METRO PLANNING COMMITTEE
OF THE TOWN PLANNING BOARD

MPC Paper No. 7/17

For Consideration by
the Metro Planning Committee on 13.10.2017

PROPOSED AMENDMENTS TO THE
APPROVED KWUN TONG (SOUTH)
OUTLINE ZONING PLAN NO. S/K14S/20

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**PROPOSED AMENDMENTS TO
THE APPROVED KWUN TONG (SOUTH)
OUTLINE ZONING PLAN NO. S/K14S/20**

1. Introduction

This paper is to seek Members' agreement that:

(a) the proposed amendments to the approved Kwun Tong (South) Outline Zoning Plan (OZP) No. S/K14S/20 (**Attachment I**) as shown on the draft OZP No. S/K14S/20A (**Attachment II**) and its Notes (**Attachment III**) are suitable for exhibition for public inspection under section 5 of the Town Planning Ordinance (the Ordinance); and

(b) the revised Explanatory Statement (ES) of the draft OZP (**Attachment IV**) is an expression of the planning intentions and objectives of the Town Planning Board (the Board) for various land use zonings of the OZP, and is suitable for exhibition together with the draft OZP and its Notes.

2. Status of the Current OZP

On 21.7.2015, the Chief Executive in Council (CE in C), under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP No. S/K14S/19, which was subsequently renumbered as S/K14S/20. On 18.10.2016, the CE in C referred the approved OZP to the Board for amendment under section 12(1)(b)(ii) of the Ordinance.

3. Background

As stated in the 2017 Policy Address, housing is one of the most important livelihood issues to be addressed. The Government has been increasing land supply through a multi-pronged approach with short-, medium- and long-term measures to achieve the target to provide a total of 460,000 housing units, including 280,000 public housing units, in the coming decade. Among other measures, steps have been taken to review the possible use of "Government, Institution or Community" ("G/IC") sites without designated use. A "G/IC" site at Ting On Street, Kwun Tong (the Site) is identified as suitable for public housing development (the proposed development). The Transport and Housing Bureau has given in-principle policy support to the Hong Kong Housing Society (HKHS) to use the Site for the proposed development.

4. Proposed Amendment to the OZP (Item A on Plans 1 to 3)

The Site and Its Surroundings

4.1 The Site has an area of about 2,219m^2, and is bounded by Ting On Street and Ngau Tau Kok Road to its south and north respectively. It is a piece of Government land currently used for a temporary playground (comprising a basketball court (about 608m^2) in the south abutting Ting On Street and a vegetated slope (about 1,535m^2) in the north with a stairway connecting with Ngau Tau Kok Road) and a sub-standard refuse collection point (RCP) of about 76m^2 at the western corner of the Site (**Plan 4**). It is about 270m away from the MTR Ngau Tau Kok Station. A number of public transport services are found along Ngau Tau Kok Road and Kwun Tong Road.

4.2 The Site is located within a medium- to high-rise residential neighbourhood supported by Government, institution and community (GIC) facilities and open space (**Plan 2**), including:

(a) private residential buildings to the south and west along Ting On, Ting Fu and Ting Yip Streets (with BH of 25-88 mPD);

(b) to the north and east across Ngau Tau Kok Road are public housing developments, including Upper Ngau Tau Kok Estate (89-143mPD), Kwun Tong Garden Estate Phase II (KTGE II) (34-67mPD), Lotus Tower (85-91mPD), and the S.K.H. Kei Hin Primary School;

(c) some low-rise GIC developments and open space are to the southeast, i.e. Ngau Tau Kok Jockey Club Clinic (33mPD), Kwun Tong Government Primary School, Ngau Tau Kok Road Children's Playground and Elegance Road Garden; and

(d) some other local open space, namely Kwun Tong Road and Ting Fu Street Sitting-out Areas (SOAs) and Ting Yu Square Temporary SOA, are in its vicinity.

4.3 The Site has not been designated for specific GIC use. HKHS proposes to develop the Site into one residential tower with 27 domestic storeys on top of a 4-storey podium with domestic/total plot ratios (PR) of 7.017/8.134 and a building height (BH) not exceeding 110 metres above Principal Datum (mPD) (**Plan 5**). It is estimated that the proposed public housing development will provide about 378 flats with an estimated population of about 1,058. The existing sub-standard RCP will be reprovisioned at G/F of the proposed development, and the podium will also accommodate retail shops and GIC facilities (namely a neighbourhood elderly centre, landscaped area, a half-size basketball court/multi-purpose playground, a covered activities area) (**Plan 6**). Moreover, shuttle lifts and public passage are provided to facilitate a barrier-free pedestrian linkage between Ting On Street (about 7.2mPD) and Ngau Tau Kok Road (about 17.2mPD) as well as to the foregoing facilities situated at various floors of the podium (**Plan 7**). The justifications and development parameters of the proposed development are given in the Planning Statement report prepared by HKHS (**Attachment V**). The proposed scheme may be subject to refinements at detailed design stage.

4.4 For reprovisioning of the existing basketball court, the proposed development will include a permanent half-size basketball court/multi-purpose playground to serve the local residents and be open to the public. Prior to commencement of the proposed development, HKHS will modify the existing basketball court next to Hung Cheuk Lau of KTGE II (within walkable distance of 250m from the Site), into one and a half basketball courts, a Tai Chi court and seating area for public enjoyment (**Plan 8**). The temporary facilities are to be constructed, managed and maintained at HKHS's own costs until a permanent basketball court be reprovisioned within the future redevelopment of KTGE II. Besides, the existing sub-standard RCP will maintain operation until the permanent RCP in the future development is in place for operation. Similar to the existing one, the major operation activity of the permanent RCP will be from 7am to 11pm with ingress/egress at Ting On Street. The seamless reprovisioning will maintain continuous service for the local community. Director of Leisure and Cultural Services (DLCS) and Director of Food and Environmental Hygiene (DFEH) have no objection to the arrangement and releasing the Site for housing development.

4.5 Completed in 1966/67, KTGE II is ageing and an early planning for redevelopment is necessary. Being just 50m away from the KTGE II, the Site is considered suitable for decanting tenants affected by the KTGE II redevelopment so as to meet the strong aspiration for local or in-situ rehousing and minimise the adjustment of those elderly residents. The detailed redevelopment programme for KTGE II will be worked out by HKHS in consultation with the concerned parties.

4.6 To ascertain the technical feasibility of the proposed development, HKHS has undertaken various assessments (**Attachment V**), which concluded that with the implementation of various mitigation measures, the proposed development would not cause insurmountable problems to the surrounding areas.

The Rezoning Proposal

4.7 To take forward the proposed development, the Site is proposed to be rezoned from "G/IC" to "Residential (Group A)3" ("R(A)3") (**Item A** on **Plan 1**) subject to the same PR control as other "R(A)" sites on the OZP, i.e. maximum domestic PR of 7.5 and a maximum total PR of 9 for a building that is partly domestic and partly non-domestic. A BH restriction (BHR) of 110mPD is proposed for the "R(A)3" zone which is generally compatible with the surrounding medium- to high-rise residential developments with a stepped BH profile gradually increasing from the south at Kwun Tong Road to the high-rise building of Upper Ngau Tau Kok Estate (129-143mPD) near the hilly area in the north (**Plans 2** & **9**). To allow the reprovisioning of the RCP at the Site, it is proposed to put 'Government RCP' under Column 1 of the Notes for the proposed "R(A)3" zone only.

5. Technical Assessments

5.1 In support of the proposed development, HKHS has completed the relevant technical assessments, namely, air ventilation assessment (AVA), environmental assessment (EA), water supply impact assessment (WSIA), drainage impact assessment (DIA), sewerage impact assessment (SIA), geotechnical impact assessment (GIA), visual impact assessment (VIA), traffic impact assessment

(TIA) and tree survey report (TSR). The main text of the Planning Statement report is at **Attachment V** and its VIA, TSR, AVA (extract), EA (extract), and TIA (extract) are at **Attachments Va** to **Ve** respectively. The full Planning Statement report with all the technical assessments are deposited at the Board's secretariat for Members' inspection.

Land Use and Urban Design Aspects

Land Use

5.2 The Site falls within a neighbourhood primarily occupied by medium- to high-rise residential developments. The proposed development is considered compatible with the land uses in the surrounding areas.

Urban Design

5.3 Taking into account the site level at 7.2mPD to 17.2mPD and the need for a four-storey podium to accommodate various GIC uses and open space/landscaped area, a BH of about 110mPD is required to achieve the permitted PR for the "R(A)3" zone. The proposed BH of 110mPD is considered not incompatible with the medium- to high-rise residential developments in the surrounding areas and can achieve a stepped height profile descending from north to south.

5.4 A VIA (**Attachment Va**) has been conducted to assess the possible visual impact of the proposed development. For assessment purpose, four viewpoints (VPs) are selected at adjacent pedestrian footpaths and open space in different directions (**Plan 10**). As illustrated in the photomontages viewing from these VPs (**Plans 10a to 10d**), the proposed development would have a moderately adverse visual impact which is considered to be generally acceptable. Some mitigation measures have been suggested to reduce the visual obstruction and to enhance visual permeability, including minimised building footprint, sensitive architectural and chromatic treatment, building setbacks and landscaped areas with aesthetic improvement plantings, implementation of green roofs and vertical greening, etc. The Chief Town Planner/Urban Design and Landscape, PlanD (CTP/UD&L, PlanD) has no adverse comment on the proposed development from urban design point of view.

Tree Preservation and Landscape Aspects

Tree Preservation

5.5 According to the TSR (**Attachment Vb**), there are 37 trees within the Site and no Registered Old and Valuable Trees are found. They are common trees with a majority of exotic species with fair to poor form, amenity value and health and structural conditions. All the trees would have to be felled as retention is impractical and transplantation is considered not cost effective. Compensatory planting of 39 trees within the development will be provided in compliance with the criteria as set out in the Development Bureau Technical Circular (Works) No. 7/2015 on Tree Preservation.

Landscape Aspect

5.6 According to the Planning Statement (**Attachment V**), to enhance the quality of amenity for public enjoyment and to meet the greening and open space

requirements under the Hong Kong Planning Standards and Guidelines (HKPSG), open space of 1,090m^2 is proposed to be provided at 1/F and 2/F of the proposed development (**Plan 11**). The open space will be managed and maintained by HKHS, serve the local residents and be accessible freely by the general public. Small- to medium-sized trees will be planted in order to provide shade and amenity where possible. The proposed open area together with the compensatory trees would enhance the local environment and improve the overall landscape quality of the Site and its surrounding physically and visually. CTP/UD&L, PlanD has no adverse comment on the proposed rezoning from tree preservation and landscape perspectives.

Air Ventilation Aspect

5.7 According to the AVA by a qualitative Expert Evaluation and a quantitative Computational Fluid Dynamics (CFD) assessment conducted by HKHS (**Attachment Vc**), the annual prevailing winds in the area are easterly (E), east-north-easterly (ENE) and east-south-easterly (ESE), while the summer prevailing winds are south-westerly (SW), south-south-westerly (SSW) and west-south-westerly (WSW). Generally, the CFD assessment revealed that the proposed scheme and the existing scenario would have similar ventilation performance in both annual and summer conditions. The proposed high-rise tower (**Plan 5**) would induce downwash wind that would be beneficial to areas close to the Site including Ting On Street, Ngau Tau Kok Road, the Ngau Tau Kok Jockey Club Clinic, but may induce a wake area to the leeward side where wind conditions for the areas to the northwest of the Site (at Ting Yip Street, On Tak Road and Ting Yu Square) would be slightly worsened. In order to minimize the adverse air ventilation impact induced by the proposed development, the following mitigation measures (**Plans 6** & **7**) will be adopted in the building design:

(a) stepped terrace design to minimise the blockage effect along Ngau Tau Kok Road which is the main air corridor for the area; and

(b) minimized podium design with maximal provision of landscape areas.

5.8 The AVA concluded that the proposed development would not induce a significant adverse impact to the surrounding concerned area when compared with the existing scenario. However, as there are slight adverse impacts on some areas, it is recommended that further quantitative AVA should be carried out in later design stage to explore more opportunities on scheme improvement. CTP/UD&L, PlanD has no adverse comment on the proposed rezoning from air ventilation perspective.

Environmental Aspect

5.9 According to the EA (**Attachment Vd**), traditional and innovative mitigation measures (including adoption of building setbacks and podium to increase buffer distance from Ngau Tau Kok Road, and provision of fins and acoustic windows to further reduce noise level) are proposed to mitigate noise impact. The first residential floor is raised to 28.75mPD which help minimizing impact of traffic noise from the busy roads. To mitigate possible air impacts to the non-domestic uses in the podium, the EA recommended to equip central fresh air supply system together with split type air conditioning to avoid the need of ventilation by means

of opened windows. With the implementation of the recommended mitigation measures, it is anticipated that the future residents would not be subject to traffic, industrial and railway noise and air quality impacts. The EA also sets out the management and mitigation strategy of the construction dust generated from the construction work for the proposed development. Where appropriate, environmental control measures for avoiding and minimising the potential impacts would be implemented during the construction stage.

5.10 For the permanent RCP at the G/F of the proposed development, its design will follow the FEHD's Handbook on Standard Features for RCP. As the whole operation will be carried out in indoor environment and through the provision of odour control equipment and odour removal ventilation system, it is anticipated that the RCP would not have any adverse air and odour pollution impact on the proposed development as well as the neighbourhood. As there would be no night time operation and the RCP would be equipped with properly designed noise control measures such as acoustical silencers and insulations, the EA concluded that the new RCP would operate within the acceptable noise limits.

5.11 It is concluded that no adverse environmental impact to the proposed development is anticipated. The Director of Environmental Protection (DEP) has no adverse comment on the proposed rezoning from environmental perspective.

Traffic Aspect

5.12 As indicated in the TIA conducted (**Attachment Ve**), the amount of additional development traffic would not be significant, thus all critical junctions in the vicinity would performance satisfactorily during the morning and evening peak hours in design year 2026. Ancillary parking and loading/unloading facilities would be provided in the proposed development to meet the requirements stipulated in the HKPSG.

5.13 The existing pedestrian link between Ting On Street and Ngau Tau Kok Road provided in the Site would be closed during the construction stage. The assessment results on pedestrian flows show that the closure of this link would not cause any adverse impact to the pedestrian movements as the pedestrian flows are small and there are plenty of capacities at the nearby footpaths.

5.14 TIA concluded that the proposed development would not cause adverse traffic impact to the road network in the surrounding areas. The Commissioner for Transport (C for T) has no adverse comment on the findings of the TIA, and no objection to the proposed rezoning from the traffic perspective.

Infrastructural Aspect

5.15 HKHS has conducted WSIA, DIA, SIA and GIA for the proposed development (**Attachment V**), which concluded that the proposed development would not result in any adverse impacts on infrastructural capacity in the area and is found to be geotechnically feasible. Concerned Government departments including the Water Supplies Department (WSD), the Environmental Protection Department, the Drainage Services Department (DSD), and the Geotechnical Engineering Office of the Civil Engineering and Development Department (CEDD) have no comment on the assessments and the proposed rezoning.

6. Provision of Open Space and GIC Facilities

The subject "G/IC" site is currently occupied by a temporary basketball court and vegetated slope, and has not been designated for any GIC use. Taking into account the planned population of the planning scheme area (including about 1,058 for the proposed development) and the provision standards in HKPSG, the planned provision of major GIC facilities and open space in the area is generally sufficient (**Attachment VI**). A neighbourhood elderly centre will be incorporated in the proposed development to address the rising demand for the elderly services in the local community. As mentioned in paragraph 4.4 above, appropriate reprovisioning arrangement for the basketball court at the Site has been agreed with DLCS.

7. Proposed Amendments to Matters shown on the Plan (Attachment II and Plan 3)

The proposed amendment as shown on the draft Kwun Tong (South) OZP No. S/K14S/20A (**Attachment II**) is as follow:

Item A: Rezoning of a site at Ting On Street from "G/IC" to "R(A)3" (about 0.22ha) and stipulation of a BHR of 110mPD in accordance with paragraph 4.7 above.

8. Proposed Amendments to the Notes of the OZP (Attachment III)

"R(A)3" Zone

8.1 To allow the reprovisioning of a RCP at the Site, it is proposed to incorporate 'Government RCP' as a Column 1 use for land designated "R(A)3" only. Besides, the remarks of the Notes of the "R(A)" zone are proposed to be amended to incorporate the development restrictions related to the Site.

"OU(B)" Zone

8.2 With a view to support art development, relevant bureaux/departments have investigated the feasibility of allowing 'Art Studio' in the industrial-office (I-O) buildings. As the key concern is on fire safety, 'Art Studio' is considered acceptable in the industrial and I-O buildings if it does not involve direct provision of services or goods (e.g. art studio which does not involve hobby classes, seminars, sales of goods, open art exhibition, etc.) is allowed. The proposal was generally supported by the stakeholders with no objection from concerned Government departments. In Kwun Tong Business Area, it is not uncommon that some of the industrial and I-O buildings are now being used as art studios. To take forward the above proposal, it is proposed to incorporate 'Art Studio (excluding those involving direct provision of services or goods)' as a Column 1 use in Schedule II of the "Other Specified Uses" annotated "Business" zone. As 'Art Studio' is currently subsumed under the use 'Place of Recreation, Sports or Culture', corresponding amendment will be made to the Notes.

8.3 The proposed amendments to the Notes (with additions in ***bold and italics*** and deletions in '~~crossed out~~') are at **Attachment III** for Members' consideration.

9. Revision to the Explanatory Statement of the OZP (Attachment IV)

The ES of the OZP has been revised to take into account the proposed amendments as mentioned in the above paragraphs. Opportunity has also been taken to update the general information for various land use zones to reflect the latest status and planning circumstances of the OZP. The proposed amendments to the ES (with additions in ***bold and italics*** and deletions in '~~crossed out~~') are at **Attachment IV** for Members' consideration.

10. Plan Number

Upon exhibition for public inspection, the OZP will be renumbered as S/K14S/21.

11. Consultation

Departmental Consultation

11.1 The proposed amendments have been circulated to the following Government bureaux/departments. They have no objection to or no adverse comment on the proposed amendments, and their comments have been incorporated in the paper where appropriate:

(a) Secretary for Development;

(b) Secretary for Education;

(c) Chief Architect/Central Management Division 2, Architectural Services Department;

(d) Chief Building Surveyor/Kowloon, Buildings Department;

(e) Chief Engineer/Construction, WSD;

(f) Chief Engineer/Mainland South, DSD;

(g) Chief Highway Engineer/Kowloon, Highways Department;

(h) Commissioner of Police;

(i) C for T;

(j) CTP/UD&L, PlanD;

(k) DEP;

(l) DFEH;

(m) Director of Agriculture, Fisheries and Conservation;

(n) Director of Fire Services;

(o) Director of Social Welfare;

(p) District Lands Officer/Kowloon East, Lands Department;

(q) District Officer (Kwun Tong), Home Affairs Department;

(r) DLCS;

(s) Government Property Administrator; and

(t) Head of Geotechnical Engineering Office, CEDD.

Consultations with the Kwun Tong District Council and the Local Stakeholders

11.2 On 2.3.2017, the Kwun Tong District Council (KTDC) was consulted on the proposed rezoning amendments to the OZP. The relevant extract of the minutes of the meeting is at **Attachment VIIa**. Although KTDC members generally supported the redevelopment of KTGE II, some raised concerns on traffic impact, reprovisioning of basketball court in the neighbourhood and the redevelopment programme of KTGE II. Some requested HKHS to further consult the local stakeholders on the proposed redevelopment. Written submissions were received from LegCo member (Hon. WU Chi-wai) on 21.3.2017 and KTDC member (Mr. CHAN Wah-yu Nelson) on 9.6.2017 (**Attachments VIIIa** and **VIIIb**).

11.3 Subsequent to the KTDC consultation, two briefing sessions were conducted by HKHS for the residents of Ting On Street area on 15.5.2017 and the tenants of KTGE II on 22.5.2017. Summary of the views/comments gauged during the briefing sessions are at **Attachment IX**.

11.4 On 18.7.2017, the KTDC Housing Committee (HC) was consulted on the HKHS's proposed redevelopment of KTGE II. The relevant extract of the minutes of the meeting is at **Attachment VIIb**.

11.5 In general, the views collected through the two local briefing sessions and consultation with KTDC HC are similar to those mentioned in paragraph 11.2. In gist, there are concerns on the traffic and environmental impacts of the development, reprovisioning for the basketball court, adequacy of GIC facilities and open space in the area, and the redevelopment programme of KTGE II and related rehousing arrangement. Regarding the possible impacts of the proposed development, the various technical assessments conducted by HKHS have confirmed the technical feasibility of the proposal. HKHS has also proposed appropriate arrangement for reprovisioning of the basketball courts in consultation with LCSD. There is also generally sufficient major GIC facilities and open space in the area. The assessments on the relevant aspects in paragraphs 5 and 6 are relevant. Detailed summary of the views received and the responses to specific issues from the HKHS are at **Attachment X**.

Public Consultation

11.6 If the proposed amendments are agreed by the Committee, the draft OZP (to be renumbered to S/K14S/21 upon exhibition) and its Notes will be exhibited under section 5 of the Ordinance. Members of the public can submit representations on the OZP amendments to the Board during the two-month statutory public inspection period.

12. Decision Sought

Members are invited to:

(a) agree to the proposed amendments to the approved Kwun Tong (South) OZP and that the draft Kwun Tong (South) OZP No. S/K14S/20A at **Attachment II** (to be renumbered as S/K14S/21 upon exhibition) and its Notes at **Attachment III** are suitable for exhibition under section 5 of the Ordinance; and

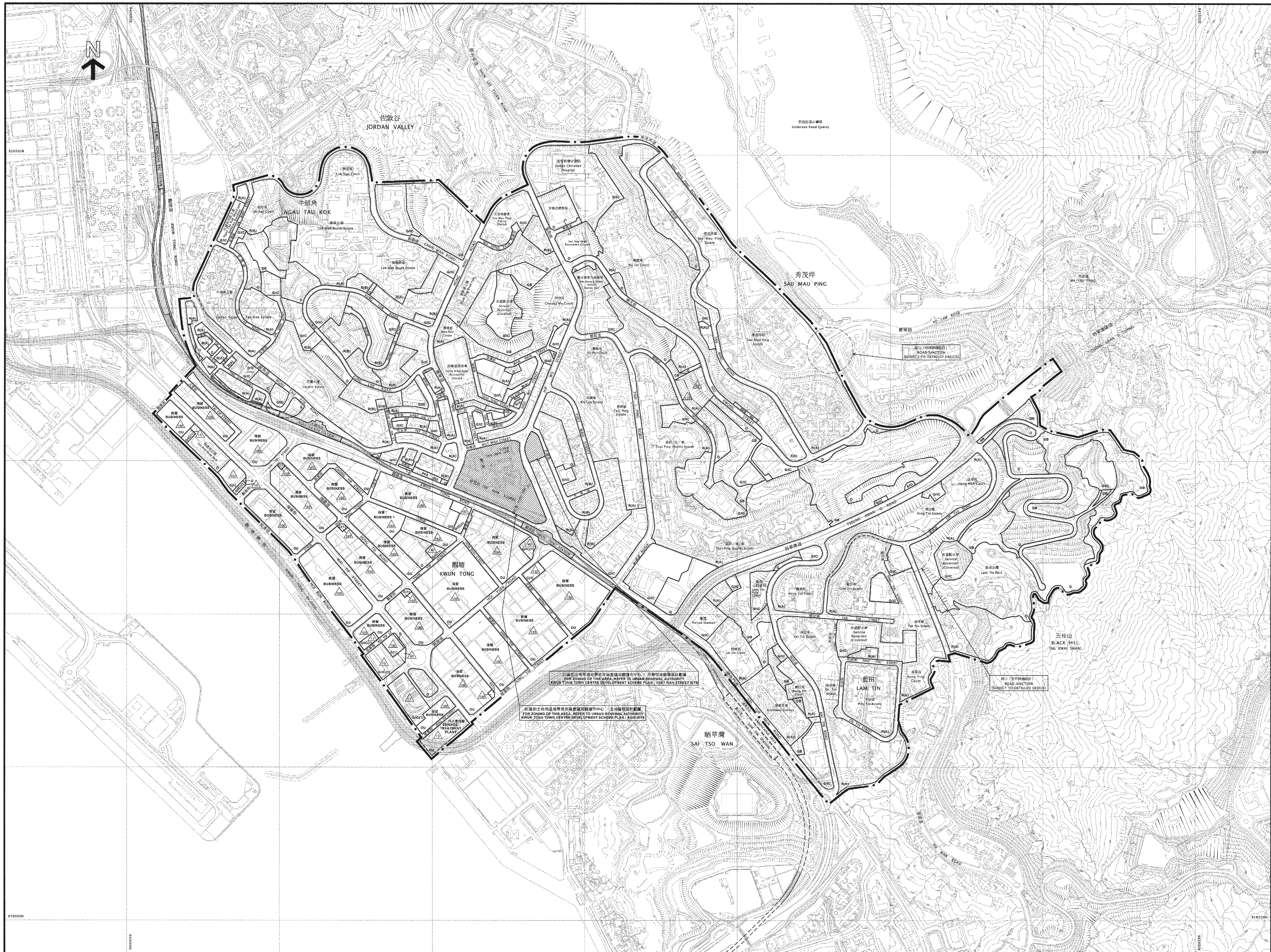
(b) adopt the revised ES at **Attachment IV** for the draft Kwun Tong (South) OZP No. S/K14S/20A as an expression of the planning intentions and objectives of the Board for various land use zones of the OZP and agree that the revised ES is suitable for publication together with the OZP.

13. Attachments

Attachment I	Approved Kwun Tong (South) OZP No. S/K14S/20 (reduced to A3 size)
Attachment II	Draft Kwun Tong (South) OZP No. S/K14S/20A
Attachment III	Revised Notes of Draft Kwun Tong (South) OZP No. S/K14S/20A
Attachment IV	Revised ES of Kwun Tong (South) OZP No. S/K14S/20A
Attachment V	Planning Statement Report for the Proposed Development
Attachment Va	Visual Impact Assessment Report
Attachment Vb	Tree Survey Report
Attachment Vc	Air Ventilation Assessment Report (Extract)
Attachment Vd	Environmental Assessment Report (Extract)
Attachment Ve	Traffic Impact Assessment Report (Extract)
Attachment VI	Provision of Major GIC Facilities and Open Space in the Kwun Tong (South) OZP Area
Attachment VIIa	Minutes of KTDC Meeting held on 2.3.2017 (Extract)
Attachment VIIb	Minutes of KTDC HC Meeting held on 18.7.2017 (Extract)
Attachment VIIIa	Letter dated 21.3.2017 received from Legislative Council Member Hon. WU Chi-wai
Attachment VIIIb	Letter dated 9.6.2017 received from KTDC Member Mr. CHAN Wah-yu Nelson
Attachment IX	Gist of the Residents' Views on the Proposed Development collected by HKHS at local briefing sessions
Attachment X	Details of Public Views Received and Responses from HKHS
Plan 1	Location Plan of Proposed Amendment Item
Plan 2	Site Plan of Proposed Amendment Item
Plan 3	Aerial Photo of Proposed Amendment Item
Plan 4	Site Photos of the Ting On Street Site
Plan 5	Typical Floor Plan and Schematic Section Plan
Plan 6	Podium Floor Plans
Plan 7	Proposed Barrier-free Pedestrian Connection
Plan 8	Proposed Arrangement of Reprovisioning Basketball Court
Plan 9	Sectional Elevation from South to North
Plan 10	Zone of Visual Influence
Plans 10a to 10d	Photomontages of the Proposed Development
Plan 11	Landscape Proposal

PLANNING DEPARTMENT
OCTOBER 2017

Attachment I of
MPC Paper No. 7/17



圖例 NOTATION

ZONES 地帶

COMMERCIAL	C	商業
RESIDENTIAL (GROUP A)	R(A)	住宅（甲類）
RESIDENTIAL (GROUP B)	R(B)	住宅（乙類）
GOVERNMENT, INSTITUTION OR COMMUNITY	G/IC	政府、機構或社區
OPEN SPACE	O	休憩用地
OTHER SPECIFIED USES	OU	其他指定用途
GREEN BELT	GB	綠化地帶

COMMUNICATIONS 交通

RAILWAY AND STATION	鐵路及車站
RAILWAY AND STATION (UNDERGROUND)	鐵路及車站（地下）
RAILWAY AND STATION (ELEVATED)	鐵路及車站（高架）
MAJOR ROAD AND JUNCTION	主要道路及路口
ELEVATED ROAD	高架道路

MISCELLANEOUS 其他

BOUNDARY OF PLANNING SCHEME		規劃範圍界線
URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA		市區重建局發展計劃圖範圍
BUILDING HEIGHT CONTROL ZONE BOUNDARY		建築物高度管制區界線
MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)	100	最高建築物高度（在主水平基準上若干米）
PETROL FILLING STATION	P F S	加油站

土地用途及面積一覽表 SCHEDULE OF USES AND AREAS

USES	大約面積及百分率 APPROXIMATE AREA & %		用途
	公頃 HECTARES	% 百分率	
COMMERCIAL	1.21	0.31	商業
RESIDENTIAL (GROUP A)	137.51	35.50	住宅（甲類）
RESIDENTIAL (GROUP B)	14.46	3.73	住宅（乙類）
GOVERNMENT, INSTITUTION OR COMMUNITY	45.15	11.65	政府、機構或社區
OPEN SPACE	41.43	10.69	休憩用地
OTHER SPECIFIED USES	46.82	12.09	其他指定用途
GREEN BELT	28.50	7.36	綠化地帶
NULLAH	0.09	0.02	明渠
MAJOR ROAD ETC.	67.17	17.34	主要道路等
URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA	5.06	1.31	市區重建局發展計劃圖範圍
TOTAL PLANNING SCHEME AREA	387.40	100.00	規劃範圍總面積

夾附的《註釋》屬這份圖則的一部分
THE ATTACHED NOTES ALSO FORM PART OF THIS PLAN

行政長官會同行政會議於２０１５年７月２１日　根據城市規劃條例第９（１）（ａ）條核准的圖則
APPROVED BY THE CHIEF EXECUTIVE IN COUNCIL UNDER SECTION 9(1)(a) OF THE TOWN PLANNING ORDINANCE ON 21 JULY 2015

Ms Kinnie WONG　黃潔怡女士
CLERK TO THE EXECUTIVE COUNCIL　行政會議秘書

香港城市規劃委員會依據城市規劃條例擬備的觀塘南部（九龍規劃區第１４區部分）分區計劃大綱圖

TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD

KOWLOON PLANNING AREA No. 14 (PART) - KWUN TONG (SOUTH) - OUTLINE ZONING PLAN

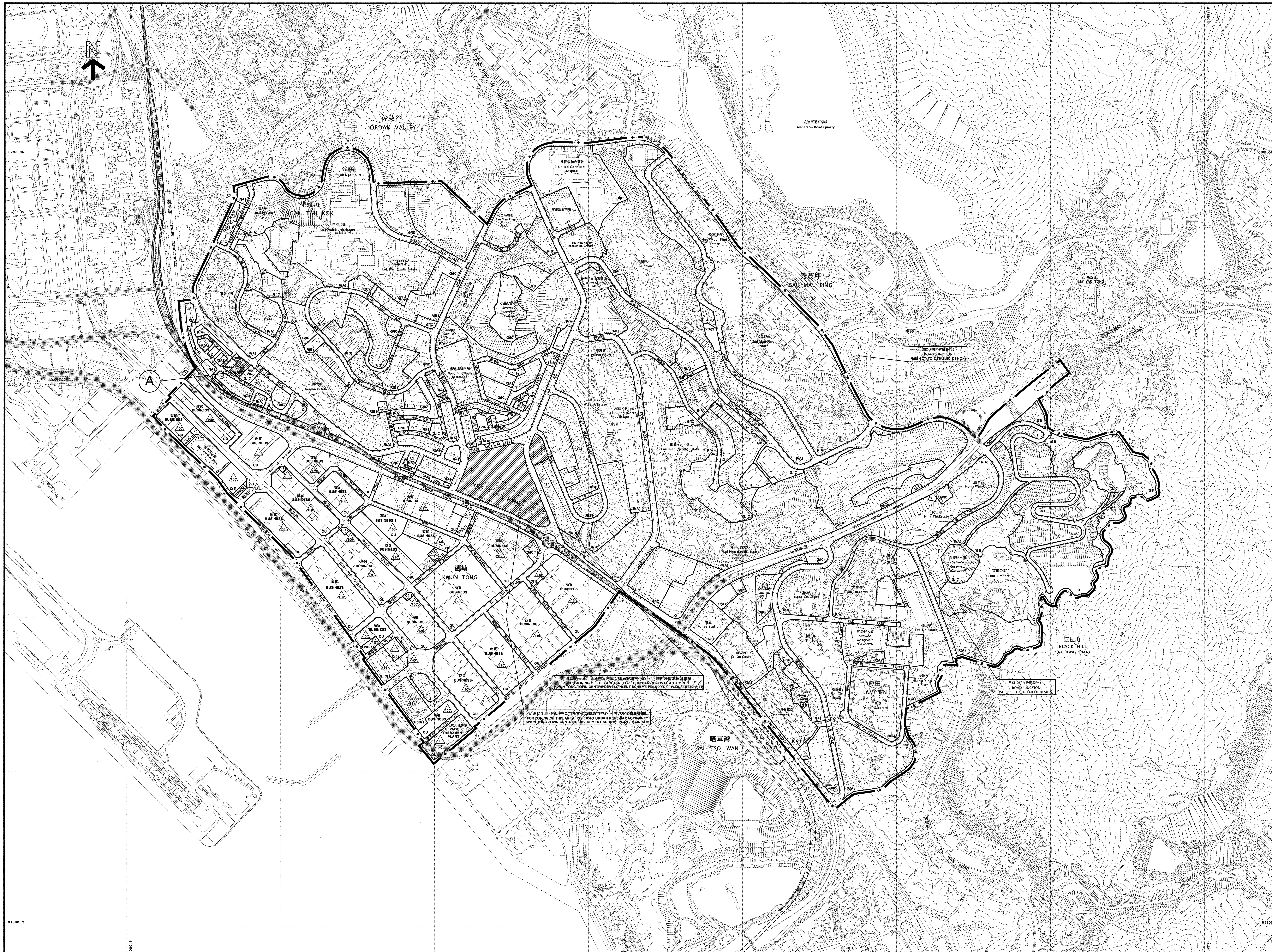
規劃署遵照城市規劃委員會指示擬備
PREPARED BY THE PLANNING DEPARTMENT UNDER THE DIRECTION OF THE TOWN PLANNING BOARD

圖則編號 PLAN No. S/K14S/20

本摘要圖於2017年9月22日擬備
EXTRACT PLAN PREPARED ON 22.9.2017

參考編號 REFERENCE No. M/K14S/17/80

Attachment II of
MPC Paper No. 7/17



圖例 NOTATION

ZONES 地帶

COMMERCIAL	C	商業
RESIDENTIAL (GROUP A)	R(A)	住宅（甲類）
RESIDENTIAL (GROUP B)	R(B)	住宅（乙類）
GOVERNMENT, INSTITUTION OR COMMUNITY	G/IC	政府、機構或社區
OPEN SPACE	O	休憩用地
OTHER SPECIFIED USES	OU	其他指定用途
GREEN BELT	GB	綠化地帶

COMMUNICATIONS 交通

RAILWAY AND STATION	車站 STATION	鐵路及車站
RAILWAY AND STATION (UNDERGROUND)	車站 STATION	鐵路及車站（地下）
RAILWAY AND STATION (ELEVATED)	車站 STATION	鐵路及車站（高架）
MAJOR ROAD AND JUNCTION		主要道路及路口
ELEVATED ROAD		高架道路

MISCELLANEOUS 其他

BOUNDARY OF PLANNING SCHEME		規劃範圍界線
URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA		市區重建局發展計劃圖範圍
BUILDING HEIGHT CONTROL ZONE BOUNDARY		建築物高度管制區界線
MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)	100	最高建築物高度（在主水平基準上若干米）
PETROL FILLING STATION	P F S	加油站

土地用途及面積一覽表 SCHEDULE OF USES AND AREAS

USES	大約面積及百分率 APPROXIMATE AREA & %		用途
	公頃 HECTARES	% 百分率	
COMMERCIAL	1.21	0.31	商業
RESIDENTIAL (GROUP A)	137.73	35.55	住宅（甲類）
RESIDENTIAL (GROUP B)	14.46	3.73	住宅（乙類）
GOVERNMENT, INSTITUTION OR COMMUNITY	44.93	11.60	政府、機構或社區
OPEN SPACE	41.43	10.69	休憩用地
OTHER SPECIFIED USES	46.82	12.09	其他指定用途
GREEN BELT	28.50	7.36	綠化地帶
NULLAH	0.09	0.02	明渠
MAJOR ROAD ETC.	67.17	17.34	主要道路等
URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREA	5.06	1.31	市區重建局發展計劃圖範圍
TOTAL PLANNING SCHEME AREA	387.40	100.00	規劃範圍總面積

夾附的《註釋》屬這份圖則的一部分，
現經修訂並按照城市規劃條例第5條展示。

THE ATTACHED NOTES ALSO FORM PART OF THIS PLAN AND HAVE BEEN AMENDED FOR EXHIBITION UNDER SECTION 5 OF THE TOWN PLANNING ORDINANCE

核准圖編號 S/K14S/20 的修訂

AMENDMENT TO APPROVED PLAN No. S/K14S/20

AMENDMENT EXHIBITED UNDER SECTION 5 OF THE TOWN PLANNING ORDINANCE — 按照城市規劃條例第5條展示的修訂

AMENDMENT ITEM A — 修訂項目A項

（參看附表）
(SEE ATTACHED SCHEDULE)

按照城市規劃條例第5條展示的
核准圖編號 S/K14S/20 的修訂
AMENDMENT TO APPROVED PLAN No. S/K14S/20 EXHIBITED UNDER SECTION 5 OF THE TOWN PLANNING ORDINANCE ON

....
SECRETARY
TOWN PLANNING BOARD
城市規劃委員會秘書

香港城市規劃委員會依據城市規劃條例擬備的觀塘南部（九龍規劃區第14區部分）分區計劃大綱圖

TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD

KOWLOON PLANNING AREA No. 14 (PART) - KWUN TONG (SOUTH) - OUTLINE ZONING PLAN

SCALE 1:5000 比例尺

METRES 100 0 200 400 600 800 METRES

規劃署遵照城市規劃委員會指示擬備
PREPARED BY THE PLANNING DEPARTMENT UNDER THE DIRECTION OF THE TOWN PLANNING BOARD

圖則編號 PLAN No. S/K14S/20A

KOWLOON PLANNING AREA NO. 14 (PART)

DRAFT ~~APPROVED~~ KWUN TONG (SOUTH) OUTLINE ZONING PLAN NO. S/K14S/20*A*

(Being ***a Draft*** ~~an Approved~~ Plan for the Purposes of the Town Planning Ordinance)

NOTES

(N.B. These form part of the Plan)

(1) These Notes show the uses or developments on land falling within the boundaries of the Plan which are always permitted and which may be permitted by the Town Planning Board, with or without conditions, on application. Where permission from the Town Planning Board for a use or development is required, the application for such permission should be made in a prescribed form. The application shall be addressed to the Secretary of the Town Planning Board, from whom the prescribed application form may be obtained.

(2) Any use or development which is always permitted or may be permitted in accordance with these Notes must also conform to any other relevant legislation, the conditions of the Government lease concerned, and any other Government requirements, as may be applicable.

(3) (a) No action is required to make the existing use of any land or building conform to this Plan until there is a material change of use or the building is redeveloped.

(b) Any material change of use or any other development (except minor alteration and/or modification to the development of the land or building in respect of the existing use which is always permitted) or redevelopment must be always permitted in terms of the Plan or, if permission is required, in accordance with the permission granted by the Town Planning Board.

(c) For the purposes of subparagraph (a) above, "existing use of any land or building" means –

(i) before the publication in the Gazette of the notice of the first statutory plan covering the land or building (hereafter referred as 'the first plan'),

- a use in existence before the publication of the first plan which has continued since it came into existence; or
- a use or a change of use approved under the Buildings Ordinance which relates to an existing building; and

(ii) after the publication of the first plan,

- a use permitted under a plan which was effected during the effective period of that plan and has continued since it was effected; or
- a use or a change of use approved under the Buildings Ordinance which relates to an existing building and permitted under a plan prevailing at the time when the use or change of use was approved.

(4) Except as otherwise specified by the Town Planning Board, when a use or material change of use is effected or a development or redevelopment is undertaken, as always permitted in terms of the Plan or in accordance with a permission granted by the Town Planning Board, all permissions granted by the Town Planning Board in respect of the site of the use or material change of use or development or redevelopment shall lapse.

(5) Road junctions, alignments of roads and railway tracks, and boundaries between zones may be subject to minor adjustments as detailed planning proceeds.

(6) Temporary uses (expected to be 5 years or less) of any land or building are always permitted as long as they comply with any other relevant legislation, the conditions of the Government lease concerned, and any other Government requirements, and there is no need for these to conform to the zoned use or these Notes. For temporary uses expected to be over 5 years, the uses must conform to the zoned use or these Notes.

(7) The following uses or developments are always permitted on land falling within the boundaries of the Plan except where the uses or developments are specified in Column 2 of the Notes of individual zones:

(a) provision, maintenance or repair of plant nursery, amenity planting, open space, rain shelter, refreshment kiosk, road, bus/public light bus stop or lay-by, cycle track, Mass Transit Railway station entrance, Mass Transit Railway structure below ground level, taxi rank, nullah, public utility pipeline, electricity mast, lamp pole, telephone booth, telecommunications radio base station, automatic teller machine and shrine;

(b) geotechnical works, local public works, road works, sewerage works, drainage works, environmental improvement works, marine related facilities, waterworks (excluding works on service reservoir) and such other public works co-ordinated or implemented by Government; and

(c) maintenance or repair of watercourse and grave.

(8) In any area shown as ‘Road’, all uses or developments except those specified in paragraph (7) above and those specified below require permission from the Town Planning Board:

toll plaza, on-street vehicle park and railway track.

(9) Unless otherwise specified, all building, engineering and other operations incidental to and all uses directly related and ancillary to the permitted uses and developments within the same zone are always permitted and no separate permission is required.

(10) In these Notes, “existing building” means a building, including a structure, which is physically existing and is in compliance with any relevant legislation and the conditions of the Government lease concerned.

KOWLOON PLANNING AREA NO. 14 (PART)

DRAFT ~~**APPROVED**~~ **KWUN TONG (SOUTH)**
OUTLINE ZONING PLAN NO. S/K14S/20*A*

Schedule of Uses

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OTHER SPECIFIED USES	12
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COMMERCIAL (1)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Commercial Bathhouse/Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Use (not elsewhere specified) Information Technology and Telecommunications Industries Institutional Use (not elsewhere specified) Library Market Off-course Betting Centre Office Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus of Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Recyclable Collection Centre Religious Institution Research, Design and Development Centre School Shop and Services Social Welfare Facility (excluding those involving residential care) Training Centre Utility Installation for Private Project	Broadcasting, Television and/or Film Studio Cargo Handling and Forwarding Facility Government Refuse Collection Point Hospital Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Wholesale Trade

Planning Intention

This zone is intended primarily for commercial developments, which may include shop, services, place of entertainment and eating place serving the needs of local workers.

(Please see next page)

COMMERCIAL (1) (Cont'd)

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 12.0, and the maximum building heights, in terms of metres above Principal Datum, as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.

(2) In determining the maximum plot ratio for the purposes of paragraph (1) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(3) Where the permitted plot ratio as defined in Building (Planning) Regulations is permitted to be exceeded in circumstances as set out in Regulation 22(1) or (2) of the said Regulations, the plot ratio for the building on land to which paragraph (1) applies may be increased by the additional plot ratio by which the permitted plot ratio is permitted to be exceeded under and in accordance with the said Regulation 22(1) or (2), notwithstanding that the relevant maximum plot ratio specified in paragraph (1) above may thereby be exceeded.

(4) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio/building height restrictions stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

RESIDENTIAL (GROUP A)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot	Commercial Bathhouse/Massage Establishment
Flat	Eating Place
Government Refuse Collection Point (on land designated "Residential (Group A)3" only)	Educational Institution
Government Use (not elsewhere specified)	Exhibition or Convention Hall
House	Government Refuse Collection Point ***(not elsewhere specified)***
Library	Hospital
Market	Hotel
Place of Recreation, Sports or Culture	Institutional Use (not elsewhere specified)
Public Clinic	Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
Public Transport Terminus of Station (excluding open-air terminus or station)	Office
Residential Institution	Petrol Filling Station
School (in free-standing purpose-designed building only)	Place of Entertainment
Social Welfare Facility	Private Club
Utility Installation for Private Project	Public Convenience
	Public Transport Terminus of Station (not elsewhere specified)
	Public Utility Installation
	Public Vehicle Park (excluding container vehicle)
	Religious Institution
	School (not elsewhere specified)
	Shop and Services
	Training Centre

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

In addition, the following uses are always permitted (a) on the lowest three floors of a building, taken to include basements; or (b) in the purpose designed non-residential portion of an existing building, both excluding floors containing wholly or mainly car parking, loading/unloading bays and/or plant room:

Eating Place
Educational Institution
Institutional Use (not elsewhere specified)
Off-course Betting Centre
Office
Place of Entertainment
Private Club
Public Convenience
Recyclable Collection Centre
School
Shop and Services
Training Centre

Planning Intention

This zone is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest three floors of a building or in the purpose-designed non-residential portion of an existing building.

Remarks

(1) On land designated "Residential (Group A)" ***and "Residential (Group A)3"***, no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in the plot ratio for the building upon development and/or redevelopment in excess of 7.5 for a domestic building or 9.0 for a building that is partly domestic and partly non-domestic, or the plot ratio of the existing building, whichever is the greater. Except where the plot ratio is permitted to be exceeded under paragraphs (9) and/or (10) hereof, under no circumstances shall the plot ratio for the domestic part of any building, to which this paragraph applies, exceed 7.5.

(2) On land designated "Residential (Group A)" ***and "Residential (Group A)3"***, for a non-domestic building to be erected on the site, the maximum plot ratio shall not exceed 9.0 except where the plot ratio is permitted to be exceeded under paragraphs (9) and/or (10) hereof.

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

Remarks (Cont'd)

(3) On land designated "Residential (Group A)1", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum domestic gross floor area of 134,252m^2.

(4) On land designated "Residential (Group A)2", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum domestic and non-domestic plot ratio of 4.5 and 1.5 respectively, and the maximum building height of 150 metres above Principal Datum (mPD), or the plot ratio and height of the existing building, whichever is the greater.

(5) For the purpose of paragraphs (1) and (4), on land designated "Residential (Group A)" ~~and~~, "Residential (Group A)2" ***and "Residential (Group A)3"***, no addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the relevant maximum domestic and/or non-domestic plot ratio(s), or the domestic and/or non-domestic plot ratio(s) of the existing building, whichever is the greater, subject to, as applicable –

(a) the plot ratio(s) of the existing building shall apply only if any addition, alteration and/or modification to or redevelopment of an existing building is for the same type of building as the existing building, i.e. domestic, non-domestic, or partly domestic and partly non-domestic building; or

(b) the maximum domestic and/or non-domestic plot ratio(s) stated in paragraphs (1) and (4) above shall apply if any addition, alteration and/or modification to or redevelopment of an existing building is not for the same type of building as the existing building, i.e. domestic, non-domestic, or partly domestic and partly non-domestic building.

(6) On land designated "Residential (Group A)" abutting both Hiu Ming Street and Hiu Kwong Street ***and land designated "Residential (Group A)3"***, no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum building height, in terms of mPD, as stipulated on the Plan, or the height of the existing building, whichever is the greater.

(7) In determining the relevant maximum plot ratio for the purposes of paragraphs (1), (2) and (4) above, area of any part of the site that is occupied or intended to be occupied by free-standing purpose-designed buildings (including both developed on ground and on podium level) solely for accommodating Government, institution or community facilities including school(s) as may be required by Government shall be deducted in calculating the relevant site area.

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

Remarks (Cont'd)

(8) In determining the relevant maximum plot ratio/gross floor area for the purposes of paragraphs (1) to (4) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(9) Where the permitted plot ratio as defined in Building (Planning) Regulations is permitted to be exceeded in circumstances as set out in Regulation 22(1) or (2) of the said Regulations, the plot ratio/gross floor area for the building on land to which paragraphs (1), (2), (3) or (4) above applies may be increased by the additional plot ratio by which the permitted plot ratio is permitted to be exceeded under and in accordance with the said Regulation 22(1) or (2), notwithstanding that the relevant maximum plot ratio specified in paragraph (1) above may thereby be exceeded.

(10) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio/gross floor area/building height restrictions stated in paragraphs (1) to (4) and (6) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

RESIDENTIAL (GROUP B)

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

Planning Intention

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

(Please see next page)

RESIDENTIAL (GROUP B) (Cont'd)

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 5.0, or the plot ratio of the existing building, whichever is the greater.

(2) In determining the relevant maximum plot ratio for the purposes of paragraph (1), any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(3) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio restriction stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

GOVERNMENT, INSTITUTION OR COMMUNITY

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot	Animal Boarding Establishment
Animal Quarantine Centre (in Government building only)	Animal Quarantine Centre (not elsewhere specified)
Broadcasting, Television and/or Film Studio	Columbarium
Cable Car Route and Terminal Building	Correctional Institution
Eating Place (Canteen, Cooked Food Centre only)	Crematorium
Educational Institution	Driving School
Exhibition or Convention Hall	Eating Place (not elsewhere specified)
Field Study/Education/Visitor Centre	Flat
Government Refuse Collection Point	Funeral Facility
Government Use (not elsewhere specified)	Helicopter Landing Pad
Hospital	Helicopter Fuelling Station
Institutional Use (not elsewhere specified)	Holiday Camp
Library	Hotel
Market	House
Place of Recreation, Sports or Culture	Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
Public Clinic	Off-course Betting Centre
Public Convenience	Office
Public Utility Installation	Petrol Filling Station
Public Vehicle Park (excluding container vehicle)	Place of Entertainment
Recyclable Collection Centre	Private Club
Religious Institution	Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation
Research, Design and Development Centre	Refuse Disposal Installation (Refuse Transfer Station only)
School	Residential Institution
Service Reservoir	Sewage Treatment/Screening Plant
Social Welfare Facility	Shop and Services
Training Centre	Utility Installation for Private Project
Wholesale Trade	Zoo

Planning Intention

This zone is intended primarily for the provision of Government, institution or community facilities serving the needs of the local residents and/or a wider district, region or the territory. It is also intended to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments.

(Please see next page)

GOVERNMENT, INSTITUTION OR COMMUNITY (Cont'd)

Remarks

(1) On land designated "Government, Institution or Community (1)", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum building heights, in terms of metres above Principal Datum, as stipulated on the Plan, or the height of the existing building, whichever is the greater.

(2) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the building height restrictions stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

OPEN SPACE

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Aviary Barbeque Spot Field Study/Education/Visitor Centre Park and Garden Pavilion Pedestrian Area Picnic Area Playground/Playing Field Promenade Public Convenience Sitting Out Area Zoo	Cable Car Route and Terminal Building Eating Place Government Refuse Collection Point Government Use (not elsewhere specified) Holiday Camp Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Transport Terminus of Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Religious Institution Service Reservoir Shop and Services Tent Camping Ground Utility Installation for Private Project

Planning Intention

This zone is intended primarily for the provision of outdoor open-air public space for active and/or passive recreational uses serving the needs of local residents as well as the general public.

OTHER SPECIFIED USES

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board

For "Business" only

Schedule I: for open-air development or for building other than industrial or industrial-office building[@]

Ambulance Depot
Commercial Bathhouse/Massage Establishment
Eating Place
Educational Institution
Exhibition or Convention Hall
Government Use (Police Reporting Centre, Post Office only)
Information Technology and Telecommunications Industries
Institutional Use (not elsewhere specified)
Library
Non-polluting Industrial Use (excluding industrial undertakings involving the use/storage of Dangerous Goods[△])
Off-course Betting Centre
Office
Place of Entertainment
Place of Recreation, Sports or Culture
Private Club
Public Clinic
Public Convenience
Public Transport Terminus of Station
Public Utility Installation
Public Vehicle Park (excluding container vehicle)
Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation
Recyclable Collection Centre
Religious Institution
Research, Design and Development Centre
School (excluding free-standing purpose-designed building and kindergarten)
Shop and Services
Training Centre
Utility Installation for Private Project
Broadcasting, Television and/or Film Studio
Bus Depot (on land designated "OU (Business 1)" only)
Cargo Handling and Forwarding Facility
Government Refuse Collection Point
Government Use (not elsewhere specified)
Hotel
Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
Non-polluting Industrial Use (not elsewhere specified)
Petrol Filling Station
School (not elsewhere specified)
Social Welfare Facility (excluding those involving residential care)
Warehouse (excluding Dangerous Goods Godown)
Wholesale Trade

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board

For "Business" only (Cont'd)

Schedule II: for industrial or industrial-office building[@]

Ambulance Depot
Art Studio (excluding those involving direct provision of services or goods)
Cargo Handling and Forwarding Facility (not elsewhere specified)
Eating Place (Canteen only)
Government Refuse Collection Point
Government Use (not elsewhere specified)
Information Technology and Telecommunications Industries
Non-polluting Industrial Use (excluding industrial undertakings involving the use/storage of Dangerous Goods[△])
Office (excluding those involving direct provision of customer services or goods)
Public Convenience
Public Transport Terminus of Station
Public Utility Installation
Public Vehicle Park (excluding container vehicle)
Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation
Recyclable Collection Centre
Research, Design and Development Centre
Shop and Services (Motor-vehicle Showroom on ground floor, Service Trades only)
Utility Installation for Private Project
Warehouse (excluding Dangerous Goods Godown)

Broadcasting, Television and/or Film Studio
Bus Depot (on land designated "OU (Business 1)" only)
Cargo Handling and Forwarding Facility (Container Freight Station, free-standing purpose-designed Logistics Centre only)
Industrial Use (not elsewhere specified)
Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
Off-course Betting Centre
Office (not elsewhere specified)
Petrol Filling Station
Place of Recreation, Sports or Culture ***(not elsewhere specified)***
Private Club
Shop and Services (not elsewhere specified) (ground floor only except Ancillary Showroom[#] which may be permitted on any floor)
Vehicle Repair Workshop
Wholesale Trade

In addition, for building without industrial undertakings involving offensive trades or the use/storage of Dangerous Goods[△], the following use is always permitted:

Office

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

For "Business" only (Cont'd)

In addition, the following uses are always permitted in the purpose-designed non-industrial portion on the lower floors (except basements and floors containing wholly or mainly car parking, loading/unloading bays and/or plant room) of an existing building, provided that the uses are separated from the industrial uses located above by a buffer floor or floors and no industrial uses are located within the non-industrial portion:	In addition, the following uses may be permitted with or without conditions on application to the Town Planning Board in the purpose-designed non-industrial portion on the lower floors (except basements and floors containing wholly or mainly car parking, loading/unloading bays and/or plant room) of an existing building, provided that the use is separated from the industrial uses located above by a buffer floor or floors and no industrial uses are located within the non-industrial portion:
Commercial Bathhouse/Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Institutional Use (not elsewhere specified) Library Off-course Betting Centre Office Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Religious Institution School (excluding kindergarten) Shop and Services Training Centre	Social Welfare Facility (excluding those involving residential care)

[@] An industrial or industrial-office building means a building which is constructed for or intended to be used by industrial or industrial-office purpose respectively as approved by the Building Authority.

[△] Dangerous Goods refer to substances classified as Dangerous Goods and requiring a licence for their use/storage under the Dangerous Goods Ordinance (Cap. 295).

[#] Ancillary Showroom requiring planning permission refers to showroom use of greater than 20% of the total usable floor area of an industrial firm in the same premises or building.

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

For "Business" only (Cont'd)

Planning Intention

This zone is intended primarily for general business uses. A mix of information technology and telecommunications industries, non-polluting industrial, office and other commercial uses are always permitted in new "business" buildings. Less fire hazard-prone office use that would not involve direct provision of customer services or goods to the general public is always permitted in existing industrial or industrial-office buildings.

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 12.0, and the maximum building heights, in terms of metres above Principal Datum, as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.

(2) In determining the maximum plot ratio for the purposes of paragraph (1) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(3) Where the permitted plot ratio as defined in Building (Planning) Regulations is permitted to be exceeded in circumstances as set out in Regulation 22(1) or (2) of the said Regulations, the plot ratio for the building on land to which paragraph (1) applies may be increased by the additional plot ratio by which the permitted plot ratio is permitted to be exceeded under and in accordance with the said Regulation 22(1) or (2), notwithstanding that the relevant maximum plot ratio specified in paragraph (1) above may thereby be exceeded.

(4) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio/building height restrictions stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
For "Petrol Filling Station" only	
Petrol Filling Station	Government Use ~~(not elsewhere specified)~~ Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily for the provision of petrol filling stations serving the needs of local residents as well as the general public.

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
For "Sewage Treatment Plant" only	
Sewage Treatment/Screening Plant	Government Use (not elsewhere specified) Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily for the provision of sewage treatment/screening plant serving the needs of the general public.

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum building height, in terms of metres above Principal Datum, as stipulated on the Plan, or the height of the existing building, whichever is the greater.

(2) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio/building height restrictions stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

GREEN BELT

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Agricultural Use Barbecue Spot Government Use (Police Reporting Centre only) Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Public Convenience Tent Camping Ground Wild Animals Protection Area	Animal Boarding Establishment Broadcasting, Television and/or Film Studio Cable Car Route and Terminal Building Columbarium (within a Religious Institution or extension of existing Columbarium only) Crematorium (within a Religious Institution or extension of existing Crematorium only) Field Study/Education/Visitor Centre Flat Government Refuse Collection Point Government Use (not elsewhere specified) Helicopter Landing Pad Holiday Camp House Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Place of Recreation, Sports or Culture Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation Religious Institution Residential Institution School Service Reservoir Social Welfare Facility Utility Installation for Private Project Zoo

Planning Intention

The planning intention of this zone is primarily for the conservation of the existing natural environment amid the built-up areas/at the urban fringe, to safeguard it from encroachment by urban type development, and to provide additional outlets for passive recreational activities. There is a general presumption against development within this zone.

KOWLOON PLANNING AREA NO. 14 (PART)

DRAFT ~~APPROVED~~ KWUN TONG (SOUTH) OUTLINE ZONING PLAN NO. S/K14S/20*A*

EXPLANATORY STATEMENT

KOWLOON PLANNING AREA NO. 14 (PART)

DRAFT ~~**APPROVED**~~ **KWUN TONG (SOUTH)**
OUTLINE ZONING PLAN NO. S/K14S/20*A*

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KOWLOON PLANNING AREA NO. 14 (PART)

DRAFT ~~**APPROVED**~~ **KWUN TONG (SOUTH)**
OUTLINE ZONING PLAN NO. S/K14S/20*A*

(Being ***a Draft*** ~~an Approved~~ Plan for the Purposes of the Town Planning Ordinance)

EXPLANATORY STATEMENT

Note: For the purposes of the Town Planning Ordinance, this statement shall not be deemed to constitute a part of the Plan.

1. INTRODUCTION

This explanatory statement is intended to assist an understanding of the ***draft*** ~~approved~~ Kwun Tong (South) Outline Zoning Plan (OZP) No. S/K14S/20***A*** (the Plan). It reflects the planning intention and objectives of the Town Planning Board (the Board) for the various land use zonings of the Plan.

2. AUTHORITY FOR THE PLAN AND PROCEDURES

2.1 On 9 January 1959, the draft Ngau Tau Kok Village – Proposed Layout Plan No. LK 15/24/2, being the first statutory plan covering the western part of the Kwun Tong area, was gazetted under section 5 of the Town Planning Ordinance (the Ordinance). On 9 June 1959, the then Governor-in-Council (G in C) under the then section 8(1) of the Ordinance, approved the draft Layout Plan. In January 1964, the approved Layout Plan was referred back to the Board for amendment. On 25 September 1964, the Ngau Tau Kok Village Layout Plan No. LK 14/17, which replaced the Plan No. LK 15/24/2, was gazetted under section 5 of the Ordinance, and was subsequently approved by the then G in C on 9 March 1965 under the then section 8(1) of the Ordinance.

2.2 On 9 May 1984, the Board was directed under section 3 of the Ordinance to prepare a draft statutory plan for the Kwun Tong and Lam Tin areas. On 26 August 1986, the approved Ngau Tau Kok Village Layout Plan was referred back to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. On 11 December 1987, the draft Kwun Tong OZP No. S/K14/1 was exhibited for public inspection under section 5 of the Ordinance. The OZP was subsequently amended twice and exhibited for public inspection under section 6(7) and 7 of the Ordinance. On 1 May 1990, the then G in C agreed to refer the OZP No. S/K14/4 to the Board for further consideration and amendment under section 9(1)(c) of the Ordinance.

2.3 Under the power delegated by the then Governor, the then Secretary for Planning, Environment and Lands, directed the Board on 3 February 1993, under section 3(1)(a) of the Ordinance, to prepare a separate draft OZP for the Anderson Road Quarries and the adjoining area to tie in with the rehabilitation scheme of Anderson Road Quarries.

In this connection, the land north of Sau Mau Ping Road was excised from the draft Kwun Tong OZP and the OZP was re-named as the draft Kwun Tong (South) OZP. On 21 May 1993, the draft Kwun Tong (South) OZP No. S/K14S/1 was exhibited for public inspection under section 5 of the Ordinance. The OZP was subsequently amended four times and exhibited for public inspection under section 7 of the Ordinance.

2.4 On 14 September 1999, the Chief Executive in Council (CE in C), under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/6. On 19 September 2000, the CE in C referred the approved OZP No. S/K14S/6 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was subsequently amended once and exhibited for public inspection under section 5 of the Ordinance.

2.5 On 10 July 2001, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/8. On 25 September 2001, the CE in C referred the approved OZP No. S/K14S/8 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was subsequently amended once and exhibited for public inspection under section 5 of the Ordinance.

2.6 On 16 March 2004, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/10. On 5 October 2004, the CE in C referred the approved OZP No. S/K14S/10 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was subsequently amended three times and exhibited for public inspection under section 5 or 7 of the Ordinance.

2.7 On 27 March 2007, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/14. On 5 June 2007, the CE in C referred the approved OZP No. S/K14S/14 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance.

2.8 On 5 October 2007, the draft Kwun Tong (South) OZP No. S/K14S/15, mainly indicating two areas of the Plan replaced by the draft Urban Renewal Authority (URA) Kwun Tong Town Centre ***(KTTC)*** – Main Site Development Scheme Plan (DSP) No. S/K14S/URA1/1 and the draft URA ***KTTC*** ~~Kwun Tong Town Centre~~ – Yuet Wah Street Site DSP No. S/K14S/URA2/1, was exhibited for public inspection under section 5 of the Ordinance.

2.9 On 15 July 2008, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/16. On 7 February 2012, the CE in C referred the approved OZP No. S/K14S/16 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The OZP was subsequently amended once and was exhibited for public inspection under section 5 of the Ordinance.

2.10 On 4 June 2013, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/18. On 1

April 2014, the CE in C referred the approved OZP No. S/K14S/18 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance.

~~2.11 On 18 July 2014, the draft Kwun Tong (South) OZP No. S/K14S/19, incorporating amendments mainly to rezone a site abutting both Hiu Ming Street and Hiu Kwong Street from "Open Space" ("O") and "Green Belt" ("GB") to "Residential (Group A)" ("R(A)"), was exhibited for public inspection under section 5 of the Ordinance. A total of 1,473 representations and one comment were received. After giving consideration to the representations and comment on 13 February 2015 and 24 April 2015, the Board agreed to note one supportive representation and decided not to uphold the remaining 1,472 adverse representations and that no amendment should be made to the draft OZP to meet the representations.~~

~~2.12~~2.11 On 21 July 2015, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Kwun Tong (South) OZP, which was subsequently renumbered as S/K14S/20. ~~On 21 August 2015, the approved Kwun Tong (South) OZP No. S/K14S/20 (the Plan) was exhibited for public inspection under section 9(5) of the Ordinance.~~ ***On 4 October 2016, the CE in C referred the approved Kwun Tong (South) OZP No. S/K14S/20 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The reference back of the OZP was notified in the Gazette on 14 October 2016 under section 12(2) of the Ordinance.***

2.12 On XX November 2017, the draft Kwun Tong (South) OZP No. S/K14S/20A (the Plan), incorporating amendments including the rezoning of a site at Ting On Street from "Government, Institution or Community" ("G/IC") to "Residential (Group A)3" and inclusion of 'Art Studio (excluding those involving direct provision of services or goods)' as a Column 1 use in Schedule II for industrial or industrial-office (I-O) building of the "Other Specified Uses" annotated "Business" ("OU(B)") zone was exhibited for public inspection under section 5 of the Ordinance.

3. OBJECT OF THE PLAN

3.1 The object of the Plan is to indicate the broad land use zonings and major transport network so that development and redevelopment of land within the Planning Scheme Area (the Area) can be put under statutory planning control.

3.2 The Plan is to illustrate the broad principles of development ***and to provide guidance for more detailed planning within the Area***. It is a small-scale plan and ***the*** transport alignments and boundaries between ***the*** land use zones may be subject to minor adjustments as detailed planning proceeds.

3.3 Since the Plan is to show broad land use zonings, there would be situations in which small strips of land not intended for building development purposes and carry no development right under the lease, such as the areas restricted for garden, slope maintenance and access road purposes, are included in the residential zones. The general principle is that such areas should not be taken into account in plot ratio and site coverage calculations. Development within residential zones should be

restricted to building lots carrying development right in order to maintain the character and amenity of the Kwun Tong (South) area and not to overload the road network in this area.

4. NOTES OF THE PLAN

4.1 Attached to the Plan is a set of Notes which shows the types of uses or developments which are always permitted within the Area and in particular zones and which may be permitted by the Board, with or without conditions, on application. The provision for application for planning permission under section 16 of the Ordinance allows greater flexibility in land use planning and control of development to meet changing needs.

4.2 For the guidance of the general public, a set of definitions that explains some of the terms used in the Notes may be obtained from the Technical Services Division of the Planning Department and can be downloaded from the Board's website at http://www.info.gov.hk/tpb.

5. THE PLANNING SCHEME AREA

5.1 The Area is located in East Kowloon within the Kwun Tong District. It is bounded by Hoi Bun Road, Shun Yip Street and Ngau Tau Kok Road to the west; Chun Wah Road and Sau Mau Ping Road to the north; and Lei Yue Mun Road and King Yip Street to the south. The eastern boundary largely follows the district administrative boundary for the Kwun Tong District. The boundary of the Area is shown in a heavy broken line on the Plan and includes the two areas designated as "URA ***KTTC*** ~~Kwun Tong Town Centre~~ DSP Area". It covers about 387 hectares of land.

5.2 The Area can be separated into two portions in terms of land use. The portion to the south-west of Kwun Tong Road, which was formed by reclamation in the 1950~~'~~s, is ***the Kwun Tong Business Area (KTBA), which is one of the major employment centres in the main urban*** ~~a long-established industrial~~ area. The ~~existing industrial~~ area is ~~however~~ under transformation to meet the changing needs of the ***non-polluting*** industrial and business sectors. The portion to the north~~-~~east of Kwun Tong Road and Lei Yue Mun Road is predominantly occupied by residential developments, particularly public housing estates.

6. POPULATION

Based on ~~According to~~ the 2011 Population Census, the population of the Area was ***estimated by the Planning Department as*** about 307,900 persons. If the planned uses on the ***Plan*** ~~OZP~~ are developed, the planned population ***of*** ~~for~~ the ***Area*** ~~area~~ would be about 318,700 persons. ~~The increase in population is mainly due to the planned development projects of the URA Kwun Tong Town Centre in the Area.~~

7. BUILDING HEIGHT RESTRICTIONS IN KWUN TONG BUSINESS AREA

7.1 As revealed from the public consultations undertaken under the Study of Urban Design Guidelines for Hong Kong (2003), the community was in general support of the initiative to instigate height control in the statutory plans to protect views to the ridgelines from popular vantage points. In taking this forward, proposals for building height restriction for the Kwun Tong and Kowloon Bay Business Areas were prepared and put forward for public consultation between May and July 2004. The proposals were generally supported by the community as a means to preserve the views to the ridgelines and to enhance the urban environment.

7.2 In main, the building height restrictions are to preserve the views to the Kowloon Ridgelines from the vantage points recommended in the Urban Design Guidelines Study, taking into account the local area context and the need to maintain visually compatible building masses in the wider setting. There are four height bands – 100 metres above Principal Datum (mPD), 130mPD, 160mPD and 200mPD ***imposed for the commercial, business and industrial developments*** in ***KTBA*** ~~the Kwun Tong Business Area~~, for preserving views to the ridgelines and reinforcing discernible district centre character at the main activity node of the Kwun Tong Mass Transit Railway (MTR) Station and ***KTTC*** ~~Town Centre~~. These height bands help achieve a stepped height profile for visual permeability, reduce the solidness of ***KTBA*** ~~Kwun Tong Business Area~~ and maintain a more intertwined relationship with the Victoria Harbour edge. Sharp contrast and significant visual barrier to adjacent major residential development such as Laguna City is also avoided.

7.3 Building height restrictions for Government, institution, community (GIC) and utility sites in ***KTBA*** ~~Kwun Tong Business Area~~ in height bands of 15mPD and 40mPD are also incorporated to provide visual relief to the high density environment of ***KTBA*** ~~the Kwun Tong Business Area~~.

7.4 A minor relaxation clause in respect of the building height restrictions is incorporated into the Notes of the Plan in order to provide incentive for development/redevelopment with design merits/planning gains. Each application for minor relaxation of building height restriction ***under section 16 of the Ordinance*** will be considered on its own merits and the relevant criteria for consideration of such relaxation are as follows:

(a) amalgamating smaller sites for achieving better urban design and local area improvements;

(b) accommodating the bonus plot ratio granted under the Buildings Ordinance in relation to surrender/dedication of land/area for use as public passage/street widening;

(c) providing better streetscape/good quality street level public urban space;

(d) providing separation between buildings to enhance air ventilation and visual permeability;

(e) accommodating building design to address specific site constraints in achieving the permissible plot ratio under the Plan; and

(f) other factors such as the need for tree preservation, innovative building design and planning merits that would bring about improvements to townscape and amenity of the locality, provided that no adverse landscape and visual impacts would be resulted from the innovative building design.

7.5 However, for existing buildings where the building height has already exceeded the maximum building height restrictions in terms of mPD and/or number of storeys as stipulated on the Plan, there is a general presumption against such application for minor relaxation unless under exceptional circumstances.

7.6 Building height restrictions have also been incorporated for some development sites outside KTBA. The criteria as mentioned in paragraphs 7.4 and 7.5 above are also relevant for consideration of application for minor relaxation of the building height restrictions for these sites.

8. LAND USE ZONINGS

8.1 "Commercial (1)" ("C(1)") – Total Area 1.21 ha

8.1.1 This zone is intended primarily for commercial developments, which may include shop, service, place of entertainment and eating place serving the needs of the local workers.

8.1.2 There are a total of seven sites under "C(1)" zoning. They are located in ***KTBA*** ~~Kwun Tong Business Area~~ to the south of Kwun Tong Road. These commercial sites, which are either located near road junctions or major transport interchanges, have been developed to provide commercial facilities for the workers. Multi-storey car parks are incorporated in some of the developments.

8.1.3 A maximum plot ratio of 12.0 is imposed on these commercial sites so as not to aggravate the existing traffic problems in the Area. In the circumstances set out in Regulation 22 of the Building (Planning) Regulations, the above specified maximum plot ratio may be increased by what is permitted to be exceeded under Regulation 22. This is to maintain flexibility for unique circumstances such as dedication of part of a site for road widening or public uses.

8.1.4 Developments and redevelopments in the "C(1)" sites are subject to maximum building heights of 100mPD or 130mPD as stipulated on the Plan. ~~Minor relaxation of the building height restrictions may be considered by the Board through the planning permission system pursuant to paragraphs 7.4 and 7.5 above. Each application for minor relaxation of building height restriction will be considered on its own merits.~~

8.1.5 ***To provide design/architectural flexibility, minor*** ~~Minor~~ relaxation of the plot ratio***/building height*** restriction***s*** may be considered by the Board on application under section 16 of the Ordinance. ***The criteria given in paragraphs 7.4 and 7.5 above would be relevant for the assessment of minor relaxation of building height restriction. However, for any existing building with plot ratio already***

exceeding the restriction as stipulated in the Notes, there is a general presumption against such application for minor relaxation of the plot ratio restriction unless under exceptional circumstances. Each application will be considered on its own merits.

8.2 "Residential (Group A)" ("R(A)") – Total Area ***137.73*** ~~137.51~~ ha

8.2.1 This zone is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest three floors of a building or in the purpose-designed non-residential portion of an existing building.

8.2.2 Existing public rental housing ***(PRH)*** estates in the Area include Lok Wah ***(North and South)*** Estate, Upper Ngau Tau Kok Estate, ~~Garden Estate,~~ Sau Mau Ping Estate, ***Sau Mau Ping South Estate,*** Wo Lok Estate, Wan Hon Estate, Tsui Ping ***(North and South)*** Estate, Kai Tin Estate, Ping Tin Estate, On Tin Estate, Hing Tin Estate, Lam Tin Estate and Tak Tin Estate. Existing Home Ownership Scheme developments include Lok Nga Court, Lei On Court, On Kay Court, Chun Wah Court, Cheung Wo Court, Hong Tin Court, Hong Yat Court, Hiu Lai Court, Po Pui Court, Hong Wah Court and Hong Ying Court. ***Existing public housing developments under the Hong Kong Housing Society include Lotus Tower and Kwun Tong Garden Estate Phase II.***

8.2.3 A site along Sau Ming Road, which is zoned "R(A)2", ***being developed*** ~~proposed~~ for ~~public rental housing (~~PRH~~)~~ cum community hall development. To prevent massive and out-of-context development, the site is subject to a maximum building height of 150mPD as stated in the Notes, a maximum domestic plot ratio of 4.5 and a maximum non-domestic plot ratio of 1.5. Various ~~Government, institution or community (~~GIC~~)~~ facilities including a community hall, a small public library and a study area would be provided within the development. A site abutting both Hiu Ming Street and Hiu Kwong Street is ***reserved*** ~~proposed~~ for PRH development and is subject to maximum building heights of 80mPD (for the upper platform and its adjoining slope) and 150mPD (for the lower platform) as shown on the Plan. ***A site abutting both Ting On Street and Ngau Tau Kok Road, which is zoned "R(A)3", is proposed for public housing development and is subject to a maximum building height of 110mPD as shown on the Plan. To increase building permeability and allow more wind penetration, two setbacks shall be provided along Ting On Street and Ngau Tau Kok Road and a stepped terrace architectural design shall be adopted for minimizing the podium structure at the "R(A)3" site. In order to minimize any adverse air ventilation impact on the surrounding low- to medium-rise developments, a quantitative air ventilation assessment is required at the detailed design stage to explore more opportunity on scheme improvement.***

8.2.4 A wide range of GIC facilities such as primary schools, community halls, children and youth centres, elderly centres, local open space, indoor games halls, markets and shopping centres are provided within these estates to serve the residents. Some of the community facilities are free-standing within the

housing estates. They are as follows:

Name of Estate	No. of Free-standing Facilities
Lok Wah Estate	2 primary schools and 1 community centre
Tsui Ping Estate	1 primary school
Lam Tin Estate ~~(adjacent to Phases 7&8)~~	1 municipal services building
Ping Tin Estate	2 primary schools
Sau Mau Ping Estate	4 ~~existing~~ primary schools ~~and 1 community hall~~
Upper Ngau Tau Kok Estate	1 primary school

These school and GIC facilities, existing or planned, are zoned "R(A)" on the OZP so as to allow for flexibility in the comprehensive planning and development of these large residential sites.

8.2.5 Existing private residential developments include those ***to the north/west of KTTC*** ~~in the vicinity of the town centre of the Area, between Kwun Tong Road and Ngau Tau Kok Road~~, as well as those at ***On Wah Street, Ting On Street,*** Hiu Kwong Street ***and Kai Tin Road***.

8.2.6 In the consideration of the overall transport, environmental and infrastructural constraints as well as the adequacy in the provision of community facilities envisioned in the Kowloon Density Study Review, completed in early 2002, developments or redevelopments within this zone are subject to specific control on plot ratios except otherwise specified in the Notes, i.e. a maximum plot ratio of 7.5 for a domestic building and a maximum plot ratio of 9.0 for a partly domestic and partly non-domestic building. In calculating the gross floor areas for these developments/redevelopments, the sites for free-standing purpose-designed buildings that are used solely for accommodating school or other GIC facilities, including those located on ground and on building podium, are not to be taken as parts of the site.

8.2.7 The northern part of Sceneway Garden which is a comprehensive private residential development above the public transport interchange is within the "R(A)1" zone. The southern part of the development is built on top of the Lam Tin MTR Station on the other side of Lei Yue Mun Road which falls within the Cha Kwo Ling, Yau Tong, Lei Yue Mun OZP, that is outside the Plan area. A landscaped deck is built over the road linking the two parts of the development together. To ensure that the intensity of this private development is under statutory planning control, a maximum domestic gross floor area is imposed under the Notes of the Plan.

8.2.8 In the circumstances set out in Regulation 22 of the Building (Planning) Regulations, the above specified maximum plot ratios or gross floor areas may be increased by what is permitted to be exceeded under Regulation 22. This is to maintain flexibility for unique circumstances such as dedication of part of a site for road widening or public uses.

8.2.9 To provide design/*architectural* flexibility, minor relaxation of the plot ratio/gross floor area/building height restrictions may be considered by the Board on application under section 16 of the Ordinance. ***The criteria given in paragraphs 7.4 and 7.5 above would be relevant for the assessment of minor relaxation of building height restriction.*** However, for any existing building with plot ratio/gross floor area already exceeding the ~~plot ratio/gross floor area~~ restriction**s** as stipulated in the Notes, there is a general presumption against such application for minor relaxation ***of the plot ratio/gross floor area restrictions*** unless under exceptional circumstances. Each application will be considered on its own merits.

8.3 "Residential (Group B)" ("R(B)") – Total Area 14.46 ha

8.3.1 This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Board. The private residential developments along Kung Lok Road***, Hong Lee Road,*** ~~and~~ Yuet Wah Street***, Tin Heung Street and upper sections of Hong Ning Road and Hip Wo Street*** fall within this zone.

8.3.2 Developments within this zone are subject to a maximum plot ratio of 5.0 in order to restrain traffic growth which will otherwise overload the existing and planned road network.

8.3.3 ***To provide design/architectural flexibility, minor*** ~~Minor~~ relaxation of the plot ratio restriction may be considered by the Board on application under section 16 of the Ordinance. However, for any existing building with plot ratio already exceeding the ~~plot ratio~~ restriction as stipulated in the Notes, there is a general presumption against such application for minor relaxation ***of the plot ratio restriction*** unless under exceptional circumstances. Each application will be considered on its own merits.

8.4 "Government, Institution or Community" ("G/IC") – Total Area ***44.93*** ~~45.15~~ ha

8.4.1 This zone is intended primarily for the provision of GIC facilities serving the needs of the local residents and/or a wider district, region or the territory. It is also intended to provide land for uses directly related to or in support of the work of the Government, organizations providing social services to meet community needs, and other institutional establishments.

8.4.2 Major existing GIC facilities include United Christian Hospital at Sau Nga Road, Ngau Tau Kok Jockey Club Clinic ***at Ting On Street***, Lam Tin Polyclinic at Kai Tin Road, ***Ngau Tau Kok Government Offices at On Wah Street, Hong Kong Public Records Building at Tsui Ping Road, various social welfare facilities*** ~~Kwong Yam Home for the Aged~~ at Kung Lok Road, ***Kwun Tong Road, Fuk Tong Road and Fuk Ning Road, two vocational training centres at Wan Hon Street and Tsui Ping Road, two Municipal Services Buildings at*** Ngau Tau Kok ***Road and Shui Wo Street*** ~~Complex, Lam Tin Complex~~, two divisional police stations at Hong Ning Road and Lei Yue Mun Road, two ***sub-divisional*** fire stations at Hoi Yuen Road and ***Kai Tin*** ~~Tseung Kwan O~~ Road, ***a Disciplined***

Services Quarters at Wo Hong Path, a ~~two~~ market complex~~es~~ at ***Yee On Street*** ~~Ngau Tau Kok Road and Shui Wo Street~~, ***a sports centre*** ~~an indoor games hall~~ at Hiu Kwong Street, a swimming pool complex ***at Tsui Ping Road*** ~~near Kwun Tong Recreation Ground~~, service reservoirs, ***pumping stations, electricity substations, telephone exchanges, community centres, churches, a higher educational facility*** and a number of primary and secondary schools.

8.4.3 Developments and redevelopments in the "G/IC(1)" sites in ***KTBA*** ~~Kwun Tong Business Area~~ to the south of Kwun Tong Road are subject to a maximum building height of 15mPD or 40mPD as stipulated on the Plan.~~—~~

~~8.4.3~~8.4.4 ***To provide design/architectural flexibility, minor*** ~~Minor~~ relaxation of the building height restriction~~s~~ may be considered by the Board ***on application under section 16 of the Ordinance*** ~~through the planning permission system~~ pursuant to ***the criteria given in*** paragraphs 7.4 and 7.5 above. Each application ~~for minor relaxation of building height restriction~~ will be considered on its own merits.

8.5 "Open Space" ("O") – Total Area 41.43 ha

8.5.1 This zone is intended primarily for the provision of outdoor open-air public space for active and/or passive recreational uses serving the needs of local residents as well as the general public.

8.5.2 Major existing open spaces in the Area include ***Kwun Tong Recreation Ground,*** Hong Ning Road Recreation Ground, Sau Ming Road Park, ~~Sau Nga Road Recreation Ground,~~ Hoi Bun Road Park, Lam Tin Park, Hong Ning Road Park, the playgrounds at ***On Tak Road,*** Kung Lok Road, Yuet Wah Street, ***Sau Nga Road,*** Hiu Ming Street, Tsun Yip Street, and a number of ~~smaller~~ rest gardens***/sitting-out areas*** at various locations. ~~The Kwun Tong Recreation Ground at Kwun Tong Road is currently being redeveloped.~~ Additional sites have been reserved at Kai Tin Road and Tseung Kwan O Road.

8.5.3 Soccer pitches and play-areas are also provided on top of the decked service reservoirs and local open spaces are provided within public housing estates and comprehensive private housing developments.

8.6 "Other Specified Uses" ("OU") – Total Area 46.82 ha

8.6.1 This zoning covers land allocated for specific uses which include Business, Petrol Filling Station and Sewage Treatment Plant.

8.6.2 About 45.57 ha of land is zoned "OU" annotated "Business" ("OU(B)"). This zone is intended primarily for general business uses. A mix of information technology and telecommunications industries, non-polluting industrial, office and other commercial uses are always permitted in new "business" buildings. Less fire hazard-prone office use that would not involve direct provision of customer services or goods to the general public is always permitted in existing

industrial and ~~industrial-office (~~I-O~~)~~ buildings. As it is not possible to phase out existing polluting and hazardous industrial uses all at once on land zoned "OU(B)", it is necessary to ensure compatibility of the uses within the same industrial or I-O building and in ***KTBA*** ~~the Kwun Tong Business Area~~ until the whole area is transformed to cater for the new non-polluting business uses. The setting back of buildings to cater for the future increase in traffic demand may also be required. The setback requirements are stipulated in departmental outline development plans and enforced through lease modification process where appropriate. ~~Development within this zone is subject to a maximum plot ratio of 12.0 as specified in the Notes. Reference should be made to the relevant Town Planning Board Guidelines.~~

8.6.3 A site at How Ming Street to the northwest of Tsun Yip Street Playground is zoned ~~"OU" annotated "Business 1" (~~"OU(B)1"~~)~~. It is also for general employment uses with the same planning intention as stated in paragraph 8.6.2. However, in order to make provision for redevelopment of the ***vacated*** ~~existing~~ bus depot if necessary, 'Bus Depot' use is included in Column 2 of the "OU(B)1" zone to allow the Board to scrutinise any submitted proposals to its satisfaction.

