

HKIA / ARB Professional Assessment 2021

Paper 6 SITE DESIGN

17 November 2021
09:00 – 13:00 (4 hours)

Kowloon Bay International Trade & Exhibition Centre (KITEC)
Kowloon Bay

ONE COMPULSORY QUESTION

Total Mark: 100

General Notes:

| | |
|--------------|--|
| Format | Use the A3 plain and A3 tracing papers provided as appropriate. |
| Presentation | Black ink line drawings are preferred. Use colour(s) for highlights if necessary. DO NOT use RED. |

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| | | | |
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| Attachment 1 | Design Data Sheet | | A4 size |
| Attachment 2 | Location Plan | 1:1000 | A3 size |
| Attachment 3 | Site Plan | 1:500 | A3 size |
| Attachment 4 | Site Section A | 1:500 | A3 size |
| Attachment 5 | Prototypes | 1:500 | A3 size |

Residential Development cum Community Recycling Centre

1. Introduction

Your practice has been approached by one of your clients to prepare a preliminary master layout plan to explore the feasibility for a lot which the Government has just put up for land sale.

The subject Lot for sale is a residential/GIC site in an urban neighborhood. In addition to residential flats, the lease requires a Community Recycling Centre (CRC), and a Community Centre to be provided within the Lot to promote sustainability living and community waste recycling. The CRC is to be handed back to Government and the Community Centre will be outsourced to Non-Government Organisation for future operation.

According to the Lease, the following should be included in the master layout plan:

- Residential flats with appropriate segregation from the CRC;
- A Community Recycling Centre (CRC) comprising a drop-in station for recyclable waste (paper, cans, glass and plastic bottles, etc.) and associated facilities including a Sorting/Temporary Holding Area, and loading/unloading facilities;
- A Community Centre comprising green product gallery/shop, multi-purpose rooms, Artists' studios for recycled products, administration offices and a rooftop organic farm/ garden;
- At ground level, a covered area for Kitchen waste collection point/ composting area. Waste is generated by the residential flats within the Lot. The compost thus produced will be used as fertilizers for the rooftop organic farm/garden.

2. The Site

2.1 Site Context

The site is located within an urban neighborhood surrounded by existing residential estates, office buildings and a school. Abutting a park to the North, the site enjoys limited sea view to the North and Northwest directions. There is a busy elevated road to the South. Please refer to Location Plan, Site Plan and Site Section in **Attachment 2 to 4**.

It is expected that the residential blocks will be strategically dispositioned in order to optimize views. Traffic noise impact from elevated road must be considered. Prototype with noise mitigation measure can only be placed within the zone delineated in the site plan as noise sensitive area.

2.2 Planning and Lease Restrictions

Major planning parameters stipulated in Outline Zoning Plan and Government Lease are summarized below:

- Site Area : 11,000 m² (about)
- User : Residential Flats cum GIC
- Gross Floor Area : Under the lease, the total domestic gross floor area and total non- domestic gross floor area shall not exceed 60,000 m² and 6,500 m² respectively.
- Site Coverage : not to exceed 65%
- Open Space : Not less than 25% of the site area
- Height Restrictions : Residential – Max. 130 meters mean principal datum (mpd)
GIC – Max. 55 meters mean principal datum (mpd)
- Vehicular Access : Vehicular ingress/egress shall be between X and Y through Z as indicated in **Attachment 2 and 3.**

2.3 Sustainable Design

Sustainable Building Design (SBD) Guidelines as stipulated in PNAP APP-152 shall be complied with. You need to show in principle compliance only; detailed illustrations/ calculations are not required. In this regard, the site arrangement shall comply with the following:

- a) **Building separation**
For the purpose of this Paper, it is NOT required to demonstrate building permeability if the proposed continuous projected façade length (L_p) for any building or group of buildings does not exceed the requirement under PNAP APP-152.
- b) **Street setbacks**
For the purpose of this Paper, setback is NOT required for the internal road(s) within the Site.
- c) **Green coverage**
The minimum site coverage of greenery (% of total site area) shall be provided. For the purpose of this Paper, all greenery shall be provided at pedestrian zone level with a minimum 20% of the site area.

