

Appendix 5

Environmental Assessment

Section 16 Application for 66 Deep Water Bay Road

Environmental Assessment Report

Blue Water Group Management Limited

Revision: 2

Document control record

Document prepared by:

Aurecon Hong Kong Limited

Unit 1608, 16/F, Tower B,
Manulife Financial Centre,
223 – 231 Wai Yip Street,
Kwun Tong, Kowloon,
Hong Kong

T +852 3664 6888

F +852 3664 6999

E hongkong@aurecongroup.com

W aurecongroup.com

A person using Aurecon documents or data accepts the risk of:

- a) Using the documents or data in electronic form without requesting and checking them for accuracy against the original hard copy version.
- b) Using the documents or data for any purpose not agreed to in writing by Aurecon.

Document control							aurecon
Report title		Environmental Assessment Report					
Document code			Project number		P528928		
File path							
Client		Blue Water Group Management Limited					
Client contact			Client reference				
Rev	Date	Revision details/status	Author	Reviewer	Verifier (if required)	Approver	
0	17-Apr-2025		DAY	KC		FL	
1	24-Jun-2025		DAY	KC		FL	
2	24-Jun-2025		Various	KC		FL	
Current revision		2					

Approval			
Reviewer signature		Approver signature	
Name	Keith Chau	Name	Fredrick Leong
Title	Associate Director, Environmental Planning and Green Building – Hong Kong	Title	Executive Director, Environmental Planning and Green Building – Hong Kong

Contents

1	Introduction.....	1
1.1	Background	1
1.2	Objectives of the Environmental Assessment	1
1.3	Report Structure	1
2	Site Context.....	2
2.1	Site Location and Its Environments	2
2.2	Proposed Development Scheme	2
3	Air Quality Impact.....	3
3.1	Introduction	3
3.2	Environmental Legislation, Standards and Guidelines.....	3
3.3	Impact Review – Construction Phase	4
3.4	Impact Review – Operational Phase	5
4	Noise Impact	7
4.1	Introduction	7
4.2	Environmental Legislation, Standards and Guidelines.....	7
4.3	Assessment Locations.....	8
4.4	Background Environment	8
4.5	Impact Review – Construction Phase	9
4.6	Impact Review – Operational Phase	11
5	Water Quality Impact.....	14
5.1	Introduction	14
5.2	Environmental Legislation, Standards and Guidelines.....	14
5.3	Impact Review – Construction Phase	15
5.4	Impact Review – Operational Phase	17
6	Waste Management.....	18
6.1	Introduction	18
6.2	Environmental Legislation, Standards and Guidelines.....	18
6.3	Impact Review – Construction Phase	18
6.4	Impact Review – Operational Phase	22
7	Land Contamination.....	23
7.1	Introduction	23
8	Conclusion	27

Figures

- Figure 2.1 Site Location and its Environ
- Figure 3.1 Buffer distance from Project Site Boundary to Roads
- Figure 2.2 Master Layout Plan
- Figure 4.1 Locations of Representative Noise Sensitive Receivers
- Figure 4.2 Plantroom Layout and the Location of Fixed Plant Noise Source

Appendices

- Appendix 2.1 Tentative Construction Programme
- Appendix 2.2 Master Layout Plan
- Appendix 4.1 Catalogues for proposed Fixed Plants
- Appendix 4.2 Detailed Noise Calculations of Fixed Plants Noise Assessment

1 Introduction

1.1 Background

- 1.1.1 The Site is located at No. 66 Deep Water Bay Road, Shouson Hill, Hong Kong where it is zoned as "R(C)3" in accordance with the approved Shouson Hill & Repulse Bay Outline Zoning Plan No. S/H17/13. The Client intends to redevelop the Site into 2 semi-detached houses and increase the maximum permitted site coverage from 25% to 37% at No. 66 Deep Water Bay Road. Due to the proposed increase in the permitted site coverage, a Section 16 Planning Application will therefore be required.
- 1.1.2 Aurecon Hong Kong Limited has been commissioned to conduct an Environmental Assessment Report for assessing the air quality, noise, water quality and waste management upon the proposed redevelopment to demonstrate the environmental acceptability for fulfilling the planning application requirement.

1.2 Objectives of the Environmental Assessment

- 1.2.1 The objective of this Report aims to identify key environmental issues associated with the proposed redevelopment for any potential impacts identified. The Environmental Assessment Report will be prepared to address the environmental aspects arising from construction and operation of the proposed redevelopment.

1.3 Report Structure

- 1.3.1 The remaining chapters of this report are shown below:
- Chapter 2 – Site Context
 - Chapter 3 – Air Quality Impact
 - Chapter 4 – Noise Impact
 - Chapter 5 – Water Quality Impact
 - Chapter 6 – Waste Management
 - Chapter 7 – Land Contamination
 - Chapter 8 - Conclusion

2 Site Context

2.1 Site Location and Its Environments

- 2.1.1 The proposed redevelopment is located at 66 Deep Water Bay Road. (**Figure 2.1**). It is located within residential area at Shouson Hill facing Deep Water Bay. The site area is about 2,043m² and has a private driveway of approximately 90m connecting to Deep Water Bay Road. The existing site consists of 6 low-rise residential houses with 4-storeys.

2.2 Proposed Development Scheme

- 2.2.1 The existing site currently comprises 6 semi-detached houses with 4-storeys each. The proposed redevelopment will involve demolishing of the existing houses and redevelop into a 3-storeys building for residential purpose in addition to 1 storey of basement. The project comprises living room, bedrooms, carports, outdoor swimming pool, and outdoor landscape features, etc. The building height is about 104.5mPD. The development schedule is listed in **Table 2.1**. The master layout plan is provided in **Figure 2.2**. The tentative construction programme is provided in **Appendix 2.1**. According to the programme, the tentative completion of works will be September 2028.

Table 2.1 Development Schedule of the Proposed Redevelopment

Floor	Uses
Basement	Carports, pump rooms, switch room, water tanks
G/F	Dining room, living room, outdoor swimming pool
1/F	Bedrooms, study rooms, gym room
2/F	Bedrooms, study rooms

3 Air Quality Impact

3.1 Introduction

- 3.1.1 This section addresses the potential air quality impacts arising from the proposed development during construction and operational phases. Appropriate mitigation measures are proposed to alleviate the potential air quality impact, if necessary.

3.2 Environmental Legislation, Standards and Guidelines

- 3.2.1 The relevant legislation, standards and guidelines are referenced to the present preliminary environmental review of air quality impacts include:

- Air Pollution Control (Amendment) Ordinance (APCO) (Cap. 311);
- Air Pollution Control (Construction Dust) Regulation (Cap.311R);
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation; and
- Hong Kong Planning Standards and Guidelines (HKPSG)

- 3.2.2 Chapter 9 of the “Hong Kong Planning Standards and Guidelines” (HKPSG) stipulates the Hong Kong Air Quality Objectives (AQOs) issued under the Air Pollution Control Ordinance (APCO). The updated AQOs came into force on 11 April 2025 and the relevant criteria for the assessment are tabulated in **Table 3.1**.

Table 3.1 Hong Kong Air Quality Objectives

Pollutant	Pollutant Concentration at Averaging Time, $\mu\text{g}/\text{m}^3$					
	10min	1-hour	8-hour	24-hour	1 year	Peak Season [#]
Carbon Monoxide	--	30,000 ⁽ⁱ⁾	10,000 ⁽ⁱ⁾	4,000 ⁽ⁱ⁾	--	--
Nitrogen Dioxide	--	200 ⁽ⁱⁱ⁾	--	120 ^(iv)	40	--
Sulphur Dioxide	500 ⁽ⁱⁱⁱ⁾	--	--	40 ⁽ⁱⁱⁱ⁾	--	--
Respirable Suspended Particulates (PM ₁₀)	--	--	--	75 ^(iv)	30	--
Fine Suspended Particulates (PM _{2.5})	--	--	--	37.5 ⁽ⁱⁱ⁾	15	--
Ozone	--	--	160 ^(iv)	--	--	100
Lead	--	--	--	--	0.5	

Note:

(i) No exceedance allowed

(ii) Not to be exceeded more than 18 times

(iii) Not to be exceeded more than 3 times

(iv) Not to be exceeded more than 9 times

New Parameters added in the Amendment Bill. The calculation of the new parameter peak season ozone should refer to the Amendment Bill.

3.3 Impact Review – Construction Phase

- 3.3.1 Based on the proposed layout plan, the proposed development will involve building construction works. The potential major air quality impact during construction is fugitive dust generated from demolition, excavation, foundation and superstructure works. The Contractor shall implement dust control measures in accordance with the requirements of the Air Pollution Control (Construction Dust) Regulation. The requirement of the regulation has been summarised as below.

Mitigation Measures

- 3.3.2 Typical relevant dust control measures include:

- Water spraying on any dusty materials before loading and unloading; stockpile of dusty materials; area where demolition work is carried out; area where excavation or earth moving activities are carried out; and any unpaved haul road;
- Provide hoarding of not less than 2.4 m high from ground level along the site boundary;
- Provide effective dust screens, sheeting or netting to enclose any scaffolding built around the perimeter of a building;
- Cover or shelter any stockpile of dusty materials;
- Provide vehicle washing facilities at all site exits to wash away any dusty materials from vehicle body and wheels before they leave the site and the vehicle washing facilities shall be paved; and
- Cover any dusty load on vehicles before they leave the site.

- 3.3.3 In addition to the dust reduction measures stipulated in the regulation, good site practices shall be incorporated and undertaken by the contractor to further minimize the fugitive dust generation, including the following:

- Avoid storage of dusty materials, including stockpiles and bags of cement, within the project site as far as possible;
- Minimize the drop height during loading and unloading; and
- Avoid the handling of dusty materials at open area.

- 3.3.4 With strict implementation of control measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practice listed in the above, no adverse construction dust impact is anticipated.

3.4 Impact Review – Operational Phase

- 3.4.1 The proposed redevelopment consisting residential uses is an air sensitive use but not an air polluting source in accordance with HKPSG. In addition, no additional air polluting source is expected to be induced by the project. To this end, the air quality impacts on the identified ASRs within the study area will be comparable to the existing conditions after the commencement of the Project and no adverse air quality impact due to the proposed development is expected to occur during the operational phase.

Vehicular Emission

- 3.4.2 Table 3.1 in Chapter 9 of HKPSG stipulates the required buffer distance between the Air Sensitive Receivers (ASRs) and the surrounding roads. Applicable buffer distance requirements are summarised in **Table 3.2** below. **Figure 3.1** is provided to show the buffer distance from the Site Boundary to the roads.

Table 3.2 Required Buffer Distance between the Surrounding Roads and the Air Sensitive Receivers of the Proposed Development.

Road	Type of Road ⁽ⁱ⁾	Required Buffer Distance (m)	Shortest Distance between the road and Site Boundary (m)
Deep Water Bay Road	Local Distributor	>5m	49m
Island Road	Primary Distributor	>20m	90m

Note:

(i) The types of roads were referred to the annual traffic census 2023 issued by Transport Department (TD).

- 3.4.3 Based on the location of the site, the buffer distance requirements between Deep Water Bay Road and the Site has been fulfilled, adverse traffic emission impact from the Deep Water Bay Road to the air sensitive uses within the site are not expected.

Chimney Emission

- 3.4.4 Site survey was conducted on 20 March 2025 to identify any existing chimney located within 200m study area of the proposed development. Based on the observation in site surveys, no chimneys were found within 200m study area from the proposed development. Therefore, it is anticipated no adverse air quality impact arising from the chimney emission upon the proposed development.

4 Noise Impact

4.1 Introduction

- 4.1.1 This section identifies and evaluates the potentials noise impact likely to arise during the construction and operations phases of the proposed development. Practical mitigation measures are proposed to reduce environmental impacts to acceptable level, if necessary.

4.2 Environmental Legislation, Standards and Guidelines

- 4.2.1 The Noise Control Ordinance (NCO) provides the statutory framework for noise control. Assessment procedures and standards relevant to the Project are set out in the Technical Memoranda (TM) and guidelines listed below:
- Chapter 9 "Environment" of the Hong Kong Planning Standards and Guidelines (HKSPG);
 - Practice Note for Professional Persons No. ProPECC PN No.1/24 "Noise from Construction Activities - Non-Statutory Controls";
 - Practice Note for Professional Persons No. ProPECC PN No.4/23 "Planning and Designing Noise Sensitive Developments";
 - Noise Control Ordinance (NCO) (Cap.400);
 - Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM);
 - Technical Memorandum on Noise from Construction Work in Designated Areas (DA-TM); and
 - Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM).

4.3 Assessment Locations

- 4.3.1 The Study Area for noise impact assessment includes all area within 300m from the Project boundary. Representative Noise Sensitive Receivers (NSRs) located in the closest proximity to the Site Boundary of the proposed redevelopment are identified and detailed in **Table 4.1**. The locations of the NSRs are provided in **Figure 4.1**.

