

Candidate Number :

Seat Number :

HKIA / ARB Professional Assessment 2010

Paper 7a

CONSTRUCTION DETAILS & DOCUMENTATION

20 marks (out of 100 marks of Paper 7)

16 December 2010
4:00 pm – 6:00 pm (2 hours)

Hong Kong International Trade & Exhibition Centre (HITEC)
Kowloon Bay

TWO COMPULSORY QUESTIONS

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 highlights if necessary. Do NOT use RED.

CONTENTS

Page Number

Page 1 Contents

Page 2 Problem Statement & Submission Requirements

Attachment 1 Public Toilet in ABC Park – Plan, Section & Elevations Scale as shown

Attachment 2 Public Toilet in ABC Park – Drawing List ---

Attachment 3 ABC Public School – Typical External Staircase Details Scale as shown

Attachment 4 ABC Public School – Typical External Staircase Details – Section AA Scale 1:25

Appendix - Buildings (Construction) Regulations Regulation 8 (B(C)R-8)
 - Buildings (Planning) Regulations Regulation 39 (B(P)R-39)
 - Code of Practice for the Provision of Means of Escape In Case of Fire Section 17

PROBLEM STATEMENT & SUBMISSION REQUIREMENTS

Please answer BOTH Questions 1 and 2.

Question 1 (8 marks)

As a project architect for the public toilet in ABC Park, you are required to list out a full set of **architectural** tender drawing on the drawing list provided in Attachment 2.

A set of design sketches with plans, sections and elevations as shown in Drawing SK01 (Attachment 1) will be used as a base for the preparation of tender document.

All structural, M&E and drainage drawings will be prepared by others.

Question 2 (12 marks)

Drawing 02 (Attachment 3) is a detail plan of an external staircase for ABC Public School. The staircase is constructed in concrete with minimum 1.1m(H) painted galvanized mild steel (GMS) balustrade railings.

You are required to prepare:-

- (a) Detail B at scale of 1:5 in Drawing 02 (Attachment 3), and
- (b) A detail section A-A indicating a typical flight (12 risers) at scale of 1:25 in Drawing 03 (Attachment 4).

The details should meet all the requirements of relevant buildings regulations (B(C)R-8, B(P)R-39 and Code of Practice for the Provision of Means of Escape In Case of Fire Section 17 as attached for reference), with all the required finishes, dimensions, etc. clearly indicated. You are free to propose appropriate design and finishes.

[Each of (a) and (b) shall carry 6 marks]]

END OF PAPER 7a

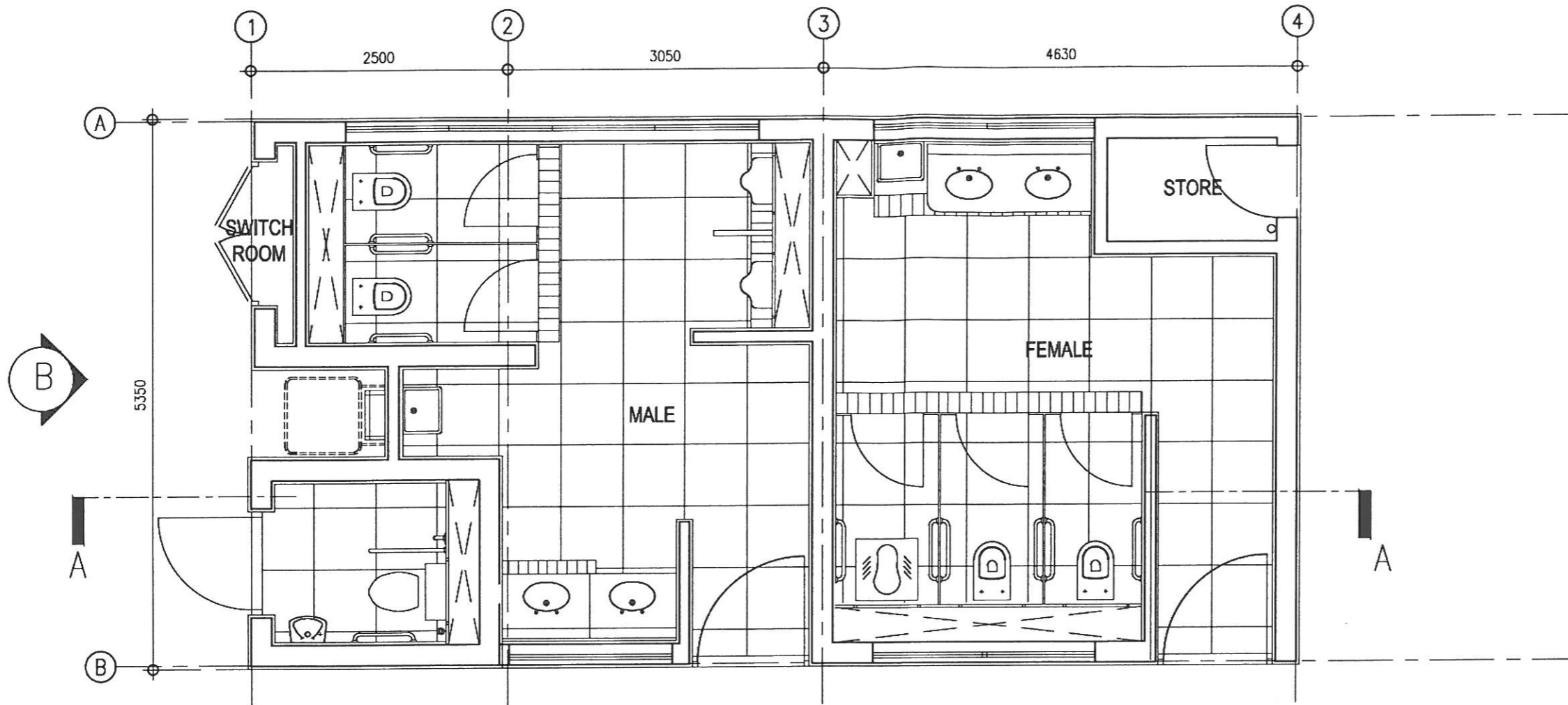
Code of Practice for the Provision of Means of Escape In Case Of Fire 1996