8.6.4 ***Developments and redevelopments in the "OU(B)" and "OU(B)1" sites are subject to a maximum plot ratio of 12.0. Reference should be made to the relevant Town Planning Board Guidelines.*** In the circumstances set out in Regulation 22 of the Building (Planning) Regulations, the above specified maximum plot ratio may be increased by what is permitted to be exceeded under Regulation 22. This is to maintain flexibility for unique circumstances such as dedication of part of a site for road widening or public uses.

8.6.5 The sewage treatment plant at Wing Yip Street zoned "OU" annotated "Sewage Treatment Plant" is intended primarily for the provision of sewage treatment/screening plant serving the needs of the general public.

8.6.6 Developments and redevelopments in the "OU(B)" and "OU(B)1" sites are subject to maximum building heights ranging from 100mPD to 200mPD ***as stipulated on the Plan***. Development and redevelopment in the "OU" annotated "Sewage Treatment Plant" site is subject to a maximum building height of 15 mPD. ~~Minor relaxation of the building height restrictions may be considered by the Board through the planning permission system pursuant to paragraphs 7.4 and 7.5 above. Each application for minor relaxation of building height relaxation will be considered on its own merits.~~

8.6.7 ~~Developments and redevelopments in the "OU(B)" and "OU(B)1" sites are subject to maximum plot ratio of 12.~~ ***To provide design/architectural flexibility, minor*** ~~Minor~~ relaxation of the plot ratio***/building height*** restriction***s*** may be considered by the Board on application under section 16 of the Ordinance. ***The criteria given in paragraphs 7.4 and 7.5 above would be relevant for the assessment of minor relaxation of building height restriction.*** However, for any existing building with plot ratio already exceeding the ~~plot ratio~~ restriction as stipulated in the Notes, there is a general presumption against

such application for minor relaxation ***of the plot ratio restriction*** unless under exceptional circumstances. Each application will be considered on its own merits.

8.6.8 The petrol filling station***s*** at Kwun Tong Road ***and Hiu Kwong Street*** zoned "OU" annotated "Petrol Filling Station" ~~is~~ ***are*** intended primarily for the provision of petrol filling stations serving the needs of local residents as well as the general public.

8.7 "Green Belt" ("GB") – Total Area 28.50 ha

8.7.1 The planning intention of this zone is primarily for the conservation of the existing natural environment amid the built-up areas/at the urban fringe, to safeguard it from encroachment by urban type development, and to provide additional outlets for passive recreational activities. There is a general presumption against development within this zone. Development within this zone will be carefully controlled and development proposals will be assessed on individual merits taking into account the relevant Town Planning Board Guidelines.

8.7.2 It includes ***the closed*** Ma Yau Tong West and Ma Yau Tong Central landfill sites. Restoration works for recreational after-use are currently in progress. Part of Lam Tin Park and hillslopes at various locations are also within this zone.

9. COMMUNICATIONS

9.1 Roads

9.1.1 The primary distributors in the Area include Kwun Tong By-pass and Tseung Kwan O Road. Kwun Tong By-pass along the south-western boundary of the Area links Eastern Harbour Crossing in the south-east and Tseung Kwan O Tunnel via Tseung Kwan O Road in the north-east. This By-pass also forms part of the road network connecting the Eastern Harbour Crossing to the approaches of the Tate's Cairn Tunnel portal at Diamond Hill. Tseung Kwan O Road links Tseung Kwan O New Town via Tseung Kwan O Tunnel, which forms the principal access from the main urban areas to the New Town.

9.1.2 Major district distributors in the Area include Kwun Tong Road, Lei Yue Mun Road and Wai Yip Street. These distributors, running in a north-west and south-east direction, connect the Area, in particular ***KTBA*** ~~Kwun Tong Business Area~~, with Central and West Kowloon. The business area is also served by local distributors including Hung To Road, Lai Yip Street, Tsun Yip Street and Hoi Yuen Road.

9.1.3 Sau Mau Ping Road, Tsui Ping Road, Hip Wo Street and Hong Ning Road are the major local distributors in the north-eastern part of the Area. The main function of these roads is to serve the residents of the public and private housing developments in the Area. Sau Mau Ping Road at the northern edge of the

Area together with Shun Lee Tsuen Road and Po Lam Road also provide external linkages to Central and West Kowloon to the west, and Sai Kung and Tseung Kwan O to the east.

9.2 Mass Transit Railway

The existing MTR Kwun Tong Line runs along Kwun Tong Road and Lei Yue Mun Road on elevated tracks. It connects Tseung Kwan O Line with interchange at MTR Yau Tong Station for harbour crossing. There are two stations in the Area, namely, MTR Ngau Tau Kok Station and MTR Kwun Tong Station.

9.3 Public Transport

Apart from the MTR, the Area is also well served by various modes of public transport including bus and public light bus. A number of bus termini are conveniently located to serve the residential***, commercial, business*** and industrial developments in the Area.

10. URBAN RENEWAL AUTHORITY DEVELOPMENT SCHEME PLAN AREAS

10.1 Two areas have been designated as "URA DSP Areas". The land use zonings of the areas are depicted on the relevant URA DSPs and they will be implemented by the URA.

10.2 The DSP for ***KTTC*** ~~Kwun Tong Town Centre~~ – Main Site covers an area of about 4.63 ha. The site is intended for comprehensive development/redevelopment of the area for residential, Government and/or commercial uses with the provision of open space and other community and supporting facilities. The DSP for ***KTTC*** ~~Kwun Tong Town Centre~~ – Yuet Wah Street Site covers an area of about 0.43 ha. The site is ***developed as a high-*** ~~intended primarily for medium-~~density residential development~~s~~ with ***Kwun Tong Community Health Centre in the podium serving the wider district*** ~~the provision of GIC facilities~~.

10.3 On 15 July 2008, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft URA ***KTTC*** ~~Kwun Tong Town Centre~~ – Main Site DSP and Yuet Wah Street Site DSP which were subsequently renumbered as S/K14S/URA1/2 and S/K14S/URA2/2 respectively. On 12 September 2008, the approved URA ***KTTC*** ~~Kwun Tong Town Centre~~ – Main Site DSP No. S/K14S/URA1/2 and Yuet Wah Street Site DSP No. S/K14S/URA2/2 were exhibited for public inspection under section 9(5) of the Ordinance.

11. UTILITY SERVICES

11.1 The Area is well served with piped water supply, drainage and sewerage systems. Electricity, gas and telephone services are also available. No difficulty is envisaged in meeting the future requirements. Improvement works to the existing drainage and sewerage systems may be required for the possible change of stormwater flow due to topographic changes arising from development.

11.2 The project of "East Kowloon Sewerage Improvement and Pollution Control" undertaken by the Drainage Services Department to improve the existing sewerage system and abate the pollution problem in East Kowloon has been completed.

12. IMPLEMENTATION

12.1 Although existing uses non-conforming to the statutory zoning are tolerated, any material change of use and any other development/redevelopment must be always permitted in terms of the Plan or, if permission is required, in accordance with the permission granted by the Board. The Board has published a set of guidelines for the interpretation of existing use in the urban and new town areas. Any person who intends to claim an "existing use right" should refer to the guidelines and will need to provide sufficient evidence to support his claim. The enforcement of the zonings mainly rests with the Buildings Department, the Lands Department and the various licensing authorities.

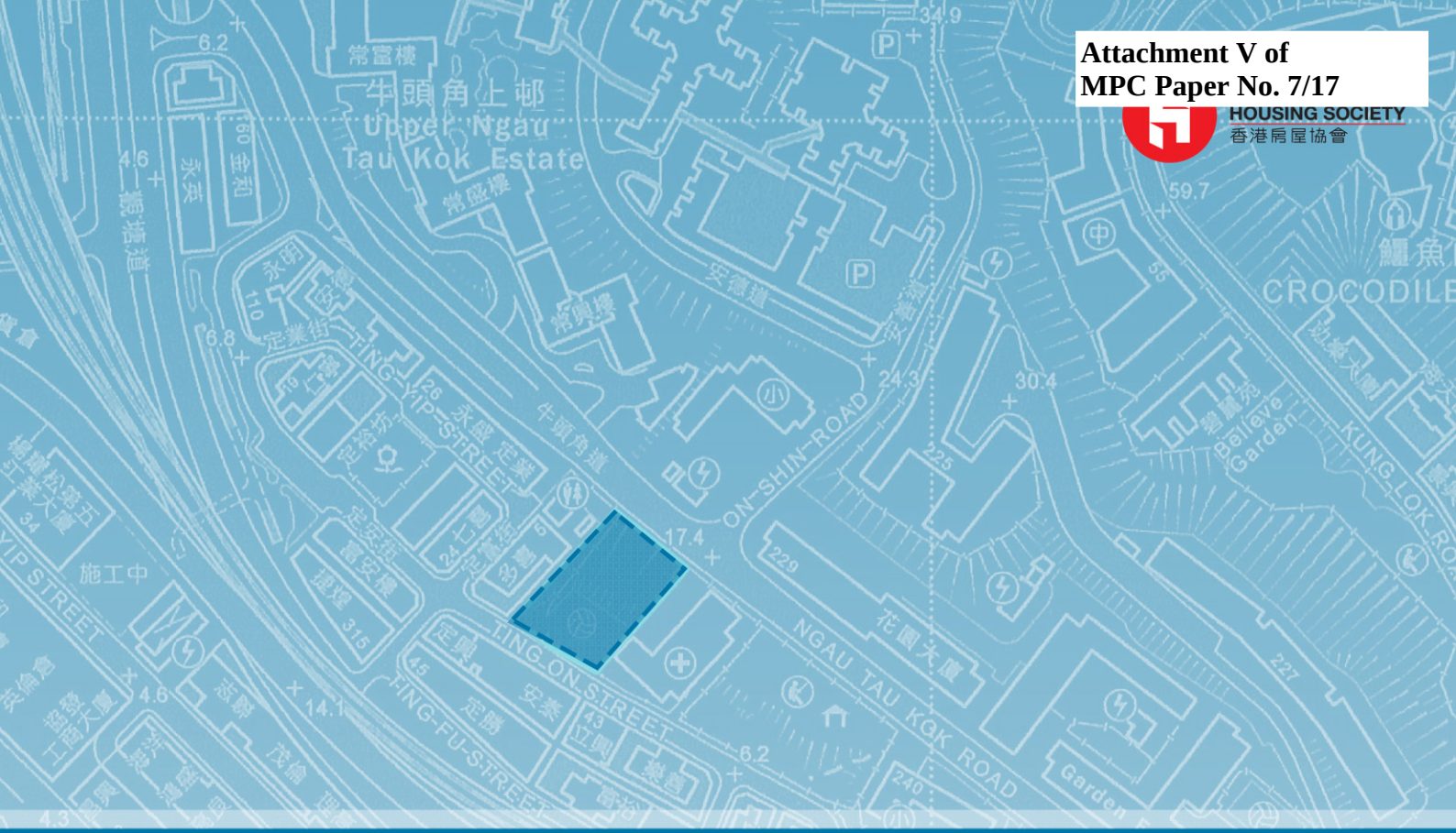
12.2 The Plan provides a broad land use framework within which more detailed non-statutory plans for the Area are prepared by the Planning Department. These detailed plans are used as the basis for public works planning and site reservation within the Government. Disposal of sites is undertaken by the Lands Department. Public works projects are co-ordinated by the Civil Engineering and Development Department in conjunction with the client departments and the works departments, such as the Highways Department and the Architectural Services Department. In the course of implementation of the Plan, the Kwun Tong District Council would also be consulted as appropriate.

12.3 Planning applications to the Board will be assessed on individual merits. In general, the Board, in considering the planning applications will take into account all relevant planning considerations which may include departmental outline development plans and guidelines published by the Board. The outline development plans are available for public inspection at the Planning Department. Guidelines published by the Board are available from the Board's website, the Secretariat of the Board and the Technical Services Division of the Planning Department. Application forms and Guidance Notes for planning applications can be downloaded from the Board's website and are available from the Secretariat of the Board and the Technical Services Division and relevant District Planning Office of the Planning Department. Applications should be supported by such materials as the Board thinks appropriate to enable it to consider the applications.

TOWN PLANNING BOARD
***NOVEMBER 2017*~~AUGUST 2015~~**

Attachment V of
MPC Paper No. 7/17

HOUSING SOCIETY
香港房屋協會



Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

FINAL PLANNING STATEMENT REPORT

October 2017

Urbis Limited
in association with

CYS Associates (HK) Limited
Meinhardt (C&S) Limited
Ramboll Environ Hong Kong Limited
OZZO Technology (HK) Limited
AIM Group Limited
Rider Levett Bucknall Limited
Wu Hill & Associates Limited

CONSULTANCY SERVICES FOR PREPARATION OF

AMENDMENT OF PLAN UNDER THE TOWN PLANNING ORDINANCE FOR PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

Revised Planning Statement Report

(Final)

(Doc. Ref. No.: 171902)

URBIS LIMITED

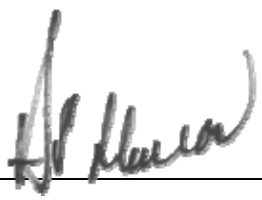
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Approved for Issue by:		Oct 2017
	PM	Date

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1. INTRODUCTION AND BACKGROUND

1.1 PUBLIC RENTAL HOUSING DEVELOPMENT UNDER THE POLICY ADDRESS

1.1.1 Public Rental Housing (PRH) is the most common type of public housing development in Hong Kong, PRH are rented at favourable rates to low-income residents. They are managed by either the Hong Kong Housing Authority (HA) or the Hong Kong Housing Society (HKHS). Low-income eligibility criteria for PRH and subsidized-sale flats vary between families, the elderly and individual applicants. The provision of PRH which is aimed at those with genuine housing needs has always been at the heart of the Government's housing policy. According to HA[1], as at end-June 2017, there were about 150,200 general applications for PRH, and about 127,600 non-elderly one-person applications under the Quota and Points System. The average waiting time for general applicants was 4.7 years. Among them, the average waiting time for elderly one-person applicants was 2.6 years. Approximately 2.12 million (29.1%) of the population in Hong Kong currently lives in PRH[2].

1.1.2 On 16 December 2014, the Transport and Housing Bureau released the "Long Term Housing Strategy" (LTHS) to address the structural issues pertaining to Hong Kong's housing problems. The Government has put forward a new strategic direction and laid down guiding principles for housing policies, including to plan early for land supply for production of both public and private housing, and to provide PRH units to serve as a "safety net" for the Hong Kong citizens who cannot afford private rental housing.

1.1.3 Furthermore, as stated in the "Long Term Housing Strategy - Implementation Milestones as at December 2014", a total housing supply target has been increased from 470,000 units to 480,000 units for the ten-year period from 2015-16 to 2024-25. In both the 2015 and 2016 Policy Addresses, the Chief Executive reiterated that housing is still the most important livelihood issue and the Government has committed to address the housing shortage with a PRH production target of about 20,000 units each year for the following decade.

1.1.4 According to the Government, raising flat supply through the increase in land supply has been its top policy priority in ensuring a healthy and stable development of the property market. One of the key initiatives to achieve the set target is through rezoning of land. In 2013, the Government identified 65 sites zoned "Green Belt" ("GB"), "Government, Institution or Community" ("G/IC") and other government sites and industrial sites[3] for short to medium-term measures for optimising the existing land use and increasing the residential land supply. The site that is the subject of this application is one of the aforementioned identified 65 sites.

1.1.5 Given its role as one of the principal public housing providers in Hong Kong, HKHS has taken the initiative to review the development feasibility of the subject application site as a contribution towards helping to meet the housing needs both within the district and territorial levels.

1.2 HONG KONG HOUSING SOCIETY AND THE RENTAL HOUSING INITIATIVES

1.2.1 HKHS has been a dedicated housing provider since being founded in 1948. HKHS is constantly involved in the identification of the housing requirements of different sectors of the community and developing appropriate housing options. Since its inception, the Society has developed over 68,000 units that fall under a number of separate categories of accommodation. These include Rental Estates, Rural Public Housing, Flat-for-Sale accommodation, Sandwich Class Housing, Urban Improvement accommodation, Full Market Value Developments, Urban Renewal Projects and Senior Citizen Residences Schemes[4].

[1] Hong Kong Housing Authority, 2015, http://www.housingauthority.gov.hk/en/about-us/publications-and-statistics/prh-applications-average-waiting-time/
[2] Hong Kong Housing Authority, 2015, Housing in Figures 2015
[3] Legislative Council Secretariat, 2013, Land Supply in Hong Kong
[4] Hong Kong Housing Society, 2014, http://www.hkhs.com/eng/business/index.asp

1.2.2 Currently, there are a total of over 32,000 units in 20 estates that are managed and developed by HKHS, housing more than 100,000 tenants.

1.3 PREVIOUS SUBMISSION AND PUBLIC ENGAGEMENT

1.3.1 In August 2016, Planning Statement and relevant technical assessments was completed and submitted to relevant parties for consideration. Local stakeholders including District Councillors were also consulted on the proposed Ting On Street Development, major views were collected and the way forward including the following:

- Upgrading the existing sub-standard Refuse Collection Point (RCP) of a size about 76 sqm into a district standard RCP with an area of about 308 sqm is proposed to be incorporated into the PRH Development;
- Accommodation of a half-size basketball court / multi-purpose playground within the site for public use;
- A covered activities area of about 120 sqm is proposed for public enjoyment; and
- A neighbourhood elderly centre to meet the growing demand in the area.

1.3.2 Hence, this Planning Statement has been updated to incorporate the above way forward suggestions with revised supporting technical assessments for Town Planning Board's consideration.

1.4 PLANNING REZONING PROPOSAL

1.4.1 With respect to the above, the HKHS has appointed Urbis Limited to study the feasibility of a proposed PRH development within the subject application site.

1.4.2 This supporting document seeks the Town Planning Board's (TPB) agreement on the proposed amendment to the approved Kwun Tong (South) Outline Zoning Plan (KT(S) OZP) No. S/K14S/20 and to confirm its acceptability that the scheme is suitable for exhibition under Section 5 of the Town Planning Ordinance (the Ordinance). The proposed amendment requires that the Subject Site (the Site) which is currently zoned "G/IC" with an area[5] of 4,697 sqm and about 2,219 sqm can be re-designated for the PRH Development along Ting On Street in Ngau Tau Kok. This will require the Site to be rezoned from "G/IC" to "Residential (Group A)" ("R(A)"). This will augment the planned PRH development and, more fundamentally, enable the decanting of tenants affected by the redevelopment of Kwun Tong Garden Estate II (KTGE II). KTGE II was completed in 1966/67 whish is continuously ageing and an early planning for redevelopment is necessary. In the past few years, HKHS could not identify suitable rehousing site in the vicinity to facilitate the redevelopment because there are no vacant sites available or suitable for housing developments. Although TOS site is relatively small in size for providing only about 380 rental flats, these would still be sufficient to decant one block of rental flats within KTGE II so as to kick start the redevelopment in phases. In addition, the TOS site is in close proximity to KTGE II and would be able to provide rehousing units to meet the strong aspiration of the existing tenants for local or insitu rehousing. Therefore, it is currently the only available site suitable for decanting tenants affected by the said redevelopment.

1.4.3 The application site has a total site area of about 2,219 sqm (Figure 1.2) and is presently occupied by the Ting On Street Playground and a RCP. The former currently contains an existing public basketball court (the court is about 608 sqm in area and has at present an 81.5% utilization rate[6] during opening hours which are between 7:00am – 11:00pm) and a landscaped area / amenity area. The seamless re-provisioning of these facilities in parallel with the development of the proposed PRH is proposed. This will ensure that it is possible to maintain a facility that is available and in continuous service for the use of the local community.

[5] The subject site falls within a portion of the "G/IC" site with a total site area of 4,697m².
[6] 2015 Average Utilization Rate of Ting On Street Playground Basketball Court by LCSD

1.5 STRUCTURE OF THE SUPPLEMENTARY PLANNING STATEMENT

1.5.1 This report provides a comprehensive overview of the proposals and the rationale and need for their development and details all relevant planning, urban design and technical considerations. Chapter 2 details the Site context, Chapter 3 elaborates on the design consideration of the proposed development, Chapter 4 summarises the technical assessments, and Chapter 5 outlines the planning justifications for the application.

2. THE APPLICATION SITE AND ITS SURROUNDING CONTEXT

2.1 THE SITE

2.1.1 The Site is currently known as the Ting On Street Playground, one of the outdoor basketball courts in Kwun Tong managed by the Leisure and Cultural Services Department (LCSD) (Figure 1.1) with an existing sub-standard RCP located at the western corner of the Site. Ngau Tau Kok Road and Ting On Street respectively abut its north-eastern and south-western perimeters of the Playground.

2.2 SURROUNDING CONTEXT

2.2.1 Surrounding Land Use

2.2.2 The Site falls within an area zoned "G/IC" on the approved KT(S) OZP No. S/K14S/20 and with a total area of about 2,219 sqm. The surrounding land uses are dominated by "R(A)" zones on the north-eastern side and the "Other Specified Uses" annotated "Business" ("OU(B)") zones on the further southern side. The Site is principally surrounded by the following land uses and developments (Figures 1.2 and 1.3):

- The KTGE II and Upper Ngau Tau Kok Estate which are zoned as "R(A)" are located to the east and north of the Site;
- Ngau Tau Kok Road is located to the immediate northeast of the Site;
- The Ngau Tau Kok Public Toilet / Bath House within the same "G/IC" zone are located to the immediate northwest of the Site;
- Two residential buildings which is zoned "R(A)", namely Dor Hei Building and Yick Fu House, are located to the immediate west of the Site;
- Ting On Street is located to the immediate southwest of the Site;
- A residential cluster which is zoned "R(A)" is located to the further west and south of the Site;
- The 7-storey Ngau Tau Kok Jockey Club Clinic within the same "G/IC" zone is located to the immediate southeast of the Site; and
- The Ngau Tau Kok Road Playground which is zoned as "Open Space" ("O") is located to the further southeast of the Site.

2.2.3 Surrounding Development Density

2.2.4 Being located within a neighbourhood which is predominantly zoned as "R(A)", the Site is surrounded by existing residential developments (with a maximum plot ratio of 7.5 for a domestic development or 9.0 for a non-domestic/composite development on the approved KT(S) OZP No. S/K14S/20, or the PR of the existing development, whichever is the greater). It also lies in close proximity to various community supporting facilities zoned "G/IC" or "O" without any statutory PR restriction stipulated on the OZP. Further to the south of the Site, the land is zoned as "OU(B)" with a maximum plot ratio of 12.0 as stated on the OZP.

2.2.5 Surrounding Topography

2.2.6 As noted above, Ngau Tau Kok Road is located to the northeast of the Site whilst; Ting On Street is located to the southwest of the Site. The ground elevation increases gradually from the southwest to the northeast. The Ngau Tau Kok Jockey Club Clinic is located to the southeast of the Site. Mau Wu Shan is located approximately 2.8km to the east of the Site. The hill rises to an elevation of some 220m. Kowloon Peak, which is located approximately 2.1km to the north of the Site, rises to an elevation of some 580m (Figure 1 in Annex C).

2.2.7 Surrounding Building Height Profile

2.2.8 There are numerous mid-rise developments to the south and west of the Site (e.g. the On Tai Building located to the south, the Ting Hing Building to the southwest and Kathy's Court to the west). There is also a high-rise PRH development located to the north of the Site (i.e. Upper Ngau Tau Kok Estate including Sheung Fu House, Sheung Shing House and Sheung Hing House rise to 129.3mPD, Sheung Yat House rises to 137.9mPD, whilst Sheung Mun House rises to 142.9mPD). The existing overall building height profile descends from the North to the South. To the east of the Site is another medium-rise PRH development (i.e. KTGE II including Hay Cheuk Lau and Yin Chee Lau rises to 38.3mPD and 67.1mPD respectively) (Figure 1.3).

2.3 EXISTING TOPOGRAPHY AND ACCESS

2.3.1 The existing Site consists of two portions. The southern portion is comprised of an existing public basketball court and a sub-standard RCP established at about 7.2mPD which is broadly at the same level with Ting On Street. As noted earlier the court and RCP occupy an area of about 608 sqm and 76 sqm respectively. The court is flat and has no existing buildings or structures. The northern portion is comprised of a green slope with vegetation and some trees. It occupies an area of about 1,535 sqm. It is located at a maximum elevation of about 17.2mPD which is broadly level with Ngau Tau Kok Road. It is currently occupied by hard and soft landscape features and a footpath (Figure 1.4).

2.3.2 The Site can be accessed through both Ting On Street and Ngau Tau Kok Road (Figure 1.5). It is readily accessible by various modes of public transport, including numerous franchised bus and Green Minibus services. In addition, the Ngau Tau Kok Mass Transit Railway (MTR) Station is approximately 270m to the southeast of the Site (Figure 1.6).

3. BUILDING AND LANDSCAPE DESIGN OF THE PROPOSED DEVELOPMENT

3.1 SPECIFIC REQUIREMENTS OF HOUSING DEVELOPMENT

3.1.1 The Site is capable of meeting the specific requirements of housing developments, with easy access to nearby open space provisions (Ngau Tau Kok Road Playground, Elegance Road Garden, Ting Yue Square Temporary Sitting-out Area, Kwun Tong Road Sitting-out Area and Ting Fu Street Sitting-out Area. There are also ample recreational facilities, schools and clinics; and a multitude of transport options (public buses, MTR and taxis). The Site falls within a neighbourhood primarily occupied by medium to high-density residential developments, which is adjacent to the Kwun Tong Business Area located to the south of Kwun Tong Road. The proposed housing development would, therefore, be largely compatible with the existing prevailing land uses in proximity to the Site (Figure 1.7).

3.1.2 The key planning and technical considerations that have been addressed by the schematic layouts include:

- To contribute to the resolution of the housing shortage problem by including residential development on the subject Site;
- To meet public aspirations for access to affordable housing;
- To ensure optimisation of development by making due regard to the constraints imposed by the existing traffic conditions but, where possible, resolving these as far as practical;
- To integrate "Government, Institution or Community" ("G/IC") facilities, open space and retail shops within the proposed development to provide convenient and accessible supporting facilities;
- To incorporate landscape treatments that serve to enhance the visual quality and amenity of the development;
- To promote sustainable building design;
- To comply with regulations, standards and guidelines by exploring the use of innovative environmental mitigation measures.

3.2 REGULATORY AND GUIDELINES COMPLIANCE

3.2.1 The proposed development aims to create a harmonious built environment that complies with all the relevant guidelines, regulations and standards. These include conformity with the principles set out in the prevailing KT(S) OZP No. S/K14S/20, the Hong Kong Planning Standards and Guidelines (HKPSG), the Air Pollution Control Ordinance (APCO) Cap 311[7]; the Noise Control Ordinance (NCO) Cap 400; the Practice Note for Authorised Person, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-152[8], the Buildings Ordinance (BO) Cap 123[9] and the Building (Planning) Regulations (B(P)R) Cap 123F etc. These guidelines and ordinances have been used as tools to extract an optimal development arrangement on the Site.

3.3 RECOMMENDED BUILDING DESIGN (ANNEX A)

3.3.1 Proposed Building Design

3.3.2 It is the design intention to optimize as far as possible the use of scarce land resources by designing an efficient public housing development that optimises development potential but at the same time is compliant with all the relevant regulations and statutory requirements. The proposed residential tower has been designed in the form of a cross to assist in the mitigation of noise impacts and to optimise development potential as much as possible. The development form incorporates a reduced aspect blank façade to enable the structure to

[7] The Air Pollution Control Ordinance (Cap. 311) sets out Air Quality Objectives (AQOs) in 2014 and provides for the periodic review of the AQOs at least once every five years with a view to promoting the conservation and best use of air in the public interest.
[8] This practice note promulgates guidelines on building design that will enhance the quality and sustainability of the built environment in Hong Kong.
[9] To provide for the planning, design and construction of buildings and associated works; to make provision for the rendering safe of dangerous buildings and land; to make provision for regular inspections of buildings and the associated repairs to prevent the buildings from becoming unsafe; and to make provision for matters connected therewith.

address noise emissions from the adjacent elevated railway (the MTR Kwun Tong Line). This design measure has been recommended as one mitigation measure that has been adopted to comply with EPD requirements. The utilisation of a cross shaped reduced aspect layout also allows the proposed development to fully comply with EPD requirements. In addition, the first residential floor is proposed at 28.75mPD as an air quality mitigation measure, given that the data assembled in connection with the environmental assessment undertaken for the Site that only domestic use of the development with openable windows located above 28.75mPD would meet the prevailing air quality standards.

3.3.3 Nevertheless, development volume below this level can be utilised for non-domestic development and is accordingly proposed to accommodate a half-size basketball court / multi-purpose playground, open space (including local open space and covered landscape for public enjoyment), "G/IC" facilities, covered activities area and retail shops. Also, shuttle lifts are provided to enable a barrier-free public passageway between the two street levels (the lower Ting On Street and the higher Ngau Tau Kok Road). This accommodation can be jointly used as support facilities for adjoining communities and future residents whilst correspondingly fulfilling the Application Site development requirements stated in Chapter 2. The consequence of the preceding will be that about 21.4m in height of the proposed building will be shared by the proposed non-domestic developments whilst the residential part of the building will rise to some 77.85m. As a result, the proposed Public Housing tower rises to a building height of 31 storeys (i.e. resulting in a combined building height of 106.6mPD, which is still an acceptable level).

3.3.4 Proposed Building Height and the Prevailing Local Building Heights

3.3.5 As mentioned in the description of the prevailing building height profile outlined in Section 2.2.8, the major PRH development located to the north of Ngau Tau Kok Road rises to heights of 130mPD to 143mPD. Conversely the residential buildings bounded by Ngau Tau Kok Road and Kwun Tong Road range in height from 20mPD to 88mPD (Figure 1.3). The building height profile presently descends from the north to the south of the Site. The Proposed Scheme with a building height of 106.6mPD is considered to be broadly compatible with the prevailing building height profile. The proposed development will create and engender a stepped height building profile. The descension in building height will also serve to ensure a degree of visual permeability. Moreover, part of the tower in the Proposed Scheme is relatively close to Ngau Tau Kok Road. It is expected that a downwash wind could be generated, and this would enhance the wind flow at the pedestrian level of Ngau Tau Kok Road. Therefore the disposition of the Proposed Scheme should likely result in positive impact along Ngau Tau Kok Road which is a major design consideration enshrined in the proposed design. In overview, therefore, the proposed building height of no more than 110mPD for the proposed "R(A)" zone is considered to be largely compatible with the adjacent developments (Figure 1.8).

3.3.6 Proposed Building Setback

3.3.7 According to the Noise Impact Assessment, the site is affected by noise impacts. Within close proximity to the Site there are two major traffic noise sources and one railway noise source. One traffic noise source is located to the southwest (Ting On Street) whilst the other is located to the northeast (Ngau Tau Kok Road). The railway track is located 100m to the southwest of the Site. In combination these noise sources have influenced the design measures that have had to be applied to the proposed development and the layout and the orientation of units. Moreover, a 10m wide domestic building setback from Ngau Tau Kok Road and 5m domestic building setback from Ting On Street on the upper floors for residential are recommended for air quality mitigation measures. In addition, the setbacks will also provide greening opportunities for the proposed development. (Annex B and Figure 1.9).

Table 1.1 Proposed Development Parameter (Subject to the detail design)

Development Parameters	Recommended Option (Cross Shape)
Site Area	
Total Site Area	About 2,219 sqm
Site Classification	A
Plot Ratio	
Gross PR (Whole Site)	About 8.134 [<9]
Domestic PR	About 7.017 [<7.5]
Non-domestic PR	About 1.117 [<1.5]
Gross Floor Area	
Domestic GFA	15,570 sqm
Non - Domestic GFA	Retail 1,200 sqm, G/IC 666m² [NOFA 303 sqm]*(i.e. a Neighbourhood Elderly Centre)* Refuse Collection Point 308 sqm Covered Activity Area 120 sqm Covered Carpark 184 sqm [half GFA accountable]
Site Coverage	
Site Coverage Requirement	33.33% / 739.6 sqm
Proposed Site Coverage	586.308 sqm (Comply with BD requirement)
Flat Mix	No. %
1-2 P	162 42.8%
3-4 P	216 57.1%
Total Flat Production	378 100%
Building Height	
Proposed Maximum Height Restriction	106.6mPD
Proposed Building Height - Domestic Part (4th Floor to 33rd Floor)33rd Floor) - Non-Domestic Part 3rd Floor – G/IC Floor 2nd Floor - Commercial Floor / Lift Lobby 1st Floor - Commercial Floor Ground Floor – G/IC Floor / E&M - Transfer Plate - Formation Level	99.25m - 77.85m 33.6m 1-12 Domestic storeys (2.8 m[10]) 44.25m 13-27 Domestic storeys (2.95m) - 21.4m 3.8 5.2 4.5 5.5 - 2.4m - 7.35mPD (Subjected to Detailed Design Development)
Proposed Nos. of Storeys - Nos. of Domestic Storeys - Nos. Non-Domestic Storeys	31 - 27 - 4

[10] It is proposed that 1-12/F will adopt a floor to floor height of 2.8m and 13-27/F will adopt a floor to floor height of 2.95m due to the provision of top hung acoustic windows. Therefore, the proposed building height will rise to 106.6mPD.

Proposed Nos. of Units Units Per Floor	378 14
Parking and Loading/Unloading Provisions	
Parking Provision	Residential: 6 for Private Car (including 1 Accessible Parking Space) 1 for Light Goods Vehicle (LGV) 3 for Motorcycle Commercial: 6 for Private Car
Loading / Unloading Provision	Residential: 1 for Light Goods Vehicle (LGV) Commercial: 1 for Heavy Goods Vehicle (HGV)
Tree Impact	
Number of Existing Trees Number of Proposed Trees to be Felled Number of Proposed Trees Compensatory Ratio	37 37 39 About 1:1
Projected Population	
Population (2.8 People per Flat)[11]	1,058 Persons
Open Space Provision	
HKPSG Requirement:	1,058 sqm
Proposed	1,090 sqm (including about 344 sqm Local Open Space on First Floor and 746 sqm on Second Floor)
Site Coverage of Greenery	
PNAP152 Requirement:	20% Overall with 10% at Primary Zone
Proposed	20% Overall with 20% at Primary Zone

3.4 PROPOSED LANDSCAPE DESIGN (ANNEX B)

3.4.1 Main Pedestrian Circulation Access Points – The main points of access to the development will be from the existing Ting On Street and Ngau Tau Kok Road. The main entry at Ngau Tau Kok Road will be defined by the proposed trees within the Site. The existing barriers between the footpath and the Site along Ting On Street are proposed to be removed in order to enhance the visual appearance and to improve accessibility of the proposed local open space. The proposed trees will be augmented and enhanced with low level planting to create an area of garden for public enjoyment on the second floor of the proposed development (refer to Annex B for Landscape Proposal). The planting will provide visual interest and a degree of softening to the streetscape along the application Site. Circulation paths will be introduced to connect the proposed development with Ngau Tau Kok Road and Ting On Street (Figure 1.5). These will be paved with high quality and durable paving materials. Sufficient outdoor seating will be provided throughout the open space. In order to realise the proposed development, modification of the existing slope will be required. It is estimated that approximately 37 trees will have to be felled (Figure 1.10). Thus, compensatory planting of about 39 trees within the development will be provided (see Annex B for details). In order to comply with

[11] With reference to the available data, the average household sizes for the projected year 2021 are 2.67 (PDZ 117), 2.73 (Kwun Tong District), 2.76 (Metro) and 2.79 (Territory) respectively. http://www.pland.gov.hk/pland_en/info_serv/statistic/tpedm14.html

the fire safety requirements, one Emergency Vehicular Access (EVA) with a minimum of 6m width is located on the second floor (Ngau Tau Kok Road level) of the development. The run-in / run-out at Ngau Tau Kok Road will allow only left-in and left-out movement respectively for emergency vehicle only access (see Annex A for more details of the access arrangement). To enhance the quality of the building and open space for public gathering and enjoyment and to meet the greening and open space requirements, shrub and tree planting has been proposed on the 1st Floor, 2nd Floor and 3rd Floor of the building. The specific planting measures and the design of planting consist of the following:

- 1st Floor – Proposed Open Landscape with sitting-out area on the 1st Floor can be accessible by lifts and staircases from both the Ground Floor and the 2nd Floor to serve the neighbourhood population. Most trees and shrubs will be planted in raised planters along the edge of the podium to provide visual and noise mitigation from the traffic along Ting On Street.
- 2nd Floor – Proposed Open Landscape areas on the 2nd Floor can be accessible directly from Ngau Tau Kok Road and by lifts and staircases connecting to Ting On Street at Ground Floor. The visual appearance of the public realm adjacent to the site is to be enhanced by re-paving the footpath along Ngau Tau Kok Road that abuts the Site. It is proposed that natural granite setts or high quality concrete pavers shall be employed. The paving shall be of the colours which conform to the existing paving in the immediate environment. The proposed local open space at the north-eastern portion of the Site serves as a visual and noise buffer between the proposed development and Ngau Tau Kok Road. The proposed local open space at south-western portion of the Site is formed of outdoor and covered landscape areas which are well connected at the same level. The open space also includes an outdoor basketball court which is easily accessible by ramps and stairs from the covered landscape areas. The covered landscape areas provide all-weather multi-purpose spaces for various types of activities e.g. group exercise and communal gathering. The proposed raised planters will allow sufficient soil depth for planting and will also serve as guardrails. Benches of high quality, durable material are also proposed along the planters to provide sitting space for the public.
- 3rd Floor – A covered landscape area is proposed on the 3rd Floor of the development at the entrance to the proposed "G/IC" facility to provide additional open space for the residents' passive recreational use[12]. The covered landscape areas provide all-weather multi-purpose spaces for various types of activities e.g. group exercise and communal gathering. Shade-tolerant shrubs and groundcovers will be planted in raised planters. An adequate seating area will also be provided within the proposed open space.
- Proposed Plant Species – Small to medium sized trees will be planted in order to provide shade and amenity where possible. The selected species will have limited root systems and will be of small scale to avoid any damage to the building structure. Shrub planting will consist of a combination of indigenous flowering and non-flowering shrubs. The proposed planting will be mostly of indigenous species to minimise maintenance and to promote longevity.

3.5 PROPOSED ACCESS ARRANGEMENT

3.5.1 The immediate vehicular access for the proposed development will be located at Ting On Street. Internal car parking, loading / unloading provisions are situated on the ground floor (Ting On Street level) and the EVA is situated on the 2nd Floor (Ngau Tau Kok Road level) of the development. The run-in / run-out for the EVA at Ngau Tau Kok Road will allow only left-in and left-out movements for emergency vehicles only. A traffic impact assessment has been undertaken to assess the junction performance of the key junctions in the vicinity of the Subject Site (Figure 1.11) and the results are presented in the Traffic Impact Assessment Study Report (Annex J).

3.5.2 The proposed development can be accessed from the wider road network from the northwest via Ngau Tau Kok Road / Ting On Street junction or from the southwest via Kwun Tong Road / Ting Fu Street junction.

[12] Passive recreational activities may include: Elderly exercise equipment, Table Tennis, informal Tai Chi and exercise areas.

However, as Ting On Street operates as a one-way street (traffic moves in a south-eastern direction), all egressing development traffic must join the wider network via the Kwun Tong Road / Ting On Street junction to the southeast of the development. To evaluate the traffic impact of the development, junction performance assessments have been undertaken at the key junctions in the vicinity of the development (Figure 1.11).

3.5.3 Moreover, two pedestrian access points will be provided with one on the south-western side of the development connecting to Ting On Street; and the other one is located at the north-eastern edge of the development and connects with Ngau Tau Kok Road (Annex A and Figure 1.5 for more details).

3.6 PLANNING AND TECHNICAL CONSIDERATIONS FOR THE PROPOSED RECOMMENDED DEVELOPMENT

3.6.1 The recommended development layout has also taken into account various site-specific factors including site configuration, slopes, existing traffic conditions, existing building height profile in the area, environmental concerns, air ventilation, pedestrian circulation, building form and disposition, flat mix and its interaction with the development context. A summary of the planning requirements for the PRH development are proposed as follows:

- A 10m wide setback from Ngau Tau Kok Road and 5m setback from Ting On Street are recommended for air quality mitigation measures. In addition, the setbacks will also provide greening opportunities for the proposed development;
- A vehicular access from Ting On Street is recommended to minimise slope cutting on the Ngau Tau Kok Side;
- A pedestrian connection with shuttle lifts is also proposed to connect Ting On Street and and Ngau Tau Kok Road for a barrier-free pedestrian linkage (Figure 1.5);
- A 4-storey podium is proposed for the proposed development to maximise the utilisation of the scarce land resources and minimise slope cutting and the podium would also increase the buffer distance from the first residential floor to the nearly road networks;
- Upgrading the existing sub-standard RCP of a size of about 76 sqm into a district standard RCP with an area of about 308 sqm is proposed to be incorporated into the PRH Development (and handover to FEHD after construction) (refer to Annex A) and seamless reprovision of the RCP.
- A covered activities area of about 120 sqm is proposed on 1st Floor near the public landscape area for public enjoyment;
- A half-size basketball court/ multi-purpose playground (Annex A) that could serve general public in the surrounding;
- A 10m setback to the Ngau Tau Kok Road along typical floor to enhance natural air ventilation throughout the Site and surroundings;
- Green areas can be provided on both ends of the Site. This can address the greening requirement of the Site and release the lower floor space for other uses. In order to maximise available floor space on the lower floor for supporting facilities, terraced podium gardens with accessible greening is also recommended for the proposed development as one of the planning gain measures;
- 6 parking spaces for private cars, 1 parking space for a LGV and 3 parking spaces for motorcycles are proposed for residential use; and 6 parking spaces for private cars are proposed for commercial use; and
- A total of 37 trees have been identified on site. These will need to be felled. Compensatory planting of 39 trees within the development has been proposed.

4. TECHNICAL ASSESSMENTS

4.1 INTRODUCTION

4.1.1 Assuming that the Site will be developed to its maximum potential for the proposed PRH Development with retail and "G/IC" facilities, technical assessments have been carried out to examine the potential impacts of the proposed development on its surrounding areas. These assessments considered the air ventilation, environmental, geotechnical, drainage, sewerage, traffic and visual impacts. Relevant legislation, standards and guidelines are considered when carrying out the impact assessments. The findings are presented in Annexes and summarised below for easy reference.

4.1.2 At the outset of the assignment a baseline architectural scheme was prepared by the project architect. This was assessed in terms of its robustness in addressing the environmental impacts prevailing within the environs of the application Site. As a result of the assessment, the baseline scheme was refined to address the identified environmental impacts. The baseline and refined schemes were then compared and contrasted. As will be seen below and in the detailed assessments in the Appendices, the refined scheme was found to adequately address the prevailing air quality and noise impacts prevailing within the environs of the application Site.

4.2 AIR VENTILATION ASSESSMENT – ANNEX C

4.2.1 A quantitative air ventilation assessment has been conducted for evaluating and comparing the Existing Scenario and the Proposed Scheme under the annual and summer conditions. According to the quantitative assessment result, it is concluded that the air ventilation performance of the Proposed Scheme would not induce a significant adverse impact to the surrounding concerned area when compared with the Existing Scenario.

4.3 ENVIRONMENTAL ASSESSMENT – ANNEX D

4.3.1 Air Quality

4.3.2 With respect to the assessment results, the air quality at the residential floors of the proposed development will comply with the Air Quality Objectives (AQOs). Having said this and as outlined earlier, at the storeys below the residential floors (i.e. below 28.75mPD), the annual NO2 concentration will exceed the relevant AQOs. The affected storeys will accommodate the transfer plate, the retail and "G/IC" facilities and carpark, without domestic use. In order to mitigate the potential impact, it is recommended to provide fresh air supply system together with split type air conditioning to in these areas. In addition, it must be noted that there is no exceedance of short term NO_2 concentration at the storeys below the residential part of the building block.

4.3.3 As such, with the implementation of the recommended mitigation measures, the future residents would not be subject to adverse air quality impacts.

4.3.4 Noise Impacts

4.3.5 Traffic noise impacts to the proposed development have been assessed. With the provision of traditional and innovative noise mitigation measures, both layouts could comply with the relevant traffic noise standards. Future residents would not be subject to adverse traffic noise impact.

4.3.6 Industrial noise impacts to the proposed development have been assessed. With a sufficient buffer distance and careful layout design, the predicted industrial noise level at both layouts would comply with the relevant noise standards under the Noise Control Ordinance. Therefore, future residents will not be subject to adverse industrial noise impacts.

4.3.7 Railway noise impacts to the proposed development have been assessed. Vertical fins and acoustic windows (top hung type) are suggested as the mitigation measure to alleviate the railway noise impact. The proposed development will comply with the relevant criteria under the Noise Control Ordinance and HKPSG after the provision of the proposed noise mitigation measures to reduce noise.

4.4 WATER SUPPLY IMPACT ASSESSMENT – ANNEX E

4.4.1 A quantitative assessment has been conducted. New water demands will be generated by the proposed development. Given the estimated fresh water and salt water demand, it is considered that the impacts to both water supplies are acceptable. The two water-mains along the north-western site boundary will be in conflict with the proposed development over a short distance and will need to be locally realigned.

4.4.2 From the water supply point of view, the proposed development can be implemented without any unacceptable adverse impacts.

4.5 DRAINAGE IMPACT ASSESSMENT – ANNEX F

4.5.1 The existing Site is partially flat, but with fairly steep slopes in the northern portion. Runoff calculations for the existing site conditions and scenario with the proposed development have been included in the assessment report. With respect to the existing conditions, there are no known drainage problems in the area with the existing runoff. As the increase in runoff with the proposed development will be negligible, it is suggested that there would be no adverse drainage impacts created by the proposed development.

4.5.2 There will be no increase in the amount of runoff from the Site as a result of the proposed development. The runoff will be discharged into the existing drainage system on Ting On Street via a new dedicated connection. It is expected that the proposed development will result in no adverse drainage impacts.

4.6 SEWERAGE IMPACT ASSESSMENT – ANNEX G

4.6.1 The proposed development at the Site will generate new sewage flows. It is recommended that an internal sewerage system be provided to deliver flow by gravity to a new connection point to the public sewerage system on Ting On Street (to manhole FMH4036719). All required upgrades of the existing public sewers / new sewerage facilities will be implemented and maintained by the Project Proponent and handed over to DSD for maintenance by the Project Proponent.

4.6.2 As such, the proposed development will be provided with properly planned sewerage facilities and no adverse impact on the public sewerage system is anticipated.

4.7 GEOTECHNICAL IMPACT ASSESSMENT – ANNEX H

4.7.1 A comprehensive geotechnical impact assessment report has been conducted for the proposed development. On the basis of the available geotechnical information and the recommended option of schematic building layout plan, the proposed development is considered to be geotechnically feasible. Topography survey and site specific ground investigation works is recommended for detailed design of site formation works, ELS works and foundation works for the proposed development. The actual site formation plan, ELS layout plan and foundation layout plan shall be subject to final general building layout plan.

4.8 VISUAL IMPACT ASSESSMENT – ANNEX I

The visual impact significance of the proposed development after the implementation of mitigation measures is considered to be Moderately Adverse but by and large acceptable. Having said that, some mitigation measures have been suggested to reduce the visual obstruction, to make the building appear less visually intrusive, to enhance visual permeability, and to improve the quality of the streetscape environment should slightly reduce the magnitude of the residual visual impacts, but will not be sufficient to reduce the overall significance thresholds. This being said the visual impact of the development is considered to be generally acceptable.

4.9 TRAFFIC IMPACT ASSESSMENTS – ANNEX J

4.9.1 Traffic impact assessments are undertaken by comparing the junction performance of the 2026 Reference scenario (i.e. without the proposed development) against the Design scenario (i.e. with the proposed development). The results of the assessments indicate that all the assessed junctions in the vicinity of the proposed development would perform satisfactorily during the AM and PM peak periods for both scenarios.

4.9.2 As the amount of additional traffic generated from the development is not significant, there are minimal differences in terms of the junction performances between the Reference and Design scenarios, hence, it is concluded that the development traffic would not cause adverse traffic impact on the road network in the vicinity of the proposed development.

4.10 TREE IMPACT ASSESSMENT – ANNEX K

4.10.1 The tree survey was carried out in December 2014 for all the tagged trees within the tree survey area. There were 37 trees surveyed within the tree survey area (diameter at 1.3m height measuring 95mm or more).

4.10.2 The general conditions of the trees within the Site boundary were found to be poor to fair. There were 16 tree species found in the surveyed area. A compensatory planting scheme with a total of 39 compensatory standard trees (preferably in small tree species) with a stem diameter >45mm and ≤ 75mm will be planted, which results in a 1:1.05 compensatory ratio in terms of quantity (i.e. number of trees for compensation). This is in accordance with the criteria as set out in DEVB TC (W) No. 7/2015 for minimum compensatory planting in terms of quantity.

4.11 SUMMARY

With respect to the technical assessments carried out, it is concluded that the Site should be feasible for the proposed PRH development with no adverse impacts expected to be posed onto the surrounding areas from the perspective of air ventilation, environmental, drainage, sewerage, traffic, water supply, geotechnical and visual impact.

5. PLANNING JUSTIFICATIONS

5.1 POLICY SUPPORT: NECESSITY OF THE PROVISION OF PUBLIC RENTAL HOUSING

5.1.1 As mentioned in Chapter 1, the Government aims to implement measures to address Hong Kong's housing problem. A new strategic direction and guiding principles for housing policies have been put forward, which includes planning early for land supply for the production of both public and private housing, and to provide PRH units to serve as a "safety net" for the Hong Kong citizens who cannot afford private rental housing. In both the 2015 and 2016 Policy Address, the Chief Executive reiterated that housing is still the most important livelihood issue and the Government has committed to address the housing shortage with the public rental housing production target of about 20,000 units each year for the following decade.

5.1.2 In 2013, the Government had identified 65 potential sites which were zoned "GB", "G/IC" and other government sites and industrial sites for short to medium-term measures for optimising the existing land use and increasing the residential land supply. The Site is one of the aforementioned and identified 65 sites. To conclude, the necessity of rezoning the Site from "G/IC" to "R(A)" for the provision of PRH to address the identified shortage of PRH has been confirmed.

5.1.3 In August 2016, Planning Statement and relevant technical assessments was completed and submitted to relevant parties for consideration. Local stakeholders including District Councillors were also consulted on the proposed Ting On Street Development, major views were collected and "G/IC" facilities have been added to the proposed PRH development including a district standard RCP, a half-size basketball court / multi-purpose playground, a covered activities area and a neighbourhood elderly centre within the development site.

5.2 PUBLIC GAIN: PROVISION OF GOVERNMENT, INSTITUTION AND COMMUNITY FACILITIES

5.2.1 As mentioned in Section 1.1.1, the Site is currently zoned "G/IC". It is considered that the planning rezoning proposal will make use of the existing area designated for GIC uses. As such, for compensating the existing demands of local residents on "G/IC" facilities and meeting the projected demand to be generated by future residents of the area, consideration has been given to upgrade the existing sub-standard RCP (about 76 sqm) into a district standard RCP (about 308 sqm). A half-size basketball court / multi-purpose playground is also proposed within the Site to provide facilities to serve general public in the surrounding. The existing 7 am to 11 pm public basketball court is unlikely to be reprovisioned within the Site and a suitable location has been identified and agreed with LCSD at a tentative location about 250m away at the existing basketball court near KTGE II Hung Cheuk Lau before it is permanently reprovisioned within the redevelopment site of KTGE II for public use at a suitable location. (Refers to Annex L) Besides, local stakeholders including the relevant District Councillors have been consulted for the proposed provision of "G/IC" facilities, the proposed facilities have taking into account the types of local demand required and the compatibility of the proposed use to surrounding developments and in line with the current planning intention to maximise land use utilisation.

5.2.2 The proposed design has also incorporated the provision for other "G/IC" facilities on the third floor with a total area of 666 sqm has been allocated for Neighbourhood Elderly Centre apart from the district standard RCP. Given that there are a number of existing open space that are already provided for both active and passive recreational use in its immediate surroundings, the overall "G/IC" provision in the Ngau Tau Kok area will not be negatively affected with the proposed development.

5.2.3 Subsequent to the District Council (DC) consultation on 2 March 2017, two briefing sessions were conducted by Hong Kong Housing Society (HKHS) for the residents of Ting On Street (TOS) area on 15 May 2017 and the tenants of Kwun Tong Garden Estate II (KTGE II) on 22 May 2017 respectively. Views consolidated include the new development may generate additional population and traffic; affect the public space in the neighbourhood and the environment etc. Please refer to Annex M for the gist of the two briefing sessions.

5.3 PUBLIC GAIN: PROVISIONING OF LOCAL OPEN SPACE AND A SEAMLESS PROVISIONING OF THE EXISTING BASKETBALL COURT

5.3.1 The Site is zoned "G/IC" and is currently occupied by an existing basketball court with some landscaped / amenity areas. The proposed development will incorporate a local open space for public enjoyment of an appropriate scale comprising of about 1,090 sqm which is sufficient to replace the existing slope with vegetation of about 900 sqm as agreed with LCSD for the proposed PRH on the 1st and 2nd Floor[13]. The proposed local open spaces and landscaped areas on the 1st and 2nd Floor would augment the publicly accessible pedestrian connection to connect Ting On Street and Ngau Tau Kok Road to enhance connectivity (refer to Annex B for Landscape proposal and Figure 1.5 for overall pedestrian connectivity). Hence, the proposed open space should be regarded as one of the public gains offered by the proposed development. Upon completion of the development, this garden will be managed and maintained by HKHS and be accessible freely by the general public for enjoyment.

5.3.2 The seamless re-provisioning of the existing basketball court is at Annex L for reference.

5.3.3 The re-provisioning arrangements of the above facilities have been agreed with LCSD.

5.4 COMPATIBILITY: SURROUNDING LAND USES

5.4.1 As stated in Section 2.2.1, the surrounding land uses are dominated by "R(A)" zones on the north-eastern side and "OU(B)" zones on the further southern side. As such, the proposed rezoning of the existing "G/IC" site to cater for the PRH development is considered compatible with the surrounding existing developments, which are predominantly for residential uses.

5.4.2 The proposed public housing development is considered compatible with the surrounding "G/IC" and residential uses. The location of the proposed PRH units will be conveniently accessible to public transport. The existing Ngau Tau Kok MTR station is located at only 8-minute walking distance from the Site. A pedestrian connection with shuttle lifts is also proposed to connect Ting On Street and Ngau Tau Kok Road to enhance the connectivity within the whole area.

5.5 COMPATIBILITY: SURROUNDING BUILDING HEIGHT PROFILE

5.5.1 With reference to Section 3.3, given that the site context with existing building heights in the surrounding area is at least 130mPD at its north across Ngua Tau Kok Road and the permitted building height of about 100mPD at its south across Kwun Tong Road, accommodation of the proposed development at 106.6mPD will not cause unacceptable adverse effects on the character of the surrounding area. The proposed building height has been influenced by various elements: i) a higher ceiling height is required for the installation of the top-hung windows for noise mitigation purposes; ii) domestic uses can only be accommodated above 28.75mPD according to the Air Pollution Control Ordinance with openable windows; iii) provision of 5m and 10m setbacks from Ting On Street and Ngau Tau Kok Road respectively for air mitigation measures; iv) adopting a stepped terrace architectural design with planting at lower levels for open space provision and public enjoyment; and v) provision of accessible open space with pedestrian circulation enhancements between Ting On Street and Ngua Tau Kok Road.

5.6 TECHNICALLY FEASIBLE DEVELOPMENT

As stated in Chapter 3, comprehensive assessments including air ventilation, environmental impact, traffic impact, water supply impact, drainage impact, sewerage impact, geotechnical impact and visual impact have been done for evaluating the feasibility of the proposed development on Ting On Street, Ngau Tau Kok. It has been concluded from the assessments that the proposed development is technically feasible. With the implementation of the suggested mitigation measures, it is advised that the proposed development will not cause insurmountable problems to the surrounding area.

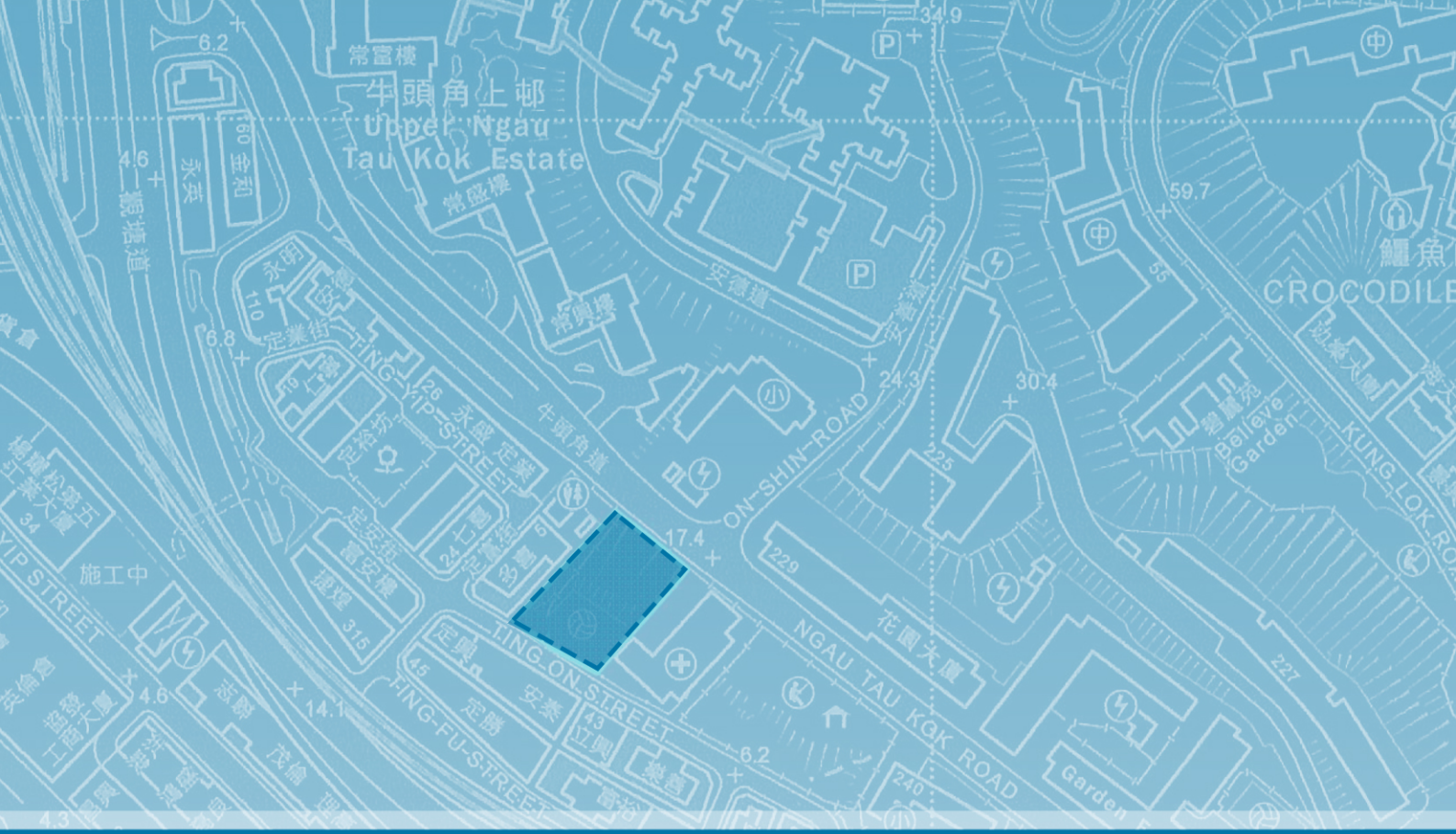
5.7 CONCLUSION

5.7.1 As demonstrated in the previous sections, the proposed development of PRH with "G/IC", retail and local open space for public enjoyment within the Site is compatible with the land uses in the surrounding area and the approval of the proposal will not set an undesirable precedent. At the same time, the assessments undertaken to support this proposed development indicate that there are no insurmountable difficulties that would conspire against the realisation of the proposed development on the Site.

5.7.2 The development arrangement and disposition have been proposed based on preliminary assessments for the Site. The Rezoning Proposal from "G/IC" to "R(A)" has considered the development scale, design and layout, also taking into account various planning, environmental, traffic, geotechnical, ventilation, landscape and infrastructure aspects. On this basis the proposed development is considered to be entirely compatible with its environs and is unlikely to compromise other uses and developments within the surrounding area. Approval of the proposed scheme would, most importantly, contribute to make a positive impact to addressing a proportion of the enormous demand for low income shelter and facilitate the redevelopment and improvement of existing rental housing stock.

5.8 DECISION SOUGHT

5.8.1 In light of the planning merits and justifications put forward in this Planning Statement, we sincerely seek for the favourable consideration from the TPB to give its support to this rezoning proposal.


牛頭角上邨
Upper Ngau Tau Kok Estate
ON SHIN ROAD
NGAU TAU KOK ROAD
HING ON STREET
HING FU STREET
YIP STREET
CROCODILE
Believe Garden
KUNG LOK RD
施工中

Figures





Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title

Aerial Photo of the Application Site

Scale	Date	Figure No.
1:2,500 @ A3	September 2017	1.1

Ngau Tau Kok &
Kowloon Bay
Outline Zoning Plan
No. S/K13/28

Kwun Tong South
Outline Zoning Plan
No. S/K14S/20

Kai Tak
Outline Zoning Plan
No. S/K22/4

LEGEND

- Application Site
- C — Commerical
- G/IC — Government, Institution or Community
- O — Open Space
- GB — Green Belt
- OU — Other Specified Uses
- OU(A) — Other Specified Uses (Amenity Area)
- R(A) — Residential (Group A)
- R(B) — Residential (Group B)

0 20 40 60 80 100m

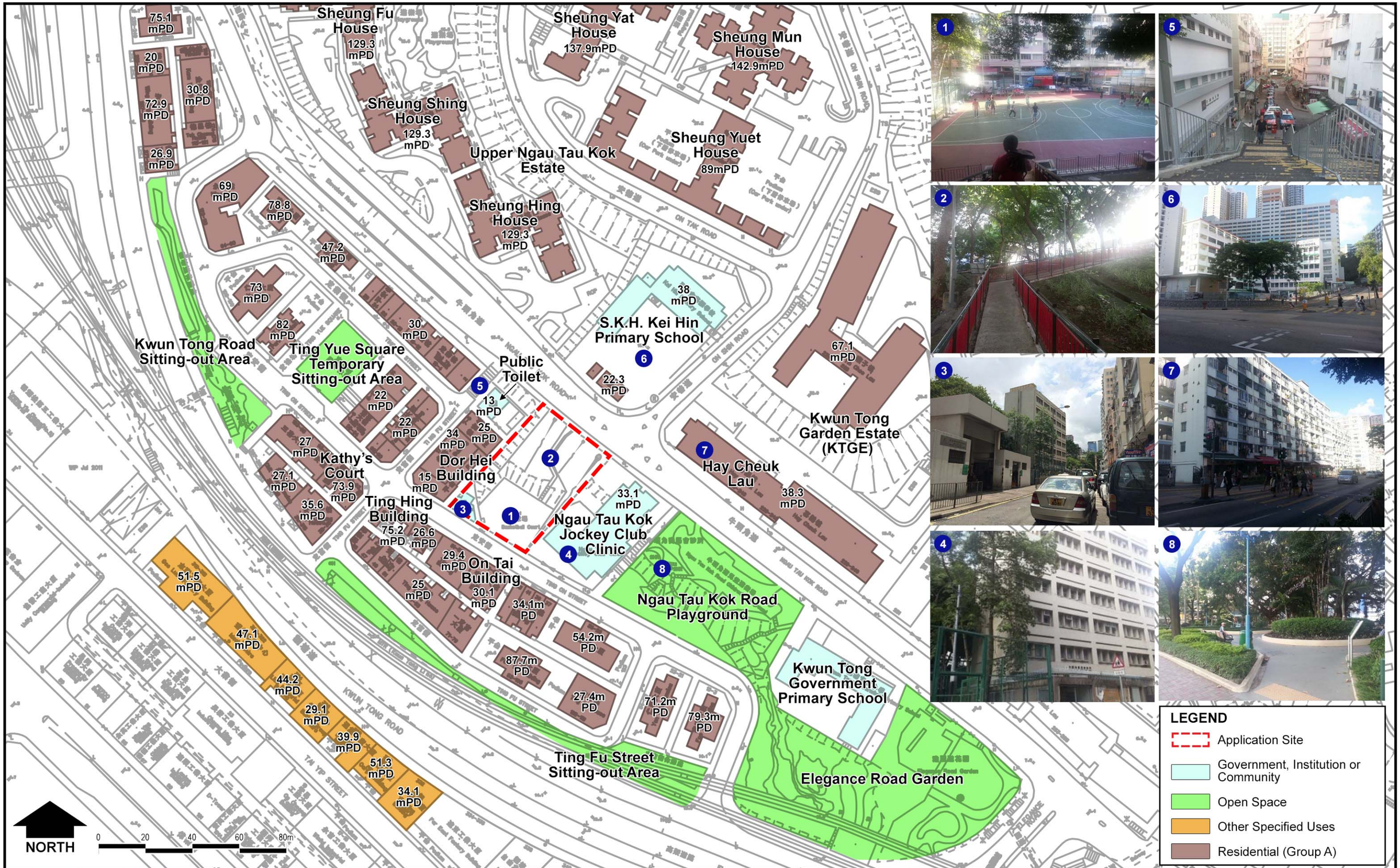
NORTH

Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title

Approved Kwun Tong South
Outline Zoning Plan No. S/K14S/20

Scale	Date	Figure No.
1:2,500 @ A3	September 2017	1.2





Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title

Application Site and Surrounding Context

Scale	Date	Figure No.
1:1,500 @ A3	September 2017	1.3

ABBREVIATIONS:

B	BOLLARD	L	LAMP POST
BH	BORE HOLE	MH	MANHOLE (UNSPECIFIED)
CB	CONCRETE BLOCK	MS	MANHOLE (STORM WATER)
CL	COVER LEVEL	MF	MANHOLE (FOUL WATER)
CP	CATCHPIT	SC	STEP CHANNEL
COL	COLUMN	SP	SIGN POLE
CONC	CONCRETE	T	MANHOLE (TELEPHONE CO)
CUL	CULVERT	TP	TELEPHONE POLE
EB	ELECTRIC BOX	TS	TEMPORARY STRUCTURE
EP	ELECTRICITY POST	UC	U CHANNEL
FB	FLOWER BED	WT	WATER TANK
FH	FIRE HYDRANT	WP	WATER PIPE
FP	FOOTPATH		
FIG	FEEDS INTO GROUND		
G	GRATING		
IC	INSPECTION COVER		
IL	INVERT LEVEL		

SYMBOLS :-

- TREE (WITH REFERENCE NUMBER)
- CONTOURS ARE INTERPOLATED AT 1 METRE INTERVAL
- CONTOURS ARE INTERPOLATED AT 5 METRES INTERVAL
- BOULDER
- CANOPY
- DRAIN/CHANNEL
- FENCE/RAILING
- FIRE HYDRANT
- GULLY
- LAMP POST
- VALVE (UNKNOWN TYPE)
- VALVE (FIRE)
- VALVE (GAS)
- VALVE (WATER)
- GATE
- STEPS
- SLOPE
- MF MANHOLE (FOUL)
- MS MANHOLE (STORM)
- T TELECOMMUNICATIONS

NOTE :-

1) ALL SPOT LEVEL POSITIONS ARE INDICATED BY A CROSS OR FEATURE SYMBOL.
2) ALL LEVELS TO HONG KONG PRINCIPAL DATUM
3) ALL GRID LINES ARE IN HONG KONG 1980 GEODETIC DATUM.
4) ALL UNITS ARE IN METRES

0 2 4 6 8 10m

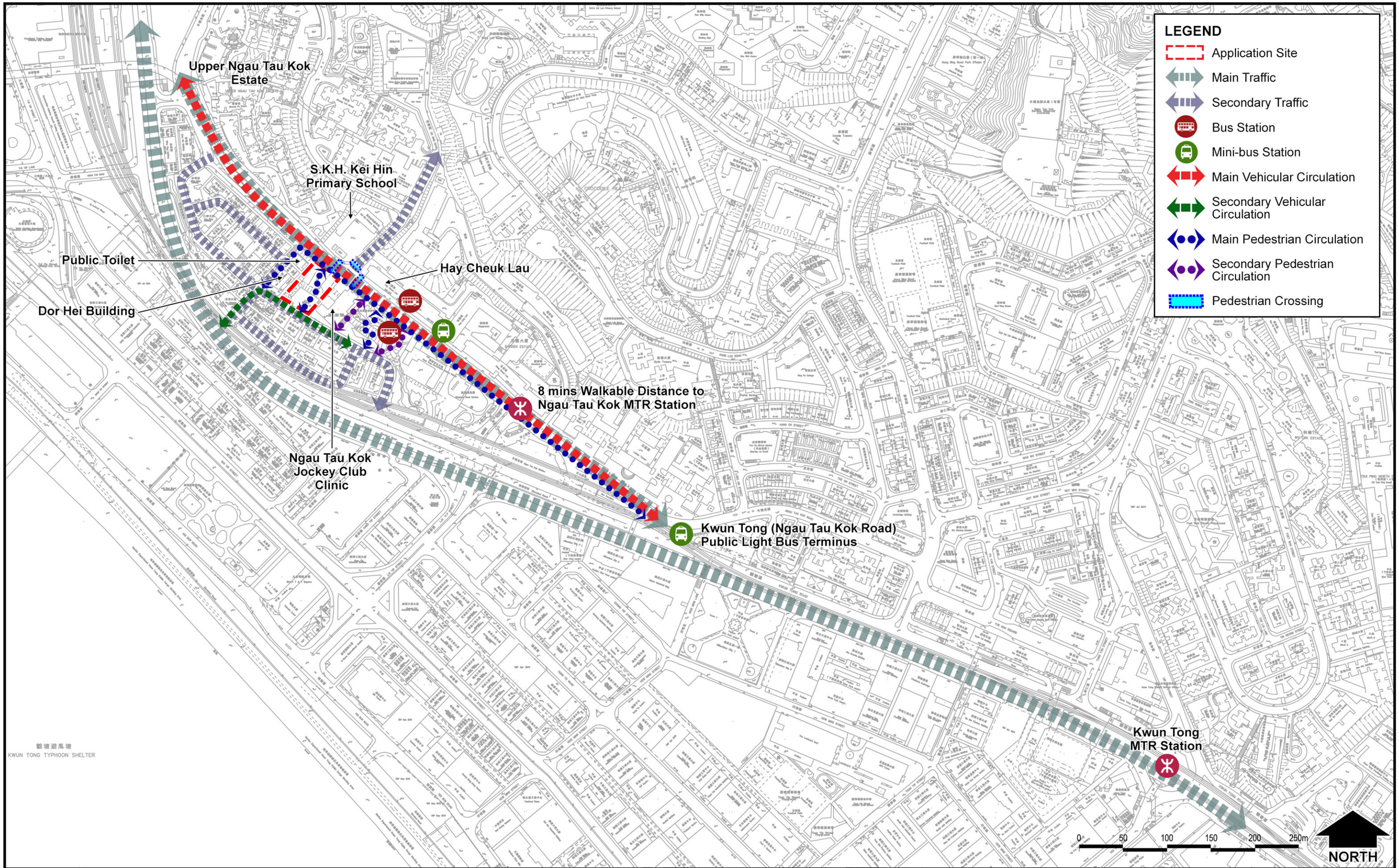
NORTH



Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Topographic Survey

Scale	Date	Figure No.
1:200 @ A3	September 2017	1.4

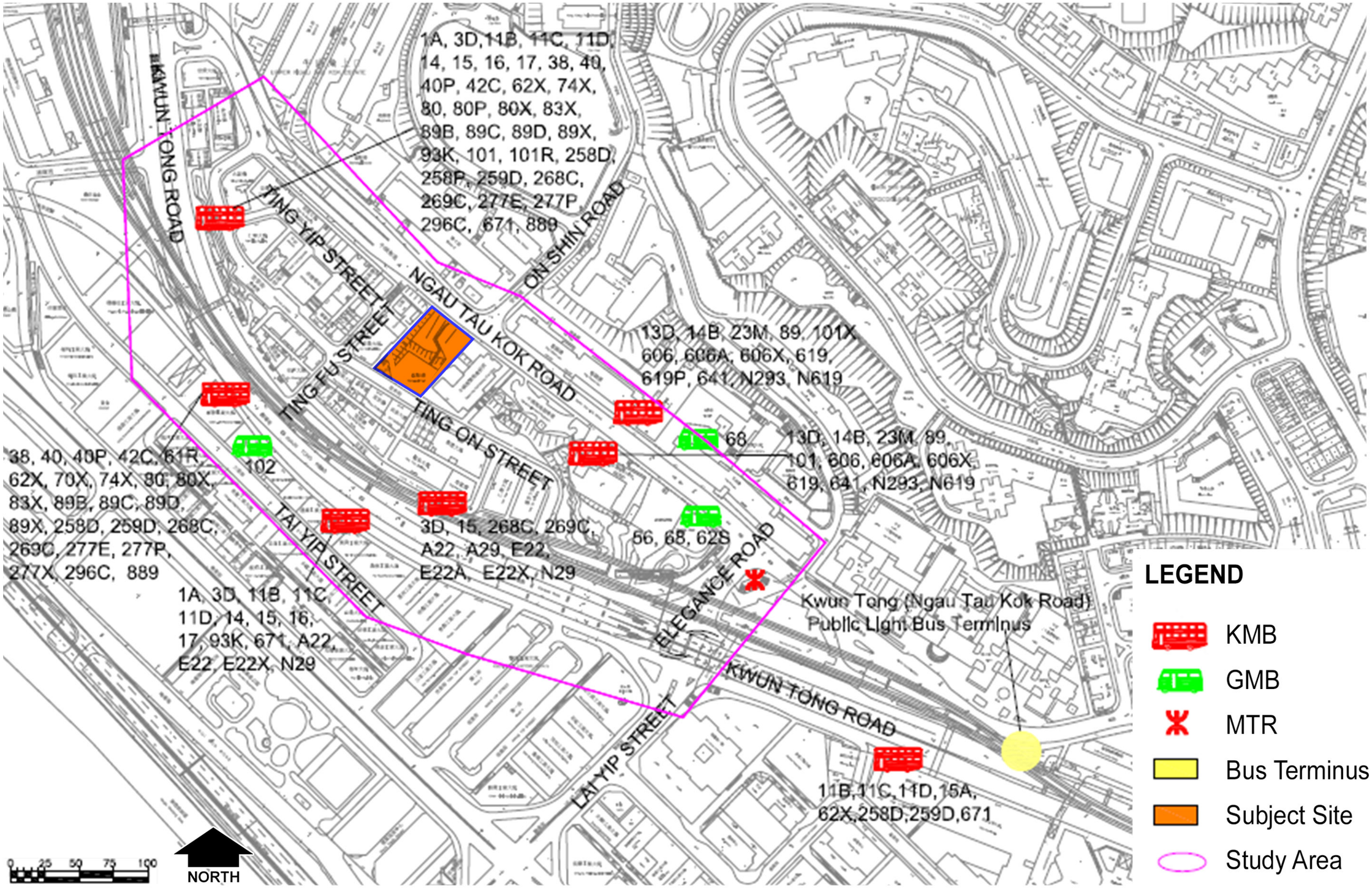


Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title

Vehicular and Pedestrian Circulation

Scale	Date	Figure No.
1:4,000 @ A3	September 2017	1.5



Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Existing Public Transport Inventory

Scale	Date	Figure No.
As Shown @ A3	September 2017	1.6

NGAU TAU KOK ROAD

TING ON STREET

PROPOSED LANDSCAPE AREA / OPEN SPACE +17.20mPD

PROPOSED LANDSCAPE AREA / OPEN SPACE +12.85mPD

PROPOSED LANDSCAPE AREA / OPEN SPACE +17.35mPD

PROPOSED LANDSCAPE AREA / OPEN SPACE +17.85mPD

+110mPD

10000

5000

B.L.

