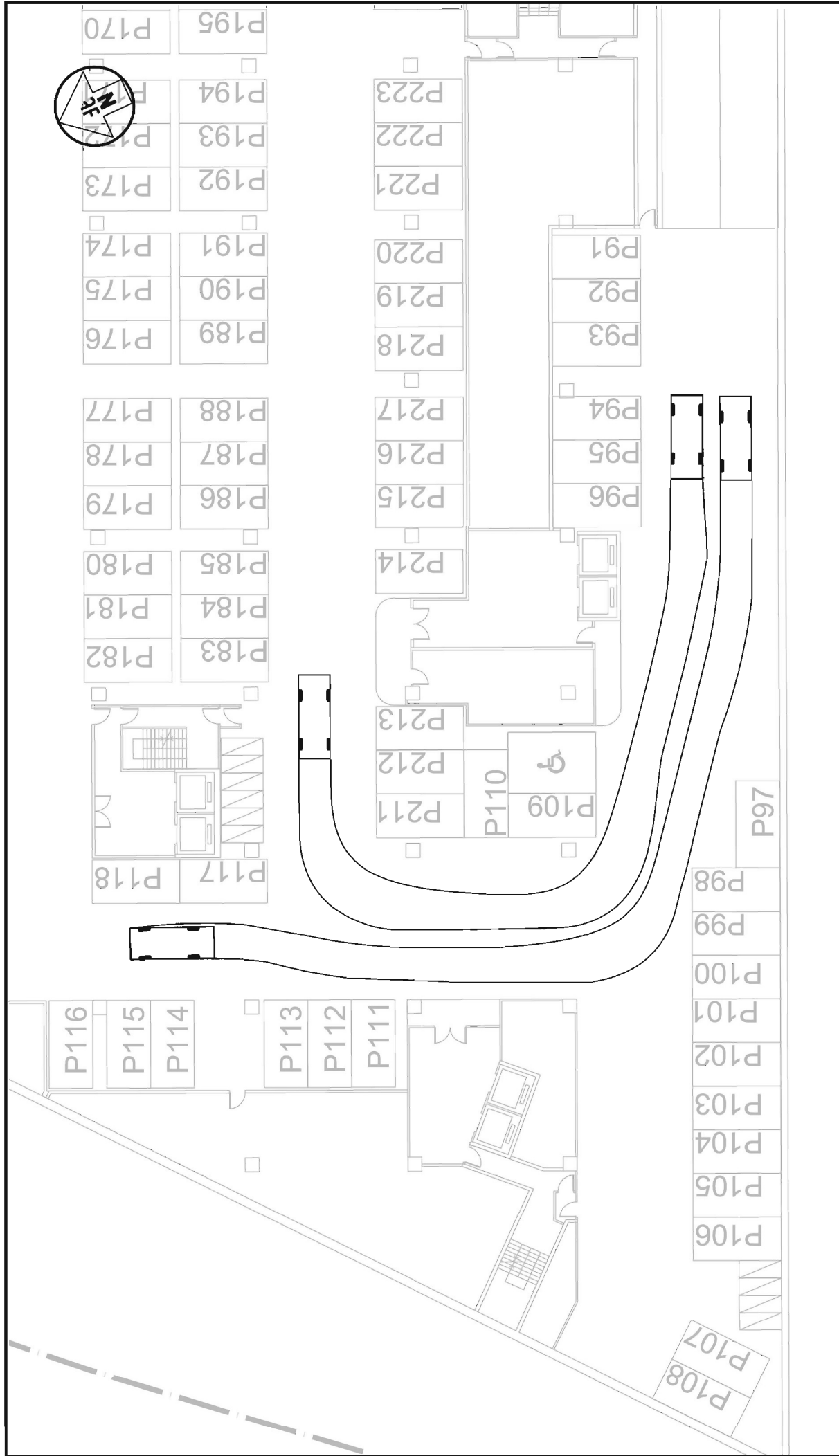
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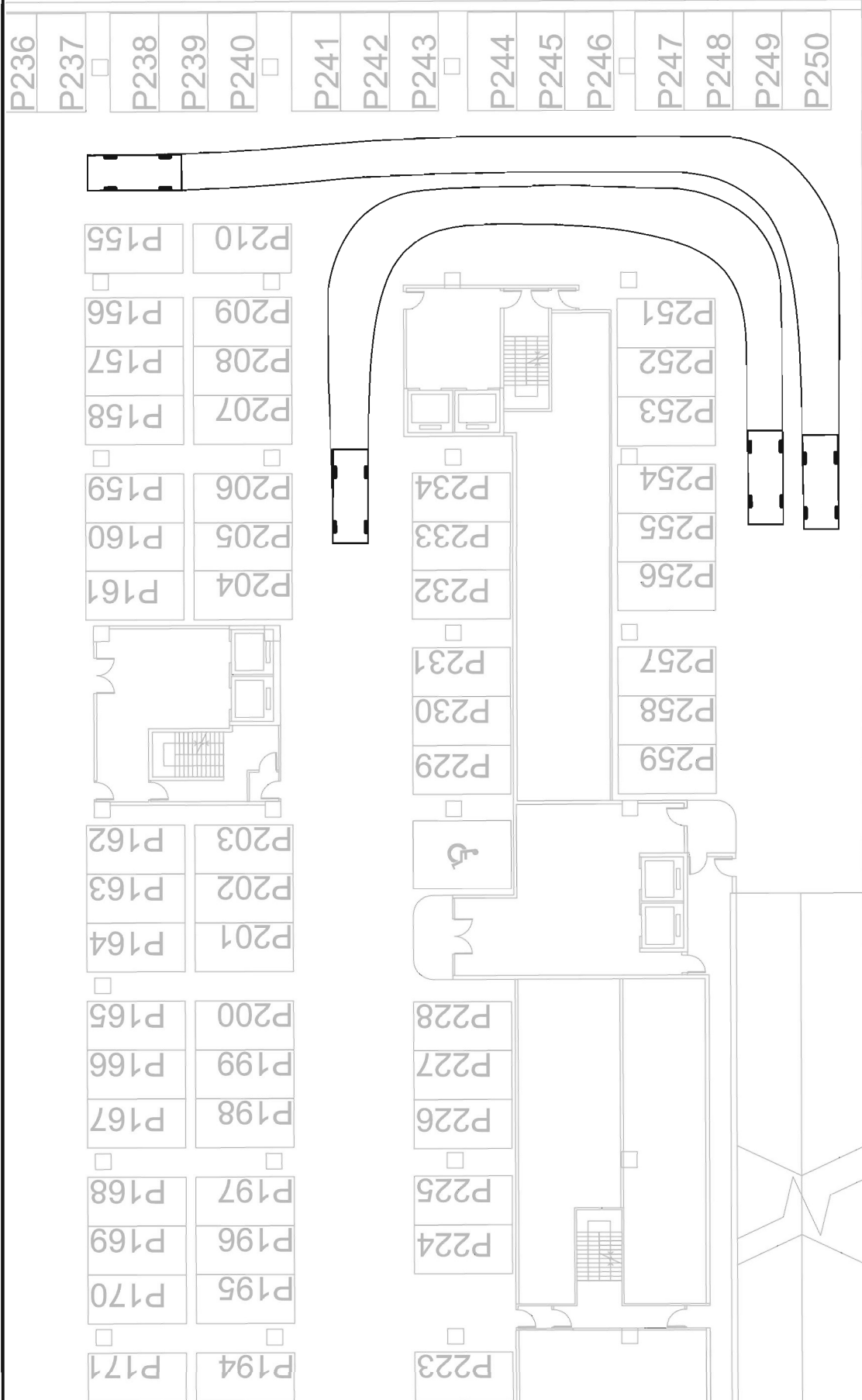


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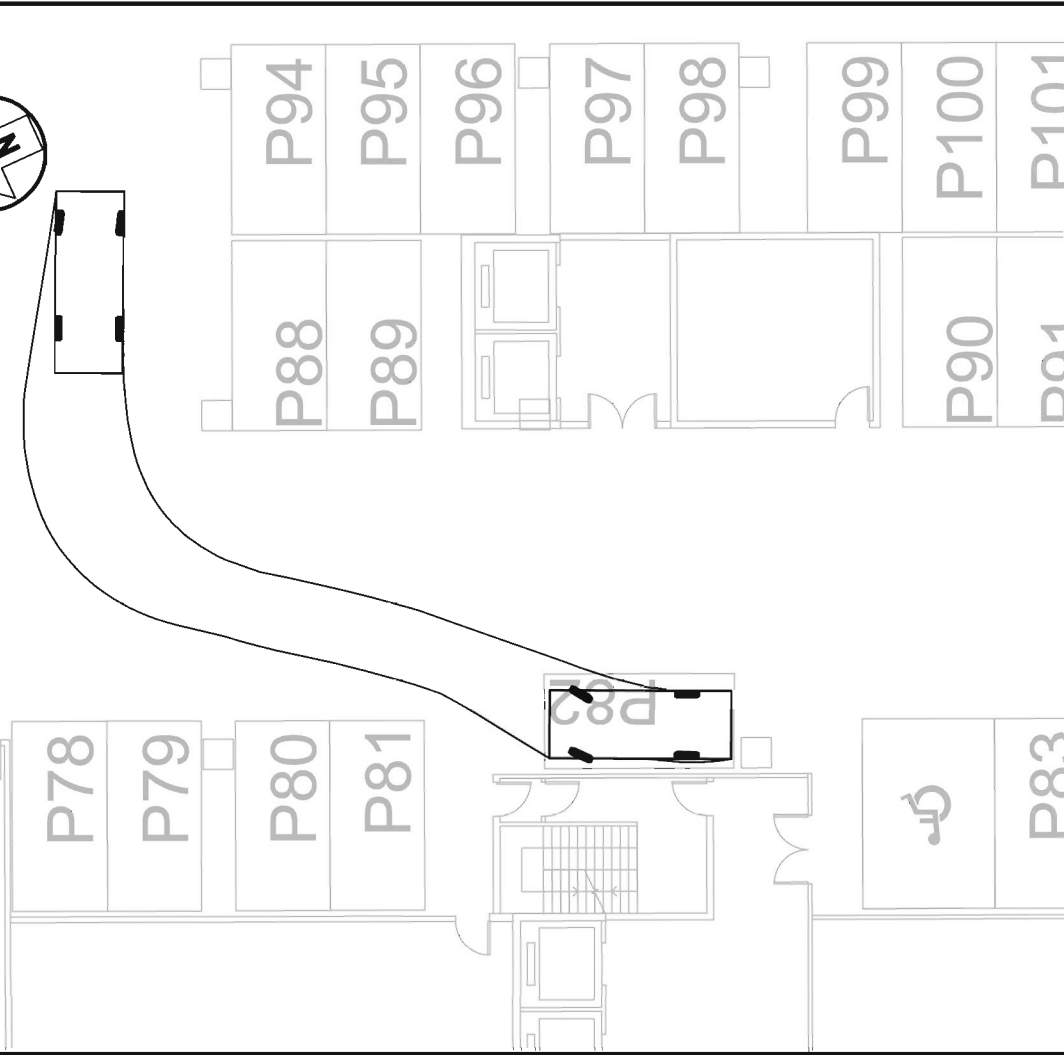
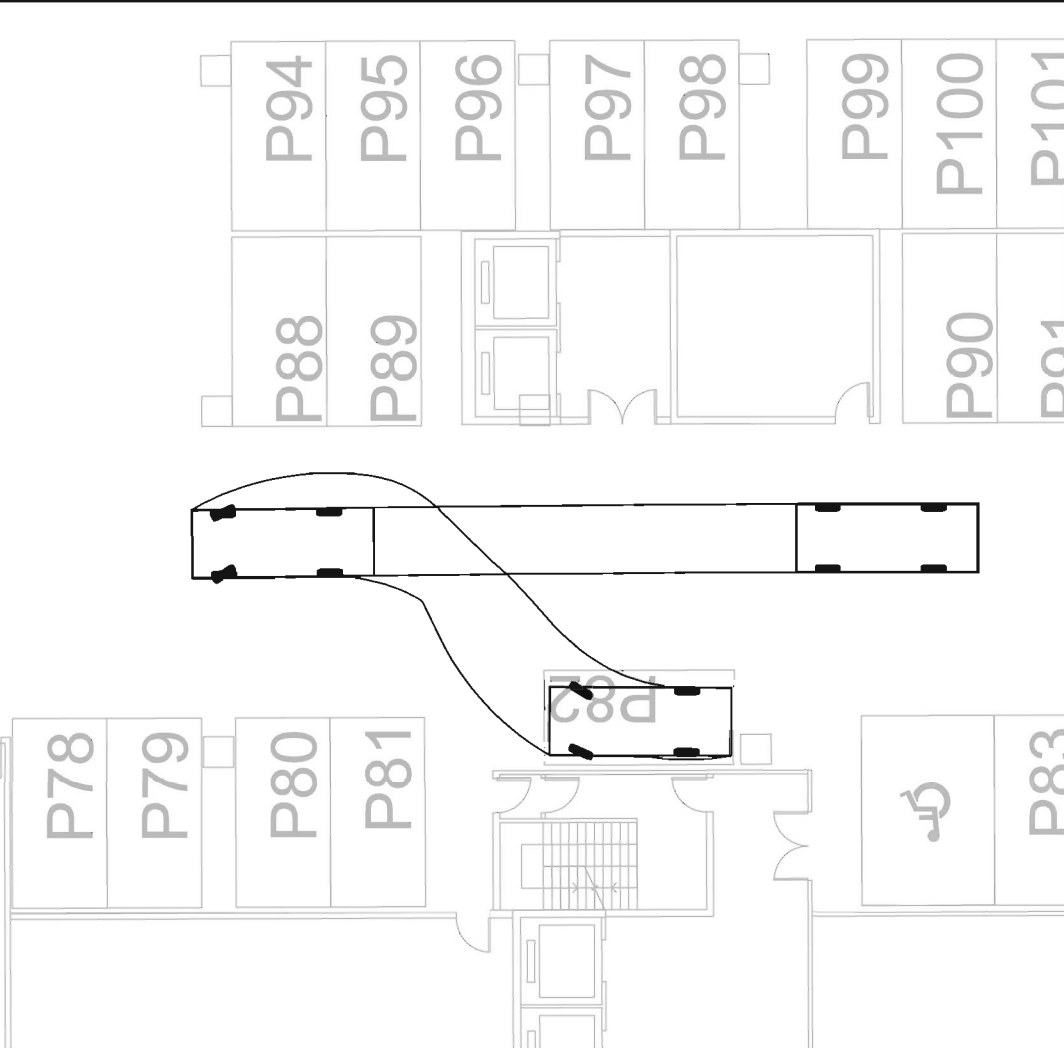
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J7167

Figure No.
SP/B2/104 R2B

Revision

R2B

Figure Title

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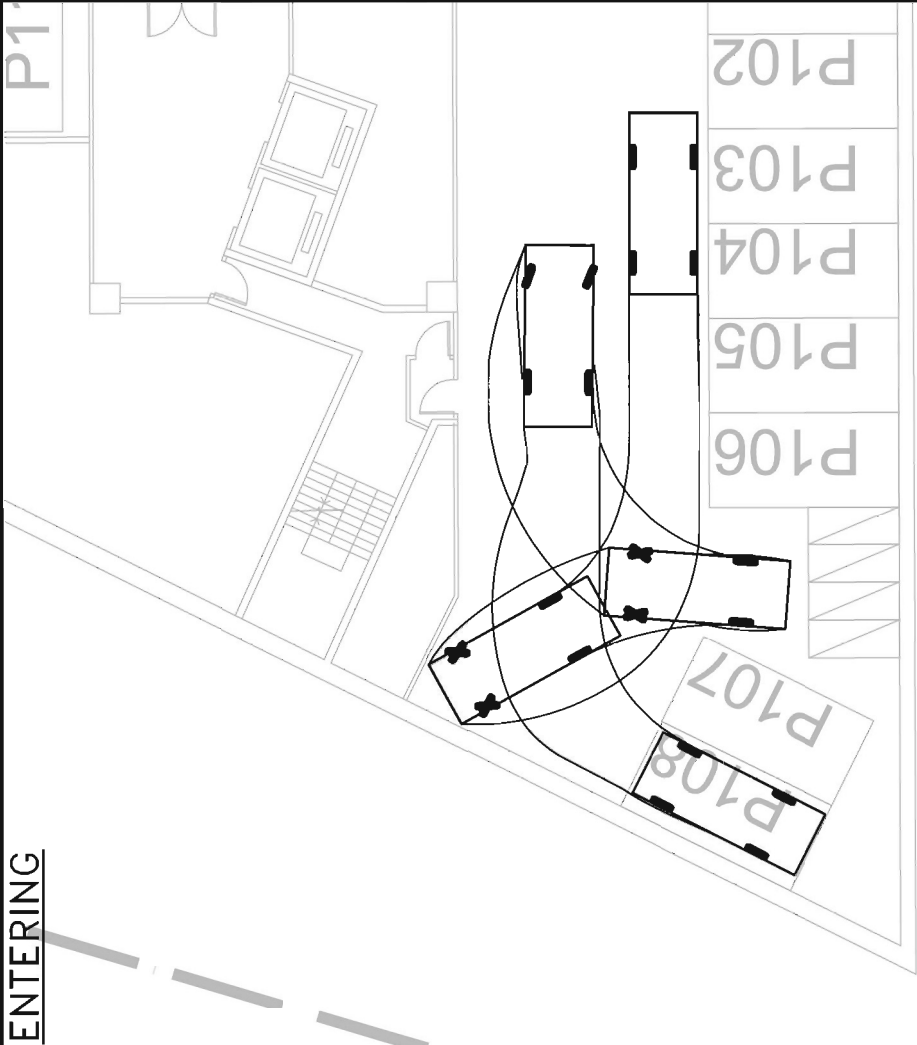
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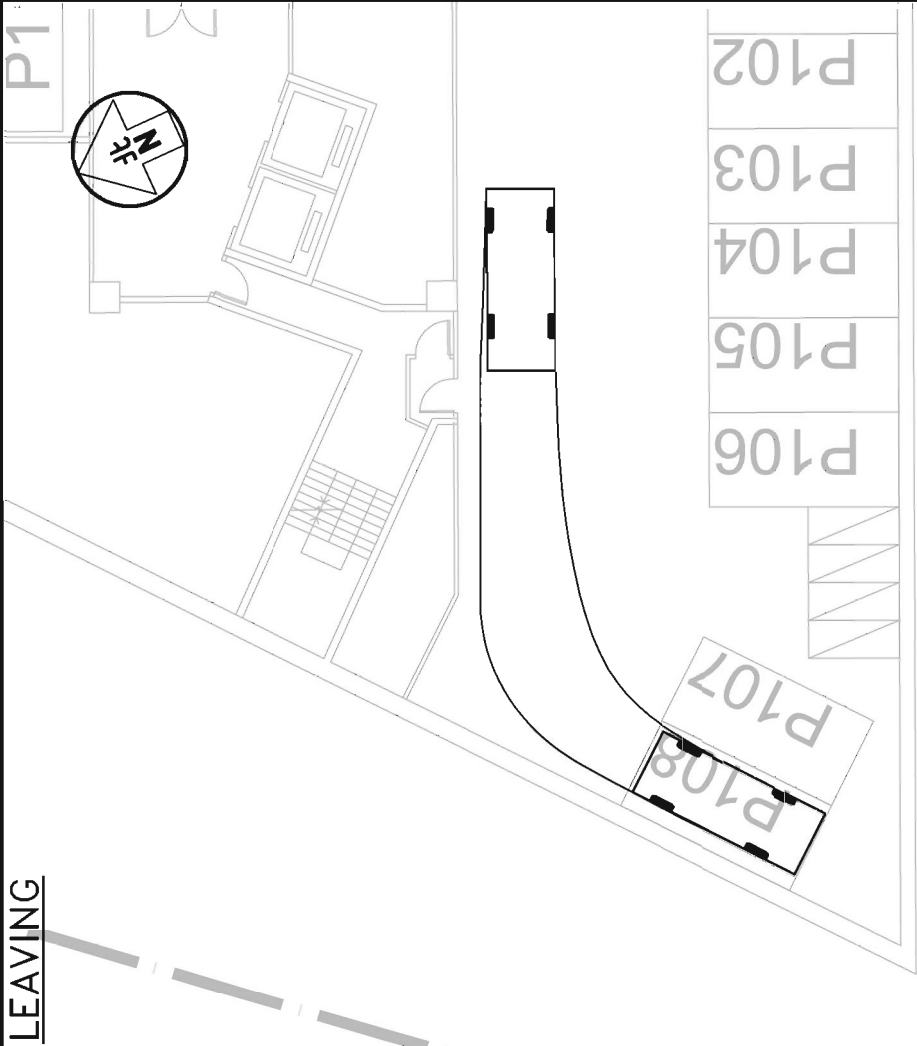
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AND LEAVING P108 IN KC-018

