Appendix 15

Environmental Assessment

Prepared for

Glory Queen Ltd.

Prepared by

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REZONING APPLICATION ON THE APPROVED MAI PO & FAIRVIEW PARK OZP NO. S/YL-MP/8 REZONING FROM "R(D)" TO "R(C)2" ZONE AT LOT 4822 IN D.D. 104 & ADJOINING GOVERNMENT LAND, EAST OF KAM POK ROAD, MAI PO, YUEN LONG, N.T.

ENVIRONMENTAL ASSESSMENT REPORT

Date	**31 July 2025**
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Ramboll Hong Kong Limited

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1. INTRODUCTION

1.1 Background

1.1.1 Ramboll Hong Kong Ltd. (the Consultant) has been commissioned by the Applicant, Glory Queen Ltd., who is also the registered owner of Lot No. 4822 in D.D. 104 to conduct this Environmental Assessment (EA) for a proposed residential development. Architectural drawings and technical information of the Application Site are provided by the Project Consultants Team.

1.1.2 The Application Site is currently zoned as "Residential (D)" (R(D)) on the Approved Mai Po & Fairview Park Outline Zoning Plan No. S/YL-MP/8 (the OZP). Thus, the Application Site has been designated for residential use by the government.

1.1.3 The Application Site is around 3.78 ha in extent. It is proposed to increase the maximum domestic plot ratio up to 1.5. The proposed development scheme consists of five residential blocks with a maximum building height of 59.85 mPD and one block of 2-storey facility compound comprises a clubhouse, a 6-classroom kindergarten and one neighbourhood elderly centre ("NEC"). Other ancillary facilities including a basement carpark, outdoor swimming pool, E&M facilities, and on-site sewage pumping station (SPS) are also proposed.

1.1.4 This EA serves to demonstrate the proposed scheme is acceptable and feasible from an environmental perspective. Practical pollution control and mitigation measures will be recommended in this EA report, if required, for this medium-rise residential development in accordance with the criteria set out in the Hong Kong Planning Standards and Guidelines (HKPSG) and other relevant legislations.

1.1.5 The Proposed Development is a designated project (DP) under the Environmental Impact Assessment Ordinance (EIAO) under Item P.1, Part 1, Schedule 2 of the EIAO (i.e. a residential development or recreational development other than New Territories exempted houses within Deep Bay Buffer Zone 1 or 2). The Proposed Development will be subject to a separate EIA study and an Environmental Permit for construction and operation of the Proposed Development. Relevant impact assessment will also be conducted in the later stage as part of the EIA process.

1.1.6 The Application Site is also the subject of a few previous approved planning applications such as those under the application nos. A/YL-MP/170, A/YL-MP/202, A/YL-MP/242 and A/YL-MP/287. All of these have been approved previously for residential development. On 14 February 2025, the Town Planning Board approved a planning application (No. A/YL-MP/381) for temporary public vehicle park (excluding container vehicle) for a period of 3 years. Site formation works in association with the above planning application has already completed.

1.2 The Project Location

1.2.1 The Application Site is bounded by Kam Pok Road to its immediate west, Fung Chuk Road to its immediate north, Ha Chuk Yuen Road to its immediate east and Ha San Wai Road to its south. Existing Ngau Tam Mei Channel is located to its farther west separated by Kam Pok Road. A "Village Type Development" ("V") zone (covering Ha San Wai Tsuen, Chuk Yuen Tsuen and Hang Fook Garden) and a Commercial/Residential ("C/R") zone are located to its farther southeast. Further to the west, north-west and south-west of the site across the said drainage channel, Yau Pok Road temporary light public housing zones and Fairview Park are located in the recreation ("REC") zone and residential ("R(C)") zone respectively.

1.2.2 In accordance with the Town Planning Board Guideline TPB PG-No. 12C, the Application Site falls outside the Wetland Buffer Area (WBA). The planning intention of the subject R(D) zone is for a comprehensive low-density residential development.

1.2.3 **Figure 1.1** shows the location of the Application Site and its environs, which is recognised as a suburban medium density residential development area. While **Appendix 1.1** shows the layout plan of the Proposed Development.

1.3 The Project Description

1.3.1 The proposed scheme is a medium-density residential development. With a proposed domestic plot ratio of 1.5, the proposed scheme comprises five residential blocks (namely Tower 1, Tower 2, Tower 3, Tower 5, and Tower 6) with 16 residential storeys and a maximum building height of 59.85 mPD, and one 2-storey facility compound block containing a 6-classroom kindergarten, clubhouse and one NEC. Ancillary facilities such as a basement carpark, outdoor swimming pool, E&M facilities, and sewage pumping station (SPS) are also planned. The mean site formation level proposed under the proposed scheme is about +5.4 mPD. Development parameters are provided in **Table 1.1**.

Table 1.1 Development Parameters of the Proposed Development

Major Development Parameters	Proposed Scheme
Application Site Area (m^2) (about)	37,870
GFA (m^2) (approximate)	Domestic: ~56,805 Non-Domestic: ~380 (kindergarten only)
Plot Ratio	Domestic: ~1.5 Non-Domestic: ~0.01 (kindergarten only)
No. of Domestic Blocks	5
Designed Population (as extracted from SIA study)	~3,866
Ancillary facilities	Basement carpark, resident's clubhouses, kindergarten, Neighbourhood Elderly Centre, Outdoor swimming pool, E&M facilities, SPS, etc.
Number of car parking spaces	Residential: 379 private car parking spaces (including visitor parking spaces and 2 for kindergarten), 14 motorcycles parking spaces, 87 bicycle parking spaces, 5 loading/ unloading bays, 2 private car/ taxi lay-bys and 5 (3m x 7m each) laybys
Installed capacity of onsite SPS (ADWF)	~1,039 m^3/day

1.4 Scope

1.4.1 This EA aims to assess the following potential major environmental issues that may be resulted from or on the Proposed Development:

- Potential air quality impact from and on the Proposed Development.
- Potential water quality impact; and
- Evaluation on construction phase impacts.
- Waste management

1.4.2 Assessments on potential noise, ecological, sewerage, and drainage impacts due to the proposed residential development are provided under other separate impact assessment reports in this application.

2. AIR QUALITY

2.1 Introduction

2.1.1 This Chapter assesses and addresses the potential air quality impacts from and upon the proposed residential development at the Application Site. The Assessment Area for air quality impact assessment is defined by a distance of 500m from the boundary of the Application Site.

2.2 Legislation, Standards, Guidelines and Criteria

2.2.1 The principal legislation regulating the air quality in Hong Kong is the Air Pollution Control Ordinance (APCO) (Cap. 311). Air Quality Objectives (AQOs) are set for the whole of Hong Kong, which specify the statutory limits for various criteria pollutants and the maximum number of exceedance allowed over a specified period of time.

2.2.2 According to the Air Pollution Control (Amendment) Bill 2024, the new set of AQOs are adopted in the assessment. The AQOs for Carbon Monoxide (CO), Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2), and Respirable Suspended Particulates (RSP), and Fine Suspended Particulates (FSP, also known as $PM_{2.5}$), which are relevant to this assessment, are summarized in **Table 2.1** below.

2.2.3 Asides from the above, Air Pollution Control (Construction Dust) Regulation and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation are also relevant during construction phase.

Table 2.1 Hong Kong Air Quality Objectives

Pollutants	Averaging Period	Pollutants Concentration ($\mu g/m^3$)	No. of Exceedances Allowed per year
CO	1 hour	30,000	0
	8 hours	10,000	0
	24-hour	4,000	0
NO_2	1 hour	200	18
	Annual	40	N.A.
	24-hour	120	9
SO_2	10-min.	500	3
	Daily (24 hours)	40	3
RSP (PM10)	Daily (24-hours)	75	9
	Annual	30	N.A.
FSP (PM2.5)	Daily (24-hours)	37.5	18
	Annual	15	N.A.

Remarks:

N.A. = Not applicable.

FSP means particulate matters *in air with a nominal aerodynamic diameter of 2.5 µm or less. Also known as PM2.5.*

RSP means particulate matters in air with a nominal aerodynamic diameter of 10 µm or less. *Also known as PM10.*

2.3 Air Quality Impact Assessment

2.3.1 During construction phase, the major air quality impact of concern will be the potential fugitive dust emission during site formation stage and the particulate matters (PM) and gaseous emissions from the use of powered mechanical equipment and construction vehicles on site. The first layer of existing ASRs that are nearby the Application Site (i.e. nearest to the site boundary) which would be worst affected are selected as representative ASRs for the purpose of this study. There are also few other approved planned development sites in adjacent, which are identified as planned ASRs.

The location of representative ASRs is shown in **Figure 2.1** and they are summarized in **Table 2.2**.

Table 2.2 Representative Existing and Planned ASRs during Construction Phase

ASR ID	Description	Type	Status	No. of Storeys	Approx. Shortest Horizontal Distance to Boundary of Application Site (m)
A01	Planned development (Y/YL-MP/3) / A/YL-MP/341 *	Residential	Planned/ Existing*	3	132
A02	Planned development (Y/YL-MP/3) / A/YL-MP/341 *	Residential	Planned/ Existing*	3	76
A03	Planned Development (Y/YL-MP/10)	Residential	Planned	14-16	31
A04	Village house located at Chuk Yuen Tsuen	Residential	Existing	3	116
A05	Village house located at Chuk Yuen Tsuen	Residential	Existing	3	35
A06	Village house located at Chuk Yuen Tsuen	Residential	Existing	3	67
A07	103A Ha San Wai	Residential	Existing	3	173
A08	25 Villa Camellia	Residential	Existing	3	83
A09	26-28 Ha San Wai Road	Residential	Existing	2	3
A10	Block 1 Helene Terrace	Residential	Existing	2	80
A11	8 Fairview Park	Residential	Existing	3	105

Remark:
* The concerned REC and R(C) Site is also the subject of an approved 3-storey temporary public light housing development by the government under Application No. A/YL-MP/341. The shortest distance between the REC and R(C) site boundary and that of Application Site has already considered in the table.

2.3.2 Since some existing ASRs are found in close proximity to the site boundary, additional mitigation measures such as erection of higher hoarding and relocation of dusty activities away from the nearest ASRs shall be considered. In addition, it is also recommended that the contractor should consider electric power supply for on-site machinery as far as practicable to minimize aerial emissions.

2.3.3 During operational stage, proposed residential buildings within current Proposed Development site will be the ASRs. Other nearby existing and planned developments as identified in **Table 2.2** above are also the ASRs. During operational phase, some potential air quality impacts may be generated from the operation of proposed on-site ancillary SPS, which have been addressed in **Section 2.3.11** to **Section 2.3.12** below.

Vehicular Emissions

2.3.4 The Application Site is away from roads such as Castle Peak Road – Tam Mi (a Rural Road) and San Tin Highway (an Expressway) by more than 276m (**Figure 2.2** refers), and is physically separated by clusters of existing village houses at Ha San Wai Tsuen, Chuk Yuen Tsuen and Hang Fook Gardens. According to the published Annual Traffic Census 2023 report, Castle Peak Road – Tam Mi is a Rural Road while San Tin Highway is an Expressway. There is no specific buffer distance for rural road under the HKPSG. Given that the Proposed Development has a separation distance over 276m from Castle Peak Road – Tam Mi, which can already satisfy relevant buffer distance requirement for a district distributor road (i.e. >10m), there should be no adverse air quality impact on the Proposed Development. San Tin Highway is further away from the Proposed Development. Accordingly, the said separation distance between Proposed Development and San Tin Highway, can also satisfy the buffer distance requirement for a Trunk Road and Primary Distributor (i.e. >20m). Thus, no adverse air quality impact on the Proposed Development is anticipated.

2.3.5 According to the planning document submitted under Application No. Y/YL-MP/10 recently agreed by TPB, the adjacent Kam Pok Road is a Rural Road. While Ha San Wai Road, Ha Chuk Yuen Road and Fung Chuk Road are single track access road. In addition, the air-sensitive uses within Application Site are also setback away from the adjacent Kam Pok Road by >5m. There is also >5m building setback from local access roads (single track access road) such as Ha San Wai Road (at least about 39m), Ha Chuk Yuen Road (at least about 25m) and Fung Chuk Road (at least about 19m). The locations of the concerned roads and the separation distance measured between the nearest air sensitive uses of the Application Site and the road edge are shown in **Figure 2.2**. For the purpose of this study, the current building setback provided at the Application Site can also satisfy the buffer distance requirement a DD road (i.e. >10m) for the above-mentioned roads as a conservative approach (see **Figure 2.2**). The Proposed Development including residential buildings, clubhouse, kindergarten, NEC are located outside the buffer distance of the above-mentioned roads. Other E&M structures i.e., "TX rooms & Main Switch Room" are anticipated to be un-manned, thus they are not ASRs. Thus, no adverse air quality impact from vehicular emission on the Proposed Development is anticipated.

2.3.6 There is one-level of basement carpark proposed within the Proposed Development. Based on preliminary information, a total of 379 private car parking spaces, 14 motorcycles parking spaces, 87 bicycle parking space, 5 loading/ unloading bays, 2 private car/ taxi lay-bys and 5 (3m x 7m each) lay-bys will be provided in the Proposed Development. Detailed carpark layout will be prepared in later detailed design stage. The potential location of the exhaust of the basement carpark will be located away from any air-sensitive uses as far as possible such as facing Kam Pok Road (**Figure 2.3** refers). The basement carpark will be designed to follow EPD's ProPECC PN 2/96 on Control of Air Pollution in Car Parks. With design and operation following relevant guideline, no adverse air quality impacts due to the basement carpark on the proposed residential development due to carpark are anticipated.

Industrial Emissions

2.3.7 Based on the latest design scheme, there are no planned industrial emission sources from the operation of this Project.

2.3.8 A review of chimney locations based on EPD's register previously obtained, were carried out. No chimneys were identified within the 500m Assessment Area. Additional chimney surveys were also conducted to verify the findings during previous planning application with further visits conducted in July 2019, August 2022, September 2023, September 2024, February 2025, May 2025, and June 2025. As no chimneys were identified within the Assessment Area, no air quality impact related to chimney emissions is expected.