10M DOMESTIC BUILDING SETBACK FROM NGAU TAU KOK ROAD

5M DOMESTIC BUILDING SETBACK FROM TING ON STREET

Sut Hei Building 24-4

TING FU STREET

7-5

Yick Fu House

17-9

Dor Hei Building Podium

88-86

67-63

King Wah Building

61-53

Ngau Tau Kok Jockey Club Clinic

LEGEND

Application Site

Proposed Landscape Area / Open Space

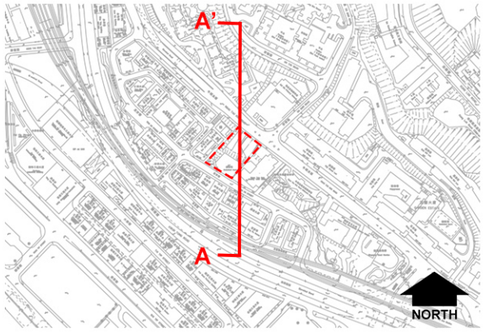
0 5 10 15m

NORTH

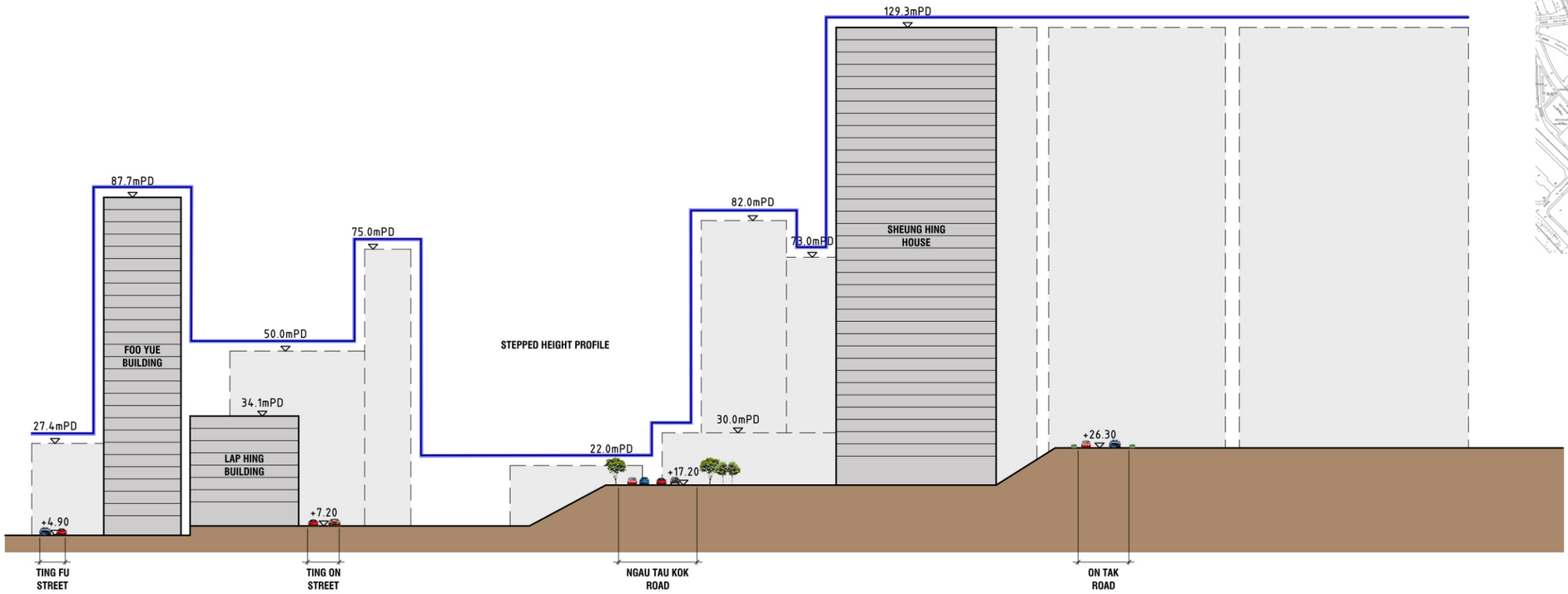
Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Site Layout Plan

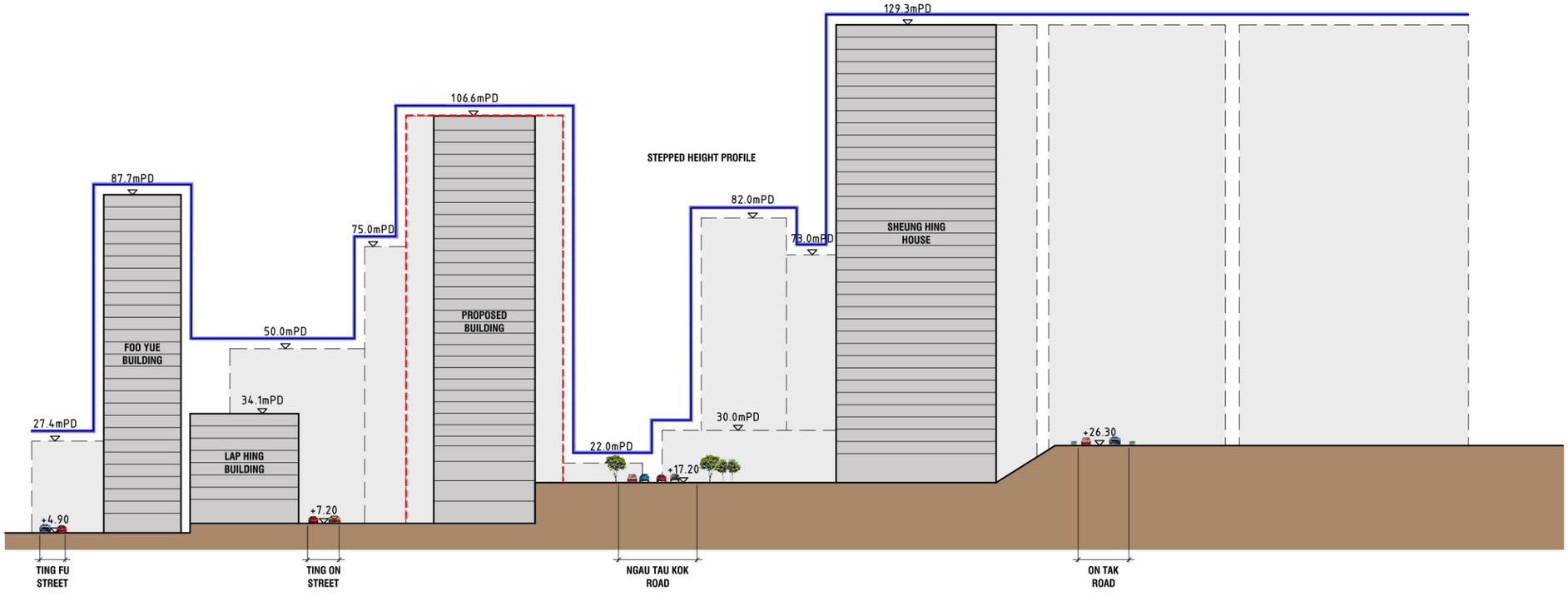
Scale	Date	Figure No.
1:300 @ A3	September 2017	1.7



Keyplan



Existing Sectional Elevation Facing West (A-A')
Scale 1:1,250



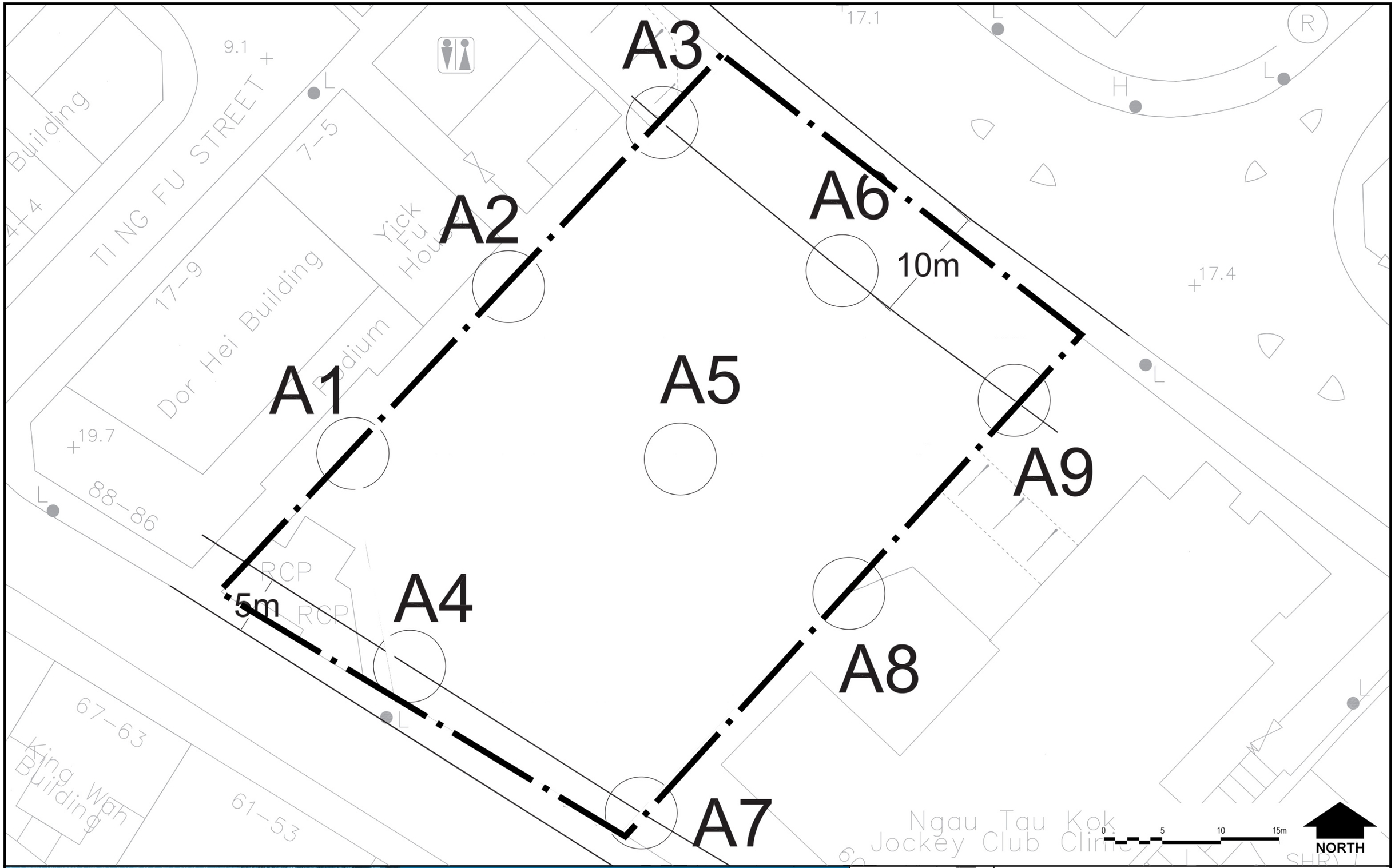
Sectional Elevation Facing West (A-A') with Proposed Development
Scale 1:1,250

0 10 20 30 40 50m

Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Sectional Elevation from North to South

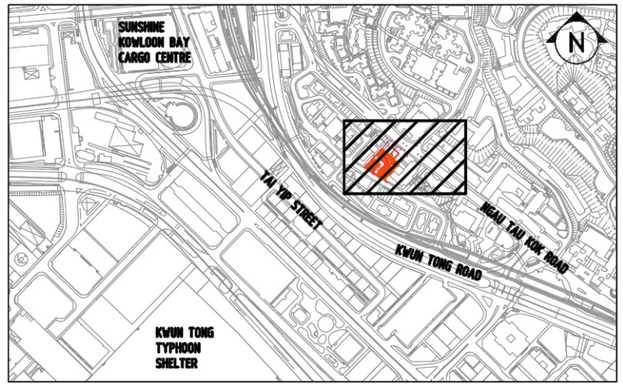
Scale	Date	Figure No.
1:1,250 @ A3	September 2017	**1.8**



Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Recommended Setback and Locations of Representative Air Sensitive Receivers

Scale	Date	Figure No.
1:300 @ A3	September 2017	1.9



LEGEND

- SURVEY BOUNDARY
- PROPOSED DEVELOPMENT
- T16(F) EXISTING TREE TO BE FELLED

(1)	(2)	(3)	(4)	(5)	(6)
Existing Tree	Retained Tree	Transplanted Tree	Felled Tree	PROPOSED COMPENSATORY PLANTING	TOTAL TREES AFTER COMPENSATION (2)+(3)+(5)
37	0	0	37	39	39

0 10 20 30m

NORTH

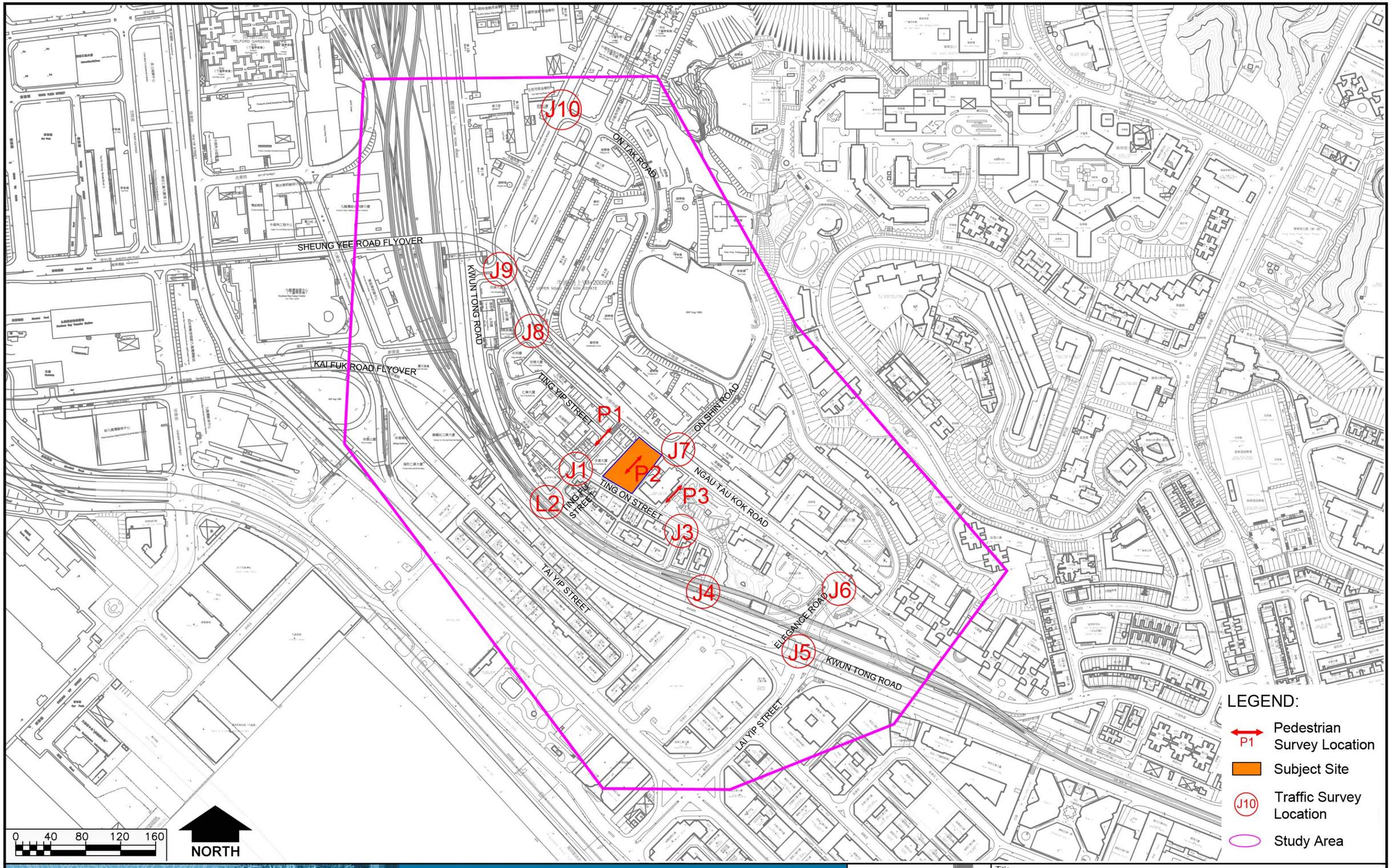
Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Tree Assessment

Scale: 1:500 @ A3

Date: September 2017

Figure No.: 1.10



Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Junction Assessment - Key Junctions

Scale	Date	Figure No.
As Shown @ A3	September 2017	1.11

Visual Impact Assessment

for

Planning Consultancy Services for the Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

(Rev. 1)

Client:
Hong Kong Housing Society

Prepared by
Urbis Limited

Prepared by :		October 2017
	Achareeya Parkmaruk	Date
Checked by :		October 2017
	Winona Ip	Date
Approved for issue by :		October 2017
	Alan Macdonald	Date

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1 INTRODUCTION

1.1 Purpose

1.1.1 The purpose of this report is to assess the visual impact arising from the proposed development of public rental housing at Ting On Street, Ngau Tau Kok, Kowloon.

1.2 Background

1.2.1 The application seeks the permission of the Town Planning Board (the TPB) to amend the existing zonings under the Approved Kwun Tong (South) Outline Zoning Plan No. S/K14S/20 Gazetted on 21/08/2015.

1.2.2 It is proposed to rezone the existing Government, Institution or Community "G/IC" land with an area of about 2,219m² along Ting On Street in Ngau Tau Kok, Kowloon to develop public rental housing (PRH) development at the Site for the purpose of decanting tenants affected by the redevelopment of its ageing Kwun Tong Garden Estate II. The Site is currently occupied by a public basketball court and a landscape garden within the ("G/IC") land.

2 METHODOLOGY FOR THE APPRAISAL OF VISUAL IMPACT

2.1 Introduction

2.1.1 This methodology follows the requirements set out in the Town Planning Board Guidelines on Submission of Visual Impact Assessment for Planning Application to the Town Planning Board (TPB PG-No.41).

2.1.2 Appraisal of visual impacts is not an objective science but is based upon a structured and reasoned evaluation of predicted impacts, informed by professional judgement and experience.

2.1.3 The methodology adopted for this visual appraisal consists of:

- Identification of Baseline Conditions (Assessment Area, Visual Elements and Resources and Viewing Points);
- Identification of Potential Sources of Impact;
- Identification of Potential Mitigation Measures
- Appraisal of Significance of Visual Impacts
- Evaluation of Overall Visual Impact

2.1.4 These stages are described in more detail below.

2.2 Identification of Baseline Visual Conditions

2.2.1 In order to identify clearly the visual impacts of a proposed development, it is necessary to establish the existing baseline visual conditions of the surrounding environment. For these purposes, the project Study Area is defined by reference to the projects' *Visual Envelope* (see below).

2.2.2 During the identification of baseline visual conditions, the following issues are defined:

- The Existing Site Conditions and Assessment Area of the Proposed Project
- Visual Elements and Resources
- Viewing Points

2.2.3 The identification of these conditions is the product of both desk-top research and field survey.

2.3 Assessment Area

2.3.1 The assessment area is the visual envelope within which the proposed development is pronouncedly visible from key sensitive viewers. The extent of the assessment area varies case by case depending on the size of the development, the site context and the distance and location of the sensitive viewers. A larger building will more likely give a more distinct visual impact than a smaller building at the same distance. Groups of buildings seen at a farther distance may be visually less distinct than the close-up views of individual buildings.

2.3.2 The assessment area will be determined in regards to the size of the proposed development, the distance of the development and its potential visibility from the selected viewing points. The visual envelope forms the Assessment Area for the purposes of the VIA. As stated in the TPB PG No. 41, "When the viewer is at a distance equal to three times the height of the building, the viewer will tend to see the building as part of a group rather than a single building. This may be used as an initial reference in approximating the extent of assessment area".

2.4 Visual Elements and Resources

2.4.1 Visual Elements and Resources are the component features of a landscape or townscape which shape its appearance and visual character to those who see it. Key Visual Elements and Resources may include major physical structures, visual resources or attractors (e.g. Victoria Harbour, natural coastline, ridgeline, mountain backdrop, woodland, streams, etc.) and/or visual eyesores or detractors (e.g. pylons, sewage treatment plants, refuse collection points, ventilation shaft buildings, quarries, etc.) that currently exist or are known to be planned within the assessment area should be reported.

2.4.2 Different Visual Elements and Resources may enhance, degrade or neutralize the overall visual impact of the development being assessed. Victoria Harbour and its ridgelines are recognized as particularly important Visual Elements in the Hong Kong context.

2.4.3 Different aspects of Visual Elements and Resources give the landscape its visual character, including their scale (e.g. buildings, topographic features, etc), variety of visual texture, pattern, form and colour. These features affect the visual character of a landscape and the type of development that can be accommodated within it without significantly changing this visual character.

2.4.4 Where committed future major development falls within the Assessment Area, its Visual Elements and Resources are also considered, as far as they are known.

2.5 Public Viewing Points

2.5.1 TPB PG-No.41 notes that "In the highly developed context of Hong Kong, it is not practical to protect private views without stifling development opportunity and balancing other relevant considerations. In the interest of the public, it is far more important to protect public views, particularly those easily accessible and popular to the public or tourists. VIA should primarily assess the impact on sensitive public viewers from the most affected viewing points. The

viewing points could be kinetic or static. They include key pedestrian nodes, popular areas used by the public or tourists for outdoor activities, recreation, rest, sitting-out, leisure, walking, sight-seeing, and prominent travel routes where travellers' visual attention may be caught by the proposed development."

2.5.2 TPB PG-No.41 continues "For identification of key public viewing points, the applicants may refer to Chapter 11 on Urban Design Guidelines in the Hong Kong Planning Standards and Guidelines (HKPSG), the Explanatory Statements of relevant statutory plans, adopted outline development plans and layout plans, and completed planning studies available for public reference. Local viewpoints should be determined with reference to the setting of the project and views of local significance".

2.6 Appraisal of Visual Change

2.6.1 Under the TPG, the effects of the visual changes on the assessment area and sensitive public viewers shall be appraised. Visual changes may be positive or negative and they are not necessarily mutually exclusive. The visual appraisal will take into account the following aspects:

- Visual Composition
- Visual Obstruction
- Effect on Visual Resources
- Effect on Public Viewers

2.6.2 The magnitude of the change depends on a number of factors including the physical extent of the change, the landscape and visual context of the change – i.e. a set circumstance/facts surrounding the change, the compatibility of the project with the surrounding landscape; and the time-scale of the change – i.e. whether it is temporary (short, medium or long term), permanent but potentially reversible, or permanent and irreversible.

2.7 Identification of Sources of Impact

2.7.1 Next, the key sources of visual impact of the proposed development are identified. These will generally be matters such as the completed building itself, associated structures and infrastructure works, such as highways, pumping stations, and electricity substations etc., used to service the development. It should be noted that Sources of Impact may be Positive or Negative.

2.8 Mitigation Proposals

2.8.1 Sources of visual impact are where possible, subject to specific mitigation proposals so that the significance of the impacts are reduced. Mitigation measures can be part of the project design (e.g. the location of buildings; colour treatment of building facades) or can be added to the basic project design (e.g. tree planting to screen a development)

2.9 Evaluation of Overall Visual Impact

2.9.1 The overall visual impact of the proposed development, taking into account the sensitivity of the key public viewers, visual resources and visual amenities likely to be affected, the magnitude, extent and duration of impact and any resultant improvement or degradation in the visual quality and character of the surrounding areas, and planning intention and known planned developments of the area.

2.9.2 Impacts are assessed upon the completion of the projects. Impacts are also assessed on the assumption that mitigation measures are in place (and planting fully mature). **Table 2.1** below shows the matrix used to assess visual impacts. The matrix is a means of subdividing and categorizing the continuous spectrum of potential impacts from zero impact at the bottom left of the figure to the maximum possible impact at the top right.

Table 2.1 – Relationship Between Receptor Sensitivity and Magnitude of Change in Defining Impact Significance

MAGNITUDE OF CHANGE	Low	Medium	High
Large	Slight or Moderate	Moderate or Substantial	Substantial
Intermediate	Slight or Moderate	Moderate	Moderate or Substantial
Small	Insubstantial or Slight	Slight or Moderate	Slight or Moderate
Negligible	Insubstantial	Insubstantial	Insubstantial

SENSITIVITY OF PUBLIC VIEWER

Note: the magnitude of change may be Positive or Adverse.

2.9.3 The significance of impacts are assessed as 'Significant Adverse' or 'Significant Positive', 'Moderate Adverse' or 'Moderate Positive', 'Slight Adverse' or 'Slight Positive' and 'Negligible'. 'Negligible' impacts are deemed to make no significant difference to the character of views, even though the Project Site and development may be physically visible in them.

2.9.4 Finally, a single summary assessment of the impacts is made based on the following thresholds stated in TPB PG-No.41:

2.9.5 **Enhanced** – if the proposed development in overall terms will improve the visual quality and complement the visual character of its setting from most of the identified key public viewing points;

2.9.6 **Partly enhanced/partly adverse** – if 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 viewing points;

2.9.7 **Negligible** – if the proposed development will, with or without mitigation measures, in overall terms have insignificant visual effects to most of the identified key public viewing points, or the visual effects would be screened or filtered by other distracting visual elements in the assessment area;

2.9.8 **Slightly adverse** – if the proposed development will, with or without mitigation measures, in overall terms result in some negative visual effects to most of the identified key public viewing points;

2.9.9 **Moderately adverse** – if the proposed development will, with or without mitigation measures, in overall terms result in negative visual effects to most of the identified key public viewing points; and

2.9.10 **Significantly adverse** – if the proposed development will in overall terms cause serious and detrimental visual effects to most of the identified key public viewing points even with mitigation measures.

3 IDENTIFICATION OF BASELINE VISUAL CONDITION

3.1 Existing Site Conditions

3.1.1 The Site is located to the north of Ting On Street and south of Ngau Tau Kok Road. It is within a heavily urbanized and well-established area. The Site is currently occupied by a basketball court in the southern portion, with a sloped playground in the northern portion rising towards Ngau Tau Kok Road.

3.1.2 The area of the basketball court at the southern portion of the Site is a flat platform, at an elevation of +7.2mPD. To the north of this platform is a man-made slope. From the crest of the registered slope, the Site continues to rise towards Ngau Tau Kok Road, at an elevation of approximately +17mPD.

3.1.3 The Site is situated next to the Ngau Tau Kok Jockey Club Clinic and the Ngau Tau Kok Maternal and Child Health Centre with Ting On Street and Ngau Tau Kok Road abutting the north and south sides of the site respectively. The majority of the surrounding land uses are residential developments zoned "Residential (A)" ("R(A)"), with several developments located in "Government, Institution or Community" ("G/IC") zones to the east of the Site along Ngau Tau Kok Road. The Ngau Tau Kok Road Children's Playground is located to the east, as well.

3.2 Assessment Area

3.2.1 The assessment area is the Visual Envelope within which the proposed development is pronouncedly visible from key sensitive public viewers and is shown in **Figure 2**. **Figure 2** also shows the Initial Assessment Area defined, in accordance with TPB GN-41, by the distance 3H from the development boundary, where H is the proposed height of the development.

3.2.2 The Initial Assessment Area for the development of the subject site encompasses the general area of Ngau Tau Kok and includes Kwun Tong Road, Kai Fuk Road Flyover, and Kwun Tong Bypass and Sheung Yee Road Flyover. Land-uses are generally comprised of R(A), R(B), C, OU, and G/IC uses. From the waterfront edge in Ngau Tau Kok, the land gradually rises in elevation to the surrounding ridgelines.

3.2.3 The Visual Envelope extends beyond the Initial Assessment Area because the development will be visible to key sensitive public viewers along the major view corridors that extend outwards from the development into the surrounding hinterland.

3.2.4 The average building height of developments in the area (+100mPD) largely defines much of the Visual Envelope to the North, South and East as the buildings create many visual 'shadows" from which the development is not visible. To the West views open up to provide extended views of the development from greater distances.

3.3 Visual Elements

3.3.1 The visual outlook is shaped by the combined composition of all the visual elements which come into sight of the viewers. All key visual elements, including any major physical structures, visual resources or attractors/detractors have been identified and are listed below.

3.3.2 Key Positive Visual Elements:

- Nearby waters of Kowloon Bay
- Kwun Tong Typhoon Shelter
- Kai Tak Runway Park
- Kai Tak Cruise Terminal
- Ngau Tau Kok Children's Playground
- Kung Lok Road Playground and associated vegetated hillsides
- Kwun Tong High Level Service Reservoir and associated vegetated hillsides

3.3.3 Key Negative Visual Elements:

- Traffic along Ngau Tau Kok Road
- Traffic along Kai Fuk Road
- Traffic along Kwun Tong Road
- MTR traffic along existing alignment
- Reclamation/Ongoing Major Development Landscape at Kai Tak Runway – this is a transitional landscape which is currently awaiting large scale development

3.4 Viewing Points

3.4.1 Viewing Points have been selected based on the TPB PG-No.41 guidelines. In the interest of the public, views that have been selected represent easily accessible pedestrian nodes, popular areas used by the public or tourists for outdoor activities, recreation, rest, sitting-out, leisure, walking, sight-seeing, and prominent travel routes where travellers' visual attention may be caught by the proposed development. In this regard, two viewpoints have been selected as static and two selected as kinetic viewpoints from which the proposed development most adversely affects public views. Several nearby public open spaces were not selected as Viewpoints as the proposed development is not pronouncedly visible from them, and as such kinetic, travelling Viewpoints were selected as views representative of public viewers travelling along the sidewalk or the road.

VP1: Viewpoint from Kai Fuk Road (Figure 4)

3.4.2 View from Kai Fuk Road represents high volumes of traffic originating from the existing flyover as well as the existing MTR train alignment and coalescing into one transportation corridor. Here, public viewers will have periodic, unobstructed views of the site.

3.4.3 The public viewers at VP1 are considered to have high sensitivity to visual change.

VP2: View from Sheung Yee Road (Figure 5)

3.4.4 View from Sheung Yee Road represents high volumes of traffic originating from the existing flyover as it turns Southeast and changes to Ngau Tau Kok Road and passes by the development site. Here, public viewers will have unobstructed views as they approach the project site.

3.4.5 The public viewers at VP2 are considered to have high sensitivity to visual change.

VP3: View from Ngau Tau Kok Road (Figure 6)

3.4.6 While views from Elegance Road Garden would be better suited for assessment, views of the project site are obscured here and make assessment inoperable. Instead, the pedestrian walkway at Ngau Tau Kok Road – across from Elegance Road Garden- has been selected as a high pedestrian volume area. Here, public viewers will have unobstructed views of the development site.

3.4.7 The public viewers at VP3 are considered to have high sensitivity to visual change.

VP4: View from Kung Lok Road Playground (Figure 7)

3.4.8 The Kung Lok Road Playground is located above the proposed development site with views overlooking the Ngau Tau Kok Area. Throughout the park area, public viewers have permanent, partially obscured views of the proposed development.

3.4.9 The public viewers at VP4 are considered to have medium sensitivity to visual change.

4 VISUAL APPRAISAL

4.1 Introduction

4.1.1 The visual impacts of the Proposed Development on the Key Public Viewing Points are summarised in **Table 5.1** and are described briefly below with reference to the four aspects listed in TPB-PG-No.41. The locations of the Viewing Points are shown on **Figure 2**.

4.2 Viewpoint 1: View from Kai Fuk Road (Figure 4)

4.2.1 The planned view from Kai Fuk Road will be subject to views of the high-rise residential building of the Ting On Street project.

4.2.2 Effects on Visual Composition: The view currently comprises an open-air car park, the overhead MTR line and an elevated roadway in the foreground, scattered high-rise residential buildings in the middleground, and scattered medium and high-rise buildings in the background with views to the open sky. The presence of the proposed development will result in a high-rise building located in the middleground of the view, adding an additional tower to the scattered buildings but in keeping with the building height profiles of the surrounding developments.

4.2.3 Effects on Visual Obstruction: The presence of the proposed development will primarily obstruct views to the open sky and buildings in the distance, moderately increasing the visual obstruction. The visual permeability would be slightly adversely affected as the proposed development will increase overall building massing in the view, but is in keeping with the surrounding development building heights and is located at a distance from the viewers.

4.2.4 Effects on Visual Elements/Resources: No Visual Elements/Resources are visible from the Viewpoint therefore there would be no additional impact.

4.2.5 Effects on Public Viewers: The public's perception of the view from Kai Fuk Road would generally be of intermediate value, as the view looks out to the general Ngau Tau Kok Area and has patches of greenery. The proposed development would create a high-rise building block, visually obstructing views of the sky in the distance but otherwise is compatible with surrounding buildings. The public viewers will have permanent and continuous open views toward the subject site at varying distances, generally at 250m. The changes described above, combined with the relative moderate proximity of these changes to the viewer, will cause an intermediate magnitude of change. This intermediate magnitude of change when combined with the high sensitivity of the public viewers will result in a visual impact significance considered to be **Moderately Adverse**.

4.3 Viewpoint 2: View from Sheung Yee Road (Figure 5)

4.3.1 The planned view from Sheung Yee Road will be subject to intermediate views of the high-rise residential building of the project.

4.3.2 Effects on Visual Composition: The view currently comprises a streetscape scene with greenery in the foreground, robust greenery and medium-rise buildings in the middleground, and scattered medium and high-rise buildings in the background. The presence of the proposed development will result in high-rise buildings located in the middleground of the view where currently there is a vegetated hillside. The building, while keeping with the surrounding building height profiles, will significantly alter the visual composition through the introduction of a building mass and height, resulting in a substantial imposing effect on the viewer.

4.3.3 Effects on Visual Obstruction: The presence of the proposed development will obstruct views to the high-rise and mid-rise buildings in the distance and block views to the open sky where otherwise there is a long, uncompromised view. The visual permeability will be reduced due to the massing of the building, reducing the viewers' capability to view distant buildings and the sky along the horizon line.

4.3.4 Effects on Visual Elements/Resources: No Visual Elements/Resources are visible from the Viewpoint therefore there would be no additional impact.

4.3.5 Effects on Public Viewers: The public's perception of the view from Sheung Yee Road would generally be of intermediate value, as the view along Ngau Tau Kok Road has multiple patches of greenery and several open spaces. The proposed development would create a significant building mass and high-rise tower. The building would require the removal of a significant amount of trees, although it would retain trees along the street. The proposed development would obstruct views in the distance and significantly obstruct views to the openness of the view. Public viewers will have permanent and continuous open views toward the subject site at varying distances, generally from 100m. The changes described above, combined with the relative close proximity of these changes to the viewer, will cause an intermediate magnitude of change. This intermediate magnitude of change when combined with the high sensitivity of the public viewers will result in a visual impact significance considered to be **Moderately Adverse**.

4.4 Viewpoint 3: View from Ngau Tau Kok Road (Figure 6)

4.4.1 The planned view from Ngau Tau Kok Road will be subject to intermediate views of the high-rise residential building of the project.

4.4.2 Effects on Visual Composition: The view currently comprises a streetscape scene with residential buildings and greenery in the foreground, greenery and medium-rise buildings in the middleground, and scattered medium and high-rise buildings in the background. The presence of the proposed development will result in high-rise buildings located in the middleground of the view where currently there is a vegetated hillside. The building will significantly alter the visual composition through the introduction of a building mass and height, resulting in a substantial imposing effect on the viewer.

4.4.3 Effects on Visual Obstruction: The presence of the proposed development will obstruct views to the high-rise and mid-rise buildings in the distance and block views to the open sky where otherwise there is a long, uncompromised view. The visual permeability would be reduced due to the massing of the building, reducing the viewers' capability to view distant buildings and the sky along the horizon line.

4.4.4 Effects on Visual Elements/Resources: No Visual Elements/Resources are visible from the Viewpoint therefore there would be no additional impact.

4.4.5 Effects on Public Viewers: The public's perception of the view from Ngau Tau Kok Road would generally be of intermediate value, as the view along Ngau Tau Kok Road has multiple patches of greenery and several open spaces. The proposed development would create a significant building mass and high-rise tower. The building would require the removal of a significant

amount of trees, although it would retain trees along the street. The proposed development would obstruct views in the distance and significantly obstruct views to the openness of the view. The public viewers will have permanent and continuous open views toward the subject site at varying distances, generally from 200m. The changes described above, combined with the relative close proximity of these changes to the viewer, will cause an Intermediate magnitude of change. This intermediate magnitude of change when combined with the high sensitivity of the public viewers will result in a visual impact significance considered to be **Moderately Adverse**.

4.5 Viewpoint 4: View from Kung Lok Road Playground (Figure 7)

4.5.1 The planned view from the Kung Lok Road Playground will be subject to distant views of the high-rise residential building of the development project.

4.5.2 Effects on Visual Composition: The view currently overlooks modified slopes with limited vegetation in the foreground with flanking medium-rise buildings on either side, medium-rise buildings in the middleground, and scattered medium and high-rise buildings in the background. The presence of the proposed development will result in a high-rise building located in the middleground of the view. While partially obscured by the buildings in the foreground, the new building would be taller than those surrounding developments but would still conform to those building heights of the high-rise buildings in the distance. These effects would result in a small effect on the viewer.

4.5.3 Effects on Visual Obstruction: The presence of the proposed development will slightly obstruct distant views of the high-rise developments and block views of the sky. This effect would be minimal as the building is partially obscured by developments in the foreground. The visual permeability will be reduced slightly by obscuring views in the distance. These effects would result in a negligible effect on the viewer.

4.5.4 Effects on Visual Elements/Resources: No Visual Elements/Resources are visible from the Viewpoint therefore there would be no additional impact.

4.5.5 Effects on Public Viewers: The public's perception of the view from Kung Lok Road Playground would generally be of medium to low value, as the view comprises of a mix of high-rise buildings in the fore-, middle-, and background and low-quality vegetation on modified slopes in the foreground. The proposed development would create a high-rise building marginally blocking views to the distance as it is already partially obscured by buildings in the foreground. The public viewers will have permanent and continuous open views toward the subject site at a distance of 230m. The changes described above, combined with the relative distant proximity of these changes to the viewer, will cause a small magnitude of change. This negligible magnitude of change when combined with the medium sensitivity of the public viewers will result in a visual impact significance considered to be **Insubstantial**.

4.6 Mitigation Proposals

4.6.1 Mitigation proposals seek to reduce or eliminate the visual impacts of the proposed development Project. The following mitigation proposals are to be introduced as part of the development of the Project:

ID No.	Visual Mitigation Measures
OM1	Small building footprint
OM2	Stepped height profile
OM3	Sensitive architectural and chromatic treatment
OM4	Extensive NBA's and landscaped areas
OM5	Aesthetic improvement planting of NBAs and landscaped areas
OM6	Implementation of green roofs and vertical greening

4.6.2 **OM1** – Building footprint within the site has been adjusted to reduce visual obstruction.

4.6.3 **OM2** – Height profile has been designed so to appear less visually intrusive.

4.6.4 **OM3** – Building finishes shall be in recessive or neutral colours and shall not include visually intrusive colours.

4.6.5 **OM4** – A NBA to the south and landscaped areas have been introduced within the site to enhance visual permeability.

4.6.6 **OM5** – Tree and shrub planting within the NBA's and landscaped areas where possible to mitigate the scale and impact of the buildings, and improve the quality of the streetscape environment.

4.6.7 **OM6** – Provision of green roofs and vertical greening where feasible and appropriate to mitigate visual impact of buildings.

4.6.8 Planting will take a number of years to establish and so the full effects of mitigation will not be seen until some 10 years after completion of the project.

5 CONCLUSION AND SUMMARY OF IMPACTS

5.1 Impacts on Viewing Points/Public Visually Sensitive Receivers

5.1.1 The methodology for deriving the magnitude of change upon the Public Viewers' and the significance of the visual impacts is described in **Sections 2.6** and **2.9.**

VP1: View from Kai Fuk Road

5.1.2 The presence of the proposed development would result in an **Intermediate** magnitude of change to the views experienced by the key sensitive public receivers from Kai Fuk Road, which, when taken together with the **High** sensitivity of these receivers, will result in a visual impact significance considered **Moderately Adverse**.

VP2: View from Sheung Yee Road

5.1.3 The presence of the proposed development would result in an **Intermediate** magnitude of change to the views experienced by the key sensitive public receivers from Sheung Yee Road, which, when taken together with the **High** sensitivity of these receivers, will result in a visual impact significance considered **Moderately Adverse**.

VP3: View from Ngau Tau Kok Road

5.1.4 The presence of the proposed development would result in an **Intermediate** magnitude of change to the views experienced by the key sensitive public receivers from Ngau Tau Kok Road, which, when taken together with the **High** sensitivity of these receivers, will result in a visual impact significance considered **Moderately Adverse**.

VP4: View from Kung Lok Road Playground

5.1.5 The presence of the proposed development would result in a **Negligible** magnitude of change to the views experienced by the key sensitive public receivers from Kung Lok Road Playground, which, when taken together with the **High** sensitivity of these receivers, will result in a visual impact significance considered **Insubstantial**.

5.2 Overall Assessment of Visual Impacts

5.2.1 A prospective development can have a moderately adverse impact (i.e. have a degree of impact of a moderate extent) and can still be considered to be of a magnitude that is generally acceptable. Having said this, some mitigation measures have been suggested to reduce the visual obstruction, to make the building appear less visually intrusive, to enhance visual permeability, and to improve the quality of the streetscape environment should slightly reduce the magnitude of the residual visual impacts, but will not be sufficient to reduce the overall significance thresholds.

5.2.2 As for the G/IC development it would have been only some 3 to 8 storeys with 4.5 floor to floor in height. It would have been imperceptible from Viewpoint 4. And partially perceptible from Viewpoints 2 and 3 and largely imperceptible from Viewpoint 1. This being said we would still hold that, given the context of the proposed residential development (i.e. high rise development that is increasing in magnitude each day), that it could be said to be generally acceptable. The visual impact significance of the proposed development after implementation of mitigation measures as shown in **Figures 4 to 7** would be considered Moderately Adverse.

5.2.3 Mitigation measures selected to reduce the visual obstruction, make the building appear less visually intrusive, enhance visual permeability, and improve the quality of the streetscape environment should slightly reduce the magnitude of the residual visual impacts, but will not be sufficient to reduce the overall significance thresholds. A summary of degree of impacts to key public viewing points is provided in **Table 5.1**.

Table 5.1: Significance of Visual Impacts (Note: All impacts are adverse unless otherwise stated)

VP	Degree of Visibility of Source(s) of Visual Impact (Full, Partial, Obscured)	Approx. Distance Between VSR & Nearest Source(s) of Impact	Magnitude of Change (Large, Intermediate, Small, Negligible)	Receptor Sensitivity (Low, Medium, High)	Receptor Number (Very Few, Few, Many, Very Many)	Impact Significance during Operation Phase (Substantial, Moderate, Slight, Insubstantial)
VP1	Full	~250m	Intermediate	High	Very Many	Moderately Adverse
VP2	Full	~100m	Intermediate	High	Very Many	Moderately Adverse
VP3	Full	~200m	Intermediate	High	Very Many	Moderately Adverse
VP4	Full	~230m	Negligible	Medium	Very Many	Insubstantial

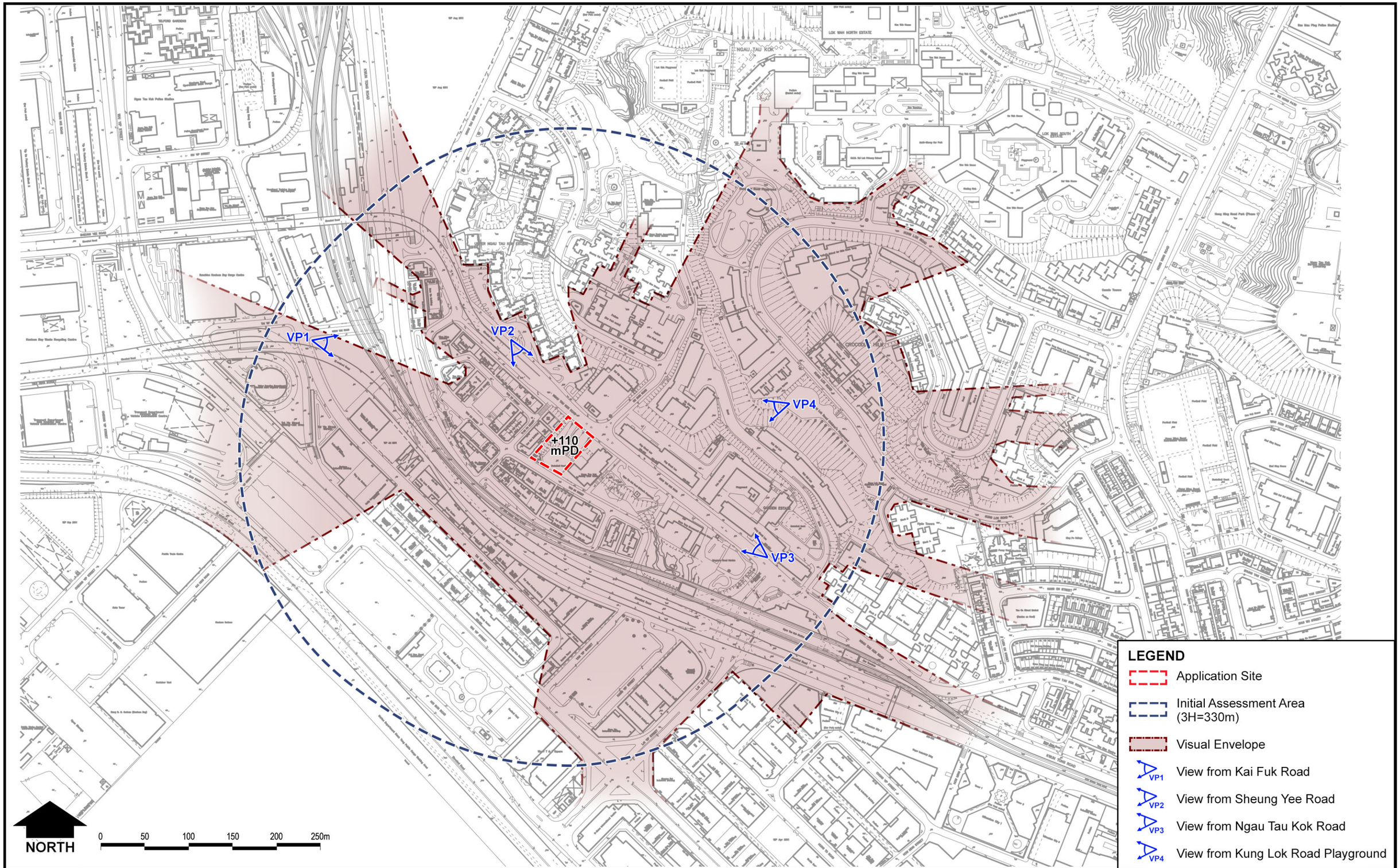


Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title

Aerial Photo

Scale	Date	Figure No.
1:4,000 @ A3	May 2017	1



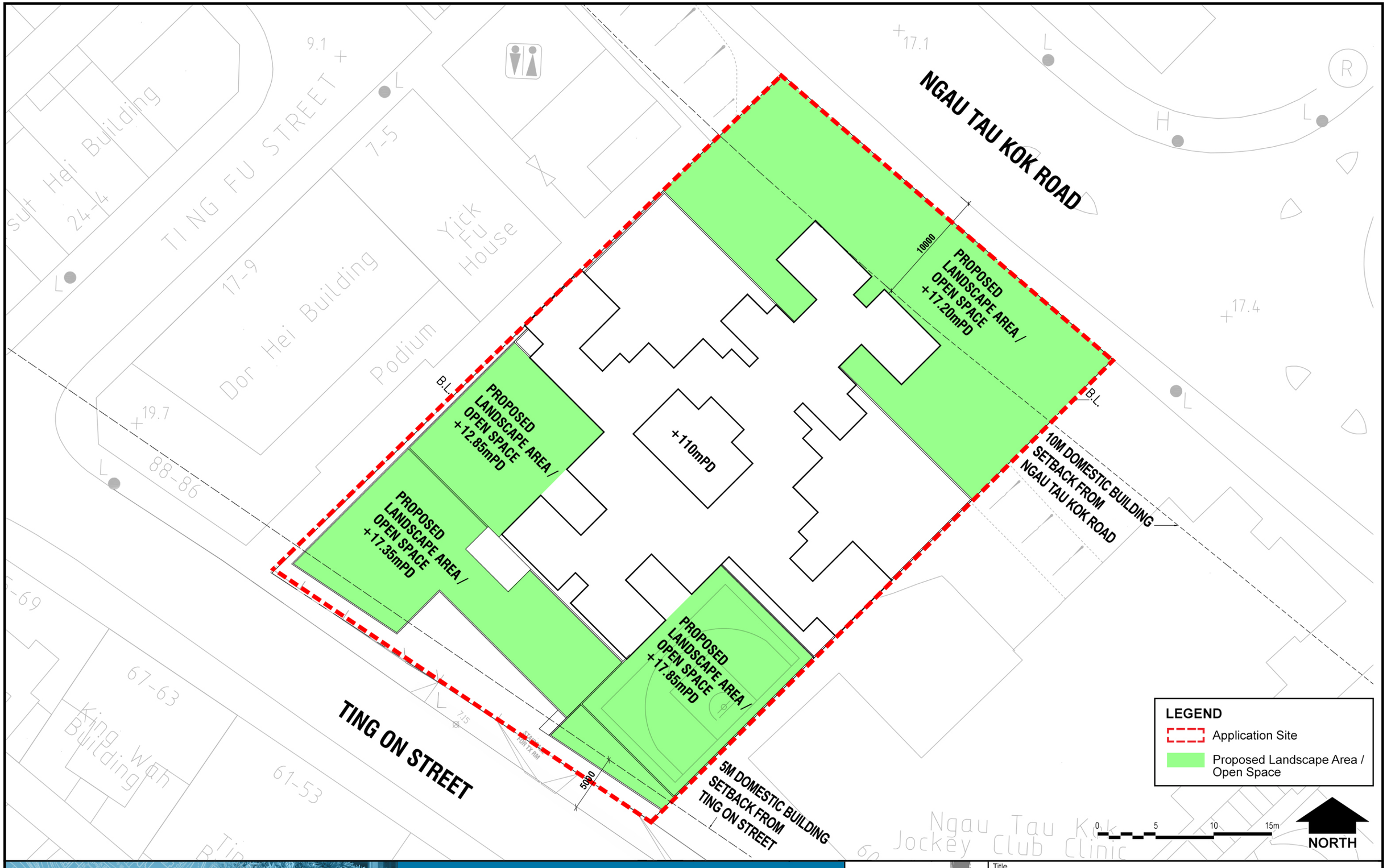
LEGEND

- Application Site
- Initial Assessment Area (3H=330m)
- Visual Envelope
- VP1 View from Kai Fuk Road
- VP2 View from Sheung Yee Road
- VP3 View from Ngau Tau Kok Road
- VP4 View from Kung Lok Road Playground

Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Zone of Visual Influence

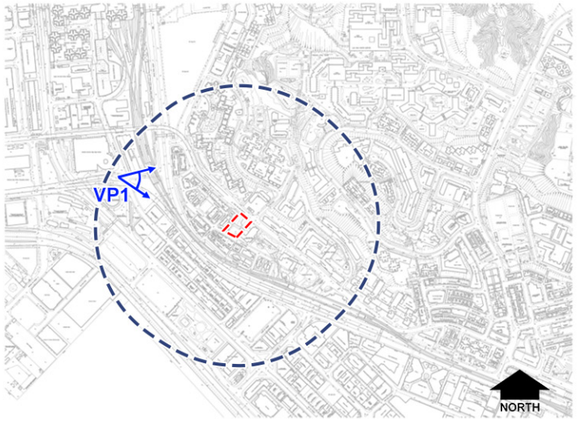
Scale	Date	Figure No.
1:4,000 @ A3	May 2017	2



Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: Site Layout Plan

Scale	Date	Figure No.
1:300 @ A3	October 2017	3



Keyplan



Existing Conditions

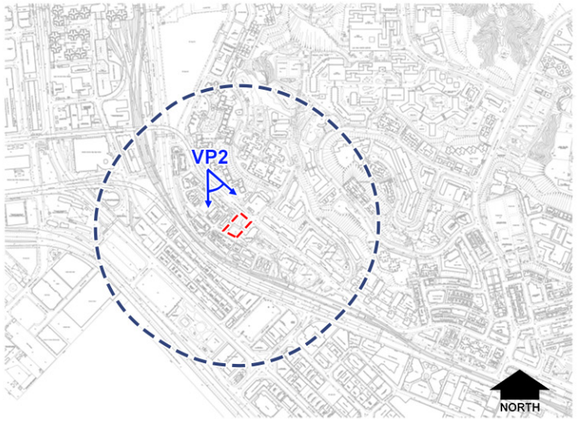


Proposed Development

Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: View Point 1 - View from Kai Fuk Road

Scale	Date	Figure No.
N.T.S.@ A3	May 2017	4



Keyplan



Existing Conditions

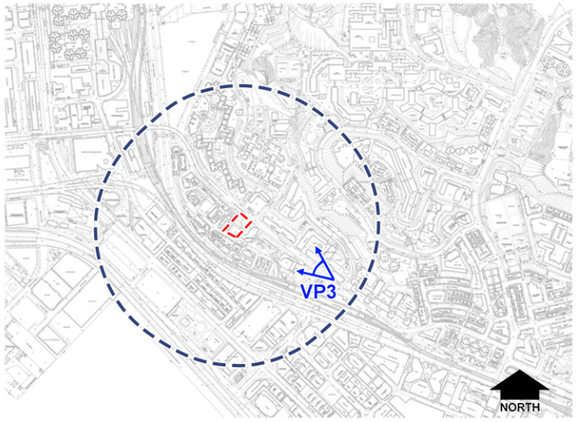


Proposed Development

Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: View Point 2 - View from Sheung Yee Road

Scale	Date	Figure No.
N.T.S.@ A3	May 2017	5



Keyplan



Existing Conditions

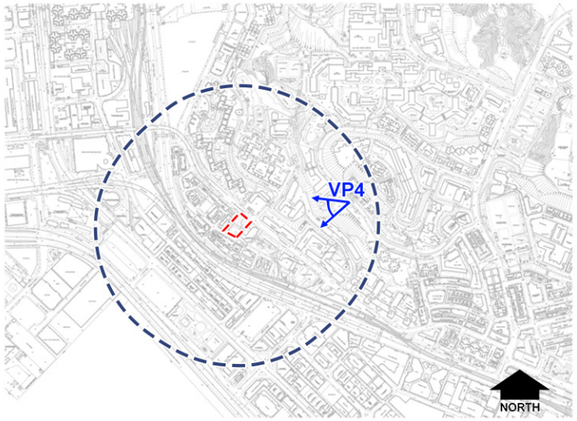


Proposed Development

Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: View Point 3 - View from Ngau Tau Kok Road

Scale	Date	Figure No.
N.T.S.@ A3	May 2017	6



Keyplan



Existing Conditions



Proposed Development

Consultancy Services for Preparation of Amendment of Plan under the Town Planning Ordinance for Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Title: View Point 4 - View from Kung Lok Road Playground

Scale	Date	Figure No.
N.T.S.@ A3	May 2017	7

Tree Survey Report

for

Planning Consultancy Services for the Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

(Rev. 2)

Client:
Hong Kong Housing Society

Prepared by
Urbis Limited

Prepared by :		September 2017
	Pure Wong	**Date**
Checked by :		September 2017
	Achareeya Parkmaruk	**Date**
Approved for issue by :		September 2017
	Alan Macdonald	**Date**

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2 DESCRIPTION OF THE PROJECT AND SURVEY AREA

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4 FINDINGS OF TREE SURVEY

5 TREE RECOMMENDATIONS

6 TREE TRANSPLANTING FEASIBILITY

7 SUMMARY

Appendix A Tree Assessment Schedules

Appendix B Tree Survey Photographs

Appendix C Drawings

Drawing Nos.	*Drawing Title*	*Revision*
HS10_TS01	Tree Survey Plan	A
HS10_TW01	Tree Works Plan	B

1 INTRODUCTION

1.1 Background

- Urbis Limited has been commissioned by Hong Kong Housing Society to undertake the tree survey and assessment for the Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon.

1.2 Content of Report

1.2.1 This Tree Survey Report is based on the Topographic Survey Plan prepared by land surveyor Wu Hill & Associates Ltd. and information gathered on site by Urbis Limited and contains the following information:

- description of the survey area (Section 2);
- description of tree survey methodology (Section 3);
- findings of tree survey (Section 4);
- Tree Survey Schedules (Appendix A);
- Tree Survey Photographs (Appendix B);
- Tree Survey Plan showing the location of the site boundary, the location of each tree surveyed and its reference number (Appendix C);
- Tree Works Plan showing proposed treatment of each existing tree (Appendix C).

1.3 Relevant Legislation and Guidelines

1.3.1 In preparation of the Report, reference has been made to the following technical circulars, practice notes and publications:

- Forests and Countryside Ordinance (Cap.96);
- Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586);
- Country Parks Ordinance (Cap. 208);
- Development Bureau Technical Circular (Works) No. 7/2015 – Tree Preservation;
- Environment, Transport and Works Bureau Technical Circular (Works) No. 29/2004 – Registration of Old and Valuable Trees, and Guidelines for their Preservation;
- Development Bureau Technical Circular (Works) No. 6/2015 -- Maintenance of Vegetation and Hard Landscape Features;
- General Regulation (GR) 740;
- Standing Interdepartmental Landscape Technical Group (SILTECH) publication -'Tree Planting and maintenance in Hong Kong' (1991);
- Agriculture, Fisheries and Conservation Department Publication - 'Check List of Hong Kong Plants 2012' (2012);
- Agriculture, Fisheries and Conservation Department Publication - 'Rare and Precious Plants of Hong Kong' (2003);

2 DESCRIPTION OF THE PROJECT AND SURVEY AREA

2.1 Project Description and Site Constraints

- The current project "Proposed Development of Rental Housing at Ting On Street, Ngau Tau Kok, Kowloon" includes the development of a 27 domestic storeys building.
- The project site is located at the existing Ting On Street Playgound and a landscape garden, just immediate to the south-western of Ngai Tau Kok Jockey Club Clinic. (refer Drawing No. HS10_TS01 of Appendix C)
- SIMAR slope 11NE-C/C228 and 11NE-C/C229 maintained by Highway Department is situated at the middle and western of the project site.
- The project site (the Site) was proposed to accommodate the decanting tenants affected by the redevelopment of its ageing Kwun Tong Garden Estate.
- As the development will involve excavation, foundation works, laying of underground utilities, sub-grade compaction and other construction activities, trees in or near this project site area are inevitably affected.

3 TREE SURVEY METHODOLOGY

3.1 Tree Survey Methodology

3.1.1 Where practical, all trees are surveyed individually, in which case the following information is identified for each individual tree:

- tree number;
- botanical name;
- height;
- crown spread;
- trunk diameter (measured 1.3 metre from the ground);
- an assessment of form (good / fair / poor);
- an assessment of health (good / fair / poor);
- an assessment of amenity value (good / fair / poor);
- the suitability for transplanting (high / medium / low);
- an assessment of structural condition (good / fair / poor);
- the conservation status of the tree species (indicates rarity and protection status under relevant ordinances of a species in Hong Kong);
- the Government department responsible for maintaining the tree;
- whether the tree is included in the Register of Old and Valuable Trees promulgated under ETWB TC(W) 29/2004;
- whether the tree is potentially registrable in accordance with the criteria as set out in ETWB TC(W) No. 29/2004;
- whether the tree species is included in the latest edition of the publication 'Rare and Precious Plants of Hong Kong' issued by AFCD;
- whether the tree is potentially hazardous;
- whether the tree should be removed or treated with tree surgery to ensure safety and prevent health deterioration;
- existing ground level at the trunk base; and
- additional remarks are provided for trees to which special importance is ascribed due to special attributes such as protected status; rarity; age over 100 years, outstanding size or form; and cultural or historical significance; and
- photographic record.

3.2 Assessment of Values

3.2.1 Tree Form

The form of all trees surveyed is evaluated as good, fair or poor taking account of the following criteria:

- whether the tree is a good example of the typical form and shape of that species;
- the degree to which the tree possesses a well balanced, attractive shape;
- the presence / absence of dead, damaged or broken limbs, branches, stumps; and
- the presence / absence of crossing, tangled branches.

3.2.2 Tree Health

The health of all trees surveyed is evaluated as good, fair or poor taking account of the following criteria:

- foliage – poor leaf colour or small leaf size may indicate damage to roots; deep green and dense foliage indicates good health of tree.
- twigs – poor shoot growth and die-back of twigs in the crown are often symptoms of root problems;
- branches – Dead, broken or crossing branches will be noted, as well as splits and cavities; and
- trunk – cavities or internal rot can be revealed by discoloured bark, moisture seeping through the bark and bracket fungi. Open cavities and bark damage will be noted
- root – the lifting of the root plate will be noted, Root severance by trenches and cuttings, or burial of the roots by adding fill and of soil compaction and paving up to the trunk will be noted.

3.2.3 Suitability for Transplanting

The predicted survival rate of the trees following transplanting is evaluated as high, medium or low taking account of the following criteria:

- the typical ability of that species to survive transplanting;
- the individual tree size, form and health condition;
- the presence of any physical impediments to the preparation of root balls and tree lifting operation, such as wall, utilities, manholes, rocks, foundations etc.; and
- the inclined angle of the tree roots.

3.2.4 Amenity Value

The amenity value of all trees surveyed is evaluated as good, fair or poor, taking account of the following criteria (based on Development Bureau Technical Circular (Works) No. 10/2013 – Tree Preservation):

- the functional values for shade, shelter, screening;
- the functional values for reduction of pollution and noise; and
- the tree's fung shui significance.

3.2.5 Conservation Status

The conservation status of each tree indicates rarity and protection status under relevant ordinances of a species in Hong Kong, with references such as:

- Rare and Precious Plants of Hong Kong;
- the IUCN Red List of Threatened Species; and

- the Forests and Countryside Ordinance (Cap. 96).

If the species of a particular tree is not listed in any of the above references, this entry for the tree will be blank in the tree assessment schedule.

3.2.6 Structural Condition

The structural condition of all trees surveyed is evaluated as good, fair or poor taking account of the following criteria:

- root conditions and stability;
- trunk and branch soundness; and
- the presence / absence of critical decay, or cavities that potentially lead to tree failure and damage.

4 FINDINGS OF TREE SURVEY

4.1 General tree survey findings

4.1.1 The tree survey was carried out in December 2014 for all tagged trees within tree survey area, with the position of the trees as shown on Drawing no. HS10_TS01 under Appendix C.

4.1.2 There were 37 trees surveyed within the tree survey area (diameter at 1.3 m height measuring 95 mm or more).

4.2 Findings for Trees

4.2.1 From the **37** trees surveyed within the tree survey boundary, the average tree height is found to be 10m, the average crown size is 7m, and the average trunk diameter is 340mm.

4.2.2 The largest tree found in this tree survey was in the south-eastern portion of the project site area. It was T15 *Ficus microcarpa* (approx. 10 m in height, 13 m wide crown spread, and trunk diameter of 986mm).

4.2.3 The general conditions of the trees within the site boundary were found to be poor to fair. There were 16 tree species found in the surveyed area. The dominant species is the exotic tree species *Koelreuteria bipinnata* which distributed widespread the slope area of the project site.

4.2.4 There are no existing trees included in the Register of Old and Valuable Trees. No existing tree meets the criteria for Potentially Registrable Trees in accordance with the criteria as set out in ETWB TC(W) No. 29/2004.

4.2.5 The findings regarding trees in this tree survey are summarized in the following table:

Species	Chinese Name	No. of Trees
Albizia lebbeck	大葉合歡	1
Bauhinia purpurea	紅花羊蹄甲	3
Bauhinia variegata	宮粉羊蹄甲	1
Bauhinia x *blakeana*	洋紫荊	1
Bombax ceiba	木棉	4
Cascabela thevetia	黃花夾竹桃	1
Celtis sinensis	朴樹	2

Cerbera manghas	海杧果	1
Erythrina variegata	刺桐	1
Ficus microcarpa	榕樹	2
Hibiscus tiliaceus	黃槿	1
Koelreuteria bipinnata	複羽葉欒樹	15
Liquidambar formosana	楓香	1
Melia azedarach	楝	1
Peltophorum pterocarpum	盾柱木	1
Sterculia lanceolata	假蘋婆	1
Grand Total =		**37**

5 TREE RECOMMENDATIONS

5.1 Proposed treatments on the surveyed trees are shown in both the Tree Assessment Schedules (Aappendix A) and in Drawing No.: HS10_1_TW01 (Appendix C).

5.2 For the **37** existing trees in the project site area, tree treatments are being described and summarized under Table 5.1 as below:

Table 5.1 – The recommendations of trees

Botanical Name	Chinese Name	Retain	Transplant	Fell	Total
Albizia lebbeck	大葉合歡	0	0	1	1
Bauhinia purpurea	紅花羊蹄甲	0	0	3	3
Bauhinia variegata	宮粉羊蹄甲	0	0	1	1
Bauhinia x blakeana	洋紫荊	0	0	1	1
Bombax ceiba	木棉	0	0	4	4
Cascabela thevetia	黃花夾竹桃	0	0	1	1
Celtis sinensis	朴樹	0	0	2	2
Cerbera manghas	海杧果	0	0	1	1
Erythrina variegata	刺桐	0	0	1	1
Ficus microcarpa	榕樹	0	0	2	2
Hibiscus tiliaceus	黃槿	0	0	1	1
Koelreuteria bipinnata	複羽葉欒樹	0	0	15	15
Liquidambar formosana	楓香	0	0	1	1
Melia azedarach	楝	0	0	1	1
Peltophorum pterocarpum	盾柱木	0	0	1	1
Sterculia lanceolata	假蘋婆	0	0	1	1
Grand Total =		**0**	**0**	**37**	**37**

- **0** trees are proposed to be retained.
- **0** trees are proposed to be transplanted.
- **37** trees are proposed to be felled, and all are affected by proposed development and associated works.

5.3 Transplantation is not feasible for **37** trees that are proposed to be felled, reasons include: most of the trees are located on slope, reasonable sized root ball preparation is impractical and unbalanced root ball will be formed. Also, some of the trees have either been planted and grown near U-channel, edge of slope or grown beside concrete wall for a long time; while others have poor tree forms which also render them not cost effective to transplant as per paragraph 23 of Development Bureau Technical Circular (Works) No. 7/2015 – Tree Preservation.

6 COMPENSATORY PROPOSAL

6.1 Due to the development of the Proposed Public Rental Housing at Ting On Street, **37** existing trees within the project site are proposed to be felled.

6.2 A compensatory planting scheme with a total of **39** compensatory standard trees (preferably in small tree species) with a stem diameter >45mm and ≤ 75mm will be planted, which results in a 1:1.05 compensatory ratio in terms of quantity (i.e., number of trees for compensation). This is in accordance with the criteria as set out in DEVB TC(W) No. 7/2015 for minimum compensatory planting in terms of quantity.

6.3 The project will incorporate a landscape area together with those compensatory trees to enhance the local environment and blend the future building with its neighbourhood, such that the overall landscape quality of the site and its surrounding will be physically and visually improved.

7 SUMMARY

7.1 Tables 7.1 below provide a consolidated findings and recommendations of the existing trees. A total of **37** trees currently existed within the tree survey boundary were surveyed. **0** trees are proposed to be retained, **0** trees are proposed to be transplanted and **37** trees are proposed to be felled. A total of **39** standard trees will be provided to compensate the loss of **37** existing trees. The total number of trees after compensation is **39**.

Table 7.1 – Summary of Trees Recommendations

	(1)	(2)	(3)	(4)	(5)	(6)
	Existing	**Retained**	**Transplanted**	**Felled**	**Proposed compensatory planting**	**Total Trees after compensation (2)+(3)+(5)**
Total	**37**	**0**	**0**	**37**	**39**	**39**

Appendix A

Tree Assessment Schedule

Tree Assessment Schedule

Project Title: Proposed Rental Housing Development at Ting On Street In Ngau Tau Kok, Kowloon

Date of Tree Survey: 12/24/2014 Surveyed by: Pure Wong & Felix Kwan

Tree No.	Species		Measurements			Amenity value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation status	Recommendation	Justification for Proposed	Department to provide expert advice to LandsD	Additional Remarks
	Scientific name	Chinese name	height (m)	DBH (mm)	crown spread (m)	(good/fair/poor)				(high/medium/low)	Remarks		(retain/ transplant/fell)	Tree Removal		
T1	*Celtis sinensis*	朴樹	10	450	8	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope toe. Adjacent to culvert. Basal paved.
T2	*Ficus microcarpa*	榕樹	10	320	7	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope.
T3	*Koelreuteria bipinnata*	複羽葉欒樹	8	280	8	Fair	Poor	Fair	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On slope. Adjacent to boulder. Asymmetrical tree form. Stubs, decay and pruning wounds are found.
T4	*Hibiscus tiliaceus*	黃槿	11	700	11	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. DBH measured at 0.80m. Exposed roots observed. Dead branches observed (largest approx. 100mm in diameter). Crossing branch observed. Loose bark and sign of borer infestation observed.
T5	*Erythrina variegata*	刺桐	8	280	6	Poor	Poor	Poor	Poor	Low	-	-	Fell	Note 1 and 2	LCSD	On slope. The tree is suppressed. Loose bark found at basal. Wounds found at branches. Dead branch, crossing branch and exposed roots are found. Immediately adjacent to U-channel.
T6	*Bauhinia x blakeana*	洋紫荊	12	290	10	Fair	Poor	Fair	Poor	Low	-	-	Fell	Note 1 and 2	LCSD	On slope. Bulge and wound found at basal. Broken scaffold. Wounds are found at branches.
T7	*Koelreuteria bipinnata*	複羽葉欒樹	10	350	8	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. Dead branch is found (approx. 50mm in diameter)
T8	*Koelreuteria bipinnata*	複羽葉欒樹	10	360	9	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. Dead branches, epicormic growth and exposed roots are found.
T9	*Koelreuteria bipinnata*	複羽葉欒樹	10	260	7	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. Adjacent to U-channel. Dead branches are found.
T10	*Koelreuteria bipinnata*	複羽葉欒樹	12	260	8	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. Adjacent to U-channel. Exposed root, dead branch and sucker growth are found.
T11	*Koelreuteria bipinnata*	複羽葉欒樹	12	370	10	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. Adjacent to U-channel. Asymmetrical tree from. Bent trunk. Dead branch (approx. 50mm in diameter) and exposed roots are found.
T12	*Koelreuteria bipinnata*	複羽葉欒樹	12	310	10	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. Adjacent to U-channel. Asymmetrical tree from. Dead branch (approx. 100mm in diameter) and stub are found.
T13	*Koelreuteria bipinnata*	複羽葉欒樹	12	375	12	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. Adjacent to U-channel. Asymmetrical tree from. Exposed roots are found.
T14	*Koelreuteria bipinnata*	複羽葉欒樹	12	250	8	Fair	Poor	Fair	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On slope. Adjacent to U-channel. Asymmetrical tree form. Exposed roots, stub, wounds, crossing branch and dead branches are found.
T15	*Ficus microcarpa*	榕樹	10	986	13	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. 2 trunks. The DBH measurement reflects the diameter of the main trunk only. Exposed roots, hangers are found. Crossing branches (Approx. 150mm in diameter) are found. Stubs (Approx. 80mm in diameter) are found.

Tree Assessment Schedule

Project Title: Proposed Rental Housing Development at Ting On Street In Ngau Tau Kok, Kowloon

Date of Tree Survey: 12/24/2014 Surveyed by: Pure Wong & Felix Kwan

Tree No.	Species		Measurements			Amenity value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation status	Recommendation	Justification for Proposed	Department to provide expert advice to LandsD	Additional Remarks
	Scientific name	Chinese name	height (m)	DBH (mm)	crown spread (m)	(good/fair/poor)				(high/medium/low)	Remarks		(retain/ transplant/fell)	Tree Removal		
T16	*Bauhinia purpurea*	紅花羊蹄甲	9	230	5	Fair	Poor	Fair	Poor	Low	-	-	Fell	Note 1 and 2	LCSD	On slope. Exposed roots and epicormic growth are found. Wood decay found at main leader.
T17	*Bauhinia purpurea*	紅花羊蹄甲	10	240	5	Poor	Poor	Poor	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On slope. Asymmetrical tree form. Leaning at 20° from gound level. Basal cavity (Approx. 150 x 100mm). Broken wound found at branch.
T18	*Peltophorum pterocarpum*	盾柱木	14	750	8	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. Exposed roots and epicormic growth are found. Dead branches, corssing branch and stubs are found. Broken wound found at branches.
T19	*Albizia lebbeck*	大葉合歡	12	510	11	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. Dead branch (approx. 50mm in diameter). Exposed roots and multiple wounds are found (largest measured 800mm long and 60mm width). Bent trunk.
T20	*Sterculia lanceolata*	假蘋婆	7	200	5	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. Asymmetrical tree form. Epicormic growth are found.
T21	*Cerbera manghas*	海杧果	8	280	5	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. Asymmetrical tree form. Exposed roots are found. Multiple wounds and cavities are found.
T22	*Bauhinia variegata*	宮粉羊蹄甲	8	240	6	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. Asymmetrical tree form. Multiple wounds are found.
T23	*Bauhinia purpurea*	紅花羊蹄甲	8	210	5	Fair	Poor	Fair	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On slope crest. Epicormic growth, exposed roots and crossing branches are found. Broken wounds are wound.
T24	*Liquidambar formosana*	楓香	10	300	6	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. Asymmetrical tree form. Exposed roots are found.
T25	*Melia azedarach*	楝	14	650	12	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	Adjacent to boulder and U-channel. Pruning wounds, exposed roots and dead branches(largest measured 50mm) are found. Girdling roots are observed.
T26	*Bombax ceiba*	木棉	14.5	290	6	Poor	Poor	Poor	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On berm up area. Asymmetrical tree form. Bent trunk. Poor taper.
T27	*Bombax ceiba*	木棉	14	370	5	Poor	Poor	Fair	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On berm up area. Wound found at branches. Poor taper.
T28	*Bombax ceiba*	木棉	12	270	5	Poor	Poor	Fair	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On berm up area. Asymmetrical tree form. Bent main leader. Poor taper.
T29	*Bombax ceiba*	木棉	14	460	6	Fair	Poor	Fair	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On berm up area. Concrete pavement lifted.
T30	*Koelreuteria bipinnata*	複羽葉欒樹	6	120	5	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope.
T31	*Koelreuteria bipinnata*	複羽葉欒樹	8	120	4	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope.

Tree Assessment Schedule

Project Title: Proposed Rental Housing Development at Ting On Street In Ngau Tau Kok, Kowloon

Date of Tree Survey: 12/24/2014 Surveyed by: Pure Wong & Felix Kwan

Tree No.	Species		Measurements			Amenity value	Form	Health condition	Structural condition	Suitability for transplanting		Conservation status	Recommendation	Justification for Proposed	Department to provide expert advice to LandsD	Additional Remarks
	Scientific name	Chinese name	height (m)	DBH (mm)	crown spread (m)	(good/fair/poor)				(high/medium/low)	Remarks		(retain/ transplant/fell)	Tree Removal		
T32	*Celtis sinensis*	朴樹	9	315	8	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. Asymmetrical tree form. Basal is paved with concrete. Sucker growth is found.
T33	*Koelreuteria bipinnata*	複羽葉欒樹	9	110	4	Poor	Fair	Poor	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On slope crest. Girdling with pavement at basal. Suppressed.
T34	*Koelreuteria bipinnata*	複羽葉欒樹	10	140	4	Poor	Poor	Poor	Poor	Low	-	-	Fell	Note 1 and 2	LCSD	On slope crest. Asymmetrical tree form. Dead branch and exposed roots are found. Epicormic growth is found.
T35	*Koelreuteria bipinnata*	複羽葉欒樹	12	410	10	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope. Sucker growth, dead branches and epicormic growth are observed.
T36	*Koelreuteria bipinnata*	複羽葉欒樹	5	500	10	Fair	Fair	Fair	Fair	Low	-	-	Fell	Note 2	LCSD	On slope crest. DBH measured at 0.50m Exposed roots and epicormic growth are observed. Crossing branches found at scaffold.
T37	*Cascabela thevetia*	黃花夾竹桃	4	140	3	Poor	Poor	Poor	Fair	Low	-	-	Fell	Note 1 and 2	LCSD	On slope crest. DBH measured at 0.25m. Included bark. Decay found at trunk.
	Key to Justification:															
	Note 1: Poor form / health tree/ poor structure or hazardous tree															
	Note 2: Affected by the site formation works															

