

Annex 1

Revised Environmental Assessment



Proposed Residential Development at Lot 182 S.B. in DD128, Lau Fu Shan

Environmental Assessment Report

Reference: P058/01 Issue 3

Date: January 2023

Confidential





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Checked and Approved by:

Patrick Ip
Director

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Date: January 2023

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1 Introduction

1.1 Background

The Applicant intends to develop a Villa at Lot 182 S.B in D.D.128 in Lau Fu Shan, New Territories (hereafter as “the Site”).

According to the Approved Ha Tsuen Fringe Outline Zoning Plan (No. S/YL-HTF/12) published by Town Planning Board in October 2018, the site is currently zoned as “Residential (Group D) “.

Urban Green Consultants Limited (UGC) has been commissioned to conduct an Environmental Assessment (EA) to assess the potential impact on the proposed development.

1.2 Objectives of the EA

The EA has identified and addressed the following major environmental issues:

- Identify the sensitive uses that will likely be affected by the operation of the Site;
- Assess and evaluate the potential noise impacts due to site operations upon the sensitive uses;
- Assess and evaluate the potential air quality impacts on the sensitive uses; and;
- Propose mitigation measures, where necessary, to reduce the environmental impacts to an acceptable level.

1.3 Report Structure

The remaining chapters of this report are shown below:

Chapter 2 – Site Context

Chapter 3 – Air Quality

Chapter 4 – Noise

Chapter 5 – Water Quality Impact

Chapter 6 – Waste Management

Chapter 7 – Land Contamination

Chapter 8 – Conclusion

2 Site Context

2.1 Site Location and the Environment

The Site is located in Lau Fu Shan. To the east of the site is an open storage yard for recycling materials and a warehouse. To the south are open storage yards for metals and a recyclable collection centre. To the west is an open storage yard for construction materials. To the north are vacant land, shrubland and a recyclables collection centre. The Site area is approximately 2,550 m².

[Figure 2.1](#) shows the Site Location and the environment.

2.2 Proposed Development

The project site is currently zoned as “Residential (Group D)”. The proposed development is a Villa. The building height will be approximately 6 m (1 storey). The building comprises of swimming pool, 6 bedrooms, entertainment room, study room, kitchen, dining & living room. Operation year of the proposed development is expected to be Year 2024.

The master layout plan and floor plans are presented in [Appendix A](#).

3 Air Quality Impact

3.1 Introduction

This section aims to assess the potential air quality impact arising from the proposed development during construction and operation phase.

3.2 Statutory Requirements and Guidelines

Chapter 9 of the HKSPG stipulates the AQOs issued under the APCO. An updated AQOs was in force on 1 Jan 2022 and the relevant criteria for this assessment are tabulated in Table 3.1.

Table 3.1 Hong Kong Air Quality Objectives

Pollutant	Averaging time	Concentration limit [i] ug/m ²	No. of exceedances allowed
Sulphur dioxide	10-minute	500	3
	24-hour	50	3
Respirable suspended particulates (PM10) [ii]	24-hour	100	9
	Annual	50	Not applicable
Fine suspended particulates (PM2.5) [iii]	24-hour	50	35
	Annual	25	Not applicable
Nitrogen dioxide	1-hour	200	18
	Annual	40	Not applicable
Ozone	8-hour	160	9
Carbon monoxide	1-hour	30,000	0
	8-hour	10,000	0
Lead	Annual	0.5	Not applicable

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 293 Kelvin 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.

3.3 Nearby Air Sensitive Receivers (ASRs)

Nearby existing ASRs located within 300 m of study area from the Project site have been identified and details are provided in Table 3.2, and their locations are shown in Figure 3.1.

Table 3.2 Nearby Air Sensitive Receivers (ASRs)

ASR	Location	Type
ASR 1	Wing Jan Church	Institutional

3.4 Air Quality During Construction Phase

The major air pollution source are fugitive dust and smoke emission during the construction stage, especially excavation work. The area of excavation is about 2,550 m² and the volume of excavation is about 5,099 m³. The construction of the proposed development shall comply with the guidelines listed below:

- Construction dust shall be controlled in accordance with the requirements as listed in the Schedule of the Air Pollution Control (Construction Dust) Regulation of APCO. Also, notice of notifiable works as defined under the Regulation shall be completed by the Contractor and sent to the Environmental Protection Department (EPD).
- Dark smoke emission of the machines used for construction shall comply with the requirements of the Air Pollution Control (Smoke) Regulation of APCO.
- All of the Non-road Mobile Machinery (NRMMS) used for the construction shall comply with the Air Pollution Control (NRMMS) (Emission) Regulation.

To mitigate fugitive dust impact, all dust control measures recommended in the Air Pollution Control (Construction Dust) Regulation, where applicable, will be implemented. Typical relevant dust control measures include:

- The works area for site clearance shall be sprayed with water before, during and after the operation so as to maintain the entire surface wet;
- Restricting heights from which materials are to be dropped, as far as practicable to minimise the fugitive dust arising from unloading/ loading;
- Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from its body and wheels;
- All spraying of materials and surfaces should avoid excessive water usage;
- Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle;
- Travelling speeds should be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks;
- Erection of hoarding of not less than 2.4 m high from ground level along the site boundary;
- Any stockpile of dusty materials shall be covered entirely by impervious sheeting; and/or placed in an area sheltered on the top and 4 sides; and
- All dusty materials shall be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.
- Adopt a higher hoarding height close to those concerned ASRs.
- Locate the haul road away from those concerned ASRs.
- Avoid dusty works or placing stockpile near those concerned ASRs.
- **Electric power supply for on-site machinery should be considered as far as practicable. Diesel generators and machinery shall be avoided to minimize the gaseous and PM emissions.**

With the implementation of the mitigation measures, no adverse construction dust impact is anticipated.

3.5 Air Quality During Operational Phase

Air Quality Impact from the Proposed Development

The proposed development is a residential use. As a result, there are no expected air pollutants emissions during operation phase. No potential air quality impacts area is expected due to the proposed development.

Vehicular Emission Impact on the Proposed Development

Only rural roads can be found at the south of the Proposed Development. As the no. of vehicle would be minimal, no vehicular emission impact is anticipated. Also, given that there is a large distance between Deep Bay Road and the Proposed Development which is about 250m, there would be no vehicular emission impact.

Chimney Emission

Based on the site survey was conducted on 3 Dec 2021 and desktop survey, no chimneys are found within 300m of the Proposed Development.

Odour Emission

Based on the site survey was conducted on 3 Dec 2021, no odour impact was found at the warehouse, recyclables collection centres and open storage yard.

The proposed septic tank would be fully enclosed. Thus, no odour emission from the septic tank will affect the proposed development. Furthermore, the distance between the proposed septic tank to ASR 1 is about 305m. Therefore, no odour impact would be anticipated.

4 Noise

4.1 Introduction

This section aims to assess the potential noise impacts upon proposed development during occupancy and the noise impacts from the proposed development on the adjacent sensitive uses.

4.2 Criteria and Guidelines

Noise Impact from Existing Fixed Source Noise

Under Noise Control Ordinance (NCO), noise criteria for existing fixed noise sources are stipulated in the Technical Memorandum for the Assessment of Noise from Place other than Domestic Premises, Public Places or Construction Sites” (IND-TM).

The site is located within rural area and surrounded by open storage yards, warehouse, recyclable collection centre, vacant land and shrubland. Given the type of area for the subject site is classified as “Type (i) Rural area, including country parks or village type development” and it will not be affected by the IFs, the Area Sensitivity Rating of the subject site area is defined as “A”. Noise standards for this fixed noise impact assessment are tabulated in [Table 4.1](#).

Table 4.1 Noise Standard for Fixed Noise Source

Time Period	Acceptable Noise Level(ANL) in IND-TM,dB(A)
Day and Evening (0700-2300 hours)	60
Night (2300-0700 hours)	50

Noise Impact from Planned Fixed Source Noise

According to the HKPSG, the noise standards [in $L_{Aeq(30min)}$] from the planned fixed noise sources should be 5 dB(A) below the **Acceptable** Noise Level (ANL) as specified in the IND-TM or as the prevailing background noise level at the façade of the Noise Sensitive Receivers (NSRs). As mentioned, the ASR is defined as “A”. The ANL and the HKPSG standards for the noise impact from the planned fixed noise sources as tabulated in [Table 4.2](#).

Table 4.2 Noise Standards for Planned Fixed Noise Source

Time Period	Acceptable Noise Level(ANL) in IND-TM,dB(A)	IND-TM Noise Standard for Planned Fixed Noise Source, [ANL-5dB(A)], dB(A)
Day and Evening (0700-2300 hours)	60	55
Night (2300-0700 hours)	50	45

4.3 Nearby Noise Sensitive Receivers

Nearby existing NSRs located within 300 m of study area from the Project site have been identified and details are provided in Table 4.3, and their locations are shown in Figure 3.1.