Paper 6 – Site Design**3. The Brief****Schedule of Accommodations**

| Accommodation | Area Required/ Numbers | Remarks |
|--|---|---|
| 1) Residential Flats | Maximum 60,000 m ² | <ul style="list-style-type: none"> • Domestic GFA shall be maximized. • 3.3m floor to floor height • shall apply for typical floors. |
| 2) Community Recycling Centre (CRC) <ul style="list-style-type: none"> • Drop-in station for recyclable wastes • Sorting/Temporary Holding Area | 1,500 m ² | <ul style="list-style-type: none"> • Centre shall be easily accessible by the public who bring in their recyclables to the Centre • 5m floor to floor height shall be provided • Sorted recyclables from the Sorting /Temporary Holding Area shall be conveniently transported to the goods vehicles at the loading bays |
| 3) Community Centre <ul style="list-style-type: none"> • Green product gallery/shop • Community function rooms • Artists' studios • Administration offices | 3,000 m ² | <ul style="list-style-type: none"> • 5m floor to floor height shall be provided • Organic farm shall be provided at its roof • Easily accessible by the public |
| 4) Kitchen waste collection point/ composting area | 2,000 m ² (Covered area at ground floor) | <ul style="list-style-type: none"> • It shall be carefully located to minimize odour affecting residents • The facility serves the residents of this development exclusively. |

Schedule of Accommodations

| Accommodation | Area Required/ Numbers | Remarks |
|--|---|----------------|
| 5) Carpark | | |
| • Residential carpark to be provided underground. | 50 nos. | |
| • 10 numbers parking spaces for GIC facilities to be provided at grade | 10 nos. | |
| 6) Loading/Unloading Bays (to be provided at ground level) | | |
| | • 2 nos. for residential flats at G/F | |
| | • 1 no. for GIC at G/F | |
| | • Each loading bay to be 3.5 x 7m with 3.5 clear headroom | |

3.1 Prototypes for Residential Towers

Three (3) prototypes of typical floor plans for residential flats are provided in **Attachment 5**. Prototype 1 is buildings with noise mitigation design measures. Prototypes 2 and 3 are suitable for all other conditions. You are required to use one or more of these prototypes to suit your planning.

The profile and the configuration of the prototypes can be modified within reasons. The size can also be adjusted to suit your proposed master layout plan within 10% variation.

4. The Task

You shall demonstrate the optimum arrangement of the building blocks within the Site to meet the development brief, to respond to site constraints and opportunities, and to comply with the statutory requirements.

Special attention shall be paid to the accessibility of each individual building, pedestrian and vehicular circulation, provisions of emergency vehicular access (EVA), provisions of greenery and amenity landscape areas for the residents, and the relationship between private and public areas within the Lot.

The design proposal shall be modest yet imaginative, functionally and ecologically sensible, technically feasible, and shall comply with the relevant statutory requirements. Barrier free access path connecting all buildings should be indicated in the plan.

Apart from maximizing development potential, your client is keen to provide a genuine sustainable development in Hong Kong. Holistic integration of sustainable design features in your proposed design would boost your client's confidence in appointing you as the Architect should he successfully acquires the land.

5. Submission Requirements

All submissions for items below should be provided on the blank A3 sized answer sheets provided.

- i) Master Layout Plan in the scale of 1:500 to illustrate/indicate:
 - Overall development at the roof level;
 - Buildings/Road and other relevant features adjacent to the Site;
 - User and number of storeys for each proposed building, external areas, levels, etc.;
 - Emergency Vehicular Access (EVA) arrangements;
 - Access points for vehicles and pedestrians;
 - Provisions of natural lighting and ventilation and open spaces where appropriate;
 - Transport facilities including carpark, ramp to basement carpark, vehicular drop-off points and loading/unloading facilities.

- ii) At least one Master Section drawing through the entire site in the scale of 1:500 to demonstrate the proposed design:
 - the proposed building height and floor levels of different building blocks;
 - Site boundary, site formation levels;
 - External levels, landscape features, and other design features.

- iii) Development Schedule
 - To complete the Design Data Sheet in **Attachment 1**.