Appendix B

Tree Survey Photographs



Photo No. 1 | T1



Photo No. 2 | T1



Photo No. 3 | T2

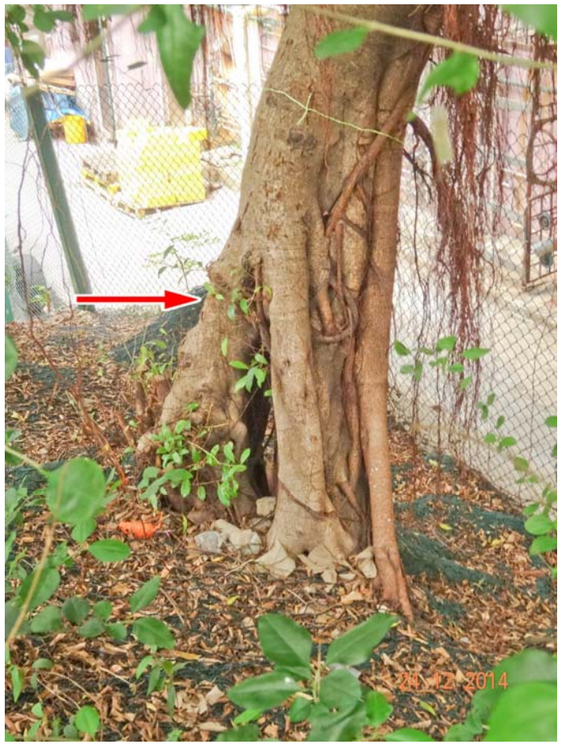


Photo No. 4 | T2



Photo No. 5 | T3



Photo No. 6 | T3

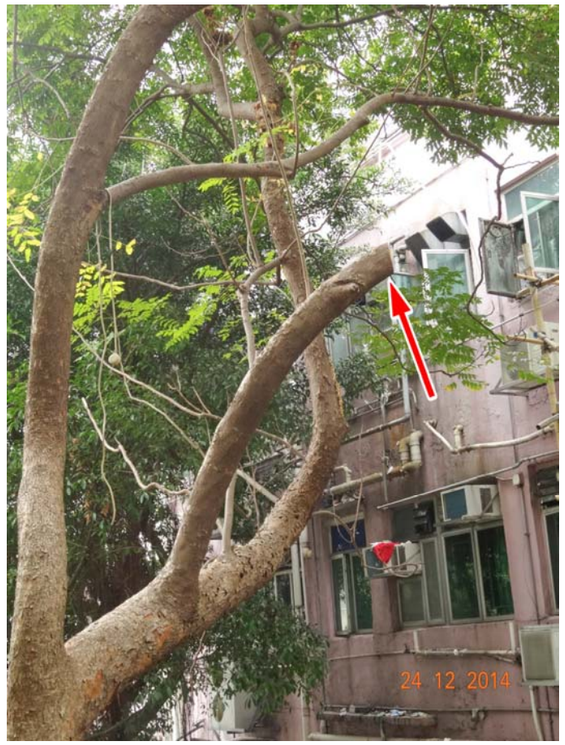


Photo No. 7 | T3



Photo No. 8 | T4

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 9 | T4



Photo No. 10 | T4



Photo No. 11 | T4



Photo No. 12 | T4



Photo No. 13 | T4



Photo No. 14 | T4

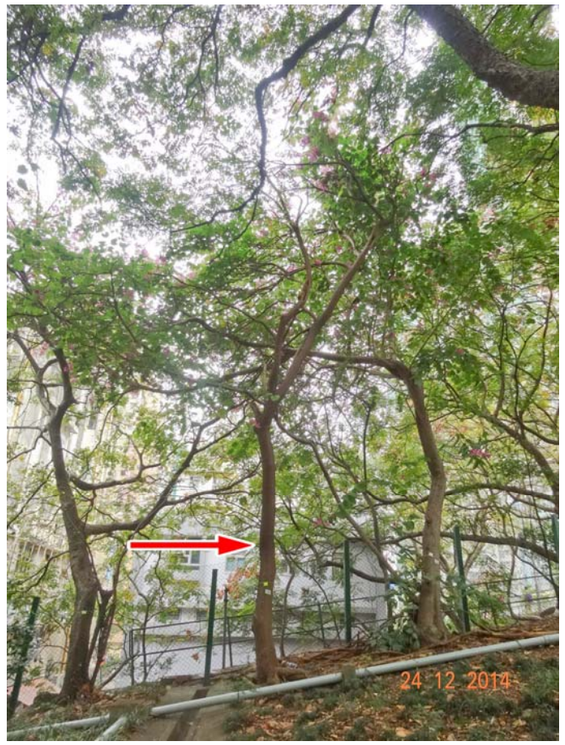


Photo No. 15 | T5



Photo No. 16 | T5

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 17 | T5



Photo No. 18 | T5

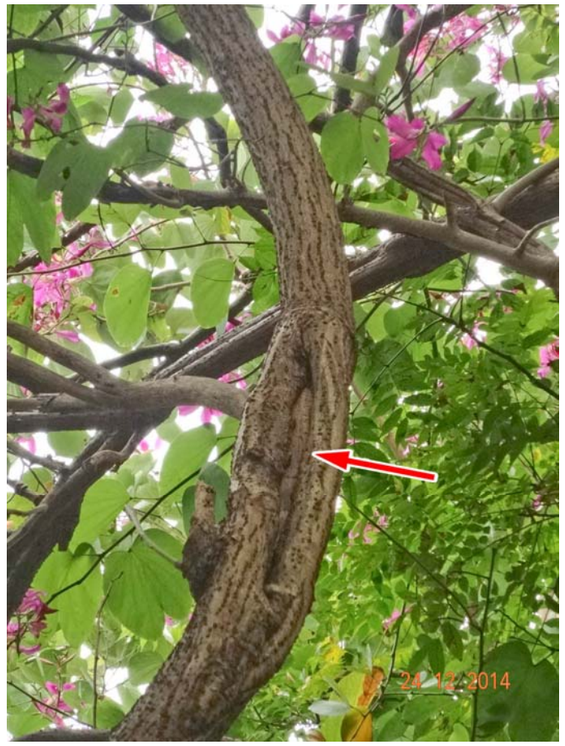


Photo No. 19 | T5



Photo No. 20 | T5

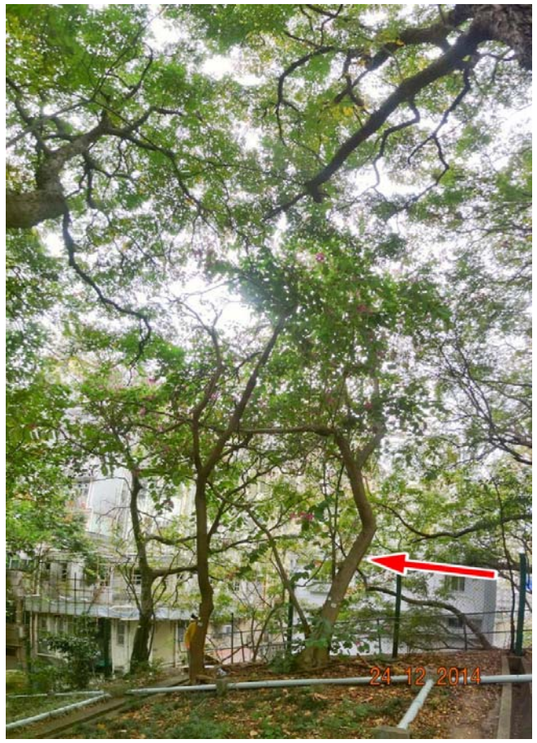


Photo No. 21 | T6



Photo No. 22 | T6



Photo No. 23 | T6



Photo No. 24 | T6

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS

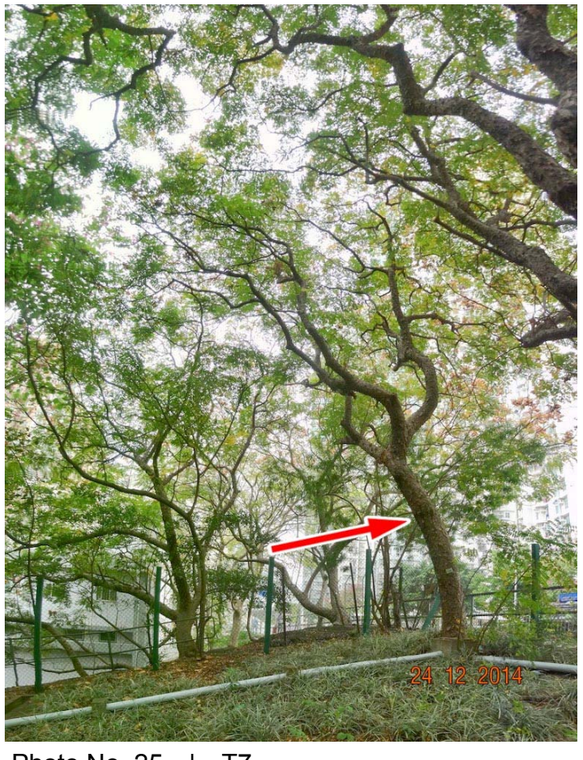


Photo No. 25 | T7



Photo No. 26 | T7

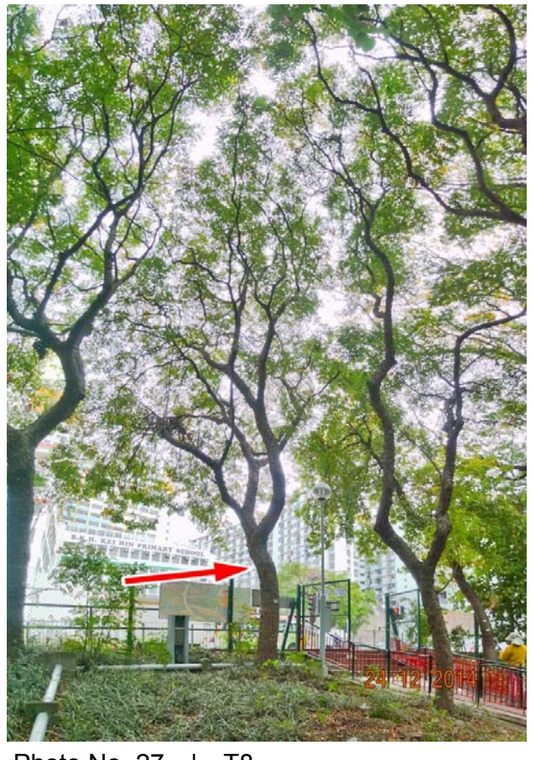


Photo No. 27 | T8



Photo No. 28 | T8

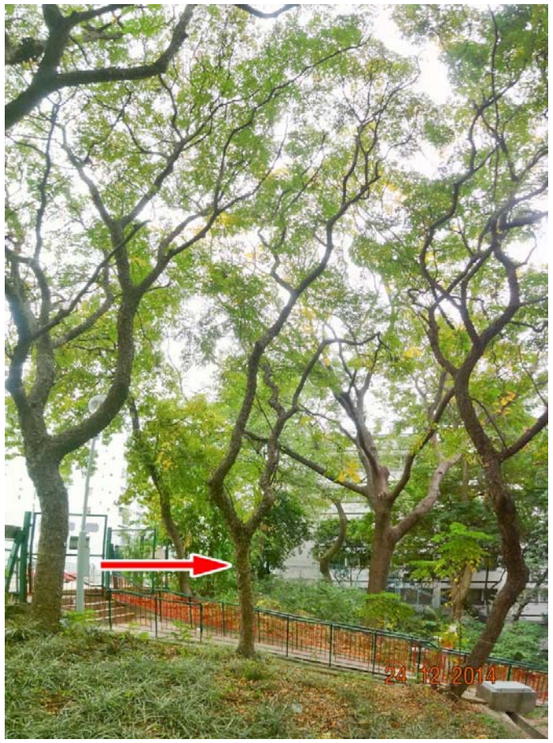


Photo No. 29 | T9



Photo No. 30 | T9



Photo No. 31 | T9



Photo No. 32 | T10

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 33 | T10

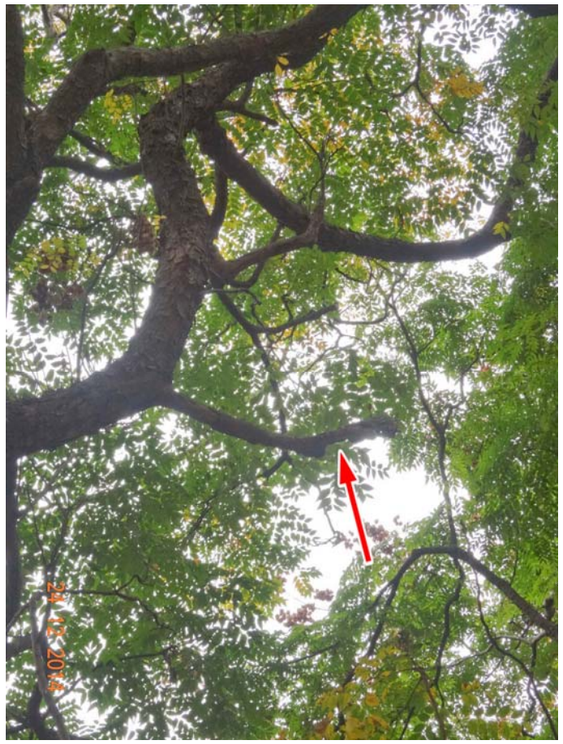


Photo No. 34 | T10



Photo No. 35 | T10



Photo No. 36 | T11



Photo No. 37 | T11



Photo No. 38 | T11



Photo No. 39 | T12

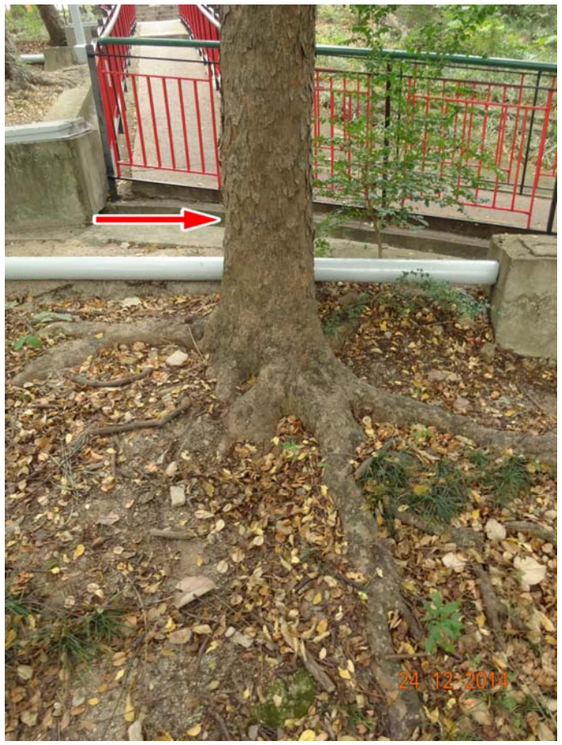


Photo No. 40 | T12

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS

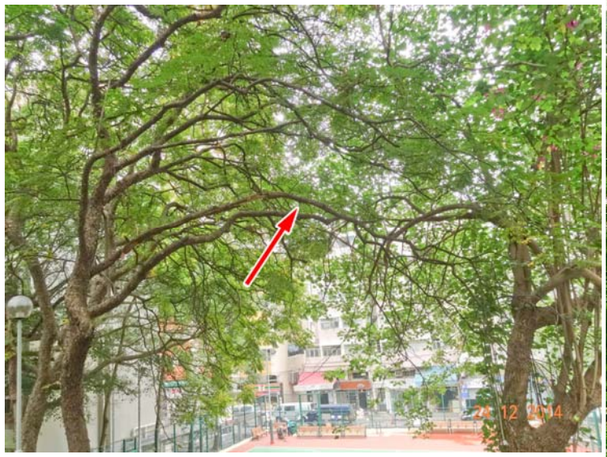


Photo No. 41 | T12



Photo No. 42 | T13



Photo No. 43 | T13

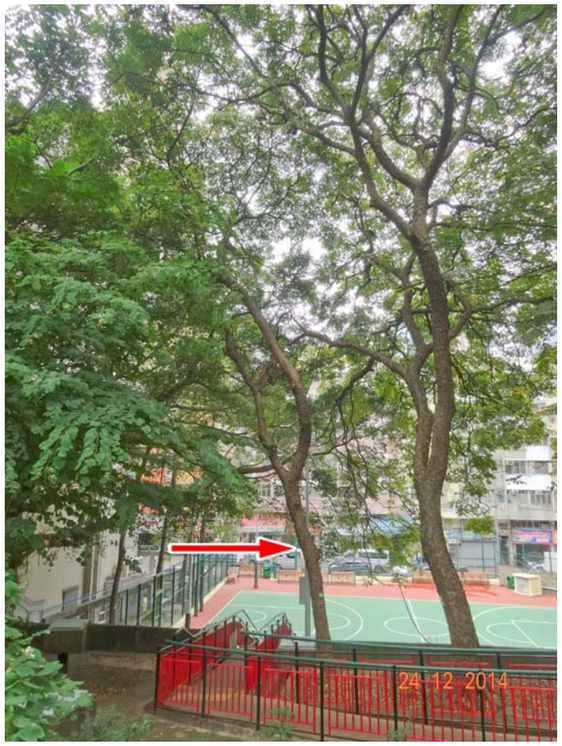


Photo No. 44 | T14



Photo No. 45 | T14



Photo No. 46 | T14



Photo No. 47 | T14



Photo No. 48 | T14

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 49 | T15



Photo No. 50 | T15



Photo No. 51 | T15



Photo No. 52 | T15

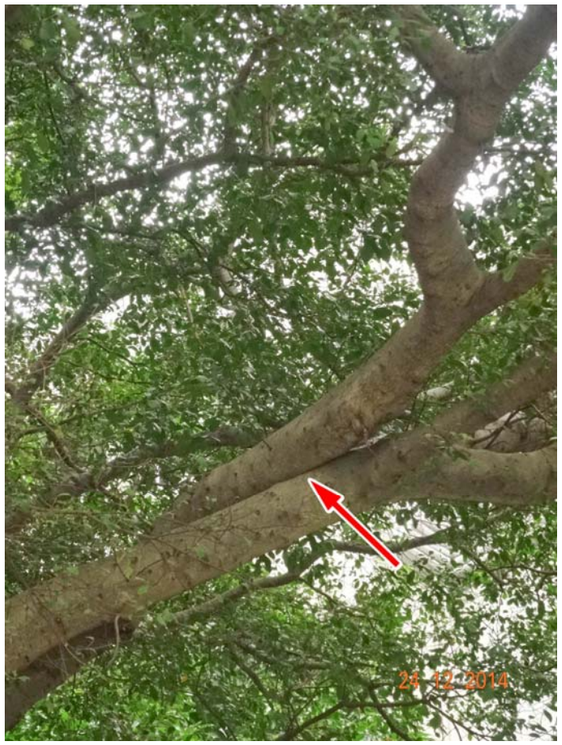


Photo No. 53 | T15



Photo No. 54 | T15



Photo No. 55 | T15



Photo No. 56 | T15

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 57 | T16



Photo No. 58 | T16



Photo No. 59 | T16



Photo No. 60 | T16

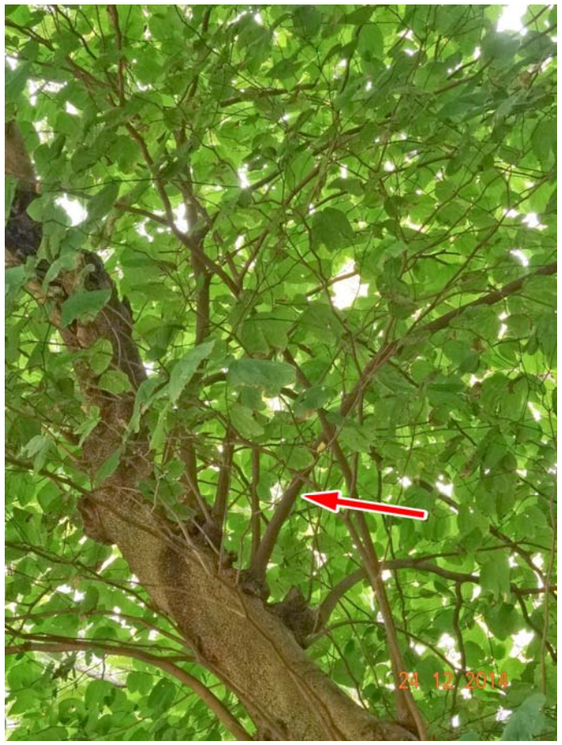


Photo No. 61 | T16



Photo No. 62 | T16

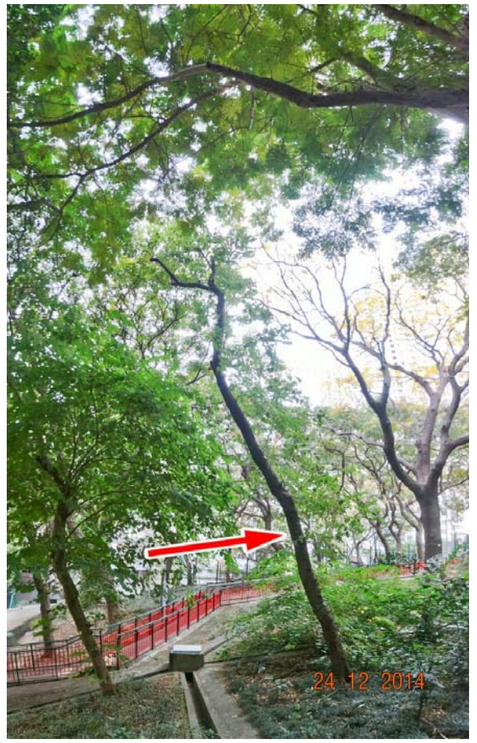


Photo No. 63 | T17



Photo No. 64 | T17

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 65 | T17

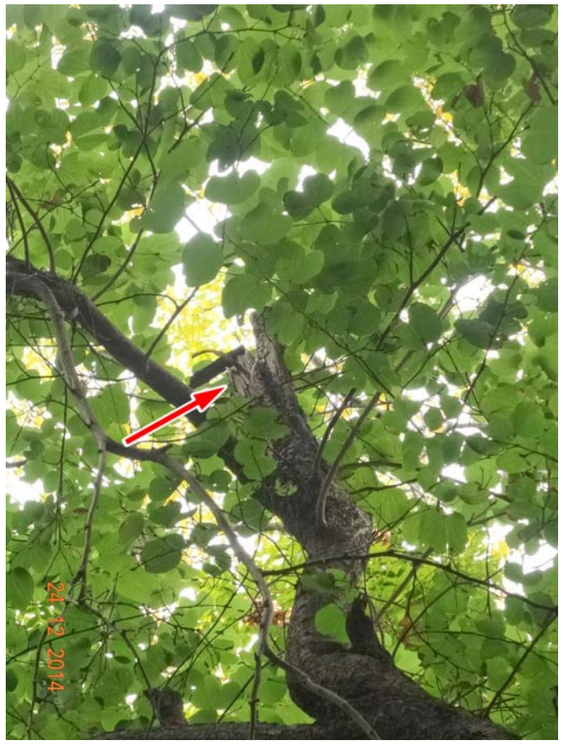


Photo No. 66 | T17



Photo No. 67 | T17

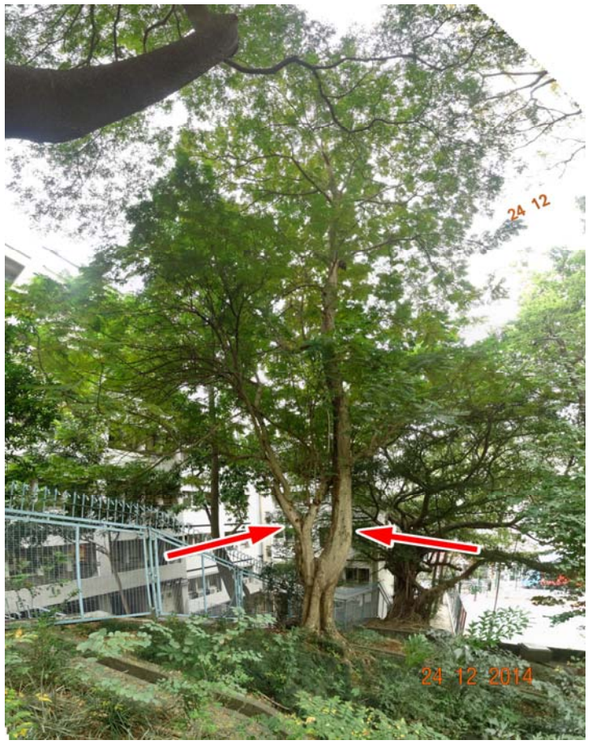


Photo No. 68 | T18



Photo No. 69 | T18

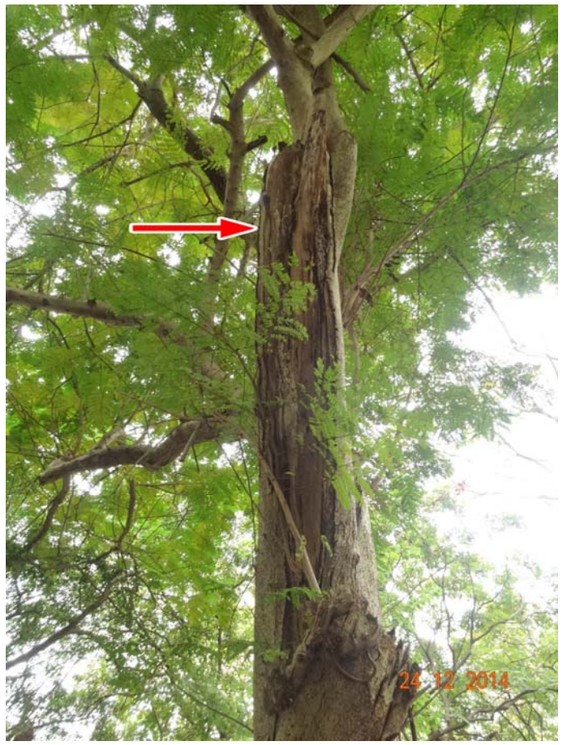


Photo No. 70 | T18



Photo No. 71 | T18



Photo No. 72 | T19

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS

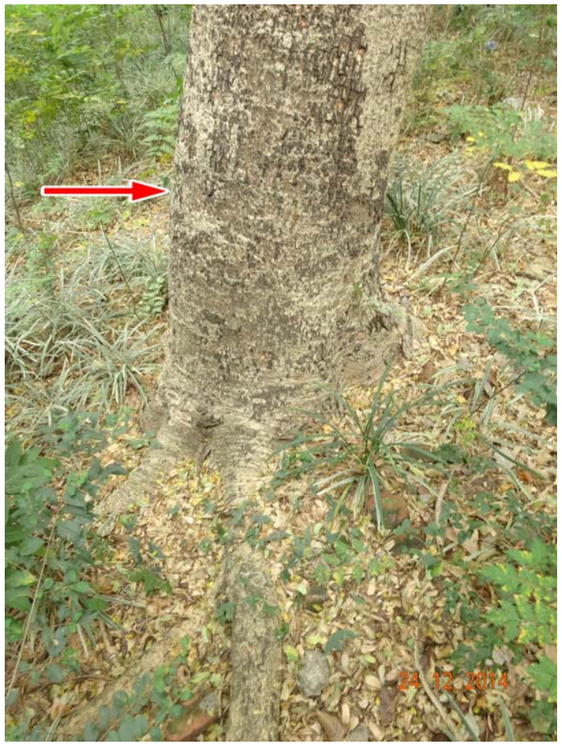


Photo No. 73 | T19



Photo No. 74 | T19

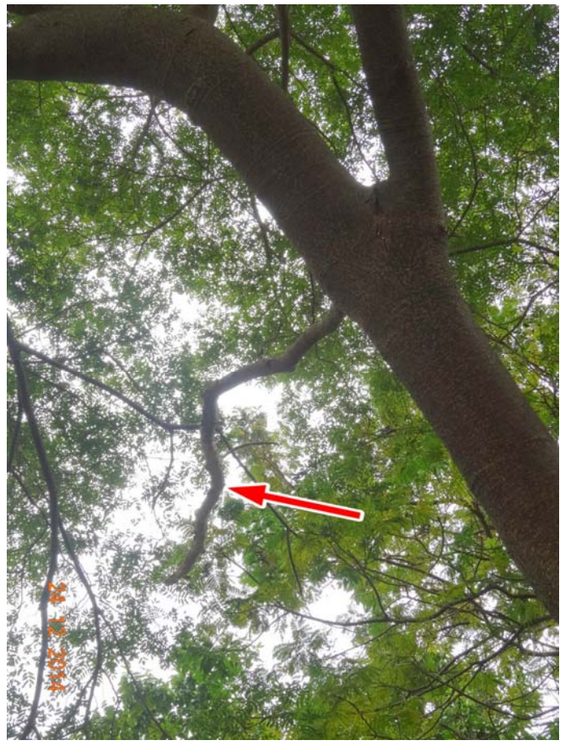


Photo No. 75 | T19



Photo No. 76 | T19



Photo No. 77 | T19



Photo No. 78 | T20



Photo No. 79 | T20

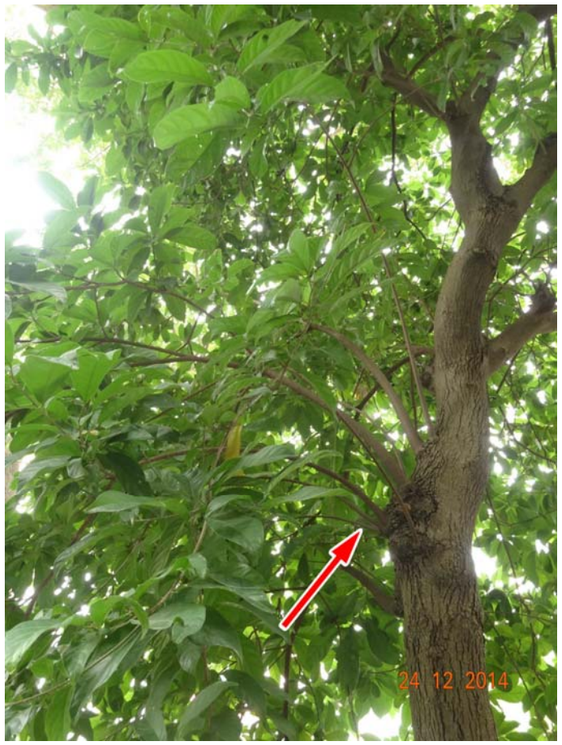


Photo No. 80 | T20

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 81 | T21



Photo No. 82 | T21



Photo No. 83 | T21



Photo No. 84 | T21



Photo No. 85 | T22



Photo No. 86 | T22

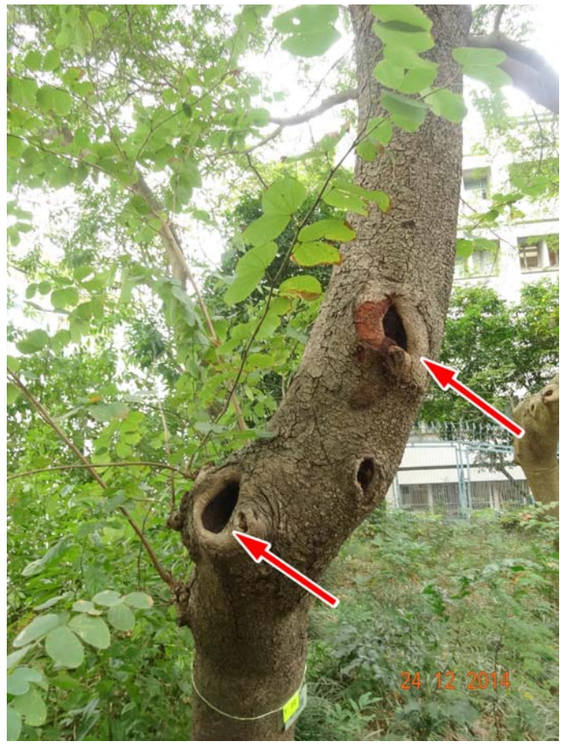


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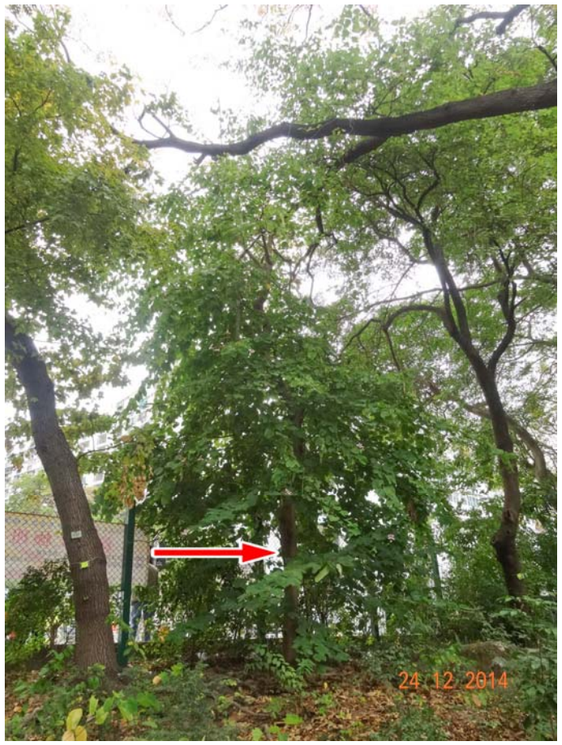


Photo No. 88 | T23

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 89 | T23



Photo No. 90 | T23



Photo No. 91 | T23



Photo No. 92 | T23



Photo No. 93 | T24



Photo No. 94 | T24



Photo No. 95 | T24



Photo No. 96 | T25

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 97 | T25



Photo No. 98 | T25



Photo No. 99 | T26



Photo No. 100 | T26



Photo No. 101 | T26



Photo No. 102 | T27



Photo No. 103 | T27



Photo No. 104 | T27

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 105 | T28



Photo No. 106 | T28

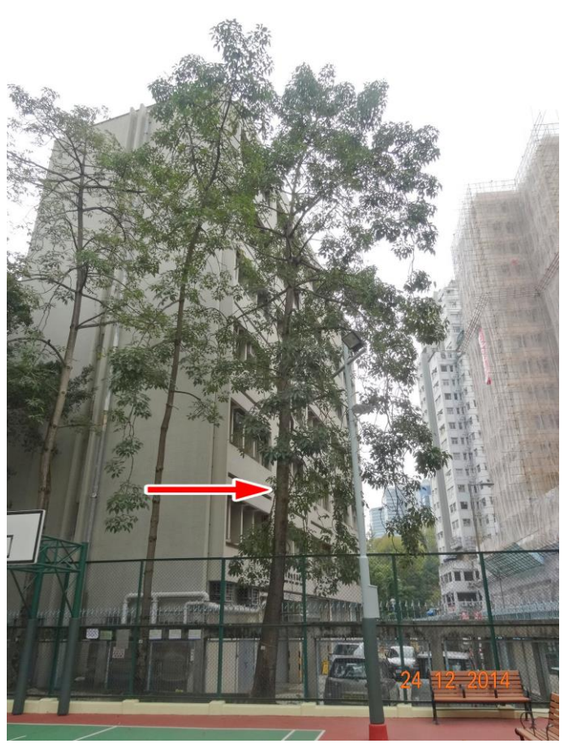


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Photo No. 108 | T29

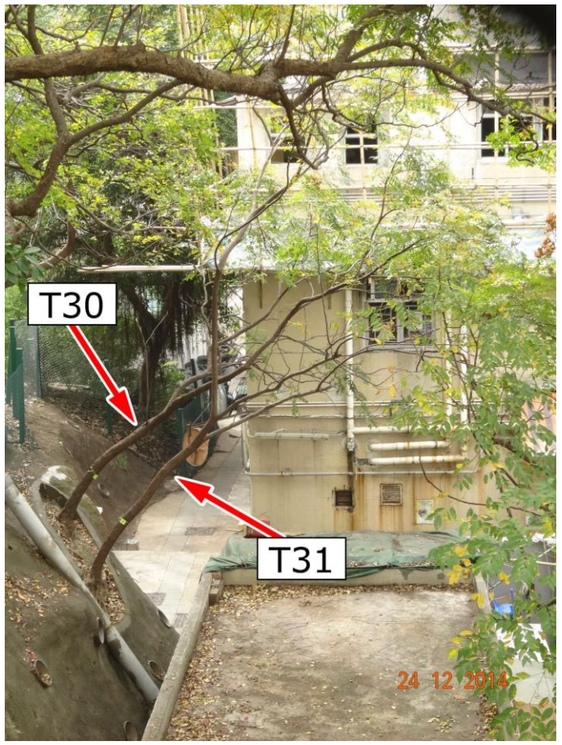


Photo No. 109 | T30,T31

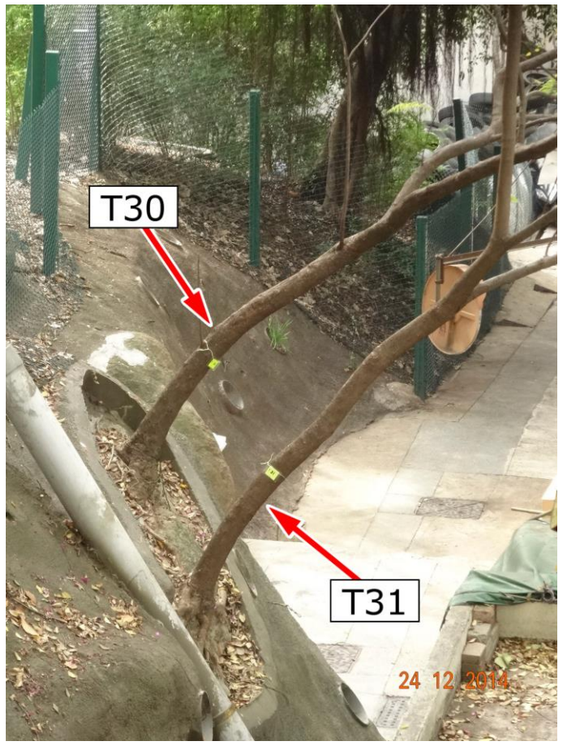


Photo No. 110 | T30,T31

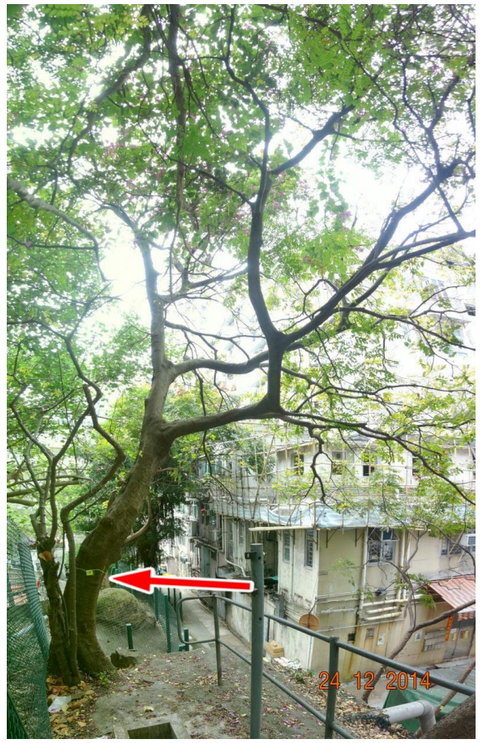


Photo No. 111 | T32



Photo No. 112 | T32

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 113 | T32



Photo No. 114 | T32

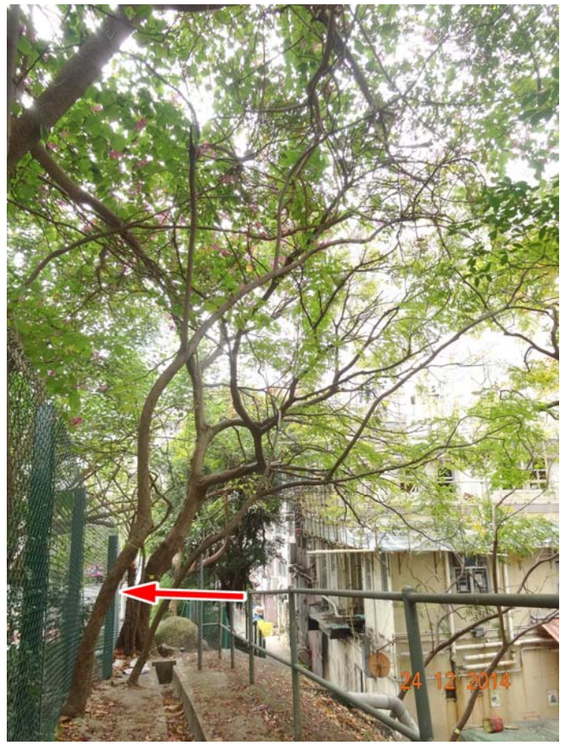


Photo No. 115 | T33



Photo No. 116 | T33



Photo No. 117 | T33



Photo No. 118 | T34



Photo No. 119 | T34



Photo No. 120 | T34

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 121 | T34



Photo No. 122 | T35



Photo No. 123 | T35



Photo No. 124 | T35



Photo No. 125 | T36



Photo No. 126 | T36



Photo No. 127 | T36



Photo No. 128 | T37

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

TREE SURVEY PHOTOGRAPHS



Photo No. 129 | T37

TREE PRESERVATION & REMOVAL PROPOSAL FOR PLANNING CONSULTANCY SERVICES FOR THE PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

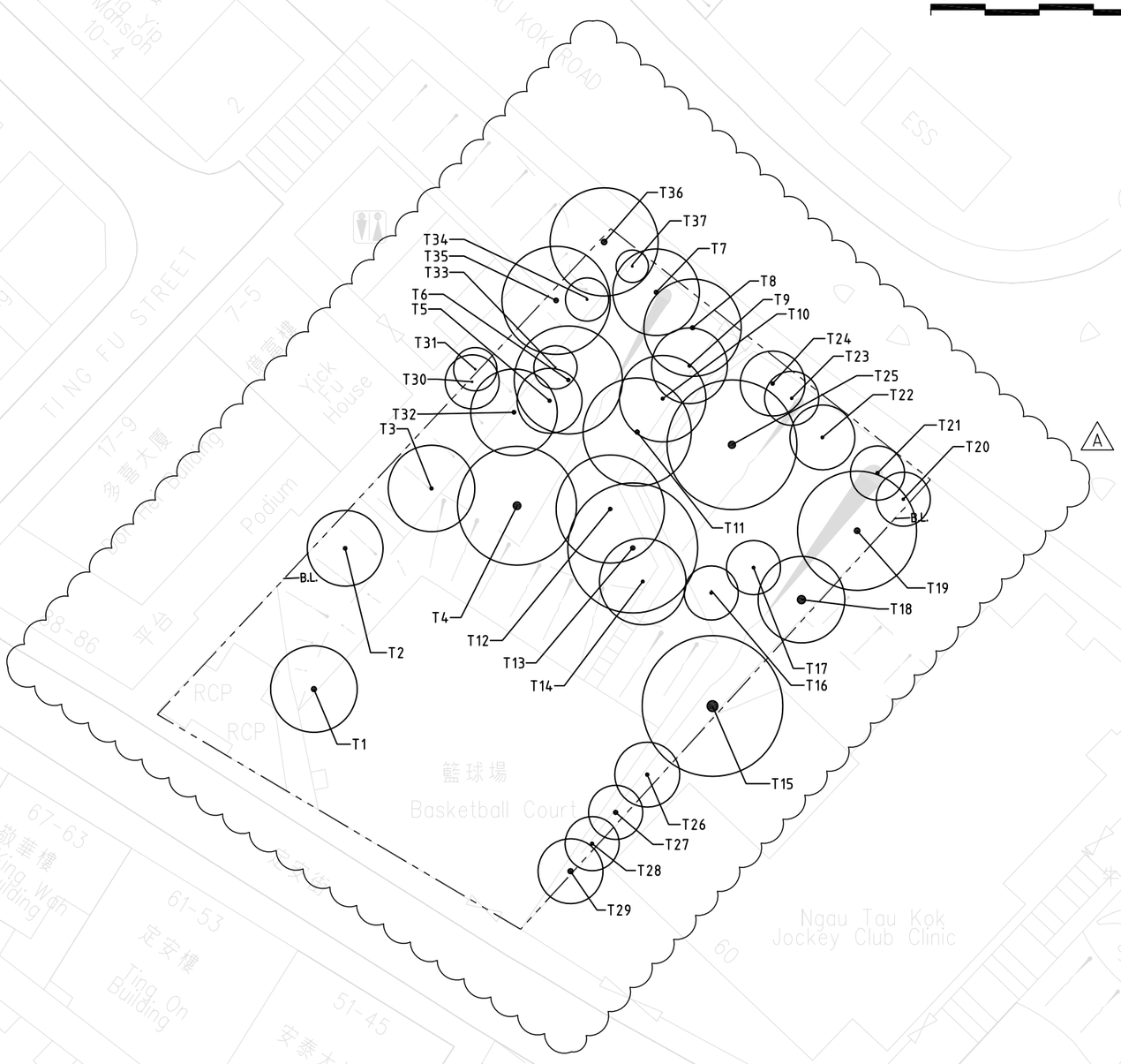
TREE SURVEY PHOTOGRAPHS

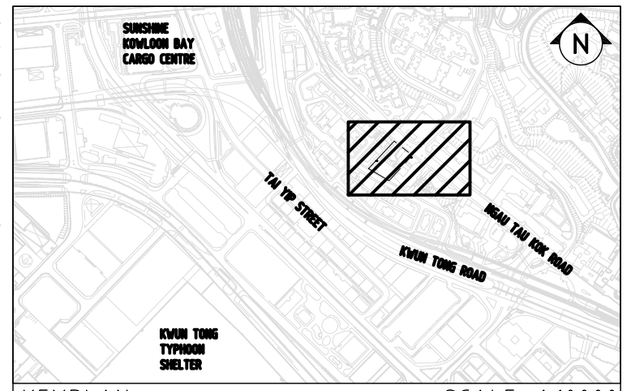
Appendix C

Drawings

SCALE 1 : 500

0 10 20 30m





KEYPLAN SCALE: 1:10000

LEGEND

SURVEY BOUNDARY

T1 EXISTING TREE

Amendment No.	Date	Description	Drawn by	Checked by	Approved by
A	MAY 2017	GENERAL REVISION	AK	PW	WI

Job Title: PROPOSED RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

Drawing Title: TREE SURVEY PLAN

Drawing No.: HS10_TS01

Scale: 1:500

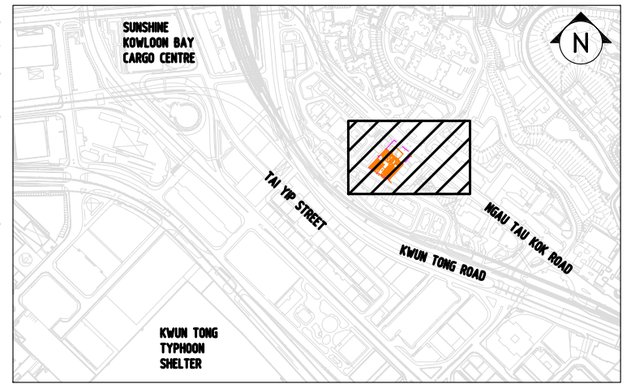
Drawn by	Checked by	Approved by	Date	Job. No.
DW			MAY 2017	HS10

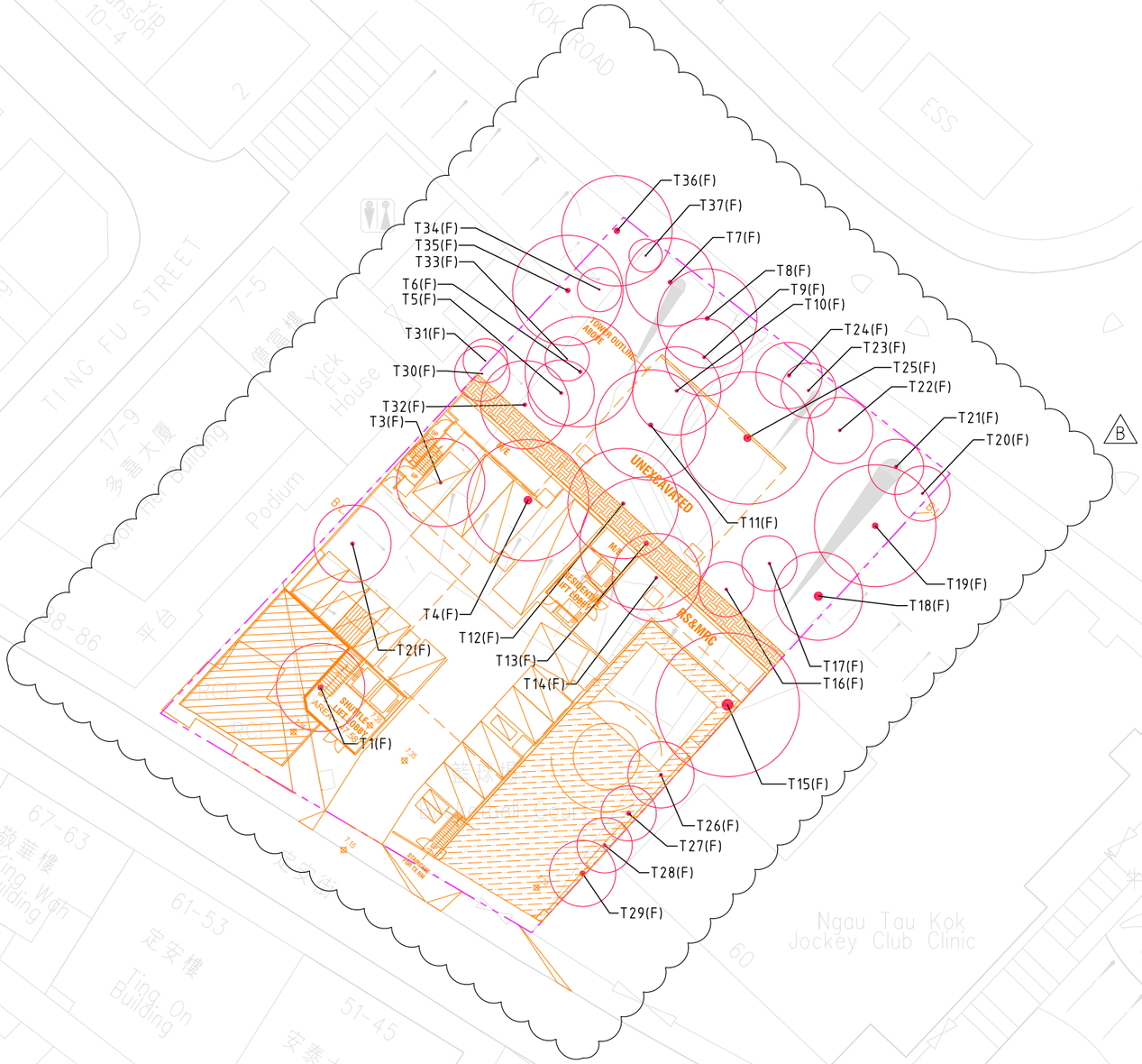
Urbis Limited 雅邦
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SCALE 1 : 500

0 10 20 30m





LEGEND

- SURVEY BOUNDARY
- PROPOSED DEVELOPMENT
- T16(F) EXISTING TREE TO BE FELLED

(1)	(2)	(3)	(4)	(5)	(6)
Existing Tree	Retained Tree	Transplanted Tree	Felled Tree	PROPOSED COMPENSATORY PLANTING	TOTAL TREES AFTER COMPENSATION (2)+(3)+(5)
37	0	0	37	39	39

Amendment No.	Date	Description	Drawn by	Checked by	Approved by
B	SEP 2017	GENERAL REVISION	AK	PW	WI
A	MAY 2017	GENERAL REVISION	AK	PW	WI

Job Title: PROPOSED RENTAL HOUSING DEVELOPMENT AT TING ON STREET IN NGAU TAU KOK, KOWLOON

Drawing Title: TREE WORKS PLAN

Drawing No.: HS10_TW01

Scale: 1:500

Drawn by DW | Checked by PW | Approved by AM | Date MAY 2017 | Job. No. HS10

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Planning, Urban Design, Landscape, Golf & Environmental Consultants
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Prepared for

Hong Kong Housing Society

Prepared by

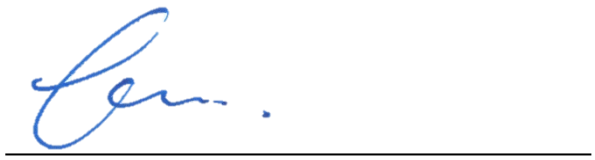
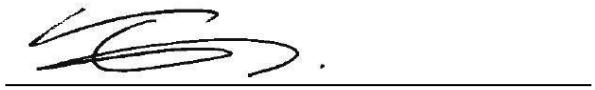
Ramboll Environ Hong Kong Limited

PROPOSED PUBLIC RENTAL HOUSING DEVELOPMENT AT TING ON STREET, NGAU TAU KOK

AIR VENTILATION ASSESSMENT REPORT

In association with

Urbis Limited

Date	**21 September 2017**
Prepared by	**Steve Lo** **Environmental Consultant**
Signed	
Approved by	**Tony Cheung** **Senior Manager**
Signed	
Project Reference	**URBHSTOSEI00**
Document No.	**R4617_V2.2**

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Appendix 1 Master Layout Plan for Proposed Scheme
Appendix 2 Aerial Photo of Existing Condition
Appendix 3 Captured Pictures of the CFD Model
Appendix 4 Detailed CFD Simulation Result for Selected Test Points
Appendix 5 Wind Profile Curve

1. INTRODUCTION

1.1 Project Background

1.1.1 Ramboll Environ Hong Kong Limited has been commissioned by Urbis Limited on behalf of the Hong Kong Housing Society (the Project Proponent) to undertake an Air Ventilation Assessment (AVA) for proposed public rental housing (the Proposed Scheme) at Ngau Tau Kok, East Kowloon (the Subject Site).

1.1.2 To assess the Proposed Development potential of the Subject Site in regards to air ventilation, a detailed technical feasibility study has been undertaken as part of the AVA.

1.2 Objectives

1.2.1 This AVA contains a qualitative expert evaluation and quantitative computational fluid dynamics (CFD) assessment of the Proposed Scheme's air ventilation impacts on the existing pedestrian wind environment. The AVA considers the the Proposed Schemes and the Existing Scenario, i.e. the current "Government/ Institution and Community (GIC)" zoning. All the surrounding buildings, major noise barriers, elevated structures, planned and committed developments within the surrounding area have been modelled in the simulations appropriately.

1.3 Subject Site and its Environs

1.3.1 The Subject Site is roughly of trapezoidal shape and it is located in a sloped area.

1.3.2 There is gradual increase in ground elevation toward the north and east with Ngau Tau Kok Road bounding to the northeast at 17.2 mPD, whilst Ting On Street bounds the southwest at 7.2 mPD, of the Subject Site.

1.3.3 Major topographic features include Kowloon Peak's hill-top of 580 m located around 2.1 km to the north, whilst Mau Wu Shan's hill-top of 220 m is located approximately 2.8 km to the east of the Subject Site.

1.3.4 To the north of the Subject Site beyond Ngau Tau Kok Road are residential buildings and primary school, immediately to the east of the is Ngau Tau Kok Maternal and Child Health Centre, to the south beyond Ting On Street and immediately to the west are predominately mid-rise residential buildings with retail at ground level.

1.3.5 Figure 1 shows the location and the environs of the Subject Site.

1.4 Proposed Scheme

1.4.1 Appendix 1 shows the Master Layout Plan of the Proposed Scheme.

1.4.2 The Proposed Scheme comprises one 31 storeys with 27 storeys for domestic use and 4 storeys for non-domestic use, with a maximum building height restriction of 110 mPD. A 5m setback from the from the Ting On Street is provided. A 10 m setback distance to Ngau Tau Kok Road would be provided for typical floors, whilst at first to third floor podium levels there would be a setback distance of around 17 m from Ngau Tau Kok Road. Figure 7 indicated the setback to the Ngau Tau Kok Road and Tin On Street. Such setback distances increase building permeability and allow more wind penetration.

1.4.3 The Proposed Scheme would feature retail, car parking, loading/ unloading bays for good vehicles and Refuse Collection Point (RCP) at ground floor; first floor proposes commercial/ covered activities area; second floor for commercial and a basketball court whilst third floor is intended for GIC use.

1.5 Existing Scenario

1.5.1 The Subject Site is currently used as a RCP and a playground with a basketball court. Appendix 2 shows an aerial photo and site photos of the existing scenario. It is currently located in GIC zone under the Outline Zoning Plan (OZP) No. S/K14S/20 – Kwun Tong (South) OZP.

1.6 Proposed Scheme Design Constraints

1.6.1 The Proposed Scheme has been fine-tuned in response to the comments from local stakeholders, including District Councillors and the public on the design of the podium. There are no changes to the residential portion. In the revised podium design, the existing basketball court will be re-provided at the podium level of the Subject Site and the existing refuse collection point (RCP) will also be re-provided at Ting On Street within the site boundary of the Subject Site.

1.6.2 The Proposed Scheme would replace and upgrade the RCP to 308 m^2 with a 10 m diameter for refuse collection vehicle's to turn, in accordance with the Handbook on Standard Features for Refuse Collection Points of Food and Environmental Hygiene Department (February 2009).

1.6.3 Therefore, due to the sizing requirement of the RCP, it is not feasible to reduce the podium bulk and the building footprint of the Proposed Scheme.

2. SITE WIND AVAILABILITY

2.1 Site Wind Availability Data

2.1.1 According to the Planning Department's website, a meso-scale Regional Atmospheric Modeling System (RAMS) was used to produce a simulated 10-year wind climate at the horizontal resolution of 0.5 km x 0.5 km covering the whole territory of Hong Kong. The simulated wind data represents the annual, winter and summer wind condition at various levels, i.e. 200 m, 300 m, and 500 m above terrain.

2.1.2 It is considered an acceptable starting point to use the simulated RAMS data for site wind availability. The use of RAMS data (grid: 089, 042) is preferred over measurement data at Waglan Island as it can reflect the effect of topography to wind availability.

2.1.3 The relevant annual windrose for the district under concern has been extracted from the Planning Department's website for Subject Site wind availability data. Figure 2 shows the relevant windrose diagram (at 500 m) representing the frequency and wind speed distribution of the district concerned for both summer and annual conditions. The simulated windroses show the local area is dominated by winds from ENE to SE annually, with winds from NE to ESE accounting for approximately 53.5 % of all winds that occur at the Subject Site. On the other hand, the summer wind mainly comes from E to WSW; 86.5 % of all winds that occur at the Subject Site.

2.1.4 The windroses results illustrate the wind environment is affected by topography and buildings. Table 2.1 sets out a summary of the simulated Subject Site wind availability data including probability of occurrence and average wind speed. In this quantitative AVA a CFD software has been used. According to the Technical Guide, simplification of wind data for the initial study has been adopted. The wind directions with highest probability of occurrence are selected AVA purposes. A total of 11 wind directions were selected (as highlighted in Table 2.1) with overall frequency of occurrence equivalent to 90.6 % and 86.5 % respectively of the time in a year for both annual and summer conditions.

Table 2.1 Summary of RAMS Data and Wind Direction

Wind Direction	Probability for Annual Condition (%)	Probability for Summer Condition (%)
N	2.4	0.8
NNE	5.3	0.9
NE	7.6	1.4
ENE	14.9	3.0
E	19.9	8.8
ESE	11.1	9.6
SE	7.0	7.4
SSE	4.4	8.4
S	4.4	9.2
SSW	5.6	12.4
SW	6.2	14.8
WSW	4.2	10.6
W	2.9	6.4
WNW	1.4	2.8
NW	1.2	2.2
NNW	1.3	1.1

2.2 Building Morphology

Building Morphology

2.2.1 There are numerous mid-rise developments to the south and west of the Subject Site.; On Tai Building located to the south, Ting Hing Building to the southwest and Kathy's Court to the west. There are several high-rise developments located to the northwest of the Subject Site; Upper Ngau Tau Kok Estate Sheung Hing House, Upper Ngau Tau Kok Estate and Sheung Shing House. The building height information was extracted from Geo-Reference Database (BG1000) provided by Survey and Mapping Office/ Lands Department, as shown in Table 2.2 and indicated in Figure 4.

Table 2.2 Surrounding Mid- to High-rise Development

Name of Development	Building Height mPD	Location from Site
Sheung Yat House	~137.9	North
Sheung Mun House	~142.9	North
Sheung Yuet House	~89	North
SKH Kei Hin Primary School	~38	North
Yick Fu House	~25	West
Dor Hei Building	~34	West
Tsut Hei Building	~22	West
Hing Fung Building	~22	West
Sheung Hei Building	~22	West
Ting Hing Building	~75.2	South
King Wah Building	~26.6	South
Ting On Building	~29.4	South
On Tai Building	~30.1	South
Lap Hing Building	~34.1	South
Ting Shing House	~25	South
Foo Yue Building	~87.7	South
Ngau Tau Kok Road Playground	~33.1	East
Garden Estate Hay Cheuk Lau	~38.3	Northeast
Garden Estate Yin Chee Lau	~67.1	Northeast
Mu Kuang English School	~75	Northeast
Believe Garden	~92	Northeast

2.3 Summary of Existing Site Wind Availability

2.3.1 According to the wind availability data, the annual wind directions of the area include easterlies, and north-easterlies. From Table 2.1, the wind probability from the E direction is 19.9 % and is considered to be the dominant wind direction for the area. The ENE (14.9 %) and ESE (11.1 %) wind are also dominant prevailing wind directions other than the E wind. Higher topographic regions and mid-rise buildings to the north / northeast / east will slightly reduce the wind availability to the Subject Site, but it is considered that the potential blocking effect is not significant. It is anticipated that Ngau Tau Kok Road and On Shin Road would be the main air corridors under the annual condition. Katabatic wind would flow would occur from hill to the lower area at night or during the winter season, which would not benefit the downwind area during daytime or summer season.

2.3.2 During summer conditions, prevailing winds from the SSW to WSW are the dominant wind directions. Under S/ SSW wind directions, the existing compact industrial buildings located between Tai Yip Street and Wai Yip Street would obstruct incoming wind to the Subject Site. Besides, existing developments to the southwest side of Ting Fu Street would also block summer wind from the southwest quadrant. Therefore, it is expected that the wind availability at the Subject Site would be low to medium during summer condition.

2.3.3 It is also anticipated that Ngau Tau Kok Road would be the main air corridor for the Subject Site under summer condition.

3. DISCUSSION ON IMPORTANT PEDESTRIAN AREAS AND FOCUS AREA

3.1 Important Pedestrian Areas

3.1.1 Important pedestrian areas that the public would often access have been identified as the following:

- Ngau Tau Kok Road;
- Ting Fu Street;
- Ting On Street;
- Tai Yip Street;
- Kai Fu Road;
- Ting Yip Street;
- On Shin Road;
- On Tak Road;
- Upper Ngau Tau Kok Estate;
- Garden Estate Yin Chee Lau;
- Garden Estate Carpark;
- SKH Kei Hin Primary School;
- Ting Yue Square;
- Ting Yue Square Temporary Sitting-out Area;
- Ngau Tau Kok Maternal and Child Health Centre; and
- Ngau Tau Kok Playground.

3.2 Problem Areas

3.2.1 It is anticipated that there would be some areas behind the existing buildings in the vicinity that have relatively low wind speed when the wind direction is from the upstream of these buildings. For example, the Tin Yue Square Temporary Sitting-out area.

3.2.2 On the other hand a wind from west over flat topography can cause high wind flow along different streets such as Ting On Street, Ting Fu Street and Ngau Tau Kok Road.

3.3 Good Design Features

3.3.1 Chapter 11 of Hong Kong Planning Standards Guidelines on Air Ventilation was referenced in order to determine the good features and problem areas from an air ventilation standpoint. Building disposition and building permeability have thus been considered for this Proposed Scheme.

3.4 Podium Structure and Building Height

3.4.1 It is anticipated that the introduction of a podium structure and high-rise building height would induce larger wake area to leeward side. However, on the other hand, the high-rise building tower would also induce some downwash wind and benefit the windward side.

3.5 Building Disposition and Setback

3.5.1 Part of the tower in the Proposed Scheme is relatively close to Ngau Tau Kok Road. It is expected that a downwash wind could be generated, and this would enhance the

wind flow at the pedestrian level of Ngau Tau Kok Road. Therefore the disposition of the Proposed Scheme should likely result in positive impact along Ngau Tau Kok Road compare to the existing condition.

3.6 Building Permeability

3.6.1 Building permeability mainly relies on void and building gap provision with an aim to minimise wind blockage. Compared to the existing RCP and open area, the Proposed Scheme should reduce the existing permeability to the downwind area.

3.7 Landscaping, Projecting Obstruction and Cool Materials

3.7.1 Greening and use of cool materials can help to reduce heat island effects. Landscaping will be provided to ameliorate possible wind amplification problems. Greening and cool materials will be incorporated into the Proposed Schemes where practicable. Cool materials including water features, materials with high emissivity will be employed where appropriate. It is expected that it is possible to adopt similar extent of greening and cool materials for both schemes.

3.8 Conclusions

3.8.1 Both the Proposed Scheme and existing scenario of the Subject Site have been evaluated from an air ventilation standpoint.

3.8.2 In order to minimise the adverse air ventilation impact induced by the high-rise building tower in the Proposed Scheme, the following mitigation measures have already adopted in the building design:

- A 10 m setback to the Ngau Tau Kok Road is provided in the typical floor to minimise the blockage effect along Ngau Tau Kok Road; and
- Minimised podium design, apart from RCP and GIC area at the podium, the Proposed Scheme try to maximise the open landscape/ playground area at the podium.

3.8.3 Under the design constraint in Section 1.6, it is not feasible to reduce the podium bulk and the building footprint of the Proposed Scheme, due to the minimal area requirement of the RCP. However, the Proposed Scheme has maximised the setback and building permeability in order to mitigate the potential adverse air ventilation impact induced by the high-rise building tower.

4. QUANTITATIVE ASSESSMENT METHODOLOGY

4.1 CFD Code and Major Parameters

4.1.1 A quantitative AVA based on requirement for initial study stipulated in the technical guide was conducted for the purpose to verify the air ventilation performance for the Proposed Scheme over the Existing Scenario .

4.1.2 The quantitative AVA was conducted using a commercial CFD code, PHOENICS. PHOENICS employs structured grid with fine-grid embedding to fit small-scale flow features without the computational overhead of fully-unstructured grids. Turbulence models include various versions of K-epsilon model (such as RNG & Low Reynolds Number Model), LVEL, Kolmogorov-Wilcox two- equation k-f model and other models such as RSM and Sub-Grid-Scale LES model.

4.1.3 Modified version of K-epsilon turbulence models which give better prediction of separation and vortexes are adopted for the AVA. In this study, the Chen-Kim modified KE-EP turbulence model has been employed. The Chen-Kim model is a variant of K- • based on comparison with experimental data. This model involves a modification which improves the dynamic response of the EP equation by introducing an additional time scale (KE/PK), where PK is the volumetric production rate of KE. The model maintains good agreement with experimental data on classical turbulent shear layers. Moreover, this is based on the KE-EP model which is appropriate for high-reynolds number problems such as external flow. These models are statistical turbulence models and are generally regarded as practical to model steady state condition. It uses different constants, and has an addition term in the ε equation. The effect of the changes is to reduce the turbulent viscosity in regions of high shear - e.g. in recirculation zones. Hence, it predicts a longer recirculation zone, in agreement with experimental evidence. The Chen-Kim model gives better prediction of separation and vortexes. It does not only keep the merits or Renormalization Group (RNG) model but also improve results to jet stream fluid and feather fluid. The equation and parameters adopted in Chen-Kim turbulence model are shown below for reference:

Equation	Φ	Γ_Φ	S_Φ
Turbulent Kinetic Energy	k	ν_t/σ_k	$\rho(G-\varepsilon)$
Dissipation Rate	ε	ν_t/σ_ε	$\rho(\varepsilon/k)(C_{\varepsilon 1}G - C_{\varepsilon 2}\varepsilon) + \rho C_{\varepsilon 3}G^2/k$

$$G = \nu_t (\partial_k U_i + \partial_i U_k)\partial_k U_i$$

$$\nu_t = C_\mu k^2 / \varepsilon$$

$\sigma_k = 0.75$, $\sigma_\varepsilon = 1.15$, $C_{\varepsilon 1} = 1.15$, $C_{\varepsilon 2} = 1.9$, $C_{\varepsilon 3} = 0.25$, $C_\mu = 0.09$

4.1.4 It is understood that LES/DES generally requires careful application by the user, because compared to statistical turbulence modelling, the approach requires more accurate spatial resolution on finer meshes and small time steps, and as a consequence significant amounts of computer time. Typically, the time step should be in the range 1/200 to 1/50 of the large-eddy turnover time. Otherwise, there will be inadequate time resolution. Also, there is always the possibility of numerical damping of the fluctuations. LES and DES have the potential to produce more accurate solutions than statistical turbulence models, but misuse of these methods is fairly common due to

inadequate temporal and spatial resolution. Considering the practicability issue, statistical turbulence model is considered a viable choice which can achieve generally acceptable level of accuracy.

4.1.5 The assessment area and surrounding area covered 150 m and 300 m respectively from the Subject Site boundary. The surrounding area is determined by two times the height of the highest building within the surrounding area therefore at least 2H of the highest building nearby (i.e. ~120 m at Sheung Mun House) from the site boundary.

4.1.6 The domain dimension is about 2800 m x 2400 m and with an elevation of 1000 m. 1-phase fluid is modelled at standard pressure. Nearly 11,850,000 grid cells are defined to simulate the air flow. Cartesian coordinate cell grid system is adopted with refinement within an area which is within about H from the Subject Site (and with denser grid near ground level). The grid size was generally smaller within the assessment area (<1 m) and coarse outside and within the study area. The grid expansion ration is controlled to not more than 1.2. The grid size near the domain boundary on four sides and ceilings are >50 m. It is defined in such a way that there was at least three cells within major building gaps. For relevant streets/ roads containing the test point, generally eight to ten cells would be defined between walls/ objects. The test point was assigned in such a way that there was at least two to three cells from the building façade or major obstacle. Within the level of 0 to 2 m aboveground, the grid height of the layer near ground is about 0.5 m and there were four cells defined so that the result taken would be taken at the third cell, instead of the cell adjacent to ground. Similarly, all test points would not be taken at the cell adjacent to wall/ object.

4.1.7 Lateral clearance is around 1,040 m (more than 5H) on each side. The vertical distance between the Proposed Scheme and the ceiling of the CFD domain amounts to more than 800 m. Top and lateral boundary area defined as symmetric plane in the CFD model. The distance between the Proposed Scheme and the inflow amounts to around 1,300 m. The distance between the Proposed Scheme and the outflow amounts to around 1,300 m. The percentage blockage is less than 3 % with the surrounding public housing and private residential developments considered. The convergence criteria adopted in this study is 0.1 %. In addition, spot values are checked to ensure that steady value can be obtained from simulation. Wind Object is defined in the PHOENICS programme environment when defining the boundary conditions. The windward boundary is defined as inflow with the wind profile defined (as discussed below). The leeward boundary is defined as outflow. The sky and lateral boundaries are defined as neutral.

4.1.8 The commonly used hybrid-differencing numerical scheme in PHOENICS is adopted (this scheme employs the 1st-order upwind-differencing scheme (UDS) in high-convection regions; and the 2nd-order central-differencing scheme (CDS) in low-convection regions automatically to strike a balance between accuracy and computing efficiency with the low-convection region using higher order scheme).

4.2 Atmospheric Conditions

4.2.1 Simulated wind profile curves were extracted from the Planning Department's website and adopted for this quantitative AVA. Appendix 5 shows the wind profile curve for the grid area (x: 089, y: 042), which corresponds to the region where the Subject Site resides.

4.2.2 Appendix 3 shows captures of the CFD models.

4.3 Test Point Location

4.3.1 On-site survey was conducted to identify major pedestrian areas and features. Test points are selected and shown in Figure 3. Test points include perimeter test point defined along the boundary of the Subject Site and overall test points representing the area within the Assessment Area.

5. KEY FINDINGS

5.1 Spatial Average Wind Velocity Ratios

5.1.1 The velocity ratio under a specific wind direction at a test point was calculated by dividing the simulated wind speed at the test point under this wind direction with the velocity at gradient height under the same wind direction. All test points were located at 2 m above ground level.

5.1.2 A total of 155 test points were selected, including 31 perimeter test points, 110 overall test points and 14 special test points (due to the re-provision of the existing landscape area and basketball court within the Subject Site, the test points location are different between Existing Scenario and Proposed Scheme, i.e. S01 – S07 for existing scenario and S08 – S14 for Proposed Scheme (2m above those area)). Figure 3a shows the location of the perimeter test points and overall test points within the assessment area. Figure 3b shows the special test points within the Subject Site.

5.1.3 Table 5.1 shows the Subject Site spatial average velocity ratio (SVR), local spatial average velocity ratio (LVR) and average wind velocity ratio along surrounding air sensitive uses area during annual condition and summer condition respectively for the Proposed Scheme (PS) and existing scenario (EX).

5.1.4 The wind velocity ratios of individual test points are shown in Figure 4a and Figure 5a for annual condition of the existing scenario and Proposed Scheme respectively, and Figure 4b and Figure 5b for summer condition of the existing scenario and Proposed Scheme respectively. Appendix 3 shows detailed simulation result of the Proposed Scheme and the existing scenario respectively.

Table 5.1 Summary of Spatial Average Wind Velocity Ratios (VR) – Annual and Summer Condition

Spatial Average Wind Velocity Ratio (VR)	Test Point	Annual		Summer	
		PS	EX	PS	EX
SVR	P01-P31,T01-T110	**0.12**	0.09	**0.09**	0.07
LVR	T01-T110	0.11	0.11	0.10	0.10
Tai Yip Street	T01-T07	0.10	0.10	0.09	0.09
Kai Fuk Road	T08-T13,T17	0.18	0.18	0.14	0.14
Ting Fu Street	T18-T23,T28,T35-T38,T46	**0.11**	0.10	**0.10**	0.09
Ting On Street	P17-P23,T14-T15,T24-T33,T105-T106	**0.09**	0.08	**0.09**	0.08
Ting Yip Street	T39-T45	0.08	0.08	0.08	0.08
Ngau Tau Kok Road	P01-P07,T47-T58,T64,T82	**0.14**	0.13	**0.13**	0.12
On Shin Road	T83-T89	0.13	**0.14**	0.13	0.13
On Tak Road	T76-T81,T87	0.13	**0.14**	0.14	**0.15**
Upper Ngau Tau Kok Estate	T59 - T67	0.12	0.12	0.13	0.13
Garden Estate Yin Chee Lau	T90-T94	0.07	0.07	0.08	0.08

Spatial Average Wind Velocity Ratio (VR)	Test Point	Annual		Summer	
		PS	EX	PS	EX
Garden Estate Carpark	T71-T75,T84	0.09	0.09	0.09	0.09
SKH Kei HIN Primary School	T68-T70	0.11	0.11	0.10	0.10
Ting Yu Square	T43,T106-T107	0.07	**0.08**	0.06	**0.07**
Ting Yu Square Temporary Sitting-out Area	T103-T105	0.06	**0.07**	0.05	**0.06**
Ngau Tau Kok Maternal and Child Health Centre	T100-T102,T30	0.08	0.08	**0.07**	0.06
Ngau Tau Kok Playground	T95-T99	0.11	0.11	0.08	0.08
Kwun Tong Government Pimary School	T34, T35, T108-T110	0.10	0.10	0.08	0.08
Public Landscape Area and Basketball Court within Subject Site	(EX)S01-S07 (PS)S08-S14	**0.15**	0.09	**0.13**	0.08

Note:

*Highlighted in **red** where VR is higher in the Proposed Scheme*

*Highlighted in **blue** where VR is higher in the Existing Scenario*

5.2 Discussions on Air Ventilation Performance

5.2.1 The SVR is higher in the Proposed Scheme but LVR are the same for both schemes under annual and summer condition. Generally, Proposed Scheme and the Existing Scenario are similar in both annual and summer condition, while there are some areas where slight improvements in VR are found in the Proposed Scheme.

5.2.2 The VRs are better in the Proposed Scheme in SVR (annual and summer condition), Ting On Street (annual and summer condition), Ngau Tau Kok Road (annual and summer condition), Ngau Tau Kok Maternal and Child Health Centre (summer condition) and public landscape area and basketball court within the Subject Site (annual and summer condition).

5.2.3 VRs are better in the existing scenario in On Shin Road (annual condition), On Tak Road (annual and summer condition), Tin Yu Square (annual and summer condition) and Ting Yu Square Temporary Sitting-out Area (annual and summer condition).

5.2.4 It is believed that the high-rise tower in the Proposed Scheme induces downwash wind and benefits areas close to the site boundary, i.e. SVR, Ting On Street, Ngau Tau Kok Road and Ngu Tau Kok Maternal and Child Health Centre.

5.2.5 It also noted that the re-provision of the existing landscape area and basketball court within the Subject Site to second floor in the Proposed Scheme improved the ventilation performance in the recreational area within Subject Site. Generally, the ventilation is better at higher level.

5.2.6 On the other hand, the high-rise building tower also induce a wake area to the leeward side. However, as discussed previously it is not feasible to reduce the podium bulk and the building footprint of the Proposed Scheme.

5.3 Direction Analysis

Wind performance under Wind Direction of NNE

5.3.1 Under NNE winds, wind flow is obstructed by the existing mid-rise buildings situated to the north and northeast of the Subject Site, i.e. Sheung Yuet House and Upper Ngau Tau Kok Estate Sheung Shing & Sheung Hing House. Hence, wind availability of the Subject Site mainly relies on wind flow coming from the existing air path of On Shin Road and Ngau Tau Kok Road.

5.3.2 Due to the level difference between Ngau Tau Kok Road (~+17 mPD) and Ting On Street (~+6 mPD), there is a wake area at the Subject Site under existing scenario. Since the Proposed Scheme sits on the wake area, it is anticipated that it would unlikely have a significant impact induced by the high-rise tower. It is observed that the VRs are similar for both the existing scenario and the Proposed Scheme under NNE wind.

5.3.3 According to the contour plot the wind flow along Ting On Street is slightly enhanced under Proposed Scheme, due to the channelized effect induced by the proposed podium design. Also, the Proposed Scheme also redistributes and diverts the NNE wind flow from On Shin Road toward northwest and slightly enhance the VR near northern boundary.

Wind performance under Wind Direction of NE

5.3.4 Similar to the NNE wind, it is found that wind flow is obstructed by the existing mid-rise buildings situated to the north and northeast of the Subject Site. Thus, the wind availability of the Subject Site mainly relies on wind flow coming from the existing air path of On Shin Road and Ngau Tau Kok Road. A wake area at the Subject Site is observed behind the Ngau Tau Kok Maternal and Child Health Centre which is located at the immediate upwind area.

5.3.5 Since the Proposed Scheme sits on the wake area, there is not significant blockage to the leeward side (i.e. Ting On Street) induced by the high-rise tower. On the other hand, the high-rise tower redistributes and diverts more wind from the On Shin Road toward the northwest and this would benefit the Ngau Tau Kok Road. It is observed that the VR are better to the northwest of the Subject Site (along Ngau Tau Kok Road) in the Proposed Scheme. However, the stronger wind to the windward side also countered the wind flow from the Ngau Tau Kok Road Playground.

5.3.6 However, the proposed high-rise tower reduce the wind penetration at higher levels; and therefore the VR at Ting Yu Square Temporary Sitting-out Area and Ting On Street (near Ting Yu Square) would be lower in the Proposed Scheme.

Wind performance under Wind Direction of ENE

5.3.7 Under ENE wind, wind flow is obstructed by the existing mid-rise buildings situated to the north and northeast of the Subject Site, i.e. Sheung Yuet House and Upper Ngau Tau Kok Estate Sheung Shing & Sheung Hing House. Wind availability of the Subject Site mainly relies on wind flow coming from the existing air path of On Shin Road and Ting On Street. A wake area at the Subject Site is observed behind the Ngau Tau Kok Maternal and Child Health Centre which is located at the immediate upwind area.

5.3.8 The high-rise tower redistributes and diverts more wind from the On Shin Road toward the northwest and this would benefit the Ngau Tau Kok Road. It is observed that the VR are slightly better to the northwest of the Subject Site (along Ngau Tau Kok Road) in the Proposed Scheme. However, the stronger wind to the windward side also countered the wind flow from the Ngau Tau Kok Road Playground.

5.3.9 However, the proposed high-rise tower reduce the wind penetration at higher levels and the podium of the Proposed Scheme may induce larger surface roughness along Ting On Street. Therefore, the VR at sitting out area between Kwun Tong Road and Tin Yu Square, Ting Yu Square Temporary Sitting-out Area and Ting On Street (near Ting Yu Square) would be lower in the Proposed Scheme. However, since the wind flow is stronger at the junction of Ting On Street and Ting Fu Street, it countered the wind flow from Kwun Tong Road toward Ting Fu Street under existing condition. Therefore a lower VR is observed in the existing condition along Ting Fu Street (between Ting On Street and Kwun Tong Road).

5.3.10 In addition, it is noted that the wind flow is enhanced at the basketball court (within Subject Site) in the Proposed Scheme since it is relocated to higher level.

Wind performance under Wind Direction of E

5.3.11 Under E winds, wind flow is obstructed by the slightly elevated topography to the north east and the existing mid-rise buildings situated to the east and northeast of the Subject Site, i.e. Pak Ling Lau, Garden Estate Hay Cheuk Lau and Garden Estate Yin Chee Lau. Wind availability of the Subject Site mainly relies on wind flow coming from the existing air path of On Shin Road, Ngau Tak Kok Road and Ting On Street.

5.3.12 A wake area at the Subject Site is observed behind the Ngau Tau Kok Maternal and Child Health Centre which is located at the immediate upwind area. Since the Proposed Scheme sits on the wake area, there is no significant blockage to the test point along site boundary. However, the proposed high-rise tower reduce the wind penetration at higher levels and the podium of the Proposed Scheme may induce larger surface roughness along Ting On Street. Therefore, the VR at sitting out area between Kwun Tong Road and Tin Yu Square, Ting Yu Square Temporary Sitting-out Area and Ting On Street (near Ting Yu Square) would be lower in the Proposed Scheme. However, since the wind flow is stronger at the junction of Ting On Street and Ting Fu Street, it countered the wind flow from Kwun Tong Road toward Ting Fu Street under existing condition. Therefore a lower VR is observed in the existing condition along Ting Fu Street (between Ting On Street and Kwun Tong Road).

5.3.13 On the other hand, the high-rise tower in Proposed Scheme induce a downwash wind to benefit the Ngau Tau Kok Road (near the northen boundary of the Subject Site). However, such stronger downwashed wind countered the wind flow at windward side. Thus, the VR is slightly low to the north of the Ngau Tau Kok Road Playground.

5.3.14 In addition, it is noted that the wind flow is enhanced at the basketball court (within Subject Site) in the Proposed Scheme since it is relocated to higher level.

Wind performance under Wind Direction of ESE and SE

5.3.15 Under ESE winds, Ting On Street and Ngau Tau Kok Road are the main air corridors near Subject Site. Several open area (e.g. Ngau Tau Kok Road Playground, Elegance Goad Garden, etc) and low-rise building (e.g. Kwon Tong Government Primary School) to the southeast of the Subject Site allowed SE wind flow from the Kwun Tong Road.

5.3.16 A wake area at the Subject Site is observed behind the Ngau Tau Kok Maternal and Child Health Centre which is located at the immediate upwind area. Since the Proposed Scheme sits on the wake area, there is no significant blockage to the test point along site boundary. However, the proposed high-rise tower may reduce the wind penetration at higher level; and therefore, the VR at the Ting Yu Square Temporary Sitting-out Area and the sitting out area between Kwun Tong Road and Tin Yu Square are lower in the Proposed Scheme.

5.3.17 On the other hand, the Proposed Scheme would induce a stronger channelised wind along Ting On Street. A better wind flow is observed along Ting On Street and Ting Fu Street under Proposed Scheme. On the other hand, the high-rise tower induced a downwash wind which would benefit the Ngau Tau Kok Road (near the northern boundary of the Subject Site).

5.3.18 In addition, it is noted that the wind flow is enhanced at the basketball court (within Subject Site) in the Proposed Scheme since it is relocated to higher level.

Wind performance under Wind Direction of SSE

5.3.19 Under SSE wind, it is observed that most of the wind is obstructed by mid-rise building cluster to the south. The wind performance of the Subject Site and that of the Ting Yue Square Temporary Sitting-out area is poor, as there are existing buildings at the immediate upwind area to create wake area behind.

5.3.20 According to the contour plot, the southeast façade of Proposed Scheme induce a stronger channelised wind along Ting On Street, and thus induced a downwash wind benefiting the Ngau Tau Kok Road. The VR at Ting Fu Street is also higher in the Proposed Scheme benefiting from the stronger incoming wind from Ting On Street.

5.3.21 In addition, the high-rise tower redistributes and diverts more SSE wind toward northeast at higher level. Therefore, more wind flow toward Upper Ngau Tau Kok Estate at higher level and downwashed by the Shung Yuet House to benefit area near SKH Kei Hin Primary School in the Proposed Scheme.

5.3.22 In addition, it is noted that the wind flow is enhanced at the basketball court (within Subject Site) in the Proposed Scheme since it is relocated to higher level.

Wind performance under Wind Direction of S

5.3.23 Under S wind, it is observed that most of the wind is obstructed by the existing mid-rise buildings cluster to the south. The wind performance of the Subject Site is poor as there are existing buildings at the immediate upwind area to create wake area behind.

5.3.24 According to the contour plot, the Proposed Scheme may induce a downwash; and thus benefit the Ting On Street. But the stronger wind along Ting On Street also obstructed the wind flow from the Kwun Tong Road to the Ting Fu Street. Thus, the VR is slightly lower in the Tin Fu Street under Proposed Scheme. Also, the building separation between the Proposed Scheme and the Ngau Tau Kok Maternal and Child Health Centre may induce a strong channelised wind and thus benefit the On Shin Road.

5.3.25 However, on the other hand, the proposed high-rise tower reduce the wind penetration at higher levels; and therefore the VR at Ting Yu Square Temporary Sitting-out Area, and Ngau Tau Kok Road to the northeast would be lower in the Proposed Scheme.

Wind performance under Wind Direction of SSW and SW

5.3.26 Under SSW and SW wind, it is observed that most of the wind is obstructed by the existing mid-rise buildings cluster to the south. The wind performance of the Subject Site is very poor as there are existing buildings at the immediate upwind area to create wake area behind.

5.3.27 Since the Proposed Scheme sits on the wake area, there are no significant impact induced by the proposed high-rise tower. It is observed that the VRs are similar for both the existing scenario and Proposed Scheme under SSW and SW wind.

5.3.28 According to the Contour plot, there is a downwashed wind to the southeast of the Subject Site and benefit the Ting On Street in the Proposed Scheme. But the stronger wind along Ting On Street also obstructed the wind flow from the Kwun Tong Road to the Ting Fu Street. Thus, the VR is slightly lower in the Tin Fu Street under Proposed Scheme

5.3.29 It is observed that the VR is slightly lower in the Ting Fu Street in the Proposed Scheme, due to the high-rise tower direct and redistribute the wind to the northwest.

5.3.30 In addition, it is noted that the wind flow is enhanced at the basketball court (within Subject Site) in the Proposed Scheme since it is relocated to higher level.

Wind performance under Wind Direction of WSW

5.3.31 Under WSW winds, generally the wind availability in the assessment area is high under all scenarios. The wind performance of the Subject Site is poor as there are existing buildings at the immediate upwind area to create wake area behind. The wind availability of the Subject Site mainly relies on wind flow coming from the existing air path of On Shin Road and Ngau Tau Kok Road.

5.3.32 It is observed that the high-rise tower of the Proposed Scheme may induce a stronger channelised wind along Ngau Tau Kok Road and Ting On Street and further leeward area. Therefore, the VR at Ngau Tau Kok Road Playground is slight higher in the Proposed Scheme. However, since more wind diverted toward Ting On Street, less wind flow to Ting Fu Street under Ting On Street.

5.3.33 However, on the other hand, the proposed high-rise tower reduce the wind penetration at higher levels; and therefore the VR to the northeast of Garden Estate would be lower in the Proposed Scheme.

5.3.34 In addition, it is noted that the wind flow is enhanced at the basketball court (within Subject Site) in the Proposed Scheme since it is relocated to higher level.

6. CONCLUSION

6.1.1 The existing scenario and Proposed Schemes at the Site situated at Ting On Street, Ngau Tau Kok have been evaluated from an air ventilation standpoint.

6.1.2 According to the quantitative AVA result, a comparison study was performed using CFD. The VRs are better in the Proposed Scheme in SVR (annual and summer condition), Ting On Street (annual and summer condition), Ngau Tau Kok Road (annual and summer condition), Ngau Tau Kok Maternal and Child Health Centre (summer condition) and public landscape area and basketball court within the Subject Site (annual and summer condition). On the other hand, VRs are better in the existing scenario in On Shin Road (annual condition), On Tak Road (annual and summer condition), Tin Yu Square (annual and summer condition) and Ting Yu Square Temporary Sitting-out Area (annual and summer condition).

6.1.3 It also noted that the re-provision of the existing landscape area and basketball court within the Subject Site to second floor in the Proposed Scheme improved the ventilation performance in the recreational area within Subject Site. Generally, the ventilation is better at higher level.

6.1.4 In order to minimise the adverse air ventilation impact induced by the high-rise building tower in the Proposed Scheme, following mitigation measure have already been adopted in the building design:

- A 10 m setback to the Ngau Tau Kok Road is provided in the typical floor; and
- Minimised podium design.

6.1.5 Since there are slight adverse impact to some focus areas (e.g. Ting Tu Square, Ting Yu Square Temporary Sitting-out Area, etc), it is recommended that further quantitative AVA should be carry out in later design stage to explore more opportunity on scheme improvement.

6.1.6 However, due to the sizing requirement of the RCP (which is response to the comments from the local stakeholders, including District Councillors and public), it is not feasible to further reduce the podium bulk and the building footprint of the Proposed Scheme.

6.1.7 In conclusion, the air ventilation performance of the Proposed Scheme would not induce a significant adverse impact to the surrounding concerned area when compare with the existing scenario.

