IICC DWARKA

URBAN DESIGN GUIDELINES HANDBOOK

DWARKA | NEW DELHI | INDIA

DOC REF: CD_IICC_PEAC_XX_XXX_X_XX_RP_0000_04 | DATE: 8TH JUNE 2018

INDIA INTERNATIONAL CONVENTION AND EXHITBITION CENTRE LIMITED

idom + CP KUKREJA ARCHITECTS

0.0 OVERVIEW

0.0 OVERVIEW

0.1 DOCUMENT DETAILS

IICC DWARKA - URBA DESIGN GUIDELINES HANDBOOK

DOC REF:	CD_ECC_PEAC_XX_XXX_X_XX_RP_0000_00
DATE:	20TH JULY 2017
CLIENT:	DMICDC
PMC:	AECOM
PEAC:	IDOM + CP KUKREJA ARCHITECTS

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Date:	20/07/2017
Author(s):	Viral Bhavsar / Amanda Impey
Reviewer(s):	José Antonio Fernández Usón / Dikshu Kukreja
Issuer:	Jesús María Susperregui Virto
Comments:	Issued for initial review and comment

VERSION 01

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Author(s):	Viral Bhavsar / Amanda Impey
Reviewer(s):	José Antonio Fernández Usón / Dikshu Kukreja
Issuer:	Jesús María Susperregui Virto
Comments:	Review following incorporation of PMC comments and general update to allow with tender package submission TD_ECC_PEAC_XX_FTP_X_XX_RP_0001_03

VERSION 02

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Author(s):	Viral Bhavsar / Amanda Impey / Iro Dimitriou
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Comments:	Universal accessibility (Section 3.8), Plot 16 (Section 9.8) and Basement Dimensions (Section 9.24) added.

NOTES:

This document should be read in conjunction with relevant drawings and other documents produced by the PEAC, where further design information and validation has been included for the further development of various parts of the design.

0.0 OVERVIEW

0.3 CONTENTS

0.0 OVERVIEW

0.4 EXECUTIVE SUMMARY

This document has been produced to provide an overview of the new India International Convention & Expo Centre (IICC) project in Dwarka, New Delhi, India, being commissioned by Delhi Mumbai Industrial Corridor Development Corporation (DMICDC).

The Project is for the development of 89.72Ha site located in Sector 25 Dwarka, and will provide over 1 million sq.m of built up area, consisting of a Convention Centre building, 5 Exhibition halls, Grand Foyer, a Multi-purpose Arena, and a Mixed Use Development area.

A masterplan and concept design for the key buildings and public realm for the whole site has been prepared, which defines the locations and sizes of all buildings, roads, infrastructure elements, as well as defining the character of the development. Furthermore a schematic design has been prepared for the following elements;

- Convention Centre Building
- Grand Foyer (Part)
- Exhibition Hall 1
- Public Realm
- Trunk Infrastructure (including roads, services etc.)

This document defines the main outputs from the above, with the intention of providing potential contractors and developers who will be involved in the delivery of the masterplan and buildings a description of the main requirements that need to be considered and adhered to where necessary as the design is further progressed.

1.0 INTRODUCTION

1.0 INTRODUCTION

OVERVIEW

This Urban Design Guidelines document works together with the Master Plan to set out the process and the key priorities and principles to guide and stimulate great urban design, movement, architecture and sustainable development for the IICC Development.

The Urban Design Guidelines form a manual for developers, designers and the professional community that underpins the delivery of the IICC Dwarka Project according to the vision and the master plan.

This document is the starting point for good design and development and the purpose is to provide a robust guiding and assessment framework within which both architectural diversity and quality can thrive, whilst affording priority to the public domain interface. The guidelines do not limit creativity; rather they provide a platform to achieve a built form to make a place where people will want to invest, work and visit.

By participating in the IICC Dwarka project, developers and their designers should endeavour to achieve over and above the minimum guideline requirements where possible. These outcomes are achieved by a close working relationship and early provision of design information through to the IICC Dwarka PMC and PEAC design review panels who will remain alongside the client throughout the implementation of the masterplan.

KEY CHAPTERS

The Urban Design Guidelines are structured in the following manner:

- **Master Plan Overview** – which provides the context for development in accordance with the IICC Dwarka Master Plan;
- **Masterplan Framework** – which contains site-wide guidelines that relate to the early stages of development as well as character statements for special places;
- **Public Realm** – which provides further detailed design descriptions of the development character of soft and hard landscape, as well as special features being incorporated into the project;
- **IICC Development** – which provides a design overview of the main Exhibition and Convention centre buildings being created within the Master plan by DMICDC;
- **Arena Development** – which provides a design overview of the 20,000 seat Arena building being created within the Master plan by DMICDC;
- **Mixed Use Development Area** – which provides further guidance on the available mix of building uses and development opportunities for private investors/developers within the Masterplan;
- **Mixed Use Development Character** – which provides the site wide controls that are to be applied to all the buildings to ensure a cohesive urban appearance is met across the site;
- **Building Design** – which provides for guidance on requirements for individual plots;
- **Sustainability** – which outlines the sustainability objectives that are to be achieved for all development;

Please, note all images shown in this report are indicative only and should not be taken to be true/accurate reflection of the final design.

IMPLEMENTATION REQUIREMENTS

The Urban Design Guidelines provide specific direction for third party developers and designers to navigate the Master plan and the controls on the design to enable them to ensure the overall vision is maintained, and as such, allow for the individual development of buildings within the site as separate projects.

This document should be read in conjunction with the all relevant Local and National Building Codes of India, as well as any other relevant legislation including the Indian Green Building Council (IGBC) guidance requirements for Campus Developments.

It is intended that the project will achieve a platinum rating under IGBC Green Campus rating and for all individual building as well.

It is the responsibility of the developer and their design team to ensure any proposal conforms with necessary requirements of these instruments.

Any approval by the PEAC under the IICC Dwarka Urban Design Guidelines does not guarantee approval under any of these other standards and requirements.

1.0 INTRODUCTION

DESIGN REVIEW PROCESS

The design of the buildings within the IICC Dwarka project incorporates a multi-disciplinary approach, and this is expected to be continued in the detailed development of individual buildings, including those being undertaken by third parties.

Individual project will need to demonstrate consistency with the objectives and controls and specifically the design requirements of the guidelines. Variations will need to be fully justified and will be considered on a case by case basis.

It is not intended that the Urban Design Guidelines be a set of highly prescriptive design requirements, and it recognises the potential for innovation and distinctive design responses on the development of individual sites.

However, development control plans have been prepared for each plot within the masterplan to illustrate specific site controls and prescribed outcomes comprising building typology, height, massing, density, character, servicing etc.

1.0 INTRODUCTION

PROJECT REQUIREMENTS

The India International Convention & Expo Centre (IICC) is envisioned as a “World Class”, mixed use district, creating one of the largest facilities of its kind in India and Asia.

The Entire complex provides over 1million sq.m of floor area, to be spread on a 89.72Ha site, and 32 buildings, and is to provide a new pedestrian friendly, vibrant and attractive destination.

The designs for the masterplan and urban design guidelines respond directly to the fundamental aspects of the time and cost constraints of the project and seeks to define the publicly funded elements (Exhibition Centre, Grand Foyer, Convention Centre, Arena and all Open Areas, as well as trunk infrastructure provisions) for direct development under an EPC contract, with potential split into 2 phases of construction.

In addition the design seeks to provide an attractive opportunity for private stakeholders, investors and operators to develop the Mixed Use Development Area under a PPP arrangement.

The key features of the development are as follows:

- Convention Centre Building (11,000+ delegates)
- Exhibition Halls (5 halls varying in size)
- Multi-purpose Arena (20,000 capacity)
- Grand Foyer (Covered entrance to link Exhibition and Convention buildings)
- Hotels (range of Hotels from 5* to 3* budget and service apartments)
- Office Space (Grade A office space including administrative areas, financial centre etc).
- Commercial Retail (dedicated malls and shops along streets)
- Office (including administration and maintenance offices and a museum)

1.0 INTRODUCTION

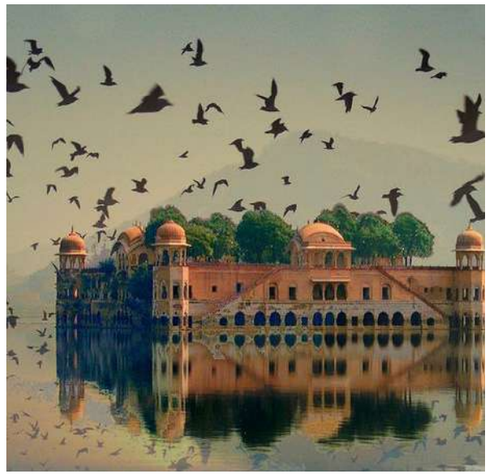
DESIGN VISION

The underlying intent of the design proposal for the IICC Dwarka Development is to create a masterplan and design of the IICC buildings that are contemporary, state-of-the-art, and iconic, and provide a reference and representation of India's unique culture, to the rest of the world.

The design considers innovative design and construction techniques, as well as integrating latest technology, to achieve facilities that are to be on a par with the best international developments being progressed around the world. However the design also clearly articulates Indian architectural traditions providing a powerful symbol of the progression of India's status on the global political and economical stage, whilst retaining the necessary acknowledgement of the cultural and religious traditions that defines the Indian people.

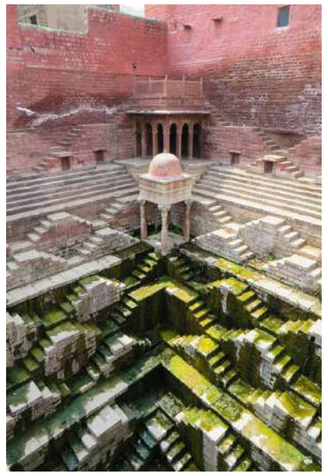
The Project is envisioned to achieve a high sustainability standard, and is required to achieve a platinum rating under the Indian Green Building Council (IGBC) accreditation for Campus Developments.

1.0 INTRODUCTION

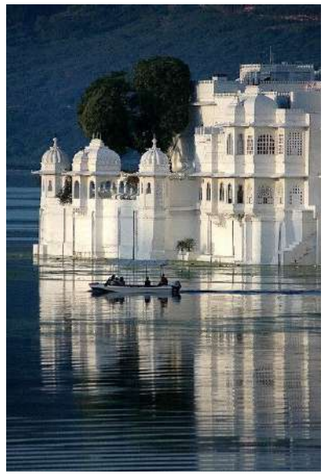


THE PALACE

HALL OF NATIONS (NEW DELHI)



STEP-WELLS OF INDIA (JAIPUR)



LAKE PALACE HOTEL (UDAIPUR)

INDIA'S DIVERSITY

TEXTILE PATTERNS

DESIGN INFLUENCES

For centuries palaces in India have been the reference of its art and culture, the key places for exchange of knowledge, the venues to welcome foreign delegations and the places to display the excellence of the country. At the same time, they have hosted thousands of distinguished guests and played a key institutional role when it comes to trade and knowledge. Accordingly the new IICC Dwarka project is conceptualised using a metaphor of a "Palace".

The "palace" metaphor also fits with the ambitions of scale and representation of the project, while also having clear links to the richest traditions in Indian architecture.

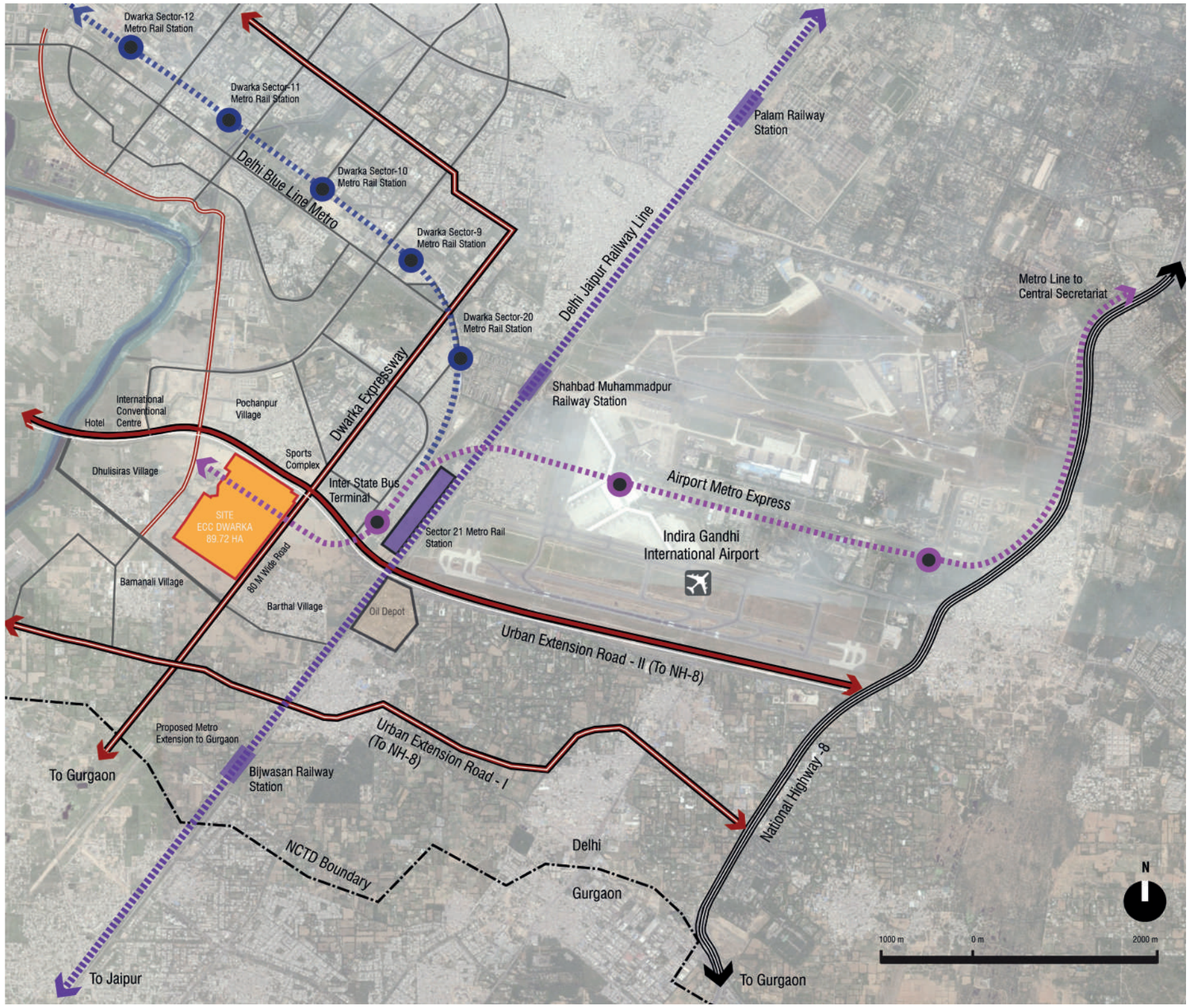
The concept is applied across the entire masterplan, where each building is conceived to be part of the entire "Palace" complex, encased within a carefully considered landscape garden, with roads and entrances carefully created to allow ease of movement and access while also creating gateways into the site.

The masterplan also represents the architectural diversity of India not only in styles, but also in some of the unique building typologies such as the House of Nations, Step-wells and the Lake Palace Hotel (Udaipur).

The final design influence reflects on the diversity of India, from its people, geography, and cultures. The IICC project envisages a showcase where iconography is used to help visitors identify with the design, integrated with patterns that are inspired from the textile patterns from regions across India.

2.0 MASTERPLAN OVERVIEW

2.0 MASTERPLAN OVERVIEW



2.1 SITE LOCATION

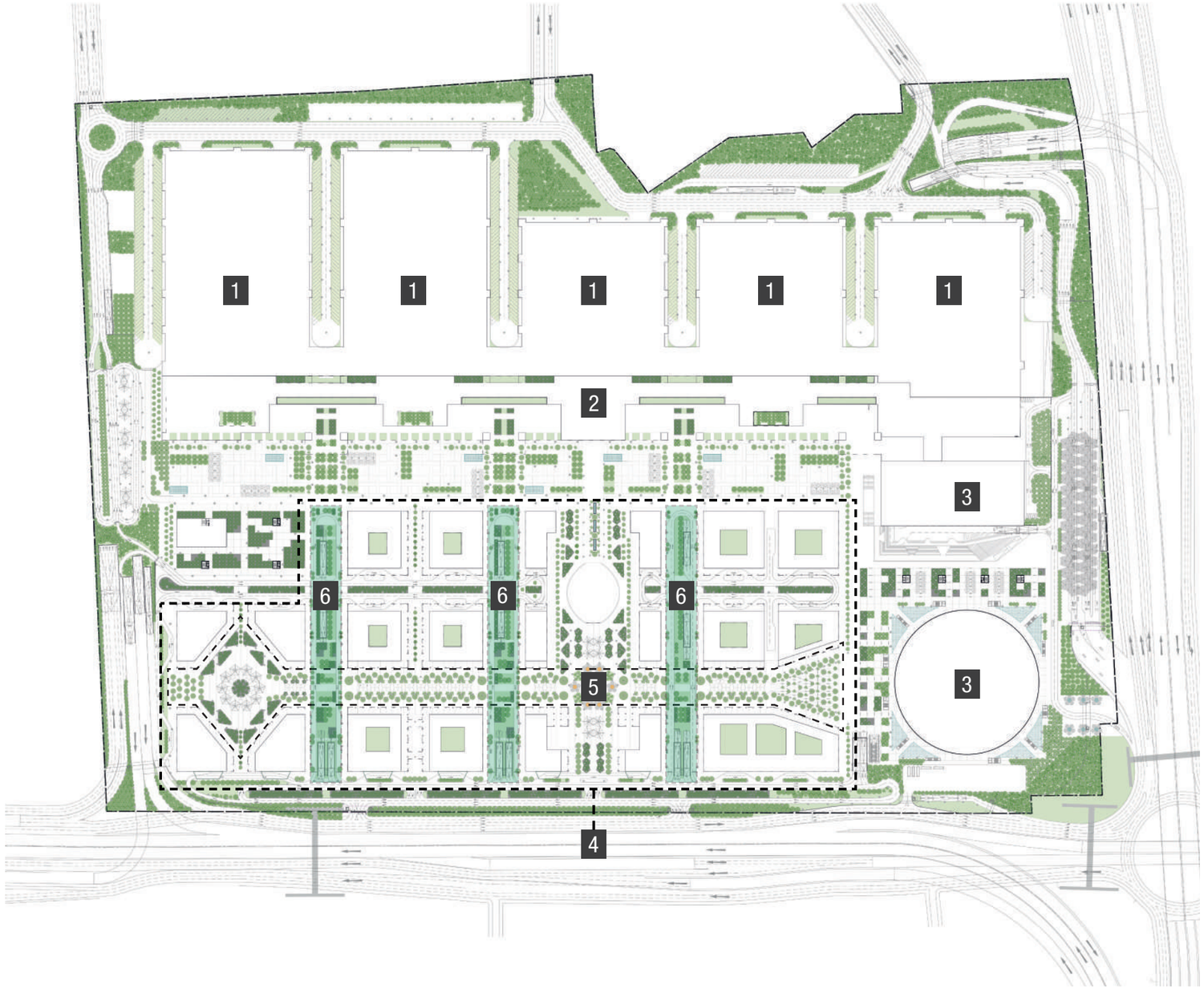
The project site is located to the South West of Delhi (approximately 21.8 kms from New Delhi India Gate and adjoining the Millennium city of Gurgaon) which comprises of three subdivisions namely: Delhi Cantonment, Najafgarh, and Vasant Vihar. The Site is also in close proximity of Indira Gandhi International Airport.

The site is bounded by Pochanpur village in its north, DhulSiras, Bamnoli and Bharthal villages lie in the south direction.

This project is framed within the Delhi 2021 Master Plan. In that regard, the Dwarka IICC will be located in between a 100m wide UER-II (Urban Extension Road-II on north) and the proposed 80m wide UER-I (Urban Extension Road-I on south) connecting NH- 1, 10 and 8. An 80m wide road (Dwarka Expressway) in between Sector 25 and 26 is proposed to be built by NHAI connecting UER-I & UER-II.

As per the seismic zoning map of India (IS: 1893, Part-1, 2002), the project site is located in the Zone IV, classified as MSK VIII i.e., area having high damage risk zone. The design of all the proposed facilities in the project will take into account the required seismic resistance.

2.0 MASTERPLAN OVERVIEW



2.2 IICC MASTERPLAN

The masterplan responds to the ambitious institutional aspirations of DMICDC and the Government of India by creating a functional state-of-the-art venue, standing as an architectural icon representing Indian culture and reinforcing India's ambitions to enhance its presence on the international stage for hosting exhibition and convention centre events.

The masterplan responds to the sites strengths of high connectivity due to the proximity of the international airport, and the new roads and metro rail extension being created. The design utilises the opportunity of creating an outstanding landscape for a new world class district.

The main features are:

1. Five Exhibition halls are distributed along the western edge of the site, one of the key iconic components of the masterplan they providing a main entrance point to the site.

2. A one kilometre long Grand Foyer connects all 5 grand exhibition halls with the convention centre and acts as a main circulation space.

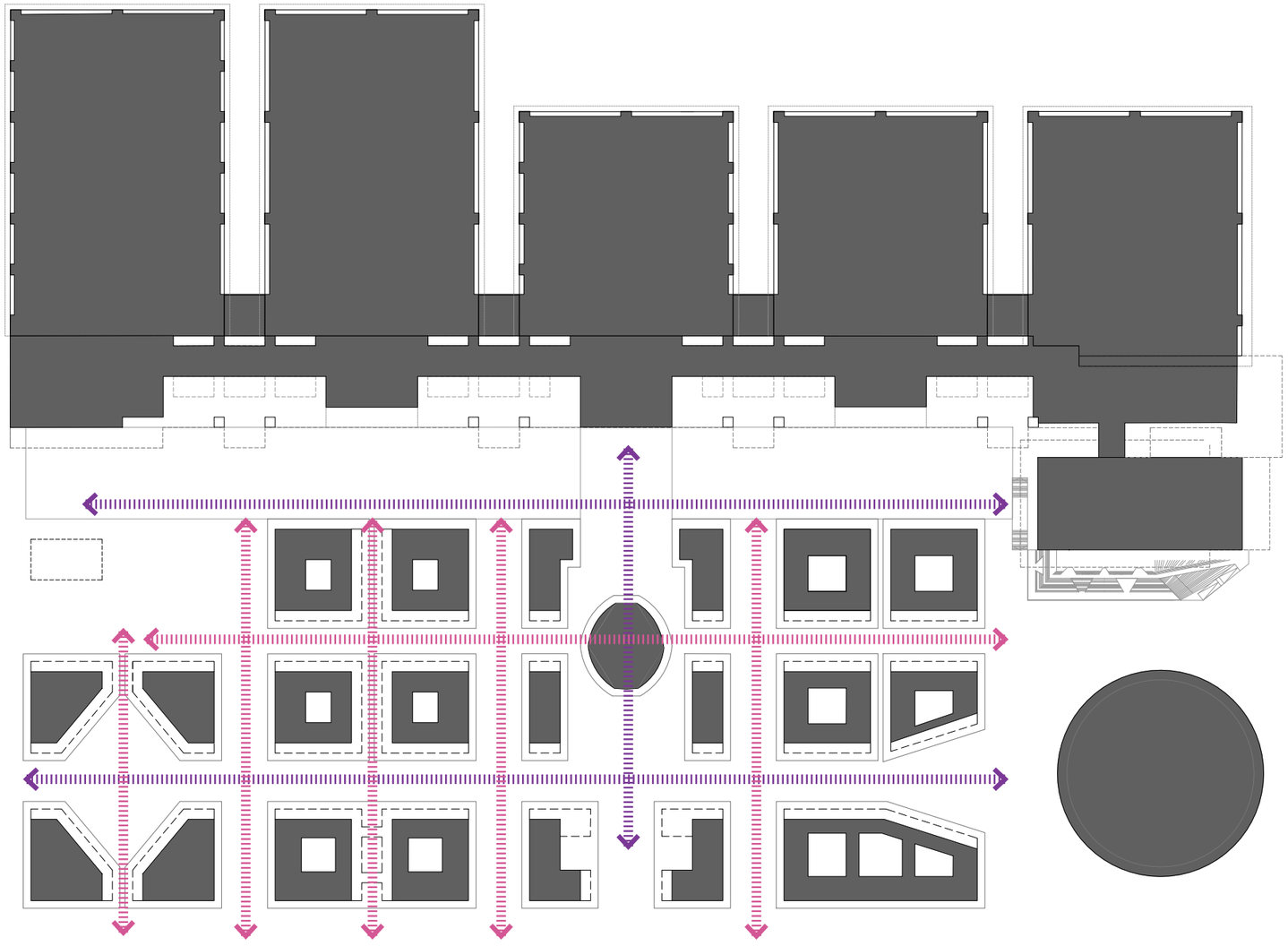
3. An International Convention Centre and Multi-purpose Arena are located on a prominent corner at the northern end of the site. They will be the first of its kind in India, an iconic state-of-the-art facility designed to house meeting spaces, concerts, ceremonies and sports events.

4. The Mixed Use Development area combines hotels, offices and retail in a lively, sustainable and car free environment.

5. A vibrant and lively pedestrian boulevard containing a mix of activity. Pierced by a landscaped network of larger urban spaces, the areas are sheltered from the sun and noise, and passively cooled by water bodies. The zone takes advantage of the convenient access with roadways and a new transport hub that serves to activate the public domain.

6. Eco-lanes contribute to the numerous green amenity areas that combine public open space with commercial activity.

2.0 MASTERPLAN OVERVIEW



2.3 SITE ACCESS LAYOUT

The site is spatially organised in a clear and coherent way creating an outstanding series of boulevards, plazas and open spaces to compliment the great variety of spatial typologies.

The design has been carried out to be in compliance with IGBC Green Campus requirements considering all transportation types (vehicular , pedestrian, bicycle) as well as connectivity to nearby public transportation systems.

