

Proposed Amendment to the Building Height Restriction of the “Government, Institution or Community” Zone for Permitted Social Welfare Facility at No.58 Sha Chau Lei Tsuen, Ha Tsuen, Yuen Long, New Territories (Lot No. 2273 in DD 125 and the Extension Thereto) – S12A
Amendment of Plan Application

Appendix 5

Environmental Assessment

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ENVIRONMENTAL ASSESSMENT

FOR

**PROPOSED REDEVELOPMENT
OF POK OI HOSPITAL YEUNG
CHUN PUI CARE AND
ATTENTION HOME IN YUEN
LONG**

Prepared by

Allied Environmental Consultants Limited

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Project Title

Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long

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1. Introduction

- 1.1.1. Allied Environmental Consultants Limited (AEC) has been appointed to conduct an Environmental Assessment (EA) for the proposed redevelopment at Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long under S.12A of the Town Planning Ordinance (hereinafter called "Proposed redevelopment") at 58 Sha Chau Lei Tsuen, Ha Tsuen, Ping Ha Road, Yuen Long at Lot No. 2273 and the Extension thereto in Demarcation District 125("the Application Site").
- 1.1.2. The Application Site is currently zoned as "Government, Institution or Community" ("G/IC") with maximum building height of 3 storeys on the Approved Hung Shui Kiu and Ha Tsuen Outline Zoning Plan No. S/HSK/2 (Approved OZP). The Applicant proposes to redevelop the Application site for Residential Care Home for the Elderly (RCHE) with building height of about 47.9mPD. Given the redevelopment proposal does not comply with the BH restriction for the subject "G/IC" zone, an application for amendment of plan under s.12A of the Town Planning Ordinance is therefore required.
- 1.1.3. The proposed redevelopment will consist of the demolition of the existing building and the construction of an 47.9 mPD new block for Pok Oi Hospital Yueng Chun Pui Care & Attention Home of residential tower (Proposed Redevelopment). The tentative completion year is 2032.
- 1.1.4. Indicative drawings and other technical information on the Proposed redevelopment are provided by the Project Architect (P&T Architects Limited) and the traffic forecast is provided by the Project Traffic Consultant (MVA Hong Kong Limited).

2. Objectives

- 2.1.1. An Environmental Assessment for the Proposed Redevelopment is required in support of S12A Planning Application to assess the potential air quality, noise, water quality impacts and land contamination based on the proposed development scheme and recommend relevant mitigation measures where necessary.

3. The Site Environ

- 3.1.1. The rezoning site area of the Application Site is 3,388.7m² with a development site area of about 3,090 m² and elevated at around 5.5 mPD currently. It is currently completely paved with a 3-storey building with building height of 16.6 mPD.
- 3.1.2. The Proposed Redevelopment is bounded by Ping Ha Road to the north, Sha Chau Lei Road

to the east and the unnamed rural road (“Access Road on the West”). Village and open storage/temporary structures areas are identified to the south and west. Location of the Application Site and its surroundings are presented in **Figure 3.1**.

- 3.1.3. The Application Site is zoned as “Government, Institution or Community ” (“G/IC”) on the Approved OZP. The surrounding areas are mainly zoned village (“V” zone), (“G/IC”), Residential(Group A) (“R(A)2” and “R(A)3” zone) , “Commercial”(“C” zone). A strip of area zoned “Open Space (“O”) are respectively located to the southwest and the south of the Application Site.
- 3.1.4. According to Hung Shui Kiu New Development Area (HSK NDA) Planning and Engineering Study-Investigation Agreement No. CE 2/2011 (CE), the Application Site is within the HSK NDA. Planned residential developments and educational development are identified to the east and north of the Application Site. The Master Layout Plan of the HSK NDA is given in Appendix 3.1. The planned land uses specified in HSK NDA are taken into consideration for this environmental assessment.
- 3.1.5. According to the Planning Application No. A/HSK/452, it is noted that R(A)2” and “R(A)3” zone to the east of the Application Site is proposed as public housing development. The intake year of the public housing development is scheduled at Year 2030.

4. The Proposed Redevelopment

4.1. Project Planning and Programme

- 4.1.1. The Proposed Redevelopment will comprise the demolition of the existing 3-storey building and the construction of a new block with 47.9 mPD to cater for the increasing demand for elderly, rehabilitation and child care services.
- 4.1.2. Upon completion by 2032, a total of 282-bed spaces (i.e. 192 for Care and Attention Home(C&AH), 50 for Hostel for Severely Mentally Handicapped Persons (HSMH) and 40 for Hostel for Moderately Mentally Handicapped Persons (HMMH)), will be provided to meet the needs of the community. The Development Schedule is given in **Table 4-1**. An indicative development layout of the Proposed Redevelopment is shown in **Appendix 3.1**.

Table 4-1 Development Schedule

Floor	Major Uses
G/F	Child Care Centre(CCC) , Car Park, E&M Facilities
1/F	Day Care Centre for the Elderly (DE)
1/F-4/F	Care & Attention Home(C&A) (192 nos of bed)
5/F	Hostel for Severely Mentally Handicapped Persons (HSMH)

Floor	Major Uses
	(50 nos of bed)
6/F	Hostel for Moderately Mentally Handicapped Persons (HMMH) (40 nos of bed)
7/F	Day Activity Centre (DAC), clinic, massage
8/F	Showroom, Kitchen, Canteen
9/F	Integrated Vocational Rehabilitation Services Centre (IVRSC), E&M Facilities
R/F	E&M Facilities

4.2. Interfacing with Other Projects

4.2.1. Based on the best available information, the Project may have interaction with other projects including, but not limited to the following:

Table 4-2 List of Concurrent Projects

	Project	Construction Programme	Potential Cumulative Impacts	
			Construction Phase	Operation Phase
1.	Hung Shui Kiu/Ha Tsuen New Development Area stage 1 works – site formation and engineering infrastructure (YL/2020/03)	Commenced in September 2023, Completion in May 2025	x	x
2.	Water Supply to Hung Shui Kiu New Development Area	Commencement year unknown, expected year of completion: 2031*	-	-
3.	Public housing development “R(A)2” and “R(A)3” (Advanced Work-Phase 3)	Tentative Development year 2019-2029, expected year of completion: 2030*	-	✓
4.	Educational development “E” (Phase 3)	Tentative Development Period 2031-2035, expected year of completion: 2036*	-	✓

Note: *With Reference to HSK NDA EIA No. CE 2/2011 (CE)

4.2.2. Major concurrent projects in the vicinity which would interface with this Project have been identified and the potential cumulative impacts from these concurrent projects have also been reviewed in **Table 4-2**. **Figure 4.1** shows the location of these projects.

- 4.2.3. Hung Shui Kiu/Ha Tsuen New Development Area stage 1 works – site formation and engineering infrastructure are currently under construction phase and will be completed tentatively by 2025, where cumulative environmental impact is not expected.
- 4.2.4. Given details of the construction programme and plant inventory are not available for the Water supply works, no detailed impact assessment can be carried out.
- 4.2.5. For HSK NDA Public housing and educational development, which will tentatively be completed by 2030 and 2036, the cumulative impact associated with the construction of the Proposed Redevelopment is subject to the construction programme of the concurrent project, and there may be potential cumulative air and noise impact.

5. Implication of Environmental Impact Assessment

- 5.1.1. This is not a designated project under the Environmental Impact Assessment (EIA) Ordinance (Cap. 499). This EA has been undertaken with reference to the guidance for environmental considerations provided in Chapter 9 “Environment” of the Hong Kong Planning Standards and Guidelines (HKPSG). This EA presents a study of the potential environmental impacts, with respect to air quality, noise, water quality and land contamination aspects. Drainage and sewerage impact assessments are presented separately.

6. Air Quality Impact Assessment

6.1. Introduction

- 6.1.1. This section assesses the potential air quality impacts in association with the proposed redevelopment by taking into account the following considerations:

- Road traffic emissions from nearby roads in the proximity;
- Industrial emissions; and
- Potential cumulative air quality impacts, if any, from nearby major housing developments.

6.2. Environmental Legislation, Standards and Guidelines

General

- 6.2.1. The relevant legislations, standards and guidelines applicable to the present study for the assessment of air quality impacts include:

- Air Pollution Control Ordinance (APCO) (Cap. 311);

- Air Pollution Control (Construction Dust) Regulation;
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation; and
- Air Pollution Control (Fuel Restriction) Regulation.

Air Pollution Control Ordinance: Hong Kong Air Quality Objectives (AQOs)

6.2.2. Air quality in Hong Kong is governed under the Air Pollution Control Ordinance (“APCO”) (Cap. 311). Under this legislation, the Government has designated various Air Control Zones for the whole territory, and the new Air Quality Objectives (“AQOs”) was taken into effect in January 2022. The AQOs stipulate the statutory limits for seven pollutants and dictate the maximum number of allowable exceedances over specified periods as shown in **Table 6-1**.

Table 6-1 Hong Kong Air Quality Objectives

Pollutant	Averaging Time	Concentration Limit (ug/m ³) ^[i]	Number of Exceedances to be allowed
Sulphur Dioxide (SO ₂)	10-minute	500	3
	24-hour	50	3
RSP or PM ₁₀ ^[ii]	24-hour	100	9
	Annual ^[iv]	50	N/A
FSP or PM _{2.5} ^[iii]	24-hour	50	18 ^[v]
	Annual ^[iv]	25	N/A
Nitrogen Dioxide (NO ₂)	1-hour	200	18
	Annual ^[iv]	40	N/A
Ozone (O ₃)	8-hour	160	9
Carbon monoxide (CO)	1-hour	30,000	0
	8-hour	10,000	0
Lead (Pb)	Annual ^[iv]	0.5	N/A

Note:

[i] All measurements of the concentration of gaseous air pollutants, i.e., sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293Kelvin and a reference pressure of 101.325 kilopascal.

[ii] Respirable suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 10 µm or less.

[iii] Fine suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 2.5 µm or less.

[iv] Arithmetic mean

[v] The new AQO allows 35 days of exceedance per calendar year for daily FSP for non-government projects. However, government projects shall adopt a more stringent standard with the number of allowable exceedances of 18 days per calendar year.

Hong Kong Planning Standards and Guidelines

6.2.3. The Hong Kong Planning Standards and Guidelines (HKPSG) also provide guidance for all private and public development projects. A summary of relevant environmental design guidelines extracted from Table 3.1 of the HKPSG Chapter 9 is provided below.

Table 6-2 Recommended Buffer Distance for Land Uses (Table 3.1 of HKPSG Chapter 9)

Polluting Uses	Parameters	Permitted Uses	Buffer Distance
Road and Highways	Trunk roads and Primary Distributor	(a) Active and passive recreational uses (b) Passive recreational uses (c) Amenity areas	>20m 3 – 20m < 3m
	District Distributor	(a) Active and passive recreational uses (b) Passive recreational uses	>10m <10m
	Local Distributor	(a) Active and passive recreational uses (b) Passive recreational uses	>5m <5m
Industrial Areas	Difference in Height between Industrial Chimney Exit and the Site		
	< 20m	(a) Active and passive recreational uses (b) Passive recreational uses	>200m 5 – 200m
	20- 30m	(a) Active and passive recreational uses (b) Passive recreational uses	>100m 5- 100m
	30- 40m	(a) Active and passive recreational uses (b) Passive recreational uses	>50m 5 - 50m
	> 40m	Active and passive recreational uses	>10m
Construction and earth moving Activities	-	(a) Passive recreational uses (b) Active and passive recreational uses	>50m

Air Pollution Control (Fuel Restriction) Regulation

6.2.4. The Air Pollution Control (Fuel Restriction) Regulation was enacted in 1990 to impose legal control on the type of fuels allowed for use and their sulphur contents in commercial and industrial processes to reduce sulphur dioxide (SO₂) emissions. In June 2008, the Regulation was amended to tighten the control requirements of liquid fuels.

6.3. Background Air Quality

Existing Air Quality in Yuen Long District

6.3.1. The nearest EPD air quality monitoring station (AQMS) is Yuen Long Monitoring Station and is adopted to represent the ambient air quality of the area. Latest available 5 years of air quality data, i.e., 2018 to 2022, are summarised in **Table 6-3** to depict the trend of the localised air quality.

Table 6-3 Background Air Quality at Yuen Long Monitoring Station

Pollutant	Averaging time	Concentration 2018-2022 ($\mu\text{g}/\text{m}^3$) ^{[1][2]}					AQO ($\mu\text{g}/\text{m}^3$)
		2018	2019	2020	2021	2022	
SO ₂	4 th peak 10-min	52	42	26	24	21	500
	4 th peak 24-hr	16	11	10	14	7	50
PM ₁₀	10 th peak 24-hr	75	83	77	73	56	100
	Annual Average	37	37	30	30	25	50
PM _{2.5}	36 th peak 24-hr	34	34	28	31	30	50
	Annual Average	20	20	16	17	16	25
NO ₂	19 th peak 1-hr	150	161	135	148	122	200
	Annual Average	<u>43</u>	<u>44</u>	32	40	37	40
O ₃	10 th peak 8-hr	<u>162</u>	<u>200</u>	154	<u>178</u>	<u>194</u>	160
CO	1 st peak 1-hr	1,720	2,150	1,530	2,090	1,700	30,000
	1 st peak 8-hr	1,574	1,903	1,279	1,591	1,519	10,000

Notes:

[1] Monitoring result(s) exceeding the AQO is/are bolded and underlined.

[2] All air quality data were extracted from EPD's Environmental Protection Interactive Centre.

6.3.2. Exceedance of concentration of NO₂ and O₃ in the AQO has been recorded at Yuen Long Monitoring Station. The exceedance of NO₂ is likely due to the influence from exhaust emission from traffic on the busy networks (e.g. Ma Miu Road and Castle Peak Road- Yuen Long etc.) in Yuen Long Area, whereas the exceedance of O₃ is mainly caused by regional air pollution problem and it is not directly emitted from man-made sources. In general, the results show a decreasing trend in the concentration of most pollutants in these 5 years.

Future Ambient Air Quality Condition

6.3.3. In view of the occupation year of 2032, Background air quality concentrations extracted from the path v3 data at Grid (22, 47) in Year 2030 represents background air quality concentrations at the Application Site area. A summary of background air quality concentration in Year 2030 is shown in **Table 6-4**. These data have demonstrated that the concentrations of pollutants are below the AQOs, except for O₃. O₃ is not directly emitted from an emission source. It is formed by the chemical reactions of NO_x and VOCs under the

presence of sunlight and a regional pollution problem. O₃ is therefore not considered as a key parameter in this assessment.

Table 6-4 Background Air Quality Concentration of Pollutants

Pollutant	Averaging time	AQOs Concentration limit (µg/m ³) (exceedance) [1]	Background (22,47)
SO ₂	4th peak 10-min	500	27.27
	4th peak 24-hr	50	6.92
PM ₁₀	10th peak 24-hr	100	52.98
	Annual Average	50	19.70
PM _{2.5}	36th peak 24-hr	30.33	30.4
	Annual Average	13.99	12.16
NO ₂	19th peak 1-hr	200	74.28
	Annual Average	40	16.53
O ₃	10th peak 8-hr	160	<u>190.65</u>
CO	1st peak 1-hr	30,000	530.78
	1st peak 8-hr	10,000	485.87

Notes:

[1] Prediction result(s) exceeding the AQO is/are bolded and underlined.

6.4. Identification of Assessment Area and Air Sensitive Receivers

- 6.4.1. In general, the assessment area for an air quality impact assessment (AQIA) is defined by a distance of 500m from the site boundary which is presented in **Figure 6.1**.
- 6.4.2. Representative air quality sensitive receivers (ASRs) were identified and the separation distance between ASRs and Application Site are shown in **Figure 6.1** and summarized **Table 6-5**.
- 6.4.3. The existing and planned ASRs were identified with reference to the latest best available information at the time of preparation of this report, including those earmarked on relevant OZP (approved Hung Shui Kiu and Ha Tsuen OZP No. S/HSK/2), Development Permission Area Plans, Outline Development Plans, Layout Plans and other relevant published land used plans, including plans and drawings published by the Lands Department and any land use and development applications approved by the Town Planning Board. Site surveys were conducted on 23 February 2024 to verify the sensitive receivers and confirm with the desktop studies.

Table 6-5 Representative Air Sensitive Receivers

ASR ID	Location	Land Use	Shortest Horizontal Distance (m)	Maximum Building Height (mPD)
ASR1	Ching Chung Taoist Association Of Hong Kong Limited Ching Chung Care And Attention Home For The Aged	RCHE	9	16
ASR2	Shek Po Tsuen	Village	430	14
ASR3*	Planned Public Housing	Residential	90	120
ASR4*	Planned Education Development	Educational	120	140
ASR5	Ha Tsuen	Village	190	18
ASR6	Sha Chau Lei Tsuen Village	Village	20	17
ASR7	Sha Chau Lei Sitting Out Area	Recreational	67	17

Note: *Planned Development, according to HSK NDA Planning and Engineering Study

6.5. Potential Air Quality Impact - Construction Phase

6.5.1. Demolition, foundation and superstructure works would be anticipated in the construction phase. However, such information is not available at the current stage, further assessment is to be conducted at the detailed design stage. It is anticipated that the demolition of the 3-storey high existing building will generate a total of 246 m³ of demolished material. As advised by the Project team, the excavation area is around 2,000 m³, and 2,885 m³ of excavated material is estimated to be generated for the foundation.

Table 6-6 Estimated Quantity of Waste

Construction Stage	Amount of materials to be handled
Demolition	246 m ³
Foundation and Excavation	2,885 m ³

6.5.2. During the construction, the Contractor(s) will be required to transport the excavated materials out from the site to avoid the cumulation of materials on site. Excavated materials will be reused as fill materials within the Project Site to minimize dust emission due to transportation of materials. In case temporary stockpiling of small amount of materials is required, the stockpiling location will be covered by tarpaulin sheets and backfilled as soon as possible.

6.5.3. Under the Air Pollution Control (non-road Mobile Machinery)(Emission), only approved or

exempted non-road mobile machineries with a proper label are allowed to be used in the construction site. In addition, dust potentially generated from concreting works could be minimized with the adaptation of MiC where most of the building structures are prefabricated offsite. Moreover, according to the current proposal, no basement floor is to be constructed, dusty emission from extensive associated earthworks is not expected. Noted that there will be some concurrent projects in the vicinity of the Project Site. The construction programme of potential concurrent projects, particularly HSK NDA Public housing development and Water Supply to Hung Shui Kiu New Development Area are unknown. The latest construction programme of the concurrent projects will be obtained during detailed design stage and construction stage such that the likeliness of overlapping construction phases should be avoided as far as practicable. Liaison with the contractors of these projects will be made to avoid scheduling heavy dust-generating activities simultaneously.

6.5.4. With the implementation of sufficient dust suppression measures as stipulated under the Air Pollution Control (Construction Dust) Regulation and good site practices, significant adverse air quality impact generated from the construction of the planned residential developments is not anticipated. Mitigation measures to control construction dust/ gaseous emission listed below are recommended to be incorporated into the future contractor specifications for contractor's implementation:

- Wetting by water spraying or dust suppression chemical on dusty material before loading and unloading, stockpile of dusty materials, area where breaking, excavation or earth moving activities works is carried out, and unpaved main haul road.
- Providing hoarding of not less than 2.4m high from ground level along the site boundary which is next to a road or other public area.
- Providing effective dust screens, sheeting or netting to enclose any scaffolding built around the perimeter of a building.
- Covering or sheltering any stockpile of dusty materials.
- Disposing of any dusty materials collected by fabric filters or other pollution control system in totally enclosed containers.
- Properly treating any exposed earth, such as by compacting or hydroseeding, within 6 months after the last construction activity.
- Providing vehicle washing facilities at all site exits to wash away any dusty materials from vehicles body and wheels before they leave the site.
- Covering of dust load on vehicles before they leave the site.
- Use of ultra-low sulphur content for on-site generators to minimize black smoke emission.
- Providing water spraying system where available and applicable.

- Restricting heights from which materials are to be dropped, as far as practicable, to minimise the fugitive dust arising from unloading / loading.
- Where the public can be affected by exhaust fumes or smoke emission from any construction plants or activities, shielding the related activities by an incombustible screen such as corrugated sheet of at least 2m in width and 1.8m in height.
- Using enclosed chutes for dropping construction materials to ground level and the chutes are dampened regularly, if applicable.
- The foundation work can be carried out either by percussive piling method or non-percussive piling method. For this project, adoption of non-percussive piling method is anticipated which helps generating lower dust emissions.
- The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.
- Vehicles within the site are restricted to a maximum speed of 10 kph.
- Vehicles are inspected regularly and well maintained to ensure that they are operating efficiently and that exhaust emissions are not causing nuisance.
- Vehicle engines are turned off when they are not in use.
- Haul road of the Application Site is located as far as possible from nearby ASRs.
- Provide electric power supply for on-site machinery as far as practicable and diesel generators and machinery shall be avoided to minimise the gaseous and PM emissions
- Erect higher hoarding at the locations with ASRs in immediate proximity to the project site boundary
- Avoid using exempted NRMMS

6.5.5. Contractors shall also implement the recommended air pollution control measures set out in “Recommended Pollution Control Clauses for Construction Contracts” available on EPD website. An EM&A program should not be necessary to monitor the dust impact arising from the construction activities associated with the project.

6.5.6. Due to the small development scale, the construction works to be involved the Application Site would be very limited. Also, requirements set out in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation to control potential emissions from non-road mobile machinery will need to be fully complied with. Therefore, gaseous emissions from diesel-fueled construction equipment would be minor and would not cause any significant adverse air quality impact.

6.6. Potential Air Quality Impact - Operation Phase

Industrial Emissions from chimney

- 6.6.1. An environmental survey was conducted and records of specified licenses were reviewed in October 2023. In addition, site inspections were conducted in 23 February 2024. The results of that survey have confirmed that no chimney is being located within 200m from the Application Site so that the horizontal buffer distance requirement is deemed complied with.

Odour Emission

- 6.6.2. Ha Tsuen Sewage Pumping Station is identified within 500m assessment area with a separation distance of 265m. As refer to the EIA Report of Upgrading and expansion of San Wai Sewage Treatment Works and expansion of Ha Tsuen Pumping Station (AEIAR-072/2003), the odour emission has been abated by design (i.e. the sewage surface within the wet wells would not be exposed to the atmosphere under normal operation) and mitigated, odour emission is thus expected to be minimal and air quality impact is considered insignificant.
- 6.6.3. No existing and proposed slaughterhouses, sewage treatment works facilities, village incinerators, odour sources and duty uses are found within 500m radius of the Application Site. Thus, no significant odour emission impact on the Proposed redevelopment is anticipated.
- 6.6.4. No odour impact is observed from the nearby Tin Shui Wai Nullah during the site visits in 23 February 2024. It is further confirmed by EPD that there is no odour complaint records in the past five years related to the concerned location at Tin Shui Wai Nullah (see **Appendix 9.2**).

Industrial Emissions from Other Specified Uses

- 6.6.5. No Industrial zone is identified in the vicinity of the Application Site. However, during the site visits, it was observed that land zoned "R(A)2", "R(A)3" and "E" in the planned HSK NDA to the north and west of the Application Site have been used as "Other Specified" uses currently. The shortest separation distance from these uses is 61m to the east and 79m to the north. Open storage, repairing workshops and logistic centre have been identified within the planned "R(A)2", "R(A)3" and "E" zone, which are considered potential source of dusty and odour emission.
- 6.6.6. As refer to the HSK NDA Planning and Engineering Study-Investigation (**Appendix 3.1**), the development year Residential and Educational uses of R(A) zone and E zone are 2019-2029 and 2031-2035 respectively. Given the tentative completion year of the Proposed Redevelopment will be 2032, the existing open storage areas, repairing workshops and logistic centres within these areas shall be removed before these developments. Besides, based on site observations, the E zone are only used as temporary storage with infrequent operation of powered mechanical equipment currently. No excavation is observed. In view of the separation distance of 90m, short term and minimal air quality impact from existing uses

on the proposed development is expected in case the existing uses are still in operation after commissioning of the proposed development in 2032. Thus, air quality impact of these activities on the Application Site during operation phase is thus not expected.

Vehicular Emissions from Open Road Traffic

- 6.6.7. The major air pollution source in the vicinity of the Application Site during operational phase would be tailpipe emission generated from road traffic along open road.
- 6.6.8. **Figure 6.2** shows the buffer separation between kerb side of nearby roads to the nearest façade of building. The Application Site is bounded by Ping Ha Road to the north, which is classified as rural road. The Application Site is also bounded by Sha Chau Lei Road to the East and an access road to the west, no information is available for these two roads in The Annual Traffic Census 2022. As advised by Traffic Consultant, these two roads are feeder roads. The buffer distance is summarized in **Table 6-7**. The buffer separation can meet the buffer distance requirement. No adverse air quality impact due to vehicular emission is anticipated.

Table 6-7 Buffer distance between the Proposed redevelopment and Nearby Road

Road	Road Type	HKPSG Guideline Buffer Distance Requirement	Distance between Proposed Redevelopment Site Boundary and nearby road
Ping Ha Road (from Hung Tin Rd to Tin Ha Rd) ^[1]	Rural Road	5m	65m
Sha Chau Lei Road	Feeder Road	5m ^[2]	6m
Access Road on the West	Feeder Road	5m ^[2]	6m

Note: ^[1]Although the AADT of Ping Ha Road (from Hung Tin Rd to Tin Ha Rd) is approx. 20,000 in both 2021 and 2022, the maximum buffer distance (>20m) as required in the HKPSG could be met and no adverse vehicular emission impact from Ping Ha Road to the proposed development would be expected.

^[2]The buffer distance for local distributors (>5m) is adopted for these road types as buffer distance requirements for these road types are not specified.

- 6.6.9. Openable windows will be provided at dormitory of RCHE for ventilation. No openable windows will be designed at buffer zone. Centralised Air conditioning will be provided at the Project Redevelopment, the location of fresh air intake will be carefully design and will not encroach on the buffer zone as recommended in the HKPSG. Recreational uses in the open

area will not be provided within the buffer zone as well.

Air quality impact arising from the Proposed Redevelopment

6.6.10. The nature of the proposed Redevelopment is not environmental polluting. The use of the Proposed Redevelopment is similar to other typical institutional uses in Hong Kong, including normal rehabilitation and child care services. In addition, the design and operation of refuse collection point on G/F will adhere to the requirements and guidelines stipulated in HKPSG. In this connection, dust generation or gaseous emissions are not expected. While about 13 open car parking spaces will be provided tentatively and the majority of visitors are expected to travel to the Application Site by public transportation or on foot. Additional traffic flow induced by the Project is considered insignificant.

6.6.11. A kitchen will be provided at 8/F. Oily fumes and cooking odour emissions may potentially arise from the kitchen. To minimize these emissions, the following considerations when positioning the exhaust outlets of the kitchen are recommended in EPD's Control of Oil Fume and Cooking Odour from Restaurants and Food Business, and will be considered during the detailed design:

- Locate the outlets at such a place where the ventilation is good and the emissions from them can be adequately dispersed without hindrance;
- Provide sufficient separation distance from any sensitive receptor in the vicinity so that the emissions will not cause, or contribute to, an odour nuisance or other type of air pollution to the public;
- Ensure the emissions from the exhaust system will be directed vertically upwards, unless it can be demonstrated by an environmental professional that other direction is more advantageous in preventing emissions from causing air pollution problems; and
- Ensure that emissions from the exhaust system will not be restricted nor deflected by, for example, the use of plates or caps.

6.7. Conclusions

- 6.7.1. With the implementation of dust suppression measures of the Proposed redevelopment and provision of good site practice as stipulated under the Air Pollution Control (Construction Dust) Regulation and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, fugitive dust impacts and gaseous emission from diesel-fueled construction equipment to the nearby air sensitive receivers due to construction works are expected to be insignificant.
- 6.7.2. For the vehicular emission, a sufficient horizontal buffer distance between Ping Ha Road, Sha Chau Lei Road and Access Road on the West to the Application Site is being proposed in accordance with the requirements set out in the HKPSG. No significant adverse air quality impact due to vehicular emission on the Proposed redevelopment is anticipated.
- 6.7.3. In view of no chimney was identified within 200m from the project site boundary, no air quality impact with respect to industrial chimney emission on the future domestic users in the Proposed redevelopment is anticipated.
- 6.7.4. Dust generation and gaseous emission are not anticipated during the operation phase from the Project, where additional traffic flow induced by the operation of the Project is also insignificant. Therefore, adverse cumulative air quality impact arising from the Project during operation phase is not expected.

7. Noise Impact Assessment

7.1. Introduction

- 7.1.1. Traffic noise and fixed noise impact are identified upon the Proposed redevelopment.
- 7.1.2. The potential traffic noise impact is mainly dominated by Ping Ha Road, Sha Chau Lei Road and access road within the assessment area, road traffic noise impact assessment was conducted to evaluate potential adverse noise impact arising from the carriageways in the vicinity of the Application Site (detailed in **Section 6.3**).
- 7.1.3. Since the Application Site is surrounded by open storage/workshops, numerous village settlements and a Care and Attention Home in its vicinity, potential fixed noise impact on the proposed redevelopment is envisaged.

7.2. Design Strategy for Noise Consideration

- 7.2.1. General guidance is provided in the Hong Kong Planning Standard and Guidelines (HKPSG) and EPD's website on Innovative Noise Mitigation Designs and Measures to reduce noise exposure. These guidelines have been duly considered in the design layout of the Proposed redevelopment. **Table 7-1** below summarizes the design strategies adopted in the Proposed redevelopment.

Table 7-1 Summary of Noise Conscious Design Strategy

Item	Design Strategy/Mitigation Measure	Considerations in the Proposed redevelopment
1	Building Setback	- The proposed redevelopment requires to maintain a setback from Ping Ha Road to increase the horizontal separation distance from noise sources.

7.3. Traffic Noise Impact Assessment

- 7.3.1. This traffic Noise Impact Assessment is prepared to assess the potential traffic noise impact on the noise sensitive uses of the Proposed redevelopment and recommend mitigation measures where practicable to attenuate the noise impact, if any.

Assessment Criteria

- 7.3.2. Noise standards are recommended in Chapter 9, "Environmental" of the HKPSG for guiding new developments against potential noise impact from sources such as road traffic, railway and aircraft. The applicable road traffic standard on office and dormitories of CCC (relies on openable windows for ventilation) are $L_{10(1-hour)}$ 70dB(A); sick bays/wards of RCHE/RCHD is $L_{10(1-hour)}$ 55dB(A).

Noise Assessment Points

- 7.3.3. Noise Assessment Points (NAP) within the Proposed redevelopment have been selected to assess the road traffic noise impact to the noise sensitive uses. Dormitory in CCC(G/F), bedrooms, sickbays and office in the RCHE (2-4/F) and RCHD (5-6/F), with openable windows/doors for prescribed ventilation purposes are regarded as NSRs, which are likely to be affected by traffic noise impact. For other rooms in RCHE, centralized air-conditioning will be provided and will not rely on openable windows for ventilation. All noise assessment points (NAPs) were taken at 1.2m above the floor level and 1m away from the façade of openable windows in rooms of sensitive uses.
- 7.3.4. **Figure 7.1** shows the location of the selected NAPs for traffic noise impact assessment.

Assessment Methodology

- 7.3.5. The potential noise impact arising from nearby existing and future road carriageways on the Noise Sensitive Receivers (NSRs) of Proposed redevelopment was assessed.
- 7.3.6. This approach considers the worst-case scenario of 15 years from the tentative completion date (Year 2032) of the Proposed redevelopment. For worst case scenario evaluation, the assessment year has been chosen to be Year 2047, which has the maximum forecasted traffic flow within the 15-year period.
- 7.3.7. **Appendix 7.1** presents the predicted peak hour traffic flows and percentage of heavy vehicles of road carriageways within 300m assessment area from the Application Site for Year 2047, which is provided by the Project Traffic Consultant. The endorsement of Traffic Department on the traffic forecast data will be supplemented once available.
- 7.3.8. The procedure of “*Calculation of Road Traffic Noise*” adopted by U.K.’s Department of Transport was used to predict the hourly $L_{10(1\text{-hour})}$ noise levels generated from road traffic at selected representative NSRs. The predicted noise levels were compared to the noise standard set out in the HKPSG (i.e. $L_{10(1\text{-hour})}$ 70dB(A) for domestic and office uses, $L_{10(1\text{-hour})}$ 55dB(A) for Diagnostic Rooms). Practicable noise mitigation measures have been recommended where necessary.

Assessment Result under Base Case Scenario

- 7.3.9. Road traffic noise assessment is being carried out for a “base case scenario”, which is based on the building design strategy mentioned above while without any noise mitigation measures proposed. The results of the assessment have indicated that the highest predicted noise level is 71dB(A) for dormitories/bedrooms/office and 63 dB(A) for sick bays in RCHE and RCHD. 3 sickbays will exceed with the traffic noise criteria of 55dB(A) as set out in the

HKPSG. **Table 7-2** summarizes the results of the of traffic noise assessment under base case scenario.

Table 7-2 Traffic Noise Prediction Results, Base Case Scenario

	CCC, RCHE & RCHD (G/F-6/F)		
	Dormitory/ Bedrooms / Office	Sickbay	Total
Maximum Predicted Traffic Noise Level, L _{10,1 hr} in dB(A)	68	63	-
Noise Criteria L _{10,1 hr} in dB(A)	70	55	-
Total No. of Rooms with Openable windows	56	5	61
Total No. of Rooms Exceed Traffic Noise Criteria	0	3	3
Compliance Rate	100%	40%	95%

7.3.10. Since noise exceedance is found in the Proposed redevelopment, traffic noise assessment for a “mitigation scenario” has been carried out.

7.3.11. Mitigations including 1.8m fin and fixed windows have been adopted. The location of architectural fin and fixed windows is given in **Figure 7.2** and summarized in **Table 7-3. Table 7-4** summarizes the results of the traffic noise assessment under the mitigation scenario. Under the mitigated scenario, no room will exceed the traffic noise criteria of 70dB(A) and 55 dB(A) as set out in HKPSG.

Table 7-3 Mitigation Schedule

Floor	Room	NAP	Mitigation Measure
6F	Sickbay	I	Fixed Window
2F	Sickbay	O	Fixed Window
3F	Sickbay	K	Fixed Window

Table 7-4 Traffic Noise Prediction Results, Mitigation Scenario

	CCC, RCHE & RCHD (G/F-6/F)		
	Bedrooms / Office	Sickbay	Total
Maximum Predicted Traffic Noise Level, L _{10,1 hr} in dB(A)	68	55	-
Noise Criteria L _{10,1 hr} in dB(A)	70	55	-
Total No. of Rooms with Openable windows	56	2	58
Total No. of Rooms Exceed Traffic Noise Criteria	0	0	0
Compliance Rate	100%	100%	100%

Summary for Road Traffic Noise Impact Assessment

- 7.3.12. Potential road traffic noise impact on the Proposed redevelopment has been assessed. According to the road traffic noise impact assessment result, the Proposed redevelopment would not be subject to significant adverse road traffic noise impact under the mitigation scenario. Full compliance will be achieved with respect to the traffic noise criterion recommended in the HKPSG.

7.4. Fixed Plant Noise Impact Assessment

Introduction

7.4.1. This assessment aims to assess the potential noise impact arising from the nearby fixed noise sources of the commercial or industrial buildings and activities in an assessment area of 300m radius around the Proposed Amendment. Practicable noise mitigation measures would be proposed to minimize the fixed noise impact to the Proposed Amendment where necessary.