Table 4.1 Representative Noise Sensitive Receivers

NSRs	Uses	Description	Distance to the Site (m)
N1	Residential	71 Deep Water Bay Road	68
N2	Residential	72 Deep Water Bay Road, House 2	92
N3	Residential	68 Deep Water Bay Road	29

- 4.3.2 The selection of noise assessment locations for N1 and N2 would be based on openable window at the top floor which is considered at the closest distance to the site with direct line of sight. For N3, as observed during site visit and desktop study, there is no direct line of sight to the site for the openable window at N3. The noise assessment location is selected at the closet distance to the Site with openable window.

4.4 Background Environment

- 4.4.1 Background noise measurement was carried out to obtain the prevailing noise condition at the vicinity of the Site. As the NSRs at the residential premises are inaccessible due to security reason, the noise measurement was conducted at a suitable representative location within the Site. The measurement result is shown in **Table 4.2**.

Table 4.2 Background Noise Levels

Measurement Date	Measurement Time	Measured Noise Level, Leq (30min)	Observed Noise Source(s)
20 March 2025	16:30-17:00	51.2	Occasional PA announcement from Deep Water Bay Beach and fixed plant noise from The Hong Kong Golf Club
	19:00-19:30	42.9	No noise source is observed at the background
	23:00-23:30	40.0	No noise source is observed at the background

Note: Free-field noise measurement was conducted. Façade correction of +3dB(A) has been added to the measurement results.

4.5 Impact Review – Construction Phase

General Construction Noise Impact

- 4.5.1 The proposed redevelopment will involve building site formation, demolition, ground investigation, excavation, non-percussive piling using mini-piling and raft footing and superstructure construction. The major potential noise sources associated with the proposed construction activities include the use of Powered Mechanical Equipment (PMEs) for the above construction works. No percussive piling will be adopted for this proposed redevelopment.
- 4.5.2 The typical PMEs to be used for the construction work activities include drilling rigs, grout mixer, concrete truck, bar bending machine, vibrator, mobile crane, cutter, generator, air compressor, water pump, dump truck, concrete lorry mixer and excavator etc. These types of PMEs are for reference only and to be confirmed by the contractors in view of the actual construction conditions and programmes. The Contractor is responsible for selecting quiet PMEs to achieve noise reductions from the adopted working methodologies.
- 4.5.3 It is anticipated that the construction works will be conducted during the daytime only, i.e. the non-restricted hours between 07:00 and 19:00 hours on any day except Sunday and general holiday. However, when any construction works involving PME is required to be carried out during the restricted hours (19:00 – 07:00 hours of the next day on any day and anytime during Sunday or general holiday), a Construction Noise Permit (CNP) shall be obtained under the NCO.
- 4.5.4 The proposed redevelopment is located within Designated Area as defined under the Noise Control (Construction Work Designated Areas) Notice. During the restricted hours in Designated Areas, the use of specified PMEs (for example, hand-held breakers and dump truck) and/or the carrying out of the prescribed construction activities (for example, erection or dismantling of formwork and hammering) is subject to more stringent control. The same system of CNP for controlling of PMEs is used.
- 4.5.5 For control of non-restricted hours construction noise, the contractor should implement noise abatement measures as recommended in the ProPECC PN 1/24 to minimize the construction noise during the daytime. The recommended daytime construction noise level at the façade of sensitive receivers during the period between 07:00 and 19:00 hours (except Sundays and general holiday) shall be met as far as practicable and are provided in **Table 4.3**.

Table 4.3 Noise Standards for Daytime Construction Activities

Noise Sensitive Uses	Leq (30 mins), dB(A)
Dwelling	75

- 4.5.6 Considering the proposed redevelopment with limited impacts to surrounding NSRs due to its scale and project nature, the construction noise impact is anticipated to be minimal with the implementation of appropriate noise control measures as recommended below:

Mitigation Measures

4.5.7 The mitigation measures as per the requirements stated in PN1/24 “Noise from Construction Activities – Non-statutory Controls” should be adopted to minimise the potential noise impacts. These include:

- Scheduling of work - This includes avoiding simultaneous operation of noisy equipment; retaining existing features that can act as a noise barrier until the last phase. Such screening can reduce noise levels by 15 dB(A) or more.
- Siting of facilities - Noisy equipment, such as emergency generators and water pumps, should always be sited as far as possible from noise sensitive receivers. Consideration should also be given to using structures such as temporary stockpiles and site buildings as noise barriers.
- Selection of quiet equipment - This is one of the most effective measures and is increasingly practicable because of the availability of quiet equipment. For example, the use of hydraulic concrete cutters and crushers in demolition work, instead of excavator-mounted percussive breakers, can achieve a noise reduction of up to 20 dB(A) and totally remove the annoying impulsive nature of the latter. Similarly, the use of a hydraulic rock drill with a sound power level not exceeding 110 dB(A) can reduce noise by 18 dB(A) when compared with a conventional crawler mounted pneumatic rock drill. The contractors are allowed to use other type of quiet PME, which can reduce the total sound power levels to meet their needs.
- Use of temporary acoustic barriers and enclosures – Provide acoustic barriers around construction site boundaries can effectively protect nearby residential uses. In addition, acoustic enclosures can be provided at static noise PME such as air compressors and generators.

Good Site Practice

4.5.8 Good practice, arrangement or techniques on the construction sites can provide considerable noise reductions, examples of these site practices include:

- Well-maintained and regularly-serviced plant should be used during the works;
- Plant operating on intermittent basis should be turned off or throttled down when not in active use; and
- Silencers or mufflers for plant should be used where possible and maintained adequately throughout the works;

4.5.9 With the implementation of mitigation measures discussed above, the construction noise impact will be minimized.

4.6 Impact Review – Operational Phase

Fixed Plant Noise Impact Assessment

- 4.6.1 During the operational stage of the proposed development, potential fixed noise sources include water pumps used for irrigation, flushing, swimming pool filtration, portable water and fire safety. These fixed noise sources would be located inside the plant rooms and fully enclosed by building structures. Potential breakout noise impact on the surroundings should be minimal. However, potential fixed noise impact would be anticipated from the louvers and should be assessed to ensure the compliance of the HKPSG and Noise Control Ordinance (“NCO”). **Figure 4.2** indicates the tentative locations of the plantrooms and the locations of the louvers. The catalogues of potential model of the louvers and their sound power levels are provided in **Appendix 4.1**.
- 4.6.2 Fixed noise sources impacting on existing uses are regulated under the NCO, which requires that impacts shall comply with the Acceptable Noise Levels (“ANL”) laid down in Table 2 of the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (“IND-TM”).
- 4.6.3 In setting the ANL, reference has been made to the Area Sensitive Rating (“ASR”) in Table 1 of IND-TM (reproduced in Table 2.1) reflecting the nature of area where noise sensitive receivers are situated.

Table 4.4 Area Sensitivity Ratings (ASRs)

Type of Area Containing NSR	Degree to which NSR is affected by Influencing Factor (IF)		
	Not Affected	Indirectly Affected	Directly Affected
Rural area, including country parks or village type developments	A	B	B
Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
Urban area	B	C	C
Area other than those above	B	B	C

- 4.6.4 As the site location is mainly bounded by Deep Water Bay Road and also Island Road and Shouson Hill Road are located within 500m assessment area. According to “Annual Traffic Census” issued by Transportation Department (TD) from Year 2023, Deep Water Bay Road, Island Road and Shouson Hill Road are not considered as Influencing Factor (IF) in accordance with the IND-TM. The site is also not located within 100m of “Industrial” or “Industrial Estate” zones.
- 4.6.5 Given the type of area for the Site is classified as “Low density residential area consisting of low-rise or isolated high-rise developments” and it is not affected by the IF, according to **Table 4.4**, the area sensitivity rating is defined as “A”.

4.6.6 The appropriate ANLs for NSRs around have been determined as shaded in **Table 4.5**.

Table 4.5 Acceptable Noise Levels (ANLs)

Time Period	Acceptable Noise Level, Leq 30 mins, dB(A)		
	Area Sensitivity Rating "A"	Area Sensitivity Rating "B"	Area Sensitivity Rating "C"
Day-time (0700 – 1900 hours)	60	65	70
Evening (1900 - 2300 hours)			
Night-time (2300- 0700 hours)	50	55	60

4.6.7 According to HKPSG, for noise criteria involving planned fixed noise sources, the level of the intruding noise at the façade of the nearest existing sensitive use should be at least 5 dB(A) below the appropriate ANL shown in as shown in **Table 4.5**, in the case of the background being 5 dB(A) lower than the ANL, should not be higher than the background.

4.6.8 Noise measurement has been conducted to measure the background noise level at the vicinity of existing NSRs. According to the measured results as shown in **Table 4.2**, the measured background noise levels are below ANL-5 (55dB(A) during daytime and evening time, 45dB(A) during night-time period). Hence, the measured background noise levels would be adopted as the noise criteria. The summary of noise criteria for the proposed development is established in **Table 4.6**. The background noise measurement results and details of noise criteria adopted for the fixed plant noise assessment is provided in **Appendix 4.2**.

Table 4.6 Noise Criteria adopted for fixed plant noise impact assessment

Time Period	Noise criteria (Background free field noise level, Leq 30 mins, dB(A))
Day-time (0700 – 1900 hours)	46
Evening (1900 - 2300 hours)	46
Night-time (2300- 0700 hours)	43

4.6.9 The fixed plant noise assessment has been conducted, and the detailed calculation is provided in **Appendix 4.2**. According to the predicted results, the fixed plant noise impacts to the nearest NSRs are well within the established noise criteria for daytime, evening time and night-time period. **Table 4.6** has summarised the noise impacts of the NSRs which comply with the noise criteria, hence, no noise mitigation would be necessary.

Table 4.6 Summary of Unmitigated Impacts on Existing NSRs

NSRs	Description	Daytime/ Evening Period, Leq (30min), dB(A) Noise criteria = 46 dB(A)	Night-time Period, Leq (30 min), dB(A) Noise criteria = 43 dB(A)
N1	71 Deep Water Bay Road	39	39
N2	72 Deep Water Bay Road, House 2	38	38
N3	68 Deep Water Bay Road	40	40

5 Water Quality Impact

5.1 Introduction

- 5.1.1 This section discusses the potentials water impact likely arising during the construction and operations phases of the proposed development. Practical mitigation measures are proposed to reduce environmental impacts to acceptable level, if necessary.

5.2 Environmental Legislation, Standards and Guidelines

- 5.2.1 The relevant legislation and associated guidance applicable to this EA for the assessment of water quality impacts include:
- Water Pollution Control Ordinance (WPCO) (Cap. 358)
 - Water Pollution Control (General) Regulations
 - Water Pollution Control (Sewerage) Regulation
 - Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)
 - Chapter 9 “Environment” of the Hong Kong Planning Standards and Guidelines (HKSPG)
 - Professional Persons Environmental Consultative Committee Practice Note 2/24 Construction Site Drainage (ProPECC PN 2/24)
 - Professional Persons Environmental Consultative Committee Practice Note 1/23 Drainage Plans subject to Comment by the Environmental Protection Department (ProPECC PN 1/23)

5.3 Impact Review – Construction Phase

- 5.3.1 The proposed development will involve foundation works and building construction. As land-based construction activities with limited extent of excavation works is expected to be undertaken, potential water quality impact during construction phase would be mainly related to the surface runoff from handling of construction materials, foundation works, excavation and superstructure works, accidental chemical spill and sewerage from workforce.
- 5.3.2 The key water quality issues associated with the construction activities include surface runoff generated from general cleaning, wheel washing and water spraying for dust suppression. These types of wastewater would contain high concentrations of Suspended Solids (SS). In addition, stormwater runoff during rainy seasons might be generated from Shouson Hill into the site. Release of uncontrolled construction site runoff would increase the SS level and turbidity in the nearby water environment. Proper control of the stormwater runoff is necessary to prevent uncontrolled construction site runoff washed down into the surrounding water sensitive receivers.
- 5.3.3 The effects on water quality from general construction activities are likely to be minimal, provided that site drainage would be well maintained, and good construction practices would be implemented in accordance with ProPECC PN No. 2/24 for proper management of construction site drainage. A discharge license will be obtained according to the WPCO requirements before any wastewater discharge from the site to storm drains or foul sewers. All site discharges will be pre-treated as necessary, in accordance with the WPCO, the conditions of the WPCO discharge license and the relevant standards listed in the TM-DSS.
- 5.3.4 Accidental spillage of chemicals and sewerage from workforce in the works areas may also contaminate the surface soils. The contaminated soil particles may be washed away by construction site runoff. These wastewaters should not be directly discharged to nearby drainage systems otherwise they would cause significant impacts on water quality.