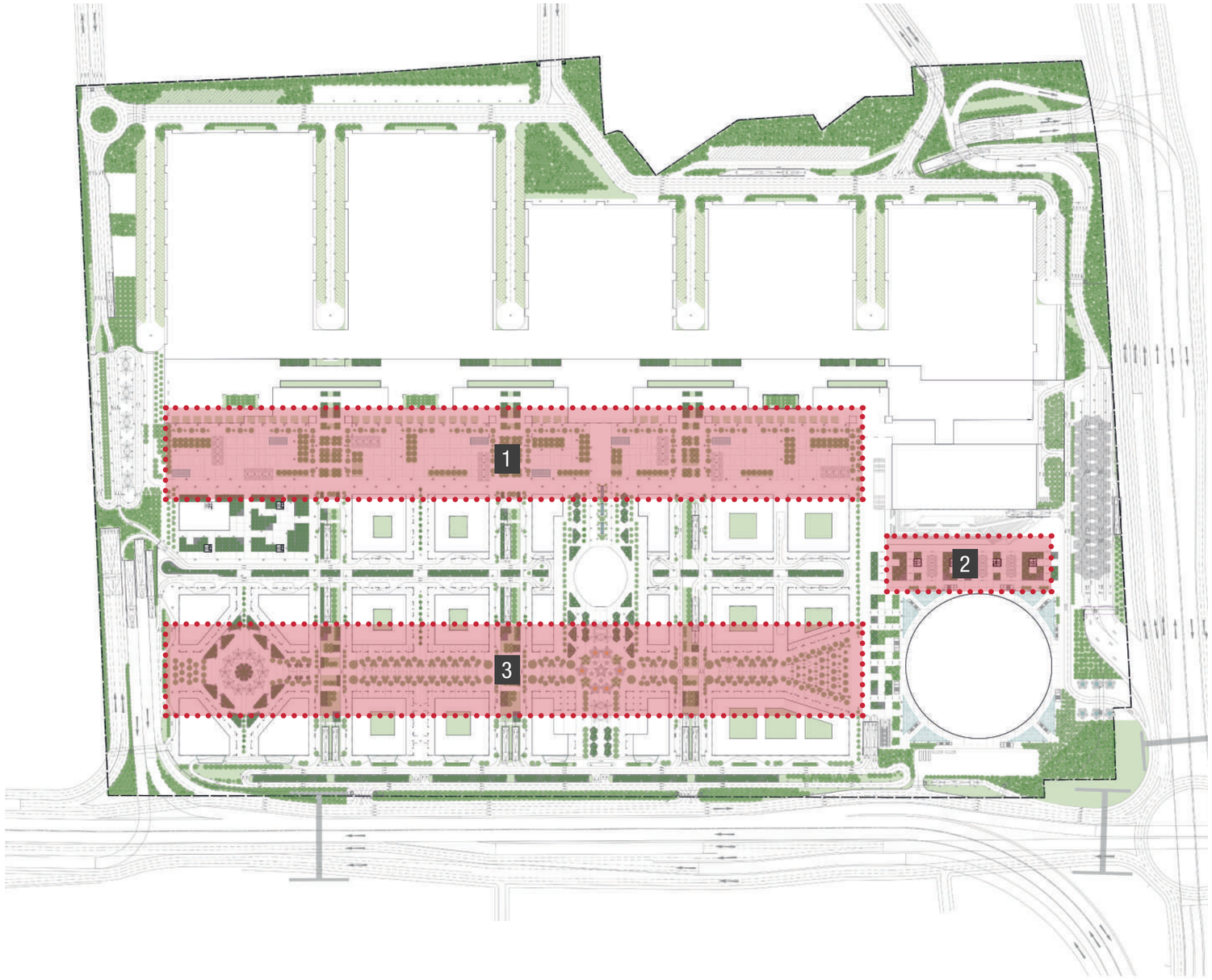
The masterplan distinguishes between three main visual axes and various secondary axes. The main axes vertically connects the main road and vehicular entrance to the metro hub and up towards the exhibition centre. Horizontally the two main axes connect the commercial hub of the mixed use district and open exhibition area with the arena, exhibition halls and transport connections.

The secondary axes run along a grid of retail streets and eco lanes.

Main visual and connecting axes:

- Main Axes
- Secondary Axes

2.0 MASTERPLAN OVERVIEW



2.4 OPEN SPACES

Open space has been developed as an essential element within the masterplan, resulting in a co-ordinated series of open areas that deliver a high level of urban space bursting with recreation areas and diversity of facilities. The landscape proposal maximises green space by creating green corridors and buffer zones which compliment the existing areas surrounding the site as well as providing a recreational and commercial offer.

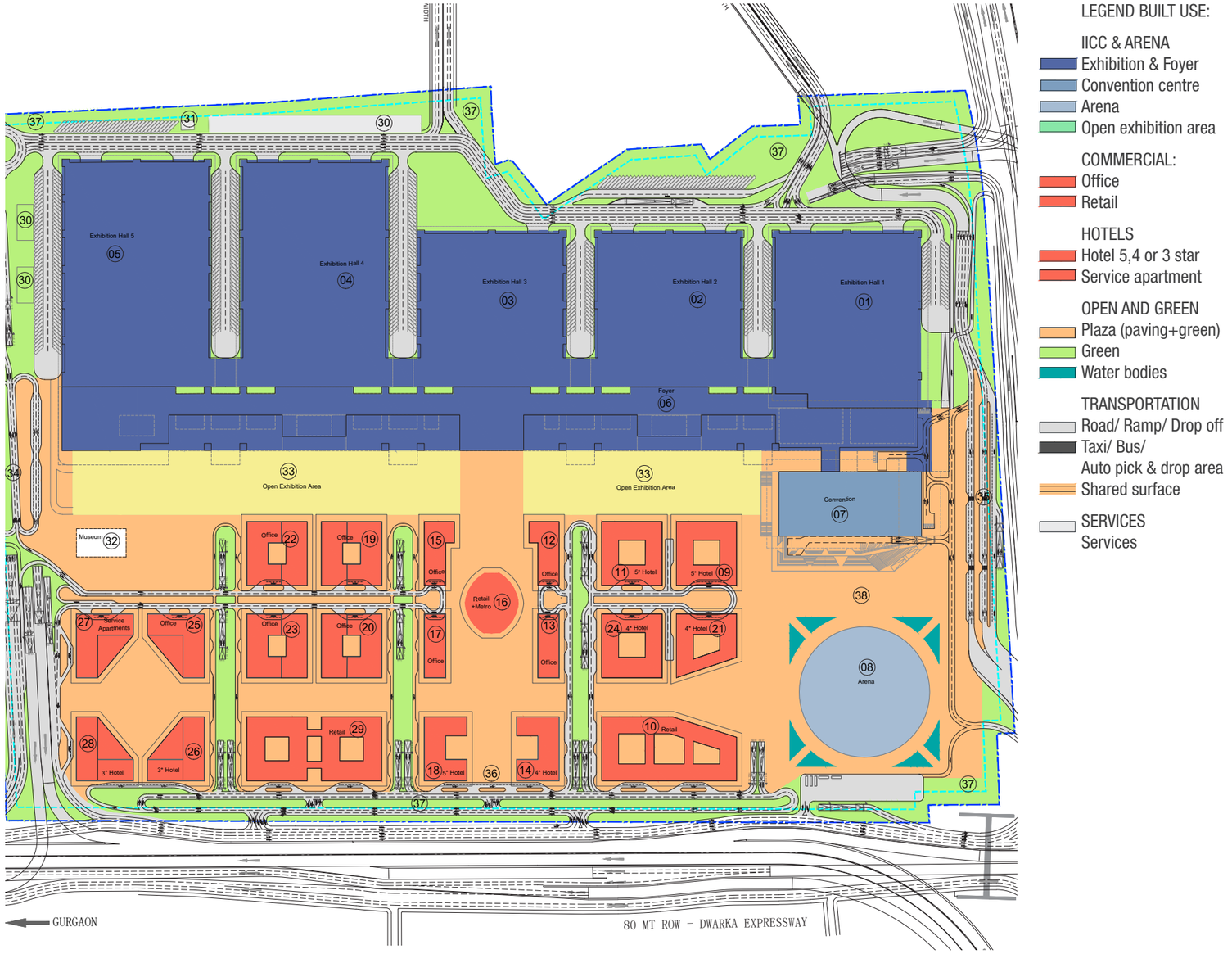
The main features are:

1. A flexible space to house external exhibitions and displays. Developed as an 'open walkway', the area allows for a spill out from the grand foyer and museum elements. The design of the area is based on a grid layout of which every landscape element references, including: tall trees, vegetation, paving, water features and coloured elements for way finding.

2. A green buffer space and spill out area between the Convention Centre and the Arena has been created, providing an area for congregation and separation for the large volumes of people entering the entertainment buildings.

3. The main boulevard links the main commercial hub through a series of landscaped urban spaces. Green zones with green and planting are rhythmically placed along the boulevard, creating comfortable break out areas while responding to the need for shading. Tall buildings further enable shade from the sun and noise, while pergolas, vegetation and water features allow for a highly habitable streetscape.

2.0 MASTERPLAN OVERVIEW



LEGEND BUILT USE:

IICC & ARENA
- Exhibition & Foyer
- Convention centre
- Arena
- Open exhibition area

COMMERCIAL:
- Office
- Retail

HOTELS
- Hotel 5,4 or 3 star
- Service apartment

OPEN AND GREEN
- Plaza (paving+green)
- Green
- Water bodies

TRANSPORTATION
- Road/ Ramp/ Drop off
- Taxi/ Bus/ Auto pick & drop area
- Shared surface

SERVICES
- Services

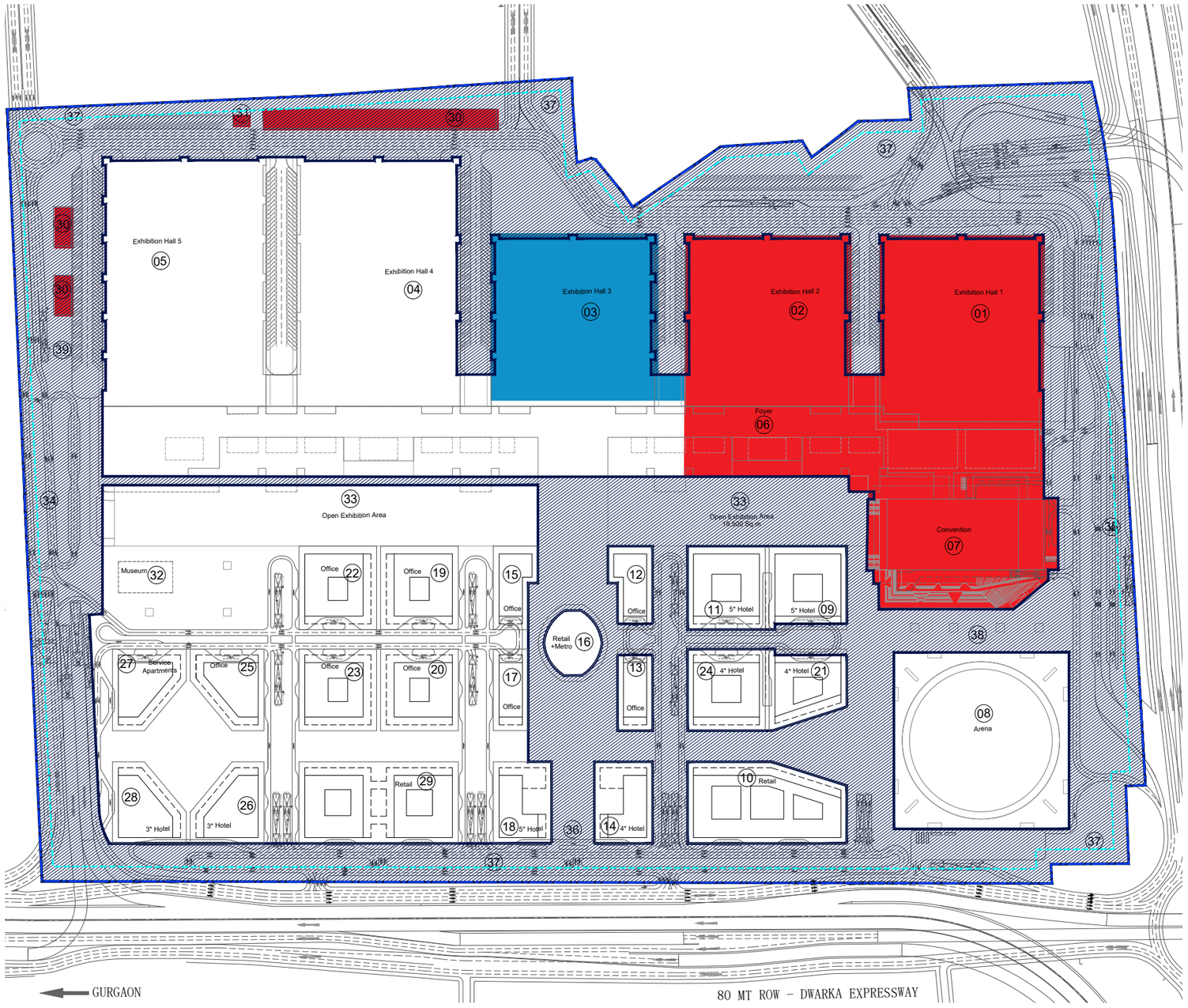
2.5 LAND USE PLAN

The key buildings within the masterplan are the Exhibition areas, Convention Centre, Arena and Mixed Use District. The masterplan has been designed considering the requirements and importance of each of these buildings. The Exhibition Halls and Convention Centre are located along the western edge of the site near a main access road, and create a key visual entrance point. The Arena and retail mall are located within the northern edge of the site allowing for maximum visibility from the main arterial road. The Mixed Use District covers the southern and central part of the site.

Key numbers:

Land Use	Area (in Ha.)	Area (in%)
Public & Semi Public	**26.82**	**30%**
Exhibition Hall & Foyer	23.64	
Convention	1.48	
Arena	1.70	
Commercial	**8.00**	**9%**
Commercial (Office & Retail)	4.78	
Hotels	3.22	
Utilities	**0.87**	**1%**
Transportation	**16.81**	**19%**
Roads	12.91	
Vehicular Drop-off	1.08	
Open Parking	1.81	
Ramps	1.01	
Green & Open Spaces	**37.22**	**41%**
Green Areas	11.56	
Water Bodies	0.27	
Paved Areas	19.15	
Open Exhibition Area	5.09	
Shared Surface	1.15	
Total	**89.72**	**100%**

2.0 MASTERPLAN OVERVIEW



2.6 PLOTS DEVELOPMENT STRUCTURE

The masterplan proposes a 2 phase development of the site.

Phase I contains:

- Convention Centre
- Exhibition Hall 1 & 2
- Partial Grand Foyer
- Public Realm Area
- First Stage of the M.U.D.
- Urban and Trunk Infrastructures

Phase II contains:

- Exhibition Hall 3, 4 & 5
- Completion of Grand Foyer
- Arena
- Completion of M.U.D.

LEGEND:

- IICC SITE BOUNDARY
- SET BACK LINE
- PHASE 1 - EPC
- PHASE 1 - EPC (PLYNTH)
- SCOPE OF WORKS EPC - PHASE I
- NON SCOPE OF WORKS EPC

3.0 MASTERPLAN FRAMEWORK

3.0 MASTERPLAN FRAMEWORK

3.1 LAYOUT PLAN

The layout plan for the masterplan has been developed based on the specific requirements of the South Delhi Municipal Corporation (SDMC) policies and guidance for the land.

1. Exhibition Hall 1
2. Exhibition Hall 2
3. Exhibition Hall 3
4. Exhibition Hall 4
5. Exhibition Hall 5
6. Grand foyer
7. Convention centre
8. Multi-purpose arena
9. Hotel (5*)
10. Retail mall
11. Hotel (5*)
12. Offices
13. Offices
14. Hotel (4*)
15. Offices
16. Retail hub
17. Offices
18. Hotel (5*)
19. Offices
20. Offices
21. Hotel (4*)
22. Offices
23. Offices
24. Hotel (4*)
25. Offices
26. Hotel (3*)
27. Service Apartments
28. Hotel (3*)
29. Retail Mall
32. Museum

LEGEND:

- IICC site boundary
- Set back line
- Proposed blocks
- Building limit
- Existing HT line to be shifted
- Tree existing to be felled
- Basement ramp (entry)
- Basement ramp (exit)
- Basement profile
- Metro - Airport express line
- Underground metro station
- Area to be acquired
- Ground floor
- Ground coverage

3.0 MASTERPLAN FRAMEWORK

3.1 LAYOUT PLAN

Approval for the masterplan has been sought and given and accordingly the design of individual components are required to adhere to the following area statement requirements:

S.i.	Details	Area
01.	Total land allotted by DDA	89.72 Ha (8,97,200 sq.m)
02.	Area of privately owned and un-acquired land	0.1368 Ha (1,368 sq.m.)
03.	Total land handed over by DDA	89.5832 Ha (8,95,832 sq.m.)
04.	Maximum Ground Coverage @ 40% of Net plot area	3,58,332.8 sq.m.
05.	Maximum FAR @ 120	10,74,998.4 sq.m.
06.	Maximum Height	41.44M - 45M
07.	Minimum area for exhibition space, Convention and meeting space	40% of FAR i.e. 4,29,999.36 sq.m.
08.	Maximum area for retail trade, office space/commercial space, Hotels and related activities	60% of FAR i.e. 6,44,999.04 sq.m.
09.	Proposed Ground Coverage	3,57,635.00 sq.m. (39.92%)
10.	Proposed FAR	10,70,000.0 sq.m.
11.	Proposed FAR for exhibition halls, convention and arena	4,28,000 sq.m. (40% of max. proposed FAR)
12.	Proposed FAR for retail trade, office space / commercial space, Hotels and related activities	6,42,000 sq.m. (60% of max. proposed FAR)
13.	Maximum proposed height	41.44M - 45M

Note: further breakdown for proposed buildings is provided on the layout plan drawing ref: CD_ECC_PEAC_OA_MSP_X_F0_DW_0011

The layout plan shows the exact boundaries of the site, as well as the necessary set backs from the perimeter road networks. It is to be noted that further set backs in each of the internal plots have been created as part of the masterplan design for buildings 9 to 28, and accordingly these are shown in section 9 of this report and these are required to be adhered to.

In addition to the areas for each of the buildings the open areas are required to comply with the following requirement:

S.i.	Details	Area
01.	Required: 50% X [Plot Area (8,95,832 sq.m.) - Permissible Ground Coverage (3,58,332.8 sq.m.)]	2,68,749.60 sq.m.
02.	Provided: Plot Area (8,95,832 sq.m.) - Road Area & Surface Parking (1,46,394.00 sq.m.) - Proposed Ground Coverage (3,57,635.00 sq.m.)	3,72,260.00 sq.m.

Parking requirements for the development have been established based on the total B.U.A. of the various building uses allocated to the masterplan as follows:

S.i.	Details	no. Spaces
01.	Parking Required	
	Exhibition Halls @2 ECS/ 100 sq.m.	6,060
	Convention Centre @2 ECS/ 100 sq.m.	1,200
	Arena @2ECS/ 100 sq.m.	1,000
	Mixed Use Development @3 ECS/ 100 sq.m.	19,260
	Offices ECC @3 ECS/ 100 sq.m.	450
	Total	27,970
02.	Parking Provided	
	Exhibition Halls + Convention Centre	7,850
	Arena	1,190
	Mixed Use Development	19,572
	Total	28,612

Split of parking and additional parking for Servicing vehicles are shown later in this report.

3.0 MASTERPLAN FRAMEWORK

3.2 BUILDING ALLOCATIONS

Within the masterplan every building has been allocated a specific use, and corresponding key data to control its development within the parameters of the overall masterplan. The building uses are allocated as follows:

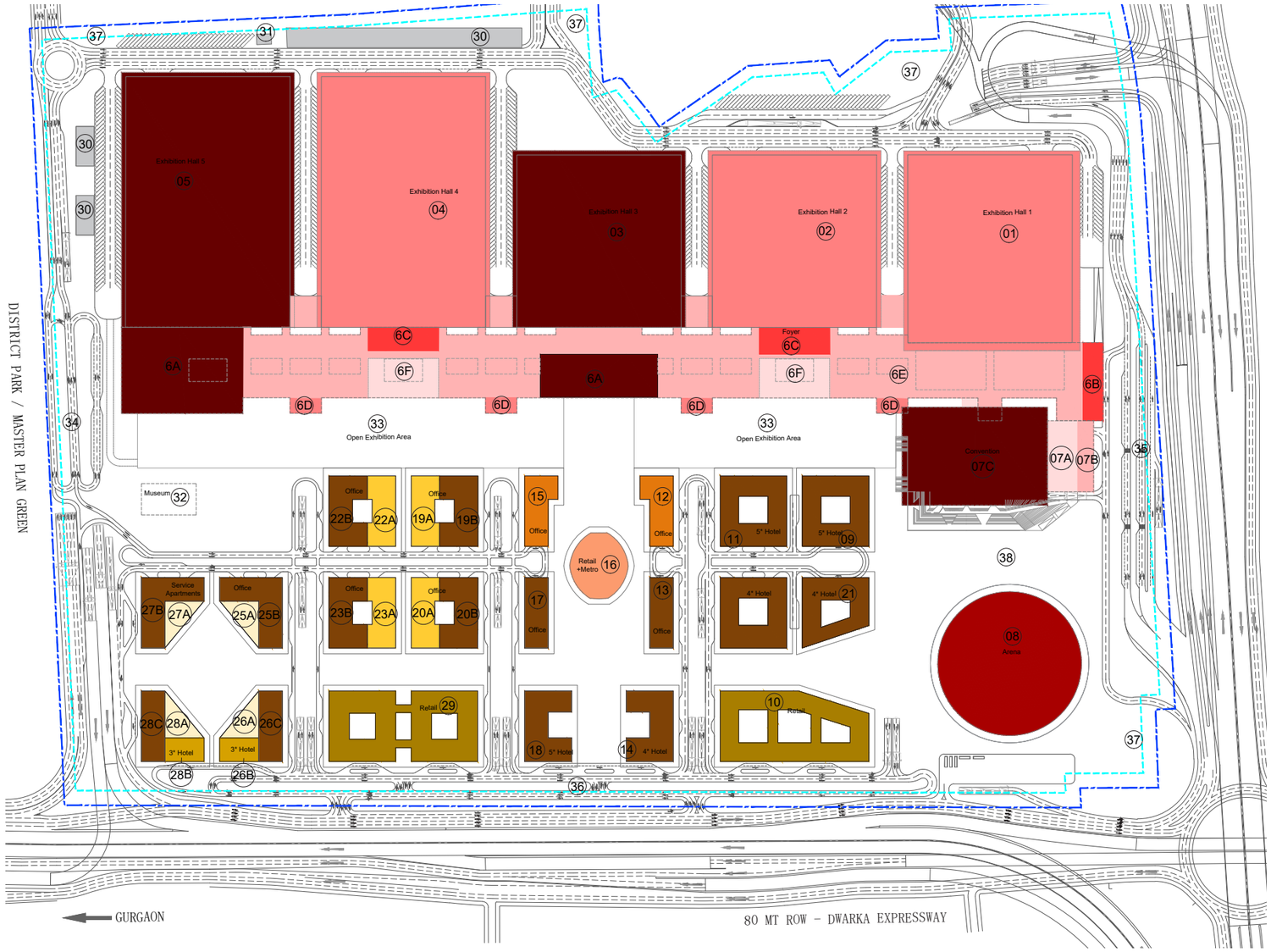
1. Exhibition Hall 1
2. Exhibition Hall 2
3. Exhibition Hall 3
4. Exhibition Hall 4
5. Exhibition Hall 5
6. Grand foyer
7. Convention centre
8. Multi-purpose arena
9. Hotel (5*)
10. Retail mall
11. Hotel (5*)
12. Offices
13. Offices
14. Hotel (4*)
15. Offices
16. Retail hub
17. Offices
18. Hotel (5*)
19. Offices
20. Offices
21. Hotel (4*)
22. Offices
23. Offices
24. Hotel (4*)
25. Offices
26. Hotel (3*)
27. Service Apartments
28. Hotel (3*)
29.Retail Mall
30. Services
31. Fire Station
32. Museum

LEGEND BUILT USE:

IICC & ARENA
- Exhibition & Foyer
- Convention centre
- Arena

COMMERCIAL
- Office
- Retail

HOTELS
- Hotels



3.3 BUILDING HEIGHTS

Due to the proximity of the site to the Indira Gandhi International Airport, height restrictions for the development have been applied to the site by the Airports Authority of India. Accordingly the various buildings in the masterplan have been designed to comply with these requirements and these will need to be strictly adhered to in the implementation of the masterplan.

