METRO PLANNING COMMITTEE
OF THE TOWN PLANNING BOARD

MPC Paper No. 9/15

For Consideration by the
Metro Planning Committee on 17.7.2015

PROPOSED AMENDMENTS TO
THE APPROVED TSING YI OUTLINE ZONING PLAN NO. S/TY/26

MPC Paper No. 9/15
For Consideration by
the Metro Planning Committee
on 17.7.2015

Proposed Amendments to the
Approved Tsing Yi Outline Zoning Plan No. S/TY/26

1. Introduction

This paper is to seek Members' agreement that:

(a) the proposed amendments to the approved Tsing Yi Outline Zoning Plan (OZP) No. S/TY/26 as shown on the draft OZP No. S/TY/26A (**Appendix I**) and its Notes (**Appendix II**) are suitable for exhibition under section 5 of the Town Planning Ordinance (the Ordinance); and

(b) the revised Explanatory Statement (ES) of the OZP (**Appendix III**) is an expression of the Town Planning Board's (the Board's) planning intentions and objectives for the various land use zonings of the OZP.

2. Status of the Current Approved Tsing Yi OZP No. S/TY/24

2.1 On 21.4.2015, the Chief Executive in Council (CE in C), under section 9(1)(a) of the Ordinance, approved the draft Tsing Yi OZP which was subsequently renumbered as S/TY/26 (**Plan 1**). On 30.4.2015, the approved OZP No. S/TY/26 was exhibited for public inspection under section 9(5) of the Ordinance.

2.2 On 23.6.2015, the CE in C referred the approved OZP to the Board for amendments under section 12(1)(b)(ii) of the Ordinance. The reference back of the OZP was notified in the Gazette on 3.7.2015 under section 12(2) of the Ordinance.

3. Background

3.1 It was stated in the 2013 Policy Address that the Government would adopt a multi-pronged approach to build up land reserve with a view to meeting housing and other development needs. The 2014 Policy Address announced that except for the north of Hong Kong Island and Kowloon Peninsula, which are more densely populated, the Government considers it feasible to generally increase the maximum domestic plot ratio (PR) currently permitted for the other "density zones" in the territory by around 20% as appropriate. In implementing these measures, the Government will duly consider factors such as traffic and infrastructural capacities, local characteristics, existing development intensity and the various possible impacts of the proposed development on the areas concerned. In the 2015 Policy Address, it was announced that the housing target in the next decade is 480,000 units.

3.2 In general, the maximum PR for Tsing Yi falls within Density Zone R2 (i.e. PR of 5). To maximize the development potential of housing land as announced in the Policy Address, a PR of 6 (i.e. a 20% increase) is proposed for new housing sites in Tsing Yi. To ascertain the increase in PR in planning terms, technical feasibility will be undertaken and concerned government departments will be consulted before rezoning.

4. The Proposed Amendments

Items A1 and A2 - Rezoning of a Site between Tsing Yi Road and Tsing Hung Road for the Proposed Public Rental Housing (PRH) Development (Plans 2 to 8)

4.1 A piece of vacant government land between Tsing Yi Road and Tsing Hung Road (the Site) (**Plans 2 - 4**) is identified as having potential for the proposed PRH development. The Site comprises Items A1 and A2 and covers the following three pieces of land:

(i) Item A1 - covering an area of about 4.13ha is proposed to be rezoned from "Open Space" ("O)" to "Residential (Group A)4" ("R(A)4") to facilitate the proposed PRH development; and

(ii) Item A2 - covering two small pieces of land with a total area of about 0.16ha is proposed to be rezoned from area shown as 'Road' to "R(A)4" to facilitate the proposed PRH development.

4.2 Major development parameters of the proposed PRH at the Site are as follows:

Site Area for "R(A)4"	4.29ha (about)
Net Site Area for the Proposed PRH (excluding elevated road, internal road, drainage reserve and slope)	2.95ha (about) (subject to detailed design)
Maximum Plot Ratio (PR)	Domestic PR of 6 or Non-domestic PR of 9.5 or under composite formula[1] for mixed use
Domestic GFA	about 170,000m^2 (subject to detailed design)
Non-Domestic GFA	about 11,000m^2 (subject to detailed design)
Maximum BH	140mPD
Number of Flats	about 3,800
Estimated Population	about 11,630
Number of Blocks	5
Local Open Space	about 11,630m^2
Community Facilities	- Kindergarten

[1] For new development of a building that is partly domestic or partly non-domestic, the PR of the domestic part of the building shall not exceed the product of the difference between the maximum non-domestic PR of 9.5 and the actual non-domestic PR proposed for the building and the maximum domestic PR of 6 divided by the maximum non-domestic PR of 9.5.

(Preliminary and subject to further study. HD continues to liaise with relevant departments on the provision of adequate community and welfare facilities.)	- Neighbourhood Elderly Centre, etc.

The proposed PRH development is anticipated to be commenced in late 2016 for completion in 2019/20-2020/21.

The Site and its Surroundings

4.3 The site is on government land and is currently vacant. Part of the Site was previously occupied by Drainage Services Department (DSD) as temporary works area. It comprises sloping area covered with vegetation and two platforms (**Plans 3 and 4**). A nullah (drainage reserve) currently under a permanent government land allocation to the DSD lies in the middle of the Site (**Plan 3**).

4.4 The surrounding areas of the Site (**Plans 2** and **3**) are:

(a) to the immediate northwest is a Petrol Filling Station (PFS) and to the further northwest across Tsing Yi Road is Mei King Playground, two high-density residential developments namely Mayfair Gardens and Cheung Ching Estate and two educational institutions namely the Hong Kong Institute of Vocational Education (Tsing Yi) (the Tsing Yi IVE) and Technological and Higher Education Institute of Hong Kong (Thei). A proposed high-density private residential development located to the west of Mayfair Gardens was rezoned last year from "Green Belt" to "R(A)4" with the same development restrictions as the Site, i.e. maximum PR of 6/9.5 and maximum BHR of 140mPD;

(b) to the immediate north is the Tsing Yi Preliminary Treatment Works (TYPTW);

(c) to the immediate east is a high-density commercial and residential developments comprising Rambler Crest which comprises a service apartment and three hotels;

(d) to the immediate south is the Tsing Sha Highway and further south across Tsing Sha Highway is Container Terminal 9 (CT9) and a cluster of land zoned "OU (Container-Related Uses)" with temporary car parks, logistics centres and storage of containers to support CT9; and

(e) the BH of the existing surrounding residential developments ranges from about 83mPD in Cheung Ching Estate to 143mPD in Rambler Crest (**Plan 3**).

Planning Justifications

4.5 The Site is currently zoned "O" on the OZP. Taking into account that the Site is vacant, sloping and inefficient for use as open space and that Tsing Yi has surplus

existing and planned provision of open space (see **Appendix IX** and paragraph 4.22 below), the Site is identified as having potential to be rezoned to residential in order to help meet the housing target of 480,000 flats in the next decade. Besides, Leisure and Cultural Services Department (LCSD) has indicated that they have no development programme for the subject "O" site and the sloping topography of the Site render it difficult to provide leisure or sports facilities at the Site. If the site is used for the development of open space, the usable area is about 1.92ha. It should be noted that about 1.16ha of local open space will be provided within the Site (see paragraph 4.2 above) and there are two existing public local open space in the vicinity, i.e. the Tsing Hung Road Playground and Mei King Playground (**Plan 3**). As such, the loss of the subject "O" site will not be significant and will not have adverse implications to the residents nearby.

4.6 Given the Site is surrounded by residential, commercial and educational developments (**Plan 3**), the proposed PRH development is considered compatible with the surrounding developments. Although the Site is in close proximity to CT9 and port back up land, residential development at the Site is considered feasible through the adoption of appropriate mitigation measures (see technical assessments in paragraphs 4.8 to 4.23 below).

4.7 Having regard to the land use and development scale of the surrounding developments, it is proposed to rezone the Site (**Items A1 and A2**) to "R(A)4" subject to a maximum PR of 6 or a maximum non-domestic PR of 9.5 or the composite formula of 6/9.5 for mixed residential and commercial developments, and a maximum BHR of 140mPD (**Plans 2 and 3**). It is estimated that the Site could provide about 3,800 flats. A preliminary conceptual layout for the proposed PRH development prepared by Housing Department (HD) are shown at **Plans 9** and **10.**

Technical Assessments

4.8 Broad technical assessments on traffic, environment, visual and air ventilation aspects, tree survey as well as infrastructure have been conducted to ascertain the feasibility of the proposed PRH development. The adequacy of provision of open space and GIC facilities in the area has also been assessed.

Traffic Impact

4.9 A Traffic Impact Assessment (TIA) (**Appendix IV**) has been conducted to assess the traffic impact of the proposed PRH development on the surrounding area. According to Table 2.1 at page 3 of the TIA, the current ratio of flow to capacity of the road junctions in the vicinity (including Tsing Yi Interchange, junction of Tsing Yi Road/Ching Hong Road and junction of Tsing Yi Road/Sai Shan Road) ranges from 0.435 to 0.624 in AM peak hour and from 0.357 to 0.552 in PM peak hour. The anticipated traffic flow generated from and attracted by the proposed PRH development is about 399 passenger car unit per hour (pcu/hr) in 2-way at AM peak hour and 292 pcu/hr in PM peak hour (Table 4.1 of TIA). According to Table 4.6 at page 16 of the TIA, the 2025 junction operation performance with the scenario of having the proposed PRH development in place indicates that the ratio of flow to capacity of the above mentioned road junctions will be in the

range from 0.571 to 0.785 in AM peak hour and from 0.439 to 0.675 in PM peak hour. As such, it is concluded that the road junctions in the vicinity has sufficient capacity to accommodate the future traffic growth and the additional traffic generated by the proposed PRH development. The traffic impact induced by the said development is acceptable from traffic engineering point of view. In view of the above, Commissioner for Transport (C for T) considers the TIA is acceptable in-principle.

4.10 Regarding the provision of public transport services, there are more than 20 franchised bus and scheduled minibus routes connecting various districts throughout Hong Kong in the vicinity of the Site. It is expected that the existing public transport service would be able to absorb the additional demand arising from the proposed PRH development by enhancing the existing routes. Despite this, it is proposed to reserve off-street laybys at Tsing Yi Road abutting the proposed development for possible expansion of the bus and minibus services in future (**Plans 11 and 12**). Road improvement works is also proposed in Tsing Yi Road to widen the associated footpath to accommodate the future passengers. C for T advises that the passenger demand in the vicinity would be closely monitored. As an established practice, Transport Department (TD), together with the public transport operators (i.e. KMB and the concerned GMB operators), will suitably adjust the level of public transport services to cope with the possible additional passenger demand generated by the proposed residential development to ensure adequate provision of public transport services.

Environmental Impact

4.11 According to the Broad Environmental Assessment (BEA) (**Appendix V**), no adverse air quality impact due to the vehicular emission is anticipated as the recommended buffer distance stipulated in the Hong Kong Planning Standards and Guidelines (HKPSG) are in full compliance for the proposed development. Furthermore, no adverse air quality impact due to the industrial emission from the Tsing Yi Preliminary Treatment Works and the Petrol Filling Station in Tsing Yi Road is anticipated given that the appropriate air pollution control have been fully adopted by the said developments. Mitigation measures such as further setback of building blocks (**Plan 23**) would be proposed in case of any exceedance of relevant odour/Volatile Organic Compounds standards during detailed design stage.

4.12 The proposed development would be susceptible to potential road traffic noise impacts from Tsing Yi Road, Tsing Hung Road and Tsing Sha Highway, operating noise from CT9 and TYPTW are identified. In case of any exceedance of relevant traffic noise standards, appropriate noise mitigation measures such as noise barriers, architectural fins, acoustic windows and further setback of building blocks (**Plan 23**) can be implemented. No insurmountable noise issue is anticipated on the proposed PRH development.

4.13 In view of the above, Environmental Protection Department (EPD) agreed that the proposed PRH is anticipated to have no insurmountable environmental problem and has no adverse comments on the proposed amendments. An Environmental Assessment Study will be carried out comprising air and noise

impact assessments during detailed design stage for identifying and implementing the necessary mitigation measures.

Visual Impact

4.14 The juxtaposition of the high-rise Mayfair Gardens and the Rambler Crest demonstrates a building height profile stepping down from the east to the west and stepping up again to the west of Mayfair Gardens following the natural terrain (**Plan 3**). A Visual Appraisal (VA) (**Appendix VI)** has been conducted to assess the potential visual impact on of the proposed PRH development on surrounding areas. Different viewpoints are selected, which represent the views from key public open spaces and/or pedestrian nodes/roads that are highly accessible by the public in the area (**Plans 13 to 20**).

4.15 When viewed from a longer distance from Viewpoints 1, 5 and 10 (**Plans 13** to **15**), the proposed PRH development would result in insignificant visual impact on the public viewers (**Plans 13 and 14**) and even not visible (**Plan 15**). When viewed from some medium range viewpoints including Viewpoints 4 and 8 (**Plans 16 and 17**), the proposed PRH development would be seen as part of the existing building cluster with similar intensity and scale and would generally not be incompatible with the existing built environment, local character and the surroundings in visual terms.

4.16 It is observed that from some short or medium ranged viewpoints including Viewpoints 2, 3 and 7 (**Plans 18** to **20**), the visual openness and part of the open sky view would be blocked. However, to maintain visual openness, the existing Tsing Hung Road Playground and the proposed ball courts (**Plan 9**) will form a visual corridor in the north-south axis and the existing drainage reserve (**Plan 9**) will form another visual corridor in the west-east axis.

4.17 Overall the visual impact of the proposed PRH development with a BHR of 140mPD based on the VA is not considered unacceptable. Moreover, additional visual enhancement measures such as building gaps, variation of building heights, open space, green coverage and greening measures will be further explored at the detailed design stage to further reduce the potential visual impact arising from the proposed PRH development.

Landscaping

4.18 Preliminary tree survey has been conducted (**Appendix VII**). There are about 1,800 trees on the proposed PRH site. The vegetation will be affected by the proposed developments and substantial tree felling will be necessary. The tree survey reveals that there are no Old and Valuable Tree or rare species within the Site. Existing Trees are mainly common species (Acacia auriculiformis (大葉相思), Acacia confuse (台灣相思) and Leucaena leucocephala (銀合歡)) with average form and low amenity. Some of the existing trees are of poor health, including deformed, damaged or cracked trunks, leaning caused structural conditions with failure potential due to limited and competitive slope woodland growing conditions. It is preliminarily estimated that more than 80% of the existing trees have to be removed due to the proposed development. Existing

trees will be preserved as far as possible and for those cannot be accommodated or conditions are unacceptable, tree transplant/felling application and compensatory proposal will be submitted to HD's Tree Preservation Committee for approval in accordance with the requirements under Development Bureau Technical Circular (Works) No. 10/2013 for Government projects. Chief Town Planner/Urban Design and Landscape (CTP/UD&L) considers that as there are existing residential developments in the surroundings, the proposed PRH development is not incompatible with the landscape character in the surrounding area.

Air Ventilation Impact

4.19 Air ventilation assessment (Expert Evaluation) (AVA EE) has been conducted (**Appendix VIII**) which shows that annual prevailing winds in the area are from north-easterly to south-easterly directions and the summer prevailing winds are from south easterly to south-westerly directions. The proposed PRH development will impose negligible impact on the wind breezeway at Tsing Yi Road (Lower). Therefore, adverse impact on Rambler Crest is not expected under major prevailing wind directions. However, the proposed PRH development will affect the wind breezeway at Tsing Yi Road (Upper) partially. Consequently, ventilation performance at Tsing Yi IVE, Thei, Mayfair Gardens and Mei King Playground will be affected. Disturbance on local wind condition at Cheung Ching Estate would also be notable under south-easterly winds and south-westerly winds. To address this, appropriate mitigation measures will be adopted, e.g. preservation of the existing wind corridors with effort, maximizing the width of wind breezeway and increasing building permeability whenever possible to reduce the impact on ventilation performance and pedestrian wind comfort. In this regard, the building blocks of the proposed PRH development are allocated away from Tsing Yi Road and Rambler Crest to provide two wind corridors with a width of 145m and 55m to facilitate the wind penetration in the surrounding developments (**Plan 21**). Furthermore, the building blocks are allocated strategically with a 15m minimum separation distance, with wider corridor to be provided where possible (**Plan 22**). To further enhance the pedestrian wind environment, the opportunity to allocate ventilation voids at ground level would be further explored to facilitate wind penetration during the detailed design stage. With appropriate measures, the ventilation impact to the surrounding environment could be minimized.

Infrastructural Impact

4.20 The proposed PRH development would not result in any adverse impact on infrastructural capacity in the area, as confirmed by concerned departments including the Chief Engineer/Development(2), Water Supplies Department (CE/Dev(2), WSD), the Chief Engineer/ Mainland South, Drainage Services Department (CE/MS, DSD), Head of the Geotechnical Engineering Office, Civil Engineering and Development Department (H(GEO), CEDD) and Project Manager (New Territories West), Civil Engineering and Development Department (PM/NTW, CEDD).

Provision of Open Space and GIC Facilities

4.21 A table showing the provision of major community facilities and open space in the Tsing Yi area is at **Appendix IX**. It can be seen that there is basically no shortfall in open space and major community facilities. Based on a planned population of about 211,950 persons for Tsing Yi area (including population of the proposed PRH development under Items A1 and A2), there will be a deficit of 1,102 hospital beds. However, since provision of hospital beds is on a regional basis, the Tsing Yi residents can use the hospital facilities in the adjacent districts such as Tsuen Wan and Kwai Chung. As regards the social welfare facilities, we are in close liaison with HD and Social Welfare Department (SWD) to ensure that the proposed development can accommodate the needed facilities which serve not just the new residents but the existing residents of the neighbourhood.

4.22 Based on the requirement of HKPSG, there is a surplus of planned district and local open space of 1.45ha and 26.47ha respectively in Tsing Yi district. It is estimated that the planned provision of open space can meet the demand of the future population as well as additional demand from the proposed PRH development.

4.23 In brief, with a proposed increase of about 3,800 flats in total, the proposed rezoning would not have significant impact on the overall planned provision of GIC facilities and open space in Tsing Yi District.

Items B1, B2 and C - Rezoning of Sites to Reflect the Existing Road Alignment (Plans 2 to 4, 6 and 8)

4.24 Opportunity is taken to rectify the zonings of three pieces of land to reflect the existing road alignment of Tsing Yi Road. They include:

(i) Item B1 - covers an area of about 1,284m^2 to be rezoned from "Government, Institution or Community" ("G/IC") to area shown as 'Road';

(ii) Item B2 - covers an area of about 69m^2 to be rezoned from "O" to area shown as 'Road'; and

(iii) Item C - covers an area of about 76m^2 to be rezoned from area shown as 'Road' to"G/IC".

5. Consultation with District Council

5.1 Kwai Tsing District Council (K&TDC) was consulted on 14.5.2015. During the meeting, K&TDC members expressed concern on the potential traffic, air ventilation and visual impacts brought by the proposed development and the insufficient provision of community facilities. Furthermore, they were concerned about the environmental impacts (i.e. traffic noise and glare impacts) from the adjacent Tsing Sha Highway, CT9 and port back up facilities on the future residents. The K&TDC passed a motion requesting the replanning of the concerned site and the proposed public housing development should be shelved until there are comprehensive planning for supporting transport, environmental and community facilities (see paragraphs 94 to 96 of **Appendix X**). An extract of the minutes of

the K&TDC meeting is at **Appendix X.**

5.2 As demonstrated by the technical assessments, the proposed PRH development would not generate unacceptable traffic and environmental impacts and would not result in a shortfall of major community facilities. The relevant departments are in close liaison and will closely monitor the need for transport and community services and make appropriate provision to meet the needs of residents. The proposed development could provide an opportunity to provide social welfare facilities serving the neighbourhood.

6. Proposed Amendments to Matters shown on the Plan

The proposed amendments to the approved OZP are shown on the draft Amendment Plan No. S/TY/26A at **Appendix I**. Details of the amendment items are as follows:

(a) Item A1 (Site Area: about 4.13ha) **(Plans 2** and **3)**
Rezoning of a site between Tsing Yi Road and Tsing Hung Road from "O" to "R(A)4" to facilitate public housing development with stipulation of BH of 140mPD;

(b) Item A2 (Site Area: about 0.16ha) **(Plans 2** and **3)**
Rezoning of two pieces of land abutting Tsing Yi Road and Tsing Sha Highway from area shown as 'Road' to "R(A)4" to facilitate public housing development with stipulation of BH of 140mPD;

(c) Item B1 (Site Area: about 0.13ha) **(Plans 2** and **3)**
Rezoning of a piece of land at the southern tip of Tsing Yi Road from "G/IC" to an area shown as 'Road';

(d) Item B2 (Site Area: about 69m^2) **(Plans 2** and **3)**
Rezoning of a piece of land to the immediate south of the site under Item A1 from "O" to an area shown as 'Road';

(e) Item C (Site Area: about 76m^2) **(Plans 2** and **3)**
Rezoning of a site in the southern part of Technological and Higher Education Institute of Hong Kong from an area shown as 'Road' to "G/IC".

7. Proposed Amendments to the Notes of the OZP

7.1 There is already a set of Notes for "R(A)4" zone with stipulation of maximum domestic/non-domestic PR of 6/9.5 and a maximum BH of 140mPD in the extant OZP. There is no need to amend the Notes of the "R(A)4" zone arising from Amendment Items A1 and A2.

7.2 With a view to support art development, relevant bureaux and departments have investigated the feasibility of allowing 'Art Studio' in the industrial and 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. hobby classes, seminars and sale of goods, art gallery and venue for rehearsal for art performance). The proposal was generally supported by the stakeholders and no objection from concerned government departments. 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 Use" annotated "Business" ("OU(B)") zone. However, since the "Industrial" ("I") zone on western and southern part of Tsing Yi has been developed for dockyards, boatyards, oil storage and chemical industries, 'Art Studio (excluding those involving direct provision of services or goods)' is not considered compatible with these special industry uses and thus it would not be incorporated in Column 1 use of the "I" zone in the OZP.

7.3 A copy of the revised Notes with the following proposed amendments is at **Appendix II (**with additions in ***bold and italic*** and deletions in ~~crossed out~~).

Notes for Schedule II of "OU(B)" Zone

Incorporation of 'Art Studio (excluding those involving direct provision of services or goods)' as a Column 1 use of the zone.

8. Revision of the Explanatory Statement of the OZP

The Explanatory Statement (ES) of the OZP has been revised to reflect the above amendments and to update the general information of various land use zones where appropriate. The updated ES (with additions in ***bold and italics*** and deletions in ~~crossed out~~) is at **Appendix III** for Members' consideration.

9. Plan Number

Upon gazetting, the draft OZP will be renumbered as S/TY/27.

10. Consultation

Departmental Consultation

10.1 The proposed amendments have been circulated to relevant Government bureau/departments for comments. Their comments have been incorporated where appropriate. Concerned bureau/departments have no objection to or no adverse comments on the proposed amendments and no insurmountable problem have been raised by the Government departments consulted:

(a) Secretary for Development;
(b) Secretary for Education;
(c) Secretary for Transport and Housing;
(d) Chief Architect/Central Management Division 2, Architectural Services Department;

(e) Chief Building Surveyor/New Territories West, Buildings Department;
(f) CE/Dev(2), WSD;
(g) CE/MS, DSD;
(h) Chief Engineer/Port Works, Civil Engineering and Development Department;
(i) Chief Highway Engineer/New Territories West, Highways Department;
(j) CTP/UD&L, Planning Department;
(k) C for T;
(l) Commissioner of Police;
(m) Director of Agriculture, Fisheries and Conservation;
(n) Director of Electrical and Mechanical Services;
(o) Director of Environmental Protection;
(p) Director of Fire Services;
(q) Director of Food and Environmental Hygiene;
(r) Director – General of Civil Aviation;
(s) Director of Leisure and Cultural Services;
(t) District Lands Officer/Tsuen Wan and Kwai Tsing, Lands Department;
(u) District Officer/Kwai Tsing;
(v) Government Property Administrator;
(w) H(GEO), CEDD; and
(x) PM/NTW, CEDD.

Public Consultation

10.2 If the proposed amendments are agreed by the Committee, the draft OZP and its Notes will be suitable for exhibition under section 5 of the Ordinance. Members of the public can submit representations on the OZP to the Board during the two-month statutory public inspection period. The K&TDC will be consulted on the amendments during the statutory exhibition period of the draft OZP.

11. Decision Sought

Members are invited to:

(a) agree to the proposed amendments to the approved Tsing Yi OZP No. S/TY/26 as mentioned in paragraphs 4, 6 and 7 above;

(b) agree that the amendment Plan No. S/TY/26A (to be renumbered as S/TY/27 upon exhibition) at **Appendix I** and its Notes at **Appendix II** are suitable for exhibition for public inspection under section 5 of the Ordinance;

(c) adopt the revised ES at **Appendix III** as an expression of the planning intentions and objectives of the Board for various land use zonings on the draft Tsing Yi OZP; and

(d) agree that the revised ES at **Appendix III** is suitable for exhibition for public inspection together with the draft OZP No. S/TY/26A (to be renumbered to S/TY/27 upon gazetting).

12. Attachments

Appendix I	Draft Tsing Yi Outline Zoning Plan No. S/TY/26A
Appendix II	Revised Notes of the draft Tsing Yi Outline Zoning Plan No. S/TY/26A
Appendix III	Revised Explanatory Statement of the draft Tsing Yi Outline Zoning Plan No. S/TY/26A
Appendix IV	Traffic Impact Assessment Report
Appendix V	Broad Environmental Assessment Report
Appendix VI	Visual Appraisal Report
Appendix VII	Preliminary Tree Survey Report
Appendix VIII	Air Ventilation Assessment (Expert Evaluation)
Appendix IX	Provision of Major Community Facilities in Tsing Yi Area
Appendix X	Extract of K&TDC meeting minutes on 14.5.2015
Plan 1	Approved Tsing Yi Outline Zoning Plan No. S/TY/26 (Reduced Size)
Plan 2	Location Plan of Amendment Items A1 to C
Plan 3	Site Plan of Amendment Items A1 to C
Plan 4	Aerial Photo of Amendment Items A1 to C
Plan 5	Site Photos of Amendment Items A1 and A2
Plan 6	Site Photos of Amendment Items A1 to C
Plan 7	Site Photo of the Proposed Development Site Boundary
Plan 8	Comparison of Existing and Proposed Zonings on the OZP for Amendment Items A1 to C
Plan 9	Layout Plan (for indicative purpose only)
Plan 10	Elevation Plan (for indicative purpose only)
Plan 11 – 12	Proposed Public Transport Facilities and Road Improvement Works
Plans 13 to 20	Photomontages of Amendments A1 and A2
Plan 21	Building Separation Before and After Construction
Plan 22	Plan View and Elevation View of Indicative Design Scheme of the Proposed development
Plan 23	Examples of Noise/Air Quality Mitigation Measures

PLANNING DEPARTMENT
JULY 2015

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）
VILLAGE TYPE DEVELOPMENT	V	鄉村式發展
INDUSTRIAL	I	工業
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
SITE OF SPECIAL SCIENTIFIC INTEREST	SSSI	具特殊科學價值地點

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

PLANNING AREA NUMBER	(1)	規劃區編號
MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)	/160	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 & % 公頃 HECTARES	% 百分率	用途
COMMERCIAL	2.50	0.23	商業
RESIDENTIAL (GROUP A)	103.17	9.67	住宅（甲類）
RESIDENTIAL (GROUP B)	2.89	0.27	住宅（乙類）
VILLAGE TYPE DEVELOPMENT	17.25	1.62	鄉村式發展
INDUSTRIAL	147.87	13.86	工業
GOVERNMENT, INSTITUTION OR COMMUNITY	43.59	4.09	政府、機構或社區
OPEN SPACE	43.47	4.07	休憩用地
OTHER SPECIFIED USES	179.97	16.87	其他指定用途
GREEN BELT	422.78	39.63	綠化地帶
SITE OF SPECIAL SCIENTIFIC INTEREST	1.05	0.10	具特殊科學價值地點
MAJOR ROAD ETC.	102.22	9.59	主要道路等
TOTAL PLANNING SCHEME AREA	1066.76	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/TY/26 的修訂
AMENDMENTS TO APPROVED PLAN No. S/TY/26

AMENDMENTS 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 A1	修訂項目A1項
AMENDMENT ITEM A2	修訂項目A2項
AMENDMENT ITEM B1	修訂項目B1項
AMENDMENT ITEM B2	修訂項目B2項
AMENDMENT ITEM C	修訂項目C項

（參看附表）
(SEE ATTACHED SCHEDULE)

香港城市規劃委員會依據城市規劃條例擬備的青衣分區計劃大綱圖
TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD
TSING YI - OUTLINE ZONING PLAN

SCALE 1:7,500 比例尺

※ METRES 200 0 200 400 600 800 1,000 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/TY/26A

~~APPROVED~~ *DRAFT* TSING YI OUTLINE ZONING PLAN NO. S/TY/26*A*

(Being ~~an Approved~~ ***a Draft*** 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 (a) where the uses or developments are specified in Column 2 of the Notes of individual zones or (b) as provided in paragraph (8) in relation to areas zoned "Site of Special Scientific Interest":

(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 areas zoned "Site of Special Scientific Interest",

(a) the following uses or developments are always permitted:

(i) maintenance or repair of plant nursery, amenity planting, sitting out area, rain shelter, refreshment kiosk, road, watercourse, nullah, public utility pipeline, electricity mast, lamp pole, telephone booth, shrine and grave; and

(ii) 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

(b) the following uses or developments require permission from the Town Planning Board:

provision of plant nursery, amenity planting, sitting out area, rain shelter, refreshment kiosk, footpath, public utility pipeline, electricity mast, lamp pole, telephone booth and shrine.

(9) 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.

(10) 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.

(11) 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.

"New Territories Exempted House" means a domestic building other than a guesthouse or a hotel; or a building primarily used for habitation, other than a guesthouse or a hotel, the ground floor of which may be used as 'Shop and Services' or 'Eating Place', the building works in respect of which are exempted by a certificate of exemption under Part III of the Buildings Ordinance (Application to the New Territories) Ordinance (Cap. 121).

~~APPROVED~~ *DRAFT* TSING YI OUTLINE ZONING PLAN NO. S/TY/26*A*

Schedule of Uses

COMMERCIAL

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) Hotel 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 or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution School Shop and Services Social Welfare Facility Training Centre Utility Installation for Private Project Wholesale Trade	Broadcasting, Television and/or Film Studio Government Refuse Collection Point Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station

(Please see next page)

COMMERCIAL (Cont'd)

Planning Intention

This zone is intended primarily for commercial developments, which may include hotel, office, shop, services, place of entertainment and eating place, functioning mainly as an environmental buffer to screen off glare and noise from Container Terminal No. 9.

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 non-domestic plot ratio of 9.5 or the plot ratio of the existing building, whichever is the greater.

(2) In determining the 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, 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 restriction 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 Flat Government Use (not elsewhere specified) House Library Market Place of Recreation, Sports or Culture Public Clinic Public Transport Terminus or Station (excluding open-air terminus or station) Residential Institution School (in free-standing purpose-designed building only) Social Welfare Facility Utility Installation for Private Project	Commercial Bathhouse/Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Refuse Collection Point Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Office Petrol Filling Station Place of Entertainment Private Club Public Convenience Public Transport Terminus or Station (not elsewhere specified) Public Utility Installation Public Vehicle Park (excluding container vehicle) Religious Institution School (not elsewhere specified) Shop and Services Training Centre
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	

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

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)" ("R(A)"), no new development for a domestic or non-domestic building shall exceed a maximum domestic plot ratio of 5.0 or a maximum non-domestic plot ratio of 9.5, as the case may be. For new development of a building that is partly domestic and partly non-domestic, the plot ratio for the domestic part of the building shall not exceed the product of the difference between the maximum non-domestic plot ratio of 9.5 and the actual non-domestic plot ratio proposed for the building and the maximum domestic plot ratio of 5.0 divided by the maximum non-domestic plot ratio of 9.5.

(2) On land designated "R(A)3" and "R(A)4", no new development for a domestic or non-domestic building shall exceed a maximum domestic plot ratio of 6.0 or a maximum non-domestic plot ratio of 9.5, as the case may be, and the maximum building heights in terms of metres above Principal Datum (mPD) as stipulated on the Plan, or the plot ratio and the height of the existing building, whichever is the greater. For new development of a building that is partly domestic and partly non-domestic, the plot ratio for the domestic part of the building shall not exceed the product of the difference between the maximum non-domestic plot ratio of 9.5 and the actual non-domestic plot ratio proposed for the building and the maximum domestic plot ratio of 6.0 divided by the maximum non-domestic plot ratio of 9.5.

(3) For the purpose of paragraphs (1) and (2) above, on land designated "R(A)", "R(A)3" and "R(A)4", 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-

(i) 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

(ii) the maximum domestic and/or non-domestic plot ratio(s) stated in paragraph (1) or (2) 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.

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

Remarks (Cont'd)

(4) On land designated "R(A)1" and "R(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 gross floor area (GFA) and in breach of any other restrictions specified below:

Sub-zone	Restriction
R(A)1	Maximum domestic GFA of 245,700m² and a maximum non-domestic GFA of 47,625m² of which not less than 1,431m² shall be provided for kindergarten and day nursery uses.
R(A)2	Maximum domestic GFA of 205,630m² and a maximum non-domestic GFA of 3,550m².

(5) On land designated "R(A)3", a public transport terminus shall be provided.

(6) In determining the relevant maximum plot ratio for the purposes of paragraphs (1), (2) and (3) 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.

(7) In determining the maximum plot ratio or GFA for the purposes of paragraphs (1), (2), (3) and (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.

(8) In determining the maximum non-domestic GFA for the purposes of paragraph (4) above, any floor space that is constructed or intended for use solely as public transport and railway facilities, as required by the Government, may also be disregarded.

(Please see next page)

RESIDENTIAL (GROUP A) (Cont'd)

Remarks (Cont'd)

(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 or GFA for the building on land to which paragraphs (1), (2), (3) or (4) 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 or GFA specified in paragraphs (1), (2), (3) and (4) above may thereby be exceeded.

(10) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio/GFA/building height restrictions stated in paragraphs (1) to (4) 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 Off-course Betting Centre Office Petrol Filling Station Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution School (not elsewhere specified) Shop and Services Social Welfare Facility 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 total plot ratio of 2.1, or the plot ratio 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, 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. Any floor space that is constructed or intended for use solely as public vehicle park and public transport facilities, as required by the Government, may also 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.

VILLAGE TYPE DEVELOPMENT

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 Government Use (Police Reporting Centre, Post Office only) House (New Territories Exempted House only) Religious Institution (Ancestral Hall only) Rural Committee/Village Office	Eating Place Government Refuse Collection Point Government Use (not elsewhere specified) # House (not elsewhere specified) Institutional Use (not elsewhere specified) # Petrol Filling Station Place of Recreation, Sports or Culture Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation # Public Vehicle Park (excluding container vehicle) Religious Institution (not elsewhere specified) # Residential Institution # School # Shop and Services Social Welfare Facility # Utility Installation for Private Project
In addition, the following uses are always permitted on the ground floor of a New Territories Exempted House:	
Eating Place Library School Shop and Services	

(Please see next page)

VILLAGE TYPE DEVELOPMENT (Cont'd)

Planning Intention

The planning intention of this zone is primarily for the provision of land for the retention and expansion of existing villages as well as reservation of land for the reprovisioning of village houses affected by Government projects. Selected commercial and community uses serving the needs of the villagers and in support of the village development are always permitted on the ground floor of a New Territories Exempted House. Other commercial, community and recreational uses may be permitted on application to the Town Planning Board.

Remarks

(1) No new development, or addition, alteration and/or modification to or redevelopment of an existing building (except development or redevelopment to those annotated with #) shall result in a total development and/or redevelopment in excess of a maximum building height of 3 storeys (8.23m) 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 restriction stated in paragraph (1) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

INDUSTRIAL

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 Bus Depot Cargo Handling and Forwarding Facility (not elsewhere specified) Eating Place (Canteen, Cooked Food Centre only) Government Refuse Collection Point Government Use (not elsewhere specified) Industrial Use (not elsewhere specified) Information Technology and Telecommunications Industries Office (Audio-visual Recording Studio, Design and Media Production, Office Related to Industrial Use only) Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park 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 Vehicle Repair Workshop Warehouse (excluding Dangerous Goods Godown)	Asphalt Plant/Concrete Batching Plant Broadcasting, Television and/or Film Studio Cargo Handling and Forwarding Facility (Container Freight Station, free-standing purpose-designed Logistics Centre only) Container Vehicle Repair Yard Dangerous Goods Godown Eating Place (not elsewhere specified) (in wholesale conversion of an existing building only) Educational Institution (in wholesale conversion of an existing building only) Exhibition or Convention Hall Industrial Use (Bleaching and Dyeing Factory, Electroplating/Printed Circuit Board Manufacture Factory, Metal Casting and Treatment Factory/Workshop only) Institutional Use (not elsewhere specified) (in wholesale conversion of an existing building only) Marine Fuelling Station Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Off-course Betting Centre Offensive Trades Office (not elsewhere specified) Oil Depot, Oil Refinery and Petro-Chemical Plant Open Storage Petrol Filling Station Pier Place of Entertainment (in wholesale conversion of an existing building only) Place of Recreation, Sports or Culture Private Club Public Clinic (in wholesale conversion of an existing building only) Religious Institution (in wholesale conversion of an existing building only)

(Please see next page)

INDUSTRIAL (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
	Ship-building, Ship-breaking and Ship-repairing Yard Shop and Services (not elsewhere specified) (ground floor only, except in wholesale conversion of an existing building and Ancillary Showroom [#] which may be permitted on any floor) Training Centre (in wholesale conversion of an existing building only) Vehicle Stripping/Breaking Yard Wholesale Trade
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 use 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:
Eating Place Educational Institution Exhibition or Convention Hall Institutional Use (not elsewhere specified) Off-course Betting Centre Office Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Religious Institution Shop and Services Training Centre	Social Welfare Facility (excluding those involving residential care)

[#] 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.

Planning Intention

This zone is intended primarily for general industrial uses to ensure an adequate supply of industrial floor space to meet demand from production-oriented industries. Information technology and telecommunications industries and office related to industrial use are also always permitted in this zone.

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 9.5, or the plot ratio 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 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

Schedule I: for "Government, Institution or Community" and "Government, Institution or Community (1)"

Ambulance Depot
Animal Quarantine Centre (in Government building only)
Broadcasting, Television and/or Film Studio
Cable Car Route and Terminal Building
Eating Place (Canteen, Cooked Food Centre only)
Educational Institution
Exhibition or Convention Hall
Field Study/Education/Visitor Centre
Government Refuse Collection Point
Government Use (not elsewhere specified)
Hospital
Institutional Use (not elsewhere specified)
Library
Market
Pier
Place of Recreation, Sports or Culture
Public Clinic
Public Convenience
Public Transport Terminus or Station
Public Utility Installation
Public Vehicle Park (excluding container vehicle)
Recyclable Collection Centre
Religious Institution
Research, Design and Development Centre
Rural Committee/Village Office
School
Service Reservoir
Social Welfare Facility
Training Centre
Wholesale Trade

Animal Boarding Establishment
Animal Quarantine Centre (not elsewhere specified)
Columbarium
Correctional Institution
Crematorium
Driving School
Eating Place (not elsewhere specified)
Firing Range
Flat
Funeral Facility
Helicopter Landing Pad
Helicopter Fuelling Station
Holiday Camp
Hotel
House
Marine Fuelling Station
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
Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation
Refuse Disposal Installation (Refuse Transfer Station only)
Residential Institution
Sewage Treatment/Screening Plant
Shop and Services
Utility Installation for Private Project

(Please see next page)

GOVERNMENT, INSTITUTION OR COMMUNITY (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

Schedule II: for "Government, Institution or Community (2)"

Ambulance Depot
Government Refuse Collection Point
Government Use (Customs and Excise Office, Driving Test Centre, Police Reporting Centre/Police Post only)
Pier
Public Convenience
Public Transport Terminus or Station
Public Utility Installation
Public Vehicle Park (excluding container vehicle)
Recyclable Collection Centre

Animal Quarantine Centre
Government Use (not elsewhere specified)
Institutional Use (not elsewhere specified)
Market
Office
Petrol Filling Station (excluding those involving liquefied petroleum gas)
Place of Recreation, Sports or Culture
Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation
Research, Design and Development Centre
Sewage Treatment/Screening Plant
Shop and Services
Social Welfare Facility (excluding those involving residential care)
Utility Installation for Private Project

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.

The sub-zone "Government, Institution or Community (1)" is part of the visual corridor for North-east Tsing Yi and high-rise building on site should be discouraged.

The sub-zone "Government, Institution or Community (2)" covers land beneath flyover. Due to the physical constraints and environmental conditions of such land, only selected Government, institution or community facilities are permitted in this sub-zone.

(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 a maximum building height of 32 metres above Principal Datum, 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 restriction 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 Barbecue Spot Bathing Beach 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 Pier Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Transport Terminus or 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 "Boatyard and Marine-oriented Industrial Uses" only

Eating Place (Canteen, Cooked Food Centre only)
Government Refuse Collection Point
Government Use (Police Reporting Centre, Post Office only)
Industrial Use (Marine-oriented Industries only)
Marine Fuelling Station
Pier
Public Convenience
Public Utility Installation
Ship-building, Ship-breaking and Ship-repairing Yard
Utility Installation for Private Project

Asphalt Plant/Concrete Batching Plant
Cargo Handling and Forwarding Facility
Container Storage/Repair Yard
Eating Place (not elsewhere specified)
Government Use (not elsewhere specified)
Industrial Use (other than those listed in Column 1)
Open Storage of Cement/Sand
Petrol Filling Station
Public Vehicle Park
Shop and Services
Warehouse (excluding Dangerous Goods Godown)

Planning Intention

This zone is intended primarily for boatyard and marine-oriented industrial uses.

(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 "Container Terminal" only

Cargo Handling and Forwarding Facility
Container Storage/Repair Yard
Container Vehicle Park/Container Vehicle Repair Yard
Eating Place (Canteen, Cooked Food Centre only)
Government Refuse Collection Point
Government Use (not elsewhere specified)
Pier
Private Club
Public Convenience
Public Transport Terminus or Station
Public Utility Installation
Public Vehicle Park
Warehouse (excluding Dangerous Goods Godown)
Ambulance Depot
Dangerous Goods Godown
Eating Place (not elsewhere specified)
Industrial Use
Marine Fuelling Station
Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
Petrol Filling Station
Public Clinic
Refuse Disposal Installation
Shop and Services
Utility Installation for Private Project
Vehicle Repair Workshop

Planning Intention

This zone is intended primarily to cater for the development of container terminals and the associated port back-up facilities.

(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 "Container Related Uses" only

Cargo Handling and Forwarding Facility
Container Storage/Repair Yard
Container Vehicle Park/Container Vehicle Repair Yard
Eating Place (Canteen, Cooked Food Centre only)
Government Refuse Collection Point
Government Use (not elsewhere specified)
Public Convenience
Public Transport Terminus or Station
Public Utility Installation
Public Vehicle Park
Warehouse (excluding Dangerous Goods Godown)

Ambulance Depot
Dangerous Goods Godown
Eating Place (not elsewhere specified)
Industrial Use
Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances
Office (for "Container Related Uses 1" only)
Oil Depot, Oil Refinery and Petro-chemical Plant
Petrol Filling Station
Private Club (for "Container Related Uses 1" only)
Public Clinic
Refuse Disposal Installation
Shop and Services
Utility Installation for Private Project
Vehicle Repair Workshop

Planning Intention

This zone is intended primarily to cater for the container related uses and port back-up facilities. Port related development such as container freight station, logistics centre, container vehicle park and container storage and repair yard are permitted within this zone.

Remarks

(1) On land designated "Other Specified Uses" annotated "Container Related Uses 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 gross floor area of 35,000m^2.

(2) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the GFA restriction 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 "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 or 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
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 or 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
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 use 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 9.5, or the plot ratio 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 restriction 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 "Recreation and Tourism Related Uses" only	Barbecue Spot Broadcasting, Television and/or Film Studio Eating Place Field Study/Education/Visitor Centre Flat Golf Course Government Use Holiday Camp Hotel House Picnic Area Pier Place of Entertainment Place of Recreation, Sports or Culture Public Transport Terminus or Station Public Utility Installation Religious Institution Residential Institution Shop and Services Tent Camping Ground Theme Park Utility Installation for Private Project

Planning Intention

This zone is intended for low-density and low-rise recreation and tourism related development such as resort hotel, public recreational uses and other tourist attractions. The zoning is to facilitate appropriate planning control over the development mix, scale, design and layout of development, taking account of various environmental, traffic, infrastructure and other constraints.

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

For "Recreation and Tourism Related Uses" only (Cont'd)

Remarks

(1) An applicant for permission for development on land designated "Other Specified Uses" annotated "Recreation and Tourism Related Uses" shall prepare a layout plan and other documents showing the following information for the consideration of the Town Planning Board:

(i) the area of the proposed land uses, the nature, position, dimensions, and heights of all buildings to be erected in the area;

(ii) the proposed total site area and gross floor area for various uses and facilities;

(iii) the details and extent of parking facilities, loading/unloading spaces and other facilities to be provided;

(iv) the alignment, widths and levels of any roads and pedestrian linkages proposed to be constructed;

(v) the landscape and urban design proposals within the area;

(vi) programmes of development in detail;

(vii) the details and programme of supply of utilities and infrastructure to meet the need of the proposed development;

(viii) an environmental assessment report, including but not limiting to a visual impact assessment to examine any possible environmental and visual problems that may be caused to or by the proposed development during and after construction and the proposed mitigation measures to tackle them;

(ix) a traffic (including marine traffic) impact assessment report to examine any possible traffic (including marine traffic) problems that may be caused by the proposed development and the proposed mitigation measures to tackle them;

(x) a drainage and sewerage impact assessment report to examine any possible drainage and sewerage problems that may be caused by the proposed development and the proposed mitigation measures to tackle them;

(Please see next page)

OTHER SPECIFIED USES (Cont'd)

For "Recreation and Tourism Related Uses" only (Cont'd)

Remarks (Cont'd)

(xi) a geotechnical assessment report including Natural Terrain Hazard Study to examine any possible geotechnical problems that may be caused by the proposed development and the proposed mitigation measures to tackle them; and

(xii) such other information as may be required by the Town Planning Board.

(2) The layout plan should be supported by an explanatory statement which contains an adequate explanation of the development proposal, including such information as land tenure, relevant lease conditions, existing conditions of the site, the character of the site in relation to the surrounding areas, principles of layout design, major development parameters, design population, types of Government, institution or community facilities, and recreational and open space facilities.

(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 a maximum plot ratio of 0.4 and a maximum building height of 40 metres above Principal Datum.

(4) In determining the maximum plot ratio for the purposes of paragraph (3) 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.

(5) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio or building height restrictions stated in paragraph (3) 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 "Viewing Platform" only	
Field Study/Education/Visitor Centre	Government Use Shop and Services Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended for the development of viewing platform.

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 gross floor area (GFA) of 457m^2 and a maximum building height of 5.6m, or the GFA and building 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 GFA and 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.

For "Amenity Area" only	
Amenity Planting	Government Use Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily for the provision of land for the development of amenity areas.

(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 "Cargo Handling Area" only	
Cargo Handling Area	Government Use Petrol Filling Station Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily for the development of cargo handling facilities.

For "Petrol Filling Station" only	
Petrol Filling Station	Government Use Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily for the development of petrol filling station.

(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 "Cement Plant" only	
Cement Plant	Government Use Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily for the development of cement plant.

For "Traditional Burial Area For Tsing Yi Villager" only	
Traditional Burial Area	Government Use Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended primarily to provide land for the development of traditional burial area for Tsing Yi villagers.

For "Sewage Treatment Plant" only	
Sewage Treatment Plant	Government Use Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended for the development of sewage treatment plant.

(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 "Ventilation Building" only	
Ventilation Building	Government Use Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended for the development of Mass Transit Railway ventilation building.

For "Chemical Wastes Treatment Facility" only	
Chemical Wastes Treatment Facility	Government Use Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended for the development of chemical wastes treatment facility.

For "Marine-related Uses" only	
Marine-related Uses	Government Use Utility Installation not Ancillary to the Specified Use

Planning Intention

This zone is intended for the provision of land to serve the marine-oriented activities affected by the reclamation for the container terminal.

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 Country Park * 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 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) Grave Holiday Camp House Marine Fuelling Station Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Petrol Filling Station Pier 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 Rural Committee/Village Office School Service Reservoir Social Welfare Facility Utility Installation for Private Project Zoo

* Country Park means a country park or special area as designated under the Country Parks Ordinance (Cap. 208). All uses and developments require consent from the Country and Marine Parks Authority and approval from the Town Planning Board is not required.

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.

SITE OF SPECIAL SCIENTIFIC INTEREST

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Country Park * Wild Animals Protection Area	Agricultural Use Field Study/Education/Visitor Centre Government Use Nature Reserve Nature Trail On-Farm Domestic Structure Picnic Area Public Convenience Public Utility Installation Tent Camping Ground Utility Installation for Private Project

* Country Park means a country park or special area as designated under the Country Parks Ordinance (Cap. 208). All uses and developments require consent from the Country and Marine Parks Authority and approval from the Town Planning Board is not required.

Planning Intention

The planning intention of this zone is to conserve and protect the features of special scientific interest such as rare or particular species of fauna and flora and their habitats, corals, woodlands, marshes or areas of geological, ecological or botanical/biological interest which are designated as Site of Special Scientific Interest (SSSI). It intends to deter human activities or developments within the SSSI.

There is a general presumption against development in this zone. No developments are permitted unless they are needed to support the conservation of the features of special scientific interest in the SSSI, to maintain and protect the existing character of the SSSI, or for educational and research purposes.

Remarks

Any filling or excavation of land, including that to effect a change of use to any of those specified in Columns 1 and 2 above or the uses or developments always permitted under the covering Notes, shall not be undertaken or continued on or after the date of the publication in the Gazette of the notice of the draft Tsing Yi Outline Zoning Plan No. S/TY/21 without the permission from the Town Planning Board under section 16 of the Town Planning Ordinance.

Appendix III

~~APPROVED~~ *DRAFT* TSING YI OUTLINE ZONING PLAN NO. S/TY/26*A*

EXPLANATORY STATEMENT

~~APPROVED~~ *DRAFT* TSING YI OUTLINE ZONING PLAN NO. S/TY/26*A*

~~APPROVED~~ *DRAFT* TSING YI OUTLINE ZONING PLAN NO. S/TY/26*A*

(Being ~~an Approved~~ ***a Draft*** 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 ~~approved~~ ***draft*** Tsing Yi Outline Zoning Plan (OZP) No. S/TY/26***A***. 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 1 September 1961, the first statutory plan of Tsuen Wan District (No. LTW/57) including Tsing Yi Island was exhibited under section 5 of the Town Planning Ordinance (the Ordinance). The plan was subsequently amended three times and approved by the then Governor in Council (G in C) on 8 October 1963 and 14 December 1965. On 30 June 1978, the draft Tsing Yi OZP No. LTY/24 covering mainly the Tsing Yi area was exhibited under section 5 of the Ordinance. The OZP was subsequently amended four times and exhibited for public inspection under section 7 of the Ordinance.

2.2 On 29 November 1988, the then G in C referred the draft Tsing Yi OZP No. S/TY/4 to the Board for further consideration and amendment under section 9(1)(c) of the Ordinance. The OZP was subsequently amended twice and exhibited for public inspection under section 5 or 7 of the Ordinance.

2.3 On 10 December 1991, the then G in C referred the draft Tsing Yi OZP No. S/TY/7 to the Board for further consideration and amendment under section 9(1)(c) of the Ordinance. The OZP was subsequently amended twice and exhibited for public inspection under section 5 of the Ordinance.

2.4 On 27 September 1994, the then G in C approved the draft Tsing Yi OZP under section 9(1)(a) of the Ordinance, which was subsequently renumbered as S/TY/10. On 23 May 1995, the then G in C, under section 12(1)(b)(ii) of the Ordinance, referred the approved OZP to the Board for amendment. The OZP was subsequently amended three times under section 5 or 7 of the Ordinance.

2.5 On 13 April 1999, the Chief Executive in Council (CE in C) approved the draft Tsing Yi OZP under section 9(1)(a) of the Ordinance, which was subsequently renumbered as S/TY/14. On 10 October 2000, the CE in C, under section 12(1)(b)(ii) of the Ordinance, referred the approved OZP to the Board for amendment. The OZP was subsequently amended ~~seven~~ ***eight*** times and exhibited for public inspection under section 5 or 7 of the Ordinance.

~~2.6 On 8 December 2009, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Tsing Yi OZP which was subsequently renumbered as No. S/TY/24. On 8 November 2011, the CE in C referred the approved OZP No. S/TY/24 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The reference back of the approved OZP was notified in the Gazette on 18 November 2011.~~

~~2.7 On 13 June 2014, the draft Tsing Yi OZP No. S/TY/25, incorporating amendments mainly to rezone a site at the junction of Liu To Road and Hang Mei Street and a site to the immediate west of Mayfair Gardens for residential uses was exhibited for public inspection under section 5 of the Ordinance. During the two-month exhibition period, a total of 706 valid representations were received. On 5 September 2014, the representations were published for public comments. During the three weeks of the publication, one valid comment was received. After giving consideration to the representations and comment on 13 February 2015, the Board decided not to uphold the representations~~.

2.~~8~~***6*** On 21 April 2015, the CE in C, under section 9(1)(a) of the Ordinance, approved the draft Tsing Yi OZP, which was subsequently renumbered as S/TY/26. ~~On 30 April 2015, the approved Tsing Yi OZP No. S/TY/26 (the Plan) was exhibited for public inspection under section 9(5) of the Ordinance.~~ ***On 23 June 2015, the CE in C referred the approved OZP No. S/TY/26 to the Board for amendment under section 12(1)(b)(ii) of the Ordinance. The reference back of the approved OZP was notified in the Gazette on 3 July 2015.***

2.7 On _____ August 2015, the draft Tsing Yi OZP No. S/TY/26A (the Plan), incorporating amendments mainly to rezone a site at Tsing Yi Road/Tsing Hung Road from "Open Space" ("O") and area shown as 'Road' to "Residential (Group A)4"("R(A)4") and to include 'Art Studio (excluding those involving direct provision of services or goods)' as a Column 1 use in the Notes for Schedule II of the "Other Specified Uses" annotated "Business" 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 road networks within which the development and redevelopment of land in Tsing Yi can be put under statutory planning control.

3.2 The Plan is intended to illustrate the broad principles of development and to provide guidance for more detailed planning within the planning scheme area (the Area). It is a small-scale plan and the road alignments and boundaries between the land use zones may be subject to minor adjustments as more 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 as non-building area or 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 Tsing Yi 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 covers the entire Tsing Yi Island which is situated to the north-west of the Victoria Harbour, separated from the Kowloon mainland by Rambler Channel to the east and north. It covers about 1,067 ha of land.

5.2 Tsing Yi is characterised by its very marked topography. The ground rises rapidly from sea level to about 300m in the south and to about 200m in the north.

5.3 Tsing Yi is currently connected to Kwai Chung by the Tsing Yi Bridge, Kwai Tsing Bridge and Cheung Tsing Bridge, to Tsuen Wan by the Tsing Tsuen Bridge, and to Stonecutters Island by the Stonecutters Bridge across Rambler Channel on the eastern side. On the western side, it is linked up with Lantau Island via the Lantau Link which was opened in 1997. On the northern side, it is linked up with Ting Kau via the Ting Kau Bridge which was opened in 1998. With the operation of the Mass Transit Railway (MTR) Airport

Express and Tung Chung Line in mid-1998, the accessibility of Tsing Yi has been greatly enhanced.

5.4 Prior to 1960, there was virtually no development in Tsing Yi. Development began to take place in the early 1960s when Government granted leases of seabed on the east and south for the development of oil depots, a power station and a few other forms of industrial undertakings; all of which are land extensive development dependent on marine access.

5.5 The opening of the Tsing Yi Bridge in 1974 gave impetus to further development and Tsing Yi has since become a focus of major land extensive and specialised industries, such as dockyards, chemical plant and marine engines workshop.

5.6 Major residential developments began in the mid 1970s and are mainly located in the north-east of Tsing Yi and around the former Tsing Yi Bay.

5.7 For convenience of reference, Tsing Yi has been subdivided into a number of smaller planning areas as shown on the Plan.

5.8 The Area covers land on the waterfront of the Victoria Harbour. For any development proposal affecting such land, due regard shall be given to the Vision Statement for Victoria Harbour published by the Board and the requirements under the Protection of the Harbour Ordinance (Cap. 531).

6. POPULATION

According to the 2011 Census, the population of the Area was about 191,750. It is estimated that the planned population of the Area would be about ~~200,350~~***211,950***.

7. LAND USE ZONINGS

7.1 Commercial ("C") - Total Area : 2.5 ha

7.1.1 This zoning is intended primarily for commercial developments, which may include hotel, office, shop, services, place of entertainment and eating place. There is only one site in Area 22 to the north-west of the Container Terminal No. 9 (CT-9) which is designated for hotel and commercial development. The main purpose of the hotel and commercial development is to act as a buffer to screen off the possible noise and glare from the CT-9 and to reduce their effects on the nearby residential developments. It can also provide some commercial services to serve the adjoining developments and the residents of Tsing Yi.

7.1.2 In order not to overtax the existing and planned infrastructure, development or redevelopment within this zone is subject to a non-domestic plot ratio of 9.5. To provide flexibility for innovative

design adapted to the characteristics of the site, minor relaxation of the plot ratio restriction may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

7.1.3 It is also necessary to restrict the building height to a limit that will achieve buffer function and not affect the general townscape of the area. However, in order to allow design flexibility, appropriate control would be incorporated in the lease of the site.

7.2 Residential (Group A) ("R(A)") - Total Area : ~~98.88~~***103.17*** ha

7.2.1 This zoning 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.

7.2.2 This zoning includes public rental housing, subsidized sales flats and private residential developments. Developments or redevelopments within the "R(A)" zone are subject to a maximum domestic plot ratio of 5.0 or a maximum non-domestic plot ratio of 9.5, or the plot ratio of the existing building, whichever is the greater. In calculating the gross floor area (GFA) for these developments/ redevelopments, land for free-standing purpose-designed buildings that are solely for accommodating school or other government, institution or community (GIC) facilities, including those located on ground and on building podium, shall be deducted in calculating the relevant site area.

7.2.3 Existing public rental housing developments include Cheung Ching Estate, Cheung Hong Estate, Tsing Yi Estate, Cheung Fat Estate, Cheung On Estate, Cheung Hang Estate, Cheung Wang Estate, Easeful Court and Broadview Garden (part). Within these public rental housing estates, adequate community facilities, retail facilities and open spaces are provided in accordance with planning standards.

7.2.4 Existing subsidised sales flats include Ching Tai Court, Ching Nga Court, Ching Wah Court, Ching Wang Court, Ching Shing Court, Serene Garden, Tivoli Garden, Greenview Villa and Broadview Garden (part). ~~A proposed~~ The New Home Ownership Scheme development ***Ching Chun Court*** in Cheung Ching Estate is under ~~planning~~ ***construction***. Adequate community facilities are provided within all housing estates in accordance with approved planning briefs.

7.2.5 Private developments include Tierra Verde, Villa Esplanada, Tsing Yi Garden, Greenfield Garden, Grand Horizon and Mayfair Gardens.

7.2.6 The MTR Airport Express/Tung Chung Line Tsing Yi Station site (i.e. Tierra Verde and Maritime Square) is zoned "R(A)1". Any development/redevelopment at this site is restricted to a maximum

domestic gross floor area (GFA) of 245,700m² and a maximum non-domestic GFA of 47,625m², of which not less than 1,431m² are for kindergarten and day nursery uses.

7.2.7 The Villa Esplanada at Nga Ying Chau is zoned "R(A)2". Any development/redevelopment at this site is restricted to a maximum domestic GFA of 205,630m² and a maximum non-domestic GFA of 3,550m². A public transport terminus, which is not accountable for GFA, is also provided within the site.

7.2.8 ~~There are two proposed private residential sites in the Area. The~~ ***A proposed private residential*** site at the junction of Liu To Road and Hang Mei Street is zoned "R(A)3"**.** ~~and the~~ ***Another proposed private residential*** site to the immediate west of Mayfair Gardens ***and a proposed public housing site to the west of Rambler Crest are*** ~~is~~ zoned "R(A)4". In order to prevent excessively tall or out-of-context buildings and to provide better control on the building heights of developments, building height restrictions are imposed taking into account the topography, foothill setting, site levels, local character, existing predominant land use, building height profile and the compatibility in terms of building height with the surrounding areas. Both the "R(A)3" and "R(A)4" zones are subject to a maximum domestic plot ratio of 6.0 or a maximum non-domestic plot ratio of 9.5, or the plot ratio of the existing building, whichever is the greater. The "R(A)3" zone is subject to a maximum building height of 200mPD and the "R(A)4" zone is subject to a maximum building height of 140mPD. A public transport terminus shall be provided in the development within the "R(A)3" zone to re-provision the existing green minibus terminus at the site, which is accountable for plot ratio calculation.

7.2.9 In the circumstances set out in Regulation 22 of the Building (Planning) Regulations, the above specified maximum plot ratio/ GFA 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.

7.2.10 To provide flexibility for innovative design adapted to the characteristics of particular sites, minor relaxation of the plot ratio/GFA/building height restrictions may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

7.3 Residential (Group B) ("R(B)") - Total Area: 2.89 ha

7.3.1 This zoning is generally intended to provide for medium-density residential development. Within this zone, commercial uses are prohibited unless otherwise permitted by the Board through the planning permission system.

7.3.2 The Mount Haven at Liu To is under this zoning. Any development/redevelopment at this site is restricted to a maximum plot ratio of 2.1. To provide flexibility for innovative design adapted to the characteristics of the site, minor relaxation of the plot ratio restriction may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

7.4 Village Type Development ("V") - Total Area : 17.25 ha

This zoning is intended for the development and expansion of existing villages as well as for providing resites to village houses affected by Government projects. Except for St. Paul's and Fisherman Villages in Area 2 and the Lutheran Village in Area 4, all the villages in Tsing Yi are village resites. To provide flexibility for innovative design adapted to the characteristics of particular sites, minor relaxation of the building height restriction may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

7.5 Industrial ("I") - Total Area : 147.87 ha

7.5.1 The planning intention of the "I" zone is to reserve land primarily for general industrial uses to ensure an adequate supply of industrial floor space. Information technology and telecommunications industries are considered suitable to operate in industrial buildings. Office related to industrial use, being an integral part of industrial function, is also permitted as of right in the "I" zone. However, general commercial and office uses, other than those permitted on the purpose-designed non-industrial portion on the lower floors of an existing building separated by a buffer floor, will require planning permission from the Board.

7.5.2 The particular geographical conditions of Tsing Yi permit the provision of land for a wide spectrum of industrial uses. Industrial land along the southern and western coast has been developed for dockyards, boatyards and oil storage, that require direct marine access. In addition, there are chemical industries on the southern part of Tsing Yi.

7.5.3 In order not to overtax the existing and planned infrastructure, development or redevelopment within this zone is subject to a non-domestic plot ratio of 9.5. To provide flexibility for innovative design adapted to the characteristics of particular sites, minor relaxation of the plot ratio restriction may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

7.6 Government, Institution or Community ("G/IC") - Total Area : ~~43.71~~ ***43.59*** ha

7.6.1 This zoning is intended to provide a wide range of GIC facilities to meet the needs of Tsing Yi residents. Existing facilities include Tsing Yi Sports Ground, Tsing Yi Swimming Pool, a divisional police station, an ambulance depot, clinics, fire stations, schools, a technical institute, indoor recreation centres and waterworks installations.