End of Paper 6

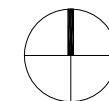
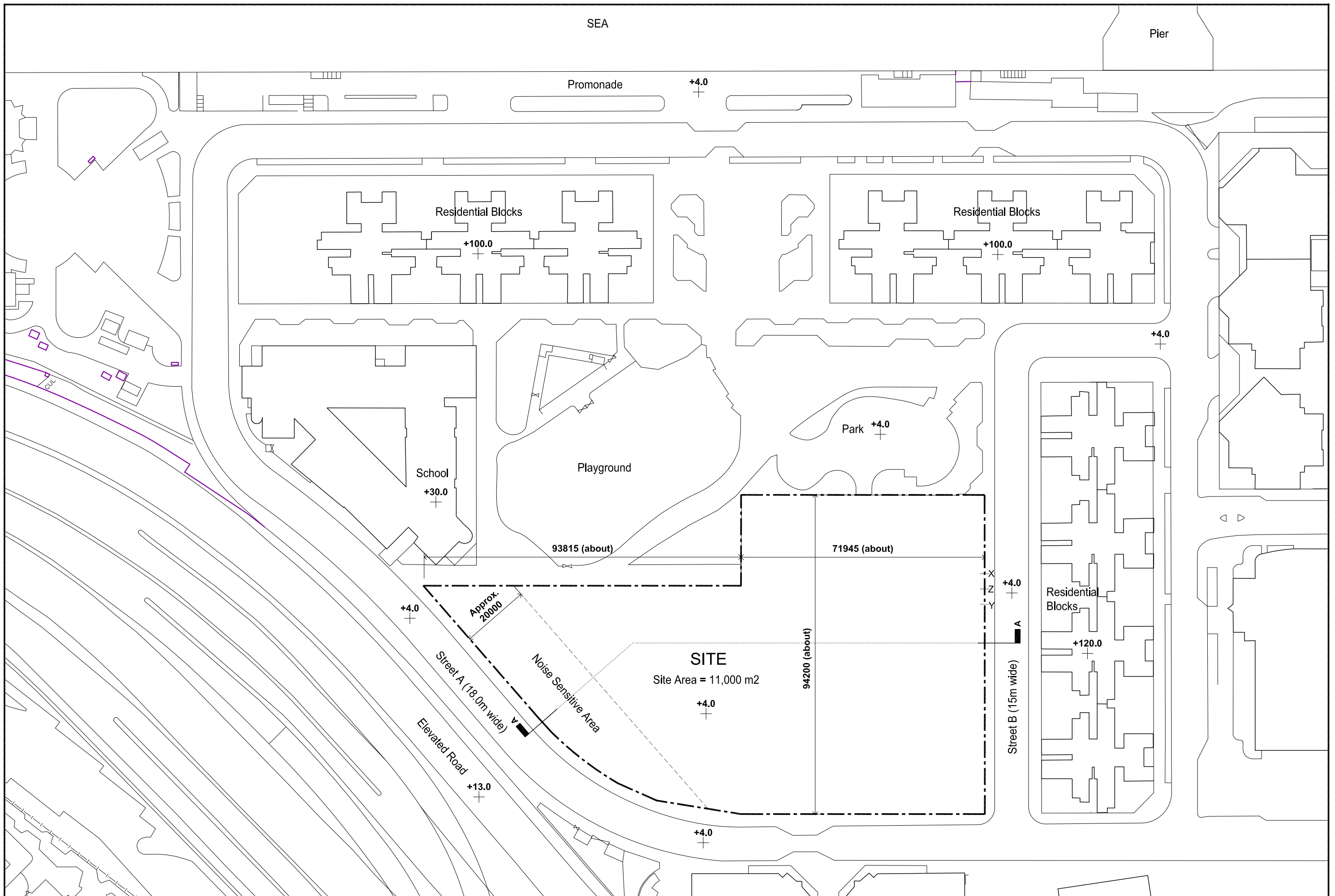
Paper 6 – Site Design