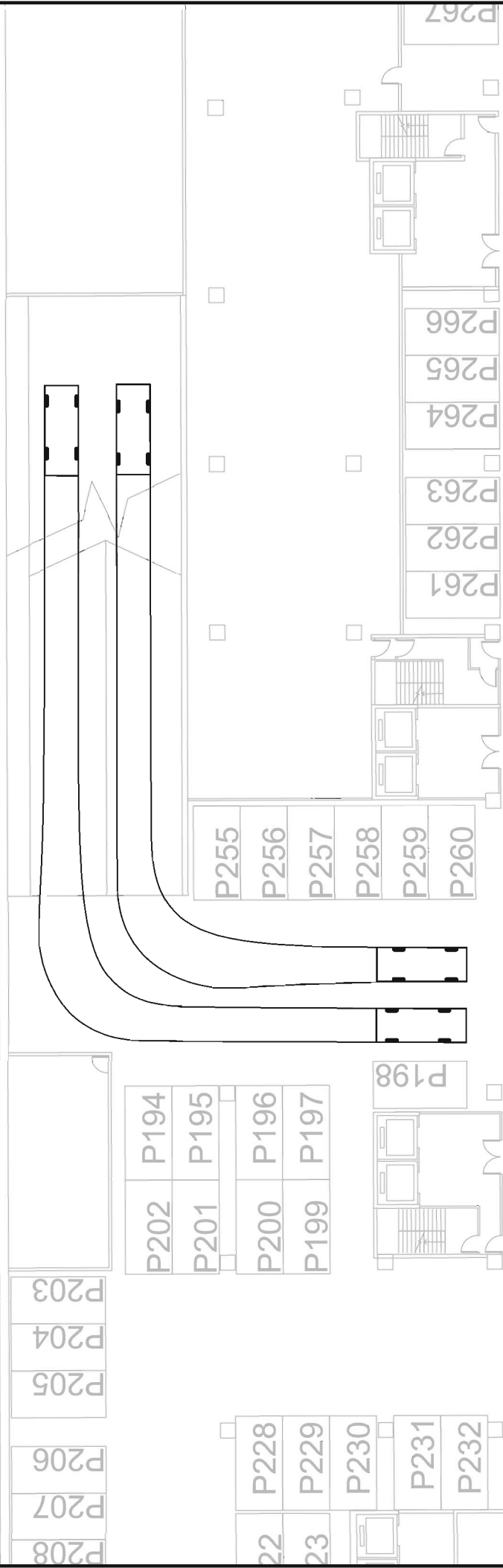
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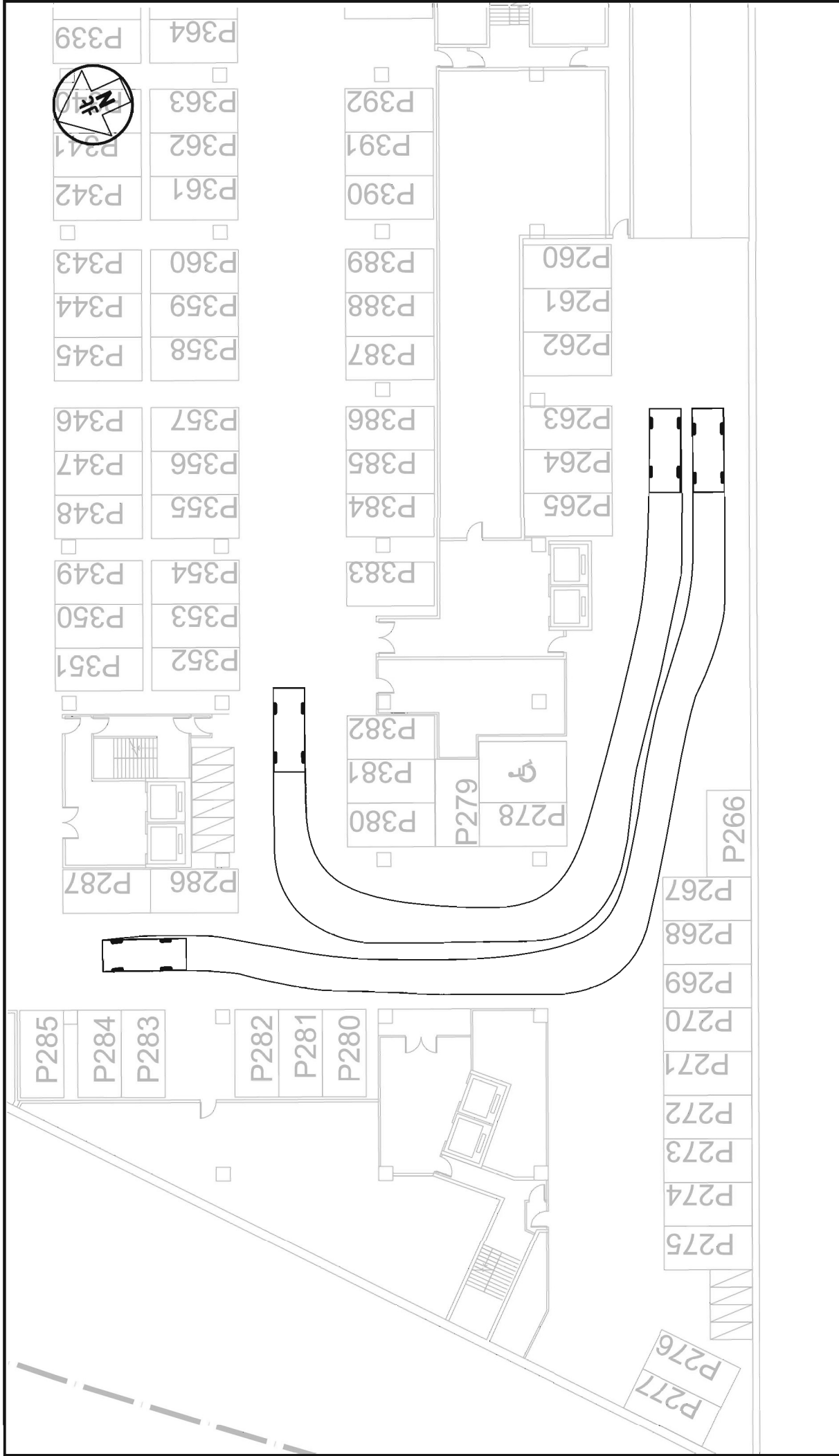
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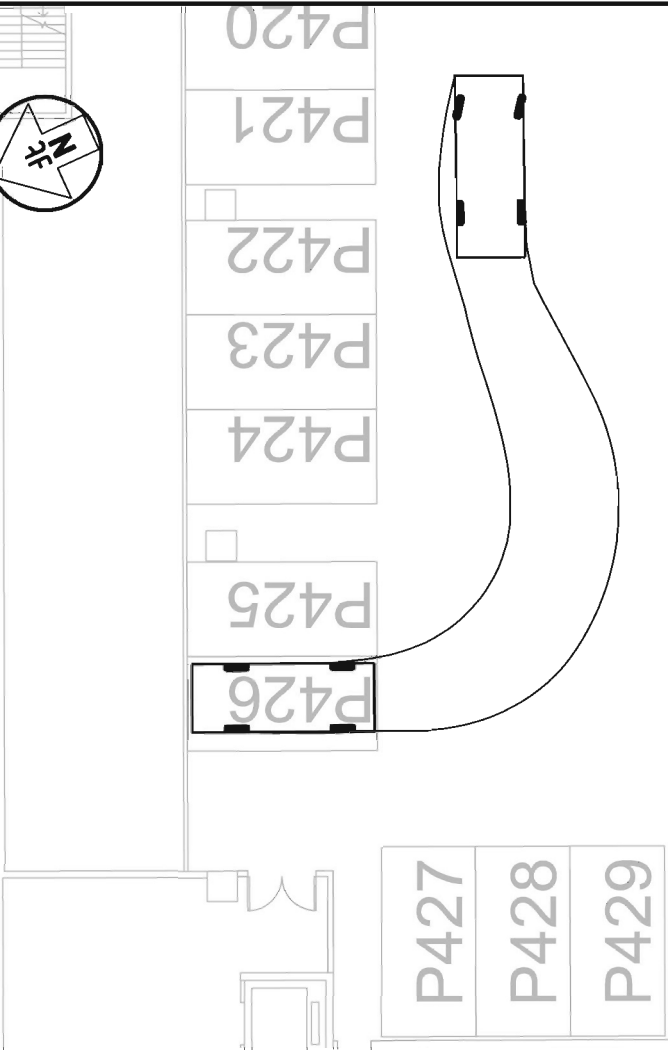
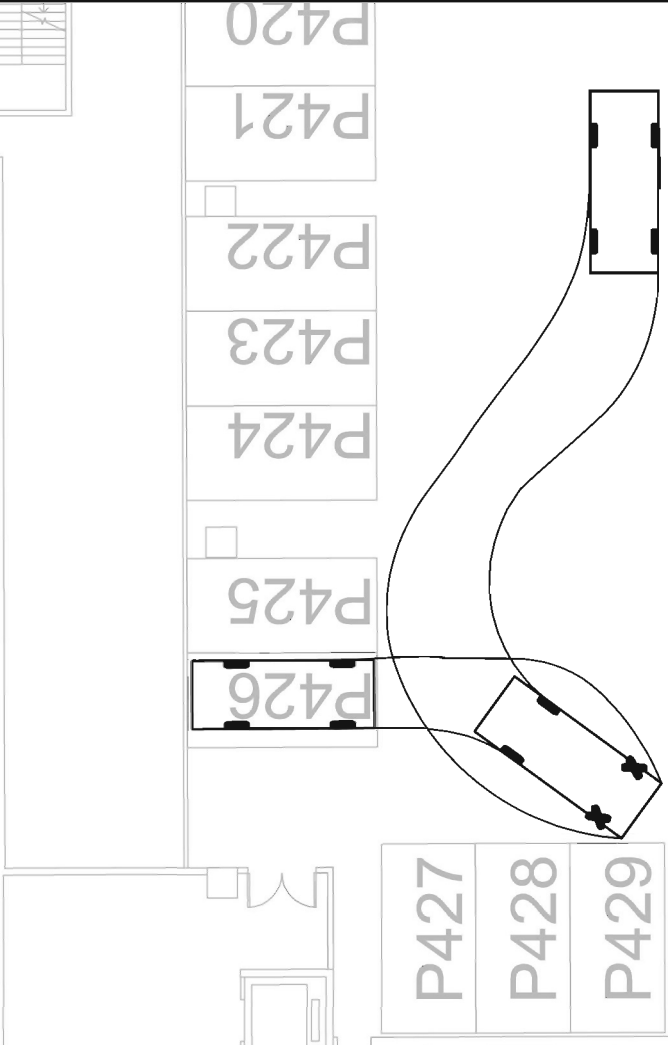
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SWEPT PATH OF PRIVATE CAR ENTERING
AND LEAVING P426 IN KC-018

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J7167

Revision
SP/B3/103 R2B

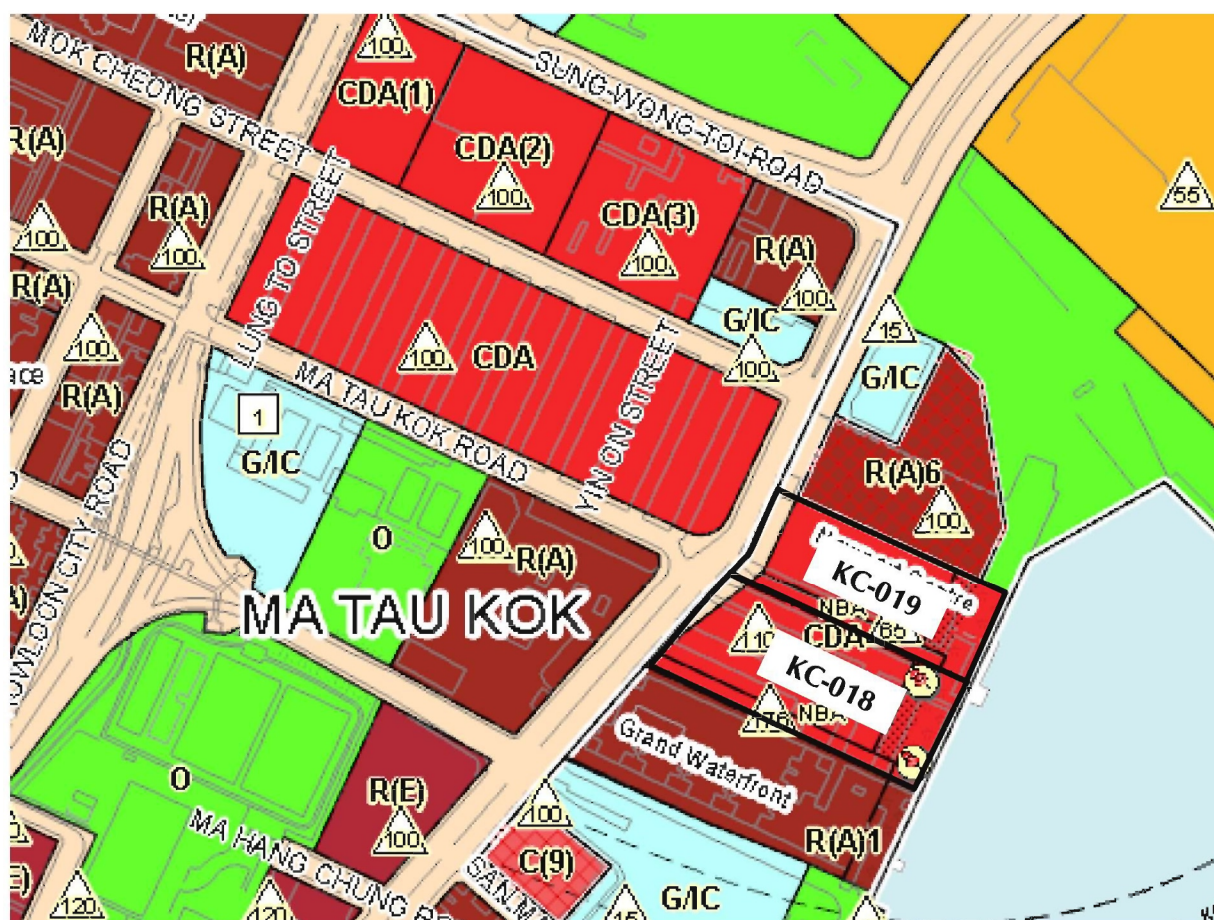
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**Appendix C – Extract from
Kai Tak OZP No. S/K22/7**

KAI TAK OUTLINE ZONING PLAN



**Appendix D –
Development Parameters of KTD
(Extract from TPB Paper No.
10192 and MPC Paper No. 9/21)**

Comparisons of Development Parameters for Sites under Review Study

Sites	Zoning		Maximum PR				BHR (mPD)			
	OZP	Proposed	OZP	Approved s.16	Proposed	Change [#]	OZP	Approved s.16	Proposed	Change [#]
2A1	CDA		5	-	6.5	+1.5	80	-	100	+20
2A2	CDA		4.5	-	6.5	+2	70	-	90	+20
2A3	C		4.5	-	6.5	+2	70	-	90	+20
2A4	C		4.5	-	6.5	+2	60	-	80	+20
2A5	C	2A5(A): G/IC	4.5	-	-	-	60	-	45	-15
		2A5(B): C			6.5	+2			80	+20
2A6	C	2A10: C	4.5	-	6.5	+2	60	-	80	+20
2A7	G/IC		-			-	30			+50
2B1	CDA		5	-	6.5 + 0.3*	+1.8	110	-	135	+25
2B2	R		5	-	6.5 + 0.1*	+1.6	100	-	125	+25
2B3	R		5	-	6.5 + 0.1*	+1.6	85	-	115	+30
2B4	R		5	-	6.5 + 0.1*	+1.6	85	-	115	+30
2B5	R		5	-	6.5 + 0.1*	+1.6	85	-	100	+15
2B6	R		5	-	6.5 + 0.1*	+1.6	85	-	100	+15
3A6	G/IC	C	-	-	8	-	45	-	100	+55
3B1			-	-	5.8	-	45	-	80	+35
3B2			-	-	5.8	-	45	-	80	+35
3B3			-	-	5.8	-	45	-	80	+35
3B4			-	-	5.8	-	45	-	80	+35
3E1	C	R	9.5	-	4.5	-5	100	-	100	0
3E2	OU/O		-	-		-	15	-	80	+65
4A1	R		3	3.4	6.5	+3.1	65/80	80	90	+10
4B1	R		3	3.8	6.5	+2.7	55	65	75	+10
4B2	R		3	4.4	6.5	+2.1	55	75	85	+10
4B3	R		3	3.9	6.5	+2.6	65	75	80	+5
4B4	R		3	3.7	6.5	+2.8	55	65	75	+10
4B5	R	C	3	-	6.3	+3.3	45	-	65	+20
4A2	C	R	4	5	6.5 + 0.15*	+1.65	45	55	80	+25
4C1	C	R	4	5	6.5 + 0.15*	+1.65	45	55	75	+20
4C2	C	R	4	5.9	6.5 + 0.15*	+0.75	55	65	75	+10
4E1	O	R	-	-	6.5	-	-	-	80	-
4E2	O	R	-	-	6.5 + 0.15*	-	-	-	80	-

*non-domestic PR for proposed residential sites

[#] comparison with OZP or approved s.16 applications

Bundle	Site	Site Area ^[b]	Current				Proposed				
			Zoning	Max. PR	Max. SC	Max. BH	Zoning	Max. Dom. PR ^[c]	Max. Non-dom. PR ^[c]	Max. SC	Max. BH
1	2A2	6,270m ²	“CDA(4)” [commercial]	6.6	65%	90mPD	“CDA(4)” [residential]	6.5 ^[d]	1.0 ^[d]	65%	125mPD ^[e]
	2A3	5,968m ²	“C(3)”	6.5	65%	90mPD	“R(A)6”	6.5	1.0	65%	125mPD
2	2A4^[a]	6,555m ²	“C(3)”	6.5	65%	80mPD	“R(A)5”	6.5	1.5	65%	125mPD
	2A5(B)^[a]	3,374m ²	“C(3)”	6.5	65%	80mPD					115mPD
	2A10^[a]	6,100m ²	“C(3)”	6.5	65%	80mPD					100mPD

Notes:

^[a] Sites 2A4, 2A5(B) and 2A10 to be under the same “R(A)5” zoning are proposed to be indicated as a linked single site on the OZP for the purpose of determination of the maximum PR. Individual sites should each be subject to the proposed maximum SC of 65%.

^[b] Site areas are subject to detailed survey.

^[c] Floor spaces for (i) railway facilities in the “R(A)5” zone (which is to cater for the existing railway facilities in Site 2A10); and (ii) government, institutional or community (GIC) facilities in the “CDA(4)”, “R(A)5” and “R(A)6” zones, as required by the Government, are proposed to be disregarded from PR calculation.

^[d] A maximum PR of 7.5 is proposed to be stipulated in the Notes of the OZP for the “CDA(4)” zone. The recommended maximum domestic PR of 6.5 and maximum non-domestic PR of 1.0 are to be stipulated under planning brief and land sale conditions.

^[e] The retail belt area of the “CDA(4)” zone abutting the LTSBPC (**Plan 9a**) is subject to a maximum BH of 2 storeys in accordance with the Notes of the OZP.

4.3 The proposed increase in the maximum BHs for the five individual sites from 80 to 90mPD to 100 to 125mPD is for ensuring that the residential use at the sites, which is subject to a lower permissible SC under the Building (Planning) Regulations than non-domestic use, could achieve the proposed maximum domestic PR of 6.5. Such an increase in BHs is still in keeping with the general stepped BH profile of the locality which is descending progressively from the northeast to the southwest^[8] (**Plan 9a**), and is in line with the broad urban design framework of KTD on creating a dynamic skyline.

4.4 To accord with the policy initiative of providing more welfare facilities in private development sites, a certain amount of gross floor area (GFA) (equivalent to not less than 5% of the proposed domestic GFA of the site in general) for provision of government/social welfare facilities mainly based on the wish-list of the Social Welfare Department (SWD) has been incorporated in the notional schemes of the reviewed sites and assumed to be disregarded from PR/GFA calculation for testing in the Review Study, such that the maximum permissible PR for the sites would not be compromised. For the two bundled sites, upon consulting SWD, the following welfare facilities have been reserved at the sites for addressing the needs of the local and the community on the services:

⁸ The highest BH of 135mPD in the locality of Area 2 relates to the proposed public housing development at Site 2B1, with the BHs of the adjacent residential sites descending progressively from the northeast to the southwest to the levels of 125mPD, 115mPD and 100mPD.

“R(B)7” with maximum PRs of 5.5/6.1/7.0, and have all been sold for private residential developments. To the south and further southeast of the three reviewed sites are the existing Kai Tak Cruise Terminal (KTCT) and a site zoned “OU” annotated “Tourism Related Uses to include Commercial, Hotel and Entertainment” (“OU(TRU)”) intended for the development of the proposed Tourism Node (TN). While Sites 4B5 and 4C4 are currently vacant, Site 4C5 is occupied as a temporary depot for franchised buses.