7.6.2 ~~A site at Area 4 is reserved for the development of a planned indoor recreation centre~~. ***An indoor recreation centre in a site at Area 4 is under construction***.

7.6.3 A public transport terminus cum lorry park is located to the north of Tsing Tsuen Road and zoned "G/IC(1)". As the site is part of the visual corridor for the North-east Tsing Yi, high-rise building on site should be discouraged. Any development or redevelopment at this site is restricted to a maximum building height of 32 metres above Principal Datum. A landscaped deck should also be provided in the development to enhance the environment and visual quality for the neighbourhood. To provide flexibility for innovative design adapted to the characteristics of the site, minor relaxation of the height restriction may be considered by the Board through the planning permission system based on individual planning merits.

7.6.4 A site beneath Tsing Yi Bridge, Kwai Tsing Bridge and Cheung Tsing Bridge is zoned "G/IC(2)". In view of the physical constraints and environmental conditions, only selected GIC facilities are permitted within this sub-zone. The site is currently occupied by a number of government uses, namely Tsing Yi Salt Water Pumping Station and Cargo Examination Compound-Cum-Office Building of the Customs and Excise Department.

7.6.5 In detailed planning, local community facilities will also be provided within the housing areas.

7.7 Open Space ("O") - Total Area : ~~47.61~~ ***43.47*** ha

7.7.1 This zoning 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. Adequate reservation for district open space has been made on the Plan. The area for passive recreational purposes mainly consists of well-wooded slopes and hills which should be preserved in the interest of general amenity.

7.7.2 The Tsing Yi Park (the town park) with an area of about 7 ha has been developed in Area 2. Another special feature is a waterfront promenade running along the coast of Area 3 in the east to Area 8 in the north. The portion of the promenade in Area 3 is linked up with the town park by several footbridges, which is an essential recreational focus for Tsing Yi residents.

7.7.3 The Tsing Yi Northeast Park located to the west of Ching Tai Court and Cheung On Estate has been developed as a district open space forming part of the waterfront promenade. Apart from providing additional recreational facilities, it can also serve as a noise buffer between the boatyards and the adjacent housing developments.

7.7.4 The open space in front of the existing residential development at Mayfair Gardens ~~will~~ provide***s*** a variety of recreational facilities to the residents and the students of the adjacent technical institute. ~~It also serves as a buffer area between the residential developments and the Container Terminal.~~

7.7.5 Apart from the district open space, local open spaces are also provided in other zones to meet local demands.

7.8 Other Specified Uses ("OU") - Total Area : 179.97 ha

7.8.1 This zoning covers land allocated for specified uses.

Container Terminal

7.8.2 The largest area under this zone is designated for the CT-9 development and back-up areas. The terminal has an area of about 68 ha and provides four container berths and two feeder berths. The feeder berths facilitate direct access to the terminal by river trade and coastal trans-shipment cargoes.

Container Related Uses

7.8.3 Land zoned "OU" annotated "Container Related Uses" is reserved for container related uses including a container freight station, lorry parking and container storage and repair. To provide high value-added logistics services in Kwai Tsing area, three modern logistics developments have been planned along Tsing Yi Road.

7.8.4 Land zoned "OU" annotated "Container Related Uses 1" is reserved for container related uses including a noise barrier in the form of a screen building at a height of not less than 45 metres above Principal Datum. The screen building was built at the northern part of the site with the intention to screen off the noise and glare from the CT-9 development. Development within the "OU" annotated "Container Related Uses 1" zone is restricted to a maximum GFA of 35,000m².

Marine-related Uses

7.8.5 An area to the south of the terminal is under this zoning and annotated for marine-related uses. It is intended to serve the existing marine-oriented activities in Area 21 which were affected by the reclamation for the terminal.

Cement Plant

7.8.6 A cement plant in Area 9 has been developed to replace the former cement plant in Area 1. This site is located over 1 km away and at the downwind direction respective to the public housing developments in Area 8.

Boatyard and Marine-oriented Industrial Uses

7.8.7 The rest of the western half of Area 9 is reserved for boatyards and marine-oriented industrial uses to meet the long-term requirements.

Sewage Treatment Plant

7.8.8 A site to the north of the existing sewage treatment plant in Area 6 is reserved for the expansion of the plant. Upon completion, the plant will provide preliminary treatment of the domestic and industrial sewage from the whole Tsing Yi.

Recreation and Tourism Related Uses

7.8.9 Two sites in North-west Tsing Yi abutting the Tsing Ma Bridge and Ting Kau Bridge are zoned "OU" annotated "Recreation and Tourism Related Uses". While situating at a strategic location and enjoying the best views of harbour and bridges, the sites are considered suitable for low-density and low-rise recreation and tourism related development such as resort hotel, public recreational uses and other tourist attractions.

7.8.10 As the sites are located at the prominent waterfront, it is the planning intention to restrict the development bulk, height and scale of the development on these sites to preserve the existing amenity. To this end, any development within this zone is restricted to a maximum building height of 40 metres above Principal Datum and a maximum plot ratio of 0.4. In addition, any development within this zone would require planning permission so that the Board could consider the development proposals based on their individual planning merits.

Viewing Platform

7.8.11 A site at Wok Tai Wan is zoned "OU" annotated "Viewing Platform". It intends to develop a permanent viewing platform for Lantau Link to serve tourists and visitors.

7.8.12 Any development or redevelopment at this site is restricted to a maximum GFA of 457m^2 and a maximum building height of 5.6m.

Business

7.8.13 The Tsing Yi Industrial Area in Area 6 is zoned "OU" annotated "Business" which is intended primarily for general business uses. Under this zoning, a mix of information technology and telecommunications industries, non-polluting industrial, office and other commercial uses will be permitted as of right in new "business" buildings. As it is not possible to phase out existing polluting and hazardous industrial uses all at once, it is necessary to ensure compatibility of the uses within the same industrial building or industrial-office building and the Tsing Yi Industrial Area until the whole area is transformed to cater for the new non-polluting business uses. Development within this zone should make reference to the relevant Town Planning Board Guidelines.

Others

7.8.14 Other sites zoned "OU" include:

(a) petrol filling stations in Areas 10 and 22;

(b) traditional burial grounds for indigenous Tsing Yi villagers in Area 24;

(c) ventilation building for the MTR Airport Express and Tung Chung Line in Area 28;

(d) chemical wastes treatment facility in Area 21; and

(e) amenity areas in Areas 6, 22 and 29.

7.8.15 To provide flexibility for innovative design adapted to the characteristics of particular sites, minor relaxation of the plot ratio/ GFA/ building height restrictions in the "OU" zones may be considered by the Board through the planning permission system. Each proposal will be considered on its individual planning merits.

7.9 Green Belt ("GB") - Total Area : 422.78 ha

7.9.1 This zoning is intended to establish the limits of urban expansion and comprises mainly steep hillsides not suitable for urban development. It serves the purpose of protecting the existing ridgeline which provides physical barriers separating the oil depots in the south and west of Tsing Yi from residential developments in the north-east. A network of natural pathways was completed in the hilltop of Area 28 to provide the public a landscaped picnic area with panoramic view. As to the other "GB" area, certain uses such as passive recreational uses may be permitted on selected sites.

7.9.2 There is a general presumption against development in "GB" zone. Development within this zone will be carefully controlled and

development proposals will be assessed on individual merits taking into account relevant Town Planning Board Guidelines.

7.10 Site of Special Scientific Interest ("SSSI") - Total Area : 1.05 ha

7.10.1 The planning intention of this zone is to conserve and protect the features of special scientific interest such as rare or particular species of fauna and flora and their habitats, corals, woodlands, marshes or areas of geological, ecological or botanical/biological interest which are designated as SSSI. It intends to deter human activities or developments within the SSSI. There is a general presumption against development in this zone. No developments are permitted unless they are needed to support the conservation of the features of special scientific interest in the SSSI, to maintain and protect the existing character of the SSSI, or for educational and research purposes.

7.10.2 The zone covers the South Tsing Yi SSSI located below the highest peak of Tsing Yi. It is a steep slope of woodland harbouring a population of Hong Kong Croton, which is endemic to Hong Kong.

8. COMMUNICATIONS

8.1 Tsing Yi Island was first connected to the road network in Kwai Chung by the Tsing Yi Bridge (Tsing Yi South Bridge) completed in 1974. A second connection with the mainland is provided by the Tsing Tsuen Bridge which was completed at the end of 1987. The Lantau Link, North West Tsing Yi Interchange, Cheung Tsing Highway, Cheung Tsing Tunnel and Cheung Tsing Bridge were completed in 1997 to provide strategic road links connecting Tsing Yi with North Lantau, Tsuen Wan and Kwai Chung.

8.2 A duplicate Tsing Yi South Bridge, namely Kwai Tsing Bridge, was completed in 1999. The purpose of constructing the bridge is to increase the capacity of the transport links between Tsing Yi and Kowloon mainland to cater for the future developments in South-east Tsing Yi. The Kwai Tsing Bridge together with the existing south bridge have provided three lanes each for the eastbound and westbound traffic.

8.3 A ring road has been constructed within Tsing Yi to connect the coastal developments. From this ring road, there is a series of secondary roads and local distributors that provide access to the development areas in various parts of Tsing Yi.

8.4 A number of strategic road schemes connecting Tsing Yi with other parts of the territory have been constructed. Ting Kau Bridge and Tsing Sha Highway with Stonecutters Bridge have been completed. These road links improve the accessibility of Tsing Yi to the North-west New Territories and the West Kowloon area.

8.5 The 2.2 km long Tsing Yi North Coastal Road connecting the existing Tsing Tsuen Bridge (Tsing Yi North Bridge) to the east and the Lantau Link to the west was completed in February 2002. It stretches along the foothills of the north Tsing Yi coast and forms a part of the strategic route between Lantau and other parts of the territory.

8.6 Apart from the road links, the Area is served by the MTR which provides two links: Airport Express between Chek Lap Kok Airport and Hong Kong Island and Tung Chung Line between Tung Chung and Hong Kong Island.

9. UTILITY SERVICES

No difficulty is foreseen in the provision of utility services. Adequate land has been reserved for a telephone exchange, electricity substations, service reservoirs and a sewage treatment plant.

10. IMPLEMENTATION

10.1 Although existing uses non-conforming to the statutory zonings 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.

10.2 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 reservations 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 Kwai Tsing District Council would also be consulted as appropriate.

10.3 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 the departmental outline development plan and the guidelines published by the Board. The outline development plan is 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 the 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
~~APRIL~~ ***AUGUST*** **2015**



Potential Site for Public Housing Development at Tsing Yi Road, Tsing Yi Area 22B

Traffic Impact Assessment Report
July 2015

Housing Department
Hong Kong Housing Authority

Mott MacDonald

Potential Site for Public Housing Development at Tsing Yi Road, Tsing Yi Area 22B

Traffic Impact Assessment Report
July 2015

Housing Department
Hong Kong Housing Authority

Mott MacDonald Hong Kong Limited
20/F, Two Landmark East, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong
T +852 2828 5757 F +852 2827 1823 W www.mottmac.com.hk

Record of Issue and Revision

Revision	Date	Originator	Checker	Approver	Description
A	April 2015	IP Chun Kit	Julie LAU	James KAM	Submission
B	May 2015	IP Chun Kit	Julie LAU	James KAM	Submission
B1	May 2015	IP Chun Kit	Julie LAU	James KAM	Submission
B2	May 2015	IP Chun Kit	Julie LAU	James KAM	Submission
B3	May 2015	IP Chun Kit	Julie LAU	James KAM	Submission
C	June 2015	IP Chun Kit	Julie LAU	James KAM	Submission
C1	July 2015	IP Chun Kit	Julie LAU	James KAM	Submission
C2	July 2015	IP Chun Kit	Julie LAU	James KAM	Submission

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

Tables

Figures

Appendices

1 Introduction

1.1 Background

1.1.1 The subject site is located at Tsing Yi Road, Tsing Yi Area 22B. Currently the site is a greenery area with no development. The location of the subject site is shown in Figure MMH/323840/TIA_FR_RC/1.1.

1.1.2 It is planned to construct a public rental housing estate with 5 building blocks tentatively (the "Proposed Development") in the subject site. Mott MacDonald Hong Kong Limited was commissioned by Housing Department to prepare a Traffic Impact Assessment (TIA) in support of the Proposed Development. This report describes the traffic impact study undertaken.

1.2 Scope of Study

1.2.1 The main objectives of this TIA study are as follows:

- To review the existing traffic conditions and the public transport services in the vicinity of the subject site;
- To check the transport layout and the internal transport facilities of the Proposed Development;
- To quantify the amount of traffic generated by the Proposed Development;
- To forecast the future traffic flows in the vicinity of the Proposed Development;
- To examine the traffic impact of the Proposed Development to the local road network; and
- To identify any deficiencies in the road network in accommodating the expected additional traffic associated with the Proposed Development.

1.3 Contents of the Report

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

- Chapter 2 describes the existing condition and the traffic surveys;
- Chapter 3 outlines the development proposal;
- Chapter 4 presents the traffic impact analysis; and
- Chapter 5 summarises the findings of the traffic impact assessment.

2 The Existing Situation

2.1 The Subject Site

2.1.1 The subject site is located at Tsing Yi Road, Tsing Yi Area 22B. It is bounded by Tsing Yi Road to the north and the west, and Tsing Hung Road to the south. To the further northwest are Mayfair Garden and Hong Kong Institute of Vocational Education. To the east of the subject site is Rambler Crest.

2.1.2 The subject site is now a shrubbery area with slopes. No structure or building is found inside the subject site. A petrol filling station with independent ingress and egress connecting to Tsing Yi Road is located to the north side of the subject site. An elevated private road is located to the northeast portion of the subject site, connecting between Tsing Yi Road and Rambler Crest. This elevated road runs above part of the subject site, and is not accessible from the subject site.

2.2 The Road Network

2.2.1 The section of Tsing Yi Road to the north of the subject site is a dual-2 carriageway with footpaths on both sides. The southern end of Tsing Yi Road is a cul-de-sac with a roundabout for U-turns, which is sufficiently large to accommodate all types of vehicles to turn around. Tsing Yi Road connects with Sai Shan Road in the form of priority junction, and with Ching Hong Road in the form of roundabout. Together with Tsing Yi Heung Sze Road and Kwai Tsing Road, Tsing Yi Road forms the Tsing Yi Interchange.

2.2.2 Tsing Yi Interchange is of double-roundabout design, with grade-separated carriageways and exclusive turning traffic lanes for some movements. Locating at the southeast part of Tsing Yi Island, the interchange provides access to Kwai Chung and Kowloon via Kwai Tsing Road and to Tsuen Wan and Sha Tin via Tsing Yi Heung Sze Road.

2.3 Traffic Survey

2.3.1 Traffic counts were conducted during the AM and the PM peak periods on Thursday 29 January 2015, in order to quantify the traffic flows in the vicinity of the subject site. The traffic counts were classified by vehicle types to enable the calculation of the traffic flows in passenger car unit (pcu). The surveyed junctions are:

- Tsing Yi Interchange;
- Tsing Yi Road / Ching Hong Road; and
- Tsing Yi Road / Sai Shan Road.

2.3.2 The location of the surveyed junctions is shown in Figure MMH/323840/TIA_FR_RC/2.1, and the junction layouts are shown in Figures MMH/323840/TIA_FR_RC/2.2 - 2.4.

2.3.3 From the survey results, it was found that the AM and the PM peak hour traffic flows occurred at 0800 - 0900 hours and 1700 - 1800 hours respectively. The existing peak hour traffic flows at these junctions are presented in Figure MMH/323840/TIA_FR_RC/2.5.

2.4 2015 Junction Operational Performance

2.4.1 The existing peak hour operational performance of the surveyed junctions was calculated based on the observed traffic counts and the analysis method found in Volume 2 of the Transport

Planning and Design Manual (TPDM). The analysis results are summarised in Table 2.1 and the detailed calculations are found in Appendix 1.

Table 2.1 2015 Junction Operational Performance

Junction	Type and Indicator	AM Peak	PM Peak
Tsing Yi Interchange (northern RA)	RA / RFC	0.624	0.552
Tsing Yi Interchange (southern RA)	RA / RFC	0.501	0.398
Tsing Yi Road / Ching Hong Road	RA / RFC	0.569	0.378
Tsing Yi Road / Sai Shan Road	Priority / RFC	0.435	0.357

Note: RA - roundabout
RFC - Ratio-of-Flow to Capacity

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

2.5 Public Transport Facilities

2.5.1 MTR Tsing Yi Station is located about 2 km away from the subject site. Some franchised bus and scheduled minibus routes provide feeder services between MTR Tsing Yi Station and the vicinity of the subject site.

2.5.2 Some franchised bus and scheduled minibus routes currently operate along Tsing Yi Road, Sai Shan Road and Ching Hong Road. The stops of these road based public transport services are within 300m from the subject site. Details of the franchised bus and the minibus routes operating in the vicinity of the subject site are given in Table 2.2. The locations of the bus and the minibus stops are shown in Figure MMH/323840/TIA_FR_RC/2.6.

Table 2.2 Existing Road Based Public Transport Services

Route	Routing
KMB 41	Cheung Ching - Kowloon City Ferry
KMB 42	Cheung Hong - Shun Lee
KMB 42A	Cheung Hang - Jordan (To Wah Road)
KMB 43	Cheung Hong - Tsuen Wan West Railway Station
KMB 43A	Cheung Wang - Shek Lei (Tai Loong Street)
KMB 43C	Cheung Hong - Island Harbourview
KMB 43M	Cheung Ching - Kwai Fong Railway Station
KMB 242X	Cheung Hang - Tsim Sha Tsui
KMB 243M	Mayfair Garden - Discovery Park
KMB 243P	Mayfair Garden - Discovery Park
KMB 249M	Mayfair Garden - Tsing Yi Railway Station
KMB 249X	Tsing Yi Railway Station - Sha Tin Central
KMB / NWFB 948	Cheung On - Causeway Bay (Tin Hau)
KMB / NWFB 948P	Cheung On - Causeway Bay (Tin Hau)
LW A31	Tsuen Wan West Railway Station - Airport (Ground Transportation Centre)
KMB N241	Hung Hom Railway Station - Cheung Wang
KMB X42C	Cheung Hang - Lam Tin Railway Station

Route	Routing
NTGMB 88A	Mayfair Garden - Tam Kon Shan Road
NTGMB 88C	Mayfair Garden - Kwai Fong Station
NTGMB 88D	Tivoli Garden - Kwai Fong Station
NTGMB 88F	Rambler Crest - Tsing Yi Station
NTGMB 88G	Rambler Crest - Kwai Fong Station
NTGMB 88M	Sai Tso Wan Road - Kwai Fong Station
NTGMB 405	Cheung Hang - Lai King South

Note: KMB: Kowloon Motor Bus
LW: Long Win
NWFB: New World First Bus
NTGMB: New Territories Green Minibus

2.6 Footpaths and Pedestrian Crossing Facilities

2.6.1 The existing eastern footpath at Tsing Yi Road fronting the subject site is very narrow to cater for 2-way pedestrian movements. Pedestrians walk between the railing along the kerbside of the footpath and the corrugated beam barrier adjacent to a steep downhill slope. At some locations of the footpath, the clear width between the railing and the beam barrier is less than 1m. Since no development currently abuts against the footpath, almost nil pedestrians were observed.

2.6.2 The western footpath fronting the Hong Kong Institute of Vocational Education HKIVE has about 1.6m – 1.9m width. Since this footpath serves only the side entrance of HKIVE (which is remoter than the main entrance) and the main entrance of HKIVE is located on Sai Shan Road, very few pedestrians were observed on this footpath.

2.6.3 Existing at-grade pedestrian crossing facilities are provided at various locations along Tsing Yi Road. They provide easy and direct connection from the subject site to Mayfair Garden, Cheung Ching Estate, and the bus / GMB stops in the vicinity. The existing pedestrian crossing facilities are found to be sufficient.

3 The Proposed Development

3.1 Development Schedule

3.1.1 The Proposed Development will tentatively consist of 5 residential blocks with about 3,800 flats and some other facilities. It is targeted for completion in around 2019/2020 – 2020/2021.

3.1.2 To allow flexibility for possible future change of the number of the residential units, 4,200 flats are adopted for calculation in this traffic impact assessment.

3.1.3 The development schedule is presented in Table 3.1.

Table 3.1 DEVELOPMENT SCHEDULE

Item	Parameter
Domestic Use	
• Domestic GFA (approx.) [A]	169,000 m^2
• Number of Residential Tower	5 nos.
• Number of Flats [B]	4,200 nos.
• Number of Flats (excluding 1-person / 2-person flats)	3,760 nos.
• Overall Average Flat Size [A] / [B]	42.6 m^2
• Estimated Population	11,630
• Number of Car Parking Space	125 (i)
• Number of Motorcycle Parking Space	34 (i)
• Number of Light Goods Vehicle Parking Space	19 (i)
Non-domestic Use	
• Retail Complex	About 4,000 m^2 GFA
• Neighbourhood Elderly Centre (subject to confirmation with relevant departments)	1 centre
• Kindergarten	8 classrooms

Note: (i) Figures are based on 4,200 flats including 440 1-person / 2-person flats. See Paragraph 3.3.2.

3.2 Layout of the Proposed Development

3.2.1 A conceptual layout of the Proposed Development is available only at this stage; nevertheless, the vehicular access of the Proposed Development will be located at the southwest corner of the subject site, connecting to the cul-de-sac of the Tsing Yi Road as shown in Figure MMH/323840/TIA_FR_RC/3.1. In view of the location of the proposed vehicular access, there will be no impact on or alternation to the operation of the existing Tsing Yi Road.

3.2.2 As shown in Figure MMH/323840/TIA_FR_RC/3.1, two pedestrian accesses are proposed, one located at the proposed vehicular access (i.e., near Tsing Yi Road cul-de-sac) and another located near the junction of Tsing Yi Road / Sai Shan Road.

3.3 Internal Transport Facilities

3.3.1 The Hong Kong Planning Standard and Guidelines (HKPSG) recommendations for the provision of the car parking space are shown Table 3.2.

Table 3.2 HKPSG Recommendations for Internal Transport Facilities

Item	HKPSG Recommendations for the Proposed Development (Domestic Use) with 4,200 Flats (including 440 1-person / 2-person flats) at Average Flat Size of 42.6 m^2 in 5 Towers
Car Parking Space	• Global Parking Standard (GPS) (excluding 1-person / 2-person flats) = 1 car space per 6 - 9 units • Demand Adjustment Ratio (R1) = 0.23 for all subsidised housing • Accessibility Adjustment Ratio (R2) = 1 for outside a 500m-radius of rail station • Minimum Provision (Minimum GPS x R1 x R2) = (4,200 - 440) / 9 x 0.23 x 1 = 96 • Maximum Provision (Maximum GPS x R1 x R2) = (4,200 - 440) / 6 x 0.23 x 1 = 144
Motorcycle Parking Space	• 1 space per 110 - 250 flats of subsidised housing, excluding 1-person / 2-person flats and non-residential elements • Minimum Provision = (4,200 - 440) / 250 = 15 • Maximum Provision = (4,200 - 440) / 110 = 34
Light Goods Vehicle Parking Space	• 1 space per 200 - 600 flats (excluding 1-person / 2-person flats) • Minimum Provision = (4,200 - 440) / 600 = 6 • Maximum Provision = (4,200 - 440) / 200 = 19
Goods Vehicle Loading / Unloading Bay	• 1 bay around each residential block for service vehicles • Minimum Provision = 5

3.3.2 Housing Department proposes to provide the car parking spaces, the motorcycle parking spaces, and the LGV parking spaces for the Proposed Development (Domestic Use) according to the ratios in the District Based Parking Standards. Exact number of parking provision will be confirmed when the flat numbers are finalized. The ratios and the proposed parking provision are shown in Table 3.3. The proposed provision falls into the range of HKPSG recommendations.

Table 3.3 Proposed Parking Provision

Parking Space	Ratio of Parking Space to Number of Flats (excluding 1-person / 2-person flats)	Parking Space for 4,200 Flats (including 440 1-person / 2-person flats)
car	1 : 30	(4200 - 440) / 30 = 125 nos
motorcycle	1 : 110	(4200 - 440) / 110 = 34 nos.
LGV	1 : 200	(4200 - 440) / 200 = 19 nos.

3.3.3 Other internal transport facilities for the residential use such as goods vehicle loading / unloading bays will be provided in accordance with the HKPSG recommendations in the detailed design stage. The internal transport facilities for the non-domestic uses shown in Table 3.1 will also be designed in accordance with the HKPSG recommendations in the detailed design stage.

3.4 Proposed Public Transport Facilities

3.4.1 In order to estimate the demand on the road based public transport services (i.e., franchised bus and green minibus), a traffic survey was conducted at Cheung Wang Estate, Tsing Yi on 31-03-2015 to quantify the passenger demand during the AM and the PM peaks. Cheung Wang Estate is selected due to its similarity to the Proposed Development in terms of the housing type, the population, the number of housing units, and the location in relation to the nearest railway station.

3.4.2 The survey results and the estimated demand on the road based public transport services are shown in Table 3.4.

Table 3.4 Estimated Passenger Demand of the Proposed Development on the Road Based Public Transport Services

Surveyed Item / Proposed Item	AM	PM
Observed Passenger Demand (person/hr)		
Cheung Wang Estate (4,200 households as at 31-12-2014)	1,776	1,062
Adopted Rates of Passenger Demand (person/hr/flat)		
Subsidised Housing / Public Rental	0.4229	0.2529
Estimated Passenger Demand of the Proposed Development (person/hr)		
Public Rental Housing Estate (4,200 flats)	1,776	1,062

3.4.3 The above results show that about 1,776 and 1,062 passengers would be generated by the Proposed Development during the AM and the PM peak hours. As a rough indication of the aforesaid figures, the 1,776 and 1,062 passengers would require about 15 and 9 bus trips in the AM and the PM peak hours, assuming the accommodation of 120 passengers for a double-deck bus.

3.4.4 Currently there are more than 20 franchised bus and scheduled minibus routes in the vicinity of the subject site. Since these public transport routes reach various districts throughout Hong Kong, such as Tsing Yi Island, Kwai Fong, Tsuen Wan, Sha Tin, Kowloon East, Kowloon South, Hong Kong Island, the airport, and the stops of these routes are within walkable distance, the demand of introducing new road-based transport routes for the Proposed Development is not identified.

3.4.5 A survey was conducted at the bus stop located at Tsing Yi Road outside Cheung Ching Estate towards Kwai Chung during the AM peak, counting the number of the boarding passengers on different bus routes (refer to Appendix C). The data was used to produce an indicative estimation on the passenger demand generated by the Proposed Development on different bus routes. The estimation is shown in Table 3.5.

Table 3.5 Indicative Estimation of Passenger Demand Generated by the Proposed Development on Different Bus Routes

Bus Route	Demand Split	Estimated Passenger Demand (Number of Boarding Passengers in the AM Peak Hour)	Equivalent Bus Trip (Number of Additional Bus Trips Required in the AM Peak Hour)
KMB 42	4.8%	86	0.7
KMB 42A	23.8%	423	3.5
KMB 43	13.6%	241	2.0
KMB 43A	15.7%	278	2.3
KMB 43C	10.6%	188	1.6
KMB 43M	10.7%	191	1.6
KMB 242X	1.0%	17	0.1
KMB 243P	3.9%	69	0.6
KMB 249X	4.2%	75	0.6
KMB / NWFB 948	8.3%	148	1.2
KMB / NWFB 948P	1.8%	32	0.3
KMB X42C	1.7%	30	0.3
Total	100.0%	1776	14.8

Note: Equivalent Bus Trip is estimated by assuming the accommodation of 120 passengers for a double-deck bus.
KMB: Kowloon Motor Bus
NWFB: New World First Bus

3.4.6 It is expected that the existing public transport services would be able to absorb the additional demand on the road based public transport services by the Proposed Development by adjusting the frequency of the existing routes.

3.4.7 To tier in with the policy of using railway as the backbone public transport mode, a new bus or GMB feeder route between the Proposed Development and Tsing Yi Railway Station could be considered. Alternatively, extension of the existing KMB Route 249M (Mayfair Garden - Tsing Yi Railway Station) to the Proposed Development is also a viable option. Detailed arrangement should be explored at the later stage before the commencement of the Proposed Development.

3.4.8 Although the existing public transport services would be able to absorb the additional demand on the road based public transport services by the Proposed Development by adjusting the frequency of the existing routes, it is proposed to reserve an off-street laybys at Tsing Yi Road abutting on the Proposed Development for possible expansion of the bus and the minibus services in future. The schematic design of the proposed public transport facilities are shown in Figure MMH/323840/TIA_FR_RC/3.1.

3.5 Pedestrian Trip Generation

3.5.1 To estimate the pedestrian generation for the Proposed Development, a pedestrian trip generation survey was conducted at Cheung Wang Estate, Tsing Yi. The survey results and the estimated pedestrian trip generation of the Proposed Development are shown in Table 3.6.

Table 3.6 Pedestrian Trip Generation of the Proposed Development

Surveyed Item / Proposed Item	AM Generation	AM Attraction	PM Generation	PM Attraction
Number of Pedestrians (person/hr)				
Cheung Wang Estate (4,200 households as at 31-12-2014)	3,389	930	614	1,661
Adopted Pedestrian Trip Generation Rates (person/hr/flat)				
Subsidised Housing / Public Rental	0.8069	0.2214	0.1462	0.3955
Estimated Pedestrian Generation of the Proposed Development (person/hr)				
Public Rental Housing Estate (4,200 flats)	3,389	930	614	1,661

3.5.2 The Proposed Development would generate some 4,300 and 2,200 pedestrians (two-way) during the AM and the PM peak hours.

3.6 Proposed Improvement to Tsing Yi Road

3.6.1 The existing condition of the footpath fronting the subject site is described in Section 2.6 of this report. The section of Tsing Yi Road to the south of Sai Shan Road is a dual-2 carriageway with the following conditions:

- western footpath fronting HKIVE of about 1.6m – 1.9m width, including railing;
- 2 northbound traffic lanes of about 6.8m width;
- a central reserve of about 1.9m width;
- 2 southbound traffic lanes of about 7.3m width; and
- eastern footpath fronting the subject site of about 1.7m, including railing, corrugated beam barrier and chain link fence.

Tsing Yi Road to the south of Sai Shan Road

3.6.2 In order to widen the eastern footpath fronting the subject site, due to the site constraint, it is proposed to reduce the number of traffic lanes. The section of the Tsing Yi Road to the south of Sai Shan Road will serve only the Proposed Development and limited traffic of about 300 - 400 pcu/hr (2-way) during the AM and PM peaks are expected (refer to Table 4.1), while a single 2-lane carriageway could accommodate about 1,700 vehicles / hour (2-way) in stipulated in the Transport Planning and Design Manual (TPDM). Hence, the reduction of the number of the traffic lanes is acceptable.

3.6.3 For the section of Tsing Yi Road to the south of Sai Shan Road, it is proposed (i) to remain the existing western footpath fronting HKIVE unchanged, (ii) to provide a single carriageway of 7.3m width with 1 northbound and 1 southbound traffic lanes, (iii) to provide an on-street layby reserved for bus and minibus stops, and (iv) to provide an eastern footpath of about 6.0m width (including railing, corrugated beam barrier, and chain link fence).

3.6.4 In view of the cul-de-sac layout of Tsing Yi Road and the locations of the 2 pedestrian accesses of the Proposed Development, the eastern footpath at this section of Tsing Yi Road is expected to mainly serve for the passengers of the public transport services operating at the cul-de-sac of

Tsing Yi Road. Apart from this group of pedestrians, it is expected that almost all pedestrians generated from the Proposed Development would prefer using the more convenient pedestrian access near Sai Shan Road via the proposed retail complex than using the pedestrian access at cul-de-sac of Tsing Yi Road. Assuming (i) a bus shelter occupying a space of 2.0m from the kerbline and (ii) corrugated beam barrier and chain link fence occupying a space of 1.0m from the edge of the footpath, the clear width remained for the transient pedestrians would be about 3.0m, which falls into the range of width standards for footpath (through zone width of 2.0m - 3.5m for residential zone) recommended in the Hong Kong Planning Standard and Guidelines.

3.6.5 As described in Section 3.4 of this report, it is expected the existing public transport services would be able to absorb the additional demand on the road based public transport services by the Proposed Development by adjusting the frequency of the existing routes. The proposed bus / GMB facilities at Tsing Yi Road cul-de-sac is reserved for possible expansion of the bus and the minibus services in future. At the rezoning stage, there is no detailed planning of the expansion of the bus and the minibus services, which requires the design jointly developed by Transport Department and the bus / minibus operators. Nevertheless, assuming one-fifth of the estimated passenger demand using the bus / minibus services operating at Tsing Yi Road cul-de-sac in the AM peak, there will be 355 passengers (= 1776 / 5) in the AM peak hour on the footpath adjacent to the bus / minibus stops. In view of the existing well-developed 20 some bus / minibus routes, the proportion of one-fifth is considered as a very conservative estimation. As described in Section 3.6.4, a clear width of 3.0m footpath adjacent to the bus shelters is provided. Level of service (LOS) A is achieved for 355 pedestrians / hour on a footpath with 2.0m effective width.

Tsing Yi Road to the north of Sai Shan Road

3.6.6 It is proposed to signalize the junction of Tsing Yi Road / Sai Shan Road in order to (i) enhance the operation of the traffic movements at this junction, and (ii) provide a signal-controlled crossing for the pedestrians to cross the roads.

3.6.7 It is worth noting that very limited traffic was observed to turn right from Sai Shan Road to Tsing Yi Road southbound as Tsing Yi Road southbound is a cul-de-sac having nowhere to go. In order to fully utilize the signal timing of the proposed signalized junction, the right turn is proposed to be banned and divert to the roundabout of Tsing Yi Road / Ching Hong Road.

3.6.8 The pedestrian crossing across the Tsing Yi Road carriageway at the proposed signalized junction will be widened to the standard width of 4m, which could accommodate the pedestrian flow of 2400 - 4800 persons per hour, as stipulated in Volume 4 of Transport Planning and Design Manual. Comparing with the overall pedestrian generation of some 4,300 and 2,200 pedestrians (two-way) during the AM and the PM peak hours (refer to Table 3.6), the proposed 4m pedestrian crossing would certainly be sufficient. If necessary, the crossing width could be reviewed at the detail design stage.

3.6.9 For the section of Tsing Yi Road between Sai Shan Road and Ching Hong Road, it is proposed to remove part of the central divider and to re-align the carriageway in order to provide extra space for the widening of the eastern footpath. 2 traffic lanes for each direction will be maintained. Due to limited space available, corrugated beam barrier is assumed at 0.3m offset from the kerb side; while boundary wall is assumed on the other side of the footpath. The eastern footpath would be widened to about 2.8m (excluding corrugated beam barrier and boundary wall).

3.6.10 Table 3.6 showed that the Proposed Development would generate some 4,300 and 2,200 pedestrians (two-way) during the AM and the PM peak hours. As a rough estimation, assuming one-fifth of the pedestrians using the pedestrian crossing for Mayfair Garden and four-fifths using the section of footpath for Cheung Ching Estate and the existing bus stops, the number of pedestrians on the footpath in the AM peak hour would be 3,455, which is under LOS C for the

effective footpath width of 1.8m. LOS C is considered as an appropriate level balancing the comfortable walking environment and the scarce land resources in the urban areas.

3.6.11 Currently vehicles using the roundabout of Tsing Yi Road / Ching Hong Road are found to have no difficulties in terms of manoeuvring, and the roundabout would be capable to accommodate the future traffic growth and the additional development traffic, nevertheless, it is proposed to enlarge the circulatory carriageway of the roundabout for improvement.

3.6.12 The schematic design of all the above proposed improvement to Tsing Yi Road is shown in Figures MMH/323840/TIA_FR_RC/3.1 - 3.2.

3.6.13 It is emphasized that the schematic design of the proposed improvement is for rezoning purpose. The schematic design would be reviewed at the detail design stage.

3.6.14 As it is the government's responsibility to provide adequate infrastructure for the public housing development, the road improvement works as mentioned in this Section 3.6 will be undertaken by Transport Department and Highways Department.

4 The Traffic Impact

4.1 Traffic Generation by the Proposed Public Rental Housing Estate and the Retail Complex

4.1.1 The traffic generation of the proposed public rental housing estate and the associated retail complex are based on the trip generation rates for "Subsidised Housing / Public Rental" and "retail use" recommended in the Transport Planning and Design Manual (TPDM). The trip generation rates and the traffic generation of the domestic use and the retail use are presented in Table 4.1.

4.2 Traffic Generation by the Proposed Neighborhood Elderly Centre

4.2.1 1 Neighbourhood Elderly Centre, subject to confirmation with relevant departments, is proposed to be provided in the proposed housing site. Neighbourhood Elderly Centre is a type of community support services at neighbourhood level. The target group is the elderly living in the locality. Telephone interviews were made to 2 existing similar centres in Tsing Yi, Tsing Yi Neighbourhood Elderly Centre in Tsing Yi Estate and Fook On Church Elderly Centre in Cheung On Estate. The service recipients of these 2 existing centres are the nearby elderly residents and they access the centres on foot. Hence, the traffic generations of these 2 centres are the trips made by staff only, which mostly relies on the public transport services.

4.2.2 In view of the negligible traffic generation of this type of social welfare facilities, a nominal traffic flow of 5 pcu/hr is assigned as shown in Table 4.1.

4.2.3 To allow flexibility for possible future additional welfare facilities, an additional traffic flow of 20 pcu/hr is assumed as shown in Table 4.1.

4.3 Traffic Generation by the Proposed Kindergarten

4.3.1 1 kindergarten with 8 classrooms is proposed to be provided in the proposed housing site. To estimate the related traffic generation during the AM and the PM peak hours, a traffic survey of an existing kindergarten, Peace Evangelical Centre Kindergarten (Tsing Yi) in Cheung Wang Estate, Tsing Yi, was conducted to qualify the traffic generation.

4.3.2 The survey results were used to estimate the traffic generations of the Proposed Kindergarten, which are shown in Table 4.1.

Table 4.1 Trip Generation Rates and Traffic Generation of the Proposed Development

Surveyed Items / Proposed Items	AM Generation	AM Attraction	PM Generation	PM Attraction
Surveyed Traffic Generation (pcu/hr)				
The Salvation Army Lai King Home (10 places)	4	4	3	1
Peace Evangelical Centre Kindergarten (Tsing Yi) (9 classrooms)	7	7	6	6
Adopted Trip Generation Rates for the Proposed Development				
Subsidised Housing / Public Rental (pcu/hr/flat)	0.0432	0.0326	0.0237	0.0301
Retail (pcu/hr/100m^2)	0.2296	0.2434	0.3100	0.3563
Neighbourhood Elderly Centre	negligible	negligible	negligible	negligible
Kindergarten (pcu/hr/classroom)	0.7778	0.7778	0.6667	0.6667
Estimated Traffic Generation (pcu/hr) of the Proposed Development				
Public Rental Housing Estate (4,200 flats)	181	137	100	126
Retail Complex (4,000m^2)	9	10	12	14
Neighbourhood Elderly Centre	5 (nominal)	5 (nominal)	5 (nominal)	5 (nominal)
Allowance for possible future additional welfare facilities	20	20	20	20
Kindergarten (8 classrooms)	6	6	5	5
Total	221	178	142	170

4.4 Traffic Generation by the Planned / Committed Developments in the Vicinity

4.4.1 The traffic flows that would be generated by the planned / committed developments in the vicinity of the Proposed Development have also been considered, and are shown in Table 4.2.

Table 4.2 Traffic Generation of the Planned / Committed Developments in the Vicinity

Planned / Committed Developments	AM Generation	AM Attraction	PM Generation	PM Attraction
Adopted Trip Generation Rates (pcu/hr/flat)				
Private Housing / High Density	0.0718	0.0425	0.0286	0.0370
Subsidised Housing Home Ownership Scheme	0.0622	0.0426	0.0297	0.0401
Estimated Traffic Generation (pcu/hr)				
Private Housing Site at Sai Shan Road with 740 flats	53	31	21	27
Ching Chun Court at 2B Ching Hong Road with 465 flats	29	20	14	19

4.4.2 It is noted that a Transport Department's vehicle examination centre at Sai Tso Wan Road, Tsing Yi has been planned. The estimated traffic flow operating along Ching Hong Road, Tsing Yi Road, and Kwai Tsing Road is shown in Table 4.3.

Table 4.3 Traffic Generation of the Planned Vehicle Examination Centre

Planned Vehicle Examination Centre	AM Generation	AM Attraction	PM Generation	PM Attraction
Traffic Operating along Ching Hong Road, Tsing Yi Road, and Kwai Tsing Road (pcu/hr)	20	29	36	36

Source: Transport Department

4.5 Design Year for Traffic Forecast

4.5.1 The Proposed Development is expected to be completed in around 2019/2020 – 2020/2021. The guideline from Transport Department recommends that the Traffic Impact Assessment (TIA) should be conducted for whichever is later: (i) three years after the completion date (2020 + 3 = 2023), or (ii) five years after the submission (2015 + 5 = 2020). For the captioned project, the year adopted for junction capacity analysis is 2025.

4.6 Traffic Forecast

4.6.1 Future background traffic was based on an assessment of Annual Traffic Census (ATC), Territorial Population and Employment Data Matrix (TPEDM), as well as the future planned / committed land use developments / redevelopments in close proximity to the Proposed Development that may affect the future traffic flows.

4.6.2 Some Annual Traffic Census (ATC) stations are found in the vicinity of the subject site. The historic Annual Average Daily Traffic (AADT) data was reviewed, and is presented in Table 4.4.

Table 4.4 ATC Stations Located in the Vicinity of the Subject Site

Station	6219	5852	5232	5653	5439	Overall
Road	Kwai Tsing Rd & Tsing Yi S Bridge	Tsing Yi Heung Sze Wui Rd	Tsing Yi Rd	Ching Hong Rd	Tsing Yi Rd	-
From	Tsing Yi Rd	Fung Shue Wo Rd RA	Tsing Yi Heung Sze Wui Rd	Chung Mei Rd	Ching Hong Rd	-
To	Kwai Tai Rd INT	Tsing Yi Rd	Ching Hong Rd	Tsing Yi Rd	Tsing Nam St	-
Year	**Annual Average Daily Traffic (vehicles per day)**					
2004	46,230	27,170	18,900	12,620	7,460	112,380
2005	44,020	28,360	19,730	13,290	7,540	112,940
2006	43,440	31,260	20,490	15,040	7,830	118,060
2007	48,340	27,960	20,290	14,900	7,760	119,250
2008	47,140	27,550	19,780	14,680	7,640	116,790
2009	45,080	25,960	19,030	13,830	6,250	110,150
2010	43,540	27,000	19,800	11,200	6,390	107,930
2011	44,240	30,020	20,620	10,910	6,660	112,450
2012	40,780	30,470	20,470	10,830	6,610	109,160
2013	47,000	31,770	18,980	11,290	6,890	115,930
Average Annual Growth	0.18%	1.75%	0.05%	-1.23%	-0.88%	**0.35%**

4.6.3 Table 4.3 shows that an overall average annual growth at the ATC stations located in the vicinity of the Proposed Development increases at 0.35% per annum.

4.6.4 To predict the traffic growth, reference was also made to the 2011-based Territorial Population and Employment Data Matrix (TPEDM). The relevant data is extracted and is shown in Table 4.5.

Table 4.5 2011-Based TPEDM Data of Population and Employment

Planning Data Zone	Item	2016	2021	2026	Average Annual Growth
154	Population	27,050	26,900	25,900	
	Employment	8,950	6,350	6,350	
	Total	36,000	33250	32,250	-1.09%
257	Population	4,200	4,150	3,950	
	Employment	4,350	4,100	3,850	
	Total	8,550	8,250	7,800	-0.91%
450	Population	35,200	33,750	32,900	
	Employment	7,700	9,350	8,750	
	Total	42,900	43,100	41,650	-0.30%
Overall	Population	66,450	64,800	62,750	
	Employment	21,000	19,800	18,950	
	Total	87,450	84,600	81,700	**-0.68%**

4.6.5 By comparing the 2016 and 2026 planning data, there is an overall decrease in population and employment at -0.68% per annum.

4.6.6 It is noted that most areas along Tsing Yi Heung Sze Wui Road, Tsing Yi Road (outside Cheung Ching Estate and Mayfair Garden), Ching Hong Road, and Sai Shan Road are fully developed. Hence, it is expected that the traffic growth at these roads is minimal.

4.6.7 In view of the historic AADT growth shown in Table 4.3 and the expected negative growth in the planning data shown in Table 4.4, a growth rate of 1.0% per annum is adopted to project the future background traffic flows from 2015 to 2025 for the purpose of analysis.

4.6.8 The 2025 background traffic flows are estimated using the observed 2015 traffic flows and the predicted traffic growth between 2015 and 2025, plus the traffic generated by the planned / committed developments in the vicinity of the Proposed Development.

4.7 2025 Junction Operational Performance

4.7.1 Year 2025 peak hour traffic flows without and with the Proposed Development are shown in Figures 4.1 and 4.2.

4.7.2 The 2025 junction capacity analysis for the scenarios without and with the Proposed Development is summarised in Table 4.6, and the detailed calculations are presented in the Appendix 1.

Table 4.6 2025 Junction Operational Performance

Junction	Type and Indicator	Without the Proposed Development		With the Proposed Development	
		AM Peak	PM Peak	AM Peak	PM Peak
Tsing Yi Interchange (northern RA)	RA / RFC	0.721	0.634	0.785	0.675
Tsing Yi Interchange (southern RA)	RA / RFC	0.595	0.463	0.662	0.486
Tsing Yi Road / Ching Hong Road	RA / RFC	0.691	0.451	0.782	0.515
Tsing Yi Road / Sai Shan Road	Priority / RFC	0.544	0.425	0.571	0.439

Note: RA - roundabout
RFC - Ratio-of-Flow to Capacity

4.7.3 The above results indicate that the surveyed junctions are expected to operate with capacities during the peak hours in 2025. The junctions analysed have sufficient capacity to accommodate the expected traffic growth and the additional traffic generated by the Proposed Development.

4.7.4 As presented in the Section 3.6 of this report, some improvements to Tsing Yi Road are proposed. Under the proposed improvement, the 2025 junction capacity analysis for the scenarios without and with the Proposed Development is summarised in Table 4.7, and the detailed calculations are presented in the Appendix 1.

Table 4.7 2025 Junction Operational Performance (Under the Proposed Improvement)

Junction	Type and Indicator	Without the Proposed Development		With the Proposed Development	
		AM Peak	PM Peak	AM Peak	PM Peak
Tsing Yi Road / Ching Hong Road	RA / RFC	0.690	0.437	0.780	0.499
Tsing Yi Road / Sai Shan Road	signal / RC	59%	93%	23%	46%

Note: RA - roundabout
RFC - Ratio-of-Flow to Capacity
RC - Reserve Capacity

5 Summary and Conclusion

5.1 Summary

5.1.1 The proposed public rental housing estate is located at the end of Tsing Yi Road, opposite to Hong Kong Institute of Vocational Education. It is proposed to construct tentatively 5 building blocks with about 3,800 flats. To allow flexibility of amending the number of residential units in the design stage, 4,200 flats are adopted for the purpose of analysis.

5.1.2 The proposed vehicular access of the Proposed Development will be connected to the cul-de-sac of Tsing Yi Road. Hence, the proposed vehicular access will have very limited interference to the road traffic.

5.1.3 Many road based public transport services could be found within 300 m from the subject site. These public transport services reach Tsing Yi Railway Station and various locations in Hong Kong, such as Kwai Chung, Tsuen Wan, Tsim Sha Tsui, Hong Kong Island, and the airport.

5.1.4 Bus stop facilities are proposed at Tsing Yi Road outside the subject site for future expansion of the public transport services. The associated footpath is proposed to be widened to accommodate the passengers.

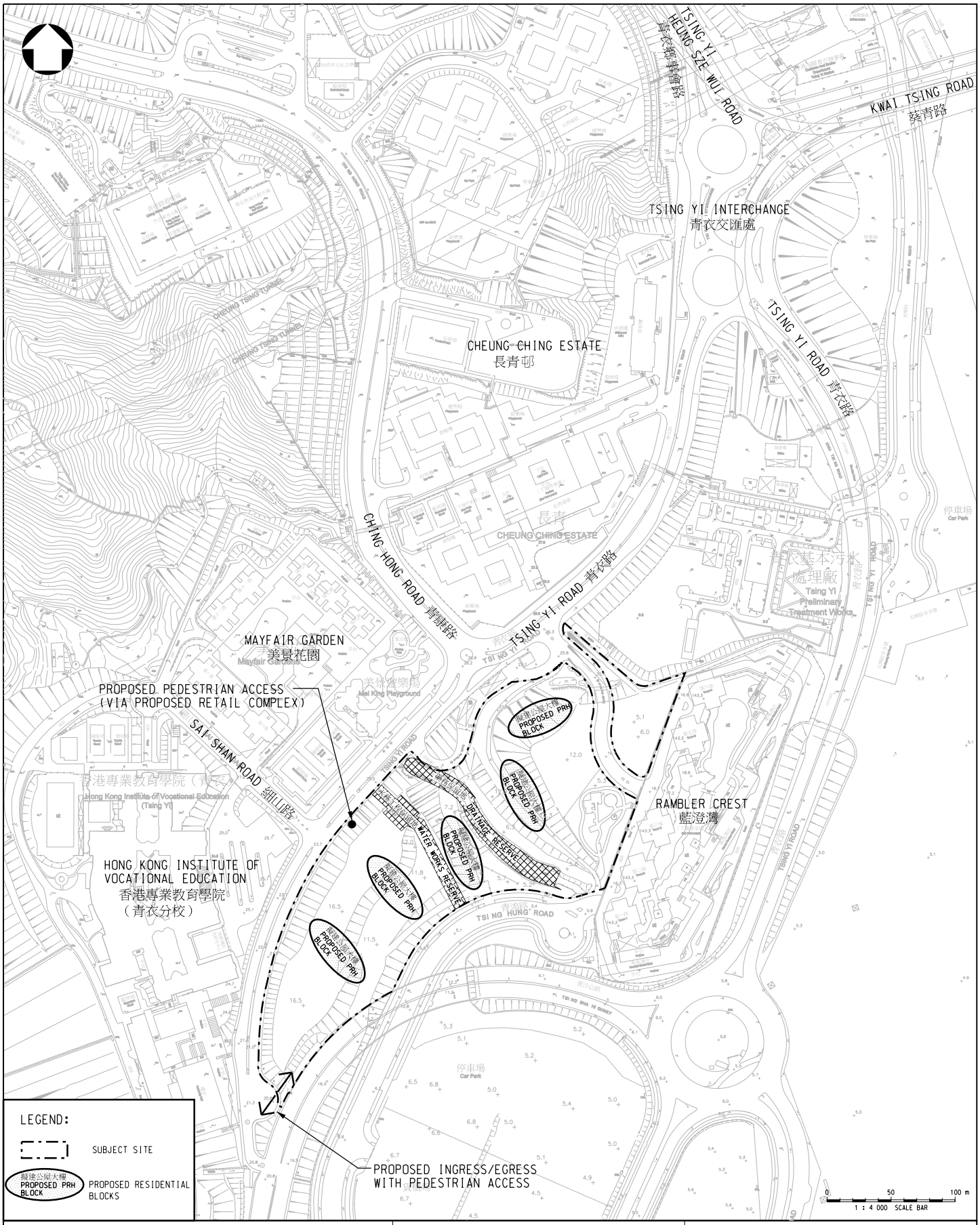
5.1.5 Car parking facilities and other internal transport facilities will be provided in accordance with the recommendations of the Hong Kong Planning Standard and Guidelines.

5.1.6 In view of the road network and the location of the subject site, the traffic generation associated with the Proposed Development will use Tsing Yi Road and pass through the road junctions assessed in this report. The assessed road junctions have sufficient capacity to accommodate the future traffic growth and the additional traffic generated by the Proposed Development.

5.2 Conclusion

5.2.1 It can be concluded that the traffic impact induced by the Proposed Development is acceptable from traffic engineering point of view.

Figures



Title

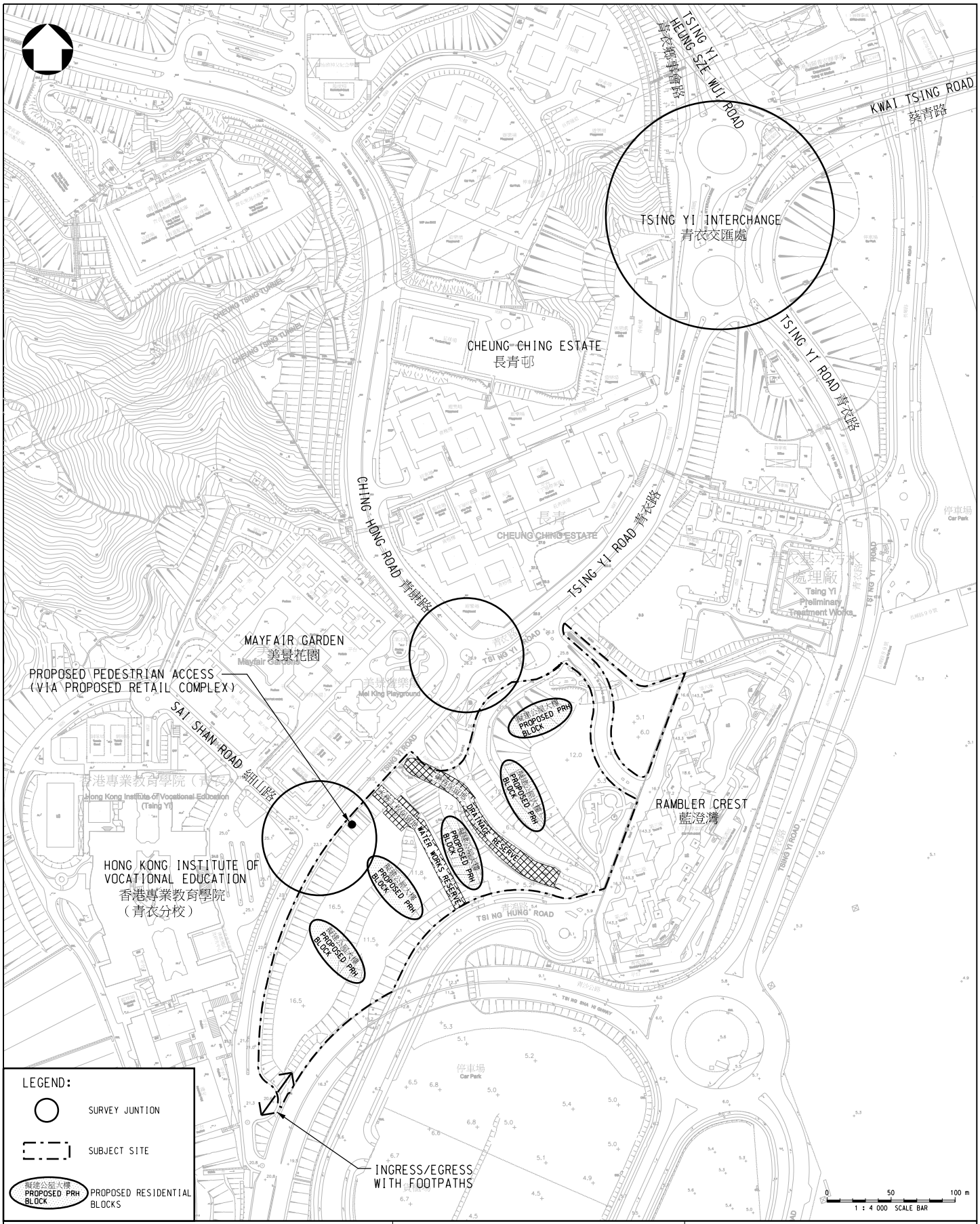
LOCATION OF SUBJECT SITE AND CONCEPTUAL LAYOUT PLAN

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	1:4000	MMH/323840/TIA_FR_RC/1.1	A	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-1_1-A.dgn DATE: 09/06/2015 TIME: 10:52:54 USER: ho57494



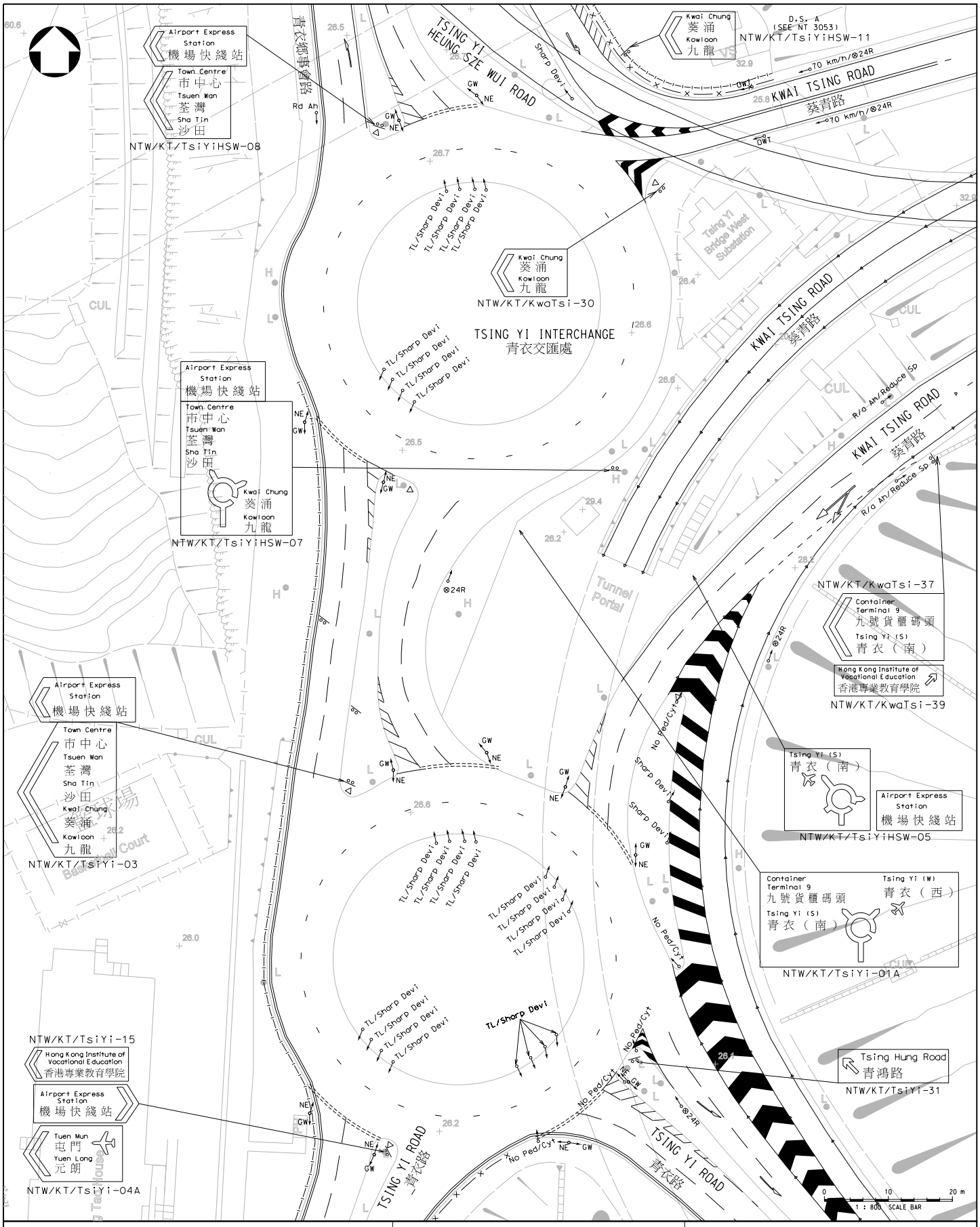
Title

LOCATION OF SURVEYED JUNCTIONS

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	1:4000	MMH/323840/TIA_FR_RC/2.1	A	-



Title

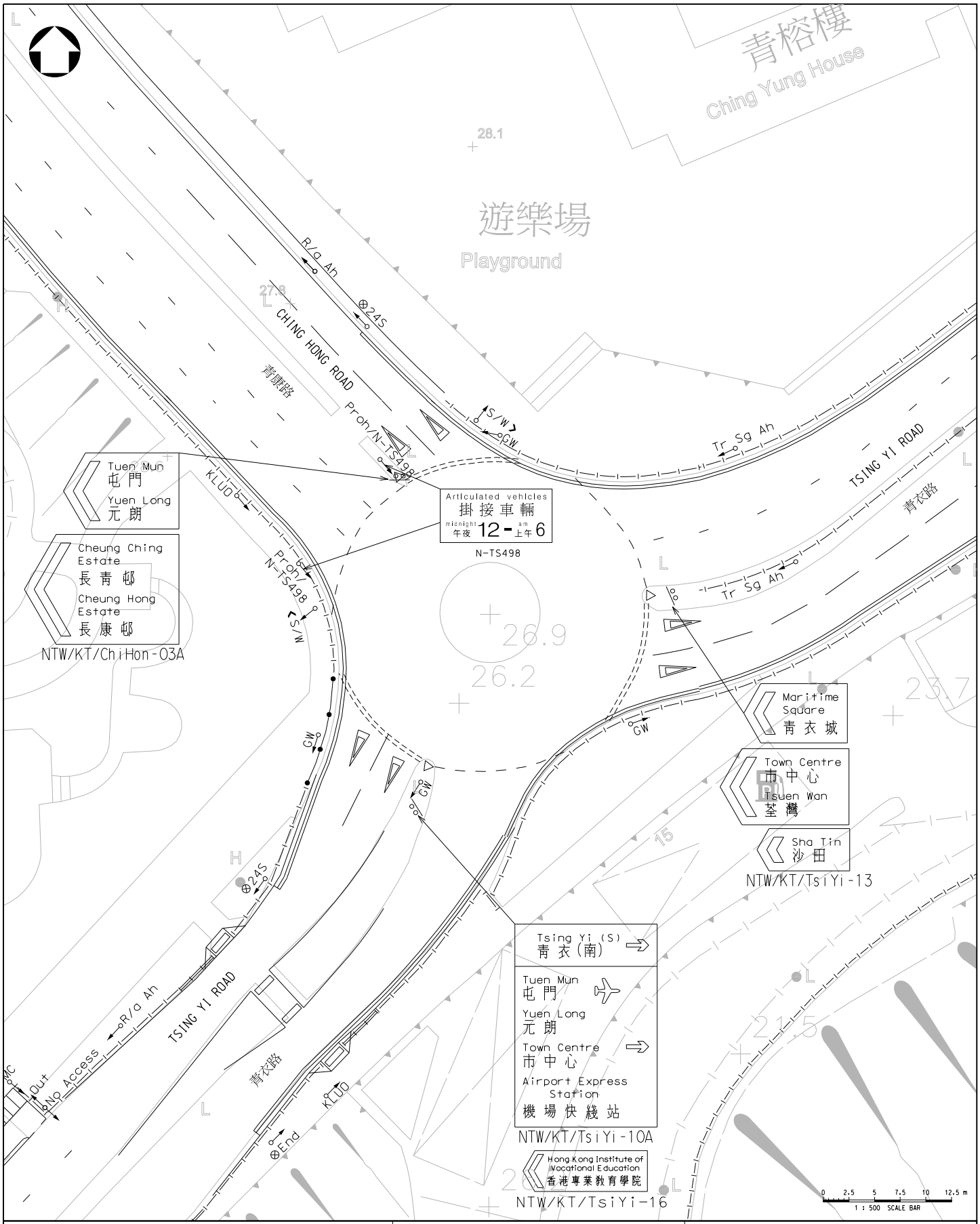
JUNCTION LAYOUT OF TSING YI INTERCHANGE

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	1:800	MMH/323840/TIA_FR_RC/2.2	A	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-2_2-A.dgn DATE: 09/06/2015 TIME: 10:53:03 USER: ho57494