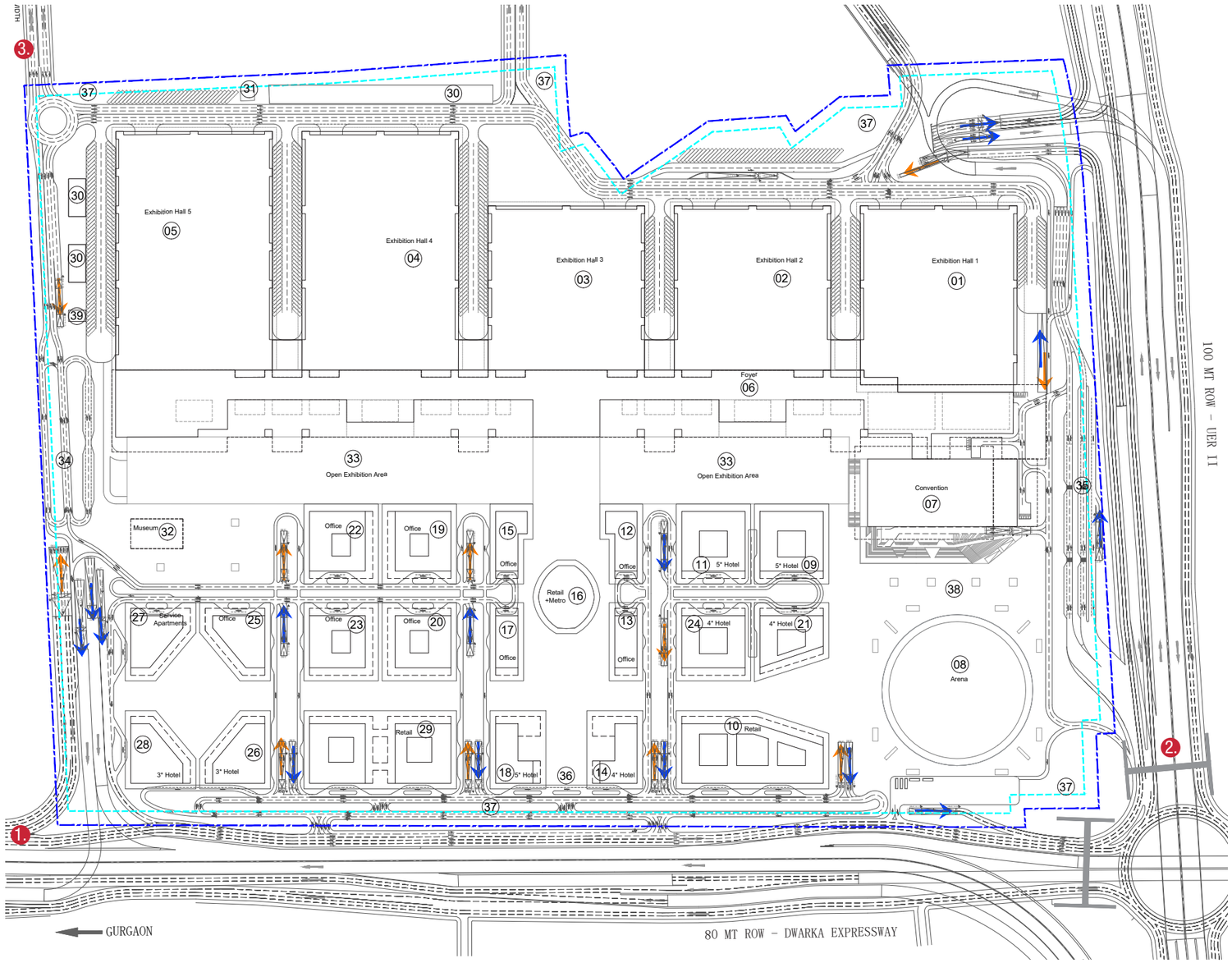
Building heights have been designed considering the need for rooftop access, building services equipment, and other installations. Accordingly the roof slab levels of most of the buildings are set to be below the maximum height limits granted by the AAI.

Consideration for the construction phase and in particular for crane installations will need to be reviewed and where required permission obtained from AAI.

BUILDING HEIGHTS:

IICC & ARENA
- Up to 45m
- Up to 42m
- Up to 35m
- Up to 30M
- Up to 25m
- Up to 15m

COMMERCIAL & HOTELS
- G+9 (39.20m)
- G+8 (35.40m)
- Retail G+6 (31.60m)
- G+6 (27.80m)
- G+5 (24.00m)
- G+4 (20.00m)
- G+3 (16.40m)



3.4 CIRCULATION

VEHICULAR CIRCULATION

Circulation for vehicles into the site is divided into three types of users:

- Car/ motorcyles / IPT/ taxi users

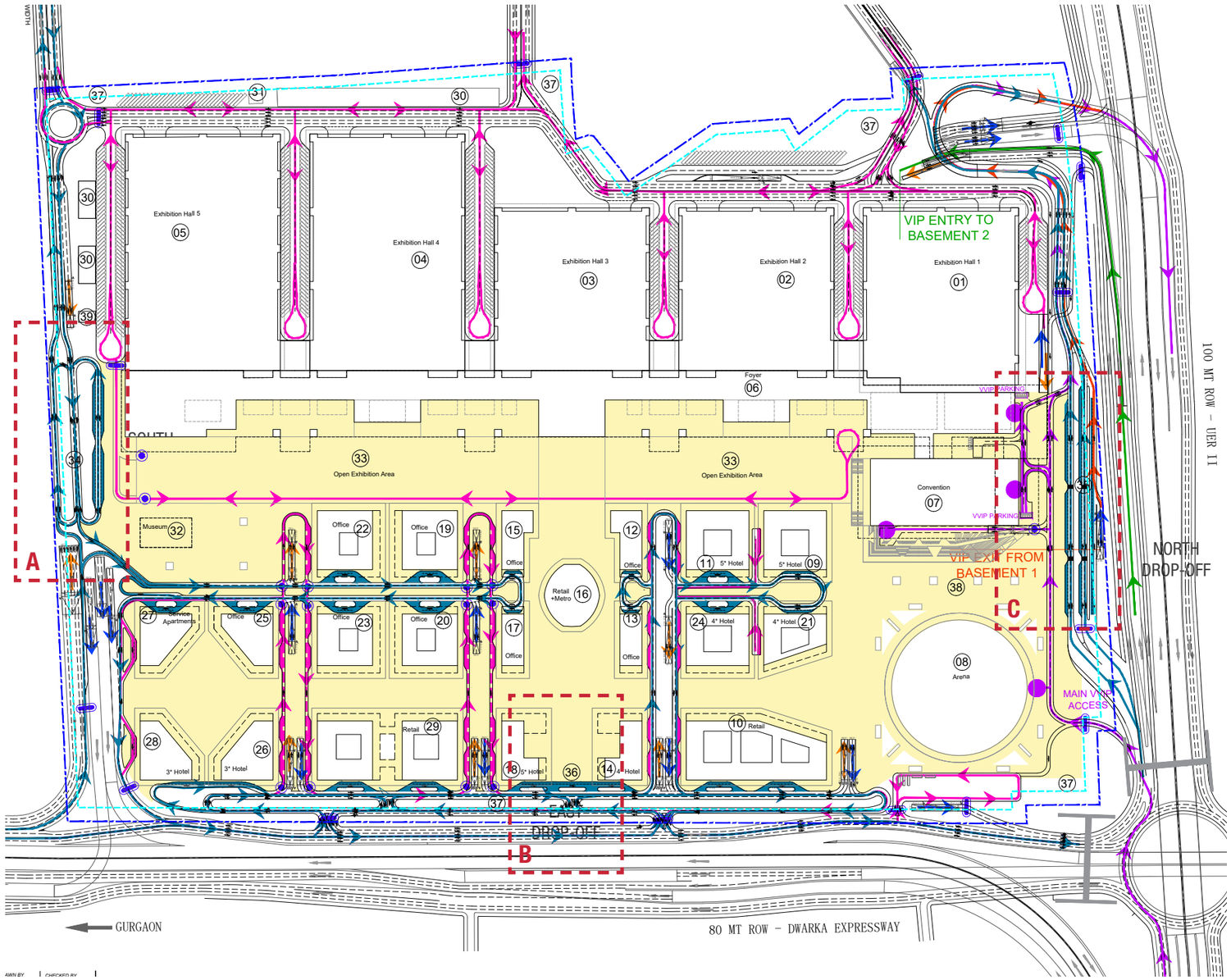
- VIP and VVIP users

- Services and maintenance vehicles.

There are three main access points for passengers in the proposal: one is located in the Dwarka Expressway (1), the second one in the UER-II (2) and the third in the Arterial road (3).

All parking is located within 4no basement levels. The intention is to restrict vehicle movements within the main site area, therefore wherever possible, movements have been directed to the perimeter of the site. The principle access to the IICC and Arena buildings will attract high volumes of traffic, to solve this problem drop offs and entry/exits to the basement level parking have been located towards the perimeter.

LEGEND:
Basement ramp (exit)
Basement ramp (entry)
Main vehicular entry point



3.4 CIRCULATION

VEHICULAR DROP OFF

The masterplan is designed to simultaneously hold events with a large multitude of visitors on three anchor developments: Exhibition Halls, Convention Centre and Arena. The circulation is designed to create a pedestrian friendly environment which is well shaded and illuminated in accordance with IGBC Green Campus requirements and incorporates large areas of pedestrianised streets.

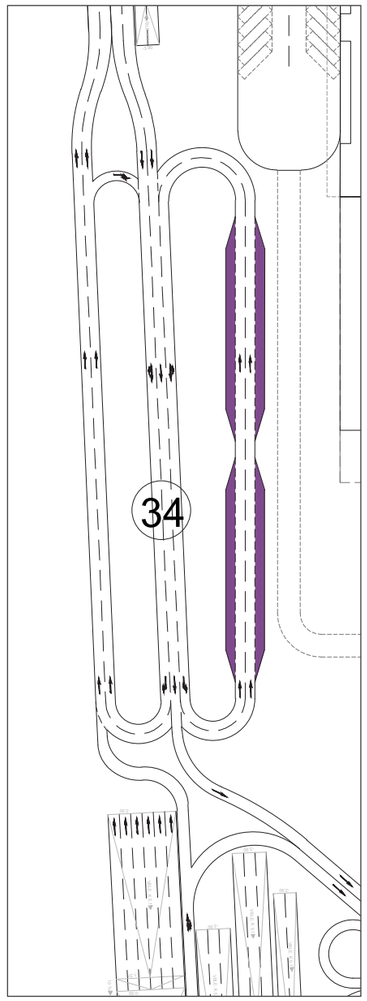
The movement strategy is based on creating a grid network to allow direct and quick movements between areas, with the emphasis of encouraging people to walk rather than move by car. Parking has therefore been excluded at ground level and moved to 4 floors within the basement, to allow for pedestrianised space. A metro station is sited within the centre of the site, underground crossings allow for easy pedestrian access from the surrounding areas, while 3 main taxi drop off points are location towards each perimeter of th site.

Shared drop off bays are located along the streets at ground floor level which are managed to avoid parking for lenghy periods. Each building is provided with 2 drop off bays: one main drop off to the main elevation for Front of House activities, as well as a secondary drop off to a side elevation for deliveries and servicing. Common ramps placed near each building provide access to the basement parking.

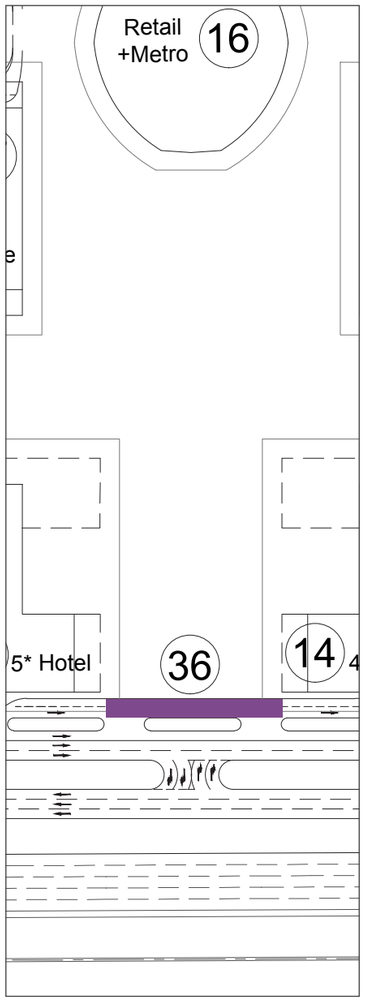
LEGEND:

- IICC Site boundary
- Setback line
- Main Circulation
- Taxi & Main Drop off
- Service Movement
- Service Movement with regilated opening hours
- Service Drop off
- Automatic Rising Bollard
- Basement Ramp (Entry)
- Basement Ramp (Exit)
- VVIP Circulation
- VIP Entry to Basement
- VIP Exit from Basement
- Pedestrian Zone

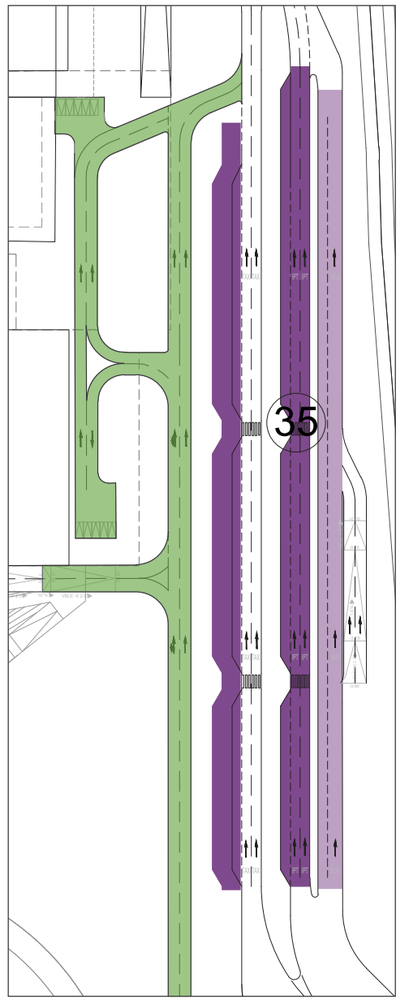
SOUTH DROP-OFF (A)



EAST DROP-OFF (B)



NORTH DROP-OFF (C)



3.4 CIRCULATION

TAXI DROP-OFF AREAS

There are 3 public drop-off points located within the development. These are strategically placed to the southern, eastern and northern ends of the site next to key buildings and access points. The Mixed Use District has been designed to contain individual drop off points for each building which will help to regulate traffic flow.

South drop-off: This is for Taxis only, and is located towards the rear of the Mixed Use District, next to the exhibition halls.

East drop-off: This is for Taxis only, and is located within the MUD area, in front of the metro station.

North drop-off: This area will be used for VVIP, taxis and buses. Located between the Arena and the IICC complex.

LEGEND:
- Bus drop-off
- Taxi drop-off
- VVIP drop-off

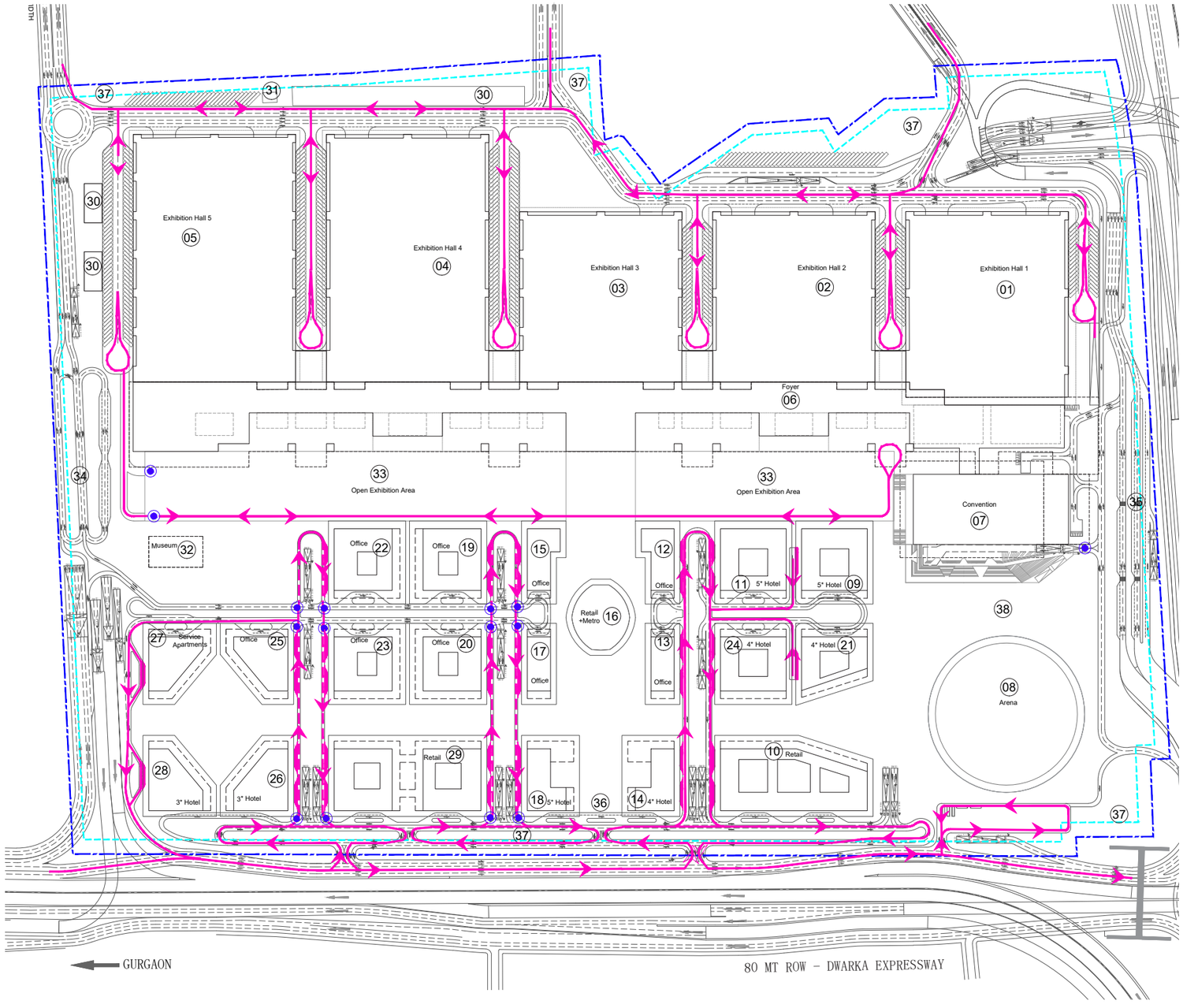
3.0 MASTERPLAN FRAMEWORK

3.4 CIRCULATION

PEDESTRIAN SPACES

DROP OFF BAYS CONVENTION CENTRE AND ARENA

DROP OFF BAYS - MIXED USE DEVELOPMENT AREA



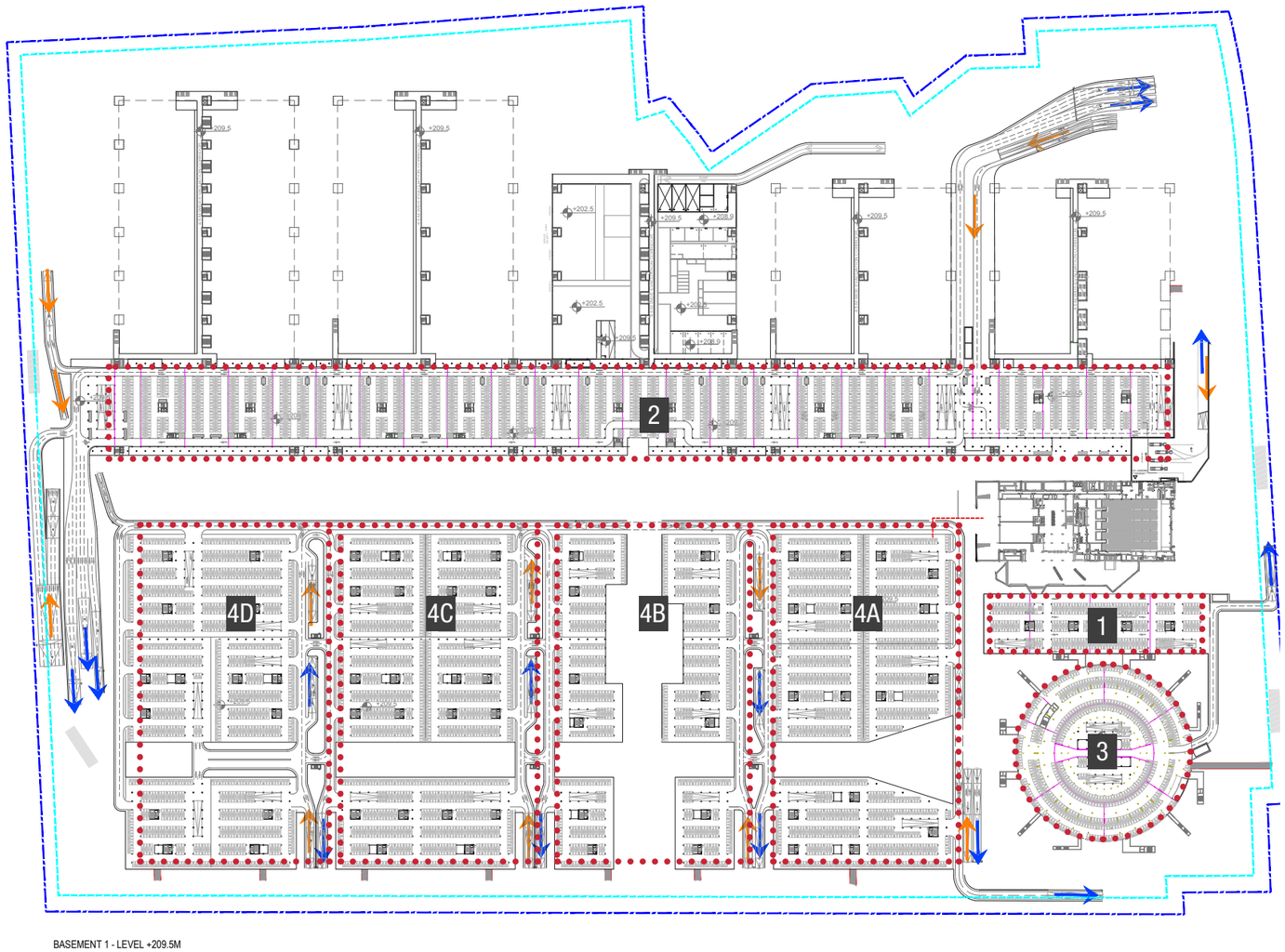
3.4 CIRCULATION

SERVICE VEHICULAR CIRCULATION

Vehicular Access to the Mixed use development buildings, for basement parking, drop off and servicing will be via controlled roads. Each building is provided with main drop off for Front of House activities, as well as a secondary drop off to a side elevation for deliveries and servicing.

LEGEND:
- IICC Site Boundary
- Set back Line
- Service Movement
- Service Drop off
- Automatic Rising Bollard
- Service Movement with regulated hours

3.0 MASTERPLAN FRAMEWORK



BASEMENT 1 - LEVEL +209.5M

3.5 BASEMENT CIRCULATION

STRUCTURED PARKING

Basement parking areas have been provided for the entire masterplan and has been split for the following elements:

1. Dedicated Parking for Convention Centre
2. Dedicated Parking for Exhibition Halls
3. Dedicated Parking for Arena Building
4. Dedicated Parking in 4 zones for the MUD buildings.

Vehicular access to the basements will be via shared ramps from the surface road network at various locations. Connections between each basement areas is provided, via dedicated space allocated to communal circulation in each basement parking zone. The basements and the zones for communal circulation are to be built accordance with the layouts proposed within this document. Internal circulation ramps between basement levels will be required to be created by within the basement extents of each zone. The quantity and locations is to be determined by developers to meet all local regulations.

Pedestrian circulation cores from the basement parking areas have been considered. In particular for the MUD buildings, the quantity and locations are to be determined by developers to meet all local regulations. In addition circulation cores are to only surface on the ground floor within the ground floor footprint of buildings.

Parking provisions for each of the buildings has been determined based on the ECS requirements established in the SDMC approval and must be strictly adhered to as follows:

	Min no. spaces
1. Exhibition Halls	6,060
2. Convention Centre	1,200
3. Arena	1,000
4. ECC Offices	450
5. Mixed Use Development	19,260
Total	27,970

LEGEND:
Basement ramp (entry)
Basement ramp (exit)

BASEMENT PARKING - ALL AREAS

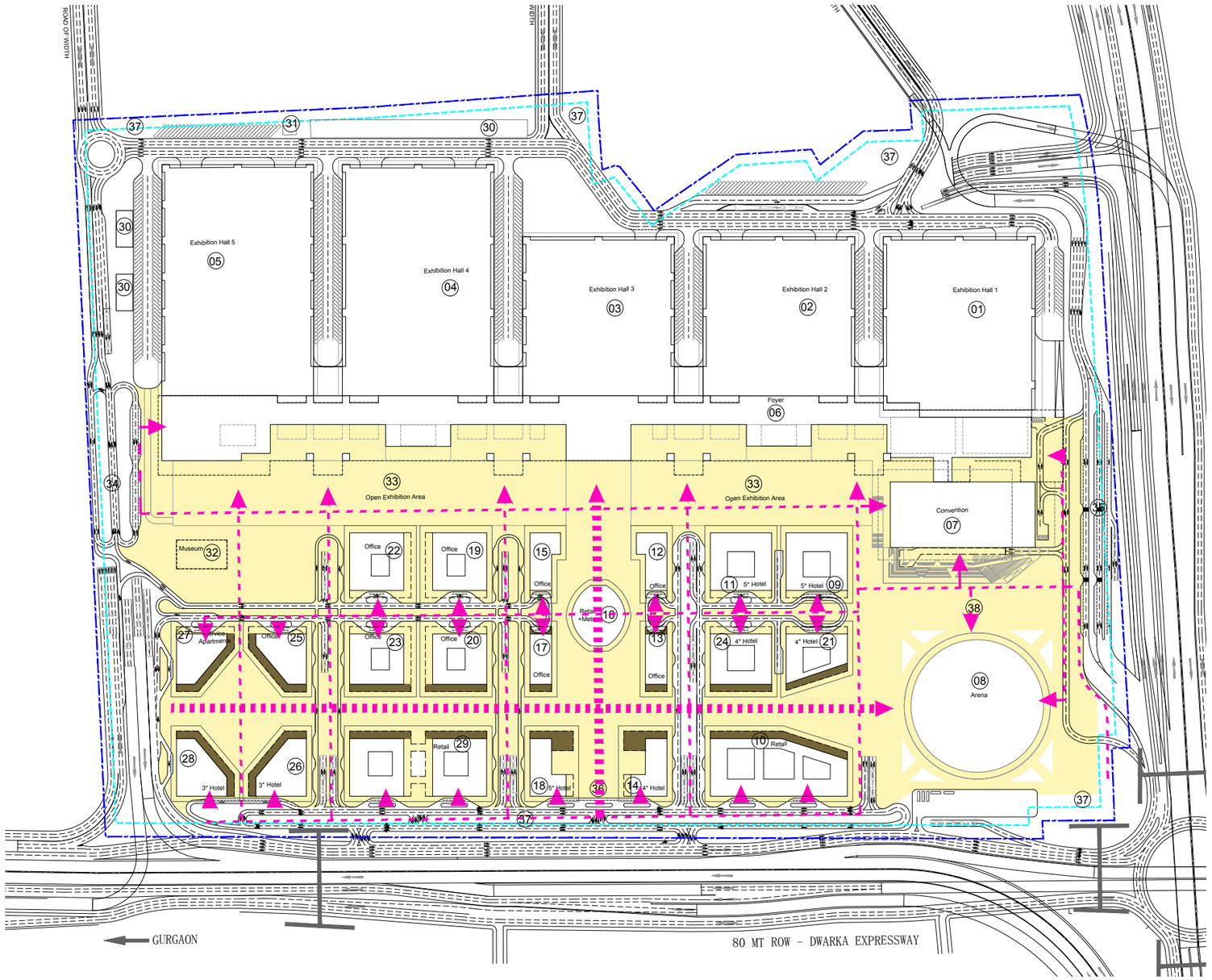
3.6 BASEMENT CAR PARKING

For the MUD buildings parking has been spread over 4 zones, (4a - 4d). Each zone provides dedicated parking for a number buildings, with the requirements of minimum spaces as per the table below.