Odour from Existing Source and Planned Sewage Pumping Stations

2.3.9 Potential odour impact due to proposed and other nearby sewage pumping station has been assessed. Within 500m radius, there is a planned future San Tin No.1 Sewage Pumping Station (SPS) located at the junction of Kam Pok Road and Castle Peak Road. However, it is located more than 500m from the boundary of Proposed Development (**Figure 2.4** refers). Since it is far away from the Application Site and outside the Assessment Area, no adverse odour impact is anticipated. There is also a planned SPS located within the adjacent development site under planning application no. Y/YL-MP/10. The exhaust of the said SPS is facing away from the Proposed Development and with a separation distance of about 117m. According to the planning document submitted under the planning application no. Y/YL-MP/10, odour removal device (with an odour removal efficiency of not less than 99% for H_2S) as well as separation

distance of >15m from the said SPS has been recommended. Given the current proposed development is about 117m away from this SPS and that there are other planned ASRs under the planning application no. Y/YL-MP/10 that are even closer to the SPS, no adverse odour impact is therefore anticipated.

2.3.10 Site surveys were also conducted in September 2023, September 2024, February 2025, May 2025, and June 2025. The route of the site surveys is indicated in **Figure 2.5**. No odour source from Ngau Tam Mei Channel ("NTMC") has been identified during the site visits. No particular air and odour emission sources have been identified at nullah along Ha Chuk Yuen Road and Ha San Wai Road, pond at DSD's Chuk Yuen Floodwater Pumping Station or within 200m radius from the Proposed Development. It is noted that a separate EIA study and air and odour impact assessment will be carried out for the Proposed Development in later stage of development to comply with the requirements under EIAO.

Other Odour Sources

2.3.11 The proposed on-site sewage pumping station within the Application Site may potentially give rise to odour impact. The indicative location of this SPS is shown in **Figure 2.4**. During the operational stage, sewage generated by the Proposed Development will be collected into the proposed on-site SPS before discharging into proposed sewers along Kam Pok Road and Pok Wai South Road and then finally discharges into existing Nam Sang Wai Sewage Pumping Station. Future management and maintenance issues will be further discussed with DSD at the detailed design stage.

2.3.12 Detailed information regarding the design of the proposed on-site SPS will only be available at the detailed design stage. Design of the proposed on-site SPS will provide with odour removal system. It will be located underground and will be in an enclosed building structure, thus impact of odour from SPS is minimal. Also, the proposed exhaust point of this on-site SPS will be facing away from its nearby air-sensitive uses facing north-east. By making reference to other similar SPSs as described in **Section 2.3.13**, it is recommended that odour removal system (with an odour removal efficiency of not less than 99% for H_2S) should be installed and a minimum separation distance of >15m between the exhaust of SPS and any air sensitive uses including the Proposed Development and nearby existing and planned ASRs, should be maintained in the design of SPS. Based on Proposed Scheme, separation distance of ~19m between the closest ASRs and the exhaust of the on-site SPS have been incorporated into the current design, see **Figure 2.4**, which can satisfy the >15m separation distance requirement as mentioned above. With the careful design of this underground SPS and the provision of odour removal filtering system, it is expected that odour impact arising from this SPS will be properly controlled.

2.3.13 With reference to the previously approved EIA Report for the project, "Outlying Island Sewerage Stage 2 - Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities (EIA-219/2013)", the odour impact assessment conducted for the Pak She SPS (with a capacity of 42,336 m^3/day) has revealed that odour levels at sensitive receivers with a separation distance varying from 1m to 68m from the SPS could meet the relevant criteria for odour level after the implementation of odour removal filtering system (with efficiency of 99% for H_2S). Furthermore, according to the Project Profile for "Public Housing Development at Lin Cheung Road Site - Temporary Sewage Pumping Station and Associated Sewer Pipes" (DIR-239/2014), an odour survey was conducted at the existing Cheung Sha Wan Sewage Pumping Station (with a design capacity of 456,863 m^3/day), which was reported to be equipped with odour removal filtering system with a removal efficiency of 95%. That sewage pumping station serves the developed areas in urban area. The survey found that no odour could be detected at a location over 10m away from the exhaust vent of that

SPS. The exhaust height for the Pak She SPS, according to the above-mentioned EIA report, is at ground floor (~1.5m above ground level), while the above-mentioned Project Profile for Cheung Sha Wan SPS has indicated its exhaust located on G/F as well. Given the similar nature of the current proposed SPS and the relatively small scale of Proposed Development (with the capacity of SPS 1,039 m^3/day), the separation distance of ~19m between the exhaust point of proposed SPS and nearest air sensitive use as illustrated in **Figure 2.4**), should be adequate to meet the >15m separation requirement. The exhaust in the proposed on-site SPS will also be located on ground floor. With an environmentally conscious design, adequate separation distance, and the provision of the recommended odour removal filtering system at the exhaust point (with an odour removal efficiency of not less than 99% for H_2S) (removal efficiency of above-mentioned SPS EIA refers), adverse odour impact due to the proposed on-site SPS is not anticipated.

2.4 Conclusion

2.4.1 The Proposed Development meets the buffer distance requirements stated in the HKPSG for the air-sensitive uses within the Application Site, thus no adverse air quality impacts due to vehicular emission are expected. In addition, as no industrial emission sources were identified within 500m from the Application Site boundary, no adverse air quality impacts due to industrial emissions are expected. The design and operation of the proposed basement carpark will follow the EPD's ProPECC PN 2/96 on Control of Air Pollution in Car Parks, and the exhaust of the basement carpark will be facing away from air sensitive uses as far as possible. Hence, no adverse air quality impacts due to the operation of the basement carpark are expected. Sewage generated by the Proposed Development will be collected into the proposed on-site SPS before discharging into proposed sewers along Kam Pok Road and Pok Wai South Road, and then finally conveyed into the existing Nam Sang Wai Sewage Pumping Station. The proposed on-site SPS will be fully underground and equipped with an odour removal filtering system (with an odour removal efficiency of not less than 99% for H_2S). With adequate buffer distance provided between the proposed on-site SPS and the air-sensitive uses, and provision of odour removal filtering system, no adverse odour impact on the Proposed Development and nearby existing sensitive uses is anticipated. Since the Proposed Development will constitute a designated project under the EIAO, relevant air quality impact assessment to demonstrate the compliance of the criteria stipulated in the EIAO-TM will be conducted under the EIA process at the detailed design stage.

3. WATER QUALITY IMPACT ASSESSMENT

3.1 Introduction

3.1.1 This section identifies and addresses the potential water quality impact during construction phase and operational phase of the Proposed Development. The extent of water quality impact assessment is based on an area within 500m radius from the boundary of the Application Site.

3.1.2 The Application Site is located within the approved OZP No. S/YL-MP/8. According to the Explanatory Statement attached to the Notes of the OZP, "no-net increase of pollution load into Deep Bay" is applicable to the Proposed Development.

3.2 Relevant Environmental Legislation and Guidelines

3.2.1 The relevant legislations, standards and guidelines for the assessment of water quality impacts include:

- Water Pollution Control Ordinance (WPCO) CAP 358;
- Technical Memorandum on "Standards for Effluent Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters" (TM-DSS);
- Hong Kong Planning Standards and Guidelines;
- *ProPECC PN* 2/24 "Construction Site Drainage"; and
- *ProPECC PN* 1/23 - Drainage Plans Subject to Comment by the Environmental Protection Department.

3.2.2 In accordance with the Town Planning Board Guideline TPB PG-No. 12C, the Application Site falls entirely outside the Wetland Buffer area as shown in **Figure 3.1**. The Water Pollution Control Ordinance (WPCO) (Cap. 358) enacted in 1980 is the principal legislation controlling water quality in Hong Kong. Under the WPCO, Hong Kong waters are classified into 10 Water Control Zones (WCZ). The Application Site is situated within the Deep Bay Catchment Area of the Deep Bay Water Control Zone (WCZ) and the Ramsar Site. The TM-DSS issued under Section 21 of the WPCO defines acceptable discharge limits of effluent to different types of receiving waters. Under the WPCO, any discharge into the WCZ requires licensing and must comply with the terms and conditions specified in the licence, except for domestic sewage discharged into public foul sewers, and unpolluted water into storm water drains and river courses.

3.2.3 The surface runoff from the Proposed Development will be discharge into nearby existing drainage system and NTMC in accordance with the Group D and Group C standards for stormwater discharge into inland waters.

3.3 Description of Environs and Water Sensitive Receivers

3.3.1 The Proposed Development is surrounded by existing road networks. Existing Fung Chuk Road and Kam Pok Road are respectively located to its immediate north and west, Ha Chuk Yuen Road and Ha San Wai Road are to its immediate east and south. Moreover, the Chuk Yuen Floodwater Pumping Station and DSD's flood storage pond are located north of the Application Site. NTMC is also situated to the farther west of the site. **Figure 3.1** refers.

3.3.2 The existing Chuk Yuen Floodwater Pumping Station is managed by DSD for the discharge of collected rainwater. NTMC is an existing engineered channel for collection of stormwater in the area. It is separated from the Application Site by Kam Pok Road. The Application Site is currently a paved area with gravels for a temporary vehicle park operation under the approved planning application (No. A/YL-MP/381). Currently,

surface runoff generated from the Application Site would be conveyed into NTMC without any treatment via existing u-channels at Kam Pok Road and Ha Chuk Yuen Road. Thus, water bodies at NTMC, flood storage pond at Chuk Yuen Floodwater Pumping Station, and those existing stormwater drains at Kam Pok Road and Ha Chuk Yuen Road are the potential water sensitive receivers (WSRs) of this project during both construction and operational phases. All these are in fact designated stormwater collection system in the area. Also, there is a landscape pond proposed within the Application Site, which serves as landscaping feature only. The proposed landscape pond will be constructed at the same time as the Proposed Development, which will be another WSR during operation of the Proposed Development (during construction phase, it will be part of a construction site, thus it is not a WSR in construction stage). The location of the WSRs are indicated in **Figure 3.1**. As a general requirement, construction site runoff and effluent from construction site shall be properly collected by construction site drainage system and treated through screening facilities before discharge. In operation, proper stormwater drainage system will be provided for the Proposed Development to properly collect stormwater runoff, and discharge through screening facilities following the existing flow regime. Thus, there should be no adverse water quality impact due to Proposed Development on the area.

3.3.3 To the farther west and north-west of Application Site are the existing Fairview Park Nullah. To the north are the proposed landscape ponds under Y/YL-MP/8 and Y/YL-MP/10. Also, reed, marsh and ponds are located to the farther north and north-east of the Application Site. Water ponds such as those near Greenery Gardens and drainage ditches such as those along Ha San Wai Road are located within the 500m assessment area (see also **Table 3.2** and **Figure 3.1**). The wetland buffer area (WBA) is also located to the farther north outside the Application Site, where a planned wetland conservation park (WCP), i.e. Sam Po Shue WCP largely is partially overlaps with the WBA. **Figure 3.1** refers. However, these water bodies (potential WSRs) are relatively far away from the Application Site and are physically separated by other land and roads, thus they are unlikely be affected by the Proposed Development.

3.3.4 River water quality monitoring data of existing Fairview Park Nullah in 2024, which are available on EPD's website and nearest water quality monitoring station, are summarised in **Table 3.1** as the reference of baseline condition. Please also refer to **Appendix 3.1** for recent past 3 years' monitoring data. According to the latest Annual River Water Quality Report published in 2023, the water quality at Fairview Park Nullah was graded "Fair" and its WQO compliance rate is generally improving over years from 2003 to 2023 from about 43% compliance recorded in 2003 to about 73% in 2023. By comparing the 2024 and 2023 data, the water quality at Fairview Park Nullah was generally stable. General speaking, there was a slight improvement on averaged water quality on parameters such as DO, SS, Ammonia-Nitrogen, and Nitrate-Nitrogen, etc., but at the same time there was a slight higher (poor) in levels of BOD5, E.coli, and faecal coliforms.

Table 3.1 Water Monitoring Data of Nearest River in 2024

Parameter	Unit	Fairview Park Nullah (FVR1)
Dissolved Oxygen (DO)	mg/L	7 (3.2-10.4)
pH	-	7.3 (7-8.8)
Suspended Solids (SS)	mg/L	11.0 (2.7-39)

Parameter	Unit	Fairview Park Nullah (FVR1)
5-Day Biochemical Oxygen Demand	mg/L	8.9 (2.2-14)
Chemical Oxygen Demand	mg/L	35 (4-64)
Oil & Grease	mg/L	<0.5 (<0.5-<0.5)
E. coli	counts/ 100mL	26792 (1700-450000)
Faecal Coliforms	counts/ 100mL	73808 (10000-1100000)
Ammonia-Nitrogen	mg/L	1.030 (0.32-2)
Nitrate-Nitrogen	mg/L	0.510 (0.32-1.4)
Total Kjeldahl Nitrogen	mg/L	2.35 (1.6-3.1)
Orthophosphate Phosphorus	mg/L	0.300 (0.093-0.5)
Total Phosphorus	mg/L	0.49 (0.32-0.54)
Sulphide	mg/L	0.035 (0.02-0.07)
Aluminium	µg/L	70 (70-70)
Cadmium	µg/L	<0.1 (<0.1-<0.1)
Chromium	µg/L	1 (<1-1)
Copper	µg/L	2 (<1-3)
Lead	µg/L	<1 (<1-<1)
Zinc	µg/L	<10 (<10-20)
Flow	m^3/s	No measurement taken

Remark:

1. Above values are extracted from River Water Quality Monitoring Data in 2024 published on EPD's website.

2. Data presented are in annual medians of monthly samples; except those for faecal coliforms and E. coli which are in annual geometric means.

2. Figures in brackets are annual ranges.

3. Values at or below laboratory reporting limits are presented as laboratory reporting limits

4. Equal values for annual medians (or geometric means) and ranges indicate that all data are the same as or below laboratory reporting limits.

