

Candidate Number :

Seat Number :

HKIA/ARB Professional Assessment 2021

**Paper 7
Building Design**

18 November 2021
9:00 am – 3:00 pm (6 hours)

Kowloonbay International Trade & Exhibition Centre (KITEC)
Kowloon Bay

ONE COMPULSORY QUESTION

100 Marks

General Notes:

Format	Examination paper, both A3 plain and A3 tracing, are provided. Use as appropriate.
Presentation	Black ink line drawings are preferred. You may use colour for clarity. Do NOT use RED.

Table of Contents

Page 2	1. PROBLEM STATEMENT	
	2. SITE DESCRIPTION	
Pages 3-6	3. DESIGN BRIEF	
Page 7	4. SUBMISSION REQUIREMENTS	
Attachment 1	LOCATION PLAN	(1:1000)
Attachment 2	SITE PLAN	(1:200)
Attachment 3	SITE SECTION	(1:200)
Attachment 4	VEHICULAR TURNING RADIUS	(1:200)

1 PROBLEM STATEMENT

Community Recycling Centre

For the past few years, the government has been encouraging and funding non-profit organizations to build recycling stations in the neighbourhood to practise recycling, enable green living and enhance environmental education.

You, being the Architect, is commissioned by a non-profit organization who wishes to design and construct a **Community Recycling Centre** incorporating the elements of collection, disposal and recovery of waste, together with art creation, exhibition and education facilities. It is the intention of the Centre to educate the public through participation in waste collection, recycling part of the waste collected from the community, and recovery on site through artistic creations. Active involvement of the community will be encouraged through workshops, retail galleries and exhibition/education functions held by non-profit organizations.

Your task is to create a sensible solution for the Community Recycling Centre which will be used by the neighbourhood, while some of the functions will also be open to public users. Vehicular access for waste collection should also be provided to the Centre.

Please prepare a schematic design for presentation to the Client. It should possess an architecturally pleasing identity and satisfy generally all functional and statutory requirements. It should also be an integrated solution that incorporates basic requirements for building structure, building services, utilities, etc.

2 SITE DESCRIPTION

Context

The Site is a hypothetical site in an urban area. It is generally flat and adjacent to a public park. The site is served by a public street B (16m wide), and a service lane (3m wide).

Please see Location Plan (Attachment 1), Site Plan (Attachment 2) and Site Section (Attachment 3).

Vehicular Access

Vehicular access shall be between points X and Y through Z (refer to Attachment 4 for vehicular swept paths). Parking and loading/unloading activities shall be provided within the Site.

3 DESIGN BRIEF

3.1 Development Requirements

Site Area	2, 735m ² (approximate)
Zoning	Government, Institution or Community (G/IC)
Permissible GFA under lease	Unrestricted
Permissible Plot Ratio and Site Coverage	Requirements under the Buildings Ordinance shall be complied with.
Building Height	Not higher than 6 storeys (from ground floor)
Site Vehicular Access	Vehicular access shall be between points X and Y through Z.
Parking	2 nos. of private car parking spaces and 1 no. of accessible car parking space shall be provided within the site.
Loading and Unloading	1 no. of loading bay (3.5m x 7.5m x 3.5mH) shall be provided within the site.
Refuse Collection	1 no. of parking for refuse collection vehicle (5.0m x 12.0m x 4.5mH) shall be provided within the site.
Barrier Free Access	Statutory requirements shall be complied with.
Lift(s)	Statutory requirements shall be complied with. Passenger lift(s) shall be provided as appropriate (shaft size = 2400mm X 2600mm minimum) Service lift(s) shall be provided as appropriate (shaft size = 2600mm x 2800mm minimum)

3.2 Design Requirements

The **Community Recycling Centre** shall facilitate the practice of waste collection and recycling, green living, artistic recreation and education purposes. Apart from serving the neighbourhood, some of the areas shall be open to the public. Convenient access to the adjacent public park should also be provided.

The Centre comprises of the **Recycling Station, Workshops & Exhibition/Education Centre** and **Community Gardening Centre**. The overall design of the Centre should be welcoming and encouraging the promotion of waste recovery through artistic creations and other educational functions. As such, **public entry to the Recycling Station shall be through the main entrance/lobby of the building**. The conventional image of “refuse collection” for this Centre should be avoided, and it should also form a pleasant and coherent identity with the public park.