Figures

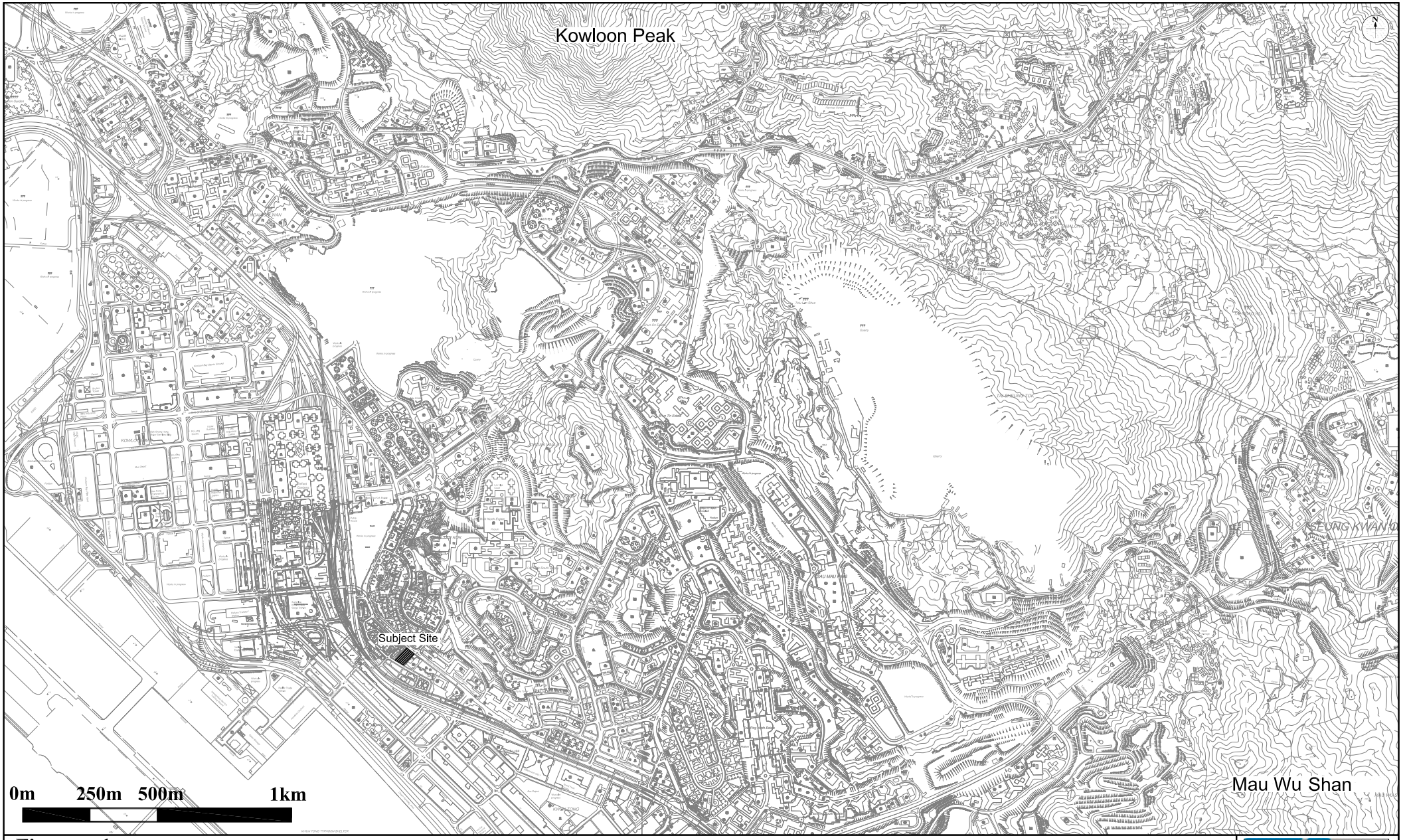
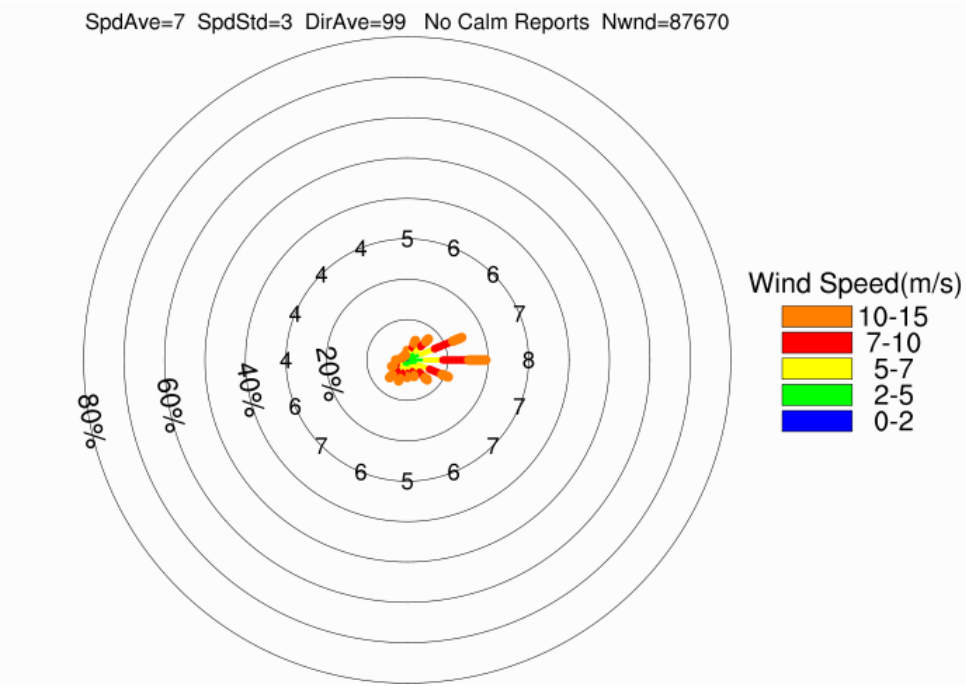
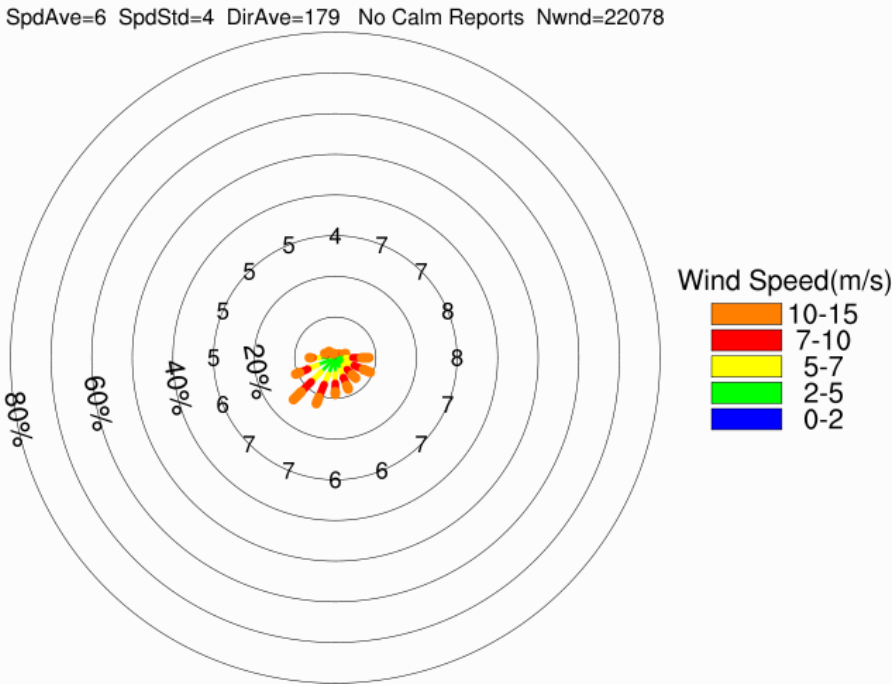


Figure: 1	RAMBOLL ENVIRON
Title: Location of the Subject site and its Environs	Drawn by: JL Checked by: SLo
Project: : Air Ventilation Assessment for the Proposed Public Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon	Rev.: 1.0 Date: May 2017



Annual Condition



Summer Condition

Figure:	**2**	RAMBOLL ENVIRON
Title:	**Windrose Diagram representing V∞ of the Area under Concern**	Drawn by: JL Checked by: TC
Project:	**Air Ventilation Assessment for the Proposed Public Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon**	Rev.: 1.1 Date: Feb 2016

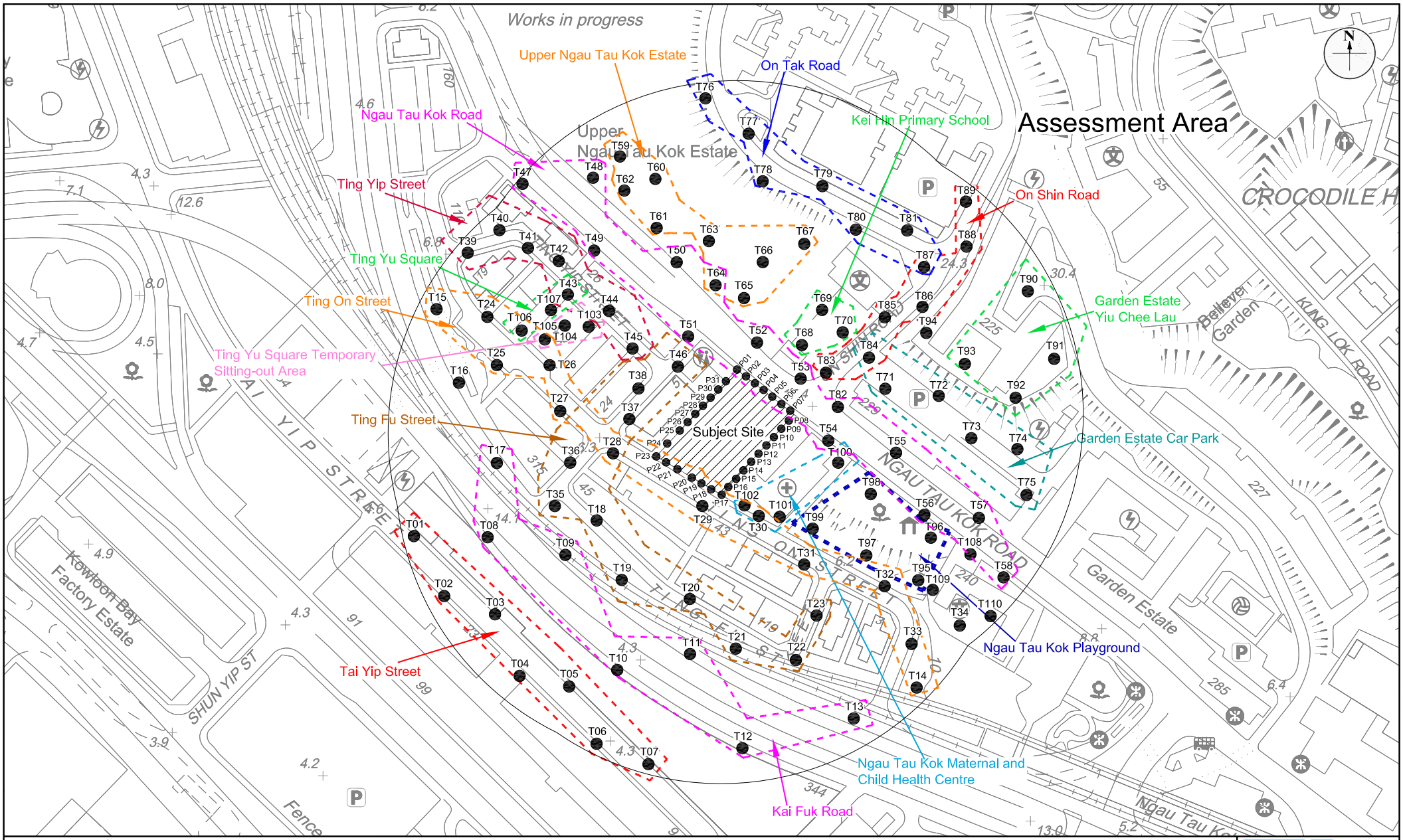


Figure: 3a	RAMBOLL ENVIRON
Title: Test Points selected for Quantitative Air Ventilation Assessment (Perimeter and Overall Test Points)	Drawn by: JL Checked by: TC
Project: : Air Ventilation Assessment for the Proposed Public Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon	Rev.: 1.3 Date: May 2017

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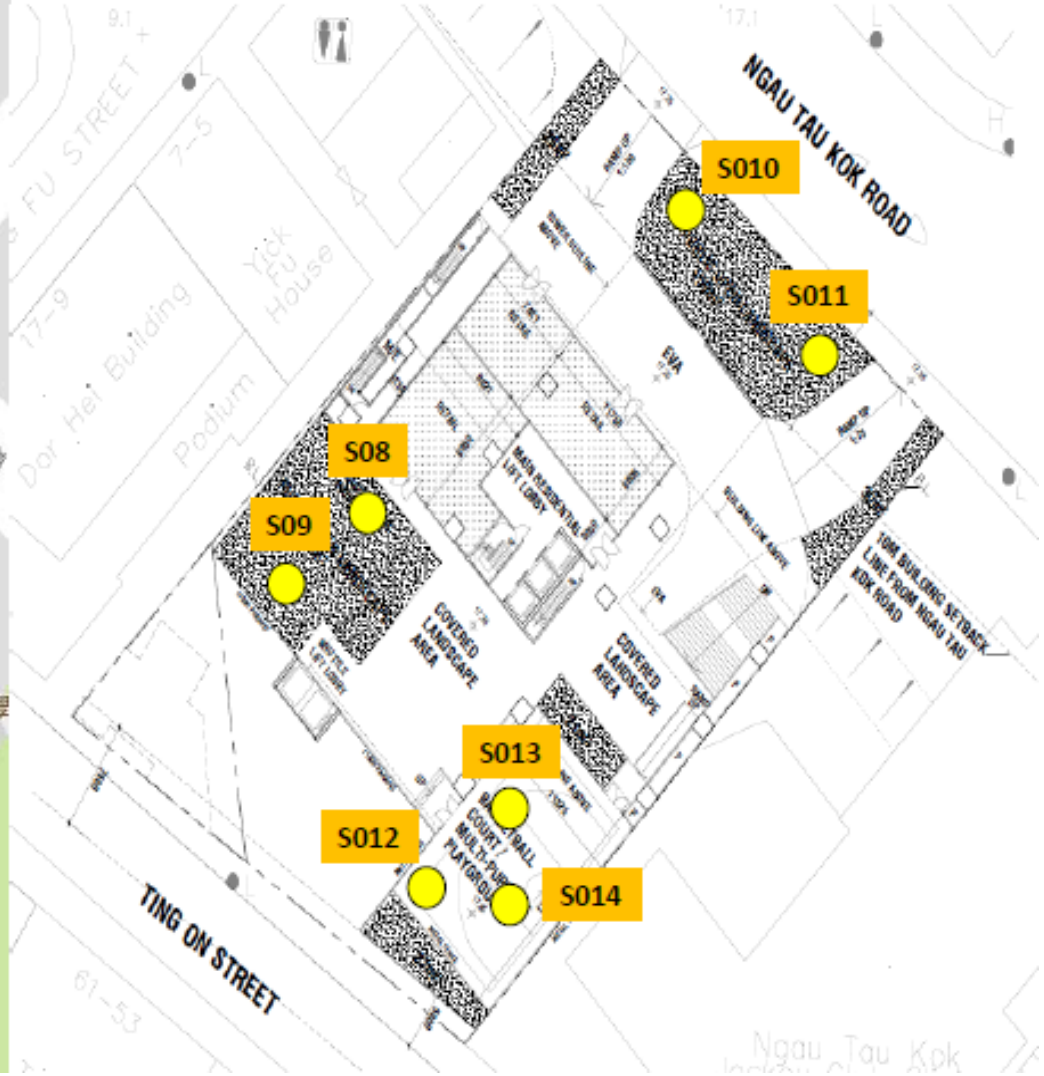


Figure:	**3b**	RAMBOLL ENVIRON
Title:	**Test Points selected for Quantitative Air Ventilation Assessment (Special Test Points)**	Drawn by: KCK Checked by: SL
Project:	**Air Ventilation Assessment for the Proposed Public Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon**	Rev.: 1.0 Date: Jul 2017

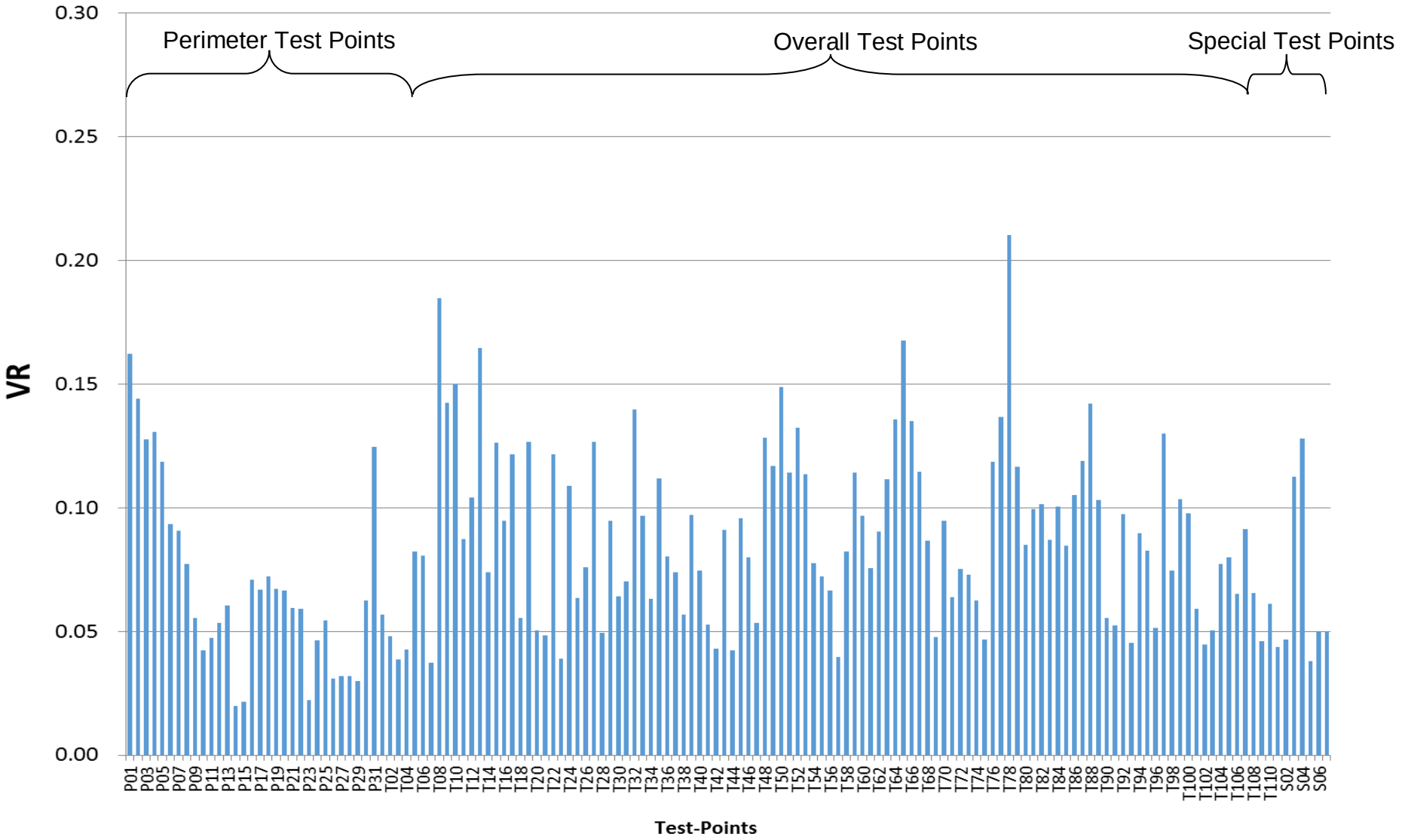


Figure:	**4a**	RAMBOLL ENVIRON
Title:	**Wind Velocity Ratios of Individual Test Points for Existing Scenario (Annual)**	Drawn by: KCK
		Checked by: SL
Project:	**Air Ventilation Assessment for the Proposed Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon**	Rev.: 1.0
		Date: Aug 2017

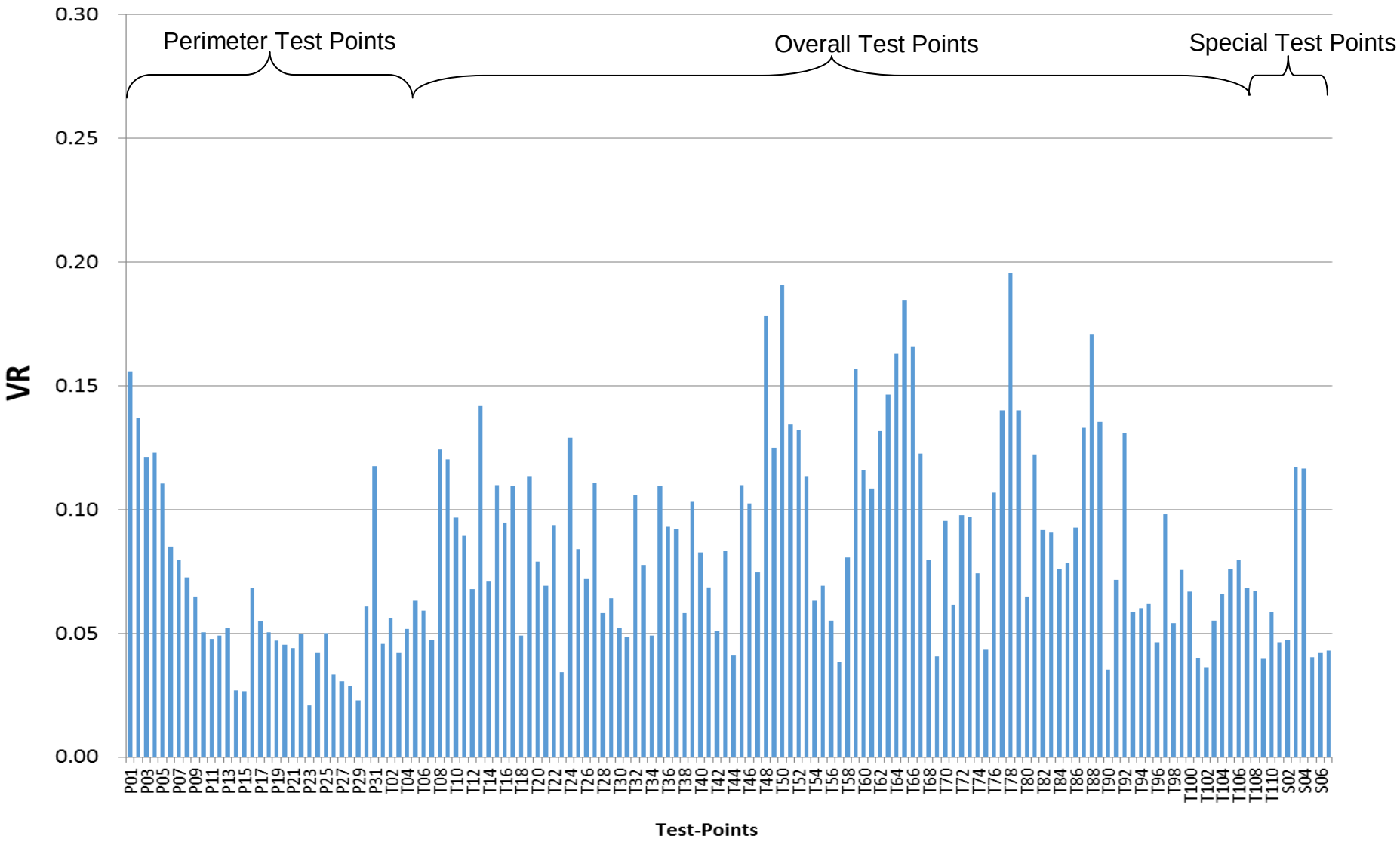


Figure:	**4b**	RAMBOLL ENVIRON
Title:	**Wind Velocity Ratios of Individual Test Points for Existing Scenario (Summer)**	Drawn by: KCK Checked by: SL
Project:	**Air Ventilation Assessment for the Proposed Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon**	Rev.: 1.0 Date: Aug 2017

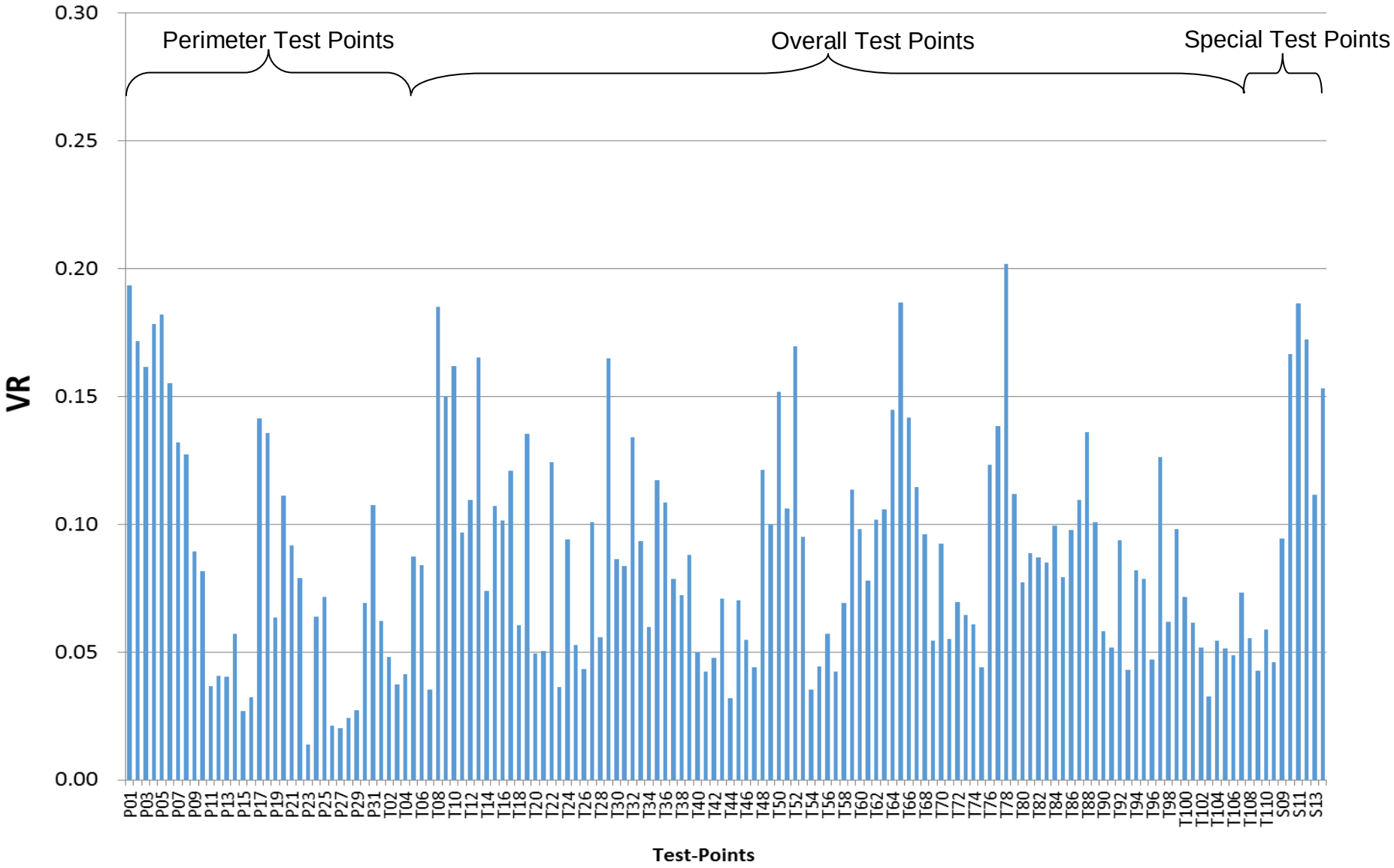


Figure: 5a	RAMBOLL ENVIRON
Title: Wind Velocity Ratios of Individual Test Points for Proposed Scheme (Annual)	Drawn by: KCK Checked by: SL
Project: Air Ventilation Assessment for the Proposed Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon	Rev.: 1.0 Date: Aug 2017

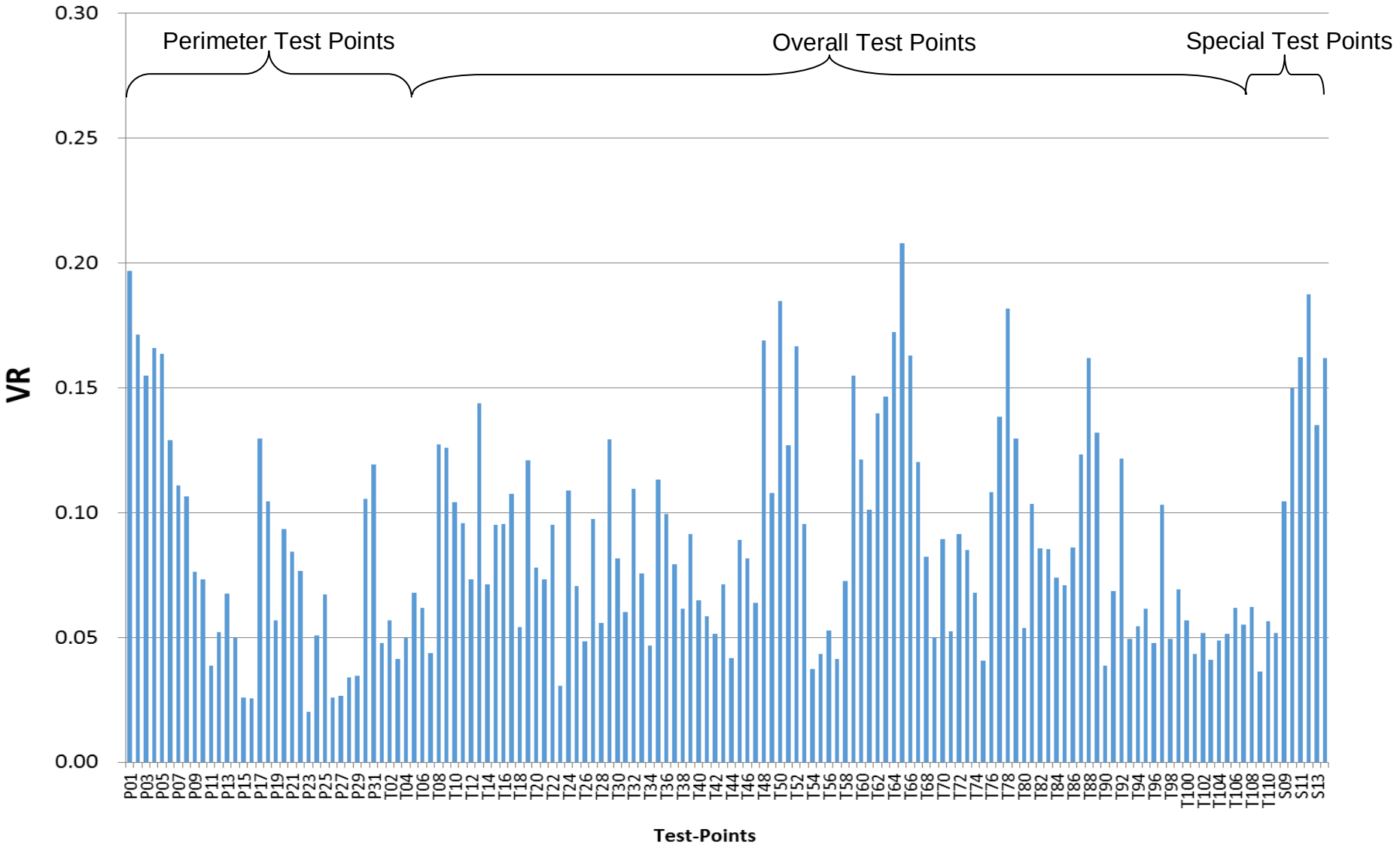


Figure:	**5b**	RAMBOLL ENVIRON
Title:	**Wind Velocity Ratios of Individual Test Points for Proposed Scheme (Summer)**	Drawn by: KCK Checked by: SL
Project:	**Air Ventilation Assessment for the Proposed Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon**	Rev.: 1.0 Date: Aug 2017

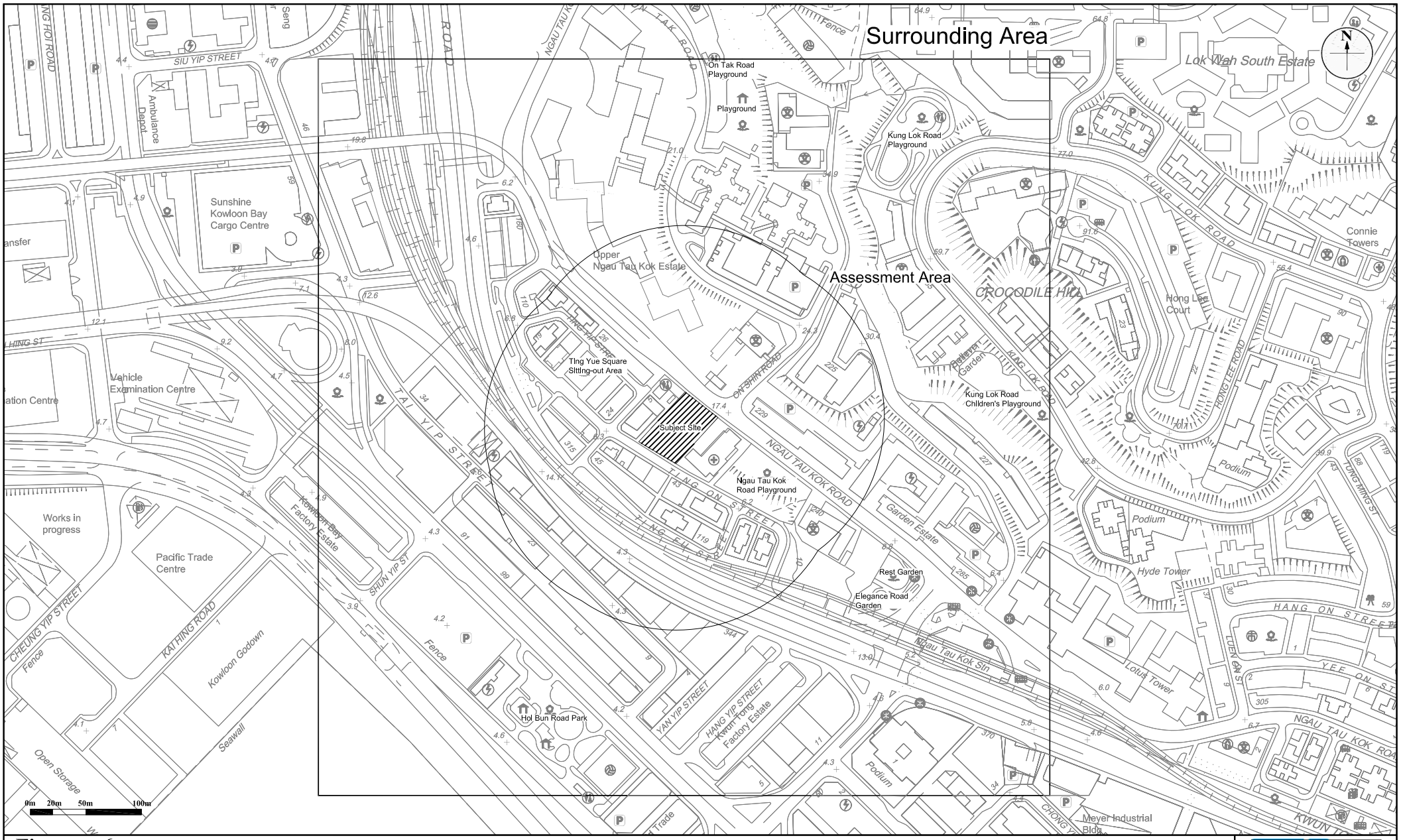
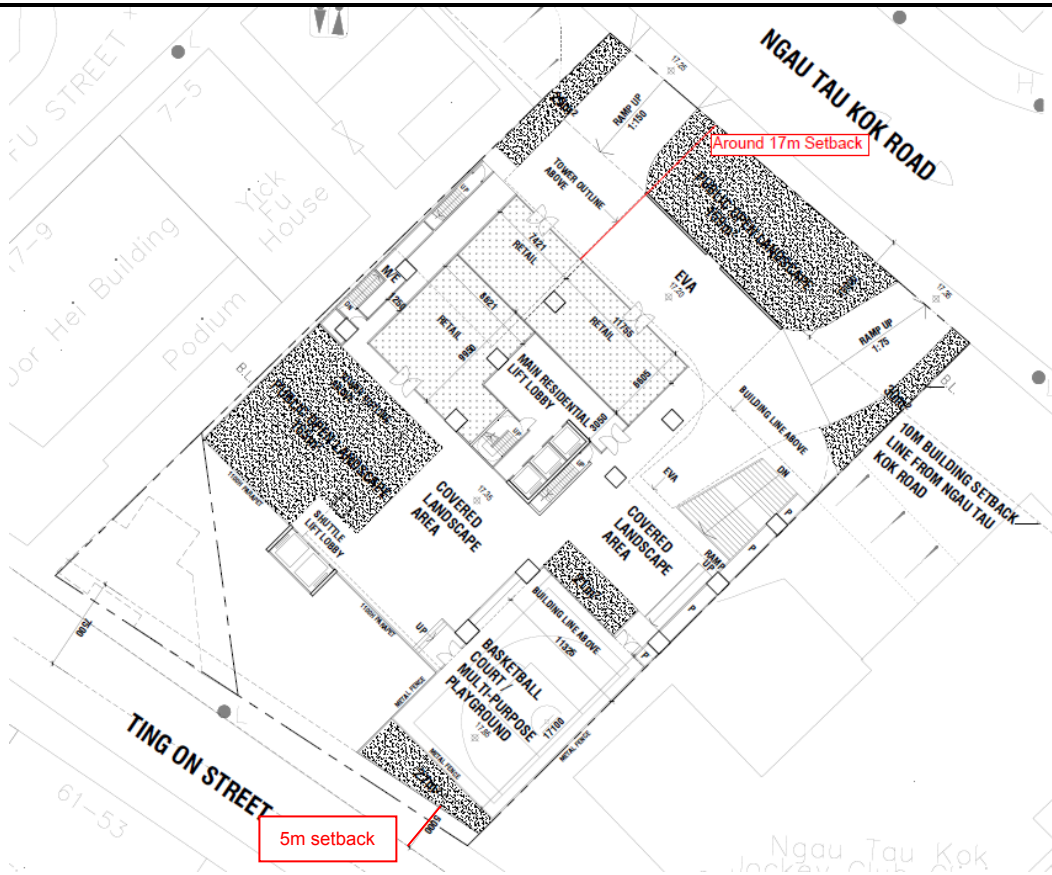
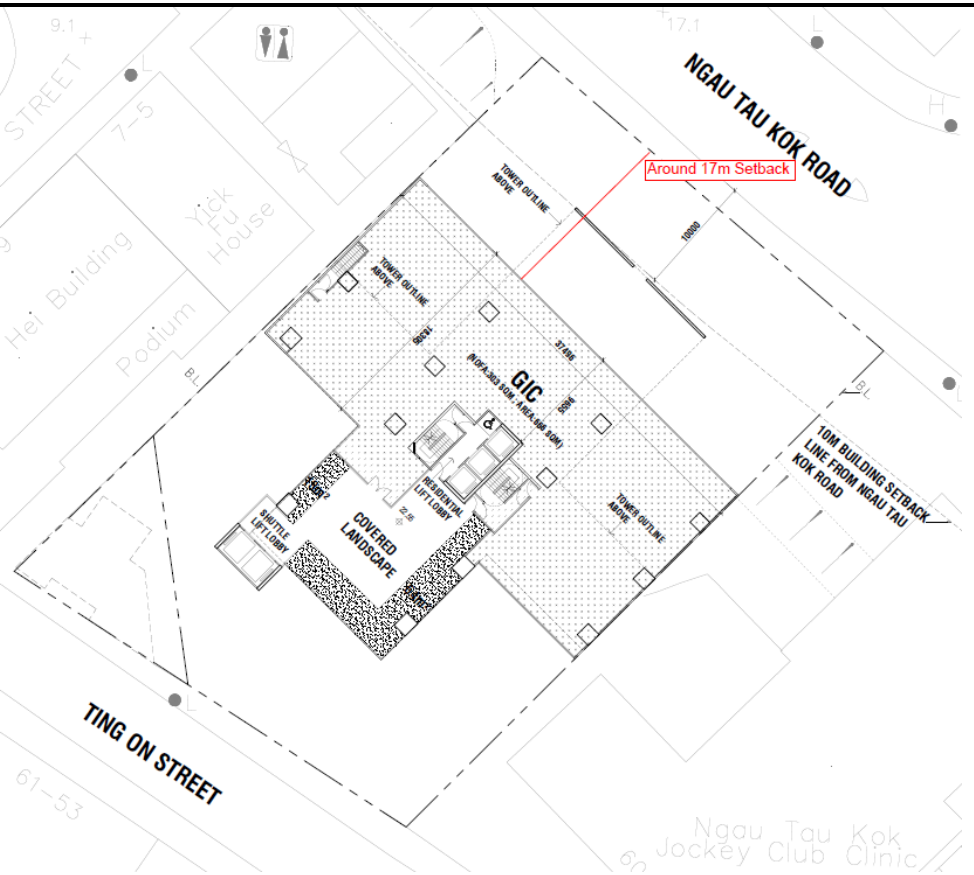


Figure: 6	RAMBOLL ENVIRON
Title: Surrounding Development and Important Pedestrian Areas	Drawn by: JL Checked by: TC
Project: : Air Ventilation Assessment for the Proposed Public Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon	Rev.: 1.3 Date: May 2017

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Second Floor



Third Floor

Figure: 7	RAMBOLL ENVIRON
Title: Setback along Ngau Tau Kok Road	Drawn by: KCK
	Checked by: SL
Project: Air Ventilation Assessment for the Proposed Rental Housing Development at Ting On Street in Ngau Tai Kok, Kowloon	Rev.: 1.0
	Date: Aug 2017



Planning Consultancy Services for the Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Environmental Assessment

Prepared by:
Ramboll Environ Hong Kong Limited

Date:
September 2017

Report Number:
R4218_V3.3

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1.0 Introduction

1.1 Study Background

The Hong Kong Housing Society proposes to develop the Subject Site to a Public Rental Housing (PRH) development with all the necessary supporting facilities.

The Subject Site falls within the overall planning context of the urban area of Ngau Tau Kok, with Ngau Tau Kok Road located to the immediate north and Ting On Street to the immediate south. **Figure 1** shows the location of the Subject Site.

An Environmental Assessment (EA) report (report ref: R4218_V2.9, dated January 2017) was prepared by Ramboll Environ Hong Kong Ltd. (the Consultant) in support of the Planning Department's proposed amendment to the approved Kwun Tong (South) Outline Zoning Plan (OZP) No. S/K14S/20. No further comment from the Environmental Protection Department (EPD) on the EA report was received in Jan 2017. In the report, the noise impact (including traffic noise, railway noise and fixed noise impact) and air quality (industrial emission and vehicular emission) have been addressed. Sufficient mitigation measures have been incorporated for mitigating the noise impact from nearby road network and railway; while sufficient buffer distance have been provided for nearby fixed noise source. Similarly, sufficient buffer distance have been provided for the residential portion of the proposed development from the nearby road networks and chimneys. It is concluded that no insurmountable environmental impact to the proposed development is anticipated.

Subsequently, local stakeholders was consulted on the proposed Ting On Street Development. The proposed development has been fine-tuned in response to the comments from the local stakeholders and public on the design of the podium, i.e. there is no changes in the residential portion. In the revised podium design, the existing basketball court will be re-provided at the podium level of the Subject Site and the existing refuse collection point (RCP) will also be re-provided at Ting On Street, i.e. the existing RCP will be demolished and included into the site boundary of the Subject Site. With the change in the development parameter, there is an update of traffic forecast.

The latest master layout plan of proposed development is shown in **Figure 2** and the associated plans for each floor and section are shown in **Annex A** of the planning statement.

The building height of the proposed development still remains 106.6mPD. There is no change of floor to floor height, number of storeys, number of units and layout of residential tower erected on the podium. As compared with the scheme for approved EA report, the current scheme involves the following changes.

1. The internal design and floor to floor height of the podium (G/F, 1/F, 2/F and 3/F) has been reorganised;

2. The site boundary is revised to include the existing Ting On Street Refuse Collection Point (RCP), however, it will be demolished and replaced by a new upgraded RCP that will be located at the southeast of the site at G/F;

3. An open basketball court / multi-purpose playground will be provided at 2/F.

As such, only air quality impact assessment (Chapter 2), traffic noise impact assessment (Chapter 3) are revised and discussion of new Refuse Collection Point (Chapter 6) is newly added. There is no update of industrial noise impact assessment (Chapter 4) and railway noise impact assessment (Chapter 5).

1.2 Environmental Appraisal of the Proposed Development

Site visits were carried out in Nov 2014, Jan 2015 and May 2016 to check if any chimneys are active within 500m from the Subject Site. It is found that there are a total of 5 active chimneys in operation; and two of them are located within 200m from the Subject Site. In addition, the subject site is bounded by Ngau Tau Kok Road to the immediate north and Ting On Street to the immediate south. The proposed development may be subjected to adverse air quality impact; and mitigation measures may be required. Details of the air quality impact assessment are presented in **Chapter 2**.

As the Subject Site is close to busy roads, such as Ngau Tau Kok Road and Kwun Tong Road, the proposed development is likely to be subjected to traffic noise impact. Due to limited buildable area, provision of sufficient setback between residential block and traffic road is unlikely to be applicable. Therefore, traditional and innovative mitigation measures may be required; such that future residents would not be subjected to adverse traffic noise impact. Details of the traffic noise impact assessment are presented in **Chapter 3**.

Based on site visits, some garages at the ground floor of the existing buildings along Ting On Street opposite to the Subject Site and VRVs on the roof of Ngau Tau Kok Jockey Club Clinic were observed. Operation of these garages and VRVs may have industrial noise impact to the proposed development. Details of the industrial noise impact are presented in **Chapter 4**.

Kwun Tong Line is located to the further south of the subject site with existing low to high-rise buildings in between. In view of close proximity, the proposed development may be subjected to adverse railway noise impact. Mitigation measures would be required to alleviate the potential impact. Details of the railway noise impact are presented in **Chapter 5**.

2.0 Air Quality Impact Assessment

2.1 Review of the Operational Phase of the Air Quality Impact

As mentioned in the section 1.1, there is no major changes in the proposed development in comparing with that studied in year 2016. The changes are the use within the podium of which the existing open basketball is re-provided at the 2/F of the podium and the existing RCP will be re-designed and incorporated into the ground floor of the podium. The existing RCP will be demolished and will be designated as retail of the proposed podium. As the above changes will not affect the fresh air intake location of the central fresh air supply system and the layout of the residential floors, there is no changes in the locations of the ASRs. In the previous EA report, it was concluded that the air quality at the residential floors of the proposed development would comply with the Air Quality Objectives (AQOs). However, for the storeys below the residential floor, i.e. below 28.75 mPD, the annual NO2 concentration will exceed the relevant AQOs. It must be noted that there is no exceedance of short term NO2 concentration at the storeys below the residential part of the building block. The uses of these storeys include transfer plate, retail and G/IC. In order to mitigate the potential impact, it is recommended to equip central fresh air supply system together with split type air conditioning for these areas. This design can avoid the need of ventilation by means of opened windows. The fresh air intake location of the central fresh air supply system will be located at the floor level above 30.25mPD and all the air sensitive uses below 30.25mPD (except basketball court/ multi-purpose playground) will be equipped with air condition with fresh air intake above 30.25mPD where the air quality would comply with the AQOs.

A site visit was carried out on 24 April 2017 to review the existing chimney information mentioned in previous study, it was confirmed that the chimneys are still being used and their information is still valid.

As advised by the traffic consultant, the traffic forecast is updated in view of the change development parameter. The updated traffic forecast is included in the **Annex 2a**. The comparison of the total daily flow and total NOx emission pollutant loading were carried out to review the air quality impact upon the proposed development (**Table 2a** and **Table 2b**) because the critical air pollutant should be NO_2 as the hourly average NO_2 concentration and annual average NO_2 concentration are marginally below and over the criteria of the AQOs. From the table, it is found that the total daily flow and NOx emission would be dropped by about 9% and 3% respectively. The previous traffic forecast, comparison of total daily flow between previous and current traffic forecast, and the calculation of the total pollutants emission and its emission inventory can refer to **Annexes 2b, 2c(i)** and **2c(ii)**. Therefore, it is considered that the calculated air pollutant concentrations at the ASRs of the residential use in the previous approved EA Report would be a worse case, which would comply with the criteria of the AQOs. As such, there is no need to update the air dispersion models.

Table 2a Comparison of Total Daily Flow between Previous and Current Traffic Forecast (Year 2036)

Total Daily Flow		Comparison between these two scenario (+/-)
Previous Traffic Forecast	**Current Traffic Forecast**	
1277487	1167331	-9%

Table 2b Total NOx Emission Calculated by Using EMFAC-HK V2.6 & Previous Traffic Forecast and EMFAC-HK V3.3 & Current Traffic Forecast (Year 2036)

Total NOx Emission (g/day)		Comparison between these two scenario (+/-)
Previous Traffic Forecast [1]	Current Traffic Forecast [2]	
167776	162051	-3%

Remarks:

[1] Refer to the approved EA report (dated Jan 2017), the emission inventory is generated by EMFAC V2.6

[2] The emission inventory for the current traffic forecast is generated by EMFAC V3.3

[3] The total RSP and FSP emission (g/day) can be refer to Annex 2c.

It is anticipated that the residential units of the proposed development would still not to be subject to adverse air quality impact with a reduction of total pollution loading. For the podium, it is recommended to apply central fresh air supply system together with split type air conditioning and the fresh air in-take point will be located at the floor level above 30.25mPD

Since the re-provision of open basketball court / multi-purpose playground will be for a short-term activity (i.e. the users normally use the basketball court/ multi-purpose playground once a while, unlikely every day. They usually stay in it for a few hours (either in the morning, in the afternoon or in the evening), not the whole day), it is considered that the long-term AQO criteria (annual) is not applicable for the basketball court/ multi-purpose playground in terms of the low frequency and short duration of possible exposure by people taking part in the activities. The previous EA has demonstrated that there would not have any short term exceedance of the air quality impact for the proposed development. With the reduction of the total emission pollutant, it is anticipated that there would still have no exceedance at the short term air quality objectives for the Subject Site, as well as the open basketball court/ multi-purpose playground.

For the re-provision of the RCP, it will located within the podium of the proposed development. The design of the RCP will follow the Handbook on Standard Features for Refuse Collection Points, i.e. the whole operation of the RCP will be carried out in indoor environment. Odour removal system will be provided to minimize the potential odour impact. It is anticipated that the re-provided RCP would not have any adverse air quality impact to the surrounding. Assessment on the new upgraded RCP will be discussed in **Chapter 6** in details.

2.2 Construction Phase Air Quality Consideration

This section presents the management and mitigation strategy of the construction dust generated from the construction work for the proposed development. Where appropriate, environmental control measures for avoiding and minimising the potential impacts are recommended.

2.2.1 Legislation

Construction activities will arise some potential temporary air quality impact on the surrounding area.

Assessment Criteria for aerial emission is based on the Hong Kong AQOs for air pollutants given in Chapter 9, "Environment", of the HKPSG for air pollution control and the AQOs for the pollutants relevant to the construction phase air quality impact are listed in **Table 1** above.

2.2.2 Dust Impact and Mitigation

Dust will be the only potential major source of air quality impact during the construction phase. Unacceptable impacts from the criteria pollutants - NOx, SO2, and CO, etc. are unlikely as significant emissions are not anticipated, as number of diesel or petroleum fuelled machinery operating in the Subject Site shall be limited as compared to the traffic volume in nearby roads.

Appropriate dust reduction measures should be adopted as required under the Air Pollution Control (Construction Dust) Regulation. Essential dust mitigation measures must be implemented to minimize the potential dust impact. Dust impact could be effectively mitigated by inclusion of appropriate contracts clauses for dust minimisation in the works contract. Mitigation measures may include:

- dump trucks for material transport should be totally enclosed using impervious sheeting;
- any excavated dusty materials or stockpile of dusty materials should be covered entirely by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated within 24 hours of the excavation or unloading;
- the stockpiled malodorous materials should be removed from Project Area as soon as possible, and they should be covered entirely by plastic tarpaulin sheets;
- dusty materials remaining after a stockpile is removed should be wetted with water;
- the area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with e.g. concrete, bituminous materials or hardcore or similar;
- stockpile of dusty materials to be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet;
- all dusty materials to be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet;
- vehicle speed to be limited to 10 kph except on completed access roads;
- the portion of road leading only to a construction site that is within 30m of a designated vehicle entrance or exit should be kept clear of dusty materials;
- every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites;
- the load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
- the working area of excavation should be sprayed with water immediately before, during and immediately after (as necessary) the operations so as to maintain the entire surface wet; and
- use of effective dust screens, sheeting or netting to be provided to enclose dry scaffolding which may be provided from the ground floor level of the building or if a canopy is provided at the first floor level, from the first floor level, up to the highest level (maximum four floors for this Project) of the scaffolding where scaffolding is erected around the perimeter of a building under construction.

A monitoring programme could also be instigated to monitor the construction process in order to enforce dust controls and modify methods of works to reduce the dust emission down to acceptable levels.

Good site management is important to help in reducing potential air quality impact down to an acceptable level. As a general guidance, the contractor shall maintain high standard of site management to prevent potential emission of fugitive dust emission. Loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should also be carried out in a manner so as to minimise the release of visible dust emission.

A high standard of site management shall be maintained. Any piles of materials accumulated on or around the work areas shall be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within

the work areas shall be carried out in a manner without generating fugitive dust emissions. The material shall be handled properly to prevent fugitive dust emission before cleaning.

"Recommended Pollution Control Clauses for Construction Contracts" is available on EPD website. It contains the recommended air pollution control measures to be implemented by the contractor during the construction of the development.

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

Emissions from non-road mobile machinery (NRMMs) should be controlled as required under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation in order to reduce emissions and improve air quality. NRMMs include non-road vehicles as well as mobile machines or equipment (regulated machines) such as crawler cranes, excavators and air compressors. Regulated machines must comply with the emission standards of Stage IIIA of the European Union (EU) or the equivalent, while non-road vehicles must comply with Euro V emission standards in line with the prevailing emission standards for road vehicles at the time of first registration in Hong Kong. Controlling emissions from NRMMs will help improve the ambient air quality and reduce the environmental nuisance caused in areas close to container terminals and construction sites. For identification, each approved or exempted NRMM is required to bear a unique label with a reference number issued by EPD in accordance with the requirements specified in the Regulation. The label must be painted or securely fixed on the machine or vehicle and be displayed at a conspicuous position of the machine or vehicle.

2.4 Potential Nuisance from Existing Refuse Collection Point

A existing refuse collection point (RCP), Ting On Street RCP, is located to the south-west of the Subject Site. Location of the existing RCP is shown in **Figure 14**. According to Chapter 9 of the HKPSG, refuse collection points are considered as one of the air polluting uses. In the case where refuse collection points are located within or beneath buildings, adequate mechanical ventilation and necessary pollution control measures will be required to avoid accumulation of aerial emissions.

Based on information from FEHD's webpage, the RCP is operated daily from 7:00am to 11:30pm for domestic waste collection. The RCP is currently surrounded by air sensitive uses (i.e. residential uses at the north, west and south, recreational uses at the east) at a minimum distance of less than 10m. In addition, no significant odour were observed in proximity to the RCP during all site surveys conducted in Nov 2014, Jan 2015, Apr 2016 and Jul 2016.

Considering the close proximity of the prevailing air sensitives from RCP and observations from site surveys, it is believed the present air pollution control measures implemented at the RCP (e.g. enclosure of odorous sources, provision of odour removal system at ventilation exhaust) can effectively avoid and minimise potential nuisance induced to the neighbouring air sensitive receivers. Adverse air pollution impacts associated with operation of the Ting On Street RCP on the proposed development is therefore not anticipated.

3.0 Traffic Noise Impact Assessment

3.1 Assessment Criteria

Noise standards are recommended in Chapter 9, "Environment", of the Hong Kong Planning Standards and Guidelines (HKPSG) for planning against possible noise impact from road traffic, railway and aircrafts. According to the guidelines, the maximum allowed road traffic noise level, measured in terms of L10(1-hr.), at typical facades of new dwellings like the proposed development is recommended to be 70 dB(A).

3.2 Assessment Methodology

The assessment concerns the prediction of the maximum L10(1-hr) traffic noise level at noise sensitive receivers (NSRs) of the proposed development due to the projected traffic data on the adjacent major road networks for year 2036, which is considered as the worst case scenario within 15 years upon completion of the proposed development in year 2020/2021. Traffic data was predicted by the project traffic consultant – Ozzo Technology Limited.

The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" was applied to predict the L10(1-hr) noise level generated from road traffic at selected representative facades (NSRs) of the proposed development. The predicted noise levels were then compared with the HKPSG noise criterion for assessing the impact.

3.3 Road Characteristics

Ngau Tau Kok Road, Ting On Street and Kwun Tong Road are considered to be the dominant sources contributing to traffic noise impact on the NSRs. Other roads within 300m from the Subject Site are also considered in the assessment. The information on traffic volume and percentage of heavy vehicle using these roads was attached in **Annex 3a**.

3.4 Noise Sensitive Receivers

NSRs likely to be subjected to adverse traffic noise level have been identified in this assessment. The locations of the NSRs are shown in **Figure 3**. The assessment points are taken at 1.2 m above the floors of the selected storey and 1m away from the facades of openable windows.

3.5 Assessment Results and Proposed Noise Mitigation Measures

The assessment results of the proposed development are shown in **Annex 3b**. In view of close proximity, the Subject Site will be experiencing adverse traffic noise impact. Therefore, noise mitigation measures will be required to alleviate the potential traffic noise impact.

The sections below describe the noise mitigation measures proposed. In this project, both traditional and innovative mitigation measures are proposed.

3.5.1 Traditional Traffic Noise Mitigation Measure considered

i) Building Setback

The site is small with area only about 0.2 hectare. With the limited buildable area, the setback of the proposed development from busy traffic roads has already been maximized (i.e. at least 10m setback from Ngau Tau Kok Road and at least 5m setback from Ting On Street is given according to the recommendations under Table 3.1 in Chapter 9 of HKPSG). It is considered that increasing separation between the carriageway and residential development can minimize the traffic noise impact to the domestic premises. Due to limited site area, alternative building forms and disposition to minimize the angle of views are also not practical.

ii) Podium

Podium will be provided at the subject site. The podium would increase the buffer distance from the first residential floor to the nearby road networks.

iii) Fins

Two 2.0m vertical fins proposed for mitigating the railway noise impact (refer to **Section 5.0** below) have also been taking into account in this assessment. Fin can reduce the angle of view from the noise sensitive use to the nearby roads. Regarding the effectiveness provided by the fin, it is maximized to be not more than 3 dB with reference to the EPD's web site on innovative noise mitigation measures (http://www.epd.gov.hk/epd/Innovative/greeny/eng/architectural_fin.html#pr). In this assessment, it is understood that the locations of the vertical fins are parallel to Ting On Street. The vertical fins can reduce more than half of the angle of view from the NSR to noisy roads, which theoretically resulting more than 3 dB reduction. In addition, in order to minimize the potential reverberant noise impact among the fin and the façade nearby, absorption material with absorption coefficient of 0.9 at 500 Hz will be applied on the vertical fin surface. Example of the sound absorptive material has been included in **Annex 8**. Therefore, it is considered that the 3 dB noise reduction provided by the fin is already a conservative approach. Locations and dimensions of the vertical fins are shown in **Figure 3**.

In order to further alleviate traffic noise impact, an innovative technology, noise reducer, will be considered to be applied on the edge of fins. Noise reducer is widely adopted in Japan to further promote the noise shielding performance of the existing and proposed noise barrier. In accordance with a review conducted for Japan by P.A. Morgan under the Dutch Innovation Programme called IPG, the provision of noise reducer on the edge of noise barrier is equivalent to extending the height of the barrier by 1.5-2m for NSRs within the shadow zone. An extract of the review report is enclosed in **Annex 12**. It is considered that additional 1 dB noise reduction can be provided by the noise reducer. However, under the current assessment, this additional reduction has not been considered as a worst case scenario.

iv) Use of Maintenance Window for Habitable Rooms

For some facades of the habitable rooms that are facing Kwun Tong Road and Ngau Tau Kok Road, maintenance window shall be installed which are not opened for ventilation purpose. Their locations are shown in **Figure 3**.

With the consideration of traditional noise mitigation measures, noise exceedances still occur at some flat units. **Table 3** below summarizes the assessment results of the proposed development. Detailed results are shown in **Annex 3b**.

Table 3 Mitigated Traffic Noise Assessment Results (With implementation of Traditional Noise Mitigation Measures)

	AM Peak Traffic Flow	PM Peak Traffic Flow
Predicted Maximum Noise Level, $L_{10\ (1\ hour)}$ dB(A)	77	77
Total No. of Exceedances	196	166
Total No. of Units	378	378
Percentage of Compliance, %	48%	56%

3.5.2 Innovative Mitigation Measure Considered

After considering all traditional noise mitigation measures, noise exceedances still exist at flat 3 to 12 of the proposed development that are directly facing Ngau Tau Kok Road. Acoustic window (baffle type) is therefore proposed to mitigate the traffic noise impact. (refer to **Figure 3**)

v) Acoustic window (baffle type)

With reference to the approved planning application for public housing at ex-San Po Kong (SPK) Flatted Factory (TPB planning application number: A/K11/211), acoustic window (baffle type) is recommended to mitigate the traffic noise for public housing. In general, acoustic window (baffle type) consists of two layers of windows and openings at offset location to reduce noise penetrating into the units. The forms of acoustic windows (baffle type) are sliding windows.

Refer to the email shown in **Annex 11,** it is checked with the project Architect – CYS Associates (Hong Kong) Ltd., the flat layouts in the proposed development is similar to those in ex-SPK Flatted Factory. According to the paper "Full scale field study of sound transmission across plenum windows", the area of the openable portion and the size of the room are two key factors affecting the acoustic performance provided by the acoustic window. Generally, the noise reduction performance of acoustic window increases with room size because of the longer reverberation time and the lower reverberation effect in a large room. For this project, the window configurations in different rooms would be same as those in the corresponding rooms in the public housing at ex-SPK Flatted Factory. Meanwhile, the rooms of this project are larger when compared with the corresponding rooms in the public housing at ex-San Po Kong Flatted Factory. (Refer to **Annex 13**) Therefore, the acoustic window (baffle type) proposed in the ex-SPK Flatted Factory can also be applicable to the proposed development of this study. It is also confirmed by project architect that the proposed acoustic window (baffle type) would fulfil the lighting and ventilation requirements of B(P)R, under the current standard.

The summary of noise attenuation performance of different types of units based listed in the environmental assessment for the public housing at ex-San Po Kong Flatted Factory (TPB planning application number: A/K11/211) is summarised below:

Table 4 Summary of Sound Attenuations Performance of Acoustic window (baffle type) for Individual Flats

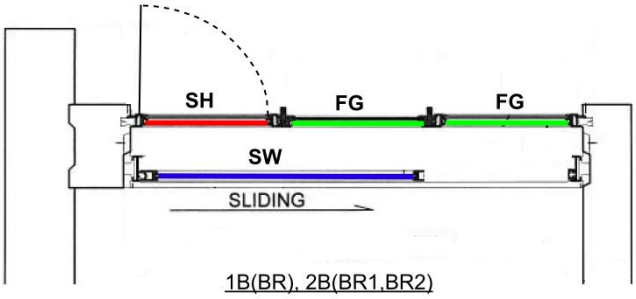
Types of Acoustic window (baffle type)	1/2P	2/3P	1B	2B (LIV+BR1)	2B (BR2)
Sliding window, without sound absorptive material	5.9	6.6	6.6	6.6	3.5
Sliding window, with sound absorptive material	7.1	7.7	8.1	8.1	4.7

Remark: Unit of the sound attenuation performance is dB.

For those flat units equipped with acoustic window (baffle type), the equivalent noise level of the corresponding noise sensitive receivers would be the results of deducting the noise level at 1 m away from façade calculated by CRTN method by the sound attenuation of the acoustic window assessed in this report. For example, it is assumed that the noise level at 1 m away from façade of a 1/2P flat is 73.5 dB(A). If acoustic window without sound absorption material is equipped for the flat, the equivalent noise level at 1 m away from façade of the 1/2P flat will be 73.5-5.9 = 67.6 dB(A), i.e. ~ 68 dB(A). As such, the flat mitigated by installation of acoustic window without sound absorption material becomes complying with HKPSG requirement.

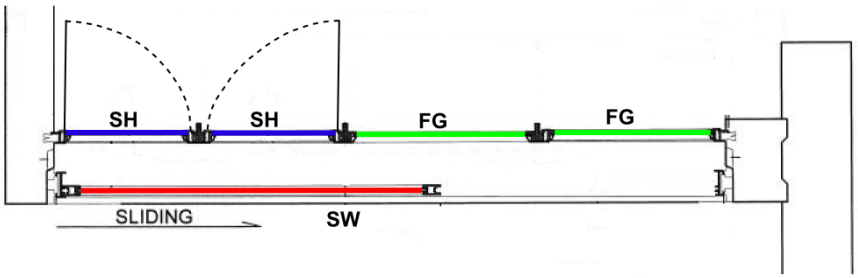
Configuration of Acoustic window (baffle type)

The basic configuration of the acoustic window (baffle type) is shown below:



1B(BR), 2B(BR1,BR2)

Note:
SH - Side-Hung Openable Window
SW - Sliding Window
FG - Fixed Glazing



1/2P, 2/3P, 1B(LR), 2B(LR)

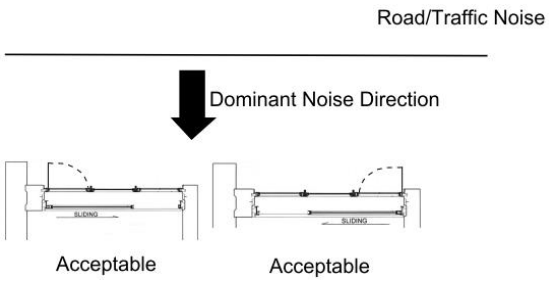
Note:
SH - Side-Hung Openable Window
SW - Sliding Window
FG - Fixed Glazing

Nevertheless, for operation and maintenance purpose, the fixed glazing specified as FG might be equipped with side-hung openable window. For those "FG equipped with side-hung openable window", provision of special window opening device would be considered for incorporation if and when such need is warranted. However, the future resident shall be advised of the caution that such window should be closed to achieve the intended sound attenuation and that opening of the windows for purpose of other operation, maintenance or additional ventilation would compromise the indoor noise level in the flat.

Acoustic Window Setting and Orientation

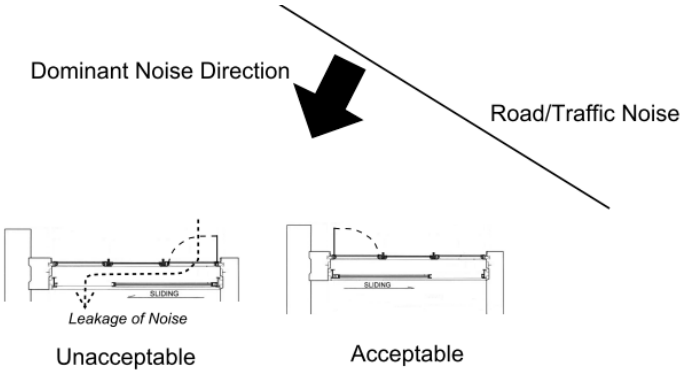
For achieving the sound attenuation assessed in the study, the acoustic window should be set at the intended orientation as described below.

In case a flat is fronting a major noisy road running in parallel with the façade, the left/right settings of the openings of its acoustic window are only mutual images; both of which could achieve the intended sound attenuation in the study.



While window in parallel with traffic noise source, both the left/right setting are applicable.

In case the road, hence the traffic noise propagates at an angle to the façade/flat, the openings of the acoustic window should be set to obstruct direct propagation of noise through the openings and the separation of outer and inner panes should be as follows.



While window NOT in parallel with traffic noise source

Materials Requirement

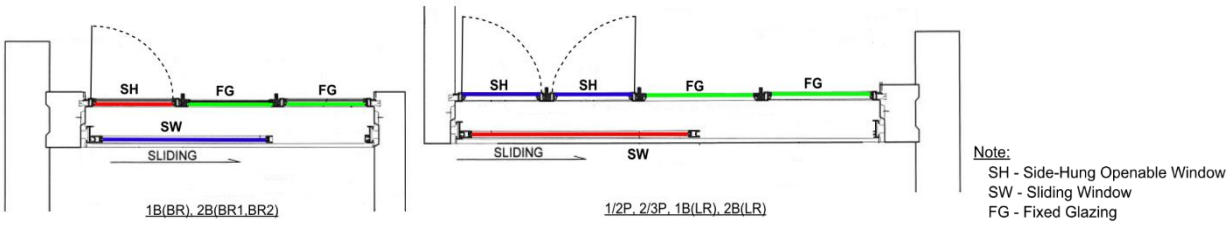
For the acoustic window (sliding window) system, the following materials requirement should be specified:
For construction

- Window pane: 6 mm thick
- Sound Absorption Material (where applicable):
  - Thickness: 30 mm
  - NRC: minimum 0.7
  - Location: two sides and top
  - Lining Panel: 2 mm aluminum (or less) with perforation
  - Perforation: 40 % opening
  - Weather-Proof Protection – SAM to be wrapped/sealed by protective sheet of biaxially oriented polyester film

Advisory to Future Residents about Acoustic Window

The sound attenuation achieved by the acoustic window refers to the designated setting of windows. Hence, the future residents in the flats equipped with acoustic windows should be advised of such settings for achieving the intended attenuation, the following may be considered as reference:

"This special window design is for mitigating traffic noise impact. To achieve the intended sound attenuation, the windows should be set as following:



3.5.3 Assessment Result with adoption of Acoustic window (baffle type)

With the implementation of both traditional and innovative noise mitigation measures (**Figure 3**), the compliance rate of the proposed development could reach 100% (**Annex 3b**). The predicted traffic noise assessment results with the application of acoustic window (baffle type) is summarised in **Table 5** below:

Table 5 Mitigated Traffic Noise Assessment Results (With implementation of Traditional and Innovative Noise Mitigation Measures)

	AM Peak Traffic Flow	PM Peak Traffic Flow
Predicted Maximum Noise Level, $L_{10\ (1\ hour)}$ dB(A)	70	70
Total No. of Exceedances	0	0
Total No. of Units	378	378
Percentage of Compliance, %	100%	100%

According to the traffic noise impact assessment result shown in **Annex 3b**, sound absorptive material would not be required at all proposed acoustic window (baffle type).

The result above is based on the assumption that the acoustic window (baffle type) could have the claimed noise reduction performance. In detailed design stage, experiments would be carried out in laboratory as well as field test in the future building to verify the noise reduction performance of the acoustic window (baffle type) system. The noise performance of the proposed acoustic window will be tested in the laboratory at subsequent detailed design stage. Further noise mitigation measures such as provision of Microperforated Absorber (MPA) material on the window pane will be incorporated to the window as contingency based on laboratory test findings. Upon completion of the development, on-site verification test will be conducted. The noise assessment results of the development in this Environmental Assessment would be updated accordingly upon verification and confirmation of the noise performance of the acoustic window systems. Furthermore, the consultant should ensure that the proposed acoustic windows would be acceptable to the Buildings Department.

3.6 Conclusion

With the provision of the proposed traditional and innovative mitigation measures, the noise compliance rate of the proposed development could reach 100%. Hence, it is concluded that the proposed development will not be subject to adverse traffic noise impact.

4.0 Industrial Noise Impact Assessment

4.1 Introduction

In this assessment, potential noise impacts arising from nearby fixed noise source on the proposed development has been assessed by general acoustic principle and Technical Memorandum For the Assessment of Noise From Places Other Than Domestic Premises, Public Places Or Construction Sites (IND-TM) published under the Noise Control Ordinance. Practicable environmental mitigation measures would be recommended, where necessary.

4.2 Industrial Noise Assessment Criteria

Referring to Table 1 of the IND-TM, the Area Sensitivity Ratings of the Subject Site should be "C" as the Subject Site is located at urban area and having influencing factor of the "major road" – Kwun Tong Road that is directly affecting the façade of the proposed development. According to the Annual Traffic Census 2015, the annual average daily traffic flow of Kwun Tong Road is in exceed of 30,000.

However, as shown in **Figure 12**, the lower zone of the residential tower (1/F to 8/F) would be well screened from Kwun Tong Road by the buildings between this road and the subject site, therefore they are considered to be indirectly affected by Kwun Tong Road, which is about 83m from the subject site. For conservative assessment, it is assumed that the lower zone of the residential tower (1/F to 8/F) would not be affected by the Kwun Tong Road. Therefore, the Area Sensitivity Ratings of the residential units at 1/F to 8/F would be "B" while the ASR for the residential units at 9/F to 27/F would be "C".

According to Table 2 of the IND-TM, the Acceptable Noise Level (ANL), in $L_{eq\ (30min)}$ dB(A) regarding to the Area Sensitivity Ratings for both daytime and nighttime are shown in **Table 6** below.

Table 6 Noise Criteria for Industrial Noise Impact Assessment

Floor	Area Sensitivity Ratings	Time Period	ANL, $L_{eq\ (30\ min)}$ dB(A)
1/F to 8/F	B	Leq (30 minutes) (07:00 – 23:00)	65
	B	Leq (30 minutes) (23:00 – 07:00)	55
9/F to 27/F	C	Leq (30 minutes) (07:00 – 23:00)	70
	C	Leq (30 minutes) (23:00 – 07:00)	60

Notes:

In any event, the Area Sensitivity Rating and the ANLs adopted in this report are only indicative and they are used for assessment only. Noise from fixed noise sources is controlled under the NCO. Therefore, the Noise Control Authority shall determine the noise impact on the basis of prevailing legislation and practices being in force, and taking into account of contemporary conditions / situations of adjoining land uses.

4.3 Background Noise Survey

Day-time and Night-time site survey were conducted on 18 Dec 2014, 29 Dec 2014, 21 Apr 2016 and 13 July 2016 (all from 10am to 8pm) using the sound level meter BK 2250 that was calibrated by the B&K sound level calibrator type 4231 with a calibration signal of 94.0 dB(A) at 1kHz. The measured daytime background noise facing the site was about 62dB(A) (Leq30min) measured from 11:00am to 11:30am on 21 Apr 2016, while the measured nighttime background noise was about 55dB(A) (Leq30min) measured from 11:40pm to 12:10am on 13 July 2016. The measured noise levels were free field and the location of

background noise measurement was at Ting On Street (~7.6mPD) (**Figure 4**). Traffic noise from nearby road network and the noise from the pedestrian as well as that from the nearby residential buildings are the dominant noise sources during the nighttime.

4.4 Not to be used

4.5 Industrial Noise Sources

Site investigations were carried out on 18 Dec 2014, 29 Dec 2014 and 21 Apr 2016 (all from 10am to 8pm). As shown in **Figure 4,** 34 nos. garages, which located at the ground floor of buildings, were found within 300m from the subject site during the site visits. Eight garages (named as S17 to S22, S24 and S25) located along Ting On Street and one garage (S34) located at Ting Fu Street are directly facing the Subject Site. The remaining 25 nos. garages are blocked by the buildings erected in between hence there is no direct line of sight from the NSRs of the proposed development. The photos of nine garages are shown in **Annex 7**. The garages mainly include car washing and car painting work. There are no night-time activities identified in the garages and they close before 7pm.

Garages

During the site surveys, it is found that the garages in the vicinity of the subject site were either not in operation or the noise sources from the garages were fluctuating due to unsteady working activities resulting in a relatively low measured noise level. In order to conduct a conservative and representative industrial noise impact assessment, it is assumed that all garages are in operation and the sound power levels (SWLs) of the garage would be referenced to others approved projects, given that the nature and activity of the garages are similar.

The SWLs of the garages were referenced from Environmental Assessment Report (EAR) for the proposed residential development at Hong Ting Road (Application No. A/SK-SK/10) where the nature of the noise sources and the size and scale of the garages are similar. The size of the garages at the Hong Ting Road is relatively larger than that found in the area surrounding the subject site, of which more than 2 cars can be parked within the garages for repairing. From the site visits, the garages found in the vicinity of the subject site are relatively small in scale that only allow one to two cars for repairing. They mainly include car washing and car painting work and limited hammering work were observed. The maximum SWL of the Auto Services / Workshops adopted for the Fixed Noise Impact Assessment for the Proposed Development at Hong Ting Road was 89.9dB(A).

Since the working activities and the scale of work are similar in both the garages at Hong Ting Road and those in the vicinity of the subject site, it is considered that the noise level measured at Hong Ting Road is adoptable in this case. Furthermore, the size of the garages presented in Hong Ting Road project is larger than those presented in this project. The larger working space in a garage would allow more repairing activities to be carried out, i.e. resulting a larger noise level generated. Therefore, it is considered that the adoption of a noise level for a larger garages for Hong Ting Road project is a conservative approach.

Auto Service / Workshop identified for the EAS for the Proposed Residential Development at Hong Ting Road (Application No. A/SK-SK/10)


An EAR of the proposed comprehensive residential and commercial development at Mok Cheong Street and Sung Wong Toi Road (Application No. A/K10/256) is another reference project having noise measurements of garages. The adopted SWL of the garages is 91.7dB(A).

For conservatism, the maximum SWL of 91.7dB(A) will be adopted for all the garages for the industrial noise impact assessment of this subject site as a worst case scenario.

Chillers and VRVs

4 no. of outdoor chillers and 10 no. of Variable Refrigerant Volume (VRV) outdoor condenser units were found on the roof of Ngau Tau Kok Jockey Club Clinic (Refer to **Figure 4** and **Annex 7**). Permission was provided by Ngau Tau Kok Jockey Club Clinic for conducting the noise measurement at the roof area on 20 July 2016. The chillers and VRVs can be divided into seven groups (V01 to V07) according to their brand and location. V01 to V04 are chillers and V05 to V07 are VRVs. During the on-site noise measurement, it was found that not all chillers and VRVs were in operation. Details of the chillers and VRVs include their locations, brand, model number, dimension and SWLs were shown in **Annex 7**.

The SWL of three groups of chillers and VRVs (V01, V05 and V06) were calculated by following the methodology stated in *ISO 3746-2010 Acoustics – Determination of Sound Power Levels and Sound Energy Levels of Noise Sources Using Sound Pressure – Survey Method Using an Enveloping Measurement Surface over a Reflecting Plane*. The measurement methodology, locations of measurement points, measured sound pressure levels (SPLs) and the associated calculated SWLs are shown in **Annex 15**. The calculated SWLs are then compared with the SWL shown in the catalogues, the larger SWL will be adopted for assessment as a conservative assessment.

For V02 and V07, on-site noise measurement could not be conducted as they were not in operation. Their SWL were referenced to V01 and V06 respectively as their brand, model number and dimension were exactly the same.

For V03 and V04, on-site noise measurement could not be conducted as they were not in operation. As such, their SWL were referenced to the catalogue, which is shown in **Annex 14**.

Based on the above, the SWLs of chillers and VRVs (V01 to V07) on the roof of Ngau Tau Kok Jockey Club Clinic range from 81.4 to 89.0 dB(A).

According to the website of Hospital Authority, the operation hour of Ngau Tau Kok Jockey Club Clinic is from 8:45am to 5pm.

4.6 Approach and Methodology

Noise impact from the identified noise sources were determined based on standard acoustical principle and practice.

PNL = SWL + Cdist + Cfac + Cbarr

Where

PNL is the predicted noise level at the Noise Sensitive Receiver in dB(A)

SWL is the sound power level of the noisy industrial activities in dB(A)

Cdist is the distance correction in dB(A) *Distance Attenuation Correction, dB(A) = 20×log(Dist) + 8 where Dist = shortest horizontal distance measured from noise source to NSR as a worst case scenario*

Cfac is façade correction, +3 dB

Cbarr is the barrier correction with the assumption of -10dB for the line of sight to the noise source is completely blocked as a conservative assumption, in according to the Technical Memorandum on Noise from Construction Work other than Percussive Piling.

4.7 Noise Sensitive Receivers and Noise Assessment Results

Three representative NSRs (N09, N13 and N14) were selected that would be subject to the worst possible industrial noise impact. **Figure 4** shows their locations and they were situated at 1m away from the façade of the openable window and at 1.2m above the floor slab of the unit.

The overall predicted noise level at the representative NSRs are summarised in **Table 7**. The detailed calculation of industrial noise impact assessment is presented in **Annex 4**.

Table 7 Predicted Industrial Noise Impact Assessment Results

Representative NSR	Predicted Noise Level, $L_{eq\ (30\ min)}$ dB(A)	Daytime ANL, $L_{eq\ (30\ min)}$ dB(A)
N09 (1/F to 8/F)	62-64	65
N13 (1/F to 8/F)	61-62	65
N14 (1/F to 8/F)	58-60	65
N09 (9/F to 27/F)	54-62	70
N13 (9/F to 27/F)	55-60	70
N14 (9/F to 27/F)	53-57	70

4.8 Conclusion

The results of predicted industrial noise at the selected NSRs for proposed development are well below both criteria during day time. There are no night-time activities identified in the garages and Ngau Tau Kok Jockey Club Clinic is closed after 5pm. Therefore, it can be concluded that the proposed development will not be subject to adverse industrial noise impact.

5.0 Railway Noise Impact Assessment

5.1 Scope of Assessment

The Subject Site is located at north of the MTR Kwun Tong Rail with a row of existing low to high-rise residential buildings located in between. In view of the close proximity, the Subject Site is experiencing railway noise impact.

5.2 Assessment Criteria

According to the IND-TM, the Area Sensitivity Rating of the proposed development is "C". However, as discussed in **Section 4.2** and **Figure 12**, the lower zone of the residential tower (1/F to 8/F) would be well screened from Kwun Tong Road by the buildings between this road and the subject site, hence they are considered to be indirectly affected by Kwun Tong Road. For conservative assessment, it is assumed that the lower zone of the residential tower (1/F to 8/F) would not be affected by the Kwun Tong Road. Therefore, the Area Sensitivity Rating of the residential units at 1/F to 8/F would be "B" while the ASR for the residential units at 9/F to 27/F would be "C".

Table 8 Acceptable Noise Levels of the Proposed Development

Floor	Area Sensitivity Ratings	Time Period	ANL, Leq (30 min) dB(A)
1/F to 8/F	B	Day & Evening (0700 to 2300 hours)	65
	B	Night (2300 to 0700 hours)	55
9/F to 27/F	C	Day & Evening (0700 to 2300 hours)	70
	C	Night (2300 to 0700 hours)	60

Notes:

In any event, the Area Sensitivity Rating and the ANLs adopted in this report are only indicative and they are used for assessment only. Noise from railway sources is controlled under the NCO. Therefore, the Noise Control Authority shall determine railway noise impact on the basis of prevailing legislation and practices being in force, and taking into account of contemporary conditions / situations of adjoining land uses.

Besides the IND-TM, the HKPSG also provides additional criteria for assessing railway noise. These noise criteria are specified in terms of A-weighted maximum noise level and daily railway noise exposure level, as shown in the table below.

Table 9 HKPSG Railway Noise Standards

Parameter	Noise Level, dB(A)
L_{max} (2300 to 0700 hours)	85
$L_{eq\ (24\ hr)}$	65

It is envisaged that the most critical time of the day in terms of assessment is the duration between 0600 and 0700 hours in the night-time period, as the specified noise criterion is the most stringent in this period. The most stringent noise criteria is 55 dB(A) for night-time while that for the daytime is 65 dB(A) for 1/F to 8/F.

To evaluate the predicted noise level of the same noise sensitive receiver against criteria at different time periods (i.e. day and evening period, night-time period and $L_{eq\ (24\ hr)}$), the only difference is the correction of the conversion of SEL to Leq (i.e. 10log (N/T) where N is the total number of events and T is the total time of the assessment period in seconds). From general acoustic point of view, doubling the train frequency will have an increment of 3 dB of the noise level. According to **Table 10** below, the train frequency in day & evening (18 trains per direction per 30 minutes) is about a double of the train frequency in nighttime (9 trains per direction per 30 minutes). The correction of the no. of events for daytime is 10*log(18/1800) = -20.0 dB while that for the nighttime period is 10*log (9/1800) = -23.0 dB. Therefore, the predicted Leq(30mins) of daytime period will be about 3 dB larger than that of the Leq(30mins) of nighttime. However, the noise criteria for Leq(30mins) of daytime and evening time period is 70 dB(A); while that of the night-time period is 60 dB(A), i.e. the difference is 10 dB between the noise criteria of daytime and evening time period and the night-time period. Therefore, if the predicted noise level at the NSR can comply with the nighttime criteria, the relevant day and evening noise criteria can also be complied. It is because that the increment of the noise level in the daytime and evening period (+ 3 dB) is less than that of the noise criteria (+ 10 dB). Hence, if the predicted $L_{eq(30min)}$ noise levels during night time with the peak hour train frequency could meet the relevant noise criterion, no adverse noise impact is envisaged with respect to other applicable standards under the normal conditions.

For Leq(24hrs), the calculation criteria is 5 dB more than that of the nighttime as shown in **Table 9**. Based on the train frequency listed in **Table 10** below, the correction of converting the SEL to Leq(30mins) of nighttime period is -23.0dB (i.e.10*log(9/(60*30)) while that to Leq(24hr) is -23.7dB (i.e. 10*log(367/(60*60*24)). The decrement of the noise level due to the change of the correction for Leq(24hr) in comparing with the Leq(30mins) of nighttime period is 0.7dB. Therefore, the predicted Leq(24hr) will be 0.7dB smaller than that of the Leq(30mins) of nighttime but the noise criteria for Leq(24hr) is 5dB more than that of the night-time period. Therefore, the predicted Leq(24hr) will comply with the relevant standard if the predicted noise level at nighttime period comply with the relevant noise standard.

5.3 Operational Characteristics of MTR

As recommended by the MTRC (refer to **Annex 10**), for future frequencies of the Kwun Tong Line Passenger train, the assessment parameters would refer to the Kwun Tong Line Extension Project EIA Report (AEIAR-154/2010), which are 18 and 9 trains per 30 minutes in each direction during daytime and night-time respectively. **Table 10** shows the train frequency adopted for Railway Noise Impact Assessment.

Table 10 Train Frequency adopted for Railway Noise Impact Assessment

Period	Train Frequency
Daytime (Peak) (07:00 – 10:00 hrs)	18 trains per 30 minutes (each direction)
Night-time (06:00 – 07:00 hours & 20:00 – 01:00 hrs of the next day)	9 trains per 30 minutes (east bound)
	9 trains per 30 minutes (west bound)
Daily	367 trains (each direction)

5.4 Assessment Methodology

The average sound exposure levels used in the current submission is listed in the **Table 11** below. The train noise data was based on field measurement which was carried out at the roof of Foo Yue Building on 19/1/2015 and 21/1/2015. Among the existing buildings along the railway track in front of the project site, Foo Yue Building is the tallest (~ 87.7 mPD) and the closest building to the track. The height of other buildings are ranging from 25.3 to 35.6mPD, it is considered that taking noise measurement at these buildings may be affected by shielding effect due to the parapet wall along the railway track where the height of the railway track is ranging from 13 to 13.9 mPD. Therefore, noise measurement have been

conducted at the roof of the Foo Yue Building (~ 87.7 mPD) that would be tall enough to avoid any potential shielding effect due to the parapet wall along the railway track. In addition, this noise measurement point has a full view of the eastbound and westbound railway track sections and is not obstructed by buildings. As shown in **Figure 5**, the noise meter was hanging outside the façade of the Foo Yue Building. Thus, the façade correction has been considered in the measured noise level.

Table 11 Average Sound Exposure Levels

Train Movement	Average SEL, dB(A)	Slant Distance
Near track (East Bound)	87.0	77.1m
Far track (West Bound)	87.2	78.5m

Given the measurement location was located in an urban area with high background due to road traffic on Kwun Tong Road and community activities at Yue Man Square, the measured SEL was employed for prediction of railway noise. SEL is a metric used to describe the amount of noise from a single event and is commonly used for assessing noise from trains.

For ordinary assessment based on the reference SEL, the Leq (30 min) level during the night-time period can be determined by accounting the following factors:

- Distance correction [DC = 10 x log (Dist ref / D)] where Dist ref is the slant distance during measurement, i.e. 77.1m for near track (i.e. East Bound) and 78.5m for far track (i.e. West Bound)
- View angle correction is reference to the CRN, = – 10 log ($\pi\theta/180 - \cos 2\alpha \sin\theta$) – 5 dB(A); where θ is view angle and α is acute angle.
- Poor track correction [+4dB] to account for potential deterioration in train operating conditions such as wheel/rail wearing varying with time.
- Conversion from SEL to Leq (30 min) during night-time [a frequency of trains in 30 minutes per direction based on Table 10 above.], i.e. SEL + 10 log(n/assessment period e.g. 1800 sec) where n = number of trains within the assessment period.
- Cbar is the barrier correction (based on Maekawa's Approach to take into account barrier effect using path difference) applied on the buildings between the Subject Site and the railway tracks. For those NSRs which is located outside the shadow zone from the existing buildings in between, some of the railway track segments will be blocked by the proposed development. As a worst case scenario, -10dB correction will be applied at the railway track segment where there is no line of sight from the NSR.
- **Figure 6** shows the railway track segment. Since some of the railway track segments are screened by the high-rise buildings such as Foo Yee Building, Yen Hau Mansion, these sections of the rail tracks have not been included in the assessment.

5.5 Noise Sensitive Receiver

Representative NSRs (N10, N10a, N10b, N13, N13a, N14, N14a, N17, N17a and N17b) were selected and their locations are indicated in **Figure 7**. Assessment points were taken to be 1m away from the openable windows on the façade of the noise sensitive uses (e.g. living/dining room, study room and bedrooms) of residential dwellings, and at 1.2m above floor slabs.

5.6 Results and Discussions

The assessment results are shown in **Annex 5**. It is found that the railway noise level of the NSRs at high zone exceed the night-time noise criteria under the Noise Control Ordinance. Therefore, two 2m vertical

fins (maximum 3dB noise reduction) and acoustic windows (top hung type) are proposed for mitigating the railway noise impacts. Their locations are shown in **Figure 7**.

As discussed in S.3.5.1 iii), it is proposed to install noise reducer on the vertical fins. It is considered that additional 1 dB noise reduction can be provided by the noise reducer to further alleviate railway noise impact. However, under the current assessment, this additional reduction has not been considered as a worst case scenario.

Acoustic Window (Top Hung Type)

The same design of acoustic window (top hung type) adopted in the approved planning application of Kwun Tong Town Centre (TPB/A/K14/727) is proposed. **Table 12** shows the configurations of the acoustic window (top hung type).

Table 12 Proposed Configuration of the Acoustic Window (Top Hung Type)

Configuration	Provisions
Acoustic Window (Top Hung Type)	• 0.85m horizontal fin • Top-hung window with MPA sunken with openings of 0.12m and 0.25m above and below • Curtain box (0.15m from top hung window + drop down 0.15m) • Ceiling with spray-on sound absorber, if required

In the case of Kwun Tong Town Centre, the proposed acoustic window (top hung type) can achieve acoustic reduction of 13.6 dB to 19.4 dB without absorption material at indoor ceiling; and 18.2 dB to 23.6 dB if absorption material at indoor ceiling is applied. For the proposed development, the maximum required noise reduction provided by the acoustic window (top hung type) is 13.8dB only (refer to **Table 13** below), which lies within the range.