Assessment Criteria

7.4.2. The Noise Control Ordinance (NCO) and the Technical Memorandum for the Assessment of Noise from Places Other than Domestic Premises, Public Places or Construction Sites (TM-IND) control noise from fixed plant noise sources.

7.4.3. According to the Approved OZP, various “Residential (Group A)” (“R(A)”), Government, Institution or Community (“G/IC”) and “Village Type Development” (“V”) zoned developments, including Sha Chau Lei Tsuen, Ching Chung Taoist Association Of Hong Kong Limited Ching Chung Care And Attention Home For The Aged, and Proposed Public housing are identified in the vicinity of the Proposed redevelopment. A strip of area zoned “Open Space (“O”)” are respectively located to the southwest and the south of the Application Site.

7.4.4. In determination of the Acceptable Noise Level (ANL) of concerned NSRs, the Area Sensitive Rating (ASR) should be identified under the IND-TM. According to Annual Traffic Census of 2022 issued by Traffic Department, Ping Ha Road has an annual average daily traffic flow below 30,000 and is not considered as an influencing factor (IF) by definition. In addition, Ha Tsuen is considered a rural area with village-type developments. Since no industrial zone is identified inside a 100m radius around the Application Site, the area sensitive rating of “A” is adopted in this project.

Table 7-5 Area Sensitive Ratings of NSRs

Noise Sensitive Receivers (NSR)	Area Sensitive Rating (ASR)	Acceptable Noise Level (ANL)	
		Day/Evening (0700-2300)	Night (2300-0700)
NSRs	A	60	55

7.4.5. In any event, the ASR and ANL adopted in this report are indicative only and used for assessment only. It should be noted that the noise from fixed noise sources is controlled under section 13 of the Noise Control Ordinance and the Noise Control Authority shall determine the noise impact from the concerned fixed noise sources on the basis of prevailing legislation and practices being in force, and taking account of contemporary conditions/situations of adjoining land uses. Nothing in this report shall bind the Noise Control Authority in the context of law enforcement against any of the fixed noise sources


being assessed.



Industrial noise impacts on the proposed redevelopment


7.4.6. According to desktop study and site visits, adjacent areas have been used as open storage, open storage of machinery, car repairing workshop and logistic entre, which are considered as potential fixed noise sources. These sources are found within 300m of the Application Site, as shown in **Figure 7.2**.




7.4.7. Site inspections have been conducted in February 2024. Most of the potential noise sources are situated to the west of the Proposed Redevelopment. Among the fixed sources identified, the logistic centre and the open storage of machinery with ancillary workshop has direct line of sight from the NSRs to these activities. All of the fixed noise sources have no nighttime operation. The activities observed, shortest separation distance of the fixed noise source is tabulated in **Table 7-6**.


Table 7-6 Potential fixed plant noise sources in the surrounding


Fixed Noise Source	Activities identified	Photo	Shortest Distance
<p>S1- Kingway Enterprise Ltd-Open Storage of Machinery with Ancillary Workshop</p>	<p>Open storage of machinery with an ancillary workshop is found to the north of the Application Site, across Ping Ha Road.</p> <p>During site visits, loading and unloading of construction materials using a mounted excavator was observed. Uncontinuous operation has been observed. [max. 15 mins operation in 30 mins]</p> <p>There is a direct line of sight from the NSRs to those activities.</p>		<p>90m</p>


Fixed Noise Source	Activities identified	Photo	Shortest Distance
<p>S2-T M Testing Co., Ltd.</p>	<p>It is within R(A) zone to the east of application site with proposed public housing development.</p> <p>The Site involved in testing of construction materials (i.e. curtain walls), with no powered machnical equipment involved.</p> <p>Activities were observed to be carried out within the temporary structure. Infrequent operation were observed in site visits. No noisy activities were observed inside the area.</p> <p>The Site was closed at night, nighttime operation is not expected.</p>		<p>75m</p>
<p>S3-CK Motor Car Repairing Workshop</p>	<p>A vehicle maintenance and repair work with temporary structures was identified next to the logistics centre.</p> <p>As observed in the site visits, vehicle maintenance and repair works were carried out within the structures. No nighttime operation as confirmed by the operator.</p> <p>Used of both powered mechanical equipment and manual operations were observed, including hand-held pneumatic tool and 2 2no. car lifter.</p>		<p>150m</p>


Fixed Noise Source	Activities identified	Photo	Shortest Distance
	<p>Concurrent operation of powered mechanical equipment (max. 2no.) is observed.</p> <p>The noise due to the hand-held pneumatic tool was noncontinuous and short in duration.</p> <p>Since the workshop is mostly enclosed in a shelter while the opening of this facility is surrounded by other temporary structures. It has no direct line of sight from the NSRs to those activities. Noise from the workshop was not noticeable at the Application Site.</p>		
<p>S4- Sing Kee Car Repairing Workshop</p>	<p>It is within R(A) zone to the east of application site with proposed public housing development.</p> <p>A vehicle maintenance and repair works with temporary structures was identified. Works were observed to be carried out within the temporary structures.</p> <p>As confirmed by the workshop owner, the workshop closes at 7 pm, nighttime operation is not expected.</p> <p>Used of both powered mechanical equipment and manual operations were observed,</p>		<p>116m</p>


Fixed Noise Source	Activities identified	Photo	Shortest Distance
	<p>including hand held pneumatic tool and forklift.</p> <p>Concurrent operation of max. 2 works were observed. Continuous operations were not observed. The noise was not noticeable at the Application Site.</p>		
<p>S5- Temporary Vehicle Repair Workshop</p>	<p>A vehicle maintenance and repair works with temporary structures was identified. Works were observed to be carried out with the temporary structures.</p> <p>Only manual operation with use of hand-held tools observed and confirmed by workshop operator. Max 1 maintenance works to be carried out on site.</p> <p>No nighttime operation is observed and confirmed by workshop operator.</p> <p>It is expected to have direct line of sight from the NSRs.</p>		<p>108m</p>
<p>S6-Wellside International Logistic Centre</p>	<p>It is within R(A) zone to the east of application site with proposed public housing development.</p> <p>A logistic centre is found at the east of the Application Site</p>		<p>79m</p>


Fixed Noise Source	Activities identified	Photo	Shortest Distance
	<p>across the Tin Shui Wai Nullah. During site visits, movements of vehicle were observed. As confirmed by the site owner, the facility is closed at night, there is no night-time operation.</p> <p>Based on the on-site observations, approximately 30 lorry trucks entering and/or leaving the facility in every 30 mins. Loading and unloading activities were observed within the parking lane and the facility.</p> <p>The loading and unloading activities were carried out at the shelter area with operation time of approximately 10 mins. The use of forklift was observed.</p> <p>There is direct line of sight from the NSR to the logistic centre.</p>		
S7-Hing Luen Motor Company	<p>It is within R(A) zone to the east of application site with proposed public housing development.</p> <p>A vehicle maintenance and repair works with temporary structures was identified. Works were observed to be carried out within the temporary structures.</p> <p>Since the facility is closed at night, there</p>		145m

Fixed Noise Source	Activities identified	Photo	Shortest Distance
	<p>is no nighttime operation.</p> <p>based on site visits, only vehicle parking was observed.</p> <p>No powered mechanical equipment observed.</p> <p>There is no direct line of sight from the NSRs to this facility</p>		
<p>S8-Metal storage area</p>	<p>It is within R(A) zone to the east of application site with proposed public housing development.</p> <p>An open storage area of metals was found to the east of the Application Site.</p> <p>The facility was closed at night, there is no nighttime operation.</p> <p>During site observation, no entry of vehicles and maintenance/repair activities was observed. Use of excavator is expected.</p>		<p>101m</p>

Fixed Noise Source	Activities identified	Photo	Shortest Distance
<p>S9- Public Open Carpark</p>	<p>An open car park is found to the north of the Application Site.</p> <p>During site inspections, only parking of light vehicles were observed. Infrequent activities were found in the carpark, no noticeable noise were observed.</p> <p>Full-day operation is expected.</p> <p>There is direct line of site from the NSRs.</p>		<p>13 m</p>

Fixed Noise Source	Activities identified	Photo	Shortest Distance
<p>S10 -VRV outdoor units (VRV OUs) of Ching Chung C&AH</p>	<p>During site observation, a set of VRV OUs was observed at the façade of Chng Chung C&AH facing the Application Site. No noticeable noise from the OUs was observed. All windows were closed.</p> <p>Nighttime operation is expected.</p>		<p>9m</p>

Fixed Noise Source	Activities identified	Photo	Shortest Distance
<p>S11- CLP Substation of Ching Chung C&AH</p>	<p>A substation was found between the building block of Ching Chung C&AH and the Application Site.</p> <p>Full-day operation is expected. No noticeable noise is observed from the NSRs in the Application Site.</p> <p>The ventilation louvre is facing away from Application Site.</p>		<p>17m</p>

Fixed Noise Source	Activities identified	Photo	Shortest Distance
S12 Container System Ltd Storage Depot	<p>Based on desktop study, there are 4 forklifts on site. Yet, no loading and unloading were observed during the site visits.</p> <p>As a conservative approach, the noise due to the loading and unloading of forklifts has been included in the quantitative assessment.</p> <p>There is no nighttime operation and no direct line of sight from the NSRs.</p>		99m

7.4.8. According to the HSK NDA Planning and Engineering Study – Investigation Report, the R(A)2 and R(A)3 zones to the east of the Application Site are proposed as public housing development with a tentative intake year of 2030. The existing fixed noise sources identified in the site inspections (S1-4, S6-S8) will no longer exist when the proposed redevelopment comes into operation. As such, the existing open storage workshops will not interface with the proposed redevelopment. Potential noise impact for these existing industrial uses in the vicinity to the proposed development is not expected. During site inspection, the carpark (S9) is mainly for private cars and no light and heavy vehicles were observed, it is a low capacity carpark and no obvious noise was observed, noise impact is not expected and a quantitative assessment is not considered for S9. Other identified sources (S5, S10-S12) will be included in the quantitative assessment.

7.4.9. The quantitative assessment results in **Appendix 7.3** revealed that the predicted industrial noise levels can meet the ANL requirements set out in the TM-IND.

Industrial noise impacts due to Project

7.4.10. Potential industrial noise to be generated from the Proposed redevelopment includes noise from the operation of air-conditioning units from the residential units, mechanical ventilation

installations of the plant rooms, as well as other fixed noise sources equipment.

7.4.11. Mechanical Equipment and Air conditioning (MVAC) and E&M plants, such as pump units, transformers, emergency generator and lift machines will be placed at enclosed plant rooms, which is at least 20 m to the nearest noise sensitive receivers at Ching Chung Care and Attention Home For The Aged. The ventilation louvres, mechanical ventilation intakes or exhausts of MVAC equipment and E&M plant rooms will be treated by silencers and enclosure, if necessary.

7.4.12. The choice of equipment and the requirement of noise control measures, such as acoustic treatments by silencers and enclosure, will be determined to ensure that noise level at potentially affected NSR will comply with the noise criteria. The cumulative noise impact on nearby NSRs shall comply with statutory requirement under Noise Control Ordinance (NCO) stipulated in IND-TM. For the design of plant noise control treatment, the plant noise shall be controlled and designed to meet the HKPSG requirement, i.e. 5 dB below ANL or the prevailing background noise level, whichever is the lower. The prevailing background noise levels shall be determined at detailed design stage, before construction commencement, for determining the planning criteria. The design requirement for the compliance to HKPSG criteria will be stated clearly in the tender specification. The Contractor shall be responsible for the design of the MVAC and E&M plants with proper mitigation measures, if necessary.

7.5. Summary of Fixed Noise Impact Assessment

7.5.1. The potential fixed noise impact has been assessed. According to the assessment result, the Proposed redevelopment will not subject to any additional and significant adverse noise impact from fixed noise sources.

7.5.2. To ensure that the noise level at potentially affected NSRs will comply with the statutory requirement under Noise Control Ordinance stipulated in IND-TM, all on-site planned fixed plant within the Proposed redevelopment shall be controlled and designed to meet the HKPSG requirement, i.e. 5 dB below ANL or the prevailing background noise level, whichever is the lower.

8. Water Quality Assessment

8.1. Introduction

8.1.1. This section presents an assessment of the potential water quality impacts associated with the construction and operation of the Project. Recommendations for mitigation measures have been provided, where necessary, to minimize the identified water quality impacts to an acceptable level.

8.2. Environmental Legislation, Standards and Guidelines

8.2.1. The water quality impact assessment is carried out with reference to the following:

- Water Pollution Control Ordinance (Cap. 358);
- Hong Kong Planning Standards and Guideline;
- Water Supplies Department (WSD) Water Quality Criteria;
- Professional Persons Environmental Consultative Committee Practice Note 2/23 “Construction Site Drainage” (ProPECC PN2/23); and
- Professional Persons Environmental Consultative Committee Practice Note 1/23 “Drainage Plans subject to Comment by the Environmental Protection Department” (ProPECC PN1/23)

Water Pollution Control Ordinance (cap.358) (“WPCO”)

8.2.2. Water quality in Hong Kong is legislated by the provisions of Water Pollution Control Ordinance (Cap 358), 1980 (“WCPO”). Territorial Water has been subdivided into ten Water Control Zones (“WCZ”) and four supplementary water control zones. The study area lies within the Deep Bay WCZ and the respective WQOs are summarized in **Table 8-1**.

Table 8-1 Summary of Water Quality Objectives for the Deep Bay WCZ

Parameters	Objectives	Sub-Zone
Aesthetic appearance	(a) Waste discharges shall cause no objectionable odours or discolouration of the water. (b) Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substances should be absent. (c) Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam. (d) There should be no recognisable sewage-derived debris. (e) Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent. (f) Waste discharges shall not cause the water to	Whole Zone

Parameters	Objectives	Sub-Zone
	contain substances which settle to form objectionable deposits.	
Bacteria	(a) The level of Escherichia coli should not exceed 610 per 100 mL, calculated as the geometric mean of all samples collected in one calendar year.	Secondary Contact Recreation Subzone and Mariculture Subzone (L.N. 455 of 1991)
	(b) The level of Escherichia coli should be zero per 100 ml, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	(c) The level of Escherichia coli should not exceed 1000 per 100 ml, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
	(d) The level of Escherichia coli should not exceed 180 per 100 mL, calculated as the geometric mean of all samples collected from March to October inclusive in one calendar year. Samples should be taken at least 3 times in a calendar month at intervals of between 3 and 14 days.	Yung Long Bathing Beach Subzone (L.N. 455 of 1991)
Colour	(a) Waste discharges shall not cause the colour of water to exceed 30 Hazen units.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	(b) Waste discharges shall not cause the colour of water to exceed 50 Hazen units.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
Dissolved Oxygen	(a) Waste discharges shall not cause the level of dissolved oxygen to fall below 4 milligrams per litre for 90% of the sampling occasions during the year; values should be taken at 1 metre below surface.	Inner Marine Subzone excepting Mariculture Subzone
	(b) Waste discharges shall not cause the level of dissolved oxygen to fall below 4 milligrams per litre for 90% of the sampling occasions during the year; values should be calculated as water column average (arithmetic mean of at least 2 measurements at 1 metre below surface and 1 metre above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 milligrams per litre within 2 metres of the seabed for 90% of the sampling occasions during the year.	Outer Marine Subzone excepting Mariculture Subzone
	(c) The dissolved oxygen level should not be less than 5 milligrams per litre for 90% of the sampling occasions during the year; values should be taken at 1 metre below surface.	Mariculture Subzone
	(d) Waste discharges shall not cause the level of dissolved oxygen to be less than 4 milligrams per	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas

Parameters	Objectives	Sub-Zone
	litre.	Subzone, Indus Subzone, Ganges Subzone, Water Gathering Ground Subzones and other inland waters of the Zone
pH	(a) The pH of the water should be within the range of 6.5-8.5 units. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.2 units.	Marine waters excepting Yung Long Bathing Beach Subzone
	(b) Waste discharges shall not cause the pH of the water to exceed the range of 6.5-8.5 units.	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	(c) The pH of the water should be within the range of 6.0-9.0 units.	Other inland waters
	(d) The pH of the water should be within the range of 6.0-9.0 units for 95% of samples. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.5 units.	Yung Long Bathing Beach Subzone
Temperature	Waste discharges shall not cause the natural daily temperature range to change by more than 2.0 degrees Celsius.	Whole Zone
Salinity	Waste discharges shall not cause the natural ambient salinity level to change by more than 10%	Whole Zone
Suspended solids	(a) Waste discharges shall neither cause the natural ambient level to be raised by 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters
	(b) Waste discharges shall not cause the annual median of suspended solids to exceed 20 milligrams per litre.	Yuen Long & Kam Tin (Upper and Lower) Subzones, Beas Subzone, Ganges Subzone, Indus Subzone, Water Gathering Ground Subzones and other inland waters
Ammonia	The un-ionized ammoniacal nitrogen level should not be more than 0.021 milligram per litre, calculated as the annual average (arithmetic mean).	Whole Zone
Nutrients	(a) Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Inner and Outer Marine Subzones
	(b) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.7 milligram per litre, expressed as annual mean.	Inner Marine Subzone
	(c) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.5 milligram per litre, expressed as annual water column average (arithmetic mean of at least 2 measurements at 1 metre below surface and 1	Outer Marine Subzone

Parameters	Objectives	Sub-Zone
	metre above seabed).	
5-Day Biochemical Oxygen Demand	(a) Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 3 milligrams per litre.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	(b) Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 5 milligrams per litre.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
Chemical Oxygen Demand	(a) Waste discharges shall not cause the chemical oxygen demand to exceed 15 milligrams per litre.	Yuen Long & Kam Tin (Upper) Subzone, Beas Subzone, Indus Subzone, Ganges Subzone and Water Gathering Ground Subzones
	(b) Waste discharges shall not cause the chemical oxygen demand to exceed 30 milligrams per litre.	Yuen Long & Kam Tin (Lower) Subzone and other inland waters
Toxins	(a) Waste discharges shall not cause the toxins in water to attain such levels as to produce significant toxic carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to toxicant interactions with each other.	Whole Zone
	(b) Waste discharges shall not cause a risk to any beneficial uses of the aquatic environment.	Whole Zone
Phenol	Phenols shall not be present in such quantities as to produce a specific odour, or in concentration greater than 0.05 milligrams per litre as C ₆ H ₅ OH.	Yung Long Bathing Beach Subzone
Turbidity	Waste discharges shall not reduce light transmission substantially from the normal level.	Yung Long Bathing Beach Subzone

Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage

Systems, Inland and Coastal Waters

8.2.3. Discharge of effluents are subject to control under the WPCO. The Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS) gives guidance on the permissible effluent discharges based on the type of receiving waters (foul sewers, stormwater drains, inland and coastal waters). The limits control the physical, chemical and microbial quality of effluents. Any sewage from the proposed construction and operation activities must comply with the standards for effluents discharged into the foul sewers, inland waters and coastal waters of Deep Bay WCZ, as given in the TM-DSS.

Practice Note for Professional Persons on Construction Site Drainage (ProPECC Note PN

2/23)

- 8.2.4. A practice note for professional persons was issued by the EPD to provide guidelines for handling and disposal of construction site discharges. The Practice Note for Professional Persons on Construction Site Drainage (ProPECC Note PN 2/23) provides good practice guidelines for dealing with various types of discharge from a construction site. Practices outlined in ProPECC Note PN 2/23 should be followed as far as possible during construction to minimise the water quality impact due to construction site drainage.

Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works (ETWB TC (Works) No. 5/2005)

- 8.2.5. ETWB TC (Works) No. 5/2005 provides an administrative framework to better protect all natural streams/rivers from the impacts of construction works. The procedures promulgated under this Circular aim to clarify and strengthen existing measures for protection of natural streams/rivers from government projects and private developments. The guidelines and precautionary mitigation measures given in the ETWB TC (Works) No. 5/2005 should be followed as far as possible to protect the inland watercourses at or near the Project area during the construction phase.

8.3. Assessment Area and Water Sensitive Receivers

- 8.3.1. The assessment area for the water quality assessment shall generally include areas within 500m from the boundary of the Project. This has been identified accordingly and is shown in **Figure 8.1**.
- 8.3.2. The Proposed Development is located in a rural area. No WSRs including water intakes, ecological valuable locations, country parks, water gathering grounds, beaches or water uses for agriculture within 500m study area of the proposed development, except 1 no. watercourse is identified. Key WSRs within 500m from the boundary of the Project were identified in **Table 8.2** below and their respective locations are illustrated in **Figure 8.1**.

Table 8-2 Summary of Representative Water Sensitive Receivers

ID	Name	Nature	Distance(m)	Description
<i>Key Inland WSR within 500m from the boundary of the Project</i>				
WSR1	Tin Shui Wai (TSW) Main Channel	Channelised watercourse	26	Tin Shui Wai (TSW) Main Channel and its tributaries are located in the Deep Bay WCZ and are a major freshwater system. This channel system generally runs from south to north and eventually enters the marine water at inner Deep Bay. Part of the core channel is identified to the right of the Application Site. The natural stream is located near Hung Tin Road
	Small tributary stream	Channelised watercourse	314	

8.3.3. The water quality of TSW Main Channel and its tributaries is routinely monitored by EPD. According to the EPD's publication "River Water Quality in Hong Kong in 2022", the downstream station (TSR1), which is to the south east of the redevelopment, was 90% in compliance in 2022 as compared with 2012's 88%. The EPD station at Tin Sui Wai Catchment (TSR1 as shown in Figure 8.1) received 'Good' grading respectively in 2022. The water quality at this EPD monitoring stations in the TSW Catchment is summarised in **Table 8-3**.

Table 8-3 Summary Statistics of River Water Quality Data at TSR1 Collected by EPD in 2022

Parameters	EPD Station TSR1	WPCO WQO
Dissolved oxygen (DO) (mg/L)	7.2 (2.6-10.3)	Waste discharges shall not cause the level of dissolved oxygen to be less than 4 mg/L
pH	7.7 (7.3-9.1)	The pH of the water should be within the range of 6.0-9.0
Suspended solids (mg/L)	8.2 (1.1-32.0)	Waste discharges shall not cause the annual median of suspended solids to exceed 20mg/L
5-day Biochemical Oxygen Demand (BOD) (mg/L)	3.6 (2.3-8.5)	Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 5mg/L

Parameters	EPD Station TSR1	WPCO WQO
Chemical Oxygen Demand (COD) (mg/L)	14 (8-19)	Waste discharges shall not cause the chemical oxygen demand to exceed 30mg/L
Oil & grease (mg/L)	<0.5	N/A
E. coli (cfu/100mL)	27000 (10000-150000)	Not exceed 1000 per 100 ml, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days
Faecal Coliforms (cfu/100mL)	98 000 (28 000 - 290 000)	
Ammonia-Nitrogen (mg/L)	1.400 (0.630 - 4.800)	The un-ionized ammoniacal nitrogen level should not be more than 0.021 milligram per litre, calculated as the annual average (arithmetic mean).
Nitrate-Nitrogen (mg/L)	0.750 (0.410 - 0.950)	Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants. Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.7 milligram per litre, expressed as annual mean.
Total Kjeldahl Nitrogen (mg/L)	2.00 (1.20 - 6.00)	-
Orthophosphate Phosphorus (mg/L)	0.120 (0.074 - 0.210)	-
Total Phosphorus (mg/L)	0.19 (0.13 - 0.51)	-
Sulphide (mg/L)	<0.02 (<0.02-0.03)	-
Aluminium (µg/L)	60 (<50-160)	-
Cadmium (µg/L)	<0.01 (<0.01-0.01)	-
Chromium (µg/L)	<1 (<1-1)	-
Copper (µg/L)	2 (<1-3)	-
Lead (µg/L)	<1 (<1-1)	-
Zinc (µg/L)	<10 (<10-24)	-
Flow (m ³ /s)	No measurement taken	-

Note:

[1]Data Source: River Water Quality in Hong Kong in 2022 (EPD)

[2]Data presented are in annual medians of monthly samples; except for E. coli which are in annual geometric means.

8.3.4. The level of E.Coli measured in TSR1 (downstream of TSW Nullah) was high (i.e. 27000

cfu/100mL). The E.coli levels discharges from the river was high, which is subject to domestic discharge of the expedient connections and unsewered villages in the area. However, the level decreased when compared to previous years.

8.4. Construction Phase Assessment

Construction Site Runoff

8.4.1. The surface runoff from construction works areas may contain increased loads of suspended solids(SS) and contaminants. Potential sources of pollution from construction site drainage include:

- General Construction Activities;
- Wash water from vehicles, equipment and dust suppression sprays;
- Potential minor oil leaks or spills from vehicles and plants;
- Site surface runoff and erosion of exposed bare soil and earth, drainage channels, earth working areas and stockpiles; and
- Sewage generated from on-site workforce.
- Accidental spillage of chemicals

8.4.2. Construction site runoff may cause physical, biological and chemical effects. The physical effects include potential blockage of watercourses and drainage channels and increase of SS levels. Local flooding risk may be increased in heavy rainfall situations. The chemical and biological effects caused by the construction runoff are highly dependent upon its SS levels and pH values. Runoff containing significant amounts of concrete and cement-derived material may cause primary chemical effects e.g. increasing turbidity and discoloration, elevation in pH, and accretion of solids. A number of secondary effects may also result in toxic effects to water biota due to elevated pH values, and reduced decay rates of faecal micro-organisms and photosynthetic rate due to the decreased light penetration. Construction site runoff comprises:

- Surface run-off may be contaminated and turbid water may enter adjacent stream and stormwater drainage system as excavated material is delivered to ground surface;
- Runoff and erosion from site surfaces, drainage channels, earth working areas and stockpiles, release of concrete washing with construction runoff and stormwater. Effluent discharge from temporary site facilities should be controlled to prevent direct discharge to the neighbouring drainage system. Such wastewater may include wastewater resulting from dust suppression sprays and wheel washing of site vehicles at site entrances; and

- Fuel, oil, solvents and lubricants from maintenance of construction machinery and equipment: The use of engine oil and lubricants, and their storage as waste materials has the potential to create impacts on the water quality of adjacent water courses if spillage occurs and enters watercourses. Waste oil may infiltrate into the surface soil layer, or run-off into local water courses, increasing hydrocarbon levels;

Mitigation Measures and Good Site Practice

8.4.3. Runoff and drainage shall be avoided or minimised with the implementation of mitigation measures and good site practices outlined in ProPECC PN 2/23 which shall include but not limited to the following.

- Providing perimeter channels to intercept storm runoff from outside the site. These shall be constructed in advance of site formation works and earthworks.
- Providing sand/silt removal facilities such as sand traps, silt traps and sediment basins to remove sand/silt particles from runoff to meet the requirements of the standard in Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters under the WPCO. These facilities shall be properly and regularly maintained. Channels or earth bunds or sand bag barriers shall be provided on site to properly direct storm water to such silt removal facilities
- Minimising soil excavation works by careful programming of works during rainy seasons
- Protecting exposed soil surface by paving as practical to reduce the potential of soil erosion
- Protecting temporary access roads by crushed gravel and exposed slope surfaces shall be protected when rainstorms are likely to occur
- Avoiding trench excavation in the wet season as far as practicable, and, if necessary, these trenches shall be excavated and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.
- Covering the open stockpiles of construction materials on site with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.
- Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. attached to the vehicle wheels or body can be washed off before the vehicle leaves the work site". Settling out the sand and silt in the wash water from the vehicles leaving the wheel washing facility, which ensures no earth, mud and debris is deposited on the road, before discharging into the storm drain. The section of the road between the wheel washing bay and the public road shall be paved with a back-fall to prevent wash water or other site runoff from entering the public area.
- Planning ahead the temporary site drainage management and wastewater treatment system for collection, treatment, reuse and discharge of surface runoff and wastewater before the construction works start.

- Groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction should be discharged into storm drains after the removal of silt in silt removal facilities.

General Construction Activities

- 8.4.4. Debris and rubbish generated on site shall be collected, handled, and disposed of properly. All fuel tanks shall be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. Open storm water drains and culverts near the works area shall be covered to block the entrance of large debris and refuse.

Accidental Spillage of Chemicals

- 8.4.5. The Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap. 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.
- 8.4.6. Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.

Sewage Generated from On-site Workforce

- 8.4.7. The sewage from construction work force is expected to be handled by portable chemical toilets. Sufficient portable toilets shall be provided by licensed contractors who shall be responsible for appropriate disposal of collected sewage and maintenance of these facilities.

Evaluation of Impact

- 8.4.8. The construction phase of the Project will be land-based which does not involve any marine works or works at the streams identified. Therefore, it is unlikely that the Project will have any adverse water quality impact from construction work, given good site practices properly implemented on site by Contractor.
- 8.4.9. The mitigation measures and good site practices will be included in the contract for contractor's implementation. With the provision and implementation of abovementioned mitigation measures, adverse water quality impact during construction phase is not anticipated.

8.5. Potential Impacts During Operation Phase

8.5.1. During the operation phase of the Proposed Development, surface run-off and sewage generated by the residents and staff are the main sources of water quality impacts. Surface run-off on site will be properly collected via stormwater drains and discharged to existing drainage system. The design of site drainage and disposal of various site effluents generated with the Proposed Development should follow the relevant guidelines and practices as given in the ProPECC PN1/23. Effluent arising from proposed development is subject to the control of WPCO, and the effluent discharge should be in compliance with the WPCO-TM and WPCO discharge license conditions.

Surface Runoff

8.5.2. The Application Site is a gently flat land 100% paved with concrete. It is currently a site used as Care and Attention Home. According to the latest design, some areas of greening/landscaping are recommended to create buffer area around the Application Site. The landscape will be managed and maintained in accordance with standard landscape practice and ArchSD General Specification. A Drainage Impact Assessment (DIA) report is prepared to review the public storm drain facilities and catering non-point source pollution/surface runoff.

8.5.3. The Project Site is currently a gentle flat land paved with concrete surface. There will be no major changes in surface properties and gradient, which will not significantly alter the overall catchment characteristics.

8.5.4. Surface runoff within the Project Site will be collected and discharged to existing public stormwater drainage network at terminal manhole SMH1012065 and SMH1012064. Surface runoff will also be collected at the catchpit SCH1006385 and the tapping point STH1001940 before discharging to the Tin Shui Wai Main Channel. The Project consists of redevelopment on a 100% paved site. Reduction of non-paved area is not expected. Additional discharge to the public drainage system is not expected.

Sewage Generated from Population of Proposed redevelopment

8.5.5. An estimated average dry weather flow of 137.2 m³/day will be discharged to the existing sewer arrangement to the West of the Application Site at FMH1009620. The sewage is discharged into a series of public sewers with diameters ranged from 150mm to 300mm were found along service lane to the south of the Project Site at the unnamed access road to the west, then conveyed to 300 mm sewer along Sha Chau Lei Road to Ha Tsuen Pumping Station and eventually to San Wai Sewage Treatment Plant.

8.5.6. The hydraulic calculation of the sewerage flow are shown in Sewerage Impact Assessment

(SIA) report. The pathway of the connection pipe to public drainage will also be shown in **Figure 8.2** and in the DSIA report.

Mitigation Measures during Operation Phase

8.5.7. In order to minimize the pollution loading, silt/sand traps should be provided for the drainage systems of open areas. Moreover, the pollution loading of runoff could be controlled by best management practices. The operator should manage the cleaning of roads and open areas within the Site before heavy rain. To further minimise pollution loading, cleaning should be carried out during low traffic periods. Cleaning methods for road/open areas, such as manual cleaning or mechanical methods and including street sweepers are recommended to be adopted. The substances during cleaning should be collected as far as practicable for off-site disposal at landfill sites. After the removal of the substances, the pollution loading of runoff would be reduced.

8.6. Conclusion

8.6.1. Tin Shui Wai Main Channel (WSR 1) is at the east of the Proposed redevelopment with a minimum separation distance of 26m. The Project would not involve any construction works at/within the above identified watercourses. Therefore, it is not expected to be affected during the construction and operation phases of the Project.

8.6.2. For construction phase, water quality impact is expected to be minimal when appropriate mitigation measures and good site practice are implemented to properly discharge site run-offs.

8.6.3. The contractor shall apply for a Discharge License from EPD under the WPCO. All site discharges should be treated as necessary in accordance with the terms and conditions of the Discharge License.

8.6.4. For operation phase, with implementation of proper pre-treatment facilities and good management measures, the potential water quality impact is anticipated to be insignificant.

9. Land Contamination Assessment

9.1. Guidelines

9.1.1. This assessment is prepared in accordance with the following guidance:

- Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management (Guidance Manual), dated December 2007, Revised in April 2023;

- Guidance Note for Contaminated Land Assessment and Remediation (Guidance Note), dated 15 August 2007, Revised in April 2023; and
- Practice Guide for Investigation and Remediation of Contaminated Land (Practice Guide) dated August 2011, Revised in April 2023.

9.2. Objectives

9.2.1. The objectives of this Environmental Assessment are

- to assess the potential land contamination impact at the Subject Site due to current and historical land uses, activities that could result in contamination of the site through desktop review and site survey (e.g. site's land use history, aerial photos, site visit photos, etc);
- and to propose forthcoming actions in case the potential land contamination identified.

9.3. Review of Historical Aerial Photos and Past Land Use

9.3.1. The earliest aerial record obtained from Lands Department showed that the Application Site was a vegetated land in 1975, which was turned into an empty paved ground in 1982. Building Block was found towards the centre of the site in 1984. As Confirmed by Project Team, the Application Site was operated as Pok Oi Yeung Chun Pui Care and Attention Home from 1985 to the present. At 1987, the northern areas of the Application Site are covered by vegetation. Part of the vegetation at the corner was found to be removed in 1998 whereas greeneries at the northern boundary of the site were removed in 2007. In 2022, planters were added to the north of the building block. No significant changes in land use are observed since 1984

9.3.2. The aerial photos are attached in **Appendix 9.1**. A summary of the land use of the Application Site is given in **Table 9-1**.

Table 9-1 Summary Table of Land Use

Period / Year	Land Use / Description	Sources of Information
1975, 1981	The Application Site was a vegetated land	Aerial photo from Lands Department(LandsD)
1982	The ground is empty and paved.	Aerial photo from LandsD
1984	One building structure at the centre is occupied by Pok Oi Hospital. Greeneries were found to the northeast corner. Ching Chung Care and Attention Home for the Aged was built to the south of the Application Site	Aerial photo from LandsD

Period / Year	Land Use / Description	Sources of Information
1987	Condition at site similar to that in 1984 Village settlements (Sha Chau Lei Tseun) found to the West of the Application Site.	Aerial photo from LandsD
1991	No significant changes in land use are observed within the Application Site. Car park to the North of the Application Site established	Aerial photo from LandsD
1998	Some greeneries at the northern corner within the Application Site became paved, no significant change observed within the Application Site.	Aerial photo from LandsD
2007	Greeneries at the northern boundary of the Application Site paved, no significant change observed within the Application Site.	Aerial photo from LandsD
2015	No significant changes in land use are observed within the Application Site.	Aerial photo from LandsD
2022	A planter found to north of the building block, no significant change observed within the Application Site and the surrounding.	Aerial photo from LandsD

9.3.3. In view of the activities observed from the aerial photos, there is no significant changes in land use, land contamination is expected to be unlikely.

9.4. Information from Government Departments

9.4.1. The following HKSAR Government Departments have been enquired on the latest update on the availability of land use status and records of land contamination and/or spillage for the site. The summary of correspondence is presented in **Table 8.2** below. Copy of the letters replied from various Government Departments are included in **Appendix 9.2** for reference.