Title

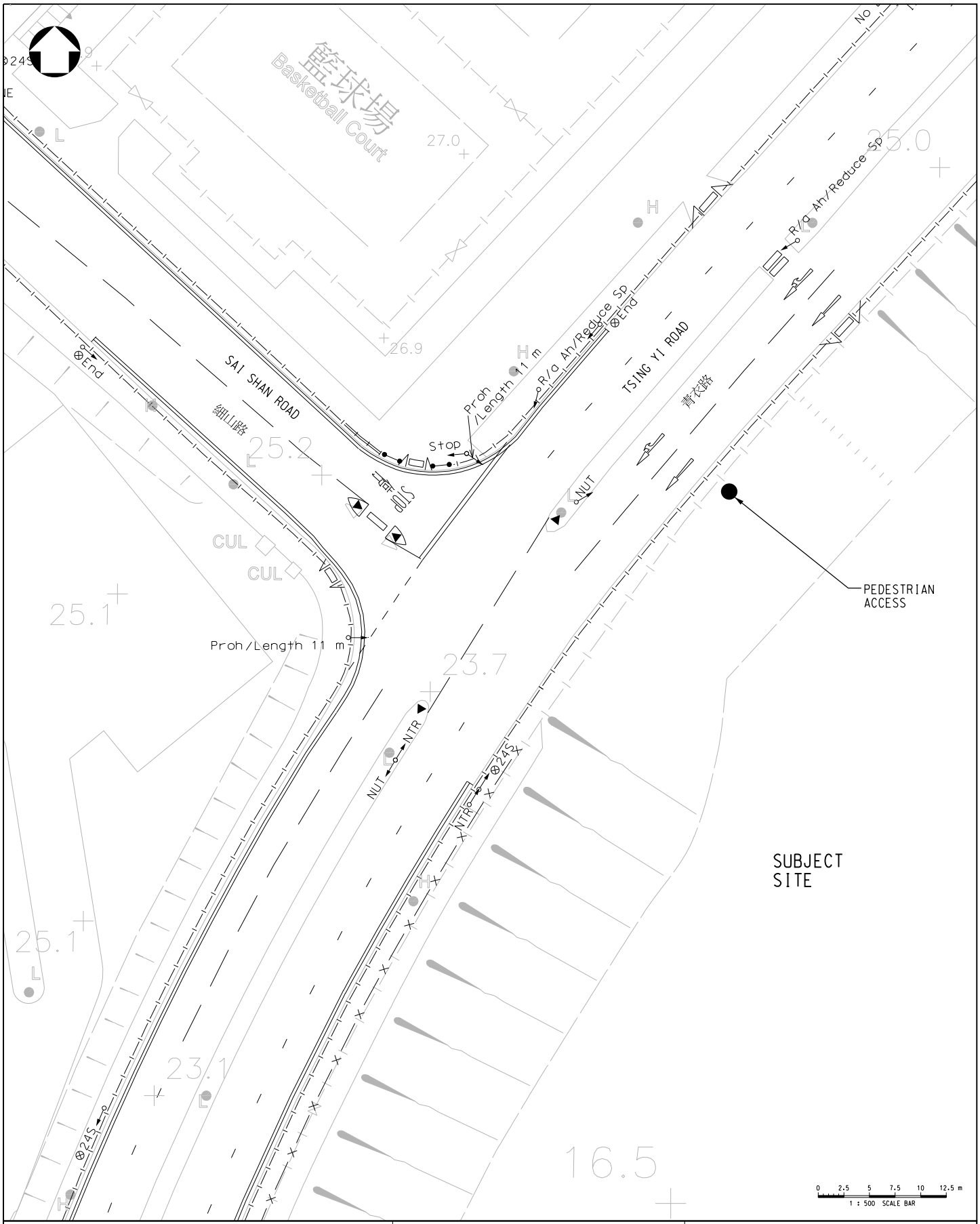
JUNCTION LAYOUT OF TSING YI ROAD / CHING HONG ROAD

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	1:500	MMH/323840/TIA_FR_RC/2.3	A	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-2_3-A.dgn DATE: 09/06/2015 TIME: 10:53:05 USER: ho57494



Title

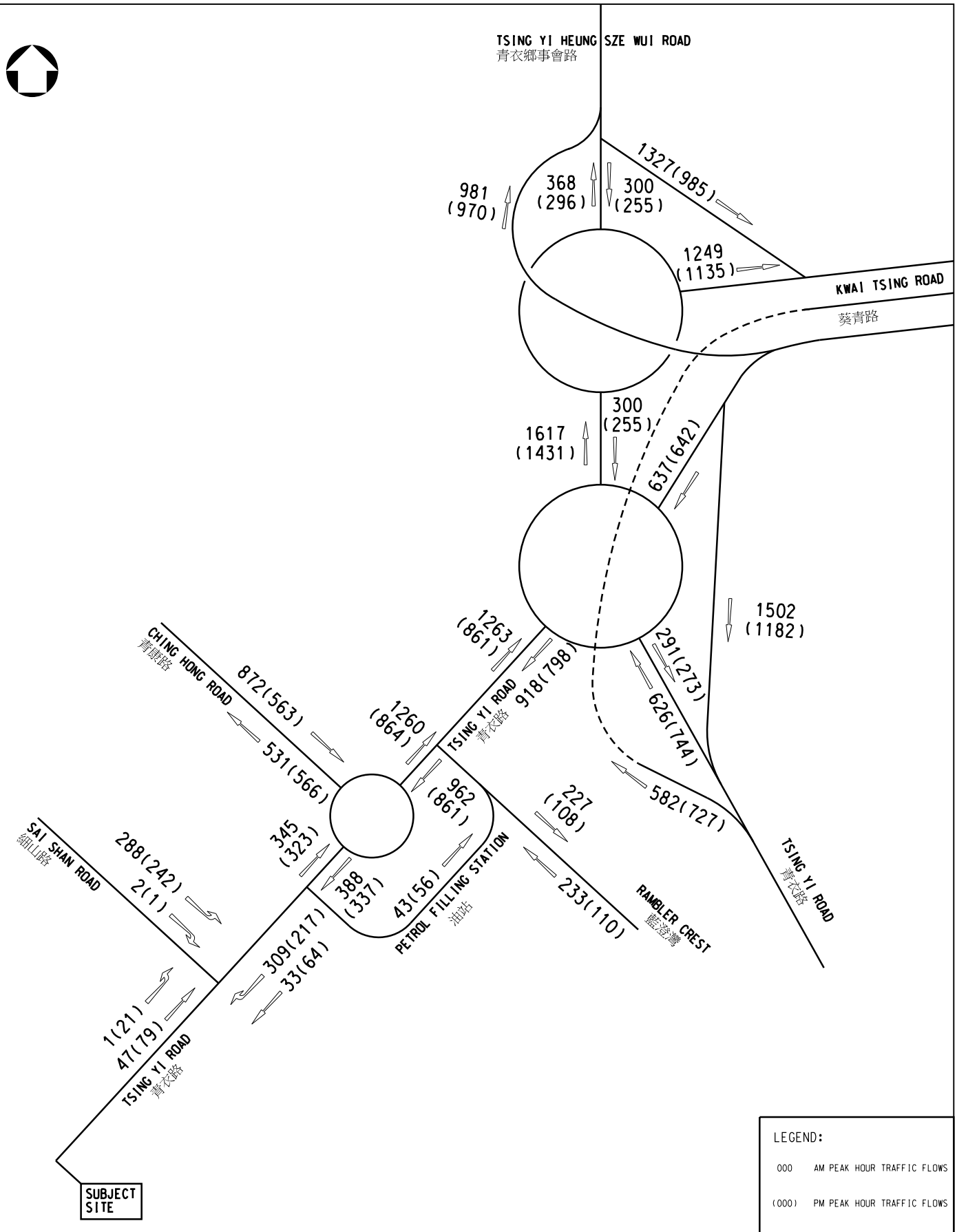
JUNCTION LAYOUT OF TSING YI ROAD / SAI SHAN ROAD

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	1:500	MMH/323840/TIA_FR_RC/2.4	A	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-2_4-A.dgn DATE: 09/06/2015 TIME: 10:53:06 USER: ho57494



Title

2015 PEAK HOUR TRAFFIC FLOWS

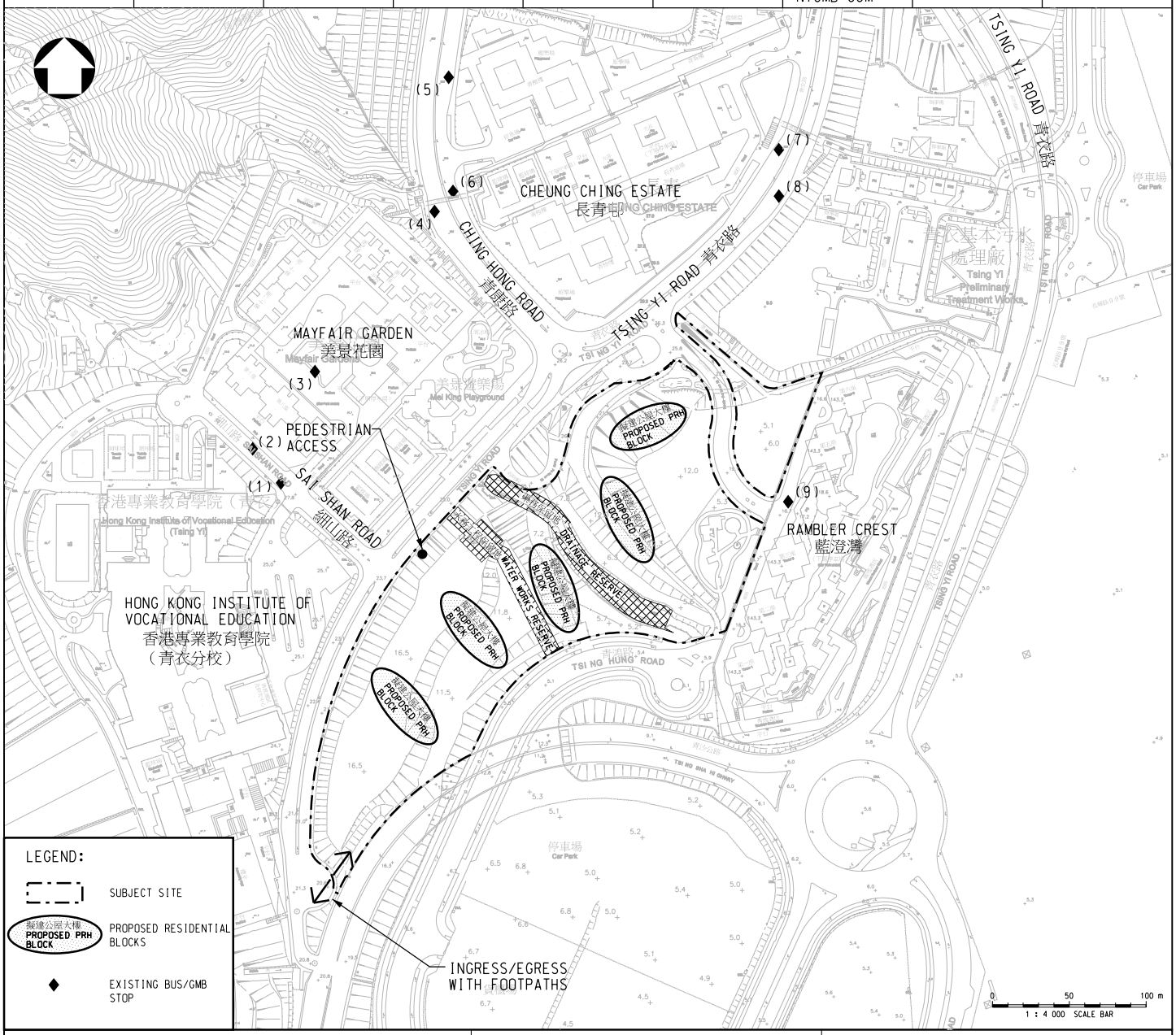
POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	N.T.S.	MMH/323840/TIA_FR_RC/2.5	A	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-2_5-A.dgn DATE: 09/06/2015 TIME: 10:53:07 USER: ho57494

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
NTGMB 88C	KMB 243M	NTGMB 88C	KMB 41	KMB 41	NTGMB 88A	KMB 42	KMB 42	NTGMB 88F
	KMB 243P		KMB 42	KMB 42	NTGMB 88D	KMB 42A	KMB 42A	NTGMB 88G
			KMB 42A	KMB 42A	NTGMB 88F	KMB 43	KMB 43	
			KMB 43	KMB 43	NTGMB 88M	KMB 43A	KMB 43A	
			KMB 43A	KMB 43A		KMB 43C	KMB 43C	
			KMB 43C	KMB 43C		KMB 43M	KMB 249X	
			KMB 243M	KMB 43M		KMB 242X	KMB/NWFB 948	
			KMB 249M	KMB 242X		KMB 243P	LW A31	
			KMB 249X	KMB 243M		KMB 249X	KMB N241	
			KMB/NWFB 948	KMB 243P		KMB/NWFB 948	NTGMB 88C	
			LW A31	KMB 249M		KMB/NWFB 948P	NTGMB 88G	
			KMB N241	KMB 249X		LW A31	NTGMB 88M	
			NTGMB 88A	KMB/NWFB 948		KMB N241	NTGMB 405	
			NTGMB 88D	KMB/NWFB 948P		KMB X42C		
			NTGMB 88F	LW A31		NTGMB 405		
			NTGMB 88M	KMB N241		NTGMB 88C		
				KMB X42C		NTGMB 88G		
						NTGMB 88M		



Title

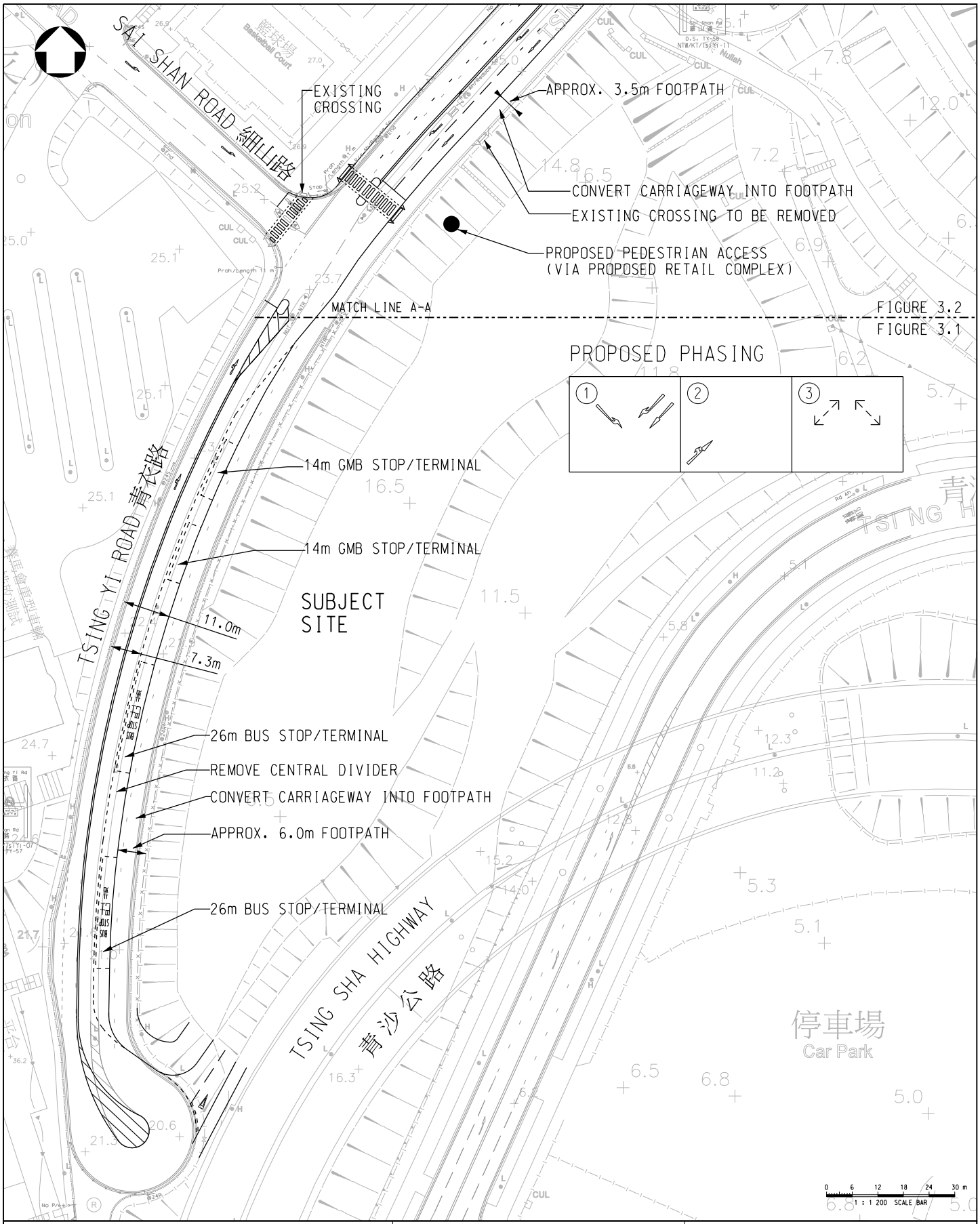
EXISTING PUBLIC TRANSPORT SERVICES

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	1:4000	MMH/323840/TIA_FR_RC/2.6	A	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-2_6-A.dgn DATE: 09/06/2015 TIME: 10:53:09 USER: ho57494



Title

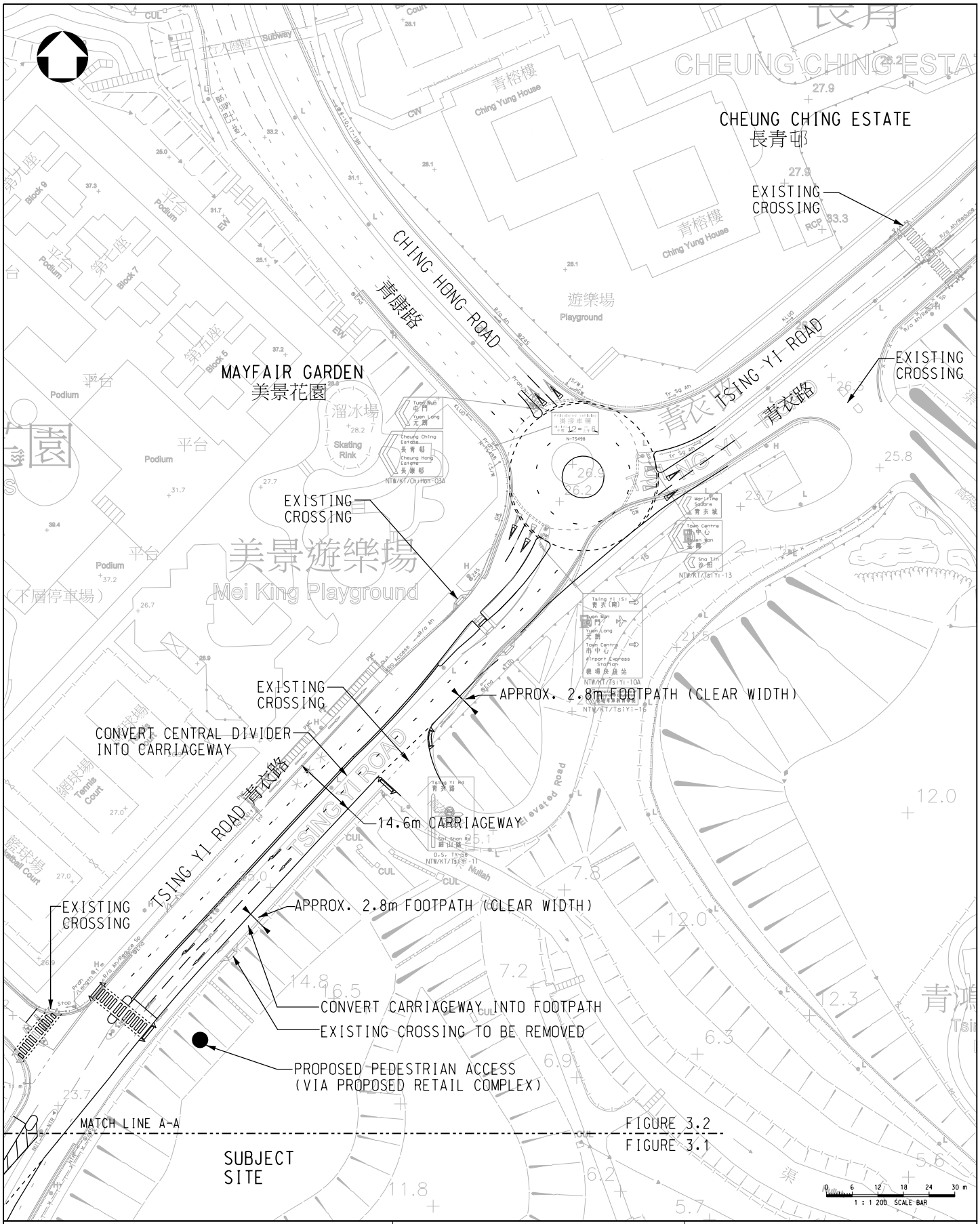
SCHEMATIC DESIGN OF VEHICULAR ACCESS, PUBLIC TRANSPORT FACILITIES, AND ROAD IMPROVEMENT (SHEET 1 OF 2)

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	1:1200	MMH/323840/TIA_FR_RC/3.1	C	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-3_1-C.dgn DATE: 09/06/2015 TIME: 11:31:53 USER: ho57494



Title

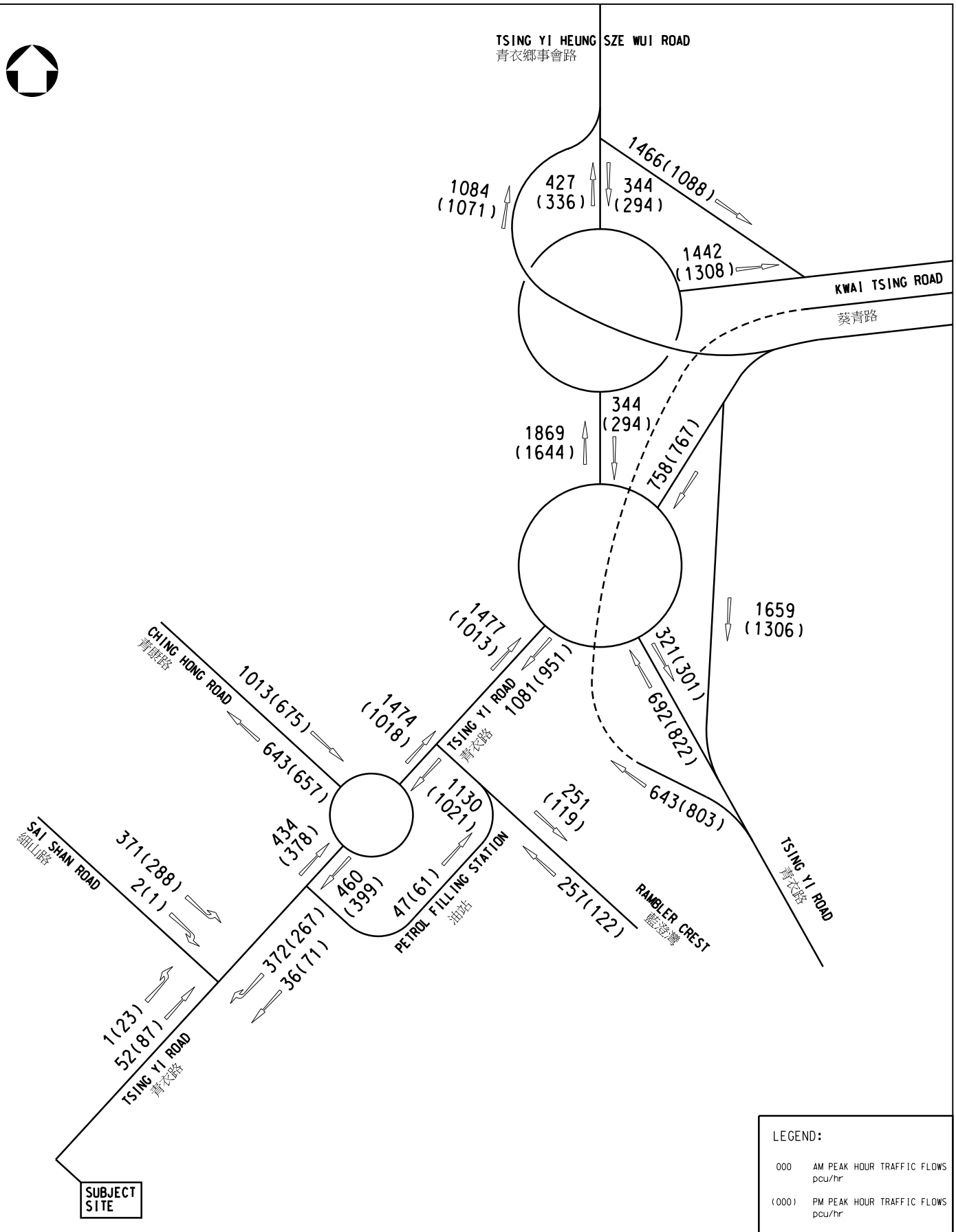
SCHEMATIC DESIGN OF VEHICULAR ACCESS, PUBLIC TRANSPORT FACILITIES, AND ROAD IMPROVEMENT (SHEET 2 OF 2)

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUL 2015	WH	ICK	---	1:1200	MMH/323840/TIA_FR_RC/3.2	H	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-3_2-H.dgn DATE: 06/07/2015 TIME: 14:44:58 USER: ho57494



LEGEND:

000	AM PEAK HOUR TRAFFIC FLOWS pcu/hr
(000)	PM PEAK HOUR TRAFFIC FLOWS pcu/hr

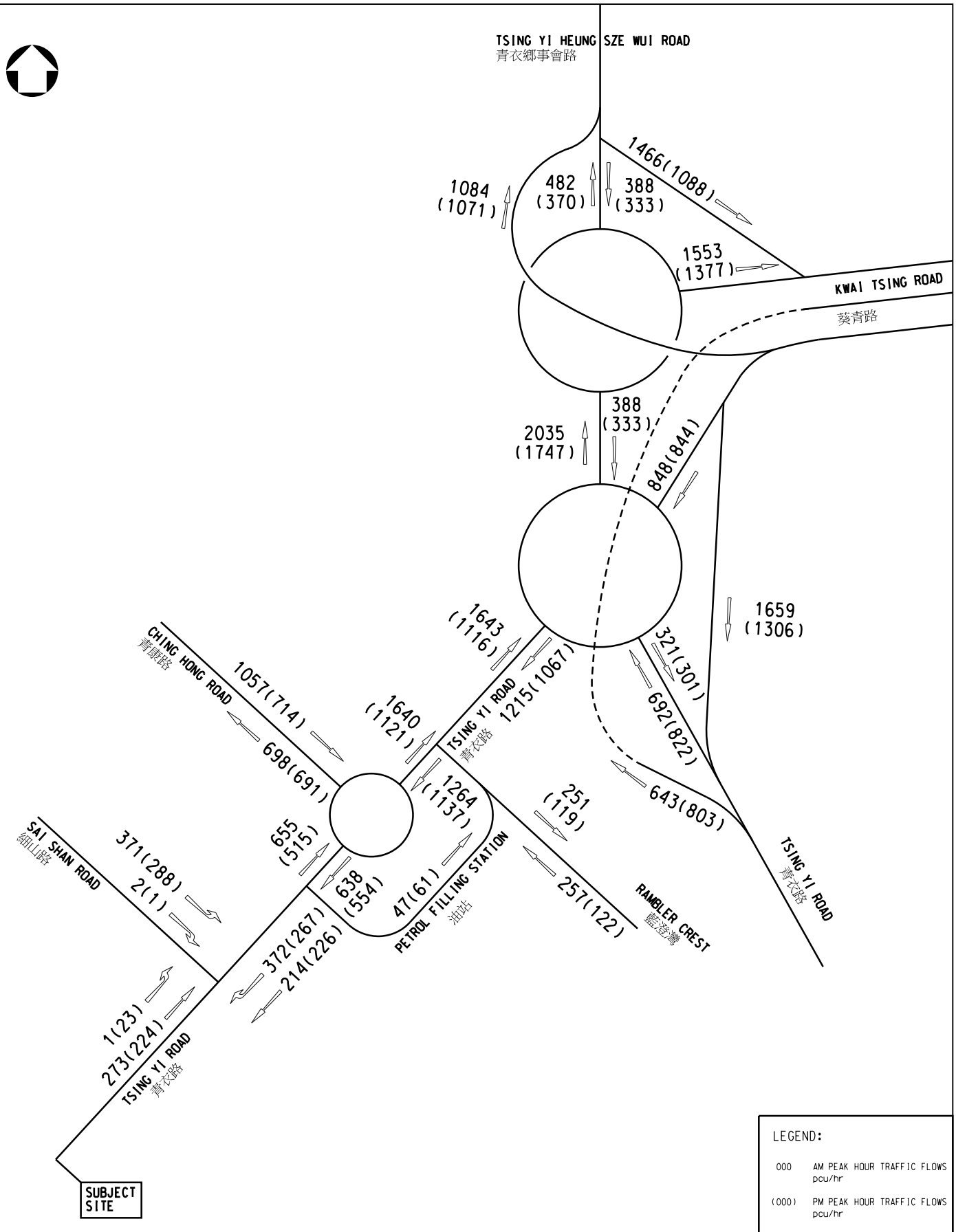
Title

2025 PEAK HOUR TRAFFIC FLOWS WITHOUT THE PROPOSED DEVELOPMENT

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	N.T.S.	MMH/323840/TIA_FR_RC/4.1	A	-



Title

2025 PEAK HOUR TRAFFIC FLOWS WITH THE PROPOSED DEVELOPMENT

POTENTIAL SITE FOR PUBLIC HOUSING DEVELOPMENT AT TSING YI ROAD, TSING YI AREA 22B

Mott MacDonald
20/F Kowloon-AIA Kowloon Tower
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Date	Drawn	Checked	Approved	Scale at A4	Drawing Number	Rev	Status
JUN 15	WH	ICK	---	N.T.S.	MMH/323840/TIA_FR_RC/4.2	A	-

J:\323840\DRAWING\TIA_FR_RC\MMH-323840-TIA_FR_RC-4_2-A.dgn DATE: 09/06/2015 TIME: 10:53:16 USER: ho57494

Appendix A

Calculation of Junction Analysis

Roundabout Analysis

Location: double roundabouts central link road / Tsing Yi Heung Sze Wui Road / Kwai Tsing Road
Scenario: existing condition
Assessment Year: 2015 Project Number: 323840 Date: 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
D	double roundabouts central link road	9.0	7.3	75.0	10.0	60	35	0.3
E	Tsing Yi Heung Sze Wui Road	9.0	7.3	25.0	10.0	60	50	0.3
F	Kwai Tsing Road	-	-	-	-	-	-	-

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

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

Limitation

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

AM Peak

Arm	To D	To E	To F	Total	q_c
From D	0	368	1249	1617	0
From E	300	0	0	300	1249
From F	-	-	-	0	300
Total	300	368	1249	1917	

PM Peak

Arm	To D	To E	To F	Total	q_c
From D	0	296	1135	1431	0
From E	255	0	0	255	1135
From F	-	-	-	0	255
Total	255	296	1135	1686	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From D	8.401	1.000	1.250	1.019	2545.514	0.704	2593	2593	1617	1431	0.624	0.552
From E	8.401	1.000	1.250	0.940	2545.514	0.704	1567	1643	300	255	0.191	0.155
									maximum		0.624	0.552

Roundabout Analysis

Location: double roundabouts central link road / Tsing Yi Heung Sze Wui Road / Kwai Tsing Road
Scenario: future traffic flows, with the planned 2 housing sites and VEC, without the Proposed Development
Assessment Year: 2025 Project Number: 323840 Date: 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
D	double roundabouts central link road	9.0	7.3	75.0	10.0	60	35	0.3
E	Tsing Yi Heung Sze Wui Road	9.0	7.3	25.0	10.0	60	50	0.3
F	Kwai Tsing Road	-	-	-	-	-	-	-

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

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

Limitation

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

AM Peak

Arm	To D	To E	To F	Total	q_c
From D	0	427	1442	1869	0
From E	344	0	0	344	1442
From F	-	-	-	0	344
Total	344	427	1442	2213	

PM Peak

Arm	To D	To E	To F	Total	q_c
From D	0	336	1308	1644	0
From E	294	0	0	294	1308
From F	-	-	-	0	294
Total	294	336	1308	1938	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From D	8.401	1.000	1.250	1.019	2545.514	0.704	2593	2593	1869	1644	0.721	0.634
From E	8.401	1.000	1.250	0.940	2545.514	0.704	1440	1528	344	294	0.239	0.192
									maximum		0.721	0.634

Roundabout Analysis

Location double roundabouts central link road / Tsing Yi Heung Sze Wui Road / Kwai Tsing Road
Scenario future traffic flows, with the planned 2 housing sites and VEC, with the Proposed Development
Assessment Year 2025 Project Number 323840 Date 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
D	double roundabouts central link road	9.0	7.3	75.0	10.0	60	35	0.3
E	Tsing Yi Heung Sze Wui Road	9.0	7.3	25.0	10.0	60	50	0.3
F	Kwai Tsing Road	-	-	-	-	-	-	-

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

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

Limitation

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

AM Peak

Arm	To D	To E	To F	Total	q_c
From D	0	482	1553	2035	0
From E	388	0	0	388	1553
From F	-	-	-	0	388
Total	388	482	1553	2423	

PM Peak

Arm	To D	To E	To F	Total	q_c
From D	0	372	1378	1750	0
From E	337	0	0	337	1378
From F	-	-	-	0	337
Total	337	372	1378	2087	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From D	8.401	1.000	1.250	1.019	2545.514	0.704	2593	2593	2035	1750	0.785	0.675
From E	8.401	1.000	1.250	0.940	2545.514	0.704	1366	1482	388	337	0.284	0.227
										maximum	0.785	0.675

Roundabout Analysis

Location: Kwai Tsing Road / Tsing Yi Road / double roundabouts central link road
Scenario: existing condition
Assessment Year: 2015 | Project Number: 323840 | Date: 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
A	Kwai Tsing Road	8.5	7.3	40.0	10.0	60	20	0.2
B	Tsing Yi Rd outside Rambler Crest	9.0	7.3	25.0	10.0	60	55	0.3
C	Tsing Yi Road outside Cheung Ching Estate	11.0	7.3	20.0	20.0	60	30	0.3
D	double roundabouts central link road	10.0	7.3	25.0	10.0	60	30	0.4

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

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

Limitation

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

AM Peak

Arm	To A	To B	To C	To D	Total	q_c
From A	0	0	572	65	637	459
From B	0	0	178	448	626	805
From C	0	127	32	1104	1263	513
From D	0	164	136	0	300	159
Total	0	291	918	1617	2826	

PM Peak

Arm	To A	To B	To C	To D	Total	q_c
From A	0	0	548	94	642	369
From B	0	0	154	590	744	738
From C	0	100	14	747	861	684
From D	0	173	82	0	255	114
Total	0	273	798	1431	2502	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	8.167	1.000	1.250	1.059	2474.617	0.691	2285	2351	637	642	0.279	0.273
From B	8.401	1.000	1.250	0.923	2545.514	0.704	1827	1870	626	744	0.343	0.398
From C	9.624	1.000	1.250	1.000	2916.109	0.768	2522	2391	1263	861	0.501	0.360
From D	8.748	1.000	1.250	1.010	2650.795	0.722	2561	2594	300	255	0.117	0.098
										maximum	0.501	0.398

Roundabout Analysis

Location Kwai Tsing Road / Tsing Yi Road / double roundabouts central link road

Scenario future traffic flows, with the planned 2 housing sites and VEC, without the Proposed Development

Assessment Year 2025 Project Number 323840 Date 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
A	Kwai Tsing Road	8.5	7.3	40.0	10.0	60	20	0.2
B	Tsing Yi Rd outside Rambler Crest	9.0	7.3	25.0	10.0	60	55	0.3
C	Tsing Yi Road outside Cheung Ching Estate	11.0	7.3	20.0	20.0	60	30	0.3
D	double roundabouts central link road	10.0	7.3	25.0	10.0	60	30	0.4

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

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

Limitation

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

AM Peak

Arm	To A	To B	To C	To D	Total	q_c
From A	0	0	686	72	758	519
From B	0	0	197	495	692	956
From C	0	140	35	1302	1477	567
From D	0	181	163	0	344	175
Total	0	321	1081	1869	3271	

PM Peak

Arm	To A	To B	To C	To D	Total	q_c
From A	0	0	663	104	767	419
From B	0	0	170	652	822	885
From C	0	110	15	888	1013	756
From D	0	191	103	0	294	125
Total	0	301	951	1644	2896	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	8.167	1.000	1.250	1.059	2474.617	0.691	2241	2314	758	767	0.338	0.331
From B	8.401	1.000	1.250	0.923	2545.514	0.704	1729	1775	692	822	0.400	0.463
From C	9.624	1.000	1.250	1.000	2916.109	0.768	2481	2336	1477	1013	0.595	0.434
From D	8.748	1.000	1.250	1.010	2650.795	0.722	2549	2586	344	294	0.135	0.114
										maximum	0.595	0.463

Roundabout Analysis

Location Kwai Tsing Road / Tsing Yi Road / double roundabouts central link road

Scenario future traffic flows, with the planned 2 housing sites and VEC, with the Proposed Development

Assessment Year 2025 Project Number 323840 Date 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
A	Kwai Tsing Road	8.5	7.3	40.0	10.0	60	20	0.2
B	Tsing Yi Rd outside Rambler Crest	9.0	7.3	25.0	10.0	60	55	0.3
C	Tsing Yi Road outside Cheung Ching Estate	11.0	7.3	20.0	20.0	60	30	0.3
D	double roundabouts central link road	10.0	7.3	25.0	10.0	60	30	0.4

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

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

Limitation

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

AM Peak

Arm	To A	To B	To C	To D	Total	q_c
From A	0	0	776	72	848	563
From B	0	0	197	495	692	1090
From C	0	140	35	1468	1643	567
From D	0	181	207	0	388	175
Total	0	321	1215	2035	3571	

PM Peak

Arm	To A	To B	To C	To D	Total	q_c
From A	0	0	747	104	851	462
From B	0	0	170	652	822	1012
From C	0	110	15	994	1119	756
From D	0	191	146	0	337	125
Total	0	301	1078	1750	3129	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From A	8.167	1.000	1.250	1.059	2474.617	0.691	2209	2283	848	851	0.384	0.373
From B	8.401	1.000	1.250	0.923	2545.514	0.704	1642	1692	692	822	0.422	0.486
From C	9.624	1.000	1.250	1.000	2916.109	0.768	2481	2336	1643	1119	0.662	0.479
From D	8.748	1.000	1.250	1.010	2650.795	0.722	2549	2586	388	337	0.152	0.130
										maximum	0.662	0.486

Roundabout Analysis

Location Tsing Yi Road / Ching Hong Road
Scenario existing condition
Assessment Year 2015 Project Number 323840 Date 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
G	Tsing Yi Road outside Cheung Ching Estate	9.0	7.3	20.0	5.0	30	40	0.5
H	Tsing Yi Road outside Mayfair Garden	7.3	7.3	25.0	1.0	30	40	0.0
I	Ching Hong Road	10.0	4.5	20.0	10.0	30	40	0.9

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

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

Limitation

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

AM Peak

Arm	To G	To H	To I	Total	q_c
From G	269	294	399	962	146
From H	265	0	80	345	720
From I	726	94	52	872	534
Total	1260	388	531	2179	

PM Peak

Arm	To G	To H	To I	Total	q_c
From G	158	270	433	861	119
From H	256	6	61	323	643
From I	450	61	52	563	420
Total	864	337	546	1747	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From G	8.114	0.050	1.476	0.965	2458.595	0.813	2259	2280	962	861	0.426	0.378
From H	7.300	0.050	1.476	0.975	2211.900	0.763	1621	1679	345	323	0.213	0.192
From I	6.493	0.050	1.476	0.965	1967.304	0.713	1532	1610	872	563	0.569	0.350
										maximum	0.569	0.378

Roundabout Analysis

Location Tsing Yi Road / Ching Hong Road

Scenario future traffic flows, with the planned 2 housing sites and VEC, without the Proposed Development

Assessment Year 2025 Project Number 323840 Date 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
G	Tsing Yi Road outside Cheung Ching Estate	9.0	7.3	20.0	5.0	30	40	0.5
H	Tsing Yi Road outside Mayfair Garden	7.3	7.3	25.0	1.0	30	40	0.0
I	Ching Hong Road	10.0	4.5	20.0	10.0	30	40	0.9

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

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

Limitation

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

AM Peak

Arm	To G	To H	To I	Total	q_c
From G	297	348	485	1130	169
From H	333	0	101	434	839
From I	844	112	57	1013	630
Total	1474	460	643	2577	

PM Peak

Arm	To G	To H	To I	Total	q_c
From G	175	318	528	1021	138
From H	299	7	72	378	760
From I	544	74	57	675	481
Total	1018	399	657	2074	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From G	8.114	0.050	1.476	0.965	2458.595	0.813	2241	2265	1130	1021	0.504	0.451
From H	7.300	0.050	1.476	0.975	2211.900	0.763	1533	1592	434	378	0.283	0.237
From I	6.493	0.050	1.476	0.965	1967.304	0.713	1466	1568	1013	675	0.691	0.430
									maximum		0.691	0.451

Roundabout Analysis

Location Tsing Yi Road / Ching Hong Road

Scenario future traffic flows, with the planned 2 housing sites and VEC, with the Proposed Development

Assessment Year 2025 Project Number 323840 Date 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
G	Tsing Yi Road outside Cheung Ching Estate	9.0	7.3	20.0	5.0	30	40	0.5
H	Tsing Yi Road outside Mayfair Garden	7.3	7.3	25.0	1.0	30	40	0.0
I	Ching Hong Road	10.0	4.5	20.0	10.0	30	40	0.9

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

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

Limitation

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

AM Peak

Arm	To G	To H	To I	Total	q_c
From G	297	482	485	1264	213
From H	499	0	156	655	839
From I	844	156	57	1057	796
Total	1640	638	698	2976	

PM Peak

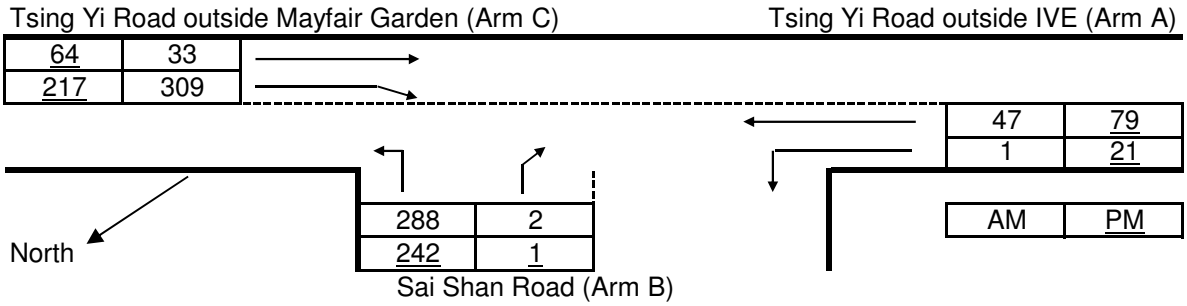
Arm	To G	To H	To I	Total	q_c
From G	175	445	528	1148	181
From H	405	7	108	520	760
From I	544	117	57	718	587
Total	1124	569	693	2386	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From G	8.114	0.050	1.476	0.965	2458.595	0.813	2206	2231	1264	1148	0.573	0.515
From H	7.300	0.050	1.476	0.975	2211.900	0.763	1533	1592	655	520	0.427	0.327
From I	6.493	0.050	1.476	0.965	1967.304	0.713	1351	1495	1057	718	0.782	0.480
										maximum	0.782	0.515

Priority Junction Analysis

Junction:	Tsing Yi Road / Sai Shan Road				
Assessment Year	2015	Project Number:	323840	Date:	07 July 2015
Scenario:	Existing Condition				



The predictive equations of capacity of movement are:

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

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

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

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

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

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

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

where Y = 1 - 0.0345W

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

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

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

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

Geometry :	Input		Input		Input		Calculated	
	W	16.50	V-rBA	50	w-BA	3.30	D	0.8518
	W-CR	2.00	V-lBA	50	w-BC	3.30	E	0.9323
			V-rBC	80	w-CB	3.65	F	0.9640
			V-rCB	80			Y	0.4308

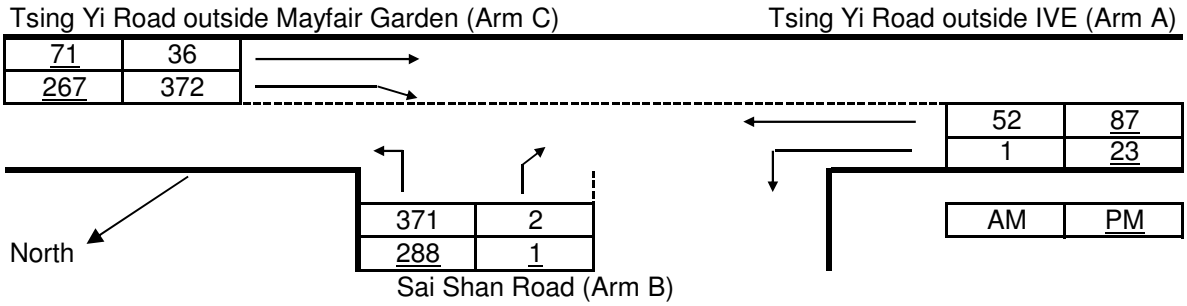
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	33	64	Q-BA	490	499
q-CB	309	217	Q-BC	688	682
q-AB	1	21	Q-CB	711	703
q-AC	47	79	Q-BAC	686	681
q-BA	2	1			
q-BC	288	242			
f	0.993	0.996			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.004	0.002	
B-C	0.419	0.355	
C-B	0.435	0.309	
B-AC	0.423	0.357	(for shared lane CA, CB)
maximum	0.435	0.357	

Priority Junction Analysis

Junction:	Tsing Yi Road / Sai Shan Road				
Assessment Year	2025	Project Number:	323840	Date:	07 July 2015
Scenario:	future traffic flows, with the planned 2 housing sites and VEC, without the Proposed Development				



The predictive equations of capacity of movement are:

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

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

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

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

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

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

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

where Y = 1 - 0.0345W

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

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

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

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

Geometry :	Input		Input		Input		Calculated	
	W	16.50	V-rBA	50	w-BA	3.30	D	0.8518
	W-CR	2.00	V-lBA	50	w-BC	3.30	E	0.9323
			V-rBC	80	w-CB	3.65	F	0.9640
			V-rCB	80			Y	0.4308

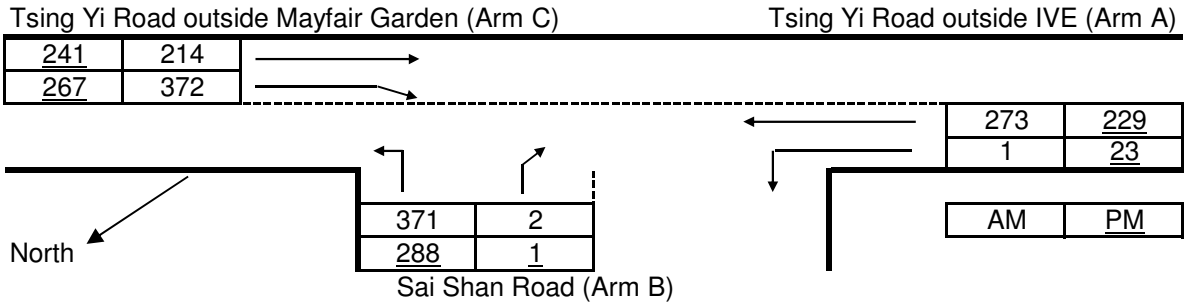
Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	36	71	Q-BA	477	488
q-CB	372	267	Q-BC	687	681
q-AB	1	23	Q-CB	710	702
q-AC	52	87	Q-BAC	685	680
q-BA	2	1			
q-BC	371	288			
f	0.995	0.997			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.004	0.002	
B-C	0.540	0.423	
C-B	0.524	0.381	
B-AC	0.544	0.425	(for shared lane CA, CB)
maximum	0.544	0.425	

Priority Junction Analysis

Junction:	Tsing Yi Road / Sai Shan Road				
Assessment Year	2025	Project Number:	323840	Date:	07 July 2015
Scenario:	future traffic flows, with the planned 2 housing sites and VEC, with the Proposed Development				



The predictive equations of capacity of movement are:

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

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

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

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

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

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

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

where Y = 1 - 0.0345W

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

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

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

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

Geometry :	Input		Input		Input		Calculated	
	W	16.50	V-rBA	50	w-BA	3.30	D	0.8518
	W-CR	2.00	V-lBA	50	w-BC	3.30	E	0.9323
			V-rBC	80	w-CB	3.65	F	0.9640
			V-rCB	80			Y	0.4308

Analysis :

Traffic Flows, pcu/hr	AM	PM	Capacity, pcu/hr	AM	PM
q-CA	214	241	Q-BA	432	455
q-CB	372	267	Q-BC	655	660
q-AB	1	23	Q-CB	677	680
q-AC	273	229	Q-BAC	653	659
q-BA	2	1			
q-BC	371	288			
f	0.995	0.997			

Ratio-of-flow to Capacity	AM	PM	
B-A	0.005	0.002	
B-C	0.567	0.437	
C-B	0.550	0.393	
B-AC	0.571	0.439	(for shared lane CA, CB)
maximum	0.571	0.439	

Roundabout Analysis

Location: Tsing Yi Road / Ching Hong Road (enlarged circulatory carriageway)
Scenario: future traffic flows, with the planned 2 housing sites and VEC, without the Proposed Development
Assessment Year: 2025 Project Number: 323840 Date: 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
G	Tsing Yi Road outside Cheung Ching Estate	7.3	7.3	100.0	1.0	34	10	0.0
H	Tsing Yi Road outside Mayfair Garden	7.3	7.3	25.0	1.0	34	40	0.0
I	Ching Hong Road	10.0	4.5	20.0	10.0	34	40	0.9

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

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

Limitation

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

AM Peak

Arm	To G	To H	To I	Total	q_c
From G	297	348	485	1130	169
From H	333	0	101	434	839
From I	844	112	57	1013	630
Total	1474	460	643	2577	

PM Peak

Arm	To G	To H	To I	Total	q_c
From G	175	318	528	1021	138
From H	299	7	72	378	760
From I	544	74	57	675	481
Total	1018	399	657	2074	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From G	7.300	0.074	1.465	1.109	2211.900	0.757	2310	2336	1130	1021	0.489	0.437
From H	7.300	0.074	1.465	0.975	2211.900	0.757	1537	1596	434	378	0.282	0.237
From I	6.493	0.074	1.465	0.965	1967.304	0.707	1469	1571	1013	675	0.690	0.430
									maximum		0.690	0.437

Roundabout Analysis

Location: Tsing Yi Road / Ching Hong Road (enlarged circulatory carriageway)
Scenario: future traffic flows, with the planned 2 housing sites and VEC, with the Proposed Development
Assessment Year: 2025 Project Number: 323840 Date: 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
G	Tsing Yi Road outside Cheung Ching Estate	7.3	7.3	100.0	1.0	34	10	0.0
H	Tsing Yi Road outside Mayfair Garden	7.3	7.3	25.0	1.0	34	40	0.0
I	Ching Hong Road	10.0	4.5	20.0	10.0	34	40	0.9

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

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

Limitation

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

AM Peak

Arm	To G	To H	To I	Total	q_c
From G	297	482	485	1264	213
From H	499	0	156	655	839
From I	844	156	57	1057	796
Total	1640	638	698	2976	

PM Peak

Arm	To G	To H	To I	Total	q_c
From G	175	445	528	1148	181
From H	405	7	108	520	760
From I	544	117	57	718	587
Total	1124	569	693	2386	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From G	7.300	0.074	1.465	1.109	2211.900	0.757	2273	2300	1264	1148	0.556	0.499
From H	7.300	0.074	1.465	0.975	2211.900	0.757	1537	1596	655	520	0.426	0.326
From I	6.493	0.074	1.465	0.965	1967.304	0.707	1356	1498	1057	718	0.780	0.479
										maximum	0.780	0.499

Signal Junction Analysis

Junction: Tsing Yi Road / Sai Shan Road (signalized junction) Project Number: 323840

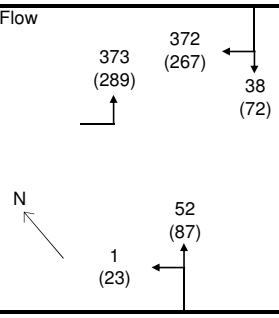
Scenario: future traffic flows, with the planned 2 housing sites and VEC, without the Proposed Development

Design Year: 2025 Designed By: Checked By: Date: 07 July 2015

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Tsing Yi Road SB	RT	A2	1	3.65	10.0		100	1843	372	0.202		100	1843	267	0.145	
	SA	A1	1	3.65				1980	38	0.019			1980	72	0.036	
Sai Shan Road	LT	B1	1	3.65	10.0		100	1722	373	0.217	0.217	100	1722	289	0.168	0.168
Tsing Yi Road NB	LT+SA	C1	2	3.65	10.0		2	1974	53	0.027	0.027	21	1920	110	0.057	0.057
pedestrian phase		$D_{(P)}$	3		min crossing time =			8	sec GM +		7	sec FGM =		15	sec	
		$E_{(P)}$	3		min crossing time =			7	sec GM +		6	sec FGM =		13	sec	

Traffic Flow pcu/hr

AM (PM)



	AM Peak			PM Peak		
	Check 1	Check 2	Check 3	Check 1	Check 2	Check 3
Sum y	0.244	0.217		0.225		
L (s)	31	37		31		
C (s)	60	60		60		
practical y	0.435	0.345		0.435		
R.C. (%)	78%	59%		93%		

Note:

1		2		3		4		5	
G	I/G	G	I/G	G	I/G	G	I/G	G	I/G
AM	7		8	15	3				
	7	5	8	15	3				
PM	7		8	15	3				

Signal Junction Analysis

Junction: Tsing Yi Road / Sai Shan Road (signalized junction) Project Number: 323840

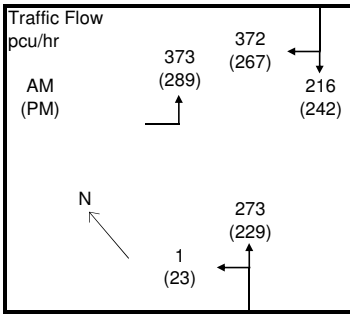
Scenario: future traffic flows, with the planned 2 housing sites and VEC, with the Proposed Development

Design Year: 2025 Designed By: Checked By: Date: 07 July 2015

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Tsing Yi Road SB	RT	A2	1	3.65	10.0		100	1843	372	0.202		100	1843	267	0.145	
	SA	A1	1	3.65				1980	216	0.109			1980	242	0.122	
Sai Shan Road	LT	B1	1	3.65	10.0		100	1722	373	0.217	0.217	100	1722	289	0.168	0.168
Tsing Yi Road NB	LT+SA	C1	2	3.65	10.0		0	1979	274	0.138	0.138	9	1953	252	0.129	0.129
pedestrian phase		$D_{(P)}$	3		min crossing time =			8	sec GM +		7	sec FGM =		15	sec	
		$E_{(P)}$	3		min crossing time =			7	sec GM +		6	sec FGM =		13	sec	

Traffic Flow pcu/hr

AM (PM)



	AM Peak			PM Peak		
	Check 1	Check 2	Check 3	Check 1	Check 2	Check 3
Sum y	0.355			0.297		
L (s)	31			31		
C (s)	60			60		
practical y	0.435			0.435		
R.C. (%)	23%			46%		

Note:

1		2		3		4		5	
G	I/G	G	I/G	G	I/G	G	I/G	G	I/G
AM	7		8	15	3				
PM	7		8	15	3				

Appendix B

Working Paper on Sensitivity Test for Possible Additional Vehicular Access at Tsing Hung Road

B1 Introduction

B1.1 Background

B1.1.1 It is planned to construct a public rental housing estate with 5 building blocks tentatively (the "Proposed Development") at Tsing Yi Road, Tsing Yi Area 22B. The proposed vehicular access for the Proposed Development is located at the cul-de-sac of the Tsing Yi Road, to the south of the Hong Kong Institute of Vocational Education. The travelling distance between the proposed vehicular access and Tsing Yi Interchange (which connects Kwai Chung via Tsing Yi Bridge) is about 800m or 2 minutes' travelling time.

B1.1.2 During the exercise of conducting the traffic impact assessment, it was required to evaluate the worthiness of having a possible additional vehicular access at Tsing Hung Road. The possible additional vehicular access would lead traffic to Tsing Yi Interchange or Tsing Sha Highway via the signalized junction of Tsing Yi Road / Tsing Hung Road and the roundabout of Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Sha Highway.

B1.1.3 This working paper will review the possible additional vehicular access and assess the associated traffic impact.

B1.2 Scope of the Study

B1.2.1 The main objectives of this study are as follows:

- To review the existing traffic condition in the vicinity of Tsing Hung Road;
- To examine the traffic impact of the Proposed Development to the local road network due to the possible additional vehicular access; and
- To identify any deficiencies in the road network in accommodating the expected additional traffic associated with the Proposed Development.

B2 The Existing Situation

B2.1 The Road Network

B2.1.1 Tsing Hung Road is a single carriageway with 2 to 4 traffic lanes. To the north end of the road, there is a small roundabout, with a development access to Rambler Crest. Since the north end of the road serves only Rambler Crest, limited traffic is observed. Other than Rambler Crest, no development access is currently found at the north end of Tsing Hung Road. To the south end, Tsing Hung Road connects with Tsing Yi Road in the form of a signal junction. The existing traffic flows along Tsing Hung Road is found to be low.

B2.1.2 The section of Tsing Yi Road between Tsing Yi Interchange and Tsing Yi Road West mainly serve the traffic for the Kwai Chung Container Terminal 9 and the industrial areas at the south and the west portions of Tsing Yi Island, including Nam Wan Kok, Nam Wan, and Sai Tso Wan. Tsing Yi Road (near Kwai Chung Container Terminal 9 and Nam Wan Kok) is a dual two carriageway; while the section near Nam Wan and Sai Tso Wan is a single two carriageway. Most vehicles using Tsing Yi Road are heavy goods vehicles.

B2.1.3 A large roundabout is located at the junction of Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Sha Highway.

B2.1.4 In view of the presence of the existing Kwai Chung Container Terminal 9 and other industrial developments in the south and the west areas of Tsing Yi Island, a large amount of container trucks and other goods vehicles is observed at Tsing Yi Road, Tsing Yi Hong Wan Road and Tsing Sha Highway.

B2.2 Public Transport Facilities

B2.2.1 No public transport routes operate along Tsing Hung Road.

B2.2.2 Only 1 minibus route (NTGMB 88M) operates along Tsing Yi Road. This minibus route serves between Kwai Fong Railway Station and Sai Tso Wan Road (Hong Kong United Dockyard).

B3 The Possible Additional Vehicular Access

B3.1 The Location of the Vehicular Access

B3.1.1 In view of the site boundary of the Proposed Development (refer to Figure MMH/323840/TIA_FR_RC/1.1 of the TIA report), the possible additional vehicular access would be located near the north end of Tsing Hung Road

B3.2 Comparison of The Routings

B3.2.1 A comparison of the routings from the Proposed Development to several locations via different vehicular accesses is shown in Table B3.1.

Table B3.1 Comparison of the Routings from Different Vehicular Access

Items	From the Tsing Yi Road Access (the originally proposed access)	From the Tsing Hung Road Access (the possible additional access)
	To Tsing Yi Interchange	
Approximate Travelling Distance and Time	800 m 2 minutes	1,500 m 3 minutes
	To Tsing Ma Bridge	
Approximate Travelling Distance and Time	4,300 m 7 minutes (via Ching Hong Road)	6,800 m 7 minutes (via Nam Wan Tunnel)
	To West Kowloon Highway near Tsing Sha Highway	
Approximate Travelling Distance and Time	5,700 m 7 minutes (via Tsing Yi Bridge (South))	6,700 m 6 minutes (via Tsing Sha Highway and Stonecutters Bridge)

B3.2.2 It can be seen that the possible additional access at Tsing Hung Road does not significantly prevail the Tsing Yi Road access in terms of travelling distance and time.

B4 The Traffic Impact

B4.1 Assessment Junctions

B4.1.1 In order to assess the traffic impact due to the provision of possible additional vehicular access, junction capacity analysis is conducted for the 2 junctions:

- roundabout of Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Sha Highway; and
- junction of Tsing Yi Road / Tsing Hung Road.

B4.2 Assessment Year

B4.2.1 In view that (i) the Proposed Development is expected to be completed in around 2019/2020 – 2020/2021, and (ii) the traffic study "Traffic Impact Assessment for Long-term Logistics Development in Kwai Tsing Area" has produced the 2026 traffic flows at the above 2 assessment junctions, year 2026 is adopted as the assessment year.

B4.3 2026 Junction Operational Performance

B4.3.1 With reference to the 2026 traffic flows in the aforesaid traffic study, year 2026 junction capacity analysis for the scenarios without and with the Proposed Development was conducted.

B4.3.2 Year 2026 peak hour traffic flows without and with the Proposed Development are shown in Figures B4.1 and B4.2. The results of the junction capacity analysis are summarised in Table B4.1.

Table B4.1 2026 Junction Operational Performance

Junction	Type and Indicator	Without the Proposed Development		With the Proposed Development	
		AM Peak	PM Peak	AM Peak	PM Peak
Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Sha Highway	RA / RFC	0.970	0.847	1.015	0.866
Tsing Yi Road / Tsing Hung Road	Signal / RC	24%	11%	21%	4%

Note: RA - roundabout
RFC - Ratio-of-Flow to Capacity
RC - Reserve Capacity

B4.3.3 The above results indicate that (i) even without the Proposed Development, the roundabout of Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Sha Highway would operate at near capacity level in 2026; (ii) the traffic associated with the Proposed Development generated via the possible additional vehicular access would further worsen the junction performance; and (iii) with the traffic associated with the Proposed Development generated via the possible additional vehicular access, the roundabout of Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Sha Highway would operate over capacity.

B5 Conclusion

B5.1 Overall Conclusion

B5.1.1 The possible additional access at Tsing Hung Road does not significantly prevail the Tsing Yi Road access in terms of travelling distance and time

B5.1.2 The roundabout of Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Sha Highway in 2026 will operate almost at capacity. Additional traffic flows due to the provision of the possible additional vehicular access at Tsing Hung Road would further worsen the operational capacity to an unacceptable level. The roundabout will not have sufficient capacity to accommodate the additional traffic generated by the Proposed Development via the possible additional vehicular access at Tsing Hung Road.

B5.1.3 The possible additional vehicular access at Tsing Hung Road is undesirable from traffic engineering point of view.