Recycling Station

As part of the waste collection and recovery network to serve the residential housing in the neighbourhood, the location of the Recycling Station shall be easily accessible to both pedestrians and those arriving by cars. Recyclables collected in the *Covered Collection Point* will be sorted in the adjacent *Sorting Room* on the same level. Recoverable materials, which can be further processed by artists’ re-creations, will be transported to the *Workshops* of this Centre. Others will be taken off-site to appropriate locations by refuse collection vehicles.

The *Food Waste Recovery Centre* will process the food waste collected at Covered Collection Point, together with those generated from the Coffee Shop. The food waste will be transported to the roof for gardening purpose. A feasible and reasonable routing for the back-of-house facilities is therefore required.

Workshops & Exhibition/Education Centre

The Workshops are interactive workplaces to engage with the public for re-generation of the recoverable waste into artistic products. Occasionally larger scale exhibitions will be held in the *Exhibition Centre* or at the open Green Lawn on ground floor. The *Exhibition Centre* can also house educational seminars or activities for the promotion of recycling.

Community Gardening Centre

The rooftop accommodates the *Community Gardening Centre* which invites the public to practise green farming from the food waste recovered from their homes or the Coffee Shop of this Centre.

Your planning should be sensible to allow easy access by different users, including access to the rooftop. Passenger lifts can be considered, however, under normal operation, users should be encouraged to use stairs to move in between levels.

3.3 Accommodation Schedule

	Gross Floor Area (m ²)	Remarks
Entrance Lobby		
For staff, and artists working at workshops	as appropriate	
For public users	as appropriate	
Recycling Station		
Covered Collection Point for Waste and Recyclables	100	1 no.
Sorting Room	100	1 no.
Store Room for tools/equipment	10	1 no.
Food Waste Recovery Centre	50	1 no.
Material Recovery Rooms	10 each	1 no. on each floor
Workshops & Exhibition / Education Centre		
Exhibition / Education Centre	300	1 no.
Artists' workshops cum retail galleries	70 each	4 nos.
Offices	35 each	8 nos.
Multi-purpose rooms	80 each	2 nos.
Changing rooms	10 each	1 no. each for male & female, near workshops
Coffee shop with small pantry	100	1 no.