3.3.5 WSRs within 500m assessment area have been identified and presented in **Table 3.2** and shown in **Figure 3.1**.

Table 3.2 Description of Water Sensitive Receivers

WSR ID	Description	Type	Status	Estimated distance (m) #
C01	Wetland Buffer Area (WBA) which covers areas such as Fairview Park, Palm Springs, Yau Mei San Tsuen and Chuk Yuen Tsuen etc.	Wetland Buffer Area	Existing zoning	Site is located outside the WBA
C02	Planned Sam Po Shue Wetland Conservation Park which covers the ponds between Fairview Park and Palm Springs, and those near Yau Mei San Tsuen	Planned Wetland Conservation Park	under planning	Site is located outside the Park
D01	Ngau Tam Mei Channel	Channelized Drainage Channel	Active	21
D02	Fairview Park Nullah (Main)	Channelised Nullah	Active	128
D03	Fairview Park Nullah (surrounding Fairview Park)	Channelised Nullah	Active	88
D04	Drainage ditch along Ha Chuk Yuen Road	Drainage ditches	Active	5
D05	Drainage ditch along Ha San Wai Road	Drainage ditches	Active	25
D06	Drainage ditches along both sides of San Tam Road	Drainage ditches	Active	362
D07	Drainage ditches along both side of Castle Peak Road – Tam Mi	Drainage ditches	Active	294
M01	Reed/marsh between Fairview Park and Palm Springs	Reed/Marsh	Active	491
R01	Reed near Chuk Yuen Tsuen	Reed	Active	251
P01	Ponds at the north of Yau Pok Road	Ponds	Active*	365

WSR ID	Description	Type	Status	Estimated distance (m) #
	(temporary wetland created under construction phase of a planned development site in AEIAR-189/2015)			
P02	Proposed landscape pond under application no. Y/YL-MP/8	Proposed pond	-	126
P03	Ponds near Hang Fook Gardens	Ponds	Active*	124
P04	Water storage pond at DSD's Chuk Yuen Floodwater Pumping Station	Ponds	Active*	7
P05	Proposed landscape pond under application no. Y/YL-MP/10	Newly proposed ponds	-	96
P06	Ponds next to Greenery Gardens	Ponds	Abandoned*	246
P07	Proposed landscape pond of the current development during operational phase	Newly proposed	-	Within Application Site

Remark:

* Status is based on desktop review for reference. Exact status should be subject to further review during later EIA study stage.

The distance is measured from the WSR to the Application Site Boundary.

3.4 Water Quality Impacts During Operation Phase

Identification of Sources of Wastewater

3.4.1 During operational stage of the Proposed Development, all sewage generated will be collected into the proposed on-site SPS and then conveyed them to public sewer system. No direct discharge of raw sewage effluent will be anticipated. All surface runoff at the Application Site will be directly discharged without any treatment into nearby drainage system and NTMC.

Recommendations on Mitigation Measures

a) Wastewater from Domestic and Commercial Activities

3.4.2 All on-site sewage will be connected by the proposed sewerage system in the Proposed Development through sewage pipelines and pumping station according to EPD's Practice Note PN 1/23. Drainage in underground carpark, covered loading and unloading area should be connected to foul sewer via petrol interceptors while drainage serving open space should be connected to stormwater drain via screening facilities in accordance with EPD's Practice Note PN 1/23. Swimming pool drainage design will follow the *ProPECC PN* 1/23 requirements as well. As such, there should be no particular water pollution concern. As mentioned above, the Proposed Development will be subject to an EIA study to be conducted at a later stage, construction and operational phases water quality impact assessment will be carried out and proper mitigation measures will be recommended, if required.

3.4.3 According to the Sewerage Impact Assessment (SIA) prepared by consultant in the Project Team, sewage from the Application Site will be collected by proposed sewers and a sewage pumping station and then conveyed via proposed rising mains and gravity sewers along Kam Pok Road and Pok Wai South Road to the existing Nam Sang Wai Sewage Pumping Station, and then conveyed to the Yuen Long Sewage Treatment Works (YLSTW) for treatment. As there will be no direct discharge of sewage to nearby area, no adverse water quality impact is expected. The proposed on-site SPS has a ADWF capacity of 1,039 m^3/day. The design of this on-site SPS will only be available/ be provided during later detailed design stage. However, as a general guidance the SPS should be designed in accordance with the requirements under DSD's Sewerage Manual – Part II. As a general requirement, measures should be proposed for emergency such as adequate spare parts for the plant; provision of duty & standby pumps; backup power arrangement; wet well/ equalization tank; and qualified personnel should be hired to inspect the plant condition and carry out maintenance on a regular basis. In addition, detection sensor at SPS should be considered and the signal will be conveyed to control room/ management office for a timely response. With the provision of these measures and standby units in place, the potential water quality impact due to sewage overflow is considered very unlikely to occur. In case of prolonged outage of the SPS, equalization tank should be proposed/ incorporated into design to temporarily store the collected sewage, which can also satisfy the EPD's Guidelines for the Design of Small Sewage Treatment Plants. The above measures for SPS are preliminary only, which should be subject to later detailed design stage as well as EIA study. In addition, twin rising mains is proposed. In case of maintenance of one of the rising mains, the other rising main can still operate as normal. As such, with the provision of twin rising mains, duty and standby pump units, backup power arrangement, and equalization tank, the potential water quality impact due to sewage overflow is considered very unlikely to occur. The operation of the SPS should also prevent direct discharge of raw sewage during emergency. The Proposed Development

will also need to undergo an EIA study at the later stage, and the issue of sewerage and water quality impact due to SPS will be properly addressed.

b) Surface Runoff from Application Site

3.4.4 Currently, there is also discharge of surface runoff at the Application Site which is directly discharged without any treatment into nearby drainage system and Ngau Tam Mei Channel. During operation, proper stormwater drainage system will be provided within the Proposed Development to properly collect stormwater runoff, and discharge through screening facilities following the existing flow regime. Details of the drainage system will only be available in detailed design stage. It is proposed that drainage system should also be provided along the site boundary to intercept stormwater. As discharge will be through screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish, there will be no direct discharge of untreated stormwater runoff into nearby WSRs. As pollutants contributed by non-point source are often bound or adsorbed onto particles, an effective stormwater management system will be the removal of pollution sources prior to rainstorm and the provision of screening facilities that collect debris or sediment. It is recommended that regular cleaning and sweeping of road surface/ open areas as well as prior to occurrence of rainstorm should be carried out to minimize exposure of pollutants to stormwater.

3.4.5 It is also recommended that fertilizers will only be applied at landscape area when needed e.g. in early Spring and in late Summer and to avoid major rainy season. Slow-release type fertilizers should be selected as far as possible and over dosage should be avoided.

c) Surface Runoff from Landscape Pond

3.4.6 As for the proposed landscape pond, it will be solely for landscaping purpose, and will not serve as a compensation pond. The detailed design of the landscape pond will only be available in detailed design stage. Proper stormwater drainage system with standard screening facilities will be provided so as to intercept the water feature away from other surface runoff such as open space and landscaping area. During normal operation of the landscape pond, no particular discharge is anticipated except heavy rainfall. In case of pond maintenance, it will be arranged during dry season as far as possible when the water level is relatively low. Stormwater drains with standard screening facilities will also be designed at the outlet of drainage of landscape pond, so that in case of draining of pond there will be no direct discharge of stormwater without treatment. The discharge from the landscape pond would comply with the above-mentioned TM DSS under WPCO, and the discharge may be subject a licence control under the WPCO and is also subject to findings of EIA study.

3.4.7 With the proposed drainage system and recommended pollution control measures in place as described in above paragraphs, no adverse water quality impact due to stormwater discharge or domestic and commercial sewage generated from the development is anticipated.

3.5 Water Quality Impacts During Construction Phase

Identification of Sources of Wastewater

3.5.1 The potential source of water quality impacts during the construction phase of the Proposed Development mainly includes sewage from construction workforce, construction site surface runoff, and accidental spillage.

Sewage from Construction Workforce

3.5.2 For sewage generated from construction workforce, it is recommended to use chemical toilets within the site and to be handled them by licensed contractor. No direct discharge of sewage effluent would be allowed.

Construction Site Runoff and Wastewater

3.5.3 The potential water quality impact during construction stage of the Proposed Development as well as construction of the proposed sewers, will be the potential discharge of construction site runoff and wastewater. Construction site runoff contains increased loads of sediments, other suspended solids and contaminants. Wastewater generated from construction activities, such as general cleaning, wheel washing, dust suppression, often contains significant concentrations of suspended solid (SS). If not properly controlled, construction site runoff generated may bring along pollutants (e.g. sediment-laden surface runoff) and pollute the nearby water bodies depending upon the topography. During construction, no direct discharge without treatment of construction site runoff from the construction site will be allowed. Construction site runoff and effluent from construction site shall be properly collected by construction site drainage system and treated through screening facilities before discharge into the nearby storm drains by following the existing flow regime. The design of the site drainage system will only be available in later detailed design stage, but the drainage system shall follow the Practice Notes for Professional Persons on "Construction Site Drainage" (*ProPECC PN 2/24*). The quality of discharge should also comply with relevant effluent discharge licence to be issued under the WPCO. The proposed sewers will be laid underneath existing roads. The exact construction method of proposed sewers will be subject to detailed design. However, it is proposed that construction of the sewers should be carried out in phases to minimise exposed area. The temporary works area should be carefully planned and located to avoid potential disturbance. Temporary stockpile area should be located away from nearby receiving water body or drainage channel. Trenchless construction method should also be explored as far as possible. Best practices as per "Construction Site Drainage" *(ProPECC PN 2/24)* should be adopted.

Accidental Spillage

3.5.4 The utilisation, handling and storage of chemicals, including engine oil, lubricants, fuels and solvents, carrying the potential to impact water quality in the event of spillage. Thus, it is imperative to proper handle, store and dispose of chemicals properly to prevent spillage.

Proposed Mitigation Measures

3.5.5 With regards to the above-mentioned sources of water quality impacts, details of recommended pollution control measures are provided in **Section 4.4** of this report. Various measures proposed in above paragraph as well as those presented in **Section 4.4** should be applied. With the proposed construction phase drainage system and recommended pollution control measures in place, no adverse water quality impact during construction phase will be expected.

3.6 Conclusion

3.6.1 Locations of relevant WSRs as well as potential sources of water quality impact that may arise during construction and operational phases of the Proposed Development, have been identified. Relevant pollution control and mitigation measures have also been recommended.

3.6.2 With the proposed measures in place, no adverse water quality impact during both construction and operational phases of the proposed development will be expected.

4. CONSTRUCTION PHASE IMPACTS

4.1 Introduction

4.1.1 During construction phase of the Proposed Development, there may be potential air quality, and water quality impacts upon the nearby sensitive receivers. Practicable environmental mitigation measures are recommended to reduce these impacts to acceptable ranges. The noise impact in construction phase of the Proposed Development has been addressed in separate reports under the same application.

4.1.2 During construction phase, the nearest sensitive receivers will be surrounding residential and village development sites such as existing Fairview Park, Chuk Yuen Tsuen, Hang Fook Gardens, Ha San Wai Tsuen, Helene Terrace, Villa Camellia and Greenery Gardens. (**Figure 1-1** refers).

4.2 Construction Phase Air Quality Impact

4.2.1 The major air quality impact of concern during the construction phase will be the potential fugitive dust emission during site formation stage and the particulate matters (PM) and gaseous emissions from the use of powered mechanical equipment and construction vehicles on site. The nearest ASRs and their separation distance are identified in **Section 2.3.1**.

Dust Emission Source

4.2.2 The major air quality impact of concern during the construction phase will be the potential fugitive dust emission. The major dust emission sources during the construction phase of the Proposed Development are expected to arise from construction activities during site formation stage such as.

- Excavation resulting in exposed ground vulnerable to soil erosion;
- Earth moving, loading and unloading of excavated material; and
- Vehicle movements on haul roads and over the construction site.

4.2.3 The Application Site is relatively a flat land and is already served by existing road network, thus significant earth works is not anticipated during construction. The current concerned development site is still at its very early planning stage, many construction details are not yet available. It is expected that site formation and excavation work will be carried out in the Application site. Therefore, mitigation measures are recommended to minimize the adverse air quality impacts to the surrounding ASRs during construction phase. For instance, phased construction should be considered during the earth works in site formation and excavation stage with a view to minimize the active works area, although details of construction and its phasing will only be available in later detailed design stage. Further measures will be considered during the detailed design stage to explore feasibility of use of electric NRMMs and avoiding the exempted NRMMs as far as practicable subject to the availability of on-site electricity, close liaison with the contractors of concurrent projects to avoid overlapping of heavy/duty works when the construction programmer becomes available. Thus, construction works should be under control and adverse construction air quality impact is not anticipated. Since the Proposed Development will constitute a designated project under the EIAO relevant construction phase impact assessment will be conducted under the EIA process. Concurrent projects, if any, will also be identified and assessed accordingly. There is an approved public light housing development by the government under application no. A/YL-MP/341. However, it is understood that it is a temporary use only. According to its planning document the said public light housing development would be removed around 2030 or so, which is before the current

Proposed Development. There are also few previously approved planned development sites in adjacent such as the approved planning application under Y/YL-MP/3 and Y/YL-MP/10 (as shown in **Figure 2.1**). Having reviewed, there is no solid construction programme of these development sites available at this stage. It is understood that all these planned development sites are also subject to separate EIA study and their construction activities would be controlled under their respective statutory Environmental Permit (EP) issued or to be issued under the EIA Ordinance. It is anticipated that relevant identified projects would implement appropriate mitigation measures as recommended in their EIA study which shall be monitored for compliance under their EM&A programme. During construction of current Proposed Development, contractor(s) will be required to review the construction programme of adjacent planned development sites and closely liaise with the other contractors of planned development sites in order to avoid overlapping of heavy or dusty works as far as possible. As for the current proposed development will also undergo its EIA study, relevant mitigation measures will be proposed for implementation to control construction air quality impact subject to the findings of EIA study. It is understood that the project proponent will recommend the implementation of a construction environmental monitoring and audit program and carrying out of continuous dust monitoring during construction phase as Environmental Monitoring and Audit requirements in the future EIA study. Details of which will be subject to the EIA study. The proposed development will follow the statutory requirement on EM&A programme/ activities accordingly. The Applicant will observe and ensure relevant mitigation measures are implemented during construction stage and that the Proposed Development will comply with all statutory requirements.

Other Pollutants Sources

4.2.4 The operation of construction equipment may cause adverse air quality during the construction phase. It is suggested that the contractor should plan their construction activities in such a way that only the required number of construction plants should be deployed to the construction site at different stages of works in order to minimize the number of construction plants working at the same time. The Air Pollution Control (Fuel Restriction) (Amendment) Regulation 2024 controls the fuel to be used. In particular, liquid fuel with a sulphur content not exceeding 0.001% by weight and a viscosity not more than 6 centistokes at 40°C, such as Ultra Low Sulphur Diesel should be used. In addition, emissions from all the regulated machines within construction site will be controlled under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation. Only approved or exempted Non-road Mobile Machinery with a proper label will be allowed to be used at construction site. In addition, electrified NRMM should be considered and used as far as practicable and exempted NRMM should be avoided. As such, emissions due to construction equipment will be under control and adverse construction air quality impact is not anticipated.