Table 9-2 Enquiries and Responses on Land Contamination Related Records in the Application Site

Consultant's Letter Ref.	Department	Response Letter Ref.	Response Date	Summary
819.4524/23-0001	Environmental Protection Department (EPD)	Nil. Through Email	10 Nov 2023	no record of reported accidents of spillage / leakage of chemicals at the area specified
819.4524/23-0002	Fire Services Department (FSD)	(205) in FSD GR 6-5/4 R Pt.49	10 Nov 2023	The case is being handled. The following information will be furnished as soon as possible: <ul style="list-style-type: none"> • Dangerous Goods License Record: from the year of 1990 to present moment. • Incident Record: Past three years

Consultant's Letter Ref.	Department	Response Letter Ref.	Response Date	Summary
				of fire and special services incidents. Consultant's follow up action has been taken and appointment letter was submitted in 29 November 2023.
		(91) in FSD GR 6-5/4 R Pt.50	13 Dec 2023	Neither records of dangerous goods license, fire accidents nor incidents of spillage/ leakage of dangerous goods were found in connection with the given conditions of your request at the subject location.
		Nil. Through Email	3 Jul 2024	Email sent on 03 July 2024 to check for updates. Pending reply from FSD
819.4524/23-0003	Planning Department	Nil. Through Email	3 Nov 2023	The subject Sha Chau Lei Tsuen Pok Oi Hospital Yeung Chun Pui Care and Attention Home was completed in 1984, and no development/redevelopment proposal at the site has been approved since then
819.4524/23-0004	Lands Department	Nil. Through Email	25 Oct 2023	The subject site is held under Lot 2273 and the Extension thereto in D.D. 125 ("the Lot") which was granted to Pok Oi Hospital under New Grant No. 2882 dated 21.5.1980 by way of Private Treaty Grant at nil premium and an Extension Letter dated 8.6.1984 registered by Memorial No. YL289856. The Lot was also varied or modified by two modification letters dated 1.3.1982 and 4.7.1983 registered by Memorial No. YL259362 and YL279198 respectively. The user of the subject site is a non-profit making residential care and attention home for the aged and such ancillary and amenity purposes. No information/record on spillage accidents, illegal/contaminating land uses or uncontrolled dumping uses of the subject site.
819.4524/233-0005	Hong Kong Police Force	Nil. Through Email	1 Nov 2023	We do not hold record of any current and historical explosive storage locations for the mentioned site, as well as any explosive spillage and incident reports.

9.4.2. Based on the information available, there is no record of any reported chemical spillage/leakage in the past 5 years. The consultant visited the territory-wide register of chemical waste producers maintained at the Territory Control Office in Wan Chai on 3 May

2024. There is one registered chemical waste producer at the Project Site (as “Yeung Chun Pui Care & Attention Home(Pok Oi Hospital)”). Details of the chemical waste producer is provided in **Appendix 9.3**. As advised by EPD, one valid chemical waste producers were found. Given the nature of the business of care and attention services on the registry, dangerous goods are not anticipated to be generated on-site.

9.4.3. Also, there are neither records of dangerous good license, fire incidents nor incidents of spillage/ leakage of dangerous goods were found in the Application Site based on FSD’s record.

9.4.4. As refer to PlanD’s response, the site is occupied by Sha Chau Lei Tsuen Pok Oi Hospital Yeung Chun Pui Care and Attention Home since 1984 with no further site proposal. LandsD supplemented that the only user of the Application Site is a non-profit making residential care and attention home for the aged and such ancillary and amenity purposes. No information/record on spillage accidents, illegal/contaminating land uses or uncontrolled dumping uses of the subject site are recorded.

9.4.5. Given the nature of the site usage as a Care and Attention Home, no uses of chemicals and dangerous goods, chemical spillage and contamination is expected. Therefore, no adverse land contamination impacts were expected from the Application Site based on the previous land uses.

9.5. Site Visit and Observation

9.5.1. Site visit was conducted on 23 February 2023 to identify potential sources of land contamination.

9.5.2. Upon the site visit, the Application Site was observed to be consistent with the abovementioned available information and it is observed that the whole Application Site was a Care and Attention Home with one building block. The Application Site was completely paved.

9.5.3. Photo records of the Application Site taken during the site visit are presented in **Appendix 9.3**. A Site Walkover Checklist has been completed as required in the EPD’s Practice Guide and attached in **Appendix 9.4**.

Store Rooms Outside Block (Photo 1-3)

9.5.4. Store rooms were inspected for any potential signs of land contamination. Photo 1-3 were gas cylinder store and switch room previously and have been used as store rooms after the adoption of electricity for power. No chemicals/gas cylinder are found. These rooms are situated in bund floors with no cracks observed.

Store rooms within Block (Photo 4-7)

9.5.5. These store rooms were also observed to be in good condition without signs of chemical storage nor any chemical leakage/spillage. The flooring was observed to be in good condition without any observable cracks. Dishwashing Detergents are found in the storeroom in Photo 6, no observable crack, stain and unidentified odour is found.

Pavement Area (Photo 8-10, 13-15)

9.5.6. The Pavement is paved with concrete in good condition, with no observable crack, oil stain and no unidentified odour of any sort. No chemical storage is identified. Buckets found in Photo 10 are confirmed food compost.

Temporary Structures (Photo 11-12)

9.5.7. Temporary storage structures are found. Electrical Appliance (Photo 11), Operation and Maintenance (O&M) Facilities are found in these structures. The ground of these structures are paved in good condition. No chemical is stored inside these structures.

Car Park Space (Photo 9)

9.5.8. No oil stain was found on the paved ground in the car park space.

9.5.9. During the site visit, it was observed that there were no other signs of obvious/ suspected contamination such as abnormal odour and/or distressed vegetation, and no aboveground/ underground storage tank and pipe works within the whole Application Site.

9.6. Summary

9.6.1. According to the desktop study, the Application Site was occupied by Pok Oi Yeung Chun Pui Care and Attention Home upon establishment in 1984. There was one building block. No chemical manufacturing and dangerous goods storage were expected. Since the building block and the pavement area are not identified as potential hotspots regarding their land uses, no potential contamination sources were expected. Therefore, no potential contamination issues are anticipated from the previously occupied building.

9.6.2. Based on the response from various government departments, there is no record of chemical waste disposal record, accidental spillage record nor submission relating to land contamination assessment, no records of dangerous goods license, fire incidents nor incidents of spillage / leakage of dangerous goods were found at the Application Site according to the available records. The response verified the collected information from the review of aerial historical photographs, hence it is not anticipated that there would be any land contamination impact due to past land uses.

- 9.6.3. During the site visit, it is observed that the entire Application Site was paved with good condition and no observable cracks are observed. Considering no other signs of obvious/suspected contamination such as abnormal odour and/or distressed vegetation, and no aboveground/ underground storage tank and pipe works within the Application Site, it is believed that the Application Site is unlikely contaminated and further site investigation is considered as not necessary.

10. Waste Management Implications

10.1. Legislation and Standards on Waste Management

Waste Disposal Ordinance (WDO) (Cap. 354)

- 10.1.1. Waste Disposal Ordinance, Cap. 354 provides legislative control on pollution caused by all forms of wastes such as livestock wastes, chemical waste etc. It provides the statutory framework for the planning, management and control of wastes in Hong Kong.

Public Health and Municipal Services Ordinance (Cap.132)

- 10.1.2. The Public Cleansing and Prevention of Nuisances Regulation provides control on illegal tipping of waste on unauthorized (unlicensed) sites.

Waste Disposal (Chemical Waste) (General) Regulation (Cap.354C)

- 10.1.3. Under the WDO, Waste Disposal (Chemical Waste) (General) Regulation (Cap.354C) provides regulations for chemical waste control, and administers the possession, storage, collection, transport and disposal of chemical waste. EPD has also issued the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, which details how the chemical waste producers should comply with the regulations on chemical waste.

Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap.354N)

- 10.1.4. Under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, construction waste delivered to a landfill for disposal must not contain more than 50% by weight of inert material; construction waste delivered to a sorting facility for disposal must contain more than 50% by weight of inert material; and construction waste delivered to a public fill reception facilities for disposal must consist entirely of inert material.

- 10.1.5. Other Environmental Regulations / Guidelines

- Land (Miscellaneous Provisions) Ordinance (Cap. 28)
- ETWB TC(W) No. 22/2003 and 22/2003A, Additional Measures to Improve Site Cleanliness and Control Mosquito Breeding on Construction Sites

- Works Bureau TC No. 12/2002, Specifications Facilitating the Use of Recycled Aggregates
- Trip Ticket System for Disposal of Construction & Demolition Materials (DEVB TC(W) No. 6/2010)
- Environmental Management on Construction Sites (ETWB TC(W) No. 19/2005)
- Public Dumps (WBTC No. 2/93)
- Waste Disposal Ordinance (Cap. 354) & Public Health and Municipal Services Ordinance (Cap. 132)
- Public Filling Facilities (WBTC No. 2/93B)
- Fill Management (WBTC No. 12/2000)
- Code of Practice on the Packaging, Labeling and Storage of Chemical Waste
- DevB TCW No. 8/2010 "Enhanced Specification for Site Cleanliness and Tidiness"
- Management of Construction and Demolition Materials (Technical Circular No. 11/2019) published by CEDD
- CEDD's Project Administration Handbook for Civil Engineering Works
- Hong Kong Planning Standards and Guidelines, 2022 (Planning Department (PlanD))
- Monitoring of Solid Waste in Hong Kong – Waste Statistics for 2022

10.2. Assessment Approach and Criteria

10.2.1. The assessment of waste management implications from the construction and operation of the Project includes the following tasks:

- Identification of types and quantities of waste arising from various construction activities based on the latest understandings;
- Evaluation of opportunities for waste reduction, re-use and recycling on-site or off-site;
- Identification of disposal options for each type of waste;
- Evaluation of potential impacts from the handling (including stockpiling, labelling, packing and storage), collection, transportation and reuse/disposal of waste with respect to potential hazards, air and odour emissions, noise, wastewater discharges and public transport; and
- Proposing mitigation measures and evaluation of residual impact.

10.3. Potential Impacts during Construction Phase

10.3.1. The construction works of the Project mainly include demolition, clearance and mobilization, excavation and foundation works, superstructure and fitting out works. Construction & Demolition (C&D) materials generated from the construction works comprises of inert and non-inert materials. For inert C&D materials (or public fills), such as soil, rock, concrete, etc., could be reused on-site as filling materials or off-site as public fill at public fills reception facilities (e.g. Tuen Mun Area 38 Fill Bank). The delivery site of inert C&D materials is subject to the designation by the PFC according to the DEVB TC(W) No.6/2010.

- 10.3.2. For non-inert C&D materials, such as topsoil, dead vegetative materials, glass, steel, plastics, paper, timber/woody materials etc., would be sorted for reuse/recycle before disposal. Surplus non-inert C&D materials are proposed to be disposed at West New Territories (WENT) Landfill at Nim Wan.
- 10.3.3. Waste management planning is needed prior to the commencement of construction works. Construction waste management strategy is to avoid, minimize, reuse, re-cycle and finally dispose of waste with the desirability descending in this order. Contractor(s) will be required to implement effective waste management measures to ensure their practices are in line with the strategies. In order to minimize the generation of wood waste, steel is recommended to be used for formworks.
- 10.3.4. Chemical waste from maintenance and servicing of construction equipment/plant may be generated. If chemical waste is produced, it will be disposed of according to Code of Practice on the Packaging, Labelling and Storage of Chemical Waste. Special handling and temporary storage of chemical waste is required before removal from site. A licensed chemical waste collector will be employed to deliver of these wastes at EPD licensed chemical waste treatment facility.
- 10.3.5. General refuse such as food scraps, waste paper, empty containers, etc. would be generated from the workforce during the construction phase. General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Enclosed and covered areas should be provided for general refuse collection to prevent waste materials being blown around by wind, flushed or leached into nearby waters, or creating an odour nuisance or pest and vermin problem. Also, routine cleaning for these areas should be implemented to keep areas clean, so that intentional or accidental release to the surrounding environment does not occur with proper management.

C&D materials

- 10.3.6. The majority of C&D materials will be generated from the key construction activities mentioned in Section 10.3.1. Inert C&D materials will be re-used on site and the remaining materials will be sent to public fill reception facilities.
- 10.3.7. Apart from optimizing the construction programme, alternative designs and construction methods have been duly considered. Use of BIM and MiC will be considered, subject to detailed design.
- 10.3.8. As advised by project team, the quantities of C&D materials generated will be subject to further design development and contractor's operation procedure/practices. The Contractor shall develop and implement their Environmental Plan (EMP) and Waste Management Plan

(which is part of the EMP) to control any potential adverse impact associated with the construction waste as far as possible. It is targeted that about 20% of the inert materials can be reused onsite. The Contractor shall develop and implement their Environmental Plan (EMP) and Waste Management Plan (which is part of the EMP) to control any potential adverse impact associated with the construction waste. Half-Yearly Status Report and Quarterly Situation Report shall be prepared accordingly.

Chemical Waste

10.3.9. Chemical waste is defined in the Cap 354C Waste Disposal (Chemical Waste) (General) Regulation. Where the construction processes produce chemical waste, the contractor must register with EPD as a chemical waste producer. Chemical waste that is likely to arise from the construction activities for the Project includes:

- Used paints, engine oils, hydraulic fluids and waste fuel;
- Spent mineral oils / cleansing fluids from machineries; and
- Spent solvent / solutions, some of which may be halogenated, from equipment cleansing activities.

10.3.10. Accidental spillages of chemicals in the works area may contaminate the top soils on exposed ground/ earth. The contaminated soil particles may be washed away by construction runoff causes water pollution.

10.3.11. Chemical wastes pose environmental and health and safety hazards if not stored and disposed of in an appropriate manner as outlined in the Waste Disposal (Chemical Waste) (General) Regulation. These hazards include:

- Toxic effects to workers;
- Adverse effects on water quality from spills; and
- Fire hazards.

10.3.12. The amount of chemical waste to be generated throughout construction phase cannot be accurately predicted at this stage since it largely depends on the contractor's housekeeping measures. It is estimated the quantities of chemical wastes will be small (about 0.1 m³ on a monthly basis). The amount of chemical waste to be generated would be quantified in the Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) to be prepared by the Contractors. Given that the chemical waste generated are to be handled, stored, collected, transported and disposed by licensed chemical waste collectors in accordance with the Waste Disposal (Chemical Waste) (General) Regulation, impacts such as potential hazard and spillage will not be anticipated.

General Refuse

- 10.3.13. General refuse such as waste papers, plastic packaging, food wastes, etc. will be generated by the construction workforce during construction phase of the Project.
- 10.3.14. Since no information regarding the number of on-site workers is available at this stage of the Project, it has been assumed that a maximum of 70 workers will work simultaneously at the Project site during the construction phase of the Project. The quantity of general refuse to be generated per day is therefore estimated to be 45.5 kg (assuming a waste generation rate of 0.65 kg per person per day and the density of the general refuse is 1029 kg/ m³).
- 10.3.15. Recycling bins for waste papers, plastic packaging should be provided to maximize reuse and recycle volume. Other non-recyclable general refuse, the Contractor shall employ a reliable waste collector to separate general refuse from C&D materials and remove general refuse from the site to WENT Landfill. The impacts arising from increased traffic loading would be limited. With proper on-site handling and storage as well as regular disposal of the wastes, no adverse impact is envisaged. All dump trucks should be equipped with GPS or equivalent system for the monitoring of their travel routings and parking locations to prohibit illegal dumping and landfilling of C&D materials. No adverse impact (e.g., potential hazards, air and odour emissions, noise, wastewater discharges and public transport etc.) is envisaged with the implementation of appropriate mitigation measures such as using trucks with covering and enclosed containers.
- 10.3.16. Types and quantities of waste arise from various construction activities and the corresponding handling arrangement and outlets are identified and summarized in **Table 10-1**.

Table 10-1 Summary of Quantities of Waste Generated

Type of Waste	Quantity	Handling Arrangement and Outlets	Remark
Inert C&D Materials Delivered to Public Fill Reception Facilities [1]	2,417m ³	- Delivered to the public fill reception facilities	/
Inert C&D Materials (or Public Fills) For Onsite Reused	483m ³	- Onsite reused before delivery to public fill reception facilities	Assumed 20% reused onsite
Non-inert C&D Materials (or C&D waste) Generated [2]	4,122m ³	- Recycled and reused (e.g. Timber and Woody material to Y-Park etc.) before disposed of at the landfill	GFA:17,922m ² Housing Projects: 0.250m ³ /m ² GFA Hong Kong-wide proportion of inert C&D materials in construction waste:0.92 (Hong Kong –Waste Statistics 2022) Waste Index*: 0.92x0.25 per m ² GFA
General Refuse	45.5 kg/day	-Recycling bins for waste papers, plastic packaging should be provide - Collected by waste collector for the disposal of at WENT	/
Chemical Waste[3]	~ 0.1 m ³ (on a monthly basis)	- Collected by licensed chemical waste collector for the disposal of at licensed treatment facilities (e.g. Chemical Waste Treatment Centre (CWTC) at Tsing Yi)	/

Note:

[1] Includes, but not limited to excavated soil, broken concrete, granular materials etc.

[2] Includes, but not limited to, bamboo, timber, paper and plastic, etc.

[3] Includes, but not limited to, scrap batteries or acid/alkali from construction plant maintenance activities; used paints, engine oils, hydraulic fluids and waste fuel, etc.

*Waste Index referenced to Section 3.2 of *A Guide for Managing and Minimizing Building and Demolition Waste* published by the Hong Kong Polytechnic University in May 2001

10.4. Mitigation Measures to Control Construction Waste Impact

General

10.4.1. Inert C&D materials will be reused on-site and the remaining materials will be sent to public fill reception facilities. In order to facilitate process of transferring the construction waste to Government waste disposal facilities (e.g. public fill reception facilities, sorting facilities and landfills), waste sorting and segregation shall be carried out on site in accordance with the

following categories:

- Hard rock and large broken concrete suitable for reuse on the Site or recycling;
- Metals (i.e. aluminium can, steel metal, ferrous metal, and non-ferrous metal);
- Plastic (i.e. plastic bag, plastic bottle, plastic packaging, etc.)
- Paper;
- Chemical waste;
- Timber and woody materials will be segregated and delivered to Y-Park
- Materials suitable for disposal at public fill reception facilities, sorting facilities and landfills

10.4.2. In addition, the Contractor is required to implement good EMP and practices on handling and disposal of waste, including but not limited to:

- Handle, store and dispose of all wastes in accordance with the Waste Disposal Ordinance;
- Handle, store and dispose of chemical waste in accordance with the EPD recommended Codes of Practice on the Packaging, Labelling & Storage of Chemical Wastes and Waste Disposal (Chemical Waste) (General) Regulation under the Waste Disposal Ordinance;
- Store general refuse in enclosed bins or compaction units separate from C&D materials and chemical wastes. A reputable waste collector should be employed to collect and dispose of general refuse from the site on a daily or every second day basis;
- Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste;
- Waste storage areas within the project site should be well maintained and cleaned regularly to prevent cross-contamination;
- Cover trucks with tarpaulin and transporting waste in enclosed containers to minimize windblown litter and dust during transportation;
- Maintain temporary stockpiles and ensure with well cover to prevent inclement weather (e.g. heavy rain).

10.4.3. To clearly spell out the types and amount of waste generated and its associated mitigation measures, a Waste Management Plan (WMP), as part of EMP should be prepared in accordance with ETWB TC(W) No.19/2005 and submitted to the Project / Site Engineer for approval. The recommended mitigation measures should form the basis of the WMP.

C&D Materials/Waste

10.4.4. It is presently anticipated that most of the C&D materials/waste will need to be transported off-site for re-use, recycling and disposal by trucks. With the implementation of the recommended dust and noise control / mitigation measures presented in the air quality and noise sections, such as covering and stockpiling materials to avoid dust and other nuisance

impacts from truck movements, these secondary environmental factors are not expected to be a concern.

10.4.5. C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public fill reception facilities or reclamation site. The following mitigation measures should be implemented in handling the excavated and C&D materials:

- Maintain temporary stockpiles and ensure with well cover to prevent inclement weather;
- Reuse excavated fill material for backfilling;
- Carry out on-site sorting; and
- According to the DEVB TC(W) No. 6/2010, implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials/waste is properly documented and verified. Where waste generation is unavoidable, the potential for recycling or reuse shall be considered. If waste cannot be recycled, disposal routes described in the EMP shall be followed. The amount of waste generated, recycled, and disposed shall be recorded. Trip-ticket system shall also be implemented in accordance with Development Bureau TC(W) No. 6/2010 to monitor the disposal of C&D material and control fly-tipping. Delivery site is subject to the designation by the PFC according to the DEVB TC(W) No.6/2010.

Chemical Waste

10.4.6. If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosives, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. Chemical waste should be collected by a licensed chemical waste collector and to be disposed of at a licensed chemical waste treatment and disposal facility in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

10.4.7. Mitigation measures will also include the provision of protective gloves and clothing to site workers, use of bulk earth movers to remove contaminated materials to prevent any possible human contact, provision of adequate washing facilities and the use of licensed chemical waste collectors to ensure legal disposal of waste, etc.

General Refuse

10.4.8. Recycling bins should also be placed to encourage recycling. Enclosed and covered areas should be provided for general refuse collection to prevent waste materials from being blown

around by the wind, flushed or leached into nearby waters, or creating an odour nuisance or pest and vermin problem. Also, routine cleaning for these areas should be implemented to keep areas clean, so that intentional or accidental release into the surrounding environment does not occur without proper management.

10.4.9. Particularly, food waste is the main source of generating unpleasant odour and causing environmental hygiene concerns. Team will explore the feasibility for providing separate recycling bins will be provided for food waste to facilitate the recycling of food waste on-site or off-site in a hygienic manner in detailed design stage.

10.4.10. With the implementation of good waste management practices at the Site, and the abovementioned mitigation measures at the Project Site, adverse environmental impacts are not expected to arise from the storage, handling and transportation of C&D materials, chemical waste and general refuse generated during construction phase.

10.5. Potential Impacts and Mitigation Measures during Operation Phase

10.5.1. The major type of waste generated from the operation phase is general refuse. With reference to Monitoring of Solid Waste in Hong Kong - Waste Statistics for 2022 by EPD, the disposal rate of domestic waste and non-domestic waste were 0.93 kg/person/day and 0.59 kg/person/day. The estimated quantities of general refuse anticipated for domestic uses will be 512kg/day, assuming a residential population of 551. The estimated general refuse generated by commercial uses will be 122 kg/day with an estimated population of 207 person.

10.5.2. General refuse will be removed on regular basis to minimize odour, pest and litter impacts. To promote the recycling of waste paper, aluminium cans and plastic bottles, the 3-coloured waste separation bins for the collection of recyclable municipal waste will be clearly labelled and placed at convenient locations. The recyclable materials will then be collected by reliable waste recycling agents on a regular basis. No chemical waste is anticipated to be produced during the operation phase. Waste generated will be disposed of at government waste disposal facilities such as WENT Landfill or refuse transfer station. Hence, adverse waste management implication is not anticipated during the operation phase.

10.6. Conclusion

10.6.1. During the construction phase, the major waste types generated by the construction activities for this project will include C&D materials from the excavation and foundation works, substructure and superstructures work; chemical waste from maintenance and servicing of construction site and equipment; general refuse from the workforce. Provided that all these identified wastes are reused and recycled if appropriate, handled, transported and disposed of in strict accordance with the relevant legislative and recommended

requirements and that the recommended good site practices and mitigation measures are properly implemented, no adverse environmental impact is expected during the construction phase.

- 10.6.2. During the operation phase, the key waste types generated will be general refuse. Provided that all these wastes are reused and recycled if appropriate, handled, transported and disposed of in strict accordance with the relevant legislative requirements and the recommended mitigation measures are properly implemented, no adverse environmental impact is expected during the operation phase.

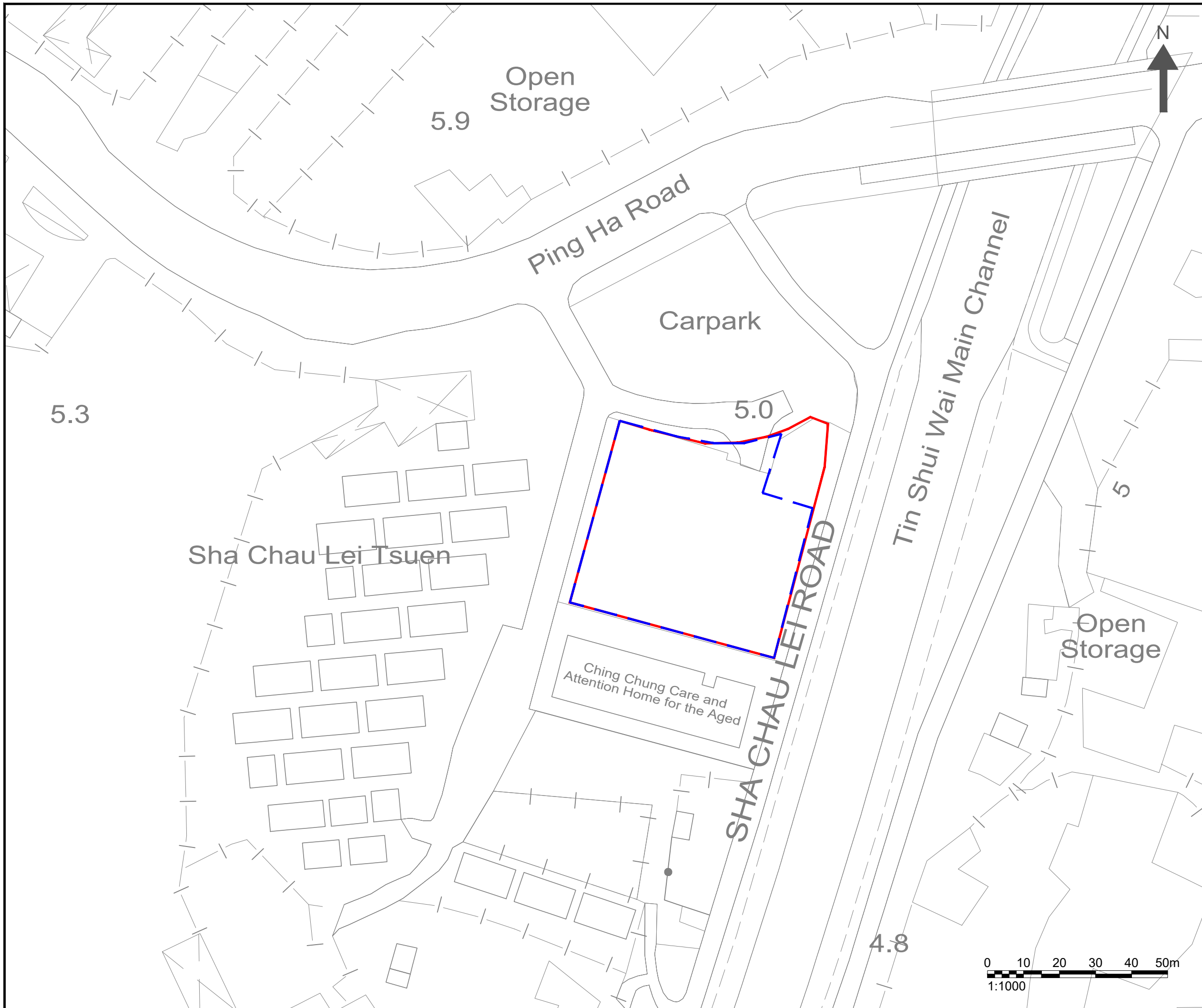
11. Conclusion

- 11.1.1. Air quality impact (including vehicular and chimney emission), traffic noise, fixed plant noise, water quality and land contamination are evaluated in this Environmental Assessment Report for the Application Site.
- 11.1.2. No active chimneys and SP License record identified within 200m from the Proposed Amendment. Setback from Ping Ha Road, openable windows for ventilation would comply with the recommended buffer distance for air sensitive use. Therefore, no unacceptable air impact subject to the Proposed redevelopment is anticipated.
- 11.1.3. The potential environmental noise impacts from nearby road traffic and fixed noise sources on the Proposed redevelopment have been evaluated.
- 11.1.4. For traffic noise impact assessment, all NSRs in the Proposed redevelopment will comply with the relevant traffic noise standard stipulated in HKPSG. The Proposed redevelopment would not be subject to significant adverse traffic noise impact.
- 11.1.5. Fixed noise impact assessment has been carried out for the Proposed redevelopment. The results of the assessment have indicated that the predicted fixed noise levels of all NSRs should be acceptable under the Noise Control Ordinance.
- 11.1.6. For water quality assessment, the Project would not involve any construction works at/within the above identified watercourses. Therefore, it is not expected to be affected during the construction and operation phases of the Project.
- 11.1.7. The site is currently used as Pok Oi Hospital Yeung Chun Pui Care and Attention Home. No significant change in land use within the Application Site has been observed. According to replies from HKSAR Departments, no records of chemical storage/spillage accidents, fire accidents or submissions relating to land contamination at the Application Site were found. During Site inspection, the floor is paved in good condition with no observable crack. Thus,

no contamination activities are anticipated for the current use and no potential sources and signs of contamination have been discovered. No land contamination impact is anticipated.

- 11.1.8. For waste management, top priority should be given to waste avoidance, followed by minimization, reuse/recycling, treatment and safe disposal of waste as a last resort during construction and operation phases.

Figures



NOTES :

- DEVELOPMENT SITE BOUNDARY
- REZONING SITE BOUNDARY

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Project No. : 2164EA

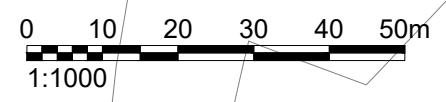
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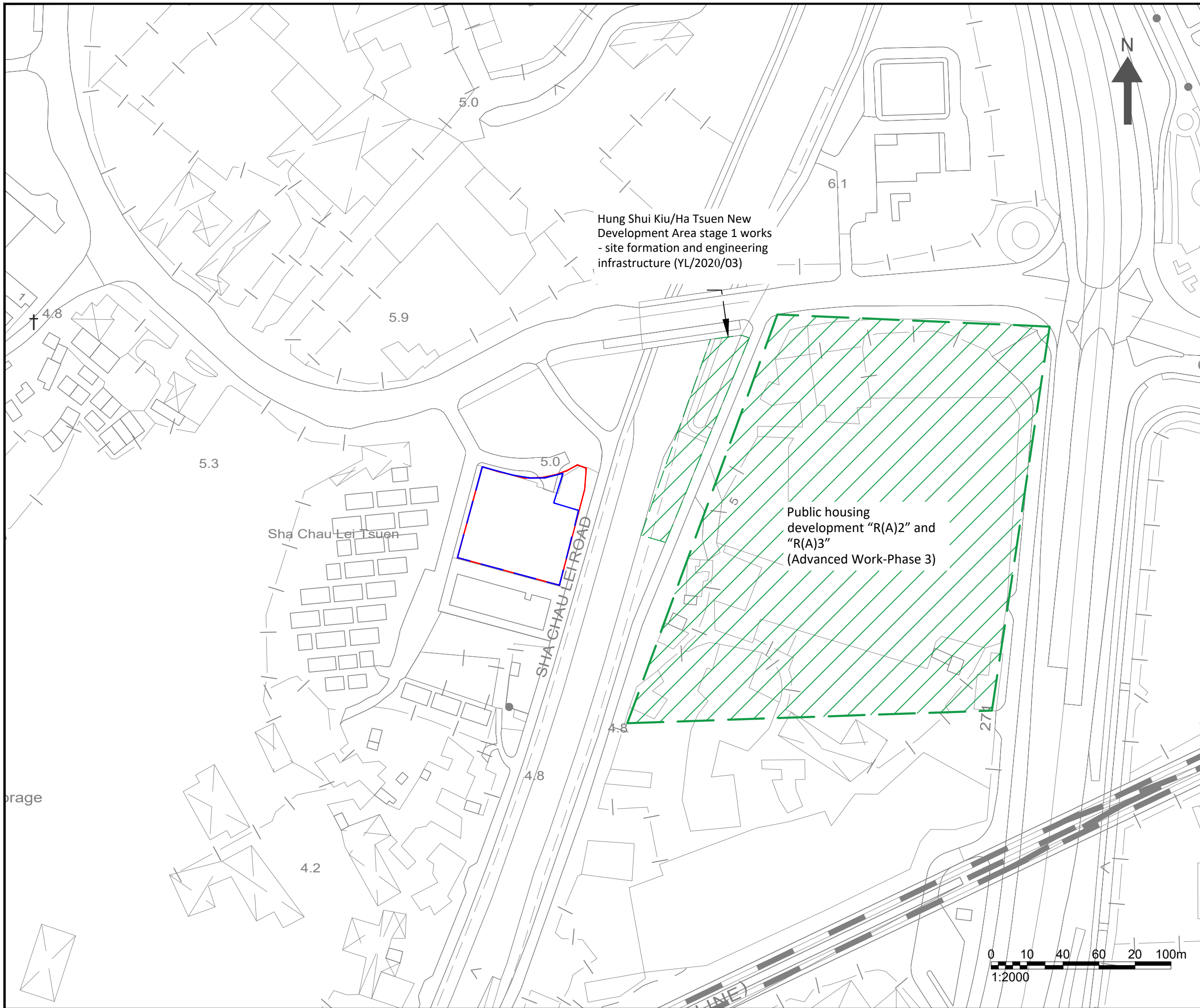
Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG




Drawing Title :
 PROJECT SITE LOCATION

Drawing No : Fig3.1	Revision : 1
Scale : AS SHOWN	Date : SEP 2023

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- NOTES :
-  DEVELOPMENT SITE BOUNDARY
 -  REZONING SITE BOUNDARY
 -  CONCURRENT PROJECT