Table 4.3 Nearby Noise Sensitive Receivers (NSRs)

NSR	Location	Type
NSR 1	Wing Jan Church	Institutional

4.4 Background Noise Condition

Noise surveys were conducted on 3 Dec 2021 to obtain the prevailing background noise level during daytime and evening for determining ANL of the NSR. The measurement point was taken at 1.2m, above the ground level, in free field and L90 (1 hour) noise measurements were recorded. The measured prevailing noise levels and established noise standard to be complied with accordance to IND-TM for fixed plant sources are summarised in Table 4.4.

Table 4.4 Measurement of Background Noise Level (Daytime and Evening period)

Measurement Period	Measured Background Noise Level, L90 (1 hour)	Noise Standard For Planned Fixed Noise Source [ANL-5dB(A)], dB(A)
Day	59.2	55
Evening	55.1	55

4.5 Road Traffic Noise

As the proposed development is a residential development which is a sensitive use, the road traffic noise impact of Deep Bay Road shall be assessed. The noise standard of road traffic is 70 L10 (1 hour) dB(A) for domestic premises as shown in Table 4.1 in Chapter 9 of HKPSG. The noise level of Deep Bay Road is predicted based on Table 4.2 and Table 4.3 in Chapter 9 of HKPSG.

Deep Bay Road is located 250m from the proposed development as shown in Figure 4.1. According to Annual Traffic Census 2021 published by Transport Department, Deep Bay Road is a local district road and the annual average daily traffic in 2021 was 2,570. The vehicular speed is 50 kph. Based on Table 4.2 in Chapter 9 of HKPSG, the façade noise level of Deep Bay Road is 81 dB(A).

Table 4.5 gives the approximate separations required for achieving the noise standard for residential developments fronting various types of roads. Deep Bay Road is a local distributor and there are no screening structures, the required separation is approximately 120m. Since the distance separation between Deep Bay Road and the proposed development is about 250m, the noise standard of L10 (1 hour) 70 dB(A) can be achieved. Table 4.6 summarise the result of the road traffic noise impact of Deep Bay Road. It is anticipated that there is no road traffic noise impact on the proposed development.

Table 4.5 Board Guidelines of Separations Required between Various Types of Roads and Residential Development

Road Type	Assumption		Distance Separation to meet L10(1h) 70dB(A)	
	Traffic flow (veh/h)	Vehicular speed (kph)	Without screening	With screening*
Trunk	5000	70	Approx.300m	Approx.50m
Primary Distributor	3000	50	Approx.180m	Approx.40m
District Distributor/Local Distributor	2000	50	Approx.120m	Approx.30m

* under or about 45o angle of view of receiver on road traffic

Table 4.6 Summary of Road Traffic Noise Impact of Deep Bay Road

Required Distance Separation	Distance separation between Deep Bay Road and the proposed development	Complied? (Y/N)
Approx.120m	Approx..250m	Y

4.6 Noise During Construction Phase

Sources of Noise Impact

During construction of the proposed development, it is anticipated that general construction works with the use of PMEs will be the primary noise source from the Site.

The equipment inventory should be subject to the selection from the contractor and to ensure the construction noise impact is within the acceptable level.

Noise mitigation Measures

With reference to the Practice Note for Professional Persons (ProPECC 2/93) Noise from Construction Activities – Non-statutory Controls, recommended noise mitigation measures include implementation of good site practices, use of quieter PME, avoidance of concurrent construction activities within an active construction site, siting of facilities and application of the acoustic screen.

Implement of Good Site Practices

Good site practices can reduce the noise impacts on affected NSRs, although the effectiveness of those practices can vary depending on actual site conditions, and hence it is difficult to quantify effectiveness. The recommended practices are as follows:

- PMEs should be kept to a minimum and the parallel use of them should be avoided;
- Intermittent use of PME which can be shut down between work periods or throttled down to a minimum;
- Mobile PME should be sited as far from NSRs as possible;
- PME known to emit noise strongly in one direction should be oriented to direct away from the nearby NSRs; and
- Only well-maintained plant should be operated on-site and PME should be serviced regularly during construction programme.

Use of Quieter PME

Using the quieter PME is considered as a practical measure to significantly reduce the noise impacts. Quieter PME are defined as having SWLs less than those listed in the GW-TM.

The Contractor has the flexibility to select appropriate quieter PME models on the condition that the SWL of each selected quieter PME plant is less than or equal to the SWL.

Use of Noise Barrier/Enclose

With the adoption of mobile temporary noise barrier locating as close as possible to the noise source, a general assumption of 5dB(A) reduction for movable PME, 10 dB(A) for stationary PME can be achieved in accordance with Guidance Note No. 9/2010 "Preparation of Construction Noise Impact Assessment Under the Environmental Impact Assessment Ordinance (EIAO) (EIAO-GN No. 9/2010)" published by EPD.

Others

To minimise inconvenience and environmental nuisance to nearby residents and other sensitive receivers, "Recommended Pollution Control Clause for Construction Contracts" of the EPD should be adopted.

Construction Works during Restricted Hours

The Contractors should apply the Construction Noise Permit (CNP) granted by the EPD if there are general construction activities with the use of PME and carry out Prescribed Construction Works (PCWs) during the restricted hours of 1900-0700 hours for all days and 1700-1900 hours on Sunday and public holidays.

4.7 Noise During Operation Phase

Noise Impact from Potential Noise Source within the Development

The proposed development is a Villa. Potential fixed plant noise will include building service equipment and mechanical ventilation provisions for the plant room, etc. As the building service equipment and the plant room will be fully enclosed by building structure, the potential breakout noise should be minimal. Thus, no adverse noise impact is anticipated.

Noise Source from Surrounding Area

The open storage yard, warehouse and recyclable collection centre shown in [Figure 4.1](#) are only used for storage and do not have any fixed plant. [Appendix B](#) shows the existing surrounding environment. No potential noise source is identified within 300m of the Site boundary, adverse noise impact on the proposed development is not anticipated.

5 Water Quality

5.1 Introduction

This section addresses the potential sources of water quality impact associated with the construction and operation phases of the proposed development. The relevant statutory requirements and mitigation measures recommended in order to minimize impacts are presented in this section.

5.2 Criteria and Guidelines

The construction of the Site shall comply with the Water Pollution Control Ordinance (WPCO) and its Technical Memorandum. Guidelines for preparation of drainage plans in ProPECC PN 5/93 “Drainage Plans subject to Comment by the Environmental Protection Department” and handling construction site runoff and discharges in ProPECC PN 1/94 “Construction Site Drainage” should be followed.

5.3 Representative Water Sensitive Receivers

Based on the desktop study followed by site visit conducted on 3 December 2021, no area of conservation value, ecological importance, agriculture activity or fish pond near the Site was identified. A water sensitive receiver (WSR) (i.e. WSR1 – Hang Hau Tsuen Nullah) was identified within the study area of 300m from the site boundary. The location of the WSR is shown in [Figure 5.1](#).

Table 5.1 Water Sensitive Receiver

WSR	Location
WSR 1	Hang Hau Tsuen Nullah

5.4 Water Quality During Construction Phase

Construction site runoff and drainage, sewage effluent and liquid/ chemical spillage generated from construction activities are the potential pollution sources and may induce water quality impact if not properly controlled.

The Contractor shall apply for a Discharge License from EPD in accordance with the WPCO. The effluent standards will have to comply with the Discharge License requirements. Appropriate water pollution control measures shall be implemented on-site during construction as follows:

- High loading of suspended solids (SS) in construction site runoff shall be prevented through proper site management by the contractor;

- Construction works should be programmed to minimise soil excavation works where practicable during rainy conditions. Exposed soil surfaces should be protected from rainfall through covering temporarily exposed slope surfaces or stockpiles with tarpaulin or the like;
- Temporary ditches, earth bunds will be created/ provided where necessary to facilitate directed and controlled discharge of runoff into storm drains via sand/ silt removal facilities such as sand traps, silt traps and sediment retention basin;
- Sand and silt removal facilities, channels and manholes will be regularly maintained and the deposited silt and grit should be removed by the contractor, and at the onset of and after each rainstorm to ensure that these facilities area functioning properly;
- Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system;
- Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before the vehicles are leaving the site area;
- Section of the road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains; and
- Chemical toilet(s) will be provided for workers during construction stage. All chemical toilets, if any, shall be regularly cleaned and the night-soil collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal.

Regarding management of chemicals such as oils and solvents involved with Project construction, the following measures shall apply:

- Plant workshop/ maintenance areas should be bunded and constructed on a hard standing. Sediment traps and oil interceptors should be provided at appropriate locations;
- Oil and grease removal facilities should also be provided where appropriate, for example, in area near plant workshop/ maintenance areas; and
- Chemical waste arising from the site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) Regulation.

As the above water pollution control measures will be properly implemented during the construction stage, the effluent discharge shall be in compliance with the discharge license requirements, and the Technical Memorandum (TM) under WPCO.

The construction site runoff and wastewater arising from the Site will be properly treated according to the aforesaid control measures. The effluent discharge will be in compliance with the discharge license requirements, and the Technical

Memorandum (TM) under WPCO. Hence, no adverse impact on the WSR is anticipated.