Rezoning Proposals

4.8 The Review Study recommended the three reviewed sites to be rezoned from commercial to residential use subject to maximum domestic PRs of 5.7/6.6/7.0 (average domestic PR of 6.5), maximum non-domestic PRs of 0.3/0.5, maximum SC of 40% and maximum BH of 95/108mPD (same as now) for production of about 3,000 private housing units. Similar to the two bundled sites at the former north apron area, GFAs for GIC/social welfare facilities (equivalent to not less than 5% of the proposed domestic GFA of the site in general) have also been reserved at these sites and are proposed to be disregarded from PR calculation. Site 4B5 is proposed to be rezoned from “C(4)” to “R(B)8” (**Item F on Plan 6**), Site 4C4 from “C(7)” to “R(B)9” (**Item G on Plan 6**) and Site 4C5 from “C(5)” to “R(B)10” (**Item H on Plan 6**). The proposed zonings and development restrictions for the sites are summarised as follows:

Site	Site Area ^[a]	Current				Proposed			
		Zoning	Max. PR	Max. SC	Max. BH	Zoning	Max. PR ^[b]	Max. SC	Max. BH
4B5	13,953m ²	“C(4)”	6.5	80%	108mPD	“R(B)8”	7.5 ^[c]	40%	108mPD
4C4	10,692m ²	“C(7)”	7.5	80%	95mPD	“R(B)9”	6.9 ^[d]	40%	95mPD
4C5	9,480m ²	“C(5)”	6.0	80%	95mPD	“R(B)10”	5.7 ^[e]	40%	95mPD

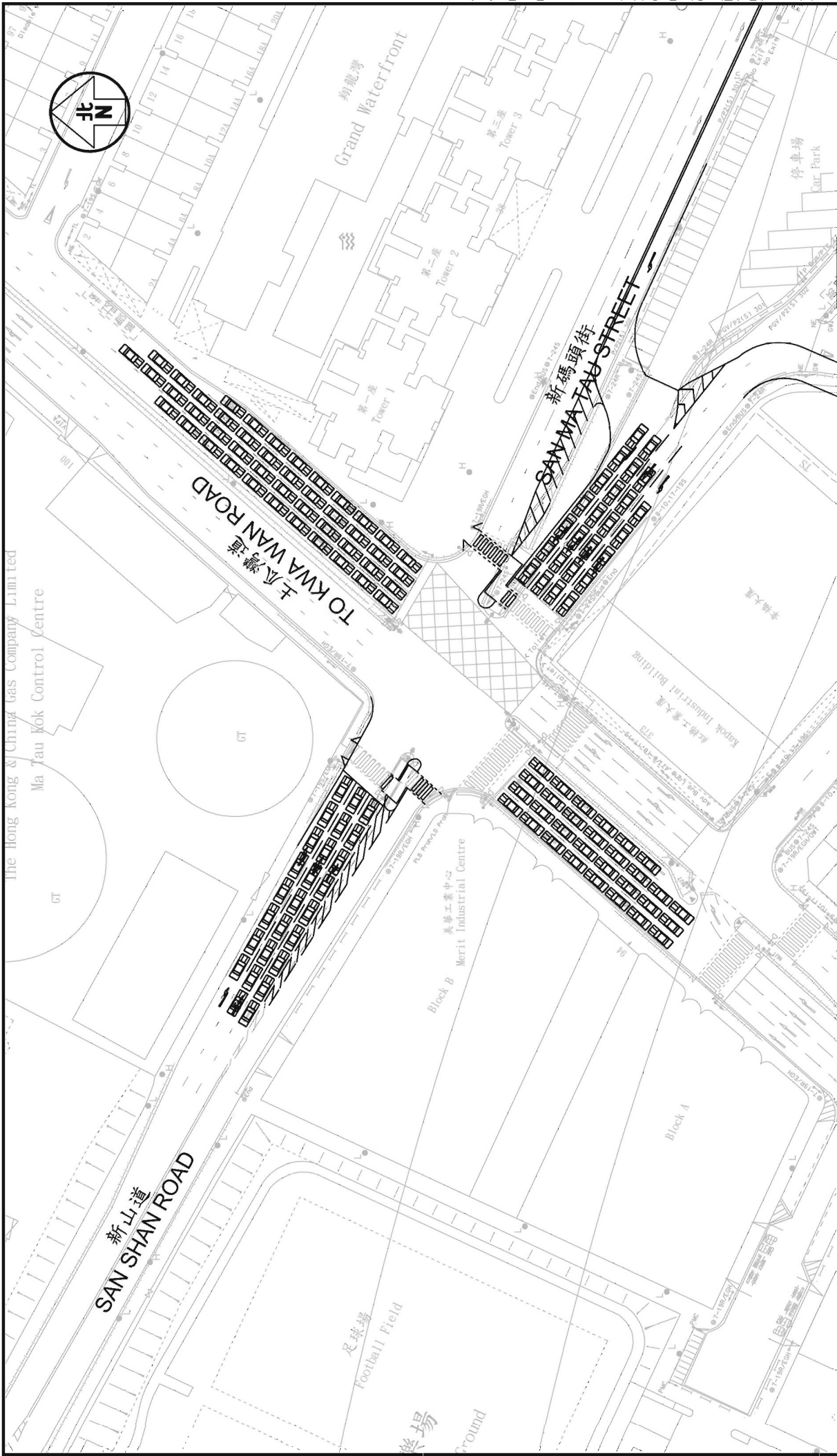
Notes:

- ^[a] Site areas are subject to detailed survey.
- ^[b] Floor spaces for GIC facilities in the “R(B)8”, “R(B)9” and “R(B)10” zones, as required by the Government, are proposed to be disregarded from PR calculation.
- ^[c] The proposed maximum PR of 7.5 comprises a maximum domestic PR of 7.0 and a maximum non-domestic PR of 0.5 which are to be stipulated under land sale conditions.
- ^[d] The proposed maximum PR of 6.9 comprises a maximum domestic PR of 6.6 and a maximum non-domestic PR of 0.3 which are to be stipulated under land sale conditions.
- ^[e] The proposed maximum PR of 5.7 is for residential use only.

4.9 To maintain the feature of an undulating and varied BH profile in the former runway area, with the tallest band of developments in the middle portion and BHs of the developments stepping down on the two sides towards the Metro Park and the runway tip (**Plan 12d**), the BHs of Sites 4B5, 4C4 and 4C5 are proposed to remain unchanged. In proportion to the BH and in consideration of specific site constraints (including the proximity of Site 4C5 to KTCT), the PRs for the three sites have been carefully designed^[10] to achieve an average maximum domestic PR of 6.5.

¹⁰ Site 4C5 is proposed with a smaller maximum domestic PR of 5.7 as half of its south-western site boundary is abutting the existing structure of KTCT and its site configuration is relatively elongated. Site 4B5, which has a more regular site configuration and is subject to a higher maximum BH among the three reviewed sites, is proposed with a larger maximum domestic PR of 7.0.

Appendix E – Queue Length Analysis

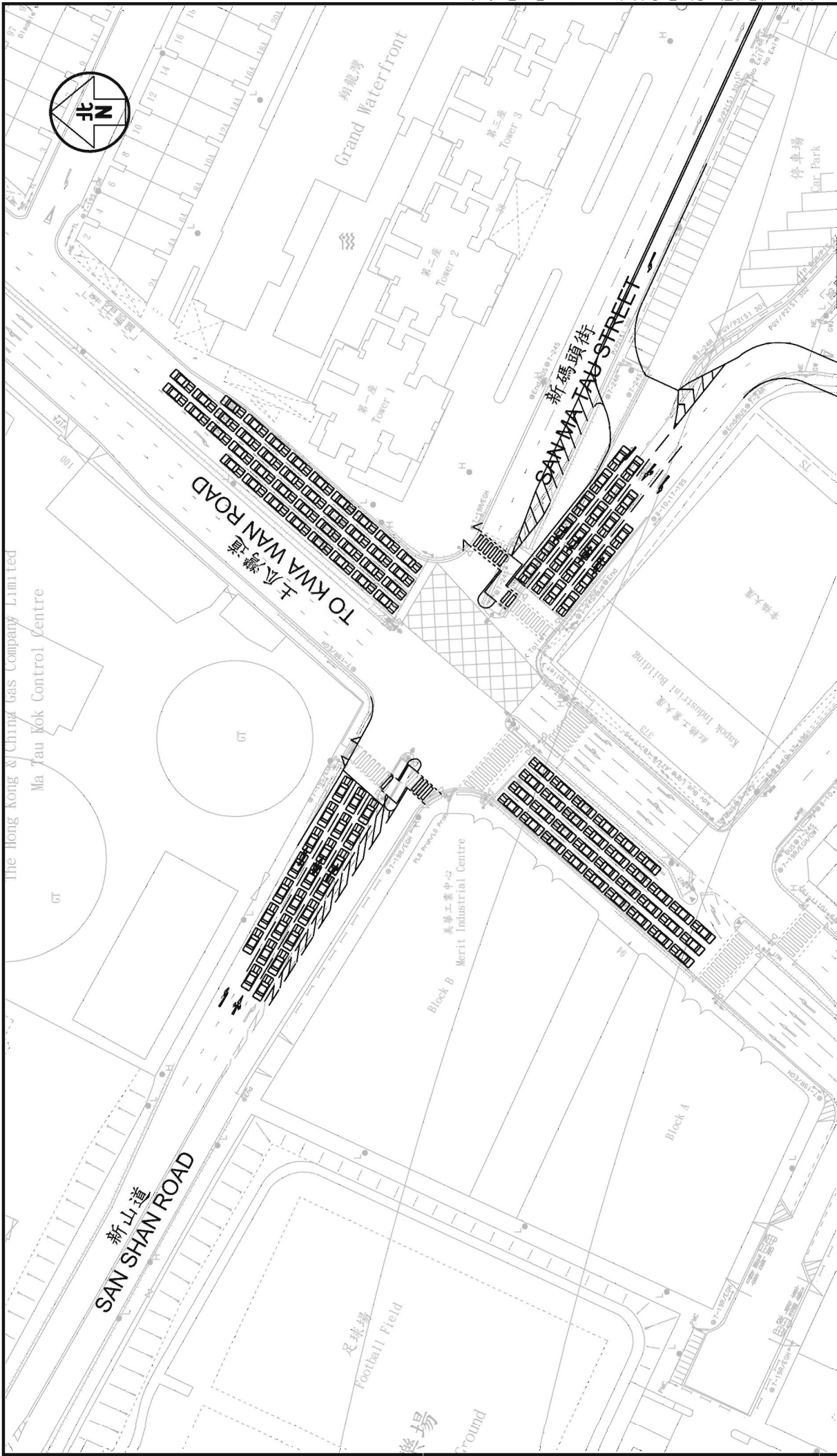


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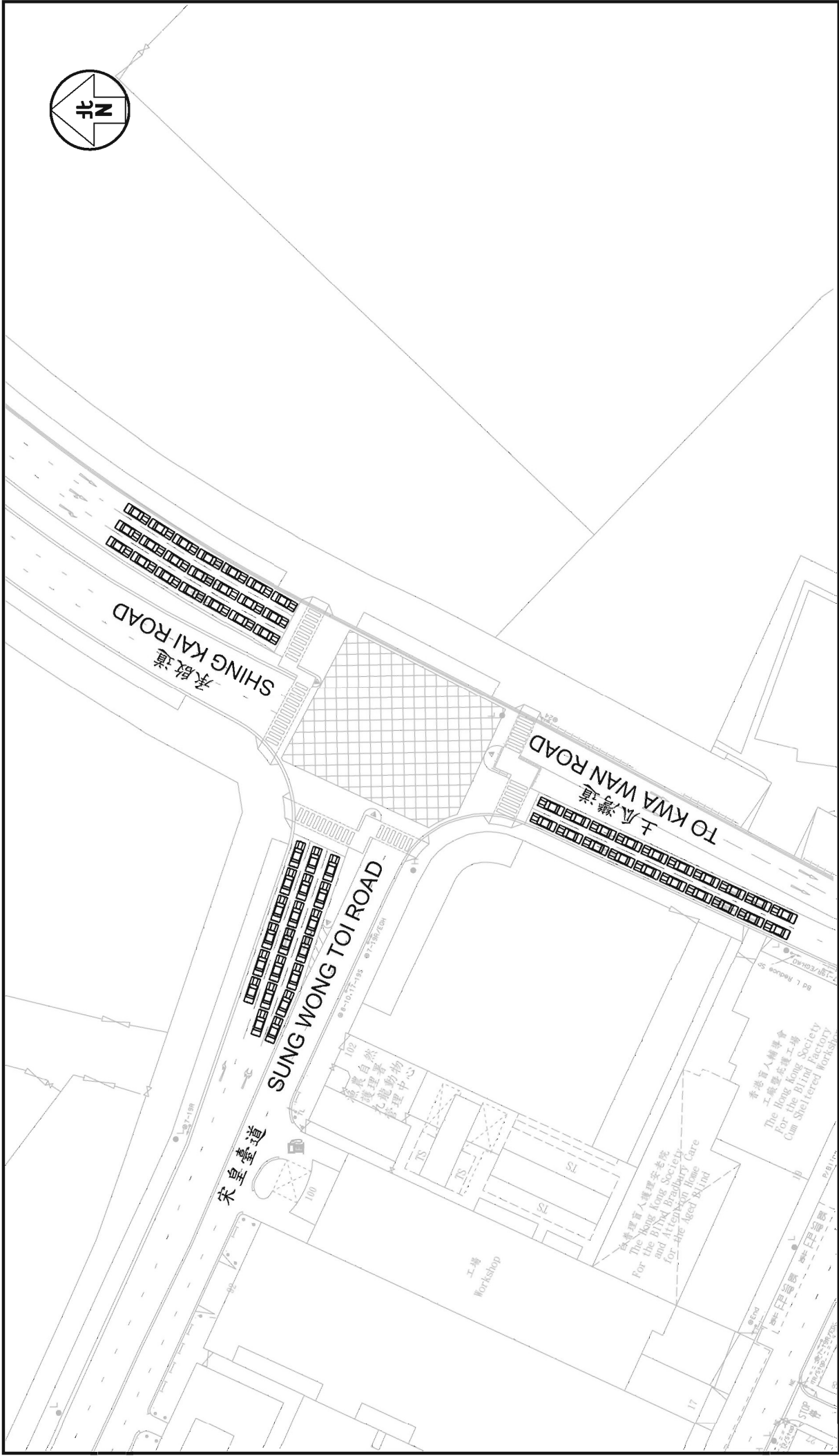
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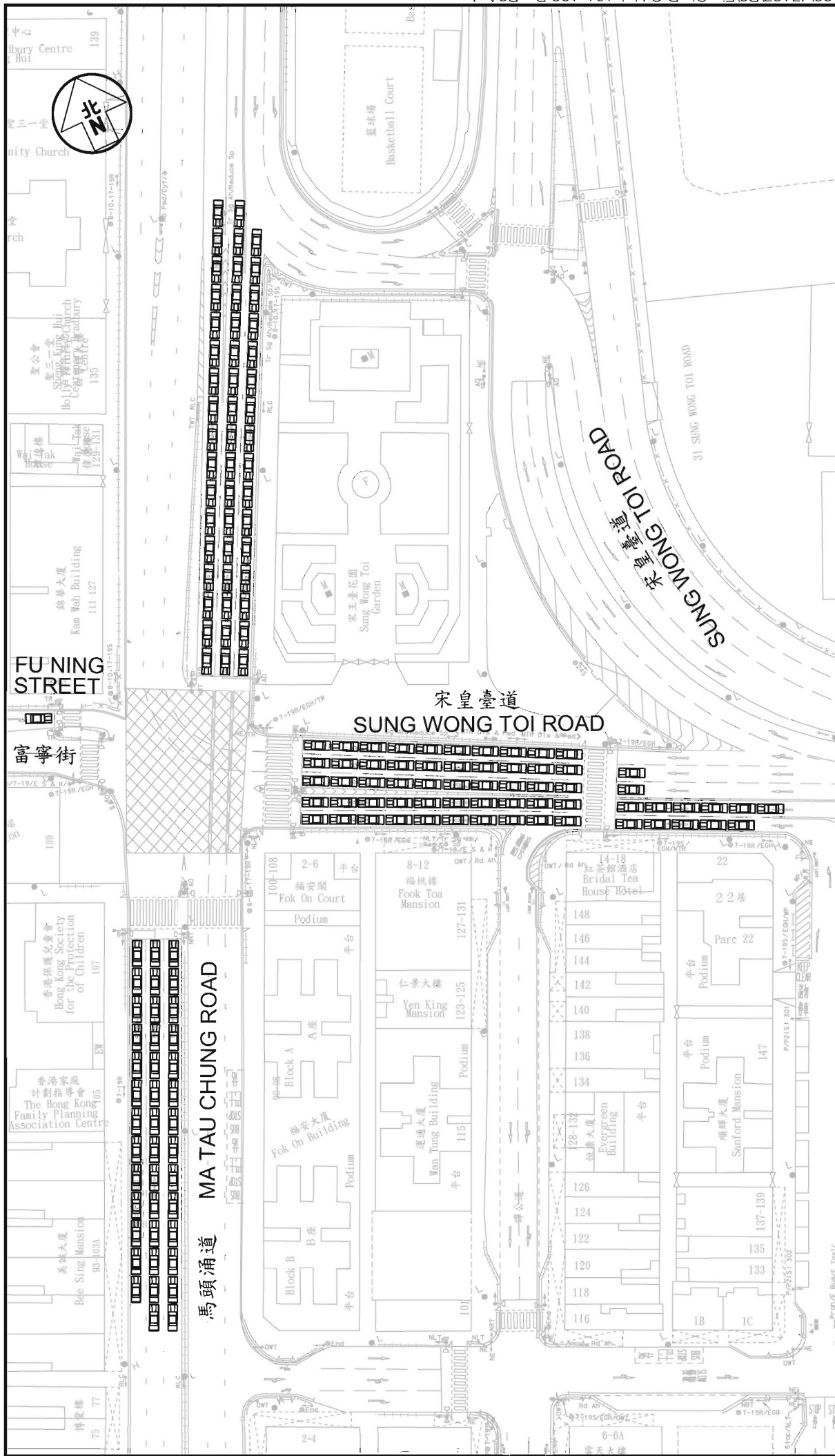


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<div>Figure Title</div> <div>JUNCTION D - QUEUE LENGTH DIAGRAM (2036 TRAFFIC FLOWS WITH KC-018 AND KC-019 : PM PEAK)</div>	<div>Designed by</div> <div>T H C</div>	<div>Checked by</div> <div>K C</div>
	<div>Drawn by</div> <div>C C L</div>	<div>Date</div> <div>21 SEP 2022</div>
	<div>Scale in A4</div> <div>1 : 1,000</div>	<div>Scale in A1</div> <div>1 : 1,000</div>

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



Project Title		J7167		Revision		CKM Asia Limited	
Figure Title		J7167		QL/G/102		Traffic and Transportation Planning Consultants	
(2036 TRAFFIC FLOWS WITH KC-018 AND KC-019 : PM PEAK)		URA KC-018 AND KC-019 IN MA TAU KOK		R2A		21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong	
				Designed by		Tel : (852) 2520 5990 Fax : (852) 2528 6343	
				T H C		Email : mail@ckmasia.com.hk	
				Drawn by			
				C C L			
				Checked by			
				K C			
				Date			
				21 SEP 2022			
				Scale in A4			
				1 : 500			



Project Title	URA KC-018 AND KC-019 IN MA TAU KOK				Figure No.		Revision	
	J7167				QL/H/101		R2A	
	JUNCTION H - QUEUE LENGTH DIAGRAM (2036 TRAFFIC FLOWS WITH KC-018 AND KC-019 : AM PEAK)				Designed by	Drawn by	Checked by	
					T H C	C C L	K C	
Figure Title					Scale in A4	Date		
				1 : 1,000	21 SEP 2022			

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Average Queue Length for Signal Junction

Junction :	D. To Kwa Wan Road / San Shan Road / San Ma Tau Street	Job No.:	J7167
		Date:	21/09/2022
Scenario :	with KC-018 and KC-019	Design Year:	2036