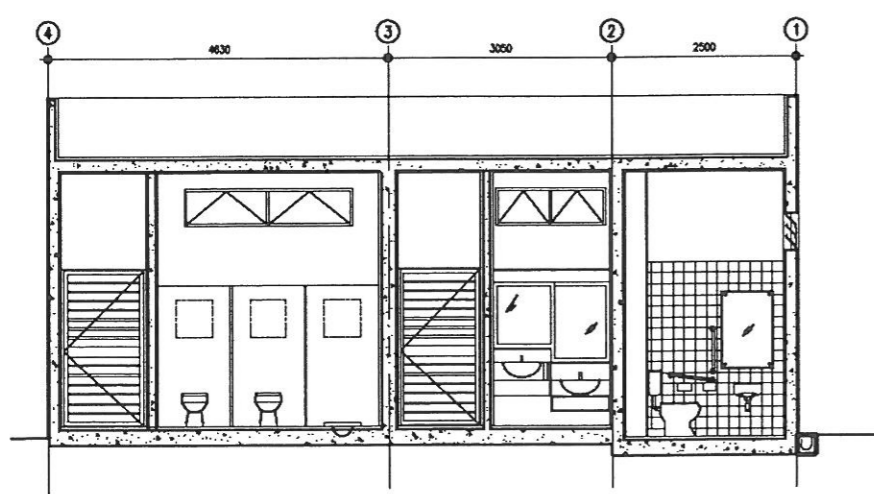
Buildings Department
屋宇署

17. Construction of Staircases

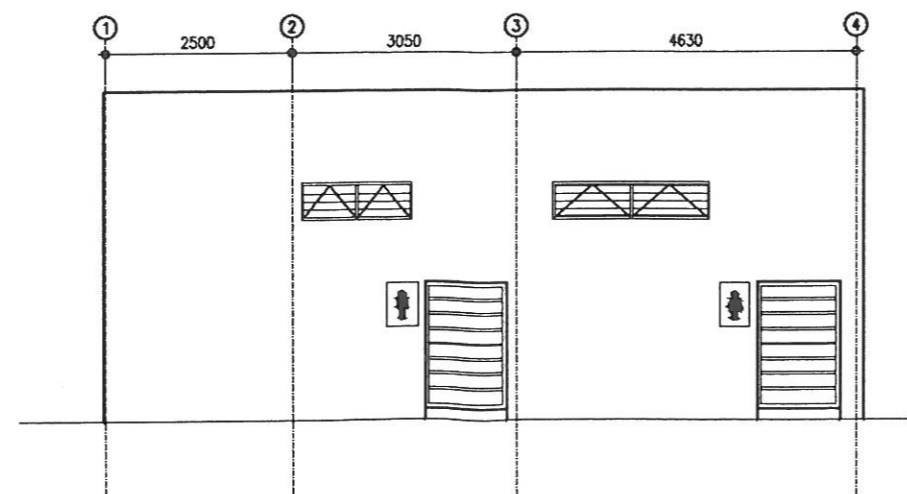
- 17.1 Every staircase to which this Code applies should be constructed in accordance with the requirements of the Code of Practice for Fire Resisting Construction.
- 17.2 Staircases should be arranged in straight flights without winders, each flight should consist of not more than 16 risers nor less than 2 risers. Treads should be not less than 225 mm wide, measured clear of nosings and the risers should be not more than 175 mm high. Provided that :-
- (a) in schools treads should be not less than 250 mm wide and the risers should be not more than 150 mm nor less than 75 mm high, and
 - (b) in places of public entertainment treads should be not less than 280 mm wide and not more than 150 mm high.
- 17.3 Landings should be provided at the top and bottom of each flight not less in width and length than the staircase width, and no exit door should at any part of its swing reduce the effective width or effective radius of such landing as the case may be.
- 17.4 Every staircase should have a clear width of not less than that required by paragraph 11.1 and a clear height of not less than 2000 mm.
- 17.5 No staircase should exceed 1800 mm in width unless it is divided by a central handrail into separate sections, each of which should be not less than 1050 mm in width.
- 17.6 There should be provided a handrail on each side of the staircase. Every such handrail should -
- (a) be at a height not less than 850 mm nor more than 1100 mm;
 - (b) not project so as to reduce the clear width of the stair by more than 90 mm, for each handrail; and
 - (c) be continuous throughout each flight, but need not be carried round a landing or half landing except in the case of a place of public entertainment.