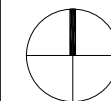
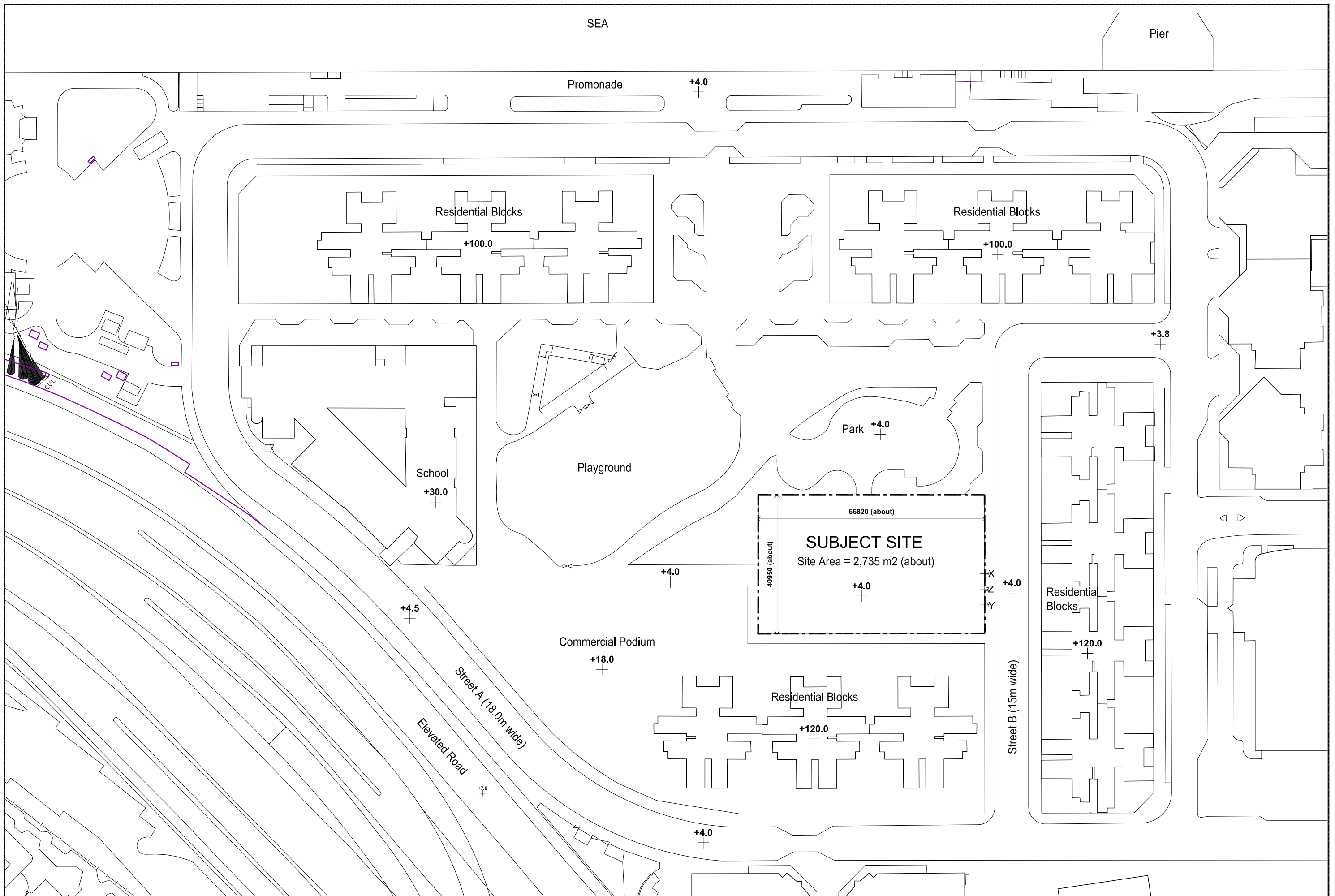
3.3 Accommodation Schedule (cont'd)