R2 / P.4-1

Lane Approach	Stage	Period	Cycle Time (sec)	Direction	Traffic Flow (pcu/hr)	Effective Green (sec)	Queue Length (m/lane)
To Kwa Wan Road NB	1	AM	130	LT+SA	228	30	38
		PM	130		289	35	46
	1	AM	130	SA	258	30	43
		PM	130		321	35	51
	1	AM	130	SA	258	30	43
		PM	130		321	35	51
	1	AM	130	RT+SA	248	30	41
		PM	130		308	35	49
San Shan Road	2	AM	130	LT	281	34	45
		PM	130		233	32	38
	2	AM	130	LT+SA+RT	302	34	48
		PM	130		262	32	43
	2	AM	130	RT	308	34	49
		PM	130		268	32	44
To Kwa Wan Road SB	3	AM	130	LT+SA	359	24	63
		PM	130		315	23	56
	3	AM	130	SA	363	24	64
		PM	130		330	23	59
	3	AM	130	SA	363	24	64
		PM	130		329	23	59
	3	AM	130	RT	345	24	61
		PM	130		254	23	45
San Ma Tau Street	4	AM	130	LT	138	17	26
		PM	130		119	15	23
	4	AM	130	LT+SA	170	17	32
		PM	130		145	15	28
	4	AM	130	RT	190	17	36
		PM	130		180	15	35
	4	AM	130	RT	188	17	35
		PM	130		178	15	34

Note:

1. Queue Length = Average Queue x 6m

Average Queue Length for Signal Junction

Junction :	G. To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	Job No.:	J7167
		Date:	21/09/2022
Scenario :	with KC-018 and KC-019	Design Year:	2036

R2 / P.7-1

Lane Approach	Stage	Period	Cycle Time (sec)	Direction	Traffic Flow (pcu/hr)	Effective Green (sec)	Queue Length (m/lane)
To Kwa Wan Road	1	AM	100	LT+SA	515	42	50
		PM	100		584	42	56
	1	AM	100	SA	596	42	58
		PM	100		581	42	56
Sung Wong Toi Road	3	AM	100	LT	247	26	30
		PM	100		284	26	35
	3	AM	100	LT+RT	279	26	34
		PM	100		321	26	40
	3	AM	100	RT	281	26	35
		PM	100		322	26	40
Shing Kai Road	2	AM	100	SA	326	19	44
		PM	100		265	19	36
	2	AM	100	RT+SA	333	19	45
		PM	100		271	19	37
	2	AM	100	RT	333	19	45
		PM	100		270	19	36

Note:

1. Queue Length = Average Queue x 6m

Average Queue Length for Signal Junction

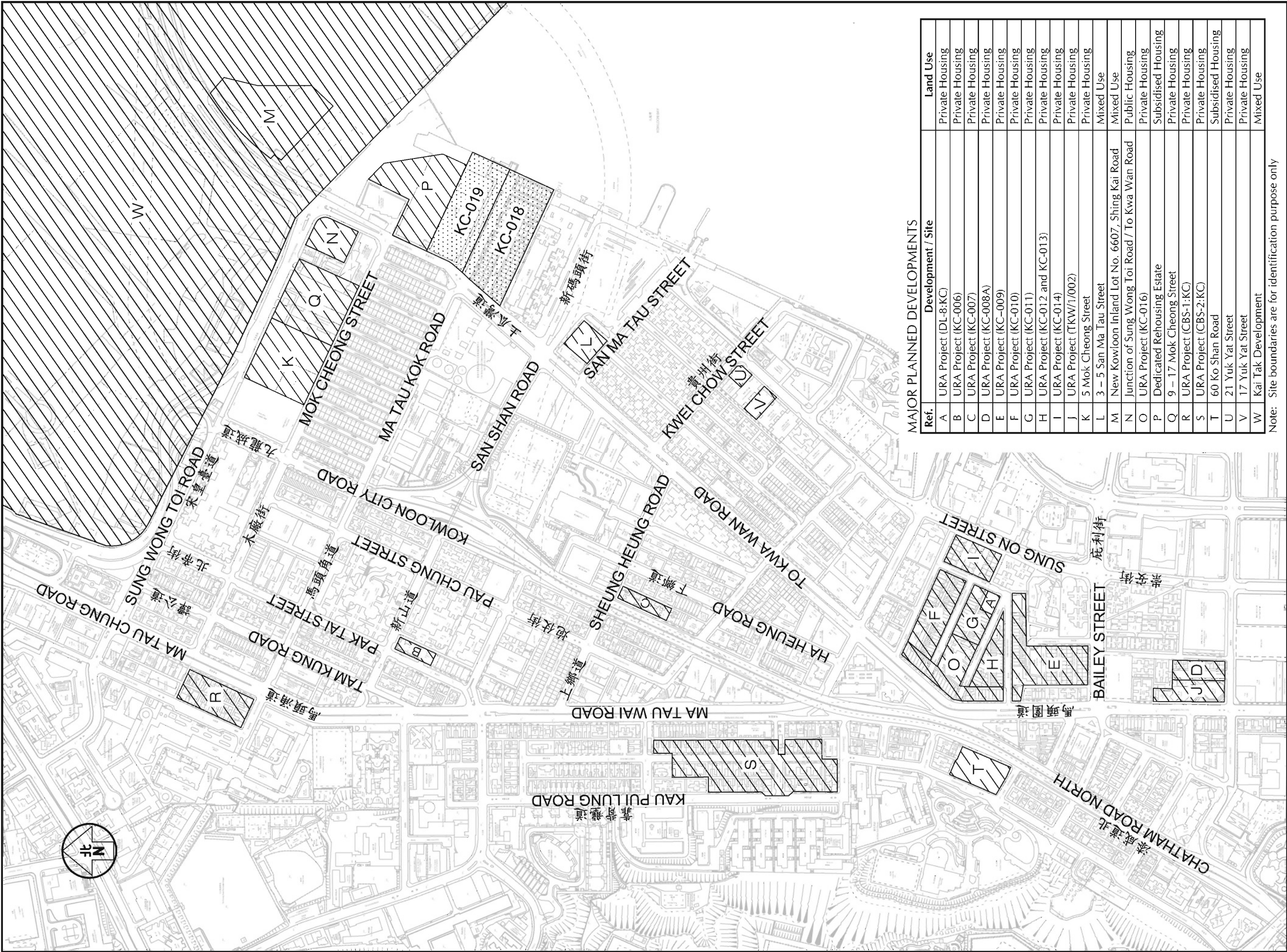
Junction :	H. Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road	Job No.:	J7167
		Date:	21/09/2022
Scenario :	with KC-018 and KC-019	Design Year:	2036

R2 / P.8-1

Lane Approach	Stage	Period	Cycle Time (sec)	Direction	Traffic Flow (pcu/hr)	Effective Green (sec)	Queue Length (m/lane)
Ma Tau Chung Road NB	1	AM	130	SA+LT	539	55	67
		PM	130		476	50	63
	1	AM	130	SA	595	55	74
		PM	130		534	50	71
	1	AM	130	SA	596	55	75
		PM	130		534	50	71
Fu Ning Street	4	AM	130	RT	18	7	4
		PM	130		18	7	4
Ma Tau Chung Road SB	1	AM	130	SA	645	52	84
		PM	130		589	47	81
	1	AM	130	SA	691	52	90
		PM	130		631	47	87
	1	AM	130	SA	691	52	90
		PM	130		632	47	87
Sung Wong Toi Road	2	AM	130	SA	470	31	78
		PM	130		488	33	79
	2	AM	130	SA	518	31	85
		PM	130		537	33	87
	2,3	AM	130	RT	423	51	56
		PM	130		597	56	74
	2,3	AM	130	RT	431	51	57
		PM	130		607	56	75
	2,3	AM	130	RT	398	51	52
		PM	130		560	56	69

Note:

1. Queue Length = Average Queue x 6m



MAJOR PLANNED DEVELOPMENTS

Ref.	Development / Site	Land Use
A	URA Project (DL-8:KC)	Private Housing
B	URA Project (KC-006)	Private Housing
C	URA Project (KC-007)	Private Housing
D	URA Project (KC-008A)	Private Housing
E	URA Project (KC-009)	Private Housing
F	URA Project (KC-010)	Private Housing
G	URA Project (KC-011)	Private Housing
H	URA Project (KC-012 and KC-013)	Private Housing
I	URA Project (KC-014)	Private Housing
J	URA Project (TKW/1/002)	Private Housing
K	5 Mok Cheong Street	Private Housing
L	3 - 5 San Ma Tau Street	Mixed Use
M	New Kowloon Inland Lot No. 6607, Shing Kai Road	Mixed Use
N	Junction of Sung Wong Toi Road / To Kwa Wan Road	Public Housing
O	URA Project (KC-016)	Private Housing
P	Dedicated Rehousing Estate	Subsidised Housing
Q	9 - 17 Mok Cheong Street	Private Housing
R	URA Project (CBS-1:KC)	Private Housing
S	URA Project (CBS-2:KC)	Private Housing
T	60 Ko Shan Road	Subsidised Housing
U	21 Yuk Yat Street	Private Housing
V	17 Yuk Yat Street	Private Housing
W	Kai Tak Development	Mixed Use

Note: Site boundaries are for identification purpose only

Project Title
Figure Title
URA KC-018 AND KC-019 IN MA TAU KOK

Job No.
J7167
Designed by
T H C
Drawn by
C C L
Checked by
K C
Revision
R2A
Date
21 SEP 2022
Scale in A3
1 : 5,000



Our Ref: J7167/2

28 September 2022

Transport Department
Urban Regional Office
Traffic Engineering (Kln) Division
8/F, Mongkok Government Offices
30 Luen Wan Street
Mong Kok, Kowloon

Attn: Ms CHOW Tseung Man, Wendy (Engr / Hung Hom)

(BY POST)

Dear Ms Chow,

**URA Sites 5A and 5B in Ma Tau Kok:
Ming Lun Street / Ma Tau Kok Road (KC-018) and
To Kwa Wan Road / Ma Tau Kok Road (KC-019)**

Traffic Forecast for Environmental Assessment Study

We refer to our Letter [CKM ref.: J7167/1] dated 3rd August 2022 and your reply of 22nd September 2022 regarding the traffic forecast in support of conducting the Air Quality Impact Assessment ("AQIA") and Traffic Noise Impact Assessment ("TNIA") by the project Environmental Consultant for the captioned project.

Please find below our response to your comments:

- (a) Traffic surveys were conducted on Thursday 9th January 2020 and Monday 6th September 2021, which as the Traffic Impact Assessment ("TIA") report. On the survey days, there were **no** public events, and **no** government announced school suspension or work-from-home arrangements.
- (b) There is a typo in Paragraph 3(A)(ii). Traffic growth rate shall be based on the latest "Territorial Population and Employment Data Matrix" ("TPEDM") published by Planning Department instead of "Hong Kong Population Projections".

The projected population and employment data extracted from the TPEDM is summarised in Table 1.

TABLE 1 TPEDM DATA FOR KOWLOON CITY AND KWUN TONG

Year	Population	Employment	Total
2019	1,123,200	607,350	1,730,550
2026	1,220,500	648,450	1,868,950
2031	1,161,350	636,100	1,797,450
Annual Growth Rate			<u>0.32%</u>

Table 1 shows that the annual growth rate obtained from TPEDM is modest, i.e. 0.32%. To be conservative, traffic growth rate adopted is 0.5% per annum, and is consistent with the traffic growth rate adopted in the TIA report.

- (c) According to the “Agreement No. TD 302/2015 – Base District Traffic Models for the Urban Area – 2016 Update” (the “BDTM Study”) obtained from Transport Department, Kai Tak Development (KTD) has been included in the 2026 BDTM.

With reference to Town Planning Board (TPB) Paper No. 10192: “Review Study of Kai Tak Development” published in 2016 and MPC Paper No. 9/21: “Proposed Amendments to the Approved Kai Tak Outline Zoning Plan No. S/K22/6” published in 2021, it is noted that the development intensity of each site in KTD has been increased.

The increase of development parameters for each site under the KTD Studies are found in Annex A. To reflect the increase of traffic generation from KTD, the BDTM was updated by applying the corresponding growths.

Apart from the KTD, other major planned developments in the vicinity of KC-018 and KC-019 which are considered are summarised in Table 2.

TABLE 2 DETAILS OF MAJOR PLANNED DEVELOPMENTS

Ref.	Location	Land Use	Development Parameters (Approx.)
A	URA Project at Kai Ming Street (DL-8:KC)	Private Housing	around 72 flats and retail GFA of around 308m ²
B	URA Project at Pak Tai Street / San Shan Road (KC-006)	Private Housing	around 228 flats and retail GFA of around 1,630m ²
C	URA Project at Kowloon City Road / Sheung Heung Road (KC-007)	Private Housing	around 294 flats and retail GFA of around 2,076m ²
D	URA Project at Chun Tin Street / Sung Chi Street (KC-008A)	Private Housing	around 260 flats and retail GFA of around 1,447m ²
E	URA Project at Bailey Street / Wing Kwong Street (KC-009)	Private Housing	around 1,150 flats and retail GFA of around 11,105m ²
F	URA Project at Hung Fook Street / Ngan Hon Street (KC-010)	Private Housing	around 750 flats and retail GFA of around 6,843m ²
G	URA Project at Hung Fook Street / Kai Ming Street (KC-011)	Private Housing	around 400 flats and retail GFA of around 3,660m ²
H	URA Project at Kai Ming Street / Wing Kwong Street (KC-012 and KC-013)	Private Housing	around 414 flats and retail GFA of around 3,721m ²
I	URA Project at Wing Kwong Street / Sung On Street (KC-014)	Private Housing	around 560 flats and retail GFA of around 4,286m ²
J	URA Project at Ma Tau Wai Road / Chun Tin Street (TKW/1/002)	Private Housing	around 493 flats and retail GFA of around 3,114m ²

TABLE 2 DETAILS OF MAJOR PLANNED DEVELOPMENTS (CONT'D)

Ref.	Location	Land Use	Development Parameters (Approx.)
K	5 Mok Cheong Street	Private Housing	around 825 flats and retail GFA of around 9,262m ²
L	3 – 5 San Ma Tau Street	Mixed Use	office GFA of around 18,479m ² and retail GFA of around 5,979m ²
M	New Kowloon Inland Lot No. 6607, Shing Kai Road	Mixed Use	office GFA of around 14,450m ² , retail GFA of around 1,550m ² and not more than 440 hotel rooms
N	Junction of Sung Wong Toi Road / To Kwa Wan Road	Public Housing	around 600 flats
O	URA Project at To Kwa Wan Road / Wing Kwong Street (KC-016)	Private Housing	around 900 flats and retail GFA of around 8,322m ²
P	Dedicated Rehousing Estate at Ma Tau Kok (by HK Housing Society)	Subsidised Housing	around 1,100 flats and retail GFA of around 8,500m ²
Q	9 – 17 Mok Cheong Street (A/K10/265)	Private Housing	around 746 flats and retail GFA of around 7,599m ²
R	URA Project at Shing Tak Street / Ma Tau Chung Road (CBS-1:KC)	Private Housing	residential GFA of around 32,243m ² and retail GFA of around 6,449m ²
S	URA Project at Kau Pui Lung Road / Chi Kiang Street (CBS-2:KC)	Private Housing	residential GFA of around 122,263m ² and retail GFA of around 12,232m ²
T	60 Ko Shan Road	Subsidised Housing	around 110 flats
U	21 Yuk Yat Street	Private Housing	around 110 flats and retail GFA of around 810m ²
V	17 Yuk Yat Street	Private Housing	around 208 flats and retail GFA of around 700m ²

The major planned developments listed in Table 2 have been included in the traffic forecast.

- (d) The traffic forecast for AQIA and TNIA has considered the increase of development intensity by 15% for the redevelopment of 13 Streets Site.
- (e) In view of the response to items (a) to (d), the traffic forecast enclosed in our Letter [CKM ref.: J7167/1] dated 3rd August 2022 remains valid.

We believe that we have addressed your comments. It is much appreciated if your department could confirm “no further comment” on the traffic forecast enclosed in our Letter [CKM ref.: J7167/1] dated 3rd August 2022 at your earliest convenience.

Should you have any queries, please do not hesitate to contact the undersigned.

Thank you for your attention.

Yours sincerely


p.p.
CHIN Kim Meng
Director

Encl. 7 pages

cc: Urban Renewal Authority

KIM\THC

Letter from Transport Department



運輸署

Transport Department

本署檔案 Our Ref. : (KL8JX) in TD KR146/193/M-4
 來函檔號 Your Ref. : J7167/1
 電話 Tel. : 2399 2504
 圖文傳真 Fax : 2397 8046
 電郵 Email : chowtseungman@td.gov.hk

22 September 2022

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

Dear Sir/Madam,

**URA Sites 5A and 5B in Ma Tau Kok:
 Ming Lun Street/Ma Tau Kok Road (KC-018) and
 To Kwa Wan Road/Ma Tau Kok Road (KC-019)**

Traffic Forecast for Environmental Assessment Study

I refer to your above-referenced letter dated 4 August 2021 and have the following comments on the captioned:

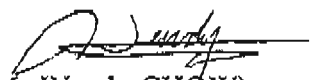

- (a) Paragraph 2 – Please advise the date(s) of conducting the traffic surveys and whether appropriate adjustment factors were applied to the survey data taking into account the effect of COVID-19.
- (b) Paragraph 3(A) ii – Please advise the “traffic growth rates” adopted. The rate shall be consistent with the rate adopted in TIA report.
- (c) Paragraph 3(A) iii – Please advise the “planned developments” considered in the traffic forecast.
- (d) It has been mentioned in this project’s planning report that a sensitivity study for 13-street redevelopment with 15% additional GFA is included in all technical assessments. Please advised if such increase of GFA will affect the traffic forecast.

/...2

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

- (e) Paragraph 4 – Subject to your response to Items (a) and (d) above, please review and update the projection of the 24-hour traffic flows.

Yours faithfully,


(Ms Wendy CHOW)
for Commissioner for Transport 

**Annex A –
Development Parameters of KTD
(Extract from TPB Paper No.
10192 and MPC Paper No. 9/21)**

Comparisons of Development Parameters for Sites under Review Study

Sites	Zoning		Maximum PR				BHR (mPD)			
	OZP	Proposed	OZP	Approved s.16	Proposed	Change [#]	OZP	Approved s.16	Proposed	Change [#]
2A1	CDA		5	-	6.5	+1.5	80	-	100	+20
2A2	CDA		4.5	-	6.5	+2	70	-	90	+20
2A3	C		4.5	-	6.5	+2	70	-	90	+20
2A4	C		4.5	-	6.5	+2	60	-	80	+20
2A5	C	2A5(A): G/IC	4.5	-	-	-	60	-	45	-15
		2A5(B): C			6.5	+2			80	+20
2A6	C	2A10:	4.5	-	6.5	+2	60	-	80	+20
2A7	G/IC	C	-			-	30			+50
2B1	CDA		5	-	6.5 + 0.3*	+1.8	110	-	135	+25
2B2	R		5	-	6.5 + 0.1*	+1.6	100	-	125	+25
2B3	R		5	-	6.5 + 0.1*	+1.6	85	-	115	+30
2B4	R		5	-	6.5 + 0.1*	+1.6	85	-	115	+30
2B5	R		5	-	6.5 + 0.1*	+1.6	85	-	100	+15
2B6	R		5	-	6.5 + 0.1*	+1.6	85	-	100	+15
3A6	G/IC	C	-	-	8	-	45	-	100	+55
3B1			-	-	5.8	-	45	-	80	+35
3B2			-	-	5.8	-	45	-	80	+35
3B3			-	-	5.8	-	45	-	80	+35
3B4			-	-	5.8	-	45	-	80	+35
3E1	C	R	9.5	-	4.5	-5	100	-	100	0
3E2	OU/O		-	-		-	15	-	80	+65
4A1	R		3	3.4	6.5	+3.1	65/80	80	90	+10
4B1	R		3	3.8	6.5	+2.7	55	65	75	+10
4B2	R		3	4.4	6.5	+2.1	55	75	85	+10
4B3	R		3	3.9	6.5	+2.6	65	75	80	+5
4B4	R		3	3.7	6.5	+2.8	55	65	75	+10
4B5	R	C	3	-	6.3	+3.3	45	-	65	+20
4A2	C	R	4	5	6.5 + 0.15*	+1.65	45	55	80	+25
4C1	C	R	4	5	6.5 + 0.15*	+1.65	45	55	75	+20
4C2	C	R	4	5.9	6.5 + 0.15*	+0.75	55	65	75	+10
4E1	O	R	-	-	6.5	-	-	-	80	-
4E2	O	R	-	-	6.5 + 0.15*	-	-	-	80	-

*non-domestic PR for proposed residential sites

[#] comparison with OZP or approved s.16 applications

Bundle	Site	Site Area ^[b]	Current				Proposed				
			Zoning	Max. PR	Max. SC	Max. BH	Zoning	Max. Dom. PR ^[c]	Max. Non-dom. PR ^[c]	Max. SC	Max. BH
1	2A2	6,270m ²	“CDA(4)” [commercial]	6.6	65%	90mPD	“CDA(4)” [residential]	6.5 ^[d]	1.0 ^[d]	65%	125mPD ^[e]
	2A3	5,968m ²	“C(3)”	6.5	65%	90mPD	“R(A)6”	6.5	1.0	65%	125mPD
2	2A4^[a]	6,555m ²	“C(3)”	6.5	65%	80mPD	“R(A)5”	6.5	1.5	65%	125mPD
	2A5(B)^[a]	3,374m ²	“C(3)”	6.5	65%	80mPD					115mPD
	2A10^[a]	6,100m ²	“C(3)”	6.5	65%	80mPD					100mPD

Notes:

^[a] Sites 2A4, 2A5(B) and 2A10 to be under the same “R(A)5” zoning are proposed to be indicated as a linked single site on the OZP for the purpose of determination of the maximum PR. Individual sites should each be subject to the proposed maximum SC of 65%.