5.5 Water Quality During Operation Phase

During operation phase, domestic sewage including toilet flushing would be the major wastewater discharge arising from the Project. Septic tank system will be built to collect all the sewage. All stormwater/rainwater from the Project site will be conveyed to the stormwater drain. A WPCO license is not required to be obtained for the mentioned discharges. With a properly designed sewerage and drainage system, no insurmountable water quality impacts would be generated from operation of the Project

6 Waste Management

6.1 Introduction

This section identifies the types of wastes that are likely to be generated during the construction and operation phases of the Project and evaluates the associated waste management implications that may result from these waste types.

6.2 Criteria and Guidelines

The Waste Disposal Ordinance prohibits the unauthorised disposal of wastes, with waste defined as any substance that is abandoned. All wastes should be properly stored and disposed in accordance with relevant waste management regulations and guidelines listed below:

- Waste Disposal Ordinance (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N);
- Land (Miscellaneous Provisions) Ordinance (Cap. 28);
- Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation;
- Environment, Transport and Works Bureau Technical Circular (Works) No. 19/2005, Environmental Management on Construction Sites;
- Development Bureau (Works) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Waste;
- Development Bureau (DEVB) Technical Circular (Works) (TC(W)) No. 6/2010 – Trip Ticket System for Disposal of C&D Materials; and
- Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers, No. ADV-19, Construction and Demolition Waste.

6.3 Waste During Construction Phase

Construction wastes are likely to be generated from the demolition, excavation and construction of structure works. Construction wastes should be at least segregated into inert Construction and Demolition (C&D) materials (i.e. public fills) and non-inert C&D materials (i.e. C&D waste). All wastes should be properly stored and disposed. Waste disposal during the construction stage will follow the trip ticket system and comply with legislation requirements including:

- Application for a billing account in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation under WDO; and
- Registration as a Chemical Waste Producer and storage/disposal of chemical wastes in accordance with the Waste Disposal (Chemical Waste) (General) Regulation under WDO.

The following types of wastes are anticipated during the construction of the proposed development:

- Construction and Demolition (C&D) materials;
- Chemical waste; and
- General refuse.

Construction and Demolition (C&D) Materials

C&D materials would be generated from demolition, excavation and construction activities during the course of the works. Waste-generating activities include excavation activities, concrete works and internal / external finishing works. Concrete debris and packaging material would also be produced.

All C&D materials generated shall be sorted into inert and non-inert portion of C&D materials. Where practicable, on-site reuse of inert portion of C&D materials shall be encouraged to minimise material volumes requiring off-site transport/ disposal. Disposal outlets such as public fill reception facilities shall be identified for inert C&D materials if no on-site reuse opportunities exist. Non-inert C&D materials should be re-used or recycled as far as possible. Landfill disposal should be considered as the last resort for non-inert C&D materials handling.

The Land (Miscellaneous Provisions) Ordinance requires that individuals or companies, who deliver inert C&D materials to the public fill reception facilities, must obtain Dumping Licences. The licences are issued by CEDD under delegated authority from the Director of Lands.

Disposal of C&D materials from the site to the public fill reception facilities and designated landfill shall be controlled under the trip-ticket system under the Development Bureau Technical Circular (Works) No. 6/2010 in order to minimise the incidence of illegal dumping.

The methods to minimise the generation of C&D materials will be addressed during detailed design and in planning of the construction works. According to ADV-19,

Waste Management Plan (WMP) will be prepared by Contractor and be submitted to Architect/ Engineer for approval before construction works.

Chemical Waste

The maintenance and servicing of construction plant and equipment may generate a small amount of chemical wastes during construction works, such as cleaning fluids, solvents, lubrication oil and fuel.

Chemical wastes arising during the construction stage may pose environmental, health and safety hazards if not stored and disposed of in an appropriate manner as stipulated in the Waste Disposal (Chemical Waste) (General) Regulations. The potential hazards include:

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

Materials classified as chemical wastes will require special handling and storage arrangements before removal for appropriate treatment at the Chemical Waste Treatment Centre (CWTC) or other licensed facilities. Wherever possible opportunities should be taken to reuse and recycle materials.

Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste published by the EPD. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation to monitor all movements of chemical wastes which would be collected by licensed chemical waste collectors to a licensed facility for final treatment and disposal.

Provided that this occurs, and the chemical waste is disposed at a licensed chemical waste treatment and disposal facility, the potential environmental impacts arising from the storage, handling and disposal of a small amount of chemical waste generated from the construction activities will be negligible.

General Refuse

The workforce will generate refuse comprising food scraps, paper waste, empty containers, etc. Such refuse will be properly stored in designated area prior to collection and disposal. Disposal of refuse at Site other than approved waste transfer or disposal facilities will be prohibited. Effective collection of site wastes will prevent waste materials being blown around by wind, or creating an odour nuisance or pest and vermin problem. Waste storage areas will be well maintained and cleaned regularly.

The daily arising of general refuse during the construction period would be small volume and such waste can be effectively controlled by recommended waste management mitigation measures stated in [Section 6.4](#). With the implementation of good waste management practices at the site, adverse environmental impacts are not expected to arise from the storage, handling and transportation of workforce wastes.

6.4 Waste During Operation Phase

General Refuse

General refuse is anticipated during the operation of the proposed development. General refuse will arise from daily activities of residents of the proposed development. General refuse will include food scraps, paper waste and containers. The storage of general refuse has potential to give rise to adverse environmental impacts. These include odour if waste is not collected frequently, windblown litter and visual impact. The Site may also attract pests and vermin if the waste storage area is not well maintained and cleaned regularly.

General refuse generated during the operation stage will be collected at the refuse collection point provided within the Site for further collection. The waste management practice will comply with the statutory requirements. In line with Government's position on waste minimization, the practice of avoiding and minimising waste generation and waste recycling should be adopted as far as practicable. Waste reduction and management including the provision of recycling bins and adequate space to facilitate separation, collection and storage of recyclable materials for recycling will be implemented.

It is anticipated that the amount of general refuse to be generated from the operation of the proposed development is small. With the implementation of good waste management practices, the environmental impacts caused by storage, handling, transport and disposal of general refuse are expected to be minimal.

6.5 Recommended Waste Management Mitigation Measures

While potentially significant waste management impacts are not envisaged, given the potential for secondary impacts (e.g., dust, noise, water quality and visual impacts) mitigation measures are required to ensure proper waste handling, storage, transportation and disposal during the operational stage.

In line with Government's position on waste minimisation, the practice of avoiding and minimising waste generation and waste recycling should be adopted as far as practicable. Recommended mitigation measures to be implemented:

Construction Stage

- Soil generated from the excavation will need to be properly handled to minimise contamination to surface waters and any exposed ground areas due to leakage or improper storage (i.e. onto bare ground instead of into tanks);
- The reuse/ recycling of all materials on-site shall be investigated prior to treatment/ disposal off-site;
- Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation;

- All waste materials shall be sorted on-site into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. Inert material, or public fill will comprise stone, rock, masonry, brick, concrete and soil which is suitable for land reclamation and site formation whilst non-inert materials include all other wastes generated from the construction process such as plastic packaging and vegetation (from site clearance);
- The Contractor shall be responsible for identifying what materials can be recycled/ reused, whether on-site or off-site. In the event of the latter, the Contractor shall make arrangements for the collection of the recyclable materials. Any remaining non-inert waste shall be collected and disposed of at landfill whilst any inert C&D materials shall be reused on-site as far as possible. Alternatively, if no use of the inert material can be found on-site, the materials can be delivered to a Public Fill Area or Public Fill Bank after obtaining the appropriate license. The storage, handling, transportation and disposal of C&D materials shall be conducted in accordance with the ETWB TCW No. 19/2005, Environmental Management on Construction Sites;
- Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor shall register as a Chemical Waste Producer if chemical wastes such as spent lubricants and paints are generated on-site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated at site. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and a Guide to the Chemical Waste Control Scheme both published by EPD;
- A sufficient number of covered bins shall be provided on-site for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the issue of ETWB TCW No. 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness, the Contractor is required to maintain a clean and hygienic site throughout the project works;
- Tool-box talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling; and
- The Contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the course of construction.

Operational Stage

- Waste reduction and management including the provision of recycling bins and adequate space to facilitate separation, collection and storage of recyclable materials for recycling in the Refuse Storage and Material Recovery Chamber will be implemented.

7 Land Contamination

7.1 Introduction

This section aims to identify the potential land contamination issues through studying the aerial photos.

7.2 Relevant Legislation, Standards and Guidelines

The relevant legislations, standards and guidelines applicable to the present study for the review of land contamination implications include:

- Guidance Note for Contaminated Land Assessment and Remediation;
- Guidance Manual for Use of Risk-based Remediation Goals (“RBRGs”) for Contaminated Land Management; and
- Practice Guide for Investigation and Remediation of Contaminated Land.