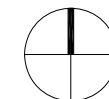
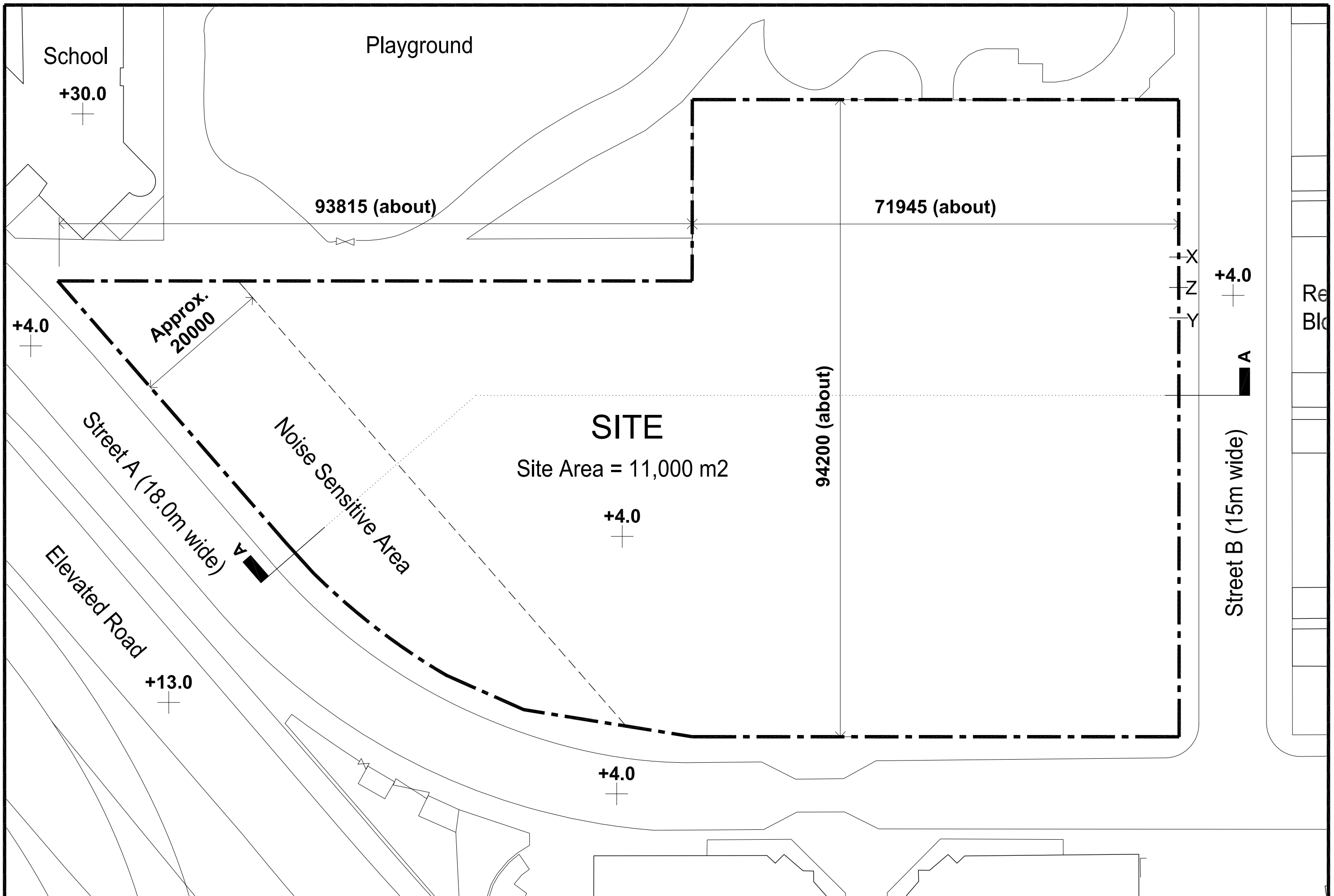
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