4.3 Mitigation Measures for Fugitive Dust and Gaseous Emission

4.3.1 Fugitive dust and gaseous emissions arising from construction activities can be effectively controlled by incorporating proper mitigation measures into work procedures through contractual clauses, good site management, and close monitoring by the resident engineers. The contractor shall be required to follow the requirements of the Air Pollution Control (Construction Dust) Regulations. With implementation of control measures stipulated under the Air Pollution Control (Construction Dust) Regulation and adoption of good site practices, it is expected that dust and gaseous emissions will be controlled. The recommended mitigation measures are described below.

General Site Management

4.3.2 Appropriate working methods should be devised and arranged to minimise dust emissions and to ensure any installed control system and/or measures are operated and/or implemented in accordance with their design merits. No free falling of construction debris should be allowed, which should be let down by hoist or enclosed tunnel to the ground; immediately before leaving the construction site, all vehicles shall be washed to remove any dust materials from its body and wheels; providing hoarding along site boundary which is next to a road or other public area; provide effective dust screens, sheeting, or netting to enclose any scaffolding built around the perimeter of a building; prevent placing dusty material storage piles near ASRs; and minimizing exposed surface and properly cover stockpile as far as possible and apply frequent watering when working close to the ASRs to supress dust emission. In view of relatively close separation distance to ASRs near Ha Chuk Yuen Road and Ha San Wai Road, higher hoarding could also be considered during construction; locating the haul road away from this ASR as far as possible; and careful arrangement of construction program to avoid concurrent dusty works as far as practicable. Covering of exposed soil surface and regular watering to suppress any dust emission. In addition, feasibility of providing electric power supply can be explored for on-site machinery as far as practicable to minimise aerial emissions.

4.3.3 Frequent mist/ water spraying should be applied on dusty areas. The frequency of spraying will depend upon local conditions such as rainfall, temperature, wind speed and humidity. The amount of water spraying should be just enough to dampen the material without over-watering which could result in surface water runoff.

Vehicles and Unpaved Site Roads

4.3.4 Dust emission from unpaved roads comes predominantly from travelling of vehicles. Areas within the site where there are regular vehicle movements should have a hard surface such as crushed stone, gravel or other granular materials. Speed controls at an upper limit of 10 km/hr should be imposed and their movements should be confined to designed roadways within the site. All dusty vehicle loads should have side and tail boards covered by tarpaulin sheeting. Wheel-wash troughs and hoses should be provided at exit points of the site.

Material Stockpiling and Handling

4.3.5 The amount of stockpiling should be minimised where possible. Construction material or debris should be covered and stored inside enclosed areas. Other control measures such as enclosed or semi-enclosed windboard should be used, where applicable, to minimise dust emission. Regular watering is needed at areas such as storage piles, where there could be potential dust emission.

Concrete Batching Plant

4.3.6 No concrete batching plant is anticipated at this stage. Should a concrete batching plant be required, a specified process licence shall be obtained from the authority, which will give guidelines on dust mitigation measures required as terms and conditions, and its implementation will be controlled through the specified process licence. A quantitative construction impact assessment will be required should a concrete batching plant be required later on to ensure that no adverse construction air quality impact will be imposed on the nearby ASRs.

4.4 Water Quality Impacts and Recommended Mitigation Measures During Construction Phase

Source of Construction Wastewater

4.4.1 Construction activities would inevitably have the potential to generate wastewater. Works should be carried out in such a manner as to minimise adverse impacts on local water bodies. Sources of construction wastewater are identified and described in **Sections 3.5.1** to **3.5.4**. Activities that are likely to cause water pollution include:

- Construction runoff and wastewater;
- Sewage from construction workforce; and
- Accidental spillage of chemicals, e.g. oil, diesel, solvents etc.

Mitigation Measures

4.4.2 The good practice given in the Practice Notes for Professional Persons on "Construction Site Drainage" (*ProPECC PN* 2/24) in controlling water pollution at construction site shall be implemented during the construction phase of the Proposed Development. Soil erosion from the construction site can be minimised through good on-site management practices by implementing viable erosion control measures which should be incorporated in contract clauses. The main practices provided in the above-mentioned document (i.e. *ProPECC PN* 2/24) are also summarized in the following paragraphs which should be enforced to prevent unacceptable construction stage impacts and for compliance with the statutory criteria.

(i) Construction Site Runoff and Wastewater

- Exposed soil surfaces should be protected from rainfall through, for example, by covering temporarily exposed slope surfaces or stockpiles with tarpaulin and protect temporary access roads by crushed stone or gravel;
- Exposed soil areas should be minimised to reduce the potential for increased siltation and contamination of runoff;
- Minimise the time that soil surfaces are exposed;
- Slow down water run-off flowing across exposed soil surfaces;
- Channels, earth bunds or sandbag barriers should be provided on site to properly direct surface runoff through drainage systems;
- Oil interceptors are also recommended to be provided for stormwater drains near plant maintenance/ repair areas, where necessary.
- Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent slit, construction materials or debris from getting into the drainage system;
- Construction works should be programmed to minimise soil excavation works where practicable during rainy conditions;
- Drainage facilities must be adequate for the controlled release of storm flows;
- Sedimentation basins and sand traps designed in accordance with the requirements of *ProPECC PN* 2/24 should be installed at the construction site for collecting surface runoff. Perimeter channels at site boundaries should be provided where necessary to intercept surface runoff from outside the site. Silt removal facilities, channels and manholes should be maintained and deposited silt and grit should be removed regularly;
- There should be no direct discharge without treatment of construction site runoff into the nearby streams and public drains;

- The Contractor shall prepare a construction site drainage management plan with details of the construction phase drainage system proposed to be constructed; discharge location(s); and screening facilities;
- The Contractor(s) shall apply for a discharge licence under the WPCO and the discharge shall comply with the terms and conditions of the licence throughout the construction phase;
- Construction of proposed sewers should be carried out in phases to minimise exposed area. Asides from above-mentioned general best practices, the temporary works area should be carefully planned and located to avoid potential disturbance. Temporary stockpile area should be located away from nearby receiving water body or drainage channel. Best practices in "Construction Site Drainage" (*ProPECC PN* 2/24) should be adopted. Trenchless construction method should also be explored as far as possible. Visual inspection to nearby receiving drainage channels should be carried out during construction phase;
- Vehicle wheel washing facilities should be provided at site exit such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before leaving the site area;
- Section of construction road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains; and
- If bentonite is used, bentonite slurry should be reconditioned and reused as far as practicable. Spent bentonite should be kept in a separate slurry collection system for disposal at a marine spoil grounds subject to obtaining a marine dumping licence from EPD. If used bentonite slurry is to be disposed of through public drainage system, it should be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards in accordance with *ProPECC PN* 2/24.

(ii) Sewage from Construction Workforce

- Sewage generated from the construction workforce should be contained by chemical toilets before connection to public foul sewer can be provided. The number of chemical toilets required would be subject to the capacity of the chemical toilets, and contractor's practices/ work programme. The Contractor(s) will be required to provide an estimation on the amount of sewage to be generated and to provide sufficient number of chemical toilets for construction workers. The chemical toilets should be serviced and cleaned by a specialist contractor at regular intervals. No discharge of sewage into nearby environment will be allowed during construction stage. Such requirements will be incorporated into relevant contractual clauses of this Proposed Amendment Scheme for proper implementation; and
- Canteen facilities are not expected. However, in case canteen is required, foul water from canteens on-site, if any, should also be contained by chemical toilets/ sewage holding tank before connection to public foul sewer can be provided. Wastewater collected from canteen kitchens, should be treated via grease traps and contained by chemical toilets/ sewage holding tanks, and collected by a licensed contractor regularly

(iii) Accidental Spillage

- Spillage of fuel oils or other polluting fluids should be prevented at source. It is recommended that all stocks should be stored inside proper containers and sited on sealed areas, preferably surrounded by berms;
- Regular site inspections to ensure the proper implementation of the above measures shall be carried out; and
- For the disposal of chemical wastes, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the requirements stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and Cap.354 C Waste Disposal (Chemical Waste) (General) Regulation. Chemical waste should be collected by a licensed collector and to be disposed of at a licensed chemical waste treatment and disposal facility.

4.5 Construction Waste Disposal

Legislation

4.5.1 Waste disposal from construction site is subject to control under the Waste Disposal Ordinance. The principal legislation controlling waste materials in Hong Kong is the Waste Disposal Ordinance (WDO) (Cap. 354) and its subsidiary regulations.

Type of Construction Waste

4.5.2 Construction of Proposed Development would involve site clearance, site formation and excavation, foundation and piling works, as well as superstructure building construction works. Construction activities will generate waste materials requiring appropriate management and disposal. Likely range of waste types includes:

- excavated C&D materials and site clearance waste;
- general refuse generated by the workforce; and
- chemical and oily wastes due to maintenance of equipment.

4.5.3 The general waste management strategy is to avoid waste generation in the first place. If that is unavoidable, source reduction and segregation should be exercised as far as practicable and at the same time, recycling and reuse should be adopted to salvage as much as possible all the recyclable and reusable materials. The following paragraphs provide a general waste management approach as well as good practices for waste management.

Construction and Demolition (C&D) Materials

4.5.4 On-site sorting of construction wastes will be recommended. On-site sorting can be achieved by avoiding the generation of "mixed waste" through good site control.

4.5.5 Waste generated by construction activities should be sorted into inert C&D materials and non-inert C&D materials. The inert C&D materials which usually comprise soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates shall be reused in earth filling, reclamation or site formation works as far as possible. The non-inert C&D materials which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled as far as practicable and, as the last resort, disposal of at landfills. On the other hand, it should explore other disposal method such as the timber and woody materials to the Yard Waste Recycling Centre in Y-Park for recycling prior to disposal at the designated landfill site, to minimise the quantity sent to landfill disposal.

4.5.6 Construction wastes shall be sorted, with the inert C&D materials broken up into small pieces for disposal at public fill reception facility, and the non-inert C&D materials

should be disposed of at landfill. A Waste Management Plan (WMP) will be submitted in accordance with ADV-19 to the Engineer/Architect for approval prior to the commencement of construction works.

Table 4.1 Estimated Quantities of C&D Materials to be Generated

Type	Total Quantity Generated (m^3)	Disposal Method
Site Clearance	~14,769*	Recyclable non-inert C&D materials such as tree trunks and woody materials will be sent to Yard Waste Recycling Centre in Y-Park subject to availability and/or at landfill. Other non-inert C&D materials such as garbage that cannot be reused or recycled will be disposed of at landfill. Inert C&D materials to be reused as fill materials on site as far as practicable and any surplus amount to be sent to public fill reception facilities for reuse, e.g. in Tuen Mun Area 38 or designated location assigned by government.
Site formation, excavation & filling, etc.	29,100**	Inert C&D materials will be reused on-site as fill material where practicable. Any surplus inert C&D materials to be sent to public fill reception facilities for reuse in Tuen Mun Area 38 or designated location assigned by government.
Building construction	~5,719***	Inert C&D materials to be sent to public fill reception facilities for reuse in Tuen Mun Area 38 or designated location assigned by government. Non-inert C&D materials that cannot be reused or recycled, to be sent to landfill as last resort.

Remarks:

The above figures and disposal method are estimation only. The exact amount to be generated and disposal method will be subject later detailed design stage.

* Based on estimation of removal of top 300mm of the ground, e.g. soil and vegetation. Exact volume is subject to detailed design stage.

** Preliminary estimation of excavation and fill materials based on current proposed scheme and formation level. Exact volume is subject to detailed design stage.

*** Estimated based on the generation rate of $0.1m^3$ per $1m^2$ of Gross Floor Area (GFA). The total GFA of the Proposed Development is ~$57,185m^2$. The waste generated due to construction of building structures is estimated based on the generation rate of $0.1m^3$ per $1m^2$ of GFA (similar waste generation rate was also adopted in the approved EIA Report in the "Agreement No. CE61/2007 (CE), North East New Territories New development Area Planning and Engineering Study – Investigation", Section 7.5.1.2). Exact volume is subject to detailed design stage.

Chemical Waste

4.5.7 Chemical and oily wastes generated from the construction activities, vehicle and plant maintenance and oil interceptors should be handled and disposed of as chemical waste in strict compliance with the Waste Disposal (Chemical Waste) (General) Regulations and the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. The Contractor should be required to register with the EPD as a Chemical Waste Producer. It is recommended to avoid undertaking maintenance of equipment on-site as far as possible in order to avoid generation of chemical waste. In case chemical waste is generated, the quantity of chemical waste arising from the proposed Project is expected to be a few litres per month. The chemical waste should be collected by

licenced chemical waste collectors and disposal of at licenced waste disposal facilities such as Chemical Waste Treatment Centre (CWTC). Provided that the handling, storage and disposal of chemical wastes are in accordance with these requirements, adverse environmental impacts are not expected.

General Refuse

4.5.8 Throughout the construction stage, the workforce would generate general refuse comprising food scraps, wastepaper, empty containers, etc. It has been estimated that the quantity of general refuse to be generated by the construction workforce is about 162.5 kg/ day, which is based on a general refuse generation rate of about 0.65 kg per worker per day and an assumed 250 workers on-site. The exact number of construction workers and quantity of general refuse to be generated will be subject to later detailed design stage. The following general waste management practices are proposed to minimise the amount of general refuse generated during construction phase.

4.5.9 Release of general refuse into the nearby storm drain should not be permitted. Effective collection of site wastes would be required to prevent waste materials being blown around by wind, flushed or leached into the surrounding environment.

4.5.10 Recyclable materials (i.e. paper, plastic bottles and aluminium cans) should be separated from other materials for recycling, in order to reduce the amount of general refuse to be disposed of at landfill. Adequate number of enclosed waste containers should be provided to avoid over-spillage of waste. The non-recyclable refuse should be placed in bags, stored in enclosed containers, and disposed of at designated landfill on a daily basis.

4.5.11 With the implementation of the recommended waste management practices on site, adverse environmental impacts would not arise from the storage, handling and transportation of general refuse.

4.6 Conclusion

4.6.1 Potential environmental impacts arising from construction activities of the Proposed Development, including air quality, construction wastewater, noise and waste impacts have been qualitatively assessed. Potential environmental impacts are anticipated to be within acceptable bounds with the implementation of effective environmental mitigation measures. In conclusion, it is envisaged that construction phase environmental impacts arising from the Proposed Scheme would be surmountable.