Roundabout Analysis

Location: Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Yi Road / Tsing Sha Highway
Scenario: future traffic flows, without the Proposed Development
Assessment Year: 2026 Project Number: 323840 Date: 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
N	Tsing Yi Road (North of RA)	10.0	6.4	35.0	15.0	103	42	0.4
O	Tsing Yi Hong Wan Road	13.0	7.3	40.0	20.0	103	42	0.5
P	Tsing Yi Road (South of RA)	12.0	7.3	55.0	10.0	103	30	0.8
Q	Tsing Sha Highway	9.0	7.3	65.0	5.0	103	6	0.5

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

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

Limitation

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

AM Peak

Arm	To N	To O	To P	To Q	Total	q_c
From N	0	0	830	180	1010	1635
From O	945	250	105	740	2040	1510
From P	830	95	40	400	1365	2125
From Q	100	790	450	10	1350	2160
Total	1875	1135	1425	1330	5765	

PM Peak

Arm	To N	To O	To P	To Q	Total	q_c
From N	5	0	690	140	835	1390
From O	850	275	80	680	1885	1315
From P	840	75	50	340	1305	1960
From Q	125	560	420	10	1115	2095
Total	1820	910	1240	1170	5140	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From N	8.436	73.700	1.007	0.979	2556.168	0.568	1594	1730	1010	835	0.634	0.483
From O	10.281	73.700	1.007	0.983	3115.195	0.646	2103	2227	2040	1885	0.970	0.847
From P	9.177	73.700	1.007	1.031	2780.630	0.599	1554	1656	1365	1305	0.879	0.788
From Q	8.114	73.700	1.007	1.117	2458.595	0.554	1409	1449	1350	1115	0.958	0.770
										maximum	0.970	0.847

Roundabout Analysis

Location: Tsing Yi Road / Tsing Yi Hong Wan Road / Tsing Yi Road / Tsing Sha Highway
Scenario: future traffic flows, with the Proposed Development and Additional access at Tsing Hung Road
Assessment Year: 2026 Project Number: 323840 Date: 07 Jul 2015

Geometric Parameters

Arm	Road (in clockwise order)	e (m)	v (m)	r (m)	L (m)	D (m)	∅ (°)	S
N	Tsing Yi Road (North of RA)	10.0	6.4	35.0	15.0	103	42	0.4
O	Tsing Yi Hong Wan Road	13.0	7.3	40.0	20.0	103	42	0.5
P	Tsing Yi Road (South of RA)	12.0	7.3	55.0	10.0	103	30	0.8
Q	Tsing Sha Highway	9.0	7.3	65.0	5.0	103	6	0.5

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

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

Limitation

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

AM Peak

Arm	To N	To O	To P	To Q	Total	q_c
From N	0	0	875	180	1055	1680
From O	945	250	105	740	2040	1600
From P	885	95	40	456	1476	2125
From Q	100	790	495	10	1395	2215
Total	1930	1135	1515	1386	5966	

PM Peak

Arm	To N	To O	To P	To Q	Total	q_c
From N	5	0	729	140	874	1428
From O	850	275	80	680	1885	1392
From P	874	75	50	375	1374	1960
From Q	125	560	458	10	1153	2129
Total	1854	910	1317	1205	5286	

Ratio-of-Flow to Capacity (RFC)

							Q_E		Entry Flow		RFC	
Arm	x_2	M	t_D	K	F	f_c	AM	PM	AM	PM	AM	PM
From N	8.436	73.700	1.007	0.979	2556.168	0.568	1569	1709	1055	874	0.672	0.511
From O	10.281	73.700	1.007	0.983	3115.195	0.646	2046	2178	2040	1885	0.997	0.866
From P	9.177	73.700	1.007	1.031	2780.630	0.599	1554	1656	1476	1374	0.950	0.830
From Q	8.114	73.700	1.007	1.117	2458.595	0.554	1375	1428	1395	1153	1.015	0.808
									maximum		1.015	0.866

Signal Junction Analysis

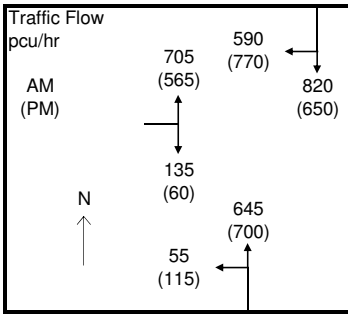
Junction: Tsing Yi Road / Tsing Hung Road Project Number: 323840

Scenario: future traffic flows, without the Proposed Development

Design Year: 2026 Designed By: Checked By: Date: 07 July 2015

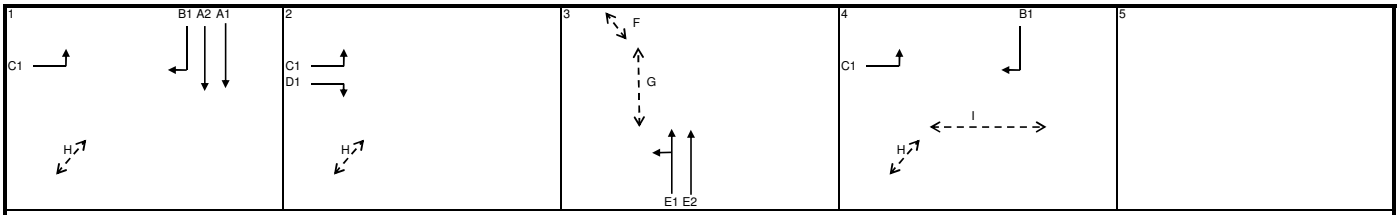
Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak Turning %	AM Peak Sat. Flow (pcu/hr)	AM Peak Flow (pcu/hr)	AM Peak y value	AM Peak Critical y	PM Peak Turning %	PM Peak Sat. Flow (pcu/hr)	PM Peak Flow (pcu/hr)	PM Peak y value	PM Peak Critical y
Tsing Yi Road SB	SA	A1	1	3.50				1965	396	0.202			1965	314	0.160	
	SA	A2	1	3.50				2105	424	0.201			2105	336	0.160	
	RT	B1	4,1	3.50	15.0		100%	1914	590	0.308	0.308	100%	1914	770	0.402	0.402
Tsing Hung Road	LT	C1	4,1,2	3.65	30.0		100%	1886	705	0.374		100%	1886	565	0.300	
	RT	D1	2	3.65	15.0		100%	1927	135	0.070	0.070	100%	1927	60	0.031	
Tsing Yi Road NB	ST+SA	E1	3	3.65	30.0		16%	1964	337	0.172	0.172	29%	1951	391	0.200	0.200
	SA	E2	3	3.65			0%	2120	363	0.171		0%	2120	424	0.200	
pedestrian phase		$F_{(P)}$	3		min crossing time =		5	sec GM +		5	sec FGM =		10	sec		
		$G_{(P)}$	3		min crossing time =		7	sec GM +		5	sec FGM =		12	sec		
		$H_{(P)}$	4,1,2		min crossing time =		5	sec GM +		5	sec FGM =		10	sec		
		$I_{(P)}$	4		min crossing time =		10	sec GM +		7	sec FGM =		17	sec		

Traffic Flow pcu/hr



	AM Peak Check 1	AM Peak Check 2	AM Peak Check 3	PM Peak Check 1	PM Peak Check 2	PM Peak Check 3
Sum y	0.550	0.443		0.603	0.391	
L (s)	18	35		23	35	
C (s)	90	90		90	90	
practical y	0.720	0.550		0.670	0.550	
R.C. (%)	31%	24%		11%	41%	

Note:



	G	I/G	G	I/G	G	I/G	G	I/G	G	I/G
AM		6		6		6				
		6		6		4	17	2		
PM		6	5	6		6				
		6		6		4	17	2		

Signal Junction Analysis

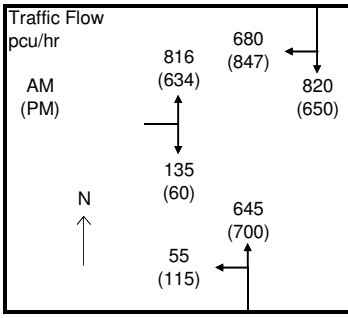
Junction: Tsing Yi Road / Tsing Hung Road Project Number: 323840

Scenario: future traffic flows, with the Proposed Development and Additional access at Tsing Hung Road

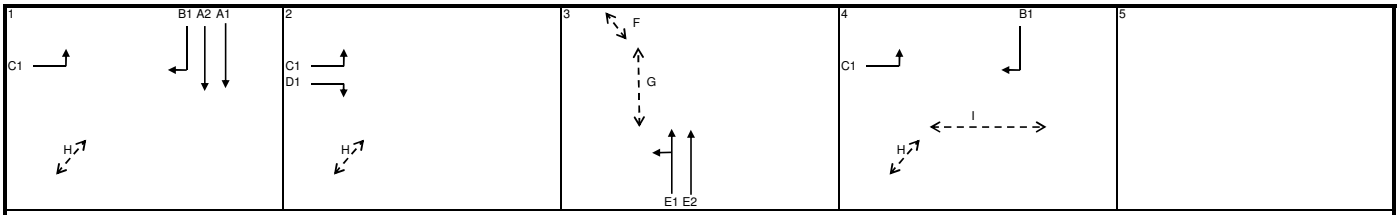
Design Year: 2026 Designed By: Checked By: Date: 07 July 2015

Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	AM Peak					PM Peak				
							Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Tsing Yi Road SB	SA	A1	1	3.50				1965	396	0.202			1965	314	0.160	
	SA	A2	1	3.50				2105	424	0.201			2105	336	0.160	
	RT	B1	4,1	3.50	15.0		100%	1914	680	0.355	0.355	100%	1914	847	0.443	0.443
Tsing Hung Road	LT	C1	4,1,2	3.65	30.0		100%	1886	816	0.433		100%	1886	634	0.336	
	RT	D1	2	3.65	15.0		100%	1927	135	0.070	0.070	100%	1927	60	0.031	
Tsing Yi Road NB	ST+SA	E1	3	3.65	30.0		16%	1964	337	0.172	0.172	29%	1951	391	0.200	0.200
	SA	E2	3	3.65			0%	2120	363	0.171		0%	2120	424	0.200	
pedestrian phase		$F_{(P)}$	3		min crossing time =			5	sec GM +	5		sec FGM =		10	sec	
		$G_{(P)}$	3		min crossing time =			7	sec GM +	5		sec FGM =		12	sec	
		$H_{(P)}$	4,1,2		min crossing time =			5	sec GM +	5		sec FGM =		10	sec	
		$I_{(P)}$	4		min crossing time =			10	sec GM +	7		sec FGM =		17	sec	

Traffic Flow pcu/hr



	AM Peak			PM Peak		
	Check 1	Check 2	Check 3	Check 1	Check 2	Check 3
Sum y	0.597	0.443		0.643	0.391	
L (s)	18	35		23	35	
C (s)	90	90		90	90	
practical y	0.720	0.550		0.670	0.550	
R.C. (%)	21%	24%		4%	41%	



	G	I/G	G	I/G	G	I/G	G	I/G	G	I/G
AM		6		6		6				
		6		6		4	17	2		
PM		6	5	6		6				
		6		6		4	17	2		

青衣路_青鴻路

Appendix C

Working Paper on Franchised Bus and Scheduled Minibus Occupancy Survey at Tsing Yi Road outside Cheung Ching Estate

C1 Introduction

C1.1 Background

C1.1.1 It is planned to construct a public rental housing estate with 5 building blocks tentatively (the "Proposed Development") at Tsing Yi Road, Tsing Yi Area 22B. It is planned to provide two pedestrian accesses for the Proposed Development, one at Tsing Yi Road cul-de-sac in connection with a proposed vehicular access, and the other one at Tsing Yi Road to the east of Sai Shan Road via a proposed retail complex.

C1.1.2 Some 20 franchised bus and scheduled minibus routes currently operate along Tsing Yi Road, Sai Shan Road and Ching Hong Road. The stops of these road based public transport services are within 300m from the Proposed Development. Since these public transport routes reach various districts throughout the territory, such as Tsing Yi Island, Kwai Fong, Tsuen Wan, Sha Tin, Kowloon East, Kowloon South, Hong Kong Island, the airport, the connectivity and the accessibility provided by these routes are sufficient. It is expected that the existing public transport services would be able to absorb the additional demand on the road based public transport services by the Proposed Development by adjusting the frequency of the existing routes.

C1.1.3 During the exercise of conducting the traffic impact assessment, it was required to conduct an occupancy survey to record the existing occupancy of the franchised bus and scheduled minibus routes (outbound direction towards Kwai Chung) currently operating along Tsing Yi Road outside Cheung Ching Estate.

C1.1.4 This working paper will present the survey information and the findings from the survey.

C1.2 Scope of the Survey

C1.2.1 The main objectives of this survey are as follows:

- To collect the vehicle occupancy of each observed franchised bus and scheduled minibus trip and the number of queuing passenger left behind at the AM peak for 1 typical weekday;
- To tabulate the data in an appropriate table format; and
- To summarise the results.

C2 The Survey

C2.1 Location and Time Period of the Survey

C2.1.1 The survey was conducted at the bus stop located at Tsing Yi Road outside Cheung Ching Estate towards Kwai Chung from 0645 to 0929 hours on Tuesday 28 April 2015.

C2.1.2 The bus stop was selected as the survey location because (i) the location is the peak loading point of the outbound trips (towards Kwai Chung) for the franchised bus and the scheduled minibus routes in the vicinity of the Proposed Development.

C2.1.3 It is believed that the survey period (0645 - 0929 hours) would cover the AM peak of the public transport demand on the outbound services.

C2.2 Surveyed Public Transport Routes

C2.2.1 The route numbers and the routings of the surveyed franchised bus and the scheduled minibus routes are shown in Table C2.1.

Table C2.1 Surveyed Public Transport Routes

Route	Origin	Destination
KMB 42	Cheung Hong	Shun Lee
KMB 42A	Cheung Hang	Jordan (To Wah Road)
KMB 43	Cheung Hong	Tsuen Wan West Railway Station
KMB 43A	Cheung Wang	Shek Lei (Tai Loong Street)
KMB 43C	Cheung Hong	Island Harbourview
KMB 43M	Cheung Ching	Kwai Fong Railway Station
KMB 242X	Cheung Hang	Tsim Sha Tsui
KMB 243P	Mayfair Garden	Discovery Park
KMB 249X	Tsing Yi Railway Station	Sha Tin Central
KMB / NWFB 948	Cheung On	Causeway Bay (Tin Hau)
KMB / NWFB 948P	Cheung On	Causeway Bay (Tin Hau)
KMB X42C	Cheung Hang	Lam Tin Railway Station
NTGMB 88C	Mayfair Garden	Kwai Fong Station
NTGMB 88D	Tivoli Garden	Kwai Fong Station
NTGMB 88G	Rambler Crest	Kwai Fong Station
NTGMB 88M	Sai Tso Wan Road	Kwai Fong Station
NTGMB 405	Cheung Hang	Lai King South

Note: KMB: Kowloon Motor Bus
NWFB: New World First Bus
NTGMB: New Territories Green Minibus

C2.3 Data Collection

C2.3.1 The following data of each observed franchised bus and the scheduled minibus trip were collected during the survey:

- arrival time;
- route number;

- number of boarding passengers;
- number of alighting passengers;
- vehicle occupancy when the vehicles left the stop;
- number of passengers left behind the vehicle trip; and
- carrying capacity of the vehicle trip.

C3 The Data Analysis

C3.1 Observed Data

C3.1.1 The number of boarding passengers of all surveyed routes is presented in Table C3.1.

Table C3.1 Number of Boarding Passengers of All Surveyed Routes

15-Minute Interval	Number of Boarding Passengers	30-Minute Interval	Number of Boarding Passengers	1-Hour Interval	Number of Boarding Passengers
06:45 - 06:59	81	-	-	-	-
07:00 - 07:14	99	06:45 - 07:14	180	-	-
07:15 - 07:29	138	07:00 - 07:29	237	-	-
07:30 - 07:44	129	07:15 - 07:44	267	06:45 - 07:44	447
07:45 - 07:59	128	07:30 - 07:59	257	07:00 - 07:59	494
08:00 - 08:14	**212**	07:45 - 08:14	340	07:15 - 08:14	607
08:15 - 08:29	188	**08:00 - 08:29**	**400**	07:30 - 08:29	657
08:30 - 08:44	148	08:15 - 08:44	336	**07:45 - 08:44**	**676**
08:45 - 08:59	103	08:30 - 08:59	251	08:00 - 08:59	651
09:00 - 09:14	90	08:45 - 09:14	193	08:15 - 09:14	529
09:15 - 09:29	65	09:00 - 09:29	155	08:30 - 09:29	406

Note: Figures in bold type represent the peak number of boarding passengers in the associated time interval.

C3.1.2 It could be found that the overall hourly peak passenger demand occurred at 07:45-08:44 hours, with the peak 15-minute at 08:00-08:14 hours.

C3.1.3 The number of boarding passengers of the individual routes is presented in Table C3.2.

Table C3.2 Number of Boarding Passengers of Individual Route

Time Interval	KMB 42	KMB 42A	KMB 43	KMB 43A	KMB 43C	KMB 43M	KMB 242X	KMB 243P	KMB 249X	KMB / NWFB 948	KMB / NWFB 948P	KMB X42C	NT GMB 88C	NT GMB 88D	NT GMB 88G	NT GMB 88M	NT GMB 405	Total
15-Minute Interval																		
06:45 - 06:59	3	22	5	10	3	11	0	0	0	0	0	0	0	19	0	8	0	81
07:00 - 07:14	0	31	8	3	10	32	0	0	9	0	0	0	0	2	0	0	4	99
07:15 - 07:29	6	18	**42**	23	8	3	0	**25**	0	0	0	0	0	0	0	11	2	138
07:30 - 07:44	6	34	16	37	10	5	0	0	11	7	0	0	0	0	0	3	0	129
07:45 - 07:59	6	20	13	20	19	10	0	0	0	28	0	0	0	4	0	8	0	128
08:00 - 08:14	**16**	**35**	12	8	26	5	**9**	23	**14**	15	6	**21**	0	4	0	18	0	**212**
08:15 - 08:29	0	24	9	**41**	6	**33**	3	0	0	**53**	**16**	0	0	0	0	0	3	188
08:30 - 08:44	13	31	26	13	**34**	12	0	0	7	0	0	0	0	6	0	6	0	148
08:45 - 08:59	5	28	20	19	12	9	0	0	5	0	0	0	0	5	0	0	0	103
09:00 - 09:14	5	32	14	5	3	12	0	0	0	0	0	0	5	2	2	10	0	90
09:15 - 09:29	0	20	3	15	0	1	0	0	6	0	0	0	0	6	0	14	0	65
30-Minute Interval																		
06:45 - 07:14	3	53	13	13	13	43	0	0	9	0	0	0	0	21	0	8	4	180
07:00 - 07:29	6	49	50	26	18	35	0	**25**	9	0	0	0	0	2	0	11	6	237
07:15 - 07:44	12	52	**58**	**60**	18	8	0	**25**	11	7	0	0	0	0	0	14	2	267
07:30 - 07:59	12	54	29	57	29	15	0	0	11	35	0	0	0	4	0	11	0	257
07:45 - 08:14	**22**	55	25	28	45	15	9	23	**14**	43	6	**21**	0	8	0	26	0	340
08:00 - 08:29	16	59	21	49	32	38	**12**	23	**14**	**68**	**22**	**21**	0	4	0	18	3	**400**
08:15 - 08:44	13	55	35	54	40	**45**	3	0	7	53	16	0	0	6	0	6	3	336
08:30 - 08:59	18	59	46	32	**46**	21	0	0	12	0	0	0	0	11	0	6	0	251
08:45 - 09:14	10	**60**	34	24	15	21	0	0	5	0	0	0	5	7	2	10	0	193
09:00 - 09:29	5	52	17	20	3	13	0	0	6	0	0	0	5	8	2	24	0	155

Time Interval	KMB 42	KMB 42A	KMB 43	KMB 43A	KMB 43C	KMB 43M	KMB 242X	KMB 243P	KMB 249X	KMB / NWFB 948	KMB / NWFB 948P	KMB X42C	NT GMB 88C	NT GMB 88D	NT GMB 88G	NT GMB 88M	NT GMB 405	Total
1-Hour Interval																		
06:45 - 07:44	15	105	71	73	31	51	0	25	20	7	0	0	0	21	0	22	6	447
07:00 - 07:59	18	103	79	83	47	50	0	25	20	35	0	0	0	6	0	22	6	494
07:15 - 08:14	34	107	**83**	88	63	23	9	**48**	25	50	6	**21**	0	8	0	40	2	607
07:30 - 08:29	28	113	50	**106**	61	53	**12**	23	25	**103**	**22**	**21**	0	8	0	29	3	657
07:45 - 08:44	**35**	110	60	82	**85**	60	**12**	23	21	96	**22**	**21**	0	14	0	32	3	**676**
08:00 - 08:59	34	**118**	67	81	78	59	**12**	23	**26**	68	**22**	**21**	0	15	0	24	3	651
08:15 - 09:14	23	115	69	78	55	**66**	3	0	12	53	16	0	5	13	2	16	3	529
08:30 - 09:29	23	111	63	52	49	34	0	0	18	0	0	0	5	19	2	30	0	406
Entire Survey Period																		
06:45 - 09:29	60	295	168	194	131	133	12	48	52	103	22	21	5	48	2	78	9	1381
Total	1239												142					1381
Split (%)	4.8%	23.8%	13.6%	15.7%	10.6%	10.7%	1.0%	3.9%	4.2%	8.3%	1.8%	1.7%	3.5%	33.8%	1.4%	54.9%	6.3%	-
Total	100%												100%					-

Note: KMB: Kowloon Motor Bus
NWFB: New World First Bus
NTGMB: New Territories Green Minibus
Figures in bold type represent the peak numbers of boarding passengers. The peak numbers of boarding passengers for the scheduled minibus routes had no significant reference values and were not highlighted because most minibus trips were full in capacity when they arrived at the surveyed bus stop.

C3.1.4 The observed vehicle trips of each bus and minibus route are presented in Table C3.2. Those vehicle trips falling into the hourly peak passenger demand peak (07:45-08:44 hours) are shown in bold type for easy reference.

Table C3.2 Observed Vehicle trips

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
KMB 42					
06:55	0	3	135	20%	0
07:16	0	6	135	10%	0
07:31	0	6	131	70%	0
07:51	0	6	135	70%	0
08:14	0	16	135	50%	0
08:34	0	13	131	50%	0
08:50	0	5	135	20%	0
09:10	0	5	131	20%	0
KMB 42A					
06:47	0	9	126	80%	0
06:53	0	12	126	80%	0
06:57	0	1	138	60%	0
07:02	0	9	138	80%	0
07:08	0	18	138	90%	2
07:10	0	4	126	80%	0
07:15	0	11	129	80%	0
07:21	0	3	138	80%	0
07:23	0	4	138	70%	0
07:30	0	13	124	100%	2
07:33	0	9	123	70%	0
07:39	0	6	138	70%	0
07:43	0	6	104	95%	0
07:51	0	8	126	100%	1
07:53	1	3	138	60%	0
07:58	0	9	134	80%	1
08:02	0	8	136	90%	0
08:08	0	3	111	100%	17
08:09	0	24	124	70%	0
08:20	0	9	138	100%	6
08:20	0	14	126	90%	0
08:21	0	1	126	60%	0
08:22	1	0	124	50%	0
08:30	1	2	128	100%	8
08:34	0	11	134	90%	0
08:39	0	12	138	100%	0

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
08:40	0	6	138	60%	0
08:46	0	7	137	70%	0
08:53	0	21	124	60%	0
08:53	0	0	138	50%	0
09:01	2	8	138	50%	0
09:05	1	11	138	60%	0
09:09	0	5	138	20%	0
09:14	0	8	126	80%	0
09:20	1	13	126	90%	0
09:26	0	7	126	50%	0
KMB 43					
06:52	0	5	124	20%	0
07:05	0	8	124	50%	0
07:19	3	31	124	80%	0
07:29	0	11	124	50%	0
07:39	1	16	124	70%	0
07:49	1	13	124	80%	0
08:00	0	1	124	30%	0
08:11	0	11	124	70%	0
08:26	1	9	124	50%	0
08:30	0	5	124	60%	0
08:38	1	21	124	90%	0
08:47	1	13	132	40%	0
08:58	0	7	124	20%	0
09:06	1	14	124	40%	0
09:19	1	3	124	10%	0
KMB 43A					
06:50	1	7	133	50%	0
06:58	1	3	124	30%	0
07:08	2	3	133	40%	0
07:17	2	12	124	95%	0
07:20	2	2	133	70%	0
07:25	2	9	133	80%	0
07:30	3	8	113	60%	0
07:34	2	13	137	95%	0
07:37	1	4	124	90%	0
07:41	1	12	137	90%	0
07:48	1	14	124	80%	0
07:58	1	6	124	90%	0
08:06	0	8	124	80%	0
08:19	2	19	124	95%	5

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
08:25	0	8	124	70%	0
08:27	0	14	133	80%	0
08:35	0	9	124	95%	4
08:39	5	4	124	70%	0
08:45	4	12	133	60%	0
08:50	8	2	133	30%	0
08:55	1	5	133	30%	0
09:08	0	5	124	30%	0
09:18	0	7	124	20%	0
09:20	0	0	124	10%	0
09:29	2	8	124	20%	0
KMB 43C					
06:56	0	3	124	60%	0
07:03	0	4	124	80%	0
07:11	0	6	124	60%	0
07:20	0	8	124	70%	0
07:30	0	6	124	80%	0
07:38	0	4	124	80%	0
07:46	0	12	124	90%	0
07:55	0	7	124	70%	0
08:03	0	7	124	70%	0
08:14	0	19	124	80%	0
08:21	0	6	124	60%	0
08:31	0	26	124	90%	0
08:40	1	8	124	70%	0
08:46	0	4	124	50%	0
08:57	0	8	124	50%	0
09:08	0	3	124	20%	0
KMB 43M					
06:46	0	6	124	10%	0
06:59	1	5	75	10%	0
07:14	0	32	75	90%	0
07:28	0	3	124	20%	0
07:38	0	5	75	50%	0
07:52	0	10	75	60%	0
08:07	0	5	124	50%	0
08:20	0	12	75	70%	0
08:26	0	21	75	100%	0
08:44	0	12	124	10%	0
08:52	0	9	75	90%	0
09:06	0	12	75	70%	0

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
09:20	0	1	124	10%	0
KMB 242X					
08:01	1	9	126	60%	0
08:20	1	3	124	40%	0
KMB 243P					
07:27	0	25	109	60%	0
08:10	0	23	122	80%	0
KMB 249X					
07:00	0	9	133	80%	0
07:32	0	11	133	70%	0
08:05	0	14	124	100%	2
08:30	0	7	124	70%	0
08:59	0	5	133	60%	0
09:29	0	6	133	40%	0
KMB / NWFB 948					
07:39	0	7	133	100%	2
07:49	0	0	133	100%	1
07:52	0	17	124	90%	0
07:58	0	11	137	90%	0
08:05	0	15	137	90%	0
08:12	0	0	133	100%	2
08:15	0	14	133	80%	16
08:18	0	7	133	40%	0
08:23	0	10	137	90%	2
08:26	0	13	129	80%	0
08:28	0	6	133	70%	0
08:29	0	3	137	40%	0
KMB / NWFB 948P					
08:00	0	6	118	70%	0
08:16	0	16	134	90%	3
KMB X42C					
08:07	0	11	134	70%	4
08:12	0	10	134	80%	0
NTGMB 88C					
07:01	0	0	16	100%	0
07:10	0	0	16	100%	9

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
07:20	0	0	16	100%	0
07:27	0	0	16	100%	0
07:32	0	0	16	100%	0
07:38	0	0	16	100%	0
07:45	0	0	16	100%	0
07:53	0	0	16	100%	0
08:02	0	0	16	100%	0
08:08	0	0	16	100%	0
08:12	0	0	16	100%	0
08:14	0	0	16	0%	0
08:15	0	0	16	100%	0
08:21	0	0	16	100%	0
08:21	0	0	16	100%	0
08:24	0	0	16	100%	0
08:26	0	0	16	100%	0
08:29	0	0	16	100%	0
08:31	0	0	16	100%	0
08:35	0	0	16	100%	0
08:42	0	0	16	100%	0
08:42	0	0	16	0%	0
08:43	0	0	16	100%	0
08:46	0	0	16	100%	0
08:48	0	0	16	100%	0
08:51	0	0	16	100%	0
08:55	0	0	16	94%	0
09:01	0	2	16	31%	0
09:01	0	0	16	50%	0
09:05	0	0	16	0%	0
09:05	0	0	16	100%	0
09:07	0	3	16	94%	0
09:12	0	0	16	100%	0
09:16	0	0	16	100%	0
09:17	0	0	16	100%	0
09:20	0	0	16	100%	1
09:21	0	0	16	100%	0
09:26	0	0	16	100%	0
09:27	0	0	16	100%	0
NTGMB 88D					
06:47	0	0	16	100%	0
06:49	0	0	16	81%	0
06:50	1	1	16	100%	1
06:50	0	9	16	75%	0

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
06:53	0	1	16	100%	1
06:54	0	6	16	88%	0
06:55	0	1	16	100%	0
06:55	0	1	16	56%	0
06:56	0	0	16	50%	0
06:56	0	0	16	50%	0
06:58	0	0	16	100%	0
07:00	0	0	16	100%	0
07:03	0	0	16	100%	0
07:08	0	0	16	100%	9
07:08	0	0	16	100%	9
07:11	0	2	16	100%	4
07:11	0	0	16	100%	4
07:15	0	0	16	100%	0
07:15	0	0	16	100%	0
07:21	0	0	16	100%	0
07:22	0	0	16	100%	0
07:22	0	0	16	100%	0
07:23	0	0	16	100%	0
07:25	0	0	16	100%	0
07:32	0	0	16	100%	0
07:35	0	0	16	100%	0
07:36	0	0	16	75%	0
07:37	0	0	16	100%	0
07:38	0	0	16	100%	0
07:40	0	0	16	100%	0
07:42	0	0	16	100%	0
07:45	0	0	16	100%	0
07:46	0	1	16	63%	0
07:54	0	0	16	100%	0
07:56	0	2	16	100%	0
07:57	0	0	16	100%	0
07:58	0	0	16	100%	0
07:59	0	1	16	100%	1
08:01	0	0	16	100%	1
08:02	0	0	16	100%	0
08:03	0	1	16	100%	0
08:03	0	0	16	100%	0
08:07	0	3	16	75%	0
08:09	0	0	16	100%	0
08:09	0	0	16	100%	0
08:10	0	0	16	100%	0
08:13	0	0	16	100%	0

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
08:13	0	0	16	75%	0
08:19	0	0	16	100%	0
08:21	0	0	16	100%	0
08:26	0	0	16	100%	0
08:29	0	0	16	100%	0
08:31	0	0	16	100%	0
08:31	0	0	16	100%	0
08:33	0	3	16	100%	2
08:37	0	0	16	100%	0
08:38	0	0	16	100%	0
08:38	0	0	16	100%	0
08:40	0	0	16	100%	0
08:41	0	0	16	100%	0
08:41	0	2	16	100%	0
08:42	0	1	16	100%	2
08:45	0	0	16	100%	0
08:47	0	0	16	100%	0
08:52	1	1	16	100%	0
08:53	0	0	16	100%	0
08:54	0	0	16	100%	0
08:56	1	1	16	100%	2
08:56	0	2	16	100%	0
08:58	1	1	16	100%	0
09:02	1	2	16	100%	0
09:07	0	0	16	100%	0
09:08	0	0	16	88%	0
09:09	0	0	16	94%	0
09:10	0	0	16	88%	0
09:12	0	0	16	100%	0
09:14	1	0	16	94%	0
09:15	1	1	16	100%	0
09:18	0	0	16	81%	0
09:19	2	2	16	81%	0
09:24	0	1	16	94%	0
09:26	0	0	16	100%	0
09:28	0	0	16	44%	0
09:29	0	2	16	100%	0
NTGMB 88G					
06:48	0	0	16	100%	1
06:57	0	0	16	100%	0
07:03	0	0	16	100%	3
07:05	0	0	16	100%	4

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
07:12	0	0	16	100%	4
07:17	0	0	16	100%	0
07:22	0	0	16	100%	0
07:26	0	0	16	100%	0
07:27	0	0	16	100%	0
07:36	0	0	16	100%	0
07:39	0	0	16	100%	0
07:43	0	0	16	100%	0
07:47	0	0	16	100%	0
07:55	0	0	16	100%	0
07:57	0	0	16	100%	0
08:03	0	0	16	100%	0
08:05	0	0	16	100%	0
08:19	0	0	16	100%	0
08:22	0	0	16	100%	0
08:29	0	0	16	100%	0
08:32	0	0	16	100%	0
08:39	0	0	16	100%	0
08:43	0	0	16	100%	0
08:52	0	0	16	100%	0
09:06	0	0	16	100%	0
09:08	0	0	16	100%	0
09:13	0	2	16	13%	0
09:16	0	0	16	100%	0
09:29	0	0	16	100%	0
NTGMB 88M					
06:48	0	3	16	94%	0
06:54	0	1	16	56%	0
06:54	0	0	16	100%	0
06:56	0	4	16	44%	0
06:59	0	0	16	100%	1
07:01	0	0	16	100%	2
07:07	0	0	16	100%	9
07:11	0	0	16	100%	4
07:17	0	0	16	100%	0
07:19	0	0	16	100%	0
07:20	0	3	16	100%	0
07:28	0	8	16	69%	0
07:30	0	0	16	100%	0
07:30	0	0	16	100%	0
07:36	0	3	16	88%	0
07:40	0	0	16	100%	0

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
07:46	0	4	16	100%	0
07:49	0	0	16	100%	0
07:49	0	0	16	100%	0
07:51	0	4	16	100%	0
07:52	0	0	16	100%	0
07:53	0	0	16	100%	0
07:57	0	0	16	100%	0
08:01	0	0	16	100%	1
08:02	0	5	16	100%	0
08:03	0	4	16	75%	0
08:04	0	0	16	100%	0
08:05	0	2	16	44%	0
08:07	0	1	16	94%	0
08:12	0	3	16	100%	0
08:13	0	3	16	50%	0
08:16	0	0	16	0%	0
08:17	0	0	16	100%	0
08:25	0	0	16	100%	0
08:26	0	0	16	100%	0
08:28	0	0	16	100%	0
08:31	0	0	16	100%	0
08:34	0	0	16	100%	2
08:37	0	0	16	100%	0
08:39	0	6	16	100%	0
08:40	0	0	16	100%	0
08:41	0	0	16	100%	0
08:46	0	0	16	100%	0
08:49	0	0	16	100%	0
08:53	0	0	16	100%	0
08:55	0	0	16	100%	0
08:59	0	0	16	100%	0
08:59	0	0	16	100%	0
09:00	0	3	16	94%	0
09:04	0	1	16	100%	0
09:10	0	6	16	38%	0
09:12	0	0	16	100%	0
09:15	0	0	16	100%	0
09:16	0	11	16	69%	0
09:18	0	0	16	0%	0
09:18	0	0	16	50%	0
09:24	0	0	16	100%	0
09:26	0	3	16	100%	0

Vehicle Arrival Time	Number of Alighting Passengers	Number of Boarding Passengers	Carrying Capacity of the Vehicle	Vehicle Occupancy after Alighting and Boarding	Number of Passengers Left in the Queue
NTGMB 405					
07:10	0	4	16	100%	5
07:18	1	0	16	56%	0
07:26	2	2	16	100%	0
07:36	0	0	16	88%	0
07:46	0	0	16	100%	0
08:01	0	0	16	100%	1
08:21	0	3	16	100%	0
09:03	0	0	16	38%	0

Note: KMB: Kowloon Motor Bus
NWFB: New World First Bus
NTGMB: New Territories Green Minibus

C3.2 Findings of the Data

C3.2.1 The findings and the observation of the individual routes are presented in Table C3.3.

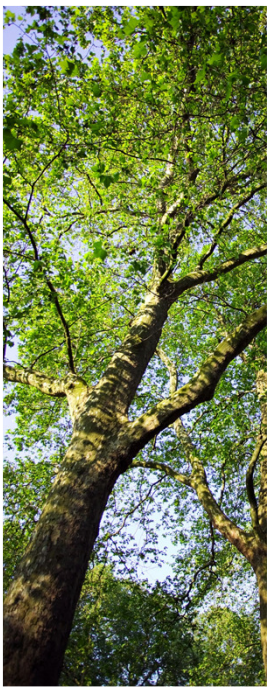
Table C3.3 Findings and Observation of the Individual Routes

Route	Findings and Observation
KMB 42	• All observed trips had occupancy of less than 100%. • No passengers were left behind the vehicle trips.
KMB 42A	• Occasionally, the vehicle occupancy of some trips reached 100% with a few passengers left behind the trips. The passengers left behind could board the next vehicle in a few minutes due to the high frequency of this route.
KMB 43	• All observed trips had occupancy of less than 100%. • No passengers were left behind the vehicle trips.
KMB 43A	• All observed trips had occupancy of less than 100%. • No passengers were left behind the vehicle trips.
KMB 43C	• All observed trips had occupancy of less than 100%. • No passengers were left behind the vehicle trips.
KMB 43M	• All observed trips had occupancy of less than 100%. • No passengers were left behind the vehicle trips.
KMB 242X	• This is a special route with limited trips. All trips were observed. • All observed trips had occupancy of less than 100%. • No passengers were left behind the vehicle trips.
KMB 243P	• This is a special route with limited trips. All trips were observed. • All observed trips had occupancy of less than 100%. • No passengers were left behind the vehicle trips.

Route	Findings and Observation
KMB 249X	• This is a special route with limited trips. All trips were observed. • Most observed trips had occupancy of less than 80%, while one trip had occupancy of 100% with 2 passengers left behind. • No passengers were left behind the vehicle trips.
KMB / NWFB 948 and 948P	• This is a special route with limited trips. All trips were observed. • Some observed trips had occupancy of 100%. • Some observed trips had occupancy of less than 100% with standee capacity available only. Some passengers preferred not boarding and waiting for next trip.
KMB X42C	• This is a special route with limited trips. All trips were observed. • All observed trips had occupancy of less than 100%. • No passengers were left behind the vehicle trips.
NTGMB 88C	• Almost all observed trips were full in capacity before arriving the surveyed bus stop. • Due to this situation, very few passengers were found to wait for this route at the surveyed bus stop.
NTGMB 88D	• The headway of this route was short, about 1 to 3 minutes. • Occasionally, a few trips had spare capacity at the surveyed bus stop.
NTGMB 88G	• Almost all observed trips were full in capacity before arriving the surveyed bus stop. • Due to this situation, very few passengers were found to wait for this route at the surveyed bus stop.
NTGMB 88M	• Most observed trips were full in capacity before arriving the surveyed bus stop.
NTGMB 405	• Some observed trips were full in capacity before arriving the surveyed bus stop.
General Item	• NTGMB Route 88C, 88D, 88G, 88M and 405 at the surveyed bus stop were heading for or passing through Kwai Fong. Some queuing passengers of these routes would switch to take KMB Route 43M (Cheung Ching - Kwai Fong Railway Station) when the buses arrived at the surveyed bus stop.

Note: KMB: Kowloon Motor Bus
NWFB: New World First Bus
NTGMB: New Territories Green Minibus

C3.2.2 In general, the overall carrying capacity of the franchised bus routes is capable to accommodate the passenger demand in the AM peak period; whilst, the occupancy of the most scheduled minibus routes almost achieve 100% at the surveyed location.


Agreement No. CB20130106 Term Engineering Consultancy Services 2013-2015 for New Territories West Region - Public Housing Development at Junction of Tsing Yi Road and Tsing Hung Road, Tsing Yi Area 22B

Broad Environmental Assessment Report (Final)

April 2015

Mott MacDonald

Agreement No. CB20130106 Term Engineering Consultancy Services 2013-2015 for New Territories West Region - Public Housing Development at Junction of Tsing Yi Road and Tsing Hung Road, Tsing Yi Area 22B

Broad Environmental Assessment Report (Final)

April 2015

Mott MacDonald, 20/F AIA Kowloon Tower, Landmark East, 100 How Ming Street, Kwun Tong, Kowloon, Hong Kong
T +852 2828 5757 **F** +852 2827 1823 w **W** www.mottmac.com

Contents

Tables

Figures

Appendix

1 Introduction

1.1 Project Background

Mott MacDonald Hong Kong Limited (MMHK) was commissioned by the Hong Kong Housing Authority (HKHA) of the HKSAR Government to conduct a Broad Environmental Assessment for the public housing development at junction of Tsing Yi Road and Tsing Hung Road, Tsing Yi Area 22B under Agreement No. CB20130106 Term Engineering Consultancy Services 2013-2015 for New Territories West Region.

1.2 Objectives

The objective of this Broad Environmental Assessment is to:

- Assess the road traffic noise impacts upon the proposed development with reference to the Hong Kong Planning Standards and Guidelines (HKPSG);
- Assess the potential impacts of other noise sources upon the proposed development with reference to HKPSG;
- Assess the potential vehicular emissions from the surroundings road network with reference to HKPSG;
- Assess the potential air pollutant emissions from the nearby industrial premises with reference to HKPSG / international standards; and
- Recommend appropriate environmental mitigation measures as required.

1.3 Site Location

The proposed development is approximately 4.1 hectare in size and located at the junction of Tsing Yi Road and Tsing Hung Road, Tsing Yi Area 22B. The location of the proposed development is shown in **Figure 1.1**.

1.4 Proposed Development Layout Designs

The proposed development tentatively consists of 5 nos. of residential block which mainly serve for domestic purpose (with about 3,800 nos. of residential flat) and welfare facilities purpose. Layout of the proposed development is shown in **Figure 1.2.** The tentative building completion year is 2019/20 - 2020/21.

2 Noise Impact

2.1 Introduction

This section presents the assessment of potential noise impacts associated with the road traffic noise and fixed plant noise, which has been conducted against the relevant noise standards in the HKPSG.

2.2 Assessment Criteria

2.2.1 Road Traffic Noise Criteria

The noise criteria for evaluating noise impact on the planned development with respect to road traffic noise are based on the HKPSG. The summary of noise criteria are given in **Table 2.1** below.

Table 2.1 Relevant Noise Standard for Planning Purposes

Uses	Road Traffic Noise Peak Hour Traffic L_{10} (1 Hour), dB(A)
All domestic premises including temporary housing accommodation	70
Educational institutions including kindergartens, nurseries and all others where unaided voice communication is required	65
Hospitals, clinics, convalescences and residential care homes for the elderly - diagnostic rooms - wards	55

Notes:
(i) The above standards apply to uses which rely on opened windows for ventilation
(ii) The above standards should be viewed as the maximum permissible noise levels assessed at 1m from the external façade

With reference to the guideline in HKPSG, the road traffic noise criterion of L_{10} is 70 dB(A) is applicable to the residential dwellings within the domestic blocks. For the kindergarten, the road traffic noise criterion of L_{10} is 65 dB(A). Based on the latest available information, no dormitory will be included and no educational and medical purpose will be in use for the welfare facilities. Thus, they will not be considered as noise sensitive receivers in accordance with HKPSG. However, if dormitory will be included, or educational or medical purpose (e.g. diagnostic rooms, wards) will be used in welfare facilities, the road traffic noise criterion(L_{10}) of 70 dB(A), 65 dB(A) or 55 dB(A) will be adopted, respectively.

2.2.2 Fixed Plant Noise Criteria

For the fixed plant noise assessment, the Acceptable Noise Levels (ANLs) for the Noise Sensitive Receivers (NSRs) are determined with consideration of the Area Sensitivity Rating (ASR), which is defined in the Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (IND-TM) issued under the Noise Control Ordinance (NCO). The ASR depends on the type of area and the degree of impact that Influencing Factors (IFs) have on the NSRs as illustrated in **Table 2.2**. Industrial area, major road or the area within the boundary of Hong Kong International Airport shall be considered to be an IF.

Table 2.2 Area Sensitivity Rating

Type of Area Containing NSR	Degree to which NSR is affected by IF		
	Not Affected[(c)]	Indirectly Affected[(d)]	Directly Affected[(e)]
(i) Rural area, including country parks[(a)] or village type developments	A	B	B
(ii) Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
(iii) Urban area[(b)]	B	C	C
(iv) Area other than those above	B	B	C

Definitions:
(a) "Country park" means an area that is designated as a country park pursuant to section 14 of the Country Parks Ordinance.
(b) "Urban area" means an area of high density, diverse development including a mixture of such elements as industrial activities, major trade or commercial activities and residential premises.
(c) "Not Affected" means that the NSR is at such a location that noise generated by the IF is not noticeable at the NSR.
(d) "Indirectly Affected" means that the NSR is at such a location that noise generated by the IF, whilst noticeable at the NSR, is not a dominant feature of the noise climate of the NSR.
(e) "Directly Affected" means that the NSR is at such a location that noise generated by the IF is readily noticeable at the NSR and is a dominant feature of the noise climate of the NSR.

Fixed plant noise is controlled under the NCO and shall comply with the ANLs laid down in the Table 2 of the IND-TM. For a given ASR, the ANL, in dB(A), is given by **Table 2.3**.

Table 2.3 Acceptable Noise Level for Fixed Plant Noise

Time Period		Area Sensitivity Rating		
		A	B	C
Day-time	(0700 to 1900 hours)	60	65	70
Evening	(1900 to 2300 hours)			
Night-time	(2300 to 0700 hours)	50	55	60

Notes: (i) The above standards apply to uses which rely on opened windows for ventilation
(ii) The above standards should be viewed as the maximum permissible noise levels assessed at 1m from the external facade

The proposed development is located in high density and diverse development area but excluding industrial activities, major trade or commercial activities. Therefore, the type of area containing the NSRs is considered as “Area other than those above” as defined in the IND-TM. In accordance with the IND-TM, Kwai Tsing Road (Kwai Tsing Bridge) with annual average daily traffic flow in excess of 30,000 should be considered as the IF, which is in the vicinity of the proposed development. According to **Table 2.2**, the ASR of the Site shall be classified as “B”.

As stipulated in Chapter 9 “Environment” of the HKPSG, the noise standard for planning purposes fixed noise source are (a) 5 dB(A) below the appropriate ANL, or (b) the prevailing background noise levels (For quiet areas with level 5 dB(A) below the ANL).

The criteria to be adopted for the NSRs are dependent on the background noise measurement results. Should the measured prevailing background noise level be lower than the ANL by more than 5dB(A), the

background noise level would be adopted as the criteria. The noise criteria of the fixed plant noise are summarised in **Table 2.4** below.

Table 2.4 Noise Criteria of Fixed Plant Noise

Time Period	ANL – 5, dB(A)[#]	Background Noise Level, dB(A)*	Fixed Noise Criteria, dB(A)
Day-time & Evening	60	61	60
Night-time	50	56	50

Note: (#) Refer to **Table 2.3** for the Area Sensitivity Rating (ASR).
(*) Refer to **Table 2.5** for the background noise measurement results.

2.3 Study Area

The Study Area is defined as within 300m of the site boundary for fixed noise impact assessment. This study area is identified and shown in **Figure 1.1**.

2.4 Background Noise Condition

Noise surveys were carried out on 3 February 2015 to investigate the background noise condition of the surrounding environment and the Project Site. The baseline noise measurement locations are shown in **Figure 2.1**.

The noise measurements were undertaken using Type 1 sound level meter (Rion NL-31 Serial No. 01262786). The sound level meter was checked using an acoustic calibrator generating a sound pressure level of 94.0 dB(A) at 1kHz immediately before and after the noise measurement. The measurements were accepted as valid only if the calibration levels before and after the noise measurement were agreed to within 1.0 dB(A). Moreover, the sound level meters and acoustic calibrators are calibrated in accredited laboratories annually to ensure reliable performance. The measurement results are shown in **Table 2.5**.

Table 2.5 Measured Background Noise Levels

Location ID	Location Description	Time Period	Start Time	*Measured Noise Level in $L_{eq\ (30min)}$, dB(A)
M1	Centre of Site	Day-time & Evening (0700 – 2300)	1405	**60.5**
		Night-time (2300 – 0700)	2305	**56.3**
M2	Southern Site Boundary	Day-time & Evening (0700 – 2300)	1445	63.9
		Night-time (2300 – 0700)	2345	56.4
M3	Northern Site Boundary	Day-time & Evening (0700 – 2300)	1530	68.6
		Night-time (2300 – 0700)	0030	63.2

Note (*): All background noise measurements were conducted under free-field condition. Thus, façade correction +3dB(A) has been included.
Bold: Lowest background noise level was adopted for conservative approach.

2.5 Identification of Noise Sources

2.5.1 Road Traffic Noise Sources

Road traffic from nearby road network is the dominant noise source within the 300m assessment area. Potential road traffic noise impact from Tsing Yi Road, Tsing Hung Road and Tsing Sha Highway is anticipated on the proposed development.

2.5.2 Fixed Plant Noise Sources

Operation of the Container Terminal 9 and Tsing Yi Preliminary Treatment Works would potentially generate fixed plant noise impacts from their equipment such as container handling plant, hydraulic pumps, generators and exhaust fans, etc.

2.6 Evaluation and Assessment of Noise Impacts

2.6.1 Road Traffic Noise Impact

Based on the given layout plan, road traffic noise would potentially affect the noise sensitive facades facing the Tsing Yi Road, Tsing Hung Road and Tsing Sha Highway. In case of any exceedance of relevant traffic noise standards, mitigation measures such as noise barriers, architectural fins, acoustic windows or even further setback of building blocks will be proposed and adopted. Examples of mitigation measures are presented in **Figure 2.2**. With the implementation of the appropriate noise mitigation measures, insurmountable road traffic noise issue is not anticipated on the proposed development.

2.6.2 Fixed Plant Noise Impact

Fixed plant noise impacts on the proposed development would be potentially generated from the operation of Container Terminal 9 and Tsing Yi Preliminary Treatment Works. In case of any exceedance of relevant fixed noise criteria, mitigation measures such as noise barriers, architectural fins, further setback of building blocks or even single-aspect building block design will be proposed and adopted. Examples of mitigation measures are presented in **Figure 2.2**. With the implementation of the appropriate noise mitigation measures, insurmountable fixed plant noise issue is not anticipated on the proposed development.

3 Air Quality Impact

3.1 Introduction

This section presents the assessment of potential vehicular and industrial emissions, which have been conducted in accordance with the guideline for environmental considerations in the planning of both public and private development in Chapter 9 of the HKPSG.

3.2 Assessment Criteria

Air Quality Objectives

The principal legislation for the management of air quality is the Air Pollution Control Ordinance (APCO). It specifies Air Quality Objective (AQOs) which stipulate the statutory limits of air pollutants and the maximum allowable numbers of exceedance over specific periods. With passage of the Air Pollution Control (Amendment) Ordinance 2013 by the Legislative Council on 10 July 2013, the prevailing AQOs as listed in **Table 3.1** are due to take effect on 1 January 2014.

Table 3.1 Prevailing AQOs Effective on 1 January 2014

Pollutant	Averaging Time	AQO concentration (µg/m³)	Allowable exceedences
Sulfur Dioxide (SO_2)	10 minute	500	3
	24 hour	125	3
Respirable Suspended Particulates (PM_{10})	24 hour	100	9
	Annual	50	0
Fine Suspended Particles ($PM_{2.5}$)	24 hour	75	9
	Annual	35	0
Nitrogen Dioxide (NO_2)	1 hour	200	18
	Annual	40	0
Carbon Monoxide (CO)	1 hour	30,000	0
	8 hour	10,000	0
Ozone (O_3)	8 hour	160	9
Lead	Annual	0.5	0
Total Suspended Particulates (TSP)	1 hour(1)	500(1)	-
Volatile Organic Compounds (VOC) (benzene)	Annual(2)	5.0(2)	-

Note (1) Criterion specified under EIAO-TM, not an AQO
(2) According to "Assessment of Toxic Air Pollutant Measurements in Hong Kong, Final Report", benzene and 1,3-butadiene are the most significant VOCs for Hong Kong. However, as 1,3-butadiene is only produced after combustion, benzene is adopted as the key pollutant of concern for petrol vapour. Since Hong Kong has no specific VOC emission standards, criterion refers to UK Air Quality Standards

3.3 Study Area

The Study Area is defined as within 500m of the site boundary for air quality impact assessment. This study area is identified and shown in **Figure 1.1**.

3.4 Identification of Emission Sources

3.4.1 Vehicular Emission

The HKPSG buffer distance to "open space" sites have been adopted as there is no specific requirement for buffer distances to domestic premises.

According to the Table 3.1 in Chapter 9 of the HKPSG, guidelines on the buffer distance for air sensitive usage on vehicular emissions in relation to different categories of roads have been recommended. The different categories of roads and the respective minimum buffer distance for open space site are given in **Table 3.2**.

Table 3.2 Guideline on Usage of Open Space Site

Pollution Source	Type of Road	Buffer Distance (m)	Permitted Uses
Road and Highways	Trunk Road and Primary Distributor (PD)	>20	Active and passive recreation uses
		3-20	Passive recreational uses
		<3	Amenity areas
	District Distributor (DD)	>10	Active and passive recreation uses
		<10	Passive recreational uses
	Local Distributor (LD)	>5	Active and passive recreation uses
		<5	Passive recreational uses
	Under Flyovers	--	Passive recreational uses

Note: The buffer distance refer to the horizontal, shortest distance from the edge of road kerb to the boundary of open space sites.

Roads located around the proposed development include Tsing Yi Road, Tsing Hung Road and Tsing Sha Highway. According to the Annual Traffic Census (2013) published by Transport Department, the corresponding section of Tsing Sha Highway is classified as Expressway (EX) (or Primary Distributor (PD)). The corresponding section of Tsing Yi Road links the Project Site to Tsing Sha Highway is classified as District Distributor (DD). No road classification information about the corresponding section of Tsing Hung Road is available in the Annual Traffic Census (2013). As it serves for linking the Project Site to the District Distributor (Tsing YI Road), Tsing Hung Road is regarded as Local Distributor (LD) in the assessment.

3.4.2 Industrial Emission

Industrial emissions are potential sources of air pollution that may affect the proposed development. The study area for industrial emission assessment includes all area within 500m from the site boundary.

3.5 Evaluation and Assessment of Air Quality Impact

3.5.1 Vehicular Emission

Horizontal Separation Distance between Nearby Roads and Domestic Blocks

The horizontal separation distances between the road kerbs and the proposed domestic blocks (see **Figure 3.1** are summarized in **Table 3.3**.

Table 3.3 Separation Distance between Nearby Road and the Domestic Blocks

Road	Type of Road	Buffer Distance (m)	Horizontal Distance to the Nearest Air Sensitive Uses	
			Location	Distance (m)
Tsing Sha Highway	PD	>20m for Active and passive recreation uses or 3-20m for Passive recreational uses or <3m for Amenity areas	Domestic Block	>20
Tsing Yi Road	DD	>10m for Active and passive recreation uses or <10m for Passive recreational uses	Domestic Block	>10
Tsing Hung Road	LD	>5m for Active and passive recreation uses or <5m for Passive recreational uses	Domestic Block	>5

Based on the result in **Table 3.3**, separation distances from the domestic Blocks to the road kerb comply with the buffer distance recommended in the HKPSG. Therefore, no adverse air quality impacts on the domestic Blocks due to vehicular emissions is anticipated. In addition, no other active or passive recreational uses are to be located within the recommended buffer distances from the kerb of the adjacent roads in order to fully comply with the HKPSG recommendation.

3.5.2 Industrial Emission

Based on the desktop study, two major industrial emission sources (i.e. Tsing Yi Preliminary Treatment Works and Petrol Filling Station at 15 Tsing Yi Road) have been identified within the 500m study area. The locations of the identified industrial emission sources are shown in **Figure 3.2**.

Tsing Yi Preliminary Treatment Works

During the operation of Tsing Yi Preliminary Treatment Works, odour emission would be the major air quality concern. The odour problem is mainly due to the presence of hydrogen sulphide (H_2S) which is a major odorous gas in sanitary sewer system. Given that appropriate odour treatment measures (e.g. deodorizers) have been fully adopted by its operator, no adverse odour impact would be anticipated. In case of any exceedance of relevant odour criterion, mitigation measures such as further setback of building blocks will be proposed and adopted so as to minimize the excessive odour impacts. Example of mitigation measure is presented in **Figure 2.2**.

Petrol Filling Station at 15 Tsing Yi Road

During the operation of the petrol filling station, the key air quality issue will arise from the emission of petrol vapour (or VOC (benzene)) which evaporate in storage tanks. Unless properly controlled, the VOC would potentially dissipate into the atmosphere and cause harmful effects. In 1999, the Government introduced the Air Pollution Control (Petrol Filling Stations) (Vapour Recovery) Regulation, which requires petrol filling station to install Phase I vapour recovery system. In 2004, the amendment of the Regulation requires petrol filling station to install Phase II vapour recovery system. With the installation of appropriate vapour recovery systems, no adverse air quality impact would be anticipated due to the operation of the petrol filling station. In case of any exceedance of relevant VOC standards, mitigation measures such as further setback of building blocks will be proposed and adopted so as to minimize the excessive VOC impacts. Example of mitigation measure is presented in **Figure 2.2**.

3.5.3 Summary

Adverse air quality impacts due to the vehicular and industrial emissions are not anticipated to occur at the proposed development.

4 Conclusion

4.1 Overall

A Broad Environmental Assessment has been conducted for the proposed development tentatively consists of 5 nos. of domestic block at Tsing Yi Area 22B. Potential impacts associated with road traffic noise, fixed plant noise, vehicular emission and industrial emission have been reviewed in this study. Insurmountable environmental problem is not anticipated and an Environmental Assessment Study comprising air and noise impact assessments will be conducted during the detailed design of the development for identifying and implementing the necessary mitigation measures.

4.2 Noise Impact

Based on the given layout plan, road traffic noise would potentially affect the noise sensitive facades facing the Tsing Yi Road, Tsing Hung Road and Tsing Sha Highway. In case of any exceedance of relevant traffic noise standards, mitigation measures such as noise barriers, architectural fins, acoustic windows or even further setback of building blocks will be proposed and adopted. With the implementation of the appropriate noise mitigation measures, insurmountable road traffic noise issue is not anticipated on the proposed development.

Fixed plant noise impacts on the proposed development would be potentially generated from the operation of Container Terminal 9 and Tsing Yi Preliminary Treatment Works. In case of any exceedance of relevant fixed noise criteria, mitigation measures such as noise barriers, architectural fins, further setback of building blocks or even single-aspect building block design will be proposed and adopted. With the implementation of the appropriate noise mitigation measures, insurmountable fixed plant noise issue is not anticipated on the proposed development.

4.3 Air Quality Impact

Potential air quality impacts due to vehicular and industrial emissions were reviewed. As the recommended buffer distances stipulated in the HKPSG are in full compliance for the proposed development, no adverse air quality impact due to the vehicular emissions is anticipated. Given that appropriate air pollution control measures have been fully adopted by Tsing Yi Preliminary Treatment Works / Petrol Filling Station at 15 Tsing Yi Road, no adverse air quality impact due to the industrial emissions would be anticipated. In case of any exceedance of relevant odour / VOC standards, mitigation measures such as further setback of building blocks will be proposed and adopted so as to minimize the excessive odour / VOC impacts.