	Buildings served	Min no. spaces
Zone 4a	9, 11, 10, 21, 24	5,215
Zone 4b	12, 13, 14, 15, 16, 17, 18	3,728
Zone 4c	29, 19, 20, 22, 23	5,446
Zone 4d	25, 26, 27, 28, (Includes for surplus parking for zones 4a - 4c)	4,871
	TOTAL	19,260

It is to be noted that due to spatial constraints for the extents of the basements, zone 4d will contain additional spaces that will be shared amongst all MUD buildings.

3.0 MASTERPLAN FRAMEWORK



3.7 BUILDING ACCESS

INGRESS AND EGRESS

The masterplan is designed with an open ground plane and individual plots do not have a physical boundary condition i.e a fence or wall. Ingress and egress is therefore only applicable to the access point for each building.

Access points for each building is to be in the locations as indicated in the diagram and the requirements for primary and secondary entrances are further explained in section 8 & 9.

LEGEND:
- Buildings main entry/exit
- Primary pedestrian circulation routes
- Pedestrian Zone

UNIVERSAL DESIGN INDIA PRINCIPLES © 2011 Latest Version: 21.06.2011

Co-authors: Abir Mullick, Anjlee Agarwal, Balaram S., Debkumar Chakrabarti, Gaurav Raheja, Haimanti Banerjee, Rachna Khare, Ravi Shankar and Shivani Gupta *(In alphabetical order)*

Disclaimer

1. The UDI principles are stand alone universal design ideologies that focus in Indianness and inclusivity as they relate to age, gender, disability, caste, class, religion, poverty and urban/rural background.

2. UDI principles neither make any connection nor build on the 7 Universal Design Principles. They recognize the overarching importance of 7 Principles in the field of universal design.

	Principles	Description	Guidelines
1	Equitable/ *Samaan*	The design is fair and non-discriminating to diverse users in Indian context	• Avoid prejudices against people of all age, gender, disability, size, caste, class and religion. • Consider different capabilities of users and build in many levels of engagement. • Provide choices in access and use through flexibility and customization. • Allow personalization through inclusion of adjustable and adaptable options. • Provide equality in challenge, opportunity and energy requirement.
2	Usable/ *Sahaj*	The design is operable by all users in Indian context	• Provide independence, comfort, safety and support during use. • Facilitate access, operation and convenience by diverse users. • Include adaptations for those experiencing difficulty in use. • Provide clarity in use, operation and maintenance to minimize instruction and avoid confusion and error. • Adopt simple means to overcome complex operation. • Follow cultural norms to address user expectations. • Offer multi-sensory feedback to point in the right direction. • Build in intuitive operation and innate understanding of problem. • Allow easy adaptation to facilitate use by people with diverse abilities. • Prevent costly mistakes and untended consequence from misuse.
3	Cultural / *Sanskritik*	The design respects the cultural past and the changing present to assist all users in Indian context	• Maintain social and traditional qualities in design. • Include Indian idioms to make historic and social connection. • Present in many languages for inclusive comprehension. • For all castes and society levels. • Respond to local context and conditions. • Employ appropriate technology to match user expectations.
4	Economic/ *Sasta*	The design respects affordability and cost considerations for diverse users in Indian context	• Ensure affordability, durability and maintainability. • Use local materials for energy savings and cost effectiveness. • Focus on low unit cost through wide distribution. • Adopt modular approach to offer choice in features and price range.
5	Aesthetic/ *Sundar*	The design employs aesthetics to promote social integration among users in Indian context	• Employ aesthetics to enhance universal appeal and use. • Allow personalizing aesthetics through flexibility, adaptability and modularity of colour, form, texture and interaction. • Employ appearance to inform use and safety. • Bridge wide range of meaning and comprehension gaps.

3.8 UNIVERSAL DESIGN COMPLIANCE

The masterplan and all its components have been developed considering the requirements of “The Universal Design India” principles, which are based on the cultural needs of the Indian people. They acknowledge the main principles of UD and build on their social and equitable agenda. There are two important aspects to the UDIP:

1) A strong connection to Indian psyche,

2) Customization.

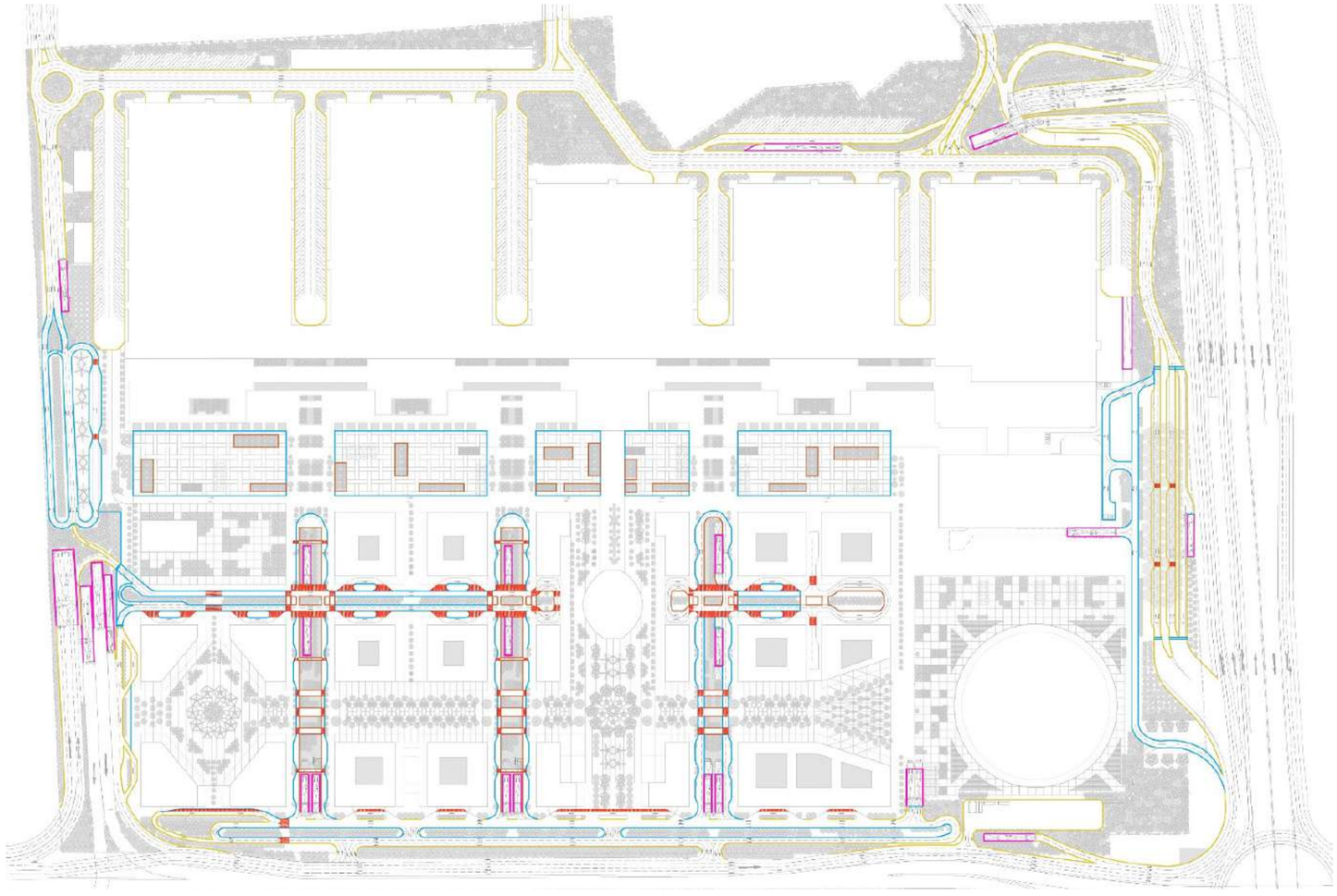
It is intended that the detail design and construction of all buildings will also be designed to comply with these principles and this will apply also to the development of all MUD buildings as well.

In addition to the UDIP, it is also intended that all elements of the masterplan and individual buildings are designed to comply with the guidelines for Universal Accessibility for Physically Disabled. Special consideration will need to be applied for entrances to individual buildings where the ground floors have been raised 0.5m higher than the external areas to mitigate against flooding. Requirements for ramps/stairs/lifts for MUD buildings is included in section 8 of this report.

In addition, the project needs to comply with the Universal Design Guidelines as per IGBC Requirements.

Key features incorporated in the public realm/landscape areas are highlighted in the following pages.

3.0 MASTERPLAN FRAMEWORK



GRANITE KERB FLUSH

STEEL EDGING FLUSH

PEDESTRIAN CROSSING

3.8 UNIVERSAL DESIGN COMPLIANCE

SLOPED ROUTES

Changes in level generally cause problems for many disabled people, particularly people with mobility or visual impairments. Even a single step can prevent access for someone who has mobility impairment and can present a trip hazard. Mobility ranges vary enormously between individuals with age and disability, while factors such as weather, topography (gradients) and obstacles can also affect mobility ranges.

It is expected that large numbers of people will be moving around IICC site and it will therefore be important to ensure that everyone can move safely and quickly by minimising gradients wherever possible.

The site has been designed to eliminate all natural slopes, and is therefore considered to be “level”.

In addition the design has considered the elimination of steps and trip hazards in the landscape areas by keeping the levels of roads, pavement areas and accessible grassed areas the same. The use of flush kerbs and steel edgings are used to mark the interfaces between these areas. Pedestrian Crossings are therefore also level.

Where changes of level are required to access specific buildings, the specific use of ramps and other means are to be incorporated within the plots and/or the building.

LEGEND:

- Granite Kerb Flush
- Steel Edging Flush
- Pedestrian Crossing

3.8 UNIVERSAL DESIGN COMPLIANCE

WALKING SURFACES

Surface finishes can render an accessible route inaccessible. However, it is possible to improve the accessibility and provide valuable information for disabled people if the correct choice of materials is made. The choice of material and colour are important in determining this. All materials chosen have surfaces that are smooth, firm and slip resistant. Surfaces are hard enough so that wheels and sticks do not sink into them. Packed surfaces such as crushed rock, gravel, sand or grit have not been used in the design for areas where walking may be occurrent.

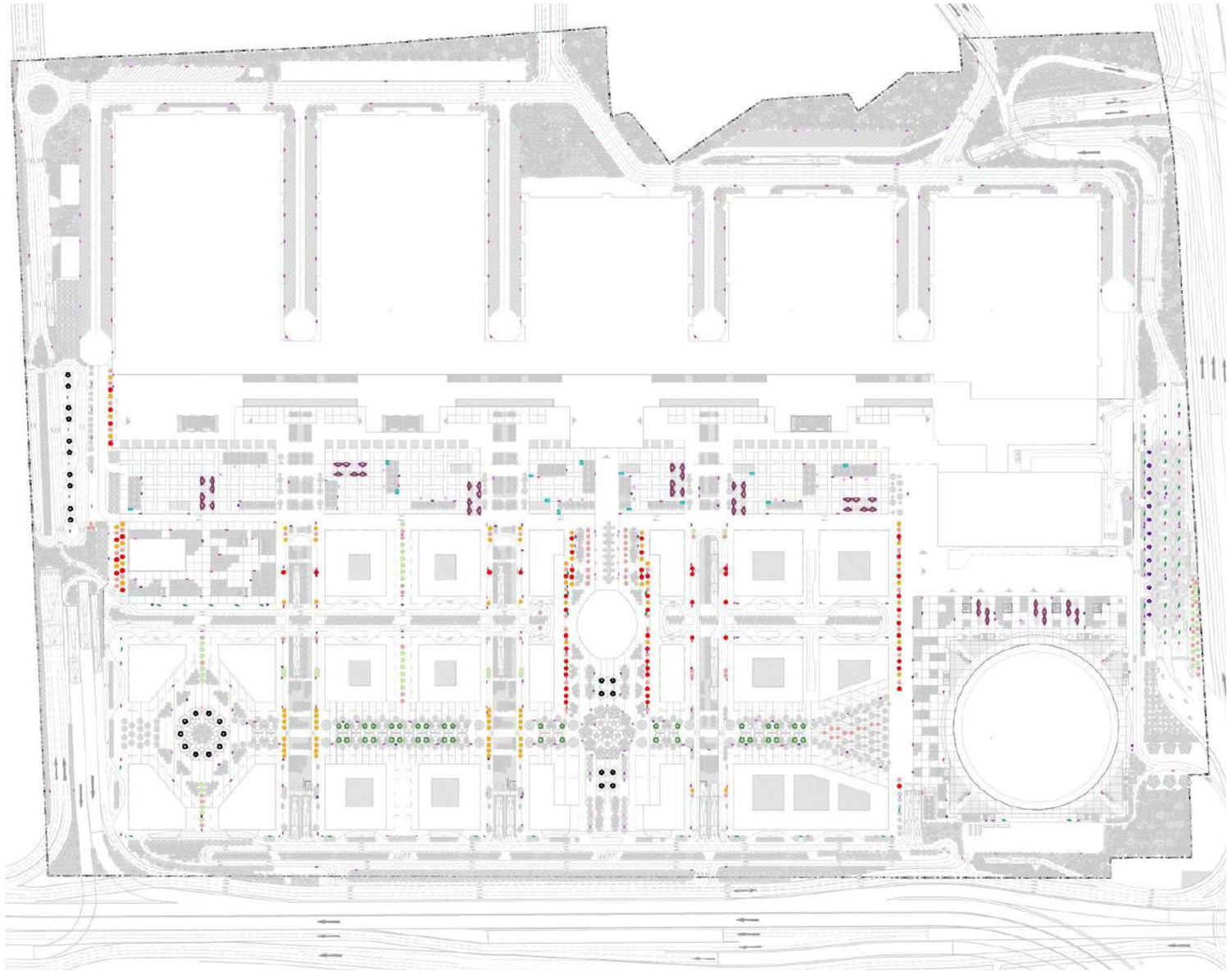
STREET FURNITURE

The organization and language that is expressed in the landscaping, pathways and street furniture will be a key factor to ensuring a safe and accessible India International Convention and Expo Centre.

Street furniture, planters, litter bins and signposts are all intended to improve the environment however, they are hazardous if not carefully designed and positioned.

Accordingly:

- All permanent street furniture has been placed in areas that will not obstruct or create a hazard for disabled people, in particular people with a visual impairment.
- Where required warnings underfoot or furniture that can be detected by the sweep of a cane is to be used to avoid the risk of colliding with items located along access routes.
- All lighting columns, signposts, litter bins, trees and seats have been located at or beyond the boundaries of pedestrian routes.
- All furniture is to be selected to be visually contrasting with the surroundings and be apparent in all lighting conditions.



3.8 UNIVERSAL DESIGN COMPLIANCE

SEATING/REST POINTS

Mobility ranges vary greatly between disabled people, while factors such as weather, topography (gradients) and obstacles can also affect mobility ranges. Resting places should therefore be provided on all circulation routes.

The landscape design includes various types of seating at regular intervals to account for the above.

- A choice of different seat designs are provided in different sitting areas. Some seats are to have both back and arm rests as these are important features for many people. Having arm rests on both sides will assist people that require additional support when getting in and out of a seat.
- Additionally perching seats, with and without backs, as casual rest places along longer circulation routes will also be provided.
- Seating has been provided along but not within pedestrian routes with adequate clear space alongside seating to allow wheelchair users to sit directly beside non-disabled companions.

BENCH BIG FLOWER
CODE - LA.04.01
BENCH SMALL FLOWER
CODE - LA.04.02
BENCH OPEN EXHIBITION
CODE - LA.04.03
BENCH BIS
CODE - LA.04.10
PLANTER OPEN
CODE - LA.04.04 A
PLANTER WITH SEATING
CODE - LA.04.05
PLANTER DOUBLE
CODE - LA.04.06
PLANTER CLOSE
CODE - LA.04.04 B
BIN
CODE - LA.04.08
DRINKING FOUNTAIN
CODE - LA.04.11
CAST-IN-SITU PLANTER WITH SEATEI
CODE - LA.04.13
FLAT PERGOLA PLANTER & SEATING
CODE - LA.04.14
PENTAGON PERGOLA PLANTER
AND SEATING
CODE - LA.04.15
TREE SEATER
CODE - LA.04.12
NORTH DROP-OFF
PERGOLA
PLANTER

3.8 UNIVERSAL DESIGN COMPLIANCE

TACTILE PAVING

Tactile paving is used to warn visually impaired people of hazards in the environment. The main use of tactile paving within the India International Convention and Expo Centre will be to identify level changes (steps/stairs) and pedestrian crossings.

Accordingly with Indian regulations the following has been taken into account:

- Corduroy paving conveys the message ‘hazard, proceed with caution’ and can be used in a number of applications including; highlighting a level change, as a delineator strip in level areas of shared space and as guidance paving. In general, corduroy paving should:
- For visually impaired people the provision underfoot of a timely warning that there is a change in level is essential. They risk tripping or losing their balance if they are not made aware of changes in level, steps or a flight of stairs. The greatest risk of tripping is at the head of a flight of steps or stairs and it is essential to ensure that people are aware that they are approaching a change in level.

External steps along a route without warning or in an unexpected position may cause a person to trip or fall.

- In shared space streets with a level surface, corduroy tactile paving is often used as a delineator strip between the notional carriageway and the footway although some schemes use other tactile methods, such as textured setts. It can be useful to use a contrasting colour for the delineator strip.
- Corduroy tactile paving can often be used as guidance paving to assist people with a visual impairment to orientate themselves and navigate around large open spaces such as public squares.
- Blister paving is used to indicate a pedestrian crossing point, either controlled or uncontrolled. In general, blister tactile paving should:
- Controlled crossing points.
- Uncontrolled crossing points.

3.8 UNIVERSAL DESIGN COMPLIANCE

SIGNAGE

The signage strategy for the India International Convention and Expo Centre will be an important part in ensuring that everyone can easily navigate their way around. It is imperative that all signage is accessible for as wide a range of visitors as possible.

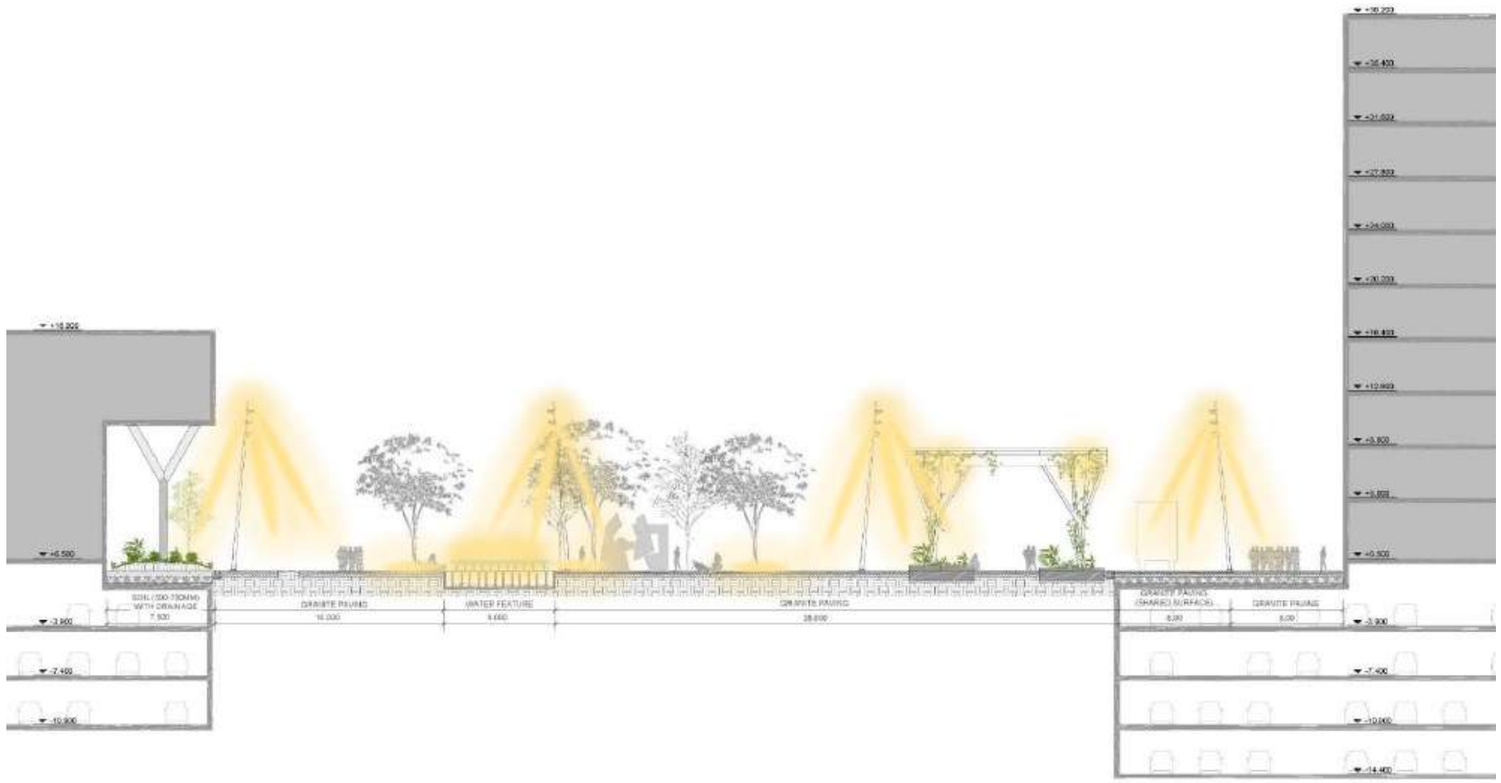
The system of signage should be complementary to the surrounding environment and be consistent from the approaches to and throughout the Park providing a simple consistent method for people to find their way.

Signage is a very important access tool for people with a hearing impairment. Visually impaired people and people with language and learning difficulties require signs to be designed in specific ways. By addressing the needs of disabled people the signage system becomes more accessible to everyone

Accordingly the design of Wayfinding used to navigate the site does not rely exclusively on text-based signage, but utilises more visual/ graphic information systems, for example:

- colour
- simple and careful language
- identification and confirmation as well as directional information
- simple symbols
- architectural elements including public art works

For specific signage design guidance reference should be made to the Signage Design Intent.



3.8 UNIVERSAL DESIGN COMPLIANCE

LIGHTING

Appropriate lighting will be critical to the success of the India International Convention and Expo Centre and to help create safe neighbourhoods.

Appropriate lighting conditions are important for people with a hearing impairment who rely on lip reading to communicate and for partially sighted people to maximize their field of vision. Lighting also has security implications.

Accordingly artificial lighting has been designed along main circulation routes, venue and amenity entrance/exit points and places where people may be expected to interact with others. In these instances, lighting has been designed for both low level to indicate pathways/ routes and at a higher level to allow people's faces to be clearly lit and identified.

3.8 UNIVERSAL DESIGN COMPLIANCE

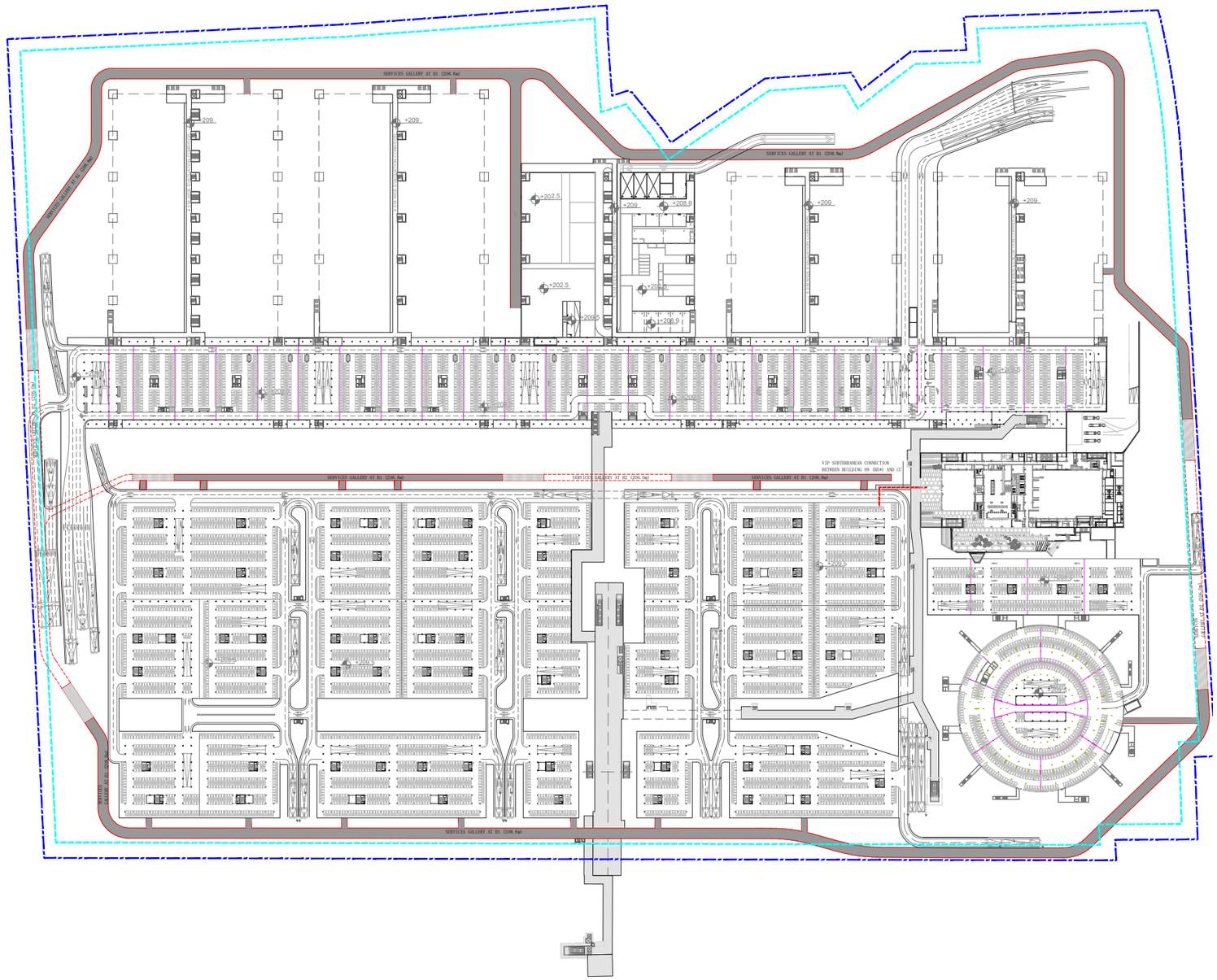
PARKING

The design has taken account of the need to provide parking, as well as appropriate provision for bus/coach parking/drop-off and pick-up areas, taxi drop-off/collection, community transport and any interlinking transport systems.