5. WASTE MANAGEMENT

5.1 Introduction

5.1.1 This section reviews the types and quantities of potential sources of waste that will arise during the construction and operation of the Proposed Development. Potential environmental impacts associated with the handling and disposal of waste have been identified. Options for avoidance, minimization, reuse, recycling, treatment, storage, collection, transport and disposal of such wastes are examined.

5.2 Environmental Legislation, Policies, Standards and Criteria and other Relevant Guidelines

5.2.1 There are various types of waste which may arise during construction works. The various types of waste may require a different approach for management according to their specific characteristics. The regulations and requirements regarding waste management (collection, storage, transfer and disposal) of the various waste streams are summarised below.

5.2.2 The principal legislation controlling waste materials in Hong Kong which are relevant to this Proposed Development are:

- Waste Disposal Ordinance (WDO) (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation; and
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation.

5.2.3 Other key relevant guidelines published by various Government Departments and Bureaux include:

- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes;
- Works Branch Technical Circular No. 2/93 "Public Dumps"; and
- PNAP No. 243 (ADV-19) – "Construction and Demolition Waste".

5.3 Identification and Evaluation of Potential Impacts

Operational phase

5.3.1 It is anticipated that general refuse will be generated during operation of the Proposed Development. General refuse will be generated by residents during the operation of the Proposed Development.

5.3.2 With the domestic nature and scale of development, the amount of general refuse to be generated during operational phase is estimated to be about 3.4 tons/day, which is based on a per capita waste disposal rate at 0.89 kg/person/day indicated in the Monitoring of Solid Waste in Hong Kong 2023 and a population of about 3,866. Standard refuse handling approach that is widely adopted in other residential development sites that is required by the government e.g. provision of refuse collection and storage facility as required under the Buildings Ordinance, will be adopted for the provision of facility for handling and disposal of collected waste. Refuse should be properly collected and stored at a designated location, and collection of waste will be arranged by a contracted waste collection contractor on regular basis. Other measures for instance, set up of recycling bins and recycling point shall be adopted to encourage segregation and recycling of aluminium and plastic wastes, and wastepaper in order to reduce general refuse generation. Subject to detailed design stage, the Proposed Development will consider feasibility of other appropriate recycling means for food

waste, e.g. delivering food waste generated to Organic Resource Recovery Centre (ORRC) or installation of food waste recycling machines for composing treatment, etc.

Construction Phase

5.3.3 Type of construction waste to be generated during construction and relevant best practices are provided in Section 4.5.

6. OVERALL CONCLUSION

6.1.1 The Application Site is surrounded by Kam Pok Road, Fung Chuk Road and Ha Chuk Yuen Road, and a number of existing and planned residential developments adjacent to Castle Peak Road and San Tin Highway. The site is designated for residential use by the government under the current OZP. A residential scheme was previously approved by TPB for the site (A/YL-MP/287). The Applicant proposes to rezone the site to allow for a high domestic plot ratio from 0.2 to 1.5 to increase the supply of private flats to echo the change in planning context to suburban development area in the Northern Metropolis.

6.1.2 To assess the environmental impact of the revised residential scheme, qualitative air quality impact assessment, water quality impact assessment, construction phase impact assessment and waste impact assessment have been conducted.

6.1.3 The potential sources of air quality impacts during construction have been identified and practicable good practices are also recommended. With appropriate control measures and good practice in place, adverse air quality impact during construction phase is not anticipated. The Application Site can satisfy the buffer distance requirements stated in the HKPSG for air sensitive uses of the Proposed Development. Thus, no adverse air quality impacts to the planned ASRs due to vehicular emission are expected. No adverse air quality impacts due to industrial emissions are expected as no industrial emissions sources have been identified within 500m from the Study boundary. Thus, adverse air quality impact during operation phase is not anticipated.

6.1.4 There is an on-site proposed private sewage pumping station proposed within the Application Site. With careful design of this SPS such as provision of odour removal and exhaust facing away from the ASRs the odour impact arising from the proposed on-site SPS is minimised. Thus, adverse air quality or odour impacts due to operation of the said pumping stations is not anticipated.

6.1.5 During construction phase, wastewater will be generated from Application Site. With the implementation of recommended pollution control measures, adverse water quality impact during construction phase is not anticipated. During the operational phase, the sewage generated by the Proposed Development will be discharged into proposed private SPS before discharging into proposed sewers along Kam Pok Road and Pok Wai South Road and finally discharges into existing Nam Sang Wai Sewage Pumping Station. Thus, no adverse water quality are envisaged for the operational phase of the Project.

6.1.6 For waste management, with the implementation of good construction site practices and appropriate general refuse handling approach, the wastes generated from the construction and operation of Proposed Development could be minimised.

6.1.7 To this end, it can be concluded that the Proposed Development is considered feasible and acceptable in the environmental standpoint.

Figures

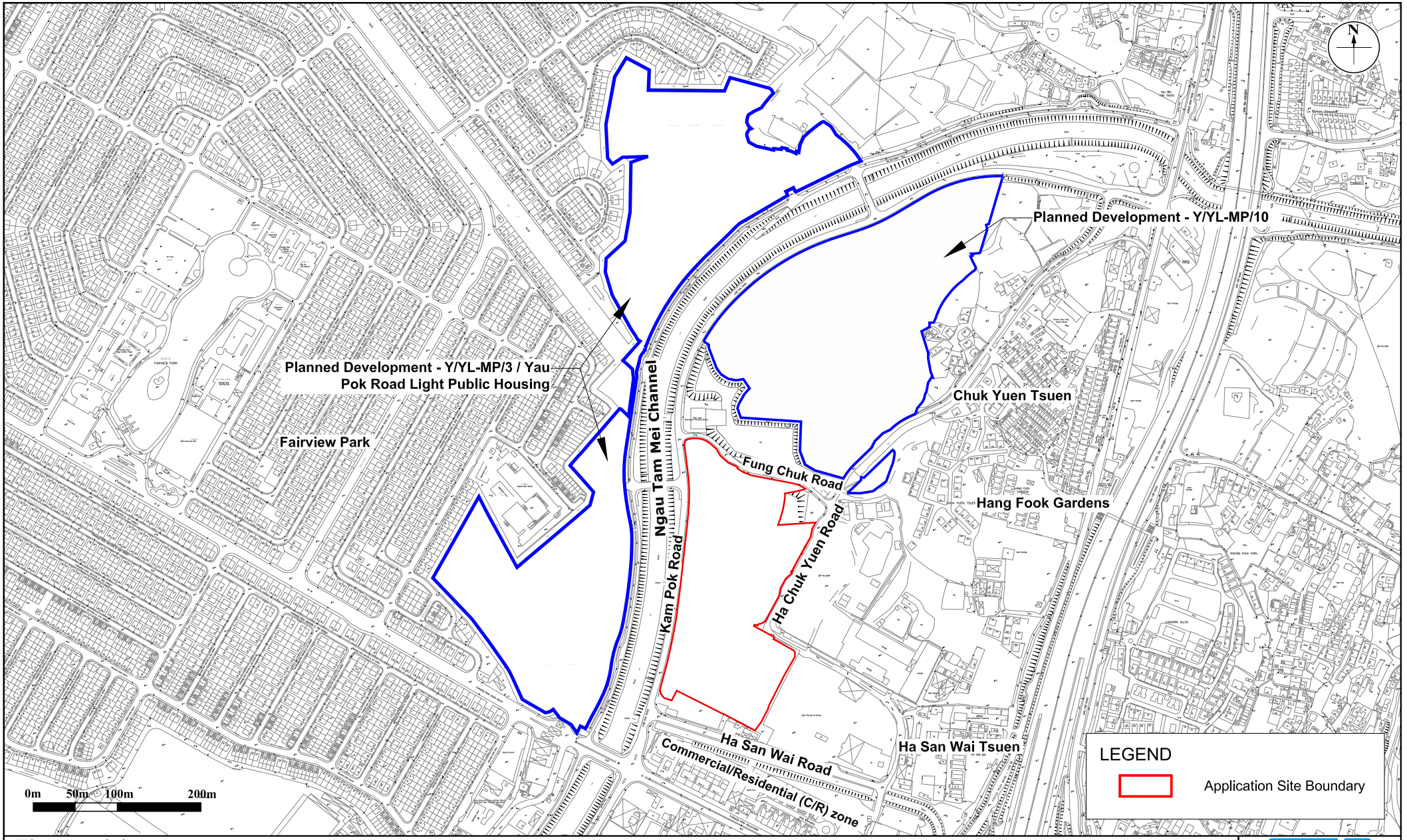


Figure: 1.1	RAMBOLL
Title: Location of the Application Site and its Environs	Drawn by: EC Checked by: HN
Project: Rezoning Application from "Residential (Group D)" to "Residential (Group C)2" Zone at Lot 4822 in D.D. 104 and Adjoining Government Land, East of Kam Pok Road, Mai Po, Yuen Long, New Territories	Rev.: 1.1 Date: Jul 2025

Q:\Projects\HENKPRRDEI03\04 Deliverables\01 EA Report\01 Figures\R9782_v1.1\Source\Figure 1.1 Location of the Application Site and its Environs.dwg

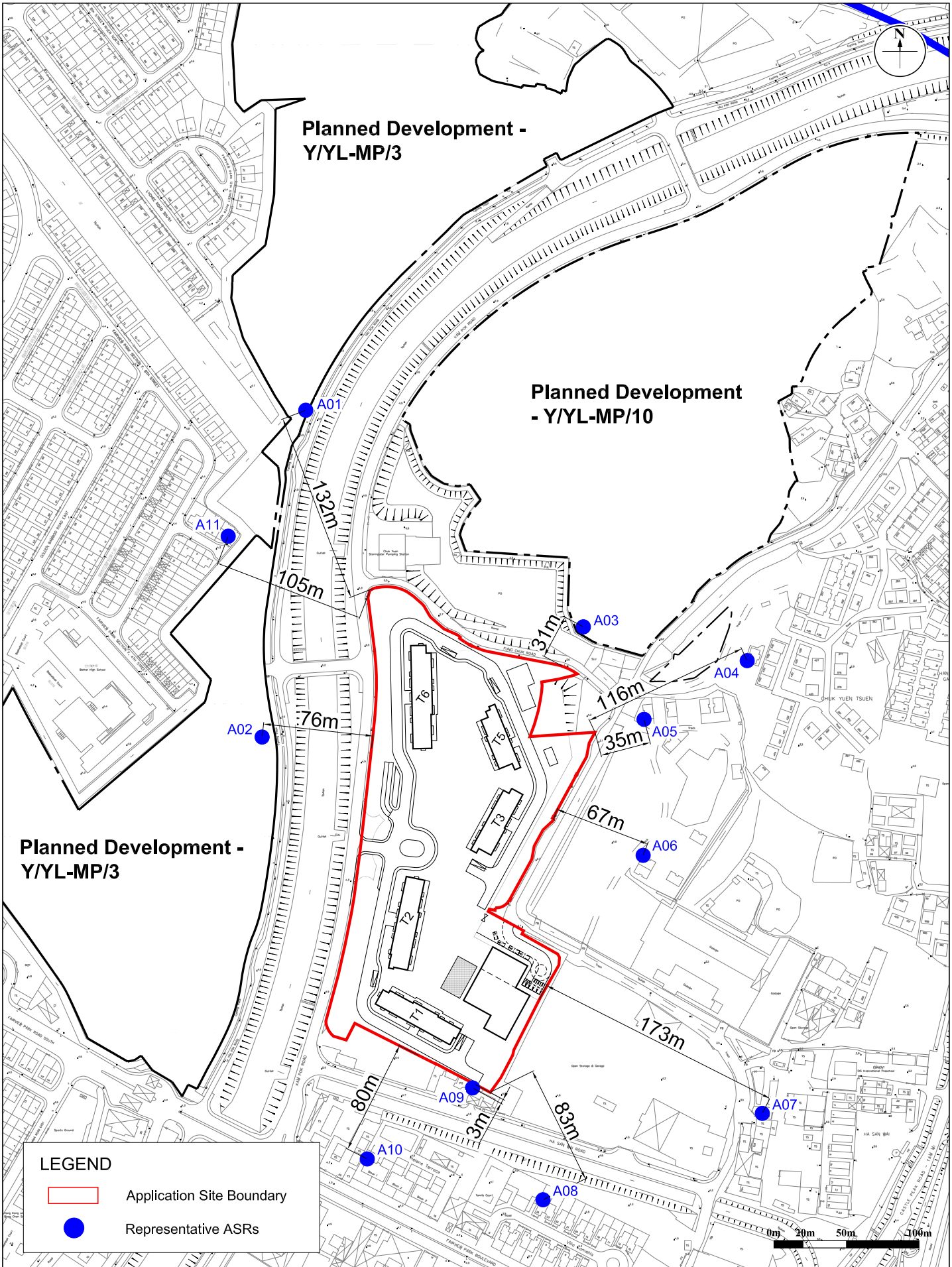
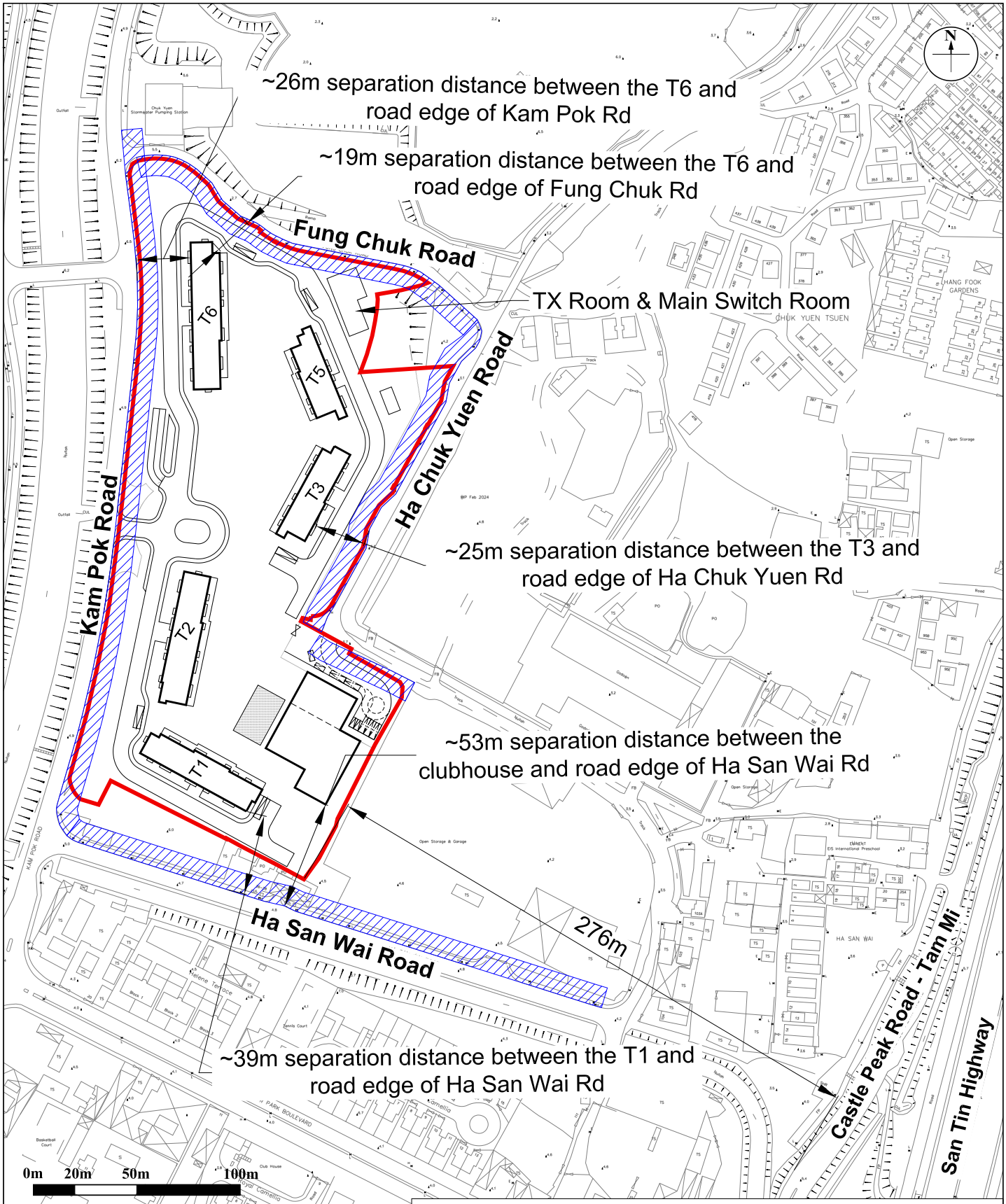