Figures

828500 E
829000 E
829500 E
830000 E
823000 N
822500 N
822000 N
TSING YI ROAD
TSING HUNG ROAD
TSING LONG HIGHWAY
TSING YI BRIDGE
CONTAINER TERMINAL 5
CONTAINER TERMINAL 9
RAMBLER CHANNEL
藍巴勒海峽
九號貨櫃碼頭
0 25 50 75 100 125 m
1 : 2 500 SCALE BAR

Notes

Key to symbols

- SITE BOUNDARY
- 500m ASSESSMENT AREA (AIR QUALITY)
- 300m ASSESSMENT AREA (NOISE)

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	JAN 15	MING	PRELIMINARY	ST	AFK

Mott MacDonald
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong, Kowloon
Hong Kong
T +852 2828 5757
F +852 2827 1823
W www.mottmac.com.hk

Client

HONG KONG HOUSING AUTHORITY

Project

AGREEMENT NO. CB20130106 TERM ENGINEERING CONSULTANCY SERVICES 2013 - 2015 FOR NEW TERRITORIES WEST REGION PUBLIC HOUSING DEVELOPMENT AT JUNCTION OF TSING YI ROAD AND TSING HUNG ROAD, TSING YI AREA 22B

Title

LOCATION OF THE TSING YI AREA 22B PUBLIC HOUSING DEVELOPMENT

Designed	AY		Eng check	ST	
Drawn	MING		Coordination	ST	
Dwg check	AY		Approved	AFK	
Scale at A1	1:2500	Status	PRE	Rev	P1

Drawing Number

FIGURE 1.1

© Mott MacDonald Hong Kong Limited

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Mott MacDonald Hong Kong Limited was commissioned. Mott MacDonald Hong Kong Limited accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

J:\323840\REPORT\ENV\EAS(TY)\150128\FIG 1-1.dgn DATE: 28/01/2015 TIME: 17:25:58 USER: yim42169

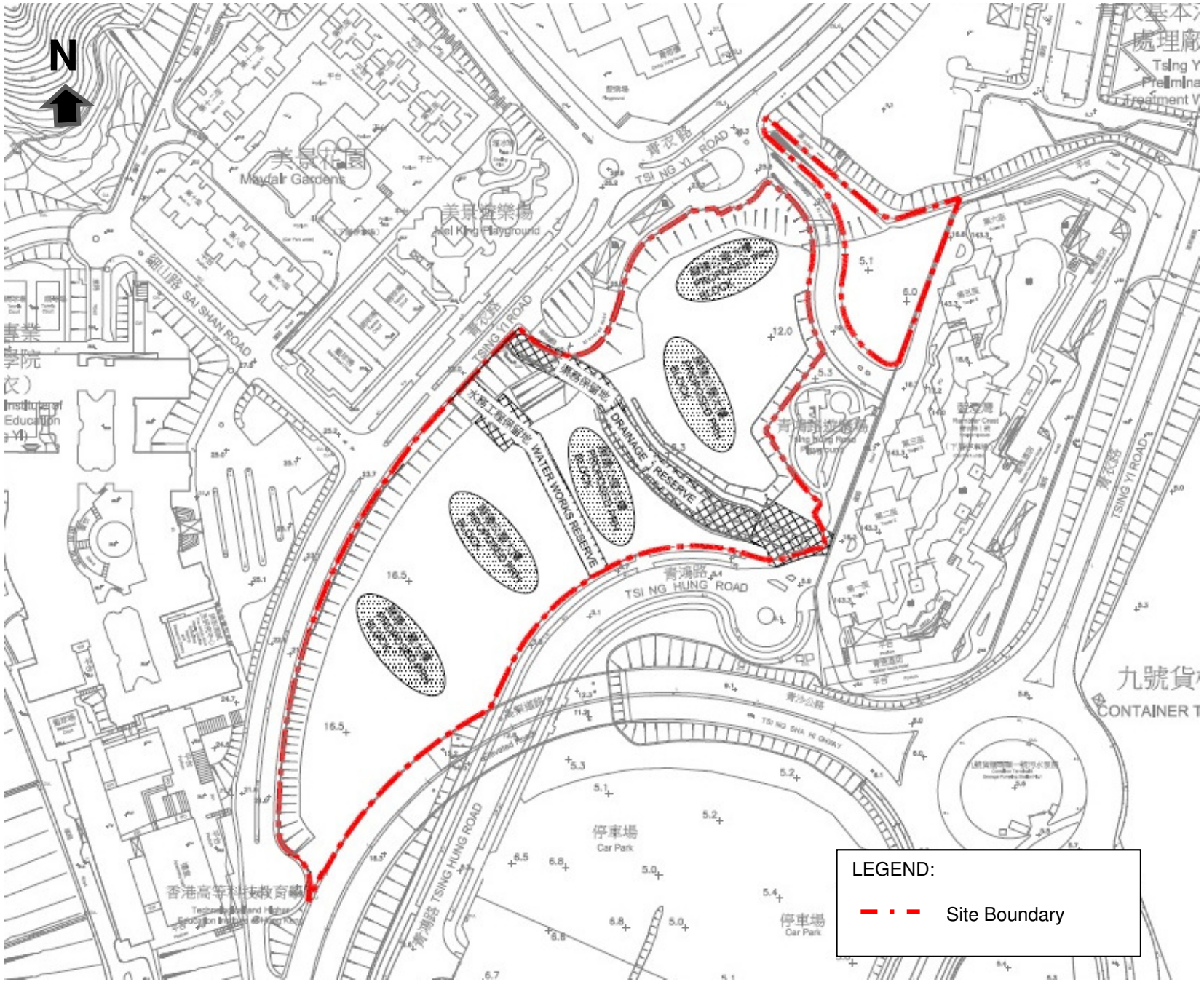


Figure 1.2 Layout of the Proposed Public Housing Development

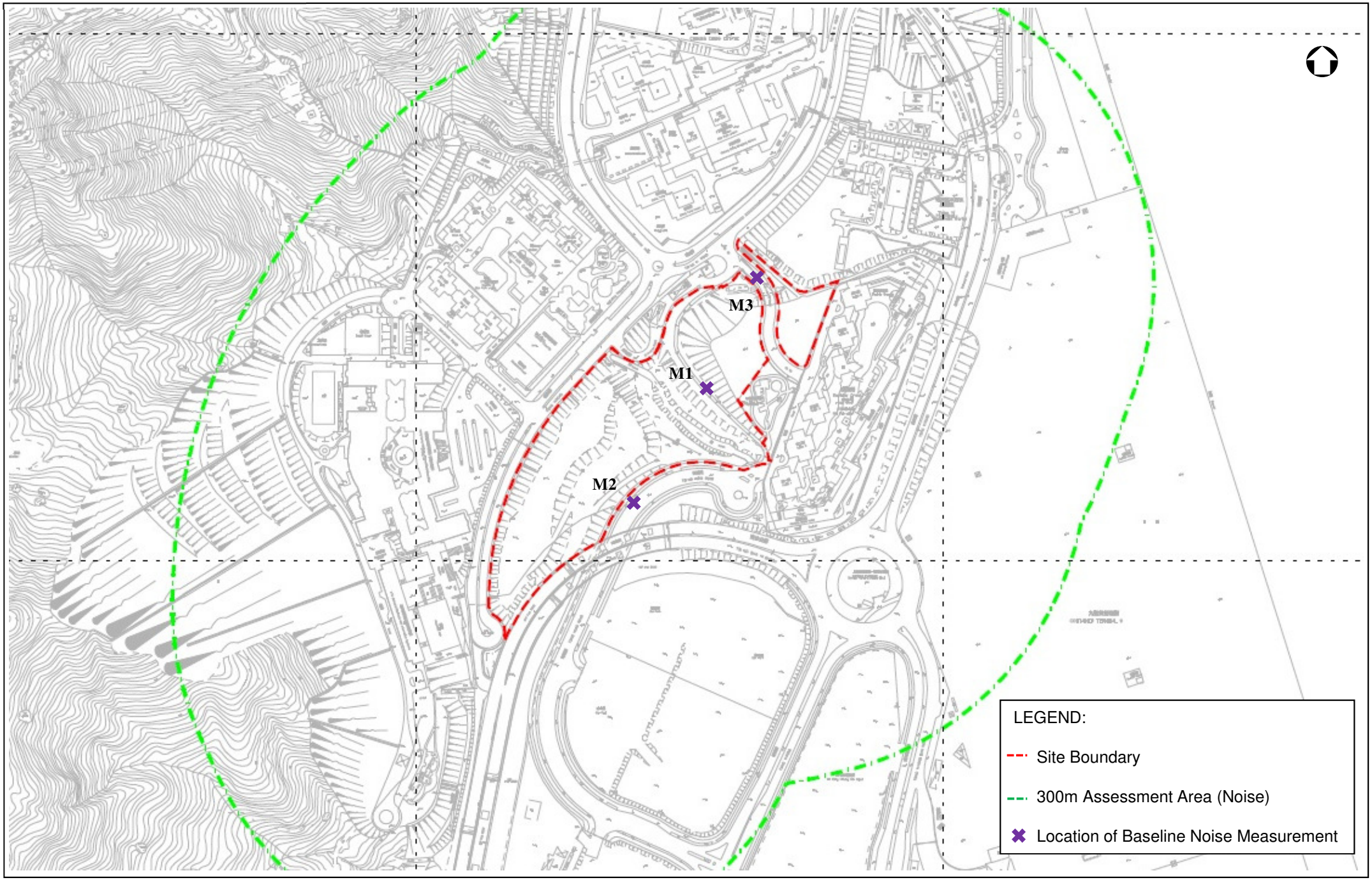
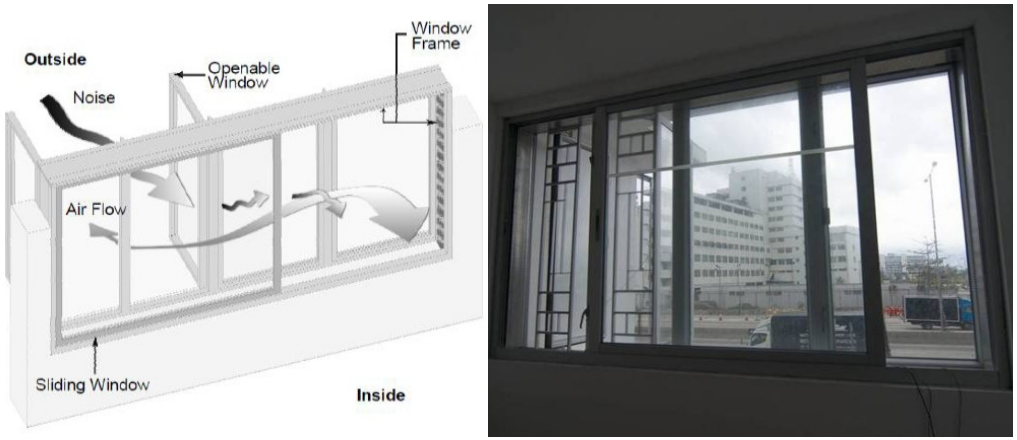


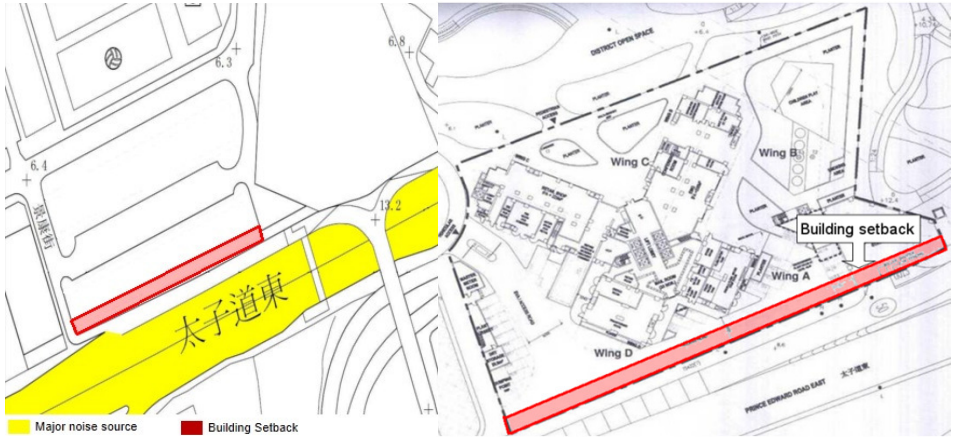
Figure 2.1 Location of Baseline Noise Measurement

Architectural Fins (Noise)

Noise Barriers (Noise)



Acoustic Windows (Noise)



Building Setback (Noise / Air Quality)

Figure 2.2 Examples of Noise / Air Quality Mitigation Measures

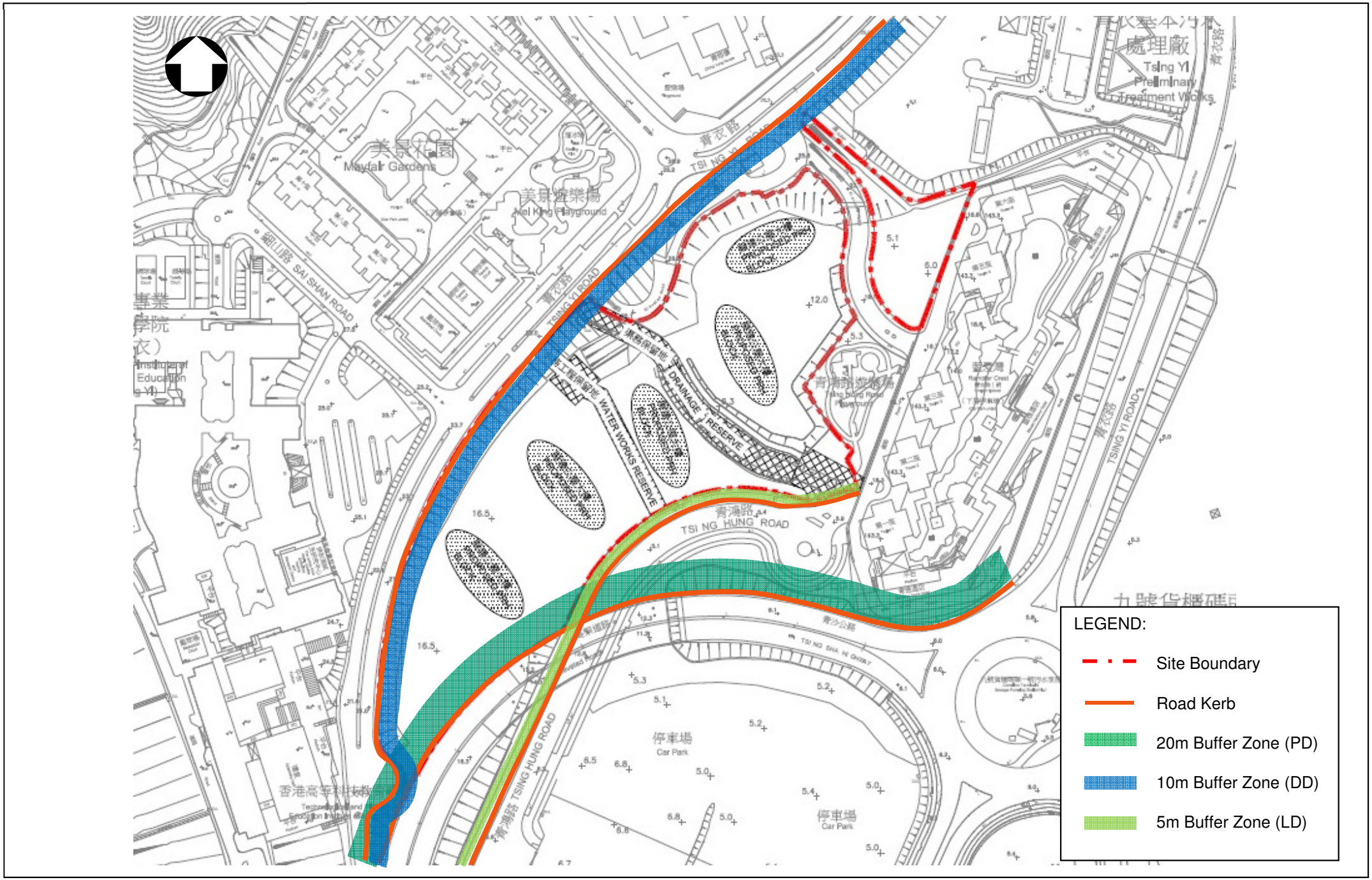


Figure 3.1 Separation Between Nearby Roads and Domestic Blocks

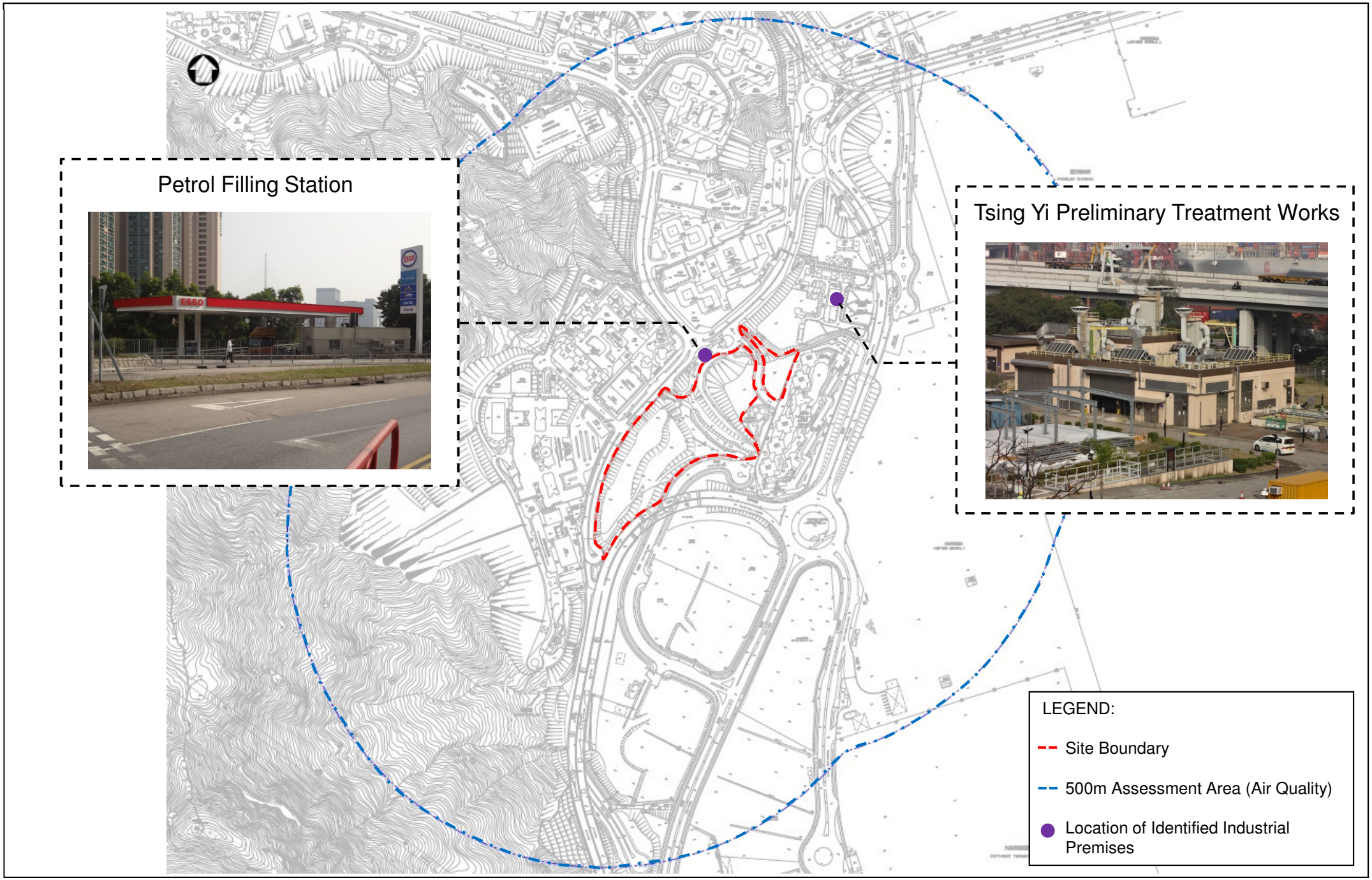


Figure 3.2 Location of Identified Industrial Premises

Appendix

Agreement No. CB20130106 Term Engineering Consultancy Services 2013-2015 for New Territories West Region - Public Housing Development at Junction of Tsing Yi Road and Tsing Hung Road, Tsing Yi Area 22B Broad Environmental Assessment Report (Final)

Comments & Responses

Comments	Responses
EPD **Ref: (8) in EP 1/TY/22/10** **Date: 20 March 2015** I refer to your above referenced memo.	
2. We agree that the potential housing site is anticipated to have no insurmountable environmental problem. Also, we note that you will carry out an Environmental Assessment Study (EAS) comprising air and noise impact assessments during detailed design of the development for identifying and implementing the necessary mitigation measures, As the captioned Broad EA Report does not involve any quantitative assessments, we have no technical comments on the report. We will provide our comments on the draft EAS that you will submit in the later stage.	Noted.
3. Having said that, to avoid ambiguity of the submission, you may wish to make it clear in the above document that it is a Broad EA but not the EAS to be submitted later.	Noted and amended accordingly.

Visual Appraisal on the Proposed Public Housing Development Site at Junction of Tsing Yi Road and Tsing Hung Road, Tsing Yi Area 22B

1. Purpose

1.1 To meet the pressing need for housing, the subject site, with an area of 4.07 ha, currently zoned "Open Space" and an area shown as road on the approved Tsing Yi OZP No. S/YT/26 has been identified as having potential for public housing development. (**Plan 1**).

1.2 In view of the plot ratio (PR) increase and the building height proposed, the proposed housing site would have visual impact on the surrounding areas in terms of the development scale, form, massing, and its spatial relationship with the overall townscape or surrounding landscape. The purpose of this appraisal is to assess the potential visual impact. The appraisal could facilitate the Metro Planning Committee of the Town Planning Board to visualize the three-dimensional relationship of the development in the proposed housing site with the surrounding context.

2. Methodology

The visual impact of the proposed housing sites will be assessed by adopting the following methodology:

(a) Identification of the overall visual context and character including positive/negative visual resources within the wider contexts of the area in the eastern part of Tsing Yi Island where the proposed housing site is located.

(b) Identification and selection of the vantage points in allowing visual impact to be assessed locally for the respective housing site. The vantage points should be easily accessible and popular to the public and/or tourists and be able to demonstrate the visual impact of the proposed housing site on the adjacent neighbourhood areas. Important views to special landmarks, valued landscape features, the harbour, ridgelines, etc. should be assessed where possible.

(c) Illustration of the visual impact of the proposed housing site in the respective areas by using computer-generated photomontages with indicative layout of the development in the proposed housing site.

(d) Identification of the scale of the development in the proposed housing site. Using computer-generated photomontages to illustrate the visual impact and their significance from the vantage points. Providing visual appraisal by evaluating the overall visual impact of the proposed housing development. Any design features or mitigation measures that help moderate the visual impact of the development shall be discussed.

3. The Proposed Development

3.1 The site is in the eastern part of Tsing Yi Island. While the immediate vicinity is surrounded by existing building blocks, there are positive visual character and resources in the wider context of the surrounding area. To the east is Rambler Channel and further afar is a landscaped backdrop in Kowloon side. To the west is Tsing Yi Sai Shan with greenery view and undulating ridgelines. Looking south from the site could see the Stonecutters Bridge, a pleasant open view of the Rambler Channel and sky views. Apart from an existing elevated access divided the site into two parts, there are some other

negative visual character and resources including Kwai Chung Container Terminal 9, container-related open-air storage uses and carparks, and a cluster of industrial related buildings and bulky machinery to the east, southeast and south of the site.

3.2 The proposed housing site is a vegetated vacant government land. The site is bounded by Tsing Yi Road and Tsing Hung Road. It is adjacent to "Residential (Group A)" ("R(A)") zones occupied by a high-rise, high-density private residential development Mayfair Gardens with building heights ranging from about 122.1mPD to 135.6mPD to the west, and an existing public housing estate, Cheung Ching Estate with building heights ranging from about 82.7mPD to 130.1mPD to the north. It is adjacent to a "Government/Institution or Community" zone of Hong Kong Institute of Vocational Education (Tsing Yi) (Tsing Yi IVE) to the west, Tsing Hung Road Playground and a hotel and residential development Rambler Crest with building heights ranging from about 109mPD to 143.3mPD to the east. Tsing Yi Preliminary Treatment Works is to the northeast, and an "Other Specified Uses" annotated "Container Related Uses" zone for parking and container storage is to the south.

3.3 The Hong Kong Housing Authority proposed to construct five domestic buildings delivering about 3 800 flats for a population of about 11 600 persons (**Plan 2**). The proposed development parameters are as follows:

Site Area:	About 4.07 ha
Maximum PR:	6/9.5 (domestic/ non-domestic)
Maximum Building Height:	140mPD
Number of Flats:	About 3 800

3.4 The proposed development has taken into account the existing local context and character including the building height of the adjacent developments at Mayfair Gardens and Rambler Crest, the mountain backdrop to the west/southwest and the sea views of the Rambler Channel to the east. The proposed building height would be within the building height range of Mayfair Gardens and Rambler Crest and in line with the existing local height profile. The proposed residential blocks directly fronting Mayfair Gardens will have building gaps of at least 15m to preserve the distant view from this adjacent residential development to Rambler Channel. Such building gaps providing view corridors not only help to soften the massing of the development, but also serve as wind corridors.

3.5 The planned private residential development nearby has been rezoned to "R(A)4" on 13 June 2014. It is envisaged that this private residential development will be in place before the completion of the subject proposed public housing development. This planned development located at the end of Sai Shan Road is based on the following development parameters. The cumulative visual impact of this planned development and the proposed PRH development will also be included in the visual appraisal.

Site Area:	About 0.62 ha
Maximum PR:	6/9.5 (domestic/ non-domestic)
Maximum Building Height:	140mPD
Number of Flats:	About 740 (assuming average flat size is $50m^2$)

4. Visual Appraisal

4.1 The following ten viewpoints from different directions and distances were selected (**Plan 1**). These viewpoints represent the views of pedestrian and driver node accessible by the

public and/ or from key public open space:

East of the site

Viewpoint 1:	Sitting-out area outside Yeung King House of Lai King Estate - a local sitting-out area for the public enjoyment of residents at Lai King Estate and easily accessible to the public as it is adjacent to Lai King Railway Station Exit A3.
Viewpoint 2:	North-eastern corner of Tsing Hung Road Playground - a local open space with active recreational facilities and accessible to the public.
Viewpoint 3:	Centre of Tsing Hung Road Playground – a local open space with active recreational facilities and accessible to the public.

South of the site

Viewpoint 4:	Northbound sliproad of the Tsing Sha Highway near the portal of the Nam Wan Tunnel - it serves as a major vehicular road approaching into Tsing Yi, in particular container related vehicles heading to the container storage and car park areas to the south of the subject site. This viewpoint overlooks part of the ridgeline of Tai Mo Shan but in a very long distance.

West of the site

Viewpoint 5:	Tsing Yi San Shan at about 159mPD - the country trail is popular to the public and/or tourists for leisure, walking and grave sweeping and be able to demonstrate the panoramic visual impacts of the proposed PRH development on the adjacent neighbourhood area.
Viewpoint 6:	Tsing Hong Road near the bus stop of Mayfair Gardens – a local viewpoint with frequent pedestrian flow and locals waiting for public transports.
Viewpoint 7	Mei King Playground – a local open space directly facing the site with active recreational facilities including ball courts and children’s play areas, and accessible to the public.

North of the site

Viewpoint 8:	Kwai Tsing Bridge - both pedestrians passing by Kwai Tsing Bridge and drivers driving west bound of Kwai Tsing Road towards Tsing Yi will experience transient views from this point.
Viewpoint 9:	Bus stop at Ching Tao House, near Cheung Ching Estate Commercial Complex, Tsing Yi Heung Sze Wui Road – a local viewpoint with frequent pedestrian flow and locals waiting for public transports.
Viewpoint 10:	Tsing Yi Promenade – a popular open space for public enjoyment.

4.2 Ten photomontages (**Figures A to J**) are prepared to illustrate the visual effect of the proposed development from the above viewpoints.

Viewpoint 1 (**Figure A**) - Sitting-out area outside Yeung King House of Lai King Estate

4.3 This viewpoint is taken from the east of the site in a distance of about 1 900m facing the Kwai Chung Container Terminals 1 and 2 and some low-rise container terminal related structures.

4.4 The subject site is set back from Rambler Channel that the existing mass and bulk of Rambler Crest provides a solid and continuous screening running across the east elevation of the proposed PRH buildings. This view is also significantly obstructed by the cargo machinery operating at Kwai Chung Terminals 1 and 2 in the front. Only a very small portion of the subject development would be barely visible from this view, which causes a slight obstruction of the green mountain backdrop. The visual impact from this long range view is considered negligible. The subject development is generally compatible with the high-rise visual composition from this viewpoint.

Viewpoint 2 (**Figure B**) - North-eastern Corner of Tsing Hung Road Playground

4.5 This local short distance viewpoint is taken from the east of the site in a distance of about 130m. Due to its close proximity to the subject site, the building mass of Blocks 3, 4 and 5 of the proposed PRH development can be experienced by users of the park that would inevitably block some of the sky views and be visually intrusive. The proposed PRH development would affect the visual amenity resulting in overbearing effects when viewed from this viewpoint. It would add visual bulk to the locality and reduce visual openness and to a certain extent, cause visual incompatibility with the surroundings.

4.6 The visual impact from this viewpoint is considered moderate to substantial. However, the existing trees and plants in the playground and future planting and landscaping within the subject site would provide visual enhancement and help minimise the visual impact and soften the building mass. Vertical greening and façade treatment to soften the visual impact would be explored at the detailed design stage.

Viewpoint 3 (**Figure C**) – Centre of Tsing Hung Road Playground

4.7 Active users of Tsing Hung Road Playground would experience the building mass and bulk of the development from certain locations. However, viewing from the centre of this playground towards the north direction provides a totally different perspective. From Viewpoint 3, an existing elevation access and a building block at Rambler Crest are already prominent and block some of the open sky view. However, since no PRH block, which is of high-rise nature, is proposed at the eastern portion of the site, visual openness can be maintained if view from Viewpoint 3.

4.8 As shown in the photomontage, only the northern wing of proposed Block 5 would be visible from this viewpoint. The existing open sky view would only be partially blocked and the visual openness would be maintained. A defined view corridor between an existing building at Rambler Crest and the proposed PRH development is established from this particular viewpoint. The addition of building blocks would not result in a wall effect. It is considered that the visual impact is moderate and the proposal would not cause visual incompatibility with the surroundings.

Viewpoint 4 (**Figure D**) - Northbound sliproad of the Tsing Sha Highway near the portal of the Nam Wan Tunnel

4.9 This viewpoint is taken from the south of the site in a distance of 900m.

4.10 The photomontage shows that the proposed PRH development will be visible from this

viewpoint. Since this is a distant view to the subject site, the building mass and bulk of the proposed blocks is considered to be not excessive. The building height is in keeping with the building height profile of the nearby existing and planned buildings blending in well with the character of the existing built-up area. The ridgeline at the backdrop in a long distance would be partially blocked by the proposed PRH development. The potential visual impacts from this viewpoint would not cause significant visual incompatibility with the surroundings. Although the direct line of sight and the prominence of the proposed development would catch drivers/passengers' attention, it is considered that drivers/passengers passing by this sliproad would mainly experience transient views of the proposed development limited to snapshots. In addition, there are currently construction works for a logistics centre on Tsing Yi Town Lot No. 185 in front of this viewpoint. Upon completion of the logistics centre in 2016 tentatively, drivers/passengers' attention would be detracted from the subject site as the building will be in the foreground of this viewpoint. The visual impact from this viewpoint is considered moderate and acceptable.

Viewpoint 5 (**Figure E**) - Tsing Yi Sai Shan at about 159mPD

4.11 This is a relatively long range view taken from the west of the site in a distance of 620m.

4.12 When viewed from this point of a country trail, the proposed PRH development would be set between the existing neighbouring developments at Rambler Crest, Mayfair Gardens and the planned private residential development at the end of Sai Shan Road. The development would be in keeping with the local character typified by high-rise residential development and similar building bulk.

4.13 The photomontage illustrates that the proposed PRH development would largely be screened by the planned private development at Sai Shan Road. This planned development is more prominent than the proposed PRH development when viewed from this viewpoint. The proposed PRH development would relate harmoniously with the local context of existing and planned residential buildings, with only partial obstruction of the views towards the Rambler Channel. The visual amenity from this viewpoint would not be significantly affected and it would not cause significant visual incompatibility with the surroundings.

Viewpoint 6 (**Figure F**) – Tsing Hong Road near the bus stop of Mayfair Gardens

4.14 This is a rather short distance view taken from the west of the site in a distance of about 220m. From this viewpoint, existing high-rise buildings of Rambler Crest have blocked part of the open sky view. Although the proposed development will further obstruct the open sky view, the proposed residential blocks in a maximum height of 140mPD are considered visually compatible with the existing building height profile of Rambler Crest and the local character. On balance, the overall visual composition would only be changed moderately as part of the open sky view would still be visible. Due to the proximity to the subject site, pedestrians passing by the walkway and passengers waiting at the bus stop would experience the building mass of two residential blocks (Blocks 4 & 5) to the immediate west of Rambler Crest, however, the view is unobtrusive as it is broken down by the building gaps between the proposed PRH blocks.

4.15 The existing trees and plantings and future soft landscaping treatment along the western site boundary would provide some visual relief at this viewpoint. Further design measures would be applied to create visual interest on the building façade and soften the building mass of the proposed development. Vertical greening and façade treatment to soften the visual impact would be explored at the detailed design stage. The visual impact of the

proposed PRH development from this viewpoint is considered moderate and acceptable.

4.16 The photomontage also demonstrates that the proposed PRH development will preserve two view corridors between Blocks 2 and 3, and Blocks 4 and 5, allowing visual penetration by providing visual openness and open sky view that would not only help to soften the massing of the development but also serve as wind corridors. The proposed development would not induce insurmountable visual impact on the surrounding development.

Viewpoint 7 (**Figure G**) – Mei King Playground

4.17 This viewpoint is taken from the west of the site in a distance of 130m. Although the proposed PRH development is in a close proximity to this viewpoint, the existing landscaping elements provide positive visual amenity in the area. The existing building blocks in Rambler Crest are already visible from this viewpoint.

4.18 While playground users will experience the views of Blocks 2, 3 and 4 of the proposed PRH development, the presence of soft landscaping in the playground would soften the building mass of the new building blocks. The building gap between Blocks 2 and 3 would provide a view corridor that a pleasant view of the open sky and visual openness would be maintained at this viewpoint. The gaps between buildings would break up the overall bulk of the proposed development and avoid a wall effect when viewed the proposed development together with Rambler Crest. The visual impact of the proposed PRH development from this viewpoint is considered moderate. The resultant visual amenity would be compatible with the local character and would not cause visual harm to the surroundings.

Viewpoint 8 (**Figure H**) – Tsing Yi Bridge

4.19 This viewpoint is taken from the north/northeast of the site with a ridgeline as backdrop in a distance of 720m.

4.20 The photomontage shows that the proposed development will be visible from the street level at this viewpoint. The building mass of the proposed development is acceptable viewing from this point given the truncated building height comparing with the height of Rambler Crest. The building height profile is in keeping with the high-rise residential blocks of the adjacent existing residential developments, which some of them have intruded into the ridgeline from this viewpoint. Only a certain part of the green hillside will be blocked by the proposed buildings when viewed from this point, nonetheless, most of the ridgeline could be maintained.

4.21 The proposed PRH development is considered compatible with the existing residential development in terms of both building height and building mass. The visual impact viewing from this point is considered moderate and would not cause visual incompatibility with the surroundings.

Viewpoint 9 (**Figure I**) - Bus stop at Ching Tao House, near Cheung Ching Estate Commercial Complex, Tsing Yi Heung Sze Wui Road

4.22 This local viewpoint is taken from the north of the site in a distance of about 300m. Similar to Viewpoint 6, the existing high-rise buildings of Rambler Crest have blocked part of the open sky view.

4.23 The photomontage shows that the proposed development will obstruct the open sky view. The proposed residential blocks in a maximum height of 140mPD are considered visually

compatible with the existing building height profile of Rambler Crest. The proposed buildings would be set back from the north building line of Rambler Crest forming a defined building gap with new buildings spreading southward, it is considered that the overall visual composition would only be changed moderately as part of the open sky view would still be visible.

4.24 Pedestrians passing by the pavement and passengers waiting at the bus stop would experience the building mass of the proposed residential blocks in a modest extent. The existing greenery along this part of Tsing Yi Road and future soft landscaping treatment along the western site boundary would provide visual relief at this viewpoint. Further design measures would be applied to create visual interest on the building façade and soften the building mass of the proposed development. Vertical greening and façade treatment to soften the visual impact would be explored at the detailed design stage. The proposed development from this viewpoint is considered moderate and acceptable and would not cause serious harm to the visual amenity of the surroundings.

Viewpoint 10 (**Figure J**) – Tsing Yi Promenade

4.25 This viewpoint is taken from the north/northeast of the site.It sets about 1 100m from the subject site.

4.26 When viewed from this point, the proposed public housing development would be completely blocked by the existing buildings of Grand Horizon, Tai Sang Container and Godown Centre and Tsing Yi Industrial Centre fronting Rambler Channel. Hence, there is no visual impact from this viewpoint. It would not cause any visual incompatibility with the surroundings.

5. Conclusion

5.1 Based on the above appraisal, the maximum building height of the proposed PRH development is about 140mPD which is in keeping of the neighbouring properties at Rambler Crest and Mayfair Gardens. When viewed from some of the long range viewpoints, i.e. Viewpoint 1 (Lai King Estate), Viewpoint 5 (Tsing Yi Sai Shan) and Viewpoint 10 (Tsing Yi Promenade), part or all of the proposed development at the subject site would be screened off. From some medium range viewpoints, i.e. Viewpoint 4 (Northbound sliproad of Tsing Sha Highway), Viewpoint 8 (Tsing Yi Bridge) and Viewpoint 9 (Bus Stop at Ching Tao House, Cheung Ching Estate), the proposed development would be seen as a part of the existing building cluster with similar development intensity and scale. The proposal would generally not be incompatible with the existing built environment, local character and the surroundings in visual terms. The visual impact of these viewpoints would be slight.

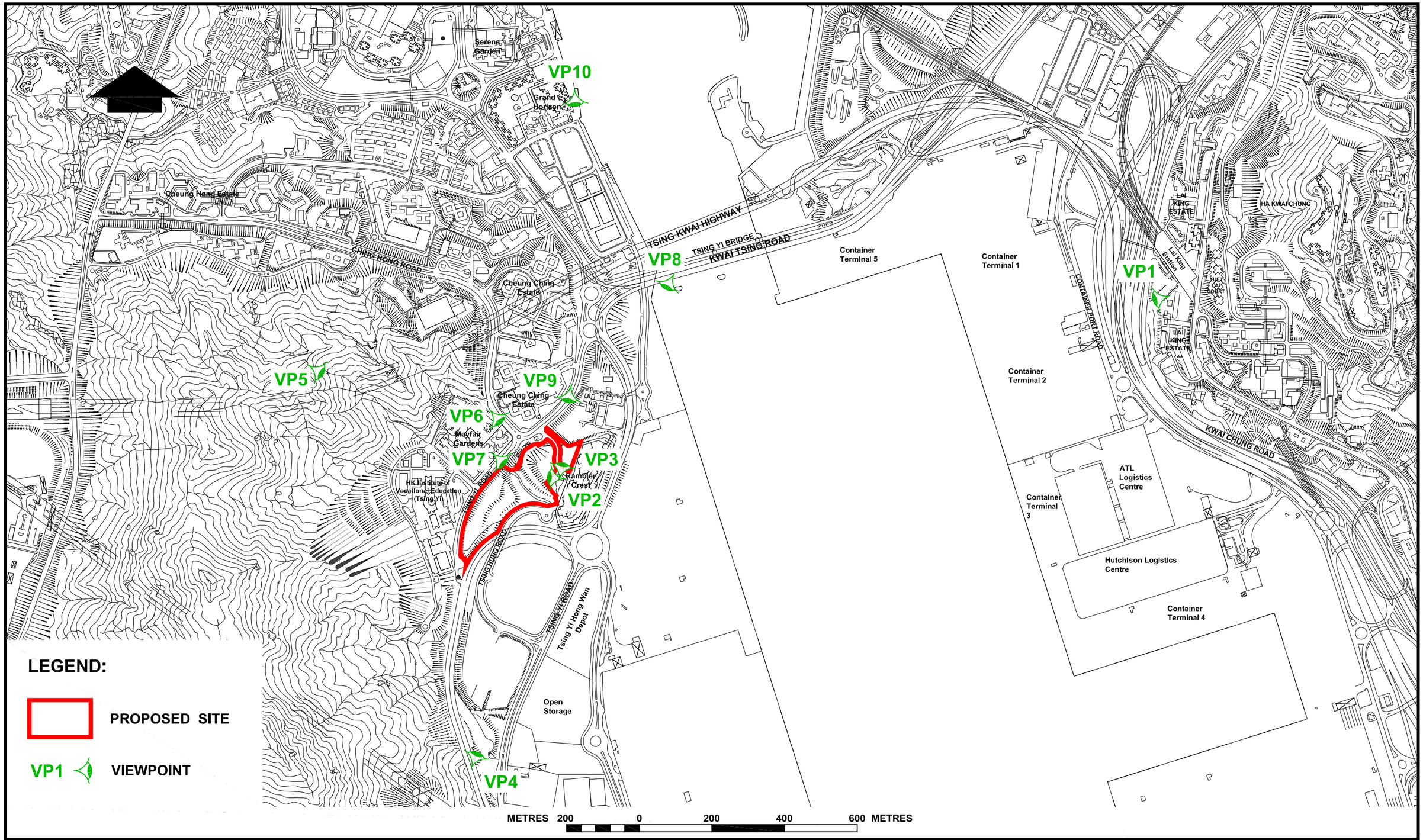
5.2 It is inevitable that some of short or medium ranged viewpoints would, to a certain extent, partially affect the visual openness and quality, such as Viewpoints 2 and 3 (Tsing Hung Road Playground), Viewpoint 6 (Tsing Hong Road near the bus stop of Mayfair Gardens) and Viewpoint 7 (Mei King Playground). The proposed PRH development would be visible due to the close proximity of the viewpoints to the subject site. Part of the open sky view enjoyed by the public would also be blocked, but such impact would not warrant serious harm to the visual amenity in the surroundings as there is a merit that view corridor would be provided to maintain visual openness so that the proposed development would not be overly unsightly and the visual impact would only be moderate.

5.3 Having considered the site constraints such as slopes, existing nullah and water works

reserve across the site, the proposed PRH development would be high-rise in order to optimize the development intensity. The scope for rearranging the disposition of the residential blocks is relatively limited but we would explore possible visual enhancement measures to minimize the residual visual impact at the detailed design stage including building gaps, variation of building heights, open space, green coverage, and greening measures. It is concluded that the proposed PRH development will not induce insurmountable visual impact on the surrounding environment.

Attachments

Plan 1	Location Plan and Viewpoints
Plan 2	Conceptual Layout Plan
Figures A to J	Photomontages



LOCATION PLAN AND VIEWPOINTS

HOUSING DEPARTMENT
PLANNING SECTION

Plan 1

DATE : 26. 3. 2015

BASE EXTRACTED FROM SHT Nos. 6-SE-D, 7-SW-C, 10-NE-B & 11-NW-A

15_0371KT_Plan1

N

長青邨
CHEUNG CHING ESTATE

青衣基本污水處理廠
Tsing Yi Preliminary Treatment Works

美景花園
Mayfair Gardens

美景遊樂場
Mei King Playground

香港專業教育學院（青衣）
Hong Kong Institute of Vocational Education (Tsing Yi)

青衣路 TSI NG YI ROAD

細山路 SAI SHAN ROAD

TSING YI ROAD

擬建公屋大廈 PROPOSED PRH BLOCK
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
BLOCK 5

DRAINAGE RESERVE
水務工程保留地 WATER WORKS RESERVE

青鴻路 TSI NG HUNG ROAD

青沙公路 TSI NG SHA HI GHWAY

Elevated Road

青鴻路遊樂場
Tsing Hung Road Playground

Rambler Crest 青衣1號

青德酒店 Rambler Oasis Hotel

停車場
Car Park

貨櫃場

九號貨櫃碼頭
CONTAINER TERMINAL 9

九號貨櫃碼頭一號污水泵房
Container Terminal 9 Sewage Pumping Station No.1

香港高等科技教育學院
Technological and Higher Education Institute of Hong Kong

NOTES

LEGEND:

- PROPOSED SITE BOUNDARY
- PROPOSED DOMESTIC BLOCKS

REVISIONS	INITIAL AND DESIGNATION		
NO	DESCRIPTION AND DATE	DWN	CKD	AUTH

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED			
CHECKED			
DRAWN			

PROJECT

TSING HUNG ROAD, TSING YI AREA 22B

DRAWING TITLE

CONCEPTUAL LAYOUT PLAN

SCALE 1:1000 (A1); 1:2000 (A3)

DRAWING NO.

SOURCE

ICU NO.

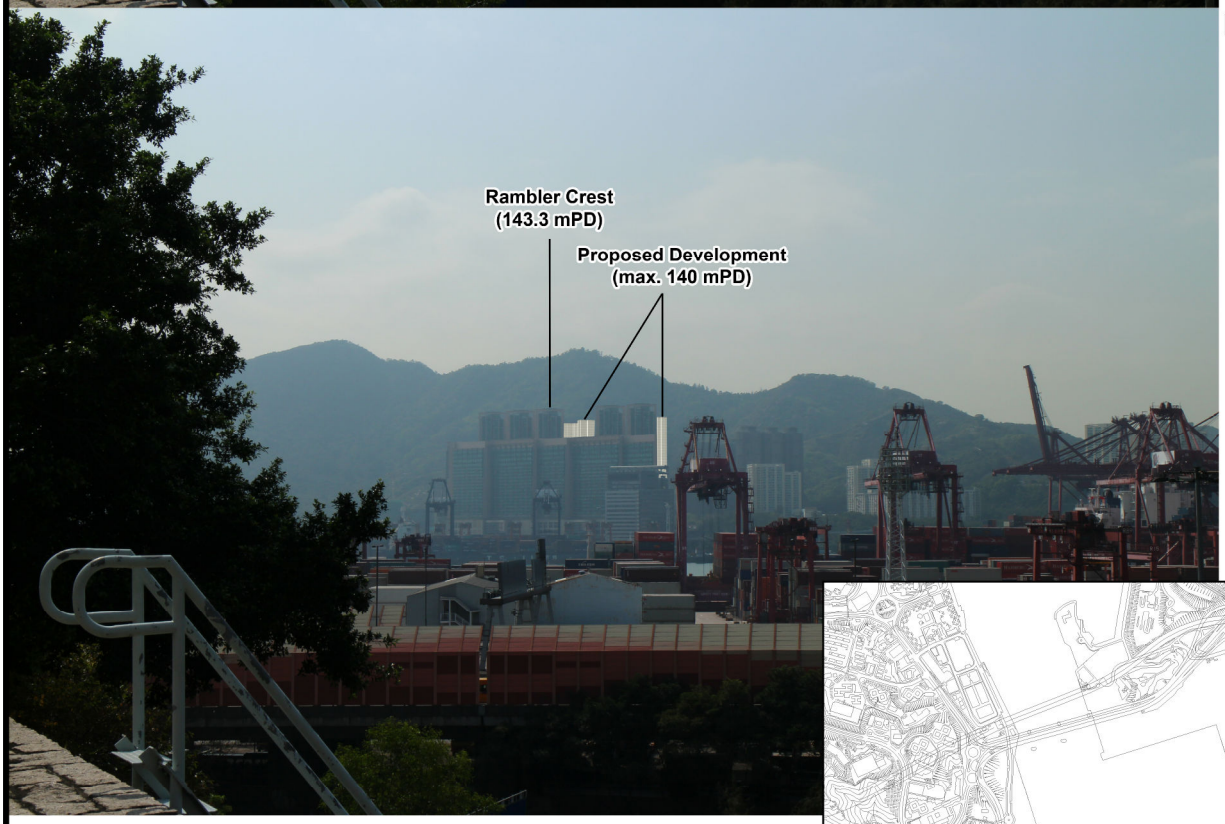
AutoCAD 2000 A1 594 x 841

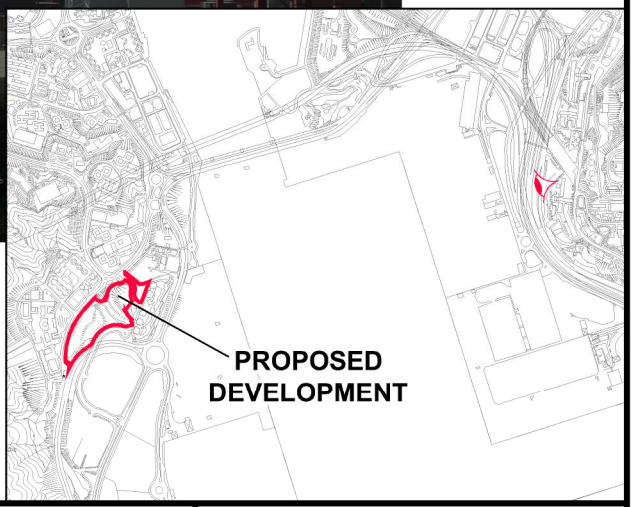
HOUSING DEPARTMENT

15_0371KT_Plan2

Existing View

Photomontage





PHOTOMONTAGE AT VIEWPOINT 1
(SITTING-OUT AREA OUTSIDE YEUNG KING HOUSE OF LAI KING ESTATE)

HOUSING DEPARTMENT
PLANNING SECTION

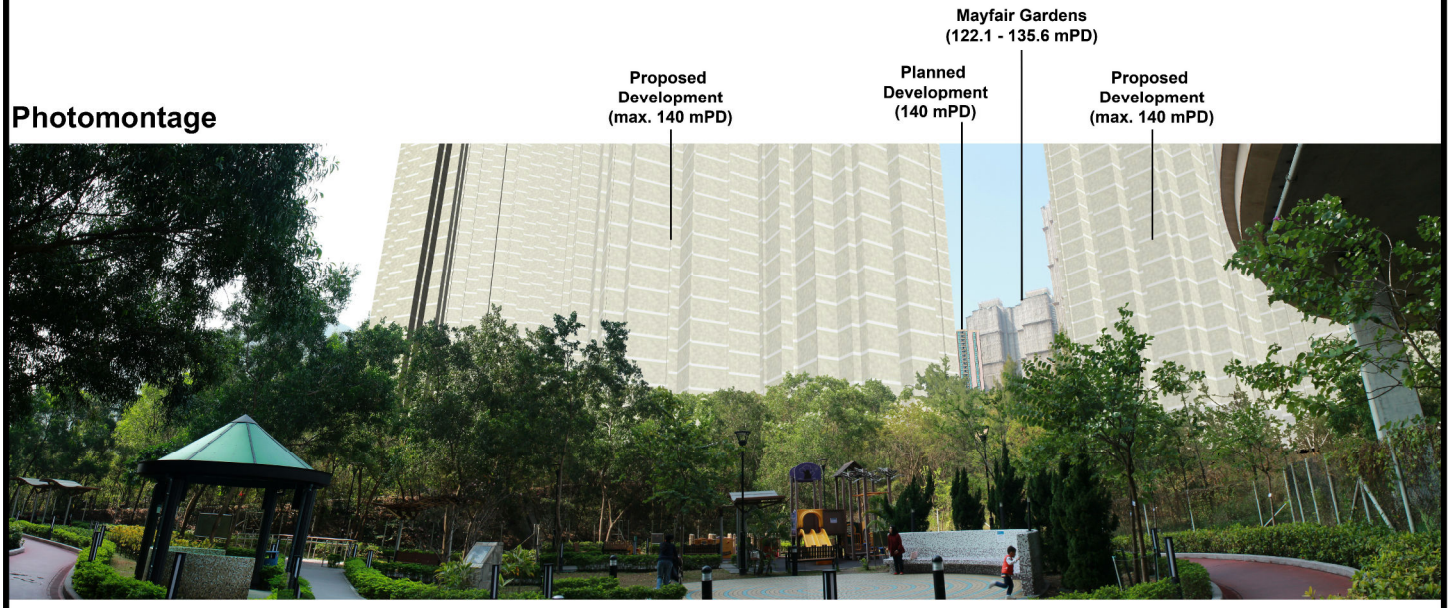
Figure A

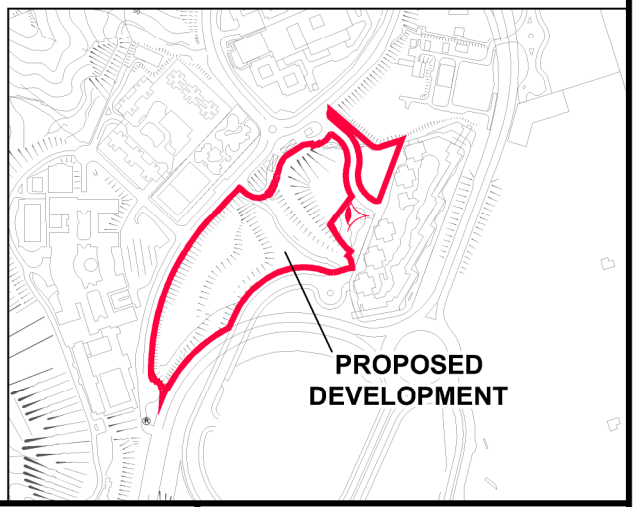
DATE :
26. 3. 2015

15_0370KT_VP1

Existing View

Photomontage





PHOTOMONTAGE AT VIEWPOINT 2
(NORTH-EASTERN CORNER OF TSING HUNG ROAD PLAYGROUND)

HOUSING DEPARTMENT
PLANNING SECTION

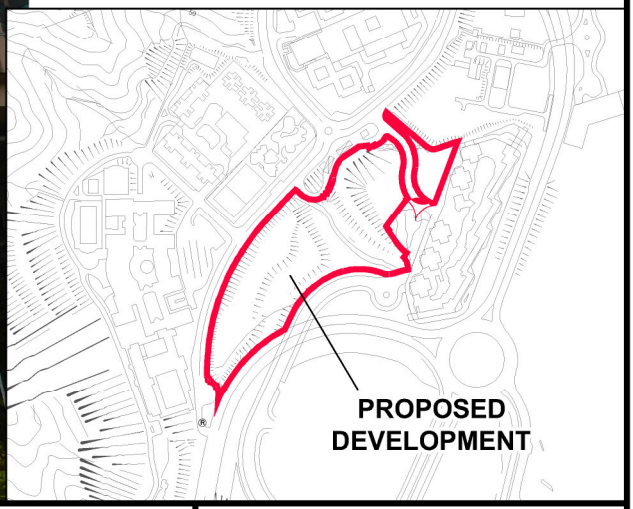
Figure B

DATE :
26. 3. 2015

15_0370KT_VP2

Existing View

Photomontage



PHOTOMONTAGE AT VIEWPOINT 3
(CENTRE OF TSING HUNG ROAD PLAYGROUND)

HOUSING DEPARTMENT
PLANNING SECTION

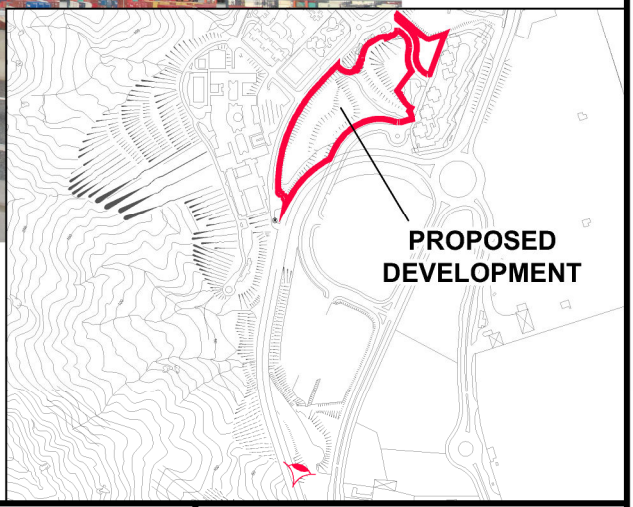
Figure C

DATE :
8. 4. 2015

15_0370KT_VP3a

Existing View

Photomontage



PHOTOMONTAGE AT VIEWPOINT 4
(NORTHBOUND SLIPROAD OF THE TSING SHA HIGHWAY NEAR THE PORTAL OF THE NAM WAN TUNNEL)

HOUSING DEPARTMENT
PLANNING SECTION

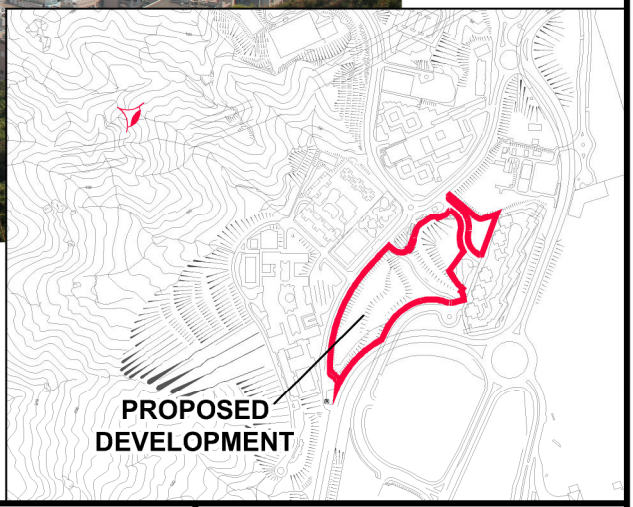
Figure D

DATE :
26. 3. 2015

15_0370KT_VP4

Existing View

Photomontage



PHOTOMONTAGE AT VIEWPOINT 5
(TSING YI SAN SHAN AT ABOUT 159mPD)

HOUSING DEPARTMENT
PLANNING SECTION

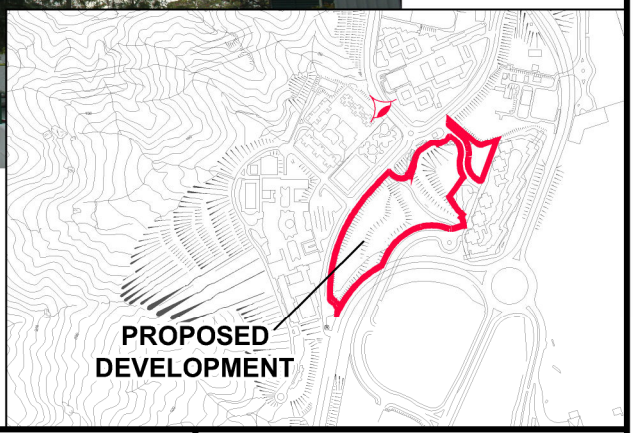
Figure E

DATE :
26. 3. 2015

15_0370KT_VP5

Existing View

Photomontage



PHOTOMONTAGE AT VIEWPOINT 6
(TSING HONG ROAD NEAR THE BUS STOP OF MAYFAIR GARDENS)

HOUSING DEPARTMENT
PLANNING SECTION

Figure F

DATE :
26. 3. 2015

15_0370KT_VP6

Existing View

Photomontage

PHOTOMONTAGE AT VIEWPOINT 7
(MEI KING PLAYGROUND)

HOUSING DEPARTMENT
PLANNING SECTION

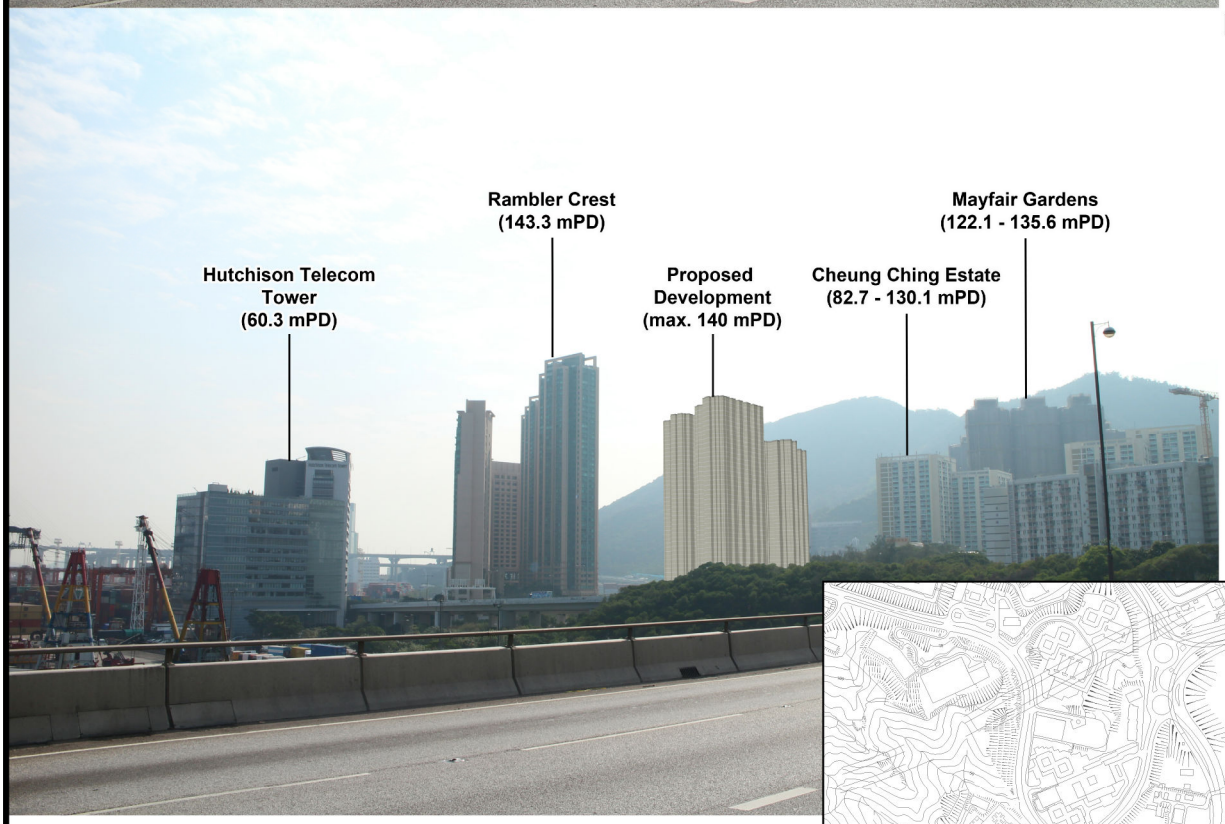
Figure G

DATE :
26. 3. 2015

15_0370KT_VP7

Existing View

Photomontage



PHOTOMONTAGE AT VIEWPOINT 8
(KWAI TSING BRIDGE)

HOUSING DEPARTMENT
PLANNING SECTION

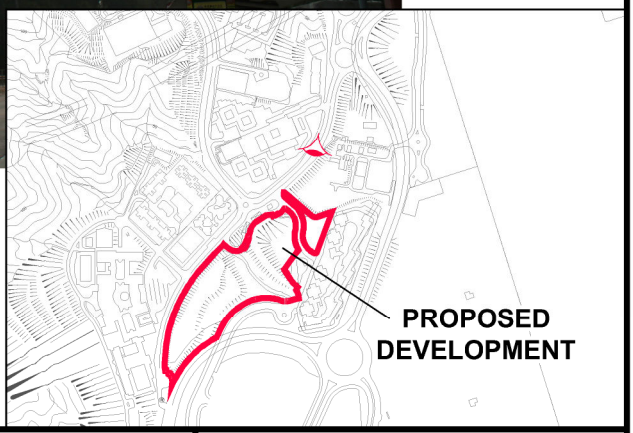
Figure H

DATE :
26. 3. 2015

15_0370KT_VP8

Existing View

Photomontage



PHOTOMONTAGE AT VIEWPOINT 9

(BUS STOP AT CHING TAO HOUSE, NEAR CHEUNG CHING ESTATE COMMERCIAL COMPLEX, TSING YI HEUNG SZE WUI ROAD)

HOUSING DEPARTMENT
PLANNING SECTION

Figure 1

DATE :
26. 3. 2015

15_0370KT_VP9

Existing View

Photomontage

PHOTOMONTAGE AT VIEWPOINT 10
(TSING YI PROMENADE)

HOUSING DEPARTMENT
PLANNING SECTION

Figure J

DATE :
26. 3. 2015

15_0370KT_VP10

Preliminary Tree Survey for Tsing Yi Area 22B

Introduction:

1.0 A preliminary tree survey for the captioned project was carried out in February 2015. It consists of a preliminary study for existing trees on site in groups of different girth size, with respect to their species and approximate quantities of each group by visual inspection. The survey extent has covered the following areas at Area 22B, Tsing Yi as shown in the attached location plan.

Site condition:

2.0 The subject site is located at Tsing Hung Road, Tsing Yi. It is bounded by Tsing Yi Road at the West, Tsing Hung Road and Container Terminal 9 at the South, Rambler Crest and LCSD playground at the East, Cheung Ching Estate and Mayfair Gardens at the North. The existing land is vacant government land, it is formed by three terrace platforms at 14.9mPD, 11.5mPD and 5.7mPD that are separated by a series of fill & cut slopes. An elevated private road from Tsing Yi Road to Rambler Crest divides the site into 2 parts (site remains intact under the elevated road). Also, the site is also bisected by drainage reserve & waterworks reserve into segments of land area.

Preliminary Tree Survey:

3.0 The preliminary tree survey reveals that there is no Old and Valuable Tree (OVT) or rare species within the site boundary. The existing trees are surveyed in groups and identified with their tree species, but no particular investigation is given to their respective health conditions and amenity value. Tree Risk Assessment (TRA) has not been carried out in these stages. The principle of retaining or removing the existing trees depends on the proposed development layout and the findings by detail tree survey. In this stage of assessment, it is anticipated that more than 80% of the existing trees have to be removed for future development (subject to the final development design and extent of works).

4.0 A detail tree survey will be carried out at the design stage to ascertain the location of these trees and to assess the impact to the project. The existing trees will be preserved as far as possible. For the surveyed existing trees that cannot be accommodated in the design or if the condition is unacceptable, tree transplant/ felling application and compensatory proposal will be submitted to Housing Department's Tree Preservation Committee for approval in accordance with the requirements in DEVB TC(W) No. 10/2013.