All private vehicle parking is provided in the underground basements. Within these areas disabled parking bays are to be provided and these are to be placed near lifts, in order to ensure the easy movement.

In total 170 disabled parking spaces are to be provided, distributed among the provision of all the buildings as shown in the table.

	DISABLED CAR PARK SPACES
EH1-EH5	29
CONVENTION CENTRE	7
ARENA	6
MUD ZONE 4A	33
MUD ZONE 4B	30
MUD ZONE 4C	33
MUD ZONE 4D	32
TOTAL	170



3.9 SITE INFRASTRUCTURE SERVICES

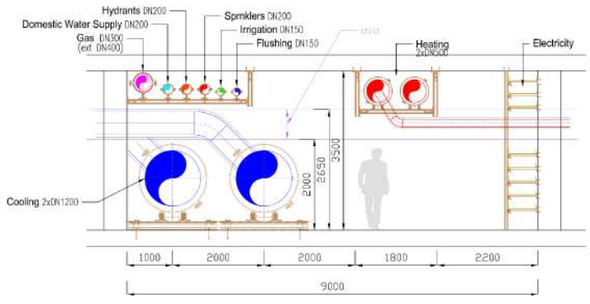
The masterplan includes a site wide and integrated approach to the servicing requirements for buildings and public areas. Accordingly a trunk infrastructure system consisting of distribution of core utilities throughout the site to allowing for connections to each building/plot.

The Trunk Infrastructure system is distributed via underground tunnels that allow for full maintenance access, and connections are to be made from each building plot at basement level. The following components will be provided as part of the overall masterplan Development:

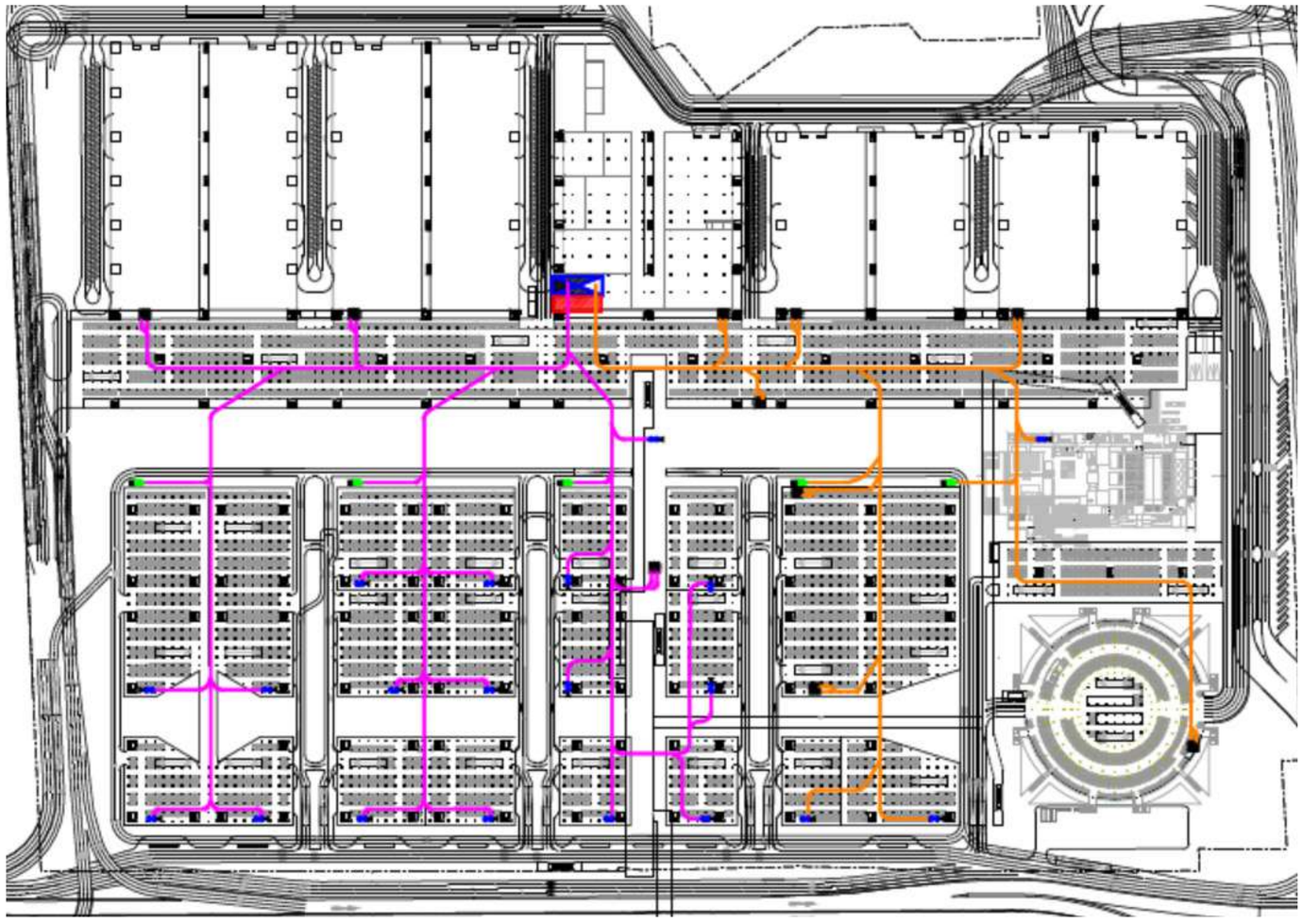
- A centralised Waste water Treatment Plant
- District Cooling Plant (DCP)
- 2 no 66KV electrical Substations + DG Backup

The trunk Infrastructure tunnels will be used to provide a metered network of services to each plot including the following systems:

- Water supply
- Storm water drainage including rainwater harvesting pits
- Sewerage Drainage Network
- Fire-fighting Network
- Diesel Supply
- Gas Supply
- Electrical Supply (11KV to each plot)
- Optical fibre cables for data/voice networking,
- Chilled water supply for HVAC systems



INDICATIVE SERVICE TUNNEL



3.10 WASTE COLLECTION

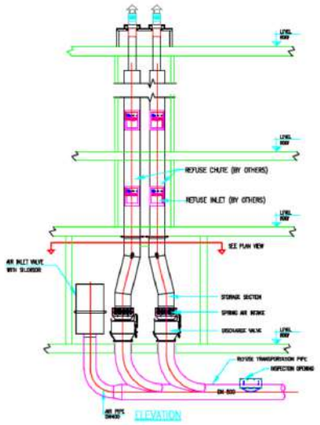
The masterplan will include a holistic approach to waste management , where collection and transportation will be divided in two types, one of them is a traditional collection such as collection through four-wheeled mini-trucks for glass, hazardous and WEEE, and the other will be pneumatic waste collection for wet and dry fraction. Both of them will be sent to a central collection area .

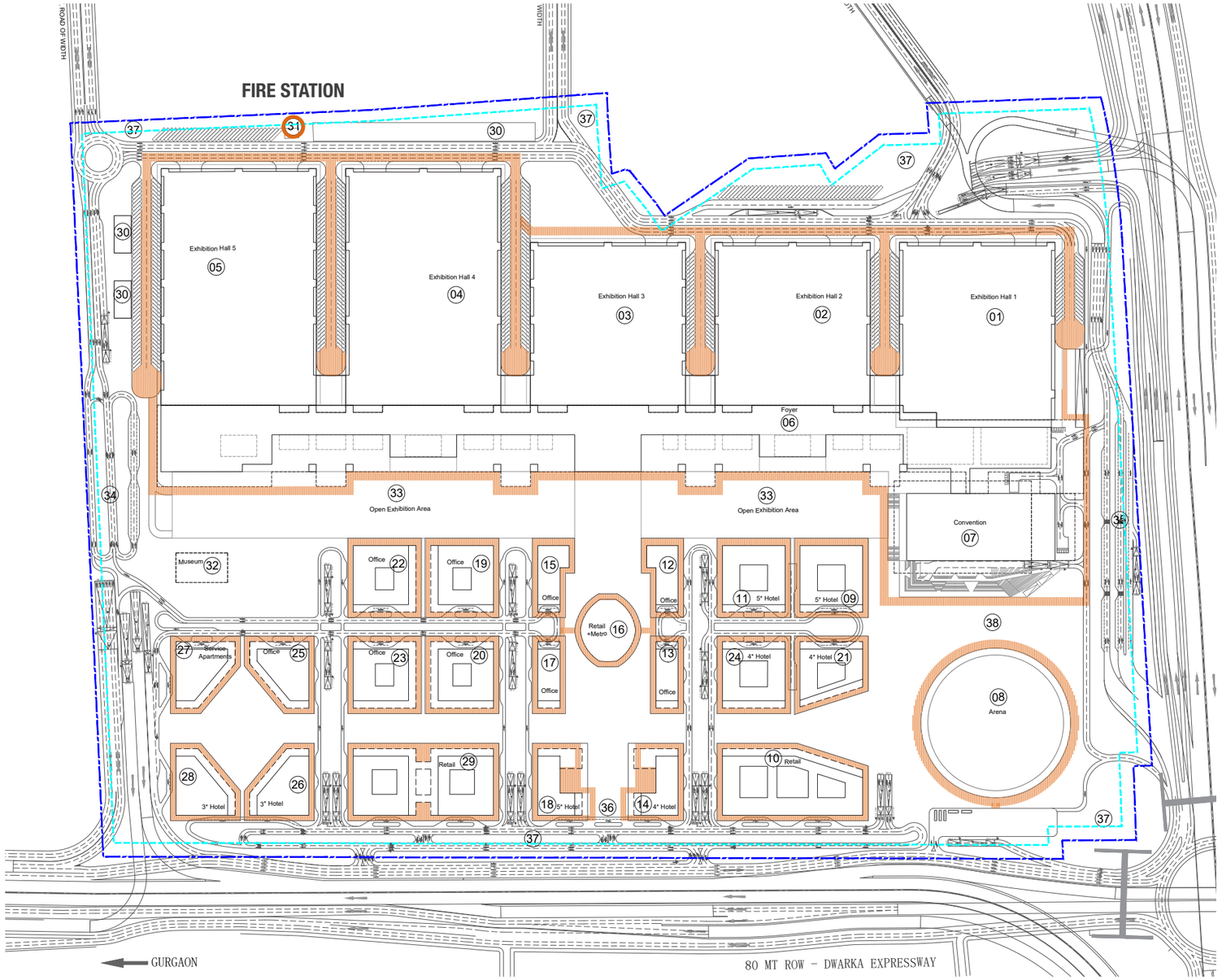
All bins in public areas as well as each building in the masterplan will be connected to the system through the trunk infrastructure provisions, and will be required to ensure that their waste production is segregated as per the requirements of the system and to provide the necessary installations to allow the system to operate and connect to the main trunk infrastructure elements. The location of any waste storage in individual buildings will need to be determined as per that buildings needs and in compliance with the guidelines elsewhere in this document.

All hazardous waste (including batteries, lamps and e-waste) is segregated.

Separate bins are provided by for ‘wet’ and ‘dry’ waste. For ‘dry’ waste separate bin will be provided for plastic, paper, metals and glass.

Typical pneumatic waste collection system





3.11 FIRE SERVICES

The complex is being considered with a single area and will have a fire station with capacity to park two fire tenders and will be manned by Delhi Fire Services (DFS).

The fire control room shall be maintained by Delhi Fire Service personnel.

Fire access routes within the masterplan are provided and these are to be kept clear at all times.

Each building will be required to prepare its own fire strategy/design to comply with all local and national codes and regulations.

All buildings shall be linked to the Fire Control Room for automatically reporting incidence of fire in any of the building.

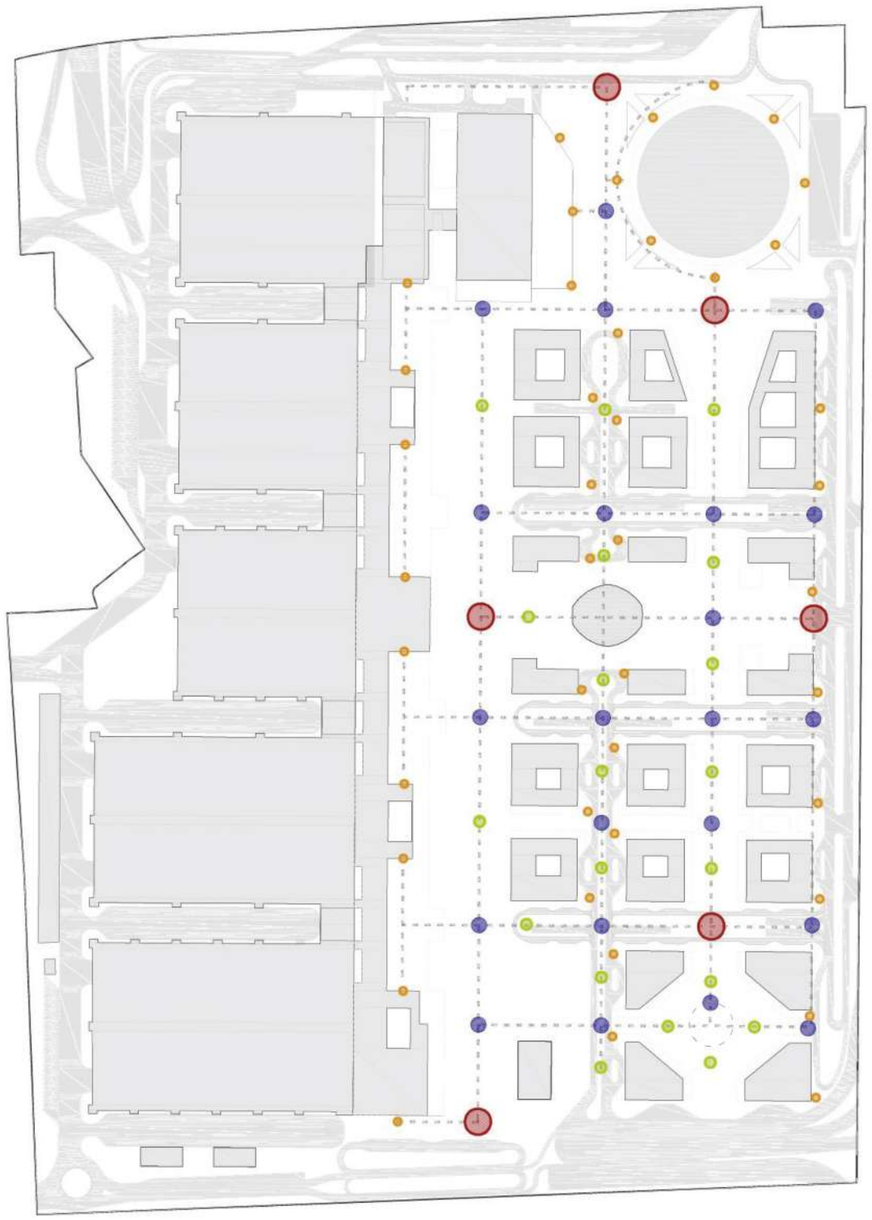
The complex will have two pump houses each with 400 kl UG water tank with pumps as specified by NBC.

Each pump house shall have the following pumps

- Two No.. Electric driven pumps 2850 lpm 95m head
- One Diesel driven pump 2850 lpm 95m head
- Two No.. Jockey Pumps – 180 lpm 95 meter head
- 200mm dia inter connected ring main will be laid in tunnel for providing water for :-
  - Internal Hydrant
  - External Hydrant
  - Sprinklers System

Every building shall have Over Head Water tank 30 kl capacity.

LEGEND:
Fire access routes



DIRECTORY SIGNAGE

PRIMARY SIGNAGE

SECONDARY SIGNAGE

TERTIARY SIGNAGE

PRIMARY PEDESTRIAN CIRCULATION

LOCATION SCHEMATIC KEY PLAN

3.12 SIGNAGE

A way-finding strategy has been designed to guide the visitors through the site. The main principles are defined below. Note: Further signage to meet IGBC Green Campus requirements are to be included in the masterplan public areas a swell as individual buildings.

SIGNAGE HIERARCHY

- **Directory:** A good directory located where visitor pause naturally will help them to quickly familiarize themselves with the site. Depending on the number of buildings and entrances multiple directory signs are needed.
- **Primary:** Primary signage falls into both the guiding and directing category of signage. Primary signage elements such as overhead banners placed on lighting poles, guides visitors in the right direction but also directs them to the location they would like to arrive.
- **Secondary:** Secondary signage is similar to primary signage in that a variety of applications will be represented in the category. As a result, it's important to develop a hierarchy of signage within the category in order to avoid message overload and clutter. Secondary signage differs from primary signage in that it not only directs but also informs by providing more details and information. Digital screens showing dynamic information can be used.
- **Tertiary:** Tertiary signs refer to identification for buildings on the site or for rooms inside the buildings and are classified as informing and instructing signs. Many of these signs will be required by code and have specific requirements.
- **Collateral:** Collateral signage belongs to the category of informing and instructing. The collateral signage will be coordinated with program flyers, calendars and brochures that will not only help manage clutter, but also let users know where to go to learn more about upcoming events. Digital screens showing dynamic information can be used. (e.g: for the exhibition halls)
- **Decor:** Digital wallpaper, murals, inspirational words and even a boldly painted accent wall can be very effective tools in your signage strategy. These features can provide visual cues using color and imagery to guide and direct users through the site and building spaces. Digital screens showing dynamic information can be used.

3.0 MASTERPLAN FRAMEWORK

3.12 SIGNAGE

120 X 300 cm

DIRECTORY IN SITE

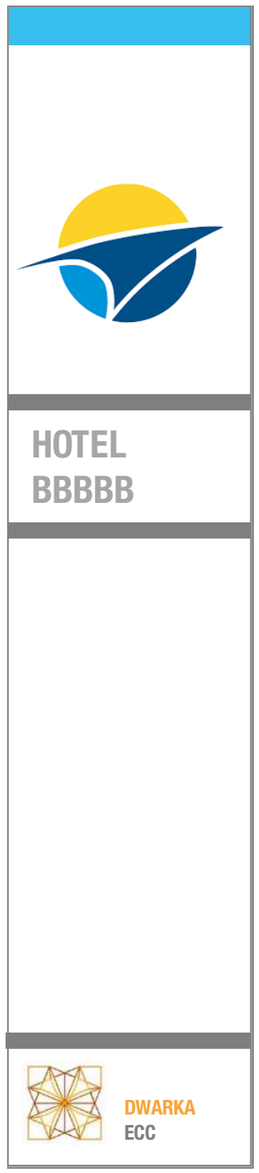
120 X 300 cm

PRIMARY IN SITE

120 X 300 cm

SECONDARY IN SITE

60 X 300 cm



TERTIARY IN SITE

NOTES:

* DIMENSIONS ARE INDICATIVE ONLY.

** THE LOGOS SHOWN ARE ONLY FOR REPRESENTATIVE PURPOSE.

W WAY-FINDING KIOSK

LARGE FORMAT SCREENS

BANNERS

3.13 DIGITAL SIGNAGE

Placed in selected locations, Digital Screens provide with useful information to the visitors. The information displayed could be related with the internal activity of the Arena and the Exhibition Centre, such as timetable of conferences, ticket prices, program schedule, etc. but also with external issues of interest, like weather conditions, taxi availability, transit timetables, flight information, etc.

Digital signage systems can cut down costs of printed signs and posters and provide the best solution for convention centres and exhibition halls to handle ever-changing messages, such as event promotions and meeting agendas.

Video walls are also a common digital signage solution in exhibition halls, convention centres and all other venues where single display is too feeble to attract attention. These dynamic, colourful screens are frequently used to create a modern and high-tech atmosphere.

Digital Signage Screens have sensors to measure the public watching them, and thus provide information about the impact and the effectiveness of the messages. This is very appreciated if the screens are used in advertising, where the incomes depend on the audience.

The Digital Signage screens are more effective and impact causing if installed in the following selected areas:

- Main entrance
- Lobbies
- Elevator banks
- Exhibition halls
- Restaurants & cafés
- Outside meeting rooms & exhibit halls
- Facility retail establishment

4.0 PUBLIC REALM

4.0 PUBLIC REALM

4.1 LANDSCAPE MASTERPLAN

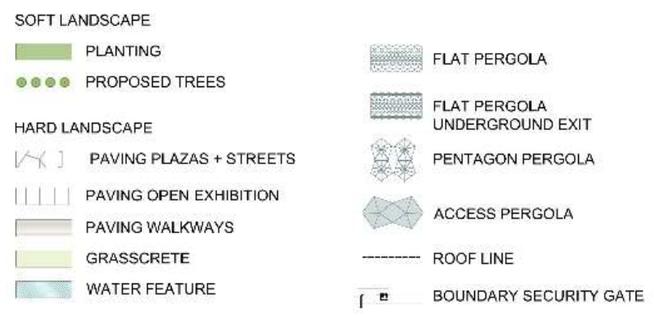
The main objective is to create a state-of-the-art and outstanding series of boulevards, plazas and open spaces to complement the uses of Dwarka IICC and help to position it as a world class Exhibition and Convention Centre.

The landscape proposal will provide a most liveable and attractive area that complements the existing green infrastructure, as well as the recreational and commercial offer, creating a first class mixed use hub, suitable for world-class sports, trade, convention and multiple events.

Altogether, the objective is to represent India through architecture and landscape design, displaying Indian diversity while incorporating Indian international projection.

The proposed development includes the following Land Use Areas and Open Spaces:

Land Use	Area (in Ha.)	Area (in%)
Public & Semi Public	**26.82**	**30%**
Commercial	**8.00**	**9%**
Utilities	**0.87**	**1%**
Transportation	**16.81**	**19%**
Green & Open Spaces	**37.22**	**41%**
Green Areas	11.56	
Water Bodies	0.27	
Paved Areas	19.15	
Open Exhibition Area	5.09	
Shared Surface	1.15	
Total	**89.72**	**100%**



4.0 PUBLIC REALM

4.2 SITE WIDE STRATEGIES

WIND CORRIDORS

The proposal has been structured creating green corridors in the wind direction. These corridors (Eco-lanes) serve as breeze corridors that evaporate water and freshen the air in its way through the vegetation planted in them.

TREES

Trees have been planted throughout the site enhancing streets and plazas and providing for shaded areas. Selected trees are either native or drought tolerant species, maximizing biodiversity and contributing to the site preservation.

WALKWAYS

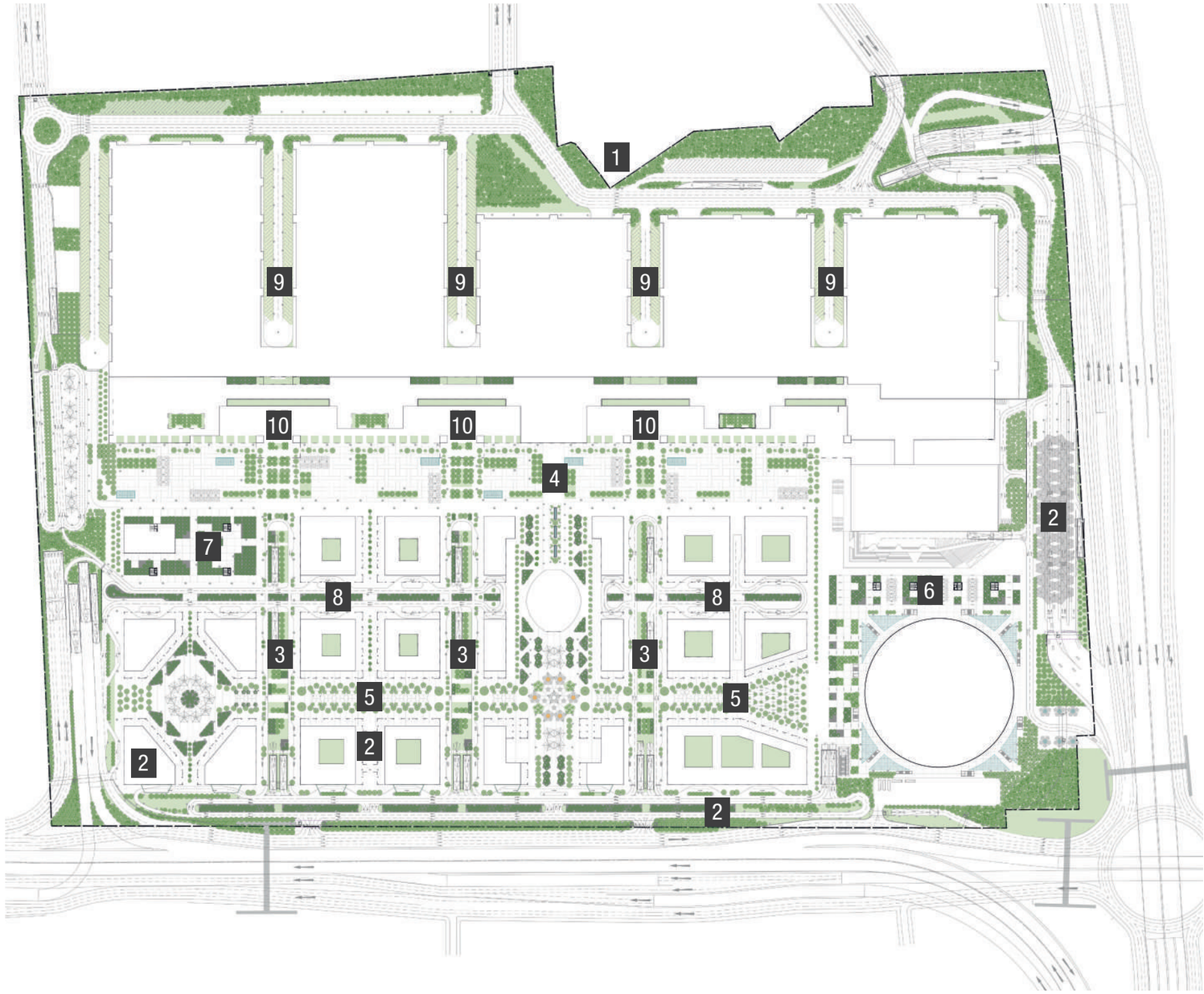
Walkways in the site have been designed considering the pedestrian movement requirements in the site, and where necessary, pergolas and other shading devices have been included to provide shelter.