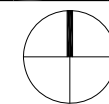
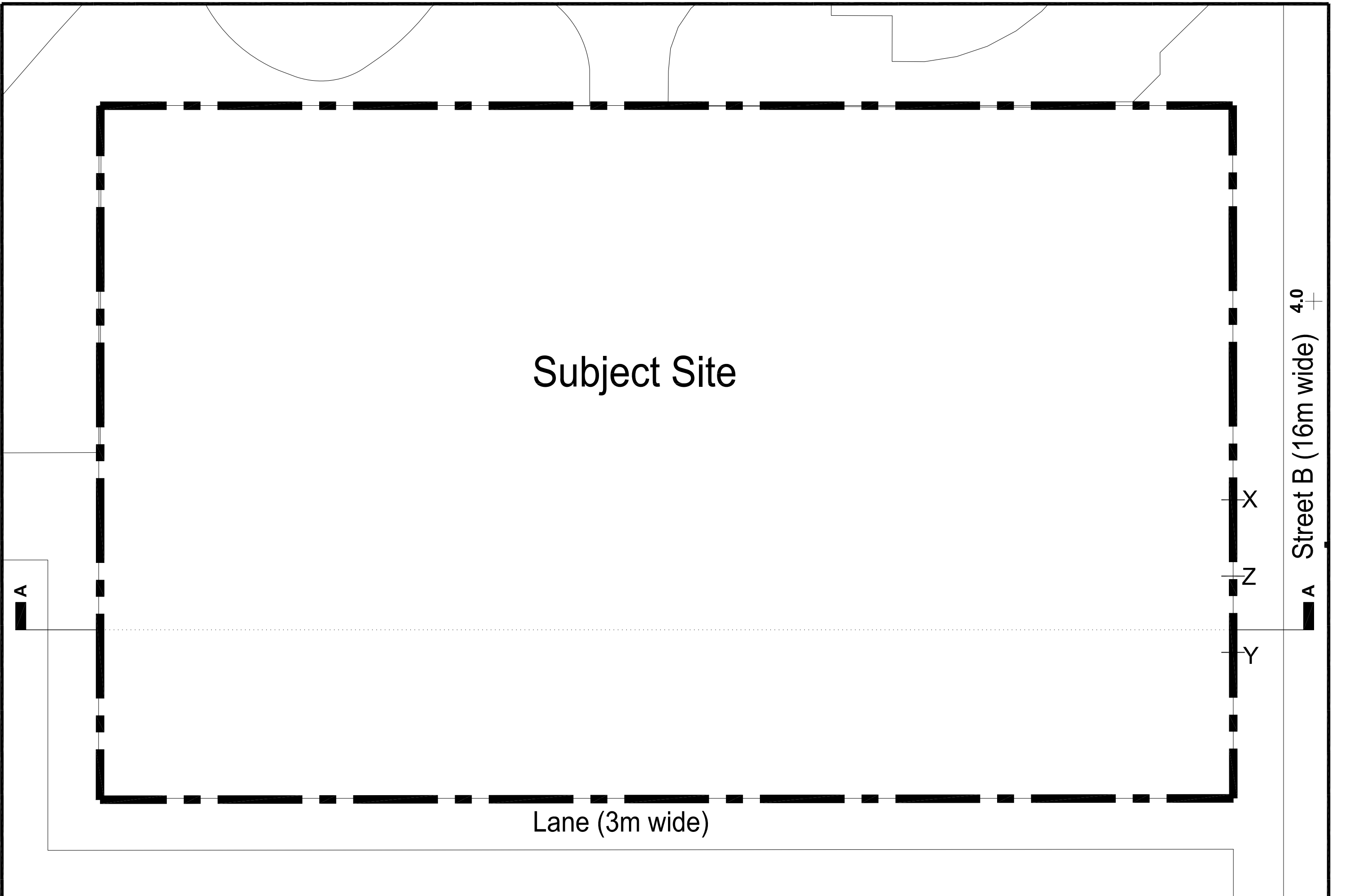
	Gross Floor Area (m ²)	Remarks
Community Gardening Centre		
Green Farming Area on Rooftop	200	1 no.
Green Lawn on Ground Floor	200	1 no. (can be used as outdoor gathering or exhibition area)
Parking Space		
Open Car Park		2 nos. (2.5m x 5m x 2.4mH each)
		1 no. (accessible parking space) (3.5m x 5m 2.4mH)
Loading and Unloading		1 no. (3.5m x 7.5m x 3.5mH each)
Refuse Collection Vehicle	6m x 5m 6m x 5m	1 no. (5.0m x 12.0m x 4.5mH each) Please refer to Attachment 4 for vehicular turning radius
Building Services		
Transformer Room (Tx Rm)	8m x 6m	1 no. (preferably on ground, or 1/F with separate staircase)
High Voltage switch Room (HV Switch Rm)	6m x 5m	1 no. (preferably adjacent to Tx Rm)
Low Voltage Switch Room (LV Switch Rm)	6m x 5m	1 no. (preferably adjacent to or on top of HV switch room)
Other building services provisions	as appropriate	
Other facilities	as appropriate	e.g. toilets, fire escape stairs, other M/E rooms, as appropriate