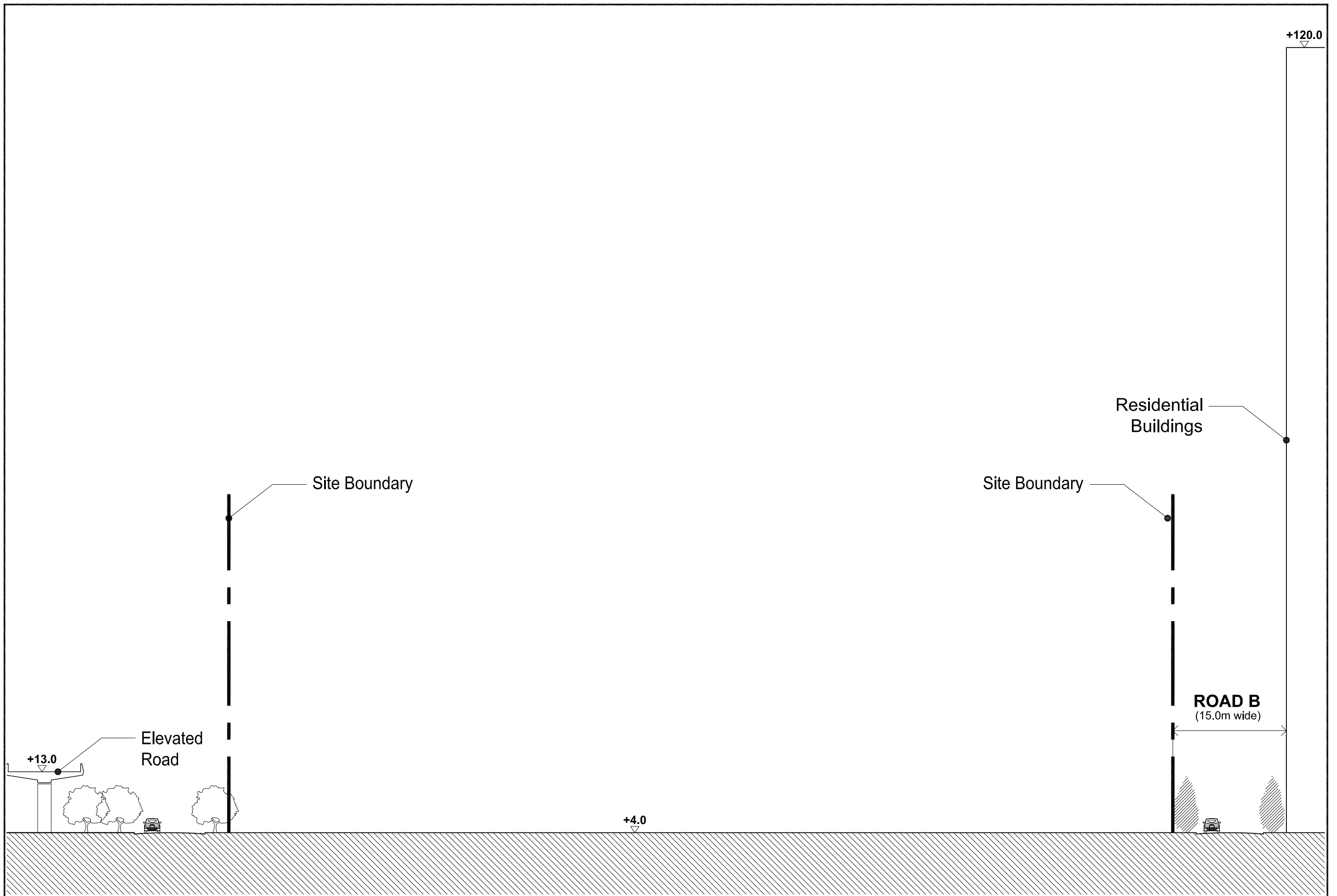
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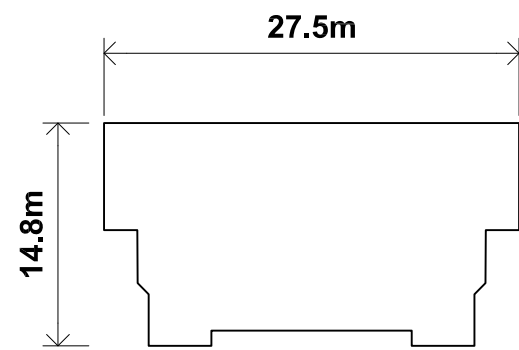
Attachment 1 – Design Data Sheet