5.0 Categories of Trees

	Estimated Nos. of Tree	Tree Species
Tree with girth ≧ 1000mm	59	Acacia auriculiformis (大葉相思) Acacia confuse (台灣相思) Alstonia scholaris (糖膠樹) Casuarina equisetifolia (木麻黃) Eucalyptus citriodora (檸檬桉) Ficus hispida (對葉榕) Leucaena leucocephala (銀合歡) Melia azedarach (楝) Spathodea campanulata (火焰木)
Tree with girth ≧ 600mm and <1000mm	771	Acacia auriculiformis (大葉相思) Acacia confuse (台灣相思) Casuarina equisetifolia (木麻黃) Eucalyptus citriodora(檸檬桉) Ficus hispida (對葉榕) Leucaena leucocephala (銀合歡) Bauhinia variegata (宮粉羊蹄甲) Celtis sinensis (朴樹) Ficus microcarpa (細葉榕) Macaranga tanarius (血桐) Melaleuca quinquenervia (白千層)
Tree with girth ≧ 300mm and <600mm	1000	Acacia auriculiformis (大葉相思) Acacia confuse (台灣相思) Casuarina equisetifolia (木麻黃) Eucalyptus citriodora(檸檬桉) Ficus hispida (對葉榕) Leucaena leucocephala (銀合歡) Bauhinia variegata (宮粉羊蹄甲) Celtis sinensis (朴樹) Ficus microcarpa (細葉榕)

		Macaranga tanarius (血桐) Melaleuca quinquenervia (白千層)
Tree with girth ≧ 200mm and <300mm	48	Acacia auriculiformis (大葉相思) Acacia confuse (台灣相思) Leucaena leucocephala (銀合歡)

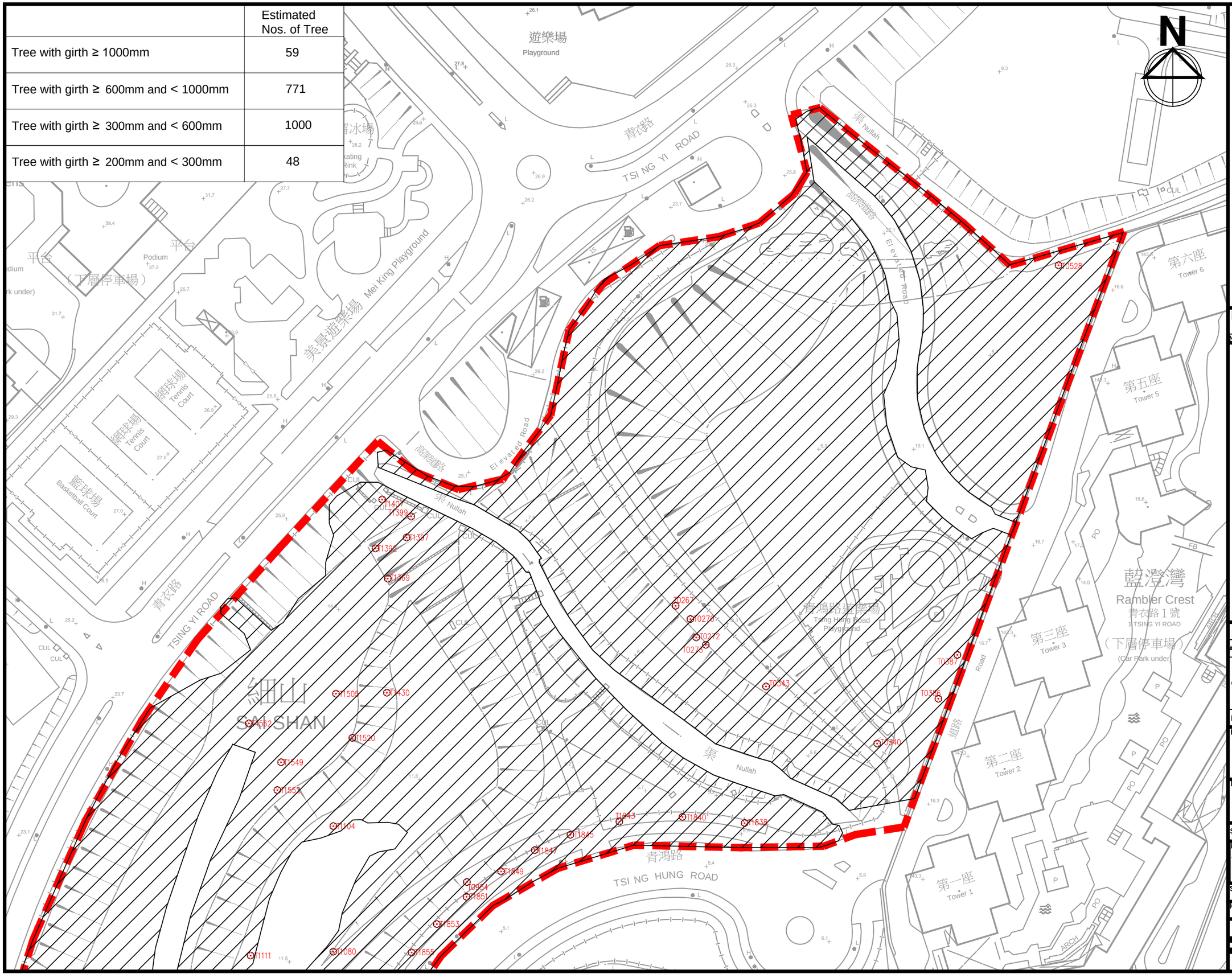
Preliminary Tree Survey Summary:

6.0 Preliminary tree survey by visual inspection for trees in groups was carried out in February 2015, in order to fulfill the need of initial site assessment, including that for existing trees and vegetation. The following data are summarized for easy reference:

- Nos. of existing tree surveyed: approx.: 1878 nos.
- Existing tree of girth size 1000mm: approx.: 59 nos.
- Existing trees are mainly common species (Acacia auriculiformis, Acacia confuse and Leucaena leucocephala) with average forms and low amenity value. Some of the existing trees are of poor health including deformed, damaged or cracked trunks, leaning caused structural conditions with failure potential due to limited & competitive slope woodland growing conditions.

END OF REPORT

	Estimated Nos. of Tree
Tree with girth ≥ 1000mm	59
Tree with girth ≥ 600mm and < 1000mm	771
Tree with girth ≥ 300mm and < 600mm	1000
Tree with girth ≥ 200mm and < 300mm	48



NOTES

- SITE BOUNDARY
- TREE WITH GIRTH ≥ 1000mm
- GROUPS OF TREE

REVISIONS

NO	DESCRIPTION AND DATE	INITIAL AND DESIGNATION DWN	CKD	AUTH

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED	DENNIS YIP SLA/2		
CHECKED	TERESA LEE LA/T3		
	YAT SHING LAM STO(A)/24		
DRAWN	K.M. CHENG CTA/A606		

PROJECT
TSING YI AREA 22B

DRAWING TITLE
TREE SURVEY PLAN
(PRELIMINARY STUDY)
(SHEET 1 OF 2)

SCALE 1:500 @ A1 ; 1:1000 @ A3

DRAWING NO.
TYA / TS / L / LO-01

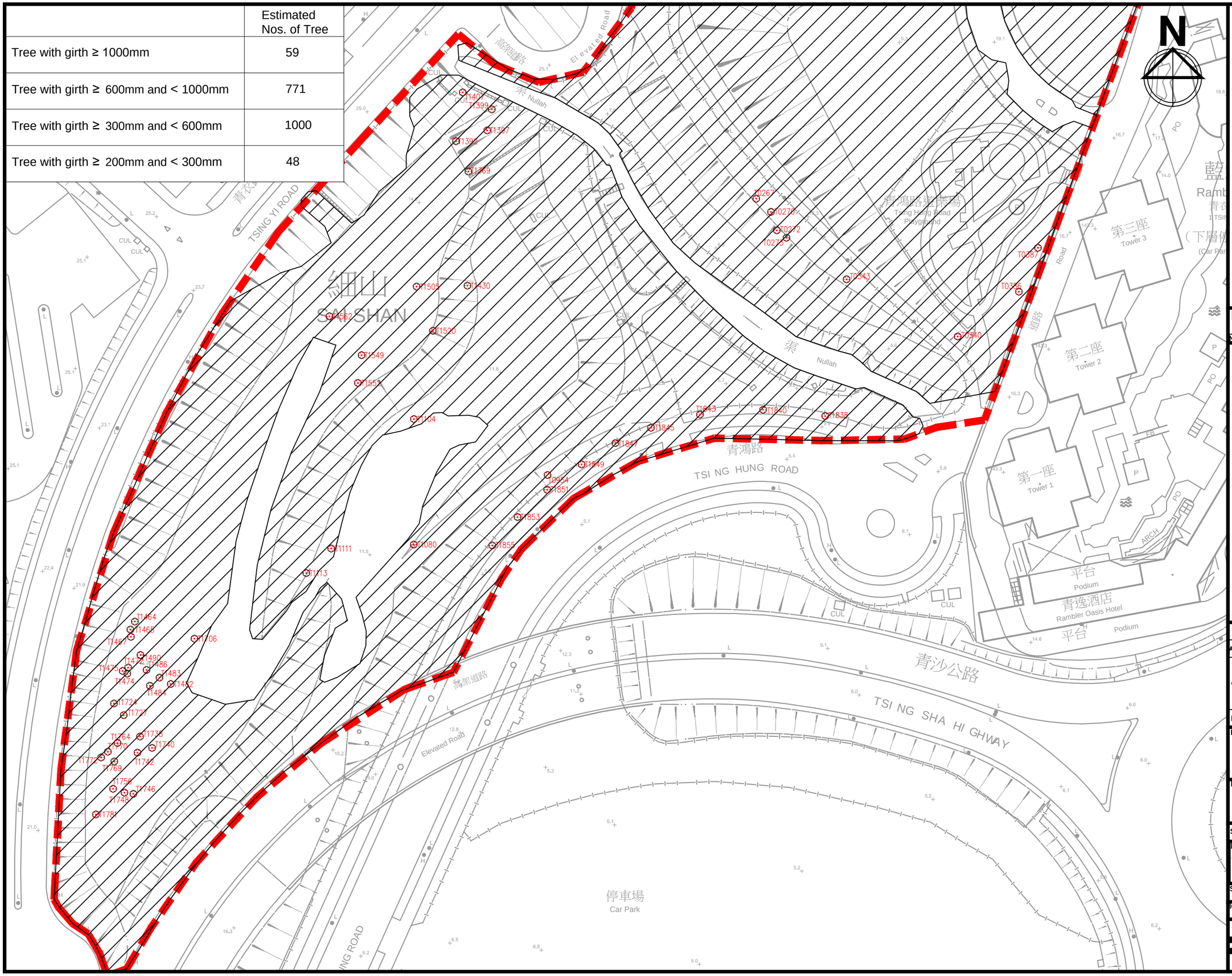
SOURCE

ICU NO.

AutoCAD 2000 A1 594 x 841

HOUSING DEPARTMENT

	Estimated Nos. of Tree
Tree with girth ≥ 1000mm	59
Tree with girth ≥ 600mm and < 1000mm	771
Tree with girth ≥ 300mm and < 600mm	1000
Tree with girth ≥ 200mm and < 300mm	48



NOTES

SITE BOUNDARY

TREE WITH GIRTH ≥ 1000mm

GROUPS OF TREE

REVISIONS

NO	DESCRIPTION AND DATE	INITIAL AND DESIGNATION DWN	CKD	AUTH

	NAME AND DESIGNATION	INITIAL	DATE
AUTHORISED	DENNIS YIP SLA/2		
CHECKED	TERESA LEE LA/T3		
	YAT SHING LAM STO(A)/24		
DRAWN	K.M. CHENG CTA/A606		

PROJECT
TSING YI AREA 22B

DRAWING TITLE
TREE SURVEY PLAN
(PRELIMINARY STUDY)
(SHEET 2 OF 2)

SCALE 1:500 @ A1 ; 1:1000 @ A3

DRAWING NO.
TYA / TS / L / LO-02

SOURCE

ICU NO.

AutoCAD 2000 A1 594 x 841

HOUSING DEPARTMENT

AECOM

Hong Kong Housing Authority

Environmental Study for the Public Housing Development at Tsing Yi Area 22B

Air Ventilation Assessment Expert Evaluation

July 2015

	Name	Signature
Prepared :	Ross Wong	
Checked:	Kenneth Lam	
Reviewed & Approved:	YT Tang	

Version: 10 Date: 06/07/2015

Disclaimer

This report is prepared for Hong Kong Housing Authority and is given for its sole benefit in relation to and pursuant to the study and may not be disclosed to, quoted to or relied upon by any person other than Hong Kong Housing Authority without our prior written consent. No person (other than Hong Kong Housing Authority) into whose possession a copy of this Hong Kong Housing Authority comes may rely on this report without our express written consent and Hong Kong Housing Authority may not rely on it for any purpose other than as described above.

AECOM Asia Co. Ltd.
11/F, Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Shatin, NT, Hong Kong
Tel: (852) 3105 8686 Fax: (852) 2317 7609 www.aecom.com

Table of Content

Page

List of Tables

List of Figures

1 INTRODUCTION

1.1.1 AECOM Asia Co. Ltd was commissioned by the Hong Kong Housing Authority to undertake Air Ventilation Assessment – Expert Evaluation on the proposed Public Housing (PH) development at Tsing Yi Area 22B. The purposes of the study include examining the air ventilation performance of the proposed architectural design scheme qualitatively and formulate possible measures to enhance ventilation performance.

1.1.2 The study is carried out in accordance with the "Housing, Planning and Lands Bureau – Technical Circular No.1/06, Environment, Transport and Work Bureau – Technical Circular No.1/06, Air Ventilation Assessment" and Annex A of the above mentioned Technical Circular "Technical Guide for Air Ventilation Assessment for Development in Hong Kong".

1.1.3 The report presents an expert evaluation on the air ventilation performance of the proposed design scheme of PH development at Tsing Yi Area 22B. It evaluates the wind characteristics of the subject site and its vicinity areas, including the following tasks.

- Identify the site wind conditions;
- Identify good design features;
- Identify obvious problem areas and propose some mitigation measures; and
- Recommend the scope, methodology and details of initial study for further air ventilation assessment stage

2 EXPERT EVALUATION

2.1 Site Vicinity

2.1.1 The proposed PH development is located at the south-eastern part of Tsing Yi Island, bounded by Tsing Yi Road at the west and the north, Tsing Hung Road at the east and Tsing Sha Highway at the south. The total site area is approximately 4.2 hectares, which is currently categorized as Open Space in the Outline Zoning Plan (OZP).

2.1.2 Rambler Crest at Tsing Yi Road (Lower), categorized as commercial area, are located at the due east to the subject site. Residential blocks of Cheung Ching Estate at the junction of Tsing Yi Road (Upper) and Tsing Hong Road are situated at the north of the subject site. They are separated by Tsing Yi Preliminary Treatment Works at the northeast, adjoining the site boundary. Residential blocks of Mayfair Gardens at Tsing Yi Road (Upper) are at situated at the north-east, separated by approximately 180m from Rambler Crest across the subject site. In addition, The Hong Kong Institute of Vocational Education (Tsing Yi) is built at the west. Presently, Container Terminal No.9 is located at the south-east of site and the land at the south is occupied by temporary uses, which is categorized as Other Specified Uses in the OZP. Idling containers are stacked in Container Terminal No. 9 and the lands nearby. The containers could be stacked up to 8 containers as high as approximately 20m above ground. **Figure 2.1** shows the container stacks around Container Terminal No. 9.

Figure 2.1 Container Stacks around Container Terminal No. 9

2.1.3 There are some open space recreation facilities in close proximity to the proposed development. The first one is Mei King Playground right between the subject site and Mayfair Gardens. The second one is Tsing Hung Road Playground right between the subject site and Rambler Crest.

2.1.4 **Figure 2.2** shows the location and vicinity of the subject site. And, **Table 2.1** summarizes the building height of surrounding buildings. The tallest building in the site vicinity is approximately 143mPD.

Figure 2.2 Location and Vicinity of the Public Rental Housing Development at Tsing Yi Area 22B

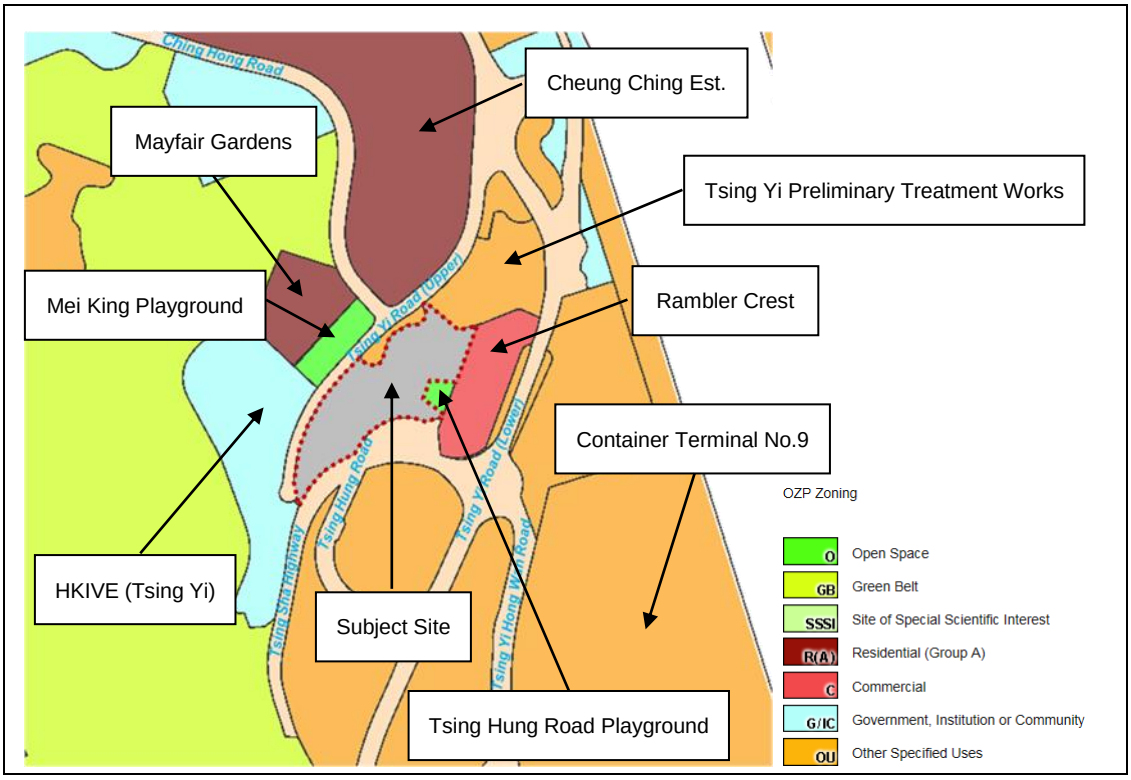


Table 2.1 Height of Surrounding Buildings

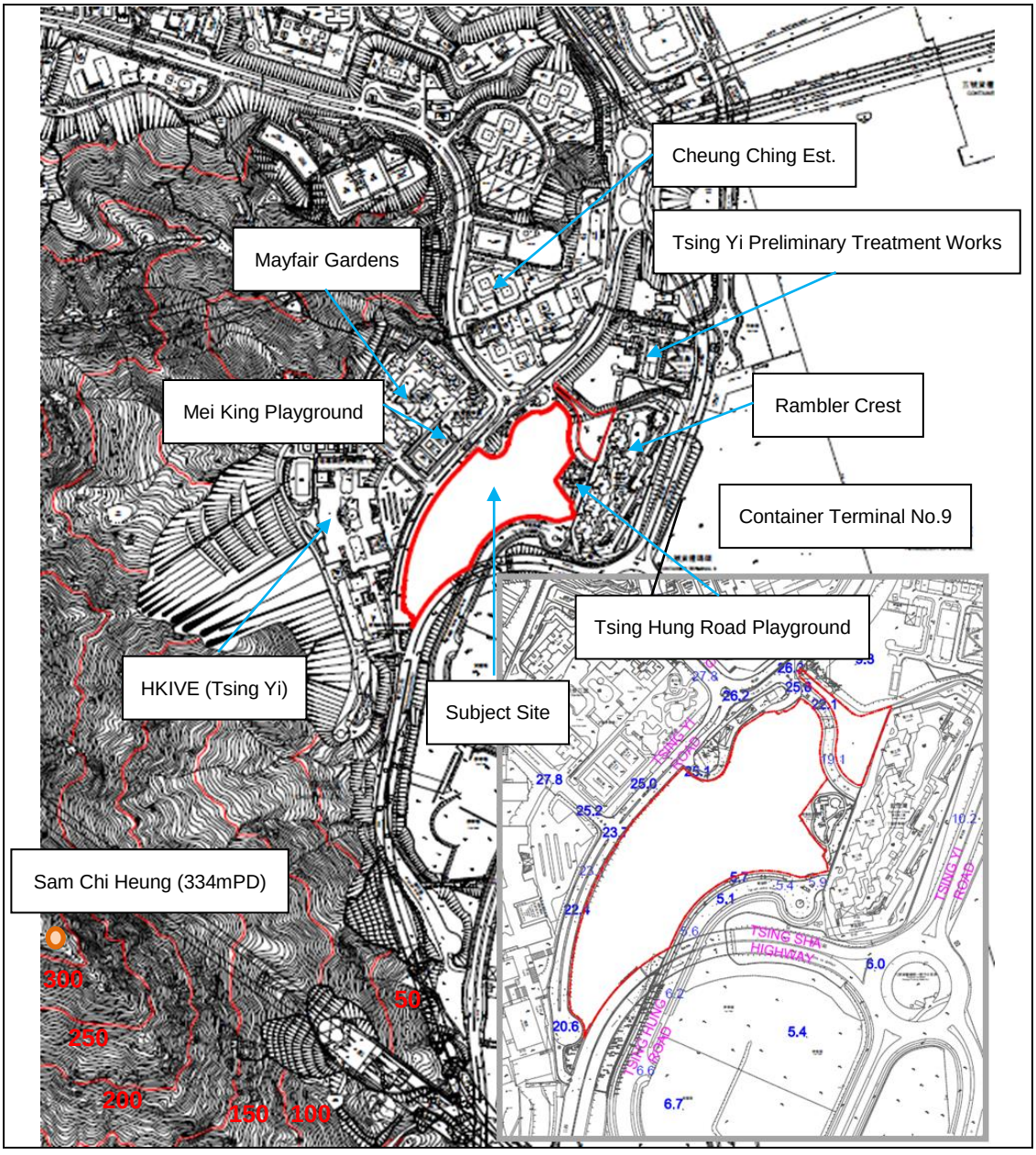
No.	Surrounding Building	Building Height (mPD)
1	Cheung Ching Estate	130
2	Mayfair Gardens	136
3	Rambler Crest	143
4	Hong Kong Institute of Vocational Education (Tsing Yi)	80
5	Tsing Yi Preliminary Treatment Works	16

2.2 Site Topography

2.2.1 **Figure 2.3** shows the ground elevation around the subject site. The ground level elevates from Tsing Hung Road at the east at approximately 6mPD to Tsing Yi Road (Upper) at the west at

approximately 20.6mPD. A slope with nearly 5m in height is situated along the west boundary of the subject site next to Tsing Yi Road (Upper). At the southeast of the subject site, the land remains flat and extends eastward to Ramble Channel and southward to the shore of Tsing Yi Island. On the other hand, ground level at the west rises abruptly to the peak of Sam Chi Heung at 334mPD. Urban area of Tsing Yi Island is located at the northwest and the north of the subject site. Ground level rise gradually to the peak of Liu To Shan at 218mPD at the north-west of Tsing Yi Island.

Figure 2.3 Contour Map of Surrounding Environment

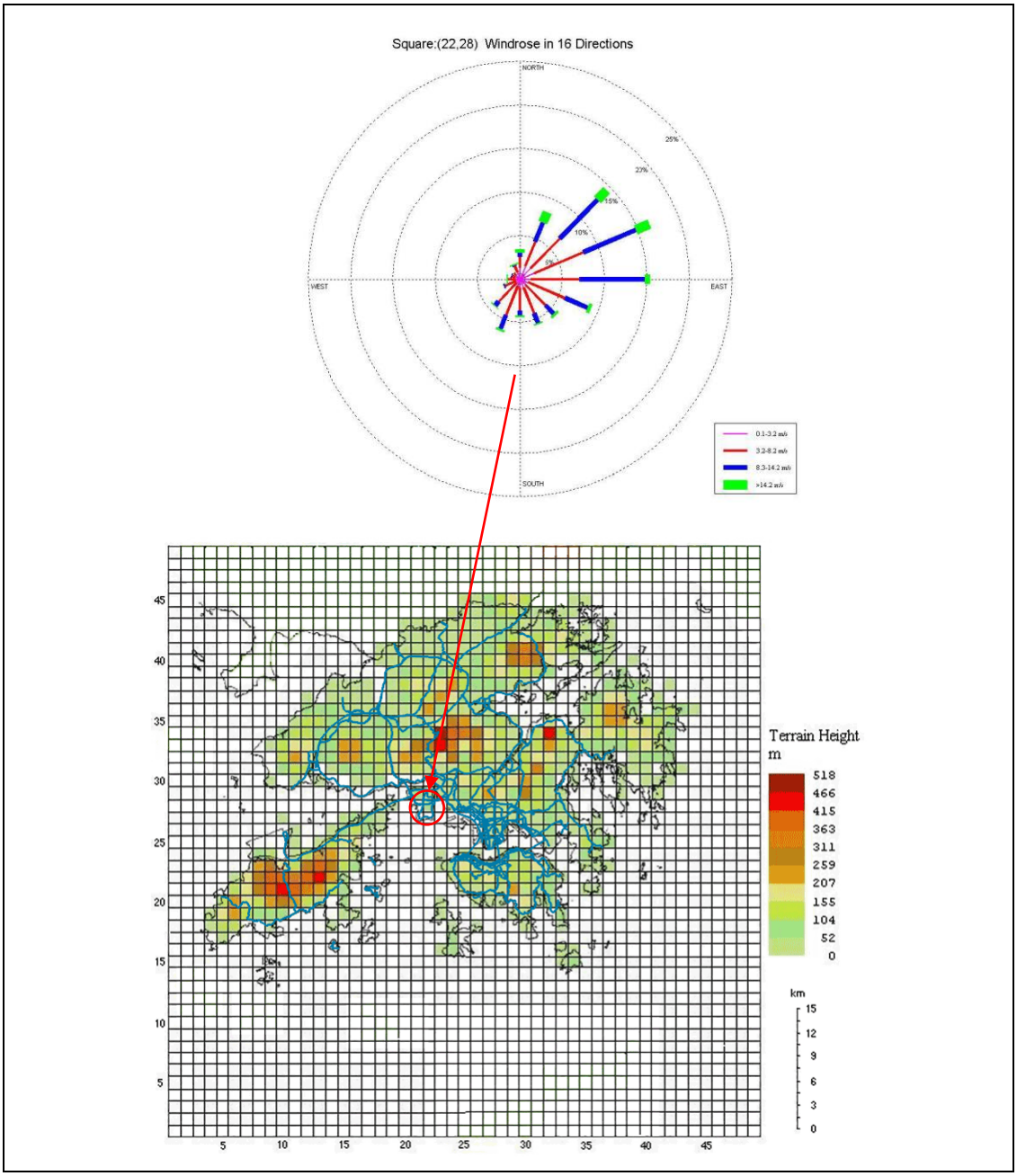


2.3 Wind Availability

2.3.1 *MM5 Wind Rose* - Natural wind availability is crucial to investigate the wind performance of the subject site. A set of wind availability data of different locations in Hong Kong grounded on the Fifth Generation Penn State Meso-scale Meteorological Model (MM5), released by the Hong Kong Planning Department, is suitable for air ventilation study. The site wind availability data can be accessed from the official website of the Planning Department. (http://www.pland.gov.hk/pland_en/misc/MM5/main.htm)

2.3.2 Wind availability data from grid (22, 28) shown in **Figure 2.4** is utilized for this study.

Figure 2.4 Annual Wind Rose of MM5 at Grid (22, 28)



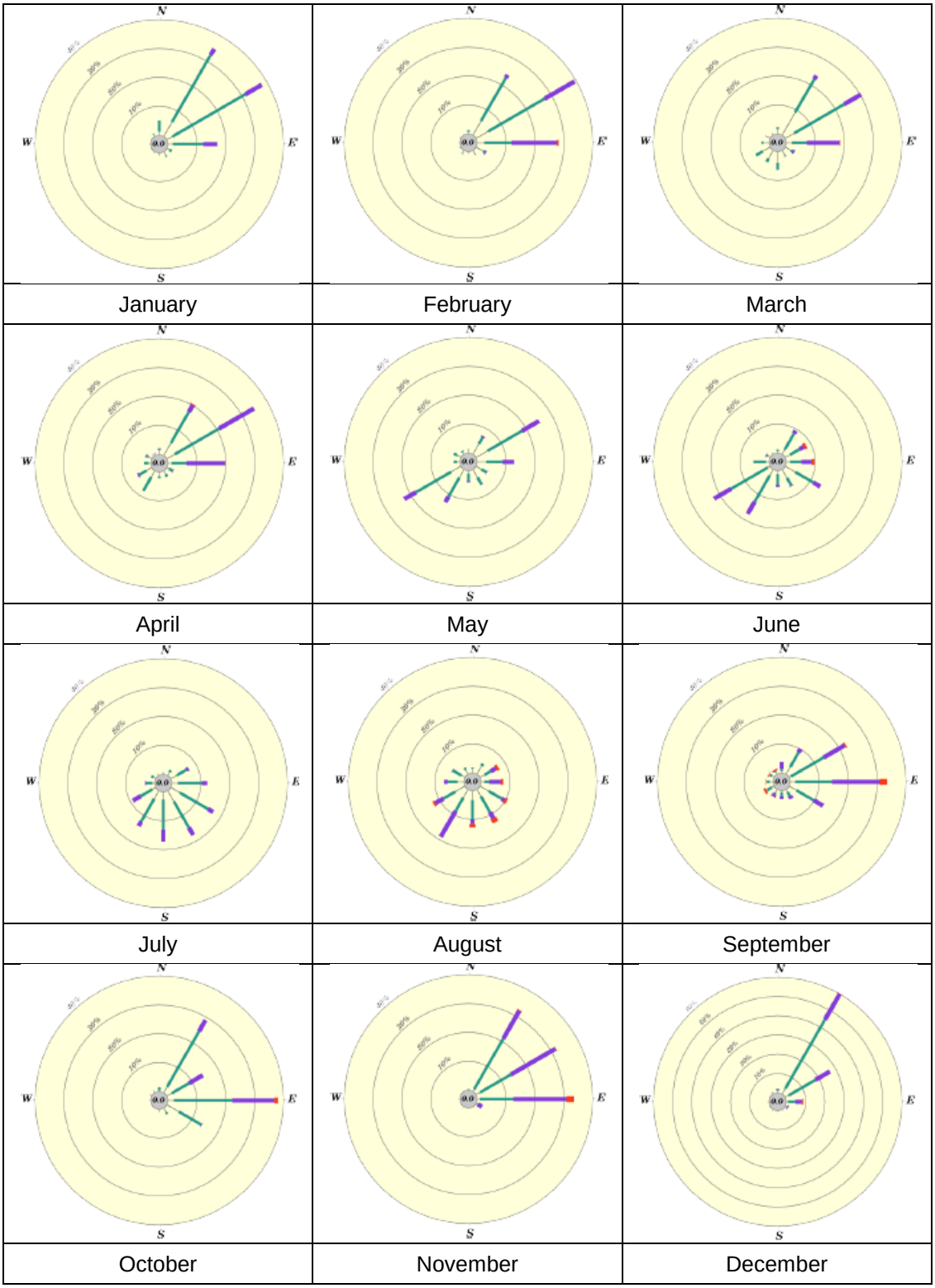
2.3.3 It can be noted from the wind rose that the occurrence of wind from NE, ENE and E directions occupy over 45% of the annual wind direction. **Table 2.2** summarizes the occurrence of each wind direction. Therefore, winds from NE, ENE and E are considered to be the annual prevailing wind from MM5 wind availability data.

Table 2.2 Wind Direction and Occurrence of MM5 at Grid (22, 28) (Adopted from Summary of Meteorological and Tidal Observation in Hong Kong 2013*)*

No.	Wind Direction (^{o})	Occurrence (%)
1	N (0^{o})	3.4
2	NNE (22.5^{o})	8.2
3	NE (45^{o})	14.3
4	ENE (67.5^{o})	16.4
5	E (90^{o})	15.2
6	ESE (112.5^{o})	8.9
7	SE (135^{o})	5.8
8	SSE (157.5^{o})	5.5
9	S (180^{o})	4.3
10	SSW (202.5^{o})	6.3
11	SW (225^{o})	4.3
12	WSW (247.5^{o})	2.1
13	W (270^{o})	1.5
14	WNW (292.5^{o})	1.1
15	NW (315^{o})	1.0
16	NNW (337.5^{o})	1.8

2.3.4 Further comparing MM5 wind availability data with the monthly wind rose at Waglan Island shown **Figure 2.5**, which is adopted from *Summary of Meteorological and Tidal Observation in Hong Kong 2013* issued by Hong Kong Observatory (HKO), annual prevailing wind comes from NE quadrant, while summer prevailing wind comes from SW quadrant. As a result, winds from SW and SSW are considered to be summer prevailing wind for the study area.

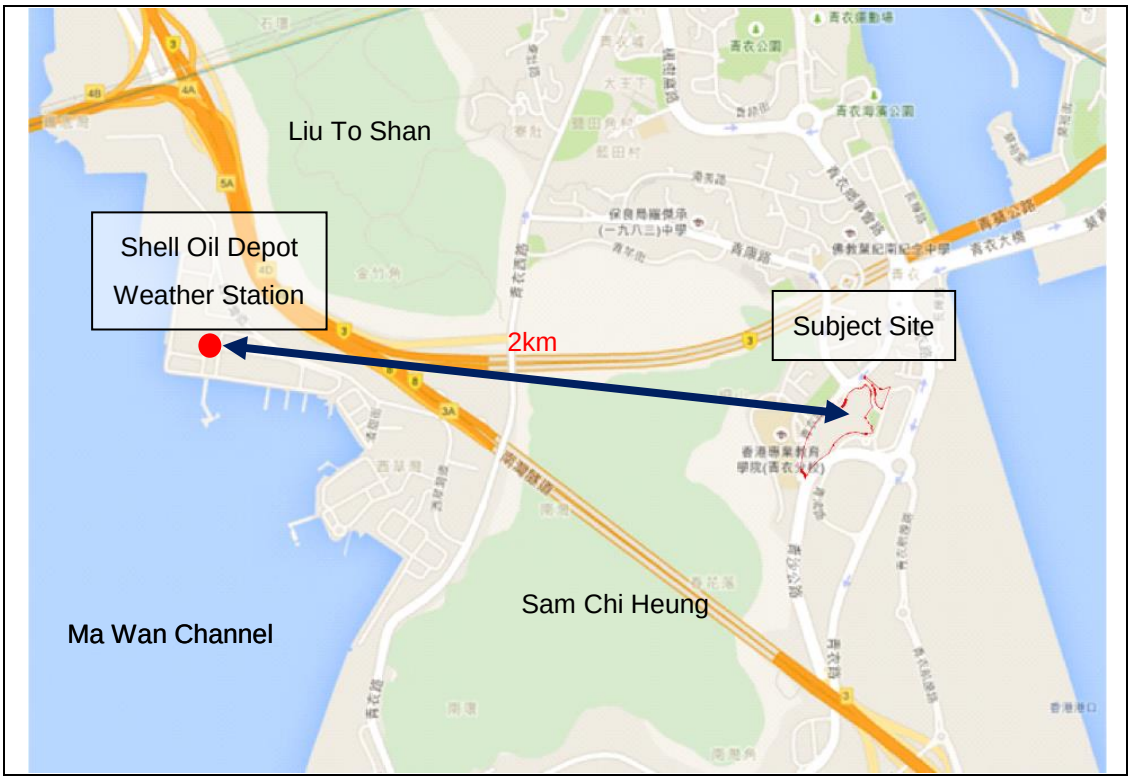
Figure 2.5 Monthly Wind Rose at Waglan Island Weather Station (Adopted from *Summary of Meteorological and Tidal Observation in Hong Kong 2013*)



2.3.5 *Wind Rose at Shell Oil Depot Weather Station* – Furthermore, local wind condition is identified by HKO Shell Oil Depot weather station at Sai Tso Wan Road, elevated at 43mPD. **Figure 2.6** shows the location of the weather station. Hilly Liu To Shan at 218mPD and Sam Chi Heung at

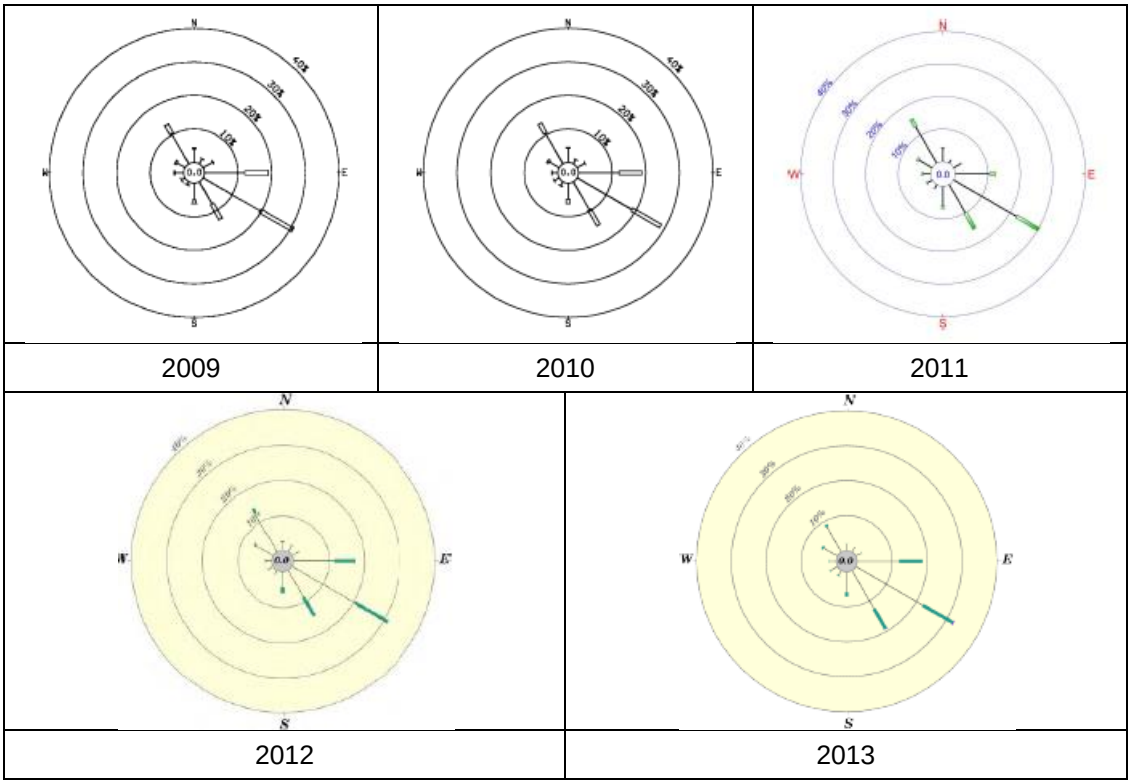
334mPD are at the north-east and the south-east respectively, while smooth Ma Wan Channel is at the west. Separated by Sam Chi Heung, the subject site is located at approximately 2km east of the weather station.

Figure 2.6 Shell Oil Depot Weather Station Location



2.3.6 **Figure 2.7** shows the annual wind rose recorded by the weather station from 2009 to 2013. It can be noted from these five year data that wind from SE quadrant is the most abundant, occupying over 60% annual occurrence. Meanwhile, winds from ESE, SE and SSE are the most frequent in summer (from May to August) referred to the raw data of that weather station. Therefore, winds from E, ESE, SE and SSE are regarded as annual prevailing wind and winds from ESE, SE and SSE are regarded as summer prevailing wind according to wind data at Shell Oil Depot Weather Station.

Figure 2.7 Annual Wind Rose at Shell Oil Depot Weather Station (Adopted from *Summary of Meteorological and Tidal Observation in Hong Kong 2009 - 2013*)



2.3.7 Comparing MM5 wind rose with the wind rose recorded by Shell Oil Depot weather station, undisturbed winds from NE, ENE and E are the most abundant while winds from ESE, SE and SSE at the weather station is more probable locally. The nuance can be attributed to the wind disturbance by the hilly topography at the east of the weather station. Under north-easterly prevailing winds, near-ground wind bypasses Liu To Shan via the trough between Liu To Shan and Sam Chi Heung, where is situated at the ESE of the weather station. Diverted wind approaches the weather station south-easterly, leading to highly probable south-easterly wind recorded by the weather station. Frequent south-easterly wind is a localized phenomenon at the weather station, which is not anticipated elsewhere. Generally, wind data from the weather station reflects the wind condition at the subject site.

2.3.8 To sum up, annual prevailing wind directions include NE, ENE, E, ESE, SE and SSE while summer prevailing wind directions include ESE, SE, SSE, SW and SSW.

2.4 Existing Wind Environment

2.4.1 Since the subject site is vacant now, no implied deterioration on ventilation performance is expected regardless prevailing wind direction.

2.4.2 *Prevailing Winds from NE and ENE* – **Figure 2.8** shows the wind environment at pedestrian level around the subject site under north-easterly prevailing winds schematically. Cheung Ching Estate and Rambler Crest are located at the windward side under north-easterly winds. Prevailing winds from NE and ENE are diverted by Rambler Crest, establishing wind stagnant zone at Tsing Hung Road Playground located at the leeward side of Rambler Crest. Relative to north-easterly wind, the extent of wind stagnant zone will be larger under ENE wind. Outside the wind stagnant zone, development of corner streams implies localized wind amplification at the wind breezeways at Tsing Yi Road (Upper) cum subject site and Tsing Yi Road (Lower). As wind permeates along the wind pathways, redevelopment of airflow pattern occurs at downstream locations, imposing some influences on ventilation performance at Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi).

Figure 2.8 Existing Wind Environment under North-Easterly Winds

2.4.3 *Prevailing Wind from E* – **Figure 2.9** shows the wind environment at pedestrian level around the subject site under easterly prevailing wind schematically. Cheung Ching Estate and Rambler Crest are located at the windward side under easterly wind. Prevailing wind is bifurcated by Rambler Crest. On the one hand, wind advances to Ching Hong Road via the wind corridor at the north of Rambler Crest. On the other hand, wind advances to Sai Shan Road via the south of Rambler Crest and the subject site. Therefore, the subject site Mayfair Gardens, Mei King Playground and the Hong Kong Institute of Vocational Education (Tsing Yi) along Sai Shan Road are affluently ventilated. Tsing Hung Road Playground, where is located at the leeward side, is well sheltered by Rambler Crest.

Figure 2.9 Existing Wind Environment under Easterly Winds

2.4.4 *Prevailing Winds from ESE, SE and SSE* – **Figure 2.10** shows the wind environment at pedestrian level around the subject site under south-easterly prevailing winds schematically. Despite of the absence of permanent superstructure built on the lands categorized as other specified uses at the southeast of the subject site, the densely packed container stacks in these areas and Container Terminal No. 9 can serve as wind barriers blocking incoming wind from ESE, SE and SSE near ground level. Wind availability at the subject site and Tsing Hung Road Playground is restricted consequently. On the contrary, wind obstruction at Cheung Ching Estate, Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi) is less significant as the elevation is higher than the preceding obstacles at Container Terminal No.9. South-easterly winds can penetrate the subject site, ventilating Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi) directly without wind barriers. Although wind availability at Cheung Ching Estate is not altered by the container stacks, it is sheltered by Ramble Crest at the south-east. Instead of direct exposure to prevailing winds, diverted wind permeate the junction of Tsing Hong Road and Tsing Yi Road (Upper) and downstream via the wind corridor above the subject site.

Figure 2.10 Existing Wind Environment under South-Easterly Winds

2.4.5 *Prevailing Winds from SW and SSW* – **Figure 2.11** shows the wind environment at pedestrian level around the subject site under south-westerly prevailing winds schematically. After bypassing the hilly Sam Chi Heung at the southwest of Tsing Yi Island, summer prevailing winds from SW and SSW advance the urban area of Tsing Yi Island via the wind breezeways at Tsing Yi Road (Upper) cum subject site and Tsing Yi Road (Lower). The subject site, Cheung Ching Estate, Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi) at Tsing Yi Road (Upper) and Rambler Crest at Tsing Yi Road (Lower) are located at the air pathways. No adverse wind condition is expected. However, wind availability at Tsing Hung Road Playground is exacerbated by the upstream container stacks.

Figure 2.11 Existing Wind Environment under South-Westerly Winds

2.4.6 The two principal wind breezeways along Tsing Yi Road (Upper) cum subject site and Tsing Yi Road (Lower) optimize overall wind permeability of the assessment area. Wind condition at Tsing Hung Road Playground is the most sensitive to wind direction, surrounding topography and morphology. Located at the wind breezeways, wind availability at the subject site, Rambler Crest, Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi) is affluent regardless prevailing wind direction. Finally, Cheung Ching Estate can expose strong north-easterly winds and south-westerly winds.

2.5 Wind Environment with Proposed Design Scheme

2.5.1 **Figure 2.12** shows a plan view and an elevation view of the proposed preliminary design scheme. The proposed development involves some retail, carpark and welfare facilities at low level up to about 30mPD and 5 domestic blocks with maximum building height of 140mPD. **Table 2.3** summarizes the maximum building height of each domestic block. There is no podium but Block 1 and Block 2 will sit on the deck at 16.5mPD and Block 3, Block 4 and Block 5 on another deck at 12.0mPD, both below the level of Tsing Yi Road (Upper).

Figure 2.12 Plan View and Elevation View of Proposed Design Scheme

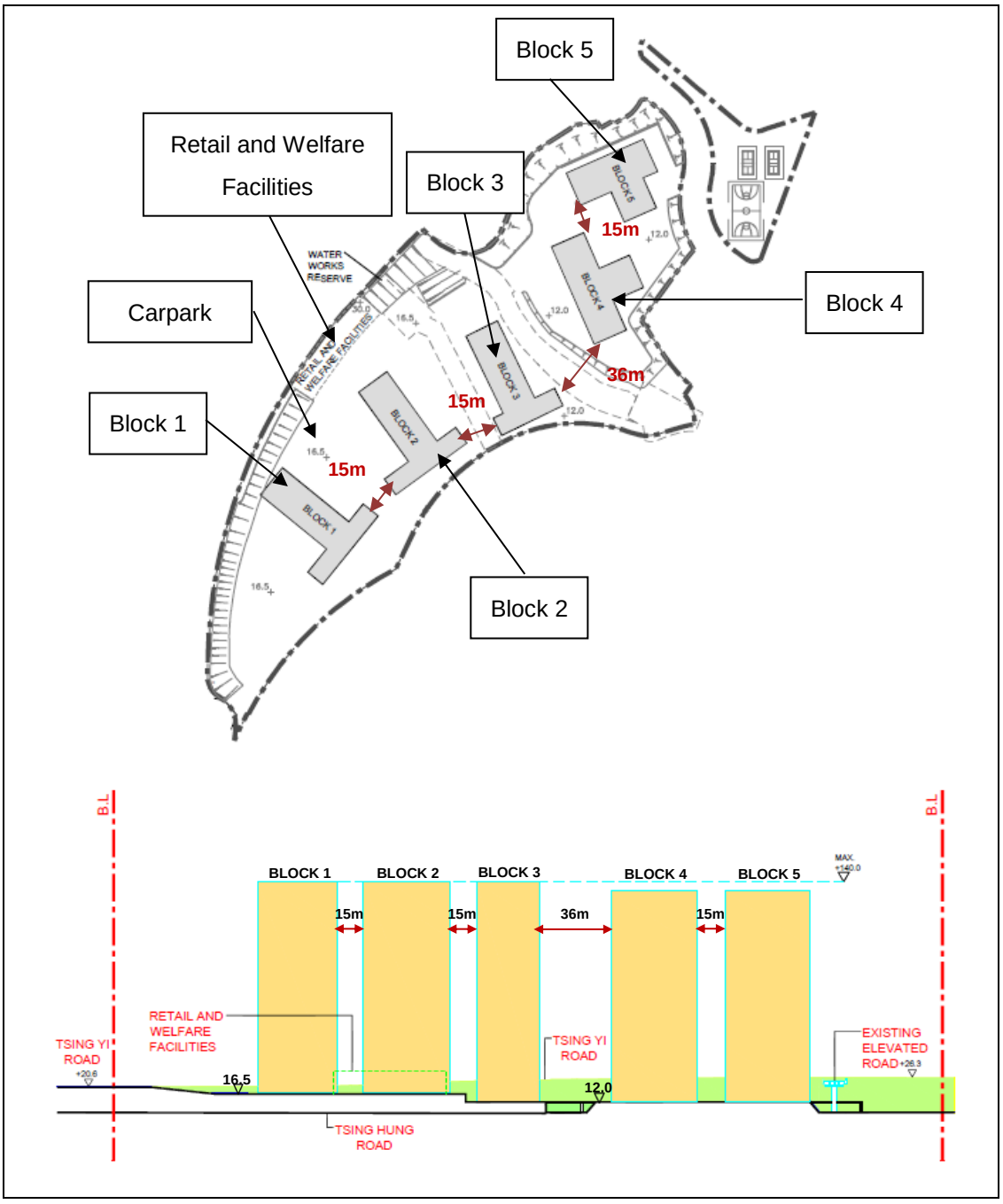


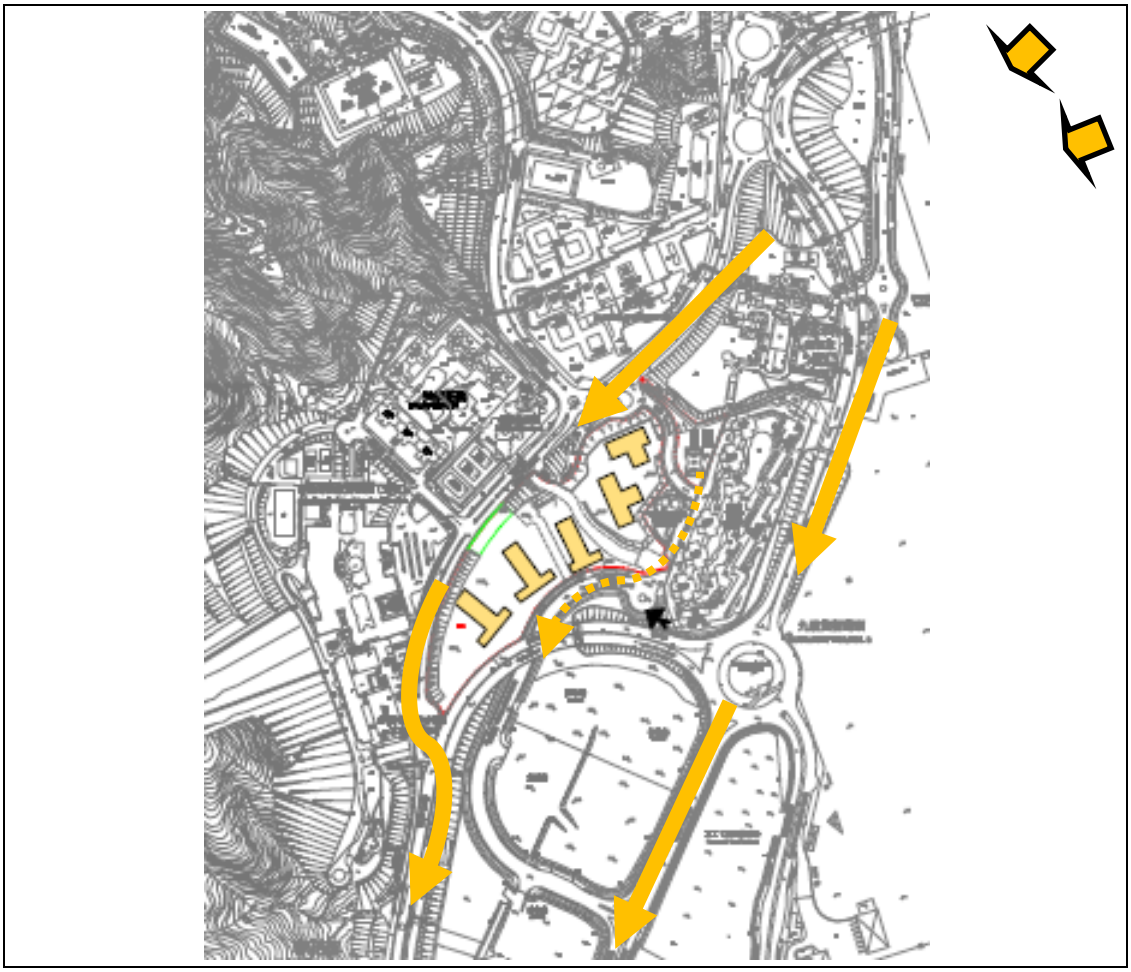
Table 2.3 Height of Proposed Buildings

No.	Proposed Building	Building Height (mPD)
1	Domestic Block No. 1	140 at maximum
2	Domestic Block No. 2	140 at maximum
3	Domestic Block No. 3	140 at maximum
4	Domestic Block No. 4	140 at maximum
5	Domestic Block No. 5	140 at maximum

2.5.2 Construction of superstructures on the subject site will cause influence on local ventilation performance unavoidably. However, ventilation performance of its vicinity may not necessary be worsened with appropriate responsive measures incorporated in the architectural design to optimize overall wind permeability.

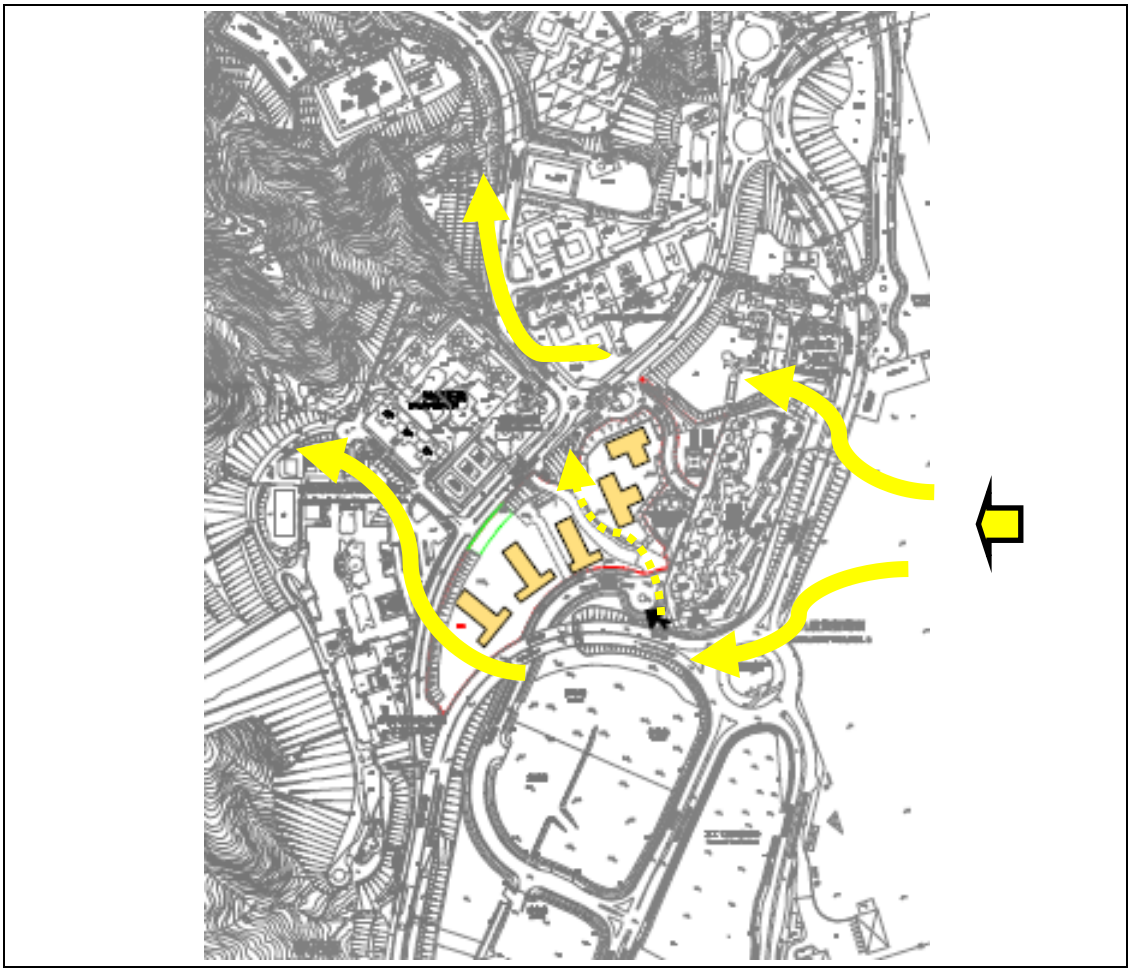
2.5.3 *Prevailing Winds from NE and ENE* – **Figure 2.13** shows the wind environment at pedestrian level around the subject site under north-easterly prevailing winds schematically. Cheung Ching Estate, Rambler Crest and Tsing Hung Road Playground are located upstream under north-easterly winds. Therefore, natural ventilation performance of these areas is not expected being adversely affected by the proposed development. Wind approaching the subject site will be bifurcated by the proposed building (Block 5), travelling through the wind breezeway at Tsing Yi Road (Upper) principally and the wind corridor at Tsing Hung Road adjunctively. Therefore, wind availability at the subject site, Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi), where are ventilated by the wind breezeway at Tsing Yi Road (Upper), will inevitably be reduced due to narrowed wind breezeway, while wind condition at Tsing Hung Road Playground can be preserved.

Figure 2.13 Wind Environment after Construction under North-Easterly Winds



2.5.4 *Prevailing Wind from E* – **Figure 2.14** shows the wind environment at pedestrian level around the subject site under easterly prevailing wind schematically. Rambler Crest at the windward side acts as existing wind barrier to easterly wind. Incoming wind must bypass the wind blockage via the north wind passage (open spaces extending from the north of Rambler Crest to Tsing Hong Road) or the south wind passage (open spaces extending from the south of Rambler Crest to Sai Shan Road). Rambler Crest and Cheung Ching Estate ventilated by the north wind passage are not expected being notably affected by the proposed development. However, the proposed buildings (Block 1 and Block 2) are situated at the south wind passage. Therefore, wind availability at Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi) will be affected inevitably even if wind approaching Sai Shan Road can bypass the proposed buildings via the south end of subject site and wind corridor between Block 3 and Block 4.

Figure 2.14 Wind Environment after Construction under Easterly Winds



2.5.5 *Prevailing Winds from ESE, SE and SSE* – **Figure 2.15** shows the wind environment at pedestrian level around the subject site under south-easterly prevailing winds schematically. Similar to easterly prevailing wind condition, Rambler Crest at the windward side is not expected being affected by the proposed development. Since the proposed buildings (Block 1 and Block 2) are situated at the south wind passage, wind approaching Sai Shan Road, on the one hand, will bypass the proposed buildings via the south end of subject site. Therefore, wind availability at Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi) will be affected inevitably. On the other hand, wind advancement towards Ching Hong Road will pass through the wind corridor between Block 3 and Block 4, which can be beneficial to the wind condition at Cheung Ching Estate and downstream residential area.

Figure 2.15 Wind Environment after Construction under South-Easterly Winds

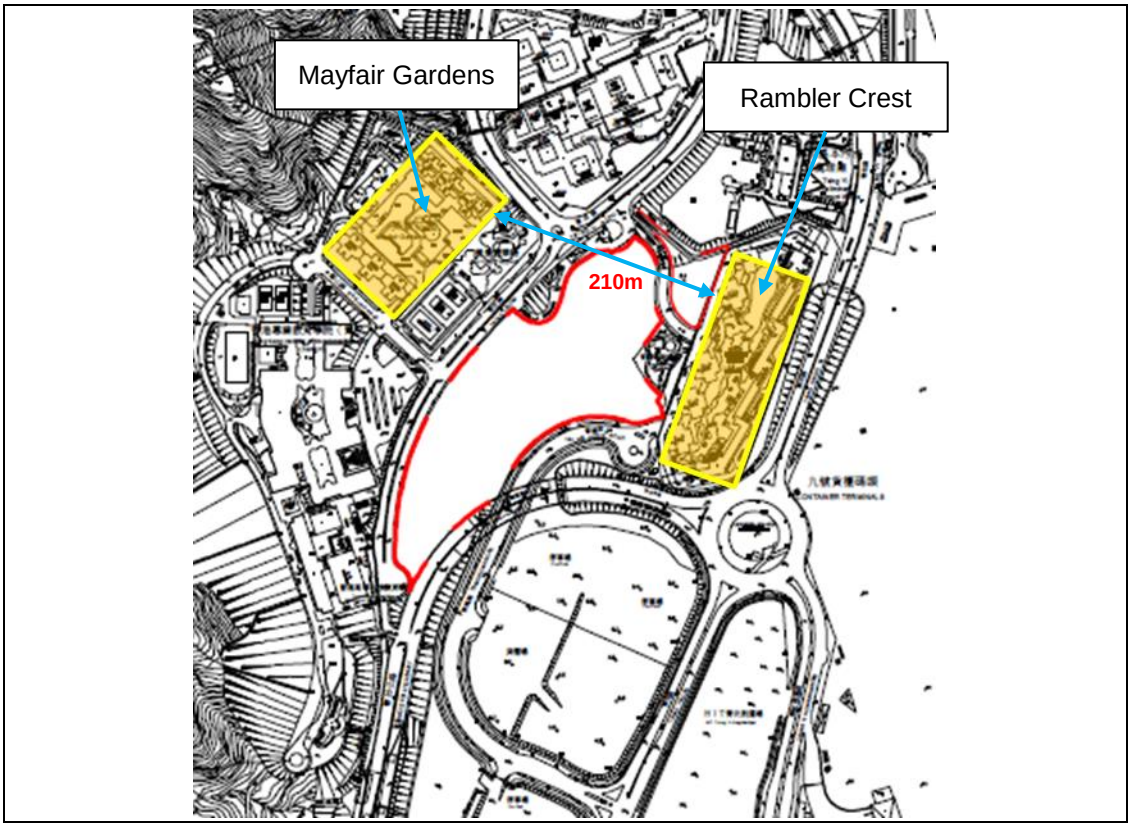
2.5.6 *Prevailing Winds from SSW and SW* – **Figure 2.16** shows the wind environment at pedestrian level around the subject site under south-westerly prevailing winds schematically. Similar to north-easterly prevailing wind condition, the proposed development shall impose negligible impact on the wind breezeway at Tsing Yi Road (Lower) and neighbouring development, including Rambler Crest. Instead, the proposed development narrows the wind breezeway at Tsing Yi Road (Upper) and affects local wind environment. The proposed building (Block 1) bifurcates incoming wind. One the one hand, wind travels through the narrowed wind breezeway at Tsing Yi Road (Upper) majorly. Wind availability along Tsing Yi Road (upper) and neighbouring developments, including The Hong Kong Institute of Vocational Education (Tsing Yi), Mei King Playground, Mayfair Gardens and Cheung Ching Estate will inevitably be reduced. On the other hand, wind diverted to the secondary wind corridor between the proposed development and Rambler Crest, which can be advantageous to the ventilation performance at Tsing Hung Road Playground.

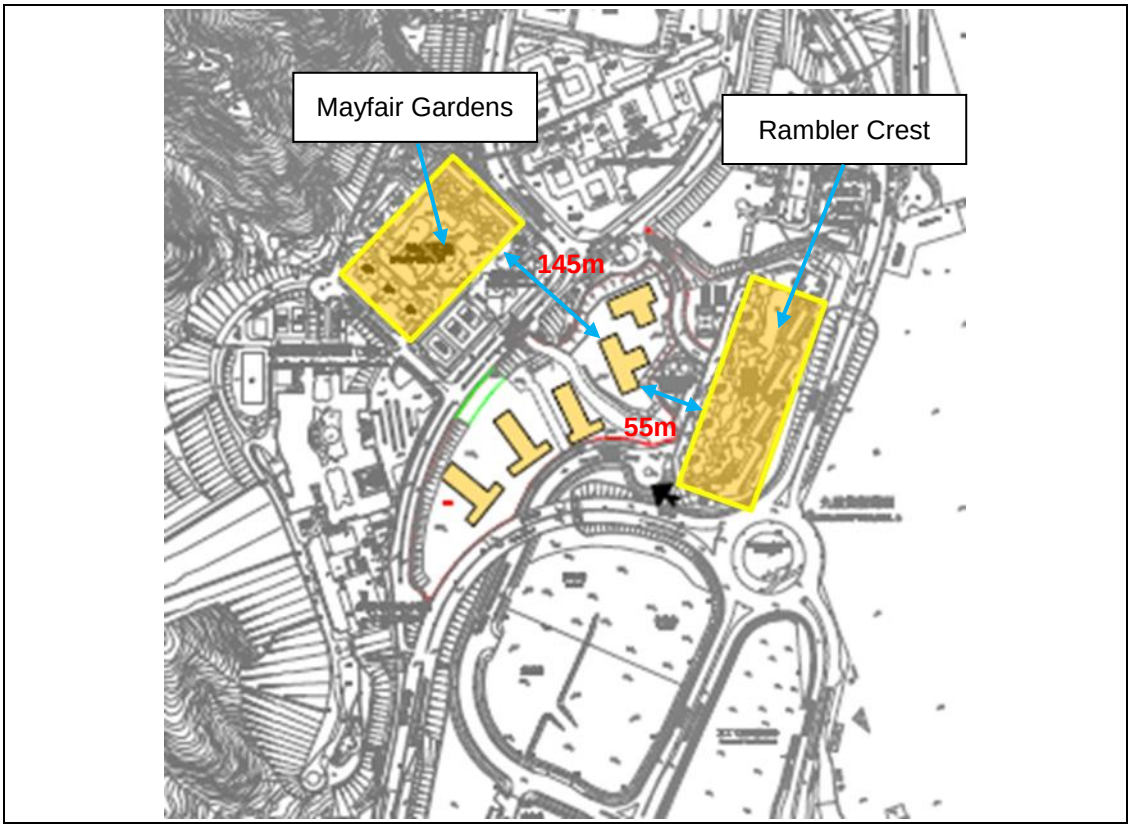
Figure 2.16 Wind Environment after Construction under South-Westerly Winds

2.5.7 The design scheme has incorporated following mitigation measures to response the above problematic areas.

2.5.8 *Preservation of Existing Wind Breezeway at Tsing Yi Road (Upper)* – Tsing Yi Road (Upper) is the principal wind breezeway for Cheung Ching Estate, Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi) under north-easterly and south-westerly prevailing wind conditions. **Figure 2.17** shows the building separation around subject site before and after construction. The wind breezeway extends from Mei King Playground to the east end of the subject site with a total width of 210m approximately. The proposed building will divide the wind breezeway. To minimize the impact on pedestrian at Tsing Yi Road (Upper), the proposed domestic blocks are allocated far away from Tsing Yi Road (Upper) with maximized separation of 145m approximately between the proposed domestic blocks and Mayfair Gardens. This measure allowing wind breezeway at Tsing Hung Road (Upper) is commodious enough for wind penetration. 55m secondary wind corridor between the proposed development and Rambler Crest can channel airflow through Tsing Hung Road Playground, amplifying wind speed of originally wind stagnant area.