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Project No. : 2162EA

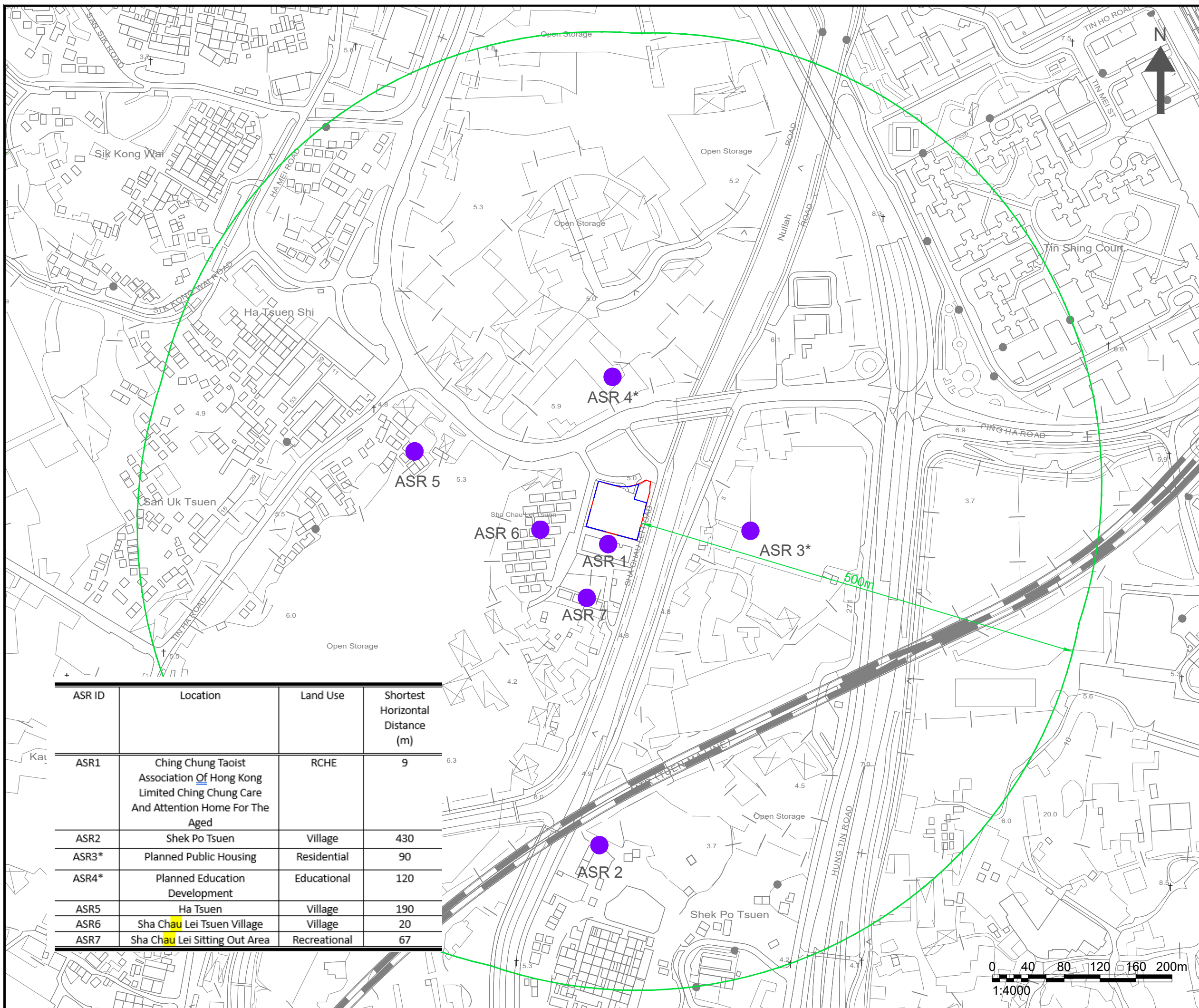
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Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
 LOCATION OF CONCURRENT PROJECT

Drawing No : FIGURE 4.1	Revision : 0
Scale : AS SHOWN	Date : APR 2024

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NOTES :

- DEVELOPMENT SITE BOUNDARY
- REZONING SITE BOUNDARY
- 500m ASSESSMENT AREA
- AIR SENSITIVE RECEIVER

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Project No. : 2164
 Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

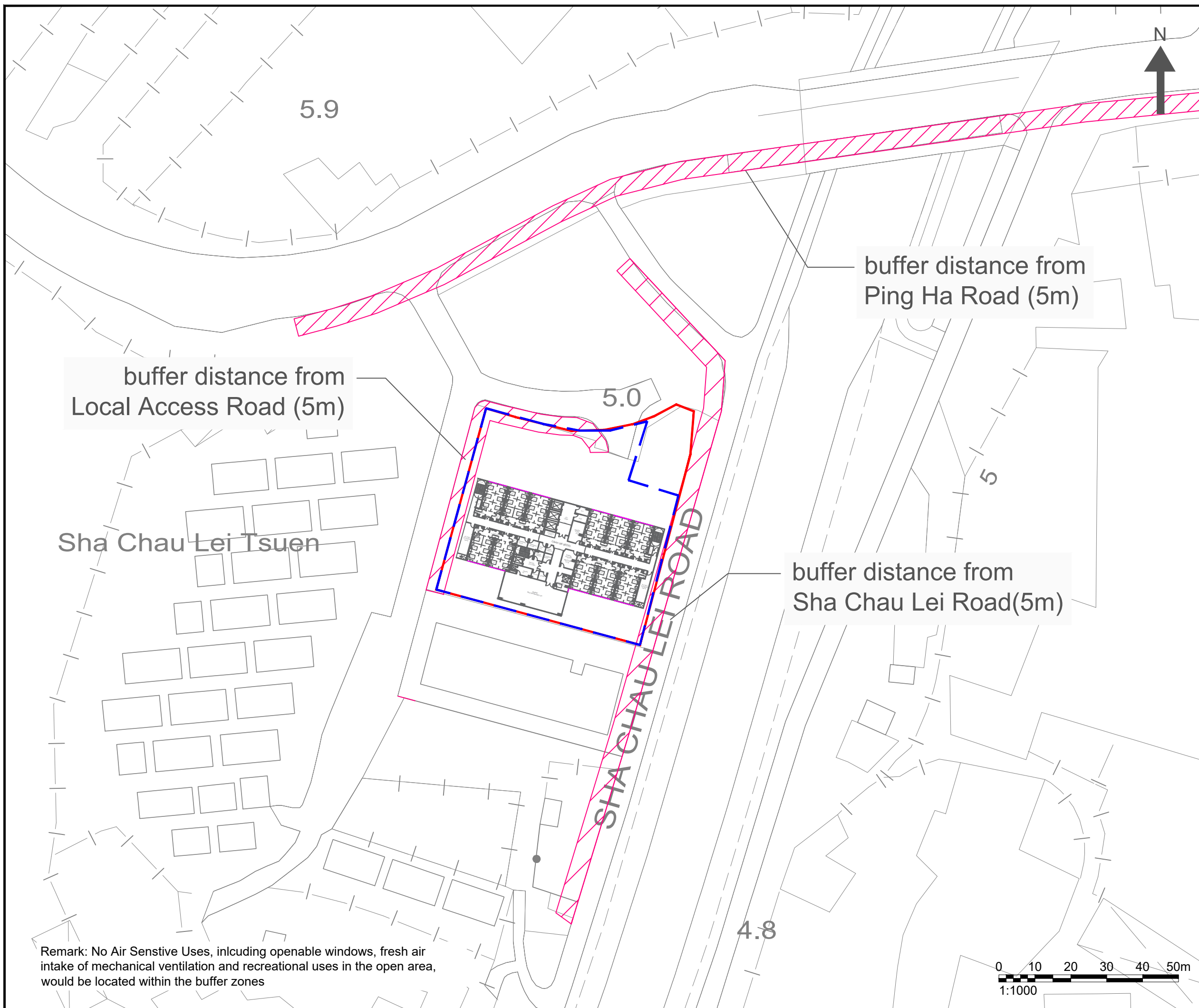
Drawing Title :
 500M ASSESSMENT AREA AND LOCATION OF AIR SENSITIVE RECEIVERS

Drawing No : FIGURE 6.1	Revision : 0
Scale : AS SHOWN	Date : SEP 2023

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ASR ID	Location	Land Use	Shortest Horizontal Distance (m)
ASR1	Ching Chung Taoist Association Of Hong Kong Limited Ching Chung Care And Attention Home For The Aged	RCHE	9
ASR2	Shek Po Tsuen	Village	430
ASR3*	Planned Public Housing	Residential	90
ASR4*	Planned Education Development	Educational	120
ASR5	Ha Tsuen	Village	190
ASR6	Sha Chau Lei Tsuen Village	Village	20
ASR7	Sha Chau Lei Sitting Out Area	Recreational	67





buffer distance from Local Access Road (5m)




buffer distance from Ping Ha Road (5m)

buffer distance from Sha Chau Lei Road (5m)

Sha Chau Lei Tsuen

SHA CHAU LEI ROAD

Remark: No Air Sensitive Uses, including openable windows, fresh air intake of mechanical ventilation and recreational uses in the open area, would be located within the buffer zones

- NOTES:
-  DEVELOPMENT SITE BOUNDARY
 -  REZONING SITE BOUNDARY
 -  BUFFER DISTANCE OF ADJACENT ROADS

Consultant

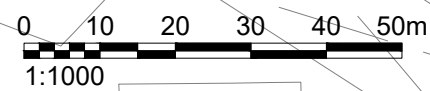


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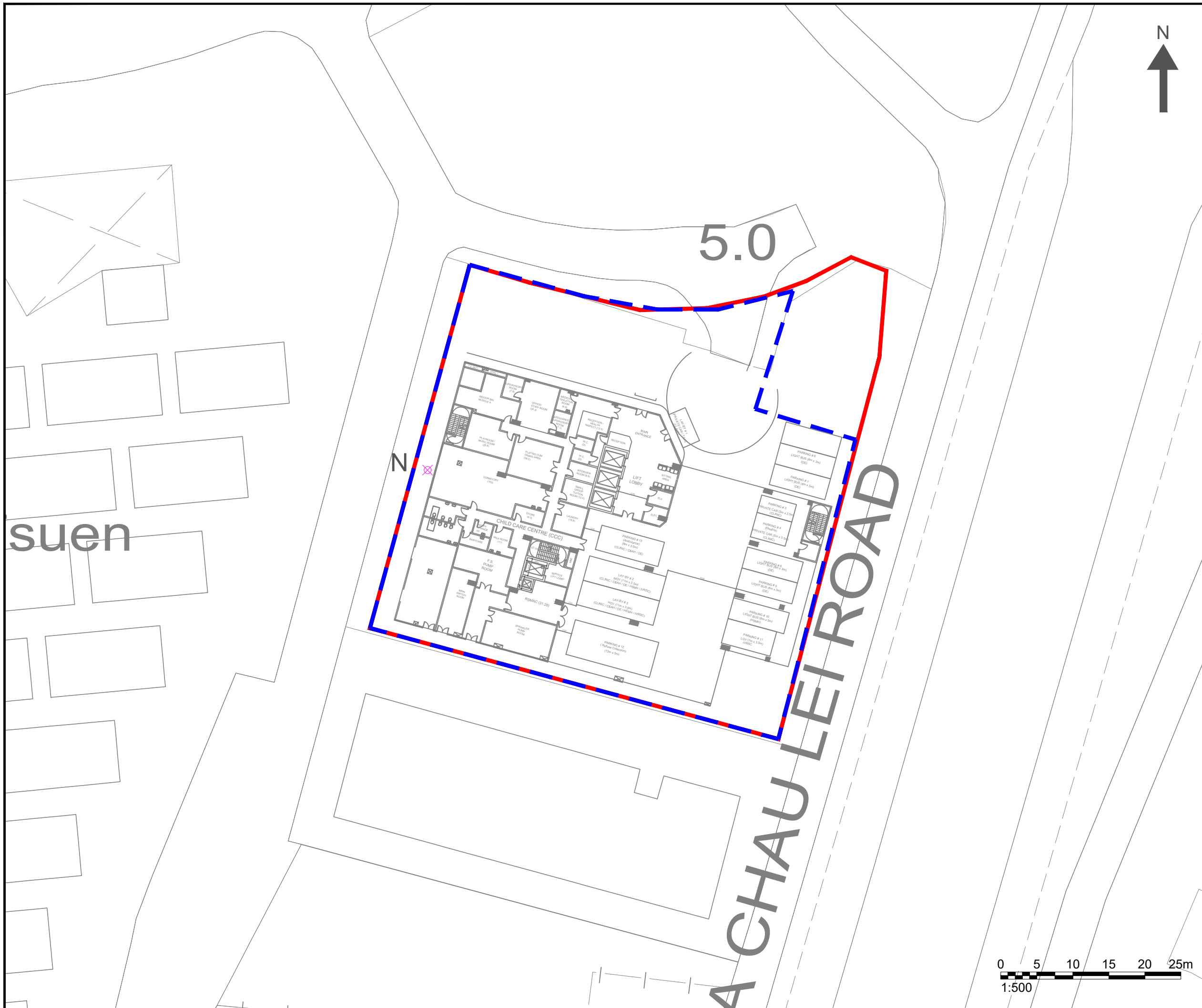
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 Drawing By : LL
 Project : PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title : BUFFER DISTANCE BETWEEN ADJACENT ROADS AND PROJECT SITE

Drawing No : FIGURE 6.2	Revision : 0
Scale : AS SHOWN	Date : SEP 2023



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- NOTES :
- DEVELOPMENT SITE BOUNDARY
 - REZONING SITE BOUNDARY
 - x NOISESENSITIVE RECEIVER

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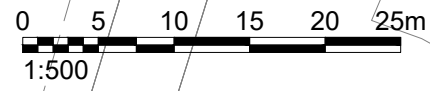
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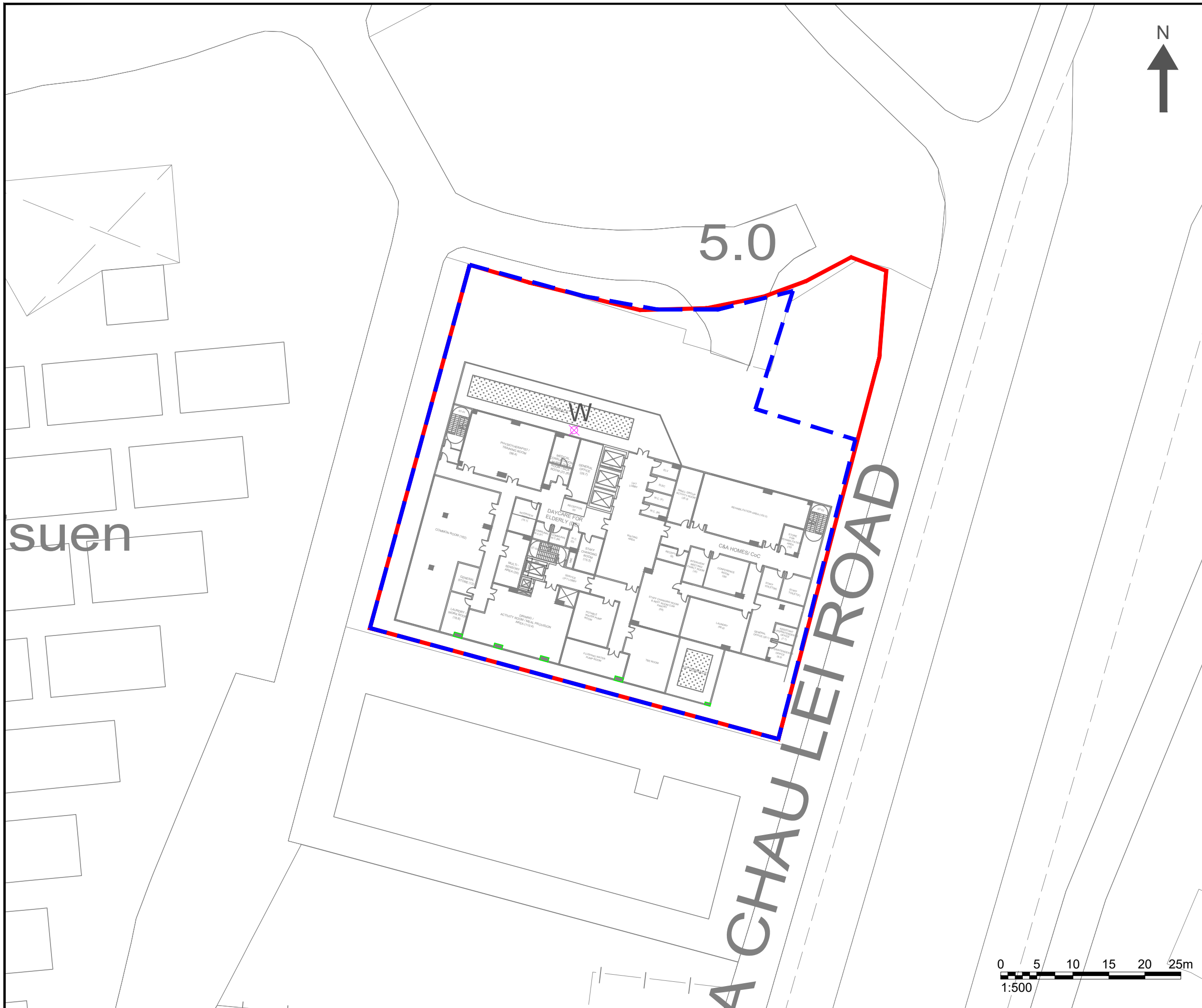
Project :
PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
NOISE ASSESSMENT POINTS(NAP) FOR TRAFFIC NOISE IMPACT ASSESSMENT(GF)

Drawing No : FIGURE 7.1a	Revision : 0
Scale : AS SHOWN	Date : MAY 2024



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- NOTES :
- DEVELOPMENT SITE BOUNDARY
 - REZONING SITE BOUNDARY
 - x NOISE SENSITIVE RECEIVER

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Project No. : 2164

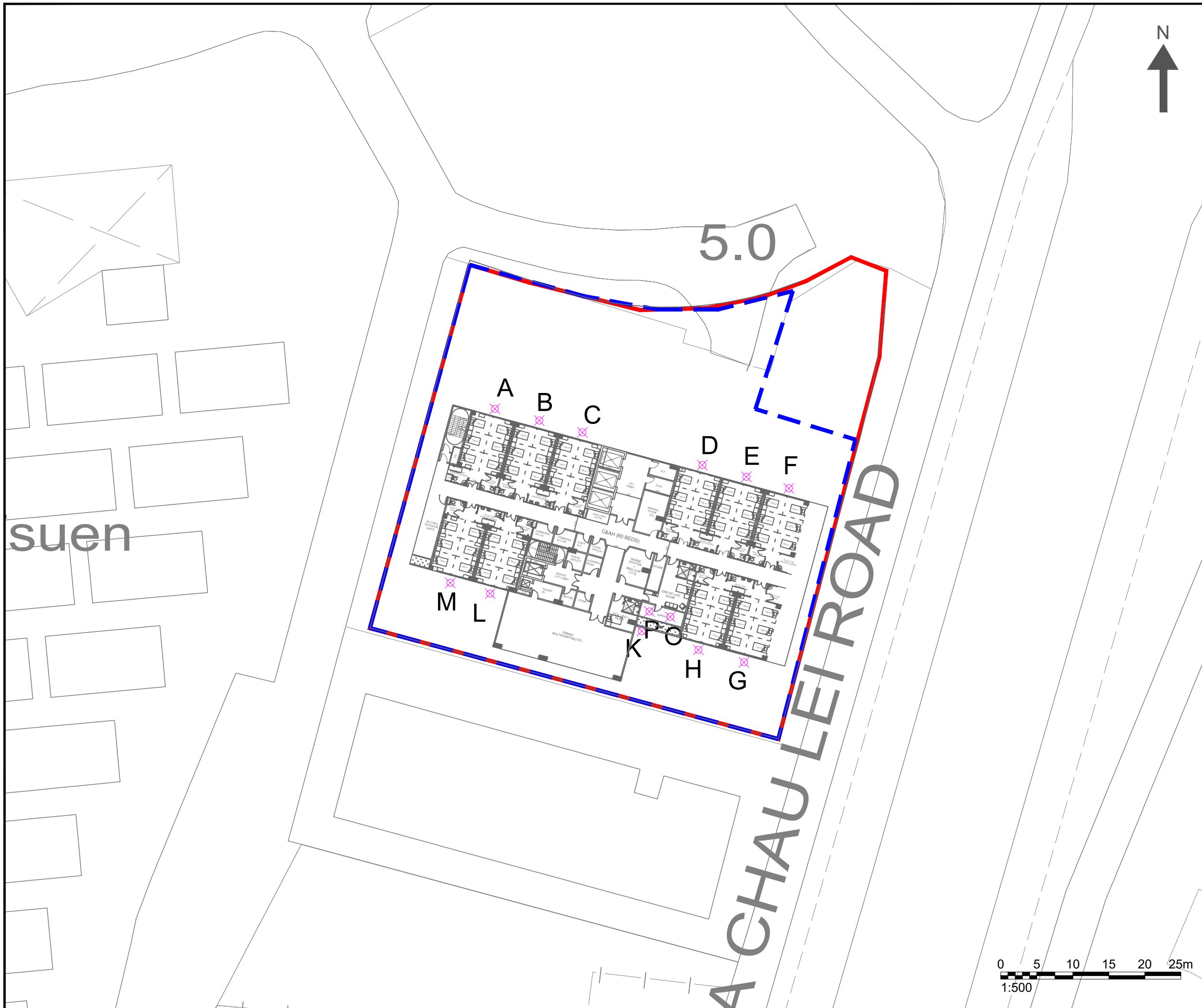
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Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
 NOISE ASSESSMENT POINTS(NAP) FOR TRAFFIC NOISE IMPACT ASSESSMENT(1F)

Drawing No : FIGURE 7.1b	Revision : 0
Scale : AS SHOWN	Date : MAY 2024

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- NOTES :
- DEVELOPMENT SITE BOUNDARY
 - REZONING SITE BOUNDARY
 - x NOISE SENSITIVE RECEIVER

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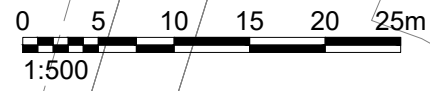
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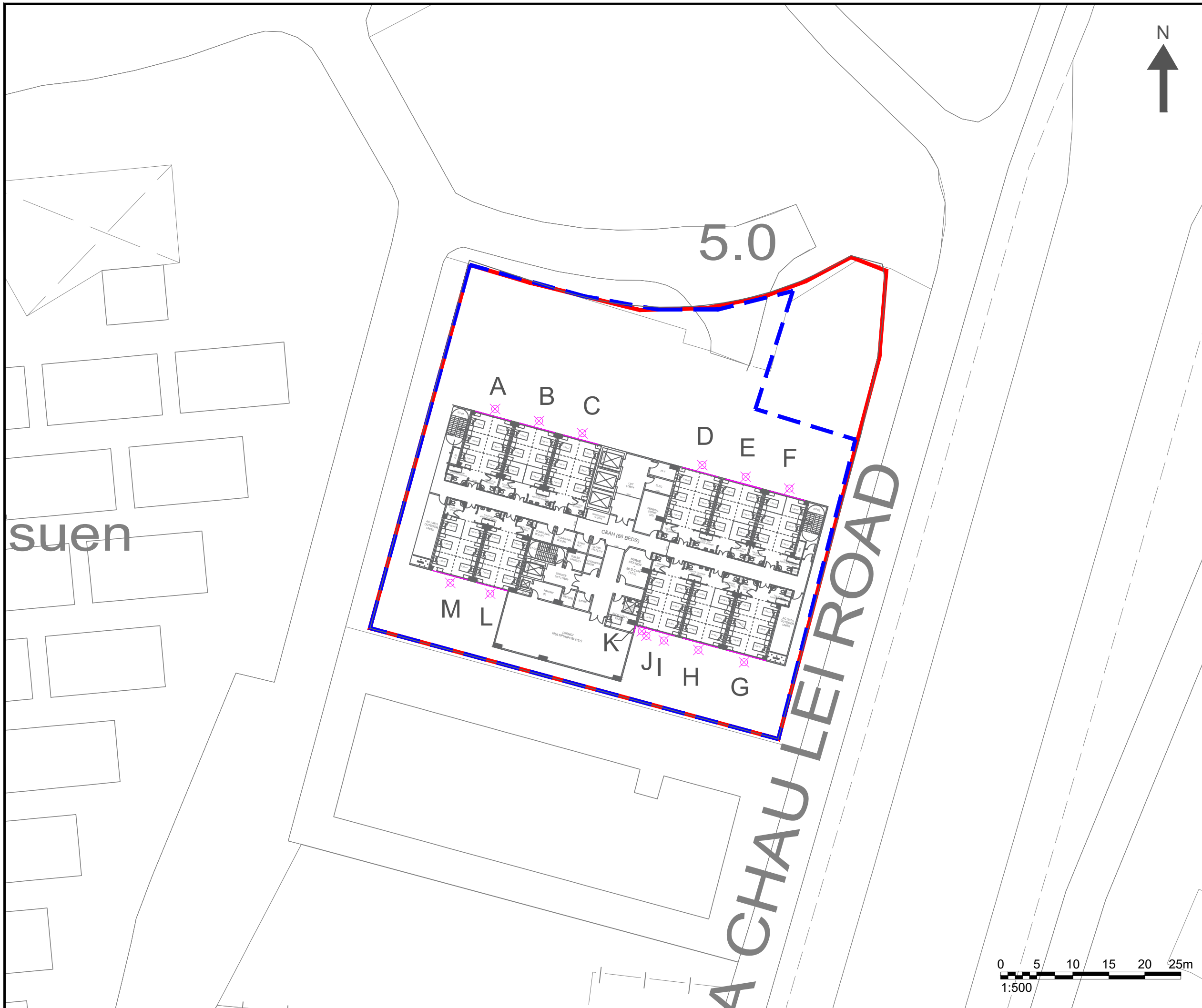
Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG




Drawing Title :
 NOISE ASSESSMENT POINTS(NAP) FOR TRAFFIC NOISE IMPACT ASSESSMENT(2F)

Drawing No : FIGURE 7.1c	Revision : 0
Scale : AS SHOWN	Date : FEB 2024



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- NOTES :
-  DEVELOPMENT SITE BOUNDARY
 -  REZONING SITE BOUNDARY
 -  NOISESENSITIVE RECEIVER

Consultant



Allied Environmental Consultants Limited

Project No. : 2164

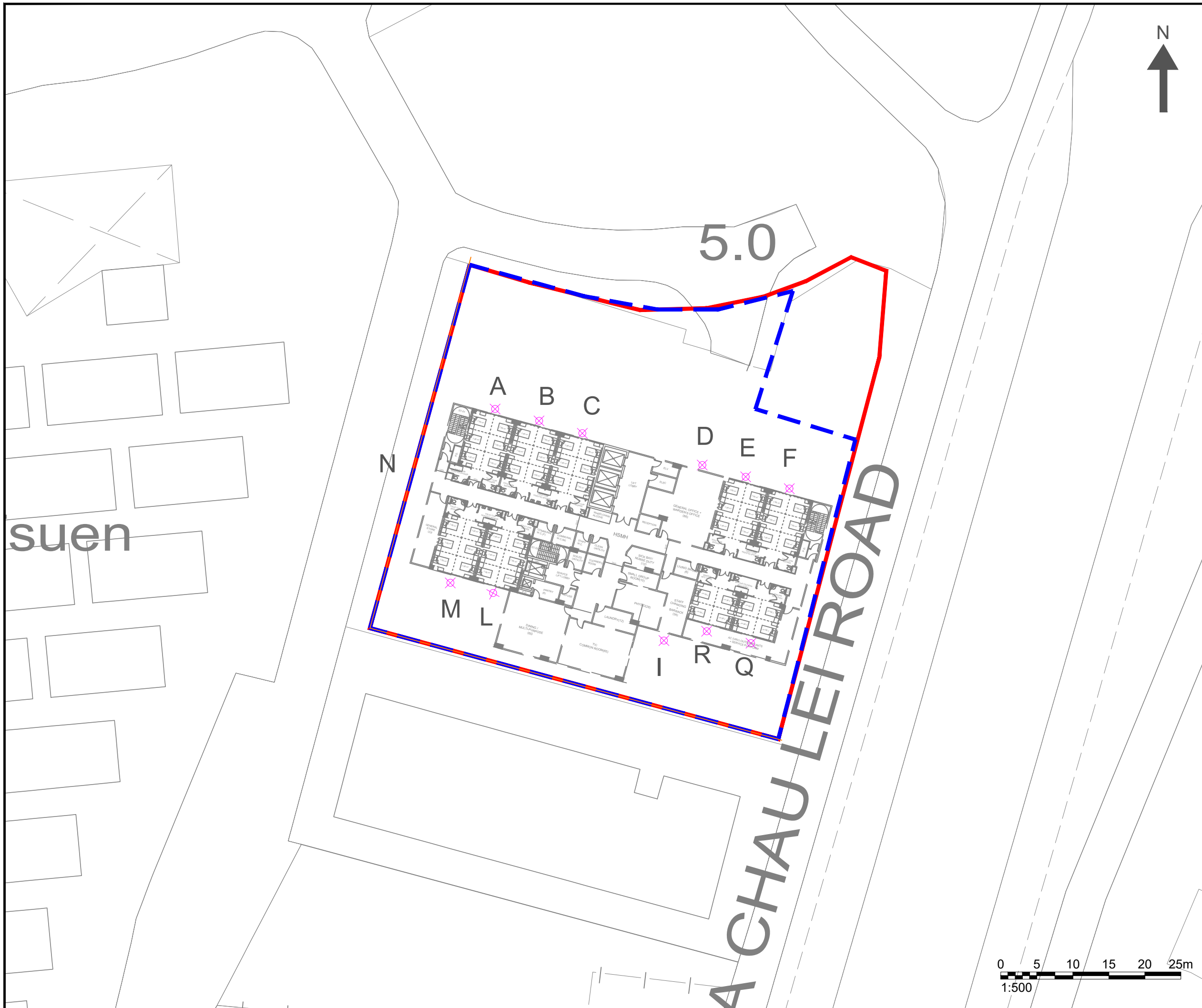
Drawing By : LL




Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
 REPRESENTATIVE NSRs FOR TRAFFIC NOISE IMPACT ASSESSMENT(3-4F)

Drawing No : FIGURE 7.1c	Revision : 0
Scale : AS SHOWN	Date : FEB 2024

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- NOTES :
-  DEVELOPMENT SITE BOUNDARY
 -  REZONING SITE BOUNDARY
 -  NOISE SENSITIVE RECEIVER

Consultant



Allied Environmental Consultants Limited

Project No. : 2164

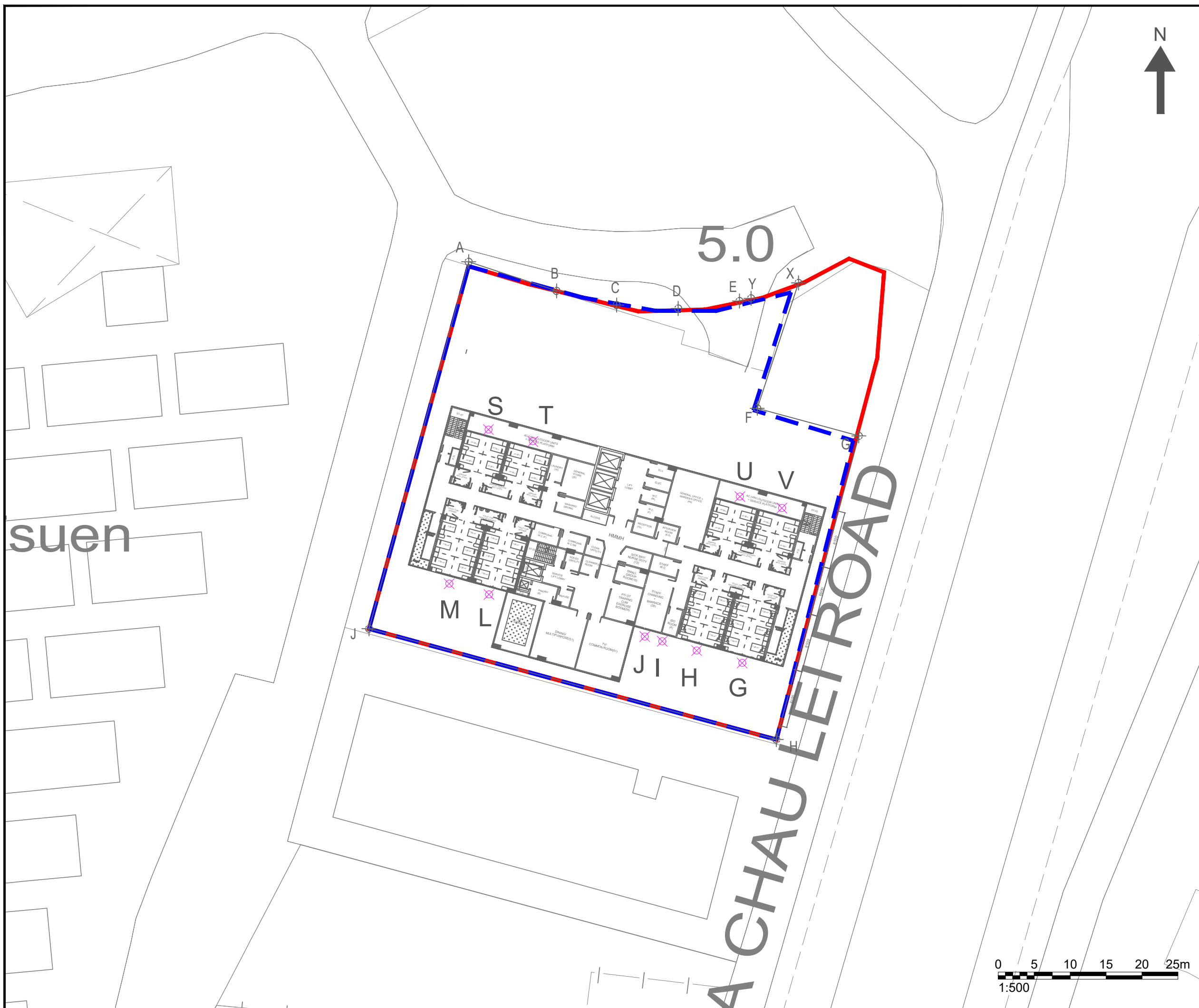
Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
 NOISE ASSESSMENT POINTS(NAP) FOR TRAFFIC NOISE IMPACT ASSESSMENT(5F)

Drawing No : FIGURE 7.1d	Revision : 0
Scale : AS SHOWN	Date : FEB 2024

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- NOTES :
- DEVELOPMENT SITE BOUNDARY
 - REZONING SITE BOUNDARY
 - ✕ NOISE SENSITIVE RECEIVER

Consultant



Allied Environmental Consultants Limited

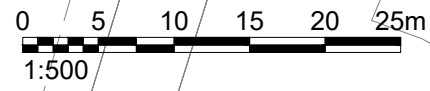
Project No. : 2164

Drawing By : LL

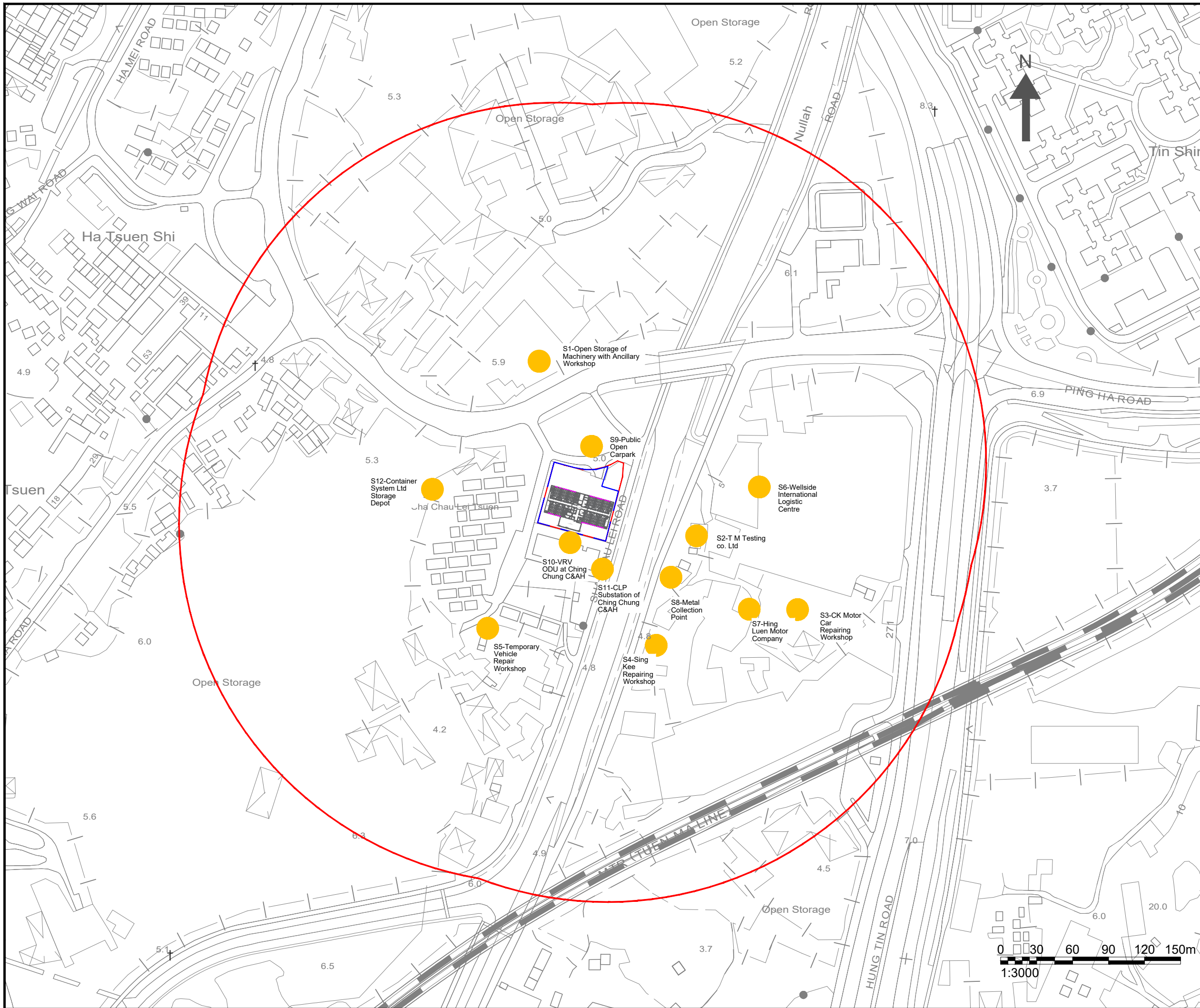
Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