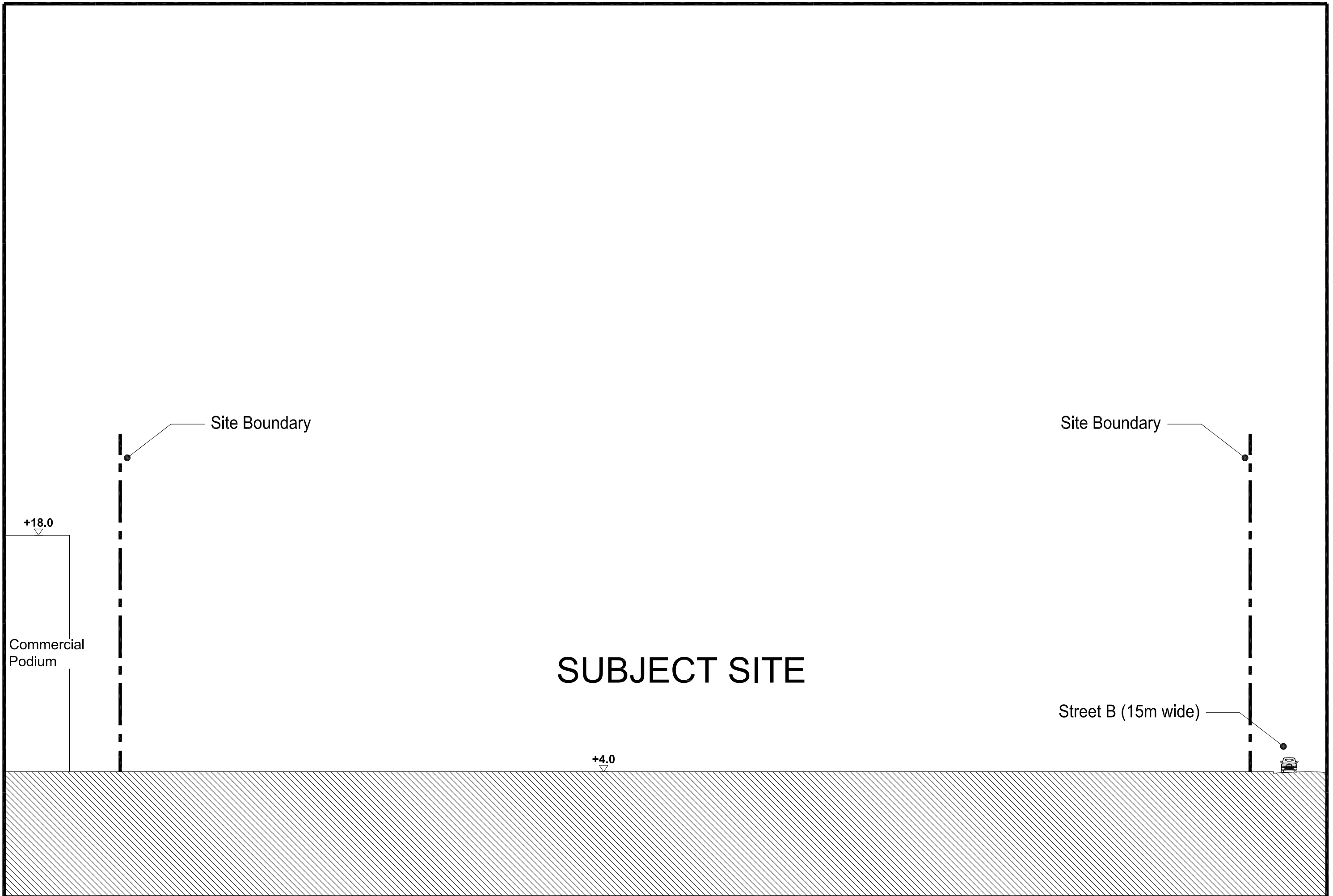
4 SUBMISSION REQUIREMENTS

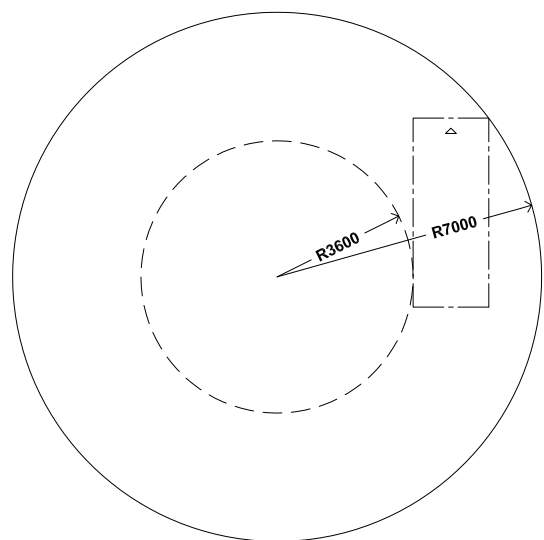
Site Plan (1:200)	Show site development including access point(s) for both pedestrian and vehicular traffic
Plan of Ground floor (1:200)	<ul style="list-style-type: none">• All required spaces according to Accommodation Schedule, with annotation• Major structural elements• Overall and critical dimensions• Appropriate annotation• Site boundary, adjacent streets and structures• Means of Access for Firefighting & Rescue
Plan of First floor Plan(s) of other floor(s) (1:200)	<ul style="list-style-type: none">• All required spaces according to Accommodation Schedule, with annotation
Section (A minimum of ONE at 1:200)	<ul style="list-style-type: none">• Major structural elements• Overall and critical dimensions• Floor to floor and other critical dimensions• Appropriate annotation• Relationship between elements of construction (<i>E.g. Interfaces and connections of building structure, building envelope, finishes, building services, and etc.</i>)
3-dimensional Illustration	Not compulsory
Calculations	<ul style="list-style-type: none">• The design is assumed to be in compliance with the relevant Buildings Ordinance and Regulations.• No calculation is required.