Figure 2.17 Building Separation before and after Construction





2.5.9 *Building Separation and Alignment* – To compromise the necessity of natural ventilation and noise isolation, domestic blocks are allocated strategically such that the separation distance is at least 15m. The cardinal wind corridor with 36m in width (Refer to **Figure 2.12**) is provided between Block 3 and Block 4 aligned collateral with Ching Hong Road for the most effective advancement of easterly and south-easterly winds towards Cheung Ching Estate and downstream residential areas.

2.5.10 *Alleviation of Urban Canyon Effect* – The ground level steps up from Tsing Hung Road at about 6mPD to the junction with Tsing Yi Road (Upper) at approximately 20.6mPD gradually, while the ground level within the subject site is intermediate between 12mPD and 16.5mPD approximately (Refer to **Figure 2.12**). Under easterly and south-easterly prevailing wind conditions, wind advancement from Tsing Hung Road at lower elevation to Tsing Yi Road (Upper) at high elevation can be enhanced.

2.5.11 *Allocation of Main Circulation Area* – To provide pedestrian wind comfort throughout the year, estate entrance, main circulation area and retails facilities (Refer to **Figure 2.12**) are allocated at the northern part of the proposed development, where is ventilated naturally and affluently by the wind breezeway at Tsing Yi Road (Upper). Although winds from ESE and SE can be altered by the domestic blocks, winds from NE, ENE and E will cross the subject site from north-east to south-west while summer prevailing winds will penetrate the site conversely.

2.5.12 *Ventilation Voids at Ground Level* – To further enhance pedestrian wind comfort, it is recommended to explore the opportunity to allocate ventilation voids at ground level

strategically, which are aligned with local air flow direction for wind penetration, whenever possible.

2.5.13 To sum up, the proposed development will impose negligible impact on the wind breezeway at Tsing Yi Road (Lower). Therefore, adverse impact on Rambler Crest is not expected under major prevailing wind directions. However, as the subject site locates, the proposed buildings will affect the wind breezeway at Tsing Yi Road (Upper) partially. Consequently, ventilation performance at Mayfair Gardens, Mei King Playground and The Hong Kong Institute of Vocational Education (Tsing Yi), where are ventilated by that wind breezeway, will be affected inevitably. Meanwhile, disturbance on local wind condition at Cheung Ching Estate would also be notable under south-easterly winds and south-westerly winds.

2.5.14 The proposed development has been designed properly to incorporate appropriate alleviation measures including preservation of the existing wind corridors with effort, maximizing the width of wind breezeway and increasing building permeability whenever possible to reduce the impact on ventilation performance and pedestrian wind comfort.

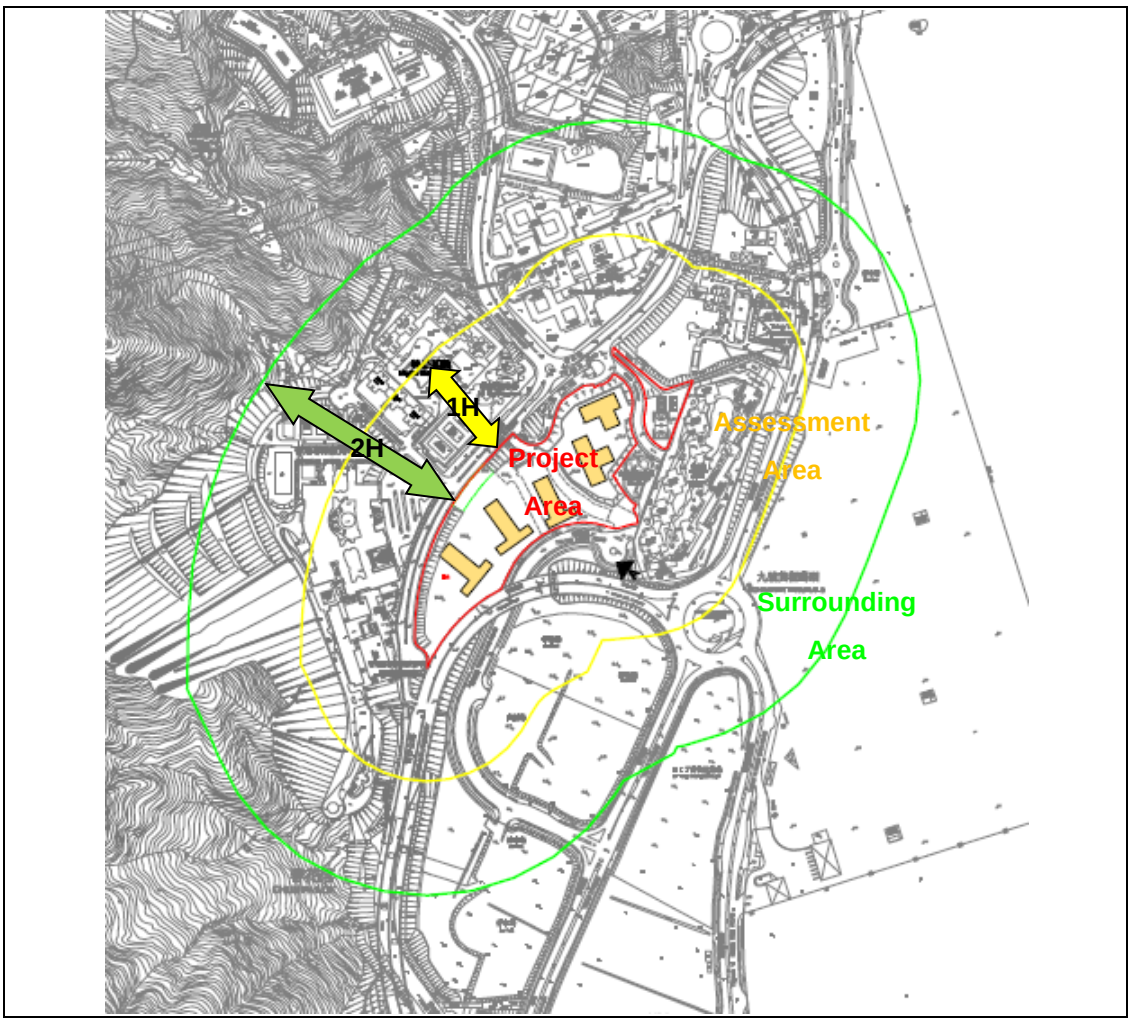
3 METHODOLOGY FOR INITIAL STUDY

3.1.1 This expert evaluation has provided a qualitative identification of ventilation performance of the subject site. In order to evaluate the ventilation performance at pedestrian level quantitatively and a better visualization on airflow pattern and wind corridors, AVA Initial Study will be carried out to provide better illustration of ventilation performance of the proposed development.

3.1.2 Refer to the Technical Guide for Air Ventilation Assessment for Development in Hong Kong, Computational Fluid Dynamics (CFD) simulations together by imposing meteorological data collected from MM5 model as boundary condition is accepted as appropriate method for AVA initial study.

3.1.3 For AVA initial study, wind environment surrounding the project area will be simulated under 8 annual prevailing wind directions (which represent occurrence of more than 75% of time) and summer prevailing wind directions. **Figure 3.1** shows the study area of AVA initial study, which includes the area within distance of 2H from the site boundary, where H is the maximum building height in the development. Wind velocity ratio (VR) which is obtained at various test point locations distributed uniformly within the assessment area is used as ventilation performance indicator.

Figure 3.1 Study Area of AVA Initial Study



3.1.4 Wind velocity ratio (VR) is defined as VR = V_p/V_{inf}, where V_p is the wind velocity at test point locations and V_{inf} is the unobstructed wind velocity at the top of boundary layer. VR indicates the wind availability experienced by pedestrian, which is a simple indicator to reflect the wind environment of the subject site.

4 SUMMARY AND CONCLUSION

4.1.1 Qualitative assessment of the wind environment regarding Public Rental Housing Development at Tsing Yi Area 22B has been carried out. Ventilation Issues has been identified in this report.

4.1.2 According to the MM5 annual wind rose and the monthly wind rose at Waglan Island weather station in 2011, it can be noted that annual prevailing wind comes from NE, ENE, E, ESE, SE and SSE directions, while summer prevailing wind comes from ESE, SE, SSE, SW and SSW directions.

4.1.3 The proposed design scheme has incorporated effective measures to enhance ventilation performance, including broadening wind corridors, stepping building height, arranging building orientation, etc. AVA initial study will assess the effectiveness of the features deployed quantitatively and identify any additional focus area.

4.1.4 In order to assess ventilation performance quantitatively and visualize wind flow pattern, an AVA initial study adopting CFD simulation will be carried out soon and the methodology of AVA initial study has been formulated in this report.

Appendix IX

Provision of Major Community Facilities in Tsing Yi

Type of Facilities	Hong Kong Planning Standards and Guidelines (HKPSG)	HKPSG Requirement (based on planned population)	Provision		Surplus/ Shortfall (against planned provision)
			Existing Provision	Planned Provision	
District Open Space	10 ha per 100,000 persons	19.34ha	19.72 ha	20.79 ha	1.45ha
Local Open Space	10 ha per 100,000 persons	19.34ha	42.27 ha	45.81 ha	26.47ha
Secondary School	1 whole-day classroom for 40 persons aged 12-17	212 classrooms	184	244	32classrooms
Primary School	1 whole-day classroom for 25.5 persons aged 6-11	329classrooms	324	324	-5 classrooms
Kindergarten/ Nursery	26 classrooms for 1,000 children aged 3-6	118classrooms	148	148	30 classrooms
District Police Station	1 per 200,000 to 500,000 persons	0	1	1	1
Divisional Police Station	1 per 100,000 to 200,000 persons	1	1	1	0
Hospital	5.5 beds per 1,000 persons	1,166 beds	0	0	-1,166 beds
Specialist Clinic/Polyclinic	1 specialist clinic/polyclinic whenever a regional or district hospital is built	NA	0	0	NA
Clinic/Health Centre	1 per 100,000 persons	2	2	2	0
Post Office	No set standard	NA	2	2	NA
Magistracy (with 8 courtrooms)	1 per 660,000 persons	NA	0	0	NA
Market	No set standard	NA	0	0	NA
Integrated Children and Youth Services Centre	1 for 12,000 persons aged 6-24	2	5	5	3
Integrated Family Services Centres	1 for 100,000 to 150,000 persons	1	2	2	1
Library	1 district library for every 200,000 persons	1	1	1	0
Sports Centre	1 per 50,000 to 65,000 persons	3	3	4	1
Sports Ground/ Sport Complex	1 per 200,000 to 250,000 persons	1	1	1	0
Swimming Pool Complex - standard	1 complex per 287,000 persons	1	1	1	0

諮詢文件

青鴻路公營房屋發展計劃

(由規劃署及房屋署提出)
(葵青區議會文件第 22/2015 號)

60. 代主席歡迎規劃署荃灣及西九龍規劃專員周日昌先生及高級城市規劃師(葵青)洪鳳玲女士、房屋署高級建築師馮志輝先生、高級規劃師陳勁剛先生、高級土木工程師康榮傑先生、以及交通顧問公司高級工程師葉俊傑先生。

61. 周日昌先生、馮志輝先生及康榮傑先生以投影片簡介有關計劃。

62. 李志強議員表示明白現時土地供應短缺,對公營房屋的需求大,但青鴻路並不是興建公營房屋的理想地點。青鴻路鄰近居民飽受貨櫃碼頭的噪音及光污染困擾。而且,在長青邨及美景花園一帶的青衣路及青康路,現時在早上繁忙時間的交通流量已經飽和,加上在青俊苑落成後,現時的交通設施將無法負荷。他建議改為在北岸公路的綠化地帶興建新的公營房屋。

63. 潘志成議員表示,有關諮詢文件在五月十一日才寄奉議員,時間倉促,議員難以諮詢居民的意見。在青鴻路興建公營房屋,無論在交通、景觀及環境上,都會對現時藍澄灣及美景花園的居民造成影響。新公營房屋的配套設施都在青衣東北,現時青衣西南的居民難以受惠。在這樣的情況下,實在難以支持青鴻路公營房屋發展計劃。

64. 林立志議員對交通配套感到憂慮;在新屋邨落成後,巴士服務很多時候都沒有相應增加。現時青衣路及青康路的流量已經飽和,運輸署應該開拓使用其他道路的新巴士線。現時很多公營房屋都是"見縫插針"式發展,交通及其他社區配套並不完善,在這樣的情況下,區議會很難支持題述方案。

65. 林紹輝議員以大白田邨 9H 用地為例,指出若在有噪音問題的土地興建公營房屋,居民遷入後將飽受困擾,而房屋署卻未能提供興建公屋前所承諾的改善措施。房屋署應該做好環境評估,以檢視有關地點是否適合發展住宅。

66. 梁子穎議員質疑有關交通評估是否準確。他認為，在現時的方案中，邨內沒有巴士站的設計並不可取，署方是低估了居民對公共交通服務的需求。公營房屋問題固然需要解決，但署方不應忽略交通問題的重要性。

67. 梁錦威議員表示，政府不應視興建了新的公營房屋就解決了房屋短缺的問題，還應考慮整體的社區規劃。在青鴻路的公屋落成後，來往該區的人口將增加超過四分之一，而題述方案中提及的社區設施，都是依賴現時已經有的設施。他建議房屋署提交更詳細的方案予區議會考慮。

68. 吳劍昇議員認為規劃署的規劃標準並不理想。題述方案只依賴附近社區提供配套設施，是罔顧現有居民的權益，若依照題述方案興建房屋，將會像葵聯邨落成後一樣，出現眾多問題。

69. 周偉雄議員以葵聯邨為例子，指房屋署在屋邨落成後，並未兌現之前所承諾會增加的交通及社區配套設施，在這樣的情況下，難以支持青鴻路公營房屋發展計劃。

70. 張慧晶議員表示支持興建公屋，但擔心交通配套是否充足。房屋署在會議上並未能夠就交通配套提出任何具體的建議。她建議房屋署和九巴協商如何能增加巴士路線。

71. 徐曉杰議員表示，現時青衣泊車位短缺，違例泊車問題嚴重，加上巴士服務不足，署方應該就以上交通問題提出具體的建議，以爭取區議會支持。

72. 徐生雄議員表示，房屋署忽略交通配套的重要性。若不增加公共交通服務，青鴻路的公屋居民出入將會很不方便。他要求房屋署提供更詳細的配套資料，供議員考慮。

73. 梁國華議員表示，政府不能只側重房屋短缺問題而忽略社區配套的問題。就房屋署所介紹的方案而言，青鴻路公屋須依賴現時周邊社區提供配套設施，對現有的居民並不公平。他促請政府認清地區的需要，改善社區配套設施的規劃。

74. 許祺祥議員表示，政府應該反思，為何在房屋短缺問題嚴峻的情況下，社區依舊有反對的聲音。近年很多新建公共屋邨的配套設施並不足夠，令居民出入不便，而且遲遲未有改善措施。政府應該改善諮詢時的做法，一併提供有關交通及社區配

套設施的詳細資料。

75. 潘小屏議員表示支持盡快興建公屋。現時樓價高企，使一般市民難以負擔，以致對公屋的需求殷切。房屋署應該在增加公屋供應時，同時做好交通配套。

76. 周日昌先生綜合回應如下：

(i) 根據規劃署進行的實地調查，青衣的地區休憩用地設施不論在平日、周末、日間或晚間，都沒有出現人多擠迫、不勝負荷的情況。而鄰近的長青邨內亦有完善的社區配套設施包括社區會堂等，而且使用率未達飽和，有空間吸納青鴻路公屋的新需求。另一方面，青鴻路公屋發展可以考慮提供相關配套設施。

(ii) 由於現時正處於概括規劃的階段，因此暫時未有增加巴士服務的詳細方案。房屋署會再和運輸署商討，如何因應屋邨落成後增加的人口，調整巴士服務。

77. 康榮傑先生表示，房屋署已經聘請了獨立顧問公司進行交通影響評估，評估結果顯示，現時主要路口及迴旋處並未飽和，有空間容納發展計劃帶來的額外車流。

78. 葉俊傑先生表示，根據交通影響評估的結果，青衣上路及附近的迴旋處可應付現時和預計增長的車流量。現時，發展計劃附近有超過 20 條巴士或小巴線前往港九新界各區；在發展計劃落成後，透過增加班次，應該可以滿足居民對公共運輸的需求。另外，在青衣上路路旁亦已預留空間，在有需要時作巴士或小巴上落客或總站之用。

79. 李志強議員表示，署方所提及的社區設施都在青衣東北，離青鴻路甚遠，而現時在青衣西南的社區會堂也經常爆滿。另九巴現時並未承諾會在新屋邨落成後增加巴士線，因此，署方並不能確保將來會有足夠的巴士服務供居民使用。他並表示擔心在青鴻路興建公屋會成為屏風樓。

80. 潘志成議員表示，房屋署應該拿出更多誠意與居民溝通。現時，房屋署及規劃署只表示，根據評估，在青鴻路興建公屋對交通和環境影響不大，但並未能提出實際的數據。

81. 林立志議員表示，現時青衣區已經公屋林立，而青衣西南的社區本身交通及設施配套並不足夠，若再有更多居民遷入，會令到問題惡化。他指出，除非政府能夠更改周邊工業用地為社區設施，否則不應該在青鴻路興建公屋。

82. 梁志成議員建議，運輸及房屋局應該參與諮詢工作，以統籌房屋署及運輸署在興建公屋及規劃相關交通配套的工作。

83. 林紹輝議員建議，青鴻路公屋的交通規劃應該包括九巴，因九巴才能決定能否增加巴士服務。他促請房屋署提供管理社區配套設施的詳細資料。

84. 徐生雄議員表示，發展計劃中雖然有會堂和學校等設施，但是位置都較為偏遠。另外，有關交通配套設施的資料不足，政府應該提供相關配套設施的詳細資料，供議員考慮。在居民入伙後，相關配套設施一般較難爭取。相比其他發展計劃，是項計劃不需考慮鄰近居民的景觀，只需解決交通及設施的問題。他相信問題解決後，計劃會較容易得到議會支持。

85. 梁錦威議員認為規劃署及房屋署未能解答他對噪音問題的提問。他要求房屋署及運輸署就此計劃提出具體的公共交通發展方案。根據 9H 用地及葵聯邨的經驗，政府在居民入伙後都沒有安排交通配套。因此，他要求當局在規劃階段提供有關方案。他亦詢問當局會否作出規劃，在計劃中的屋邨內興建街市。

86. 周偉雄議員認同梁錦威議員在交通方面的意見。他表示，公共屋邨的居民多數來自基層。他參考葵聯邨的情況，當局應考慮有否足夠支援給予屋邨內的精神病康復者、長者及婦女，如有需要，應與其他部門如醫院管理局及社會福利署配合。

87. 吳劍昇議員表示，葵聯邨的居民因為要應付生活上的需要，所以要往返山上。他希望政府能改善交通及其他配套，以改善葵聯邨的問題。他認為在地區設施不足下，難以支持發展計劃。

88. 周日昌先生的回應如下：

(i) 青衣區整個規劃中的新增人口應約為 20000 人而非 100000 人。人口總數預算增至約 190000 人，當中已經計

及各項情況。發展計劃亦是按預計新增的人口作規劃和估算。

(ii) 發展計劃中新興建的商場可以連接美景花園及長青邨，居民因而可享用長青邨的社區設施，而該設施現時仍有空間應付更多需要。

89. 康榮傑先生的回應如下：

(i) 房屋署在規劃過程中與其他部門如運輸署、規劃署及環保署均保持緊密聯絡，而發展計劃亦得到有關部門認同。

(ii) 根據交通影響評估結果，即使在最繁忙的時段，發展計劃附近的道路仍然有能力應付交通需要。報告內之計算方法，除了獲運輸署認可外，亦是一項較為科學化的測試。另外，房屋署一直與運輸署就發展計劃帶來新增的公共運輸服務需求保持緊密聯絡，並進行評估。由於新增的人口不會在同一時間使用公共運輸服務，預計在繁忙時段，由發展計劃產生的需求約為相等於 15 班次的巴士服務。基於市民對公共運輸服務的需求會隨着時間變化，房屋署會繼續與運輸署保持緊密聯絡，適時為此發展計劃制定方案。

90. 馮志輝先生回應指，房屋署會因應地盤的布局及附近環境，透過建築設計、拉遠噪音源頭與受影響單位的距離、安裝減音窗及建築鰭片等措施紓緩噪音問題。另外，顧問公司會進行評估，研究有否興建街市的需要。

91. 李志強議員提出一項臨時動議，內容如下：

臨時動議：“葵青區議會要求政府優先考慮青衣北岸約十公頃之綠化地大量建公屋，並重新規劃青鴻路之使用，在未有完整交通及環境配套之前，擱置在青鴻路選址建大型屋邨。”

(由李志強議員動議，潘志成議員和議)

92. 代主席宣布就是否接納臨時動議進行表決，結果 15 票贊成，沒有反對及 8 票棄權，區議會接納臨時動議。

93. 梁國華議員作出聲明，指由於以上臨時動議的內容涉及青衣的綠化地帶，而事前並沒有諮詢青衣居民，他擔心對居民有

負責人

影響。因此他對該臨時動議表示棄權。

94. 代主席表示收到修訂動議(一)，內容如下：

“葵青區議會要求重新規劃青鴻路/青衣路用地，在未有規劃完整交通、環境及社區配套之前，擱置在上述選址興建大型屋邨。”

(由林立志議員、李志強議員、潘志成議員動議，林紹輝議員、梁錦威議員、梁志成議員、梁國華議員、徐生雄議員、吳劍升議員和議)

95. 代主席宣布下列授權的通知：

(i) 何少平議員授權張慧晶議員代其於會上進行投票；
(ii) 黃潤達議員授權梁錦威議員代其於會上進行投票；
(iii) 麥美娟議員及梁子穎議員授權劉美璐議員代其於會上進行投票；
(iv) 潘小屏議員授權林翠玲議員代其於會上進行投票。

96. 主席宣布就修訂動議進行表決，結果 24 票贊成，沒有反對及棄權，區議會通過修訂動議。

(主席返回會議室繼續主持會議。)

PLAN 1

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）
VILLAGE TYPE DEVELOPMENT	V	鄉村式發展
INDUSTRIAL	I	工業
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
SITE OF SPECIAL SCIENTIFIC INTEREST	SSSI	具特別科學價值地點

COMMUNICATIONS		交通
RAILWAY AND STATION	RAILWAY STATION	鐵路及車站
RAILWAY AND STATION (UNDERGROUND)	RAILWAY STATION	鐵路及車站（地下）
RAILWAY AND STATION (ELEVATED)	RAILWAY 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
PLANNING AREA NUMBER	(1)	規劃區編號
MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)	140mPD	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	APPROXIMATE AREA & % 大約面積及百分率 公頃 HECTARES	% 百分率	用途
COMMERCIAL	2.50	0.23	商業
RESIDENTIAL (GROUP A)	98.68	9.27	住宅（甲類）
RESIDENTIAL (GROUP B)	2.89	0.27	住宅（乙類）
VILLAGE TYPE DEVELOPMENT	17.25	1.62	鄉村式發展
INDUSTRIAL	147.57	13.86	工業
GOVERNMENT, INSTITUTION OR COMMUNITY	43.71	4.10	政府、機構或社區
OPEN SPACE	47.61	4.46	休憩用地
OTHER SPECIFIED USES	179.97	16.87	其他指定用途
GREEN BELT	422.78	39.63	綠化地帶
SITE OF SPECIAL SCIENTIFIC INTEREST	1.05	0.10	具特別科學價值地點
MAJOR ROAD ETC.	102.25	9.59	主要道路等
TOTAL PLANNING SCHEME AREA	1066.76	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4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 APRIL 2015

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

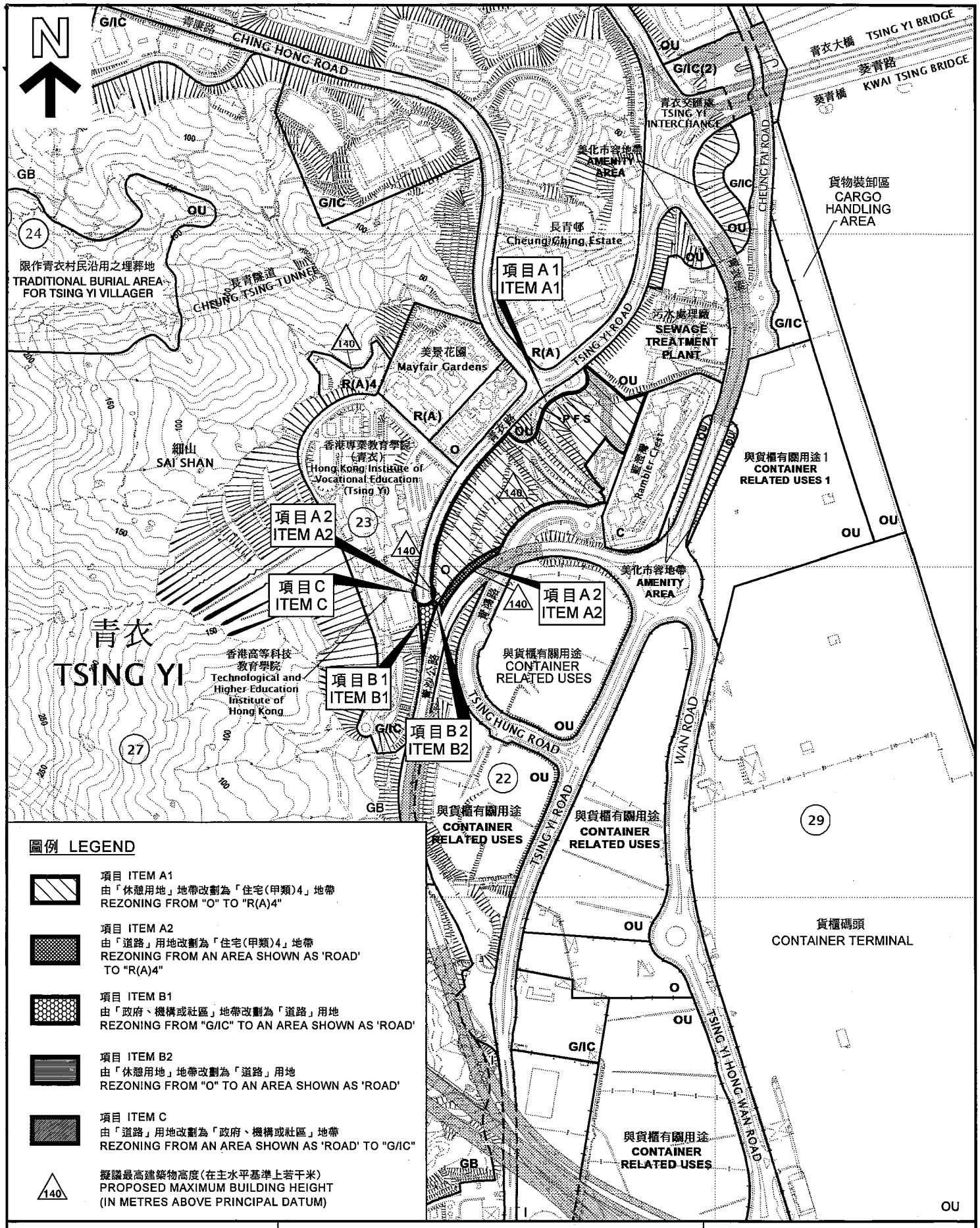
香港城市規劃委員會依據城市規劃條例擬備的青衣分區計劃大綱圖
TOWN PLANNING ORDINANCE, HONG KONG TOWN PLANNING BOARD
TSING YI - OUTLINE ZONING PLAN

SCALE 1:7 500 比例尺

0 100 200 400 600 800 1 000 METRES 米

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/TY/26



圖例 LEGEND

項目 ITEM A1
由「休憩用地」地帶改劃為「住宅(甲類)4」地帶
REZONING FROM "O" TO "R(A)4"

項目 ITEM A2
由「道路」用地改劃為「住宅(甲類)4」地帶
REZONING FROM AN AREA SHOWN AS 'ROAD' TO "R(A)4"

項目 ITEM B1
由「政府、機構或社區」地帶改劃為「道路」用地
REZONING FROM "G/IC" TO AN AREA SHOWN AS 'ROAD'

項目 ITEM B2
由「休憩用地」地帶改劃為「道路」用地
REZONING FROM "O" TO AN AREA SHOWN AS 'ROAD'

項目 ITEM C
由「道路」用地改劃為「政府、機構或社區」地帶
REZONING FROM AN AREA SHOWN AS 'ROAD' TO "G/IC"

140 擬議最高建築物高度(在主水平基準上若干米)
PROPOSED MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)

本摘要圖於2015年6月16日擬備，所根據的資料為於2015年4月21日核准的分區計劃大綱圖編號 S/TY/26
EXTRACT PLAN PREPARED ON 16.6.2015 BASED ON OUTLINE ZONING PLAN No. S/TY/26 APPROVED ON 21.4.2015

位置圖 - 項目A1,A2,B1,B2及C
LOCATION PLAN - ITEMS A1,A2, B1, B2 AND C

青衣分區計劃大綱核准圖編號 S/TY/26
的擬議修訂項目
PROPOSED AMENDMENTS TO APPROVED TSING YI OUTLINE ZONING PLAN No. S/TY/26

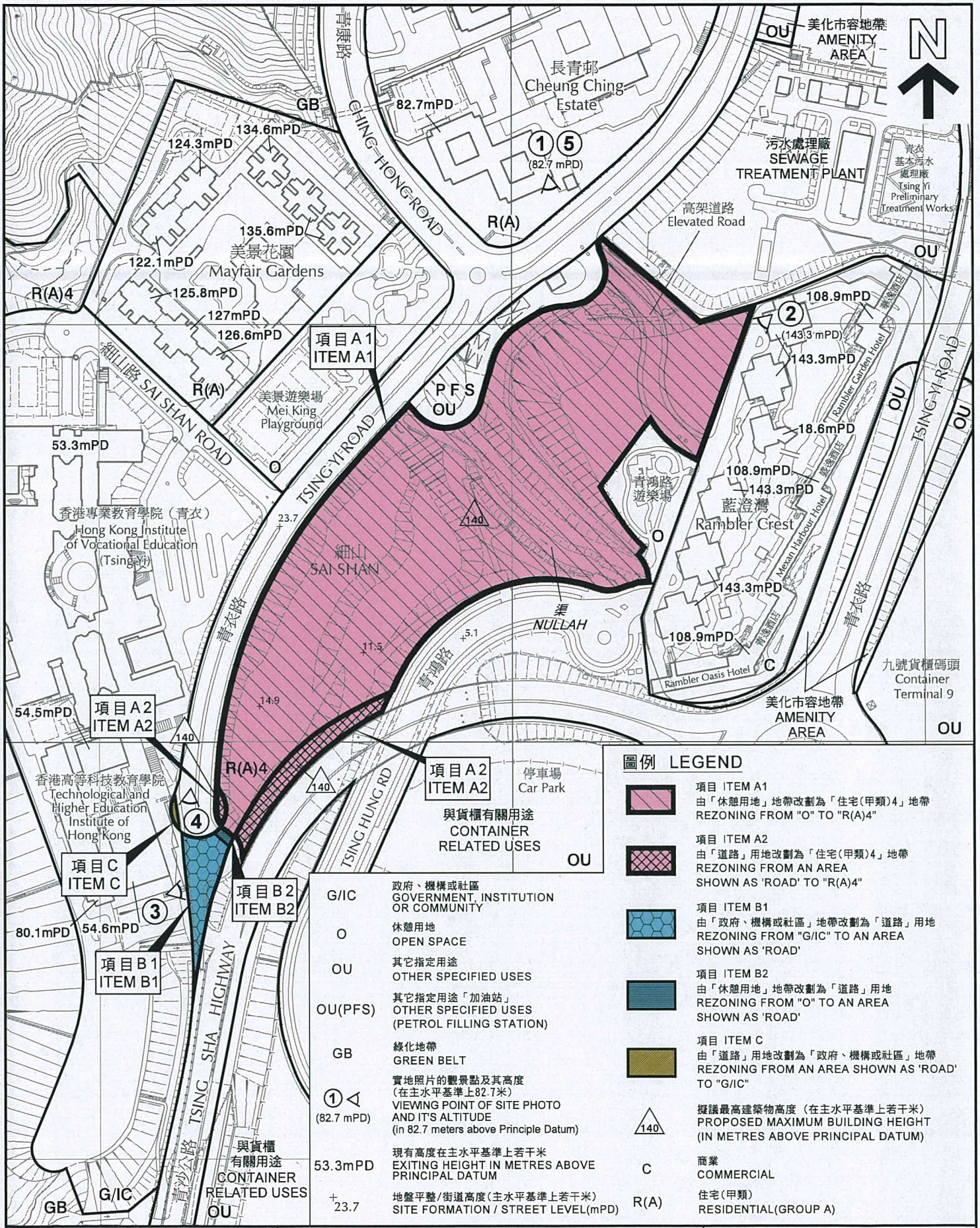
SCALE 1 : 7 500 比例尺

米 METRES 100 0 100 200 300 米 METRES

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
2



圖例 LEGEND

	項目 ITEM A1 由「休憩用地」地帶改劃為「住宅(甲類)4」地帶 REZONING FROM "O" TO "R(A)4"
	項目 ITEM A2 由「道路」用地改劃為「住宅(甲類)4」地帶 REZONING FROM AN AREA SHOWN AS 'ROAD' TO "R(A)4"
	項目 ITEM B1 由「政府、機構或社區」地帶改劃為「道路」用地 REZONING FROM "G/IC" TO AN AREA SHOWN AS 'ROAD'
	項目 ITEM B2 由「休憩用地」地帶改劃為「道路」用地 REZONING FROM "O" TO AN AREA SHOWN AS 'ROAD'
	項目 ITEM C 由「道路」用地改劃為「政府、機構或社區」地帶 REZONING FROM AN AREA SHOWN AS 'ROAD' TO "G/IC"
G/IC	政府、機構或社區 GOVERNMENT, INSTITUTION OR COMMUNITY
O	休憩用地 OPEN SPACE
OU	其它指定用途 OTHER SPECIFIED USES
OU(PFS)	其它指定用途「加油站」 OTHER SPECIFIED USES (PETROL FILLING STATION)
GB	綠化地帶 GREEN BELT
① (82.7 mPD)	實地照片的觀景點及其高度 (在主水平基準上82.7米) VIEWING POINT OF SITE PHOTO AND IT'S ALTITUDE (in 82.7 meters above Principle Datum)
53.3mPD	現有高度在主水平基準上若干米 EXITING HEIGHT IN METRES ABOVE PRINCIPAL DATUM
+23.7	地盤平整/街道高度(主水平基準上若干米) SITE FORMATION / STREET LEVEL(mPD)
140	擬議最高建築物高度（在主水平基準上若干米） PROPOSED MAXIMUM BUILDING HEIGHT (IN METRES ABOVE PRINCIPAL DATUM)
C	商業 COMMERCIAL
R(A)	住宅(甲類) RESIDENTIAL(GROUP A)

本摘要圖於2015年6月17日擬備，
所根據的資料為測量圖編號
10-NE-5C/D, 10A/B
EXTRACT PLAN PREPARED ON 17.6.2015
BASED ON SURVEY SHEETS No.
10-NE-5B/D, 10A/B

平面圖 - 項目A1,A2,B1,B2及C
SITE PLAN - ITEMS A1,A2,B1,B2 AND C

青衣分區計劃大綱核准圖編號 S/TY/26
的擬議修訂項目
PROPOSED AMENDMENTS TO APPROVED TSING YI OUTLINE ZONING PLAN No. S/TY/26

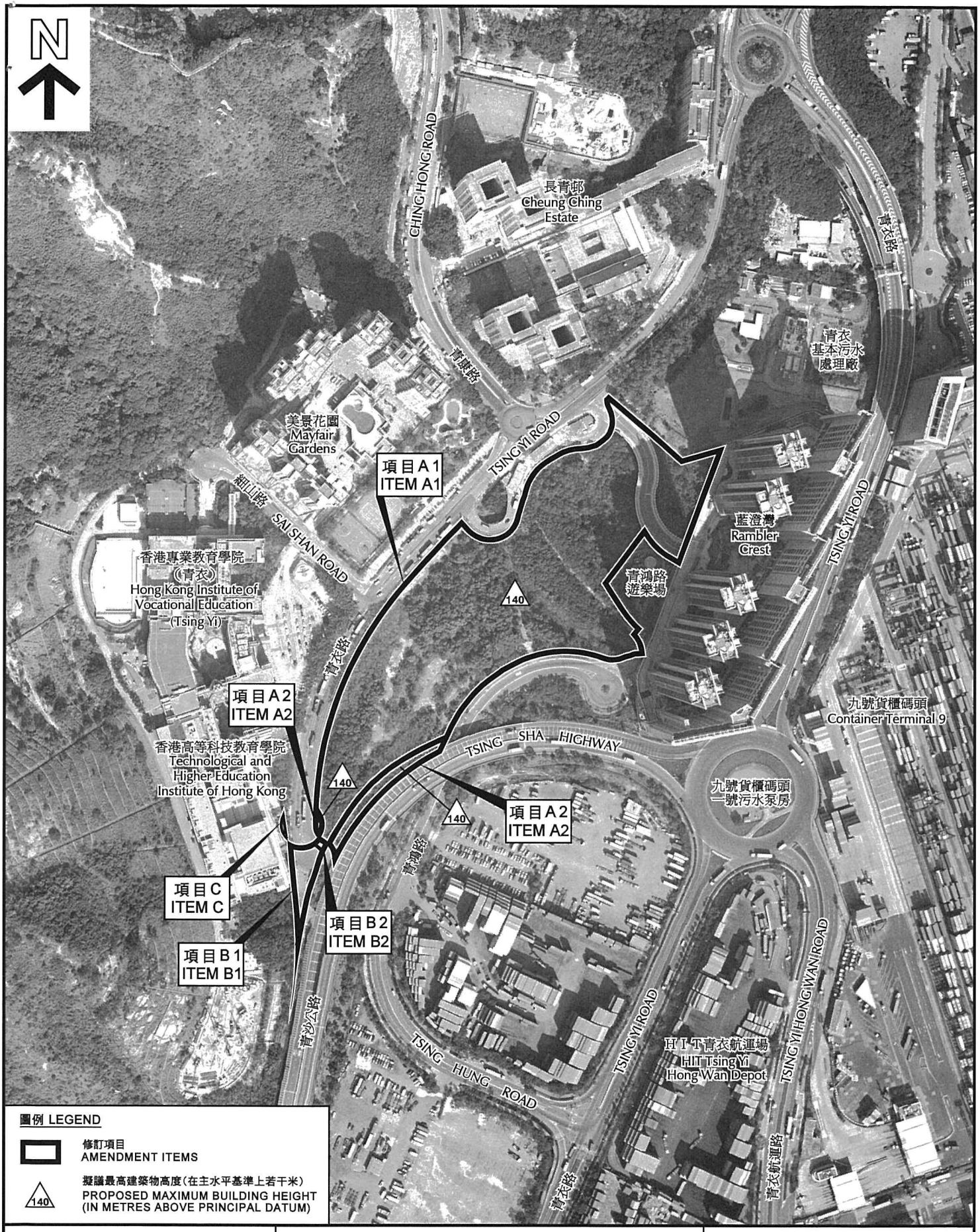
SCALE 1 : 3 000 比例尺

米 METRES 50 0 50 100 米 METRES

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
3



本摘要圖於2015年6月16日擬備，
所根據的資料為地政總署於2014年1月23日
拍得的航攝照片編號CS49027
EXTRACT PLAN PREPARED ON 16.6.2015
BASED ON AERIAL PHOTO No. CS49027
TAKEN ON 23.1.2014 BY LANDS DEPARTMENT

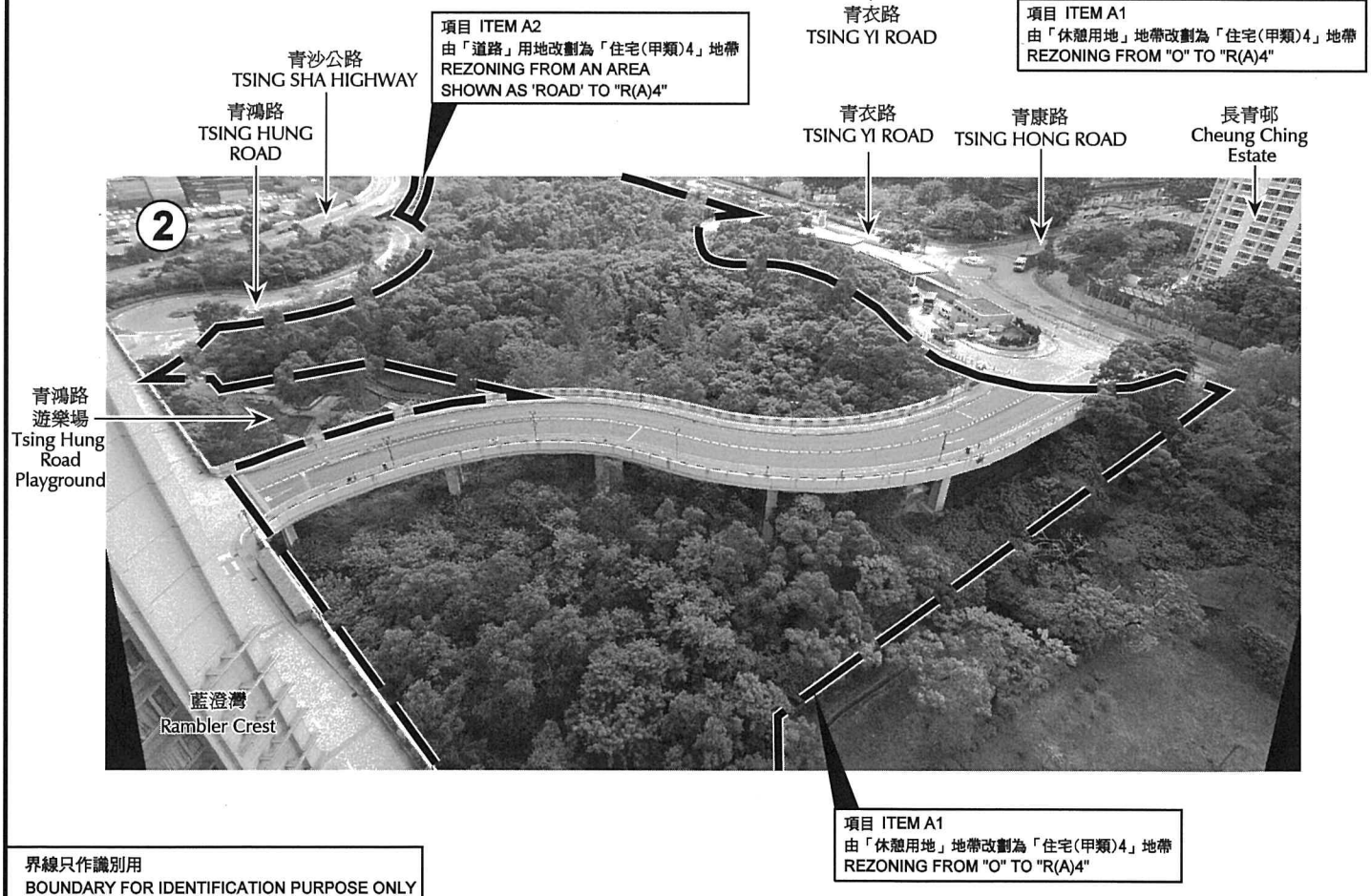
修訂項目A1,A2,B1,B2及C航空照片
AERIAL PHOTO OF AMENDMENT ITEMS A1,A2,B1,B2 AND C

青衣分區計劃大綱核准圖編號 S/TY/26
的擬議修訂項目
PROPOSED AMENDMENTS TO APPROVED TSING YI OUTLINE ZONING PLAN No. S/TY/26

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
4



界線只作識別用
BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

本圖於2015年6月17日擬備，所根據的資料為攝於2015年6月9日的實地照片
PLAN PREPARED ON 17.6.2015
BASED ON SITE PHOTOS
TAKEN ON 9.6.2015

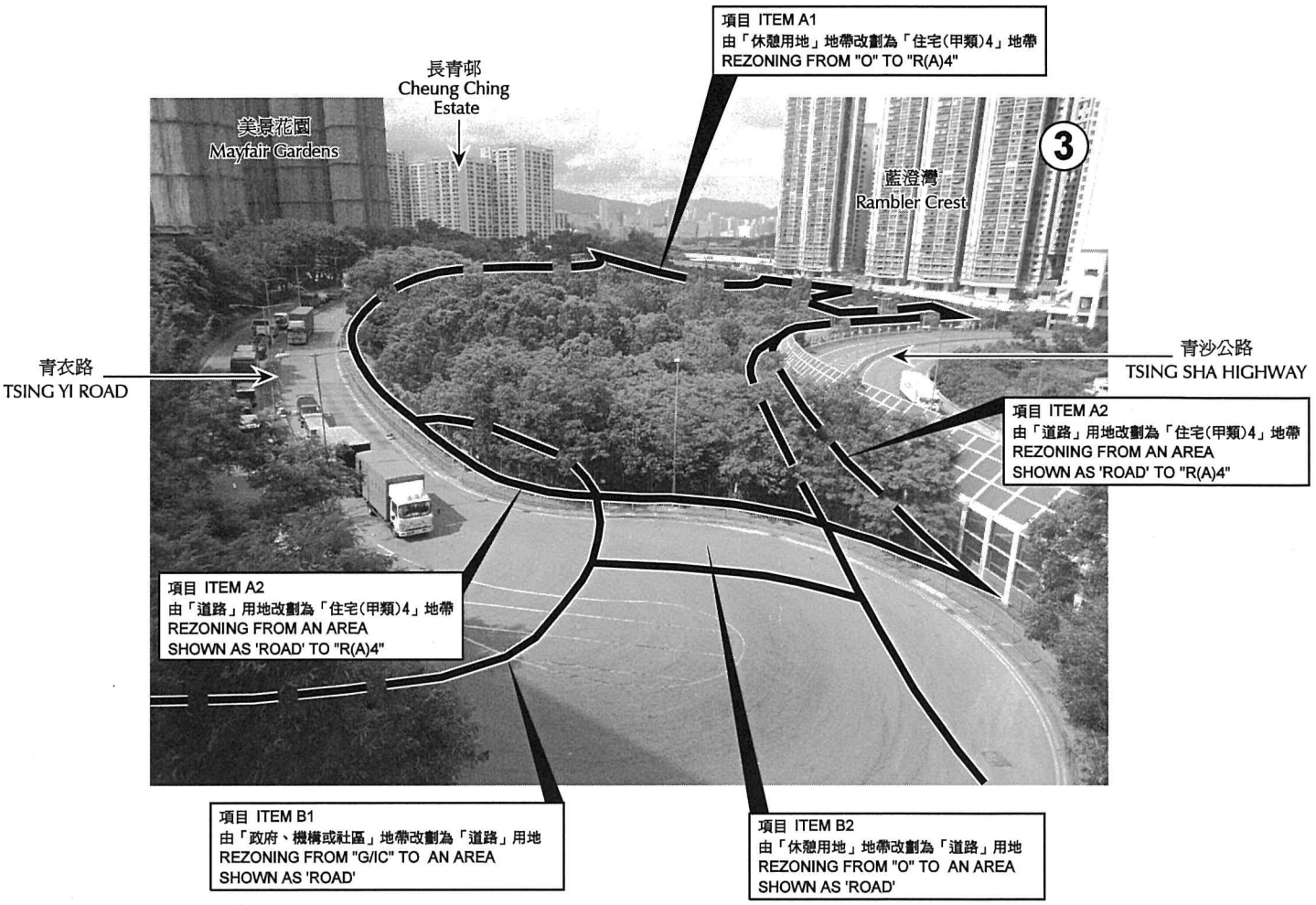
實地照片 SITE PHOTOS

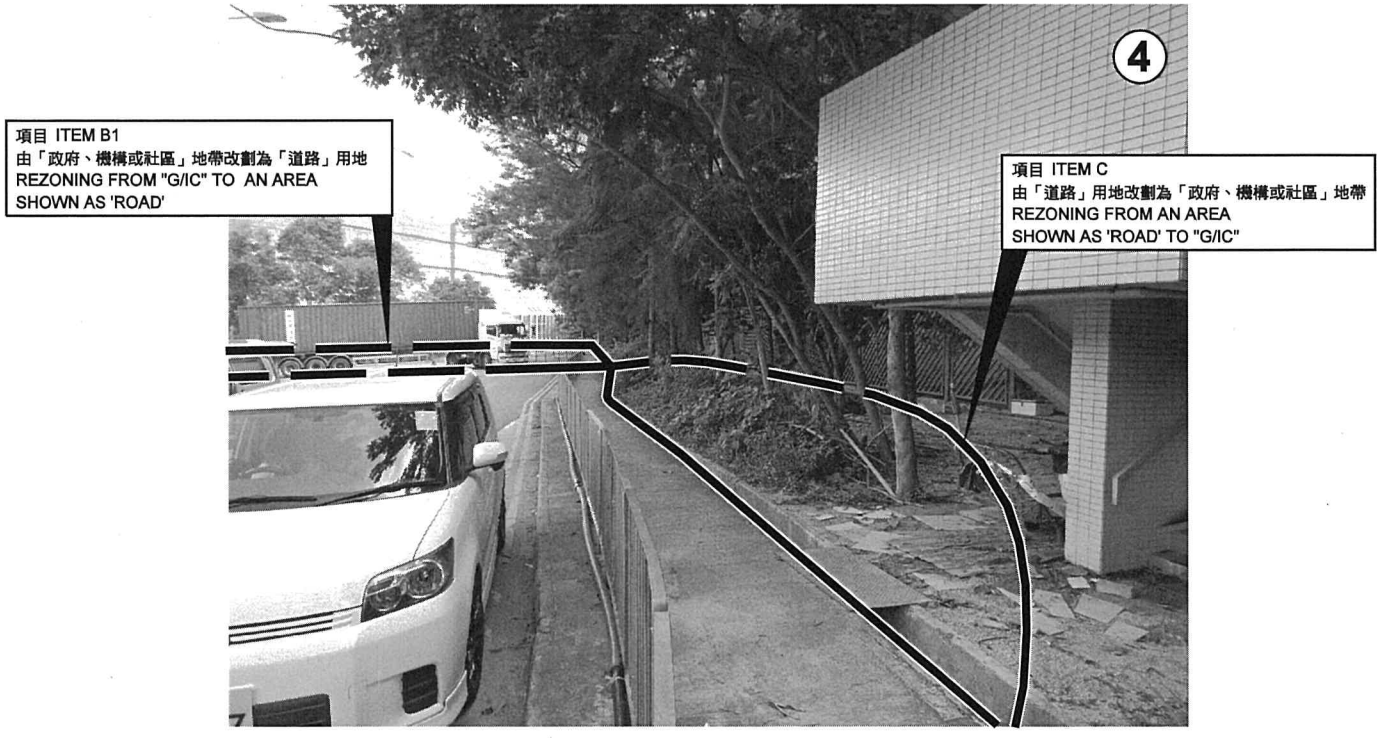
青衣分區計劃大綱核准圖編號 S/TY/26
的擬議修訂項目
PROPOSED AMENDMENTS TO
APPROVED TSING YI
OUTLINE ZONING PLAN No. S/TY/26

規劃署
PLANNING
DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
5





界線只作識別用
BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

本圖於2015年6月16日擬備，所根據的資料為攝於2015年6月9日的實地照片
PLAN PREPARED ON 16.6.2015
BASED ON SITE PHOTOS
TAKEN ON 9.6.2015

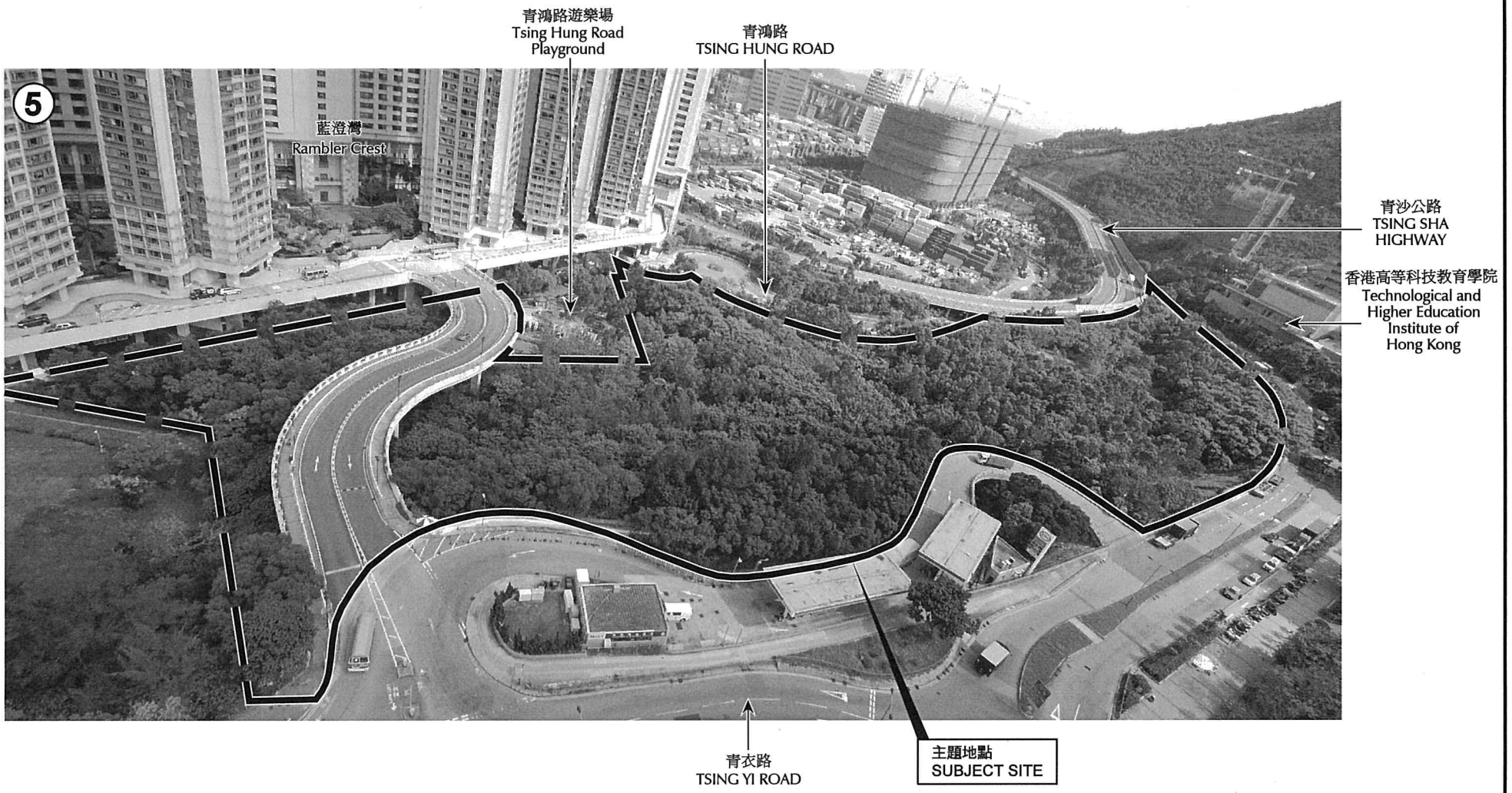
實地照片 SITE PHOTOS

青衣分區計劃大綱核准圖編號 S/TY/26
的擬議修訂項目
PROPOSED AMENDMENTS TO
APPROVED TSING YI
OUTLINE ZONING PLAN No. S/TY/26

規劃署
PLANNING
DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
6



界線只作識別用
BOUNDARY FOR IDENTIFICATION PURPOSE ONLY

本圖於2015年6月17日擬備，
所根據的資料為攝於2015年6月9日
的實地照片

PLAN PREPARED ON 17.6.2015
BASED ON SITE PHOTO
TAKEN ON 9.6.2015

實地照片-擬議發展的邊界
SITE PHOTO-PROPOSED DEVELOPMENT SITE BOUNDARY

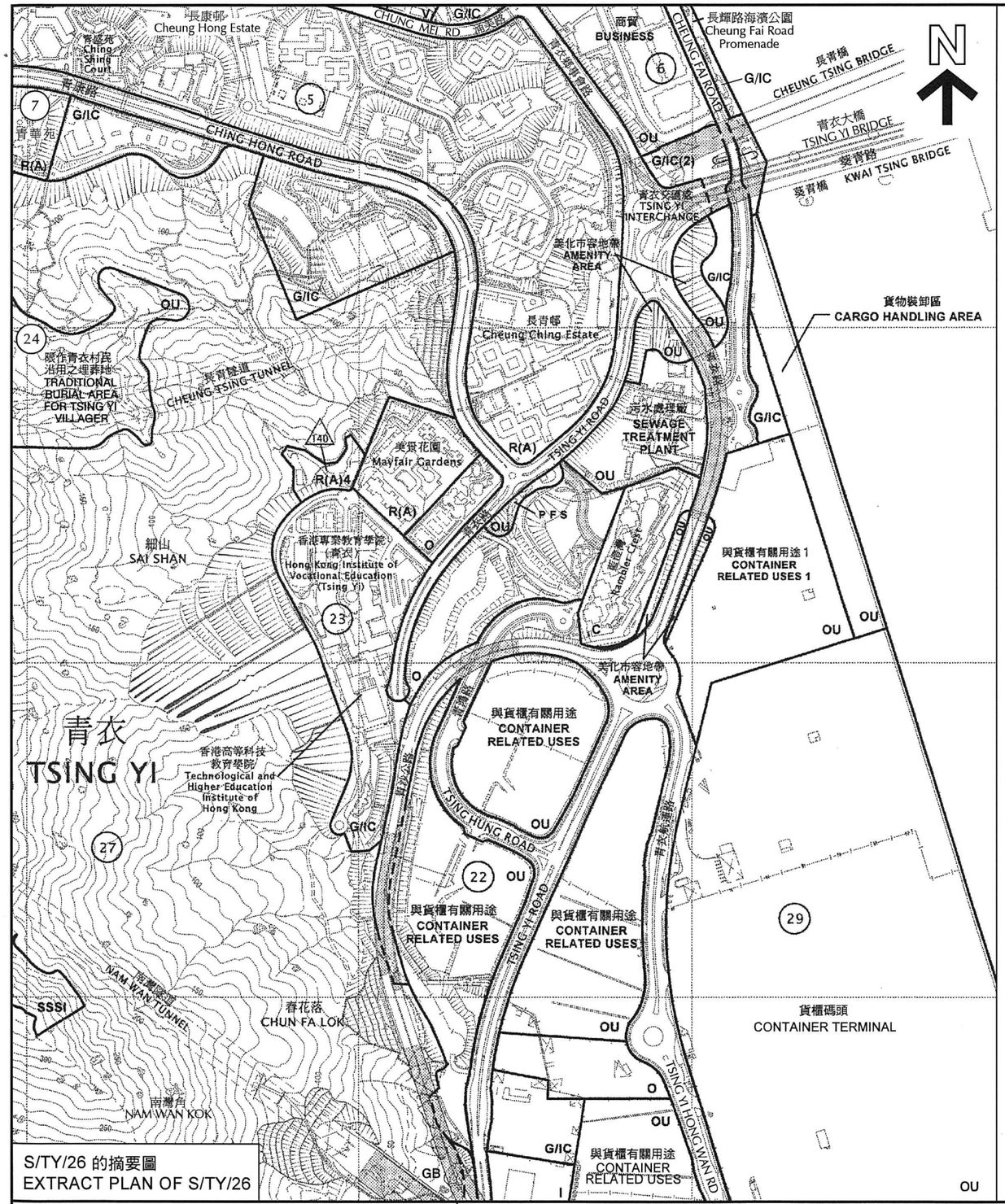
青衣分區計劃大綱核准圖編號 S/TY/26
的擬議修訂項目

PROPOSED AMENDMENTS TO
APPROVED TSING YI
OUTLINE ZONING PLAN No. S/TY/26

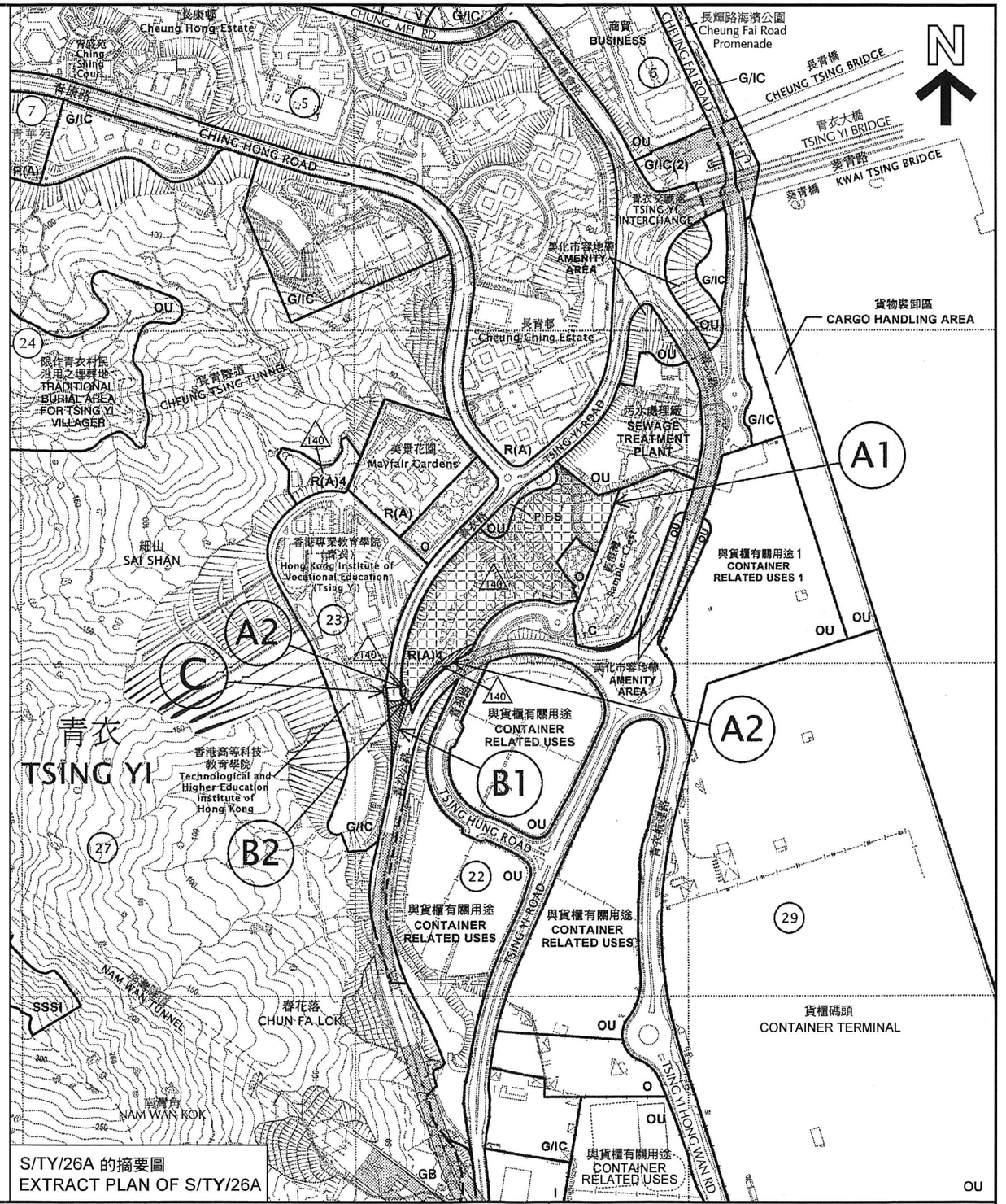
規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
7