Figure:	2.1	RAMBOLL	
Title:	Location of Representative Air Sensitive Receivers for Air Quality Impact Assessment (Construction Phase)	Drawn by:	EC
		Checked by:	HN
Project:	Rezoning Application from "Residential (Group D)" to "Residential (Group C)2" Zone at Lot 4822 in D.D. 104 and Adjoining Government Land, East of Kam Pok Road, Mai Po, Yuen Long, New Territories	Rev.:	1.1
		Date:	Jul 2025

Q:\Projects\HENKPRRDEI03\04 Deliverables\01 EA Report\01 Figures\R9782_v1.1\Source\Figure 2.1 Location of Representative Air Sensitive Receivers for AIr Quality Impact Assessment (Construction Phase).dwg



LEGEND

- Application Site Boundary
- 10m Buffer Zone for nearby Roads

Remark:

(1) No air sensitive uses, including fresh air intake of ventilation system, openable windows and recreational uses in open space of proposed development should be located within the buffer zone.

(2) Kam Pok Road is a Rural Road, and Ha Chuk Yuen Road, Fung Chuk Road, and Ha San Wai Road are single track access road. To be conservative, a 10m buffer zone from road edge is currently assumed for the purpose of this assessment.

(3) For the buildings in which part of them fall within the buffer zone (i.e. E&M structures such as "TX Room & Main Switch Room"), it is confirmed that these buildings are anticipated to be un-manned, or otherwise they will need to be designed in such a way that there shall be no air-sensitive use including openable window, fresh air intake and recreational use in open space located within the buffer zone."

Figure: 2.2

Title: Buffer Distance between the Application Site and nearby Road Networks

Project: Rezoning Application from "Residential (Group D)" to "Residential (Group C)2" Zone at Lot 4822 in D.D. 104 and Adjoining Government Land, East of Kam Pok Road, Mai Po, Yuen Long, New Territories

RAMBOLL

Drawn by:	EC
Checked by:	HN
Rev.:	1.1
Date:	Jul 2025

Q:\Projects\HENKPRRDEI03\04 Deliverables\01 EA Report\01 Figures\R9782_v1.1\Source\Figure 2.2 Buffer Distance between Application Site and nearby Road Networks.dwg

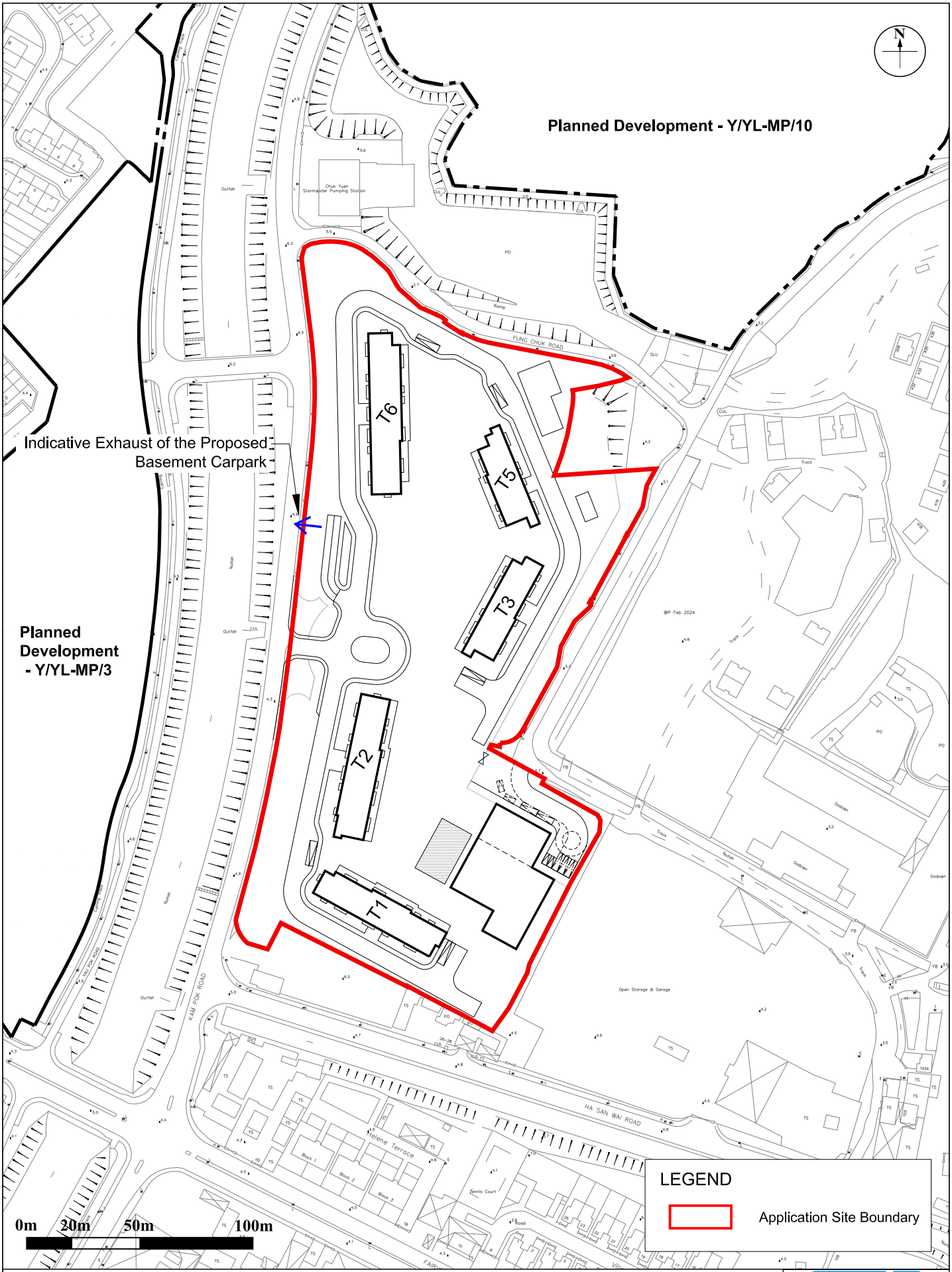


Figure: 2.3	RAMBOLL
Title: Proposed Location of the Exhaust of the Basement Carpark	Drawn by: EC
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Project: Rezoning Application from "Residential (Group D)" to "Residential (Group C)2" Zone at Lot 4822 in D.D. 104 and Adjoining Government Land, East of Kam Pok Road, Mai Po, Yuen Long, New Territories	Rev.: 1.1
	Date: Jul 2025

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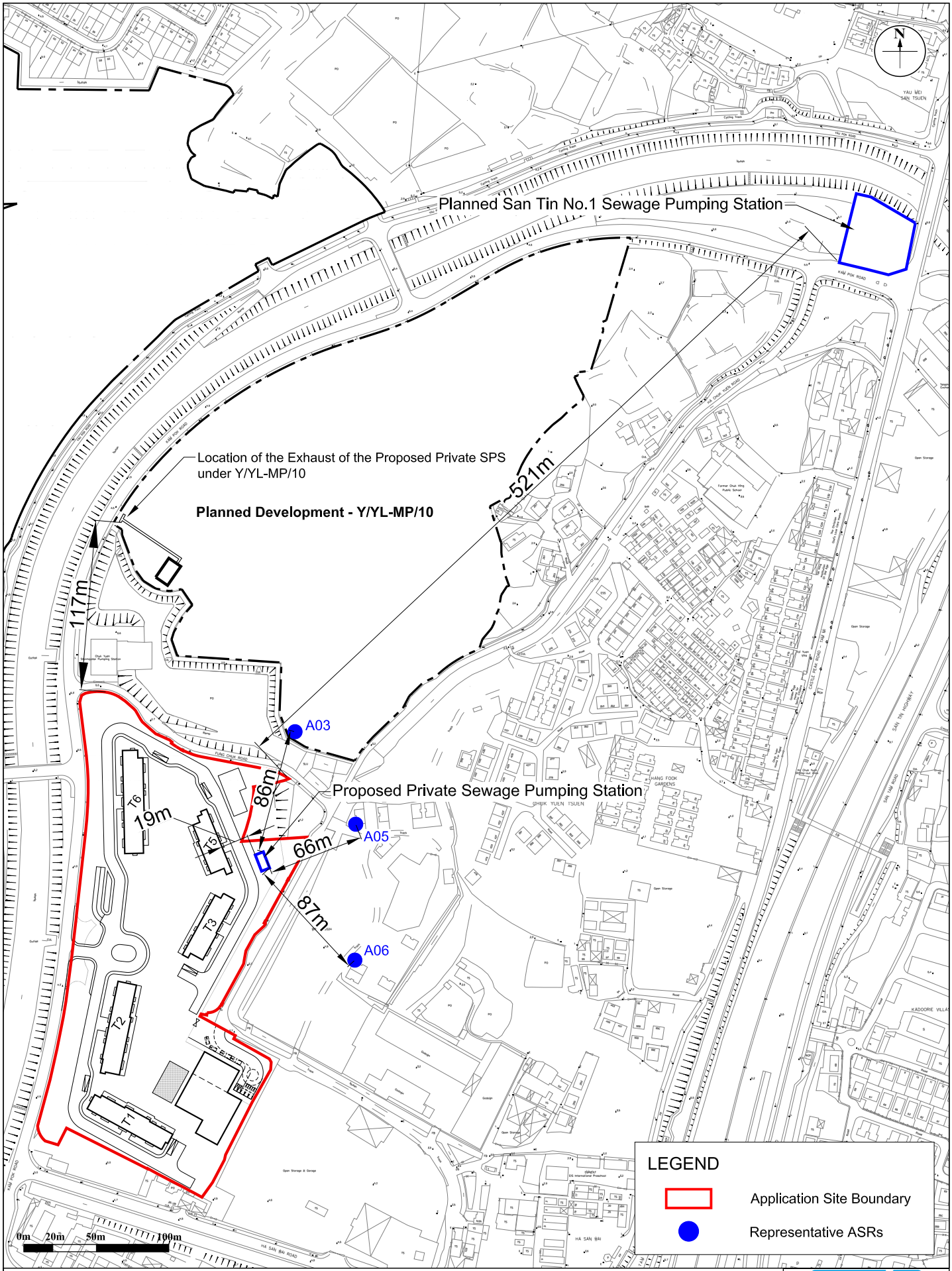

Figure:	2.4	RAMBOLL
Title:	Location of the Planned San Tin No. 1 Sewage Pumping Station and Proposed Private Sewage Pumping Station	Drawn by: EC Checked by: HN
Project:	Rezoning Application from "Residential (Group D)" to "Residential (Group C)2" Zone at Lot 4822 in D.D. 104 and Adjoining Government Land, East of Kam Pok Road, Mai Po, Yuen Long, New Territories	Rev.: 1.1 Date: Jul 2025

Q:\Projects\HENKPRRDEI03\04 Deliverables\01 EA Report\01 Figures\R9782_v1.1\Source\Figure 2.4 Location of the Planned San TIn No.1 Sewage Pumping Station and Proposed Private Sewage Pumping Station.dwg