END OF PAPER

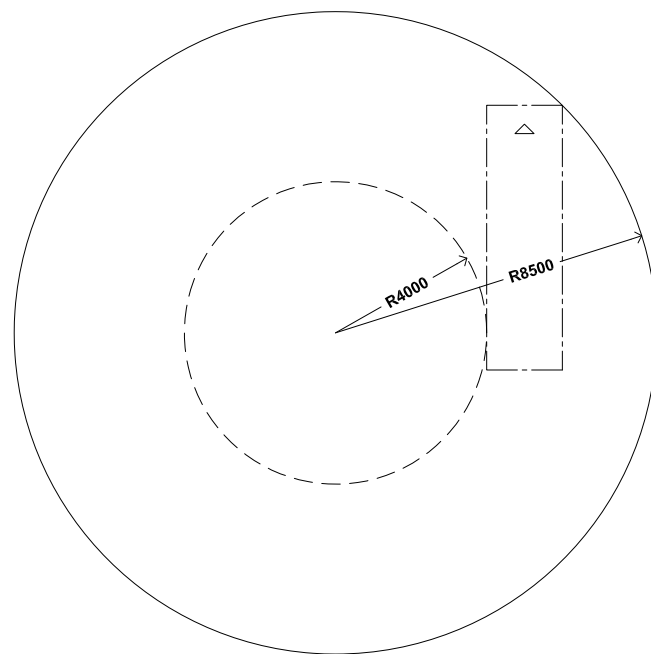




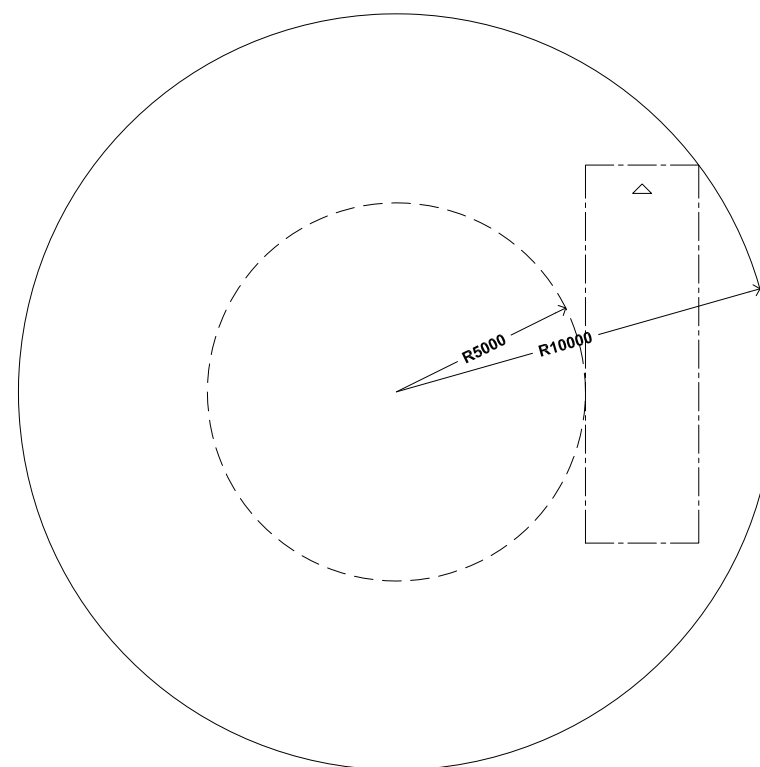




PRIVATE CAR



LIGHT GOODS VEHICLE (LGV)



REFUSE COLLECTION VEHICLE