Mitigation Measures

- 5.3.5 Good site practices would be essential to control construction site runoff and accidental chemical spill. Below are the major good site practices according to Professional Persons Environmental Consultative Committee Practice Note 2/24 Construction Site Drainage (ProPECC PN 2/24). With the implementation of these mitigation measures, adverse water quality impacts are not expected to arise from the construction works of the Project.
- At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction.
 - The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into storm drains, through a silt/sediment trap. The silt/sediment traps should be incorporated in the permanent drainage channels to enhance deposition rates.

- The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 2/24. The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction.
- Construction works should be programmed to minimize surface excavation works during the rainy seasons (April to September). All exposed earth areas should be completed and vegetated as soon as possible after earthworks have been completed. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means. Temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.
- All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas.
- Measures should be taken to minimise the ingress of site drainage into excavations. If the excavation in wet periods is necessary, it should be dug and backfilled in short sections wherever practicable. Water pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.
- All open stockpiles of construction materials (for example, aggregates, sand and fill material) should be covered 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.
- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.
- Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during or after rainstorms are summarized in Appendix A2 of ProPECC PN 2/24. Particular attention should be paid to the control of silty surface runoff during storm events.
- All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.
- Oil interceptors should be provided in the drainage system downstream of any oil/fuel pollution sources. The oil interceptors should be emptied and cleaned regularly to prevent the release of oil and grease into the storm water drainage system after accidental spillage. A bypass should be provided for the oil interceptors to prevent flushing during heavy rain.
- Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts.
- 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.

- Water used in ground boring and drilling for site investigation or rock/soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.

5.3.6 The closest public toilet from the proposed redevelopment is located at Deep Water Bay Beach Public Toilet for the workers to use. Nevertheless, chemical mobile toilets shall be provided for the workers during construction stage as a backup facility. Regular desludging shall be carried out to maintain proper hygiene of the toilets.

5.4 Impact Review – Operational Phase

5.4.1 The ProPECC PN 1/23, Drainage Plans subject to Comments by Environmental Protection Department, provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers. The design of site drainage and disposal of site effluents generated within the proposed development area should follow the relevant guidelines and practices as given in the ProPECC PN 1/23.

5.4.2 According to the Sewerage Impact Assessment (SIA) which is provided separately in this Section 16 Planning Application Submission, the possible impacts on the local sewerage network due to the operation of the proposed development has been evaluated. The wastewater generated from the operation of the proposed development will be conveyed to the downstream from the government manhole “FMH7017092” and other government sewer along Deep Water Bay Road to the Golf Club Sewage Pumping Station inside the Golf Club Carpark. The assessment findings demonstrated and confirmed that there should be sufficient capacity for the public sewer to handle the change of sewage generation due to the proposed uses. Therefore, adverse impact on water quality during the operation phase of the Project is not anticipated.

5.4.3 For the operation of swimming pool, since the site is not situated in Water Gathering Ground, the swimming pool main drain and pool make-up tank drain will be connected to storm water drains of the site and conveyed to the nearest stream course along the existing storm water channel outside the site as stated in the Drainage Impact Assessment (DIA) report. Filtration plant backwash will be discharged to foul sewers of the site and conveyed to the government manhole “FMH7017092” along the existing sewer as stated in SIA report.

5.4.4 During operation phase, surface runoff is also considered as a potential source of water quality impact due to the additional paved areas created by the proposed development. However, as the surface runoff would be collected and discharged to adequate drainage system, minimal impact is anticipated.

6 Waste Management

6.1 Introduction

- 6.1.1 This section identifies the types of wastes that are likely to be generated during the construction of the proposed development and evaluates the associated waste management implication that may result from these wastes types.

6.2 Environmental Legislation, Standards and Guidelines

- 6.2.1 The relevant legislation and associated guidance applicable to this PER for the review of waste management implications include:

- Waste Disposal Ordinance (WDO) (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation;
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation;
- Public Health and Municipal Services Ordinance (Cap. 132) – Public Cleansing and Prevention of Nuisances Regulation; and
- Land (Miscellaneous Provisions) Ordinance (Cap. 28).
- Development Bureau Technical Circular (Works) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials (“DEVB TC(W) No. 6/2010”);
- Building Department Practice Note for Registered Contractors (“PNRC 17”), Control of Environmental Nuisance from Construction Sites;
- Environmental, Transport and Works Bureau (ETWB) Technical Circular (Works) No. 22/2003A, Additional Measures to improve Site Cleanliness and Control Mosquito Breeding on Construction Sites;
- Building Department’s Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers No. ADV-19 Construction and Demolition Waste
- ETWB TCW No. 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness;
- Code of Practice of the Packaging, Labelling and Storage of Chemical Waste, EPD (2022);
- A Guide to the Chemical Waste Control Scheme, EPD (2022)

6.3 Impact Review – Construction Phase

- 6.3.1 The proposed development is located in an private low density residential area and will involve demolition works of existing structure, foundation and building construction. These activities are expected to generate a variety of wastes which can be divided into categories based on their composition and ultimate method of disposal. The identified waste types include:

- Construction and demolition (C&D) materials;
- Chemical wastes
- General refuse.

- 6.3.2 The nature of each type of waste arising and an evaluation of the potential implications associated with these wastes are provided below.

Construction and Demolition (C&D) Materials

- 6.3.3 Majority of C&D materials generated during construction stage would be at the demolition stage. All demolished C&D materials generated shall be sorted into inert and non-inert C&D materials. The inert portion of C&D materials generated will comprise broken concrete, tiles and soft organic material while non-inert portion will comprise glass, metals, plastic pipes, and wooden material.
- 6.3.4 Where practicable, Contractor shall be encouraged to minimize the C&D material volumes requiring off-site transport/ disposal. Disposal outlets such as public fill reception facilities shall be identified for inert materials if no on-site reuse opportunities exist. Non-inert C&D materials should be reused or recycled as far as possible, any recyclable materials (e.g. metal or paper packing) will be segregated and collected by recycling contractor. The remaining non-inert C&D material will be disposed of in landfill site. Landfill disposal should be considered as the last resort for waste handling. The estimated quantity of C&D material generated from the construction of the Project has been presented in **Table 6.1**.
- 6.3.5 The estimated quantities of inert and non-inert C&D materials to be generated during construction phase are summarized in **Table 6.1**. The estimation of the quantity of inert C&D material is based on building record plans while the non-inert C&D material is based on the site visit and layout plan on the number of fixed equipment such as toilet bowl, washing basins, windows and wooden furniture.

Table 6.1 Estimated Quantity of C&D Materials Generated during Construction Phase

Inert C&D Materials (m ³)	Non-Inert C&D Materials (m ³)
4600	60

Chemical Waste

- 6.3.6 Chemicals are expected to be used during the construction activities for the Project. These may include surplus adhesives, spent paints, petroleum products, spent lubrication oil, grease and mineral oil, spent acid and alkaline solutions/solvent and other chemicals. Accidental spillage of chemicals in the works areas may contaminate the surface and sub-surface soils.
- 6.3.7 The volume of chemical waste that will be generated will depend on the total number of plants and vehicles, and how much maintenance is actually required to be carried out on site by the contractor. It is anticipated that the total quantity of chemical waste produced will be limited to only a few cubic meters per month.
- 6.3.8 Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor will 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, and incompatible chemicals should be stored separately. Appropriate labels must be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor will use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

General Refuse

- 6.3.9 The workforce would generate refuse comprising food scraps, paper waste, empty containers, etc. Such refuse will be properly stored in a designated area prior to collection and disposal. Disposal of refuse at site other than approved waste transfer or disposal facilities is prohibited. Effective collection of the on-site wastes will prevent waste materials being blown around by wind, or creating an odour nuisance or pest and vermin problems. Waste storage areas will be well maintained and cleaned regularly. The waste should be disposed of at designated landfill site (i.e., West New Territories Landfill (WENT)).
- 6.3.10 To minimize the disposal quantities of general refuse, recycle bins for different types of recyclable should be provided together with general refuse bins. Arrangements should be made with the recycling contractor to collect the recycled material regularly. The Contractor shall provide briefing for workers regarding avoiding, reducing, reusing and recycling of general refuse during induction training.
- 6.3.11 It has been assumed that a maximum of 15 workers will work simultaneously at the Project site during construction phase of the proposed Project. Quantity of general refuse to be generated per day is therefore estimated to be 9.8 kg (assuming a waste generation rate of 0.65 kg per person per day). 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.

Mitigation Measures

- 6.3.12 In line with the Hong Kong Government's position on waste minimisation, the practice of avoiding and minimising waste generation and waste recycling should be adopted as far as practicable throughout the construction phase. With implementation of below recommended mitigation measures, no adverse waste management impact is anticipated to occur.
- Waste management shall be controlled through contractual requirements as well as through statutory requirements.
 - The contractor should reuse as much of the inert C&D materials as possible on-site. Inert and non-inert C&D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal.
 - Being a part of the Environmental Management Plan ("EMP"), a Waste Management Plan ("WMP") should be developed by the Contractor and to be submitted to Architect/Engineer for approval before the commencement of any construction works base on the requirement of Building Department's Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers No. ADV-19 Construction and Demolition Waste. The objectives of the WMP will be to identify any potential environmental impacts from the generation of waste at the Site; to recommend appropriate waste handling, collection, sorting, disposal and recycling measures in accordance with requirements of the current regulations; and to categorise and permit segregation of C&D materials where practicable (i.e. inert C&D materials/non-inert C&D materials) for treatment and disposal considerations i.e. reuse/recycling/ public fill/landfill.
 - The contractors should adopt good housekeeping practices with reference to the WMP such as waste segregation prior to disposal. Besides the provision of stockpiling and segregating areas at site, effective collection of site wastes is required to prevent waste materials being blown around by wind, flushed or leached into nearby waters, or creating odour nuisance or pest and vermin problems. Waste storage areas should be well maintained and cleaned regularly.
 - Mitigation measures listed in Practice Note for Registered Contractors No. 17 Control of Environmental Nuisance from Construction Sites shall be adopted. The C&D materials shall be delivered to the appropriate designated outlets by dump trucks fitted with covered box type dump bed to minimize potential nuisance during transportation of waste. Refuse pending removal should be stored in receptacles provided with close fitting covers to avoid waste materials be flushed or leached under inclement weather conditions such as heavy rainfall.
 - A trip-ticket system should be established in accordance with the Waste Disposal (Charges for Disposal of Construction Waste) Regulation to monitor the disposal of public fill and solid wastes at public filling facilities and landfills, and to control fly-tipping. A trip-ticket system should be included as one of the contractual requirements for the contractor to strictly implement.
 - Whenever there are excess recyclable construction materials, including bricks, plastics and metals, reuse and recycling should be carried out as far as practicable to minimise the amount of waste disposal. Other inert non-recyclable materials such as concrete, asphalt, etc. should be treated as public fill. Surplus non-inert C&D materials and non-recyclable wastes should be disposed at designated landfill site.
 - For general refuse, provisions of recycle bins for different types of recyclable waste should be provided together with a general refuse bin to separate from C&D materials. Arrangements

should be made with the recycling companies to collect the recycle waste. A reputable waste collector should be employed by the construction contractor to remove general refuse from the Site, separately from C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of “wind-blown” materials.

- Contractors should register as Chemical Waste Producer if any chemical waste is generated during construction phase of the Project. A licensed collector shall be employed to handle and dispose of the chemical wastes, if any. In addition, any chemical waste generated should be handled in accordance with EPD's Code of Practice on the Packaging, Labelling and Storage Chemical Waste.

6.4 Impact Review – Operational Phase

- 6.4.1 During operational phase, general refuse anticipated from the proposed development include daily activities of residents, staff and visitors. Waste would include general food waste and other recyclable including paper, glass and metal containers, etc. According to the EPD's "Monitoring of Solid Waste in Hong Kong – Waste Statistics for 2023", the five-year average (2019 to 2023) per capita general refuse disposal rate is 1.48kg/person/day. All general refuse should be recycled wherever possible, and landfill disposal should only be adopted as a last resort. The recyclables will be properly sorted and stored within the Site for further collection. For food waste, the implementation of appropriate recycling measures will be considered during the operational phase, subject to further detailed feasibility study.
- 6.4.2 General refuse generated during the operational 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.
- 6.4.3 With the implementation of good waste management practices at the Site, the environmental impacts caused by storage, handling, transport and disposal of general refuse are expected to be minimal.