According to the paper "Full scale field study of sound transmission across plenum windows", the size of the room would have some impacts on the reverberation and the insulation is stronger for larger room size with stronger indoor sound absorption. For the proposed development, the rooms with acoustic windows (top hung type) have a room size of about 6.6m^2 to 17.9 m^2, while that in Kwun Tong Town Centre ranges from about 5.0m^2 to 10.5m^2 only. With the same design of acoustic window (top hung type) as proposed in Kwun Tong Town Centre, in view of larger room size, it is considered that the acoustic performance of acoustic window (top hung type) applied in the proposed development would not be worse than that in Kwun Tong Town Centre (i.e. at least 13.8 dB as required for the proposed development).

Same as the case of Kwun Tong Town Centre, the system consists of a top hung window for ventilation purpose with Microperforated Absorber (MPA) panel applied at the inner side, and an acoustic fin is located underneath it. The fin plus sound absorptive material at surface can effectively resist noise from entering domestic premises directly and hence minimize the impact caused to the residents. Other than the above, a fixed window with maintenance opening was implemented below the acoustic fin. The maintenance window has an opening width of 300mm as well as equipped with removable lock; and it is not for prescribed window opening calculation. **Figure 13** shows the indicative section of the proposed acoustic window (top hung type) system.

Table 13 The Acoustic Performance provided by the Acoustic Window (Top Hung Type)

Unit	NSR	Maximum Railway Noise Level before the adoption of acoustic window (top hung type), dB(A)	Acoustic Reduction adopted in the assessment, dB	Remark
13	N10	64	13.8	The required reduction is 13.8 dB
13	N10a	64	13.8	The required reduction is 13.8 dB
13	N10b	61	10.6	The required reduction is 10.6 dB
14	N13	64	13.0	The required reduction is 13.0 dB
1	N14	64	13.1	The required reduction is 13.1 dB
1	N14a	61	11.3	The required reduction is 11.3 dB
2	N17	64	13.2	The required reduction is 13.2 dB
2	N17a	64	13.2	The required reduction is 13.2 dB
2	N17b	61	11.3	The required reduction is 11.3 dB

The assessment results of railway noise at selected NSRs are given in **Table 14** below. Details of all assessment results are shown in **Annex 5**. With the provision of vertical fins and the acoustic windows (top hung type), the proposed development will comply with the relevant criteria under the HKPSG and Noise Control Ordinance.

Table 14 Summary of Assessment Results for Railway Noise Impact

Representative NSR	Floor	Predicted Outdoor Noise Level (Without adoption of Acoustic Window (Top Hung Type) and vertical fin), $L_{eq\ (30\ min)}$ dB(A)	Night-time outdoor ANL, $L_{eq\ (30\ min)}$ dB(A)	Predicted Indoor Noise Level (With adoption of Acoustic Window (Top Hung Type) and vertical fin), $L_{eq\ (30\ min)}$ dB(A)	Night-time indoor ANL, $L_{eq\ (30\ min)}$ dB(A)
N10	1/F to 8/F	54-58	55	43-44	45
N10a		53-58		42-45	
N10b		53-56		45	
N13		53-58		43-45	
N13a		53-55		N/A	
N14		50-57		43-44	
N14a		49-57		45	
N17		49-57		44	
N17a		49-57		43-44	
N17b		49-57		45	

Representative NSR	Floor	Predicted Outdoor Noise Level (Without adoption of Acoustic Window (Top Hung Type) and vertical fin), $L_{eq\ (30\ min)}$ dB(A)	Night-time outdoor ANL, $L_{eq\ (30\ min)}$ dB(A)	Predicted Indoor Noise Level (With adoption of Acoustic Window (Top Hung Type) and vertical fin), $L_{eq\ (30\ min)}$ dB(A)	Night-time indoor ANL, $L_{eq\ (30\ min)}$ dB(A)
N10	9/F to 27/F	59-65	60	49-50	50
N10a		62-65		48-50	
N10b		59-62		50	
N13		61-67		48-50	
N13a		56-59		N/A	
N14		58-67		47-50	
N14a		57-61		50	
N17		57-65		47-50	
N17a		57-65		49-50	
N17b		57-61		50	

Note:

N/A = No adoption of Acoustic Window (Top Hung Type) and vertical fin

5.7 Further Study of the Acoustic Window (Top Hung Type)

A laboratory testing will be carried out during the later stage to further verify the acoustic performance provided by acoustic window (top hung type). Additional measures, such as increasing the vertical length of the pelmet for the window, may be considered during the laboratory test, if necessary. The additional measures would help to reduce the direct transmission of the noise into the indoor area, and thus, would improve the acoustic performance. On-site noise measurement will be conducted to verify the noise reduction performance of the acoustic window (top hung type) and contingency measures will be considered to improve the acoustic performance of the innovative measures, if required.

5.8 Conclusion

In view of close proximity, the subject site will be experiencing severe railway noise impact. However, after the provision of vertical fins and acoustic windows (top hung type), the proposed development will comply with the relevant criteria under the HKPSG and Noise Control Ordinance. Hence, it is concluded that the proposed development will not be subject to adverse railway noise impact.

6.0 Re-Provision of New Refuse Collection Point (RCP)

6.1 New Upgraded RCP

According to the latest G/F layout plan of the proposed PRH development at Ting On Street (**Annex A** of the planning statement), a new upgraded RCP of 308 s.m. with a 10m diameter turntable for RCV (Refuse Collection Vehicle) will be provided according to the Handbook on Standard Features for Refuse Collection Points of FEHD (Feb 2009) to replace the existing RCP on site. This existing RCP should remain in operation during the construction period of the PRH development until the new upgraded RCP is in place for operation. With this arrangement, there will be no disruption of the refuse collection services for the locality of Ting On Street.

Since the proposed RCP will replace the existing RCP at Ting On Street, the operation pattern of the new RCP will be same as the existing RCP, i.e. the quantity and quality of the refuse to be handed by the proposed RCP will be same as that handed by the existing RCP. The housekeeping procedures mentioned in the Handbook will also be implemented in new RCP.

6.2 Suggested Improvements to the Design of RCPs

The RCPs should be designed according to the guidelines and recommendations mentioned in the Chapter 9 of HKPSG and the aforementioned Handbook. As stipulated in Section 2.4 and 3.4 of the Handbook, the design of RCPs should aim to minimize the noise, fumes and foul odours nuisance to the public and people living and working nearby, where appropriate, by enclosing the whole facility and through the provision of odour control equipment and ventilation with applying suitable acoustical silencers and insulations.

Section 5.3 of the Handbook also provides suggestions on the odour control systems and RCV exhaust extraction system. Any RCP will have two separate ventilation systems, one to control the emission of unpleasant odour from the building and the other to extract the exhaust fumes from the refuse collection vehicle directly to the outside of the building. Consideration should be given to install these systems in such a manner that possible noise and exhaust nuisance which may cause public complaints will be minimised. The outlets of these systems should be camouflaged in order to provide a better visual appearance to the environment, without affecting the effective dispersal of the gaseous effluents. Acoustic treatment material should, whenever applicable, be provided to moving or vibrating parts of the system, so as to suppress the emission of noise.

6.3 Noise Design Criteria and Potential Operational Noise of the New RCP

According to preliminary design, the whole RCP facility will be fully enclosed to minimise the noise nuisance. Nevertheless, it is considered that the exhausts for the equipment such as ventilation and de-odorising systems inside the new RCP are the potential noise sources which generate fixed plant noise impact to the adjacent NSRs. The operation activity of the RCP will be from 7am to 11pm and there will be no operation for the RCP between 11pm and 7am.

Given that the new RCP will be bounded by existing residential buildings to its south and west and Ngau Tau Kok Jockey Club Clinic to its east, although the detailed design of the new RCP is not available at this stage, the fixed noise sources (exhausts of the equipment) are recommended to be located far away from these NSRs as practical as possible. As shown in **Figure 14**, the fixed noise sources are proposed to be located at the top right corner of the new RCP such that the existing residential buildings and the proposed residential tower have no direct line-of-sight to them and the closest NSR is Ngau Tau Kok Jockey Club Clinic, which is about 13m to them.

For planning of a fixed noise source, the criteria should be ANL-5dB(A) or background noise level, whichever is lower. As discussed in **Sections 4.2 and 4.3**, ANL for ASR of B is 65dB(A) while the background noise level is 62dB(A) for the day and evening time period. (The measured daytime

background noise facing the site was measured from 11:00am to 11:30am on 21 Apr 2016. The measured noise levels were free field and the location of background noise measurement was at Ting On Street (~7.6mPD) (**Figure 14**). During the measurement, the existing RCP and the garages in the vicinity of the subject site were not in operation, the traffic noise from nearby road network and the noise from the pedestrian as well as that from the nearby residential buildings are the dominant noise sources.) Therefore, the criterion of 60dB(A) is adopted. In order to fulfil the HKPSG requirement on the fixed noise source that there is no adverse impact upon the nearby NSRs, the design of the noise emission sources inside the new RCP should be based on the following equation.

SWL = ANL – 5 dB(A) + Distance Correction – façade correction

Where

SWL = the maximum allowable sound power level of the noisy equipment inside the new RCP;

ANL – 5 dB(A) = 60 dB(A), as ASR is classified as "B" and the Day & Evening ANL is 65 dB(A);

Distance Correction = 20*(log(Buffer Distance)) + 8 and Buffer Distance = 13m;

Façade correction = 3 dB(A)

Based on the above equation, the maximum allowable sound power level of the equipment in the new RCP should be about 87.3 dB(A). Properly designed noise control measures such as acoustical silencers and insulations shall be taken to ensure that new RCP operates within this acceptable noise limits. Referring to Good Practices on Ventilation System Noise Control issued by EPD in April 2006, there are many practical remedies available in the market to control noise. For example, (i) adoption of a tall gap-free acoustic barrier with surface density of at least 10kg/m2 is able to achieve a reduction of noise level of between 5dB(A) to 10dB(A) and (ii) a full enclosure shielding the lower part of the chillers together with discharge silencers on top should be able to achieve more than 20 dB(A) reduction at source. In view of the SWL for various rating of ventilation equipment, given in the same booklet, ranges from 79 to 113 dB(A). It is therefore considered that the maximum allowable SWL-87.3 dB(A) is achievable by selecting quieter model of machines and applying suitable noise insulation measures.

The operation activity of the RCP will be from 7am to 11pm and there will be no operation for the RCP between 11pm and 7am. For the potential operational noise from loading and unloading of refuse during operation of RCP, the first load of refuse collection vehicle (RCV) will be started at 8am and the last load of the refuse collection vehicle will be completed at around 10pm, therefore, no loading or unloading activities will be conducted after 11pm. Its operation will be carried out within the totally enclosed development, the loading and unloading would be carried out after closing the gate of the RCP in order to minimize the operational noise impact to the surrounding.

Since most of the activities would be carried out enclosed within the RCP building, therefore, operational noise from loading and unloading of refuse would not be anticipated. Also, the roller shutter of the RCP will be closed during handling the loading and unloading of the refuse.

Therefore, it is considered that there would not have adverse operational noise impact due to the operation of the RCP.

6.4 Conclusion

A new RCP will be provided to replace the existing RCP on site, the design will be strictly followed the guidelines and recommendations from the Chapter 9 of HKPSG and the aforementioned Handbook. It is believed the recommended air and odour pollution control measures to be implemented at the RCP (e.g.

enclosure of odorous sources, provision of odour removal system at ventilation exhaust) can effectively avoid and minimise potential nuisance induced to the neighbouring air sensitive receivers and the proposed development. Adverse air and odour pollution impacts associated with operation of the Ting On Street new RCP on the proposed development and the neighbourhood is therefore not anticipated.

The maximum allowable sound power level of noisy equipment inside the new RCP has been calculated and it should be within 87.3 dB(A). Properly designed noise control measures such as acoustical silencers and insulations shall be taken to ensure that new RCP operates within this acceptable noise limits.

7.0 Overall Conclusions

The Subject Site is proposed to be developed as Public Housing; and this study is to assessment the potential environmental impacts upon proposed development. Air quality, traffic noise, industrial noise and railway noise impacts have been quantitatively assessed.

By comparing the total NOx emission loading of previous traffic forecast and that of the current traffic forecast, it is considered that the calculated air pollutant concentrations at the ASRs of the residential use in the previous approved EA would be a worst case, which would comply with the criteria of the AQOs. As such, there is no need to update the air dispersion models and the conclusion remain valid. Based on the previous assessment results, the air quality at the residential floors of the proposed development would comply with the Air Quality Objectives (AQOs). However, for the storeys below the residential floor, i.e. below 28.75 mPD, the annual NO_2 concentration will exceed the relevant AQOs. It must be noted that there is no exceedance of short term NO_2 concentration at the storeys below the residential part of the building block. The uses of these storeys include transfer plate, retail and G/IC. In order to mitigate the potential impact, it is recommended to equip central fresh air supply system together with split type air conditioning at these areas. This design can avoid the need of ventilation by means of opened windows. The fresh air intake location of the central fresh air supply system will be located at the floor level above 30.25mPD and all the air sensitive uses below 30.25mPD (except basketball court/ multi-purpose playground) will be equipped with air condition with fresh air intake above 30.25mPD where the air quality would comply with the AQOs. Since the re-provision of open basketball court / multi-purpose playground will be for a short-term activity (i.e. the users normally use the basketball court/ multi-purpose playground once a while, unlikely every day. They usually stay in it for a few hours (either in the morning, in the afternoon or in the evening), not the whole day), it is considered that the long-term AQO criteria (annual) is not applicable for the basketball court/ multi-purpose playground in terms of the low frequency and short duration of possible exposure by people taking part in the activities. The previous EA has demonstrated that there would not have any short term exceedance of the air quality impact for the proposed development. With the reduction of the total emission pollutant, it is anticipated that there would still have no exceedance at the short term air quality objectives for the Subject Site, as well as the open basketball court/ multi-purpose playground.

Traffic noise impacts of the proposed development have been assessed. With the provision of tradition and innovative noise mitigation measures, the proposed development could comply with the relevant traffic noise standard. Hence, it is concluded that the proposed development will not be subject to adverse traffic noise impact.

Industrial noise impacts of the proposed development have been assessed. The predicted industrial noise assessments conclude that the proposed development can comply with the relevant standard. Hence, it is concluded that the proposed development will not be subject to adverse industrial noise impact.

Railway noise impacts of the proposed development have been assessed. The proposed development can comply with the relevant criteria under the HKPSG and the Noise Control Ordinance after the provision of mitigation measures. Hence, it is concluded that the proposed development will not be subject to adverse railway noise impact.

A new RCP will be provided to replace the existing RCP on site, the design will be strictly followed the according to the Handbook on Standard Features for Refuse Collection Points of FEHD (Feb 2009) to minimise potential air and odour nuisance induced to the neighbouring air sensitive receivers. The maximum allowable sound power level of noisy equipment inside the new RCP has been calculated and it should be within 87.3 dB(A). Properly designed noise control measures shall be taken to ensure that new RCP operates within this acceptable noise limits.

The environmental assessment confirms the acceptability of proposed development at the Subject Site.

Figures

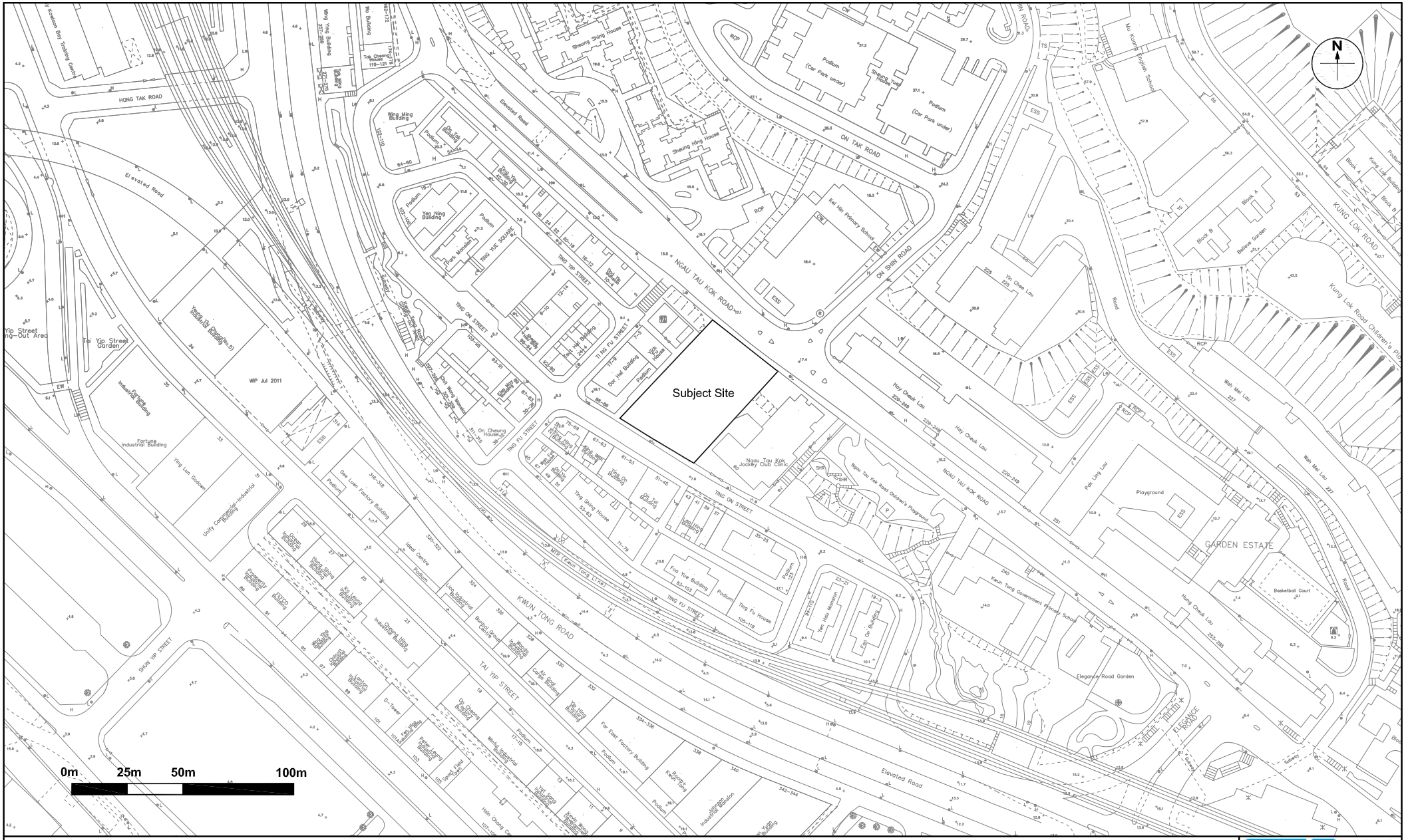


Figure: 1	RAMBOLL ENVIRON
Title: Location of the Subject Site and its Environs	Drawn by: KW Checked by: TC
Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 3.0 Date: May 2017



Figure: 2	RAMBOLL ENVIRON
Title: Master Layout Plan of the Proposed Development	Drawn by: KW
	Checked by: TC
Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 1.0
	Date: Jan 2015

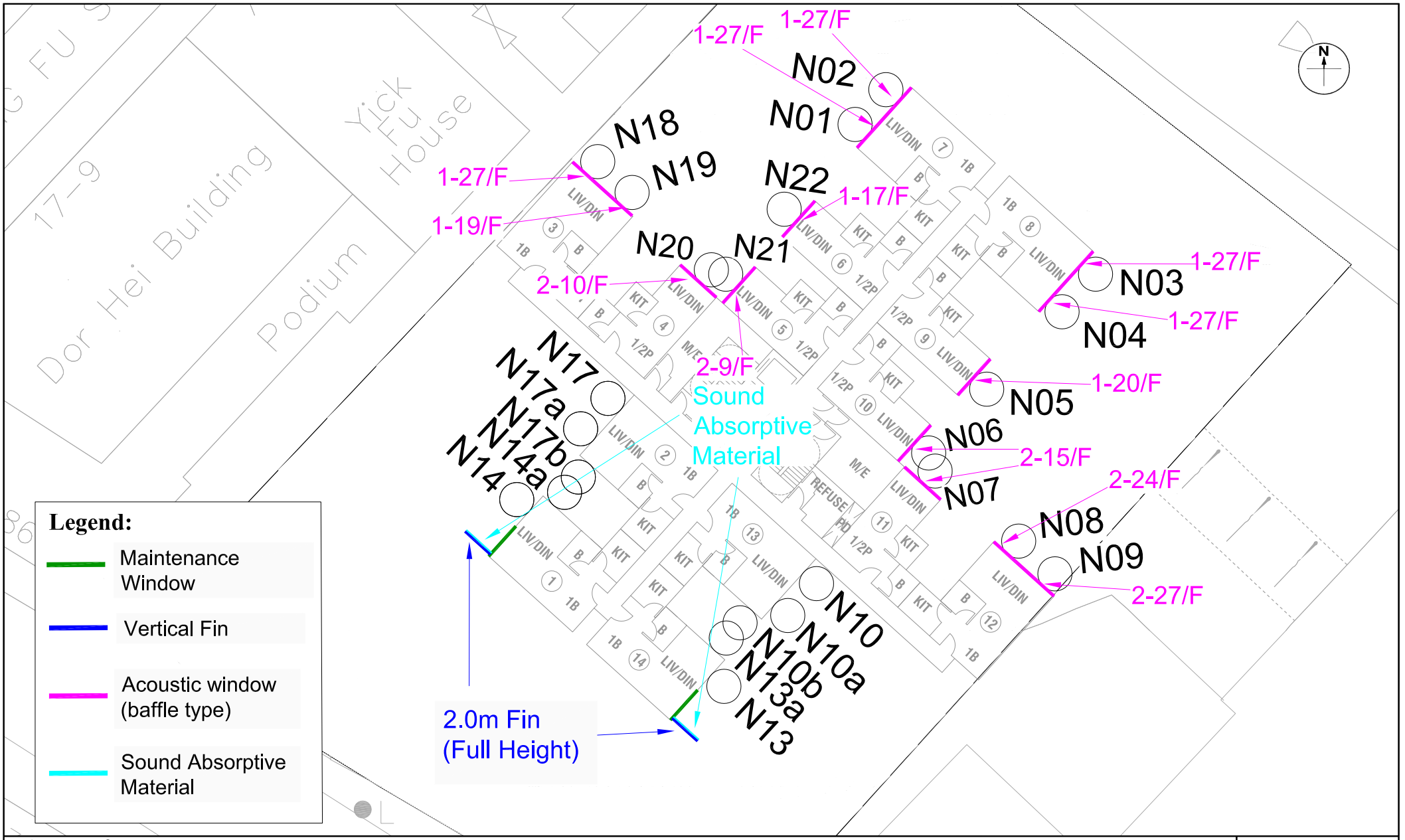


Figure: 3

Title: Locations of the Representative Noise Sensitive Receivers and Mitigation Measures for Traffic Noise Impact Assessment

Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

RAMBOLL ENVIRON

Drawn by:	KW
Checked by:	TC
Rev.:	3.0
Date:	Apr 2017

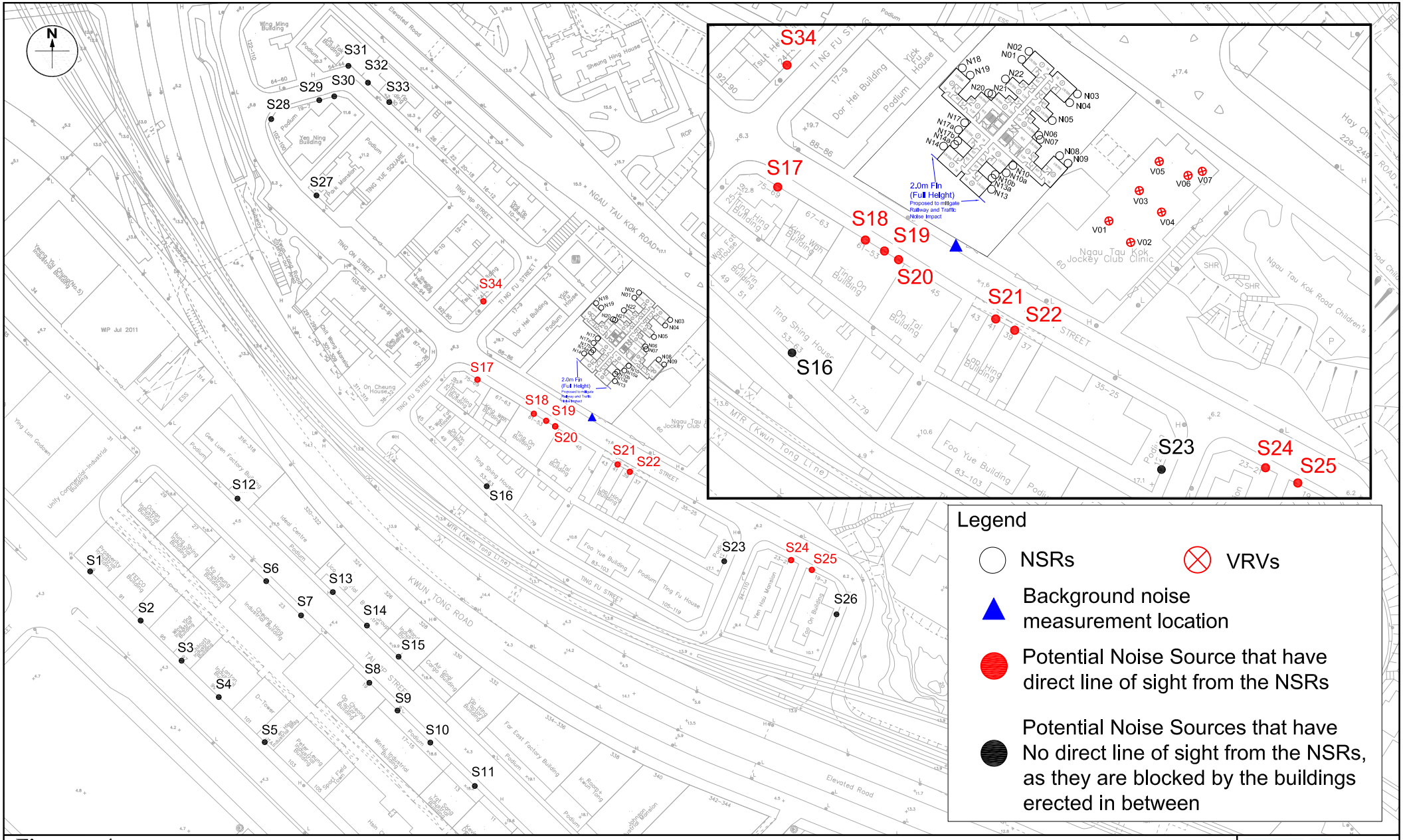


Figure: 4	RAMBOLL ENVIRON
Title: Locations of the Representative Noise Sensitive Receivers and Potential Noise Sources within 300m from Subject Site for Industrial Noise Impact Assessment	Drawn by: KW Checked by: TC
Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 3.0 Date: May 2017

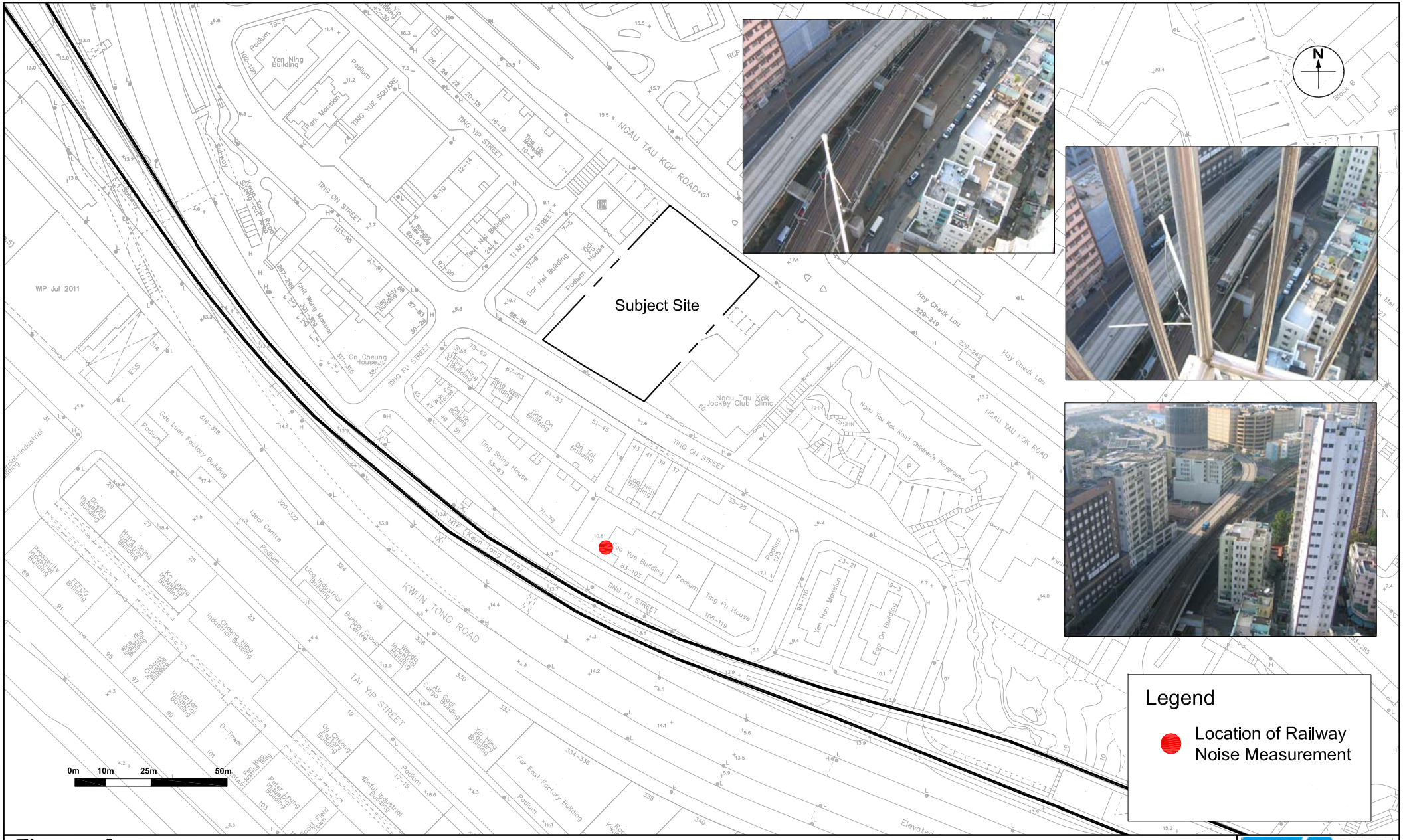


Figure: 5	RAMBOLL ENVIRON
Title: Location of Railway Noise Measurement	Drawn by: KW Checked by: TC
Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 3.0 Date: May 2017

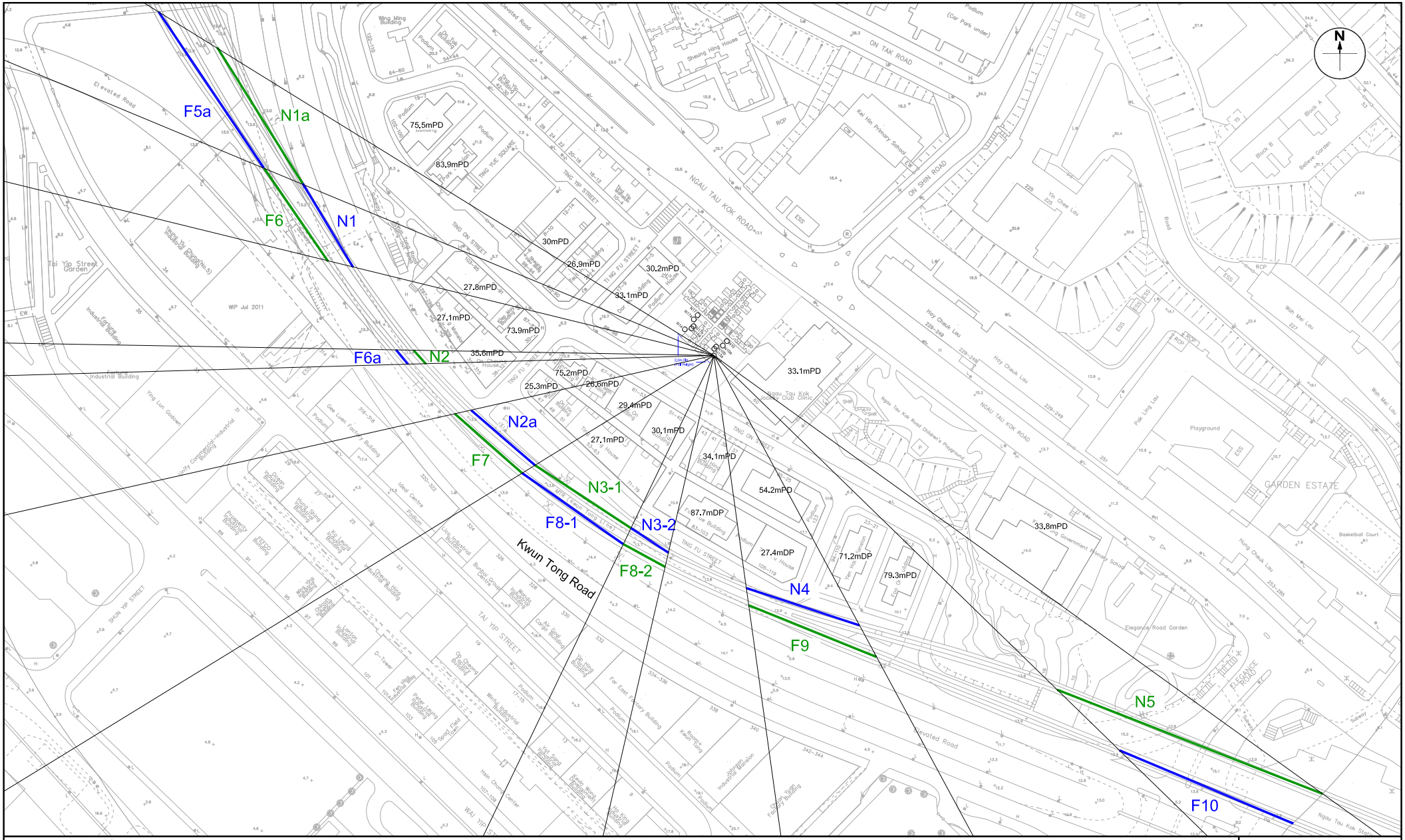


Figure:	6a	RAMBOLL ENVIRON
Title:	Identification of Railway Track within 300m from the Subject Site and the Buildings between Kwun Tong Road and the Subject Site (For NSR N13)	Drawn by: KW Checked by: TC
Project:	Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 2.8 Date: Nov 2016

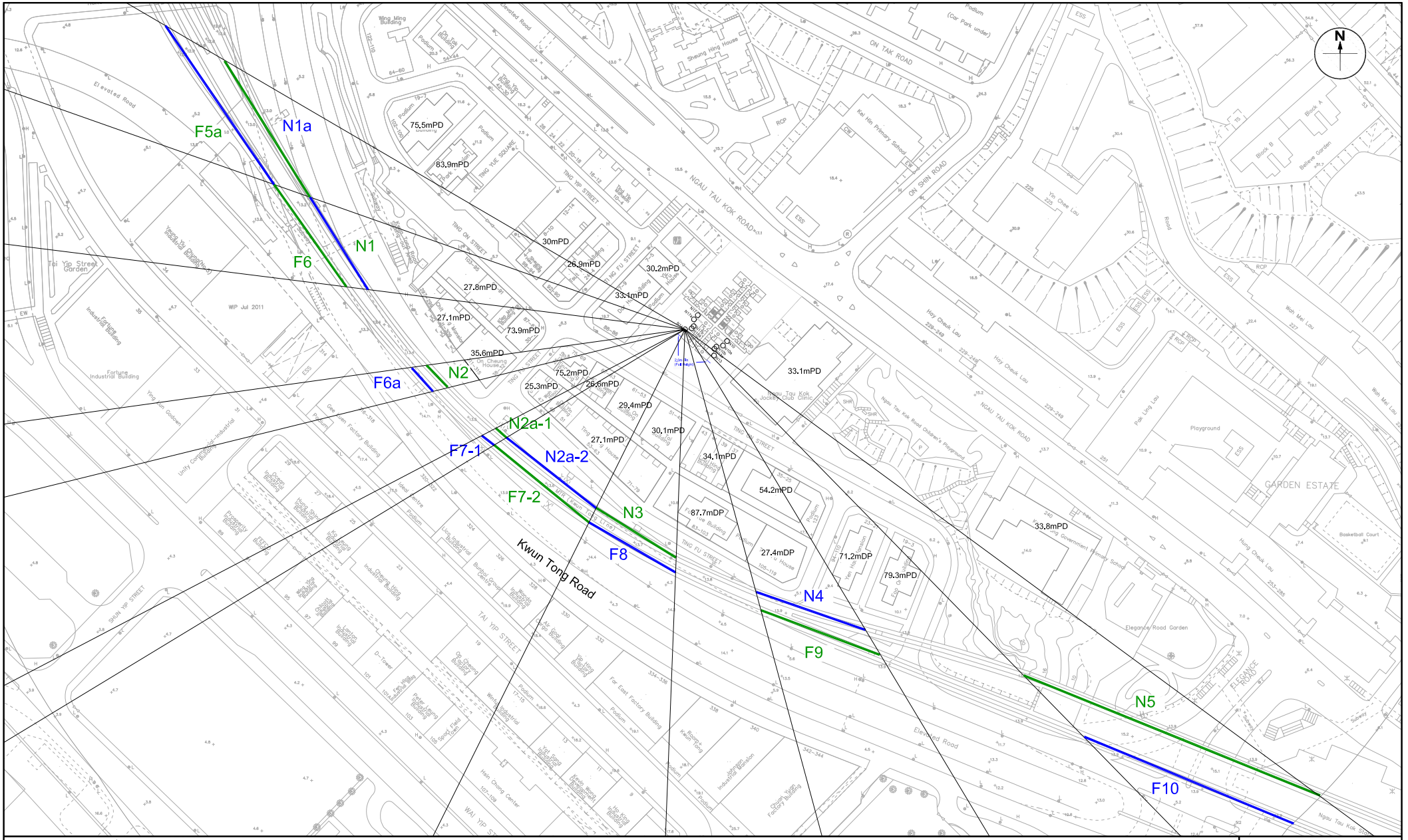


Figure:	6b	RAMBOLL ENVIRON
Title:	Identification of Railway Track within 300m from the Subject Site and the Buildings between Kwun Tong Road and the Subject Site (For NSR N14)	Drawn by: KW Checked by: TC
Project:	Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 2.8 Date: Nov 2016

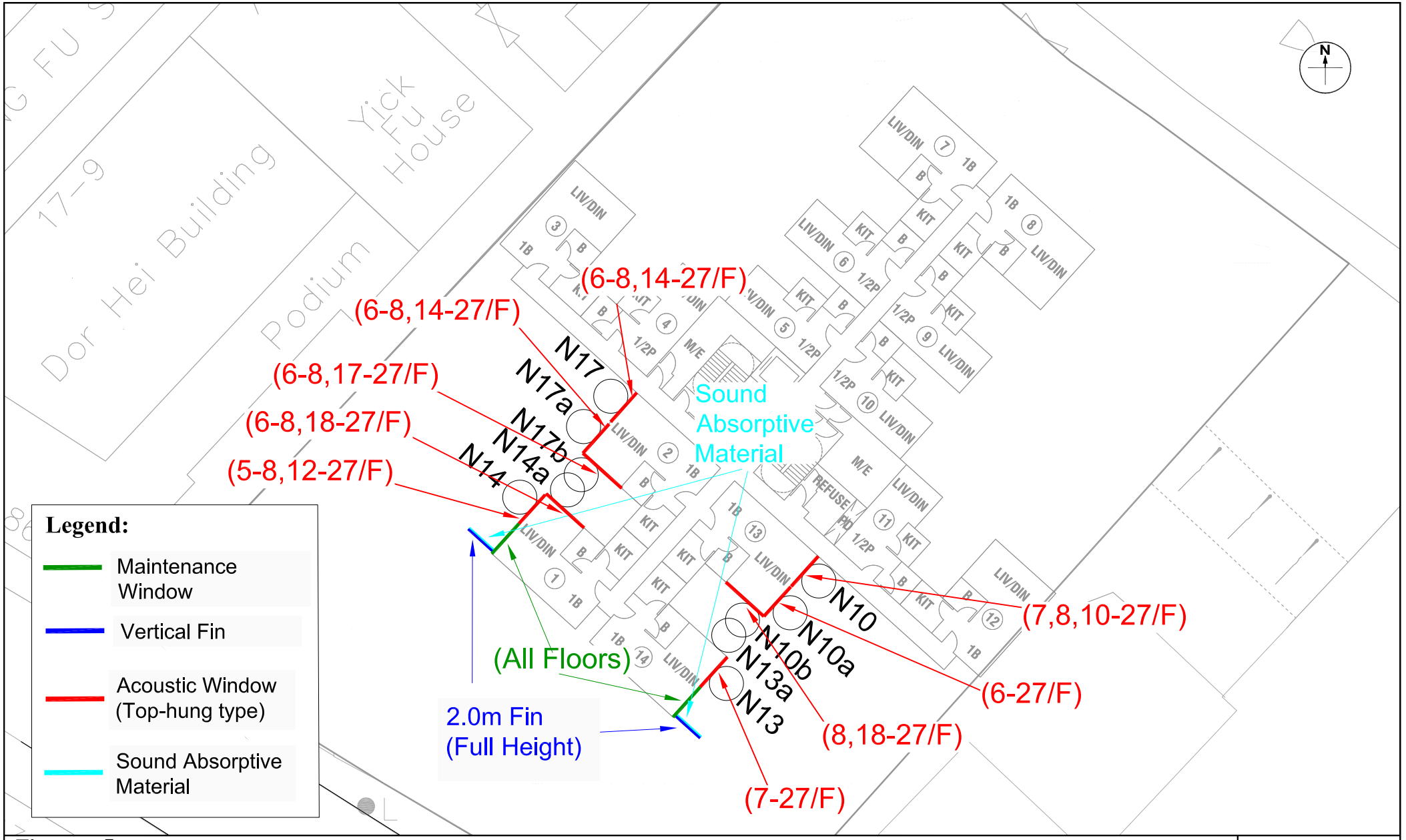


Figure: 7	RAMBOLL ENVIRON
Title: Locations of the Representative Noise Sensitive Receivers and Mitigation Measures for Railway Noise Impact Assessment	Drawn by: SC Checked by: TC
Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 2.8 Date: Nov 2016

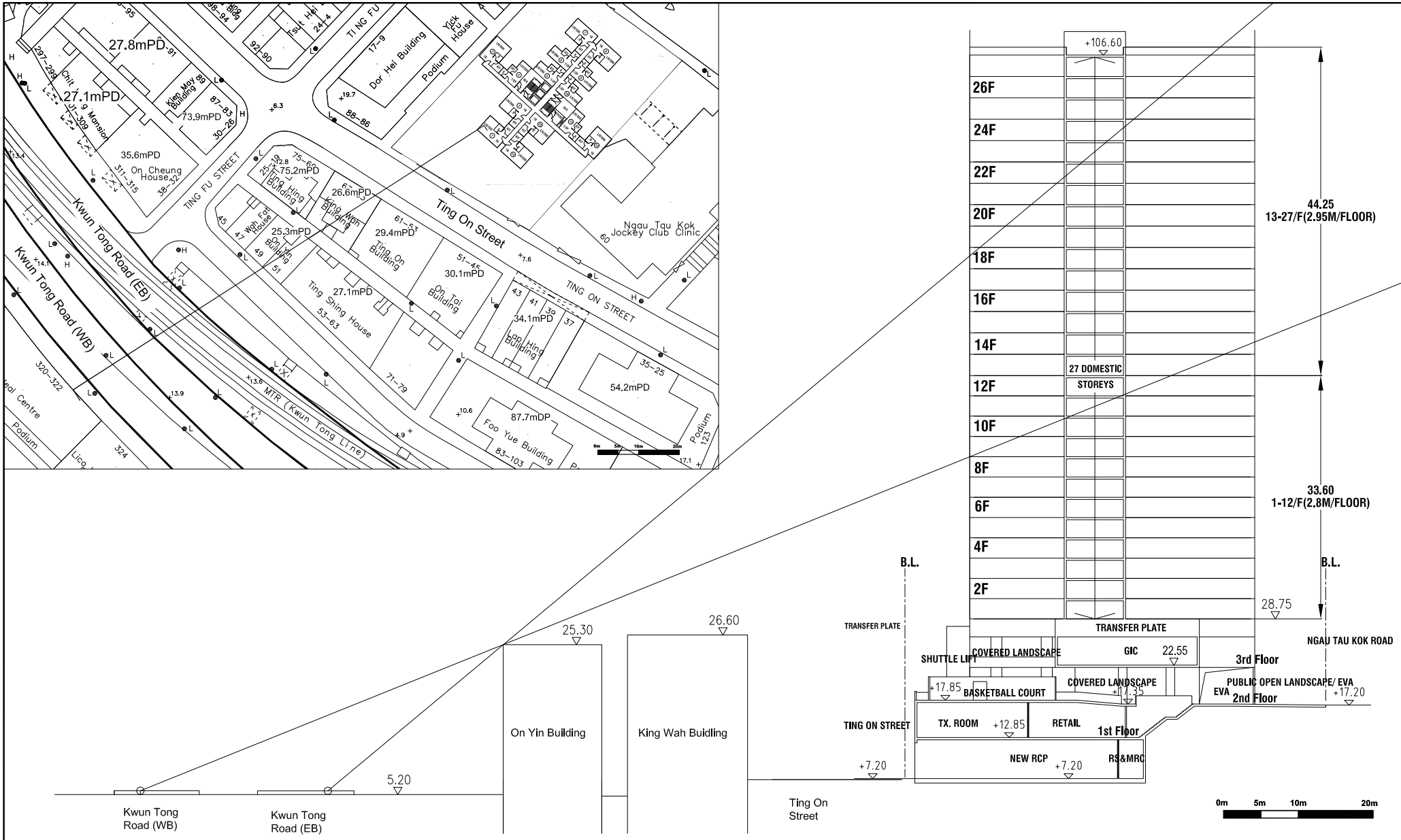


Figure: 12

Title: Section Drawing to Determine the Area Sensitivity Rating of the Noise Sensitive Receivers

Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

RAMBOLL ENVIRON

Drawn by: KW

Checked by: TC

Rev.: 3.3

Date: Sep 2017

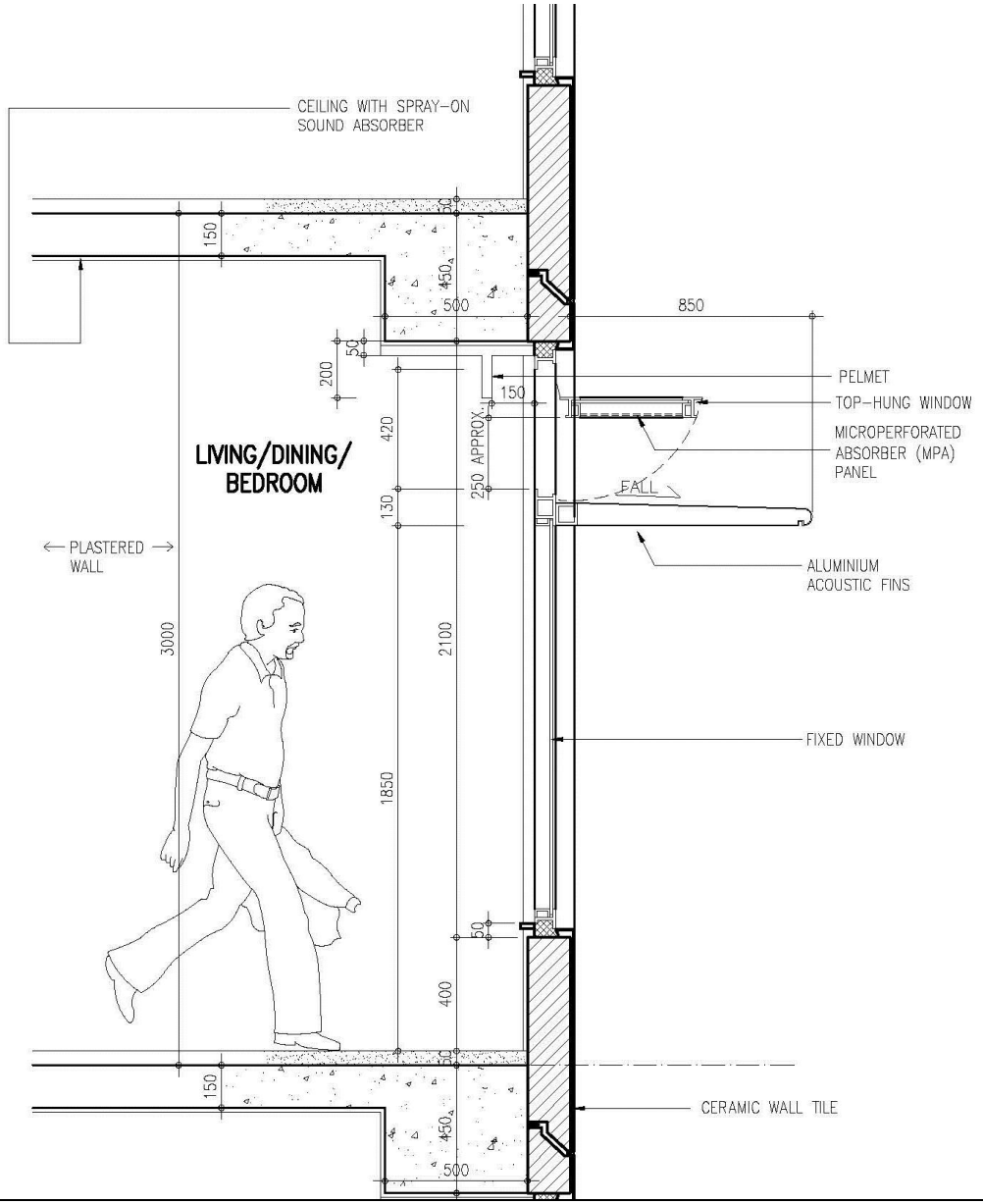


Figure: 13	RAMBOLL ENVIRON
Title: Indicative Design of Top Hung Acoustic Window	Drawn by: KW
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Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 2.4
	Date: Jun 2016

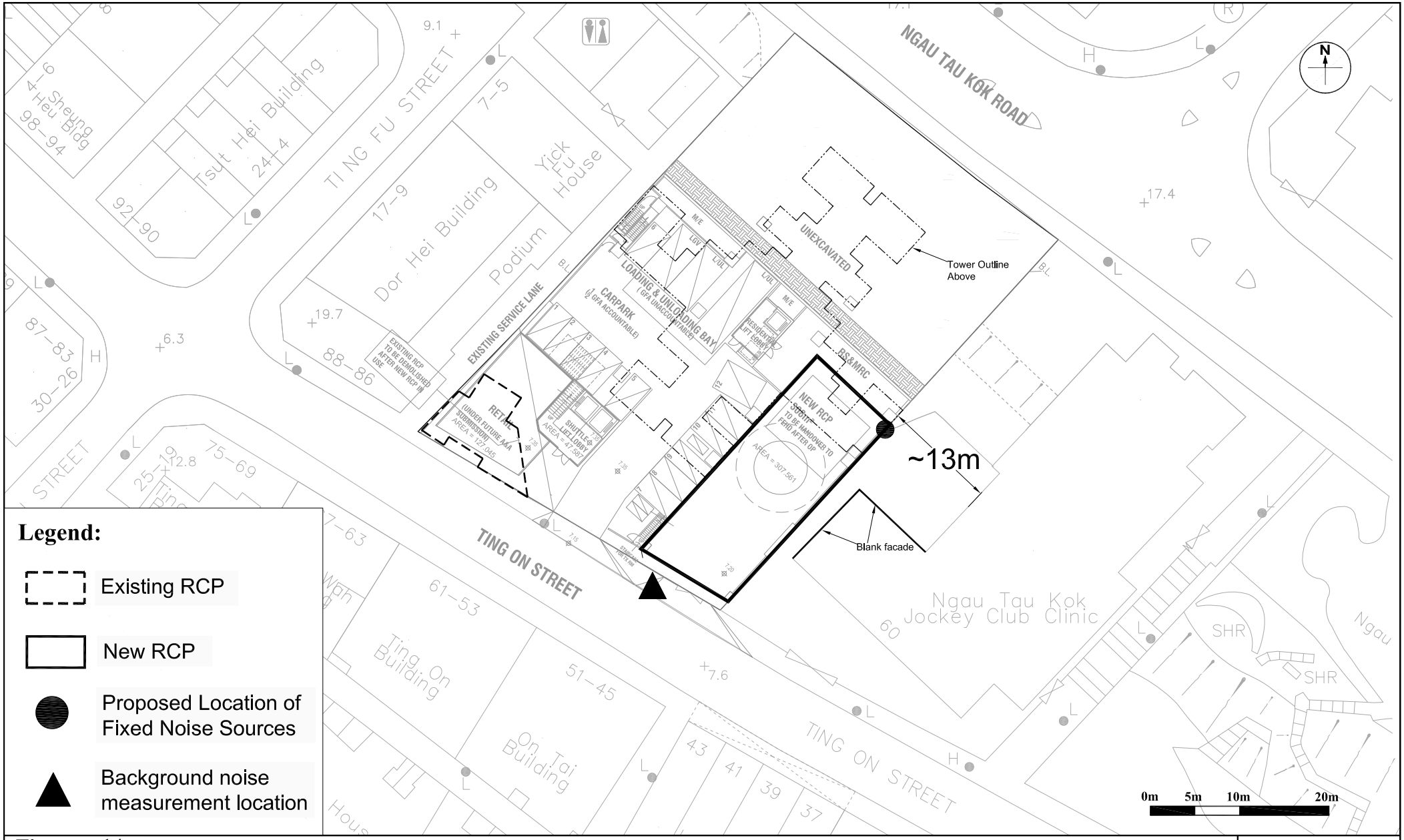


Figure: 14	RAMBOLL ENVIRON
Title: Proposed Location of Fixed Noise Sources and Separation Distance Between the Nearest Noise Sensitive Receivers and New Refuse Collection Point (RCP) at G/F	Drawn by: KW Checked by: TC
Project: Planning Consultancy Services for the Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon	Rev.: 3.3 Date: Sep 2017

Hong Kong Housing Society
Proposed Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Traffic Impact Assessment Study
Final Study Report
September 2017

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Hong Kong Housing Society
Proposed Public Rental Housing Development at Ting On Street in Ngau Tau Kok, Kowloon

Traffic Impact Assessment Study
Final Study Report
September 2017

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1	Final Study Report	MM 5/9/2017	OC 6/9/2017

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1 INTRODUCTION

1.1 Background

1.1.1 Hong Kong Housing Society propose to develop a public rental housing development at the existing basketball playground located between Ting On Street and Ngau Tau Kok Road in Ngau Tau Kok, Kowloon (hereafter referred as the "Subject Site").

1.1.2 The area of the Subject Site is approximately 2,219m^2 and the site is a basketball playground at present. The proposed development comprises of a single tower of residential flats cum commercial and GIC spaces.

1.1.3 Ozzo Technology (HK) Limited has been commissioned to undertake a Traffic Impact Assessment (TIA) Study to assess the potential traffic impact to be induced by the proposed housing development.

1.2 Study Objectives

1.2.1 The objectives of the TIA study are as follows:

- To review the existing traffic situation of the surrounding road network;
- To estimate the potential traffic generations/ attractions of the proposed development;
- To assess the future traffic situation of the surrounding road network;
- To appraise the potential traffic impact of the proposed development on the surrounding road network;
- To recommend improvement proposals, if required; and
- To advise on the internal transport arrangements.

1.3 Report Structure

1.3.1 Following this introductory chapter, the remainder of this report is arranged as follow:

- Chapter 2 describes the Subject Site and the proposed housing development;
- Chapter 3 summarises the existing traffic condition in the vicinity of the Subject Site;
- Chapter 4 provides traffic forecast and the traffic impact results;
- Chapter 5 reviews the internal transport provisions; and
- Chapter 6 presents the findings and conclusion of this study.

2 THE PROPOSED DEVELOPMENT

2.1 Site Location and Study Area

2.1.1 **Figure 2.1** shows the location of the Subject Site which is situated between Ting On Street and Ngau Tau Kok Road in Ngau Tau Kok. At present, the Subject Site is a basketball court playground, open daily between 07:00 and 23:00 and managed by the Leisure and Cultural Services Department (LCSD).

2.1.2 **Figure 2.1** also shows the proposed Study Area for this Traffic Impact Assessment (TIA) study and which covers all the key junctions in the vicinity of the Subject Site.

2.2 The Proposed Development

2.2.1 The total site area of the Subject Site is approximately 2,219m^2. The proposed development comprises of a single tower of rental residential flats cum commercial space and G/IC facilities. **Table 2-1** summarizes the proposed development parameters.

Table 2-1 Summary of Proposed Development Parameters

Parameter	Proposed
Site Area	About 2,219 m^2
Plot Ratio Domestic Non-Domestic	 About 7.017 About 1.094
GFA Domestic Non-Domestic - Retail - G/IC	 15,570 m^2 1,200 m^2 616 m^2
Flat Mix 1 person/2 persons 3 persons/4 persons Total	 162 216 **378**

2.2.2 A total of 378 rental flats will be provided within the single tower of residential building. The non-domestic area which comprise of retail spaces, covered activities area and G/IC facilities, as well as the carpark are situated on the lower floors of the building.

2.3 Access Arrangement

2.3.1 The vehicular access for the proposed development will be located at Ting On Street which is classified as a Local Distributor (LD) road. The section of Ting On Street adjacent to the Subject Site is a one-way street with one traffic lane of about 3.7m in width, running in eastbound direction, and on-street parking spaces alongside the southern kerb of the road.

2.3.2 Vehicles coming from Ngau Tau Kok Road and Kwun Tong Road can access the Subject Site via the junction of Ting On Street and Ting Fu Street. Egressing development traffic have to join the wider road network via the priority junction of Kwun Tong Road and Ting On Street about 150m to the south-east of the Subject Site.

2.3.3 For pedestrians, there will be two accesses with one on the southern side of the development, connecting to Ting On Street; and the other connecting to Ngau Tau Kok Road on the northern side of the development.

3 EXISTING TRAFFIC SITUATION

3.1 Existing Road Network

3.1.1 **Figure 2.1** shows the existing road network in the vicinity of the Subject Site. As shown in the figure, the Subject Site is located in between two of the major roads in Ngau Tau Kok District, i.e. Kwun Tong Road and Ngau Tau Kok Road.

3.1.2 Kwun Tong Road is a Primary Distributor (PD) road which is part of Route Seven of the Hong Kong strategic road network, extends from Tseung Kwan O in the east to Kwai Chung in the west.

3.1.3 Ngau Tau Kok Road, adjacent to the Subject Site, is a District Distributor (DD) road connecting Ngau Tau Kok District with the adjacent districts through the road network in the area.

3.1.4 The vehicular access for the Subject Site will be located at Ting On Street which is a Local Distributor (LD) road and, together with other local roads such as Ting Fu Street, Elegance Road, Ting Yip Street and On Shin Road etc., forms the local road network in Ngau Tau Kok District.

3.2 Existing Public Transport Services

3.2.1 The Study Area is well served by public transport services and **Figure 3.1** shows the existing public transport inventory in the vicinity of the Subject Site. The Subject Site is located approximately 230m from the MTR Ngau Tau Kok Station which is on the Kwun Tong Line. There are also extensive franchised bus and Green Minibus (GMB) network serving the Study Area. **Table 3-1** presents a list of the regular and special franchised bus, and GMB routes serving the area.

Table 3-1 Existing Public Transport Services

Route No.	Termination Points		Frequency (Mins)
Franchised Bus Services			
101	Kwun Tong B/T (Yue Man Sq)	Kennedy Town B/T	3-12
101R	Happy Valley Race Course	Kwun Tong B/T (Yue Man Sq)	4
101X	Kennedy Town B/T	Kwun Tong B/T (Yue Man Sq)	Weekday only 07:15, 07:45, 17:55, 18:15
11B	Kwun Tong B/T (Tsui Ping Rd)	Kowloon City Ferry B/T	10-20
11C	Chuk Yuen Est B/T	Sau Mau Ping B/T (Upper)	15-20
11D	Lok Fu B/T	Kwun Tong Ferry B/T	20-30
13D	Po Tat Est	Island Habourview	15-20
13M	Kwun Tong (Elegance Road)	Po Tat (Circular)	15-20
14	Yau Tong B/T	China Ferry B/T	12-20
14B	Ngau Tau Kok B/T	Lam Tin B/T (Kwong Tin Est)	15-20
14X	Lei Yue Mun	Tsim Sha Tsui (Cir.)	20-30
15	Ping Tin	Hung Hom Ferry Concourse B/T	12-20
15A	Ping Tin	Tsz Wan Shan (North) B/T	20-35
15X	Lam Tin B/T (Kwong Tin Est)	Hung Hom Railway Stn	Weekday only 20 (07:10-09:30)
16	Lam Tin B/T (Kwong Tin Est)	Mong Kok (Park Avenue)	8-15
17	Kwun Tong B/T (Yue Man Sq)	Oi Man B/T	5-15
1A	Sau Mau Ping B/T (Central)	Star Ferry B/T	5-10
215X	Lam Tin (Kwong Tin Est)	Kowloon Station	5-15
234C	Sham Tseng	Kwun Tong Railway Stn	Monday to Saturday 07:25, 07:35
23M	Lok Wah B/T	Shun Lee (Cir.)	12-15
258D	Po Tin	Lam Tin Railway Stn B/T	7-20
258P	Hung Shui Kiu	Lam Tin Railway Stn	Weekday only 06:50, 07:02, 07:14, 07:26, 07:38 and 07:50
258S	Shan King B/T	Lam Tin Railway Stn	Weekday only 07:35
258X	Po Tin	Kwun Tong Ferry	Weekday only 07:35
259D	Lung Mun Oasis	Yau Tong B/T	7-25
259X	Lung Mun Oasis	Kwun Tong Ferry	Weekday only 07:00 and 07:30
267X	Siu Hong Court B/T	Lam Tin RailWAY Stn	Weekday only 07:25
268C	Long Ping Railway Stn	Kwun Tong Ferry B/T	5-15
268P	Ma Wang Road (Shan Shui House)	Kwun Tong Ferry	Weekday only 07:15 and 07:25
269C	Tin Shui Wai Town Centre B/T	Kwun Tong Ferry B/T	5-15
269S	Tin Shui Wai Town Centre B/T	Kwun Tong Ferry B/T	Weekday only 07:15 and 07:35
274X	Kwun Tong Ferry	Tai Po Centre	Weekday only 5-8
277E	Tin Ping Est B/T	Lam Tin Railway Stn B/T	15-20
277P	Tin Ping Est B/T	Lam Tin Railway Stn B/T	Weekday only 30 (06:30-08:00)

Route No.	Termination Points		Frequency (Mins)
277X	Luen Wo Hui B/T	Lam Tin Railway Stn B/T	5-15
28B	Choi Fook	Kai Yip B/T	15-20
292P	Sai Kung B/T	Kwun Tong	Weekday only at 07:30
296C	Sheung Tak	Sham Shui Po (Tonkin St)	15-20
38	Kwai Shing B/T (East)	Ping Tin	5-15
3D	Tsz Wan Shan (Central)	Kwun Tong B/T (Yue Man Sq)	5-10
40	Tsuen Wan (Nina Tower)	Laguna City B/T	12-20
40P	Shek Wai Kok B/T	Kwun Tong Railway Stn	Monday to Saturday 8-11 (07:05-08:20)
42C	Cheung Hang B/T	Lam Tin Railway Stn B/T	4-12
5R	Kai Tak Cruise Terminal	Ngau Tau Kok Railway Station (Circular)	30
6P	So Uk	Lei Yue Mun Estate	Weekday only at 07:00, 07:20 and 07:40
606	Choi Wan (Fung Shing St)	Siu Sai Wan (Island Resort) PTI	15-20
606A	Choi Wan (Fung Shing St)	Yiu Tung Est	Monday to Saturday 20 (06:10-09:10)
606X	Kowloon Bay B/T	Siu Sai Wan (Island Resort) PTI	Monday to Saturday 20 (06:30-08:50)
619	Shun Lee B/T	Macau Ferry B/T	4-25
619P	Shun Lee B/T	Macau Ferry B/T	Monday to Saturday 07:43, 07:50
61R	City One Shatin	Lam Tin Stn	Monday to Saturday 20
62X	Tuen Mun Central B/T	Yau Tong B/T	8-25
641	Kai Tak (Kai Ching Est)	Macau Ferry B/T	Weekday only 10-25
671	Diamond Hill Railway Stn B/T	Ap Lei Chau (Lee Lok St) B/T	12-30
69C	Tin Tan Estate B/T	Kwun Tong Ferry	Weekday only 7-10 (06:35-08:00)
74B	Kowloon Bay	Tai Po Central	Weekday only 10-15
74C	Kau Lung Hang	Kwun Tong Ferry B/T	Weekday only 20 (07:00-08:00)
74D	Kau Lung Hang	Kwun Tong Ferry	60
74E	Tai Mei Tuk Bus Terminus	Kwun Tong Ferry	Weekday only at 07:15
74P	Kwun Tong Ferry	Tai Po Central	Weekday only at 08:00
74X	Tai Po Central	Kwun Tong Ferry B/T	4-15
796S	Tseung Kwan O Stn	Ngau Tau Kok Stn	Weekday only at 05:30, 06:00, 00:40 and 01:10
80	Mei Lam B/T	Kwun Tong Ferry B/T	6-12
80P	Hin Keng B/T	Kwun Tong Ferry B/T	Weekday only 4-8 (06:50-09:00)
80X	Chun Shek B/T	Kwun Tong Ferry B/T	6-20
83A	Shui Chuen O B/T	Kwun Tong Ferry	Weekday only at 07:45, 08:15 and 08:45
83X	Wong Nai Tau B/T	Kwun Tong Ferry B/T	9-25
889	Ping Tin	Shatin Race Course B/T	Weekday only at 11:15
89	Lek Yuen B/T	Kwun Tong Railway Stn	6-15

Route No.	Termination Points		Frequency (Mins)
89B	Shatin Wai B/T	Kwun Tong Railway Stn	8-20
89C	Heng On B/T	Kwun Tong B/T (Tsui Ping Rd)	12-20
89D	Wu Kai Sha Railway Stn	Lam Tin Railway Stn B/T	5-20
89P	Ma On Shan Town Centre	Lam Tin Railway Stn B/T	Monday to Satuday 3-10 (07:25-08:50)
89X	Shatin Railway Stn B/T	Kwun Tong Railway Stn	6-15
93K	Po Lam B/T	Mong Kok East Railway Stn B/T	15-25
95M	Tsui Lam	Kwun Tong (Elegance Road)	15-25
98A	Hang Hau (North) (Tseung Kwan O Hospital)	Ngau Tau Kok Railway Station (Cir.)	8-15
A22	Lam Tin Stn	Airport (Ground Transportation Centre)	15-20
A29	Tseung Kwan O (Po Lam)	Airport (Ground Transportation Centre)	30
E22	Lam Tin (North)	AsiaWorld Expo	10-20
E22A	Tseung Kwan O (Hong Sing Garden)	AsiaWorld Expo	30
E22C	Tiu Keng Leng Station	Aircraft Maintenance Area	06:05, 06:20
E22S	Tung Chung (Yat Tung Est)	Tseung Kwan O (Po Lam)	Weekday only at 07:13 and 07:28
E22X	Yau Tong	AsiaWorld Expo	06:54, 07:09, 07:24
T277	Sheung Shui B/T	Lam Tin Railway Station B/T	Weekday only at 07:15, 07:30 and 07:45
X42C	Cheung Hang	Lam Tin Railway Station B/T	Weekday only at 07:40
N29	Tseung Kwan O (Hong Sing Garden)	Tung Chung Stn	03:50, 04:20, 04:50
N293	Sheung Tak	Mong Kok East Railway Stn B/T	15-20
N619	Shun Lee B/T	Macau Ferry B/T	20
NA29	Po Lam Station	Airport (GTS)	04:15
GMB Services			
102	Hang Hau Stn	San Po Kong (Hong Keung St)	2-15
102B	Hang Hau (Yuk Ming Court)	Choi Hung	10
102S	Hang Hau Stn	San Po Kong (Hong Keung St)	Overnight service 6-20
22A	Lok Wah Estate	Kwun Tong Ferry Pier	20
35	Choi Hung Est	Hong Lee Court	5-7
56	Richland Gardens	Kwun Tong (Shung Yan St)	10-12
62S	Kwong Tin Est	Tsim Sha Tsui (Haiphong Rd)	20
68	Choi Wan Est	Kowloon Bay (Enterprise Sq)	8-12
501S	Sheung Shui Station	Kwun Tong (Yue Man Sq)	Overnight service 15-20

3.3 Existing Traffic Conditions

3.3.1 To gain an understanding of the existing traffic conditions in the Study Area, classified turning movement counts were undertaken at the key junctions in the vicinity of the Subject Site on 8 March 2017 (Wednesday) over the peirods of 07:00 to 10:00 (AM peak period) and 17:00 to 20:00 (PM peak period). **Figure 3.2** shows the survey locations.

3.3.2 All vehicle flows in the subsequent analysis are converted to passenger car unit (PCU) based on the PCU factors for urban standard as indicated in Table 2.3.1.1 of Volume 2 of Transport Planning and Design Manual (TPDM) as shown in **Table 3-2**.

Table 3-2 Passenger Car Unit Conversion Factors

Vehicle Type	PCU Conversion Factor
Car/ Taxi	1.00
Public Light Bus/ Minibus	1.50
Light Goods Vehicle	1.50
Medium Goods Vehicle	1.75
Heavy Goods Vehicle	1.75
Bus/ Coach	2.00

Source: Table 2.3.1.1, Chapter 2.3, Volume 2, TPDM-2015

3.3.3 Based on the above PCU factors, vehicular traffic flows in PCUs are calculated and the result indicates that the AM and PM peak hour occur at 08:45 to 09:45 and 17:00 to 18:00 respectively. **Figure 3.3** presents the 2017 observed AM and PM peak hour traffic flows on the road network in the vicinity of the Subject Site.

3.3.4 Based on the existing traffic flows, the performance of the key junctions in the Study Area are assessed and the results are summarized in **Table 3-3** with detailed calculation sheets given in **Appendix A**.

Table 3-3 2017 Peak Hour Performance of Key Junctions

ID.	Location	Type	Capacity Index (1)	AM Peak	PM Peak
J1	Ting On Street/ Ting Fu Street(W)	Priority	DFC	0.11	0.12
L2	Ting Fu Street	Link	V/C	0.09	0.09
J3	Ting On Street/ Ting Fu Street(E)	Priority	DFC	0.08	0.09
J4	Kwun Tong Road / Ting On Street	Priority	DFC	0.35	0.48
J5	Kwun Tong Road / Lai Yip Street	Signal	RC(P)	18.6%	19.3%
J6	Ngau Tau Kok Road / Elegance Road	Signal	RC(P)	44.7%	56.1%
J7	Ngau Tau Kok Road / On Shin Road	Signal	RC(P)	29.6%	32.8%
J8	Ngau Tau Kok Road / Ting On Street	Priority	DFC	0.08	0.08
J9	Ngau Tau Kok Road / Unnamed Road Near Ting On Street	Signal	RC(P)	25.6%	81.0%
J10	Ngau Tau Kok Road / On Tak Road	Signal	RC(P)	100%+	100%+

Note (1) Capacity Indices:
DFC = Design Flow to Capacity ratio for Priority Junction
VC = Volume to Capacity ratio for road link
RC(P) = Reserve Capacity for Signalised Junction under Current cycle time with Actual green timings for respective phases

3.3.5 For signal controlled junctions, two set of reserve capacity indeces, i.e. R.C.(C) and R.C.(P), are calculated according to the method stated in Chapter 2.4 of Volume 4 TPDM and presented in the calculation sheets in Appendix A.

3.3.6 R.C. (C) is is the Junction Reserve Capacity under current cycle time with optimum green times for respective phases, i.e. R.C. (C) is the maximum reserve capacity of the junction that can be achievable for the observed flows at current cycle time.

3.3.7 To show the actual on-site traffic conditions at the concerned junctions, **Table 3-3** presents the R.C.(P) of the respective junctions which is the Actual Reserve Capacity under current cycle time with the actual green times being observed on-site for respective phases.

3.3.8 The results of the junction assessments show that all the key junctions in the vicinity of the Subject Site operate satisfactorily in both the AM and PM peak periods in 2017.

3.3.9 **Figure 3.4** and **Figure 3.5** show the observed queue lengths at the Junctions of Kwun Tong Road / Lai Yip Street (J5) and Ngau Tau Kok Road / Elegance Road (J6) in the AM and PM peak hours respectively. In general, the average queue lengths for each phase as shown in the calculation sheets are comparable with the on-site queuing conditions being observed.

3.4 Existing Pedestrian Condition

3.4.1 At present, the Subject Site is a basketball court playground open daily between 07:00 and 23:00. As shown in **Figure 3.2**, the playground also provides a pedestrian link (P2) between Ting On Street and Ngau Tau Kok Road in addition to the other pedestrian links (P1 and P3) in the vicinity. As a result of the proposed housing development, the existing basketball court playground will be cancelled and re-provisioned within the district; and hence the pedestrians currently using P2 to access Ting on Street and Ngau Tau Kok Road will be diverted to P1 and P3 nearby.

3.4.2 To assess the impact of the pedestrian diversion, pedestrian count surveys were undertaken at the existing footpaths inside and nearby the playground over the AM (07:00 – 10:00) and PM (16:00 – 19:00) peak periods on 11 April 2017 (Tuesday). The locations of the concerned footpaths are shown in **Figure 3.2**.

3.4.3 Analysis of the observed data indicates that the AM and PM peak hour for pedestrian flows occur at 07:30 to 08:30 and 17:15 to 18:15 respectively. **Table 3-4** presents the observed peak hour pedestrian flows and the calculated Level of Service of the respective footpaths.

Table 3-4 2017 Observed Pedestrian Flows and Level of Services

ID.	Location	Effective Width	AM Peak			PM Peak		
			Peak Hour Flows	PMM(2)	LOS(3)	Peak Hour Flows	PMM	LOS
P1	Ting Fu Street	2m	329	2.7	A	318	2.7	A
P2	Basketball Playground	1.5m	21	0.2	A	12	0.1	A
P3	Adjacent to Ngau Tau Kok Jockey Clubl Clinic	1.5m	107	1.2	A	117	1.3	A

Notes: *(1) Effective Width = Actual Width – 1.0m shy zone*
(2) PMM = Pedestrian flow per minute per meter
(3) LOS = Level of Service

3.4.4 As indicated in the table, the level of services for all the three concerned footpaths are good with a LOS value of A because the amount of pedestrian flows along these footpaths are not high. Hence, the closure of the existing pedestrian route at the Subject Site upon the completion of the proposed development is not expected to cause any adverse impact to the pedestrian movements as the amount of diverted flows are small and there are plenty of capacity at the nearby footpaths at P1 and P3.

4 FUTURE TRAFFIC SITUATION

4.1 Design Year

4.1.1 The expected completion year for the proposed housing development is 2020/2021 and hence the "Design Year" for this study is set as 2026, i.e. 5 years upon completion of the proposed development.

4.2 Methodology

4.2.1 The following steps are undertaken to derive the 2026 Peak Hour Reference Flows (i.e. without the proposed development) and Design Flows (i.e. with the proposed development):

2026 Background Flows = **(Figure 4.1)**	2017 Observed Flows (Figure 3.3) x Traffic Annual Growth (+2.0% per annum)
2026 Reference Flows = **(Figure 4.3)**	2026 Background Flows (Figure 4.1) + Additional Flows by Planned and Committed Developments within the Study Area
2026 Design Flows = **(Figure 4.4)**	2026 Reference Flows (Figure 4.3) + Additional Flows by the Proposed Development.

4.2.2 In forecasting the background traffic growth in the area between 2017 and 2026, references are made to the following sources of information which include:

- the historical traffic data from Annual Traffic Census (ATC);
- the 2014-based Territorial Population and Employment Data Matrices (TPEDM) from Planning Department;
- traffic forecasts from the Base District Traffic Model (BDTM); and
- future transport infrastructures.

4.2.3 The amount of traffic to be induced by the planned and committed developments within the Study Area are estimated by applying trip generations/ attractions rates from relevant existing developments contained in the Transport Planning and Design Manual (TPDM). The development flows are then added to the 2026 Background Traffic Flows to obtain the 2026 Reference Traffic Flows (i.e. without proposed development).

4.2.4 The additional traffic to be generated by the proposed development are also estimated by applying appropriate trip rates extracted from TPDM. The 2026 Design Taffic Flows (i.e. with proposed development) are calculated by additing the additional development flows to the 2026 Reference Traffic Flows.

4.2.5 The traffic impact to be induced by the proposed development are assessed by comparing the 2026 Reference Traffic Flows against the Design Traffic Flows.

4.3 2026 Peak Hour Background Traffic Flows

Historical Traffic Data

4.3.1 To gain an understanding of the historical trends of traffic growth in the Study Area, relevant traffic data over the period of 2010 to 2015 are extracted from the Annual Traffic Census (ATC) Reports, published by Transport Department, for the ATC stations in the Study Area. **Table 4-1** describes the locations of the ATC stations and provides the corresponding traffic data. As indicated in the table, the traffic volume on the road network in the vicinity of the Subject Site had increased by about 0.9% p.a. between 2010 and 2015.

Table 4-1 Historical Traffic Data from ATC

Stn No.	Road Name	From	To		AADT(1)						Growth p.a.
					2010	2011	2012	2013	2014	2015	
3012	Kwun Tong Rd	Ngau Tau Kok Rd	Kwun Tong Rd	AADT	75,800	76,500	79,660	78,070	76830	75340	--
				growth p.a.	--	0.92%	4.13%	-2.00%	-1.59%	-1.94%	-0.12%
3020	Wai Yip St	Lai Yip St	Hoi Yuen Rd	AADT	24,030	24,820	27,510	28,620	27820	27930	--
				growth p.a.	--	+3.29%	+10.84%	+4.03%	-2.80%	+0.40%	+3.05%
3023	Kwun Tong Bypass	Wai Yip St	Cheung Yip St	AADT	92,530	93,040	92,940	97,200	99000	97350	--
				growth p.a.	--	+0.55%	-0.11%	+4.58%	+1.85%	-1.67%	+1.02%
4070	Ngau Tau Kok Rd	Elegance Rd	Up-ramp to Sheung Yee Rd	AADT	15,000	15,120	16,100	16,330	16530	16290	--
				growth p.a.	--	+0.80%	+6.48%	+1.43%	+1.22%	-1.45%	+1.66%
Overall Total					207,360	209,480	216,210	220,220	220,180	216,910	--
Average Growth Rate (per annum)					--	+1.02%	+3.0%	+1.85%	-0.02%	-1.49%	**+0.90%**

Planning Data Assumption

4.3.2 Reference is also made to the 2014-based Territorial Population and Employment Data Matrices (TPEDM) land use data published by Planning Department. The predicted growth in the development intensity including population and employment places in Kwun Tong District is approximately 0.94% per annum between 2017 and 2026. It is noted that major developments such as Kwun Tong Town Centre, Anderson Road Development and Anderson Road Quarry Site Development are included in the TPEDM.

Table 4-2 2014-Based TPEDM for Kwun Tong District

Category	2014	2017*	2021	2026	% Growth p.a. 2017-2026
Population	645,400	659,029	677,200	718,750	+0.97%
Employment Places	386,000	400,336	419,450	433,800	+0.90%
Total	1,031,400	1,059,364	1,096,650	1,152,550	+0.94%

Note: *2017 population and employment places are calculated by interpolation between 2014 – 2021.

Base District Transport Model

4.3.3 As a source of reference for estimating traffic growth on the road network within the study area, reference are also made to the 2008 Base District Transport Model (BDTM) for Kowloon East (BDTM-K2). **Table 4-3** shows the BDTM traffic flows on the key road links in the vicinity of the Subject Site. The 2016 to 2021 traffic growth rate within the Study Area, as predicted by BDTM, is 1.2% and 1.7% per annum for the AM and PM peak hour respectively. It should be noted however that the 2008-based BDTM is developed based on the 2006-based TPEDM.

Table 4-3 Traffic Data from BDTM-K2

Road Name	2008	2016	2021	% Growth p.a.	
				2008-2016	2016-2021
AM Peak Hour Flows (passenger car unit)					
Ngau Tau Kok Rd	1,256	1,307	1,437	+0.50%	+1.91%
Kwun Tong Rd	5,564	5,786	6,114	+0.49%	+1.11%
Kai Fuk Rd	532	1036	983	+8.69%	-1.04%
Elegance Rd	1,263	1,245	1,424	-0.18%	+2.72%
Total	8,615	9,374	9,958	+1.06%	+1.22%
PM Peak Hour Flows (passenger car unit)					
Ngau Tau Kok Rd	1,185	1,542	1,672	+3.35%	+1.63%
Kwun Tong Rd	6,084	6,181	6,873	+0.20%	+2.15%
Kai Fuk Rd	606	1440	1426	+11.43%	-0.20%
Elegance Rd	1,657	1,968	2,141	+2.17%	+1.70%
Total	**9,532**	**11,131**	**12,112**	**+1.96%**	**+1.70%**

Planned Major Transport Infrastructures

4.3.4 The Shatin Central Link (SCL) comprises of two parts:

- East West Line (EWL) Tai Wai to Hung Hom Station, which extends the existing Ma On Shan Line from Tai Wai to the West Rail Line via East Kowloon and is expected to complete by 2019; and
- North South Line (NSL) Hung Hom to Admiralty, which extends the existing East Rail Line across the habour to Wan Chai North and Admiralty is expected to complete by 2021.

4.3.5 Although the planned SCL alignments do not pass through the Study Area directly, the completions of these projects are still likely to provide some benefits to the Study Area as the MTR Ngau Tau Kok Station, which is within walking distance from the Subject Site, is on the Kwun Tong Line.

4.3.6 The Central Kowloon Route (CKR) is a 4.7km dual 3-lane trunk road linking Yau Ma Tei Interchange in West Kowloon with the road network on the Kai Tak Development in East Kowloon. The project is currently under detailed design stage and tentatively for completion by 2025 subject to final review by the authority.

4.3.7 The CKR will provide an alternative east-west route for the Kowloon area, and it is expected to improve the road accessibility of the Study Area to West Kowloon. Kwun Tong Bypass which is a major route through the Study Area will connect to the CKR via Kai Tak Interchange, and the journey times by road from the Study Area to West Kowloon and other adjacent areas is expected to improve significantly.

4.3.8 CKR forms part of Route 6 which will connect Kwun Tong Bypass of Route 2 in Kowloon Bay, and runs through an underground tunnel to Lam Tin, and further to southern Tseung Kwan O. The route, when completed, is expected to relieve the congestion problem in Kowloon, and will also serve as an alternative route for the existing Tseung Kwan O Tunnel but there is no detail propramme at present.

Assumed Background Traffic Growth Rate

4.3.9 Taking into account the above information, a conservative traffic growth rate of +2.0% per annum, which is higher than the historical growth of +0.9% p.a. over the past 5 years and the forecast development growth of +0.94% p.a. between 2017 and 2026, is adopted for deriving the 2026 Background Traffic Flows to ensure the robustness of the future year assessments.

4.3.10 By applying the assumed growth factor, i.e. +2.0% p.a. which equivalent to an overall increase of +19.5% from 2017 to 2026, **Figure 4.1** shows the 2026 Peak Hour Background Flows in the Study Area.