S/TY/26 的摘要圖
EXTRACT PLAN OF S/TY/26



S/TY/26A 的摘要圖
EXTRACT PLAN OF S/TY/26A

本摘要圖於2015年6月17日擬備，
所根據的資料為青衣分區計劃大綱核准圖編號 S/TY/26
和青衣分區計劃大綱草圖編號 S/TY/26A

EXTRACT PLAN PREPARED ON 17.6.2015 BASED ON APPROVED TSING YI OUTLINE ZONING PLAN No. S/TY/26 AND DRAFT TSING YI OUTLINE ZONING PLAN No. S/TY/26A

修訂項目A1,A2,B1,B2及C青衣分區計劃大綱圖上的現有與擬議用途地帶的比較
COMPARISON OF EXISTING AND PROPOSED ZONINGS ON THE TSING YI OUTLINE ZONING PLAN FOR AMENDMENT ITEMS A1,A2,B1,B2 AND C

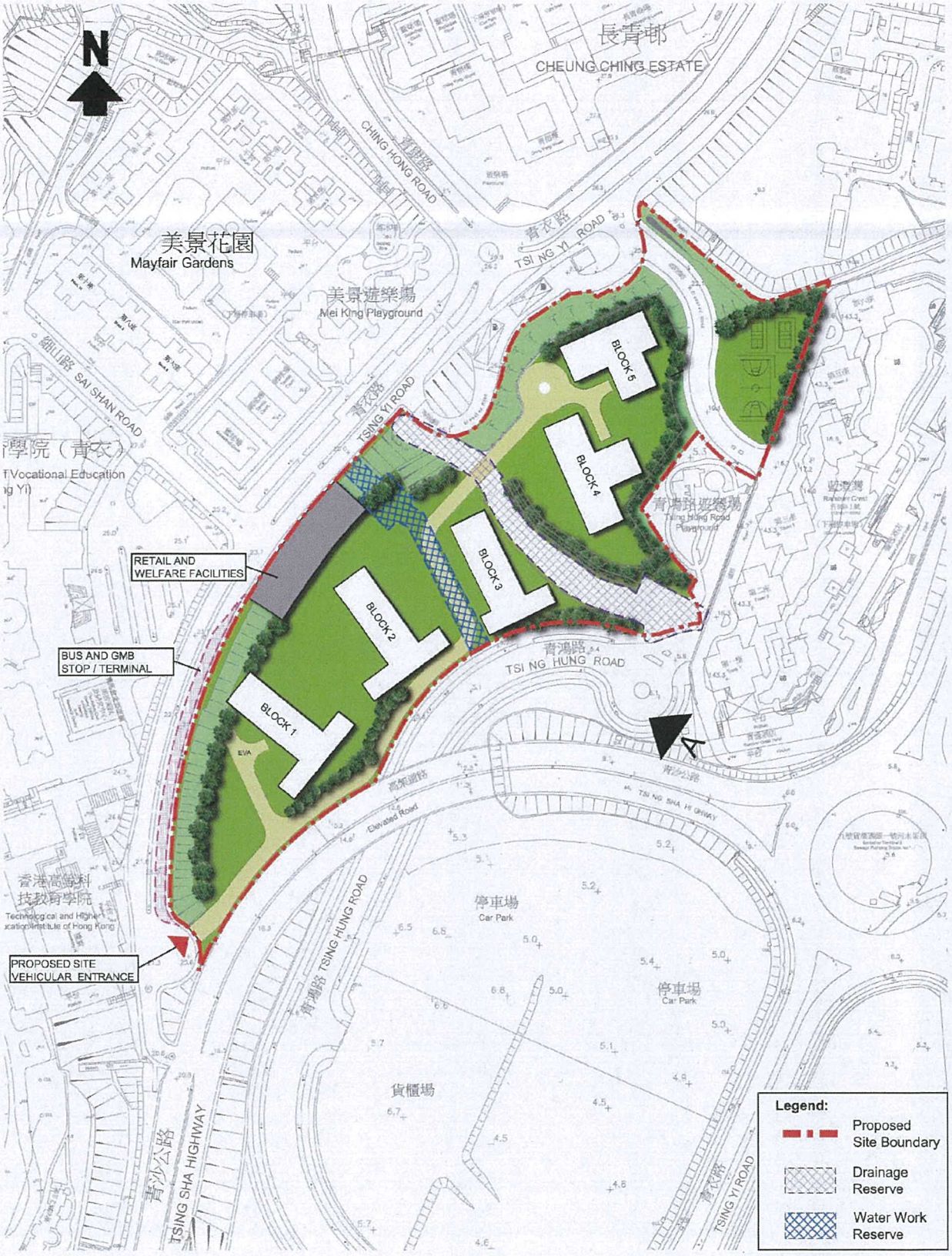
SCALE 1 : 7 500 比例尺

METRES 100 0 100 200 300 400 500 600 700 METRES

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
8



SOURCE : SITE PLAN FROM PLANNING SECTIONS, HOUSING DEPARTMENT

本圖於2015年7月7日擬備

PLAN PREPARED ON 7.7.2015

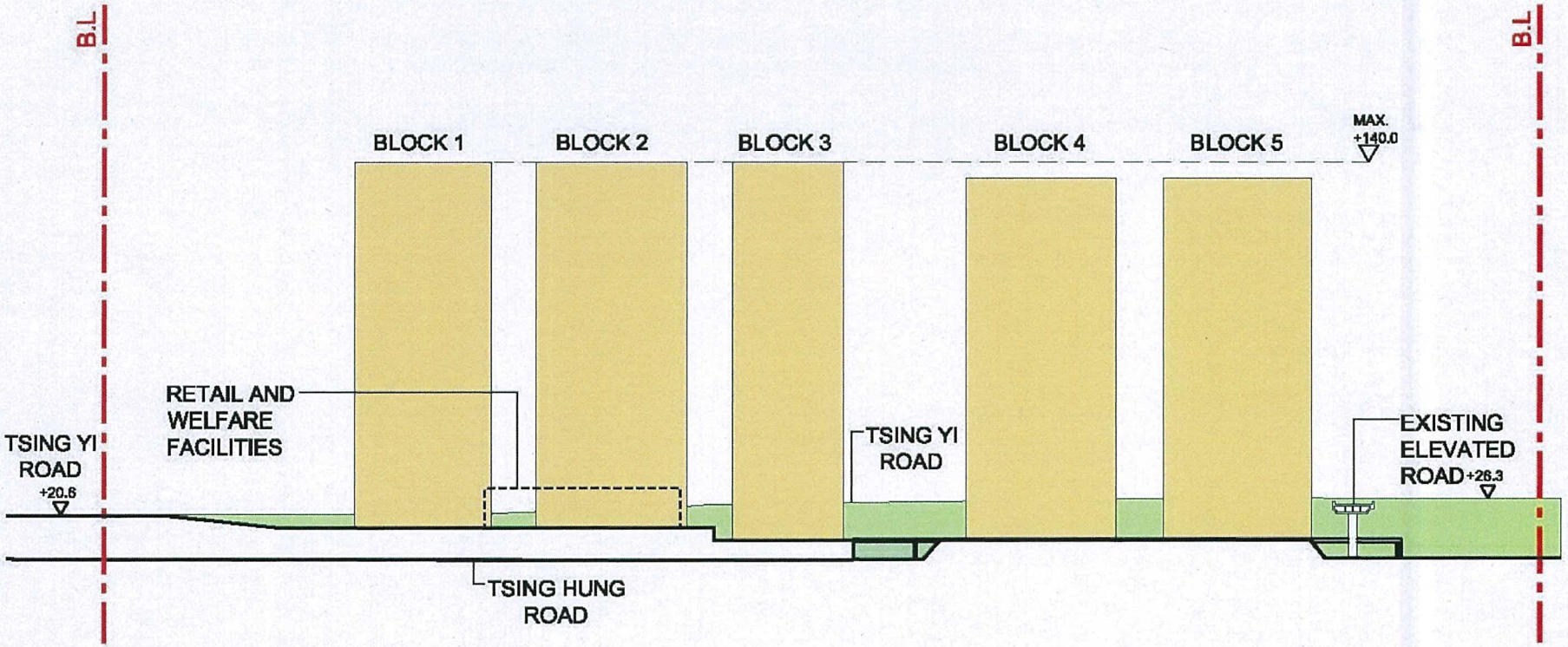
平面圖 LAYOUT PLAN

青衣青鴻路擬議公營房屋發展
（只作標示用途，有待詳細設計）
PUBLIC HOUSING DEVELOPMENT AT TSING HUNG ROAD, TSING YI
(FOR INDICATIVE PURPOSE ONLY, SUBJECT TO DETAILED DESIGN)

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
9



ELEVATION A

Legend:

Proposed Site Boundary

*Incl. 1s Entrance Lobby

SOURCE : ELEVATION PLAN FROM PLANNING SECTIONS, HOUSING DEPARTMENT

本圖於2015年7月7日擬備

PLAN PREPARED ON 7.7.2015

立視圖 ELEVATION

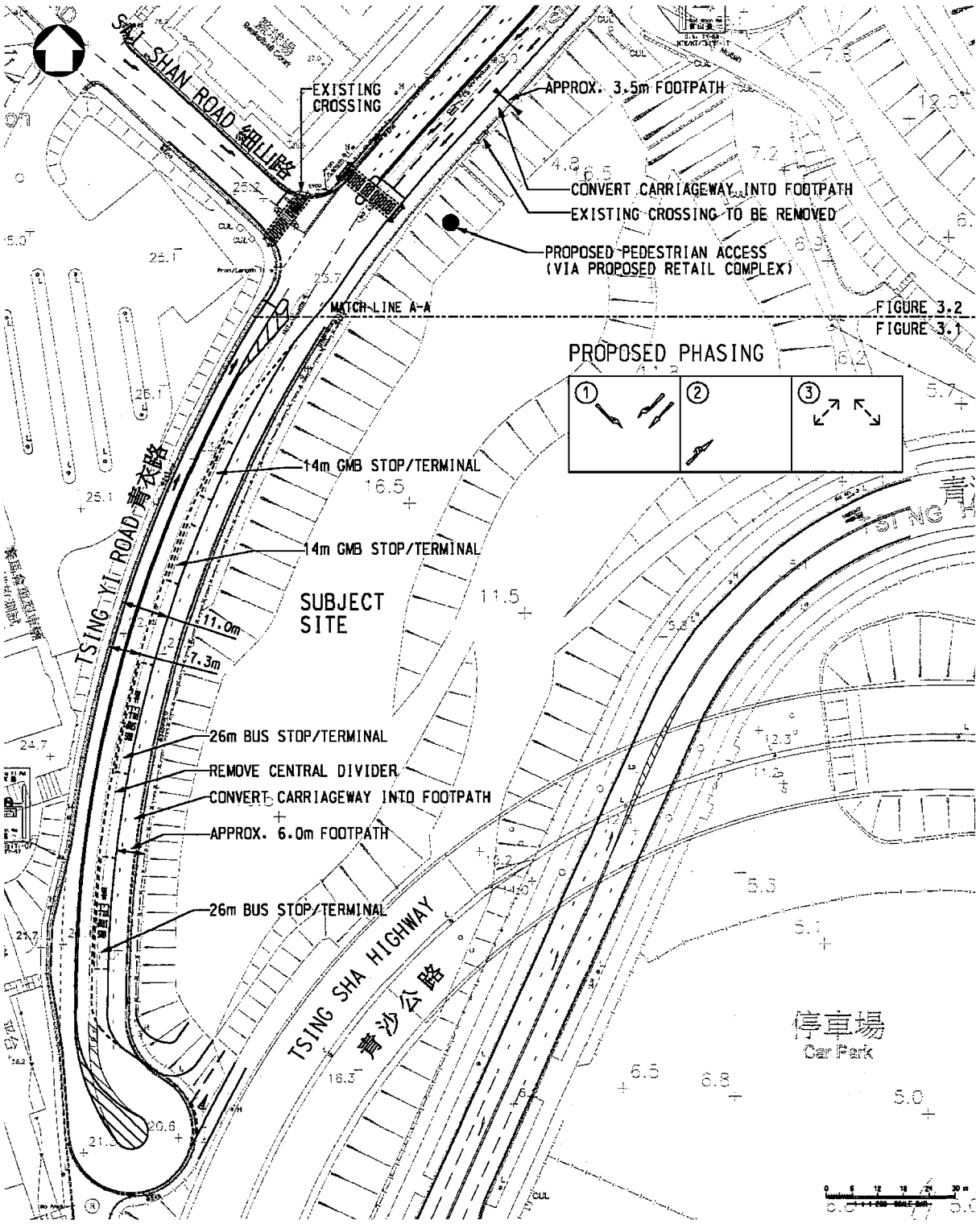
青衣青鴻路擬議公營房屋發展
（只作標示用途，有待詳細設計）

PUBLIC HOUSING DEVELOPMENT AT TSING HUNG ROAD, TSING YI
(FOR INDICATIVE PURPOSE ONLY, SUBJECT TO DETAILED DESIGN)

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
10



SOURCE : TRAFFIC IMPACT ASSESSMENT, HOUSING DEPARTMENT

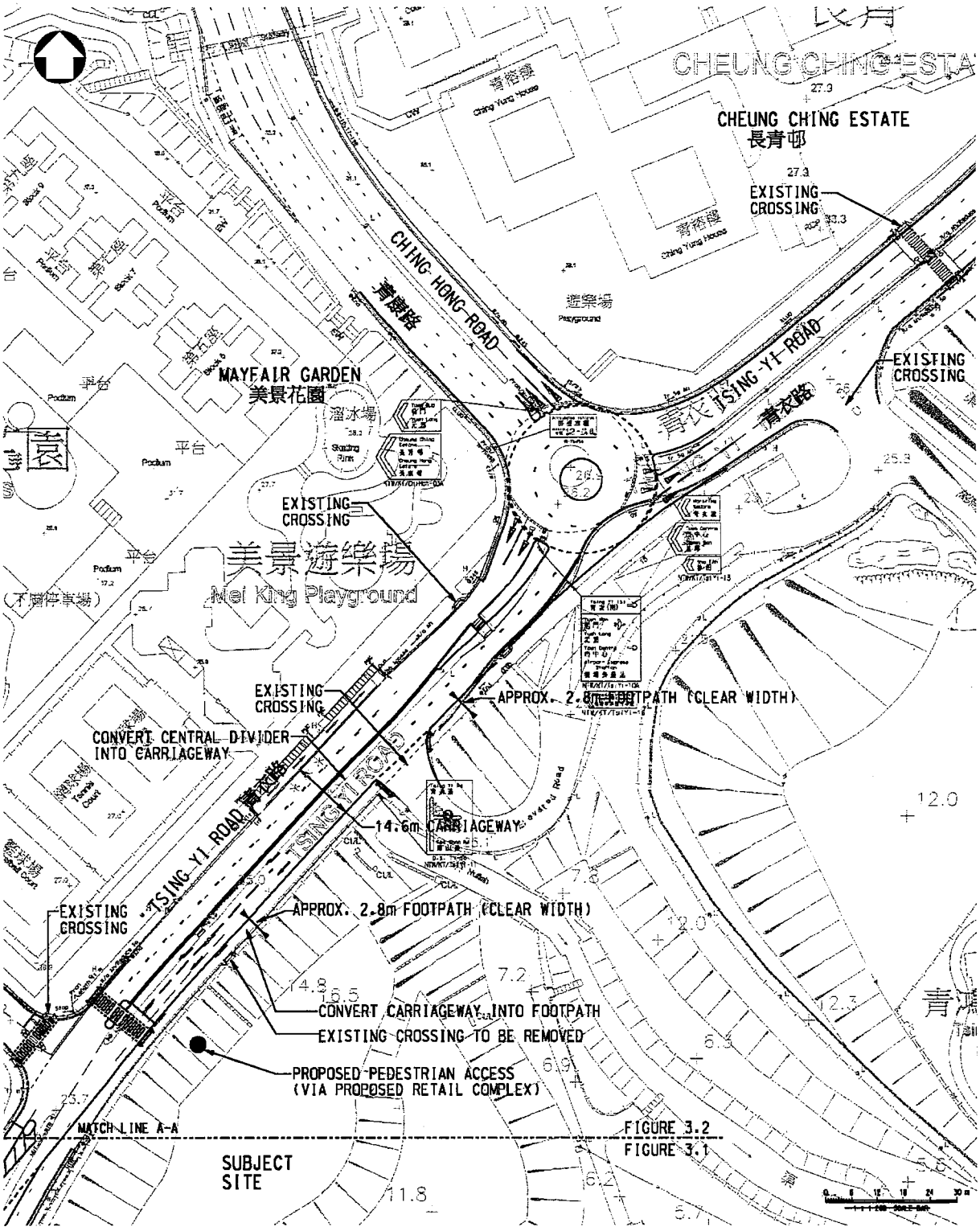
本圖於2015年7月8日擬備
PLAN PREPARED ON 8.7.2015

位於青衣路擬議的公共交通設施及道路改善工程
PROPOSED PUBLIC TRANSPORT FACILITIES AND ROAD IMPROVEMENT WORKS IN TSING YI ROAD

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
11



SOURCE : TRAFFIC IMPACT ASSESSMENT, HOUSING DEPARTMENT

本圖於2015年7月8日擬備
PLAN PREPARED ON 8.7.2015

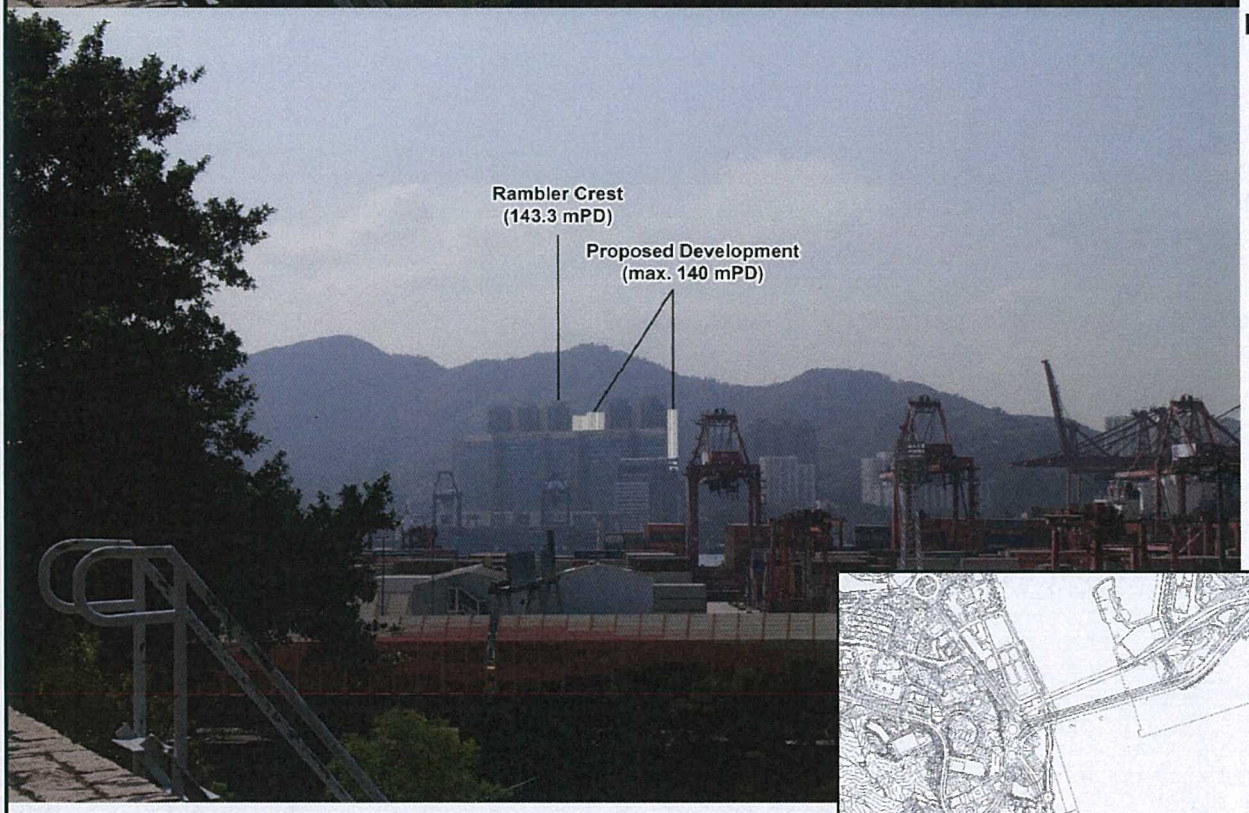
位於青衣路擬議的公共交通設施及道路改善工程
PROPOSED PUBLIC TRANSPORT FACILITIES AND ROAD IMPROVEMENT WORKS IN TSING YI ROAD

規劃署
PLANNING DEPARTMENT

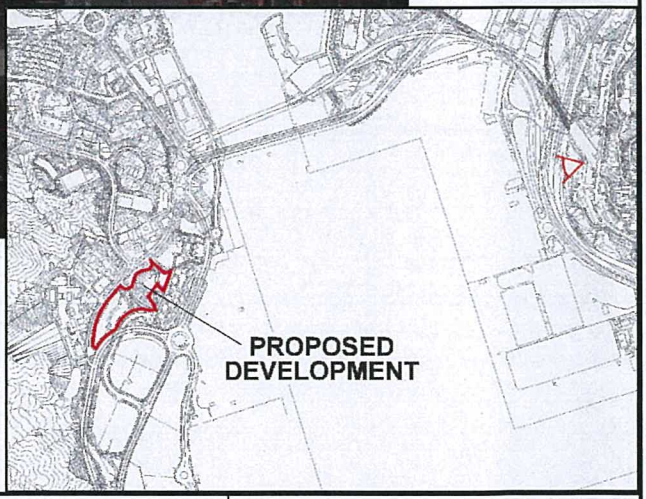
參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
12

Existing View



Photomontage



SOURCE : FIGURE A OF VISUAL APPRAISAL
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT

本圖於2015年6月18日擬備
PLAN PREPARED ON 18.6.2015

由VP1荔景邨仰景樓觀望
VIEW FROM VP1 SITTING-OUT AREA OUTSIDE
YEUNG KING HOUSE OF LAI KING ESTATE

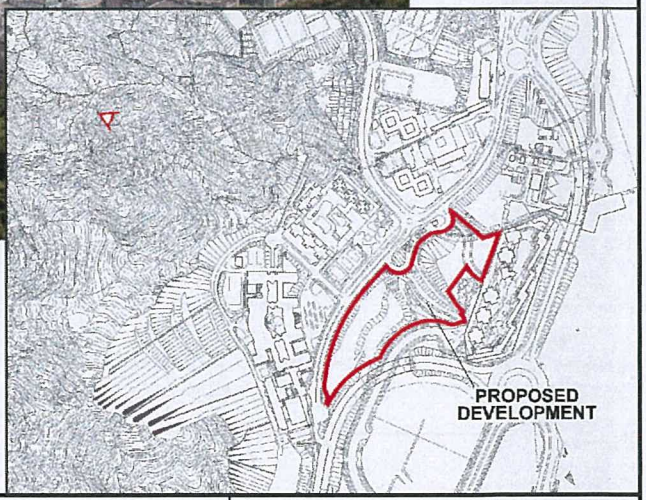
規劃署
PLANNING
DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
13

Existing View

Photomontage



SOURCE : FIGURE E OF VISUAL APPRAISAL
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT

本圖於2015年6月18日擬備

PLAN PREPARED ON 18.6.2015

由VP5青衣細山主水平基準上159米觀望

VIEW FROM VP5 TSING YI SAI SHAN
AT ABOUT 159mPD

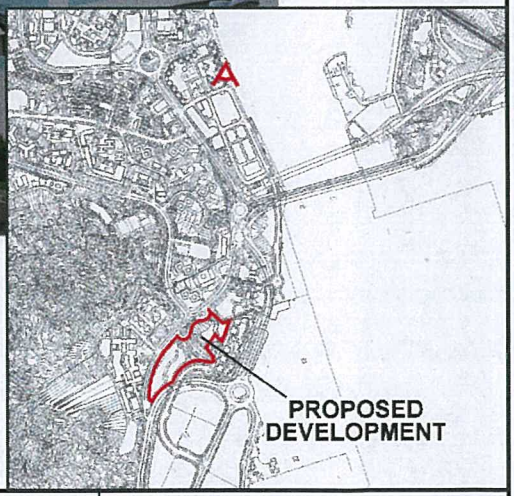
規劃署
PLANNING
DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
14

Existing View

Photomontage



SOURCE : FIGURE J OF VISUAL APPRAISAL
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT

本圖於2015年6月18日擬備
PLAN PREPARED ON 18.6.2015

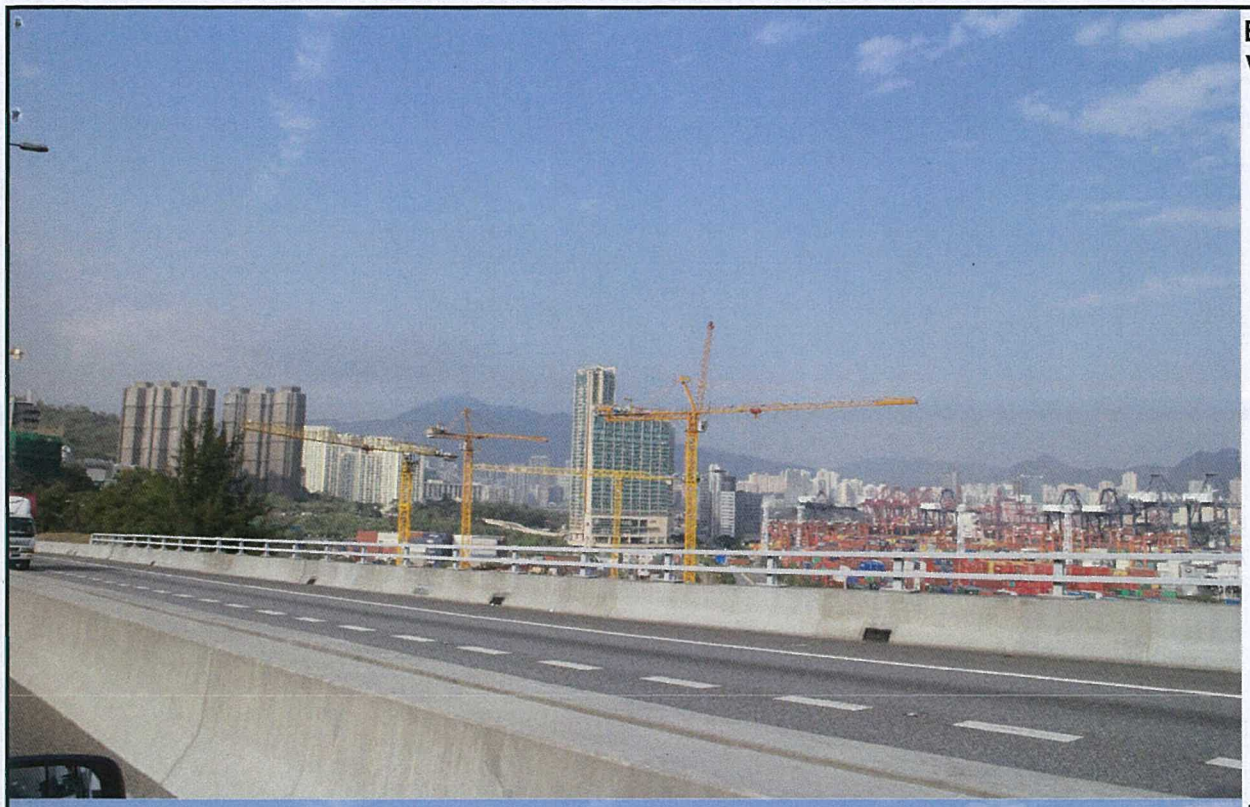
由VP10青衣海濱公園觀望
VIEW FROM VP10 TSING YI PROMENADE

規劃署
PLANNING DEPARTMENT

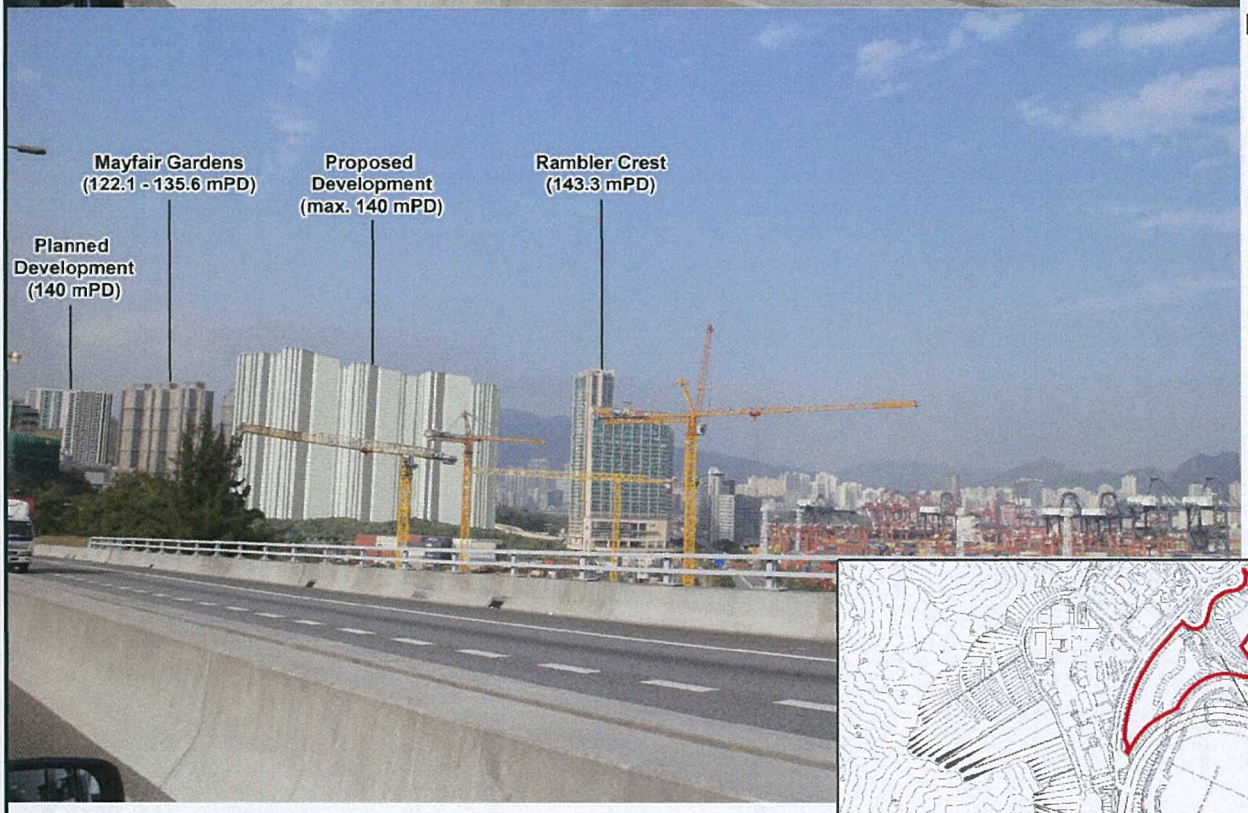
參考編號
REFERENCE No.
M/TY/15/6

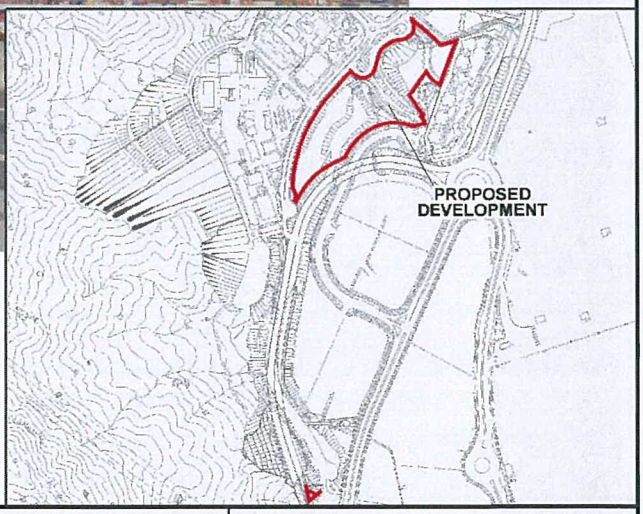
圖 PLAN
15

Existing View



Photomontage





SOURCE : FIGURE D OF VISUAL APPRAISAL
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT

本圖於2015年6月18日擬備
PLAN PREPARED ON 18.6.2015

由VP4青沙公路北行近南灣隧道觀望
VIEW FROM VP4 NORTHBOUND SLIPROAD OF
THE TSING SHA HIGHWAY
NEAR THE PORTAL OF NAM WAN TUNNEL

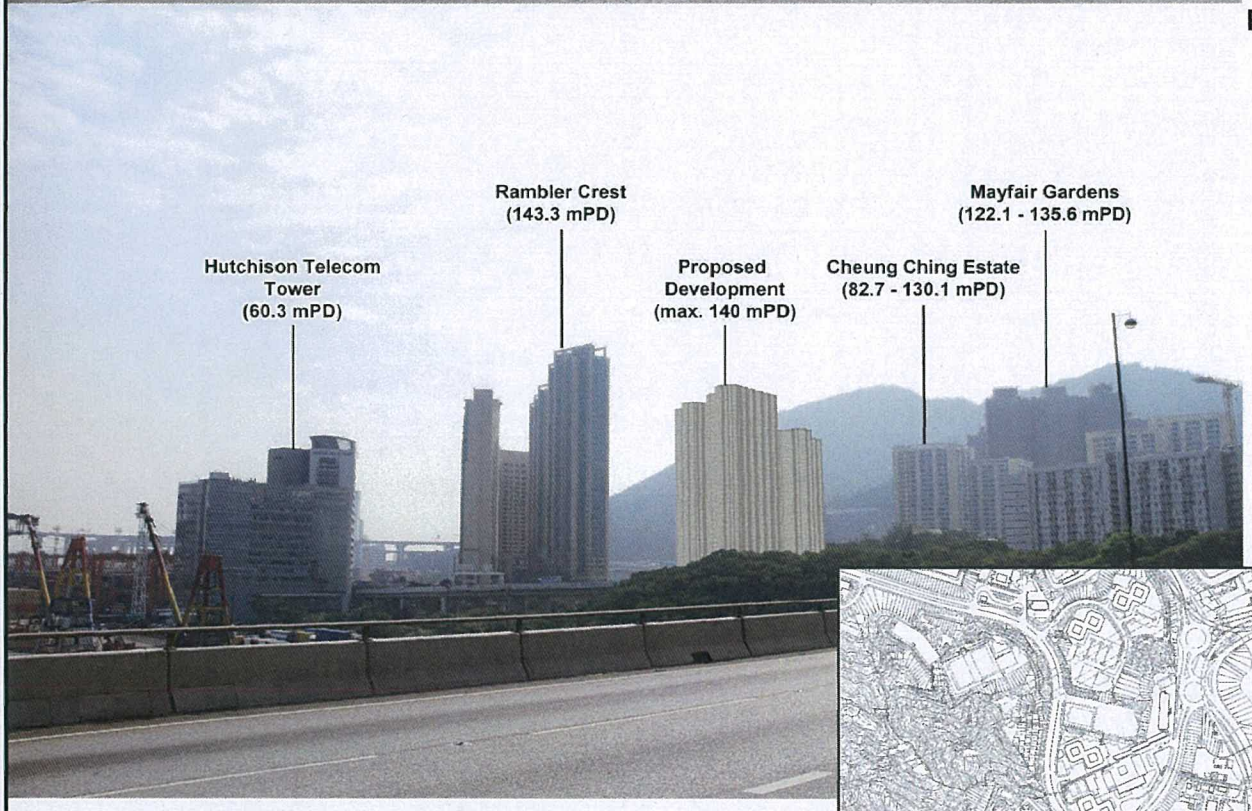
規劃署
PLANNING
DEPARTMENT

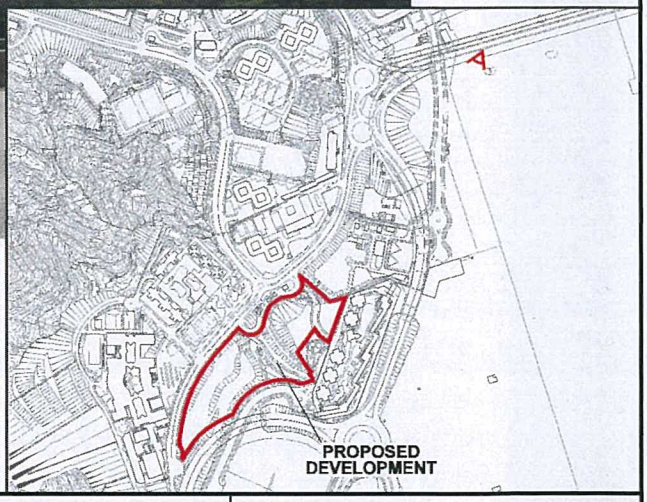
參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
16

Existing View

Photomontage





SOURCE : FIGURE H OF VISUAL APPRAISAL FROM PLANNING SECTIONS, HOUSING DEPARTMENT

本圖於2015年6月16日擬備
PLAN PREPARED ON 16.6.2015

由VP8葵青橋觀望
VIEW FROM VP8 KWAI TSING BRIDGE

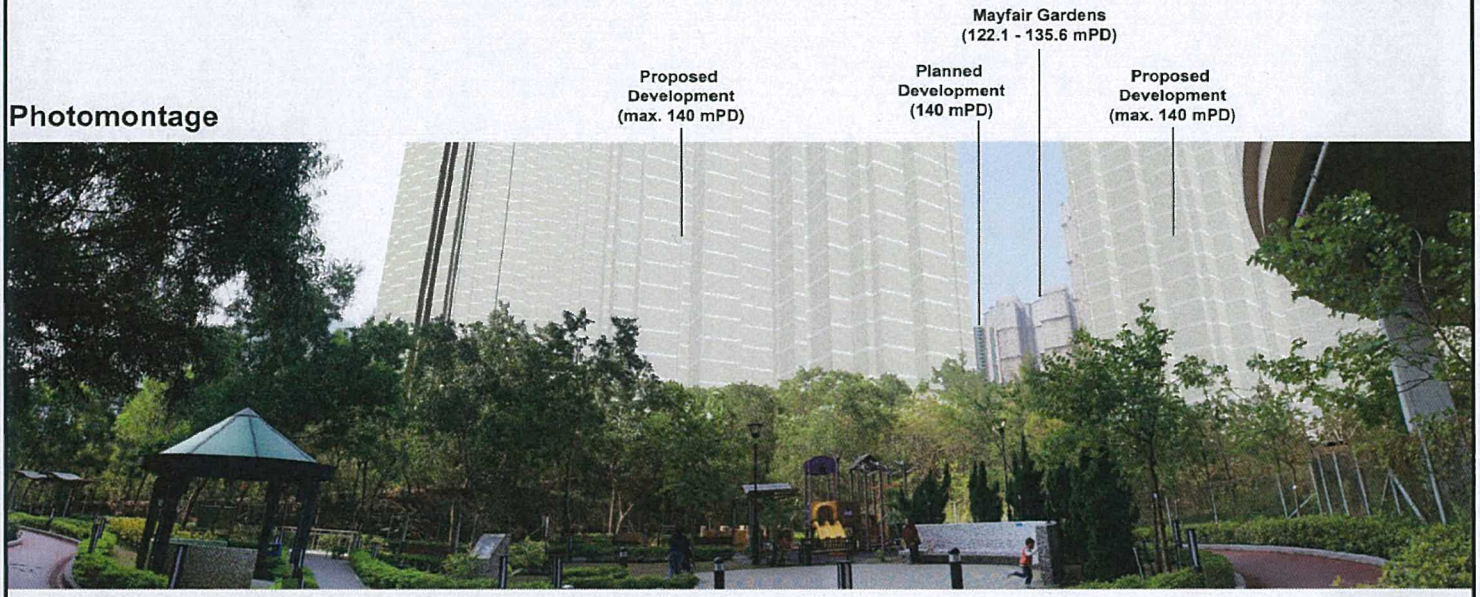
規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

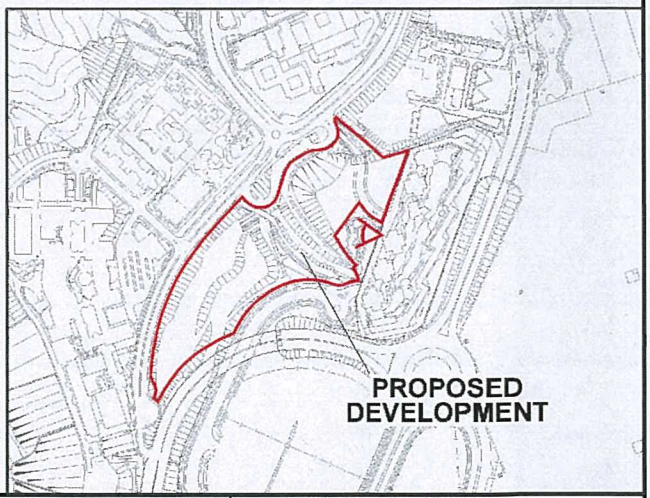
圖 PLAN
17

Existing View

Photomontage



SOURCE : FIGURE B OF VISUAL APPRAISAL
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT



本圖於2015年6月18日擬備
PLAN PREPARED ON 18.6.2015

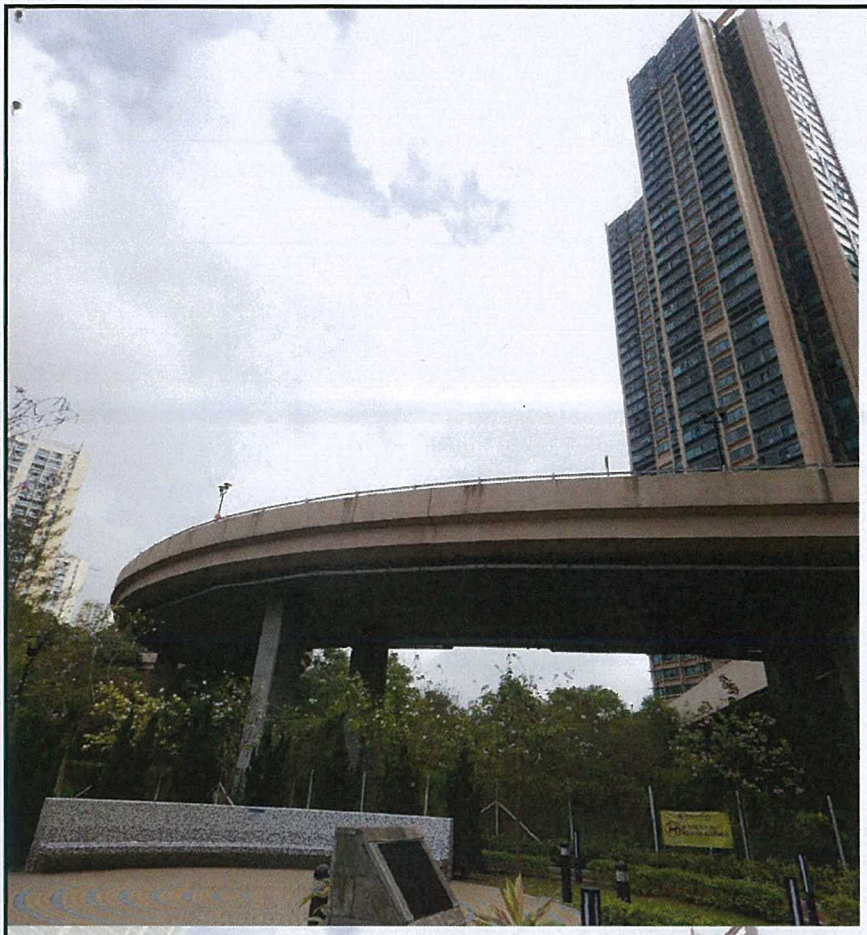
由VP2青鴻路公園東北角觀望
VIEW FROM VP2 NORTH-EASTERN CORNER OF
TSING HUNG ROAD PLAYGROUND

規劃署
PLANNING
DEPARTMENT

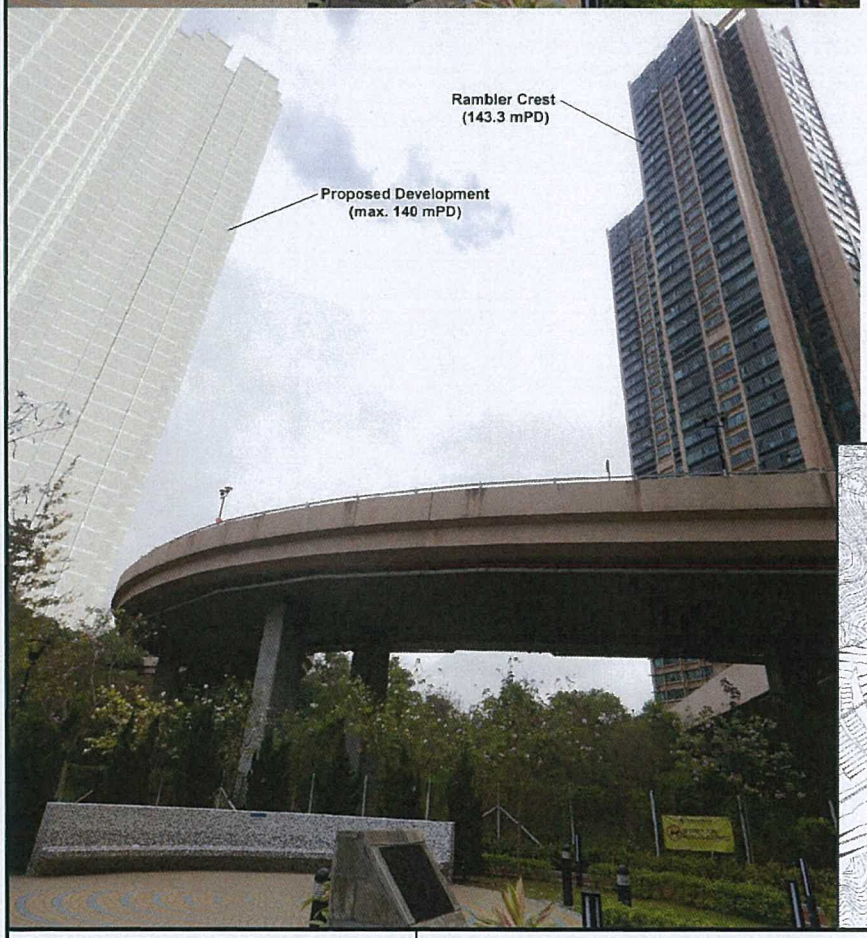
參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
18

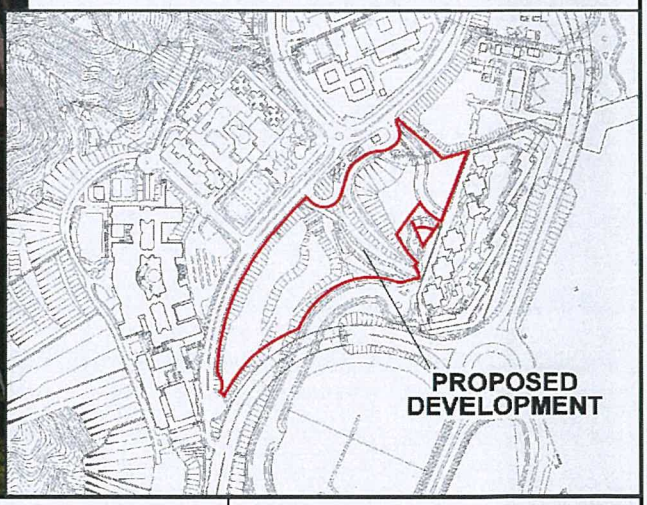
Existing View



Photomontage



SOURCE : FIGURE C OF VISUAL APPRAISAL
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT



本圖於2015年6月18日擬備
PLAN PREPARED ON 18.6.2015

由VP3青鴻路公園中心觀望
VIEW FROM VP3 CENTRE OF
TSING HUNG ROAD PLAYGROUND

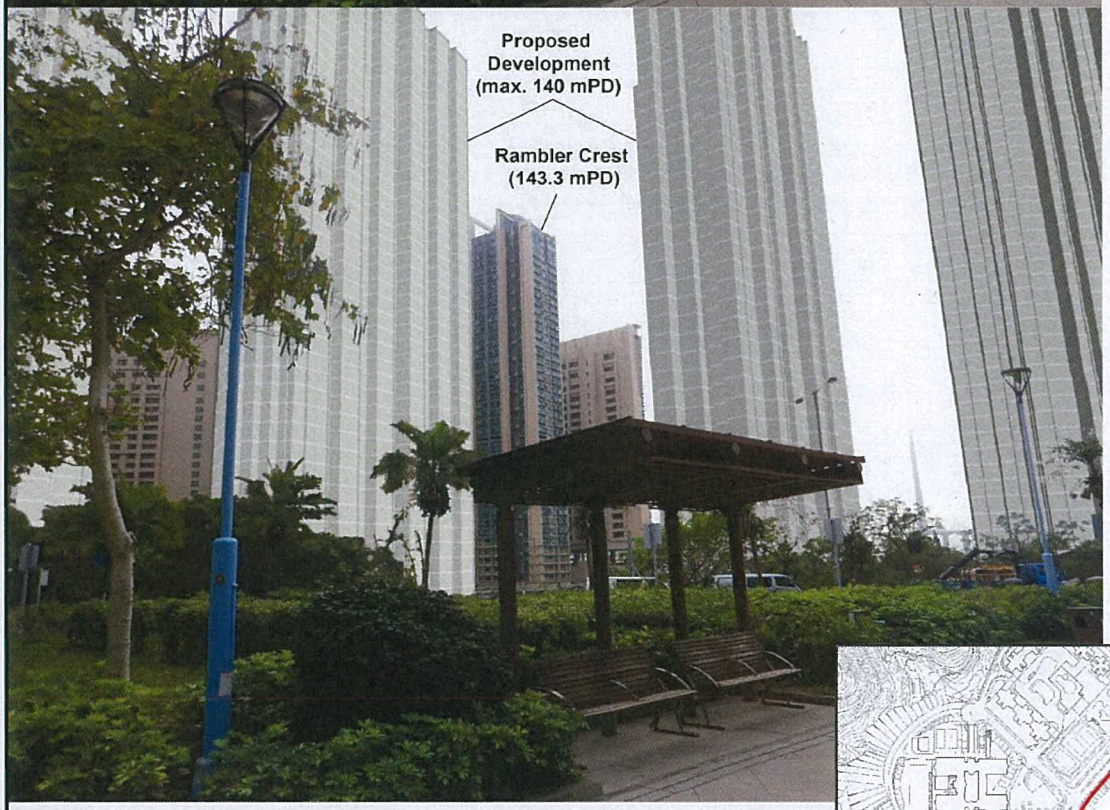
規劃署
PLANNING
DEPARTMENT

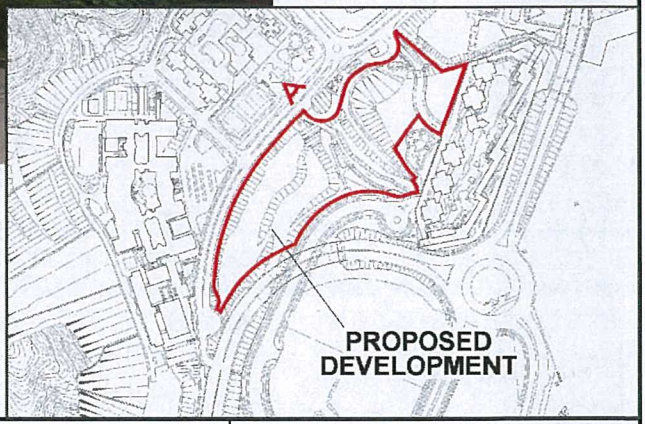
參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
19

Existing View

Photomontage





SOURCE : FIGURE G OF VISUAL APPRAISAL
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT

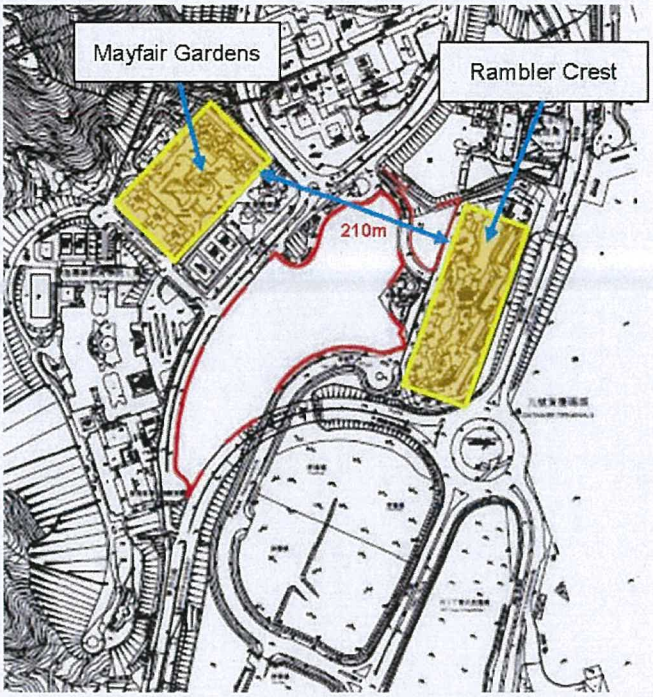
本圖於2015年6月18日擬備
PLAN PREPARED ON 18.6.2015

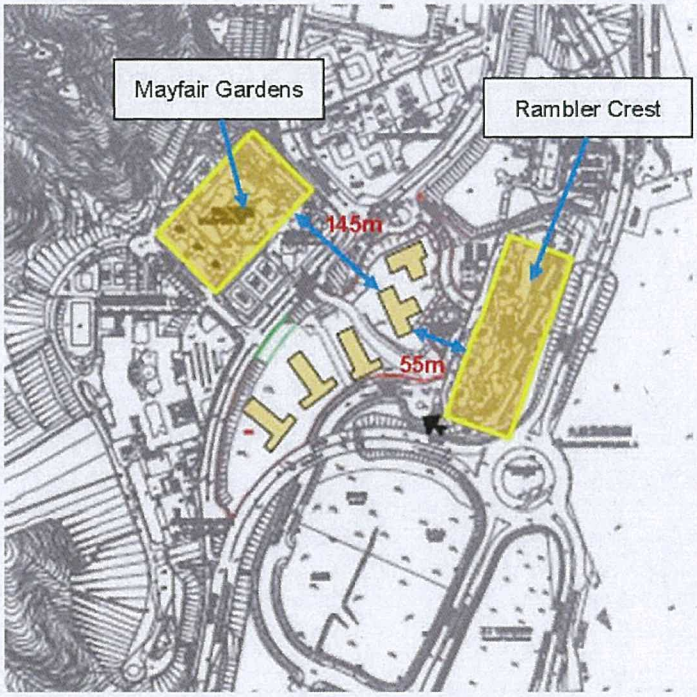
由VP7美景遊樂場觀望
VIEW FROM VP7 MEI KING PLAYGROUND

規劃署
PLANNING
DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
20





SOURCE : FIGURE 2.17 OF AIR VENTILATION ASSESSMENT
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT

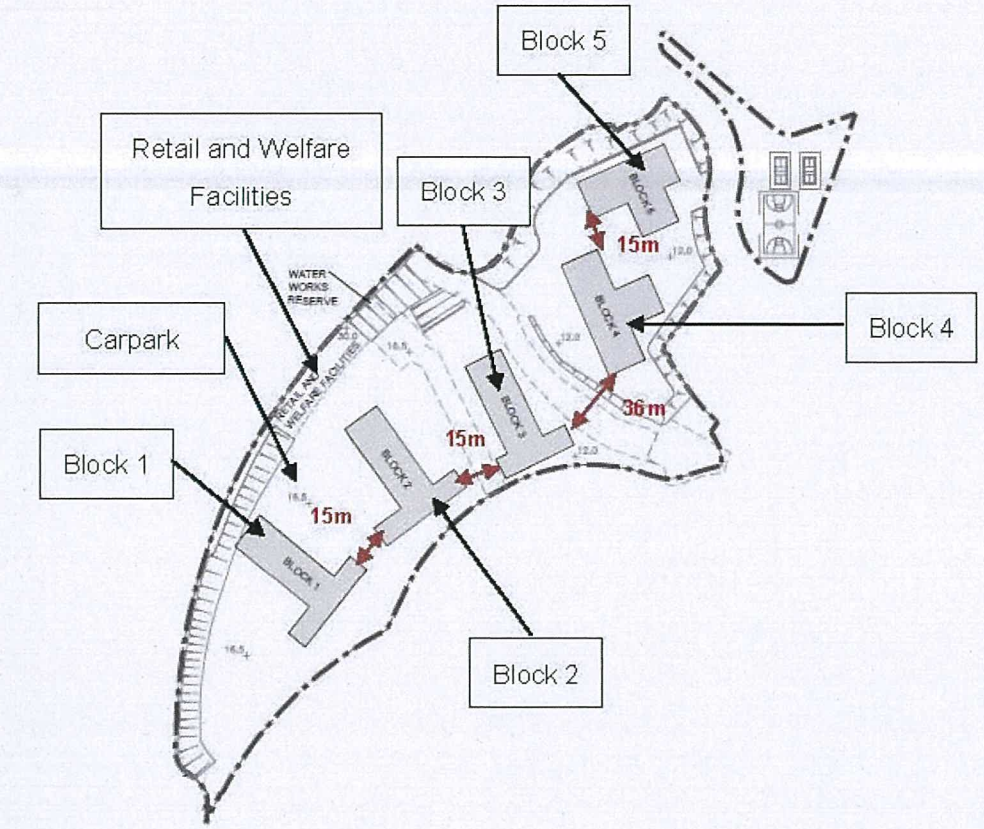
本圖於2015年7月8日擬備
PLAN PREPARED ON 8.7.2015

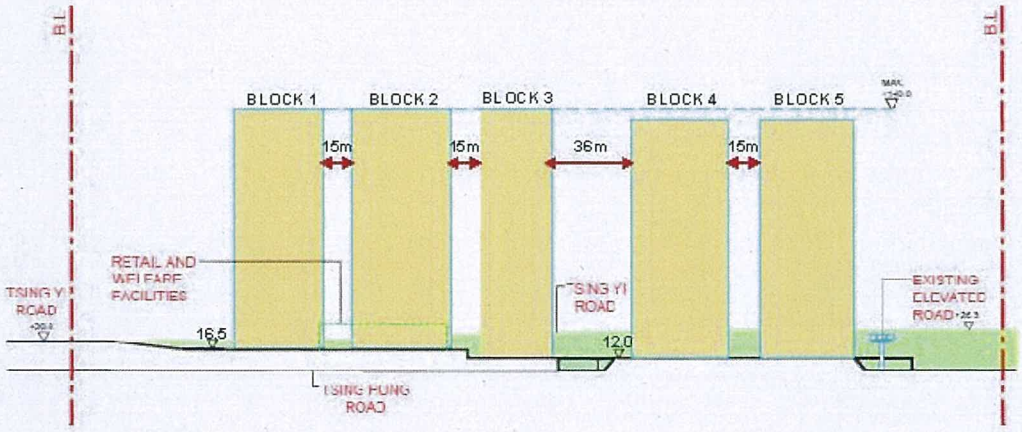
擬議發展落成前後的樓宇間距
BUILDING SEPARATION BEFORE AND AFTER CONSTRUCTION

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
21





SOURCE : FIGURE 2.12 OF AIR VENTILATION ASSESSMENT
FROM PLANNING SECTIONS,
HOUSING DEPARTMENT

本圖於2015年7月9日擬備
PLAN PREPARED ON 9.7.2015

擬議發展初步設計藍圖的平面圖及立視圖
PLAN VIEW AND ELEVATION VIEW OF
INDICATIVE DESIGN SCHEME OF
THE PROPOSED DEVELOPMENT

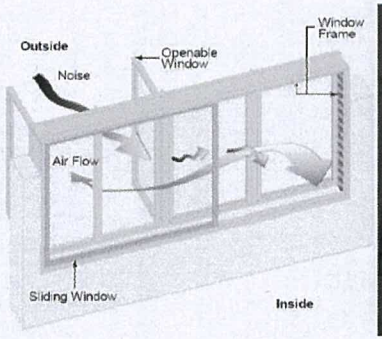
規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

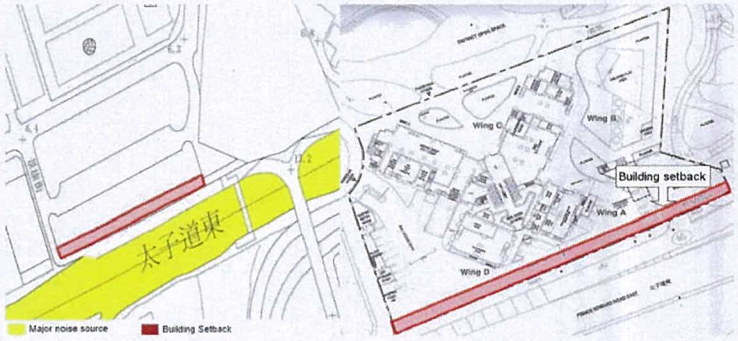
圖 PLAN
22

Architectural Fins (Noise)

Noise Barriers (Noise)



Acoustic Windows (Noise)



Building Setback (Noise / Air Quality)

SOURCE : FIGURE 2.2 OF BROAD ENVIRONMENTAL ASSESSMANT FROM PLANNING SECTIONS, HOUSING DEPARTMENT

本圖於2015年6月18日擬備
PLAN PREPARED ON 18.6.2015

噪音/空氣質素的緩減措施例子
EXAMPLES OF NOISE/AIR QUALITY MITIGATION MEASURES

規劃署
PLANNING DEPARTMENT

參考編號
REFERENCE No.
M/TY/15/6

圖 PLAN
23