7 Land Contamination

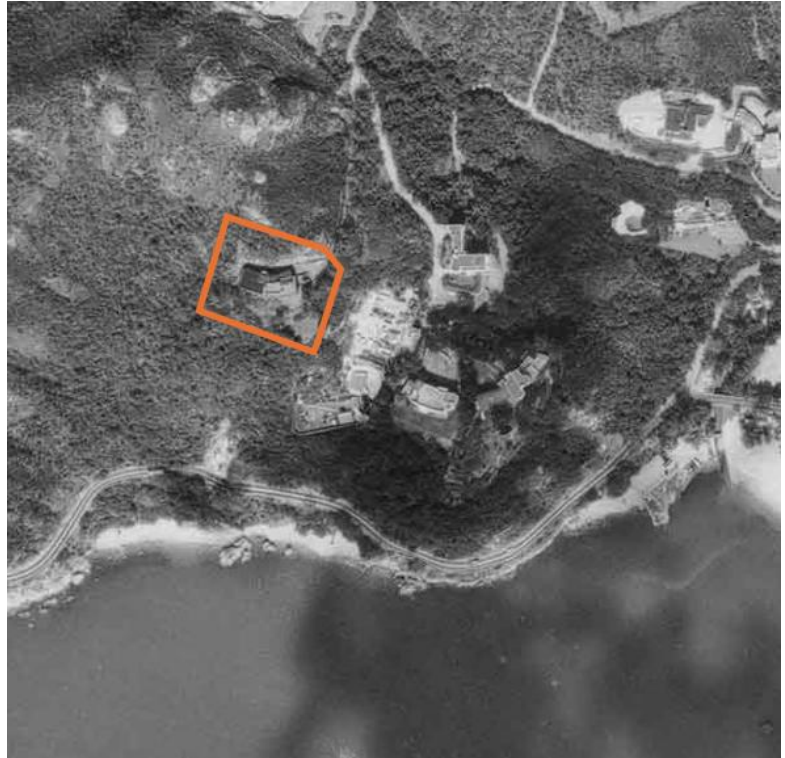
7.1 Introduction

- 7.1.1 The Site is located at Shouson Hill facing Deep Water Bay and has been used for residential purposes since 1963. Therefore, no potential land contamination issues are anticipated due to the existing and historical land uses. Selected historical aerial photographs between Year 1963 and Year 2020 are shown in **Table 7.1**.

Table 7.1 Selected Historical Aerial Photographs (between Year 1963 and Year 2020)

Year (Aerial Photo ID)	Photo
1963 (1963_6737)	 A black and white aerial photograph of a coastal area. A residential development is visible on a hillside, with several buildings and roads. A specific area of the development is outlined with an orange rectangle. The hillside is covered in dense vegetation. A road runs along the base of the hill, and a body of water is visible in the foreground.

1976
(1976_16180)



1987
(1987_A10400)



1999
(1999_CN22937)



2010
(2010_CS30873)



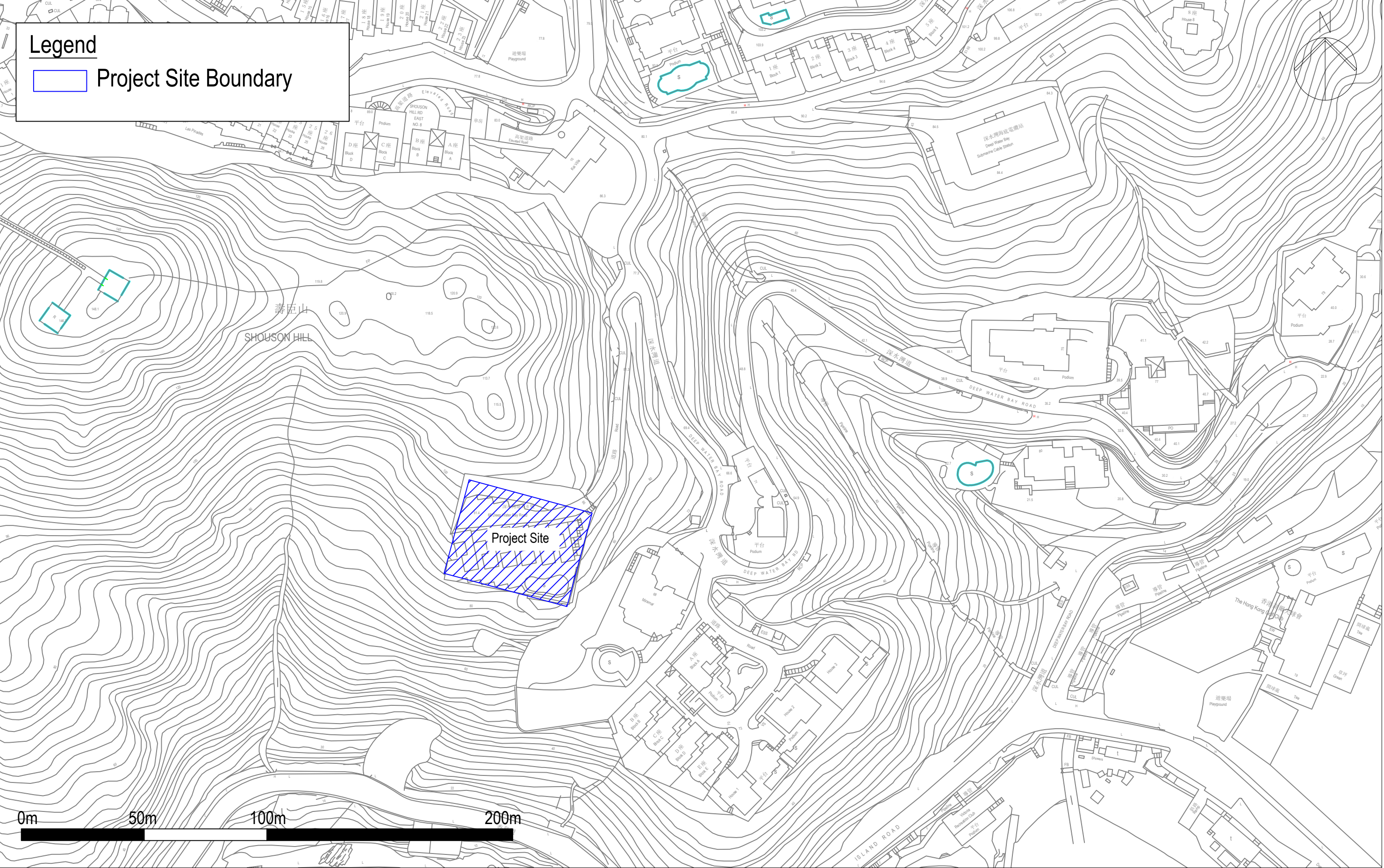
2020
(2020_E101238C)