VEHICLE CIRCULATION

Vehicle circulation within the site has been carefully studied to allow access to buildings while minimizing impact on pedestrians as well as reducing air and noise pollution. In addition, 'no through' routes are provided, ensuring majority of the traffic is kept at the periphery of the site.

COVERED AREAS (PERGOLAS)
WIND CORRIDORS
COVERED AREAS (COLONNADES)
WATER FEATURES
TREES

4.0 PUBLIC REALM



4.3 ZONING STRATEGY

The proposal is divided into ten main zones plus the green roof zone. Each zone has its own character and helps way finding and orientation as well as introducing different scales and activity areas.

1) Green buffer
2) Main access roads
3) Eco Lanes
4) Open exhibition area
5) Main boulevard
6) Arena plaza
7) Museum plaza
8) Internal road
9) Parking bays
10) Exhibition courtyards

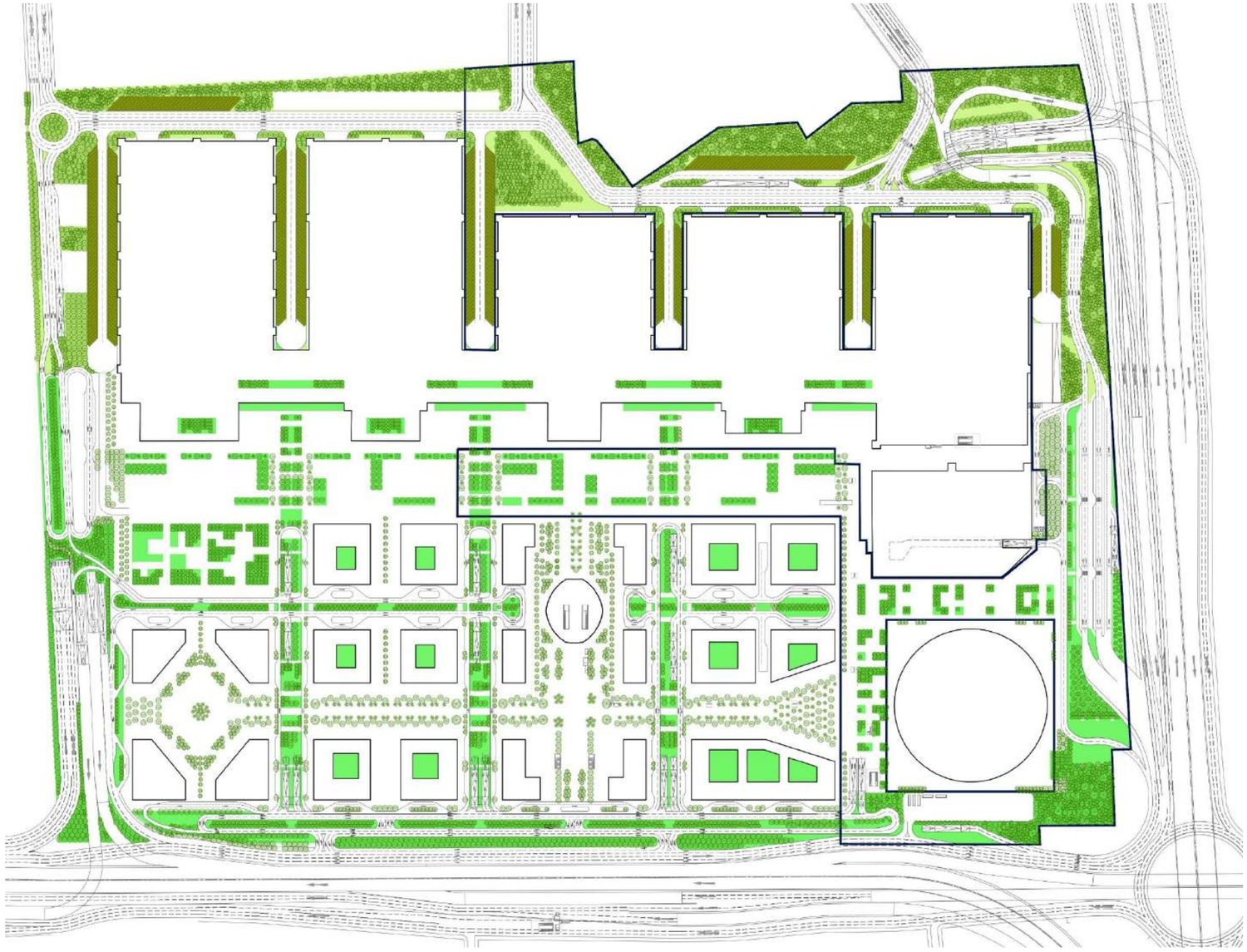
BUILDING DESIGN

The site has no overall significant slopes. Hence buildings have been planned accordingly considering a level site. Where possible, existing trees and vegetation have been retained. The buildings have been designed considering incident solar radiation, to reduce energy consumption while also maximizing daylight.

4.0 PUBLIC REALM

4.4 SOFTSCAPE MASTERPLAN

The softscape has been designed according to a diverse plant palette of herbs and shrubs, which follows the indications of the Greening Delhi Action Plan.



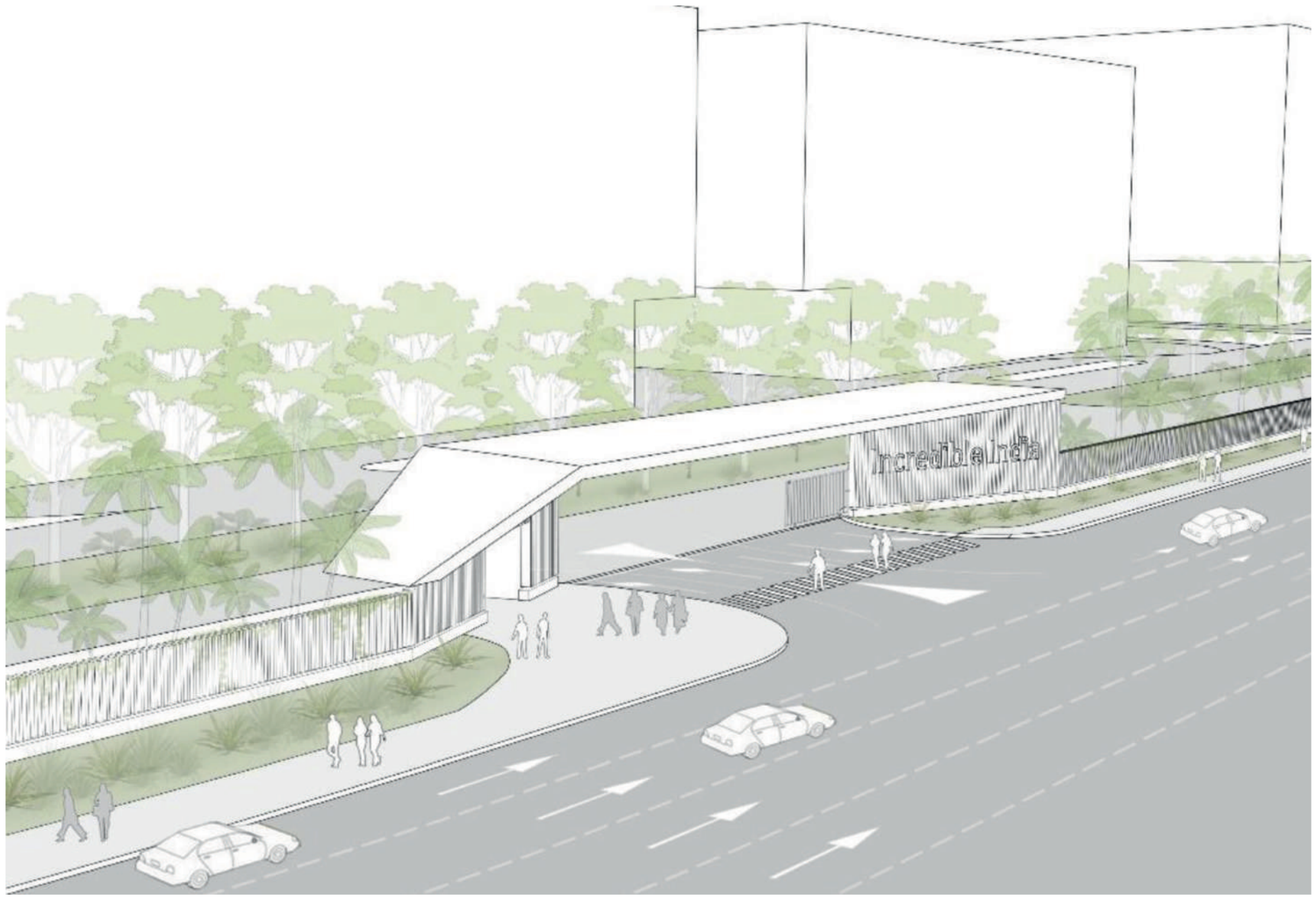
GRASSCRETE

LAWN / VIVACIOUS HERBS (LOW MAINTENANCE)

HERBS AND SHRUBS (MEDIUM MAINTENANCE)

PROPOSED TREES

4.0 PUBLIC REALM



4.6 VISUAL CORRIDORS AND STREETSCAPE

THE MAIN ACCESS ROAD

The Main Access Road is a 3 + 3 lane, double-way road, with an 8.4m runway that collects traffic from Dwarka Expressroad. Including walkway and carriageway the road is 38.5 m wide.

From this road, cars can access both the hotels and shopping centres located in it, as well as the underground parking that serves them.

This street conforms the East facade of the complex. The buildings that lay on it have their main accesses to this street, with large canopies that cover the access drop-offs.

One of the complex' main access parts from the middle of this road and leads directly to the main entrance of the Exhibition Centre. The Eco-Lanes also part from this road and lead to the other accesses of the Exhibition Centre, connecting East and West ends and crossing the Main Commercial Boulevard.

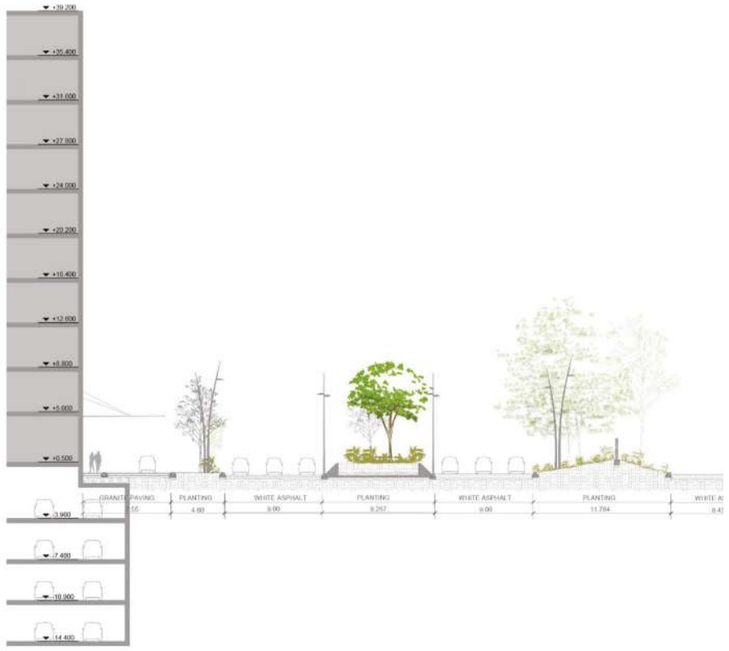
The aim is to convey this road an important air, with lined palms and large canopies covering the drop-off bays.

NOTE: All the views are indicative only, and the plans/sections take precedence.

4.0 PUBLIC REALM

4.6 VISUAL CORRIDORS AND STREETSCAPE

THE MAIN ACCESS ROAD

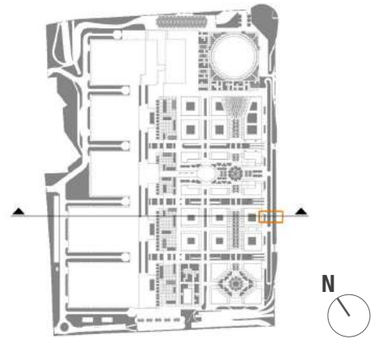


Part section

Part plan

LA.07.01	White Granite Paving	1000 x 1000 mm
LA.07.02	White Granite Paving	600 x 1200 mm
LA.07.03	White Granite Paving	200 x 300 mm
LA.07.04	Light Grey Granite Paving	1000 x 1000 mm
LA.07.05	Light Grey Granite Paving	300 x 300 mm
LA.07.06	Light Grey Granite Paving	150 x 450 mm
LA.07.08	Medium Grey Granite Paving	1000 x 1000 mm
LA.07.09	Medium Grey Granite Paving	300 x 300 mm
LA.07.10	Medium Grey Granite Paving	600 x 1200 mm
LA.07.12	Dark Grey Granite Paving	300 x 300 mm
LA.07.14	Pink Grey Granite Paving	600 x 1200 mm
LA.07.15	Rosey Pink Granite Paving	150 x 450 mm
LA.07.16	Copper Silk Granite Paving	200 x 300 mm
LA.07.17	Copper Silk Granite Paving	600 x 1200 mm
LA.07.18	Indian Juparana Granite Paving	150 x 450 mm
LA.07.19	Paradiso Bash Granite Paving	200 x 300 mm
LA.07.25	White Asphalt	
LA.08.03	White Granite Kerb (Flush)	300 x 255 x 900 mm
LA.08.05	Stainless Steel Flush Edging	
LA.08.07	Basement Concrete Wall Cladded in Granite	
LA.08.08	Concrete Kerb (100 mm upstand)	

- LIGHT COLUMN CURVED POLES (8M) (each symbol shows two fixtures) **CODE- LA.05.01**
- LIGHT COLUMN STRAIGHT POLES (8M) (each symbol shows two fixtures) **CODE- LA.05.02**
- LIGHT COLUMN (4.25 M) **CODE- LA.05.03**
- FLOOR LIGHTING (each symbol shows three fixtures) **CODE- LA.05.04**
- TREE LIGHTING **CODE- LA.05.05**
- WATER FEATURE LIGHTING **CODE- LA.05.06 , LA.05.13**
- PENTAGON PERGOLA LIGHTING **CODE- LA.05.08 , LA.05.11**
- FLAT PERGOLA LIGHTING **CODE- LA.05.09 , LA.05.12**
- NORTH DROP-OFF PERGOLA LIGHTING **CODE- LA.05.10**
- LIGHT COLUMN (12 M) (each symbol shows three fixtures) **CODE- LA.05.14**

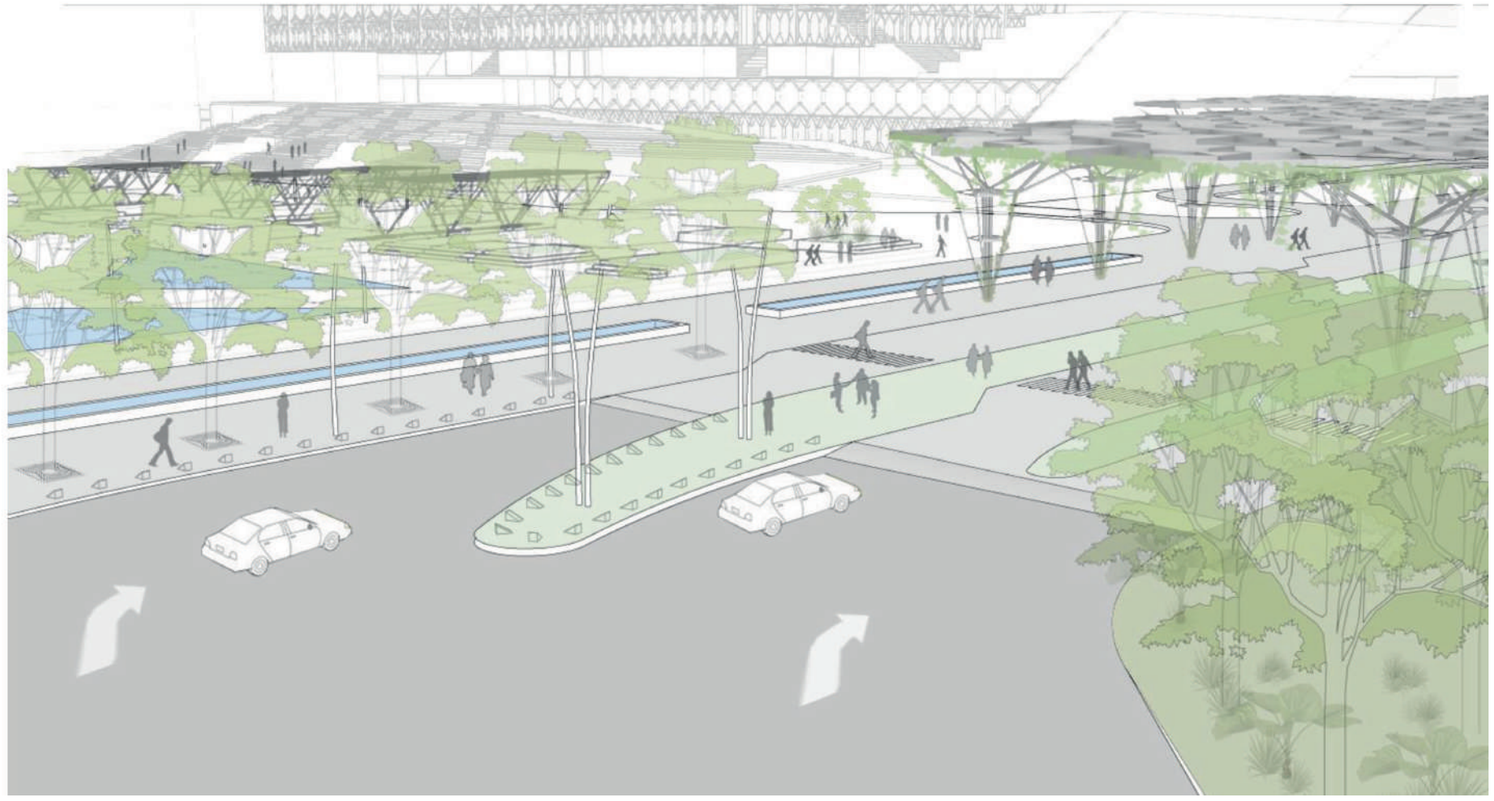


4.0 PUBLIC REALM

4.6 VISUAL CORRIDORS AND STREETSCAPE

NORTH DROP-OFF

This area serves as a drop-off area for bus, IPT and taxi. It is composed of three ways, each way devoted to a different type of vehicle. These three ways are separated by green strips allowing pedestrian circulation. Considering the pedestrian circulation, a wide-span pergola is designed. The design of the pergola is enhanced with climber type plants and lighting elements to create a lively entrance to the project site. It is important to mention that the direct access to The Convention Centre and The Arena is achieved with this area.



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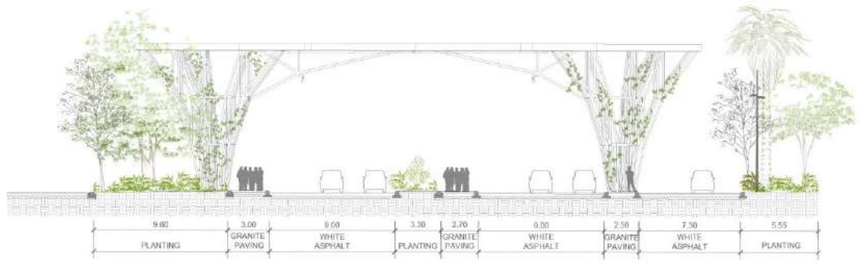
4.0 PUBLIC REALM

4.6 VISUAL CORRIDORS AND STREETSCAPE

NORTH DROP-OFF



Part section

Part plan

N

LA.07.01	White Granite Paving	1000 x 1000 mm
LA.07.02	White Granite Paving	600 x 1200 mm
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- TREE LIGHTING **CODE- LA.05.05**
- WATER FEATURE LIGHTING **CODE- LA.05.06 , LA.05.13**
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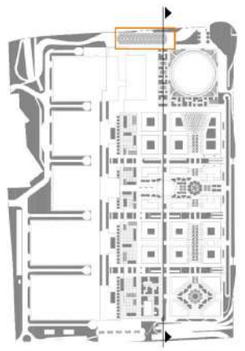


N

4.0 PUBLIC REALM

NOTE: All the views are indicative only, and the plans/sections take precedence.

4.6 VISUAL CORRIDORS AND STREETSCAPE

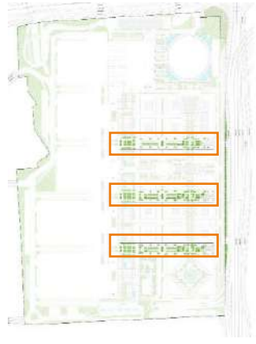
ECO-LANES

Eco-Lanes are 48 m wide streets that cross the site in the Southeast-Northwest direction. They part from the Main Access Road and enter the Exhibition Foyer at different points along its Southeast Façade.

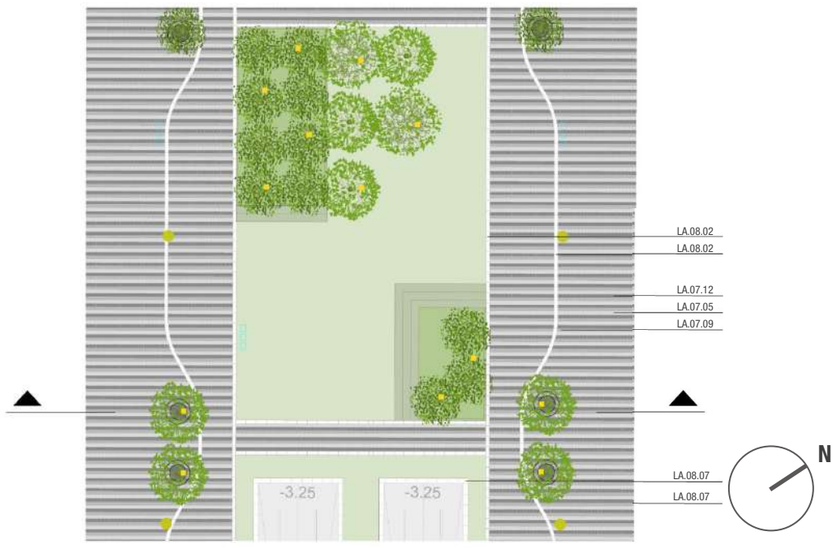
The Eco-lanes are mainly pedestrian and only admit service traffic at restricted hours. During the opening/working hours, they are closed to traffic. One of the Eco-Lanes is an exception to this criterion, since passenger traffic must go along this road to reach the hotel drop-off bays next to the Exhibition Centre.

One of the most important Eco-Lane objective is to give quick access to Exhibition and hotel visitors to the Main Commercial Boulevard. Another is to provide a green, peaceful road, where visitors, hotel guests and office workers a recreation and resting outdoor space.

Eco-Lanes are planted with medium size colourful local trees to create an exotic atmosphere. For the planters small size trees are proposed. Seating is designed as a part of the planters which provide spaces for pedestrians to relax both in shade and shadow.