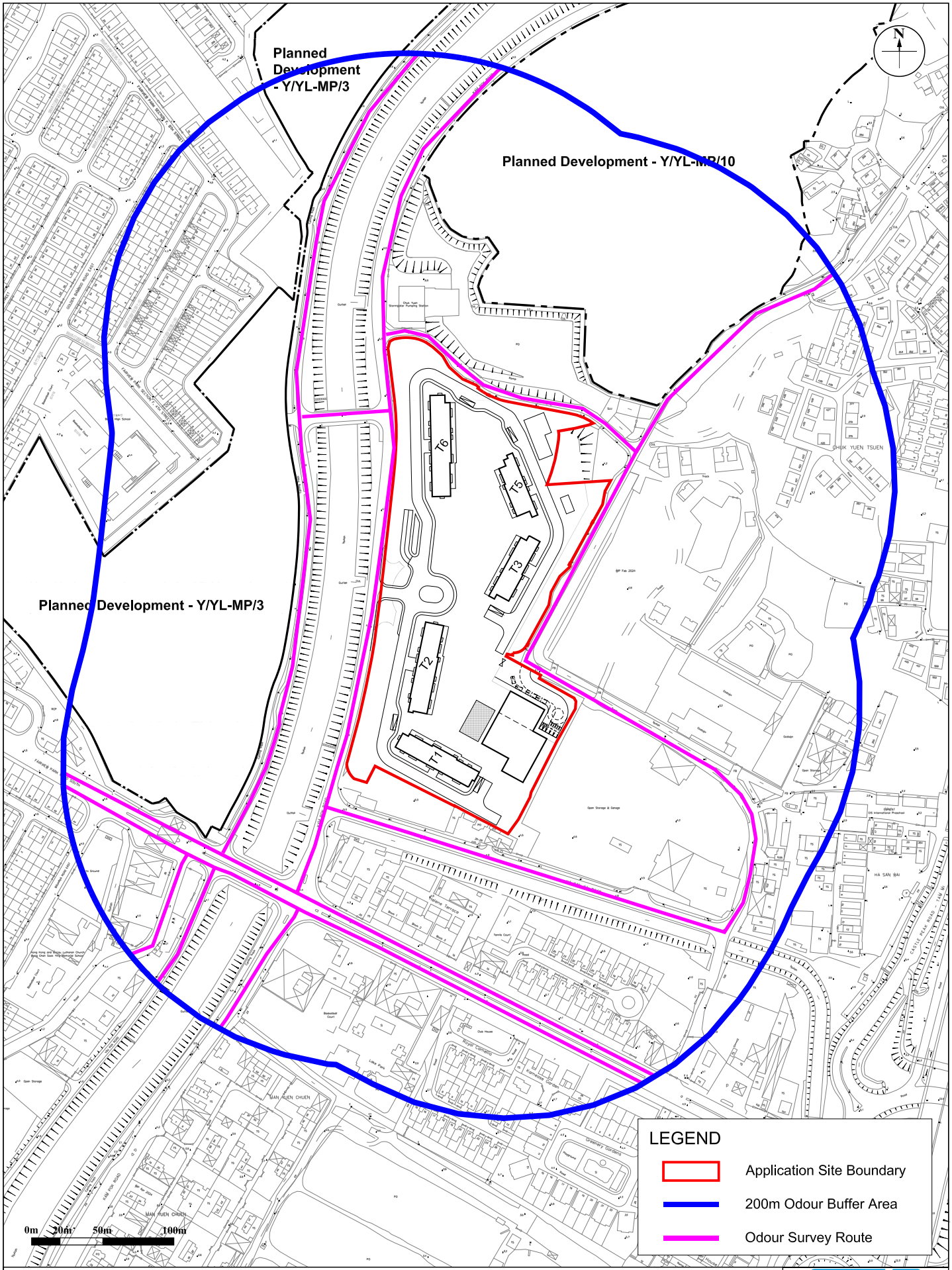

Figure: 2.5	RAMBOLL
Title: Odour Survey Route	Drawn by: EC
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Project: Rezoning Application from "Residential (Group D)" to "Residential (Group C)2" Zone at Lot 4822 in D.D. 104 and Adjoining Government Land, East of Kam Pok Road, Mai Po, Yuen Long, New Territories	Rev.: 1.1
	Date: Jul 2025

Q:\Projects\HENKPRRDEI03\04 Deliverables\01 EA Report\01 Figures\R9782_v1.1\Source\Figure 2.5 Odour Survey Route.dwg

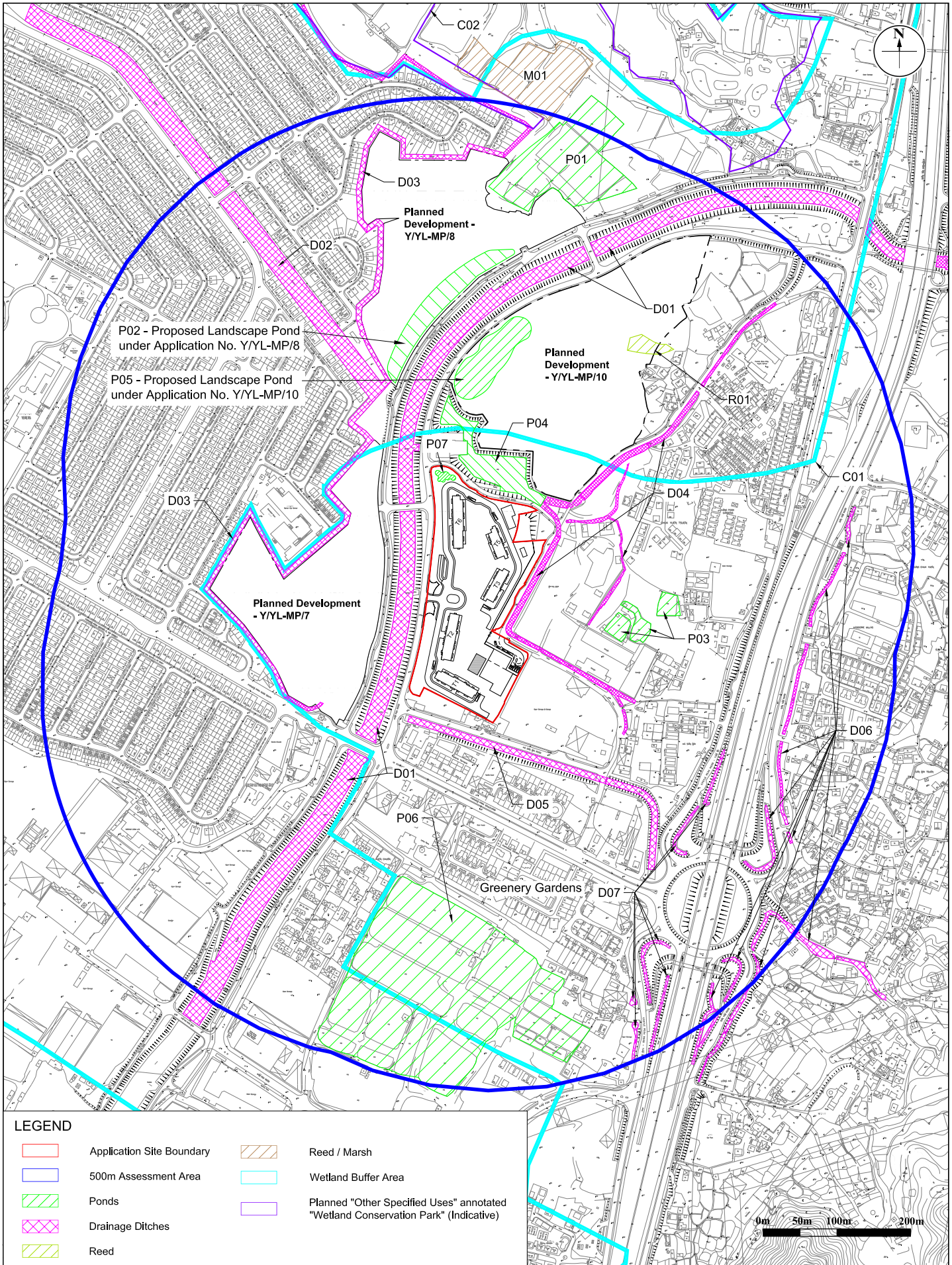


Figure:	3.1	RAMBOLL
Title:	Location of Water Sensitive Receivers for Water Quality Impact Assessment	Drawn by: EC Checked by: HN
Project:	Rezoning Application from "Residential (Group D)" to "Residential (Group C)2" Zone at Lot 4822 in D.D. 104 and Adjoining Government Land, East of Kam Pok Road, Mai Po, Yuen Long, New Territories	Rev.: 1.1 Date: Jul 2025

Q:\Projects\HENKPRRDEI03\04 Deliverables\01 EA Report\01 Figures\R9782_v1.1\Source\Figure 3.1 Location of Water Sensitive Receivers for Water Quality Impact Assessment.dwg

Appendix

Appendix 1.1

Layout Plan of the Proposed Development

LEGEND

- APPLICATION SITE BOUNDARY
- FENCE WALL (2.5mH)
- SWIMMING POOL
- LAY-BY

Remark : 1. All spot levels marked on building structures (including towers and clubhouse) refer to the main roof levels.

YAU POK ROAD
NGAU TAM MEI CHANNEL
KAM POK ROAD
HA SAN WAI ROAD
HA CHUK YUEN ROAD
FUNG CHUK ROAD
Cycling Track
Nullah
Outfall
CUL
Stormwater Chuk Yuen Pumping Station
Ramp
SLU
WIP Jul 2021
Track

T1 16 STOREYS +59.85 PRIVATE GARDEN
T2 16 STOREYS +59.85 PRIVATE GARDEN
T3 16 STOREYS +59.85 PRIVATE GARDEN
T5 16 STOREYS +59.85 PRIVATE GARDEN
T6 16 STOREYS +59.85 PRIVATE GARDEN

OUTDOOR SWIMMING POOL
ROOF +15.40
CLUBHOUSE (2 STOREYS)
6-CLASSROOM KINDERGARTEN AT G/F, NEIGHBOURHOOD ELDERLY CENTRE (NEC) AT 1/F

LANDSCAPE AREA +5.40
LANDSCAPE AREA +10.40
TX ROOM & MAIN SWITCH ROOM
SEWAGE PUMPING STATION

S1
S2
S3
X1
Z1
Y1

15m
33.5m
50m
10m
7.3m
11.4m
9.5m
21m
16m
12m
6m
2m
3m
5m
8m
9m

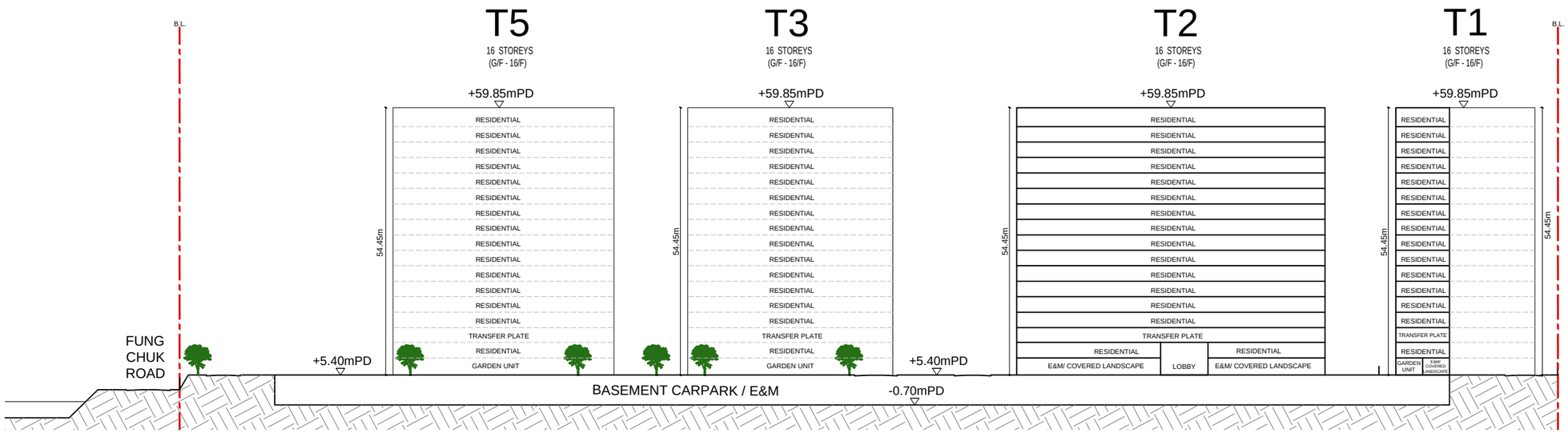
N

Lot 4822 IN D.D.104, Kam Pok Road, Mai Po, Yuen Long

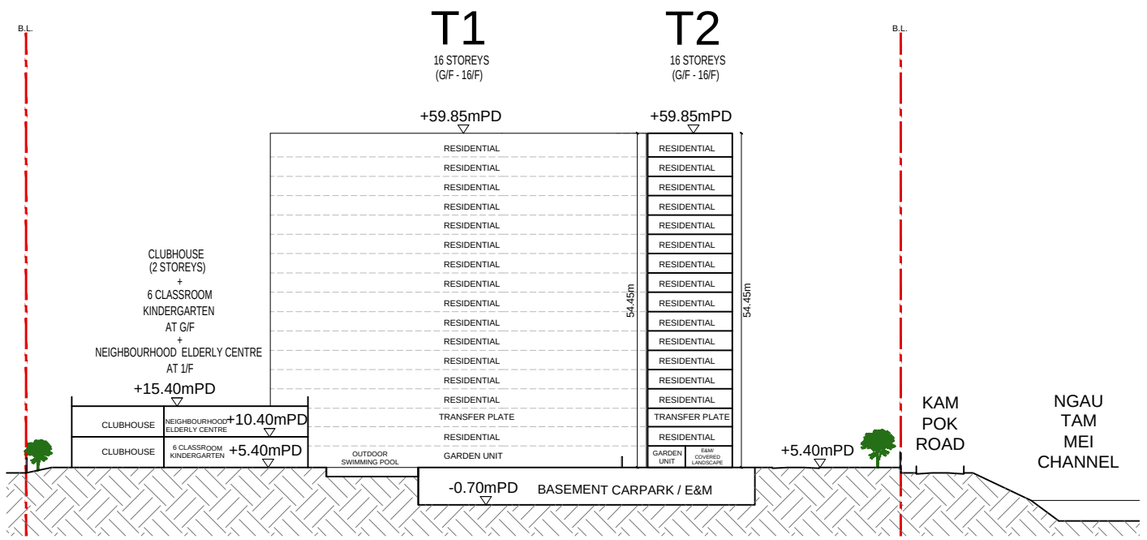
MASTER LAYOUT PLAN

0 10 20 30m

DATE : 17/07/2025



SECTION S1-S1



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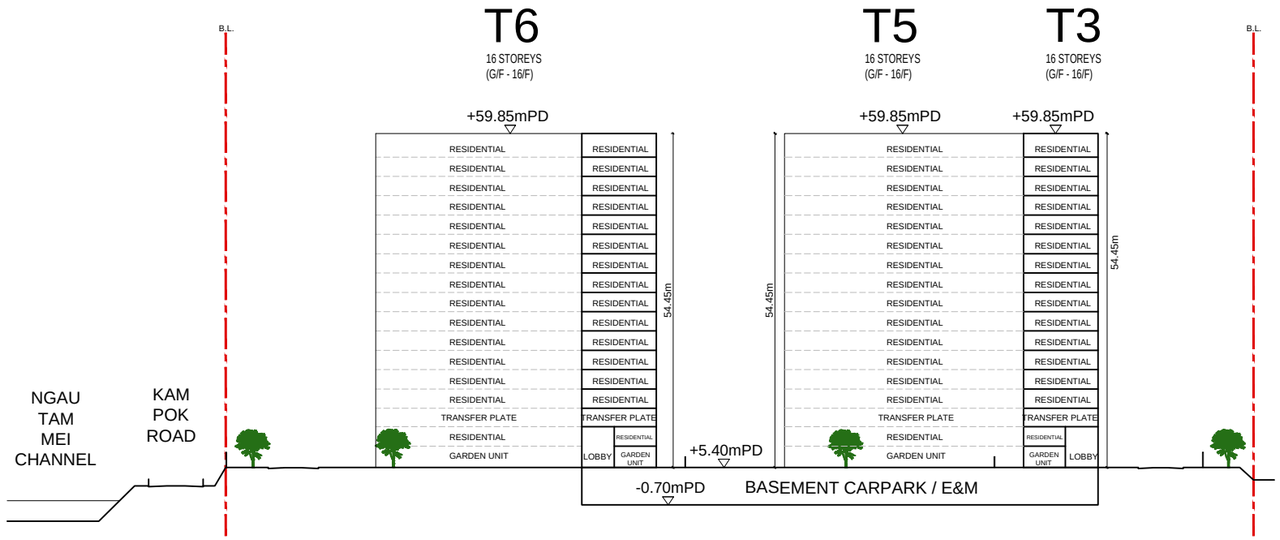