7.3 Description of Existing Environment

Currently, there is no development at the proposed development and it is a vacant land.

7.4 Identification of Potential Land Contamination

Historical aerial photographs were reviewed to identify previous land uses at the proposed Project Site and any previous contaminative activities. There are no identified sources of potential land contamination from previous land uses based on review of historical aerial photographs. The reviewed aerial photographs are provided in [Appendix D. Table 7.1](#) summarised the land use from 1974 to 2020.

Table 7.1 Summary of Land Use from 1974 to 2020

Year	Land Use
1974	Farmland
1989	Vegetated land
1991	Vegetated land
2002	Vegetated land
2015	Vegetated land
2020	Vacant land

Based on the historical aerial photographs and site visit, it is not expected there will be potential land contamination issues at the Project Site.

8 Conclusions

The Environmental Assessment (EA) is prepared to identify all potential environmental impacts and relevant environmental requirements due to the operation of the proposed development.

Air Quality Impact

The proposed development is a residential use. As a result, there are no expected air pollutants emissions during operation phase and such, no potential air quality impacts are expected due to proposed development

No chimney emission was found within 300 m of the Site, no unacceptable air quality impact arising from vehicular and industrial emissions on the proposed development is anticipated.

Noise Impact

As the distance separation between Deep Bay Road and the proposed development is about 250m which could achieve the noise standard of 30m. No road traffic noise impact is anticipated.

Building service equipment and plant room will be fully enclosed by building structures. Hence, no adverse noise impact is anticipated.

No fixed plants are recognised in nearby open storage yard, recyclable collection centre and warehouse, no adverse noise impacts are anticipated on the proposed development.

Water Quality Impact

The effluent discharge will be in compliance with the discharge license requirements, and the Technical Memorandum (TM) under WPCO. Hence, no adverse impact on the WSR is anticipated during construction.

Regarding the water quality during operational stage, the sewage generated from the proposed development will be collected by the septic tank system. Hence, no adverse water quality impact is anticipated.

Waste Management

The potential impacts of waste arising from construction and operation phases of the proposed development have been assessed. With the implementation of waste management measures, waste generated/disposed of the proposed development should not lead to any adverse impact.


Land Contamination

Currently, there is no development at the Site. With the review of historical photograph and site visit, it is not expected there will be potential land contamination issues at the Project Site.

Figures



LEGEND

 Site Boundary

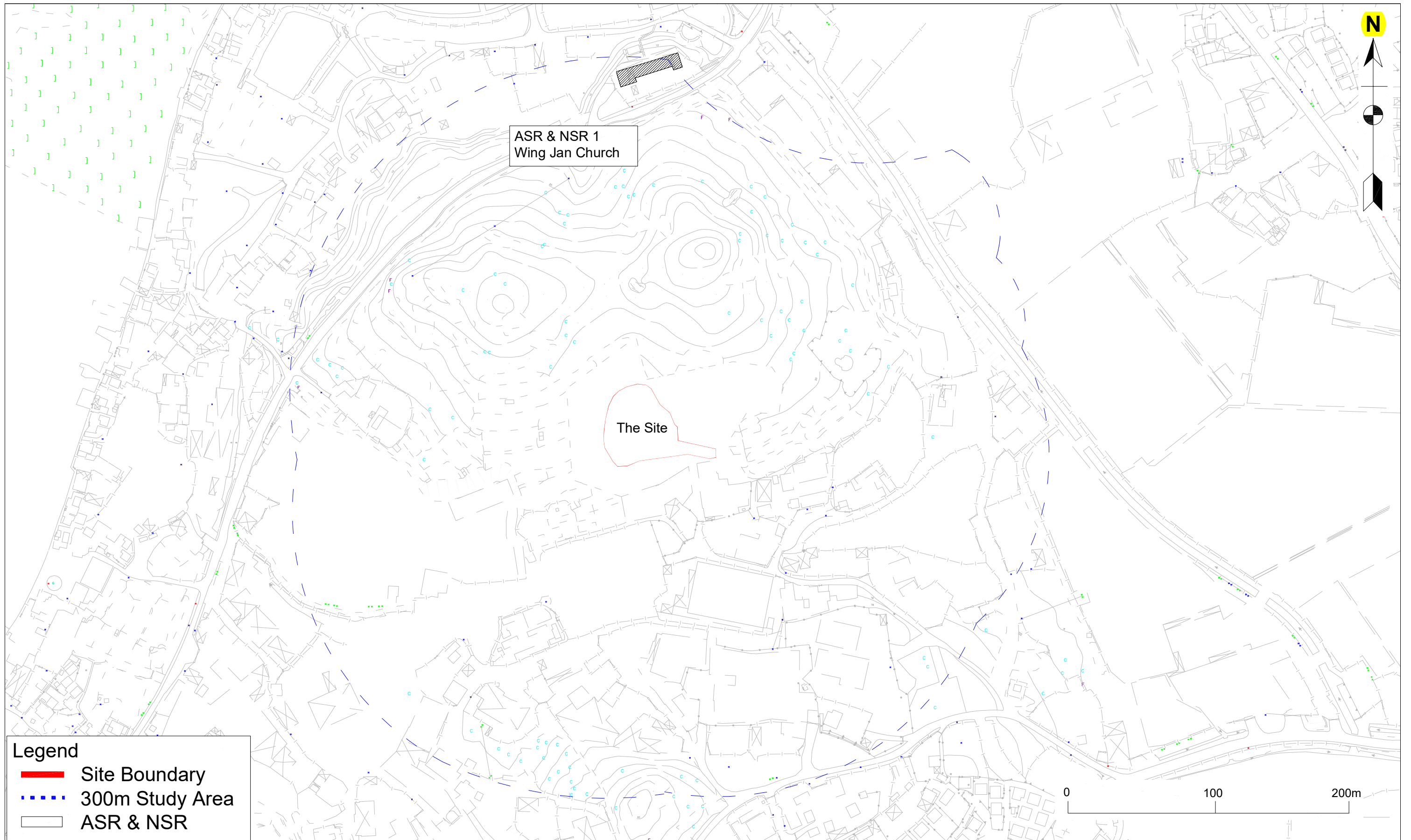


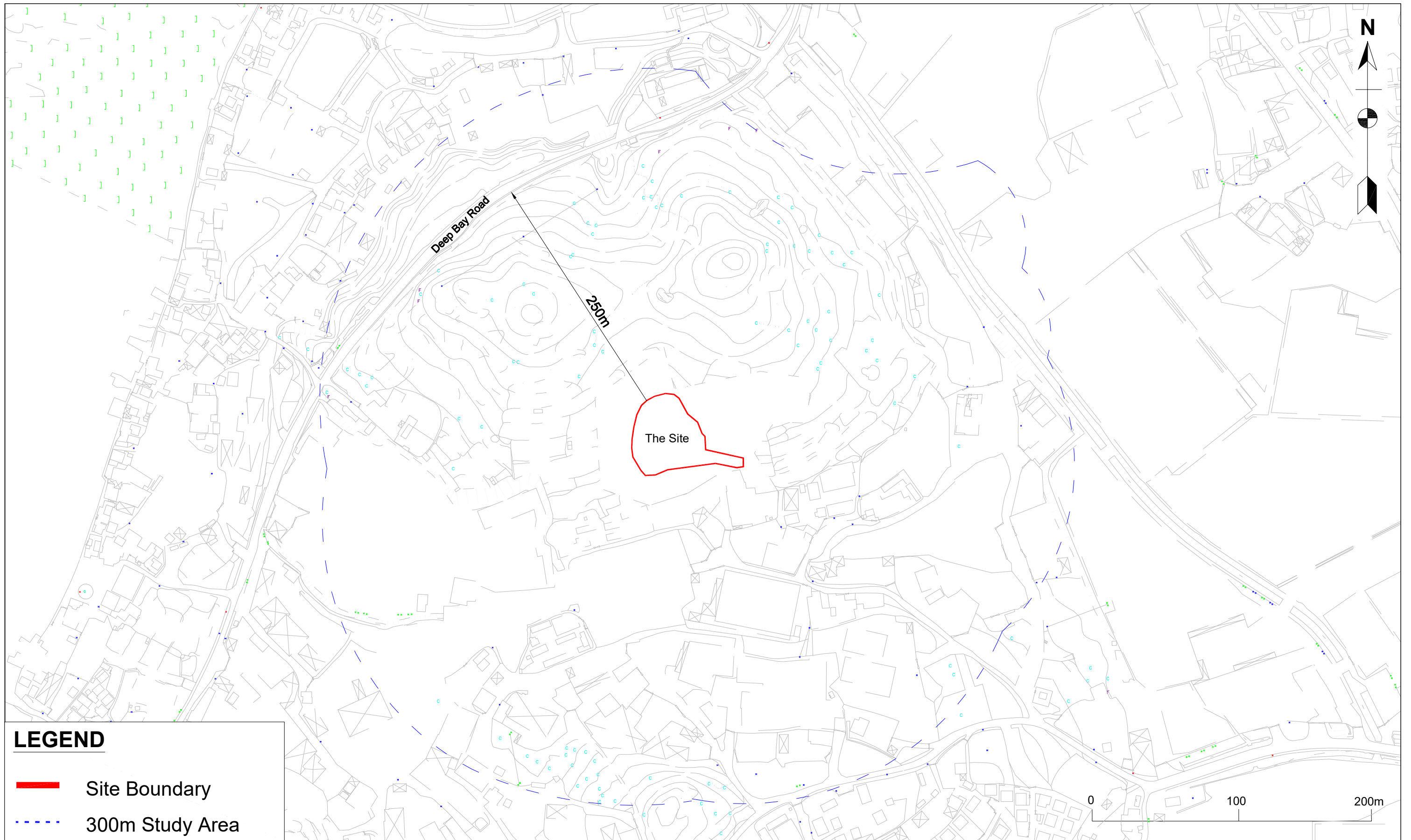
Proposed Residential Development at Lot 182 S.B. in DD128