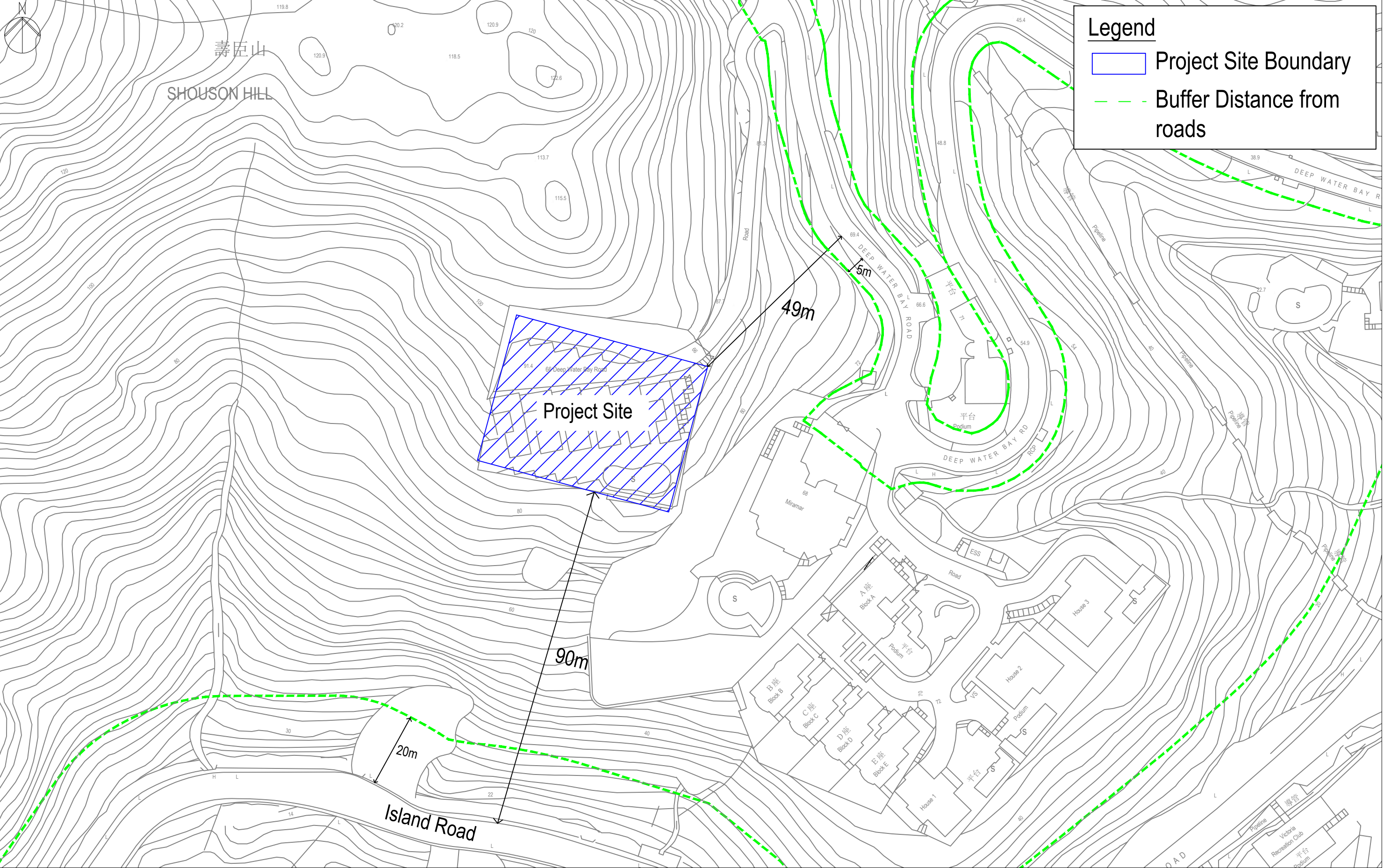


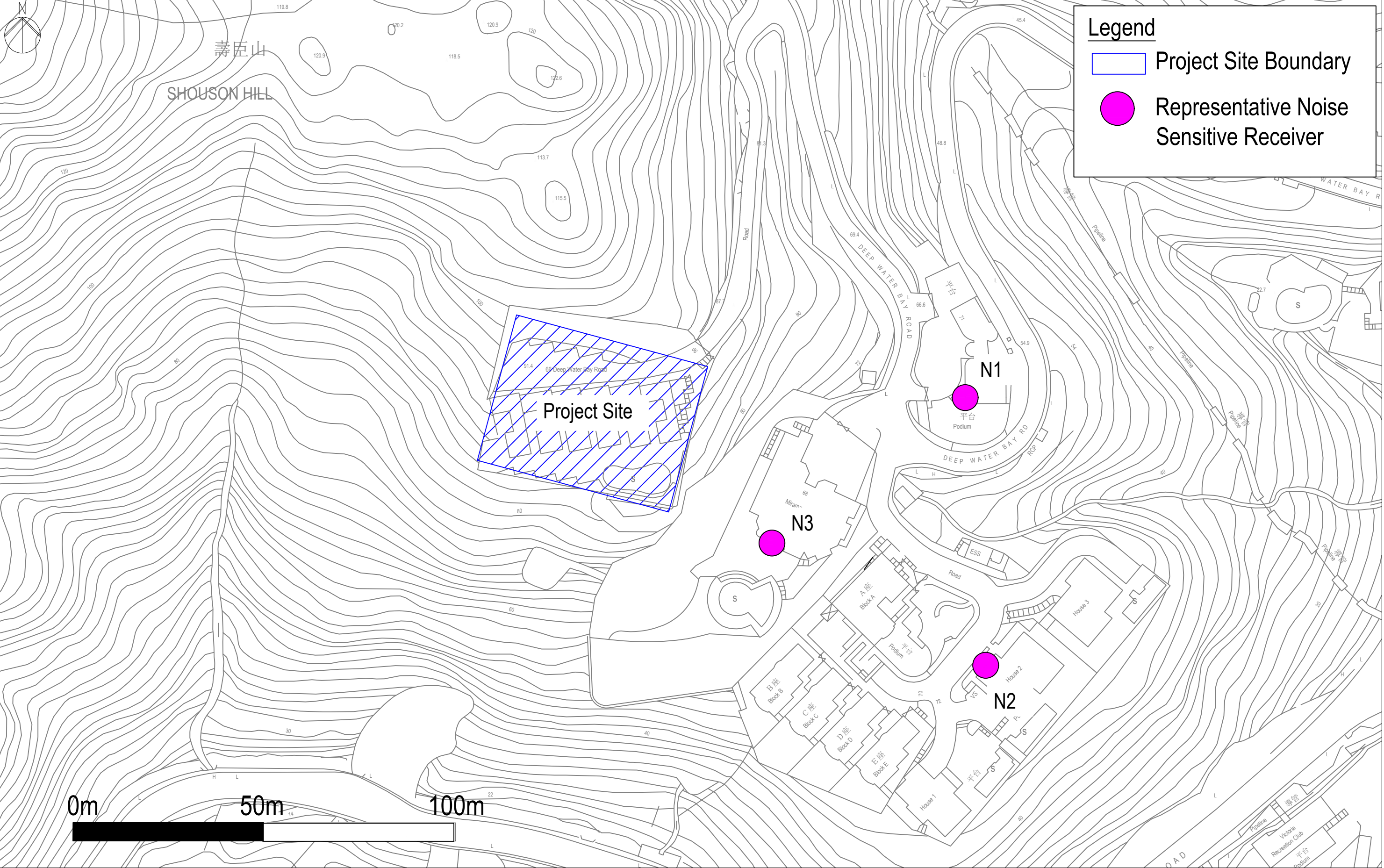
8 Conclusion

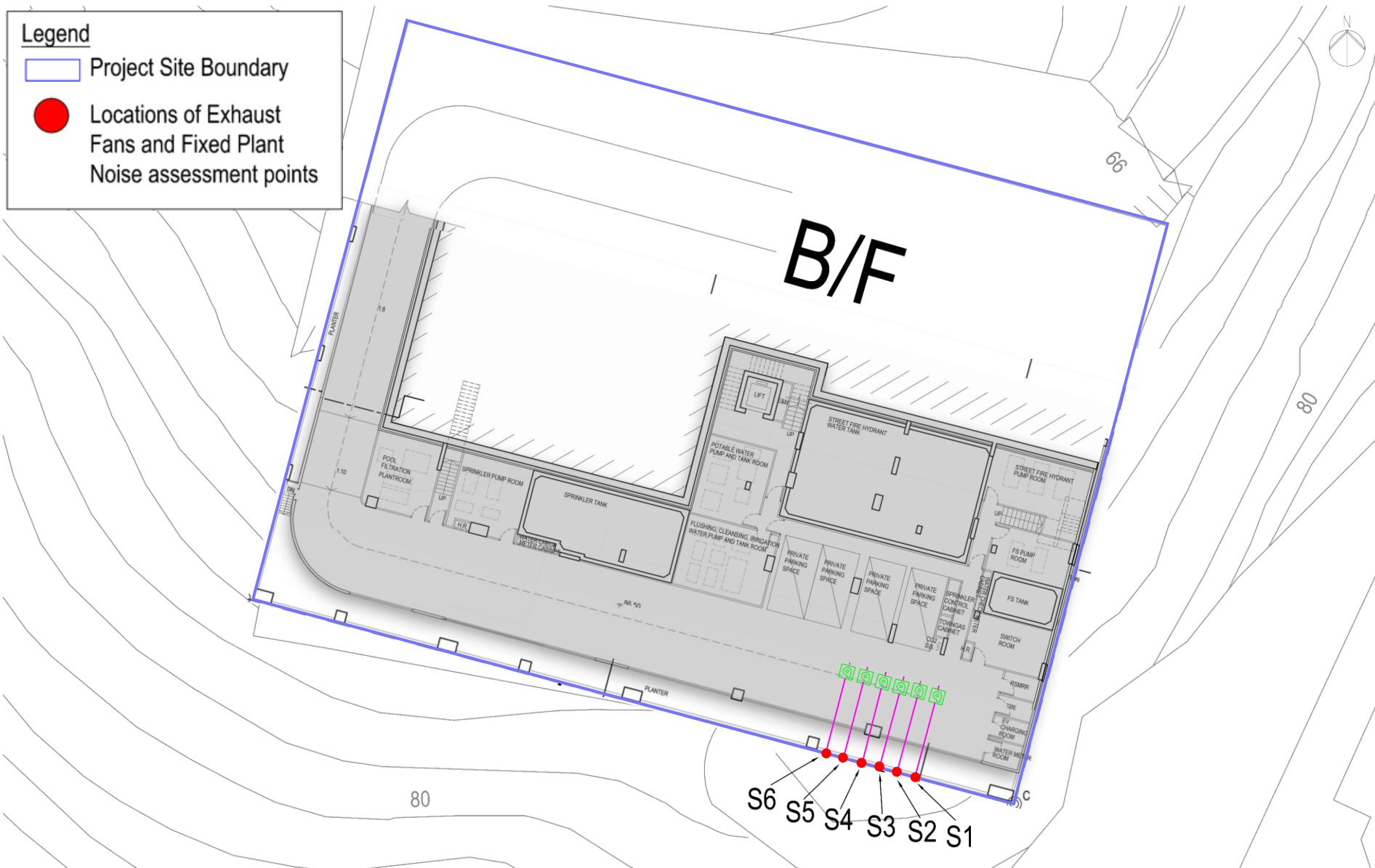
- 8.1.1 The potential environmental impacts during the construction and operation phase of proposed development have been identified and evaluated in this Environmental Assessment Report. The EA report concludes that the construction and operation of the proposed development would be environmentally acceptable and in compliance with the environmental legislation and standards. With the implementation of the recommended environmental mitigation measures, no adverse environment impact from the proposed development is anticipated.

FIGURES









APPENDIX 2.1

Tentative Construction Programme

ID	Task Name	Duration	Start	Finish
1	Tendering Period for consultant and contractor	390 days	Fri 16/5/25	Tue 9/6/26
3	Hoardings and Demolition Work	120 days	Fri 12/6/26	Fri 9/10/26
4	Ground Investigation Work	45 days	Mon 27/4/26	Thu 11/6/26
5	Excavation and lateral Support (ELS), Site Formation and Foundation Work	420 days	Sat 6/2/27	Fri 31/3/28
6	Pile Cap and Superstructure Work	360 days	Sat 1/4/28	Mon 26/3/29

The Gantt chart displays the following task durations:

- Task 1: 16/5/25 to 9/6/26
- Task 3: 12/6/26 to 9/10/26
- Task 4: 27/4/26 to 11/6/26
- Task 5: 6/2/27 to 31/3/28
- Task 6: 1/4/28 to 26/3/29

Legend
————— Critical date
Path Predecessor Summary Task
——> Late

Wed 25/6/25

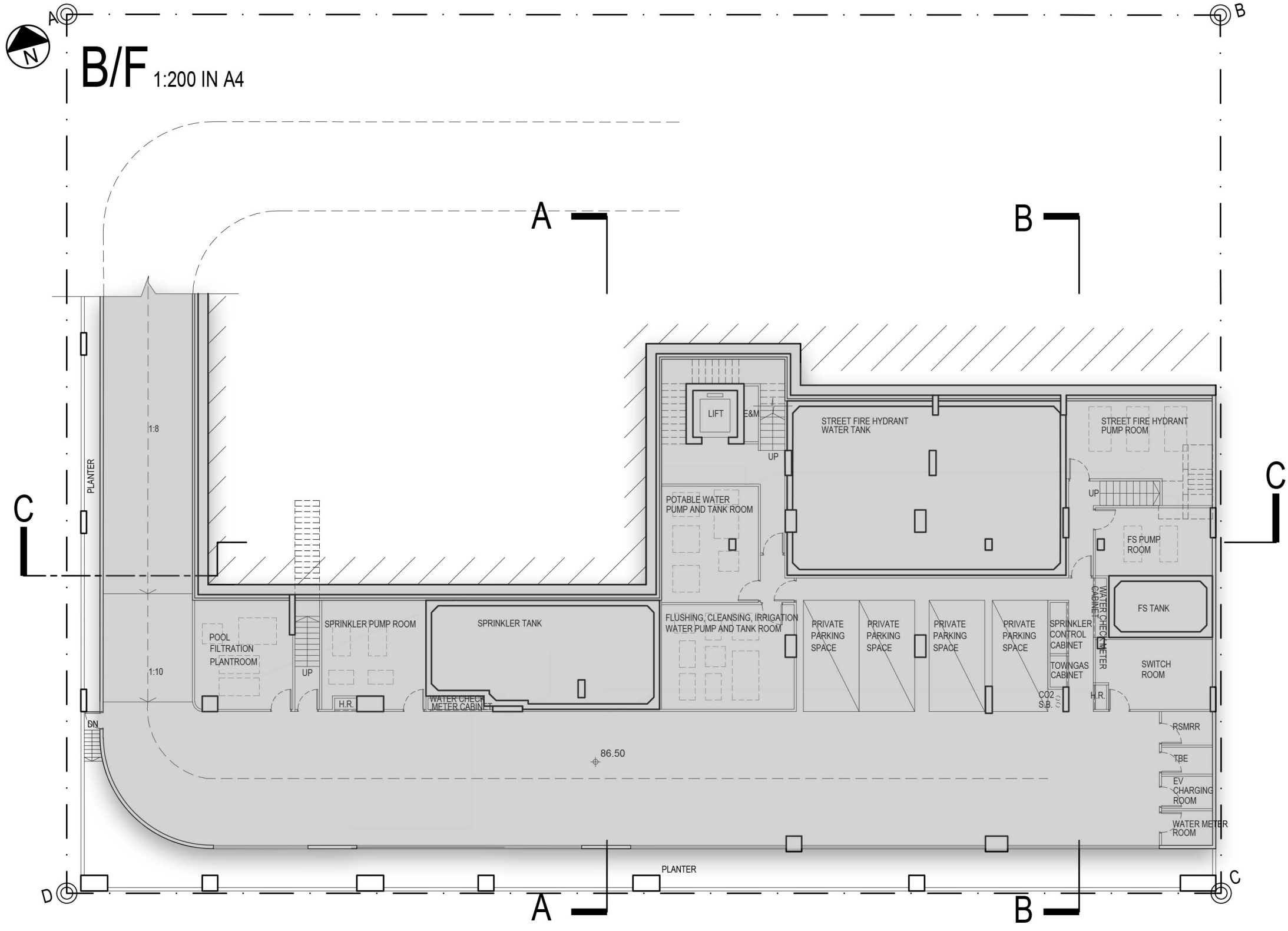
Page 1

APPENDIX 2.2

Master Layout Plan



B/F 1:200 IN A4



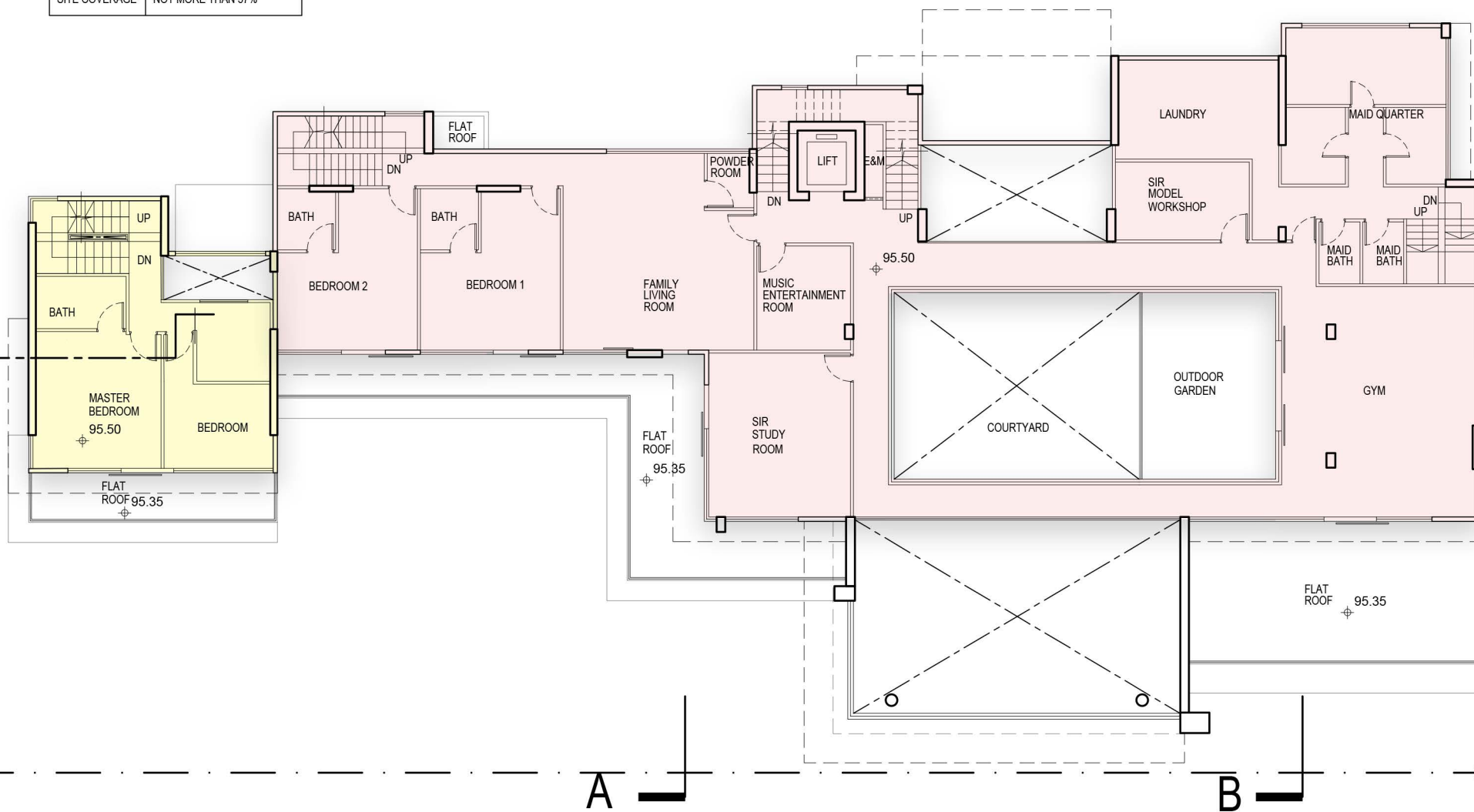


1/F PLAN 1:200 IN A4

DEVELOPMENT SCHEDULE	
SITE AREA	2,043.869 s.m.
PLOT RATIO	0.75
GFA	NOT MORE THAN 1,532.902 s.m.
NO. OF STOREY	3
BUILDING HEIGHT	104.5 mPD
SITE COVERAGE	NOT MORE THAN 37%