^[b] Site areas are subject to detailed survey.

^[c] Floor spaces for (i) railway facilities in the “R(A)5” zone (which is to cater for the existing railway facilities in Site 2A10); and (ii) government, institutional or community (GIC) facilities in the “CDA(4)”, “R(A)5” and “R(A)6” zones, as required by the Government, are proposed to be disregarded from PR calculation.

^[d] A maximum PR of 7.5 is proposed to be stipulated in the Notes of the OZP for the “CDA(4)” zone. The recommended maximum domestic PR of 6.5 and maximum non-domestic PR of 1.0 are to be stipulated under planning brief and land sale conditions.

^[e] The retail belt area of the “CDA(4)” zone abutting the LTSBPC (**Plan 9a**) is subject to a maximum BH of 2 storeys in accordance with the Notes of the OZP.

4.3 The proposed increase in the maximum BHs for the five individual sites from 80 to 90mPD to 100 to 125mPD is for ensuring that the residential use at the sites, which is subject to a lower permissible SC under the Building (Planning) Regulations than non-domestic use, could achieve the proposed maximum domestic PR of 6.5. Such an increase in BHs is still in keeping with the general stepped BH profile of the locality which is descending progressively from the northeast to the southwest^[8] (**Plan 9a**), and is in line with the broad urban design framework of KTD on creating a dynamic skyline.

4.4 To accord with the policy initiative of providing more welfare facilities in private development sites, a certain amount of gross floor area (GFA) (equivalent to not less than 5% of the proposed domestic GFA of the site in general) for provision of government/social welfare facilities mainly based on the wish-list of the Social Welfare Department (SWD) has been incorporated in the notional schemes of the reviewed sites and assumed to be disregarded from PR/GFA calculation for testing in the Review Study, such that the maximum permissible PR for the sites would not be compromised. For the two bundled sites, upon consulting SWD, the following welfare facilities have been reserved at the sites for addressing the needs of the local and the community on the services:

⁸ The highest BH of 135mPD in the locality of Area 2 relates to the proposed public housing development at Site 2B1, with the BHs of the adjacent residential sites descending progressively from the northeast to the southwest to the levels of 125mPD, 115mPD and 100mPD.

“R(B)7” with maximum PRs of 5.5/6.1/7.0, and have all been sold for private residential developments. To the south and further southeast of the three reviewed sites are the existing Kai Tak Cruise Terminal (KTCT) and a site zoned “OU” annotated “Tourism Related Uses to include Commercial, Hotel and Entertainment” (“OU(TRU)”) intended for the development of the proposed Tourism Node (TN). While Sites 4B5 and 4C4 are currently vacant, Site 4C5 is occupied as a temporary depot for franchised buses.

Rezoning Proposals

4.8 The Review Study recommended the three reviewed sites to be rezoned from commercial to residential use subject to maximum domestic PRs of 5.7/6.6/7.0 (average domestic PR of 6.5), maximum non-domestic PRs of 0.3/0.5, maximum SC of 40% and maximum BH of 95/108mPD (same as now) for production of about 3,000 private housing units. Similar to the two bundled sites at the former north apron area, GFAs for GIC/social welfare facilities (equivalent to not less than 5% of the proposed domestic GFA of the site in general) have also been reserved at these sites and are proposed to be disregarded from PR calculation. Site 4B5 is proposed to be rezoned from “C(4)” to “R(B)8” (**Item F on Plan 6**), Site 4C4 from “C(7)” to “R(B)9” (**Item G on Plan 6**) and Site 4C5 from “C(5)” to “R(B)10” (**Item H on Plan 6**). The proposed zonings and development restrictions for the sites are summarised as follows:

Site	Site Area ^[a]	Current				Proposed			
		Zoning	Max. PR	Max. SC	Max. BH	Zoning	Max. PR ^[b]	Max. SC	Max. BH
4B5	13,953m ²	“C(4)”	6.5	80%	108mPD	“R(B)8”	7.5 ^[c]	40%	108mPD
4C4	10,692m ²	“C(7)”	7.5	80%	95mPD	“R(B)9”	6.9 ^[d]	40%	95mPD
4C5	9,480m ²	“C(5)”	6.0	80%	95mPD	“R(B)10”	5.7 ^[e]	40%	95mPD

Notes:

- ^[a] Site areas are subject to detailed survey.
- ^[b] Floor spaces for GIC facilities in the “R(B)8”, “R(B)9” and “R(B)10” zones, as required by the Government, are proposed to be disregarded from PR calculation.
- ^[c] The proposed maximum PR of 7.5 comprises a maximum domestic PR of 7.0 and a maximum non-domestic PR of 0.5 which are to be stipulated under land sale conditions.
- ^[d] The proposed maximum PR of 6.9 comprises a maximum domestic PR of 6.6 and a maximum non-domestic PR of 0.3 which are to be stipulated under land sale conditions.
- ^[e] The proposed maximum PR of 5.7 is for residential use only.

4.9 To maintain the feature of an undulating and varied BH profile in the former runway area, with the tallest band of developments in the middle portion and BHs of the developments stepping down on the two sides towards the Metro Park and the runway tip (**Plan 12d**), the BHs of Sites 4B5, 4C4 and 4C5 are proposed to remain unchanged. In proportion to the BH and in consideration of specific site constraints (including the proximity of Site 4C5 to KTCT), the PRs for the three sites have been carefully designed^[10] to achieve an average maximum domestic PR of 6.5.

¹⁰ Site 4C5 is proposed with a smaller maximum domestic PR of 5.7 as half of its south-western site boundary is abutting the existing structure of KTCT and its site configuration is relatively elongated. Site 4B5, which has a more regular site configuration and is subject to a higher maximum BH among the three reviewed sites, is proposed with a larger maximum domestic PR of 7.0.

TECHNICAL NOTE – SENSITIVITY TESTS WITH REDEVELOPMENT OF 13 STREETS SITE

Background

- A.1 According to the Ma Tau Kok Outline Zoning Plan (OZP) No. S/K10/28, another “Comprehensive Development Area” (“CDA”) site is located in the vicinity of KC-018 and KC-019 which is bounded by To Kwa Wan Road to the east, Ma Tau Kok Road to the south, Kowloon City Road to the west and Mok Cheong Street to the north, and is commonly known as the 13 Streets Site. The location of 13 Streets Site is shown in Figure A.1.
- A.2 Taking into consideration the potential redevelopment of the adjoining “CDA” Site, two sensitivity tests are conducted by assuming that the 13 Streets Site is redeveloped in residential and retail uses with an increase of development intensity. The indicative development parameters for the 13 Streets Site are presented in Table A.1.

TABLE A.1 DEVELOPMENT PARAMETERS OF 13 STREETS SITE

Use	Sensitivity Test 1 – Increase GFA by 15%	Sensitivity Test 2 – Increase GFA by 15% and Increase Number of Flats by 15%
Residential ⁽¹⁾	4,408 flats	5,070 flats
Retail	48,990m ² GFA	48,990m ² GFA

Note: ⁽¹⁾ assume average flat size < 60m²

Traffic Generation of 13 Streets Site

- A.3 To estimate traffic generation of the 13 Streets Site, trip generation rates for residential and retail found in Volume 1 of the TPDM are adopted. The adopted trip generation rates are presented in Table A.2.

TABLE A.2 TRIP GENERATION RATES

Use	Unit	Trip Generation Rates			
		AM Peak		PM Peak	
		IN	OUT	IN	OUT
Residential (average flat size = 60m ²) ⁽¹⁾	pcu/hour/flat	0.0425	0.0718	0.0370	0.0286
Retail ⁽¹⁾	pcu/hour/100m ²	0.2434	0.2296	0.3563	0.3100

Note: ⁽¹⁾ extracted from Volume 1 of TPDM

- A.4 The trip generation rates presented in Table A.2 are used to calculate the traffic generated associated with the 13 Streets Site, and the calculated traffic generation is presented in Table A.3.

TABLE A.3 DEVELOPMENT PARAMETERS AND TRAFFIC GENERATION
OF 13 STREETS SITE

Use	Traffic Generation (pcu/hour)							
	Sensitivity Test 1 – Increase GFA by 15%				Sensitivity Test 2 – Increase GFA by 15% and Increase Number of Flats by 15%			
	AM Peak		PM Peak		AM Peak		PM Peak	
	IN	OUT	IN	OUT	IN	OUT	IN	OUT
Residential	188	317	164	127	216	365	188	146
Retail	120	113	175	152	120	113	175	152
Total	308	430	339	279	336	478	363	298

2036 Junction Capacity Analysis for Sensitivity Tests

A.5 The Kai Tak OZP No. S/K22/7 indicates that a strip of area zoned as “Road” is provided along the eastern side of To Kwa Wan Road between Sung Wong Toi Road and Ma Tau Kok Road, which is reserved for potential road widening. Extract of the OZP is found in Annex 1.

A.6 Assuming the redevelopment of 13 Streets Site is completed in 2033, the 2036 junction capacity analysis for Sensitivity Tests 1 and 2 are conducted for the following two scenarios:

Scenario A – without potential widening of To Kwa Wan Road

Scenario B – with potential widening of To Kwa Wan Road as shown in Figure A.2

A.7 The 2036 peak hour traffic flows for Sensitivity Tests 1 and 2 under Scenarios A and B are shown in Figures A.3 – A.6 respectively. The 2036 junction capacity analysis for the sensitivity tests are summarised in Table A.4, and detailed calculations are found in Annex 2.

TABLE A.4 2036 JUNCTION OPERATIONAL PERFORMANCE (SENSITIVITY TESTS)

Ref.	Junction ⁽¹⁾	Scenario A – without widening of To Kwa Wan Road		Scenario B – with widening of To Kwa Wan Road	
		AM Peak	PM Peak	AM Peak	PM Peak
Sensitivity Test 1 – Increase GFA by 15%					
A	Kowloon City Road / Sung Wong Toi Road	67%	69%	72%	72%
B	Kowloon City Road / Mok Cheong Street	89%	57%	83%	52%
C	Kowloon City Road / Ma Tau Kok Road	100%	53%	79%	41%
D	To Kwa Wan Road / San Shan Road / San Ma Tau Street ⁽²⁾	22%	25%	24%	28%
E	To Kwa Wan Road / Ma Tau Kok Road	> 100%	> 100%	90%	> 100%
F	To Kwa Wan Road / Mok Cheong Street	21%	28%	52%	72%
G	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	2%	8%	48%	50%
H	Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road	24%	22%	24%	22%
I	Ma Tau Chung Road / Ma Tau Kok Road	94%	> 100%	94%	> 100%
J	Olympic Garden Roundabout	0.811	0.796	0.811	0.796
Sensitivity Test 2 – Increase GFA by 15% and Increase No. of Flat by 15%					
A	Kowloon City Road / Sung Wong Toi Road	64%	67%	70%	71%
B	Kowloon City Road / Mok Cheong Street	85%	54%	78%	49%
C	Kowloon City Road / Ma Tau Kok Road	98%	51%	76%	39%
D	To Kwa Wan Road / San Shan Road / San Ma Tau Street ⁽²⁾	21%	25%	23%	27%
E	To Kwa Wan Road / Ma Tau Kok Road	100%	> 100%	89%	> 100%
F	To Kwa Wan Road / Mok Cheong Street	18%	26%	48%	70%
G	To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road	0%	6%	46%	49%
H	Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road	23%	22%	23%	22%
I	Ma Tau Chung Road / Ma Tau Kok Road	94%	> 100%	94%	> 100%
J	Olympic Garden Roundabout	0.815	0.799	0.815	0.799

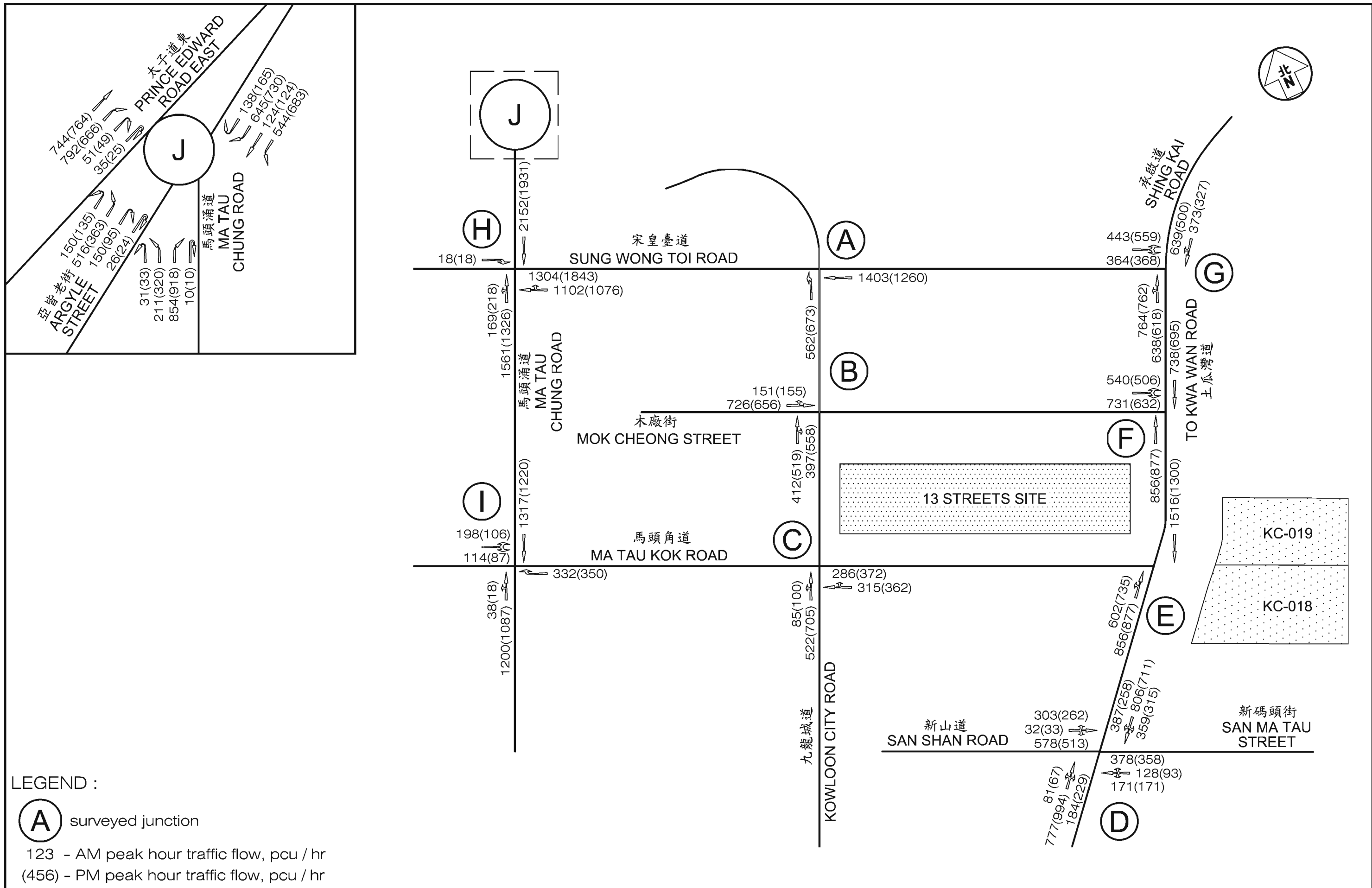
Note: ⁽¹⁾ refer to Table 2.2 of TIA report on the type of junction and performance indicator

⁽²⁾ with traffic improvement scheme as shown in Figure 4.3 of TIA report

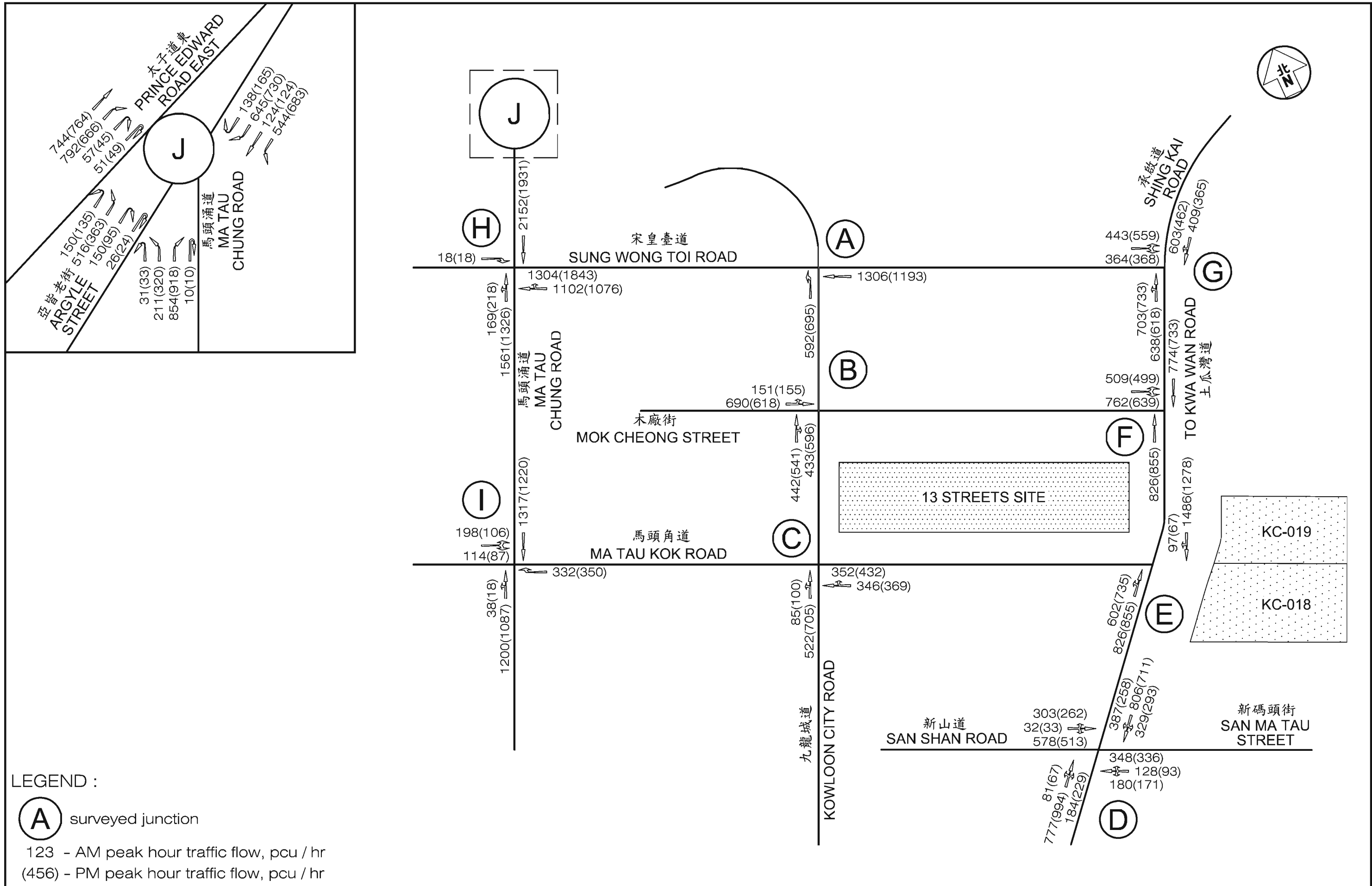
- A.8 With completion of the 13 Streets Site without widening of To Kwa Wan Road (i.e. Scenario A), Sensitivity Tests 1 and 2 indicate that the analysed junction G is expected to operate with reserve capacity below 15% during the peak hours in 2036.
- A.9 Taking into consideration the potential widening of To Kwa Wan Road (i.e. Scenario B), all analysed junctions in both Sensitivity Tests 1 and 2 are expected to operate with reserve capacity above 15% or Ratio-of-Flow to Capacity below 0.85 during the peak hours in 2036.