Part section



Part plan

4.6 VISUAL CORRIDORS AND STREETSCAPE

ECO-LANES

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LA.07.05	Light Grey Granite Paving	300 x 300 mm
LA.07.06	Light Grey Granite Paving	150 x 450 mm
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LA.07.09	Medium Grey Granite Paving	300 x 300 mm
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LA.08.08	Concrete Kerb (100 mm upstand)	

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- LIGHT COLUMN (4.25 M) **CODE- LA.05.03**
- FLOOR LIGHTING (each symbol shows three fixtures) **CODE- LA.05.04**
- TREE LIGHTING **CODE- LA.05.05**
- WATER FEATURE LIGHTING **CODE- LA.05.06 , LA.05.13**
- PENTAGON PERGOLA LIGHTING **CODE- LA.05.08 , LA.05.11**
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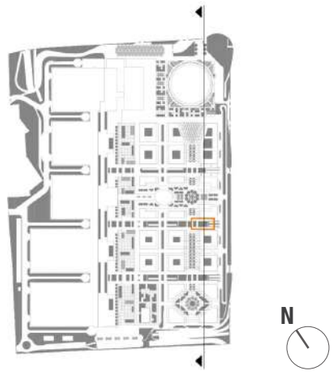
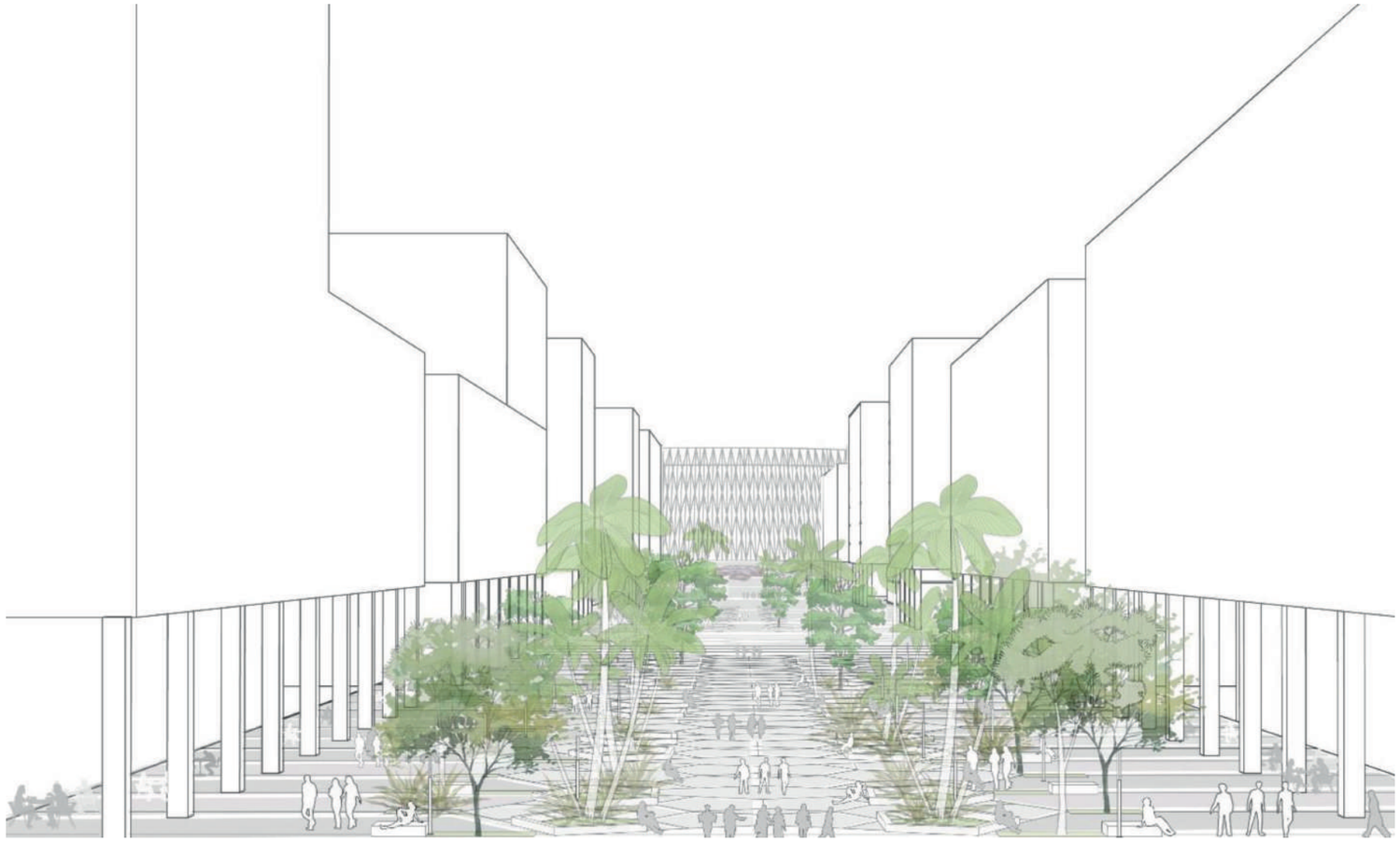


4.0 PUBLIC REALM



NOTE: All the views are indicative only, and the plans/sections take precedence.

4.6 VISUAL CORRIDORS AND STREETSCAPE

MAIN COMMERCIAL BOULEVARD

Main Commercial Boulevard is a fully pedestrian retail street. It is 44 m wide plus 8 m colonnade at each side. This guaranties a covered walkway both for summer as for rainy days.

The Main Commercial Boulevard crosses the site in the Northeast-Southwest direction and has the Arena as a focal point towards Northeast. At the Southeast end, a rhomboid plaza is proposed.

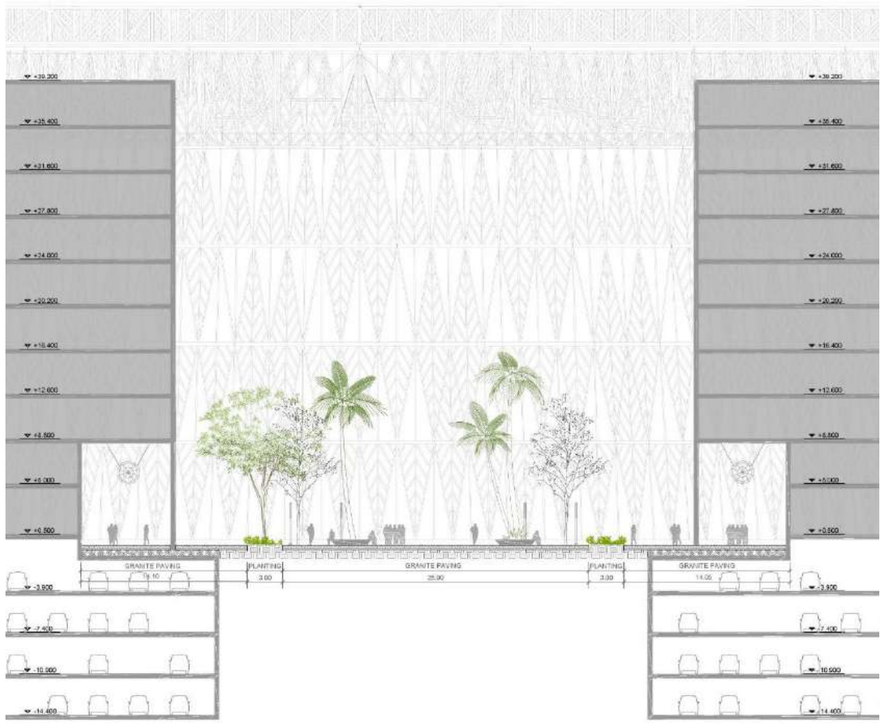
The Main Commercial Boulevard is meant to be a lively, retail street with shops, cafés and restaurants, where all visitors can meet and have a lively recreation time.

It has palm tree and other colourful tree alignment and scattered with green areas and benches. Three water features are located on the focal points of this area: Main Entrance and Arena Plaza.

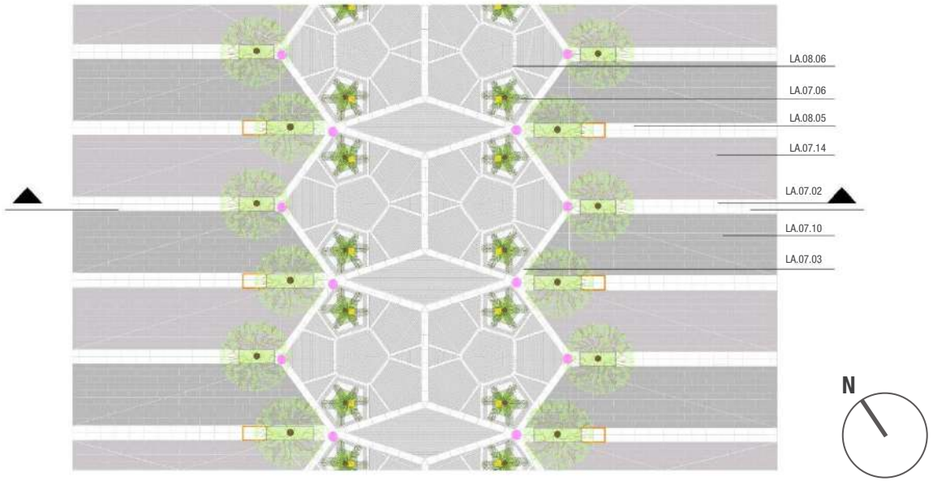
The floor paved with granite forming different scale patterns in reference to Indian urban art and traditional architecture.

4.6 VISUAL CORRIDORS AND STREETSCAPE

MAIN COMMERCIAL BOULEVARD



Part section



Part plan

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- LIGHT COLUMN (4.25 M) **CODE- LA.05.03**
- FLOOR LIGHTING (each symbol shows three fixtures) **CODE- LA.05.04**
- TREE LIGHTING **CODE- LA.05.05**
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- FLAT PERGOLA LIGHTING **CODE- LA.05.09 , LA.05.12**
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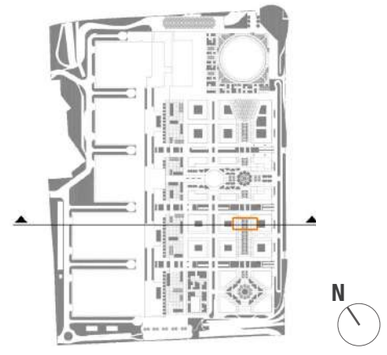
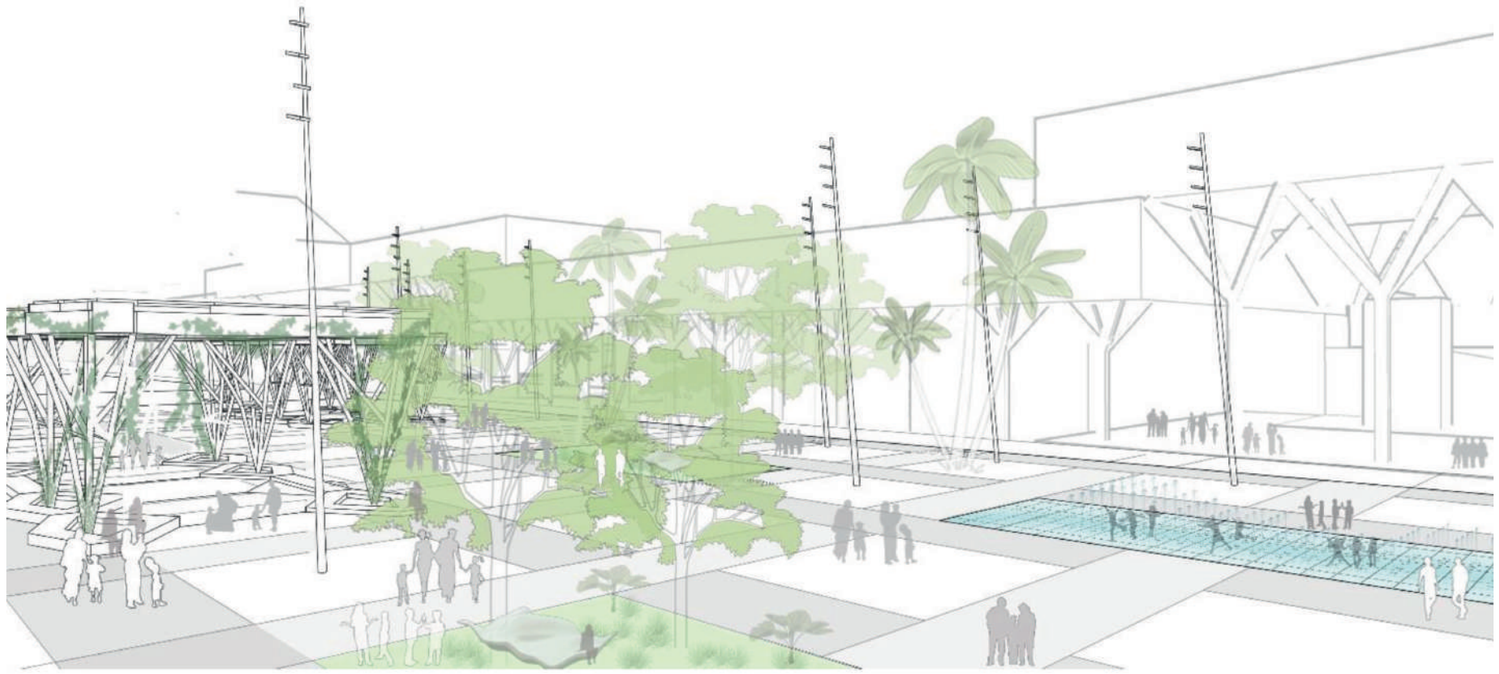


4.0 PUBLIC REALM



4.6 VISUAL CORRIDORS AND STREETSCAPE

OPEN EXHIBITION AREA

The Open Exhibition Area is enclosed in a 75 wide area. The main purpose of this area is to hold open-air exhibitions. This requires wide regular spaces in order to display big elements such as construction machinery, small airplanes, etc. For this reason, the planting in this area is an open grid with 15 to 25 m distance between the trees.

Water features have been provided for the whole area, plus pergolas and softscape areas to provide resting areas for visitors.

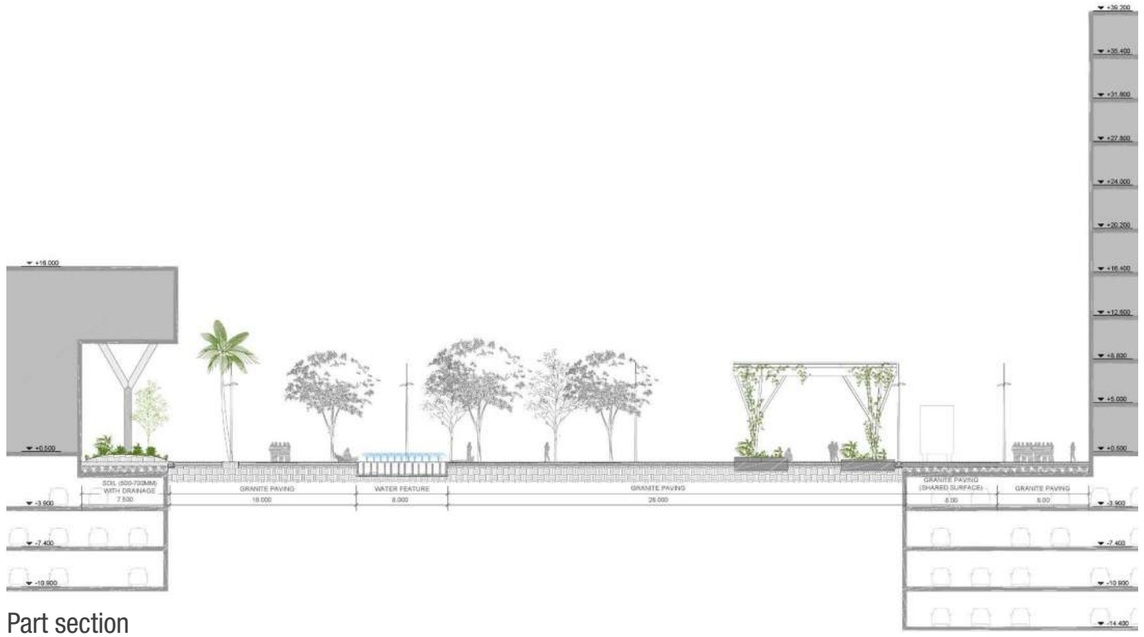
Floor is paved with granite elements forming a wide regular pattern.

NOTE: All the views are indicative only, and the plans/sections take precedence.

4.0 PUBLIC REALM

4.6 VISUAL CORRIDORS AND STREETSCAPE

OPEN EXHIBITION AREA

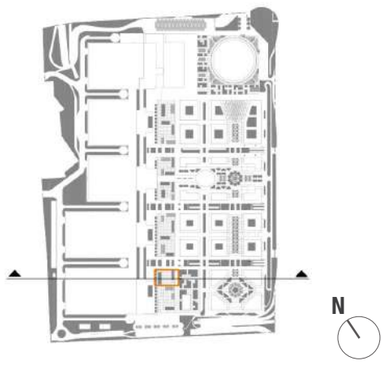


Part section

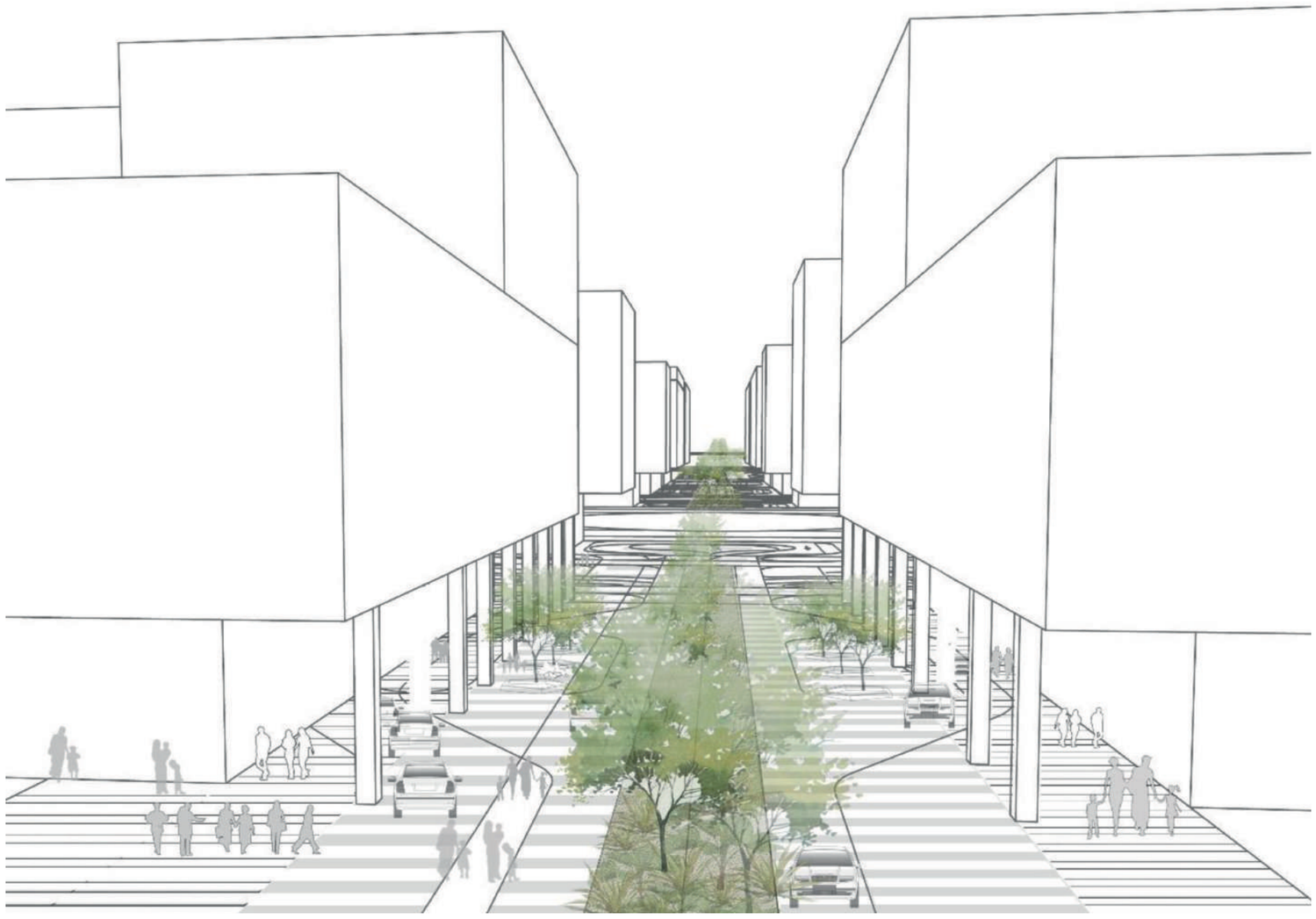
Part plan

LA.07.01	White Granite Paving	1000 x 1000 mm
LA.07.02	White Granite Paving	600 x 1200 mm
LA.07.03	White Granite Paving	200 x 300 mm
LA.07.04	Light Grey Granite Paving	1000 x 1000 mm
LA.07.05	Light Grey Granite Paving	300 x 300 mm
LA.07.06	Light Grey Granite Paving	150 x 450 mm
LA.07.08	Medium Grey Granite Paving	1000 x 1000 mm
LA.07.09	Medium Grey Granite Paving	300 x 300 mm
LA.07.10	Medium Grey Granite Paving	600 x 1200 mm
LA.07.12	Dark Grey Granite Paving	300 x 300 mm
LA.07.14	Pink Grey Granite Paving	600 x 1200 mm
LA.07.15	Rosey Pink Granite Paving	150 x 450 mm
LA.07.16	Copper Silk Granite Paving	200 x 300 mm
LA.07.17	Copper Silk Granite Paving	600 x 1200 mm
LA.07.18	Indian Juparana Granite Paving	150 x 450 mm
LA.07.19	Paradiso Bash Granite Paving	200 x 300 mm
LA.07.25	White Asphalt	
LA.08.03	White Granite Kerb (Flush)	300 x 255 x 900 mm
LA.08.05	Stainless Steel Flush Edging	
LA.08.07	Basement Concrete Wall Cladded in Granite	
LA.08.08	Concrete Kerb (100 mm upstand)	

- LIGHT COLUMN CURVED POLES (8M) (each symbol shows two fixtures) **CODE- LA.05.01**
- LIGHT COLUMN STRAIGHT POLES (8M) (each symbol shows two fixtures) **CODE- LA.05.02**
- LIGHT COLUMN (4.25 M) **CODE- LA.05.03**
- FLOOR LIGHTING (each symbol shows three fixtures) **CODE- LA.05.04**
- TREE LIGHTING **CODE- LA.05.05**
- WATER FEATURE LIGHTING **CODE- LA.05.06 , LA.05.13**
- PENTAGON PERGOLA LIGHTING **CODE- LA.05.08 , LA.05.11**
- FLAT PERGOLA LIGHTING **CODE- LA.05.09 , LA.05.12**
- NORTH DROP-OFF PERGOLA LIGHTING **CODE- LA.05.10**
- LIGHT COLUMN (12 M) (each symbol shows three fixtures) **CODE- LA.05.14**



4.0 PUBLIC REALM



4.6 VISUAL CORRIDORS AND STREETSCAPE

INTERNAL ROAD

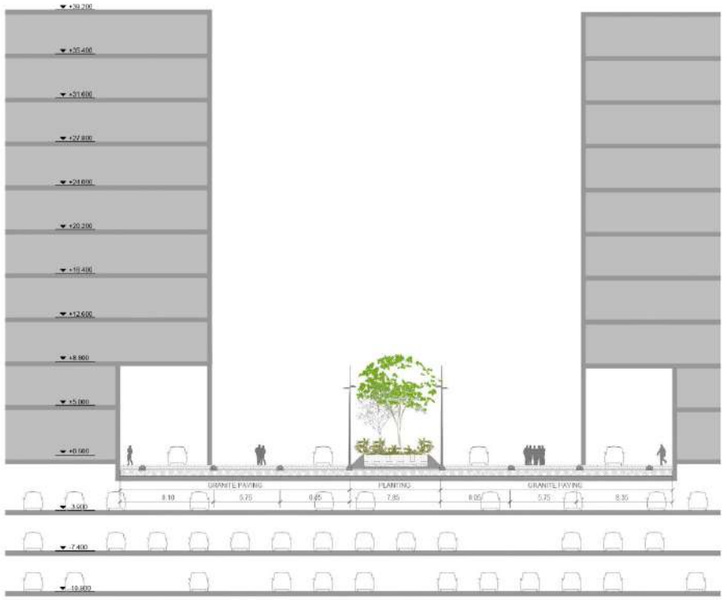
The internal road is 32 m wide plus 8 m colonnade at each side. The road is a 2+2 double-way road. A green boulevard is located between each two carriageways. The road gives access to the second and third row of MUD buildings (office buildings and hotels). The drop-offs are located under the colonnade to ensure a safe and covered arrival. Both carriageway and walkway are paved with granite stone, creating a linear pattern. This conveys the road a semi-pedestrian character and ensures that cars drive at a slow speed. Because of the basement parking under this street, trees are planted in planters in this road.

NOTE: All the views are indicative only, and the plans/sections take precedence.