LEGEND

- HOUSE 1
- HOUSE 2





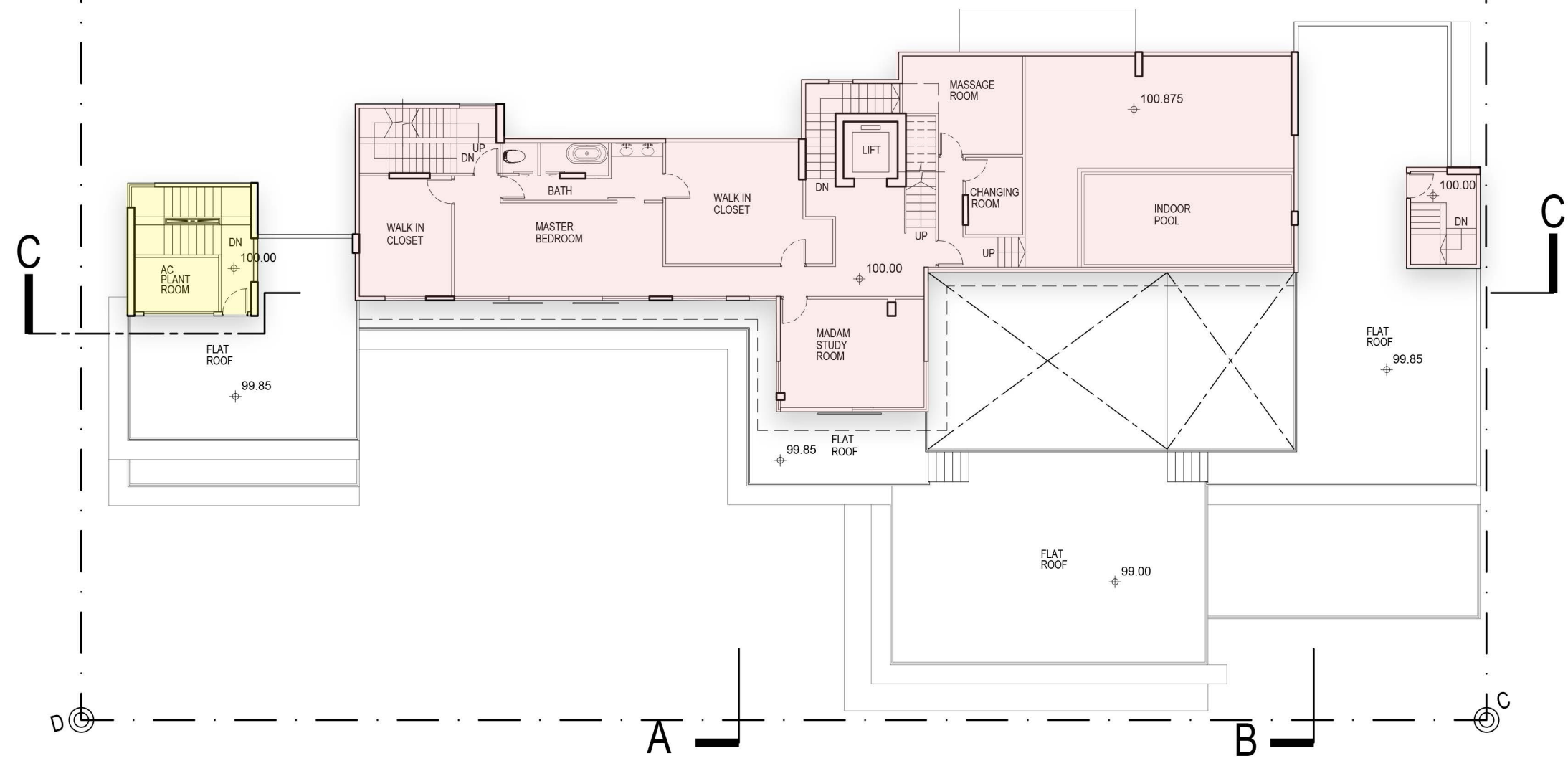
2/F PLAN

1:200 IN A4

LEGEND

HOUSE 1

HOUSE 2





R/F PLAN 1:200 IN A4

LEGEND

- HOUSE 1
- HOUSE 2

A

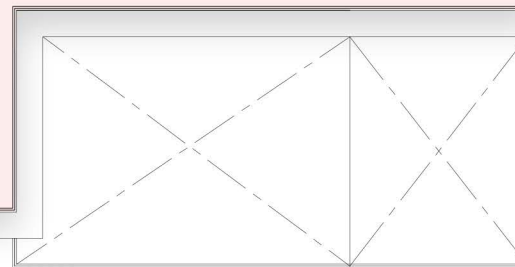
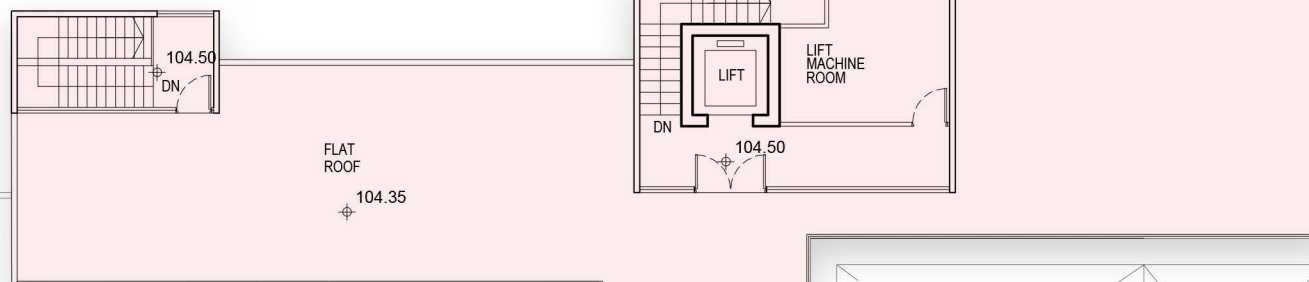
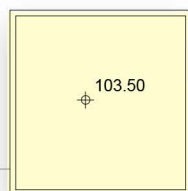
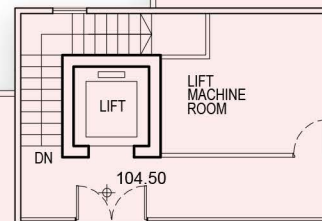
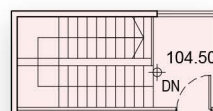
B