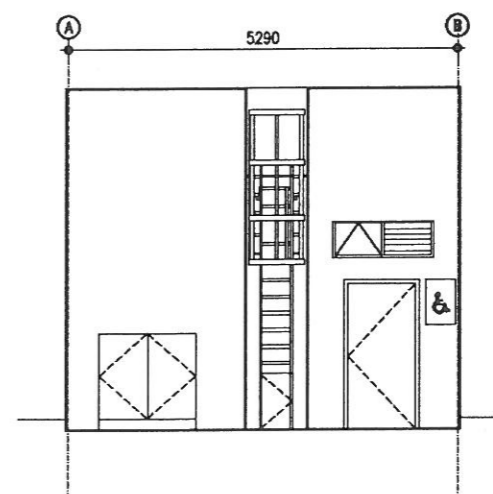
GROUND FLOOR PLAN 1:50



SECTION AA 1:100



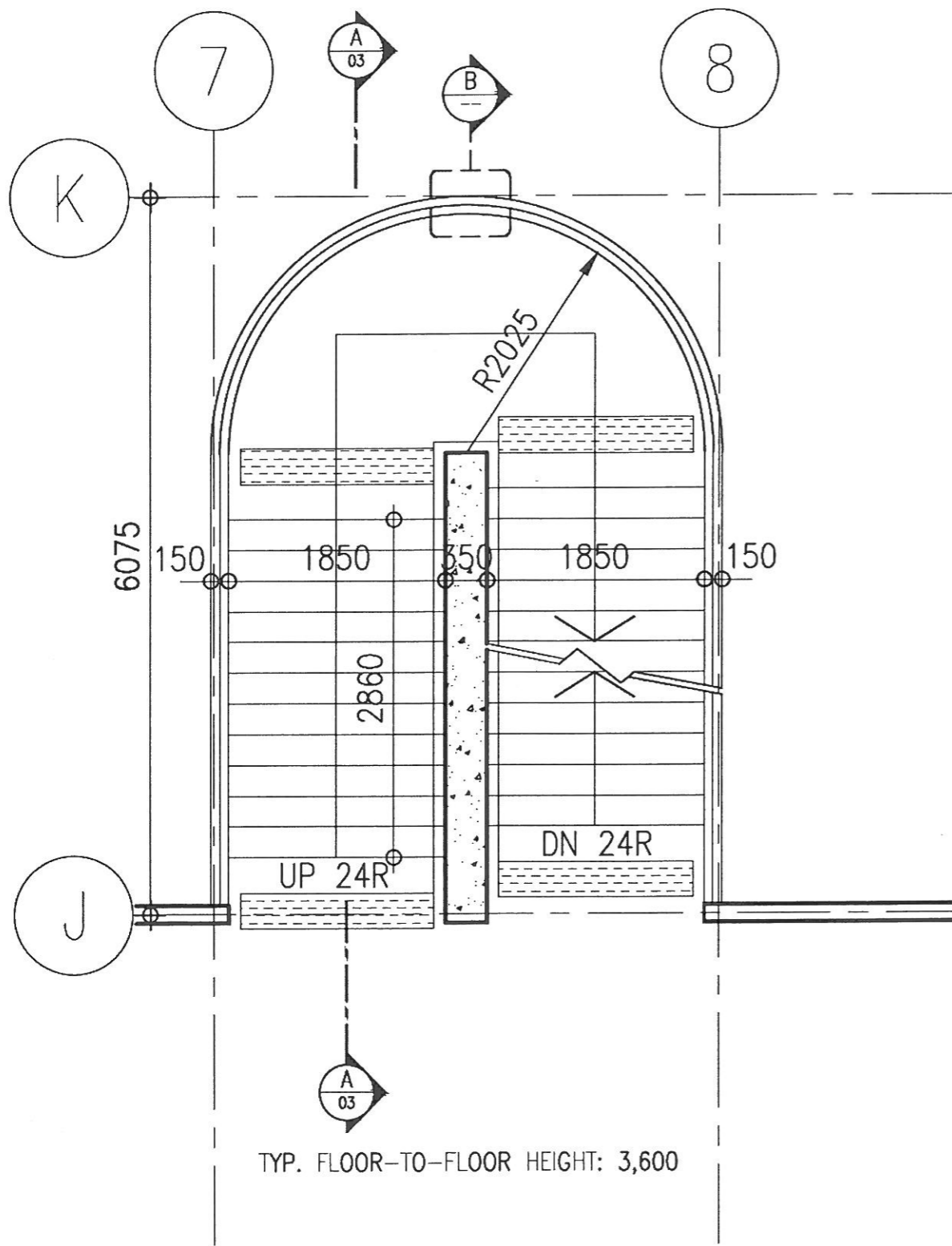
ELEVATION A 1:100



ELEVATION B 1:100

General Notes		
No.	Revision/Issue	Date
Firm Name		
XYZ ARCHITECTS & ASSOCIATES LTD.		
Project Name and Address		
PUBLIC TOILET IN ABC PARK		
Drawing Title		
PLAN, SECTION & ELEVATIONS		
Date	DEC 2010	Drawing No.
Date		SK-01





TYP. FLOOR-TO-FLOOR HEIGHT: 3,600

PLAN 1:50

DETAIL B 1:5

General Notes

No.	Revision/Issue	Date

XYZ ARCHITECTS & ASSOCIATES LTD.

ABC PUBLIC SCHOOL

TYPICAL EXTERNAL STAIRCASE DETAILS

Date	DEC 2010	Drawing No.	02
Scale	AS INDICATED		



General Notes

No.	Revision/Issue	Date

Prepared by
XYZ ARCHITECTS & ASSOCIATES LTD.