4.4 2026 Peak Hour Reference Traffic Flows

4.4.1 According to the published information from the Town Planning Board's Portal 2, there are numerous planning applications within the Study Area. **Figure 4.2** shows the locations of the planned and committed developments with the summary of the development parameters are given in **Table 4-4**.

Table 4-4 Planned Developments in Study Area

	Case No.	Use	Address	GFA (s.q.m.)	Unit
1	A/K14/686	Proposed Hotel (Wholesale Conversion of an Existing Vacant Industrial Building)	326 Kwun Tong Road, Kwun Tong, KTIL 548	2,013	63
2	A/K14/713	Proposed Hotel	101 Wai Yip Street, Kwun Tong, Kowloon, KTIL 577	3,513	99
3	A/K14/723	Proposed Hotel	11 Tai Yip Street, Kwun Tong, Kowloon, KTIL 564	3,746	96
4	--	(Re)development of Commercial / Office with Building Plan Approvals and Works Commenced	Wai Yip Street / Hung Yip Street / Hoi Bun Road / Shun Yip Street	82,100	N/A
5	--		93 Wai Yip Street	2,500	N/A
6	--		123 Hoi Bun Road (redevelopment of Wharf T&T Square)	55,400	N/A
7	--		Kwun Tong Road / Yan Yip Street / Wai Yip Street / Hang Yip Street	61,300	N/A
8	A/K14/662-1	Proposed conversion of an Existing Industrial Building to Hotel Use	320-322 Kwun Tong Road, Kwun Tong, KTIL 550 & 551	6,001	140
9	A/K13/280	Proposed Religious Institution (Temple)	Near the road junction between Ngau Tau Kok Road and Kwun Tong Road, Lower Ngau Tau Kok Estate Phase 7, Kowloon, Government Land	N/A	N/A

Source: Town Planning Board Portal 2

4.4.2 In order to estimate the amount of vehicular traffic to be induced by the planned developments, appropriate trip rate data from existing developments relevant to the proposed development are extracted from the Transport Planning and Design Manual (TPDM). **Table 4-5** shows excerpts from Annex D, Appendix 1, Chapter 3, Volume 1 of TPDM, which provide trip rate data for different types of developments.

Table 4-5 Peak Hour Trip Rates for Retail and Hotel from TPDM

OZP Zoning	Trip Rate Unit	Upper Limit / Mean / Lower Limit	AM Peak Hour		PM Peak Hour	
			Generation Rate	Attraction Rate	Generation Rate	Attraction Rate
Retail / Shopping Complex (Office + Retail)	pcu/hr/100m² GFA	Upper Limit	0.3307	0.3342	0.3839	0.4504
		Mean	**0.2296**	**0.2434**	**0.31**	**0.3563**
		Lower Limit	0.1285	0.1525	0.236	0.2622
Hotel	pcu/hr/guest room	Upper Limit	0.1814	0.2082	0.1697	0.2183
		Mean	**0.1329**	**0.1457**	**0.129**	**0.1546**
		Lower Limit	0.0843	0.0832	0.0883	0.0908

Source: Annex D, Appendix 1, Chapter 3, Volume 1 of TPDM

4.4.3 As the Study Area is well served by public transport including franchised buses and MTR services, it is proposed to adopt the mean values of the Office and Hotel trip rates for estimating the additional traffic to be generated by the planned developments. To provide conservate estimates the Office trip rates are applied to the industrial-office buildings. Accordingly, **Table 4-6** shows the estimated amount of peak hour vehicular trips to be induced by the planned developments.

Table 4-6 Peak Hour Traffic by Planned Developments in Study Area

	Case No.	Use	GFA (s.q.m.)	AM Generation	AM Attraction	PM Generation	PM Attraction
Hotel Trip Rates (pcu/hr/guest room)				**0.1329**	**0.1457**	**0.129**	**0.1546**
1	A/K14/686	Proposed Hotel	63	8	9	8	10
2	A/K14/713	Proposed Hotel	99	13	14	13	15
3	A/K14/723	Proposed Hotel	96	13	14	12	15
8	A/K14/662-1	Proposed conversion of an Existing Industrial Building to Hotel Use	140	19	20	18	22
Office + Retail Trip Rates (pcu/hr/100m² GFA)				**0.2296**	**0.2434**	**0.31**	**0.3563**
4	--	(Re)development of Commercial / Office with Building Plan Approvals and Works Commenced	82,100	189	200	255	293
5	--		2,500	6	6	8	9
6	--		55,400	127	135	172	197
7	--		61,300	141	149	190	218
Others							
9	A/K13/280	Proposed Religious Institution (Temple)	N/A	5	5	5	5
			Total	**521**	**552**	**681**	**784**

4.4.4 It is forecast that the planned and committed developments would induce total two-way traffic flows of 1,073 pcu's and 1,465 pcu's in the AM and PM peak hour respectively. The development flows are assigned onto the road network in the Study Area based on the existing distribution pattern in the Study Area. By adding the development flows onto the 2026 Peak Hour Background Flows in **Figure 4.1**, **Figure 4.3** shows the 2026 AM and PM Peak Hour Reference Flows in the study area.

4.5 2026 Peak Hour Design Flows

4.5.1 Appropriate trip rate data extracted from the Transport Planning and Design Manual (TPDM) are used to estimate the amount of vehicular traffic to be induced by the proposed development. **Table 4-7** show excerpts from Table 1 and Table 2, Annex D, Appendix 1, Chapter 3, Volume 1 of TPDM, which provide trip rate data for subsidised rental housing and commercial developments.

Table 4-7 Peak Hour Trip Rates for Subsidised Housing and Retail from TPDM

OZP Zoning	Trip Rate Unit	Upper Limit / Mean / Lower Limit	AM Peak Hour		PM Peak Hour	
			Generation Rate	Attraction Rate	Generation Rate	Attraction Rate
Subsidised Housing: Public Rental	pcu/hr/flat Average Flat size = 40 m^2	Upper Limit	0.0539	0.0439	0.0278	0.0339
		Mean	**0.0432**	**0.0326**	**0.0237**	**0.0301**
		Lower Limit	0.0325	0.0213	0.0196	0.0263
Retail / Shopping Complex	pcu/hr/100m^2 GFA	Upper Limit	0.3307	0.3342	0.3839	0.4504
		Mean	**0.2296**	**0.2434**	**0.3100**	**0.3563**
		Lower Limit	0.1285	0.1525	0.2360	0.2622

Source: Annex D, Appendix 1, Chapter 3, Volume 1 of TPDM

4.5.2 As the average flat sizes for the rental residential units is less than 40m^2 and that the area is well served by public transport including MTR Ngau Tau Kok Station, it is proposed to adopt the mean values of the subsidised public rental housing and commercial trip rates for estimating the additional development traffic. Accordingly, **Table 4-8** shows the estimated amount of peak hour vehicular trips to be induced by the proposed development.

Table 4-8 Peak Hour Development Traffic Generations/ Attractions

	AM Peak Hour		PM Peak Hour	
	Generation (Out)	Attraction (In)	Generation (Out)	Attraction (In)
Residential Trip Rate (PCU/hr/unit)	0.0432	0.0326	0.0237	0.0301
Commercial Trip Rate (PCU/hr/100m^2 GFA)	0.2296	0.2434	0.3100	0.3563
378 residential units & 1,100m^2 commercial space				
No. of Residential Trip (PCU/hr)	16	12	9	11
No. of Commercial Trip (PCU/hr)	3	3	3	4
Total Trip (PCU/hr)	19	15	12	15
Total 2-way Trip (PCU/hr)	34		27	

4.5.3 It is forecast that the proposed development would induce a total two-way traffic of 34 pcu's and 27 pcu's in the morning and evening peak hour respectively. **Figure 4.4** shows the AM and PM peak hour development flows on the road network in the study area.

4.5.4 By adding the peak hour development flows (Figure 4.4) onto the forecast 2026 Peak Hour Reference Flows (Figure 4.3), the 2026 Peak Hour Design Flows (i.e. with proposed development) are derived as shown in **Figure 4.5**.

4.6 Traffic Impact Assessment

4.6.1 Based on the 2026 Reference Flows (i.e. without proposed development) and 2026 Design Flows (i.e. with proposed development), junction capacity assessments are undertaken and the results are presented in **Table 4-9** with detailed calculation sheets provided in **Appendix B.** The reserve capacity (i.e. RC(C)) of signal-controlled junctions are calculated based on the current cycle time with optimum green time for each phase.

Table 4-9 2026 Peak Hour Junction Performance

Jn ID	Location	Junction Type	Reference		Design	
			AM Peak	PM Peak	AM Peak	PM Peak
J1	Ting On St / Ting Fu St (W)	Priority	0.13	0.15	0.14	0.16
L2	Ting Fu Street	Link	0.11	0.11	0.12	0.12
J3	Ting On St / Ting Fu St (E)	Priority	0.10	0.11	0.10	0.11
J4	Kwun Tong Rd / Ting On St	Priority	0.48	0.58	0.48	0.58
J5	Kwun Tong Rd / Lai Yip St / Elegance Rd	Signal	14.9%	15.8%	14.8%	15.7%
J6	Ngau Tau Kok Rd / Elegance Rd	Signal	28.2%	35.9%	28.2%	35.3%
J7	Ngau Tau Kok Rd / On Shin Rd	Signal	21.0%	25.3%	19.4%	23.7%
J8	Ngau Tau Kok Rd / Ting On St	Priority	0.09	0.10	0.10	0.10
J9	Ngau Tau Kok Rd / Unnamed Rd Near Ting On St	Signal	16.5%	59.2%	15.8%	58.5%
J10	Ngau Tau Kok Rd / On Tak Rd	Signal	100%+	100%+	100%+	100%+

Notes: Capacity Indices:
DFC = Design Flow to Capacity ratio for Priority Junction
VC = Volume to Capacity ratio for road link
RC(C) = Reserve Capacity for Signalised Junction under current cycle time with Optimum green timings

4.6.2 It is indicated in **Table 4-9**, all of the assessed junctions in the vicinity of the Subject Site are expected to perform satisfactorily during the AM and PM peak hours for both the 2026 Reference and Design scenarios. As the amount of additional development traffic is not significant, there are minimal differences between the Reference and Design scenarios. It can be concluded, therefore, that the proposed development traffic would not cause adverse traffic impact to the road network in the vicinity of the Subject Site.

5 INTERNAL TRANSPORT PROVISIONS

5.1 Parking and Loading/ Unloading Provisions

5.1.1 **Table 5-1** summarizes the proposed internal car parking and loading/ unloading provisions for the proposed development, which meet the requirement for a development of this nature and size as stipulated in the Hong Kong Planning Standards and Guidelines (HKPSG).

Table 5-1 Proposed Parking and Loading/ Unloading Provisions

Type	Vehicle Type	Proposed Size	Proposed Headroom	HKPSG Requirements		Proposed Provision
				Criteria	Required	
Parking Spaces						
Residential (1) (216 nos. of 3/4 persons units)	Car	5m x 2.5m	Open	1 space per 6-9 flats(2)	5 – 7	6
	LGV	7m x 3.5m	>4.7m	1 space per 200-600 flats	1	1
	Motorcycle	1m x 2.4m	Open	1 space per 110-250 flats	1	3
Commercial (1,200m^2)	Car	5m x 2.5m 5m x 2.5m 5m x 3.5m	Open >4.7m >4.7m	1 space per 200-300m^2	4 – 6	3 2 1 (Total = 6)
Loading/ Unloading Spaces						
Residential (216 nos. of 3/4 persons units)	LGV(3)	7m x 3.5m	>4.7m	1 space per block	1	1
Commercial (1,200m^2)	HGV(3)	11m x 3.5m	>4.7m	1 space per 800-1200m^2	1	1

Notes:
(1) For subsidized housing, "one person/ two persons" flats shall be excluded from the calculation of the overall parking provision
(2) Demand Adjustment Ratio for Subsidized Housing = 0.23. Accessibility Adjustment Ratio = 0.85 (within 500m radius of rail station)
(3) LGV – Light Goods Vehicle; HGV – Heavy Goods Vehicle

5.1.2 Based on the proposed provision as indicated in **Table 5-1**, the development will provide a total of 12 nos. of parking spaces for private car (including one accessible car parking spaces), 3 nos. of motorcycle parking spaces and 1 no. of LGV parking space. Two nos. of goods vehicle loading/unloading bays, one for LGV and one for HGV, will also be provided.

5.1.3 **Figure 5.1** shows the arrangement of the parking and loading/unloading bays within the development and the results of vehicle swept path assessments are presented in **Appendix C**.

5.2 Emergency Vehicle Access

5.2.1 **Figure 5.2** shows the emergency vehicle access (EVA) arrangement for the proposed housing development. The run-in / run-out of the EVA will be located at Ngau Tau Kok Road to allow emergency vehicles to access the bulding block within the Site. The figure also shows the swept path of a fire engine.

6 SUMMARY AND CONCLUSION

6.1 Summary

6.1.1 Hong Kong Hosuing Society propose to develop a public rental housing development at Ting On Street in Ngau Tau Kok (the Subject Site). The proposed development within the Subject Site, which is currently a basketball court playground, will comprise of a single tower providing 378 residential units and 1,200m^2 commercial spaces.

6.1.2 The Subject Site is well served by public transport, including MTR, bus and GMB services. In order to appraise the existing traffic condition in the area, classified turning movement counts were carried out at the key junctions in the vicinity of the Subject Site over the AM and PM peak periods on 8 March 2017. The AM and PM peak hours are identified to occur at 08:45 to 09:45 and 17:00 to 18:00 respectively.

6.1.3 Junction capacity assessments are undertaken to assess the existing peak hour performance of all the key junctions in the vicinity of the Subject Site. The assessment results indicate that all the assessed junctions perform satisfactorily during the respective peak hours.

6.1.4 The planned completion for the proposed development is 2020/2021 and hence the “Design Year” for this study is set as 2026. Having reviewed the historical trend of traffic growth in the area, the planned transport infrastructure in the district and the planned population and employment growth in the area, to provide conservative estimates, a traffic growth factor of 2.0% per annum is adopted to forecast the 2026 Background traffic flows. Additional traffic to be generated by the planned developments in the Study Area are added to the Backround traffic flows to derive the 2026 Peak Hour Reference traffic flows (i.e. without proposed development).

6.1.5 Trip rate data extracted from TPDM relevant to the nature of the proposed development in terms of sizes of the flats and accessibility etc. has been adopted to estimate the amount of development to be induced by the proposed development. It is estimated that a total two-way traffic of 34 pcu’s and 27 pcu’s would be generated by the proposed development during the AM and PM peak hour respectively. The development traffic is added to the 2026 Reference Traffic Flows to calculate the 2026 Design Traffic Flows (i.e. with proposed development).

6.1.6 Traffic impact assessments are undertaken by comparing the junction performance of the 2026 Reference scenario (i.e. without the proposed development) against the Design scenario (i.e. with the proposed development). The results of the assessments indicate that all the assessed junctions in the vicinity of the proposed development would perform satisfactorily during the AM and PM peak periods for both scenarios.

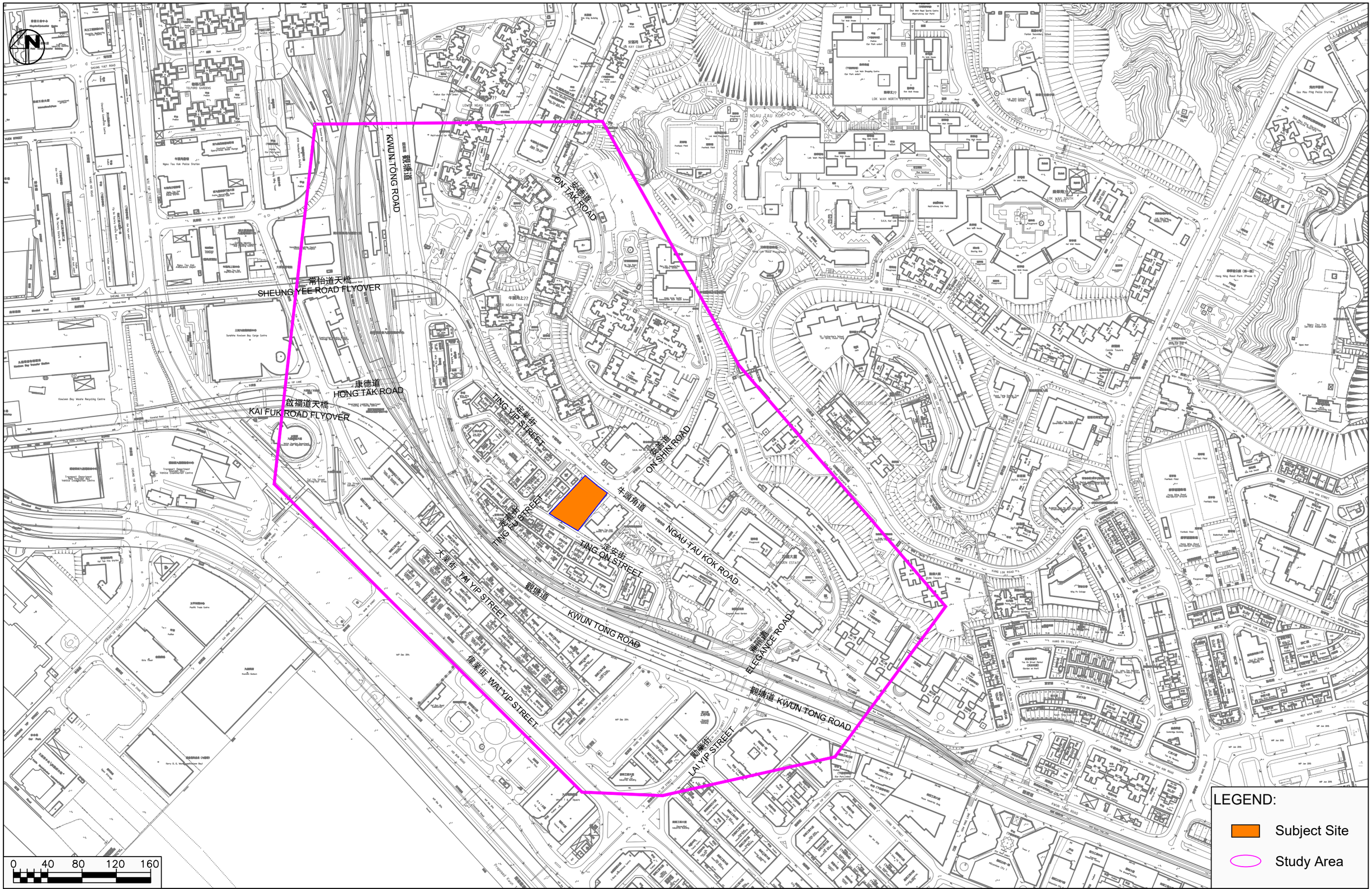
6.1.7 As the amount of additional development traffic is not significant, there are minimal differences between the Reference and Design scenarios, hence, it is concluded that the development traffic would not cause adverse traffic impact on the road network in the vicinity of the proposed development.

6.1.8 The proposed internal transport provisions (i.e. parking and loading/ unloading provisions) comply with the relevant standards and guidelines as stipulated in HKPSG. Accordingly, totals of 12 parking spaces for private car, one parking space for goods vehicle and three spaces for motorcycle will be provided. In addition, two loading/unloading bays, one for HGV and one for LGV, will be provided within the development site.

6.2 Conclusion

6.2.1 Based on the results of the traffic impact assessment study, it is concluded that the proposed development will not induce adverse traffic impact to the road network in the vicinity of the proposed development.

Figures



OZZO TECHNOLOGY

Date	Scale
02/03/2015	1:4000

Project Title

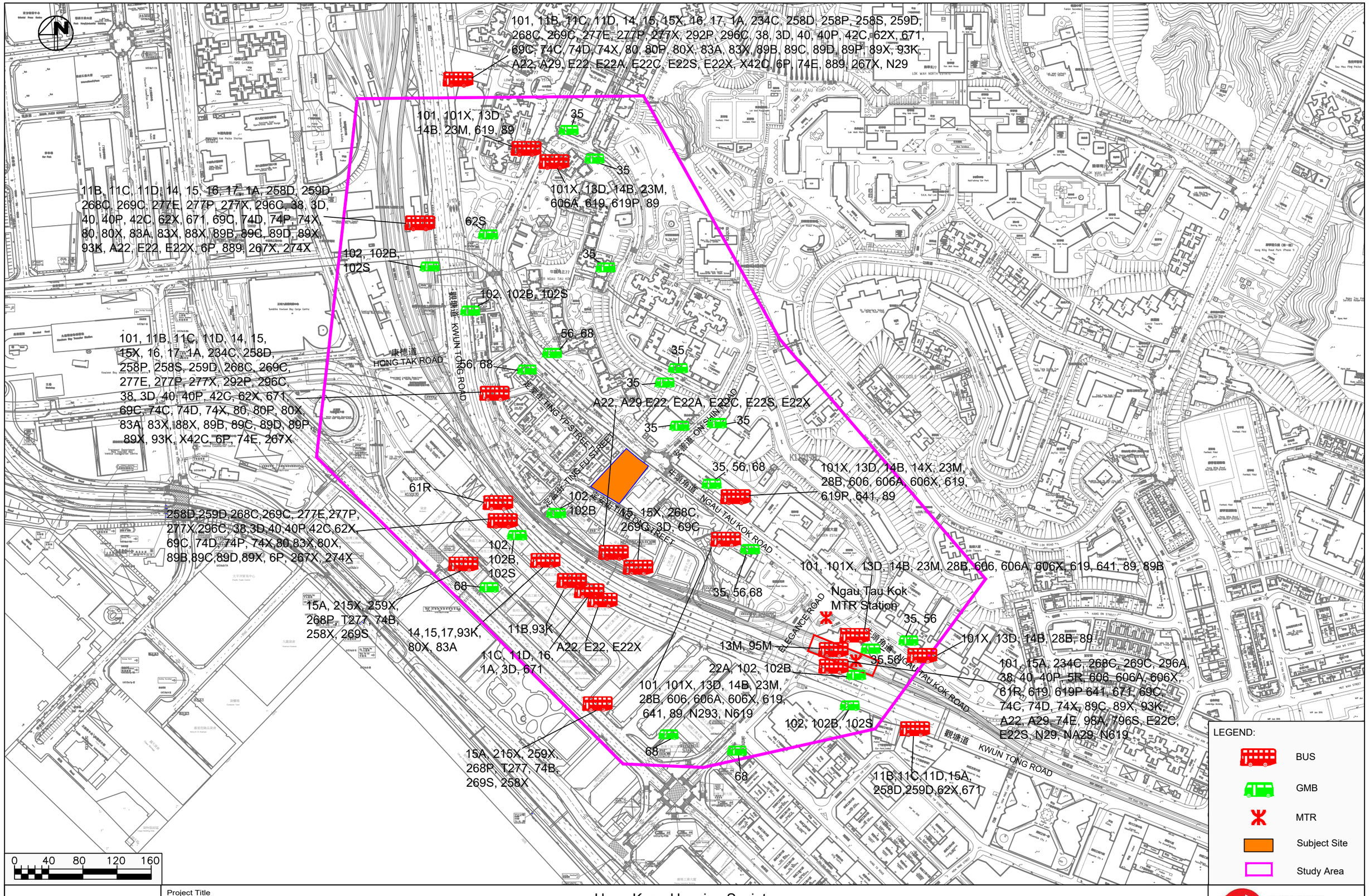
Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

Site Location Plan

HONG KONG HOUSING SOCIETY 香港房屋協會

Project No.	80654	Rev.
Dwg No.	Figure 2.1	A



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Date	Scale
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Project Title

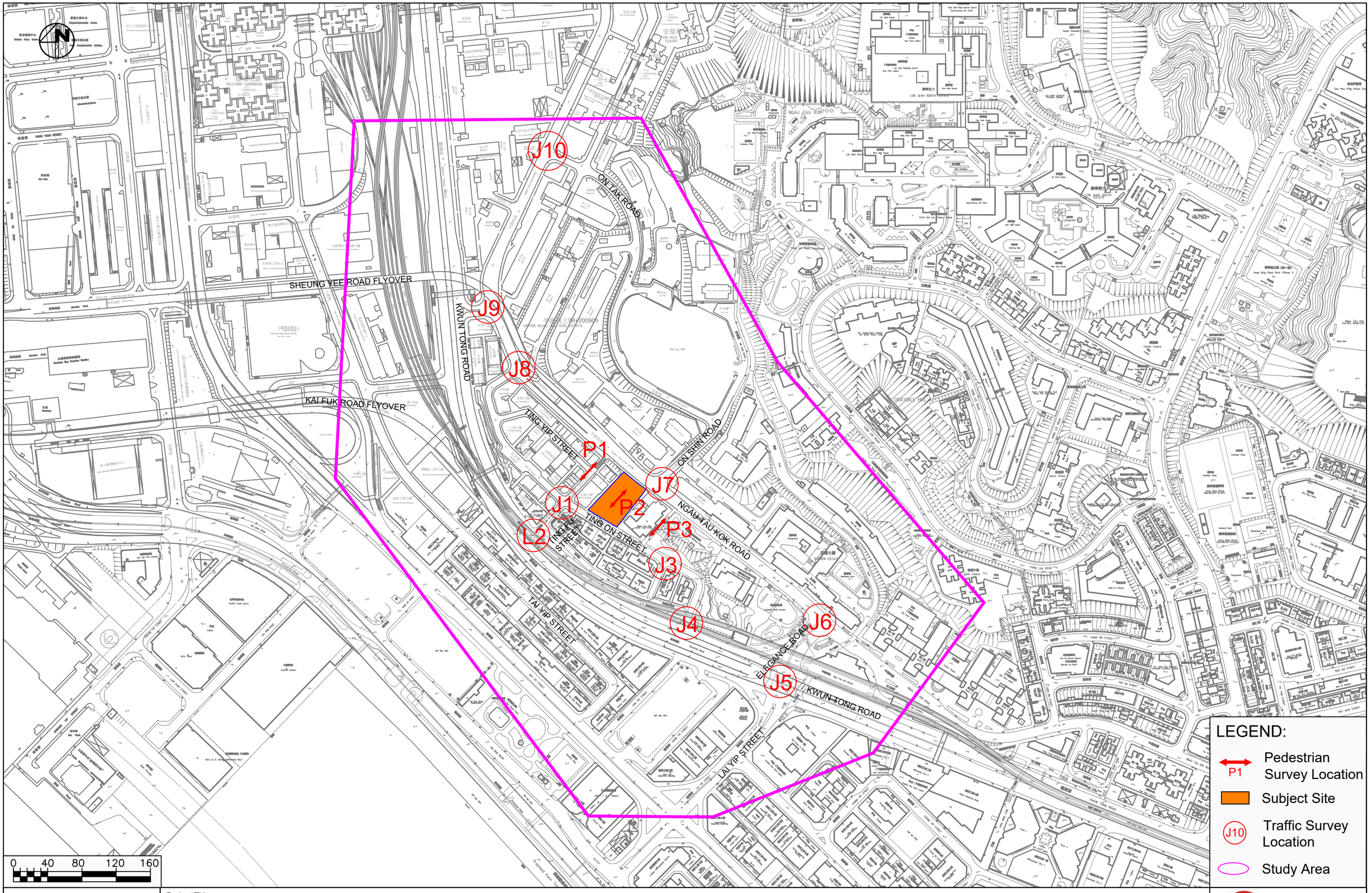
Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

Existing Public Transport Inventory

HONG KONG HOUSING SOCIETY 香港房屋協會

Project No.	80654	Rev.
Dwg No.	Figure 3.1	C



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Project Title

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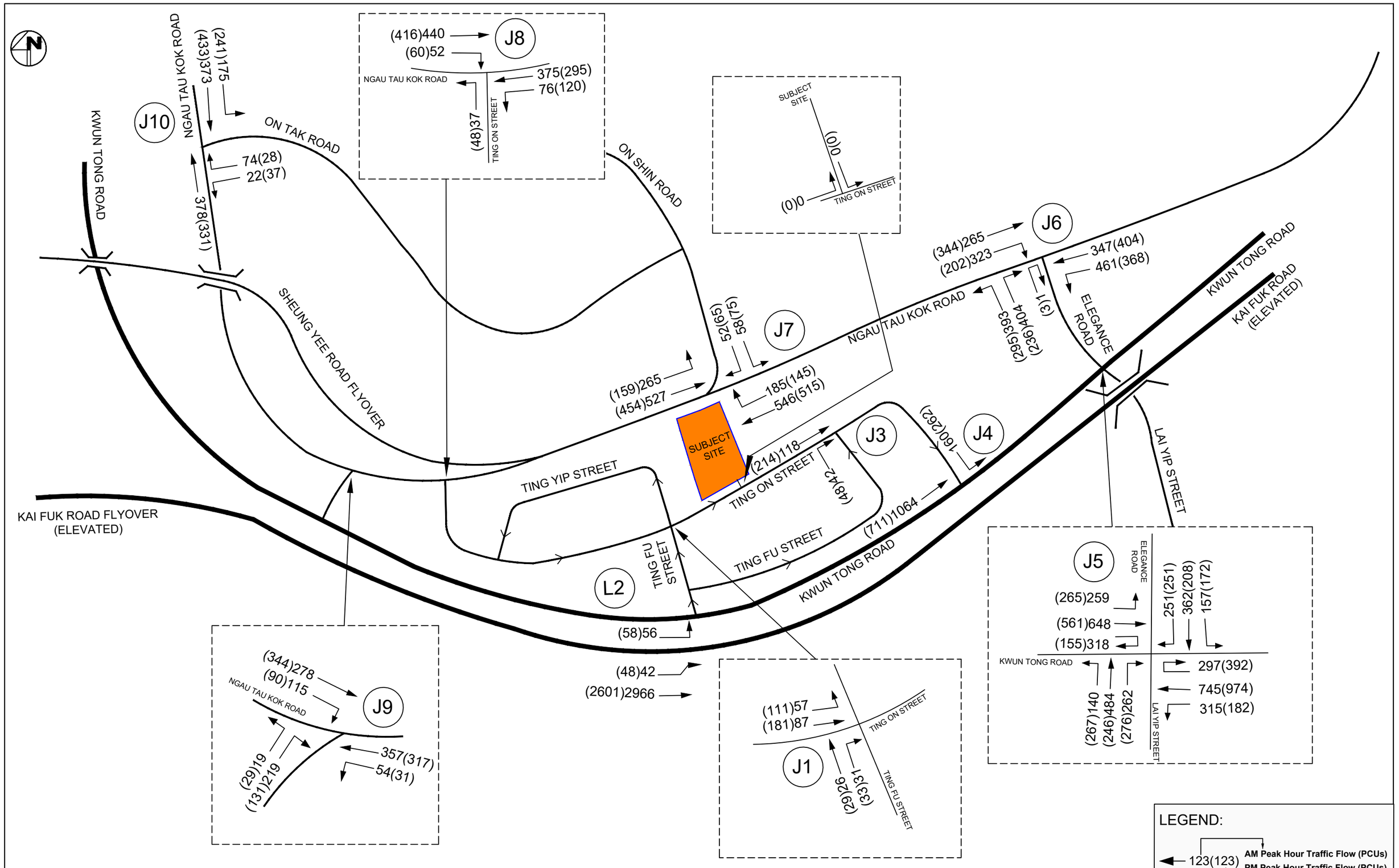
The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

Traffic Survey Locations

Date	Scale
19/10/2015	1:4000

HONG KONG HOUSING SOCIETY 香港房屋協會

Project No.	80654	Rev.
Dwg No.	Figure 3.2	A



OZZO TECHNOLOGY

Date 26/04/2017

Scale NTS

Project Title

Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

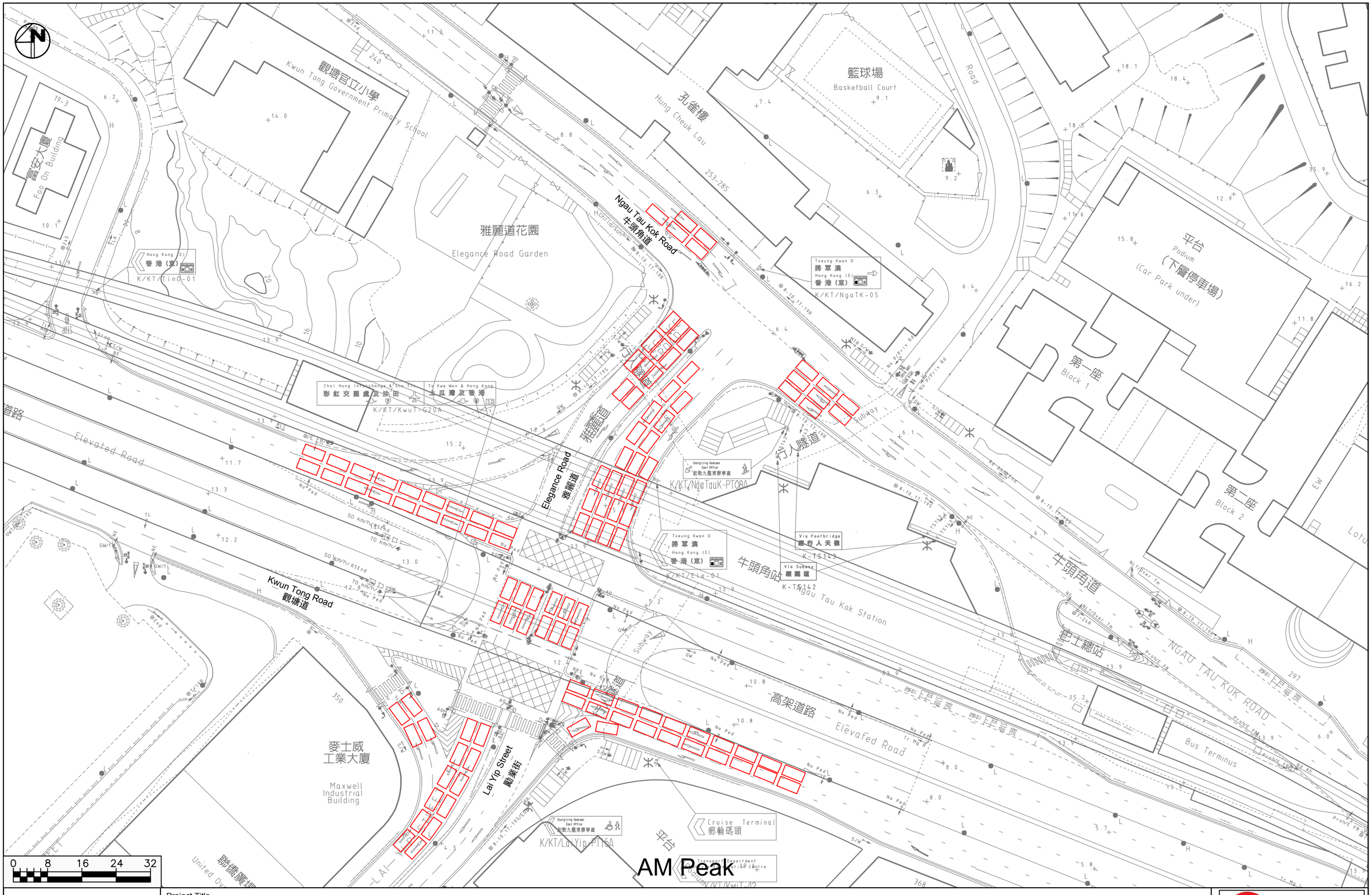
2017 Observed Peak Hour Traffic Flows

HONG KONG HOUSING SOCIETY 香港房屋協會

Project No. 80654

Dwg No. Figure 3.3

Rev. F



OZZO TECHNOLOGY

Project Title

Hong Kong Housing Society

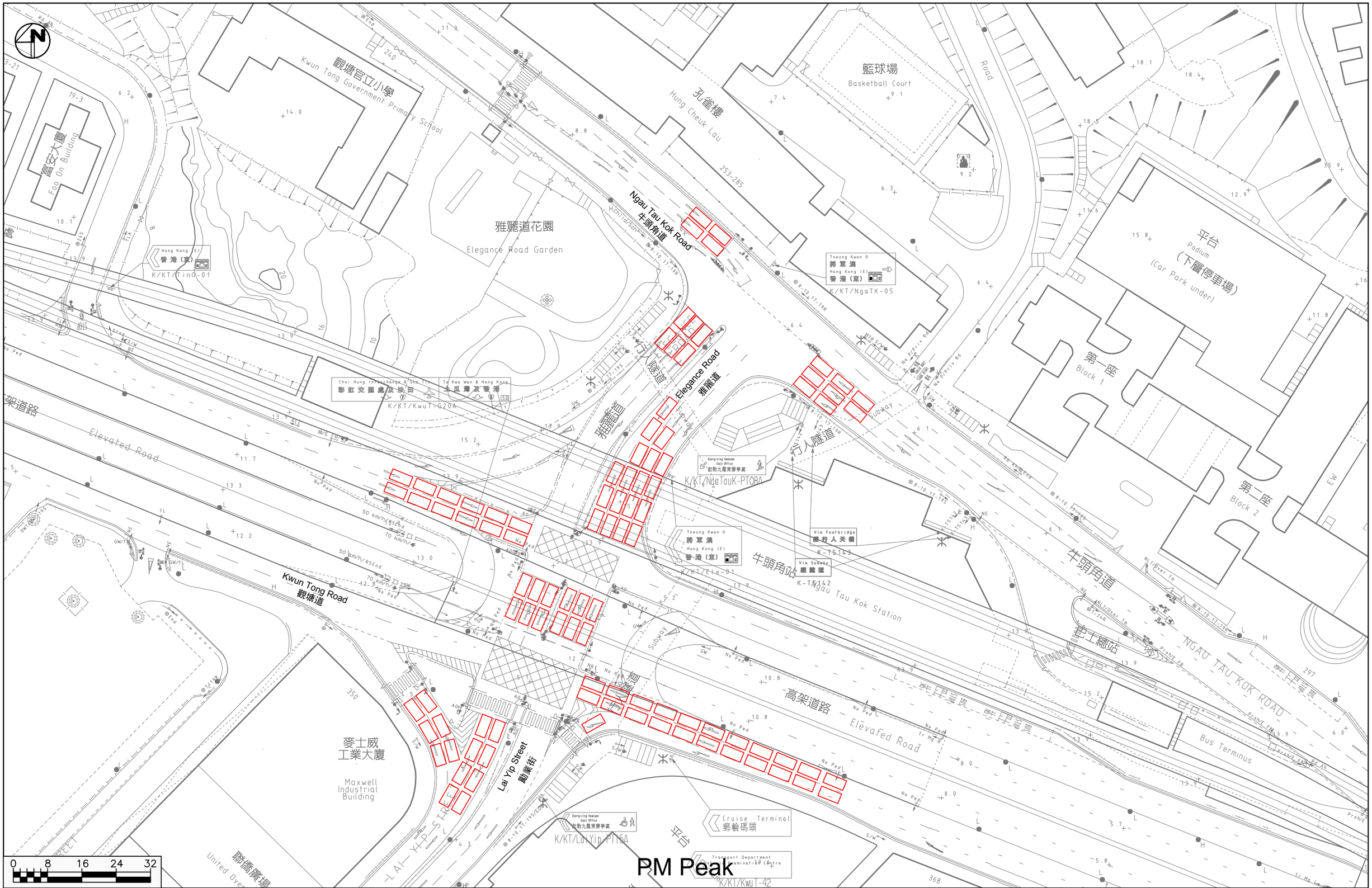
The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

2017 AM Peak Hour Average Queue Lengths

Date	Scale
26/04/2017	1:800

HONG KONG HOUSING SOCIETY 香港房屋協會

Project No.	80654	Rev.
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Project Title

Hong Kong Housing Society

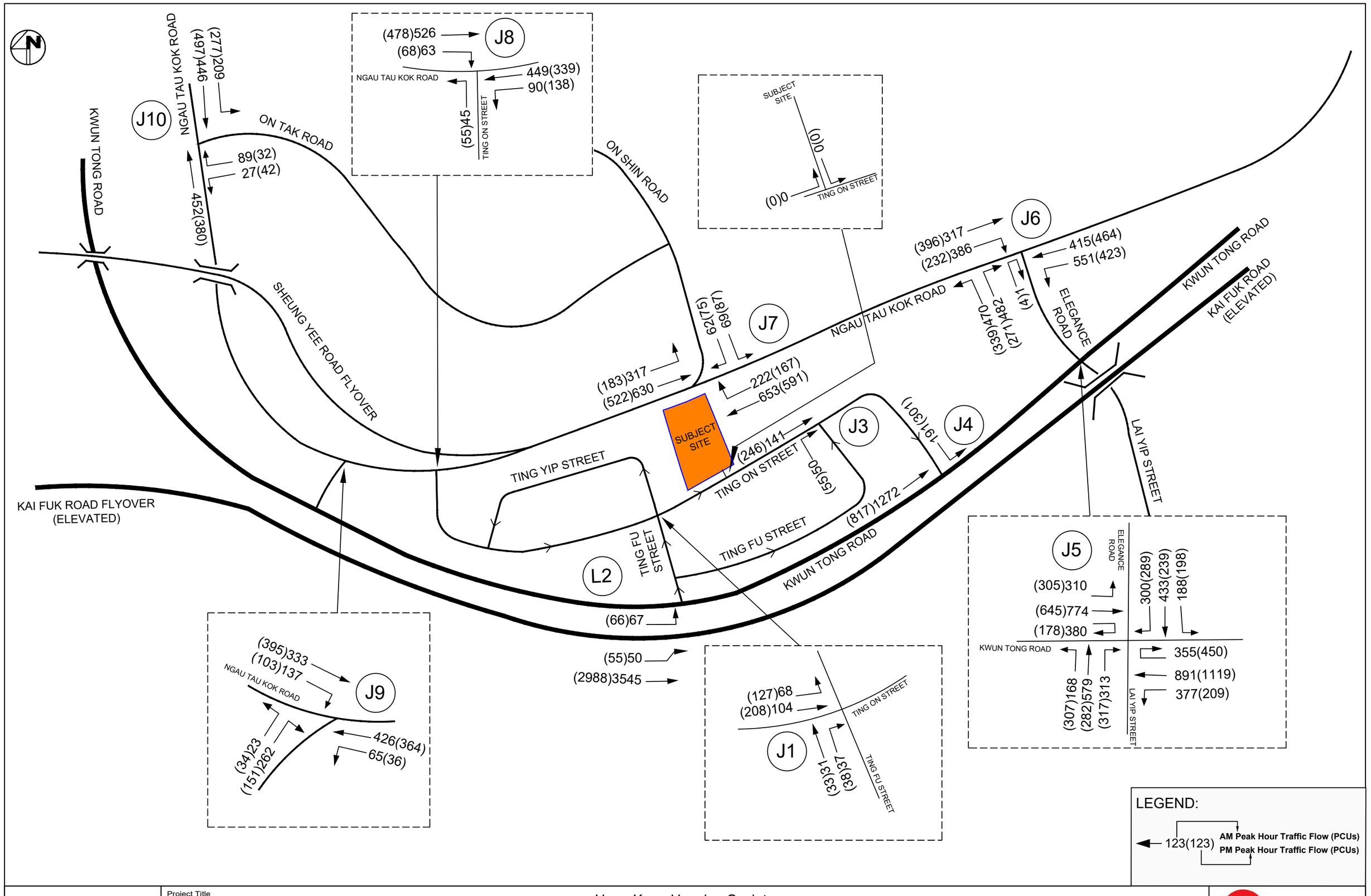
The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

2017 PM Peak Hour Average Queue Lengths

Date	Scale
26/04/2017	1:800

HONG KONG HOUSING SOCIETY 香港房屋協會

Project No.	80654	Rev.
Dwg No.	Figure 3.5	A



LEGEND:

123(123) — AM Peak Hour Traffic Flow (PCUs) / PM Peak Hour Traffic Flow (PCUs)

OZZO TECHNOLOGY

Project Title

Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

2026 Peak Hour Background Flows

HONG KONG HOUSING SOCIETY 香港房屋協會

Date	Scale	Project No.	Rev.
26/04/2017	NTS	80654	H
		Dwg No. Figure 4.1	

9. A/K13/280

8. A/K14/662

1. A/K14/686

2. A/K14/713

3. A/K14/723

4

5

6

7

Redevelopments of Commercial / Office with Building Plan Approvals and Works Commenced

KWUN TONG ROAD 觀塘道

SHEUNG YEE ROAD FLYOVER 常怡道天橋

HONG TAK ROAD 康德道

KAI FUK ROAD FLYOVER 啟福道天橋

TING YIP STREET 定業街

ON TAK ROAD 安德道

ON SHIN ROAD 安善道

NGAU TAU KOK ROAD 牛頭角道

TING ON STREET 定安街

TAI YIP STREET 大業街

WAI YIP STREET 惠業街

ELEGANCE ROAD 雅德道

LAI YIP STREET 勵業街

NGAU TAU KOK 牛頭角

LOK WAH NORTH ESTATE

LOK WAH SOUTH ESTATE

CROCODILE HILL

0 40 80 120 160

LEGEND:

- Subject Site
- Planned Development
- Study Area

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Project Title

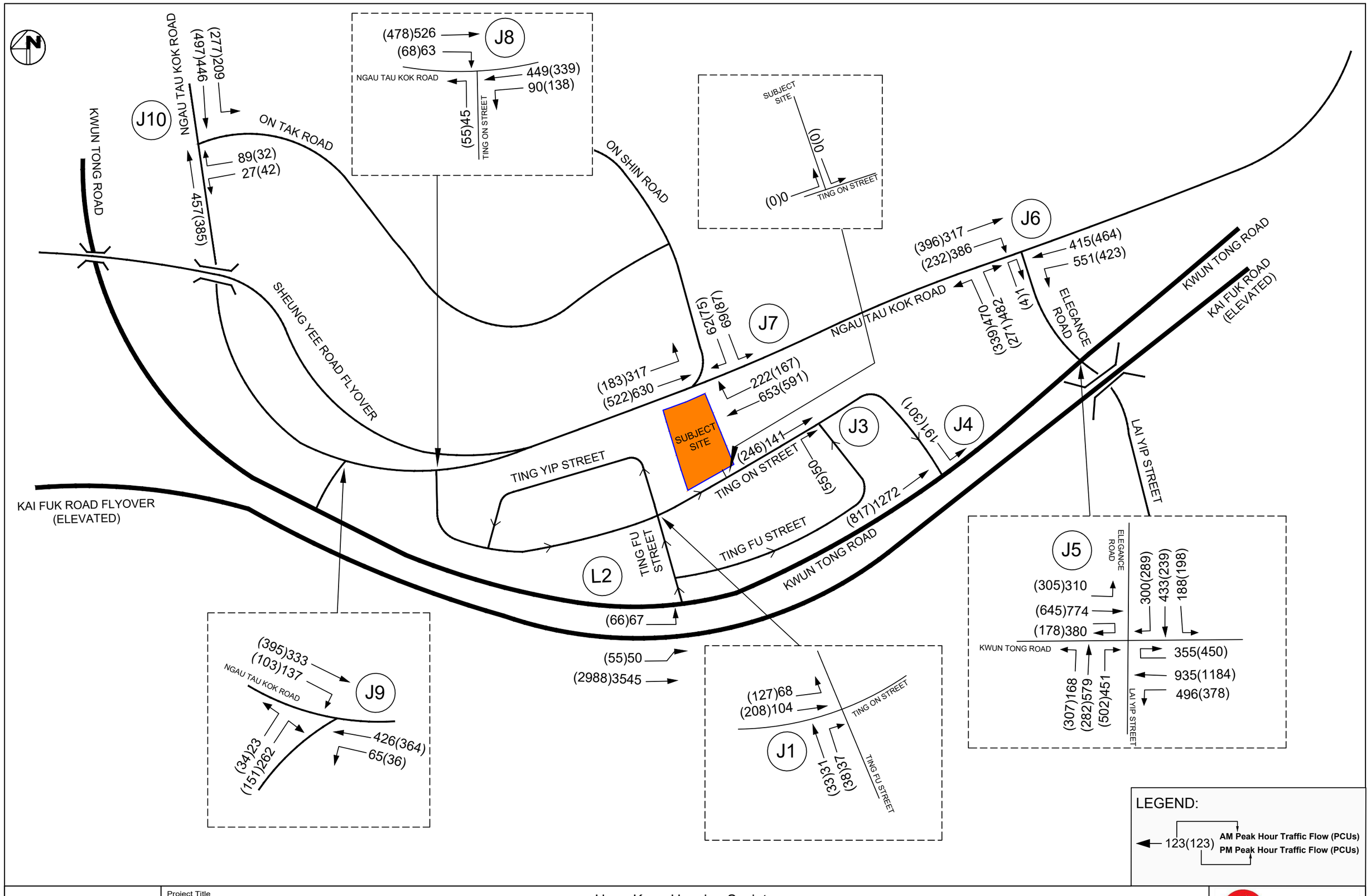
Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

Locations of Planned Developments

HONG KONG HOUSING SOCIETY 香港房屋協會

Date	Scale	Project No.	Rev.
5/4/2017	1:4000	80654	E
		Dwg No. Figure 4.2	



OZZO TECHNOLOGY

Date 26/04/2017

Scale NTS

Project Title

Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

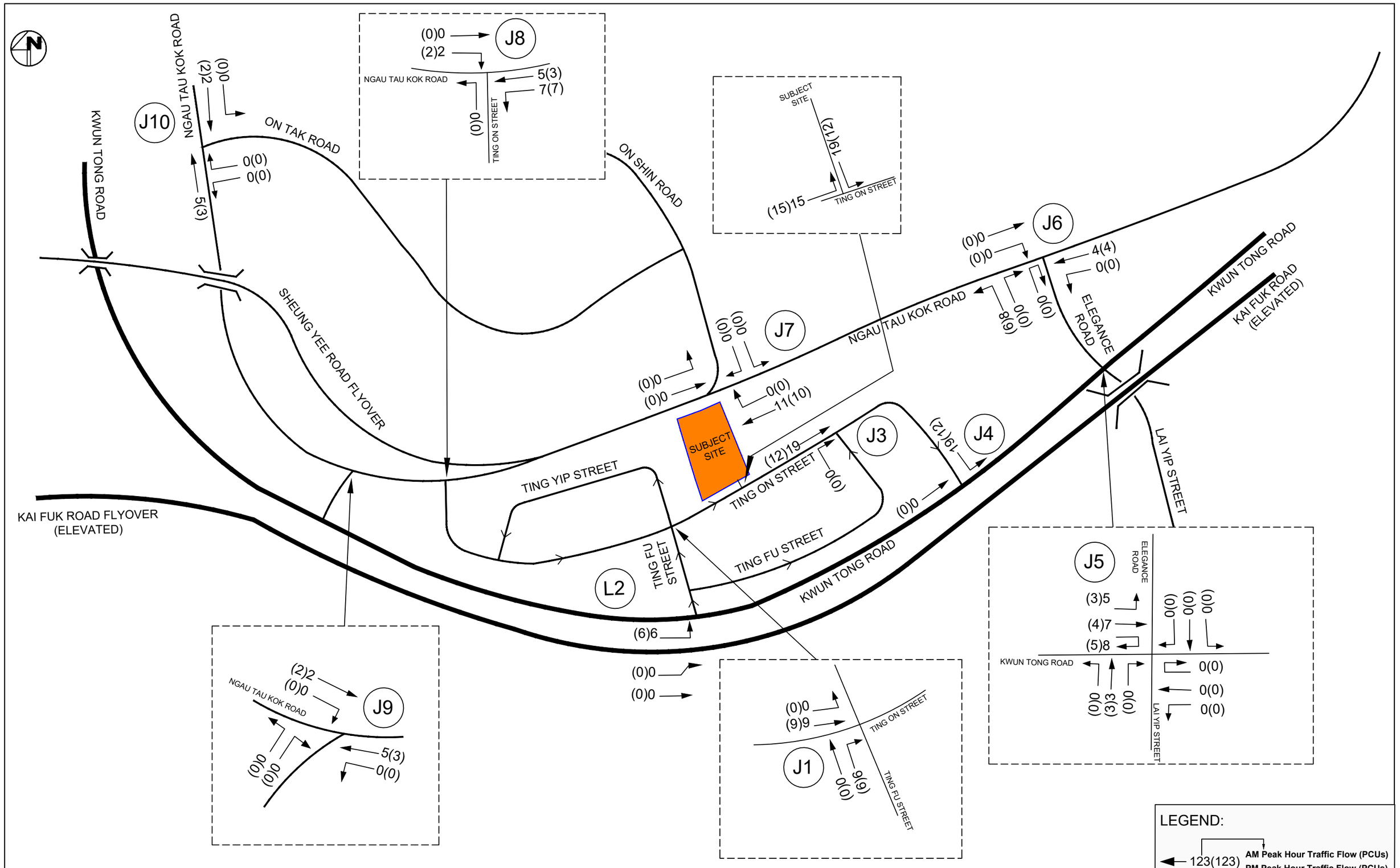
2026 Peak Hour Reference Flows

HONG KONG HOUSING SOCIETY 香港房屋協會

Project No. 80654

Dwg No. Figure 4.3

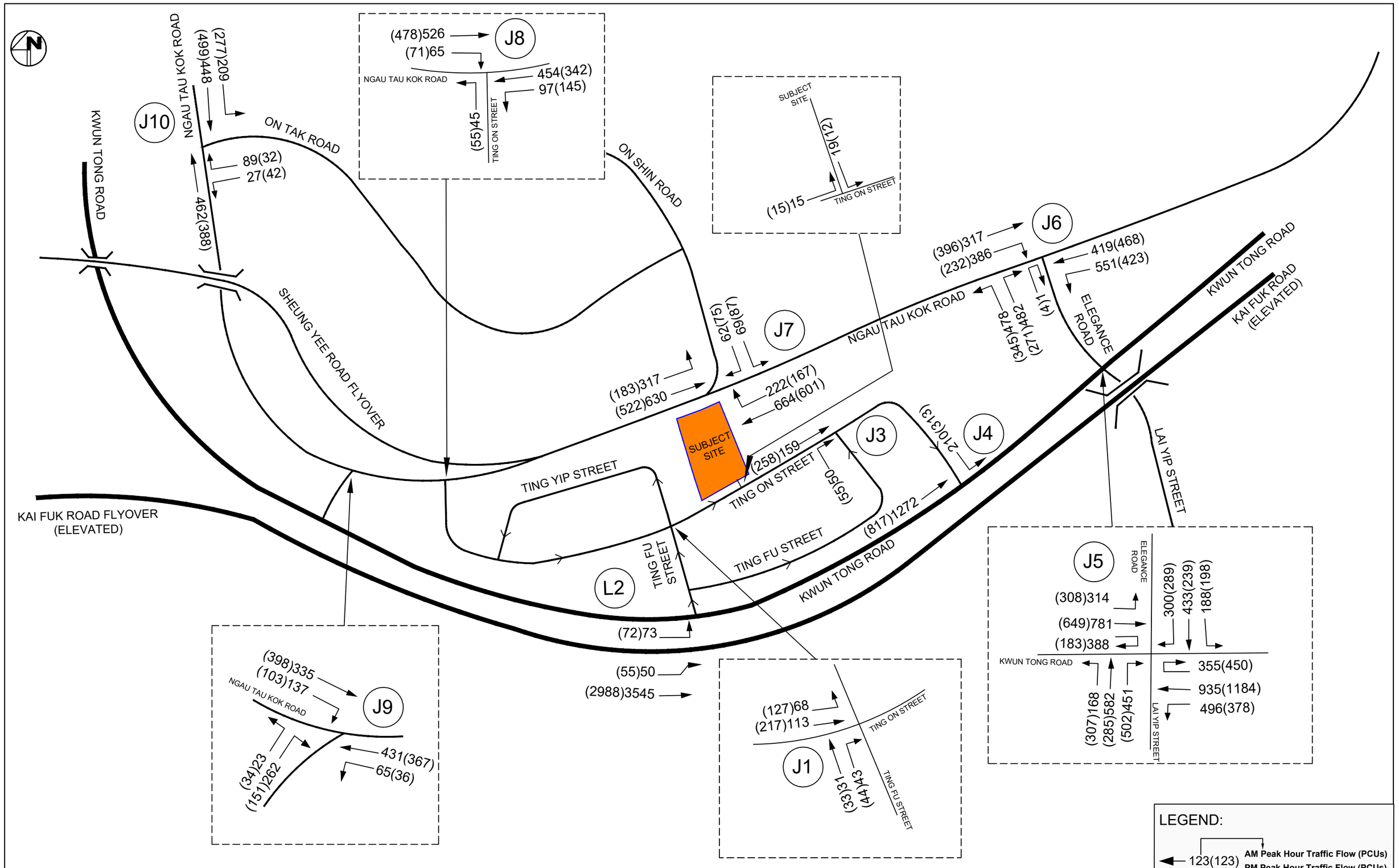
Rev. G



LEGEND:

123(123) — AM Peak Hour Traffic Flow (PCUs) / PM Peak Hour Traffic Flow (PCUs)

OZZO TECHNOLOGY	Project Title	Hong Kong Housing Society The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study Peak Hour Developement Flows	HONG KONG HOUSING SOCIETY 香港房屋協會
Date 08/08/2015	Scale NTS		Project No. 80654 / Dwg No. Figure 4.4 / Rev. F



OZZO TECHNOLOGY

Date 26/04/2017 | Scale NTS

Project Title

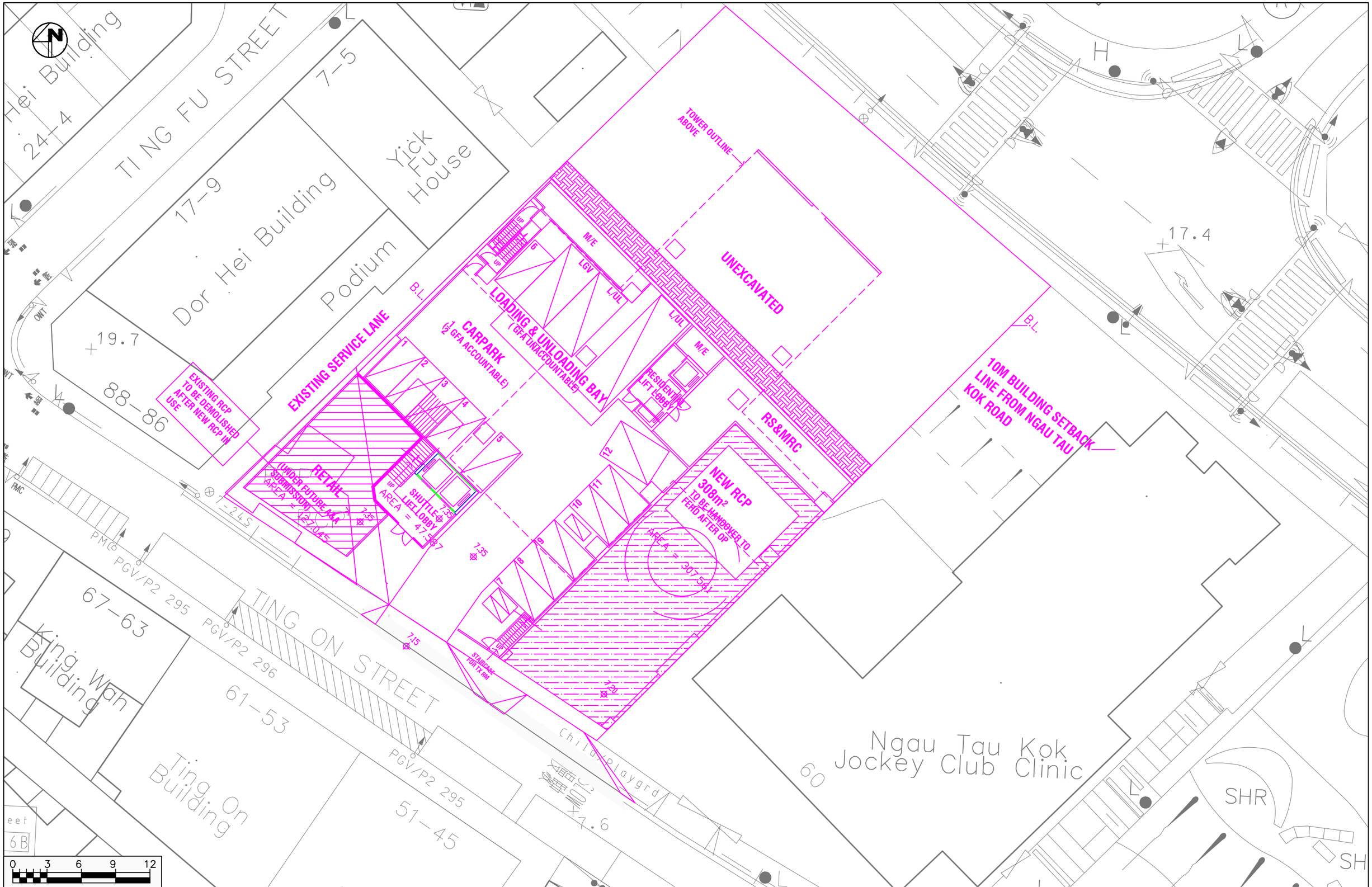
Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

2026 Peak Hour Design Flows

HONG KONG HOUSING SOCIETY 香港房屋協會

Project No. 80654 | Dwg No. Figure 4.5 | Rev. G



OZZO TECHNOLOGY

Project Title

Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

Carpark Layout Arrangement

HONG KONG HOUSING SOCIETY 香港房屋協會

Date	Scale
26/04/2017	1:300

Project No.	80654	Rev.
Dwg No.	Figure 5.1	G

NGAU TAU KOK ROAD

17.1

L

H

PH

ET

EVA AREA

10000

Larger Fire Appliance

100%

RETAIL

PUBLIC OPEN LANDSCAPE

SHUTTLE LIFT

EVA Area

EVA

11.7

2.985

5

Larger Fire Appliance
Overall Length 11.700m
Overall Width 2.490m
Overall Body Height 3.439m
Min Body Ground Clearance 0.146m
Track Width 2.490m
Lock to Lock Time 4.00 sec
Kerb to Kerb Turning Radius 10.500m

0 3 6 9 12

OZZO TECHNOLOGY

Project Title

Hong Kong Housing Society

The Proposed Rental Hosing Development at Ting On Street in Ngau Tau Kok, Kowloon - Traffic Impact Assessment Study

Emergency Vehicle Access Arrangement

HONG KONG HOUSING SOCIETY 香港房屋協會

Date	Scale	Project No.	Rev.
18/04/2016	1:300	80654	A
		Dwg No. Figure 5.2	

Provision of Major Government, Institution or Community Facilities and Open Space in Kwun Tong (South) OZP Area

Type of Facilities	**Hong Kong Planning Standards and Guidelines (HKPSG)**	**HKPSG Requirement Based on Planned Population[1] (i)**	**Provision**		**Surplus / Deficit (ii)-(i)**
			Existing	**Existing & Planned (ii)**	
Secondary School	1 whole day classroom for 40 persons aged 12-17	281 classroom	584 classroom	584 classroom	+303 classroom
Primary School	1 whole day classroom for 25.5 persons aged 6-11	443 classroom	462 classroom	492 classroom	+49 classroom
Kindergarten/ Nursery	26 classroom for 1,000 persons aged 3 to under 6	151 classroom	159 classroom	159 classroom	+8 classroom
District Police Station	1 per 200,000 to 500,000 persons	0	2	2	+2
Divisional Police Station	1 per 100,000 to 200,000 persons	1	2	2	+1
Sub-divisional Fire Station	No set standard	No set standard	2	2	NA
Hospital	5.5 beds / 1000 persons	1752 beds	1385 beds	1700 beds	-52 beds
Specialist Clinic/Polyclinic	1 specialist clinic/ polyclinic whenever a regional or district hospital is built	No set standard	1	1	NA
Clinic/Health Centre	1 per 100,000 persons	3	3	3	0
Post Office	Accessible within 1.2 km in urban	No set standard	5	5	NA
Market	No set standard	No set standard	8	8	NA

Type of Facilities	**Hong Kong Planning Standards and Guidelines (HKPSG)**	**HKPSG Requirement Based on Planned Population[1] (i)**	**Provision**		**Surplus / Deficit (ii)-(i)**
			Existing	**Existing & Planned (ii)**	
Integrated Children and Youth Services Centre	1 for 12,000 persons aged 6-24	3	6	7	+4
Neighbourhood Elderly Centres	No set standard	No set standard	8	9	NA
Integrated Family Services Centres	1 per 100,000 to 150,000 persons	2	3	3	+2
Library	1 district library for 200,000 persons	1	4	4	+3
Sports Centre	1 per 50,000 to 65,000 persons	4	4	4	0
Standard Swimming Pool Complex	1 per 287,000 persons	1	1	1	0
Leisure Swimming Pool	1 per district	1	1	1	0
Local Open Space	10 ha per 100,000 persons	29.82 ha	57.22 ha[2]	57.90 ha	+28.08 ha
District Open Space[3]	10 ha per 100,000 persons	29.82 ha	17.96 ha	29.36 ha	-0.46 ha

Notes:

[1] Based on the 2011 Population Census, the planned population of the OZP Area upon full development of the planned uses was estimated to be about 318,700 persons.

[2] Excluded the area of the Ting On Street Site of 0.22 ha.

[3] Although there is a deficit in District Open Space (DO) for the area, the planned DO for entire Kwun Tong District is in surplus (Planned DO is 96.47 ha (+23.61 ha)).

第五屆觀塘區議會
第八次全會會議記錄

日期: 2017 年 3 月 2 日(星期四)
時間: 下午 2 時 30 分至 6 時 45 分
地點: 九龍觀塘觀塘道 392 號創紀之城 6 期 20 樓 05-07 室
觀塘民政事務處會議室

主席

陳振彬太平紳士, GBS

副主席

洪錦鉉先生

議員

歐陽均諾先生
畢東尼先生
陳俊傑先生
陳國華先生, MH, BBS
陳汶堅先生
陳華裕太平紳士, MH
鄭景陽先生
鄭強峰先生
張琪騰先生
張培剛先生
張順華先生
張姚彬先生
蔡澤鴻先生
符碧珍女士
何啟明先生
徐海山先生
金　堅女士
簡銘東先生
黎樹濠太平紳士, BBS, MH
呂東孩先生
馬軼超先生
莫建成先生
顏汶羽先生
柯創盛先生, MH
蘇冠聰先生
蘇麗珍太平紳士, MH
譚肇卓先生
鄧咏駿先生
謝淑珍女士
黃子健先生
葉興國太平紳士, MH
姚柏良先生

出席會議的政府部門/機構代表

羅莘桉先生, JP	觀塘民政事務專員	
陳碧琪女士	觀塘民政事務助理專員(1)	
麥瑞禧先生	觀塘民政事務助理專員(2)	
趙廣堅先生	候任觀塘民政事務助理專員(2)	
袁旭健總警司	警務處秀茂坪區指揮官	
鍾詠敏高級警司	警務處觀塘區副指揮官	
張凱婷女士	警務處秀茂坪區警民關係主任	
廖健威先生	運輸署高級運輸主任/觀塘	
陸子慧先生	房屋署物業管理總經理(東九龍)	
陳炳華先生	土木工程拓展署高級工程師 6/(九龍)	
葉小明女士	社會福利署觀塘區福利專員	
鄧敏華女士	康樂及文化事務署總康樂事務經理(九龍)	
李樹邦先生	食物環境衞生署觀塘區環境衞生總監	
葉文娟女士, JP	社會福利署署長	議項 II
葉小明女士	社會福利署觀塘區福利專員	
陳婉貞女士	社會福利署觀塘區助理福利專員 1	
梁好有女士	社會福利署觀塘區助理福利專員 2	
陳敏婷女士	社會福利署觀塘區及九龍城區高級社會保障主任	
葉子季先生	規劃署九龍規劃專員	議項 III
蘇月仙女士	規劃署高級城市規劃師/九龍 5	
楊嘉康先生	香港房屋協會助理總監（物業發展及市場事務）	
曾德明先生	香港房屋協會總經理（物業策劃及發展）	
彭卓恒先生	香港房屋協會高級經理（物業策劃及發展）	
葉子季先生	規劃署九龍規劃專員	議項 IV
林達良先生	規劃署城市規劃師/九龍 6	
徐仕基先生	土木工程拓展署總工程師/九龍 1(九龍)	
陳炳華先生	土木工程拓展署高級工程師/6(九龍)	
梁任城先生	職業訓練局副執行幹事	
楊詠珊女士	奧雅納工程顧問	

秘書

李賢斌先生	觀塘民政事務處高級行政主任(區議會)

列席者:

甘遠清女士	觀塘民政事務處高級聯絡主任(1)
梁燕屏女士	觀塘民政事務處高級聯絡主任(2)
蕭潔芝女士	觀塘民政事務處高級行政主任(地區管理)
高楚翹先生	觀塘民政事務處一級行政主任(區議會)

缺席者:

陳耀雄先生
潘任惠珍女士, MH
黃春平先生

議項 III－《觀塘(南部)分區計劃大綱核准圖編號 S/K14S/20》的擬議修訂項目

(觀塘區議會文件第 10/2017 號)

8. 主席歡迎規劃署九龍規劃專員葉子季先生和高級城市規劃師/九龍 5 蘇月仙女士，以及香港房屋協會助理總監(物業發展及市場事務)楊嘉康先生、總經理(物業策劃及發展)曾德明先生和高級經理(物業策劃及發展)彭卓恒先生協助討論。

9. 葉專員介紹文件。

10. 議員提出的查詢及意見如下：

10.1 陳華裕議員表示定安街一帶為 60 年代設計的花園小區，樓宇以私人物業為主，業主既要動用積蓄購置物業，又要繳納高昂的差餉，可享用的休憩設施卻不多。署方擬議的規劃將令居民失去僅有的休憩設施，生活秩序受到影響，他們特別擔心的是：(i)現有康樂體育場地減少；(ii)定安街人流增加，造成煩擾；以及(iii)車流增加，對交通造成進一步壓力，但署方並沒有提出任何交通改善措施。他建議署方考慮：(i)一併發展鄰近賽馬會診所用地，以改善社區設施及規模，提升服務效益；(ii)在過渡期內為居民提供替代休憩設施；(iii)讓定安街可持續發展，為居民帶來最大裨益；以及(iv)重置康樂體育場地供居民使用。他呼籲署方作出共贏的規劃，不應影響當區居民的利益，以免製造地區矛盾。基於以上所述，他不支持文件的改劃建議。

10.2 何啟明議員指出，受影響球場現時的使用率甚高，他建議香港房屋協會(下稱「房協」)考慮：(i)在定安街就近

位置重置球場，以供定安街居民繼續使用；(ii)在原址安置花園大廈居民時，須確保單位面積不變；以及(iii)讓原址安置的住戶遷進新單位後可以繼續使用未用的電費補貼餘額。

10.3 譚肇卓議員建議署方考慮：(i)評估重建花園大廈對定安街、定富街一帶的各種影響，而非只考慮單一用地的發展事宜；以及(ii)延長諮詢期，並作更深入的研究。

10.4 顏汶羽議員建議署方考慮：(i)就花園大廈重建計劃進行深入諮詢；(ii)就重建後新增人口作出相應的交通安排；以及(iii)押後處理文件，讓議員有時間諮詢各持份者。

10.5 莫建成議員建議署方考慮：(i)就花園大廈重建計劃進行更詳盡的諮詢工作，包括擬訂更詳細的規劃、時間表等；以及(ii)向花園大廈街坊解釋原址重置方案，並向區議會提供更多資料。

10.6 洪錦鉉議員顧慮到樓宇老舊會影響結構安全，故支持重建花園大廈，並建議署方考慮：(i)詳細解釋如何彌補改劃建議對附近居民造成的損失；(ii)就定安街一帶(包括附近的賽馬會診所)作整體規劃；以及(iii)先安排房協與區議員溝通，然後才就改劃建議作出決定。

10.7 金堅議員支持花園大廈重建計劃，並建議署方考慮：(i)早日重建較舊，樓齡已超過 50 年的花園大廈第二期；(ii)重新規劃社區設施，改善康樂活動場所缺乏的情況，並加建無障礙設施；(iii)縮短分為三階段並長達 20 年的重建期；(iv)將重建造成的環境污染減至最低；(v)重建後維持現行的租金水平；(vi)重建後增設長者日間護理中心及安老院舍，支援有需要的長者；(vii)重置循道衞理觀塘社會服務處，因該處早期曾協助房協籌募部分經費興建花園大廈，並一直在現址提供社福和宗教服務；以及(viii)延長諮詢期，以優化有關的規劃。

10.8 畢東尼議員詢問署方：(i)有否就文件第 3.4 段所述的籃球場諮詢持份者，以及該球場的使用率為何；(ii)文件

第 3.3 段所述的垃圾收集站在重建期間的過渡安排；(iii)如何安置受影響的 5 000 伙居民；以及(iv)重建會否影響賽馬會診所的運作。

10.9 陳汶堅議員對於能夠原區重建花園大廈表示歡迎，並建議署方考慮：(i)詳細諮詢受影響居民，讓他們了解重建計劃；以及(ii)詳細交代如何補償居民失去的休憩設施。

10.10 鄧咏駿議員建議署方認真聆聽受影響居民的意見，優化改劃建議。

10.11 鄭景陽議員建議署方考慮：(i)優化現有籃球場遷往花園大廈後的接駁安排；(ii)告知居民垃圾收集站在搬遷期間的垃圾收集安排；(iii)到地區諮詢所有持份者，包括互委會；以及(iv)向區議會及街坊介紹未來 10-20 年的社區規劃。

10.12 馬軼超議員建議署方考慮：(i)檢討擬議建築物的高度及地積比率，以免過高而阻礙功樂道、康利道一帶的樓宇景觀；以及(ii)早日向區議會匯報花園大廈重建的擬議建築物高度，避免重建後產生屏風效應。

10.13 蘇冠聰議員建議署方及房協考慮：(i)就改劃及重建建議諮詢所有持份者，包括當區議員；以及(ii)向區議會提供更多資料，並再次徵詢區議會的意見。

10.14 柯創盛議員建議署方/房協考慮：(i)及早向所有持份者透露重建計劃詳情，並加強公眾諮詢及參與；(ii)就各項評估提供更詳盡的資料及報告；(iii)就籃球場搬遷作出實際且為居民所能接受的過渡安排；以及(iv)盡早就重建花園大廈諮詢受影響居民。

10.15 蔡澤鴻議員指出，居於擬議用地附近的居民多為基層街坊，而且重建計劃長達 20 年之久，無需急於興建擬議樓宇，故反對文件的改劃建議。他建議署方多與當區居民及議員溝通。

10.16 張琪騰議員建議署方考慮為受影響區域增值，例如在擬

建樓宇地下增設診所，以應付未來的額外需求，讓附近街坊有所得益。

10.17 張培剛議員建議署方考慮就議員提出的意見再作研究，稍後再諮詢區議會。

11. 署方就議員的查詢及意見回應如下：

11.1 花園大廈重建計劃：署方表示，是次改劃土地用途提供了契機啟動重建花園大廈。重建計劃的第一步，是在擬議用地發展房屋，從而原區安置花園大廈部分原有居民，隨後便可展開花園大廈重建計劃。署方相信房協作為負責任的機構，稍後便會就重建計劃的流程及安排詳細諮詢居民。由於重建計劃處於改劃土地作住宅用途的初始階段，加上興建樓宇工程，相信數年後樓宇才可落成以供調遷之用，房協在這段期間會就優化有關安排與居民及區議會繼續溝通。署方亦會應議員的要求，與居民就重建計劃進行溝通。在各項影響評估方面，以交通影響評估為例，署方指根據房協的評估，由於發展規模相對較小，故不會對交通造成重大影響。就向區議會提供有關的評估報告事宜，署方會與房協聯絡及跟進。

[會後補註: 房協現正更新有關報告，稍後會把報告提交區議會秘書處，供議員參考。]

11.2 休憩設施的安排：署方表示，房協在過渡期間會在花園大廈範圍內提供多半個籃球場及一個太極場地，長遠而言則會在花園大廈重建後提供多一個籃球場及在擬議用地設有一個多用途球場。此外，有關發展會在一樓至三樓提供休憩空間，相對於用地目前只有一個籃球場和斜坡，房協未來會提供較多休憩設施予公眾使用。

11.3 整體地規劃受影響區域：署方表示，已就會否一併重建鄰近於 1984 年落成的牛頭角賽馬會診所聯絡衞生署，由於該診所使用率甚高，暫時未有重建計劃，故不會包括在是次發展計劃內。

11.4 諮詢工作：署方表示，已聯同房協與相關區議員作初步

接觸，並會在下一階段作進一步商討，以優化有關計劃。

11.5 垃圾收集站的過渡安排：署方解釋，在興建樓宇期間，現有的垃圾收集站會繼續如常運作，直至新的垃圾收集站落成啟用為止，兩者會無縫銜接，以確保垃圾收集服務不受影響。

11.6 擬建樓宇高度會否影響附近功樂道一帶樓宇：署方表示，擬議用地建議改劃為「住宅(甲類)」地帶，總地積比率最高為 9 倍，與附近其他同類用地的地積比率限制相同。在樓宇高度方面，建議高度上限為主水平基準上 110 米，與周邊發展的高度相若，例如不會高於附近高度約為 130 米至 143 米的牛頭角上邨。

11.7 現有籃球場使用率：署方表示，由於受影響籃球場的使用率甚高，房協在過渡期間會有重置安排。

11.8 房協的補充資料：

11.8.1 花園大廈重建計劃：由於花園大廈樓齡達 50 年，故計劃將之重建，以提供新的屋邨設施予居民使用。原則上期望可原區安置，在區內物色合適的土地作重建用途。最終經了解社區的需要及關注後，建議在定安街的 0.22 公頃土地上興建 400 個住宅單位，並同時改善該區的環境、衞生及交通，例如建議原址重建垃圾收集站。

11.8.2 籃球場的使用：由於受影響籃球場的使用率甚高，加上附近休憩設施不多，故建議在擬議用地建成後增設一個多用途球場。在過渡期間亦會採取臨時措施，改建花園大廈範圍內現有籃球場，並增設太極場地。長遠而言，重建後的花園大廈會提供足夠的康樂設施予區內居民使用。

11.8.3 啟動重建計劃：花園大廈現有 2,300 個單位，重建計劃將會分三期完成，要啟動重建計劃，首先須要在定安街興建 400 個單位，調遷部份受重建影響的居民。若規劃程序順利通過，預計可在一

至兩年內啟動工程，定安街項目預計完工日期為2022年，而整個花園大廈重建項目則暫訂在2040年完工。因此，會有足夠時間就花園大廈的設計、布局、居民需要等各方面進行諮詢。房協十分樂意與當區議員、互委會及居民深入商討，了解居民的需要。

[會後補註：房協將會安排於五月份舉行發佈會，邀請定安街居民、花園大廈住戶及相關持份者包括區議員等出席，就定安街改劃土地用途及花園大廈重建項目溝通。]

12. 署方補充，定安街項目已應居民的訴求來設計，包括提供休憩設施、設置通道方便居民由牛頭角道前往定安街、設立長者鄰舍中心等。房協亦會探討議員的建議是否可行。

13. 主席總結，議員均期望重建花園大廈。由於重建計劃長達20年，署方應重新檢討文件內容，作出詳細的整體規劃，以便充分諮詢各持份者。房協亦須讓區內街坊知悉籃球場的臨時安排。

14. 大會備悉文件。

第五屆觀塘區議會屬下
房屋事務委員會
第十一次會議記錄

日期：2017年7月18日(星期二)
時間：下午2時30分
地點：九龍觀塘觀塘道392號創紀之城6期20樓05-07室
觀塘民政事務處會議室

出席者：

柯創盛議員, MH (主席)
歐陽均諾議員
畢東尼議員
陳俊傑議員
陳國華議員, BBS, MH
陳汶堅議員
陳華裕議員, MH, JP
陳耀雄議員
鄭景陽議員
鄭強峰議員
張琪騰議員
張培剛議員
張順華議員, MH
張姚彬議員
蔡澤鴻議員
徐海山議員
符碧珍議員 (副主席)
洪錦鉉議員, MH
金　堅議員
簡銘東議員
黎樹濠議員, BBS, MH, JP
呂東孩議員
馬軼超議員
莫建成議員
顏汶羽議員
蘇冠聰議員
蘇麗珍議員, MH, JP
譚肇卓議員
謝淑珍議員
黃子健議員
黃春平議員

增選委員

方美玲女士
許有為先生
李嘉恒先生
梁騰丰先生
吳偉俊先生

出席會議的政府部門代表

陳碧琪女士	觀塘民政事務助理專員(1)	
李賢斌先生	觀塘民政事務處高級行政主任(區議會)	
秦名詩女士	房屋署建築師(119)	) 議項II
莫國禧先生	房屋署高級房屋事務經理/東九龍(1)	

出席會議的香港房屋協會代表

彭卓恒先生	高級經理(物業策劃及發展)	) 議項IV
何劉淑如女士	經理(物業策劃及發展)	)

秘書

李蕙雯女士　觀塘民政事務處行政主任(區議會)3

缺席者：

蔡澤鴻議員　曾佑祥先生
姚柏良議員, MH

IV. <u>續議事項</u>

9. 香港房屋協會(下稱「房協」)代表向委員介紹項目。

10. 委員提出的意見及查詢如下：

10.1 委員均支持觀塘花園大廈(下稱「花園大廈」)進行重建，但認為定安街的噪音及塞車問題嚴重，未必適合作原區安置選址，希望房協能有更好的規劃及提供後備方案。委員建議房協可考慮使用花園大廈孔雀樓附近的球場用地進行重建；

10.2 委員擔心花園大廈重建後會影響附近屋苑的居住環境和景觀，希望房協能作出妥善的計劃，並就重建項目詳細諮詢各持份者，包括附近居民及區議員；

10.3 委員關注花園大廈與附近社區的連接，期望重建可使道路配套設施更為完善；

10.4 委員向房協反映，花園大廈居民擔心重建後租金上升和單位面積縮小，希望房協可顧及居民需要。居民亦憂慮定安街項目與花園大廈相距較遠，因而影響治安；

10.5 委員理解定安街項目重置的垃圾收集站將會是密封式設計，但居民仍擔心其環境衞生及造成氣味影響；

10.6 委員認為整項重建計劃需時過長，會持續影響附近居民，建議房協考慮其他時間較短的重建方案；以及

10.7 委員建議房協可就重建計劃提供更詳細的資料予委員會參考。

11. 房協就委員的意見及查詢回應如下：

11.1 房協指出定安街項目是暫時唯一較可行的原區安置方案，而此項目亦可有效推動區內發展。房協一直就花園大廈重建計劃與規劃署保持緊密溝通，亦曾研究不同方案的可行性，包括使用花園大廈孔雀樓附近的球場用地，但該幅土地有其發展限制，只可提供有限的安置單位，並未能配合重建計劃所需；

11.2 房協會遵從政府部門相關的指引並作仔細評估，盡量避免重建後影響附近屋苑的景觀；

11.3 房協亦回應委員期望重建後的花園大廈與附近社區及港鐵站有更好的連接，指出在可行情況下會盡力配合；

11.4 就重建後的租金水平，房協會按當時實際情況而定，而單位面積則會參考香港房屋委員會的指引作為基準。房協指出定安街項目的保安會由物業管理部負

責，相信部門會致力維持治安水平；

11.5 房協表示重置之垃圾收集站會交由食物環境衞生署管理，相信該署會盡力維持環境清潔；

11.6 房協表示由於重建工程分階段進行，故需時較長，但房協亦會研究可否加快工程進度。在施工期間，房協會嚴格監管工程及遵守相關法例，避免對附近居民造成滋擾；以及

11.7 房協指出重建計劃仍處於初步階段，待有進一步較清晰的資訊，會盡早和區議會及各委員溝通。

12. 主席建議房協備悉委員對重建計劃的意見，並期望房協可把任何修訂資料及早通知委員會，讓委員掌握重建計劃的進展。

胡志偉 立法會議員辦事處
Office of Legislative Councillor Wu Chi Wai
地址：九龍觀塘和樂邨長安樓地下104室 電話：3567 0304 傳真：3567 0694