C

C

A

B



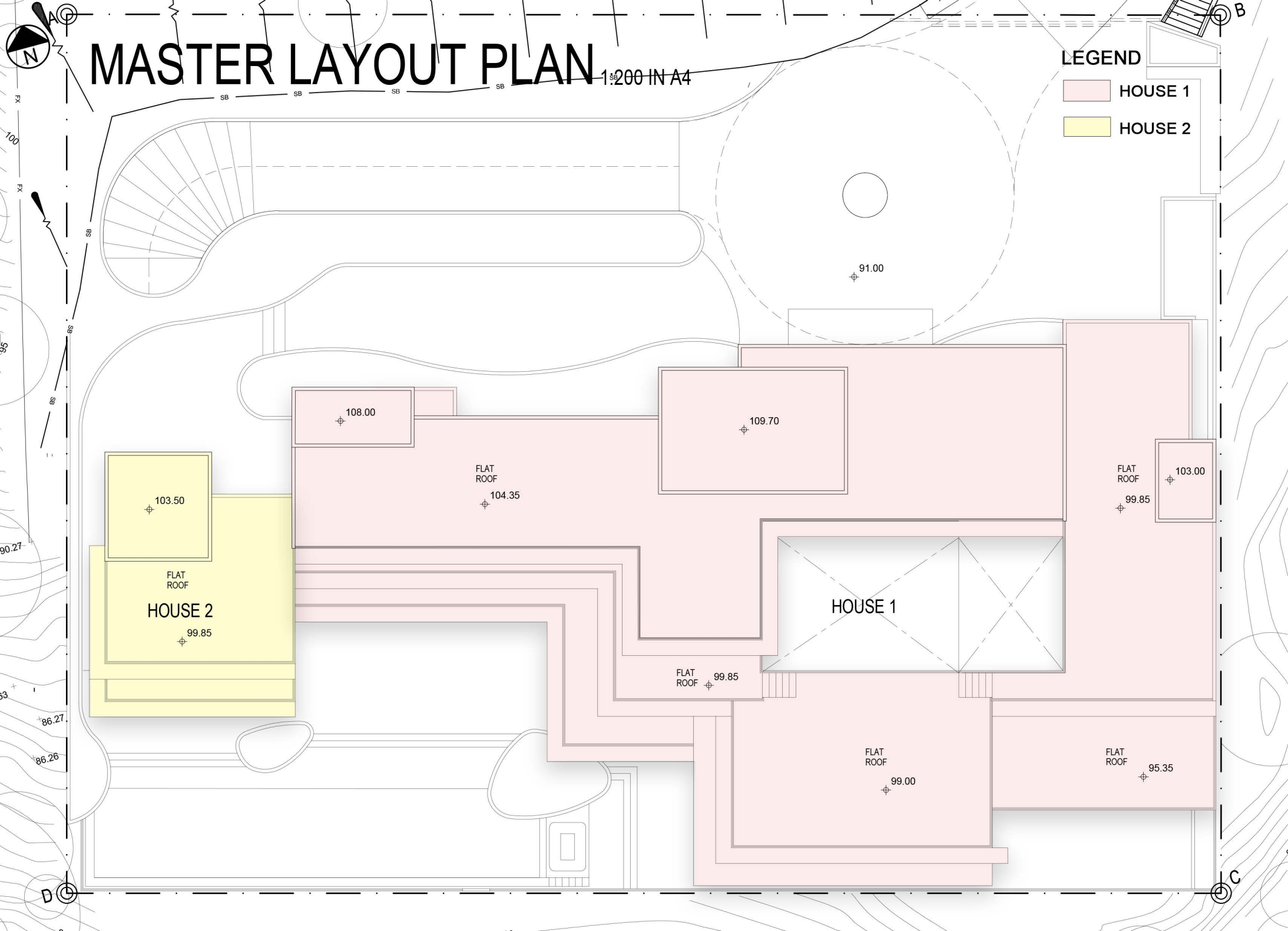


MASTER LAYOUT PLAN

1:200 IN A4

LEGEND

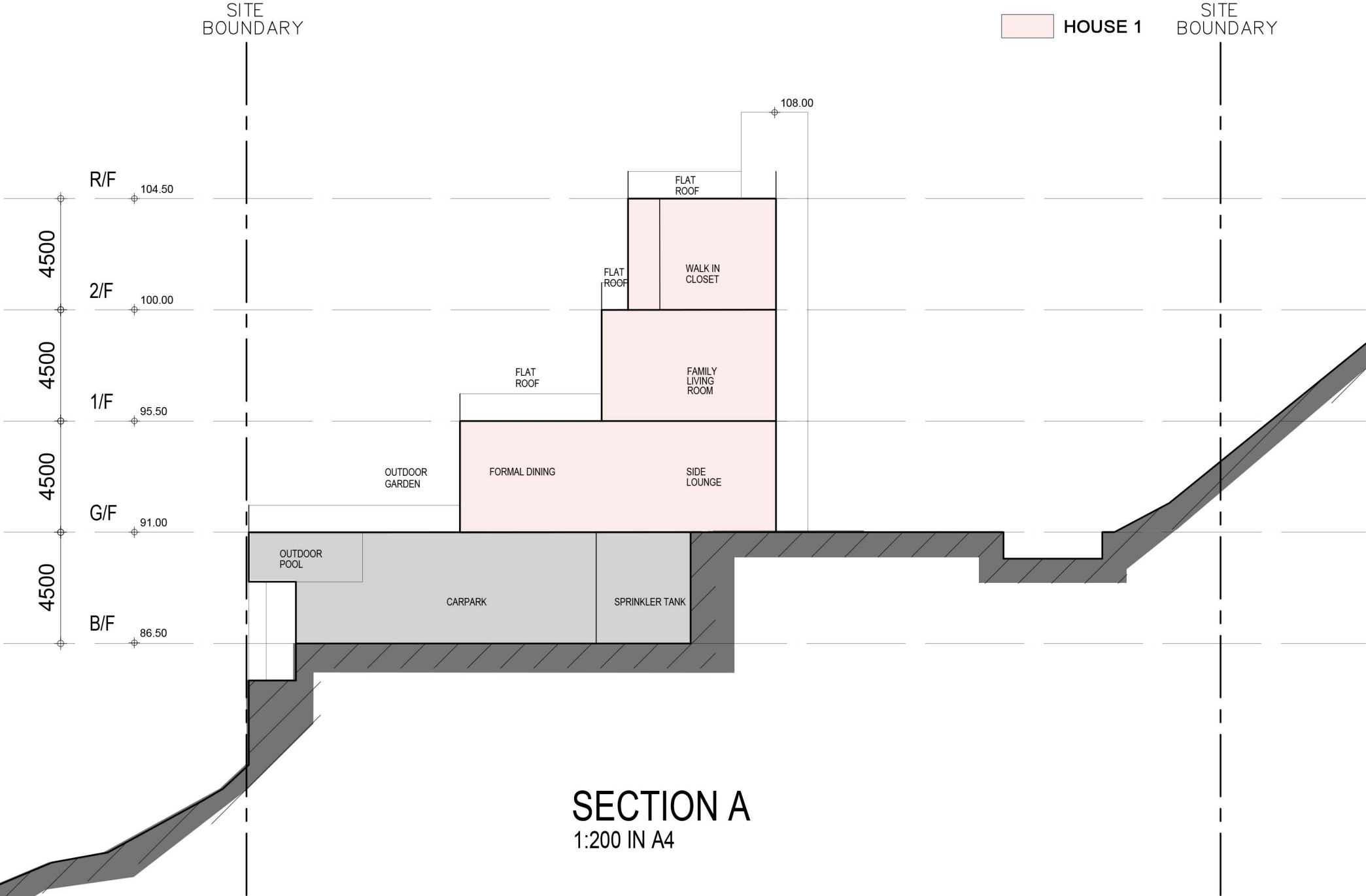
- HOUSE 1
- HOUSE 2



LEGEND

HOUSE 1

SITE
BOUNDARY



 HOUSE 1

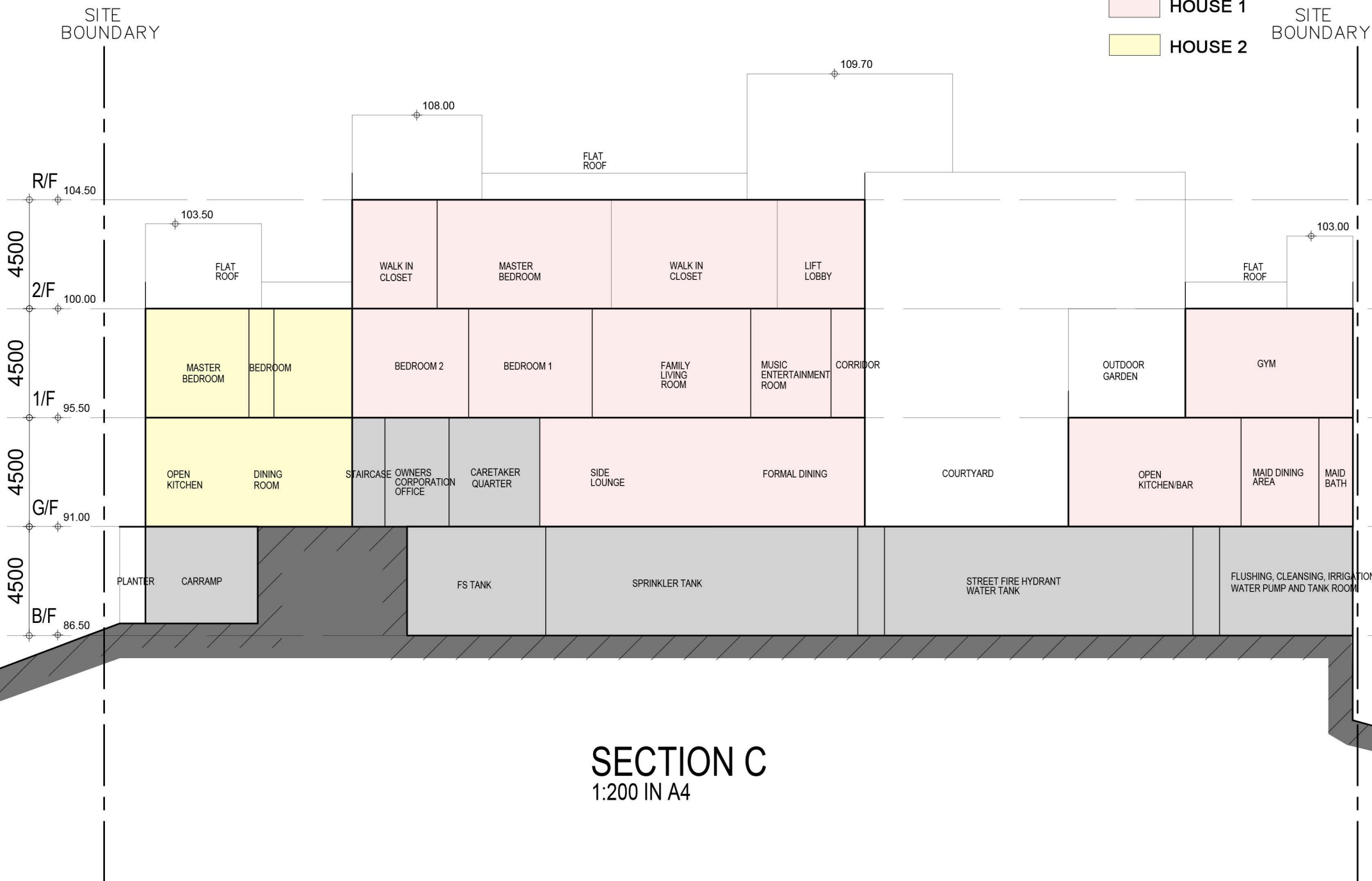
SITE
BOUNDARY



LEGEND

- HOUSE 1
- HOUSE 2

SITE
BOUNDARY



SECTION C
1:200 IN A4

APPENDIX 4.1

Catalogues for Proposed Fixed Plants



IN LINE FAN

CSD Series

(Enclosed type motor)



In-Line Fan – CSD Series (Enclosed type motor)

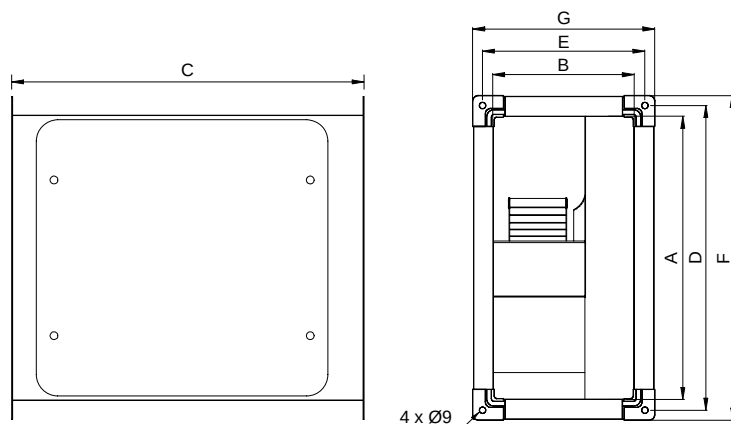
KRUGER

- Cabinet is manufactured in galvanised sheet steel.
- Access door fitted as standard.
- Removable access door for easy accessibility to motor and fan.
- Flanged inlet and outlet for easy ductwork connection.
- Easy installation
- Low noise level.
- Ease of maintenance
- Thermally protected motor.



Kruger Ventilation Industries certifies that the **CSD series** shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

Dimensions



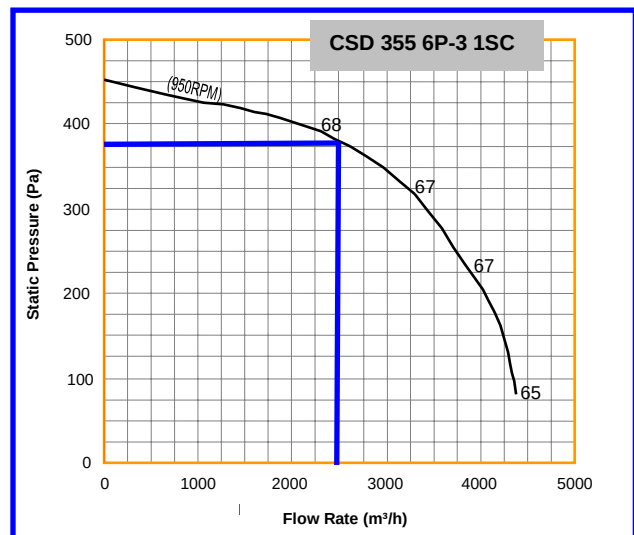
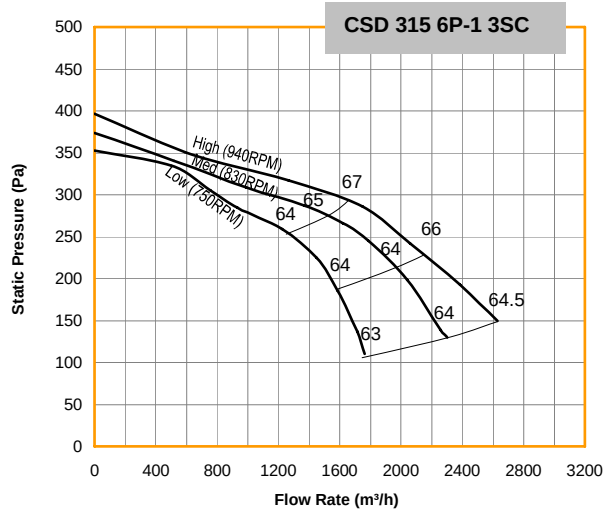
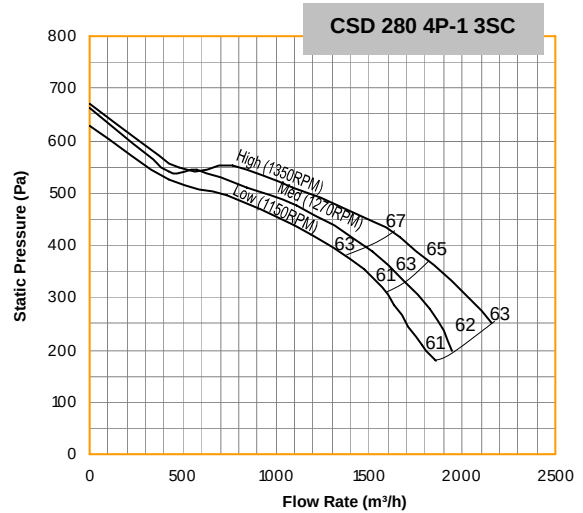
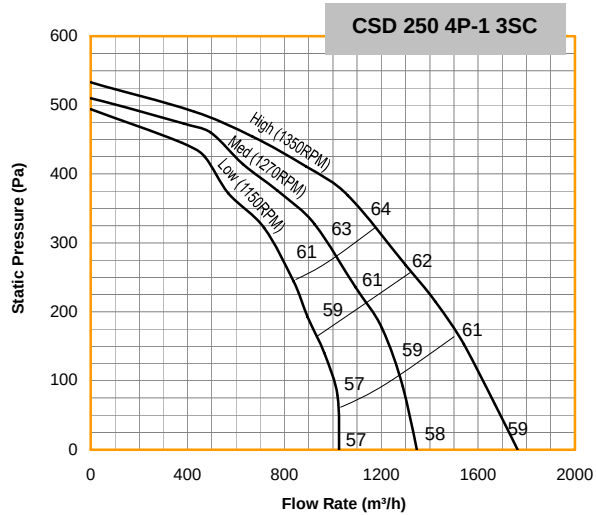
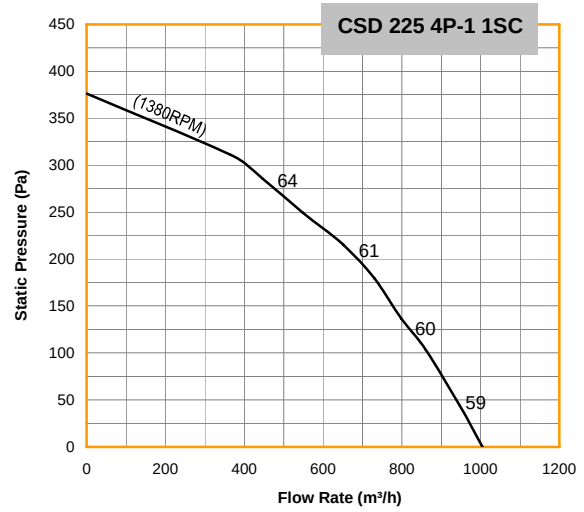
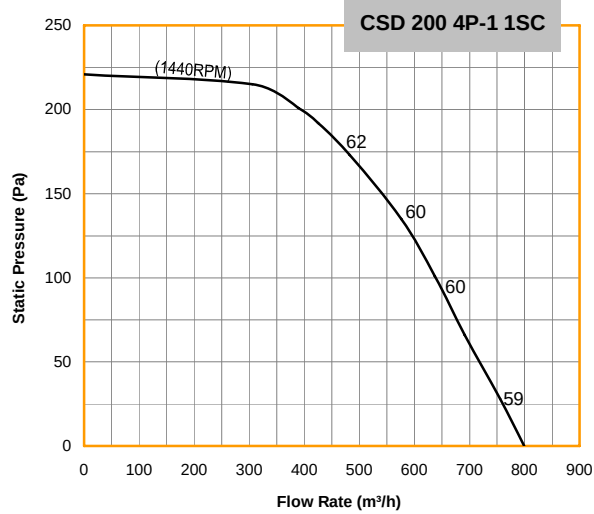
Model	A	B	C	D	E	F	G	Wt (Kg)
CSD 200	400	200	500	428	228	456	256	15
CSD 225	500	250	542	528	278	556	306	19
CSD 250	500	300	562	528	328	556	356	22
CSD 280	600	300	682	628	328	656	356	30
CSD 315	600	350	717	628	378	656	406	42
CSD 355	800	400	800	828	428	856	456	45
CSD 400	800	500	882	828	528	856	556	55