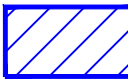


Drawing Title :
 NOISE ASSESSMENT POINTS(NAP) FOR TRAFFIC NOISE IMPACT ASSESSMENT(6F)

Drawing No : FIGURE 7.1e	Revision : 0
Scale : AS SHOWN	Date : FEB 2024



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- NOTES :
-  PROJECT SITE
 -  ASSESSMENT AREA
 -  POTENTIAL FIXED NOISE SOURCE

Consultant



Allied Environmental Consultants Limited

Project No. : 2162EA

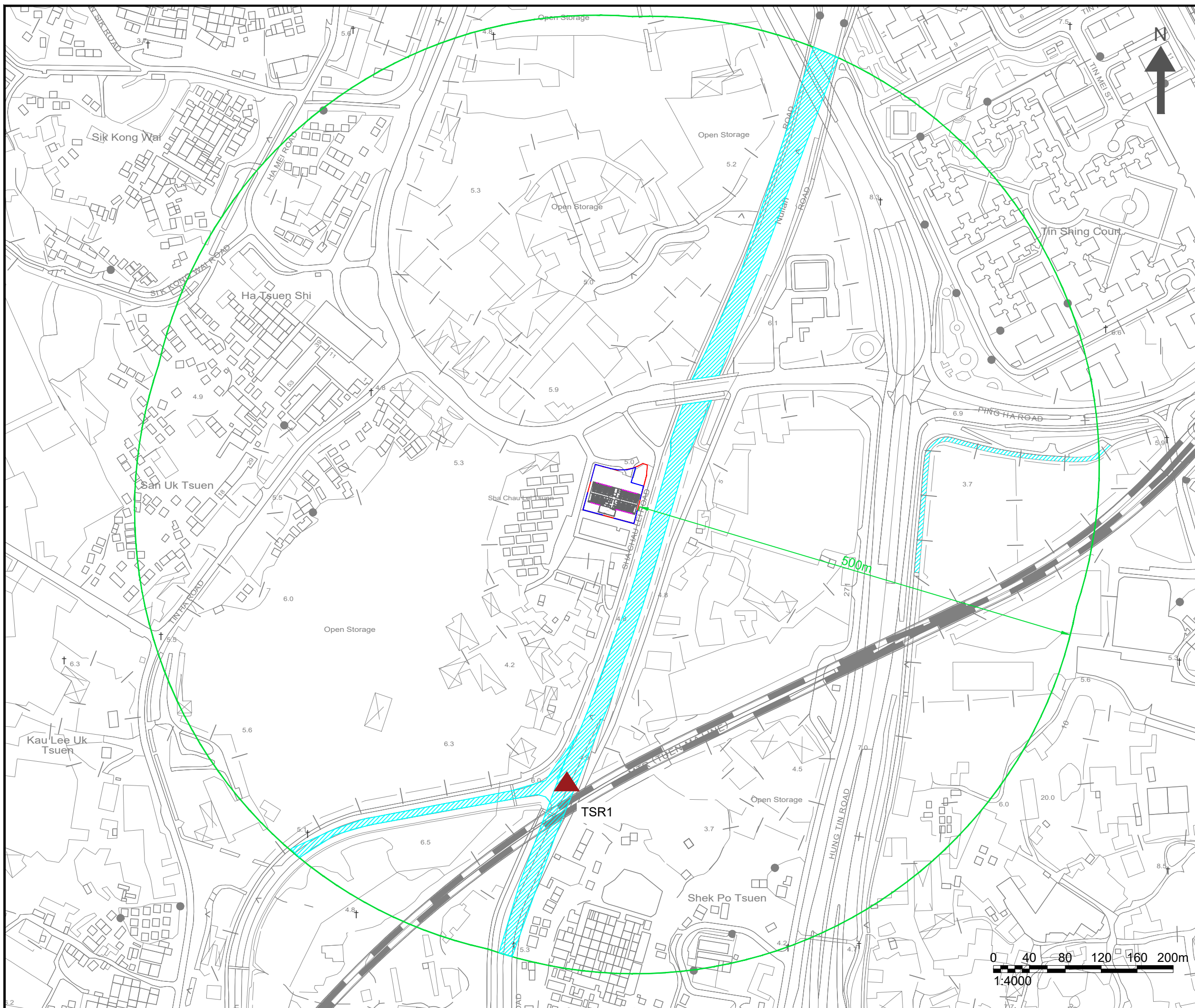
Drawing By : LL




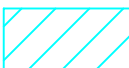

Project :
PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
LOCATION OF POTENTIAL FIXED NOISE SOURCES

Drawing No : FIGURE 7.2	Revision : 0
Scale : AS SHOWN	Date : MAY 2024

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- NOTES :
-  DEVELOPMENT SITE BOUNDARY
 -  REZONING SITE BOUNDARY
 -  500m ASSESSMENT AREA
 -  WATERCOURSE
 -  RIVER MONITORING STATION
TSR1

Consultant



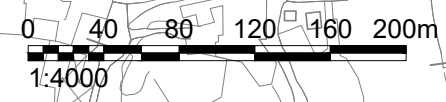
Allied Environmental Consultants Limited

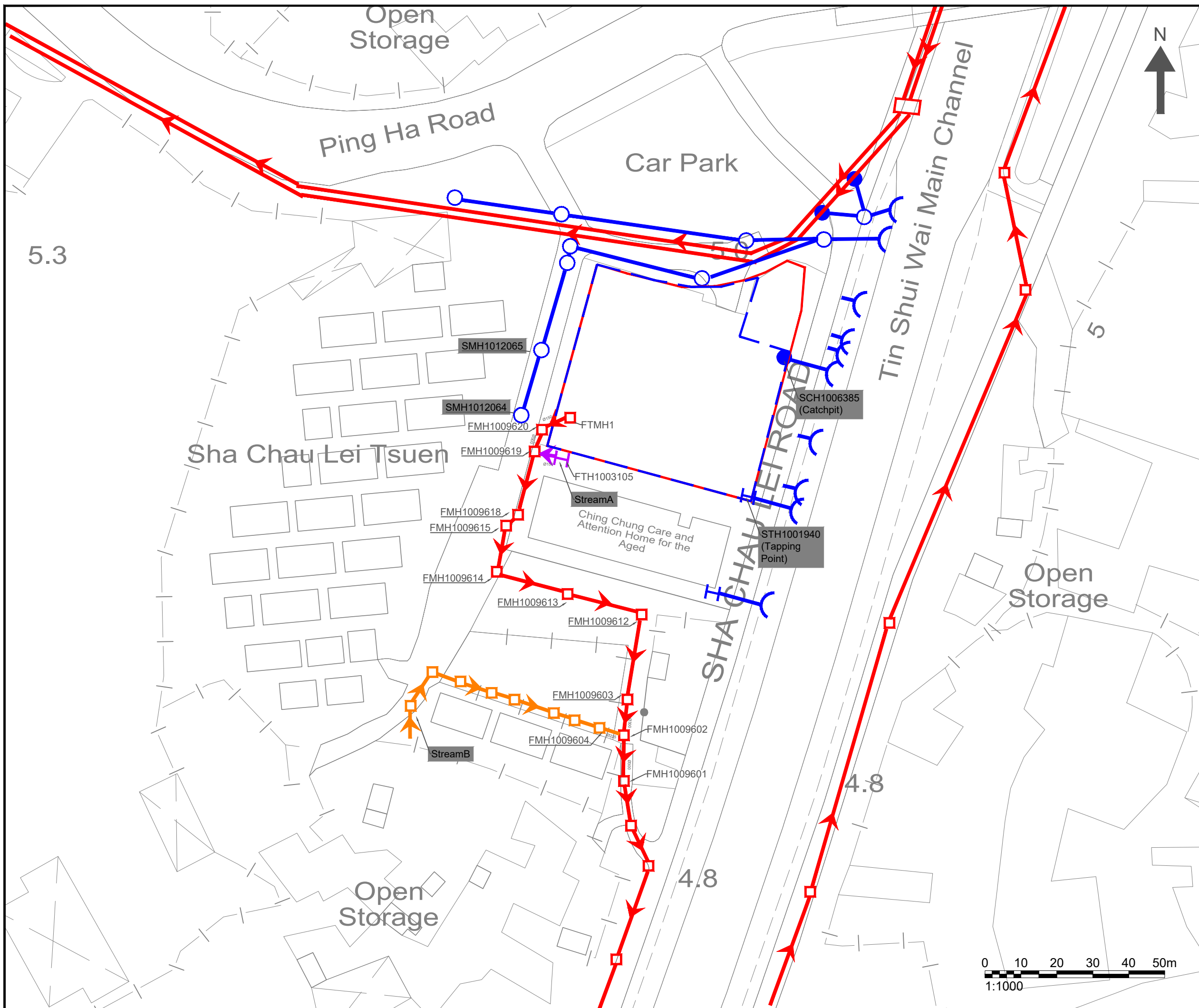
Project No. : 2162EA
 Drawing By : LL
 Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
 500M ASSESSMENT AREA AND LOCATION OF WATER SENSITIVE RECEIVERS

Drawing No : FIGURE 8.1	Revision : 0
Scale : AS SHOWN	Date : FEB 2024

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- NOTES :
- DEVELOPMENT SITE BOUNDARY
 - REZONING SITE BOUNDARY
 - EXISTING SEWER AND MANHOLE
 - STREAM A (SEWAGE)
 - STREAM B (SEWAGE)
 - EXISTING DRAINAGE AND MANHOLE

Consultant



Allied Environmental Consultants Limited

Project No. : 2164EA

Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
 OVERVIEW OF PROPOSED AND EXISTING SEWAGE NETWORK AND CATCHMENT

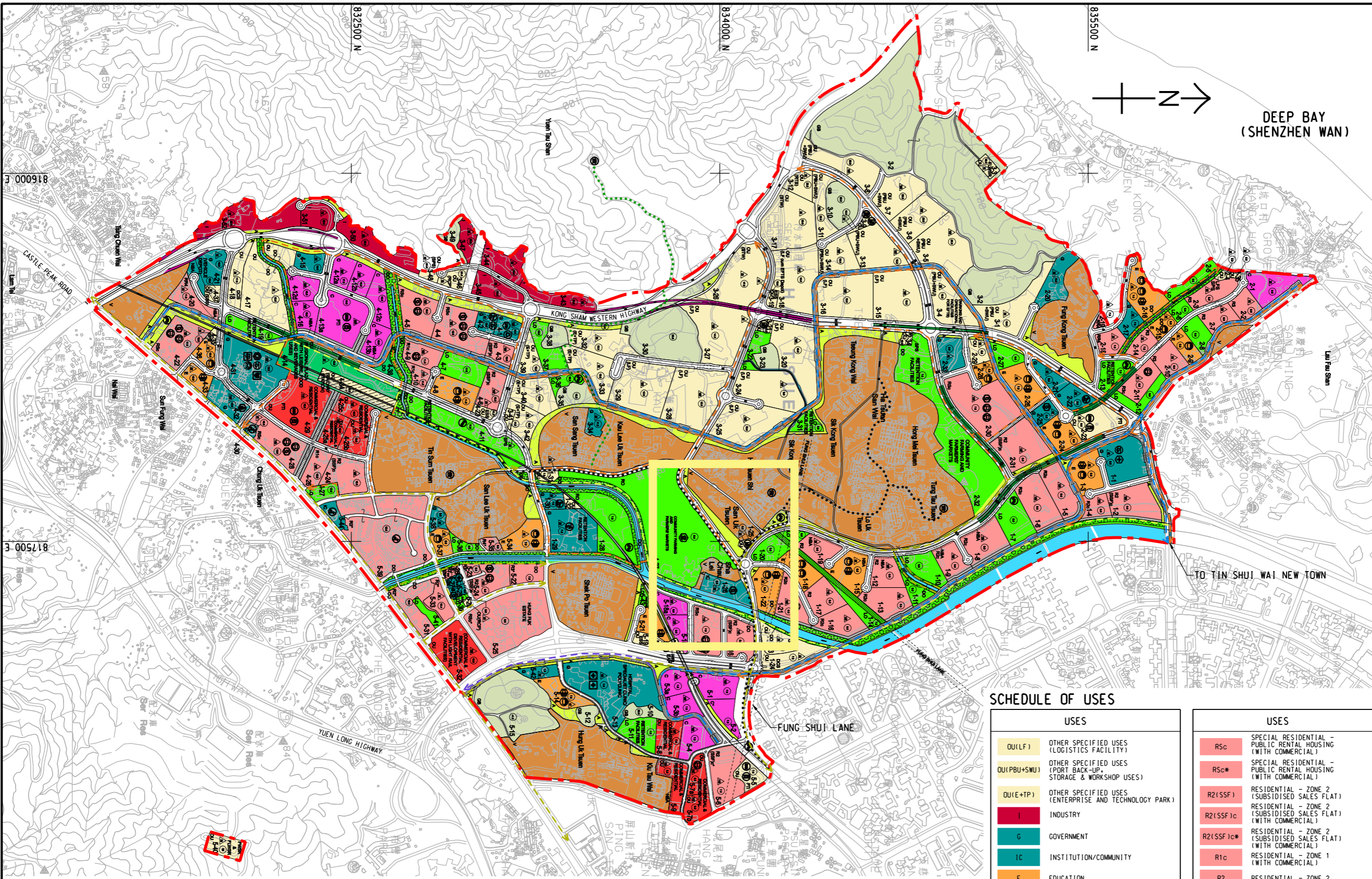
Drawing No : Fig3.1	Revision : 1
Scale : AS SHOWN	Date : Jan 2024

DO NOT SCALE OFF DRAWING. THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY STATED. ALL RIGHTS RESERVED AND REPRODUCTION IN ANY FORM MUST BE APPROVED BY ALLIED ENVIRONMENTAL CONSULTANTS LIMITED.

Appendix 3.1

Master Layout Plan and Programme of the HSK NDA(extracted)

ISO A1 594mm x 841mm
 Approved:
 Checked:
 Designer:
 Project Management Initials:
 Pld File by: ZENGXF
 PATH: P:\PROJECTS\6022570\DRAWING\REPORT\TR19C\TR19C_201.dgn



AECOM

PROJECT
HUNG SHUI KIU NEW DEVELOPMENT AREA PLANNING AND ENGINEERING STUDY - INVESTIGATION

CLIENT
CEDD
 土木工程拓展署
 Civil Engineering and Development Department

規劃署
 Planning Department

CONSULTANT
 工務顧問公司
AECOM Asia Company Ltd.
 www.aecom.com

SUB-CONSULTANTS
 分判工務顧問公司

ISSUE/REVISION
 修訂

IR	DATE	DESCRIPTION	CHK

STATUS
 狀態

SCALE
 比例
 A3 1:16000

DIMENSION UNIT
 尺寸單位
 METRES

KEY PLAN
 索引圖

SCHEDULE OF USES

USES	USES
OU(LF) OTHER SPECIFIED USES (LOGISTICS FACILITY)	RSc SPECIAL RESIDENTIAL - PUBLIC RENTAL HOUSING (WITH COMMERCIAL)
OU(PBU+SWU) OTHER SPECIFIED USES (PORT BACK-UP, STORAGE & WORKSHOP USES)	RSc# SPECIAL RESIDENTIAL - PUBLIC RENTAL HOUSING (WITH COMMERCIAL)
OU(E+TP) OTHER SPECIFIED USES (ENTERPRISE AND TECHNOLOGY PARK)	R2(SSF) RESIDENTIAL - ZONE 2 (SUBSIDISED SALES FLAT)
I INDUSTRY	R2(SSF)c RESIDENTIAL - ZONE 2 (SUBSIDISED SALES FLAT) (WITH COMMERCIAL)
G GOVERNMENT	R2(SSF)c# RESIDENTIAL - ZONE 2 (SUBSIDISED SALES FLAT) (WITH COMMERCIAL)
IC INSTITUTION/COMMUNITY	R1c RESIDENTIAL - ZONE 1 (WITH COMMERCIAL)
E EDUCATION	R2 RESIDENTIAL - ZONE 2
GB GREEN BELT	R2c RESIDENTIAL - ZONE 2 (WITH COMMERCIAL)
RO REGIONAL OPEN SPACE	R2# RESIDENTIAL - ZONE 2
DO DISTRICT OPEN SPACE	R3 RESIDENTIAL - ZONE 3
LO LOCAL OPEN SPACE	R3c RESIDENTIAL - ZONE 3 (WITH COMMERCIAL)
OU OTHER SPECIFIED USES	R3# RESIDENTIAL - ZONE 3
OU (REGIONAL PLAZA) OTHER SPECIFIED USES (REGIONAL PLAZA)	RR4 RURAL RESIDENTIAL - ZONE 4
V VILLAGE TYPE DEVELOPMENT	R4# RESIDENTIAL - ZONE 4
A AMENITY AREA	C COMMERCIAL
ROAD, JUNCTIONS, EFTS ETC.	OU(C&R) OTHER SPECIFIED USES (COMMERCIAL & RESIDENTIAL DEVELOPMENT)

LEGEND:

- PROJECT BOUNDARY
- ... CULTURAL HERITAGE TRAIL
- ... ECO TRAIL
- PROPOSED WEST RAIL HSK STATION
- DEPRESSED ROAD
- ELEVATED ROAD
- CHANNEL
- SHOPPING STREET
- PEDESTRIAN STREET
- PROPOSED ENVIRONMENTALLY FRIENDLY TRANSPORT SERVICES
- RIVERSIDE PROMENADE
- FUNG SHUI LANE
- NON-BUILDING AREA (NBA)
- PROPOSED LEVEL (IN M ABOVE PRINCIPAL DATUM)
- MAXIMUM BUILDING HEIGHT (IN M ABOVE PRINCIPAL DATUM)
- GOVERNMENT OFFICES
- COMMUNITY HALL
- SOCIAL WELFARE FACILITY
- POST OFFICE
- DIVISIONAL FIRE STATION
- SPORT GROUND
- SECONDARY SCHOOL
- PRIMARY SCHOOL
- CHURCH
- KINDERGARTEN
- TEMPLE
- TOWN PARK
- DISTRICT POLICE STATION
- AMBULANCE DEPOT
- HOSPITAL
- POLYCLINIC/SPECIALIST CLINIC
- GENERAL CLINIC
- BUS TERMINUS
- GREEN MINIBUS TERMINUS / PUBLIC LIGHT BUS TERMINUS
- PETROL FILLING STATION
- MAJOR CYCLE PARKING FACILITY
- MAGISTRACY
- PERFORMANCE VENUE
- PROPOSED GREEN TRANSIT CORRIDOR
- PROPOSED GREEN TRANSIT CORRIDOR EXTENSION
- EXISTING CYCLE TRACK
- PROPOSED ARTERY CYCLEWAY
- PROPOSED CYCLE TRACK/REPROVISION OF EXISTING CYCLE TRACK
- PTI
- TSW WRL
- WRL EAP
- DCS
- E+TP
- FLWSR
- FWSR
- LF
- LPG
- ESS
- EXISTING CYCLE TRACK
- PROPOSED ARTERY CYCLEWAY
- PROPOSED CYCLE TRACK/REPROVISION OF EXISTING CYCLE TRACK
- PTI
- TSW WRL
- WRL EAP
- DCS
- E+TP
- FLWSR
- FWSR
- LF
- LPG
- ESS
- PBU+SWU PORT BACK-UP, STORAGE AND WORKSHOP USES
- RTS REFUSE TRANSFER STATION
- STW SEWAGE TREATMENT WORKS
- LFS LAU FAU SHAN
- RCP REFUSE COLLECTION POINT
- SPS SEWAGE PUMPING STATION
- SSF SUBSIDISED SALES FLAT

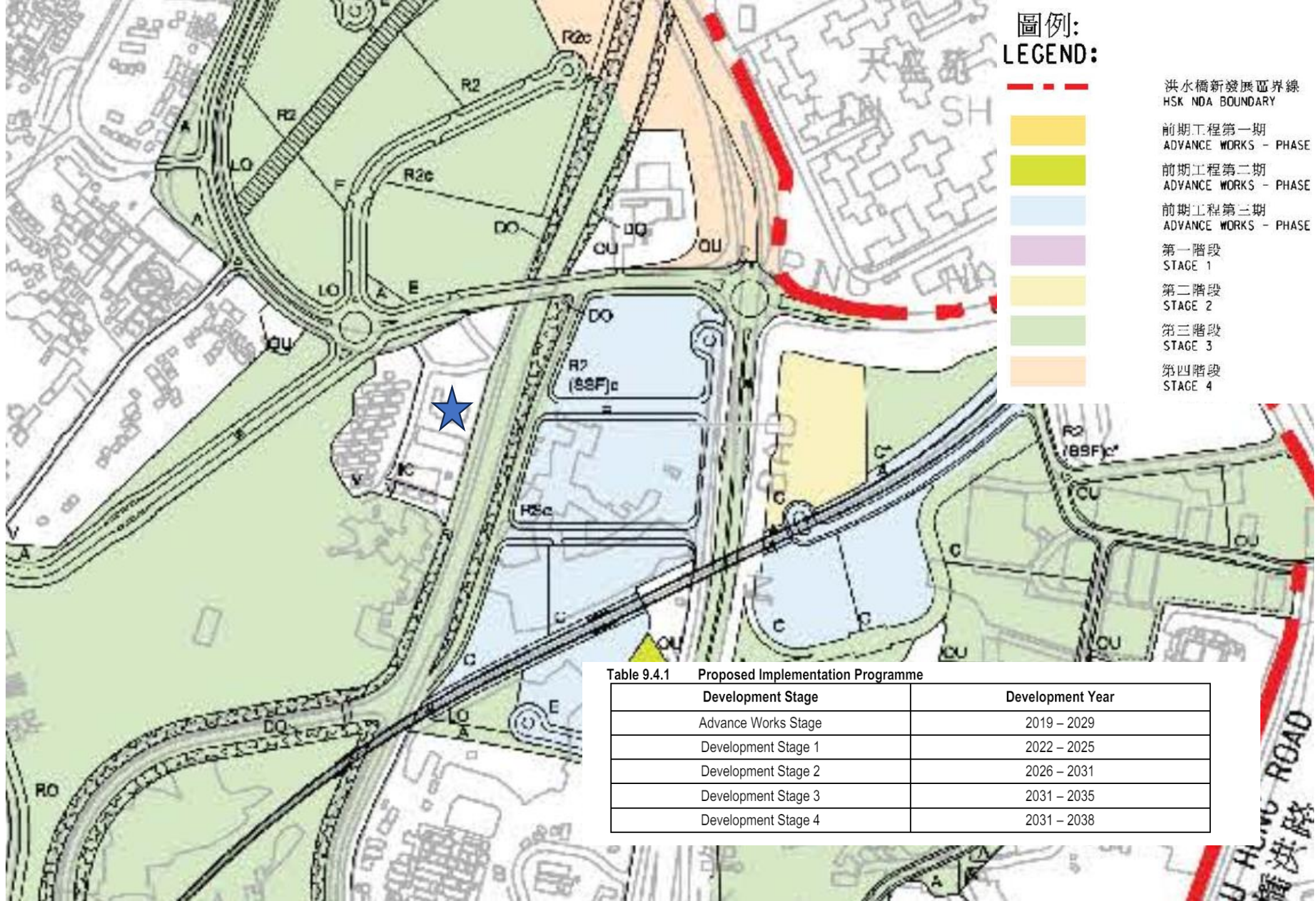
* LAND USES AND DEVELOPMENT PARAMETERS BASED ON THE PROVISIONS IN THE EXISTING OZP / APPROVED DEVELOPMENT SCHEMES.

PROJECT NO.
 項目編號
 6022570

AGREEMENT NO.
 協議編號
 CE2/2011 (CE)

SHEET TITLE
 圖紙名稱
REVISED RECOMMENDED OUTLINE DEVELOPMENT PLAN (RODP)

SHEET NUMBER
 圖紙編號
 6022570/TR19C/FIGURE 2.1



圖例:
LEGEND:

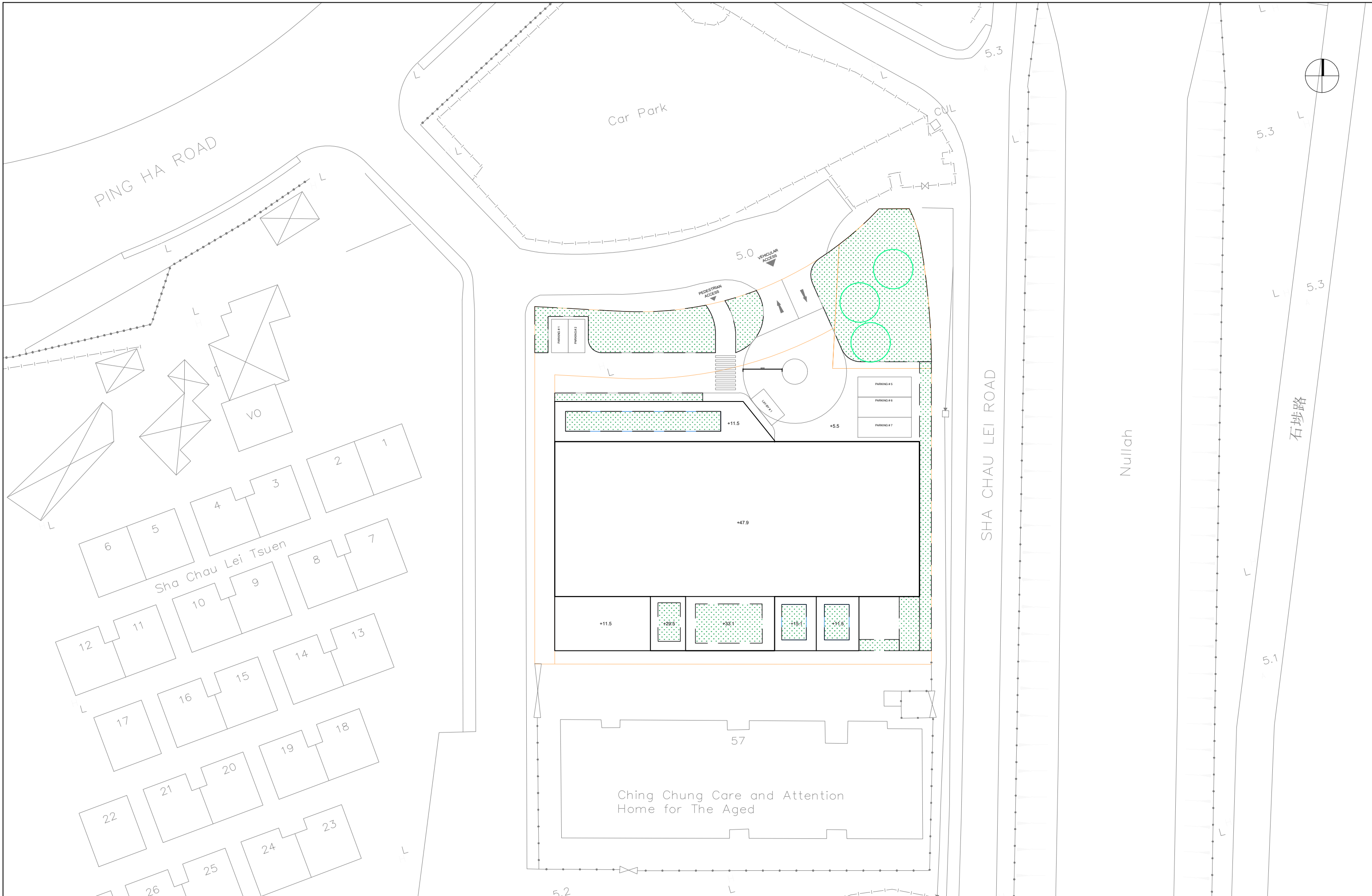
- - - 洪水橋新發展區界線
HSK NDA BOUNDARY
- 前期工程第一期
ADVANCE WORKS - PHASE 1
- 前期工程第二期
ADVANCE WORKS - PHASE 2
- 前期工程第三期
ADVANCE WORKS - PHASE 3
- 第一階段
STAGE 1
- 第二階段
STAGE 2
- 第三階段
STAGE 3
- 第四階段
STAGE 4

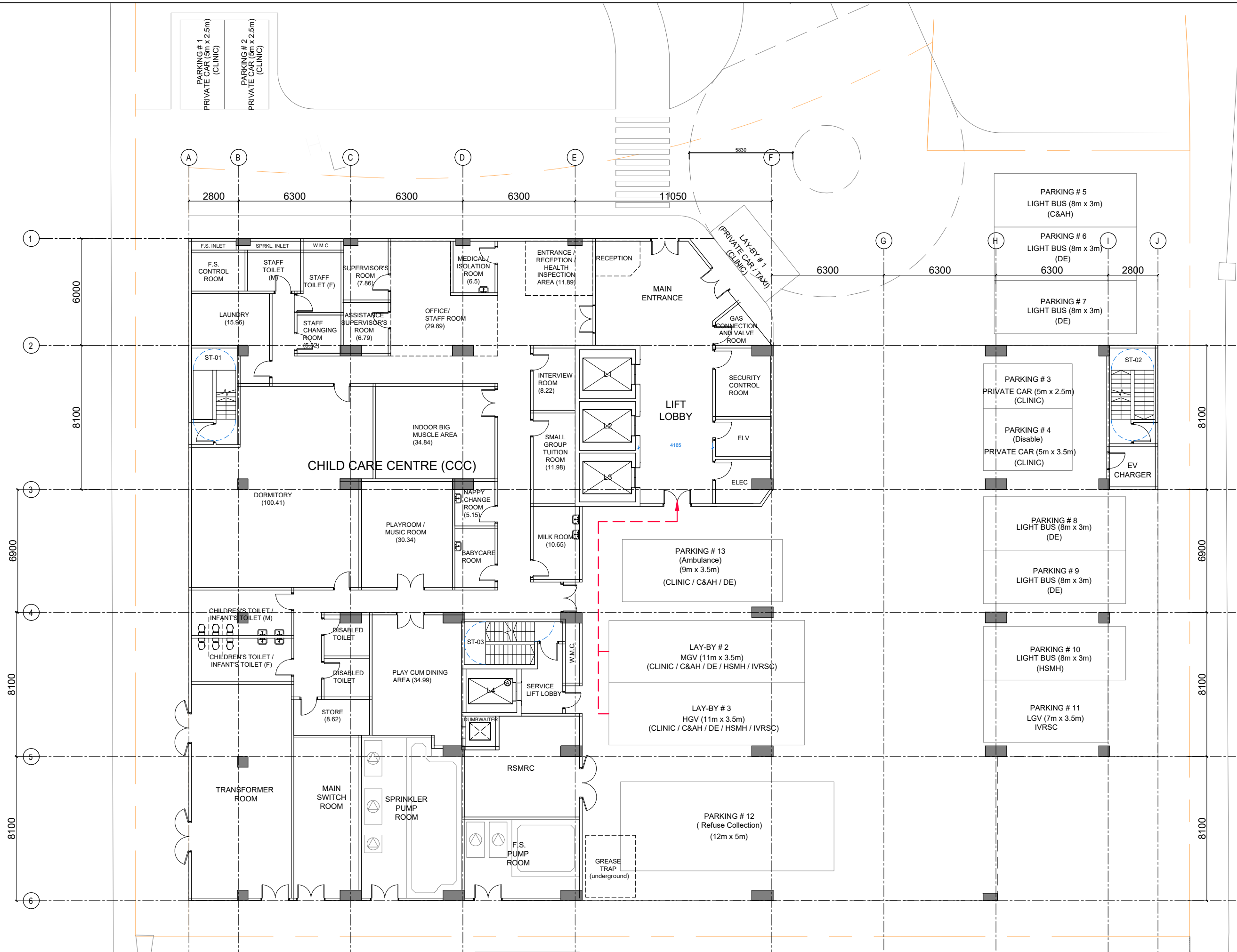
Table 9.4.1 Proposed Implementation Programme

Development Stage	Development Year
Advance Works Stage	2019 – 2029
Development Stage 1	2022 – 2025
Development Stage 2	2026 – 2031
Development Stage 3	2031 – 2035
Development Stage 4	2031 – 2038