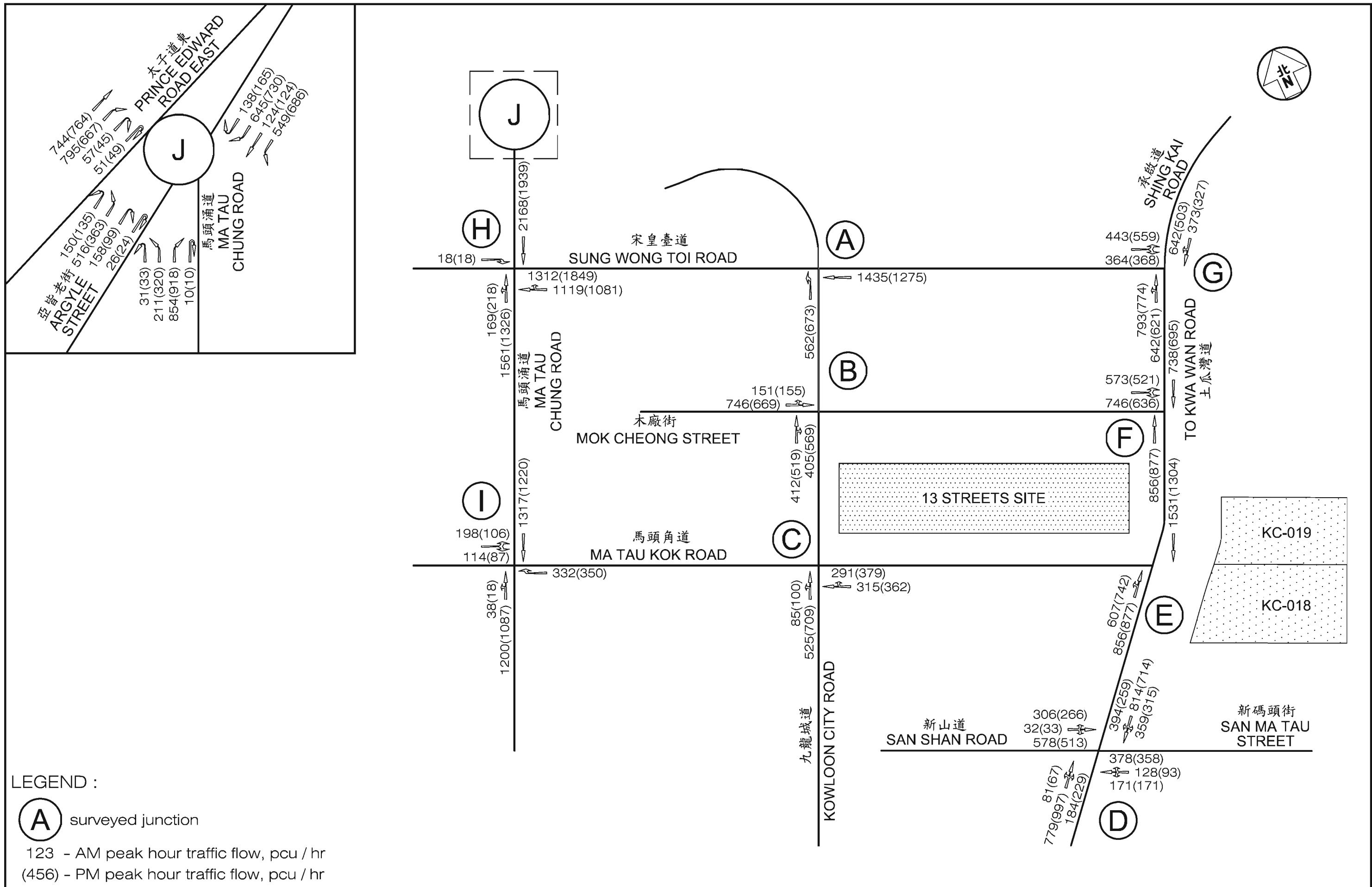
Project Title	URA KC-018 AND KC-019 IN MA TAU KOK										Figure No.		A.1		Revision		R2A		CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk						
Figure Title	LOCATION OF 13 STREETS SITE										Designed by	T H C			Drawn by	C C L					Checked by	K C			
												Scale in A4						Date				21 SEP 2022			
												1 : 3,000													



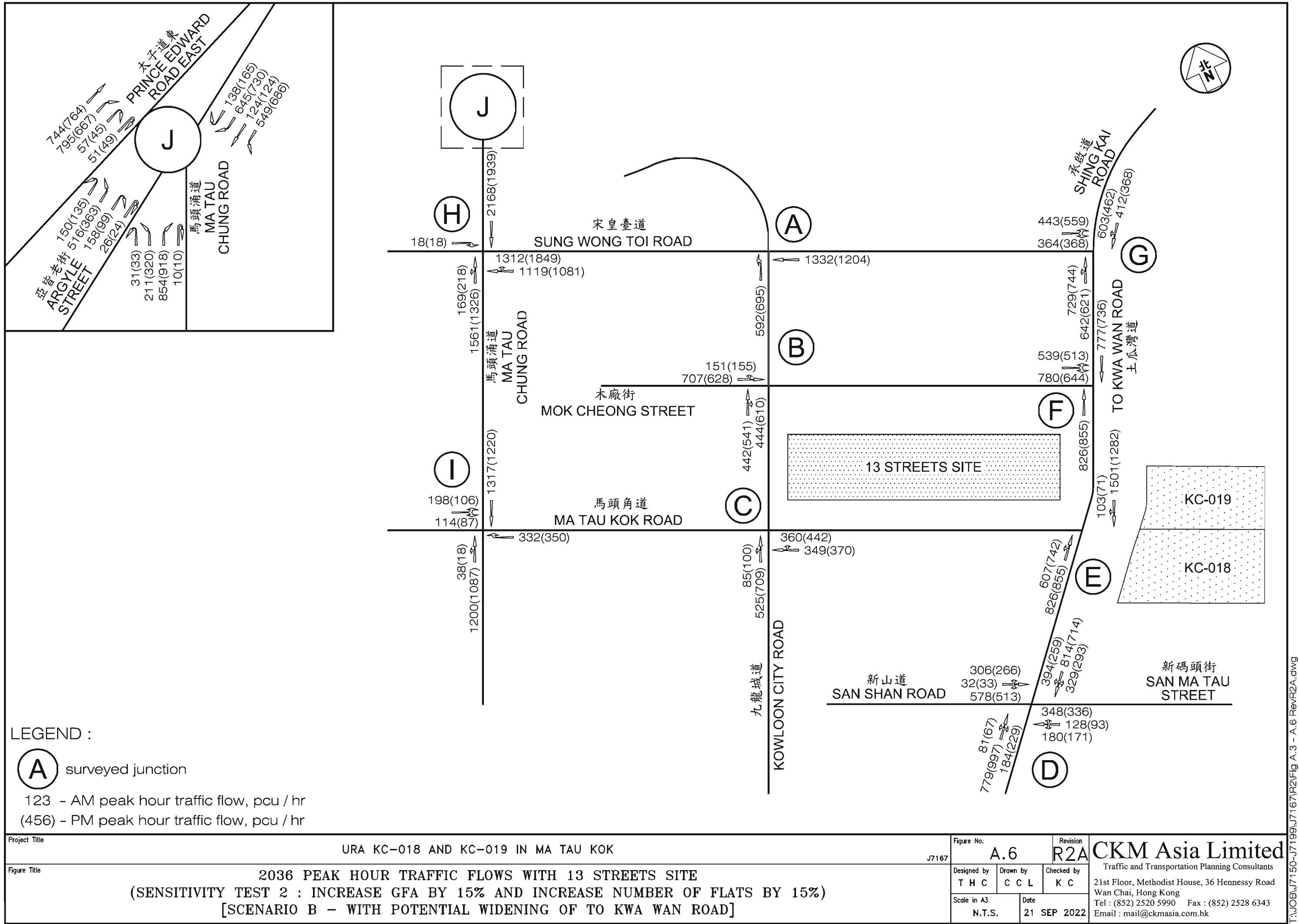
Project Title	URA KC-018 AND KC-019 IN MA TAU KOK					J7167	Figure No. A.3		Revision R2A		CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk			
Figure Title	2036 PEAK HOUR TRAFFIC FLOWS WITH 13 STREETS SITE (SENSITIVITY TEST 1 : INCREASE GFA BY 15%) [SCENARIO A - WITHOUT POTENTIAL WIDENING OF TO KWA WAN ROAD]					Designed by T H C		Drawn by C C L		Checked by K C				
						Scale in A3 N.T.S.		Date 21 SEP 2022						



Project Title	URA KC-018 AND KC-019 IN MA TAU KOK					Figure No.		Revision		CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk
Figure Title	2036 PEAK HOUR TRAFFIC FLOWS WITH 13 STREETS SITE (SENSITIVITY TEST 1 : INCREASE GFA BY 15%) [SCENARIO B – WITH POTENTIAL WIDENING OF TO KWA WAN ROAD]					A.4		R2A		
						Designed by T H C	Drawn by C C L	Checked by K C		
						Scale in A3 N.T.S.		Date 21 SEP 2022		

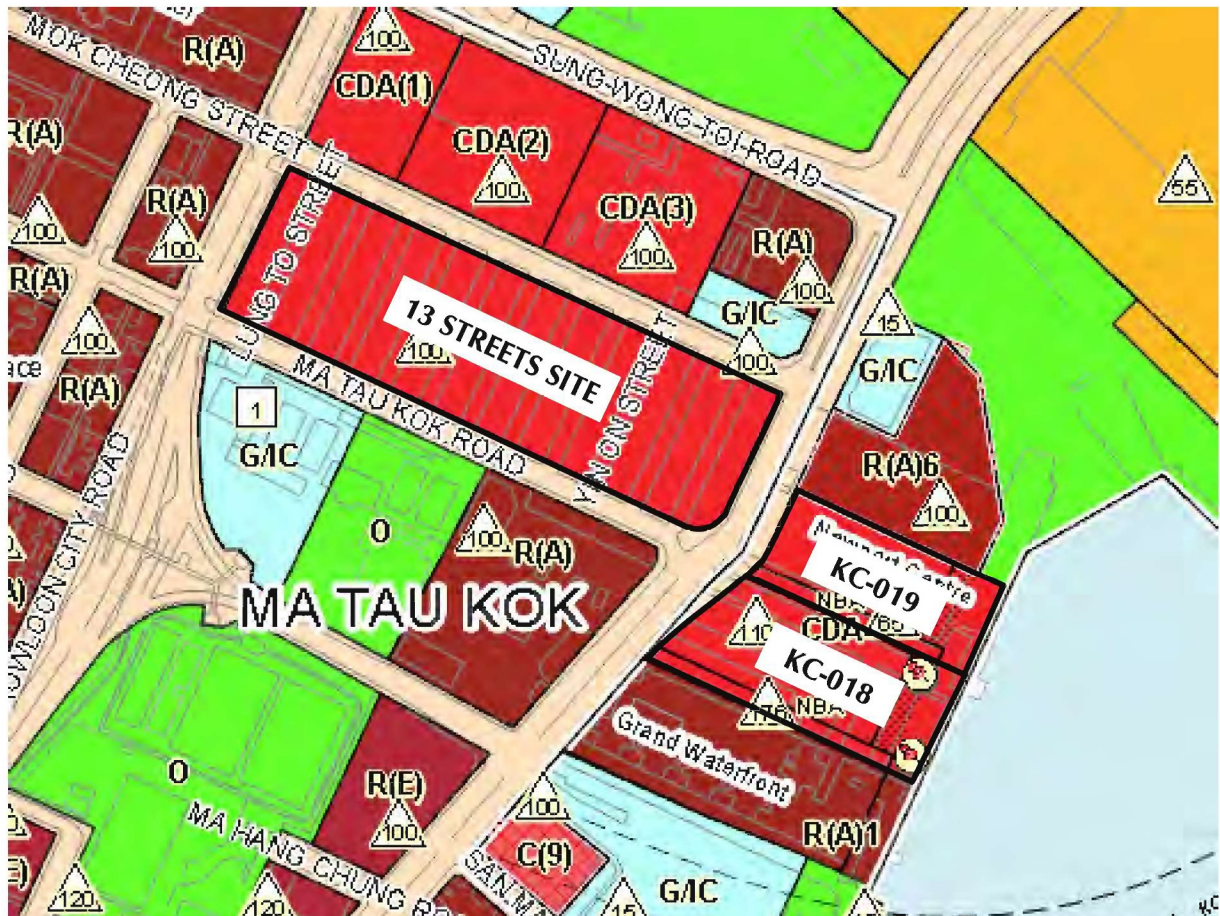


Project Title	URA KC-018 AND KC-019 IN MA TAU KOK					Figure No.		A.5		Revision		R2A		CKM Asia Limited Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk			
Figure Title	2036 PEAK HOUR TRAFFIC FLOWS WITH 13 STREETS SITE (SENSITIVITY TEST 2 : INCREASE GFA BY 15% AND INCREASE NUMBER OF FLATS BY 15%) [SCENARIO A - WITHOUT POTENTIAL WIDENING OF TO KWA WAN ROAD]					Designed by		Drawn by		Checked by							
						T H C		C C L		K C							
						Scale in A3		N.T.S.		Date		21 SEP 2022					



**Annex 1 – Extract from
Ma Tau Kok OZP No. S/K10/28**

MA TAU KOK OUTLINE ZONING PLAN



Annex 2 – Junction Capacity Analysis

Signal Junction Analysis

Junction: A. Sung Wong Toi Road / Kowloon City Road

Job Number: J7167

Scenario: Sensitivity Test 1 (without widening of To Kwa Wan Road)

R2 / P.A1-1

Design Year: 2036

Designed By: _____

Checked By: _____

Date: 19 September 2022



[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.498		0.493	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	67%		69%	

Note: $S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

1		2		3		4		5		
										
AM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: A. Sung Wong Toi Road / Kowloon City Road

Job Number: J7167

Scenario: Sensitivity Test 1 (with widening of To Kwa Wan Road)

R2 / P.A1-2

Design Year: 2036 Designed By: _____

Checked By: _____

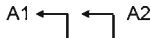

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

S=1940+100(W-3.25)		S=2080+100(W-3.25)		Note:
S _M =S-(1+1.5f/r)		S _M =(S-230)÷(1+1.5f/r)		
	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.483		0.482	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	72%		72%	

1		2		3		4		5		
										
AM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: A. Sung Wong Toi Road / Kowloon City Road

Job Number: J7167

Scenario: Sensitivity Test 2 (without widening of To Kwa Wan Road)

R2 / P.A1-3

Design Year: 2036

Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

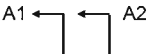
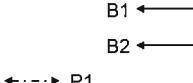
PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.506		0.497	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	64%		67%	

	1	2	3	4	5					
										
AM	G = G =	I/G = 6 I/G =	G = G =	I/G = 6 I/G =	G = G =	I/G = I/G =	G = G =	I/G = I/G =	G = G =	I/G = I/G =
PM	G = G =	I/G = 6 I/G =	G = G =	I/G = 6 I/G =	G = G =	I/G = I/G =	G = G =	I/G = I/G =	G = G =	I/G = I/G =

Signal Junction Analysis

Junction: B. Kowloon City Road / Mok Cheong Street

Job Number: J7167

Scenario: Sensitivity Test 1 (without widening of To Kwa Wan Road)

R2 / P.A2-1

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)


PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.439		0.530	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	89%		57%	

1		2		3		4		5		
										
AM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: B. Kowloon City Road / Mok Cheong Street

Job Number: J7167

Scenario: Sensitivity Test 1 (with widening of To Kwa Wan Road)

R2 / P.A2-2

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.454		0.546	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	83%		52%	

Note:

1		2		3		4		5		
<p>A1 A2 A3</p> <p>B1 B2 B3</p> <p>P3</p>										
AM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: B. Kowloon City Road / Mok Cheong Street

Job Number: J7167

Scenario: Sensitivity Test 2 (without widening of To Kwa Wan Road)

R2 / P.A2-3

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.449		0.540	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	85%		54%	

1		2		3		4		5		
<p>A1 A2 A3</p> <p>B1 B2 B3</p> <p>P3</p>										
AM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: B. Kowloon City Road / Mok Cheong Street

Job Number: J7167

Scenario: Sensitivity Test 2 (with widening of To Kwa Wan Road)

R2 / P.A2-4

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.466		0.558	
L (s)	10		10	
C (s)	130		130	
practical y	0.831		0.831	
R.C. (%)	78%		49%	

Note: $S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

1		2		3		4		5		
<p>A1 A2 A3</p> <p>B1 B2 B3</p> <p>P3</p>										
AM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 6	G =	I/G = 6	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: C. Kowloon City Road / Ma Tau Kok Road

Job Number: J7167

Scenario: Sensitivity Test 1 (without widening of To Kwa Wan Road)

R2 / P.A3-1

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.329		0.431	
L (s)	35		35	
C (s)	130		130	
practical y	0.658		0.658	
R.C. (%)	100%		53%	

Note:

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

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

	1		2		3		4		5	
AM	G =	I/G = 8	G =	I/G = 8	G = 18	I/G = 3	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 8	G =	I/G = 8	G = 18	I/G = 3	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: C. Kowloon City Road / Ma Tau Kok Road

Job Number: J7167

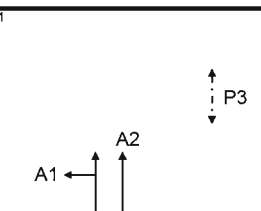
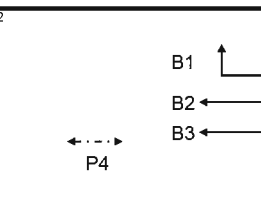
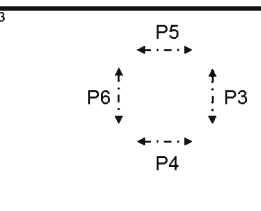
Scenario: Sensitivity Test 1 (with widening of To Kwa Wan Road)

R2 / P.A3-2

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022[illegible]

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.367		0.466	
L (s)	35		35	
C (s)	130		130	
practical y	0.658		0.658	
R.C. (%)	79%		41%	

	1	2	3	4	5			
								
AM	$G =$ $G =$	$I/G = 8$ $I/G =$	$G =$ $G =$	$I/G = 8$ $I/G =$	$G = 18$ $G =$	$I/G = 3$ $I/G =$	$G =$ $G =$	$I/G =$ $I/G =$
PM	$G =$ $G =$	$I/G = 8$ $I/G =$	$G =$ $G =$	$I/G = 8$ $I/G =$	$G = 18$ $G =$	$I/G = 3$ $I/G =$	$G =$ $G =$	$I/G =$ $I/G =$

Signal Junction Analysis

Junction: C. Kowloon City Road / Ma Tau Kok Road

Job Number: J7167

Scenario: Sensitivity Test 2 (without widening of To Kwa Wan Road)

R2 / P.A3-3

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

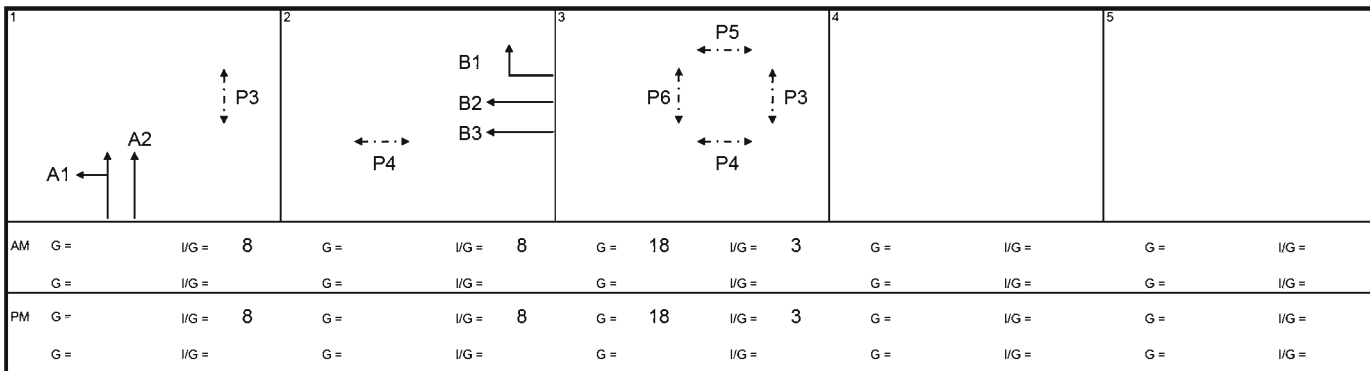
[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.333		0.436	
L (s)	35		35	
C (s)	130		130	
practical y	0.658		0.658	
R.C. (%)	98%		51%	

Note:



Signal Junction Analysis

Junction: C. Kowloon City Road / Ma Tau Kok Road

Job Number: J7167

Scenario: Sensitivity Test 2 (with widening of To Kwa Wan Road)

R2 / P.A3-4

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022[illegible]

AM Traffic Flow (pcu/hr)