Site Location and its Environ

Figure 2.1

Rev. 0





LEGEND

- Site Boundary
- - - 300m Study Area

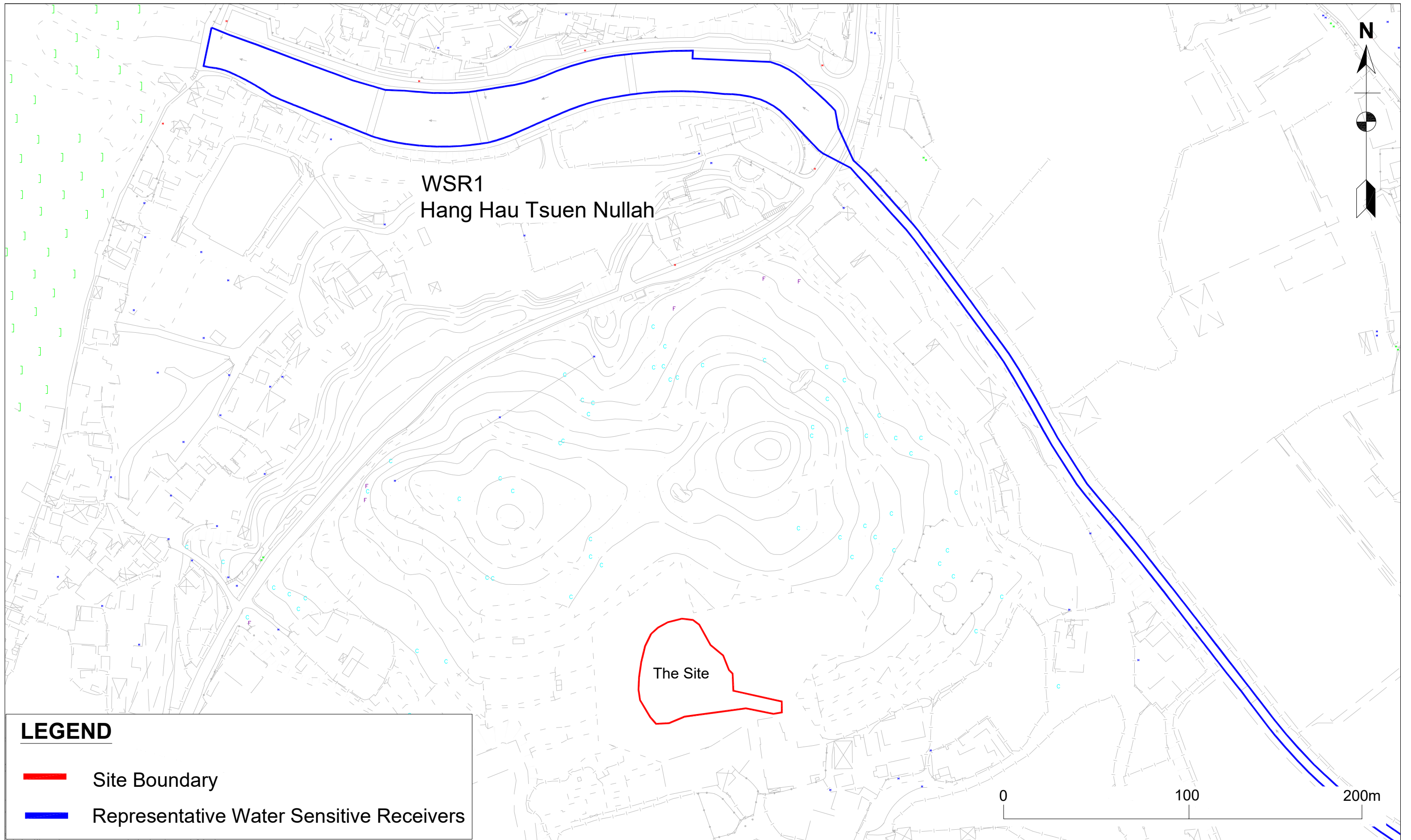
Proposed Residential Development at Lot 182 S.B. in DD128