Project Name and Address
ABC PUBLIC SCHOOL

Drawing Title
TYPICAL EXTERNAL
STAIRCASE DETAILS - SECTION AA

<small>Date</small> DEC 2010	<small>Drawing No.</small> 03
<small>Scale</small> 1:25	



Candidate Number :

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HKIA / ARB Professional Assessment 2010

Paper 7b

BUILDING DESIGN

80 marks (out of 100 marks of Paper 7)

17 December 2010
9:00 am – 5:00 pm (8 hours)

Hong Kong International Trade & Exhibition Centre (HITEC)
Kowloon Bay

ONE COMPULSORY QUESTION

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 highlights if necessary. Do NOT use RED.

CONTENTS

Page Number

Page 1	Contents
Pages 2 to 7	<ol style="list-style-type: none">1 Problem Statement2 Site Description3 Design Brief4 Submission Requirements

Attachment 1	Location Plan	Scale 1: 1000
Attachment 2	Site Plan	Scale 1: 200
Attachment 3	Site Section AA	Scale 1: 200

1 PROBLEM STATEMENT

Your Client, a non-government organization, intends to develop an existing open space into a **Community Centre cum Residential Home for the Elderly**. It is located in an urban context with ageing population. There is an existing 2-storey historical building to the northeast of the site.

Your task is to prepare a **schematic design** which satisfies generally all functional and statutory requirements, for presentation to the Client.

Your design should incorporate preliminary provisions and requirements for building structure, building services, utilities and the like. The design should be sensitive to the Site and neighborhood.

2 SITE DESCRIPTION

Context

The Site is a hypothetical site in one of the developed new towns in the New Territories. It consists of 2 platforms with a level difference of 8m. Running along the south and north of the Site are vehicular Roads A and B respectively which are both not less than 6m wide. Adjacent residential development bounds the Site on its west.

The vicinity of the Site comprises of residential developments which are not more than 8 storeys high.

There is a public park to the northeast of the Site along Road B. A historical building, which is adapted to the use as the Medical and Rehabilitation Centre (MRC) for the elderly, is situated in this park. The main entrance to the MRC is facing the Site. Convenient access shall be provided from the Community Centre to the entrance of the MRC by means of covered walkways at level +12.5mPD.

For the purpose of this paper, design of the MRC is not required.

See Attachments 1 & 2: Location Plan and Site Plan.

Pedestrian Access

Pedestrian access can be from both Road A and Road B.

Vehicular Access

Vehicular access for private cars, service vehicles and ambulance shall be through Road B as detailed under Section 3.

Environmental Factors

Traffic noise from the main road and secondary road is not significant.

3 DESIGN BRIEF

3.1 Development Requirements

Site Area	2,145 s.m. (approximate)
Zoning	Government, Institution or Community (G/IC)
Permissible GFA under lease	Residential Home for the Elderly = 3,500 s.m. Community Centre = 2,500 s.m. (excluding Medical and Rehabilitation Centre)
Permissible Plot Ratio (PR) and Site Coverage (SC)	Requirements under Buildings Ordinance shall be complied with.
Building Height	Not higher than +36.5mPD (main roof)
Site Vehicular Access	Vehicular Access shall be between points X and Y through Z.
Car Parks	Staff parking = 4 nos. (2.5m x 5m x 2.4mH each) Visitor parking = 2 nos. (2.5m x 5m x 2.4mH each)
Loading and Unloading	L/UL = 1 no. (3.5m x 11m x 4.7mH) Ambulance = 1 no. (3m x 9m x 4.1mH)
Refuse Collection	Vehicular access is NOT required for the purpose of this Paper.
Barrier Free Access	Barrier free access shall be an essential requirement in the design of the building.
Lift(s)	Residential Portion <ul style="list-style-type: none"> • 2 passenger lifts (shaft size : approximately 2.4mW x 2.6mD each) Community Centre <ul style="list-style-type: none"> • 1 passenger lift (shaft size : approximately 2.4mW x 2.6mD each), separate from those for residential portion 1 service lift (shaft size : approximately 2.4mW x 3mD) shall be shared between the Residential Home for the Elderly and the Community Centre. For the purpose of this paper, lift shaft concession is not applicable.
Connection to Medical and Rehabilitation Centre (MRC)	Access shall be provided from the Community Centre to the entrance of the MRC at level +12.5mPD by means of covered walkway(s).

3.2 Design Requirements

The development is a **Community Centre cum Residential Home for the Elderly**.

3.3 Accommodation Schedule

	Gross Floor Area (s.m.)	Remarks
Community Centre (open to the Public)		
Reception and Entrance Foyer	As appropriate	Street level (designated entrance and separate from entrance for Residential Home)
Management Office	50	
Multi-purpose Hall	200	
Library / Reading Lounge	100	
Meeting Rooms	20 x 2	
Mahjong Rooms	20 x 2	
Video / Karaoke Rooms	20 x 2	
Convenient Store	40	
Café	100	
Central Kitchen	100	Serves both Café (Community Centre) and Dining Areas (Residential Home for the Elderly).
Back-of-House & Stores	100	