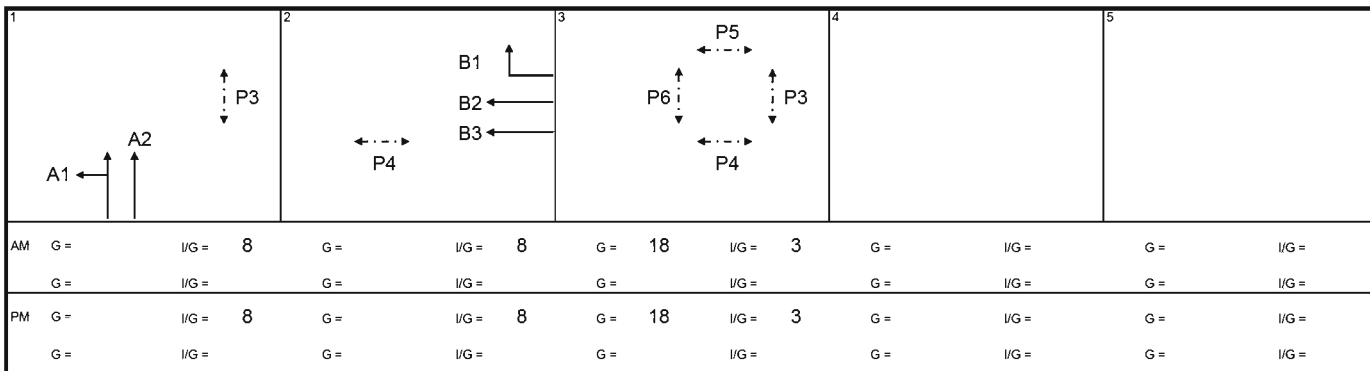
PM Traffic Flow (pcu/hr)

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.373		0.473	
L (s)	35		35	
C (s)	130		130	
practical y	0.658		0.658	
R.C. (%)	76%		39%	

Note:



Signal Junction Analysis

Junction: D. To Kwa Wan Road / San Shan Road / San Ma Tau Street Job Number: J7167
 Scenario: Sensitivity Test 2 (with widening of To Kwa Wan Road) R2 / P.A4-4
 Design Year: 2036 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
To Kwa Wan Road NB	LT+SA	A1	1	3.00	10.0		34	1822	241	0.132	0.132	22	1854	302	0.163
	SA	A2	1	3.00				2055	271	0.132			2055	335	0.163
	SA	A3	1	3.00				2055	271	0.132			2055	335	0.163
	RT+SA	A4	1	3.00	25.0		71	1971	261	0.132		71	1971	321	0.163
San Shan Road	LT	B1	2	3.00	10.0		100	1665	278	0.167	0.167	100	1665	246	0.148
	LT+SA+RT	B2	2	3.00	16.0		90	1895	316	0.167		88	1898	280	0.147
	RT	B3	2	3.00	24.0		100	1934	322	0.167		100	1934	286	0.148
To Kwa Wan Road SB	LT+SA	C1	3	3.00	10.0		100	1665	329	0.198		101	1663	290	0.174
	SA	C2	3	3.00				2055	407	0.198			2055	359	0.175
	SA	C3	3	3.00				2055	407	0.198			2055	358	0.174
	RT	C4	3	3.00	30.0		100	1957	394	0.201	0.201	100	1957	259	0.132
San Ma Tau Street	LT	D1	4	3.00	10.0		100	1665	138	0.083		100	1665	119	0.071
	LT+SA	D2	4	3.40	16.0		25	2047	170	0.083		36	2027	145	0.072
	RT	D3	4	3.40	24.0		100	1972	175	0.089		100	1972	169	0.086
	RT	D4	4	3.40	20.0		100	1949	173	0.089	0.089	100	1949	167	0.085
pedestrian phase						P1	1		min crossing time =		5	sec GM +		9	sec FGM =
						P2	2, 3, 4		min crossing time =		8	sec GM +		15	sec FGM =
						P3	4		min crossing time =		5	sec GM +		7	sec FGM =
						P4	1, 2, 3		min crossing time =		5	sec GM +		11	sec FGM =
						P5	1, 3, 4		min crossing time =		5	sec GM +		9	sec FGM =
						P6	2		min crossing time =		5	sec GM +		6	sec FGM =

AM Traffic Flow (pcu/hr)		PM Traffic Flow (pcu/hr)		<div><div><div><div><div><div>S=1940+100(W-3.25)</div><div>S=2080+100(W-3.25)</div></div><div><div>S_M=S÷(1+1.5/r)</div><div>S_M=(S-230)÷(1+1.5/r)</div></div></div></div><div>Note: with possible improvement scheme for San Ma Tau Street and San Shan Road</div></div></div>				

1	2	3	4	5
AM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =
PM G = I/G = 6	G = I/G = 9	G = I/G = 6	G = I/G = 8	G = I/G =
G = I/G = 6	G = I/G = 9	G = I/G = 6	G = 12 I/G = 8	G = I/G =

Signal Junction Analysis

Junction: E. To Kwa Wan Road / Ma Tau Kok Road

Job Number: J7167

Scenario: Sensitivity Test 1 (without widening of To Kwa Wan Road)

R2 / P.A5-1

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.367		0.315	
L (s)	23		23	
C (s)	130		130	
practical y	0.741		0.741	
R.C. (%)	102%		135%	

AM G = I/G = 5 G = 16 I/G = 3 G = I/G = G = I/G = G = I/G =				
G = I/G = G = I/G = G = I/G = G = I/G = G = I/G =				
AM G = I/G = 5 G = 16 I/G = 3 G = I/G = G = I/G = G = I/G =				
G = I/G = G = I/G = G = I/G = G = I/G = G = I/G =				

Signal Junction Analysis

Junction: E. To Kwa Wan Road / Ma Tau Kok Road

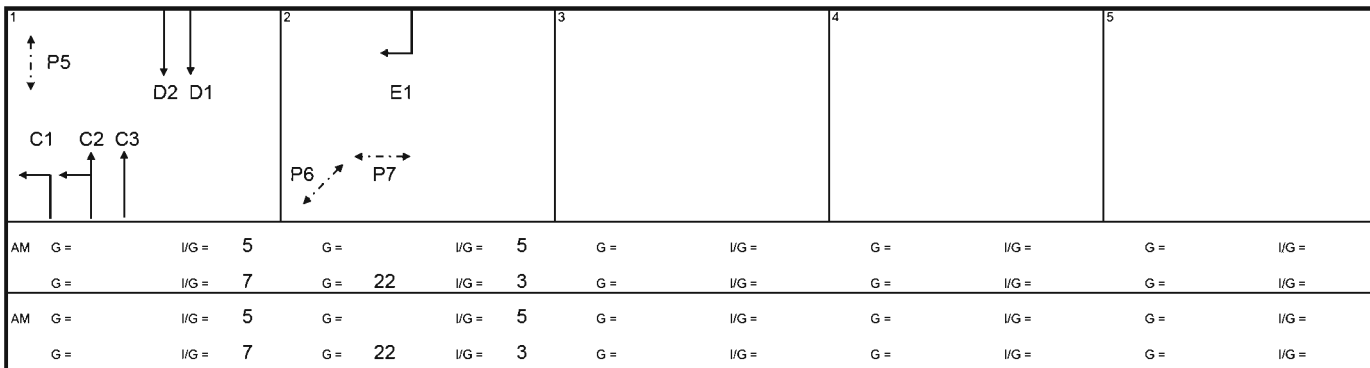
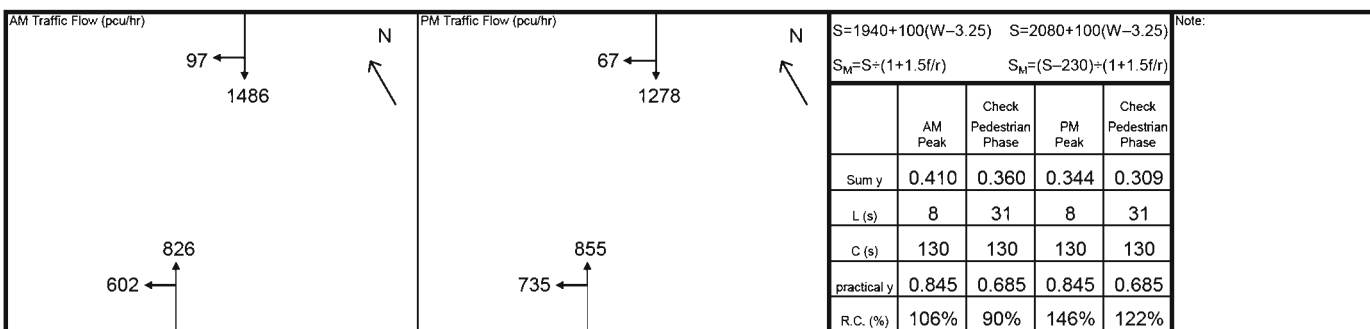
Job Number: J7167

Scenario: Sensitivity Test 1 (with widening of To Kwa Wan Road)

R2 / P.A5-2

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

Signal Junction Analysis

Junction: E. To Kwa Wan Road / Ma Tau Kok Road

Job Number: J7167

Scenario: Sensitivity Test 2 (without widening of To Kwa Wan Road)

R2 / P.A5-3

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) / (1 + 1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.371		0.316	
L (s)	23		23	
C (s)	130		130	
practical y	0.741		0.741	
R.C. (%)	100%		135%	

	1	2	3	4	5
	 C1 C2 C3 ← ← ↑ D2 D1	 P6 P7			
AM	G = I/G = 5	G = 16 I/G = 3	G = I/G =	G = I/G =	G = I/G =
	G = I/G =	G = I/G =	G = I/G =	G = I/G =	G = I/G =
AM	G = I/G = 5	G = 16 I/G = 3	G = I/G =	G = I/G =	G = I/G =
	G = I/G =	G = I/G =	G = I/G =	G = I/G =	G = I/G =

Signal Junction Analysis

Junction: E. To Kwa Wan Road / Ma Tau Kok Road

Job Number: J7167

Scenario: Sensitivity Test 2 (with widening of To Kwa Wan Road)

R2 / P.A5-4

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.416	0.363	0.347	0.310
L (s)	8	31	8	31
C (s)	130	130	130	130
practical y	0.845	0.685	0.845	0.685
R.C. (%)	103%	89%	144%	121%

1			2			3			4			5		
AM	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G = 7	G = 22	I/G = 3	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
AM	G =	I/G = 5	G =	I/G = 5	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
	G =	I/G = 7	G = 22	I/G = 3	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: F. To Kwa Wan Road / Mok Cheong Street

Job Number: J7167

Scenario: Sensitivity Test 1 (without widening of To Kwa Wan Road)

R2 / P.A6-1

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.551		0.521	
L (s)	34		34	
C (s)	130		130	
practical y	0.665		0.665	
R.C. (%)	21%		28%	

AM	G = 17 I/G = 17	G = 18 I/G = 18	G = 19 I/G = 19	G = 20 I/G = 20	G = 21 I/G = 21	G = 22 I/G = 22	G = 23 I/G = 23	G = 24 I/G = 24	G = 25 I/G = 25
PM	G = 17 I/G = 17	G = 18 I/G = 18	G = 19 I/G = 19	G = 20 I/G = 20	G = 21 I/G = 21	G = 22 I/G = 22	G = 23 I/G = 23	G = 24 I/G = 24	G = 25 I/G = 25

Signal Junction Analysis

Junction: F. To Kwa Wan Road / Mok Cheong Street

Job Number: J7167

Scenario: Sensitivity Test 1 (with widening of To Kwa Wan Road)

R2 / P.A6-2

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:				
S=1940+100(W-3.25)		S=2080+100(W-3.25)		
S _M =S-(1+1.5f/r)		S _M =(S-230)-(1+1.5f/r)		
	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.450		0.399	
L (s)	31		31	
C (s)	130		130	
practical y	0.685		0.685	
R.C. (%)	52%		72%	

	1	2	3	4	5
AM	G = G =	I/G = 7 I/G =	G = 17 I/G = 3	G = I/G = 6	G = I/G =
PM	G = G =	I/G = 7 I/G =	G = 17 I/G = 3	G = I/G = 6	G = I/G =

Signal Junction Analysis

Junction: F. To Kwa Wan Road / Mok Cheong Street

Job Number: J7167

Scenario: Sensitivity Test 2 (without widening of To Kwa Wan Road)

R2 / P.A6-3

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

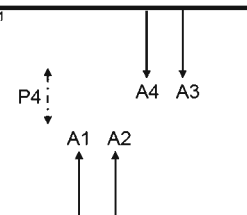
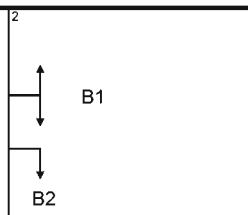
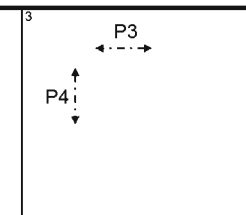
[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.563		0.526	
L (s)	34		34	
C (s)	130		130	
practical y	0.665		0.665	
R.C. (%)	18%		26%	

Note: $S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

1		2		3		4		5		
										
AM	G =	I/G = 7	G =	I/G = 8	G = 18	I/G = 3	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =
PM	G =	I/G = 7	G =	I/G = 8	G = 18	I/G = 3	G =	I/G =	G =	I/G =
	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =	G =	I/G =

Signal Junction Analysis

Junction: F. To Kwa Wan Road / Mok Cheong Street

Job Number: J7167

Scenario: Sensitivity Test 2 (with widening of To Kwa Wan Road)

R2 / P.A6-4

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

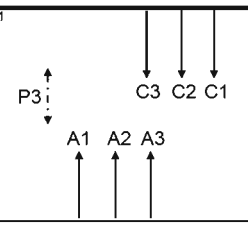
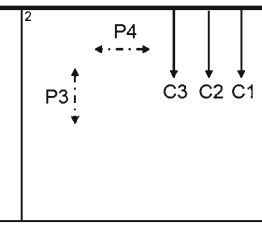
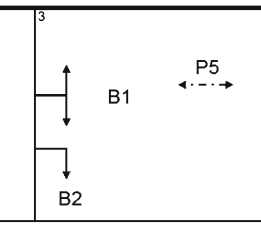
PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.462		0.403	
L (s)	31		31	
C (s)	130		130	
practical y	0.685		0.685	
R.C. (%)	48%		70%	

															
AM	G =	I/G =	7	G =	17	I/G =	3	G =	I/G =	6	G =	I/G =	G =	I/G =	
	G =	I/G =		G =		I/G =		G =	I/G =		G =	I/G =	G =	I/G =	
PM	G =	I/G =	7	G =	17	I/G =	3	G =	I/G =	6	G =	I/G =	G =	I/G =	
	G =	I/G =		G =		I/G =		G =	I/G =		G =	I/G =	G =	I/G =	

Signal Junction Analysis

Junction: G. To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

Job Number: J7167

Scenario: Sensitivity Test 1 (without widening of To Kwa Wan Road)

R2 / P.A7-1

Design Year: 2036

Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.719	0.580	0.708	0.569
L (s)	13	34	13	32
C (s)	100	100	100	100
practical y	0.783	0.594	0.783	0.612
R.C. (%)	9%	2%	11%	8%

Note:

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

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

AM	G =	I/G =	6	G =	I/G =	5	G =	I/G =	5	G =	I/G =	
	G =	I/G =	12	G =	16	I/G =	3	G =	I/G =	5	G =	I/G =
PM	G =	I/G =	6	G =	I/G =	5	G =	I/G =	5	G =	I/G =	
	G =	17	I/G =	2	G =	I/G =	5	G =	I/G =	10	G =	I/G =

Signal Junction Analysis

Junction: G. To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

Job Number: J7167

Scenario: Sensitivity Test 1 (with widening of To Kwa Wan Road)

R2 / P.A7-2

Design Year: 2036

Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Table 1: Traffic Flow Data

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.531	0.391	0.522	0.387
L (s)	13	34	13	32
C (s)	100	100	100	100
practical y	0.783	0.594	0.783	0.612
R.C. (%)	48%	52%	50%	58%

Note:

$S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

<p>The diagram shows a five-story building layout. The ground floor is divided into five vertical sections. Section 1 (leftmost) contains a staircase labeled 'P5' and 'P6', and a horizontal arrow labeled 'P8'. Section 2 contains a staircase labeled 'B1', 'B2', 'B3', and a horizontal arrow labeled 'P7'. Section 3 contains a staircase labeled 'A1', 'A2', 'A3', and a horizontal arrow labeled 'P9'. Section 4 and Section 5 are empty. The building is labeled 'P4' at the top and 'P8' at the bottom.</p>											
AM	G =	I/G =	6	G =	I/G =	5	G =	I/G =	5	G =	I/G =
	G =	I/G =	12	G =	I/G =	3	G =	I/G =	5	G =	I/G =
PM	G =	I/G =	6	G =	I/G =	5	G =	I/G =	5	G =	I/G =
	G =	I/G =	17	G =	I/G =	5	G =	I/G =	10	G =	I/G =

Signal Junction Analysis

Junction: G. To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

Job Number: J7167

Scenario: Sensitivity Test 2 (without widening of To Kwa Wan Road)

R2 / P.A7-3

Design Year: 2036

Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.735	0.596	0.715	0.576
L (s)	13	34	13	32
C (s)	100	100	100	100
practical y	0.783	0.594	0.783	0.612
R.C. (%)	7%	0%	10%	6%

Note:

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

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

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

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

AM	G =		I/G = 6		G =		I/G = 5		G =		I/G = 5		G =		I/G =	
	G =		I/G = 12		G = 16		I/G = 3		G =		I/G = 5		G =		I/G =	
PM	G =		I/G = 6		G =		I/G = 5		G =		I/G = 5		G =		I/G =	
	G = 17		I/G = 2		G =		I/G = 5		G =		I/G = 10		G =		I/G =	

Signal Junction Analysis

Junction: G. To Kwa Wan Road / Shing Kai Road / Sung Wong Toi Road

Job Number: J7167

Scenario: Sensitivity Test 2 (with widening of To Kwa Wan Road)

R2 / P.A7-4

Design Year: 2036

Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

	$S=1940+100(W-3.25)$		$S=2080+100(W-3.25)$	
	$S_M=S÷(1+1.5f/r)$		$S_M=(S-230)÷(1+1.5f/r)$	
	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.536	0.396	0.525	0.390
L (s)	13	34	13	32
C (s)	100	100	100	100
practical y	0.783	0.594	0.783	0.612
R.C. (%)	46%	50%	49%	57%

AM	G =	I/G =	6	G =	I/G =	5	G =	I/G =	5	G =	I/G =
	G =	I/G =	12	G =	I/G =	3	G =	I/G =	5	G =	I/G =
PM	G =	I/G =	6	G =	I/G =	5	G =	I/G =	5	G =	I/G =
	G =	I/G =	17	G =	I/G =	5	G =	I/G =	10	G =	I/G =

Signal Junction Analysis

Junction: H. Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road Job Number: J7167
 Scenario: Sensitivity Test 1 (without widening of To Kwa Wan Road) R2 / P.A8-1
 Design Year: 2036 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak					
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	
Ma Tau Chung Road NB	SA+LT	A1	1	3.50	15.0		31	1906	539	0.283		46	1879	476	0.253	
	SA	A2	1	3.50				2105	595	0.283			2105	534	0.254	
	SA	A3	1	3.50				2105	596	0.283			2105	534	0.254	
Fu Ning Street	RT	B1	4	3.50	25.0		100	1854	18	0.010	0.010	100	1854	18	0.010	0.010
Ma Tau Chung Road SB	SA	C1	1	3.50				1965	685	0.349			1965	614	0.312	
	SA	C2	1	3.50				2105	734	0.349			2105	658	0.313	0.313
	SA	C3	1	3.50				2105	733	0.348	0.348		2105	659	0.313	
Sung Wong Toi Road	SA	D1	2	3.20				1935	525	0.271			1935	512	0.265	
	SA	D2	2	3.75				2130	577	0.271	0.271		2130	564	0.265	
	RT	D3	2, 3	3.00	30.0		100	1957	441	0.225		100	1957	623	0.318	
	RT	D4	2, 3	3.50	26.0		100	1990	448	0.225		100	1990	634	0.319	0.319
	RT	D5	2, 3	3.50	22.0		100	1840	415	0.226		100	1840	586	0.319	
pedestrian phase	P1	1				min crossing time =		10		sec GM +	9		sec FGM =	19	sec	
	P2	1, 2, 3				min crossing time =		5		sec GM +	5		sec FGM =	10	sec	
	P3	2, 3				min crossing time =		10		sec GM +	9		sec FGM =	19	sec	
	P4	3, 4				min crossing time =		7		sec GM +	8		sec FGM =	15	sec	

Signal Junction Analysis

Junction: H. Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road

Job Number: J7167

Scenario: Sensitivity Test 1 (with widening of To Kwa Wan Road)

R2 / P.A8-2

Design Year: 2036

Designed By: _____

Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.629		0.641	
L (s)	17		17	
C (s)	130		130	
practical y	0.782		0.782	
R.C. (%)	24%		22%	

AM	G =	I/G =	7	G =	I/G =	G =	I/G =	7	G =	I/G =	6	G =	I/G =
	G =	I/G =		G =	I/G =	G =	I/G =		G =	I/G =		G =	I/G =
PM	G =	I/G =	7	G =	I/G =	G =	I/G =	7	G =	I/G =	6	G =	I/G =
	G =	I/G =		G =	I/G =	G =	I/G =		G =	I/G =		G =	I/G =