Appendix 3.2

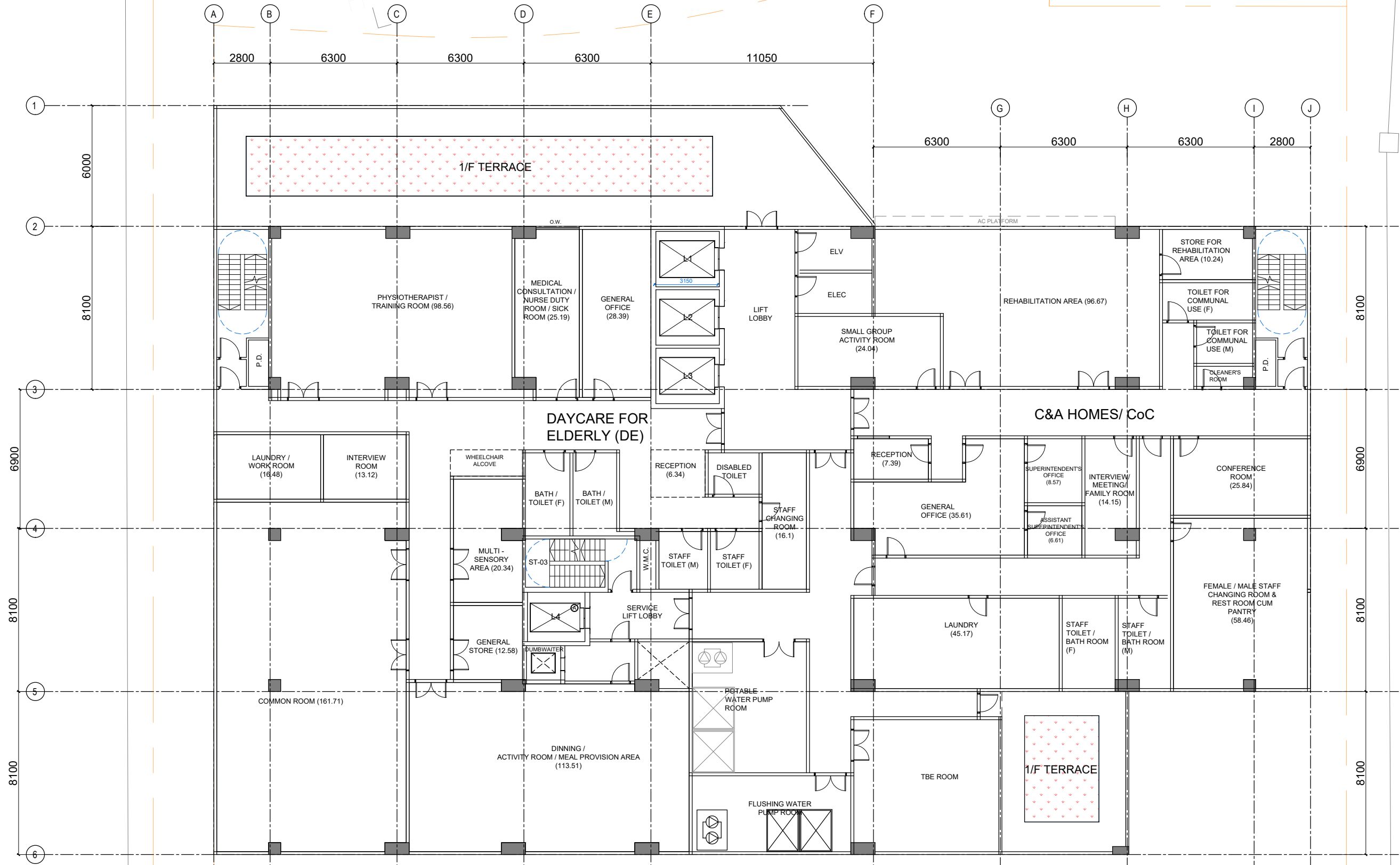
Master Layout Plan of the Proposed Redevelopment





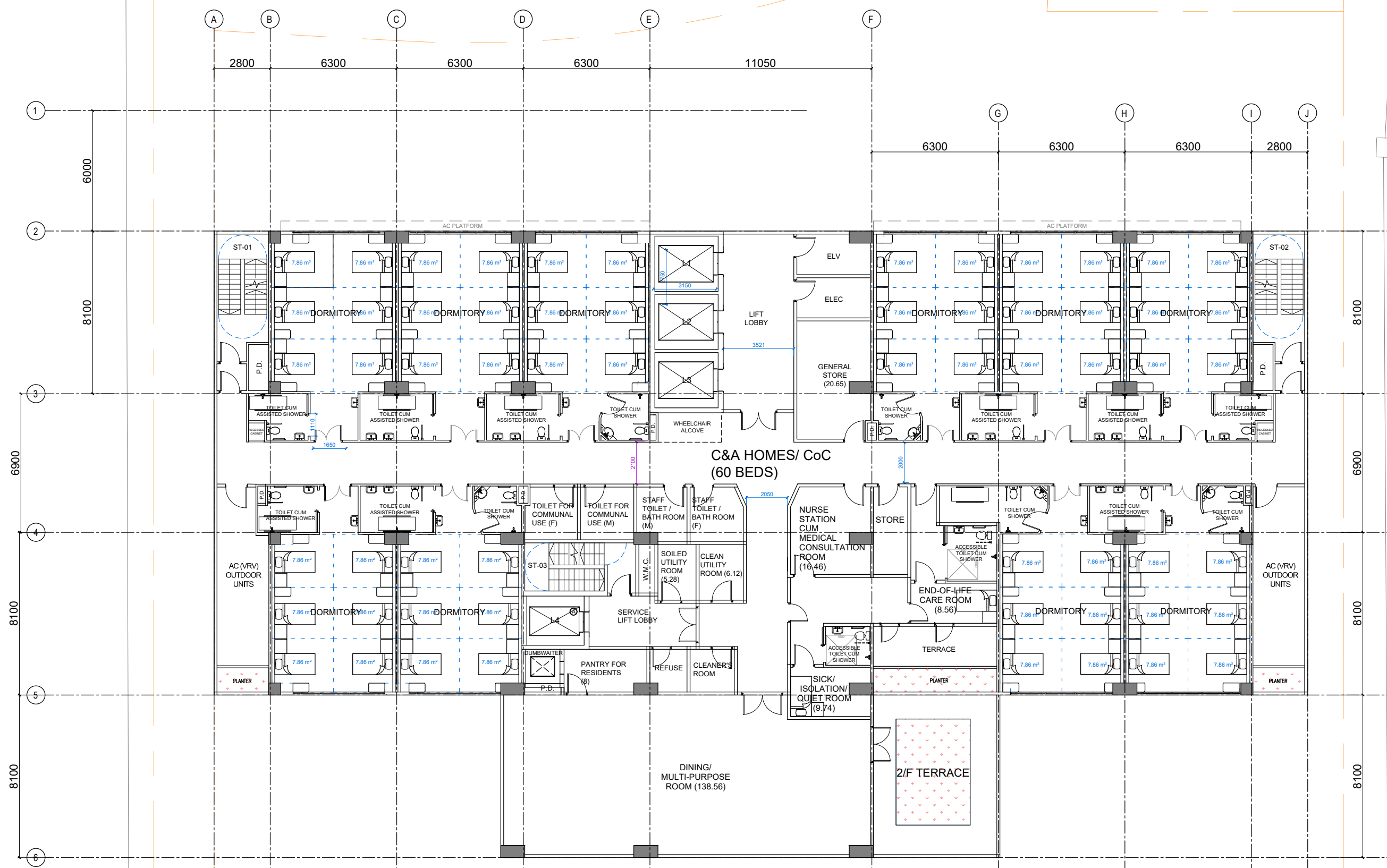


SHA CHAU LEI ROAD



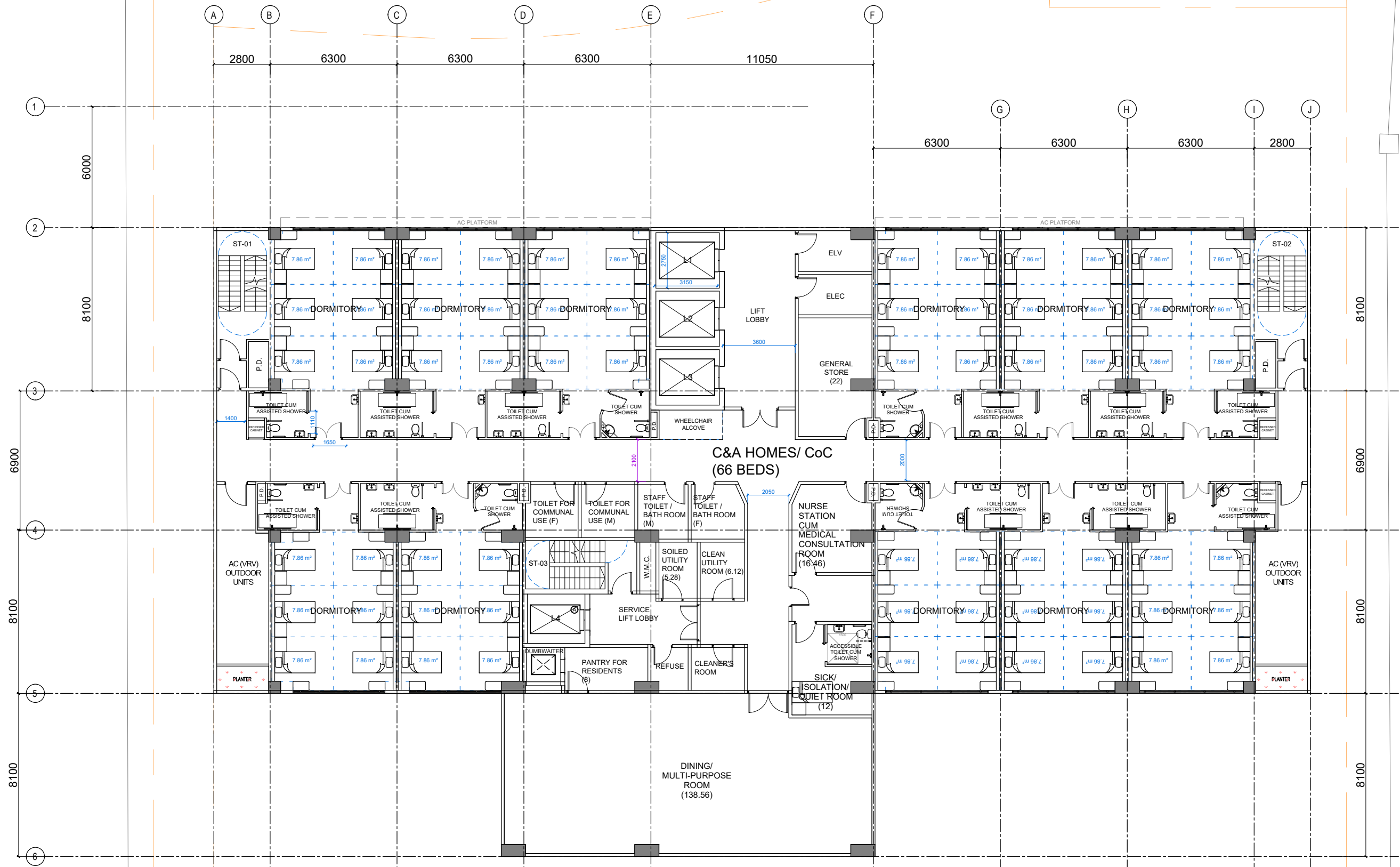


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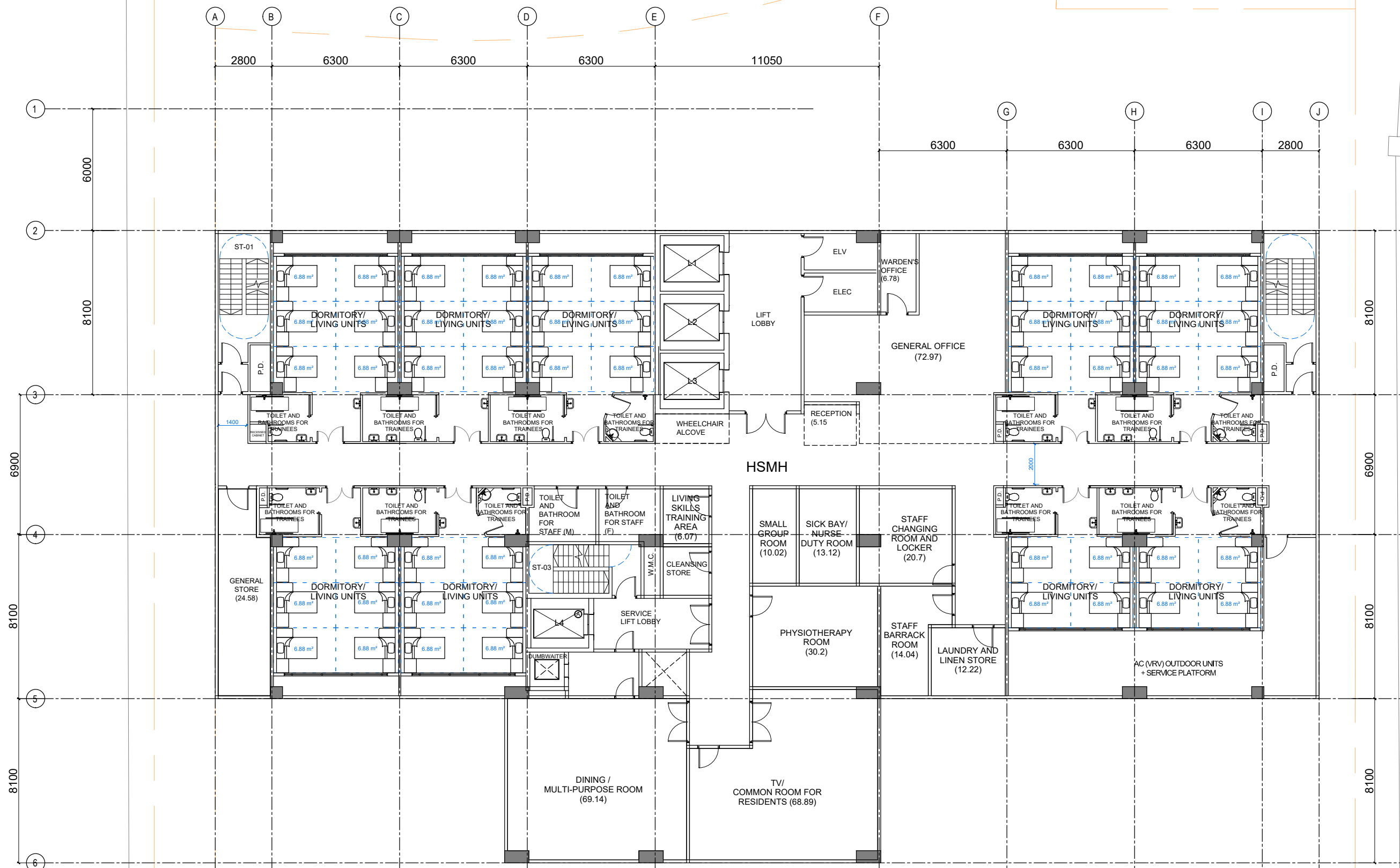


SHA CHAU LEI ROAD



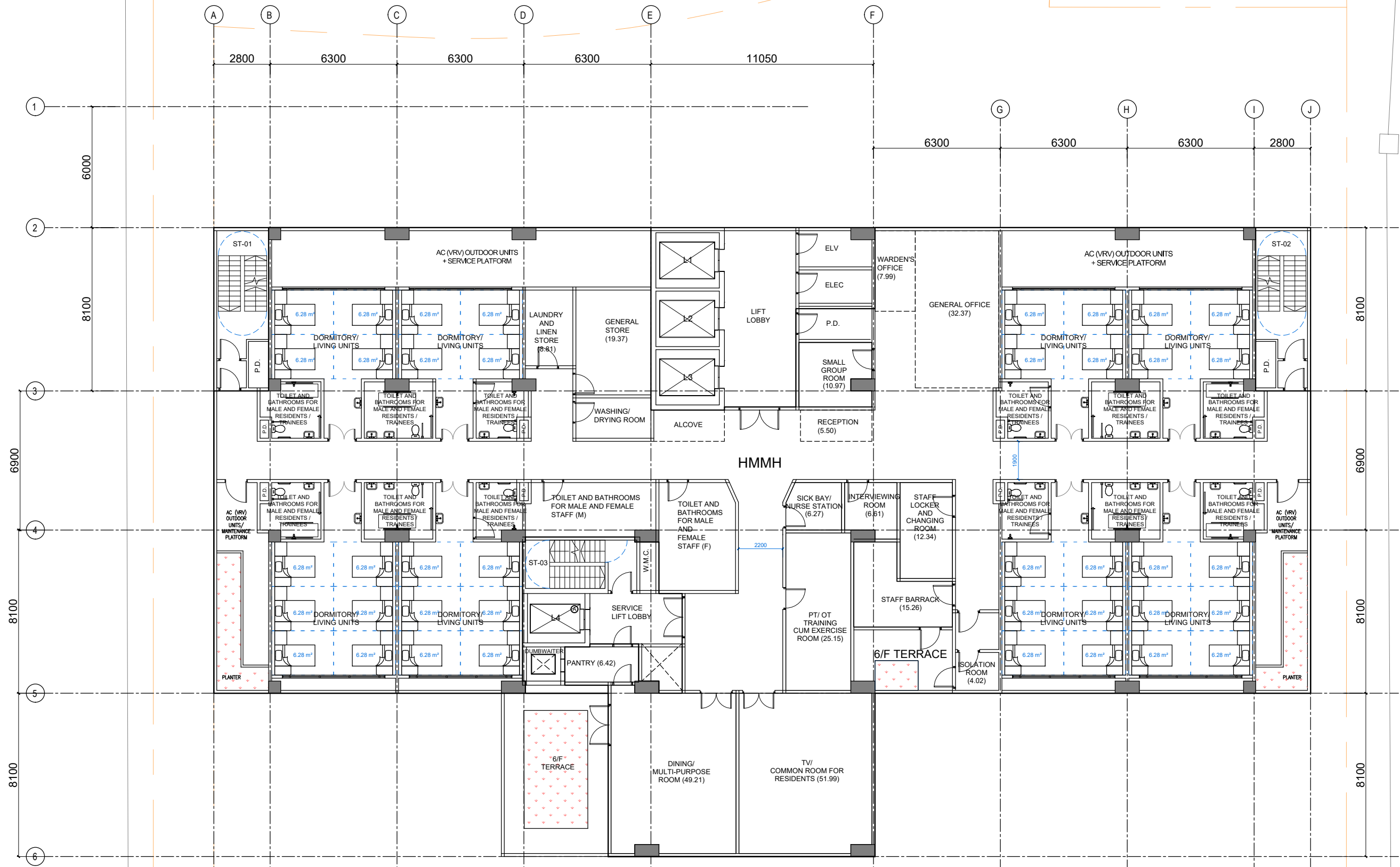


SHA CHAU LEI ROAD



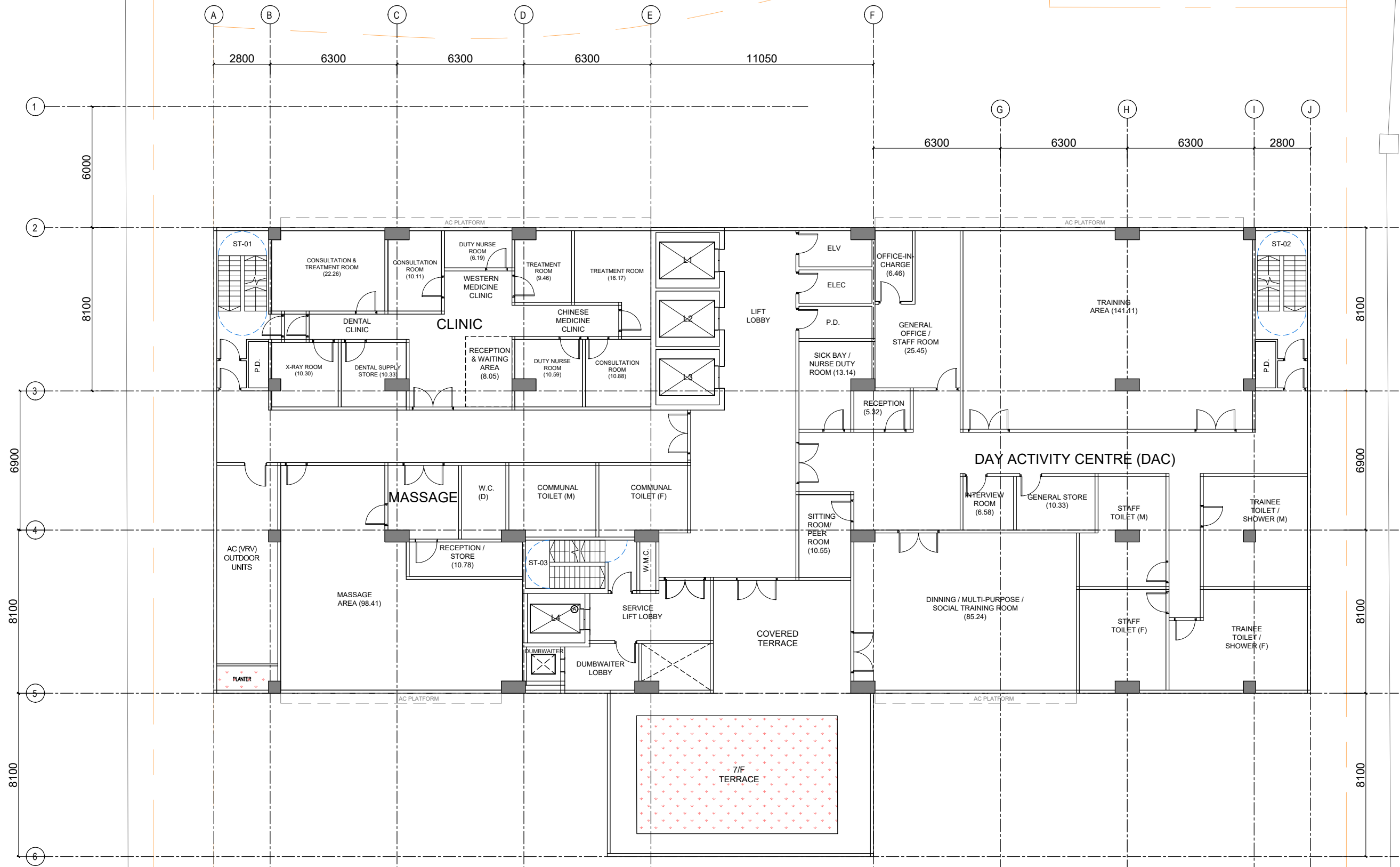


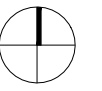
SHA CHAU LEI ROAD



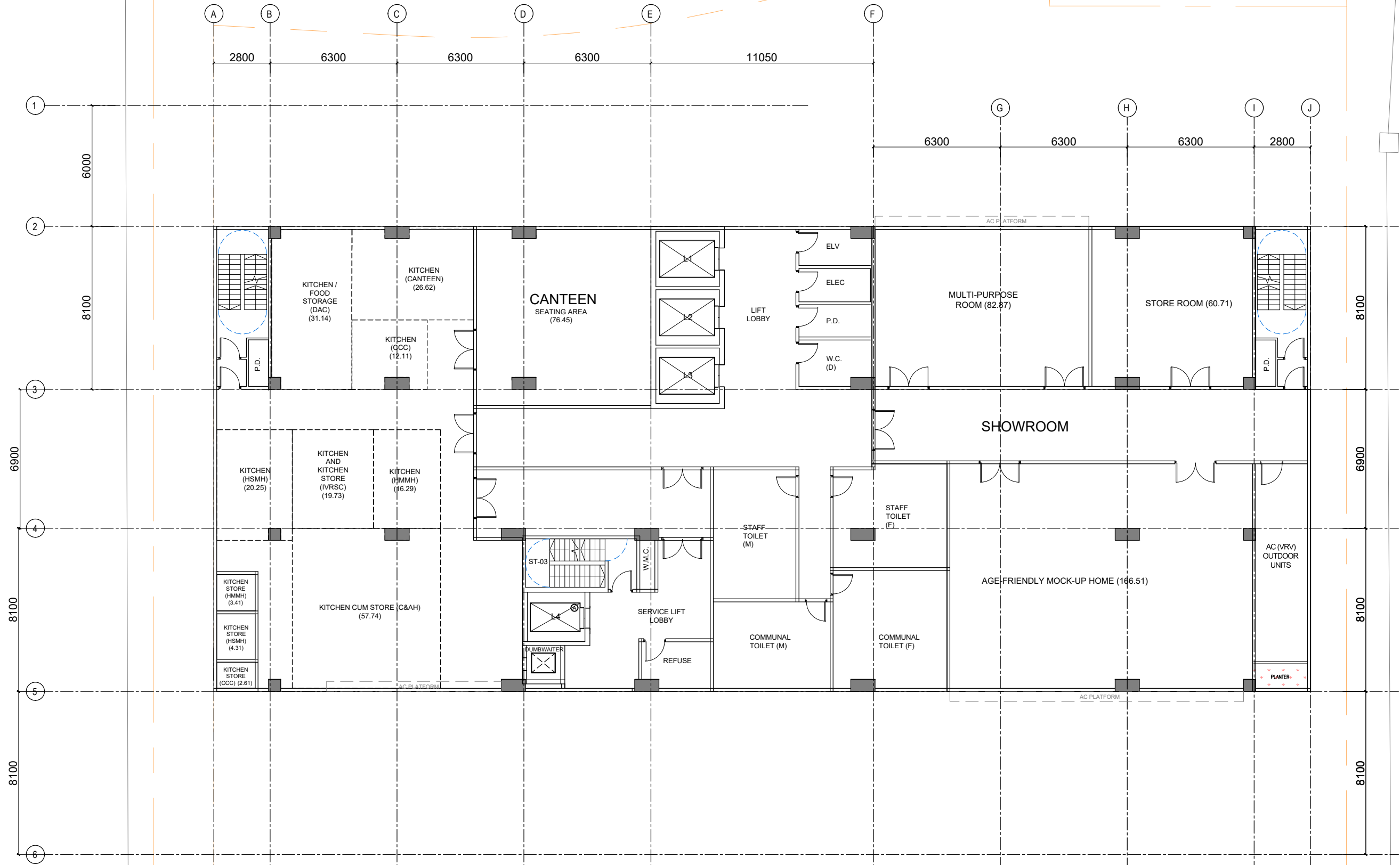


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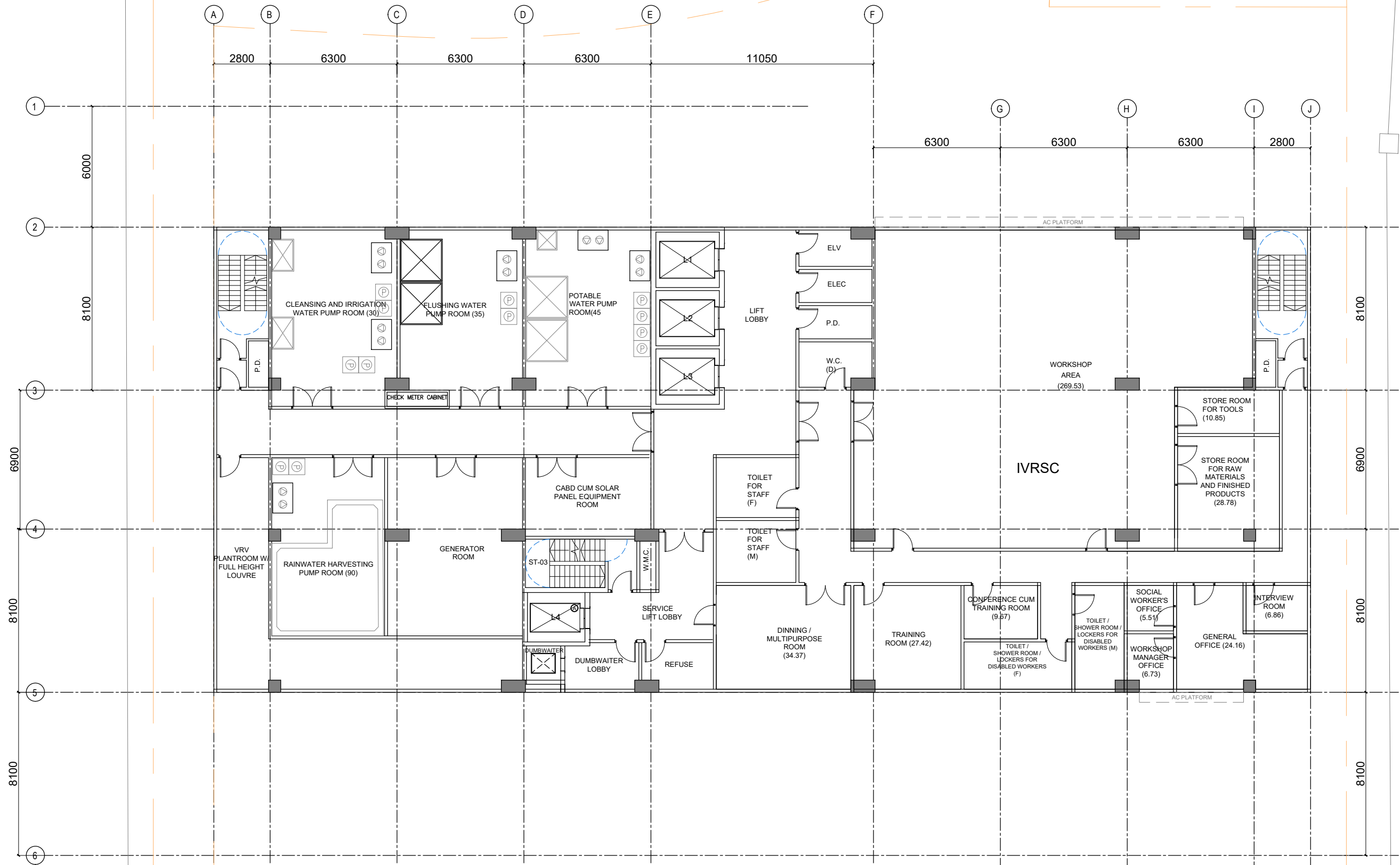


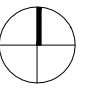
SHA CHAU LEI ROAD



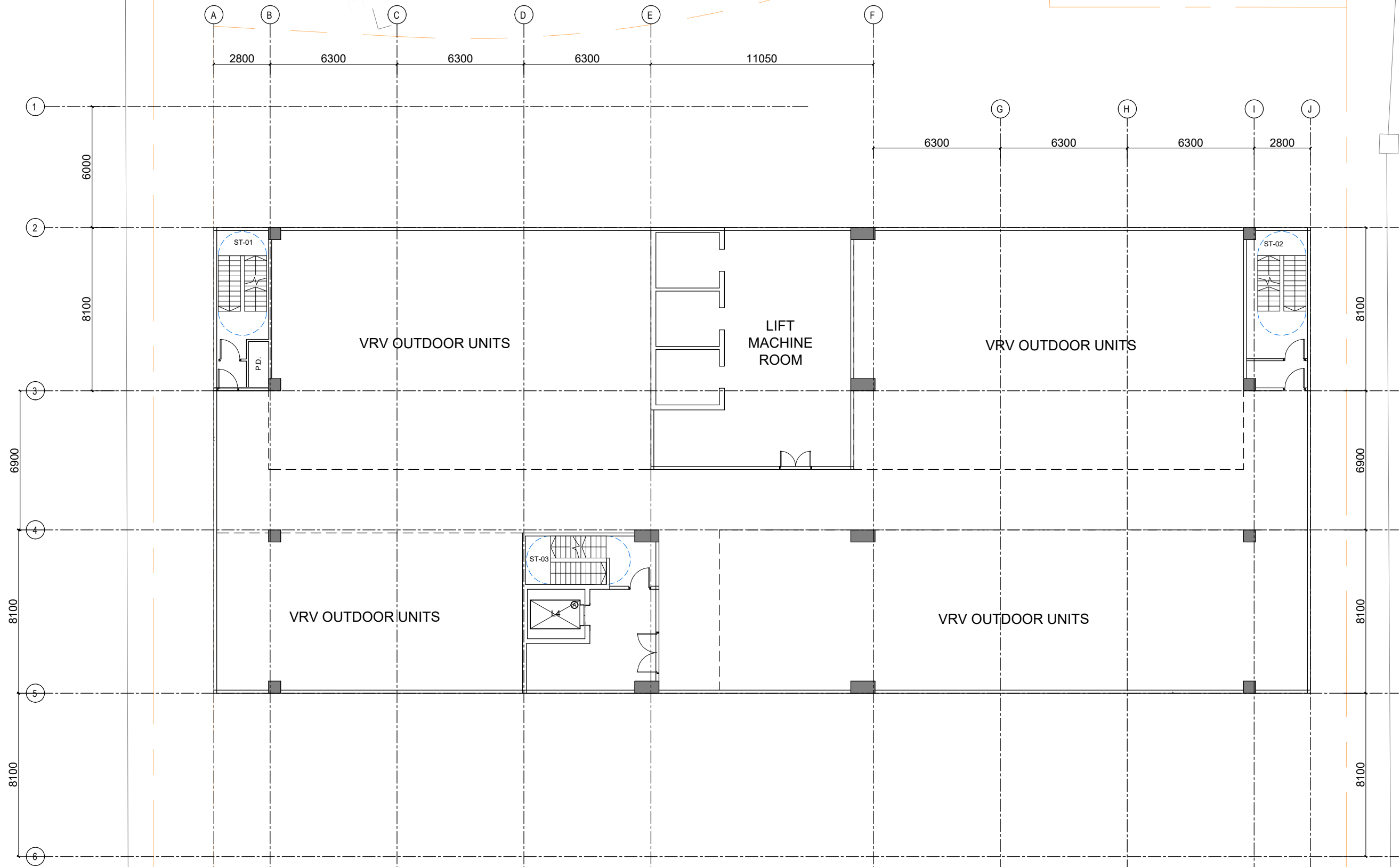


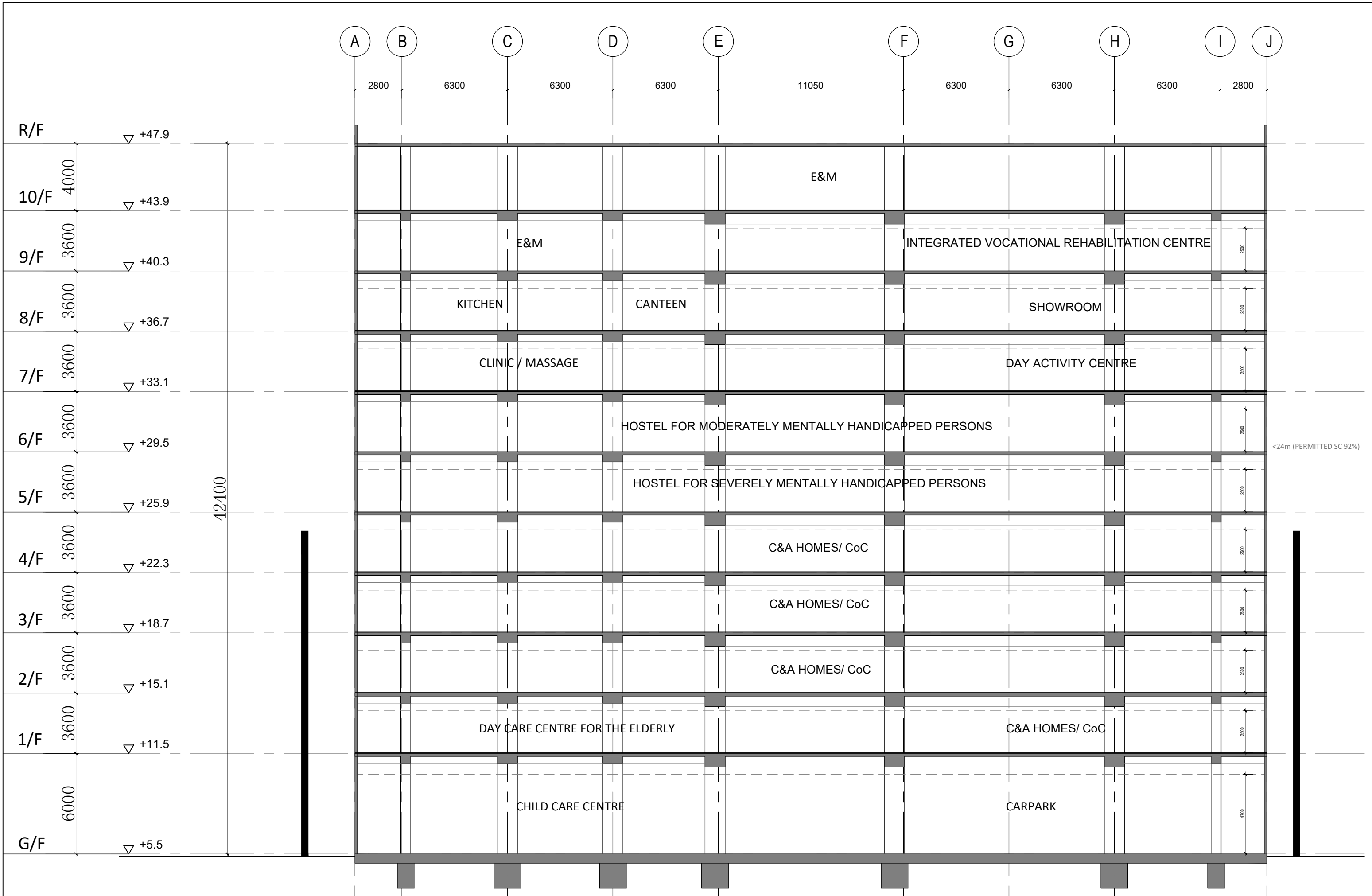
SHA CHAU LEI ROAD





SHA CHAU LEI ROAD





Appendix 7.1

Traffic Forecast of Year 2047 from Project Traffic

Consultant

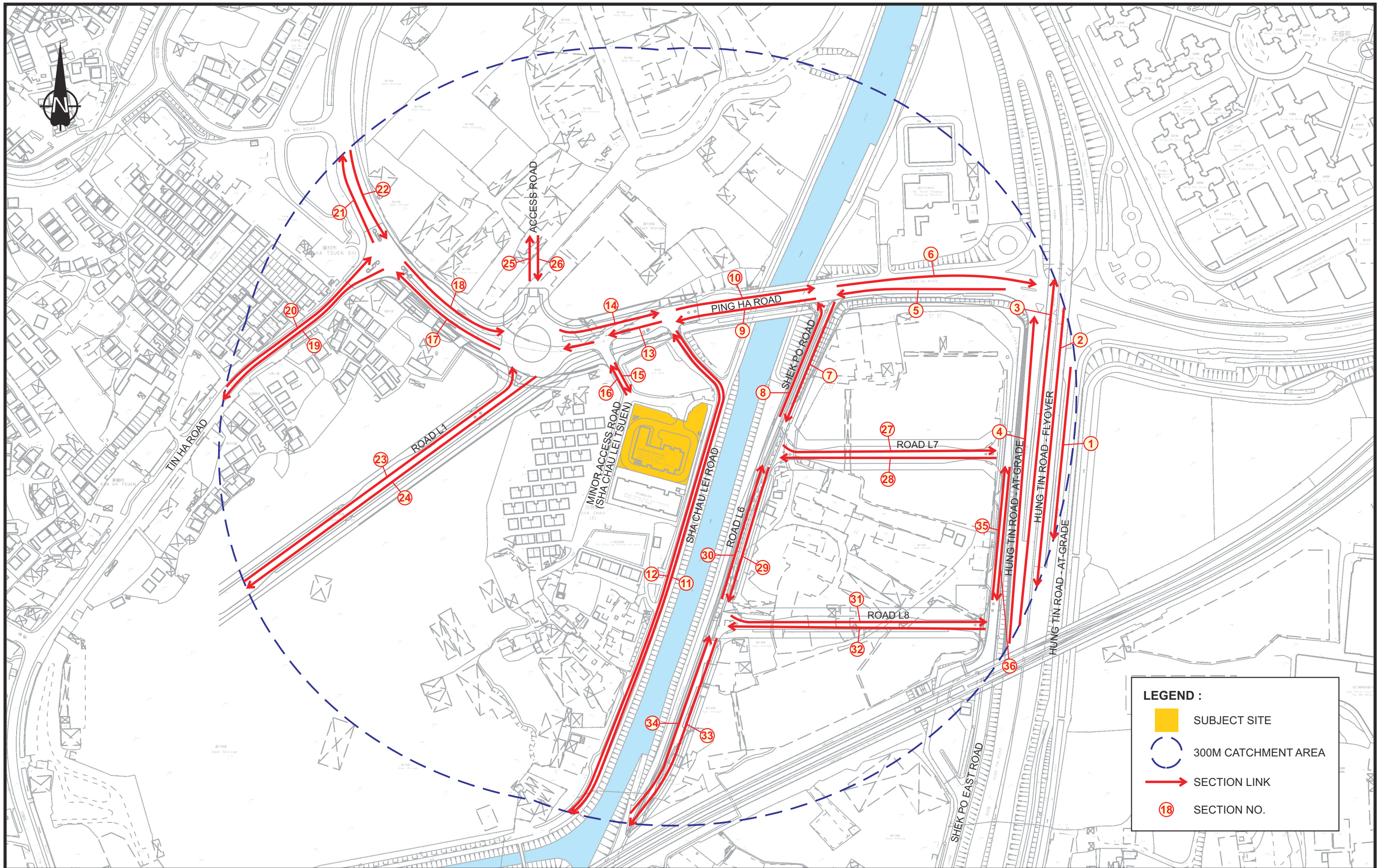
Table 1 Estimated Traffic Flows in Design Year 2047