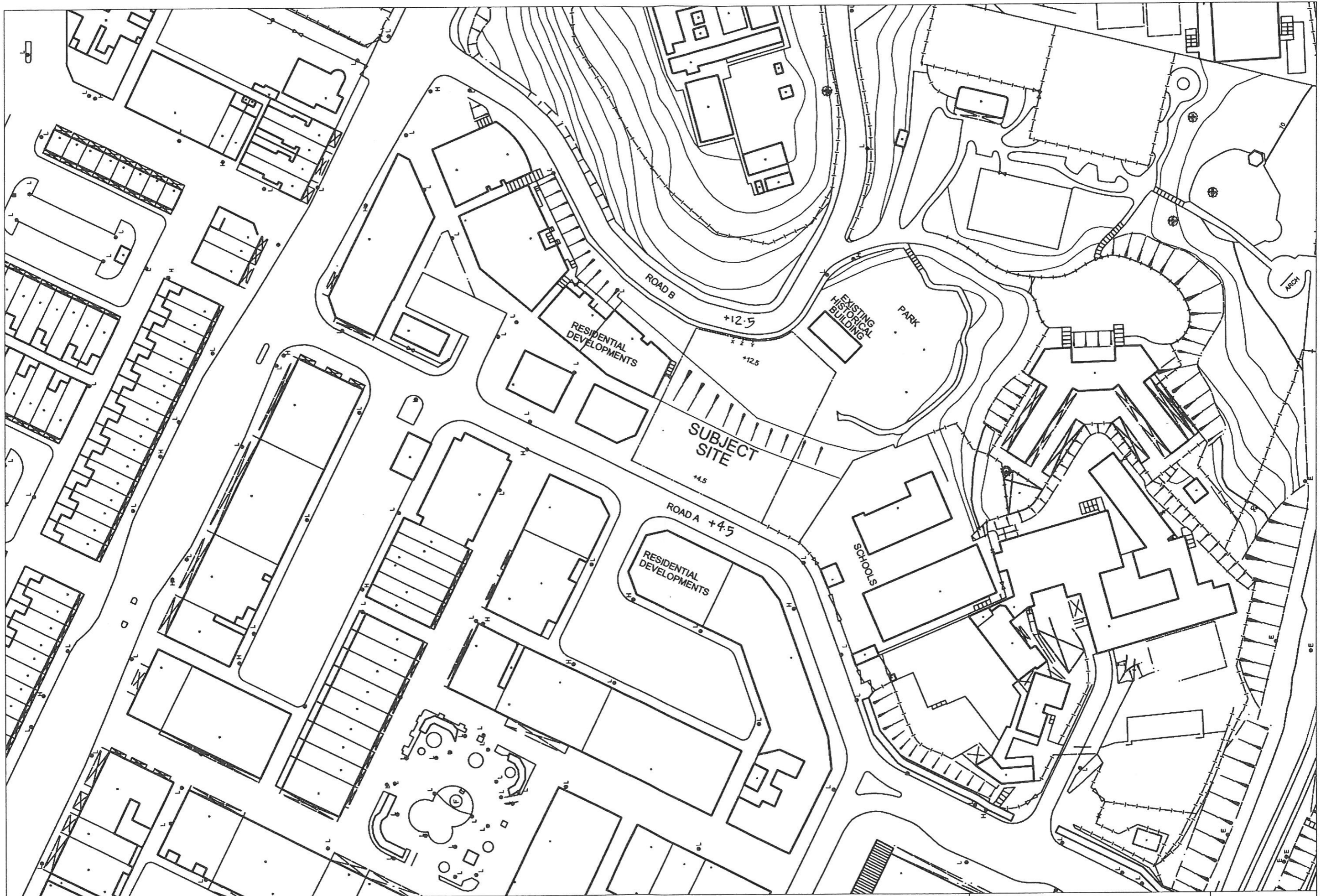
	Gross Floor Area (s.m.)	Remarks
Residential Home for the Elderly (restricted access by Residents, Staff and Visitors only)		
Reception and Entrance Foyer	As appropriate	Street Level (designated entrance and separate from Community Centre)
Residential Rooms	48 rooms (area of each typical room to be in the range of 30 to 40 s.m.)	Two beds (i.e. 2 occupants) to be accommodated in each typical unit. An individual toilet with water closet, wash basin and shower facilities to be provided for each typical room. <i>The rooms should be arranged in such a way to promote socializing among the elderly. Long corridor approach without a sense of community should be avoided.</i>
Dining areas / Conversation Lounges	3 s.m. / occupant on each floor	To be provided on each residential floor. Kitchen facilities for the dining areas will rely on the central kitchen for the Café within the Community Centre. Proper service access shall be provided.
Nurse Stations, housekeeping and pantry	3 s.m. / occupant on each floor	To be provided on each residential floor.
Roof / Podium terraces	As appropriate	