Signal Junction Analysis

Junction: H. Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road Job Number: J7167
 Scenario: Sensitivity Test 2 (without widening of To Kwa Wan Road) R2 / P.A8-3
 Design Year: 2036 Designed By: _____ Checked By: _____ Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Ma Tau Chung Road NB	SA+LT	A1	1	3.50	15.0	31	1906	539	0.283		46	1879	476	0.253	
	SA	A2	1	3.50			2105	595	0.283			2105	534	0.254	
	SA	A3	1	3.50			2105	596	0.283			2105	534	0.254	
Fu Ning Street	RT	B1	4	3.50	25.0	100	1854	18	0.010	0.010	100	1854	18	0.010	0.010
Ma Tau Chung Road SB	SA	C1	1	3.50			1965	690	0.351			1965	617	0.314	
	SA	C2	1	3.50			2105	739	0.351			2105	661	0.314	0.314
	SA	C3	1	3.50			2105	739	0.351	0.351		2105	661	0.314	
Sung Wong Toi Road	SA	D1	2	3.20			1935	533	0.275			1935	515	0.266	
	SA	D2	2	3.75			2130	586	0.275	0.275		2130	566	0.266	
	RT	D3	2, 3	3.00	30.0	100	1957	444	0.227		100	1957	625	0.319	
	RT	D4	2, 3	3.50	26.0	100	1990	451	0.227		100	1990	636	0.320	
	RT	D5	2, 3	3.50	22.0	100	1840	417	0.227		100	1840	588	0.320	0.320
pedestrian phase	P1	1													
	P2	1, 2, 3													
	P3	2, 3													
	P4	3, 4													

AM Traffic Flow (pcu/hr)

2168

18

1312

1119

1561

169

N

1849

1081

1326

218

PM Traffic Flow (pcu/hr)

1939

18

1849

1081

1326

218

N

S=1940+100(W-3.25)

S=2080+100(W-3.25)

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

AM Peak

Check Pedestrian Phase

PM Peak

Check Pedestrian Phase

Sum y

0.636

0.643

L (s)

17

17

C (s)

130

130

practical y

0.782

0.782

R.C. (%)

23%

22%

Note:

1	2	3	4	5
AM G = I/G = 7	G = I/G =	G = I/G = 7	G = I/G = 6	G = I/G =
G = I/G =	G = I/G =	G = I/G =	G = I/G =	G = I/G =
PM G = I/G = 7	G = I/G =	G = I/G = 7	G = I/G = 6	G = I/G =
G = I/G =	G = I/G =	G = I/G =	G = I/G =	G = I/G =

Signal Junction Analysis

Junction: H. Ma Tau Chung Road / Fu Ning Street / Sung Wong Toi Road

Job Number: J7167

Scenario: Sensitivity Test 2 (with widening of To Kwa Wan Road)

R2 / P.A8-4

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

Approach	Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
						Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Ma Tau Chung Road NB	SA+LT	A1	1	3.50	15.0		31	1906	539	0.283		46	1879	476	0.253
	SA	A2	1	3.50				2105	596	0.283			2105	534	0.254
	SA	A3	1	3.50				2105	595	0.283			2105	534	0.253
Fu Ning Street	RT	B1	4	3.50	25.0		100	1854	18	0.009	0.009	100	1854	18	0.009
Ma Tau Chung Road SB	SA	C1	1	3.50				1965	690	0.351			1965	617	0.314
	SA	C2	1	3.50				2105	739	0.351			2105	661	0.314
	SA	C3	1	3.50				2105	739	0.351	0.351		2105	661	0.314
Sung Wong Toi Road	SA	D1	2	3.20				1935	533	0.275			1935	515	0.266
	SA	D2	2	3.75				2130	586	0.275	0.275		2130	566	0.266
	RT	D3	2, 3	3.00	30.0		100	1957	444	0.227		100	1957	625	0.319
	RT	D4	2, 3	3.50	26.0		100	1990	451	0.227		100	1990	636	0.320
	RT	D5	2, 3	3.50	22.0		100	1840	417	0.227		100	1840	588	0.320
pedestrian phase	P1	1		min crossing time =			10	sec GM +		9	sec FGM =		19	sec	
	P2	1, 2, 3		min crossing time =			5	sec GM +		5	sec FGM =		10	sec	
	P3	2, 3		min crossing time =			10	sec GM +		9	sec FGM =		19	sec	
	P4	3, 4		min crossing time =			7	sec GM +		8	sec FGM =		15	sec	

AM Traffic Flow (pcu/hr)

Northbound: 2168 (from Highway 101), 18 (from Highway 102)

Southbound: 1312 (to Highway 101), 1119 (to Highway 102)

Eastbound: 1561 (from Highway 101), 169 (from Highway 102)

PM Traffic Flow (pcu/hr)

Northbound: 1939 (from Highway 101), 18 (from Highway 102)

Southbound: 1849 (to Highway 101), 1081 (to Highway 102)

Eastbound: 1326 (from Highway 101), 218 (from Highway 102)

Delay Analysis Results

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.636		0.643	
L (s)	17		17	
C (s)	130		130	
practical y	0.782		0.782	
R.C. (%)	23%		22%	

Note: $S = 1940 + 100(W - 3.25)$ $S = 2080 + 100(W - 3.25)$
 $S_M = S - (1 + 1.5f/r)$ $S_M = (S - 230) - (1 + 1.5f/r)$

AM	G =	I/G =	7	G =	I/G =	G =	I/G =	7	G =	I/G =	6	G =	I/G =
	G =	I/G =		G =	I/G =	G =	I/G =		G =	I/G =		G =	I/G =
PM	G =	I/G =	7	G =	I/G =	G =	I/G =	7	G =	I/G =	6	G =	I/G =
	G =	I/G =		G =	I/G =	G =	I/G =		G =	I/G =		G =	I/G =

Signal Junction Analysis

Junction: I. Ma Tau Chung Road / Ma Tau Kok Road

Job Number: J7167

Scenario: Sensitivity Test 1 (without widening of To Kwa Wan Road)

R2 / P.A9-1

Design Year: 2036 Designed By: Checked By: Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

Note:

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

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

	AM Peak	Check Pedestrian Phase	PM Peak	Check Pedestrian Phase
Sum y	0.411		0.347	
L (s)	15		15	
C (s)	130		130	
practical y	0.796		0.796	
R.C. (%)	94%		129%	

AM	G =	I/G =	6	G =	I/G =	6	G =	I/G =	6	G =	I/G =
	G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =
PM	G =	I/G =	6	G =	I/G =	6	G =	I/G =	6	G =	I/G =
	G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =

Signal Junction Analysis

Junction: I. Ma Tau Chung Road / Ma Tau Kok Road

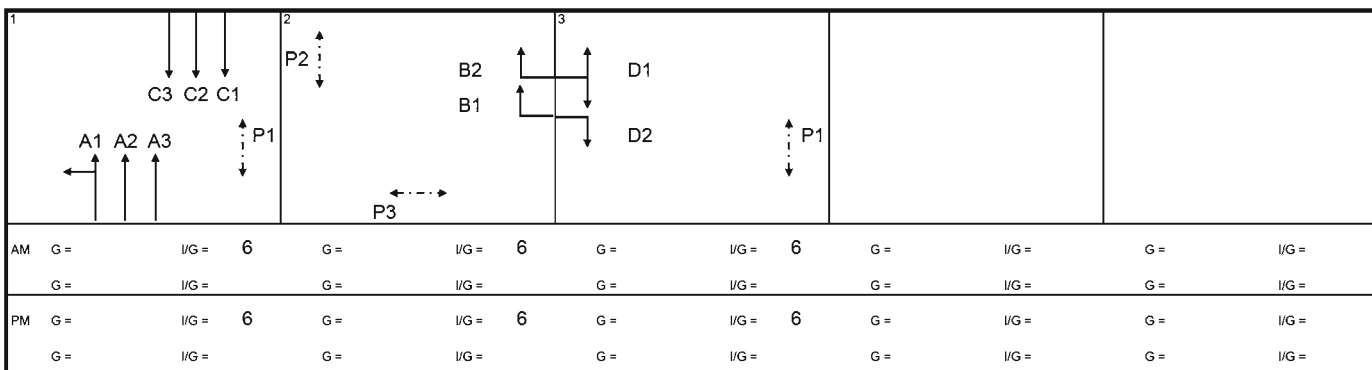
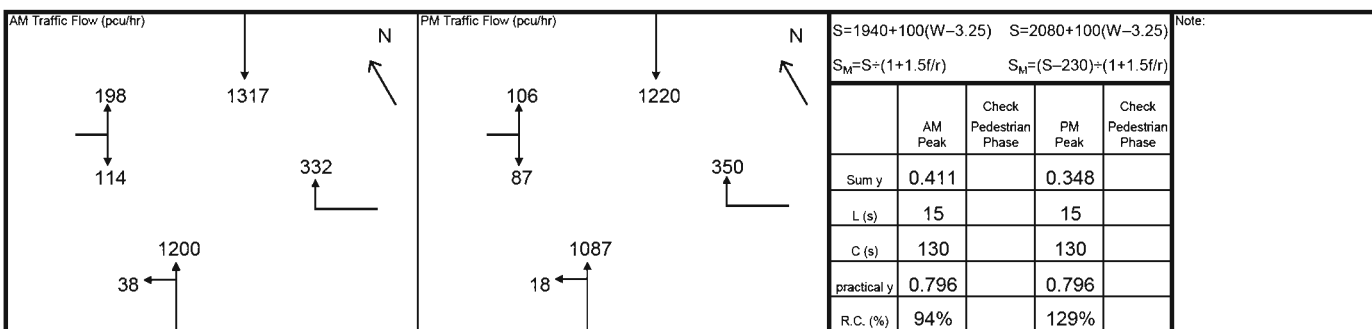
Job Number: J7167

Scenario: Sensitivity Test 1 (with widening of To Kwa Wan Road)

R2 / P.A9-2

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

Signal Junction Analysis

Junction: I. Ma Tau Chung Road / Ma Tau Kok Road

Job Number: J7167

Scenario: Sensitivity Test 2 (without widening of To Kwa Wan Road)

R2 / P.A9-3

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

AM Traffic Flow (pcu/hr)

PM Traffic Flow (pcu/hr)

AM Peak

PM Peak

Check Pedestrian Phase

Check Pedestrian Phase

Sum y

L (s)

C (s)

practical y

R.C. (%)

0.411

15

130

0.796

94%

0.347

15

130

0.796

129%

Note:

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

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

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

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

AM	G =	I/G =	6	G =	I/G =	6	G =	I/G =	6	G =	I/G =
	G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =
PM	G =	I/G =	6	G =	I/G =	6	G =	I/G =	6	G =	I/G =
	G =	I/G =		G =	I/G =		G =	I/G =		G =	I/G =

Signal Junction Analysis

Junction: I. Ma Tau Chung Road / Ma Tau Kok Road

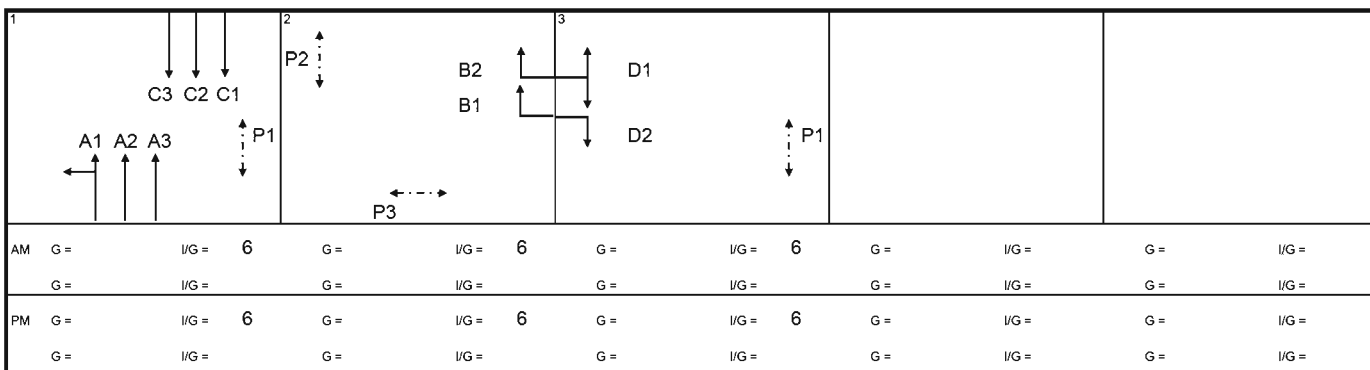
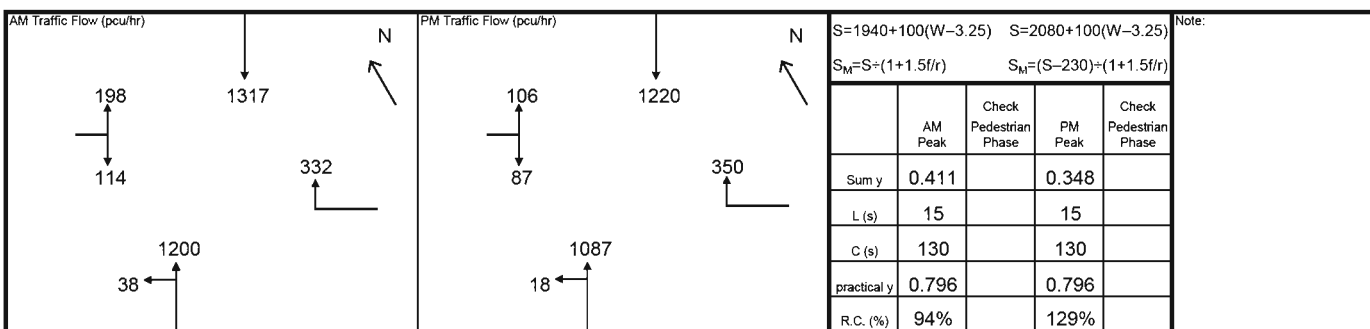
Job Number: J7167

Scenario: Sensitivity Test 2 (with widening of To Kwa Wan Road)

R2 / P.A9-4

Design Year: 2036 Designed By: _____ Checked By: _____

Date: 19 September 2022

[illegible]

Roundabout Analysis

Location J. Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street R2 / P.A10-1
 Scenario Sensitivity Test 1 (without widening of To Kwa Wan Road)
 Design Year 2036 Job Number J7167 Date 19 September 2022

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	31	211	854					1106	1041
From B	150	26	150	516					842	1909
From C	792	57	51	491					1391	1694
From D	544	124	645	138					1451	1086
From E										
From F										
From G										
From H										
Total	1496	238	1057	1999					4790	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	33	320	918					1281	1137
From B	95	24	135	363					617	2192
From C	666	45	49	504					1264	1575
From D	683	124	730	165					1702	889
From E										
From F										
From G										
From H										
Total	1454	226	1234	1950					4864	

Legend

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

Geometric Parameters

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

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

Q _E	Entry Capacity
q _c	Circulating Flow across the Entry
K	$= 1 - 0.00347(\emptyset - 30) - 0.978[(1/r) - 0.05]$
F	$= 303x_2$
f _c	$= 0.210t_D(1 + 0.2x_2)$
t _D	$= 1 + 0.5/(1 + M)$
M	$= \exp[(D - 60)/10]$
x ₂	$= v + (e - v)/(1 + 2S)$
S	$= 1.6(e - v)/L$

Limitation

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

Ratio-of-Flow to Capacity (RFC)

Arm							Q _E		Entry Flow		RFC	
	x ₂	M	t _D	K	F	f _c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2071	2015	1106	1281	0.534	0.636
From B	6.509	54.598	1.009	1.044	1972.301	0.488	1088	943	842	617	0.774	0.654
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1715	1787	1391	1264	0.811	0.707
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2026	2138	1451	1702	0.716	0.796
From E												
From F												
From G												
From H												

Roundabout Analysis

Location J. Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street R2 / P.A10-2
 Scenario Sensitivity Test 1 (with widening of To Kwa Wan Road)
 Design Year 2036 Job Number J7167 Date 19 September 2022

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	31	211	854					1106	1041
From B	150	26	150	516					842	1909
From C	792	57	51	491					1391	1694
From D	544	124	645	138					1451	1086
From E										
From F										
From G										
From H										
Total	1496	238	1057	1999					4790	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	33	320	918					1281	1137
From B	95	24	135	363					617	2192
From C	666	45	49	504					1264	1575
From D	683	124	730	165					1702	889
From E										
From F										
From G										
From H										
Total	1454	226	1234	1950					4864	

Legend

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

Geometric Parameters

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

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

Q _E	Entry Capacity
q _c	Circulating Flow across the Entry
K	$= 1 - 0.00347(\emptyset - 30) - 0.978[(1/r) - 0.05]$
F	$= 303x_2$
f _c	$= 0.210t_D(1 + 0.2x_2)$
t _D	$= 1 + 0.5/(1 + M)$
M	$= \exp[(D - 60)/10]$
x ₂	$= v + (e - v)/(1 + 2S)$
S	$= 1.6(e - v)/L$

Limitation

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

Ratio-of-Flow to Capacity (RFC)

Arm							Q _E		Entry Flow		RFC	
	x ₂	M	t _D	K	F	f _c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2071	2015	1106	1281	0.534	0.636
From B	6.509	54.598	1.009	1.044	1972.301	0.488	1088	943	842	617	0.774	0.654
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1715	1787	1391	1264	0.811	0.707
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2026	2138	1451	1702	0.716	0.796
From E												
From F												
From G												
From H												

Roundabout Analysis

Location J. Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street R2 / P.A10-3
 Scenario Sensitivity Test 2 (without widening of To Kwa Wan Road)
 Design Year 2036 Job Number J7167 Date 19 September 2022

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	31	211	854					1106	1041
From B	158	26	150	516					850	1909
From C	795	57	51	491					1394	1702
From D	549	124	645	138					1456	1097
From E										
From F										
From G										
From H										
Total	1512	238	1057	1999					4806	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	33	320	918					1281	1137
From B	99	24	135	363					621	2192
From C	667	45	49	504					1265	1579
From D	686	124	730	165					1705	894
From E										
From F										
From G										
From H										
Total	1462	226	1234	1950					4872	

Legend

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

Geometric Parameters

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

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

Q _E	Entry Capacity
q _c	Circulating Flow across the Entry
K	$= 1 - 0.00347(\emptyset - 30) - 0.978[(1/r) - 0.05]$
F	$= 303x_2$
f _c	$= 0.210t_D(1 + 0.2x_2)$
t _D	$= 1 + 0.5/(1 + M)$
M	$= \exp[(D - 60)/10]$
x ₂	$= v + (e - v)/(1 + 2S)$
S	$= 1.6(e - v)/L$

Limitation

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

Ratio-of-Flow to Capacity (RFC)

Arm							Q _E		Entry Flow		RFC	
	x ₂	M	t _D	K	F	f _c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2071	2015	1106	1281	0.534	0.636
From B	6.509	54.598	1.009	1.044	1972.301	0.488	1088	943	850	621	0.782	0.658
From C	8.691	54.598	1.009	1.039	2633.411	0.580	1710	1784	1394	1265	0.815	0.709
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2020	2135	1456	1705	0.721	0.799
From E												
From F												
From G												
From H												

Roundabout Analysis

Location J. Ma Tau Chung Road / Prince Edward Road East / Prince Edward Road West / Argyle Street R2 / P.A10-4
 Scenario Sensitivity Test 2 (with widening of To Kwa Wan Road)
 Design Year 2036 Job Number J7167 Date 19 September 2022

AM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	31	211	854					1106	1041
From B	158	26	150	516					850	1909
From C	795	57	51	491					1394	1702
From D	549	124	645	138					1456	1097
From E										
From F										
From G										
From H										
Total	1512	238	1057	1999					4806	

PM Peak

Arm	To A	To B	To C	To D	To E	To F	To G	To H	Total	q _c
From A	10	33	320	918					1281	1137
From B	99	24	135	363					621	2192
From C	667	45	49	504					1265	1579
From D	686	124	730	165					1705	894
From E										
From F										
From G										
From H										
Total	1462	226	1234	1950					4872	

Legend

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

Geometric Parameters

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

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

Q _E	Entry Capacity
q _c	Circulating Flow across the Entry
K	$= 1 - 0.00347(\emptyset - 30) - 0.978[(1/r) - 0.05]$
F	$= 303x_2$
f _c	$= 0.210t_D(1 + 0.2x_2)$
t _D	$= 1 + 0.5/(1 + M)$
M	$= \exp[(D - 60)/10]$
x ₂	$= v + (e - v)/(1 + 2S)$
S	$= 1.6(e - v)/L$

Limitation

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

Ratio-of-Flow to Capacity (RFC)

Arm							Q _E		Entry Flow		RFC	
	x ₂	M	t _D	K	F	f _c	AM	PM	AM	PM	AM	PM
From A	9.003	54.598	1.009	0.982	2727.863	0.593	2071	2015	1106	1281	0.534	0.636
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From C	8.691	54.598	1.009	1.039	2633.411	0.580	1710	1784	1394	1265	0.815	0.709
From D	9.328	54.598	1.009	0.935	2826.281	0.607	2020	2135	1456	1705	0.721	0.799
From E												
From F												
From G												
From H												