SECTION S3-S3

Appendix 3.1

Historic River Water Quality Monitoring Data

River Quality Monitoring Data in 2024

Water Control Zone	River	Station	Dates	Sample No	Dissolved Oxygen (mg/L)	pH	Suspended solids (mg/L)	5-Day Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Oil and Grease (mg/L)	*E.coli* (counts/100mL)	Faecal Coliforms (counts/100mL)	Ammonia-Nitrogen (mg/L)	Nitrate-Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)
Deep Bay	Fairview Park Nullah	FVR1	17/1/2024	1	5.1	7.2	7.1	5.9	33	<0.5	30000	91000	1.4	0.98	1.7
Deep Bay	Fairview Park Nullah	FVR1	14/2/2024	1	9	7.9	2.7	9.2	64	<0.5	1700	10000	0.96	0.5	2
Deep Bay	Fairview Park Nullah	FVR1	11/3/2024	1	6.7	7.2	10	14	50	<0.5	100000	170000	1.4	1.4	2.6
Deep Bay	Fairview Park Nullah	FVR1	18/4/2024	1	7.4	8.2	31	9.9	46	<0.5	72000	150000	0.76	0.48	3.1
Deep Bay	Fairview Park Nullah	FVR1	16/5/2024	1	9	8	16	6.4	27	<0.5	65000	150000	0.63	0.56	2.3
Deep Bay	Fairview Park Nullah	FVR1	7/6/2024	1	6	7.3	19	5	18	<0.5	8000	22000	1.1	0.52	2.6
Deep Bay	Fairview Park Nullah	FVR1	11/7/2024	1	10.4	8.8	21	8.6	36	<0.5	67000	120000	0.72	0.49	2.7
Deep Bay	Fairview Park Nullah	FVR1	22/8/2024	1	3.3	7	3	2.2	14	<0.5	9000	21000	0.77	0.32	1.6
Deep Bay	Fairview Park Nullah	FVR1	12/9/2024	1	7.5	7.8	39	8.1	4	<0.5	11000	36000	0.32	0.43	2.2
Deep Bay	Fairview Park Nullah	FVR1	18/10/2024	1	4.3	7.2	9.2	14	35	<0.5	20000	90000	1.5	0.59	2.3
Deep Bay	Fairview Park Nullah	FVR1	22/11/2024	1	3.2	7.1	12	11	34	<0.5	450000	1100000	2	0.41	2.7
Deep Bay	Fairview Park Nullah	FVR1	12/12/2024	1	7.3	7.3	6.8	12	43	<0.5	12000	38000	1.6	0.62	2.4

River Quality Monitoring Data in 2024 (Cont'd)

Water Control Zone	River	Station	Dates	Sample No	Orthophosphate Phosphorus (mg/L)	Total Phosphorus (mg/L)	Sulphide (mg/L)	Aluminium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Flow (m³/s)
Deep Bay	Fairview Park Nullah	FVR1	17/1/2024	1	0.41	0.6	<0.02	<50	<0.1	<1	2	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	14/2/2024	1	0.37	0.48	<0.02	<50	<0.1	<1	2	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	11/3/2024	1	0.24	0.48	<0.02	<50	<0.1	<1	2	<1	20	null
Deep Bay	Fairview Park Nullah	FVR1	18/4/2024	1	0.23	0.54	0.04	<50	<0.1	<1	1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	16/5/2024	1	0.14	0.33	<0.02	<50	<0.1	<1	2	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	7/6/2024	1	0.36	0.47	0.02	<50	<0.1	<1	<1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	11/7/2024	1	0.2	0.5	0.04	<50	<0.1	<1	2	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	22/8/2024	1	0.16	0.32	<0.02	<50	<0.1	<1	<1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	12/9/2024	1	0.093	0.33	0.03	70	<0.1	<1	3	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	18/10/2024	1	0.46	0.5	<0.02	<50	<0.1	1	2	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	22/11/2024	1	0.5	0.53	0.07	<50	<0.1	1	2	<1	20	null
Deep Bay	Fairview Park Nullah	FVR1	12/12/2024	1	0.41	0.5	0.02	<50	<0.1	<1	2	<1	<10	null

River Quality Monitoring Data in 2023

Water Control Zone	River	Station	Dates	Sample No	Dissolved Oxygen (mg/L)	pH	Suspended solids (mg/L)	5-Day Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Oil and Grease (mg/L)	*E.coli* (counts/100mL)	Faecal Coliforms (counts/100mL)	Ammonia-Nitrogen (mg/L)	Nitrate-Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)
Deep Bay	Fairview Park Nullah	FVR1	13/1/2023	1	4.2	7.1	12	13	46	<0.5	120000	170000	2.8	0.39	4
Deep Bay	Fairview Park Nullah	FVR1	22/2/2023	1	7.2	7.5	11	11	33	<0.5	31000	86000	1.5	0.88	2.4
Deep Bay	Fairview Park Nullah	FVR1	23/3/2023	1	5.4	7.4	20	11	49	<0.5	100000	130000	1.7	0.84	3
Deep Bay	Fairview Park Nullah	FVR1	13/4/2023	1	11.7	8.5	20	8.5	70	<0.5	90000	190000	1.2	0.94	3.2
Deep Bay	Fairview Park Nullah	FVR1	12/5/2023	1	3.7	7.3	10	6.8	38	<0.5	28000	71000	1.9	0.54	2.7
Deep Bay	Fairview Park Nullah	FVR1	16/6/2023	1	3.8	7.4	6.8	7	15	<0.5	110000	440000	0.99	0.48	1.8
Deep Bay	Fairview Park Nullah	FVR1	7/7/2023	1	8.4	7.7	20	10	29	<0.5	5000	21000	0.86	0.79	2.1
Deep Bay	Fairview Park Nullah	FVR1	18/8/2023	1	6.9	7.4	22	5.4	9	<0.5	19000	55000	0.45	0.41	0.92
Deep Bay	Fairview Park Nullah	FVR1	15/9/2023	1	4.3	7.3	9.6	3	23	<0.5	2900	14000	1	0.34	1.9
Deep Bay	Fairview Park Nullah	FVR1	20/10/2023	1	4.7	7.2	18	4	18	<0.5	10000	27000	1.4	0.73	2.1
Deep Bay	Fairview Park Nullah	FVR1	15/11/2023	1	5.9	7.4	8	4.2	17	<0.5	15000	69000	1.7	1.2	2.6
Deep Bay	Fairview Park Nullah	FVR1	13/12/2023	1	5.5	7.2	8.6	5.9	30	<0.5	15000	56000	1.6	1.2	2.4

River Quality Monitoring Data in 2023 (Cont'd)

Water Control Zone	River	Station	Dates	Sample No	Orthophosphate Phosphorus (mg/L)	Total Phosphorus (mg/L)	Sulphide (mg/L)	Aluminium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Flow (m³/s)
Deep Bay	Fairview Park Nullah	FVR1	13/1/2023	1	0.53	0.73	<0.02	<50	<0.1	<1	2	<1	20	null
Deep Bay	Fairview Park Nullah	FVR1	22/2/2023	1	0.26	0.39	0.02	<50	<0.1	1	2	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	23/3/2023	1	0.29	0.56	<0.02	<50	<0.1	1	2	<1	10	null
Deep Bay	Fairview Park Nullah	FVR1	13/4/2023	1	0.22	0.53	0.04	<50	<0.1	<1	1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	12/5/2023	1	0.42	0.55	<0.02	<50	<0.1	1	2	<1	20	null
Deep Bay	Fairview Park Nullah	FVR1	16/6/2023	1	0.39	0.47	<0.02	<50	<0.1	<1	1	<1	10	null
Deep Bay	Fairview Park Nullah	FVR1	7/7/2023	1	0.23	0.36	<0.02	<50	<0.1	<1	1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	18/8/2023	1	0.095	0.12	<0.02	<50	<0.1	<1	<1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	15/9/2023	1	0.4	0.43	<0.02	<50	<0.1	<1	<1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	20/10/2023	1	0.2	0.3	0.02	<50	<0.1	<1	1	<1	10	null
Deep Bay	Fairview Park Nullah	FVR1	15/11/2023	1	0.23	0.35	<0.02	<50	<0.1	<1	2	<1	10	null
Deep Bay	Fairview Park Nullah	FVR1	13/12/2023	1	0.35	0.51	<0.02	<50	<0.1	<1	2	<1	20	null

River Quality Monitoring Data in 2022

Water Control Zone	River	Station	Dates	Sample No	Dissolved Oxygen (mg/L)	pH	Suspended solids (mg/L)	5-Day Biochemical Oxygen Demand (mg/L)	Chemical Oxygen Demand (mg/L)	Oil and Grease (mg/L)	*E.coli* (counts/100mL)	Faecal Coliforms (counts/100mL)	Ammonia-Nitrogen (mg/L)	Nitrate-Nitrogen (mg/L)	Total Kjeldahl Nitrogen (mg/L)
Deep Bay	Fairview Park Nullah	FVR1	14/1/2022	1	6.4	7.5	22	16	24	<0.5	7800	53000	2.9	0.38	4
Deep Bay	Fairview Park Nullah	FVR1	9/2/2022	1	5.5	7.4	17	7.9	43	<0.5	44000	89000	2.8	0.48	4.5
Deep Bay	Fairview Park Nullah	FVR1	28/4/2022	1	6.6	7.7	1.2	12	29	<0.5	28000	88000	1.4	0.84	4.2
Deep Bay	Fairview Park Nullah	FVR1	11/5/2022	1	5.8	7.3	19	6.4	26	<0.5	72000	130000	0.87	0.31	2.4
Deep Bay	Fairview Park Nullah	FVR1	17/6/2022	1	9.6	8.1	21	5.5	28	<0.5	62000	110000	1	0.44	3
Deep Bay	Fairview Park Nullah	FVR1	22/7/2022	1	9.8	8.6	34	12	66	<0.5	5900	17000	0.32	0.095	2.2
Deep Bay	Fairview Park Nullah	FVR1	12/8/2022	1	4.7	6.9	83	10	23	<0.5	1100000	1400000	1.3	0.17	2
Deep Bay	Fairview Park Nullah	FVR1	1/9/2022	1	10.4	8.4	21	14	43	<0.5	59000	110000	1.1	0.47	3.6
Deep Bay	Fairview Park Nullah	FVR1	19/10/2022	1	4.4	7.3	10	7.5	34	<0.5	57000	300000	0.83	0.95	2.2
Deep Bay	Fairview Park Nullah	FVR1	23/11/2022	1	3.3	7.2	7.3	5.5	26	<0.5	200000	330000	2.5	1.5	3.2
Deep Bay	Fairview Park Nullah	FVR1	14/12/2022	1	7.1	7.3	15	10	48	0.7	34000	61000	1.1	1	2.1

River Quality Monitoring Data in 2022 (Cont'd)

Water Control Zone	River	Station	Dates	Sample No	Orthophosphate Phosphorus (mg/L)	Total Phosphorus (mg/L)	Sulphide (mg/L)	Aluminium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Lead (µg/L)	Zinc (µg/L)	Flow (m³/s)
Deep Bay	Fairview Park Nullah	FVR1	14/1/2022	1	0.29	0.56	0.02	<50	<0.1	1	2	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	9/2/2022	1	0.33	0.57	0.03	<50	<0.1	1	2	<1	11	null
Deep Bay	Fairview Park Nullah	FVR1	28/4/2022	1	0.34	0.71	<0.02	<50	<0.1	<1	2	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	11/5/2022	1	0.27	0.43	<0.02	<50	<0.1	<1	1	<1	17	null
Deep Bay	Fairview Park Nullah	FVR1	17/6/2022	1	0.26	0.58	0.02	<50	<0.1	<1	<1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	22/7/2022	1	0.14	0.43	<0.02	<50	<0.1	<1	2	<1	10	null
Deep Bay	Fairview Park Nullah	FVR1	12/8/2022	1	0.18	0.36	<0.02	<50	<0.1	<1	1	<1	20	null

Deep Bay	Fairview Park Nullah	FVR1	1/9/2022	1	0.13	0.55	0.04	<50	<0.1	<1	<1	<1	<10	null
Deep Bay	Fairview Park Nullah	FVR1	19/10/2022	1	0.19	0.41	<0.02	<50	<0.1	<1	2	<1	20	null
Deep Bay	Fairview Park Nullah	FVR1	23/11/2022	1	0.47	0.6	<0.02	<50	<0.1	1	2	<1	20	null
Deep Bay	Fairview Park Nullah	FVR1	14/12/2022	1	0.19	0.35	<0.02	<50	<0.1	<1	2	<1	20	null

Remark:

1) Data presented are in annual medians of monthly samples; except those for faecal coliforms and E. coli which are in annual geometric means.
2) Values at or below laboratory reporting limits are presented as laboratory reporting limits.