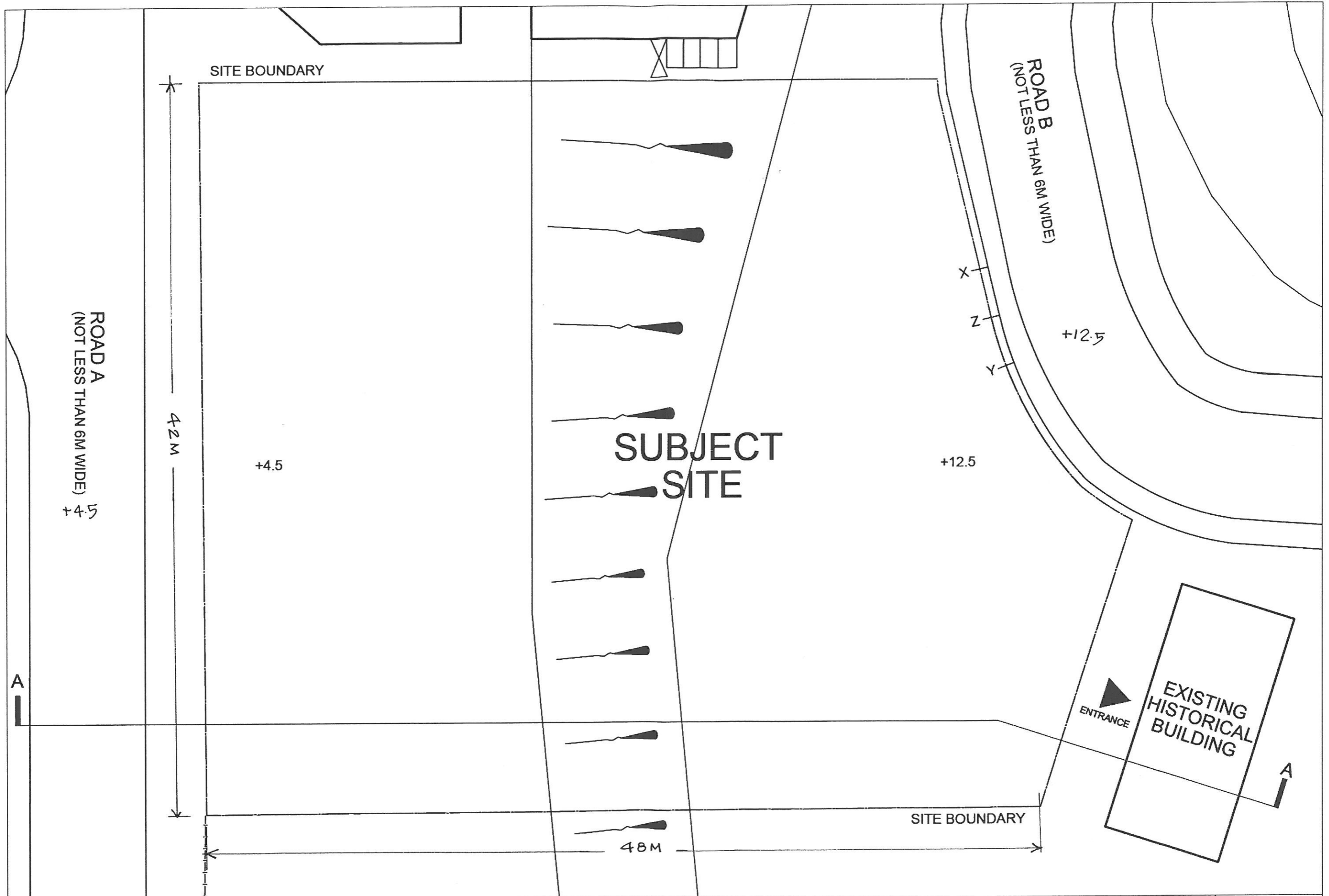
	Gross Floor Area (s.m.)	Remarks
Supporting & Circulation (General)		
General Circulation and Means of Escape	as required and as appropriate	<i>Barrier Free Access shall be an important feature of the building.</i>
Sanitary Provisions for Common Areas	As appropriate (Common area refers to the whole Community Centre and the common areas of the Residential Home for the Elderly)	<u>Community Centre</u> <ul style="list-style-type: none"> • <i>As appropriate</i> <u>Residential Portion (each floor)</u> <ul style="list-style-type: none"> • <i>Male toilet = 1WC, 2U, 2WB</i> • <i>Female toilet = 2WC, 2WB</i> • <i>1 accessible toilet</i> <i>(Detailed calculations are NOT REQUIRED)</i>
Transformer, Switch & Plant rooms	as appropriate	
Refuse Collection Room	as appropriate	<i>(Detailed calculations are NOT REQUIRED)</i>