香港銅鑼灣告士打道280號
世界貿易中心29樓
香港房屋協會
總經理(物業策劃及發展)
曾德明先生

電話：28397888
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有關：牛頭角花園大廈重建計劃

曾總經理：

據悉香港房屋協會位於牛頭角的花園大廈將會重建，政府現時建議改劃近安定街及牛頭角道之間的一幅「政府、機構或社區」用地，交由房協作公共房屋發展，作為重建花園大廈時，安置現有住戶之用。

於3月15日，民主黨立法會議員胡志偉聯同一眾觀塘區議員及社區主任，邀約　貴會就花園大廈重建事宜會面。會上我們就上述重建項目向　貴會提出下列意見：

1. 善用大廈樓層 增加社區公共空間

據了解，現時定安街用地擬建的樓宇中，地下設有停車場，提供12個泊車位，L1層暫時興建機電房、火牛房及少量商鋪。我們認為房協應該善用相關空間，於L1層取消興建商鋪，並將機電房及火牛房放置在地下的停車場位置，騰出L1的空間作為室內的多用途設施，例如社區會堂或室內球場等，以改善區內長期欠缺舉辦社區活動場地的問題，亦可補償居民因重建而失去的籃球場等公眾空間。

2. 增加升降機數量

現時的發展建議當中，在新落成的大廈內會設有兩部升降機，以連接定安街與牛頭角道，加強花園大廈及定安街的居民之間的流動，並作為無障礙通道之用。我們擔心現階段的設計只有兩部升降機，其數量不足以應付人流所需。我們歡迎現時房協將L3預留作長者鄰舍中心，作為長者社區服務或日間照顧服務用途，惟我們擔心日後只有兩部升降機，而沒有獨立的升降機供長者鄰舍中心，會令依靠輪椅上落的長者構成不便。在繁忙時間也會出現居民及往返長者鄰舍中心的人士，爭相使用升降機。因此我們希望房協在設計增加升降機數量至4部以應付人流需要。

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3. 租金及搬遷支援安排

有居民對花園大廈重建表示支持，惟居民對重建後的租金加幅及搬遷支援有一些擔心。房協過往曾有不少重建資助房屋的經驗，例如觀龍樓及明華大廈項目等，房協為重建而搬遷的居民在租金及搬遷支援為何？再者，新單位之大小是否因應舊址單位而分配？

4. 觀塘循道衛理社區服務處會址安排

觀塘循道衛理社區服務處(簡稱：「觀循」)已服務觀塘的街坊超過 50 年歷史，而且當年還出資協助興建花園大廈。我們希望房協盡快與觀循商討其安置問題，並確保觀循能原區安置。

5. 邀請房協代表出席地區居民會

現時居住在花園大廈及定安街附近的居民表示，他們並不知道重建計劃的訊息，因此我們要求　貴會日後能夠派代表出席地區居民會，廣泛諮詢及聽取居民意見。

希望　貴會能接納我們的建議，並就上述問題作出回覆，如有任何查詢，歡迎致電　　予社區主任陸大恒或　　予黃正峰聯絡。

順祝

工作順利！身體健康！

立法會議員 胡志偉
觀塘區議員 陳汶堅 莫建成 鄭景陽
民主黨九龍東支部主席 黃啟明
民主黨社區主任 黃正峰 陸大恒
孔雀樓互助委員會主席 鄭滬娟
謹啟

2017 年 3 月 21 日

陳 華 裕 議 員 辦 事 處

觀塘翠屏北邨翠梓樓 M2 層 108B 舖
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敬啟者：

茲就牛頭角定安街籃球場改劃為住宅用途事，本處於 9/5/2017 向本區坊眾透過問卷方式收集意見。茲列其結果向　鈞座反映，敬請　參詳。

若有任何查詢，可直接與本人聯絡 (電話：　　) 。

此致
香港房屋協會　彭經理　　(電郵：changpang@hkhs.com)
規劃署　葉子季專員　　(電郵：enquire@pland.gov.hk / tspd@plland.gov.hk)
觀塘民政事務專員　羅莘桉太平紳士　(電郵：dokt@had.gov.hk)

觀塘區議員

陳華裕　　謹上
二〇一七年六月九日

副本：陳華裕校長 (電郵：nchan77@netvigator.com)

陳華裕議員辦事處
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問卷調查結果報告

本辦事處就牛頭角定安街籃球場改劃為住宅用途於 9/5/2017 向本區坊眾透過問卷方式收集意見。茲就調查結果撰寫報告如下：

是次調查共發出 1,950 份問卷，收回 73 份。有 40% (29 人) 贊成，42% (31 人) 反對，12% (9 人)無意見，6% (4 人)有其他建議 (詳見附件 A1-A4)。

茲綜合有關問卷調查結果，分析如下：不管回覆者是反對還是支持，他們都認為要好好規劃定安街的發展，特別重視如何配合整體區域之所需。若單單為了應付住房的需要，而犧牲當區居民僅有的康樂設施是不智的，特別是把現有籃球場改建成一座房協的出租屋及日後只剩得半個籃球場，根本就是漠視區內居民之使用康樂設施者之訴求。縱使有其他的配套，如長者服務中心、十餘個停車位等也不足以應付日後社區的發展。

最令人失望者是為何不利用現有花園大廈的籃球場作其重建的工作，相反摧毀了寧靜的社區。當中包括砍伐樹木等，可謂削足適履，實非長遠之策略。此外，政府理應有計劃為定安街於重建時作妥善規劃，為此舊區居民帶來裨益與持續發展，使這班開荒牛同樣分享經濟發展的成果。

研究的另一個重點是：有 59%區內人士表示需要有一個完整的籃球場，訴求之大，不容忽視，因現時花園大廈之籃球場使用率低，甚至可作其他用途！而定安街乃市肺之所在，兩者確實不同。

至於日後興建時大部份市民擔心有：

1. 工程帶來的噪音滋擾；
2. 打樁工程對舊有建築物結構造成的破壞；
3. 空氣污染；
4. 工程車進出工地時帶來區內的交通擠塞；
5. 綜合環境帶給定安居民之不良影響；
6. 對到診所就診人士帶來滋擾；
7. 新建 28 層高的大廈會阻擋旁邊樓房的空氣流通，及
8. 鑑於行人路狹窄，現有盲人輔助之凸線設計較易絆倒途人需改良至安全式設計。

在建議方面：

1. 增設無障礙通道
2. 關顧南亞裔人士失去聚落地點帶來的負面影響，並應就此採取補救措施
3. 增設連鎖快餐店(如大家樂、麥當奴等)
4. 該處對面即將變身為全港第二個商業中心(CBD)，潛能發展非常，單建 400 個房舍單位，就犧牲了整區長遠的發展，實不合理。如何審視並配合整區之規劃，規劃署務必多方考慮為荷！

5. 應先行解決對面近觀塘道一帶的單幢樓宇，因那處非常貼近港鐵路軌，同時亦靠近觀塘道行車路，噪音超標滋擾非常，令人生活在煉獄般，收購這些樓宇改建其他發展是政府或市區重建局當務之急，亦可為當區居民帶來舒適的居住環境。

上述調查，只作拋磚引玉，祈盼能對有關部門在改劃上述設施時能為居民多作考慮及為其帶來一點裨益。

陳華裕議員辦事處

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規劃署有意把定安街籃球場改劃為住宅用途，並擬興建出租屋邨，同時亦會重建現有垃圾站。新樓高 28 層之基座建築，低層為商舖，另設升降機方便上落牛頭角道、開設長者服務中心、停車場、重建後的垃圾站、籃球場及乒乓球多用途室等，方便坊眾。本辦事處就上述改劃，現透過問卷收集各持份者之意見，俾作跟進及參考。問卷結果如下：

1. 你會否支持上述改劃土地用途，以作日後興建出租屋邨及其他社區配套設施？
   ○支持(29) ○反對(31)　○無意見(9)　○其他(4) _____

2. 你是否經常使用現有的籃球場？
   ○經常(14) ○間中(34)　○未曾使用過(23) ○其他 (3)_____

   *如答經常或間中者，你認為該籃球場應：
   ○保留為一個標準面積(59)　○可接受半個(8)　○無意見(6)

3. 在施工期間，現有的籃球場將會暫設於花園大廈孔雀樓旁邊。待完工後，現有的籃球場將會設於重建後之觀塘花園大廈內予公眾使用，有何意見？
   ○支持(16) ○反對(29) ○無意見(14) ○其他(3)_____

4. 若重建後，在基座上有以下的設施：
   ① 長者服務中心　○支持(46) ○反對(5) ○無意見(11) ○其他(0)___
   ② 半個籃球場　○支持(24) ○反對(13) ○無意見(15) ○其他(10)__
   ③ 乒乓球及多用途室　○支持(40) ○反對(8) ○無意見(11) ○其他(0)___
   ④ 公眾停車位　○支持(32) ○反對(14) ○無意見(14) ○其他(0)___
   ⑤ 隱蔽式的垃圾收集站　○支持(44) ○反對(6) ○無意見(10) ○其他(0)___
   ⑥ 兩台往牛頭角道升降機　○支持(48) ○反對(5) ○無意見(7) ○其他(0)___
   ⑦ 其他建議：
   _____

5. 在施工期間，你會否擔心工程帶來的影響？
   ○不擔心(23)　○擔心：(40)_____
   _____

6. 你認為上述改劃應重點關注甚麼？
   ○交通負荷(20) ○重置現有設施(20)　○如何配合地區發展(46)
   ○其他：(13)_____

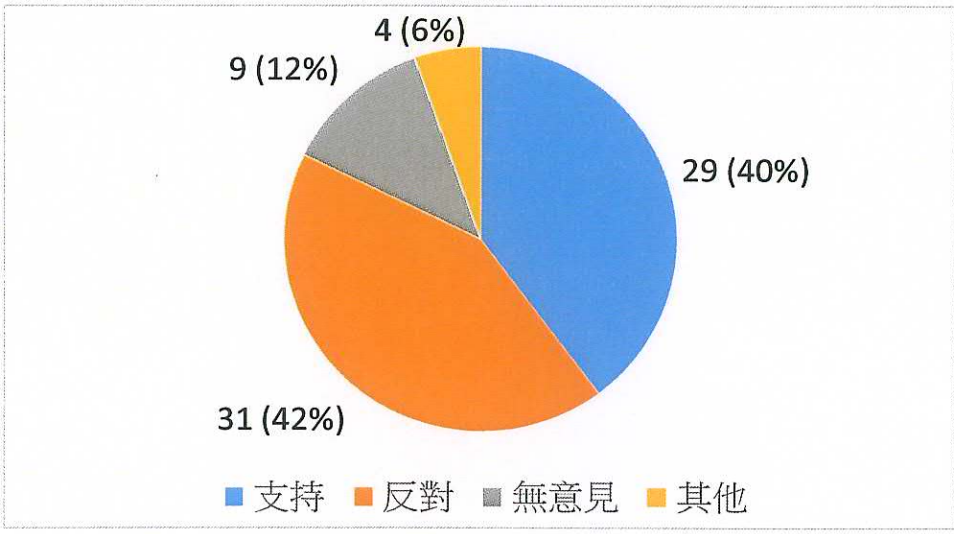
7. 以下個人資料或作必要時之聯繫用，資料絕對保密，並會在問卷調查後銷毀。
   姓名：_____　電話：_____

請填妥問卷後，於 17/5/2017(星期三)前傳真至 2811-1872 或交本辦事處彙集跟進。

共印 2,500 份

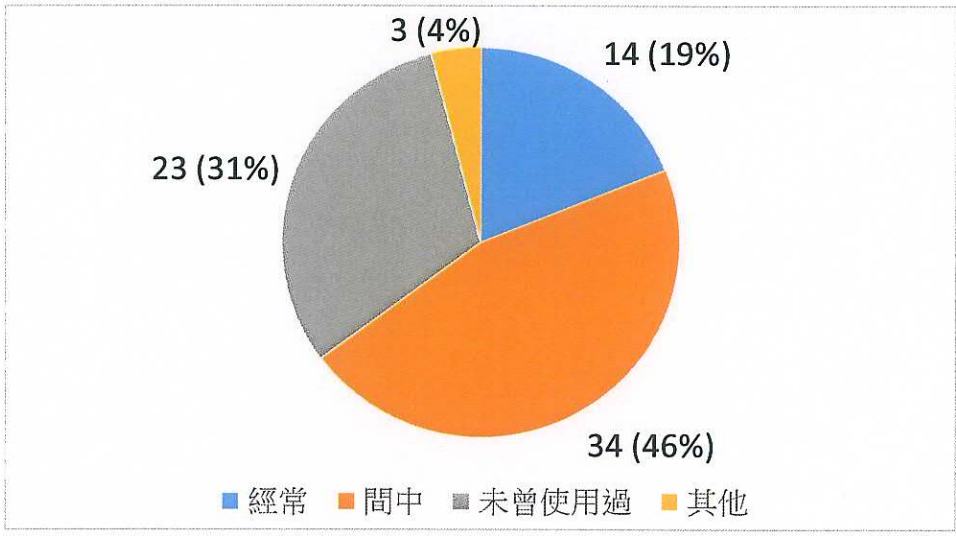
1. 你會否支持上述改劃土地用途，以作日後興建出租屋邨及其他社區配套設施？

○支持 29　○反對 31　○無意見 9　○其他 4 _____



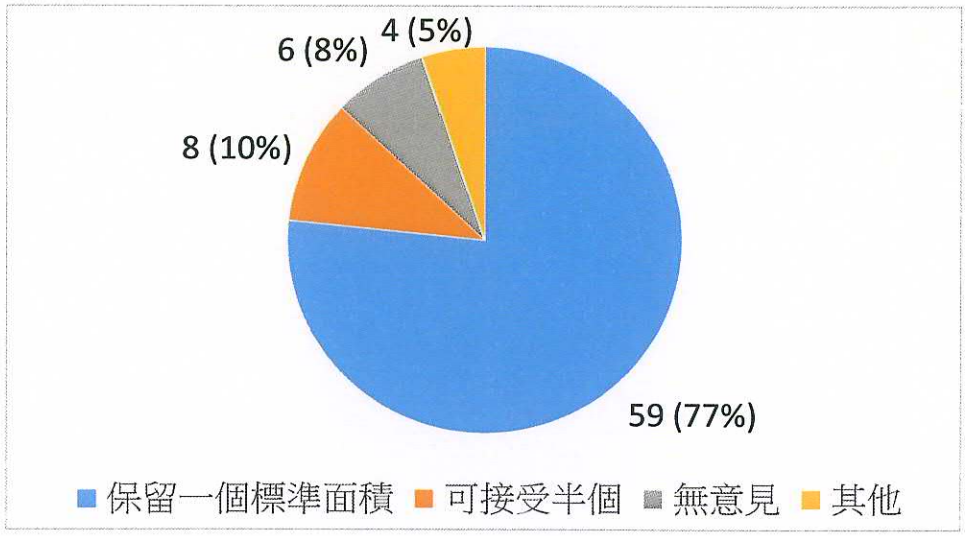
2. 你是否經常使用現有的籃球場？

○經常 14　○間中 34　○未曾使用過 23　○其他 3 _____



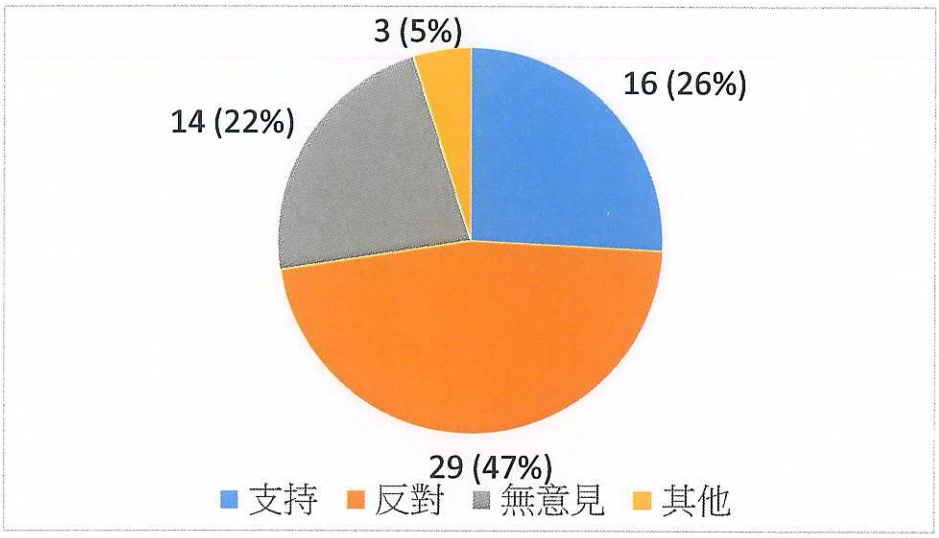
*如答經常或間中者，你認為該籃球場應：

○保留為一個標準面積　○可接受半個　○無意見



3. 在施工期間，現有的籃球場將會暫設於花園大廈孔雀樓旁邊。待完工後，現有的籃球場將會設於重建後之觀塘花園大廈內予公眾使用，有何意見？

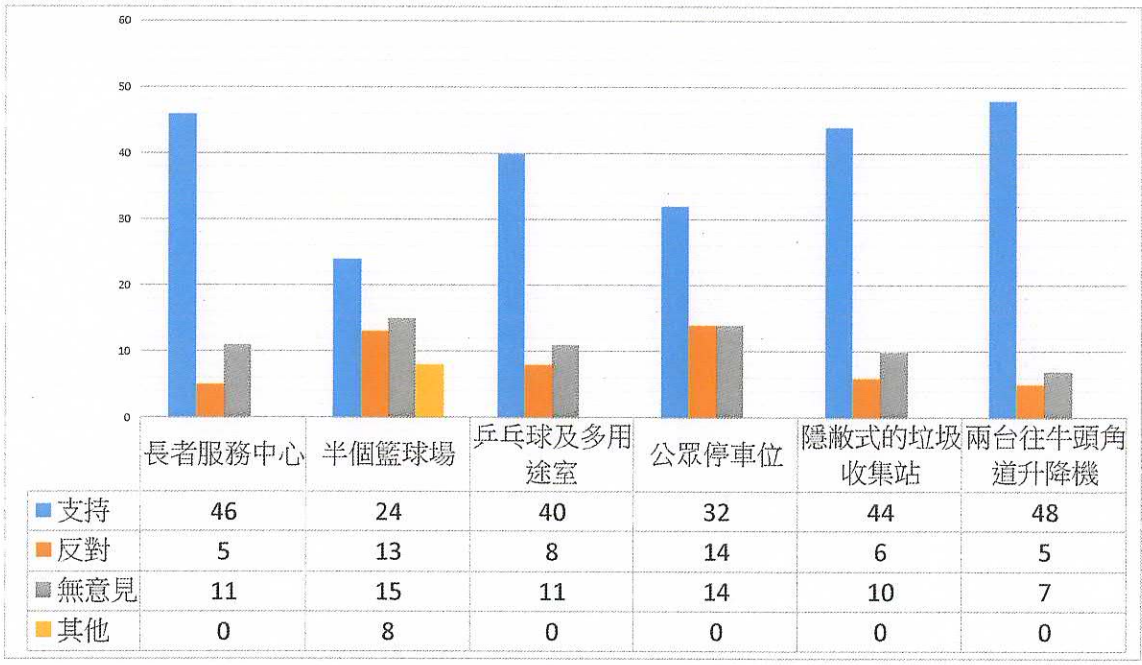
○支持 16　○反對 29　○無意見 14　○其他 3 _____



4. 若重建後，在基座上有以下的設施：

① 長者服務中心	○支持	○反對	○無意見	○其他_____
② 半個籃球場	○支持	○反對	○無意見	○其他_____
③ 乒乓球及多用途室	○支持	○反對	○無意見	○其他_____
④ 公眾停車位	○支持	○反對	○無意見	○其他_____
⑤ 隱蔽式的垃圾收集站	○支持	○反對	○無意見	○其他_____
⑥ 兩台往牛頭角道升降機	○支持	○反對	○無意見	○其他_____

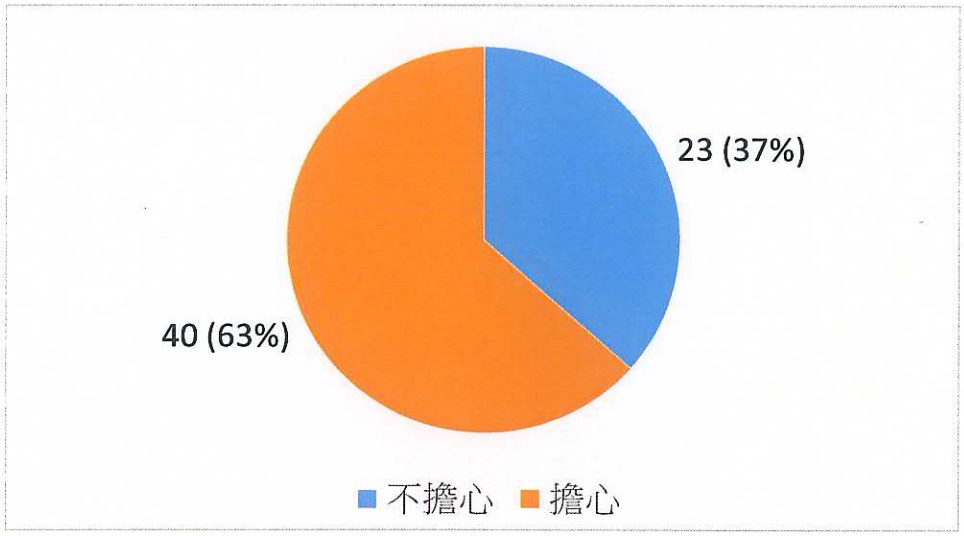
⑦ 其他建議：_____



	長者服務中心	半個籃球場	乒乓球及多用途室	公眾停車位	隱蔽式的垃圾收集站	兩台往牛頭角道升降機
支持	46	24	40	32	44	48
反對	5	13	8	14	6	5
無意見	11	15	11	14	10	7
其他	0	8	0	0	0	0

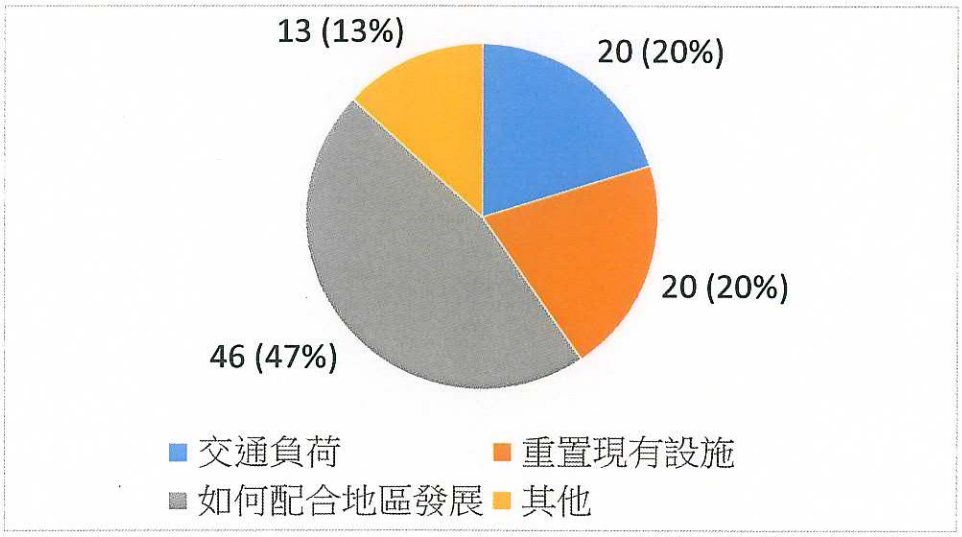
5. 在施工期間，你會否擔心工程帶來的影響？

○不擔心 23　　○擔心 40：_____



6. 你認為上述改劃應重點關注甚麼？

○交通負荷 20　○重置現有設施 20　○如何配合地區發展 46　○其他 13：_____



The Gist of Residents' Views of the
Proposed Public Rental Housing Development at Ting On Street, Ngau Tau Kok for Decanting Purpose to Facilitate the Redevelopment of Kwun Tong Garden Estate II

Subsequent to the District Council (DC) consultation on 2 March 2017, two briefing sessions were conducted by Hong Kong Housing Society (HKHS) for the residents of Ting On Street (TOS) area on 15 May 2017 and the tenants of Kwun Tong Garden Estate II (KTGE II) on 22 May 2017 respectively.

(A) Briefing Session on 15 May 2017

The briefing session was targeted at the residents of TOS area. There were 49 attendees including 36 TOS area residents, 5 KTGE II tenants and 8 DC members/assistants including Mr Chan Wah-yu, Nelson of the local constituency.

Residents raised concerns on the rezoning proposal as highlighted below :-

1) The proposed development would generate additional population and traffic that would burden the TOS area.

2) The proposed development would affect the air ventilation of the locality.

3) The resident's enjoyment of the existing basketball court would be jeopardized. The temporarily reprovisioned basketball court in KTGE II is considered too far away from TOS area.

4) Felling of existing trees to make way for the proposed development would destroy the amenity value of the Site.

5) The existing amenity facilities, upon reprovisioning, should be made available for use of the public without limitation in terms of eligibility and opening hours.

6) The disturbance and adverse health impacts to the residents, occupiers in the neighborhood and the adjoining Jockey Club Clinic during construction period. It is also worried that the construction may affect the structural stability of buildings in close proximity.

7) The Site is considered not suitable for the proposed rental housing development. Instead, other locations such as Kai Tak, Hoi Bun Road Park and the existing basketball court in KTGE II should be more appropriate.

8) HKHS should collaborate with the Housing Authority (HA) for making use of its public housing resource for re-housing the affected tenants of KTGE II redevelopment.

9) HKHS should carry out a comprehensive consultation of the TOS area residents before putting forward this rezoning proposal to the Town Planning Board (TPB) for consideration.

B. <u>Briefing Session on 22 May 2017</u>

The briefing session was targeted at the tenants of KTGE II who would be affected by the proposed redevelopment of the aging rental housing estate. There were 222 attendees including 205 tenants of KTGE II, 4 tenants of KTGE I, 9 DC members/assistants including Ms Kam Kin of the local constituency and 4 staff members of a local Non-Governmental Organization (NGO).

Ms Kam Kin, presented in the briefing session her findings concerning her own consultation of the affected tenants of KTGE II through questionnaires and home visits as follows :-

1) Among the 280 questionnaires received from the rental housing units, 72% supported, 14% objected to and 14% had no comment on the proposed redevelopment.

2) Among the enquiries through 702 home visits, 63% supported, 13% objected to and 24% had no comment on the proposed redevelopment.

Also, the supportive tenants expressed their grave concern on the extra long redevelopment process requested for an expedition of the redevelopment programme, urged HKHS' to maintain the existing low rental level and to provide no less living floor area for the new rental units in both the proposed development and redevelopment.

Some of the non-supportive tenants expressed that they were satisfied with the existing living environment and would not be able to get used to the unfamiliar new living environment. Some of them claimed that they were ageing or living alone and could not afford to remove to or decorate the new rental units. Some even considered that the demolition of building was not environmental friendly and redevelopment should be avoided.

Tenants presented in the briefing session generally indicated their no objection to the redevelopment but raised some other concerns as highlighted below :-

1) There is a need to strike a balance between the interests of the residents of TOS area and the tenants of KTGE II, e.g. by providing a pedestrian connection between the proposed development and the KTGE II redevelopment.

2) It is considered that the 3-phase redevelopment programme is far too long. They urged HKHS to find another large rehousing site to provide sufficient rehousing units to accommodate all affected tenants with a view to expediting the redevelopment programme. A suggestion is to make use of the Jockey Club Clinic, Ngau Tau Kok Road playground and even Kwun Tong Government Primary School as a larger rehousing site.

3) The stacking over of the residential tower above the refuse collection point may cause hygienic problem to the residents above.

4) More facilities in serving the elderly tenants of KTGE II should be provided in the proposed development and the KTGE II redevelopment.

5) The noise from the reprovisioned basketball court, which may be opened 24 hours a day, may disturb the residents of the proposed development.

6) The air pollutants from the air ventilation system of nearby Jockey Club Clinic may affect the health of residents of the proposed development.

7) In order to mitigate the potential noise and traffic impacts, consideration should be given to not providing any parking facility in the proposed development and accommodating parking facilities in the KTGE II redevelopment instead.

Details of Public Views Received and Responses from the Hong Kong Housing Society

Views/Comments from the KTDC and Local Stakeholders	HKHS's Responses
Views/Comments on the Proposed Development at the Ting On Street Site	
Impact on the Surrounding Area	
1. The proposed development would generate additional population and traffic that would burden the Ting On Street area.	The proposed development will provide 378 nos. of flats accommodating 1,058 people (assuming 2.8 persons per flat). As the number of traffic generated by the proposed development is small (about 34 passenger car units/hour in the morning peak) and given that sufficient parking and L/UL facilities be provided within the Site, the TIA concluded that the proposed development would not cause adverse traffic impact to the road network in the surrounding areas. The C for T has no adverse comment on the findings of the TIA and no objection to the proposal.
2. The proposed development would affect the air ventilation of the locality.	The AVA showed that the proposed high-rise tower will induce downwash wind that would be beneficial to areas close to the Site including Ting On Street, Ngau Tau Kok Road, the Ngau Tau Kok Jockey Club Clinic. Whereas, air ventilation in some areas would be slightly worsened (including Ting Yip Street, On Tak Road, Ting Yu Square and Ting Yu Square Temporary Sitting-out Area). Mitigation measures on stepped terrace design and minimized podium design with maximal provision of landscape areas will be proposed to address the adverse effect. The AVA recommended that further quantitative AVA should be carried out in later design stage to explore more opportunities on scheme improvement.
3. Felling of existing tress to make way for the proposed development would destroy the amenity value of the Site.	According to the TSR, there are 37 trees in the Site, which are mostly along the slope where public enjoyment is limited. Existing trees are mainly common species with fair to poor form, amenity value, health and structural conditions. Compensatory planting of 39 trees within the landscaped areas at the public accessible podium of

Views/Comments from the KTDC and Local Stakeholders	HKHS's Responses
	future development will be provided. The proposed rezoning is in line with the policy objectives in enhancing housing supply and better utilising land resource.
4. In order to mitigate the potential noise and traffic impacts, consideration should be given to not providing any parking facility in the proposed development and accommodating parking facilities in the KTGE II redevelopment instead.	Minimal parking facilities would be provided in accordance with the current HKPSG to serve the need of the residents and occupiers of the proposed rental housing development. The TIA assessed the provisions and confirmed that these would not cause adverse traffic impact in the vicinity.
5. The disturbance and adverse health impacts to the residents and occupiers in the neighbourhood during construction period. It is also worried that the construction may affect the structural stability of buildings in close proximity.	Currently, construction works are subject to the control of relevant environmental legislation. As set out in the EA, HKHS had committed to adopting various mitigation measures, e.g. good construction site management, minimization of stockpiling and covering of stored materials, in order to minimise the disturbance to the residents during the construction period. HKHS will closely monitor the construction works and ensure no adverse impacts to the surrounding.
6. The air pollutants from the air ventilation system of nearby Jockey Club Clinic may affect the health of residents of the proposed development.	The air ventilation system is used for purposes of thermal comfort only. It does not generate air pollution.
Provision of GIC facilities	
7. The E&M and parking facilities of the proposed development should be put underground so as to make rooms for providing more GIC facilities at the ground floor level.	Given the small footprint, there are constraints to put the parking facilities underground. GIC facilities including a neighbourhood elderly centre, public accessible open/covered landscape, a half-size basketball court/multi-purpose playground, a covered activities area are to be provided within the proposed development.

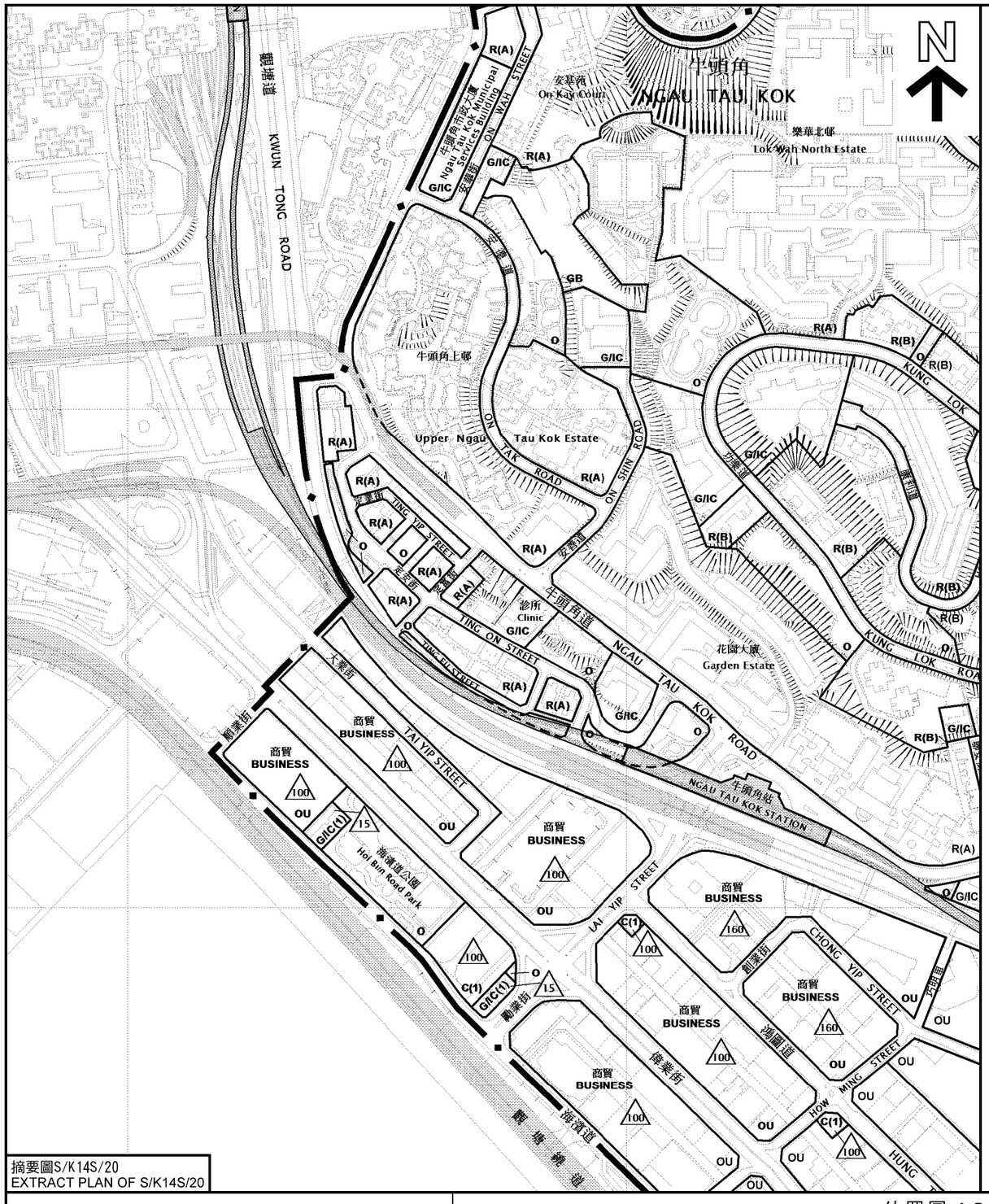
Views/Comments from the KTDC and Local Stakeholders	HKHS's Responses
8. Sufficient GIC facilities should be provided in the area.	Apart from the reprovisioning of the ball court and a RCP up to district standard within the proposed development, a permanent one will be provided in the future redevelopment in KTGE II. The project would also bring some planning gains to the Ting On Street neighbourhood, such as the barrier-free pedestrian linkage that helps to overcome the level difference between Ting On Street and Ngau Tau Kok Road, landscape garden for public enjoyment and a neighbourhood elderly centre to meet the demand for the elderly services. There is generally sufficient major GIC facilities.
9. The residents' enjoyment of the existing basketball court would be jeopardized. The temporarily reprovisioned basketball court in KTGE II is considered too far away from Ting On Street area.	Prior to commencement of the proposed development, HKHS will modify the existing basketball court next to Hung Cheuk Lau of KTGE II (within walkable distance of 250m from the Site), into one and a half basketball courts, a Tai Chi court and seating area for public enjoyment. A permanent one will be provided in the future redevelopment in KTGE II. A half-size basketball court/multi-purpose playground would be permanently provided within the Site to serve the general public.
10. The existing amenity facilities, upon reprovisioning, should be made available for use of the public without limitation in terms of eligibility and opening hours.	Similar to the existing basketball court, the future ball court/multi-purpose playground, pedestrian accesses leading to ball court and the covered landscape areas etc. would be open to the public from 7:00 am to 11:00 pm.
11. The noise from the reprovisioned basketball court, which may be opened 24 hours a day, may disturb the residents of the proposed development.	The basketball court to be re-provisioned would follow the arrangement of the existing basketball court for opening to the public from 7:00am to 11:00pm. Also, it should be of proper design and disposition to eliminate the disturbance to the

Views/Comments from the KTDC and Local Stakeholders	HKHS's Responses
	residents.
12. The stacking over of the residential tower above the refuse collection point may cause hygienic problem to the residents above.	The RCP to be re-provisioned in-situ on site should follow the latest design standard and requirements of the HKPSG by enclosing the whole facilities and allowing entry of Refuse Collection Vehicle. To minimize nuisance to the public and people living nearby, it would be provided with odour control equipment and ventilation. Also, it would be equipped with high water pressure cleaning and leachate drainage and disposal system. Upon completion, it would be taken over for management and maintenance by the FEHD. There are in fact similar arrangements of incorporating public RCP within the podium of residential development without causing hygienic problem to the residents above.
13. Additional shuttle lifts should be provided within the proposed development.	There will be two shuttle lifts provided in the podium structure of the proposed development. These should be sufficient to serve as part of the barrier-free pedestrian access for the public.
Other specific comments on the Proposed Development	
14. The Site is considered not suitable for the proposed rental housing development. Instead, other locations such as Kai Tak, Hoi Bun Road Park and the existing basketball court in KTGE II should be more appropriate.	The location of the proposed decanting site generally respected the demand for rehousing in the same district. The current rehousing arrangement aims at minimizing the difficulties of the tenants, especially those elderly, to be affected by the redevelopment. The Site falls within a neighbourhood primarily occupied by medium- to high-rise residential buildings and the proposed development would by largely compatible with the existing prevailing land uses in proximity to the Site. A number of technical assessments were conducted which demonstrated that the proposed development would not induce adverse impacts to the surrounding areas from traffic, urban design, air ventilation, environmental, visual, water

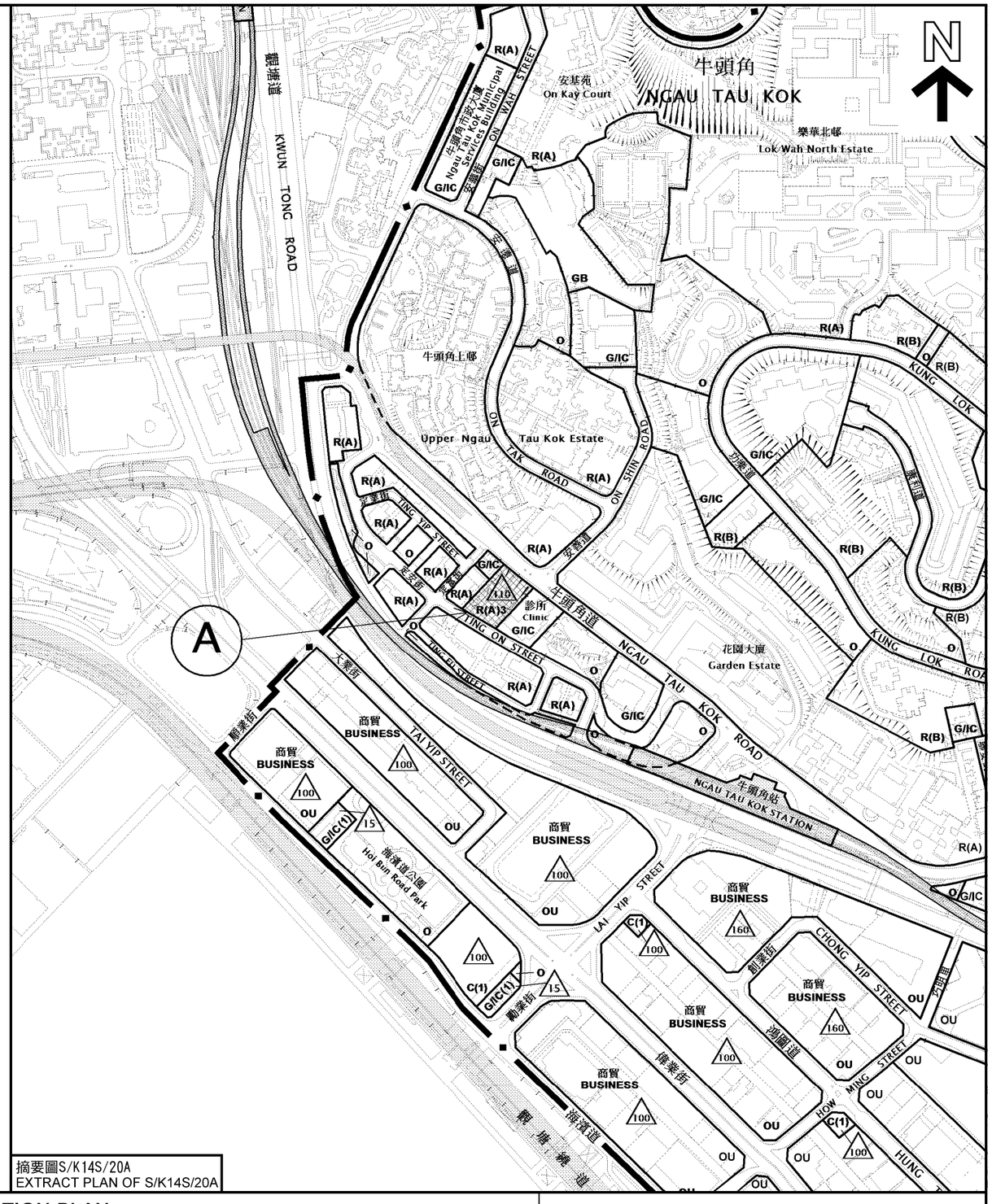
Views/Comments from the KTDC and Local Stakeholders	HKHS's Responses
	supply, drainage and sewerage perspectives.
15. HKHS should collaborate with the Housing Authority (HA) for making use of its public housing resources for re-housing the affected tenants of KTGE II redevelopment.	HKHS is a non-government organization which operates independently of the Government to provide subsidized housing for the Hong Kong citizens. It would not therefore in a position to share HA's public housing resources for re-housing the affected tenants of KTGE II. Further, even HA faces a problem of insufficient housing units to cater for the applicants in the General Waiting List and to rehouse its tenants affected by redevelopment of the ageing rental estates.
16. HKHS should carry out a comprehensive consultation of the Ting On Street area residents before putting forward this rezoning proposal to the Board for considerations.	HKHS consulted KTDC and KTDC Housing Committee in March and July 2017 respectively, and conducted two briefing sessions for the residents of Ting On Street area and the tenants of KTGE II in May 2017.
Views/Comments on the Redevelopment of KTGE II	
Redevelopment of KTGE II	
17. It is considered that the 3-phase redevelopment programme is far too long. They urged HKHS to find another large rehousing site to provide sufficient rehousing units to accommodate all affected tenants with a view to expediting the redevelopment programme. A suggestion is to make use of the Jockey Club Clinic, Ngau Tau Kok Road playground and even Kwun Tong Government Primary School as a larger rehousing site.	Department of Health advised that the utilization of subject clinic is very high and there is no plan for redevelopment. Thus, that part of the "G/IC" zone is excluded from this rezoning exercise. HKHS have been searching for years of development sites large enough for the redevelopment of KTGE II in one go. However, given the lack of land supply in the urban area and all those suitable housing sites have already been earmarked and planned for either land sale sites for private residential or public housing developments in the vicinity, HKHS has little choice but to rezone the current "G/IC" site at Ting On Street for residential development. This site is the only available option to facilitate HKHS to redevelop KTGE II in phases.
18. There is a need to strike a balance	HKHS manages to balance the interests between the

Views/Comments from the KTDC and Local Stakeholders	HKHS's Responses
between the interests of the residents of the Ting On Street area and the tenants of KTGE II, e.g. by providing a pedestrian connection between the proposed development and the KTGE II redevelopment. There are also concerns on the noise from the increased utilization of the basketball courts in KTGE II may disturb the residents.	residents of Ting On Street and KTGE II. The proposed development would provide a barrier-free access linking Ting On Street and Ngau Tau Kok Road. Also, HKHS would look into the feasibility to improve the pedestrian connection arrangement between the development and the KTGE II redevelopment. When carrying out the improvement works to the existing basketball court in KTGE II, HKHS would take into account of the likely noise impact from the increased utilization to address residents' concern.
19. More facilities in serving the elderly tenants of KTGE II should be provided in the proposed development and the KTGE II redevelopment.	The age profile of the tenants, which comprises a large proportion of aged tenants, will be a major factor that affects the future design and facilities to be provided in both the rehousing scheme and the redevelopment of KTGE II. Barrier-free access, recreation facilities for the elderly, flats of aged friendly design and a Neighbourhood Elderly Centre to be run by SWD will be provided in the proposed rehousing development. Also, similar approach will be adopted for the redevelopment of KTGE II. In addition, elderly housing and facilities such as a Residential Care Home for the Elderly may be provided in the KTGE II redevelopment subject to further study.
20. Proper reprovisioning of the Kwun Tong Methodist Church which is currently a tenant of KTGE II.	Proper reprovisioning of the existing welfare facilities will be considered in the future redevelopment of KTGE II.
21. Assessment on the KTGE II redevelopment project as well.	Subject to the successful rezoning of the "G/IC" site at Ting On Street to facilitate the proposed rehousing development, a detailed study would be carried out to ascertain the feasible redevelopment scheme for maximizing the site potential of KTGE II.

Views/Comments from the KTDC and Local Stakeholders	HKHS's Responses
Rehousing arrangement	
22. Request to maintain the existing low rental level and to provide no less living floor area for the new rental units in both the proposed development and redevelopment.	The allocation standard of the rehousing units would be not less than Internal Floor Area of 7m^2 per person, which is a similar standard adopted by the HA.
23. Concerns about the difficulties in getting used to the new living environments. There are concerns about the difficulties for the elderly to move to or decorate the new rental units.	The Site is just 50m away from the KTGE II. The location of the proposed decanting site generally respected the demand for rehousing in the same district. The current rehousing arrangement aims at minimizing the difficulties of the tenants, especially those elderly, to be affected by the redevelopment. If there is still hardship caused to individual tenant, HKHS will consider the situation and manage to resolve the problem on a case by case basis.



摘要圖S/K14S/20
EXTRACT PLAN OF S/K14S/20



摘要圖S/K14S/20A
EXTRACT PLAN OF S/K14S/20A

本摘要圖於2017年9月22日擬備，
所根據的資料為於2015年7月21日
核准的分區計劃大綱圖編號S/K14S/20
EXTRACT PLAN PREPARED ON 22.9.2017
BASED ON OUTLINE ZONING PLAN No.
S/K14S/20 APPROVED ON 21.7.2015

位置圖 LOCATION PLAN

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
（A項）
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20
(ITEM A)

SCALE 1：5 000 比例尺

米 METRES 100 0 100 200 300 400 米 METRES

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
1

S/K13/29

S/K14S/20

A 項
ITEM A

圖例 LEGEND

- 擬議由「政府、機構或社區」地帶改劃為「住宅（甲類）3」地帶 PROPOSED REZONING FROM "G/IC" TO "R(A)3"
- 110 擬議最高建築物高度（在主水平基準上若干米） PROPOSED MAXIMUM BUILDING HEIGHT (IN mPD)
- R(A) 住宅（甲類） RESIDENTIAL (GROUP A)
- R(B) 住宅（乙類） RESIDENTIAL (GROUP B)
- G/IC 政府、機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
- O 休憩用地 OPEN SPACE
- OU 其他指定用途 OTHER SPECIFIED USES
- 100 現有建築物高度（在主水平基準上若干米） EXISTING BUILDING HEIGHT (IN mPD)
- ① 實地照片的觀景點 VIEWING POINT OF SITE PHOTO

界線只作識別用
BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

本摘要圖於2017年10月6日擬備，
所根據的資料為測量圖編號
11-NE-17B、17D、18A和18C

EXTRACT PLAN PREPARED ON 6.10.2017
BASED ON SURVEY SHEETS No.
11-NE-17B ,17D,18A & 18C

平面圖 SITE PLAN

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
（A項）
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20
(ITEM A)

SCALE 1：2 000 比例尺

米 METRES 40 0 40 80 120 160 米 METRES

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
2



界線只作識別用
BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

本摘要圖於2017年9月27日擬備，所根據的資料為地政總署於2017年2月13日拍攝的航攝照片編號E014473C、E014475C 及 E014477C
EXTRACT PLAN PREPARED ON 27.9.2017
BASED ON AERIAL PHOTOS No. E014473C, E014475C AND E014477C TAKEN ON 13.2.2017 BY LANDS DEPARTMENT

航攝照片 AERIAL PHOTO

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
（A項）
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20
(ITEM A)

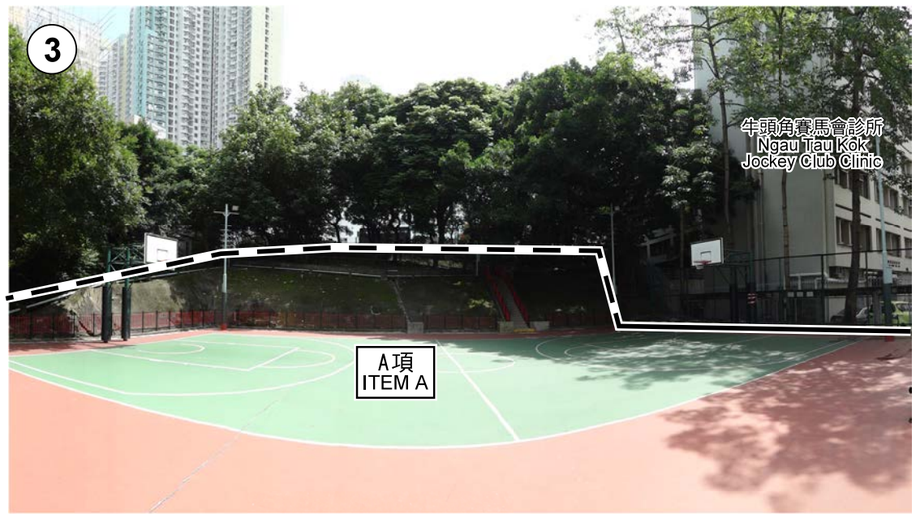
規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
3









界線只作識別用
BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

本圖於2017年9月19日擬備，
所根據的資料為攝於2016年6月1日的實地照片
PLAN PREPARED ON 19.9.2017
BASED ON SITE PHOTOS TAKEN ON 1.6.2016

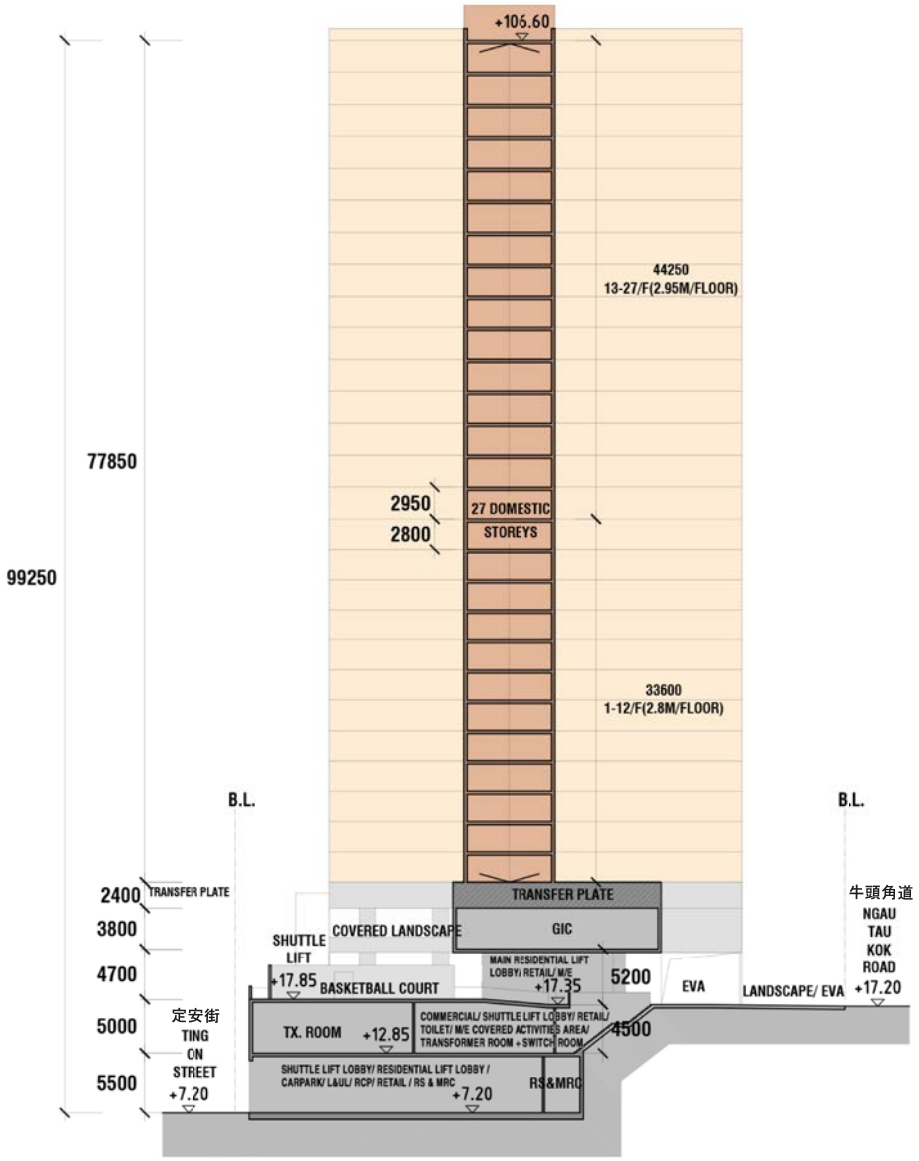
實地照片 SITE PHOTOS

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
（A項）
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20
(ITEM A)

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
4





（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月27日擬備
EXTRACT PLAN PREPARED ON 27.9.2017

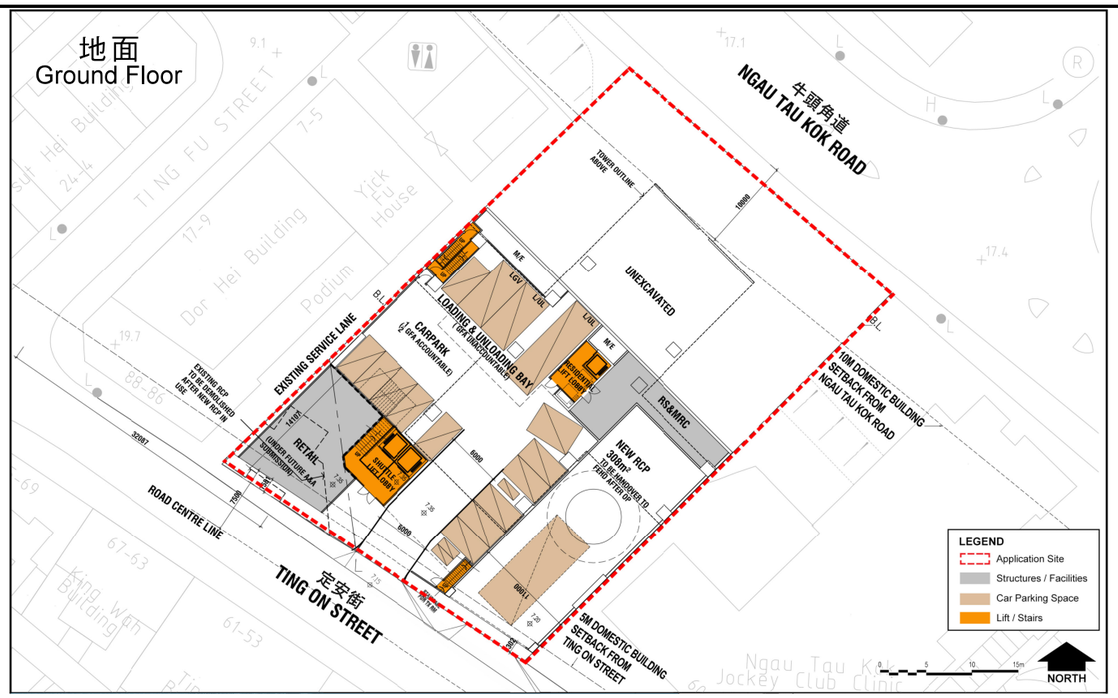
標準樓層平面圖及示意剖面圖
TYPICAL FLOOR PLAN AND SCHEMATIC SECTION PLAN

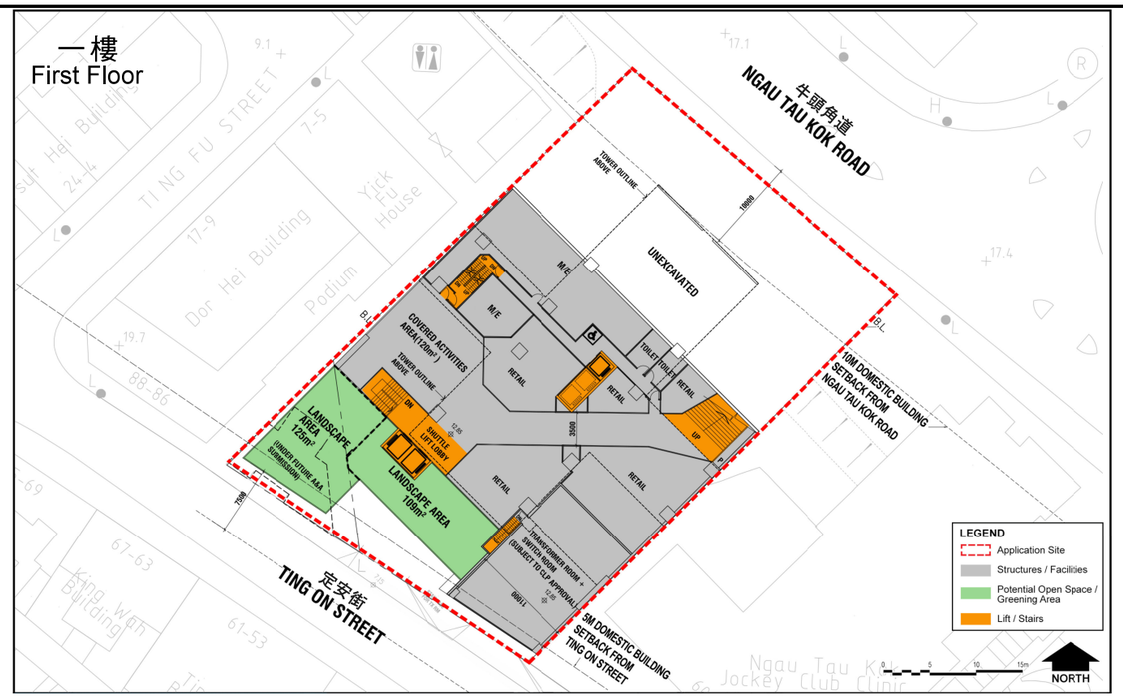
觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20

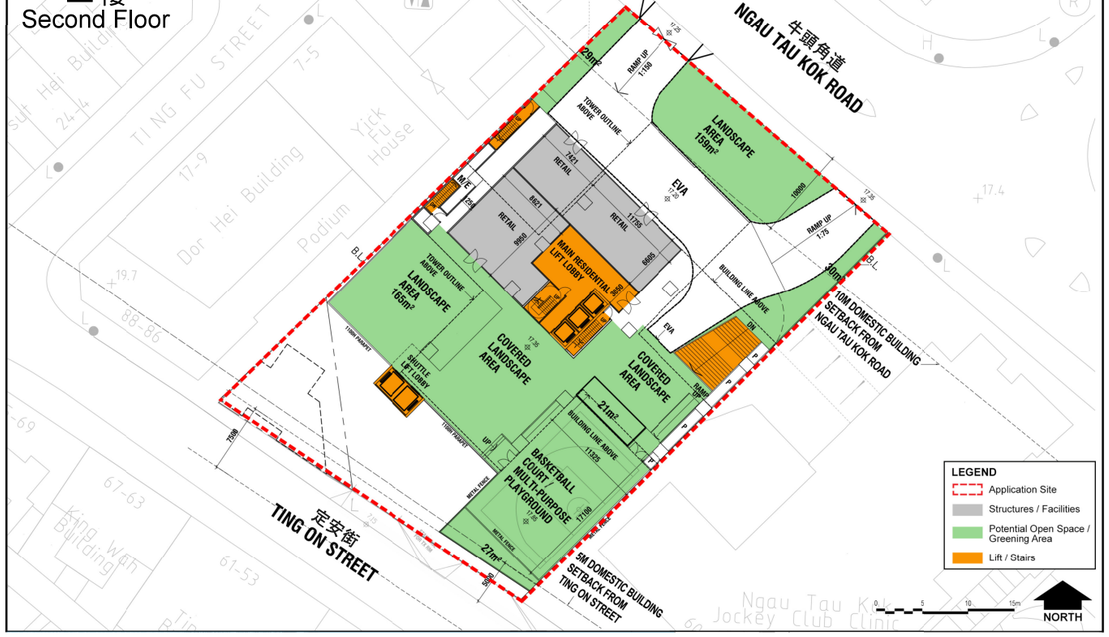
規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
5









（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年10月10日擬備
EXTRACT PLAN PREPARED ON 10.10.2017

平台樓層平面圖
PODIUM FLOOR PLANS

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20

規劃署
PLANNING DEPARTMENT

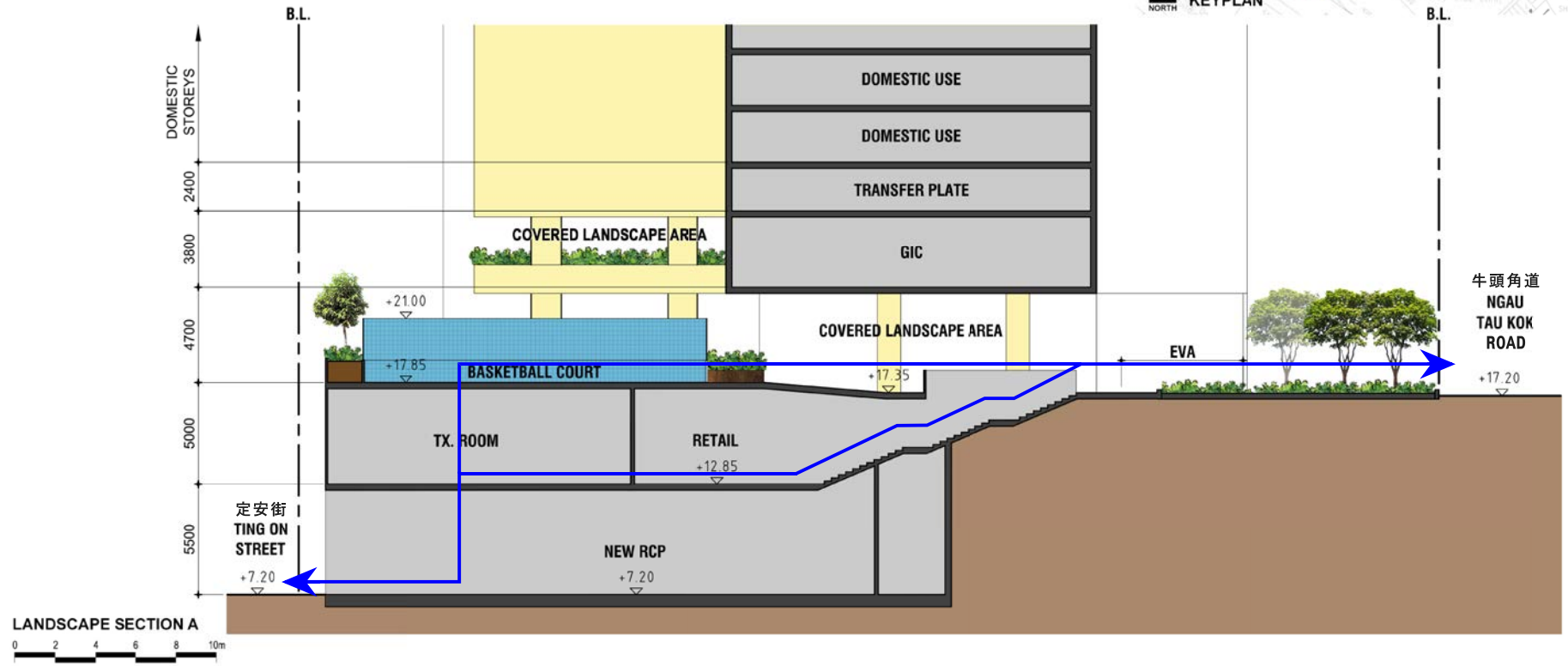
參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
6

LEGEND

Barrier-free Pedestrian Connection





（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月28日擬備
EXTRACT PLAN PREPARED ON 28.9.2017

園景剖面圖
LANDSCAPE SECTION PLAN

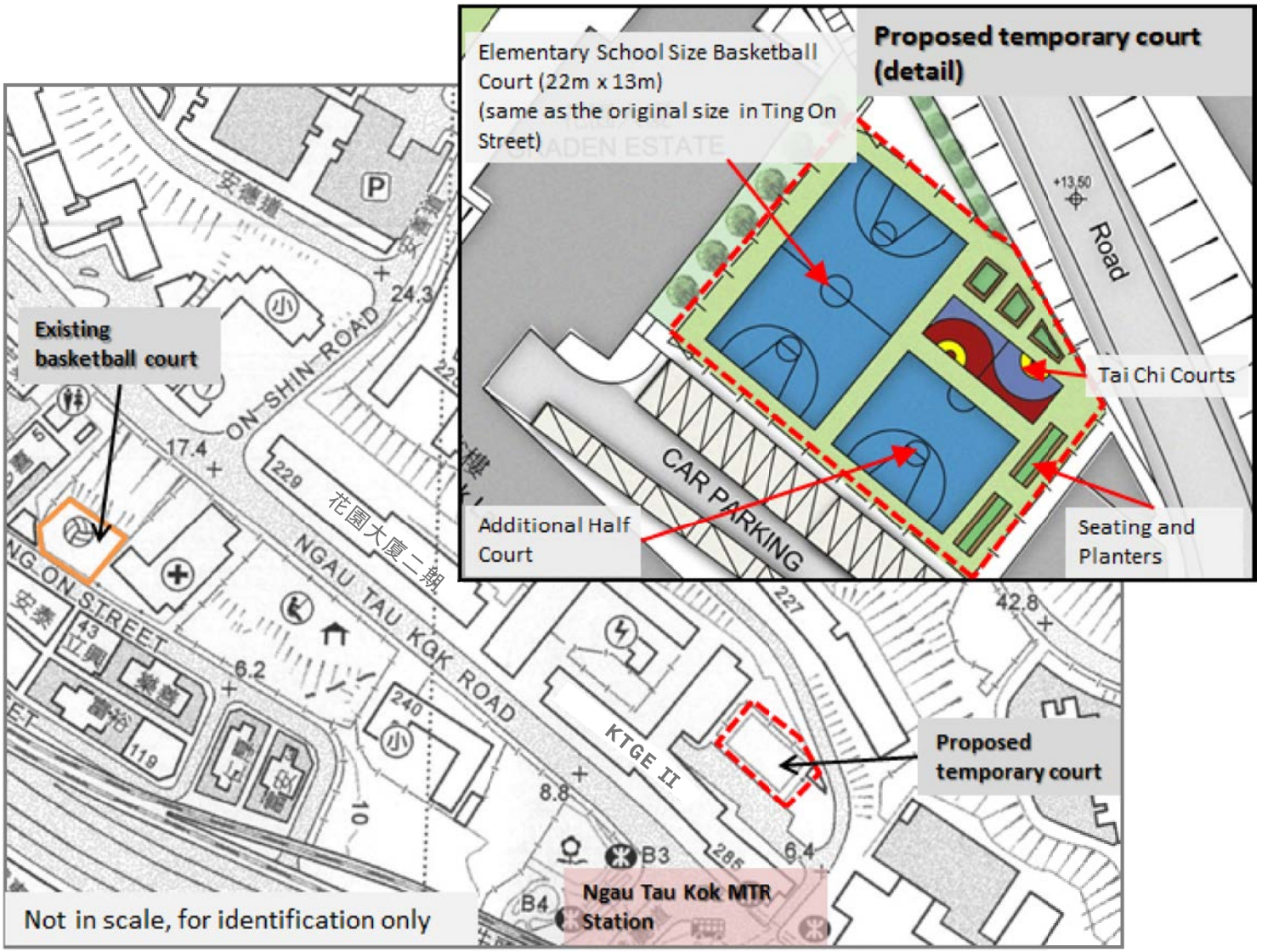
擬議無障礙行人連接
PROPOSED BARRIER-FREE PEDESTRIAN CONNECTION

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20

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PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
7



（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月28日擬備
EXTRACT PLAN PREPARED ON 28.9.2017

位置圖 LOCATION PLAN

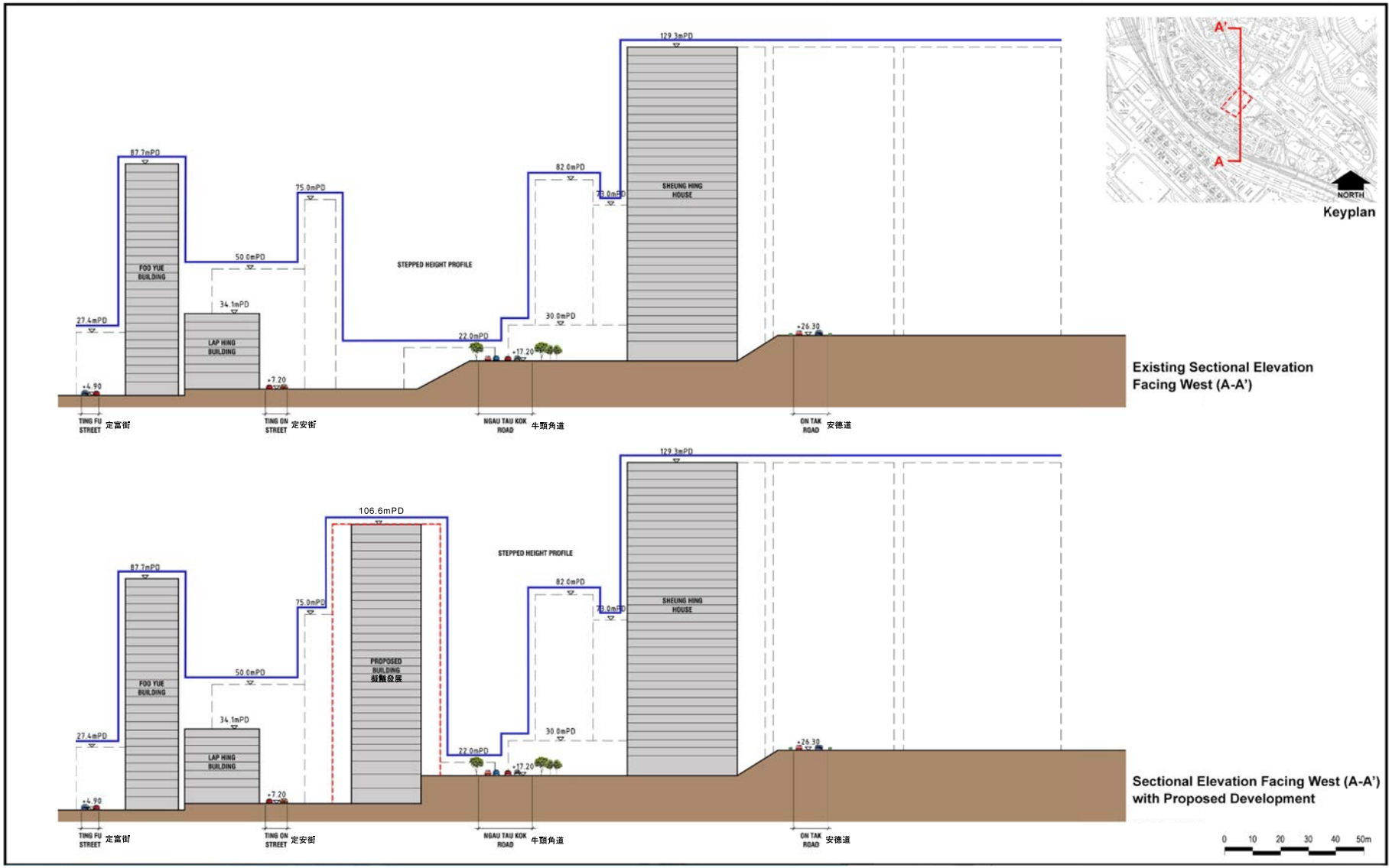
擬議重置籃球場安排
PROPOSED ARRANGEMENT OF REPROVISIONING BASKETBALL COURT

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
8



（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月27日擬備
EXTRACT PLAN PREPARED ON 27.9.2017

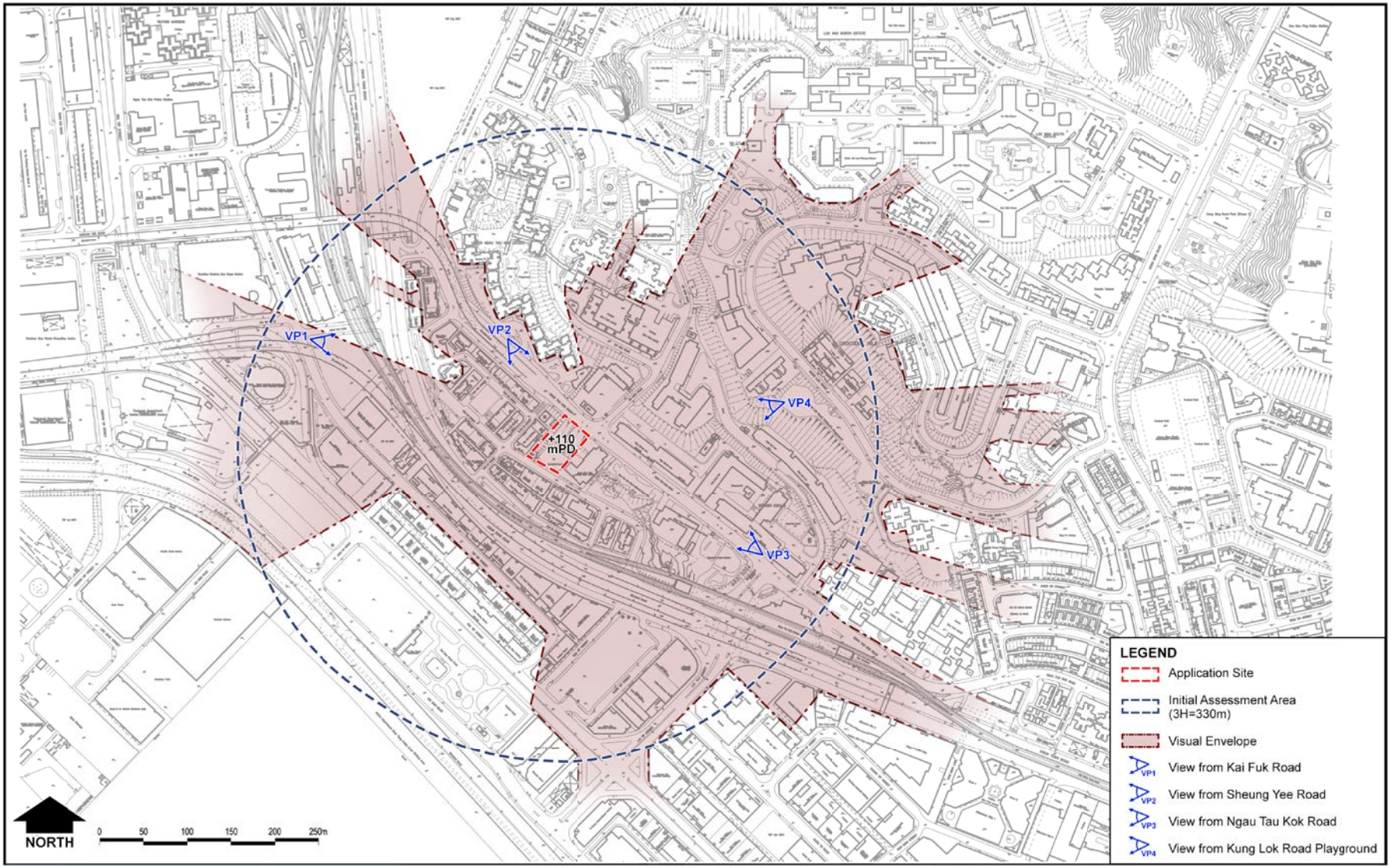
由南面至北面的剖面圖
SECTIONAL ELEVATION FROM SOUTH TO NORTH

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
9



（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月27日擬備
EXTRACT PLAN PREPARED ON 27.9.2017

位置圖 LOCATION PLAN

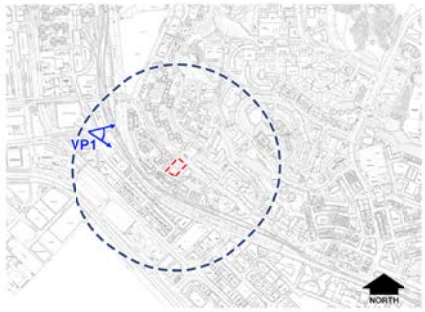
視覺影響區域
ZONE OF VISUAL INFLUENCE

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
10



Keyplan



Existing Condition



Proposed Development

（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月27日擬備
EXTRACT PLAN PREPARED ON 27.9.2017

合成照片 PHOTOMONTAGE

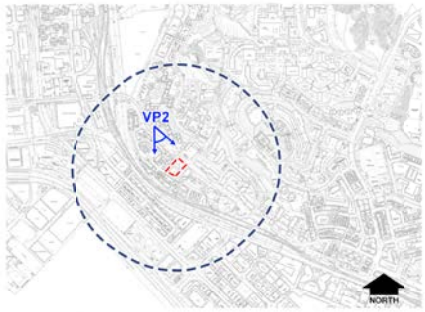
在啟福道天橋旁邊地面的觀景點
VIEWING POINT AT GROUND LEVEL NEXT TO KAI FUK ROAD FLYOVER

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
（A項）
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20
(ITEM A)

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
10a



Keyplan



Existing Condition



Proposed Development

（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月27日擬備
EXTRACT PLAN PREPARED ON 27.9.2017

合成照片 PHOTOMONTAGE

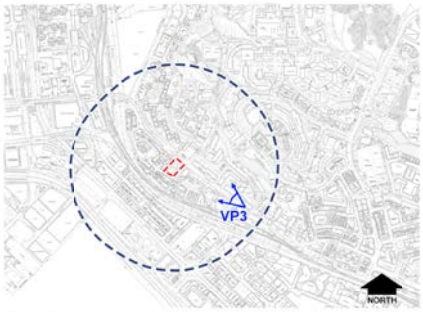
在牛頭角上邨常興樓的觀景點
VIEWING POINT AT SHEUNG HING HOUSE OF UPPER NGAU TAU KOK ESTATE

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
（A項）
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20
(ITEM A)

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
10b



Keyplan



Existing Condition



Proposed Development

（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月27日擬備
EXTRACT PLAN PREPARED ON 27.9.2017

合成照片 PHOTOMONTAGE

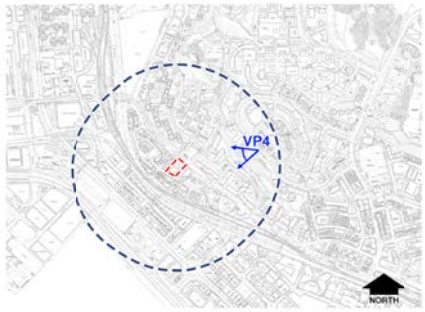
在觀塘花園大廈第二期孔雀樓的觀景點
VIEWING POINT AT HUNG CHEUK LAU OF KWUN TONG GARDEN ESTATE II

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
（A項）
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20
(ITEM A)

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
10c



Keyplan



Existing Condition



Proposed Development

（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年9月27日擬備
EXTRACT PLAN PREPARED ON 27.9.2017

合成照片 PHOTOMONTAGE

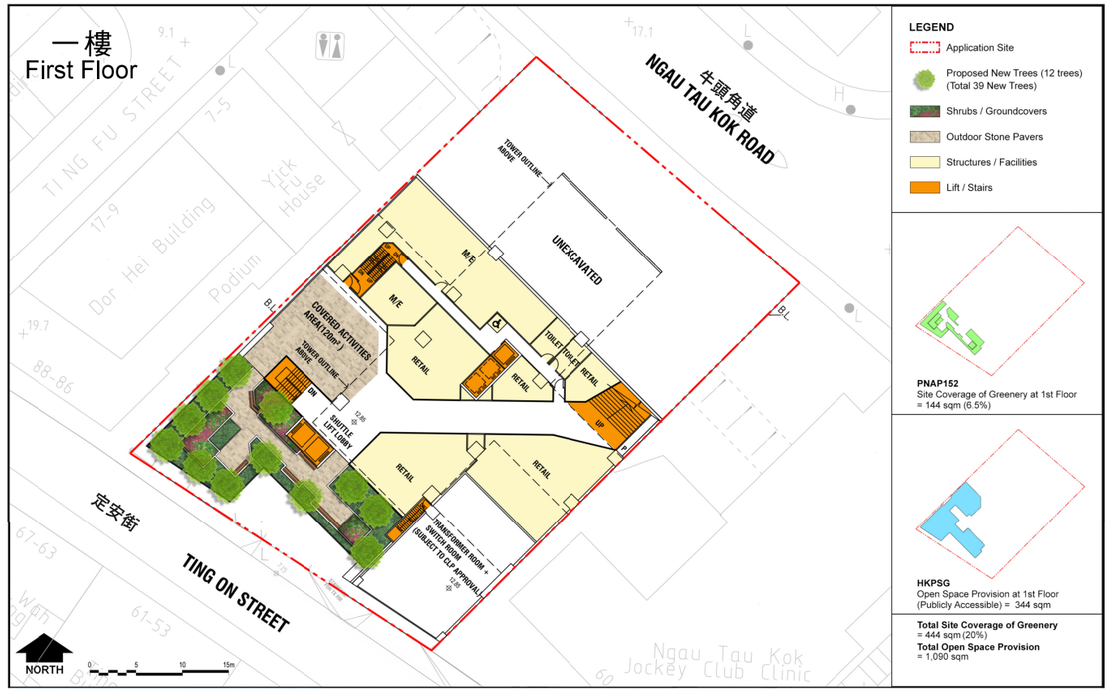
在功樂道兒童遊樂場的觀景點
VIEWING POINT AT KUNG LOK ROAD CHILDREN'S PLAYGROUND

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
（A項）
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20
(ITEM A)

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
10d







（資料來源：由香港房屋協會提交）
(SOURCE : SUBMITTED BY HONG KONG HOUSING SOCIETY)

本摘要圖於2017年10月10日擬備
EXTRACT PLAN PREPARED ON 10.10.2017

園景美化建議
LANDSCAPE PROPOSAL

觀塘（南部）分區計劃大綱核准圖編號S/K14S/20的擬議修訂
PROPOSED AMENDMENT TO THE APPROVED KWUN TONG (SOUTH) OUTLINE ZONING PLAN No. S/K14S/20

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/K14S/17/80

圖 PLAN
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