| Accommodation | Statutory/Brief Requirements | Proposed |
|--|------------------------------|----------|
| Site Area | 11,000m ² | -- |
| Gross Floor Area <ul style="list-style-type: none"> • Residential Flats • Community Recycling Centre (CRC) • Community Centre with Roof top Organic farm/ garden • Kitchen waste collection point/ composting area | | |
| Loading/Unloading Bays | | |
| At grade carpark for GIC Facilities | 10 nos. | |
| Height Restrictions: Domestic Non Domestic | | |
| Site Coverage: | | |
| Green Coverage (at grade level) | | |
| Open Space Provisions | | |

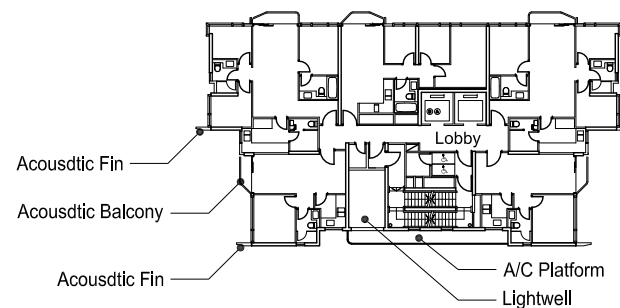




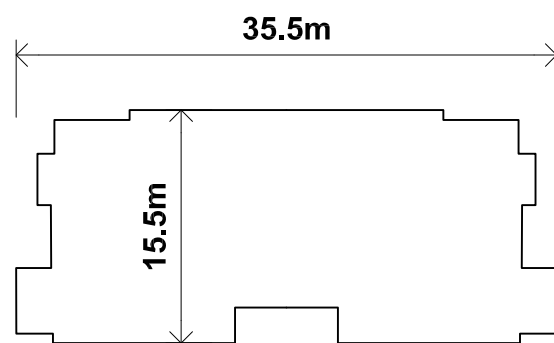




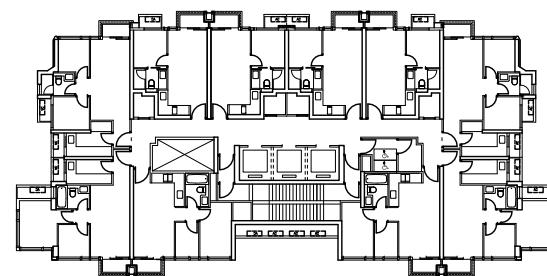
Simplified Block Plan for Presenting in Master Plan



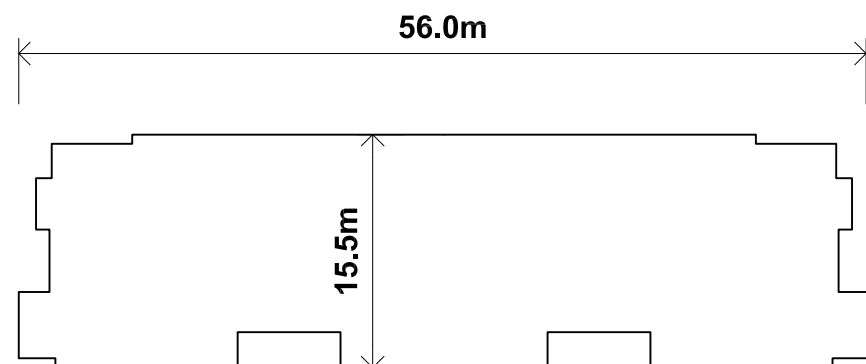
Prototype 1
 Building Type with Noise Mitigation Design
 GFA/Floor 320 sq.m
 Floor plate 350 sq.m



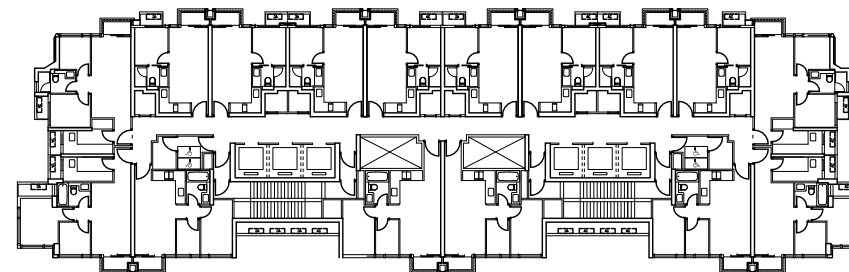
Simplified Block Plan for Presenting in Master Plan



Prototype 2
 GFA/Floor 430 sq.m
 Floor plate 470 sq.m



Simplified Block Plan for Presenting in Master Plan



Prototype 3
 GFA/Floor 750 sq.m
 Floor plate 770 sq.m

NOTE: The profile and configuration of the prototypes may be modified within reasons. The size can also be adjusted to suit your proposed master layout plan within 10% variation.