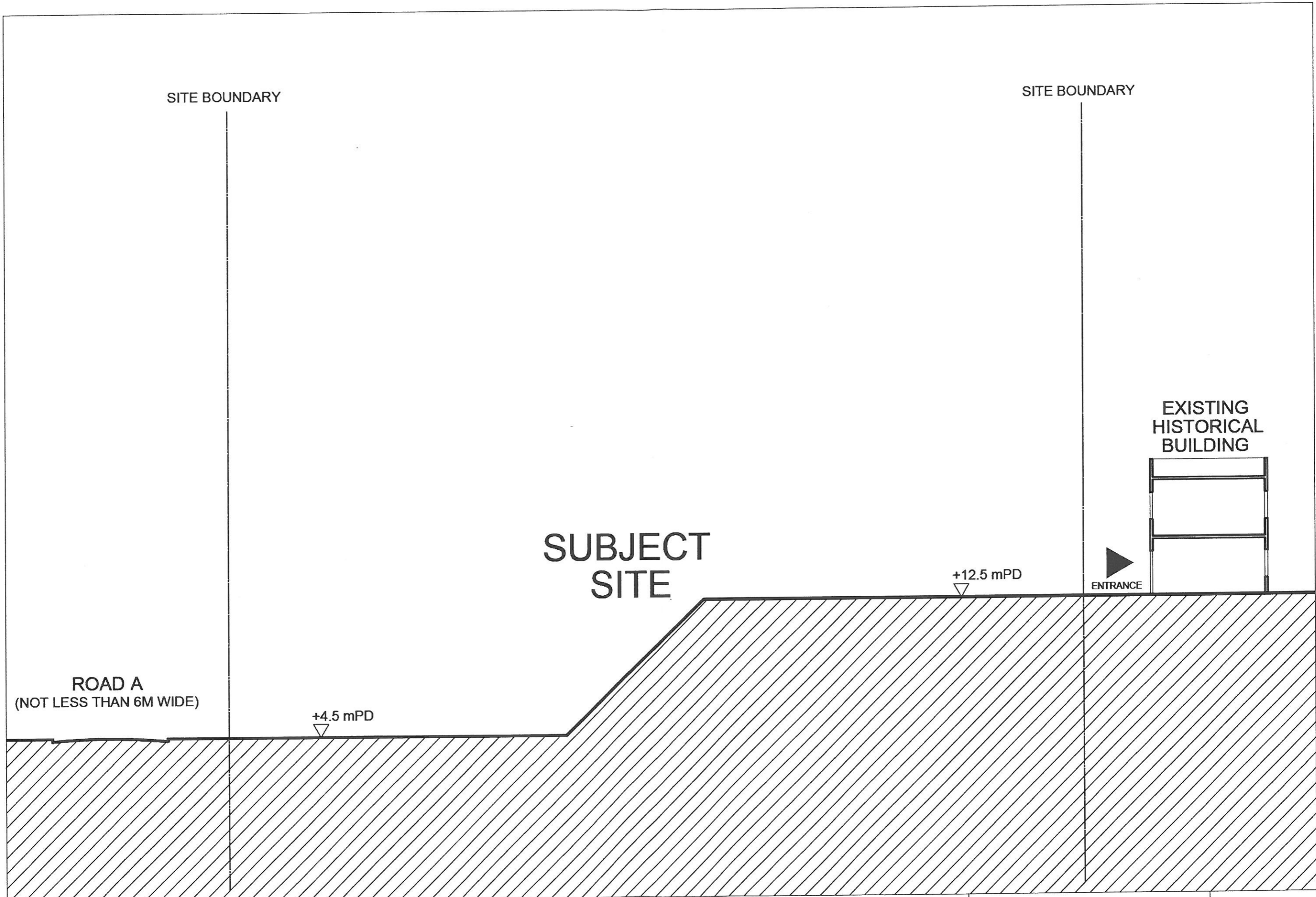
4 SUBMISSION REQUIREMENTS

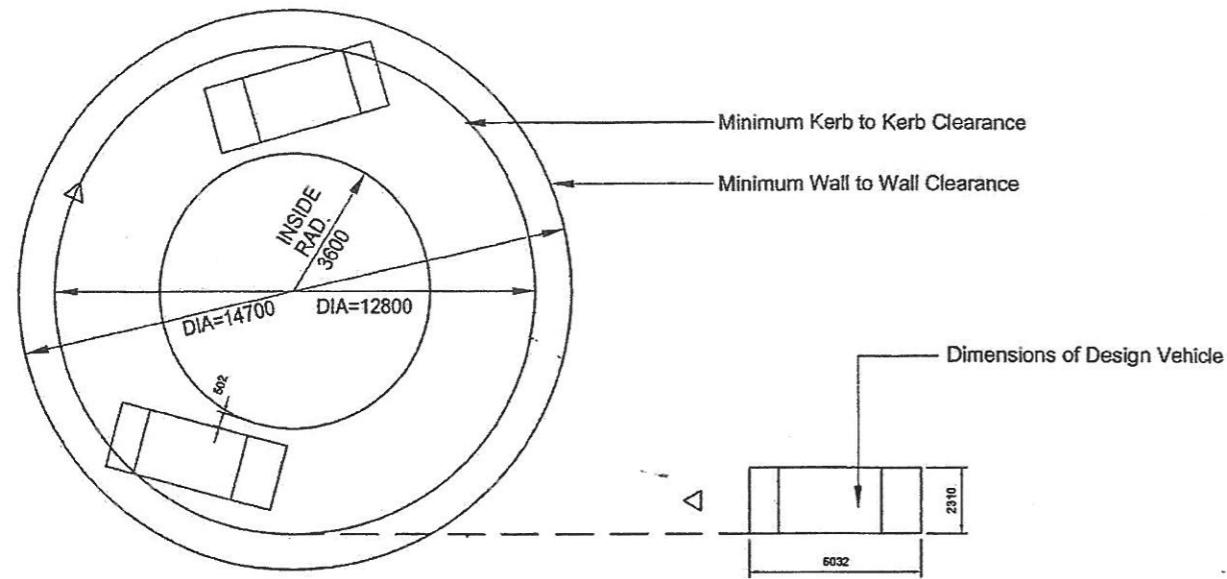
Design Statement	Describe Concepts and Design Intentions. Use text, sketches and diagrams as appropriate. Be concise and brief.
Site Plan suggested Scale 1:200	Show site development. Include access point(s) for pedestrians.
Plans of all major Levels suggested Scale 1:200	Indicate all major spaces and elements of construction. Label spaces according to the Accommodation Schedule. Note usable area of each space (only approximate figures are required). Indicate Building Section cut-line(s). Give overall and critical dimensions. Show Site Boundary and adjacent structures. Show critical Means of Escape distances. Show Means of Access for Firefighting & Rescue. Show integrated Building Structure. Show architectural provisions for integrated Building Services.
Building Section(s) suggested scale 1:100/ 200	Show floor to floor dimensions. Show relationship between the elements of construction (<i>eg. interfaces and connections of building structure, building envelope, finishes, building services, and the like</i>) Include annotations and critical dimensions.
Illustration	Illustrate external massing, form, architectural features in minimum one drawing. Use either axonometric, or isometric, or perspective drawing(s) as appropriate. Indicate major exterior finishes, textures and the like.
Calculations	Show compliance of design with - Permissible Plot Ratio - Permissible Site Coverage Tables, Schedules and Calculations for exit widths, sanitary fitments, refuse rooms, and the like are NOT REQUIRED.