Section No. ⁽¹⁾	Road	Direction	Peak Hour Traffic Volume (veh/hr) ⁽²⁾	Heavy Vehicles (%)	Speed Limit (km/h)
1	Hung Tin Road- at grade	SB	260	12%	50
2	Hung Tin Road -Flyover	SB	1,510	27%	70
3	Hung Tin Road -Flyover	NB	1,315	40%	70
4	Hung Tin Road- at grade	NB	305	26%	50
5	Ping Ha Road	WB	1,330	21%	50
6	Ping Ha Road	EB	1,100	26%	50
7	Shek Po Road	SB	35	10%	50
8	Shek Po Road	NB	150	10%	50
9	Ping Ha Road	WB	1,340	19%	50
10	Ping Ha Road	EB	1,025	24%	50
11	Sha Chau Lei Road	SB	90	15%	50
12	Sha Chau Lei Road	NB	150	9%	50
13	Ping Ha Road	WB	1,300	15%	50
14	Ping Ha Road	EB	995	12%	50
15	Minor Access Road (Sha Chau Lei Tsuen)	SB	75	11%	50
16	Minor Access Road (Sha Chau Lei Tsuen)	NB	65	5%	50
17	Ping Ha Road	WB	1,275	16%	50
18	Ping Ha Road	EB	985	17%	50
19	Tin Ha Road	SB	710	37%	50
20	Tin Ha Road	NB	605	30%	50
21	Ping Ha Road	WB	1,090	33%	50
22	Ping Ha Road	EB	965	32%	50
23	Road L1	NB	570	36%	50
24	Road L1	SB	755	41%	50
25	Access Road	SB	190	10%	50
26	Access Road	NB	150	10%	50
27	Road L7	EB	75	10%	50
28	Road L7	WB	60	10%	50
29	Road L6	SB	135	10%	50
30	Road L6	NB	210	10%	50
31	Road L8	EB	90	10%	50
32	Road L8	WB	95	10%	50
33	Road L6	SB	235	10%	50
34	Road L6	NB	275	10%	50

Section No. ⁽¹⁾	Road	Direction	Peak Hour Traffic Volume (veh/hr) ⁽²⁾	Heavy Vehicles (%)	Speed Limit (km/h)
35	Shek Po East Road	NB	60	10%	50
36	Shek Po East Road	SB	40	10%	50

Note: (1) Section location refers to **Drawing No. 1.1.**

(2) Numbers rounded to the nearest 5.



LEGEND :

- SUBJECT SITE
- 300M CATCHMENT AREA
- SECTION LINK
- 18 SECTION NO.

Rev.	Description	Checked	Date
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

Project Title
ARCHITECTURAL AND ASSOCIATED CONSULTANCY SERVICES FOR TECHNICAL FEASIBILITY STUDY FOR PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title
KEY INDEX PLAN OF TRAFFIC FORECAST FOR NOISE IMPACT ASSESSMENT IN 300M RADIUS

Designed TAT Checked CYH Scale NTS Date FEB 2024 Drawing No. **1.1** Rev. -



Appendix 7.2

Traffic Noise Impact Assessment Result (Base Case & Mitigated Case)

Appendix 7.3

Fixed Plant Noise Impact Assessment Calculation

Fixed Plant Noise Impact Assessment Calculation

Project No.: 2166EA
 Project: Proposed Redevelopment Pok Oi Hospital Yeung Chun Pui Care and Attention Home

NSR ID Pok Oi-West

Daytime Criterion: 70 dB(A)														Correction						Resultant Noise Level dB(A)										
ID	Name	X-coordinate	Y-coordinate	Height of FPN (mPD)	SWL dB(A)	Remark	Quantity (nos.)	NSR Location		Height of NSR (mPD)			Horizontal Distance (m)			Vertical Distance (m)			Slant Distance (m)			% on time over 30mins			Resultant Noise Level dB(A)					
								X-coordinate	Y-coordinate	1F	SF	SF	1F	SF	SF	1F	SF	SF	1F	SF	SF	1F	SF	SF	Quantity (%)	Façade (dB)	Tonality (dB)	Impulsive (dB)	Intermittency (dB)	Barrier (dB)
S5	Temporary Vehicle Repair Workshop	817617.5344	833918.67	6	100	[3]	1	817686.2	834001.5	12.7	27.1	41.5	107.6034064	6.7	21.1	35.5	-48.7	-48.8	-49.1	100%	0	3	0	0	0	-5	0	49.3	49.2	48.9
S10	AC Outdoor Units at Cheong Cheung (CAH)	817687.24	833989.91	13.7	56	[1]	10	817686.2	834001.5	12.7	27.1	41.5	11.64652788	1	15.4	29.8	-29.4	-33.7	-38.1	100%	0	3	0	0	0	0	0	29.6	25.3	20.9
S11	CLP Substation of Cheung Chun CAH-AC outdoor units	817713.0	833967.95	8	56	[1]	1	817686.2	834001.5	12.7	27.1	41.5	43.50738443	4.7	19.1	33.5	-40.8	-41.5	-42.8	100%	0	3	0	0	0	0	0	18.2	17.5	16.2
S12	Container System Ltd Storage	817572.09	834034.5	6	91	[2]	4	817686.2	834001.5	12.7	27.1	41.5	118.7859087	6.7	21.1	35.5	-49.5	-49.6	-49.9	100%	0	3	0	0	0	-5	0	39.5	39.4	39.1
																			Overall			50	50	49						

Remarks for SWLs:

- [1] SWL of AC outdoor unit is referred to sound level of Mitsubishi outdoor unit model "PLY-SP48BA" (56dB(A)).
- [2] SWL of loading and unloading using forklift (51 dB(A)) is referred to the approved EIA report "AEIAR-332/2014 - Proposed Residential Cum Passive Recreation Development within "Recreation" Zone and "Residential (Group C)" Zone at Various Lots in DD 104, Yuen Long, N.T." (website: https://www.epd.gov.hk/eia/register/report/eiareport/eia_2202014/EIA%20Report/Html/Appendices/App%204-7.pdf)
- [3] SWL of hand-held pneumatic tool (100dB(A)) is referred to the approved EIA report "AEIAR-351/2015 - Chai Wan Government Complex and Vehicle Depot" (website: https://www.epd.gov.hk/eia/register/report/eiareport/eia_2302015/Web/PDF/EIA%20Report%20-%20Appendices.pdf)
- [4] Correction factor for quantity = 10 log (quantity)
- [5] Distance correction for SWL = 20 log (distance) + 8
- [6] Correction for percentage on-time over 30 mins = 10 log (on-time %)
- [7] Barrier correction: While NSR with no direct line of sight to the source/opening, a 10dB(A) attenuation would be applied. While NSR is partially screened, a 5dB(A) attenuation would be applied.
- [8] The following formula was used for calculating the SPLs at NSRs =
 $SPL = SWL + QC + DC + FC + BC + OC + TC + IMC + ITC$

- SPL Sound Pressure Level (dB(A))
- SWL Sound Power Level (dB(A))
- QC Correction factor for quantity (dB(A))
- DC Distance Attenuation (dB(A))
- FC Façade Correction (dB(A))
- BC Barrier Correction (dB(A))
- OC Percentage on-time Correction (dB(A))
- TC Correction for Tonality (dB(A))
- IMC Correction for Impulsiveness (dB(A))
- ITC Correction for Intermittency (dB(A))

Fixed Plant Noise Impact Assessment Calculation

Project No.: 2127

Project: Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) for Mix Use Development (Residential & Commercial) at Lot 796 & 1008 RP and Adjoining Government land in Ping Che, Ta Kwu Ling, New Territories

NSR ID Pok Oi-South

Daytime Criterion: 70 dB(A)

ID	Name	Fixed Plant Noise Source		SWL dB(A)	Remark	Quantity (nos.)	NSR Location		Height of NSR (mPD)			Horizontal Distance (m)			Vertical Distance (m)			Slant Distance (m)			% on time over 30mins %	Correction							Resultant Noise Level dB(A)					
		X-coordinate	Y-coordinate				Height of FPN (mPD)	X-coordinate	Y-coordinate	1F	SF	9F	1F	SF	9F	1F	SF	9F	1F	SF		9F	Quantity (dB)	Façade (dB)	Tonality (dB)	Impulsive (dB)	Intermittency (dB)	Barrier (dB)	% on time (dB)	1F	SF	9F		
S5	Temporary Vehicle Repair Workshop	817685.5346	833918.67	6	100	[3]	1	817685.7	834001.7	12.7	27.1	41.5	83.03020699	6.7	21.1	35.5	-46.4	-46.7	-47.1	100%	0	3	0	0	0	0	0	56.6	56.3	55.9				
S10	AC Outdoor Units at Cheng Chung C&AH	817687.34	833989.58	13.7	56	[1]	10	817685.7	834001.7	12.7	27.1	41.5	11.9006273	1	15.4	29.8	-29.5	-33.8	-38.1	100%	0	3	0	0	0	0	29.5	25.2	20.9					
S11	CLP Substation of Ching Chun C&AH-AC outdoor units	817713.0	833967.95	8	56	[1]	1	817685.7	834001.7	12.7	27.1	41.5	43.980706	4.7	19.1	33.5	-40.9	-41.6	-42.9	100%	0	3	0	0	0	0	18.1	17.4	16.1					
S12	Container System Ltd Storage	817572.09	834034.5	6	91	[2]	4	817685.7	834001.7	12.7	27.1	41.5	118.2500406	6.7	21.1	35.5	-49.5	-49.6	-49.8	100%	0	3	0	0	0	0	44.5	44.4	44.2					
																						Overall							57	57	56			

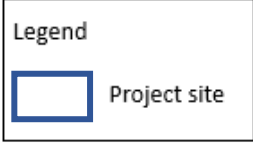
Remarks for SWLs:

- [1] SWL of AC outdoor unit is referred to sound level of Mitsubishi outdoor unit model "PLY-SP488A" (56dB(A)).
- [2] SWL of loading and unloading using forklift (51 dB(A)) is referred to the approved EIA report "AEIAR-332/2014 - Proposed Residential Cum Passive Recreation Development within "Recreation" Zone and "Residential (Group C)" Zone at Various Lots in DD 104, Yuen Long, N.T." (website: https://www.epd.gov.hk/eia/register/report/eiareport/eia_2202014/EIA%20Report/Html/Appendices/App%204-7.pdf)
- [3] SWL of hand-held pneumatic tool (100dB(A)) is referred to the approved EIA report "AEIAR-351/2015 - Chai Wan Government Complex and Vehicle Depot" (website: https://www.epd.gov.hk/eia/register/report/eiareport/eia_2302015/Website/PDF/EIA%20Report%20-%20Appendices.pdf)
- [4] Correction factor for quantity = 10 log (quantity)
- [5] Distance correction for SWL = 20 log (distance) + 8
- [6] Correction for percentage on-time over 30 mins = 10 log (on-time %)
- [7] Barrier correction: While NSR with no direct line of sight to the source/opening, a 10dB(A) attenuation would be applied. While NSR is partially screened, a 5dB(A) attenuation would be applied.
- [8] The following formula was used for calculating the SPLs at NSRs =
 $SPL = SWL + QC + DC + FC + BC + OC + TC + IMC + NTC$

- SPL Sound Pressure Level (dB(A))
- SWL Sound Power Level (dB(A))
- QC Correction factor for quantity (dB(A))
- DC Distance Attenuation (dB(A))
- FC Façade Correction (dB(A))
- BC Barrier Correction (dB(A))
- OC Percentage on-time Correction (dB(A))
- TC Correction for Tonality (dB(A))
- IMC Correction for Impulsiveness (dB(A))
- NTC Correction for Intermittency (dB(A))

Appendix 9.1

Aerial Photos



1975



1981



1982



1984



1987



1991



1998



2007



2015



2022

Appendix 9.2

Copy of Letter Replies from Various Government Departments

From: hllai@epd.gov.hk
To: [Leanna Lei](#)
Subject: RE: FW: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment
Date: Wednesday, July 24, 2024 3:30:13 PM

Dear Ms. Lei,

According to our record, there was no odour complaint records in the past five years related to the concerned location at Tin Shui Wai Nullah. Thanks.

Best Regards,
LAI Ho-leung, LEO
EPD, Tel :2158 5825

From: Leanna Lei [REDACTED]
To: "hllai@epd.gov.hk" <hllai@epd.gov.hk>
Cc: Cathy Man [REDACTED]
Date: 28/06/2024 15:22
Subject: RE: FW: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment

Dear Mr. Lai,

Thank you for your reply. We are currently conducting an S12A Application for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long. As referred to EPD comments, information on odour emission of the nearby Tin Shui Wai Nullah is required. We would like to check on the odour complaint records in the past five years related to the nearby Tin Shui Wai Nullah and any information you could provide which might be useful to our study. We enclosed herewith a site map showing the location of the Project Site for your reference.

Due to the tight schedule, it is highly appreciated if the above information could be available and returned to us via either fax (Fax No. 2815 5399) or email by 10 Jul 2024.

Thank you very much for your kind attention and assistance.

Yours Sincerely,
Leanna Lei



Best Regards,

[Redacted signature block]

Allied Environmental Consultants Limited *Member of AEC Group (HKEX Stock Code: 8320.HK)*

[Redacted contact information]

[attachment "Fig1 Site Location Plan.pdf" deleted by HL LAI/EPD/HKSARG] [attachment "RtC table _extract.docx" deleted by HL LAI/EPD/HKSARG] [attachment "Fig 3.1 _Site location Plan _Issue 1.pdf" deleted by HL LAI/EPD/HKSARG]

From: hllai@epd.gov.hk
To: [Leanna Lei](#)
Subject: Re: FW: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment
Date: Friday, November 10, 2023 2:30:10 PM

Dear Ms. LEI,

Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home
in Yuen Long
Request for Information for Land Contamination Assessment

I refer your email about the captioned. Our reply is as below:-

(a) This Regional Office has no record of reported accidents of spillage / leakage of chemicals at the areas specified in your letter. You may also need to check with other parties / departments for such information as appropriate.

Please contact me should you have any questions.

Yours faithfully,
(LAI Ho-leung)
for Director of Environmental Protection

From: Leanna Lei [REDACTED]
To: "hllai@epd.gov.hk" <hllai@epd.gov.hk>
Cc: Cathy Man <[REDACTED]>
Date: 10/11/2023 12:46
Subject: FW: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment

Dear Mr. Lai,

I am writing to follow up on the request letter I sent on 25 October 2023 via email and fax regarding the record of registered chemical waste producers on our site (please refer to the enclosure).

As this matter is time-sensitive, I would be grateful for your prompt response and the timely provision of the requested information.

Should you have any queries, please feel free to contact the undersigned at [REDACTED]
[REDACTED]

Thank you for your attention to this matter.

Best Regards,
Leanna Lei



27/F, Overseas Trust Bank Building, 160 Gloucester Road, Wan Chai, Hong Kong

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From: Leanna Lei

Sent: Wednesday, October 25, 2023 9:51 AM

To: hllai@epd.gov.hk

Cc: Cathy Man [REDACTED]

Subject: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment

Dear Sir,

**Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care
and Attention Home in Yuen Long
Request for Information for Land Contamination Assessment**

We are conducting a Technical Feasibility Study for Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long (Subject Site). As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Subject Site are required as part of the vetting process.

Of particular interests is whether there are any registered chemical waste producers under your record in the Subject Site, any waste disposal record, any accidental spillage record, any submission relating to land contamination assessment and any information you could provide which might be useful for our study. We enclosed herewith a site map showing the location of the Subject Site for your reference.

Due to tight schedule, it is highly appreciated if the above information could be available and returned to us via either fax (Fax No. [REDACTED]) or email by **7 November 2023**.

Thank you very much for your kind attention and assistance. Should you have any queries, please feel free to contact the undersigned at [REDACTED]

Best Regards,



[REDACTED]



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[attachment "Fig1 Site Location Plan.pdf" deleted by HL LAI/EPD/HKSARG]

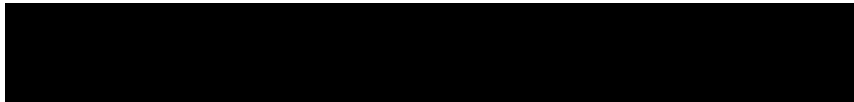
From: [Leanna Lei](#)
To: hllai@epd.gov.hk
Cc: [Cathy Man](#)
Subject: RE: FW: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment
Date: Friday, June 28, 2024 3:22:00 PM
Attachments: [RtC table_extract.docx](#)
[image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[Fig 3.1 Site location Plan Issue 1.pdf](#)

Dear Mr. Lai,

Thank you for your reply. We are currently conducting an S12A Application for the Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long. As referred to EPD comments, information on odour emission of the nearby Tin Shui Wai Nullah is required. We would like to check on the odour complaint records in the past five years related to the nearby Tin Shui Wai Nullah and any information you could provide which might be useful to our study. We enclosed herewith a site map showing the location of the Project Site for your reference.

Due to the tight schedule, it is highly appreciated if the above information could be available and returned to us via either fax (Fax No. [REDACTED]) or email by 10 Jul 2024. Thank you very much for your kind attention and assistance.

Yours Sincerely,
Leanna Lei



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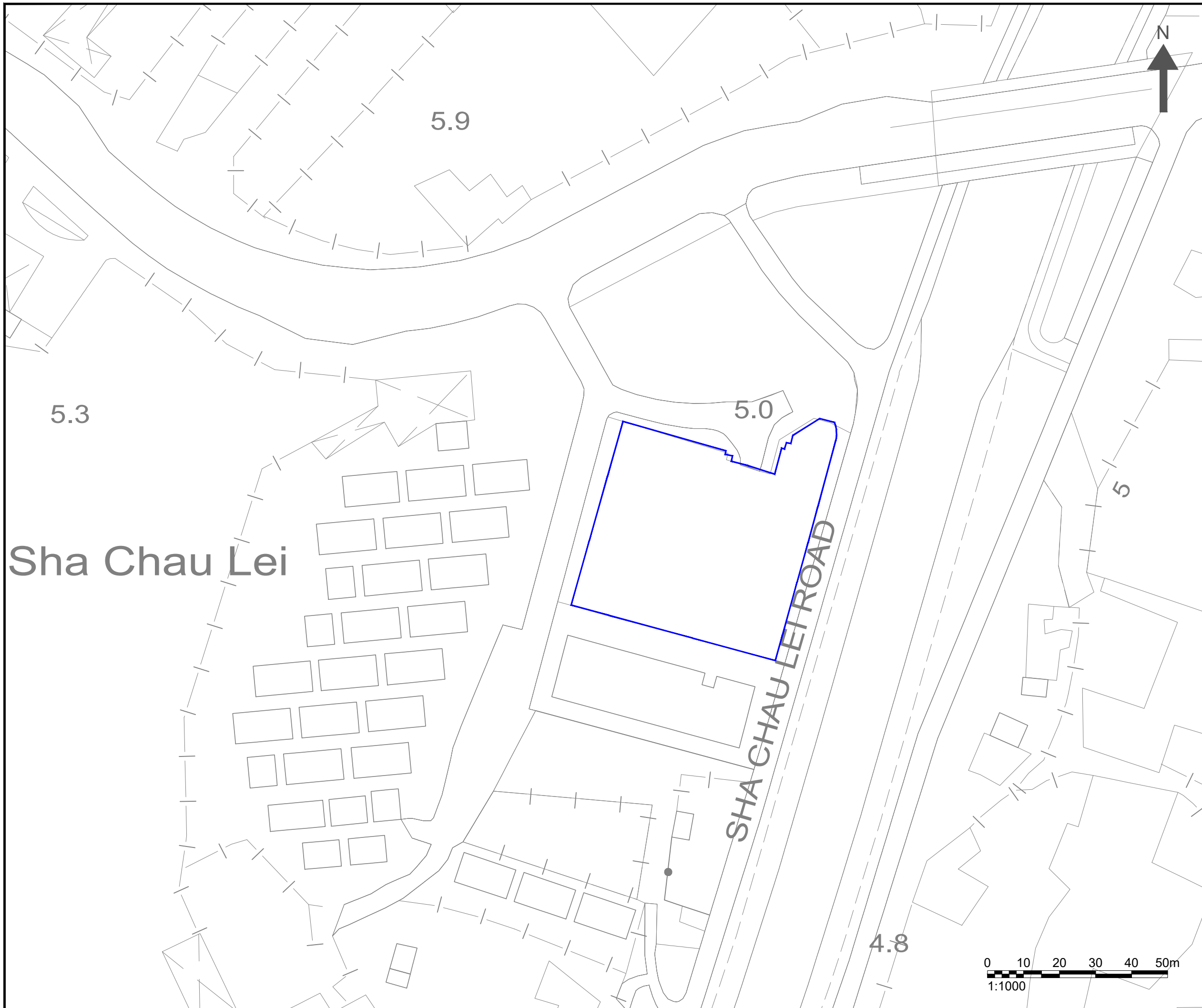
From: hllai@epd.gov.hk <hllai@epd.gov.hk>
Sent: Friday, November 10, 2023 2:30 PM
To: Leanna Lei <leannalei@aechk.com>
Subject: Re: FW: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment

Dear Ms. LEI,


Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home
in Yuen Long
Request for Information for Land Contamination Assessment

I refer your email about the captioned. Our reply is as below:-

(a) This Regional Office has no record of reported accidents of spillage / leakage of



NOTES :

 PROJECT SITE

Sha Chau Lei

Consultant



Allied Environmental Consultants Limited

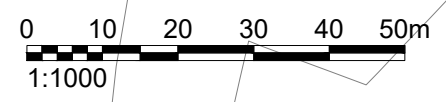
Project No. : 2164EA

Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI
 HOSPITAL YEUNG CHUN PUI CARE AND
 ATTENTION HOME IN YUEN LONG

Drawing Title :
 PROJECT SITE LOCATION

Drawing No : Fig3.1	Revision : 1
Scale : AS SHOWN	Date : SEP 2023



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Our Ref. [819.4524/23-0002]



Fire Services Department / Management Group
9/F, Fire Services Headquarters Building
1 Hong Chong Road
Tsim Sha Tsui East
Kowloon



19 October 2023

By Fax ([redacted])

Dear Sir/Madam,

**Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care
and Attention Home in Yuen Long
Request for Information for Land Contamination Assessment**

We are conducting a Technical Feasibility Study for Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long (Subject Site). As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Subject Site are required as part of the vetting process.

Of particular interests are spill and incident reports (including records of fire at the Subject Site) that we believe your Department might have record of. Furthermore, we would also like to know whether anywhere of the subject site had applied or possessed license for dangerous goods storage. We enclosed herewith a site map showing the location of the Subject Site for your reference.

Due to tight schedule, it is highly appreciated if the above information could be available and returned to us via either fax (Fax No. [redacted]) or email **by 2 November 2023**.

Thank you very much for your kind attention and assistance. Should you have any queries, please feel free to contact the undersigned at [redacted]

Yours sincerely,

Cathy Man

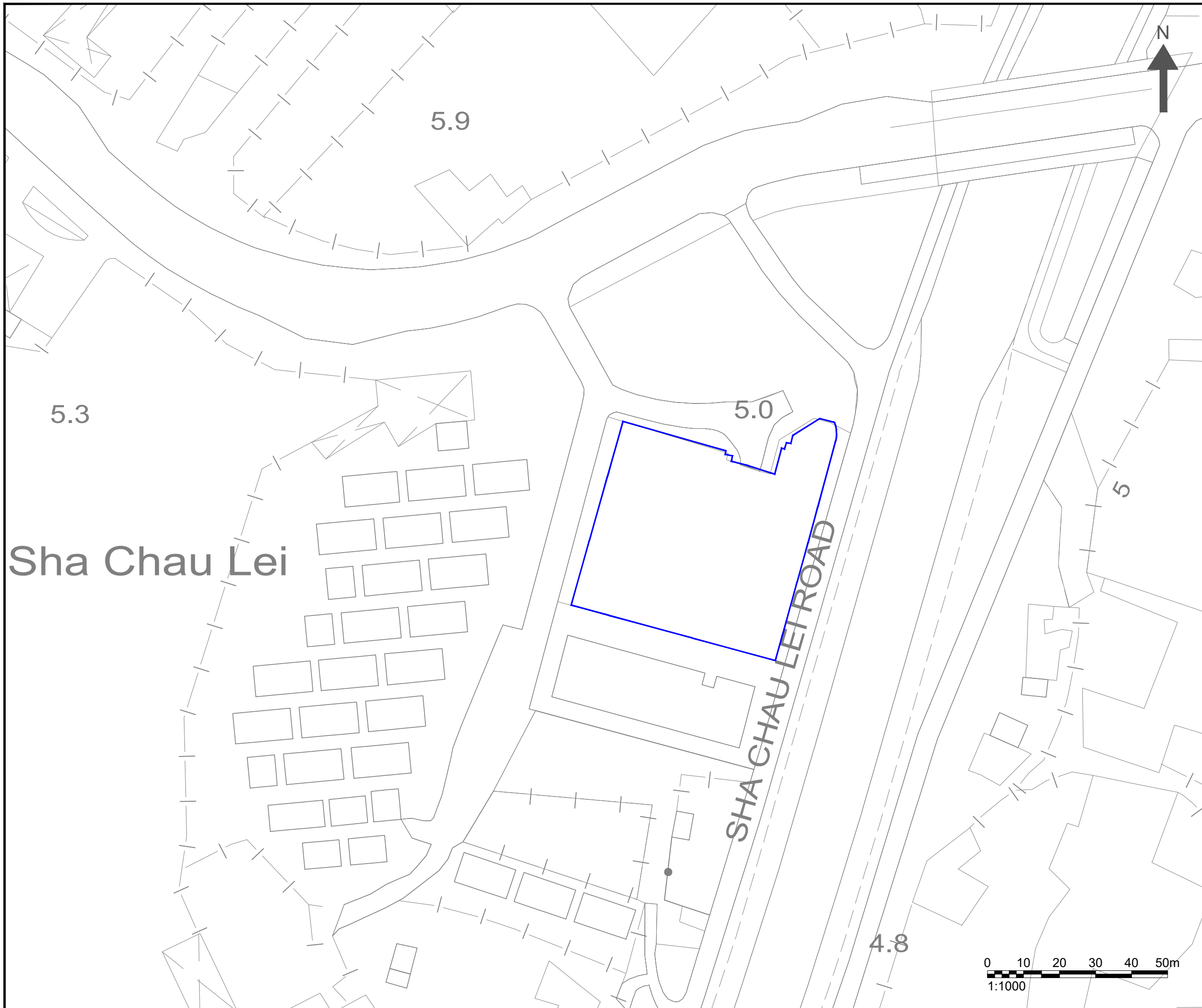
Associate Director
CM/II

Encl. Site Location Plan


Allied Environmental Consultants Limited
Member of AEC Group (HKEX Stock Code: 8320.HK)

沛然環境評估工程顧問有限公司
沛然環保集團成員 (港交所股份代號: 8320.HK)





NOTES :

 PROJECT SITE

Sha Chau Lei

Consultant



Allied Environmental Consultants Limited

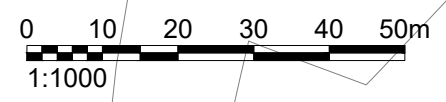
Project No. : 2164EA

Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI
 HOSPITAL YEUNG CHUN PUI CARE AND
 ATTENTION HOME IN YUEN LONG

Drawing Title :
 PROJECT SITE LOCATION

Drawing No : Fig3.1	Revision : 1
Scale : AS SHOWN	Date : SEP 2023



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消防處
香港九龍尖沙咀東部康莊道1號
消防處總部大廈

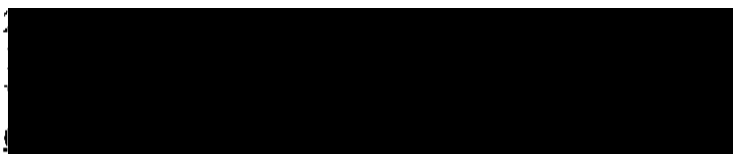


FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS
BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 OUR REF. : (22) in FSD GR 6-5/4 R Pt. 54
來函檔號 YOUR REF. : 819.4524/23-0002
電子郵件 E-mail : hkfsdenq@hkfsd.gov.hk
圖文傳真 FAX NO. : 2988 1196
電話 TEL NO. : 2733 5848

10 July 2024

Allied Environmental Consultants Limited



By fax (2815 5399) only

Dear Ms. LEI,

**Proposed Development of Pok Oi Hospital
Yeung Chun Pui Care and Attention Home in Yuen Long
Request for Information of Dangerous Goods & Incident Records**

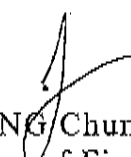
I refer to your email of 3.7.2024 regarding the captioned subject.

Your case is being handled, and a reply will be furnished to you as soon as possible. Please be advised that due to time lapse, this Department can only provide the following information for your requested information:

- (i) Dangerous Goods Licence Record: from the year of 1990 to present moment.
- (ii) Incident Record: Past three years of fire and special services incidents.

Should you have further questions, please feel free to contact the undersigned.

Yours sincerely,


(TSANG/Chun-hei)
for Director of Fire Services

From: [Leanna Lei](#)
To: hkfsdenq@hkfsd.gov.hk
Cc: [Cathy Man](#); [NGAN Chun Sang](#)
Subject: RE: [819.4524-230002 Pok Oi Hospital] Submission of Appointment Letter
Date: Wednesday, July 3, 2024 3:52:00 PM
Attachments: [23-0002 FSD reply \(2\).pdf](#)
[image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[23-0002 FSD enquiry.pdf](#)
[Fig 3.1 Site location Plan Issue 1.pdf](#)
[819.4524 Appointment letter 1.pdf](#)
[RtC table extract fsd.docx](#)

Dear Mr Lai,

To follow up on your reply dated 13 December 2023 (ref no. (91) in FSD GR6-5/4 R Pt.50), we received comments from EPD on the latest status of the dangerous goods and incident records. We would like to check on the latest information, particularly the relevant records in 2024, for our study. We enclosed herewith a site map showing the location of the Project Site and an appointment letter for your reference.

Due to the tight schedule, it would be highly appreciated if the above information could be available and returned to us via either fax (Fax No. [REDACTED]) or email by 9 Jul 2024. Thank you very much for your kind attention and assistance.