300m Noise Study Area

Figure 4.1

Rev. 0



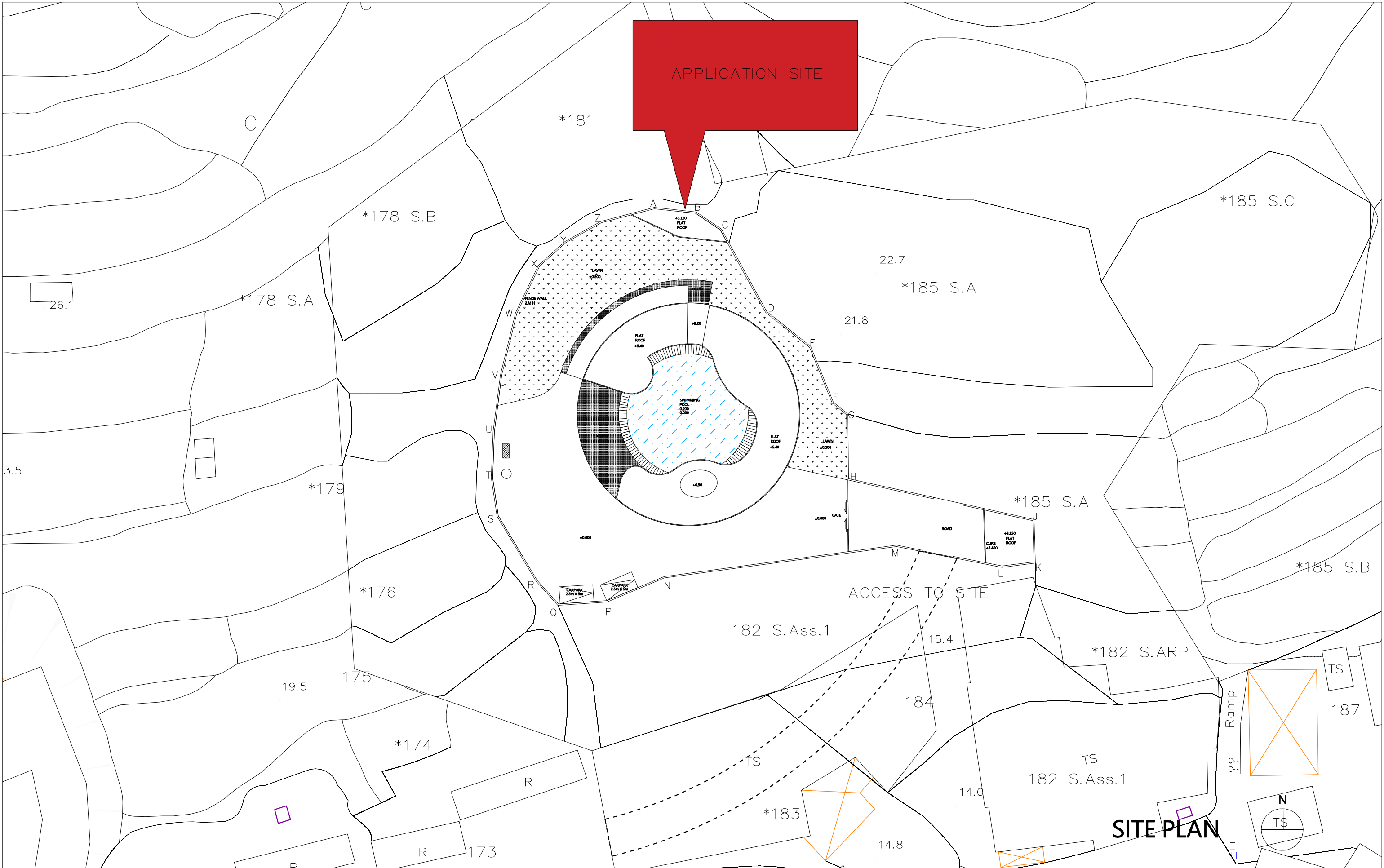


LEGEND

- Site Boundary
- Representative Water Sensitive Receivers

Appendix A

Development Plan

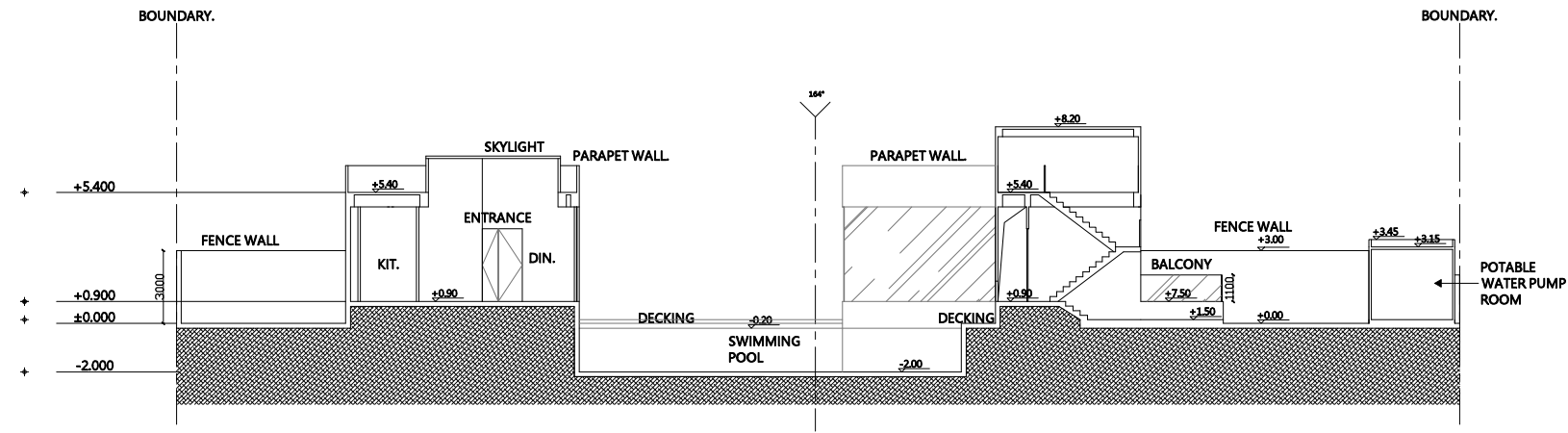


APPLICATION SITE

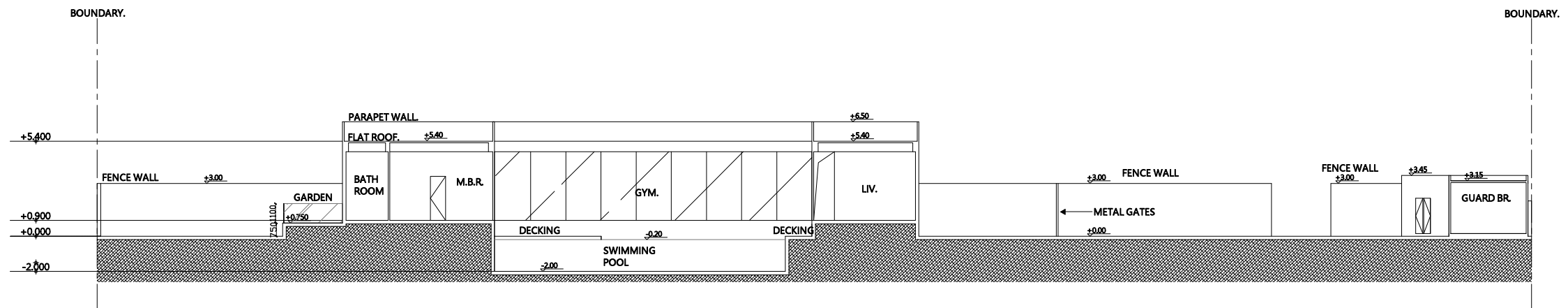
SITE PLAN

DESIGN DRAWING	Rev	Date	Description
	-	-	-
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Project:		ADO	
PROPOSED HOUSE DEVELOPMENT AT LOT NO. 182 S.B. IN D.D. 128		ADO LTD. 18C6 TML Tower, 3 Hoi Shing Road, Tsuen Wan West, HK	
Drawing Title:		Project reference	Scale
SITE PLAN		-	1:500 (A3)
		Date	Revision No./Date
		2022-02-17	
		Checked	Approved
		Read in conj. with	Drawing No.



SECTION A -A



SECTION B -B

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**PROPOSED HOUSE DEVELOPMENT
 AT LOT NO. 182 S.B. IN D.D. 128**

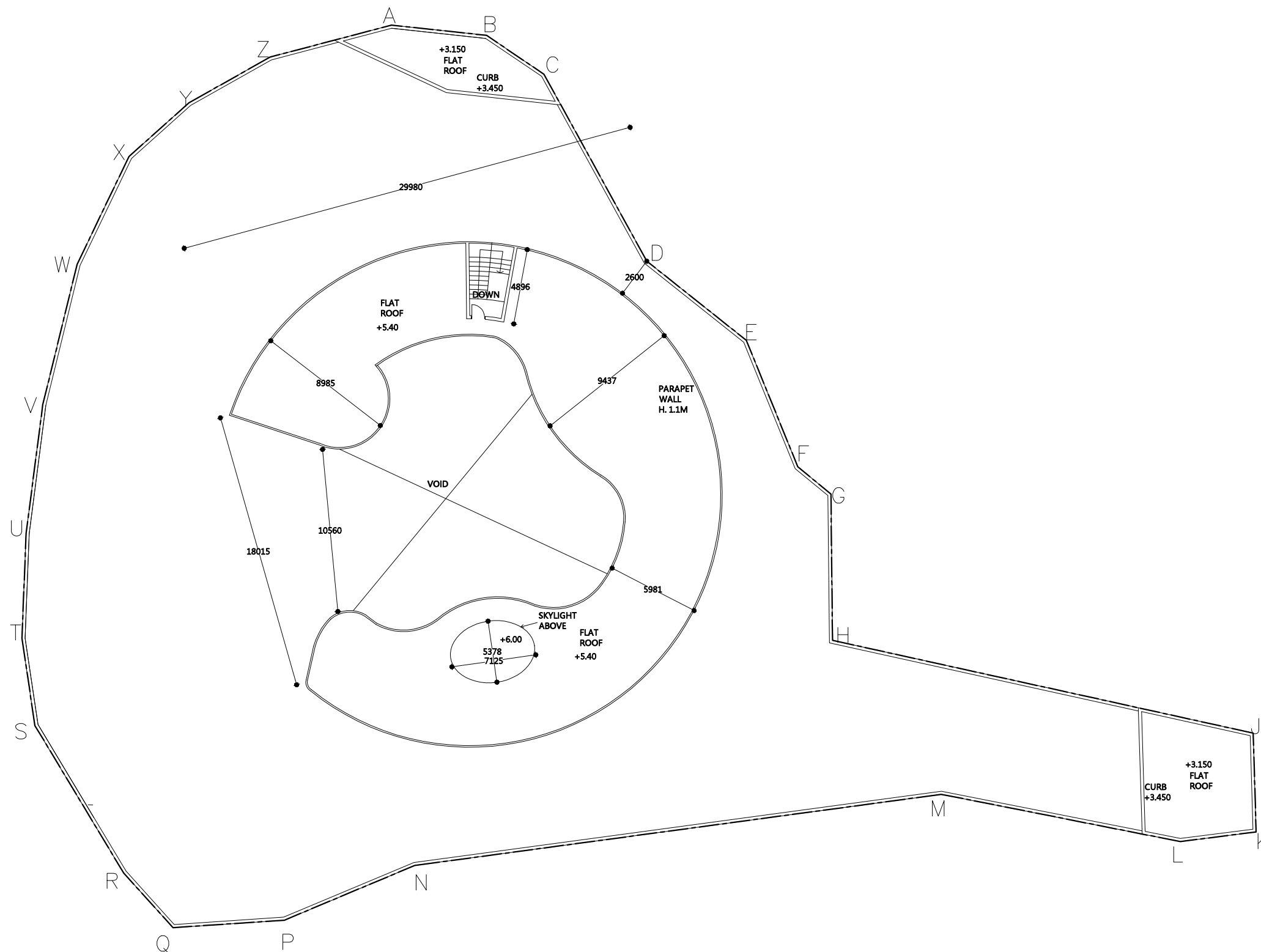
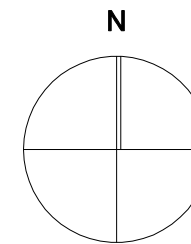


ADO LTD. 18C6 TML Tower, 3 Hol Shing Road, Tsuen Wan West, HK Tel: 2646-6381 Fax: 2634-6648

Drawing Title:
SECTION A - A & B - B

Project reference: - Scale: 1:300 (A3) Drawn: Checked: Approved:

CAD reference: - Date: 2021-2-16 Revision No./Date: Read in conj. with Drawing No.:



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Rev	Date	Description
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**PROPOSED HOUSE DEVELOPMENT
AT LOT NO. 182 S.B. IN D.D. 128**

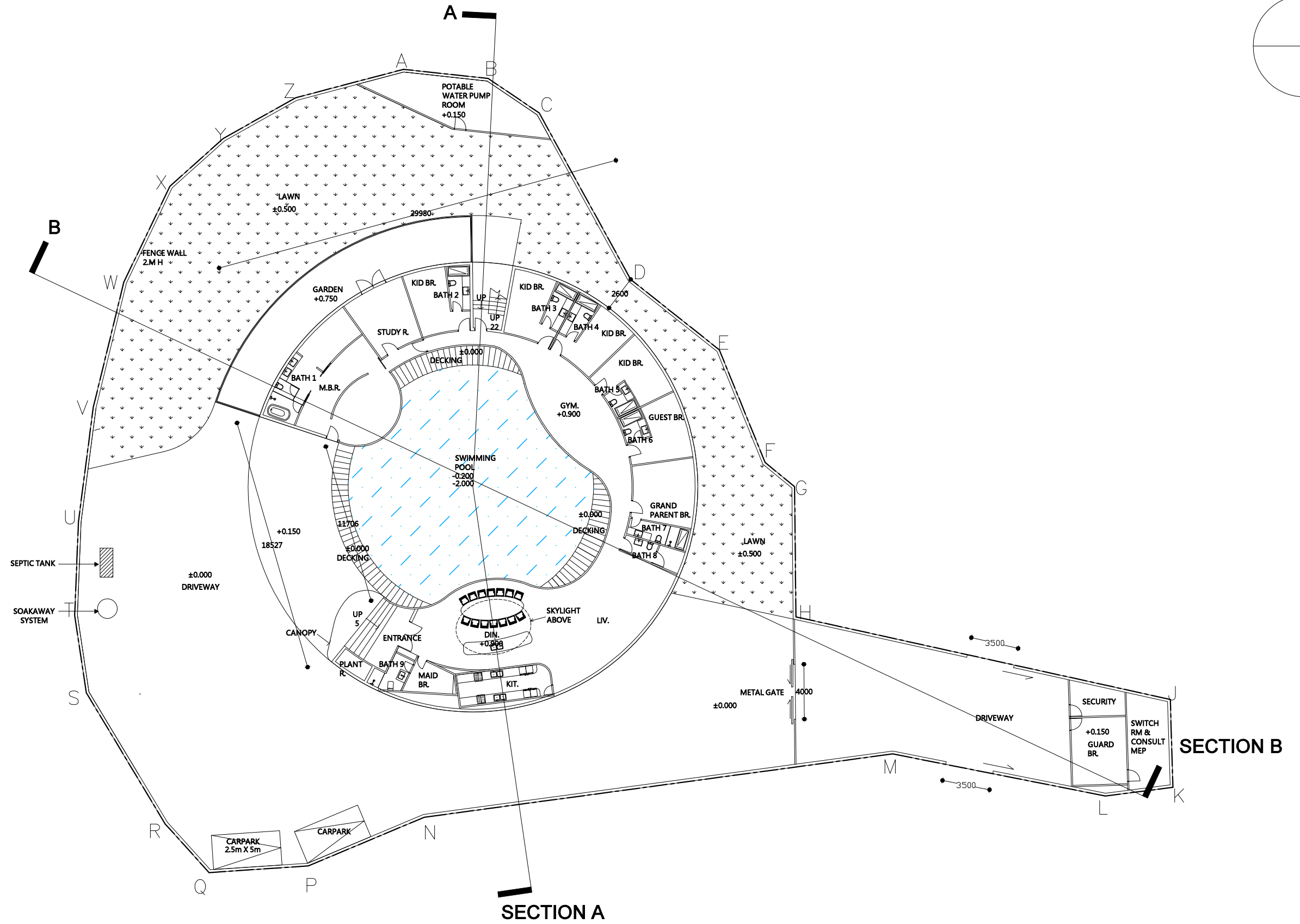
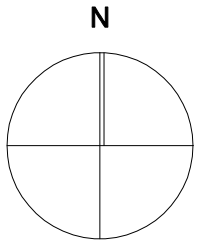
Drawing Title:
ROOF FLOOR LAYOUT PLAN



Project reference		Scale		Drawn		Checked		Approved	
-		1:300 (A3)							
CAD reference		Date		Revision No./Date		Read in conj. with Drawing No.			
		2021-2-16							

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Rev	Date	Description
-	-	-

Project:
**PROPOSED HOUSE DEVELOPMENT
AT LOT NO. 182 S.B. IN D.D. 128**



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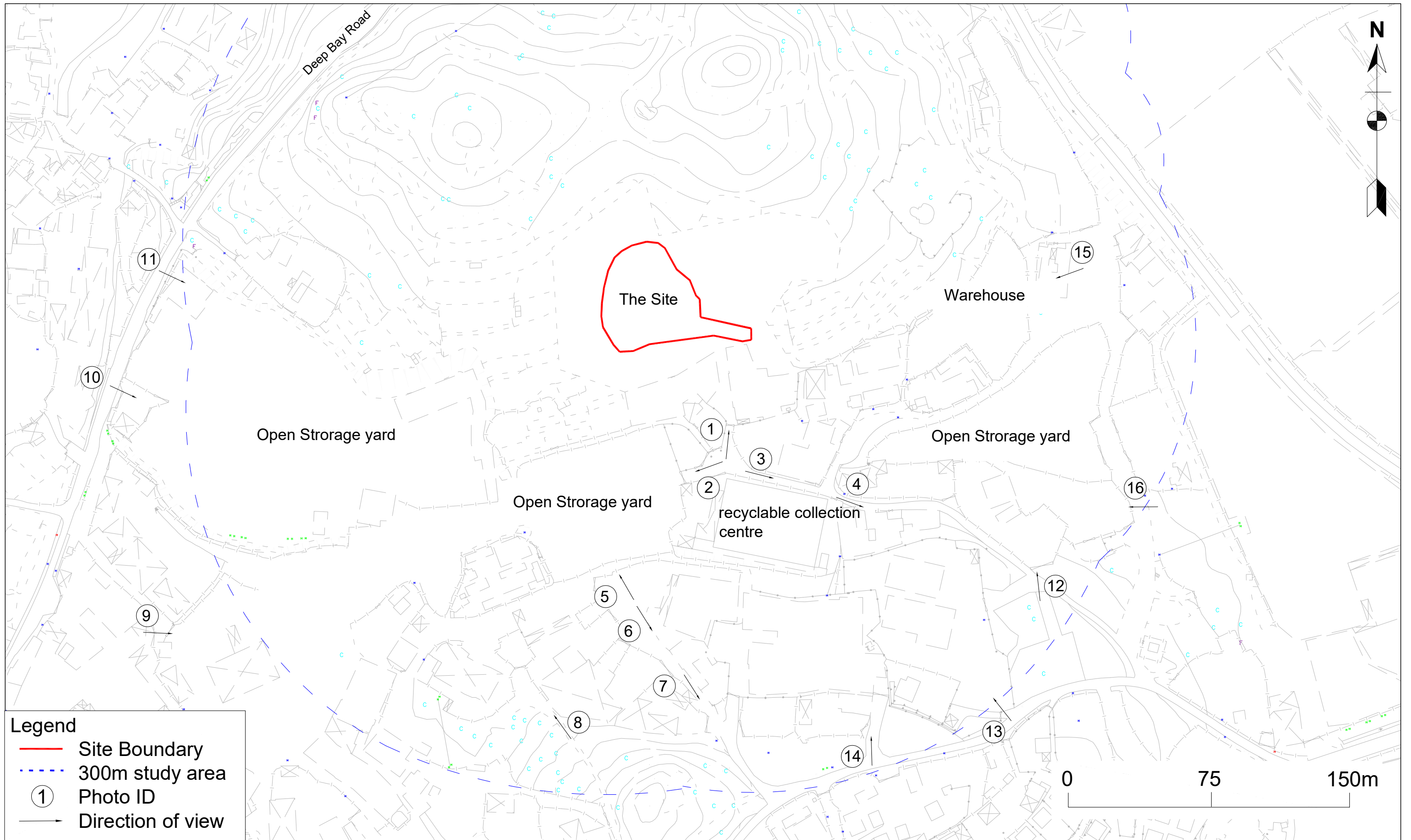
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GROUND FLOOR LAYOUT PLAN

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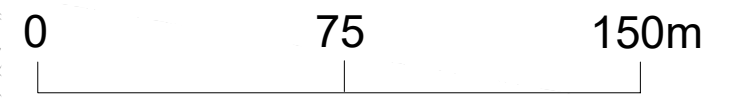
CAD reference: - Date: 2022-02-16 Revision No./Date: Read in conj. with Drawing No.