END OF PAPER 7b



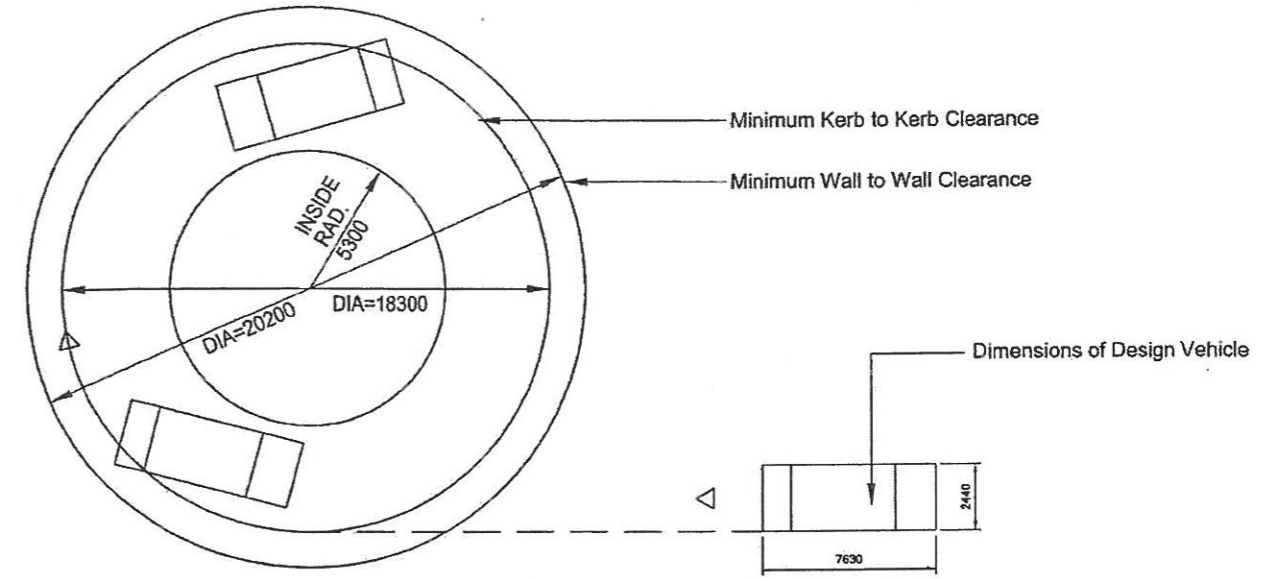






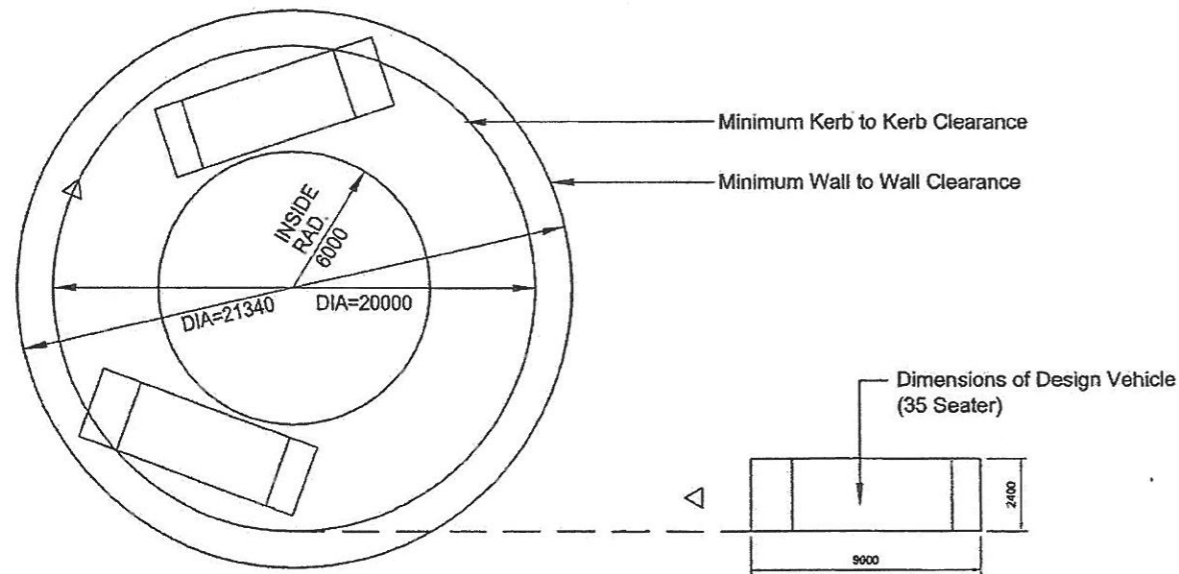
**RECOMMENDED MINIMUM STANDARDS OF
TURNING CIRCLE FOR PRIVATE CARS**

(not to scale)



**RECOMMENDED MINIMUM STANDARDS OF
TURNING CIRCLE FOR GOODS VEHICLES**

(not to scale)



**RECOMMENDED MINIMUM STANDARDS OF
TURNING CIRCLE FOR TOURIST BUS**

(not to scale)