All dimensions in mm.

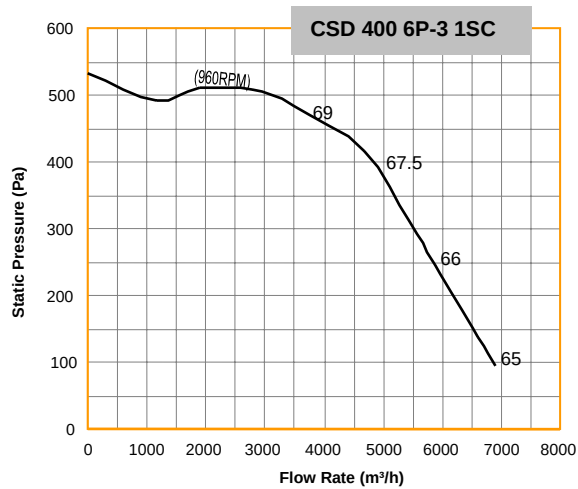
Technical Data

Model	Max Q m³/h	Power W	Motor Prot.	Phase	Hz	Max. Amp	Voltage	uF/V	Ins. Cl	dB (A) at 3m	RPM
CSD 200 4P-1 1SC	800	165	IP44	1	50	0.9	220-240	10/450	F	52	1440
CSD 225 4P-1 1SC	1005	245	IP44	1	50	1.4	220-240	7.5/450	F	54	1380
CSD 250 4P-1 3SC	1765	350	IP44	1	50	2.8/2.2/1.6	220-240	12.5/450	F	54	1350/1270/1150
CSD 280 4P-1 3SC	2160	550	IP44	1	50	3.6/3.1/2.9	220-240	12.5/450	F	57	1350/1270/1150
CSD 315 6P-1 3SC	2630	709	IP44	1	50	3.5/2.5/1.9	220-240	12.5/450	F	56	940/830/750
CSD 355 6P-3 1SC	4970	1100	IP54	3	50	3.1	400	-	F	58	950
CSD 400 6P-3 1SC	6840	1500	IP54	3	50	5.0	400	-	F	59	960

- Speed (RPM) shown is nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances (accessories).



- Speed (RPM) shown is nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances (accessories).
- Sound pressure level Lp(A) at 1m free field.
- The AMCA Certified Ratings Seal applies to air performance only.



- Speed (RPM) shown is nominal. Performance is based on actual speed of test. Performance ratings do not include the effects of appurtenances (accessories).
- Sound pressure level $L_p(A)$ at 1m free field.
- The AMCA Certified Ratings Seal applies to air performance only.

APPENDIX 4.2

Detailed Noise Calculations of Fixed Plants Noise Assessment

Summary of Noise Sensitive Receivers

NSR Label	Descriptions	Nature of Use	Statutory Plan No.	Current zoning	Existing/ Planned Uses	Location		Local Ground, (mPD)	Selected Floor	Floor Level, (mPD)	Assessm ent Point, z, (mPD)	ASR	Daytime (Background free field noise level)			Evening (Background free field noise level)			Night-time (Background free field noise level)			Noise Criteria (ANL-5), L _{eq} (30 min)	
						x	y						Date	Time	Measured Levels	Date	Time	Measured Levels	Date	Time	Measured Levels	Daytime & Evening Time	Nighttime (2300- 0700)
						Easting	Northing																
N1	71 Deep Water Bay Road	Residential	Approved Shouson Hill and Repulse Bay Outline Zoning Plan No. S/H17/13	R(C)	Existing	837063	812000	66.6	3	73.6	74.8	A	20-Mar-25	16:30-17:00	51.2	20-Mar-25	19:00-19:30	42.9	20-Mar-25	23:00-23:30	40.0	46	43
N2	72 Deep Water Bay Road House 2	Residential	Approved Shouson Hill and Repulse Bay Outline Zoning Plan No. S/H17/13	R(C)	Existing	837068	811930	54.9	3	61.9	63.1	A	20-Mar-25	16:30-17:00	51.2	20-Mar-25	19:00-19:30	42.9	20-Mar-25	23:00-23:30	40.0	46	43
N3	68 Deep Water Bay Road	Residential	Approved Shouson Hill and Repulse Bay Outline Zoning Plan No. S/H17/13	R(C)	Existing	837012	811962	60.0	2.0	63.5	64.7	A	20-Mar-25	16:30-17:00	51.2	20-Mar-25	19:00-19:30	42.9	20-Mar-25	23:00-23:30	40.0	46	43

Summary of Noise Inventory

Noise Source ID	Description of Noise Sources	SPL at 3m discharge ⁽ⁱ⁾	Maximum SWL, dB(A), L _{eq} (30 min) ⁽ⁱⁱ⁾		Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak) ⁽ⁱⁱⁱ⁾
			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD				
S1	Louver 1	58	76	76	836979	811972	90.0	2	1	100.0%	100.0%
S2	Louver 2	58	76	76	836977	811972	90.0	2	1	100.0%	100.0%
S3	Louver 3	58	76	76	836976	811972	90.0	2	1	100.0%	100.0%
S4	Louver 4	58	76	76	836975	811973	90.0	2	1	100.0%	100.0%
S5	Louver 5	58	76	76	836974	811973	90.0	2	1	100.0%	100.0%
S6	Louver 6	58	76	76	836973	811973	90.0	2	1	100.0%	100.0%

Note:

(i) The sound pressure level of the louver is made reference to the catalogue provided in Appendix 4.1.

(ii) The calculation of SWL = Sound Pressure Level of the Louver + (20 x Log(3))+8)

(iii) Assumed 100% operation during night-time as worst case senario.

Prediction of Unmitigated Fixed Noise Source Impact on Existing NSRs																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								</
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----

NSR Labels	Descriptions	Nature of Use	Existing/ Planned Uses	Location			ASR	Noise Criteria (ANL-5), L _{eq} (30)		Noise Source ID	Description of Noise Sources	SWL, dB(A), L _{eq} (30 min)		Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak)	Slant Distance to NSR, d (m)	Correction for, dB(A)								Noise Impact at NSR, dB(A)		
				X	Y	Z, mPD		Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD						Distance	No.	% on time (Daytime)	% on time (Night-time)	Screening by Features	Barrier Effects ^[1]	Tonality	Facade	Daytime & Evening Period	Night-time	
N2	72 Deep Water Bay Road House 2	Residential	Existing	837068	811930	63.1	A	46	43	S1	Louver 1	76	76	836979	811972	90.0	2	1	100.0%	100.0%	102	-48.2	0	0	0	0	0	0	0	3	30.3	30.3
										S2	Louver 2	76	76	836977	811972	90.0	2	1	100.0%	100.0%	103	-48.3	0	0	0	0	0	0	3	30.2	30.2	
										S3	Louver 3	76	76	836976	811972	90.0	2	1	100.0%	100.0%	105	-48.4	0	0	0	0	0	0	3	30.1	30.1	
										S4	Louver 4	76	76	836975	811973	90.0	2	1	100.0%	100.0%	106	-48.5	0	0	0	0	0	0	3	30.0	30.0	
										S5	Louver 5	76	76	836974	811973	90.0	2	1	100.0%	100.0%	107	-48.6	0	0	0	0	0	0	3	29.9	29.9	
										S6	Louver 6	76	76	836973	811973	90.0	2	1	100.0%	100.0%	108	-48.7	0	0	0	0	0	0	3	29.8	29.8	
																				Total =	38	38										

NSR Labels	Descriptions	Nature of Use	Existing/Planned Uses	Location			ASR	Noise Criteria (ANL-5), L _{eq} (30)		Noise Source ID	Description of Noise Sources	SWL, dB(A), L _{eq} (30 min)		Location			Directivity Factor (Q)	No. of Plant	% on-time within 30min (Daytime Peak)	% on-time within 30min (Night-time Peak)	Slant Distance to NSR, d (m)	Correction for, dB(A)								Noise Impact at NSR, dB(A)	
				X	Y	Z, mPD		Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)			Daytime & Evening Time (0700-2300)	Nighttime (2300-0700)	X	Y	Z, mPD						Distance	No.	% on time (Daytime)	% on time (Night-time)	Screening by Features ⁽¹⁾	Barrier Effects	Tonality	Facade	Daytime & Evening Period	Night-time
N3	68 Deep Water Bay Road	Residential	Existing	837012	811962	64.7	A	46	43	S1	Louver 1	76	76	836979	811972	90.0	2	1	100.0%	100.0%	43	-40.7	0	0	0	-5	0	0	3	32.8	32.8
										S2	Louver 2	76	76	836977	811972	90.0	2	1	100.0%	100.0%	44	-40.9	0	0	0	-5	0	0	3	32.6	32.6
										S3	Louver 3	76	76	836976	811972	90.0	2	1	100.0%	100.0%	45	-41.1	0	0	0	-5	0	0	3	32.4	32.4
										S4	Louver 4	76	76	836975	811973	90.0	2	1	100.0%	100.0%	46	-41.2	0	0	0	-5	0	0	3	32.3	32.3
										S5	Louver 5	76	76	836974	811973	90.0	2	1	100.0%	100.0%	47	-41.4	0	0	0	-5	0	0	3	32.1	32.1
										S6	Louver 6	76	76	836973	811973	90.0	2	1	100.0%	100.0%	48	-41.6	0	0	0	-5	0	0	3	31.9	31.9
Total =																							40	40							

Note:

(i) There is no direct line of sight between the noise sources and the receiver at N3. A correction of -5dB(A) is adopted for Screening by Features. Corrections of tonality, intermittency or impulsiveness have not been considered in proposed fixed noise source as there are no detailed information and noise specification for these planned noise sources. However, if the noise exhibits any of these characteristics during the operation of the plant, the maximum allowable SWLs should be reduced in accordance with the recommendation given in Section 3.3 of the IND-TM.

Document prepared by

Aurecon Hong Kong Limited

Unit 1608, 16/F, Tower B,
Manulife Financial Centre,
223 – 231 Wai Yip Street,
Kwun Tong, Kowloon,
Hong Kong

T +852 3664 6888

F +852 3664 6999

E hongkong@aurecongroup.com

W aurecongroup.com