Best Regards,
Leanna



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From: Leanna Lei
Sent: Wednesday, November 29, 2023 5:40 PM
To: hkfsdenq@hkfsd.gov.hk
Cc: Cathy Man <[REDACTED]>; NGAN Chun Sang <[REDACTED]>
Subject: [819.4524-230002 Pok Oi Hospital] Submission of Appointment Letter

Proposed Development of Pok Oi Hospital
Yeung Chun Pui Care and Attention Home in Yuen Long
Submission of Appointment Letter

Dear Mr NG,

Regarding your letter (Ref.:(205) in FSD GR6-5/4 R Pt.49) dated 10 November 2023 regarding the information request of dangerous goods and incident records, we are pleased to submit an Appointment Letter for your record.

Due to the tight schedule, it would be highly appreciated if the above information could be available and returned to us via either fax (Fax No. [REDACTED]) or email by **13 December 2023**.

Thank you very much for your attention and assistance. Should you have any queries, please contact me at [REDACTED].

Encl. Site Location Plan, Appointment Letter

Best Regards,
Leanna Lei



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消防處總部大廈



FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS
BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 OUR REF. : (205) in FSD GR 6-5/4 R Pt. 49
來函檔號 YOUR REF. : [819.4524/23-0002]
電子郵件 E-mail : hkfsdenq@hkfsd.gov.hk
圖文傳真 FAX NO. : 2739 5879
電話 TEL NO. : 2733 7741

10 November 2023

Allied Environmental Consultants Limited

[REDACTED]
(Attn: Ms. Cathy Man, Associate Director)

By fax (2815 5399) only

Dear Ms. MAN,

**Proposed Development of Pok Oi Hospital
Yeung Chun Pui Care and Attention Home in Yuen Long
Request for Information of Dangerous Goods & Incident Records**

I refer to your letter of 19.10.2023 regarding the captioned subject.

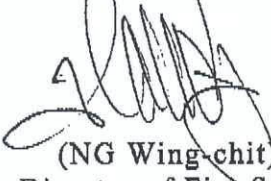
Your case is being handled, and a reply will be furnished to you as soon as possible. Please be advised that due to time lapse, this Department can only provide the following information for your requested information:

- (i) Dangerous Goods Licence Record: from the year of 1990 to present moment.
- (ii) Incident Record: Past three years of fire and special services incidents.

Please also submit the appointment letter from your client for record.

Should you have further questions, please feel free to contact the undersigned.

Yours sincerely,


(NG Wing-chit)
for Director of Fire Services

From: [Leanna Lei](#)
To: hkfsdenq@hkfsd.gov.hk
Cc: [Cathy Man](#); [NGAN Chun Sang](#)
Subject: [819.4524-230002 Pok Oi Hospital] Submission of Appointment Letter
Date: Wednesday, November 29, 2023 5:40:00 PM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)
[819.4524 Appointment letter 1.pdf](#)
[23-0002 FSD reply.pdf](#)
[Fig1 Site Location Plan.pdf](#)

Proposed Development of Pok Oi Hospital
Yeung Chun Pui Care and Attention Home in Yuen Long
Submission of Appointment Letter

Dear Mr NG,

Regarding your letter (Ref.:(205) in FSD GR6-5/4 R Pt.49) dated 10 November 2023 regarding the information request of dangerous goods and incident records, we are pleased to submit an Appointment Letter for your record.

Due to the tight schedule, it would be highly appreciated if the above information could be available and returned to us via either fax (Fax No. 2815 5399) or email by **13 December 2023**. Thank you very much for your attention and assistance. Should you have any queries, please contact me at 3915 7178.

Encl. Site Location Plan, Appointment Letter

Best Regards,
Leanna Lei



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消防處總部大廈



FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS
BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 OUR REF. : (91) in FSD GR 6-5/4 R Pt. 50
來函檔號 YOUR REF. : [819.4524/23-0002]
電子郵件 E-mail : hkfsdenq@hkfsd.gov.hk
圖文傳真 FAX NO. : 2988 1196
電話 TEL NO. : 2733 7570

13 December 2023

Allied Environmental Consultants Limited



(Attn: Ms. Cathy MAN, Associate Director)

Dear Ms. MAN,

**Proposed Development of Pok Oi Hospital
Yeung Chun Pui Care and Attention Home in Yuen Long
Request for Information of Dangerous Goods & Incident Records**

I refer to your letter of 19.10.2023 regarding the captioned request and reply below in response to your questions:-

Please be advised that neither records of dangerous goods license, fire incidents nor incidents of spillage / leakage of dangerous goods were found in connection with the given conditions of your request at the subject location.

If you have further questions, please feel free to contact the undersigned.

Yours sincerely,

(LAI Kin-man)

for Director of Fire Services

From: ccylam@pland.gov.hk
To: [Leanna Lei](#)
Cc: [Cathy Man](#); sphchan@pland.gov.hk
Subject: Re: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment
Date: Friday, November 3, 2023 9:54:45 AM
Attachments: [ATT00001.png](#)
[ATT00002.png](#)
[ATT00003.png](#)
[ATT00004.png](#)

Dear Ms. Lei,

I refer to your email dated 26.10.2023 regarding the captioned request.

According to our record, the subject Sha Chau Lei Tsuen Pok Oi Hospital Yeung Chun Pui Care and Attention Home was completed in 1984, and no development/redevelopment proposal at the site has been approved since then.

The consultant should be advised to refer to the adopted Hung Shui Kiu and Ha Tsuen (HSK/HT) Outline Development Plan for the development proposals of the surrounding areas in the HSK/HT area.

Regards,
Charlotte Lam
for TM&YLW DPO, PlanD
Tel: 2158 6294

From: Leanna Lei <[REDACTED]>
To: "ccylam@pland.gov.hk" <ccylam@pland.gov.hk>
Cc: Cathy Man <[REDACTED]>
Date: 26/10/2023 10:07
Subject: Re: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment

Dear Ms. LAM,

**Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care
and Attention Home in Yuen Long
Request for Information for Land Contamination Assessment**

We are conducting a Technical Feasibility Study for Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long (Subject Site). As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Subject Site are required as part of the vetting process.

Of particular interests are current and historical site information, any change on the land use and any information you could provide that might be useful for our study. We enclosed herewith a site map

showing the location of the subject site for your reference.

Due to tight schedule, it is highly appreciated if the above information could be available and returned to us via either fax (Fax No. [REDACTED]) or email by **7 November 2023**.

Thank you very much for your kind attention and assistance. Should you have any queries, please feel free to contact the undersigned at [REDACTED]

Best Regards,



[REDACTED]

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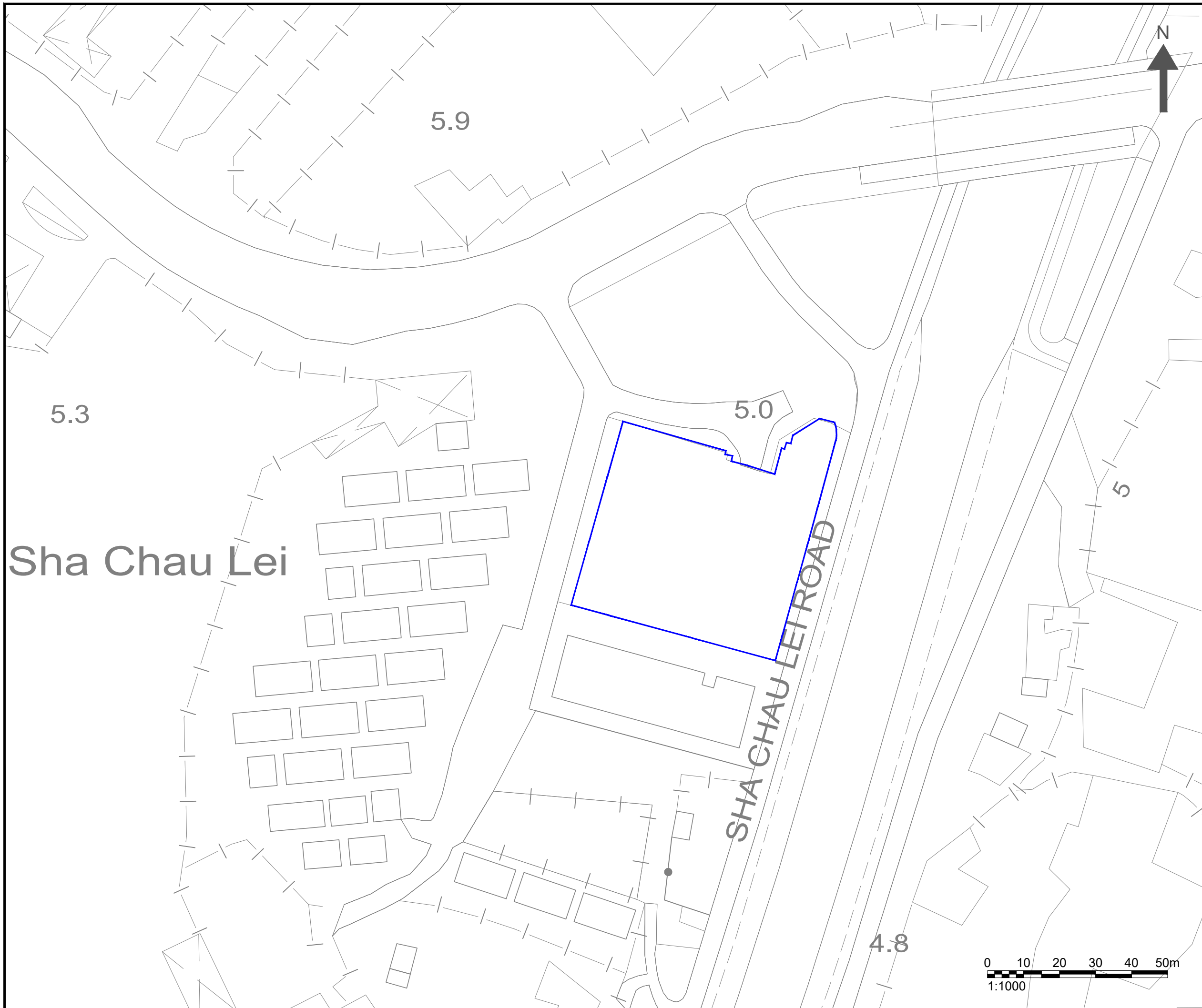
[REDACTED]

Follow us




[REDACTED]

[attachment "Fig1 Site Location Plan.pdf" deleted by Charlotte Cheuk Ying LAM/PLAND/HKSARG]



NOTES :

 PROJECT SITE

Sha Chau Lei

Consultant



Allied Environmental Consultants Limited

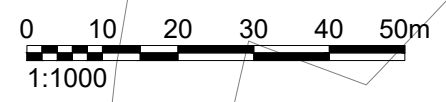
Project No. : 2164EA

Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI
 HOSPITAL YEUNG CHUN PUI CARE AND
 ATTENTION HOME IN YUEN LONG

Drawing Title :
 PROJECT SITE LOCATION

Drawing No : Fig3.1	Revision : 1
Scale : AS SHOWN	Date : SEP 2023



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From: lmeylw3@landsd.gov.hk
To: [Leanna Lei](#)
Cc: esylw3@landsd.gov.hk
Subject: Fw: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment (DLOYL 467/YPT/62 Pt.2)
Date: Wednesday, October 25, 2023 2:27:49 PM
Attachments: [ATT00001.png](#)
[ATT00002.png](#)
[ATT00003.png](#)
[ATT00004.png](#)

Dear Ms. Lei,

I refer to your preceding mail below.

The subject site is held under Lot 2273 and the Extension thereto in D.D. 125 ("the Lot") which was granted to Pok Oi Hospital under New Grant No. 2882 dated 21.5.1980 by way of Private Treaty Grant at nil premium and an Extension Letter dated 8.6.1984 registered by Memorial No. YL289856. The Lot was also varied or modified by two modification letters dated 1.3.1982 and 4.7.1983 registered by Memorial No. YL259362 and YL279198 respectively. The user of the subject site is a non-profit making residential care and attention home for the aged and such ancillary and amenity purposes.

We have no information/record on spillage accidents, illegal/contaminating land uses or uncontrolled dumping uses of the subject site.

Regards

(TH LAW)
LME/W3
DLOYL
Tel: 3529 1114
Fax: 2473 3134

From: Leanna Lei <[REDACTED]>
To: "lmeylw1@landsd.gov.hk" <lmeylw1@landsd.gov.hk>
Cc: Cathy Man <[REDACTED]>
Date: 25/10/2023 09:52
Subject: [819.4524 Pok Oi]Request for Information for Land Contamination Assessment

Dear Sir,

Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care

and Attention Home in Yuen Long
Request for Information for Land Contamination Assessment

We are conducting a Technical Feasibility Study for Proposed Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long (Subject Site). As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Subject Site are required as part of the vetting process.

Of particular interests are information on spillage accidents, illegal/contaminating land uses or uncontrolled dumping uses, current and historical land use information, and any information you could provide which might be useful for our study. We enclosed herewith a site map showing the location of the subject site for your reference.

Due to tight schedule, it is highly appreciated if the above information could be available and returned to us via either fax (Fax No. [REDACTED]) or email by **7 November 2023**.

Thank you very much for your kind attention and assistance. Should you have any queries, please feel free to contact the undersigned at [REDACTED]

Best Regards,



[REDACTED]

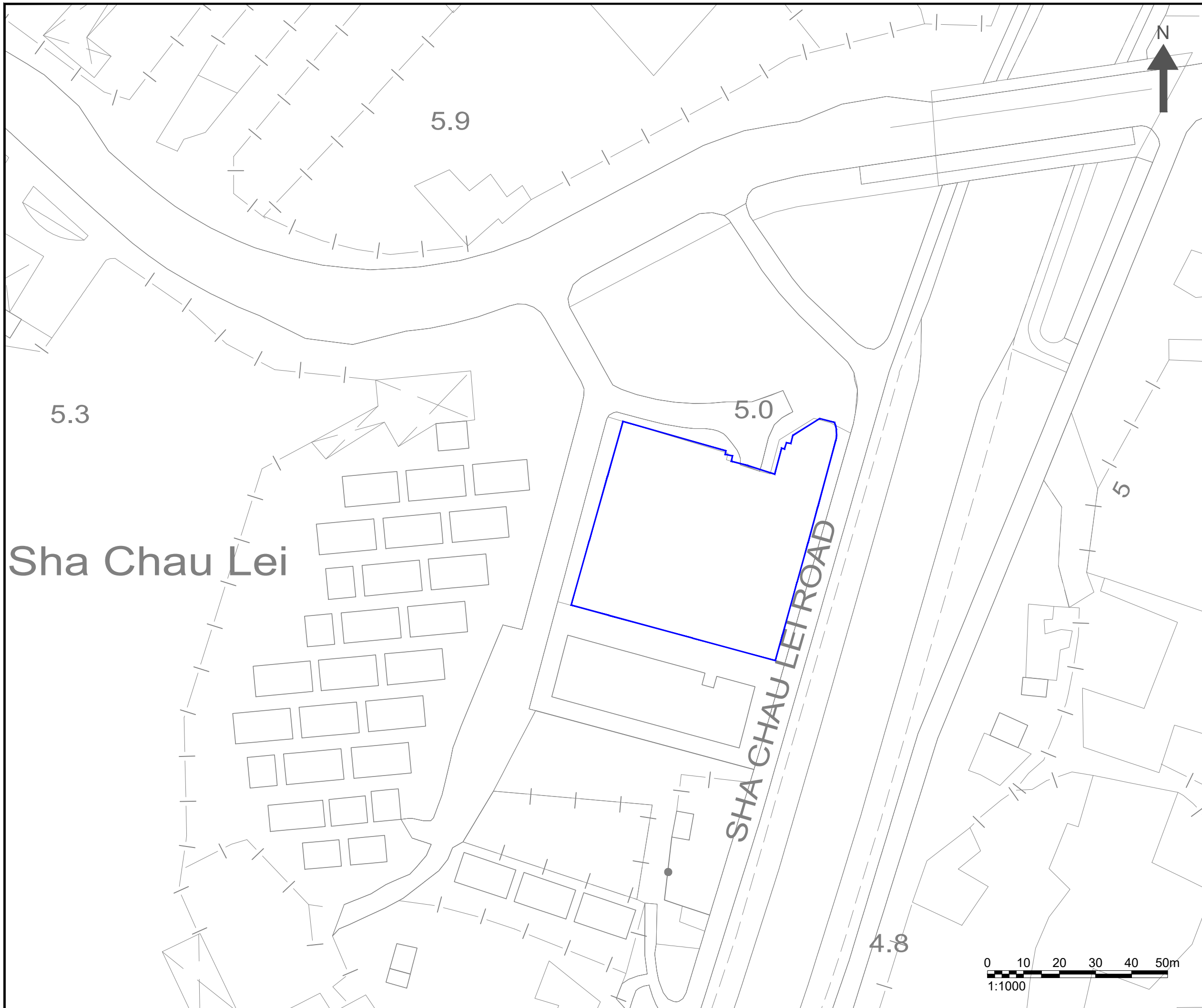
Allied Environmental Consultants Limited *Member of AEC Group (HKEX Stock Code: 8320.HK)*

[REDACTED]
Follow us




[REDACTED]

[attachment "Fig1 Site Location Plan.pdf" deleted by Carmen Tat Huen LAW/LAO/LANDSD/HKSARG]



NOTES :

 PROJECT SITE

Sha Chau Lei

Consultant



Allied Environmental Consultants Limited

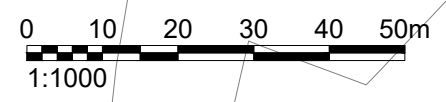
Project No. : 2164EA

Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI
 HOSPITAL YEUNG CHUN PUI CARE AND
 ATTENTION HOME IN YUEN LONG

Drawing Title :
 PROJECT SITE LOCATION

Drawing No : Fig3.1	Revision : 1
Scale : AS SHOWN	Date : SEP 2023

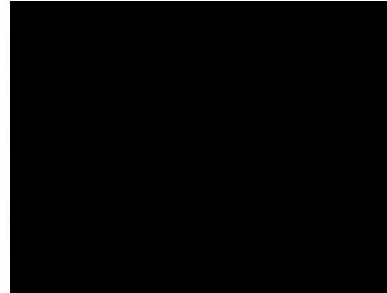


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Our Ref. [819.4524/23-0005]



Hong Kong Police Force
Explosive Ordinance Disposal Bureau
EOD Mount Butler Depot,
150 Mount Butler Road,
Jardine's Lookout
Hong Kong



19 October 2023

By Fax (2203 4273)

Dear Sir/Madam,

Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long
Request for Information for Land Contamination Assessment

We are conducting a Technical Feasibility Study for Redevelopment of Pok Oi Hospital Yeung Chun Pui Care and Attention Home in Yuen Long (Subject Site). As required by the "Practice Guide for Investigation and Remediation of Contaminated Land" published by the Environmental Protection Department of the HKSAR (EPD), information pertaining to the change of land uses/past activities/incidents/accidents at the Subject Site are required as part of the vetting process.

Of particular interests are current and historical explosive storage locations and records at the Subject Site, and any explosive spillage and incident reports that we believe your Department might have records of. We enclosed herewith a site map showing the location of the Subject Site for your reference.

Due to tight schedule, it is highly appreciated if the above information could be available and returned to us via either fax (Fax No. [REDACTED]) or email by **2 November 2023**.

Thank you very much for your kind attention and assistance. Should you have any queries, please feel free to contact the undersigned at [REDACTED]

Yours sincerely,

A handwritten signature in black ink, appearing to be 'Cathy Man', written over a white background.

Cathy Man
Associate Director
CM/II

Encl. Site Location Plan

Allied Environmental Consultants Limited

Member of AEC Group (HKEX Stock Code: 8320.HK)

沛然環境評估工程顧問有限公司

沛然環保集團成員 (港交所股份代號: 8320.HK)

From: abdo-2-eod@police.gov.hk
To: [Leanna Lei](#)
Subject: RE: Land Contamination Assessment (Ref: 819.4524/23-0005)
Date: Wednesday, November 1, 2023 9:29:25 AM

Dear Ms Leanna Lei,

The letter with the above captioned reference number refers.

We do not hold record of any current and historical explosive storage locations for the mentioned site, as well as any explosive spillage and incident reports.

Please contact the undersigned if you have further query.

Best Regards,

LEUNG Kin-yip, Tommy
Assistant Bomb Disposal Officer 2
Explosive Ordnance Disposal Bureau
Hong Kong Police Force

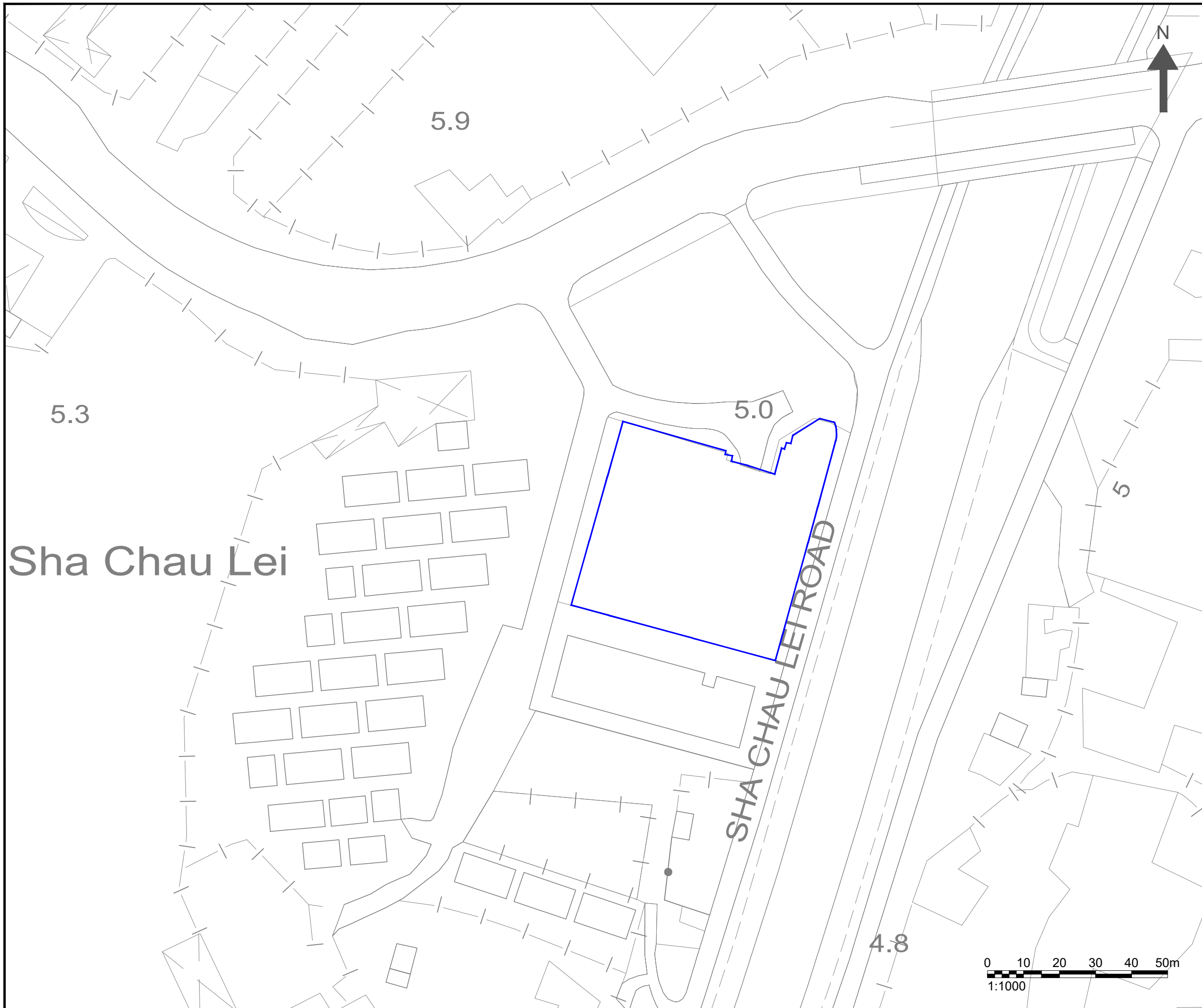
Tel: +852 2203 4297 (direct) / +852 2203 4290 (24-hour Depot Control Room)

Fax: +852 2203 4273


Address: EOD Depot, No. 150, Mount Butler Road, Jardine's Lookout, Hong Kong.

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NOTES :

 PROJECT SITE

Sha Chau Lei

Consultant



Allied Environmental Consultants Limited

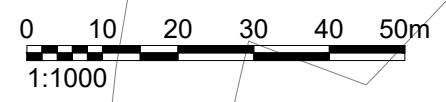
Project No. : 2164EA

Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI
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Drawing Title :
 PROJECT SITE LOCATION

Drawing No : Fig3.1	Revision : 1
Scale : AS SHOWN	Date : SEP 2023



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Appendix 9.3

Chemical Waste Producer Record

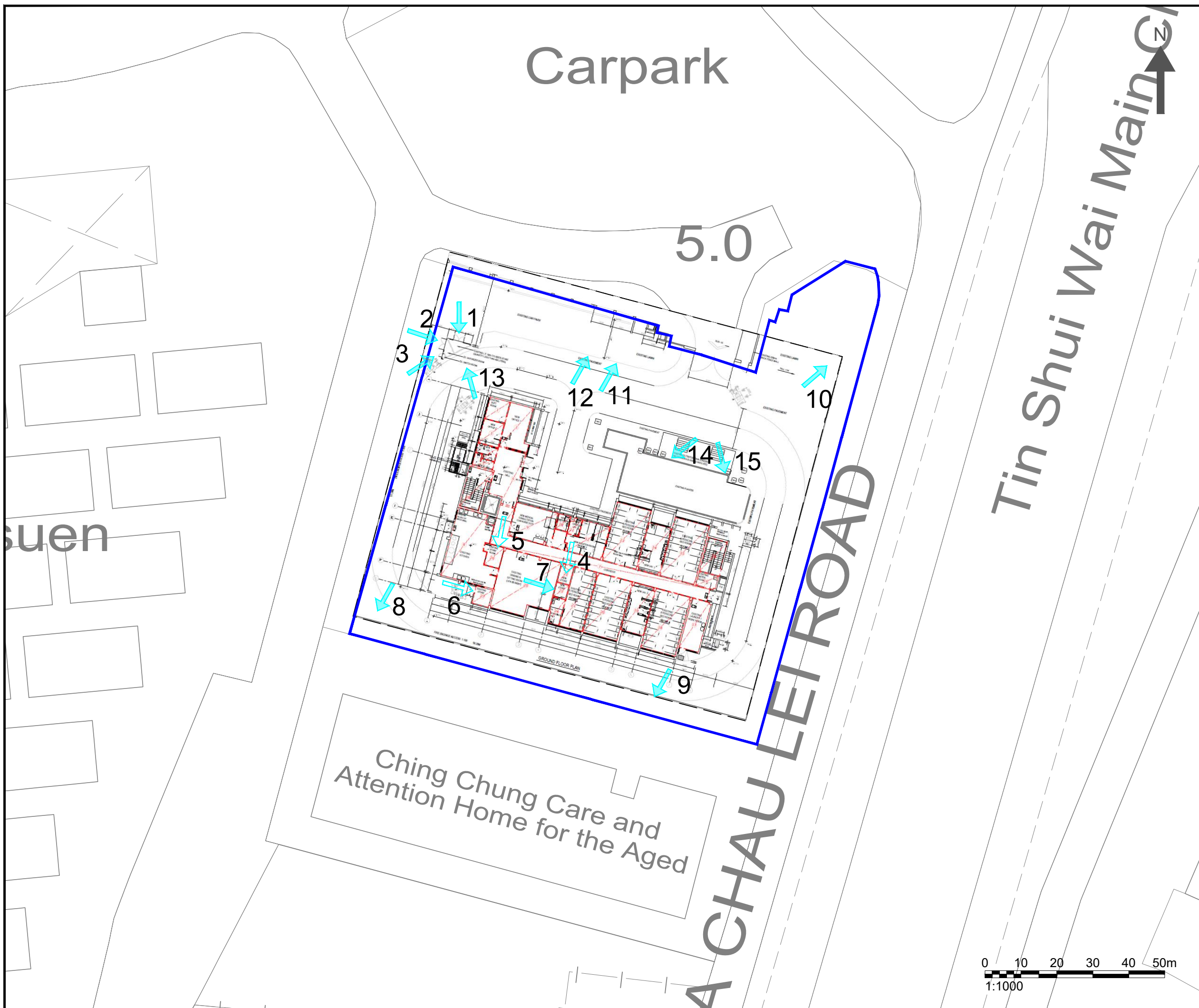
No Invalid WPN as of 03.05.2024



Valid WPN as of 03.05.2024

Waste Producer Name	Premises Address	Nature of Business
Yeung Chun Pui Care & Attention Home (pok Oi Hospital)	The Pok Oi Hospital Yeung Chun Pui Care and Attention Home, 58 Sha Chau Lei, Yuen Long, NT	Care and Attention Services

Appendix 9.4

Site Visit Photo Records



- NOTES :
-  PROJECT SITE
 -  PHOTOLOG TAKEN DIRECTION

Consultant



Allied Environmental Consultants Limited

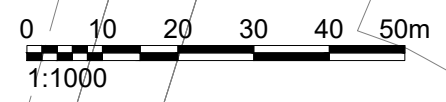
Project No. : 2164EA

Drawing By : LL

Project :
 PROPOSED REDEVELOPMENT OF POK OI HOSPITAL YEUNG CHUN PUI CARE AND ATTENTION HOME IN YUEN LONG

Drawing Title :
 PHOTOLOG MAP INDICATION

Drawing No : Fig9.3	Revision : 1
Scale : AS SHOWN	Date : FEB 2024



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Photo1



Photo2



Photo3



Photo4



Photo5



Photo6



Photo7



Photo8



Photo9



Photo10



Photo11



Photo12



Photo13



Photo14



Photo15

Appendix 9.5

Site Walkover Checklist

Annex C1

Site Walkover Checklist (23th Feb 2024)

GENERAL SITE DETAILS

SITE OWNER/CLIENT Pok Oi Hospital Yeung Chun Pui Care and Attention Home

PROPERTY ADDRESS 58 SHA CHAU LEI TSUEN, HA TSUEN, YUEN LONG, N.T.

PERSON CONDUCTING THE QUESTIONNAIRE

NAME Leanna Lei

POSITION Assistant Consultant (Allied Environmental Consultants Limited)

AUTHORIZED OWNER/CLIENT REPRESENTATIVE (IF APPLICABLE)

NAME Mr. Siu

POSITION Site representative

TELEPHONE [REDACTED]

SITE ACTIVITIES

Briefly describe activities carried out on site, including types of products/chemicals/materials handled.

Obtain a flow schematic if possible.

Number of employees:	Full-time: 41
	Part-time: 7
	Temporary/Seasonal: /
Maximum no. of people on site at any time:	48
Typical hours of operation:	Open hour: 9:15-5:30
Number of shifts:	3
Days per week:	7
Weeks per year:	52
Scheduled plant shut-down:	N/A

Detail the main sources of energy at the site:

Gas	Yes /No
Electricity	Yes/ No
Coal	Yes /No
Oil	Yes /No
Other	Yes /No

SITE DESCRIPTION

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: 3,090 sq.m

What area of the site is covered by buildings (%): 25%

Please list all current and previous owners/occupiers if possible. Pok Oi Hospital Yeung Chun Pui Care and Attention Home (current)

Is a site plan available? If yes, please attach. Yes/No

Are there any other parties on site as tenants or sub-tenants? Yes/No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Open public car park

South: Ching Chung Care and Attention Home for the Aged

East: Tin Shui Wai Main Channel and open storage to the further east

West: Sha Chau Lei Tsuen

Annex C1 – Site Walkover Checklist (Page 43)

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.).

Flat land

State the size and location of the nearest residential communities.

Sha Chau Lei village houses in the west with a separation distance of approximately 30m

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or sites of special scientific interest?

No

Questionnaire with Existing/Previous Site Owner or Occupier

Ref.		Yes/No	Notes
1.	What are the main activities/operations at the above address?	Yes	Residential Care Home for the Elderly
2.	How long have you been occupying the site?	Since 1984	
3.	Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy?)	Yes	The land was vacant before 1984
4.	Prior to your occupancy, who occupied the site?	N/A	
5.	What were the main activities/operations during their occupancy?	N/A	Residential Care Home for the Elderly
6.	Have there been any major changes in operations carried out at the site in the last 10 years?	No	
7.	Have any polluting activities been carried out in the vicinity of the site in the past?	No	
8.	To the best of your knowledge, has the site ever been used as a petrol filling station/car service garage?	No	
9.	Are there any boreholes/wells or natural springs either on the site or in the surrounding area?	No	
10.	Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	No	
11.	Are any chemicals used in your daily operations? (If yes, please provide details.)	Yes	Gas cylinder
	• Where do you store these chemicals?	Yes	In store room
12.	Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	N/A	
13.	Has the facility produced a separate hazardous substance inventory?	N/A	
14.	Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes,	No	

	please provide details.)		
15.	How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	N/A	
16.	Do you have any underground storage tanks? (If yes, please provide details.)	No	
	<ul style="list-style-type: none"> ▪ How many underground storage tanks do you have on site? 	N/A	
	<ul style="list-style-type: none"> ▪ What are the tanks constructed of? 	-	
	<ul style="list-style-type: none"> ▪ What are the contents of these tanks? 	-	
	<ul style="list-style-type: none"> ▪ Are the pipelines above or below ground? 	-	
	<ul style="list-style-type: none"> ▪ If the pipelines are below ground, has any leak and integrity testing been performed? 	-	
	<ul style="list-style-type: none"> ▪ Have there been any spills associated with these tanks? 	-	
17.	Are there any disused underground storage tanks?	No	
18.	Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	No	
19.	How are the wastes disposed of?	N/A	
20.	Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	
21.	Have any spills occurred on site? (If yes, please provide details.)	No	
	<ul style="list-style-type: none"> • When did the spill occur? 	-	
	<ul style="list-style-type: none"> • What were the substances spilled? 	-	
	<ul style="list-style-type: none"> • What was the quantity of material spilled? 	-	
	<ul style="list-style-type: none"> • Did you notify the relevant departments of the spill? 	-	
	<ul style="list-style-type: none"> • What were the actions taken to clean up the spill? 	-	
	<ul style="list-style-type: none"> • What were the areas affected? 	-	
22.	Do you have any records of major renovation of your site or rearrangement of underground utilities, pipe work/underground tanks (If yes, please provide details.)	No	
23.	Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	
24.	Are there any known contaminations on site? (If yes, please provide details.)	No	
25.	Has the site ever been remediated? (If yes, please provide details.)	No	

Observations

1.	Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	N/A	
2.	What are the conditions of the bund walls and floors?	-	
3.	Are any surface water drains located near to drum storage and unloading areas?	No	
4.	Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	Yes	General Refuse
5.	Is there a storage site for the wastes?		Yes, in bins/buckets (Photo 9 & 13)
6.	Is there an on-site landfill?	No	
7.	Were any stressed vegetation noted on-site during the site reconnaissance? (If yes, please indicate location and approximate size.)	No	
8.	Were any stained surfaces noted on-site during the site reconnaissance? (If yes, please provide details.)	No	
9.	Are there any potential off-site sources of contamination?	Yes	Car park to the work of application site is what potential off-site source of catchment. Only car park can with vehicle monitoring works.
10.	Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	
11.	Are there any sumps, effluent pits, interceptors or lagoons on site?	No	
12.	Any noticeable odours during site walkover?	No	
13.	Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ash, oily tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	No	