Appendix B

Photos of existing surrounding environment



- Legend**
- Site Boundary
 - - - 300m study area
 - ① Photo ID
 - Direction of view





Proposed Residential Development at Lot 182 S.B. in DD128

Photo Index Plan

Appendix B

Rev. 0

Appendix B – Photos of existing surrounding environment

ID	Photos	Remarks
1		No fixed plants are found.
2		No fixed plants are found. The land is for storage purpose.

3



No fixed plants are found.

4



No fixed plants are found.

5



No fixed plants are found. The land is for storage purpose.

6



No fixed plants are found.

7



No fixed plants are found.

8



No fixed plants are found.

9



No fixed plants are found.

10



No fixed plants are found. The land lot is for construction material storage. No machine will be operated inside the land lot.

11



No fixed plants are found. The land lot is occupied by a leasing company for construction machine storage only. No machine will be operated inside the land lot.

12



No fixed plants are found. The land is for storage purpose.

13



No fixed plants are found.

14



No fixed plants are found.

15



No fixed plants are found. The land is for storage purpose.

16



No fixed plants are found. The land is for storage purpose.

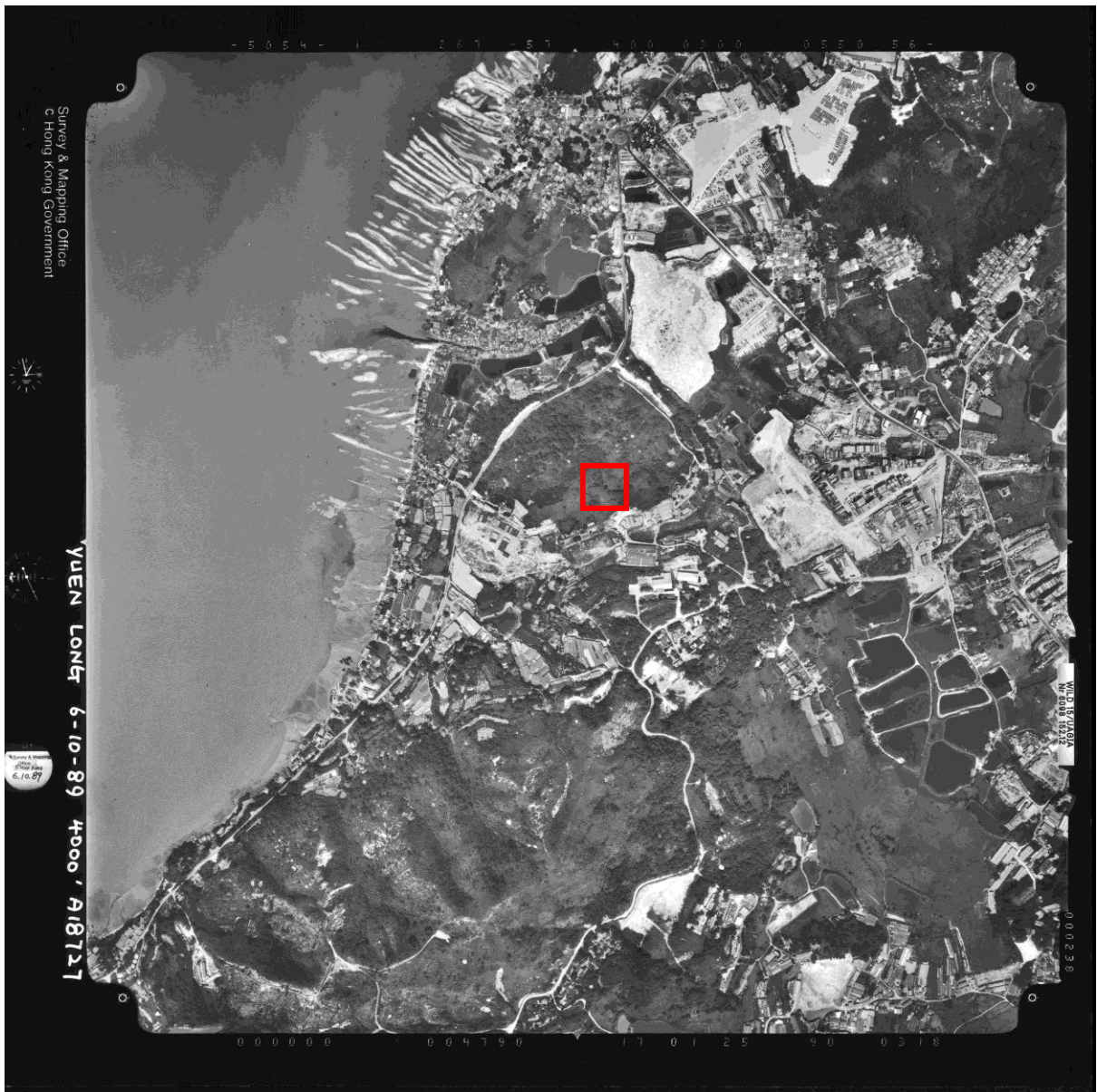
Appendix C

Aerial Photos

1974

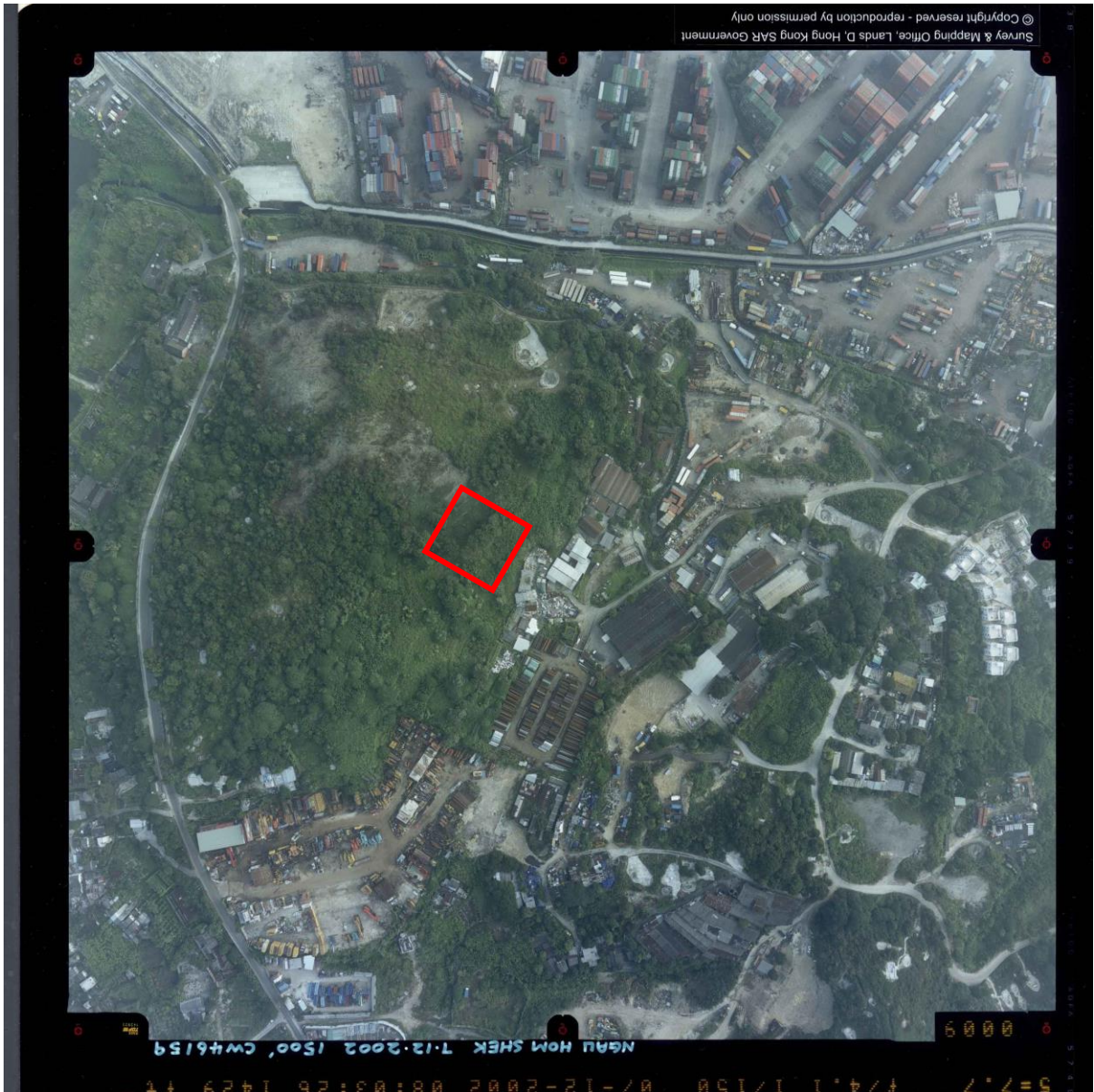


1989



1991







Survey & Mapping Office, Lands Department
The Government of Hong Kong Special Administrative Region

香港特別行政區政府 地政總署測繪處



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E-105632C 6900' 25 Nov 2020 UltraCam Eagle 210mm
LAU FAU SHAN 流浮山