4.0 PUBLIC REALM

4.6 VISUAL CORRIDORS AND STREETSCAPE

INTERNAL ROAD

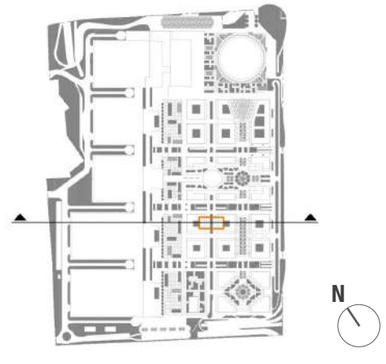


Part section

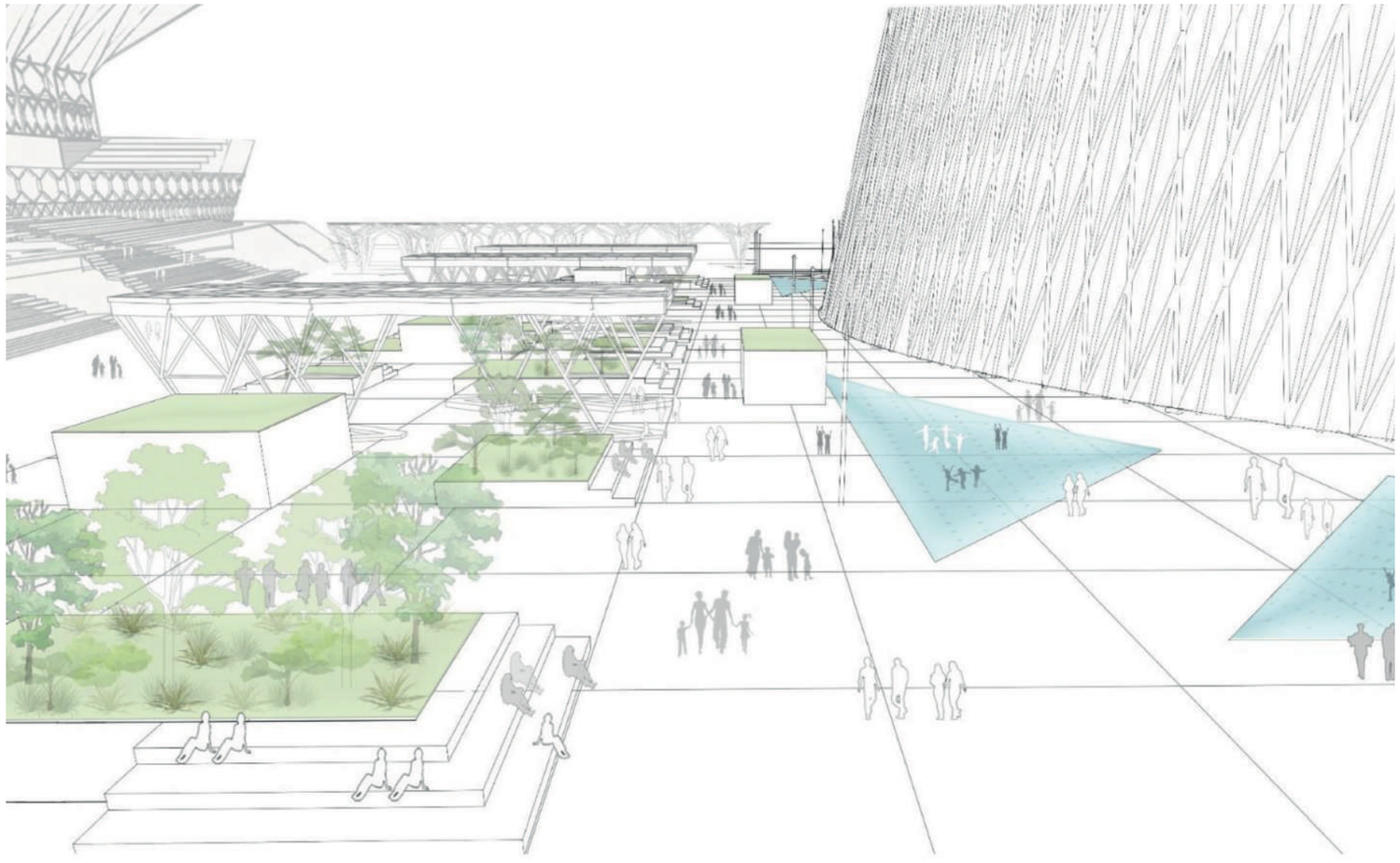
Part plan

LA.07.01	White Granite Paving	1000 x 1000 mm
LA.07.02	White Granite Paving	600 x 1200 mm
LA.07.03	White Granite Paving	200 x 300 mm
LA.07.04	Light Grey Granite Paving	1000 x 1000 mm
LA.07.05	Light Grey Granite Paving	300 x 300 mm
LA.07.06	Light Grey Granite Paving	150 x 450 mm
LA.07.08	Medium Grey Granite Paving	1000 x 1000 mm
LA.07.09	Medium Grey Granite Paving	300 x 300 mm
LA.07.10	Medium Grey Granite Paving	600 x 1200 mm
LA.07.12	Dark Grey Granite Paving	300 x 300 mm
LA.07.14	Pink Grey Granite Paving	600 x 1200 mm
LA.07.15	Rosey Pink Granite Paving	150 x 450 mm
LA.07.16	Copper Silk Granite Paving	200 x 300 mm
LA.07.17	Copper Silk Granite Paving	600 x 1200 mm
LA.07.18	Indian Juparana Granite Paving	150 x 450 mm
LA.07.19	Paradiso Bash Granite Paving	200 x 300 mm
LA.07.25	White Asphalt	
LA.08.03	White Granite Kerb (Flush)	300 x 255 x 900 mm
LA.08.05	Stainless Steel Flush Edging	
LA.08.07	Basement Concrete Wall Cladded in Granite	
LA.08.08	Concrete Kerb (100 mm upstand)	

- LIGHT COLUMN CURVED POLES (8M) (each symbol shows two fixtures) **CODE- LA.05.01**
- LIGHT COLUMN STRAIGHT POLES (8M) (each symbol shows two fixtures) **CODE- LA.05.02**
- LIGHT COLUMN (4.25 M) **CODE- LA.05.03**
- FLOOR LIGHTING (each symbol shows three fixtures) **CODE- LA.05.04**
- TREE LIGHTING **CODE- LA.05.05**
- WATER FEATURE LIGHTING **CODE- LA.05.06 , LA.05.13**
- PENTAGON PERGOLA LIGHTING **CODE- LA.05.08 , LA.05.11**
- FLAT PERGOLA LIGHTING **CODE- LA.05.09 , LA.05.12**
- NORTH DROP-OFF PERGOLA LIGHTING **CODE- LA.05.10**
- LIGHT COLUMN (12 M) (each symbol shows three fixtures) **CODE- LA.05.14**



4.0 PUBLIC REALM



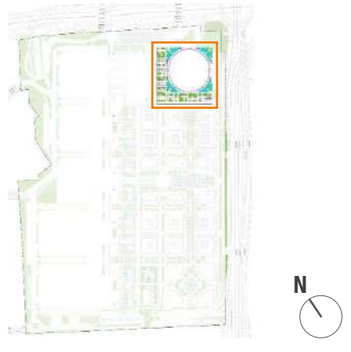
4.6 VISUAL CORRIDORS AND STREETSCAPE

ARENA PLAZA

The Arena Plaza is located between the Arena and the Convention Centre and gives access to both. Large planters with deciduous trees having stair-like seaters are located between both buildings, providing with a fresh atmosphere and a place to rest.

A water feature is designed around the arena to enhance the building as an iconic element. This water feature is flush with the floor, so the area can serve as spill out area when the jets are turned off.

The plaza also opens to the main drop-off area at the Northeast side of the site.

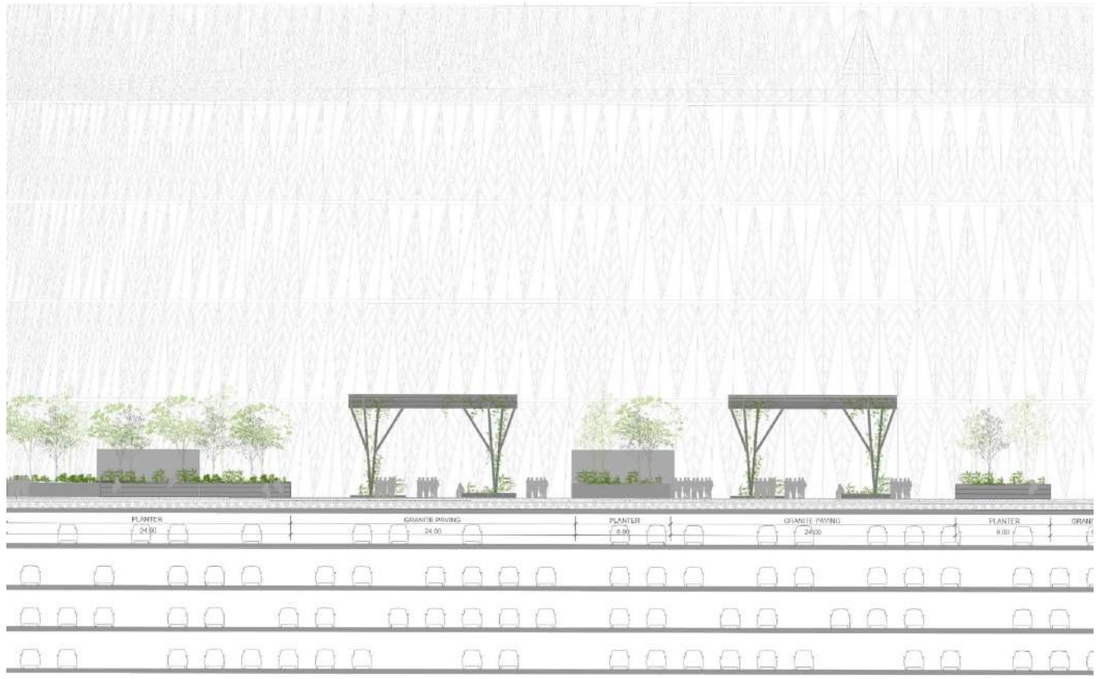


NOTE: All the views are indicative only, and the plans/sections take precedence.

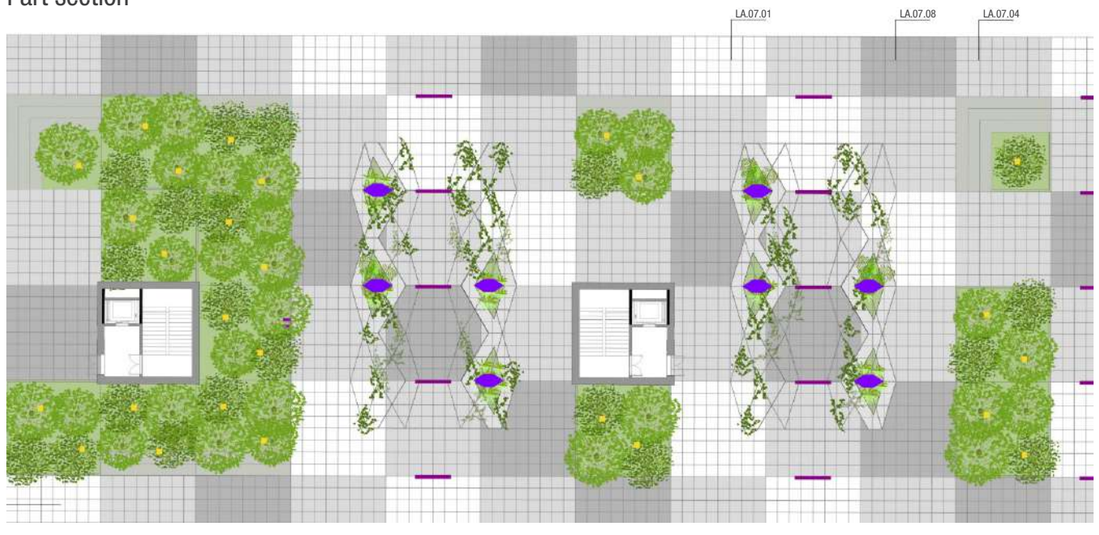
4.0 PUBLIC REALM

4.6 VISUAL CORRIDORS AND STREETSCAPE

ARENA PLAZA



Part section

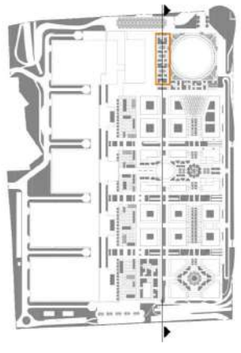


Part plan

LA.07.01	White Granite Paving	1000 x 1000 mm
LA.07.02	White Granite Paving	600 x 1200 mm
LA.07.03	White Granite Paving	200 x 300 mm
LA.07.04	Light Grey Granite Paving	1000 x 1000 mm
LA.07.05	Light Grey Granite Paving	300 x 300 mm
LA.07.06	Light Grey Granite Paving	150 x 450 mm
LA.07.08	Medium Grey Granite Paving	1000 x 1000 mm
LA.07.09	Medium Grey Granite Paving	300 x 300 mm
LA.07.10	Medium Grey Granite Paving	600 x 1200 mm
LA.07.12	Dark Grey Granite Paving	300 x 300 mm
LA.07.14	Pink Grey Granite Paving	600 x 1200 mm
LA.07.15	Rosey Pink Granite Paving	150 x 450 mm
LA.07.16	Copper Silk Granite Paving	200 x 300 mm
LA.07.17	Copper Silk Granite Paving	600 x 1200 mm
LA.07.18	Indian Juparana Granite Paving	150 x 450 mm
LA.07.19	Paradiso Bash Granite Paving	200 x 300 mm
LA.07.25	White Asphalt	
LA.08.03	White Granite Kerb (Flush)	300 x 255 x 900 mm
LA.08.05	Stainless Steel Flush Edging	
LA.08.07	Basement Concrete Wall Cladded in Granite	
LA.08.08	Concrete Kerb (100 mm upstand)	

- LIGHT COLUMN CURVED POLES (8M) (each symbol shows two fixtures) **CODE- LA.05.01**
- LIGHT COLUMN STRAIGHT POLES (8M) (each symbol shows two fixtures) **CODE- LA.05.02**
- LIGHT COLUMN (4.25 M) **CODE- LA.05.03**
- FLOOR LIGHTING (each symbol shows three fixtures) **CODE- LA.05.04**
- TREE LIGHTING **CODE- LA.05.05**
- WATER FEATURE LIGHTING **CODE- LA.05.06 , LA.05.13**
- PENTAGON PERGOLA LIGHTING **CODE- LA.05.08 , LA.05.11**
- FLAT PERGOLA LIGHTING **CODE- LA.05.09 , LA.05.12**
- NORTH DROP-OFF PERGOLA LIGHTING **CODE- LA.05.10**
- LIGHT COLUMN (12 M) (each symbol shows three fixtures) **CODE- LA.05.14**

N

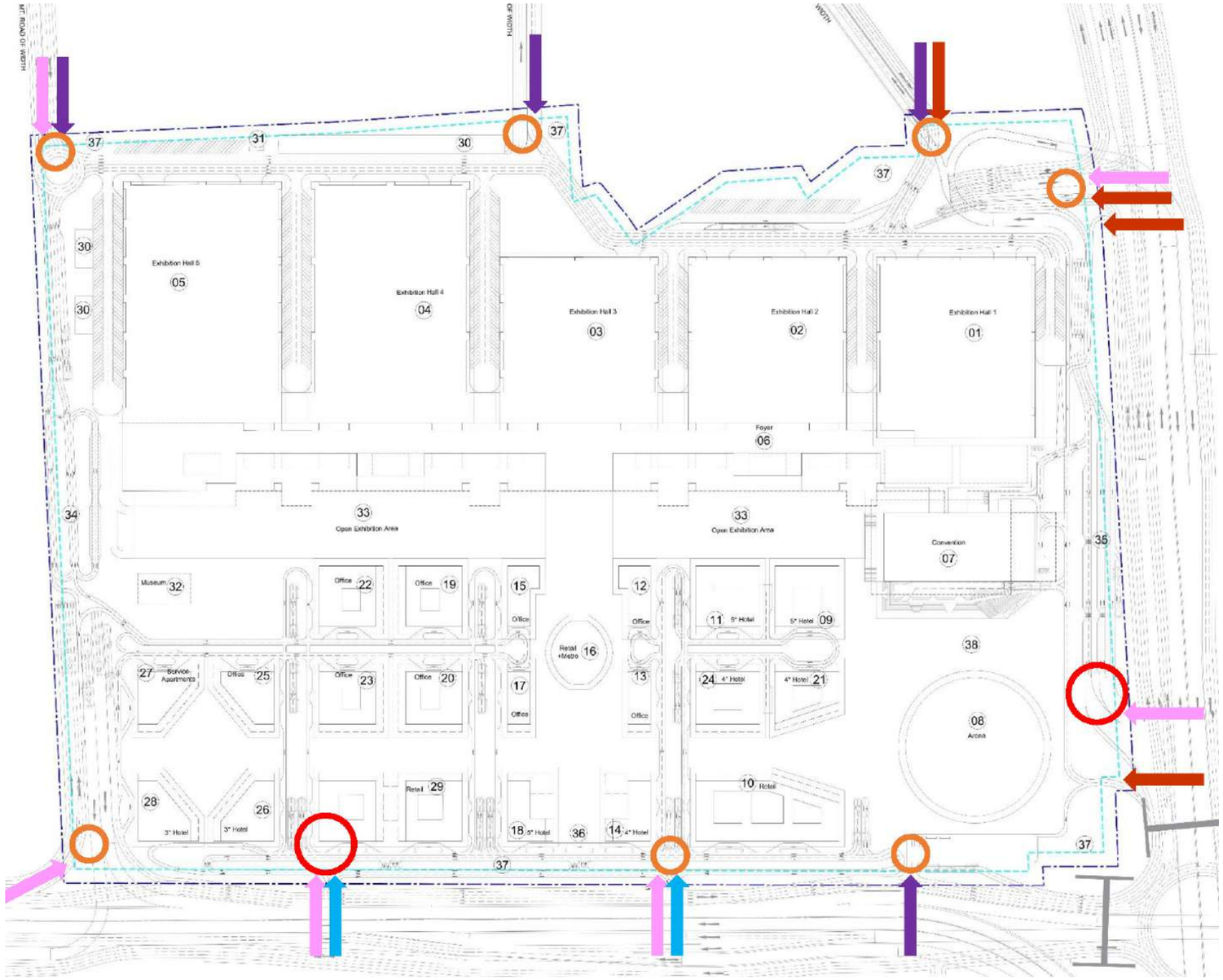


N

4.0 PUBLIC REALM

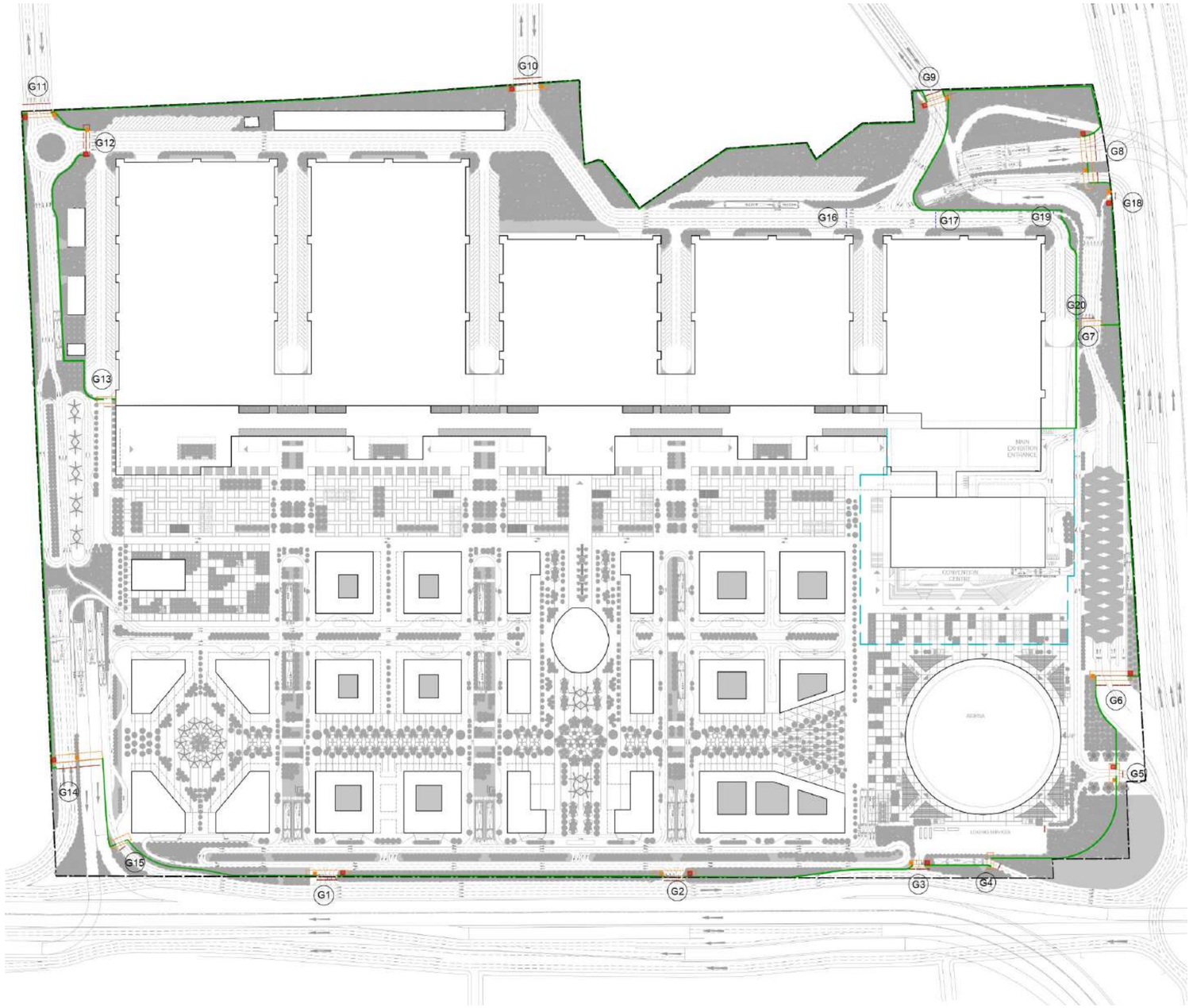
4.7 BOUNDARIES AND GATEWAYS

Access to the site will be controlled. There will be fencing all along the boundaries of the site and the access points will be controlled by gateways with security guard rooms.



4.0 PUBLIC REALM

4.7 BOUNDARIES AND GATEWAYS



ECC SITE BOUNDARY

BOUNDARY TYPE 01

BOUNDARY TYPE 02

AUTOMATIC GATE / AUTOMATIC BOLLARDS / TYRE BUSTER

PILL BOX

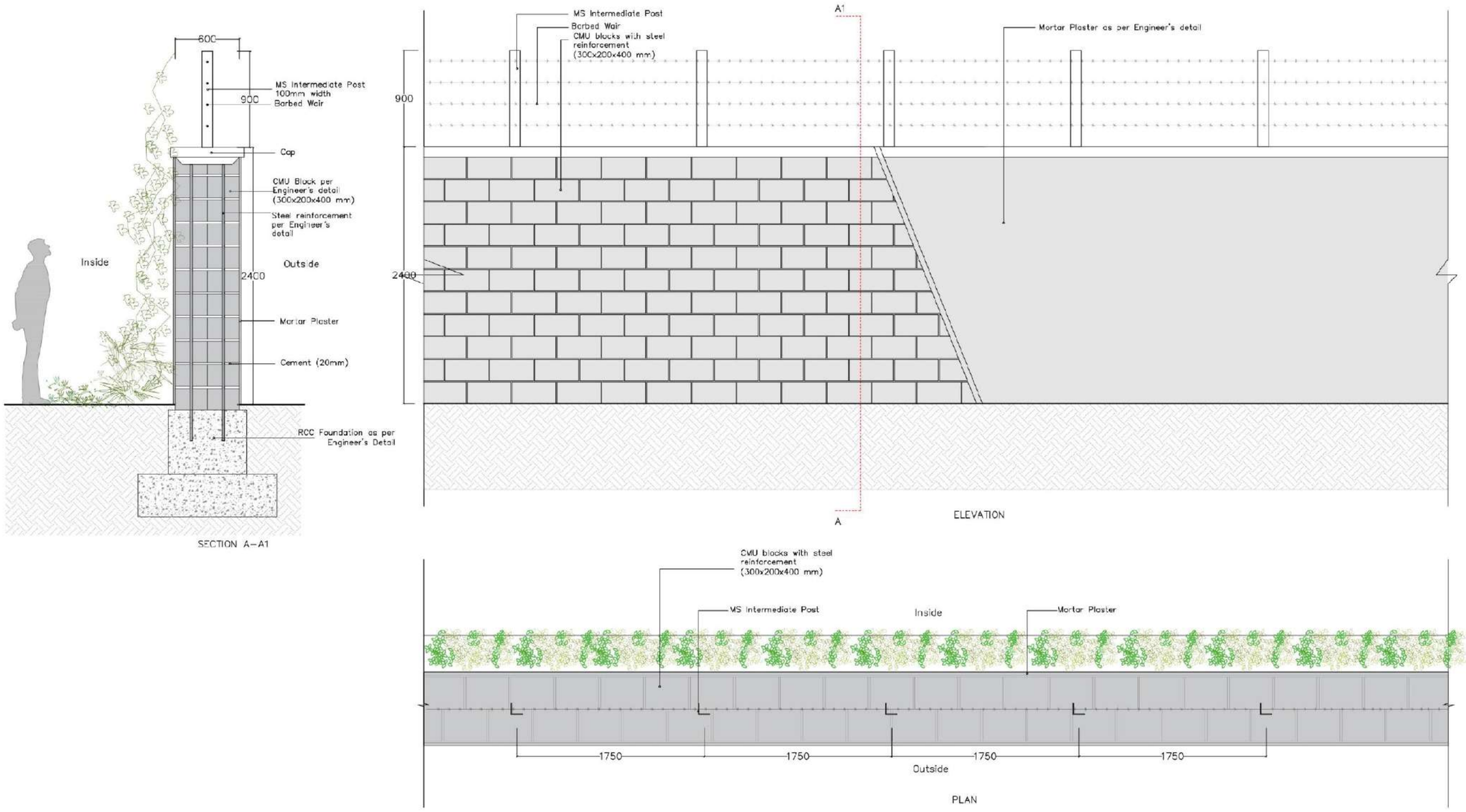
SECURITY BOOTH

BOOM BARRIER

AUTOMATIC BOLLARDS

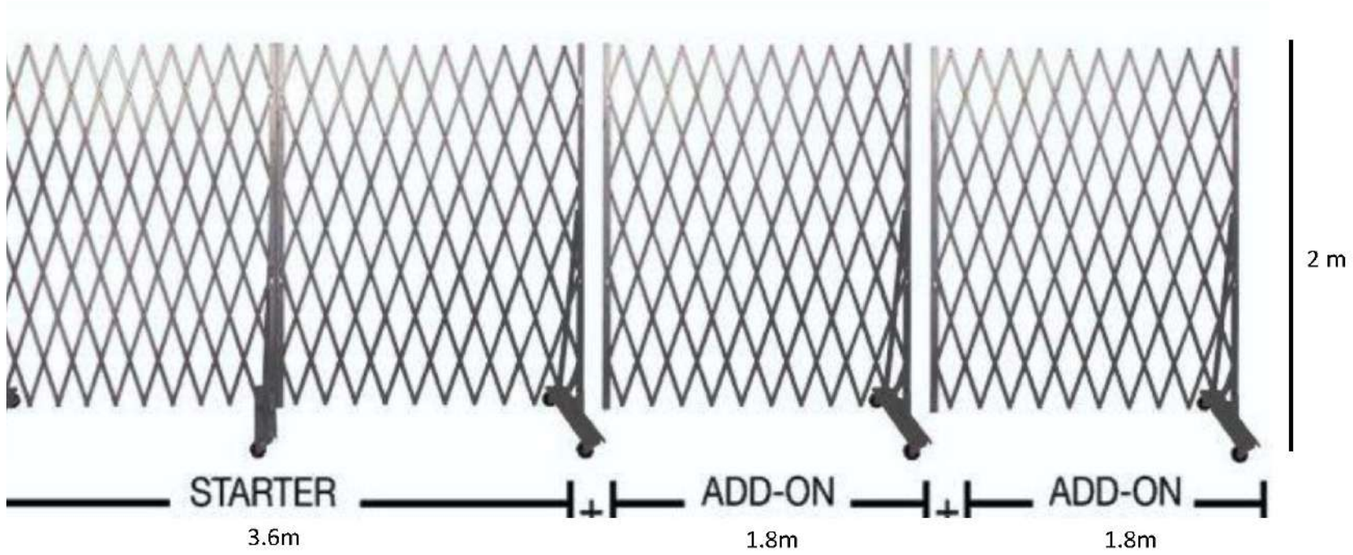
4.7 BOUNDARIES AND GATEWAYS

BOUNDARY TYPE 01



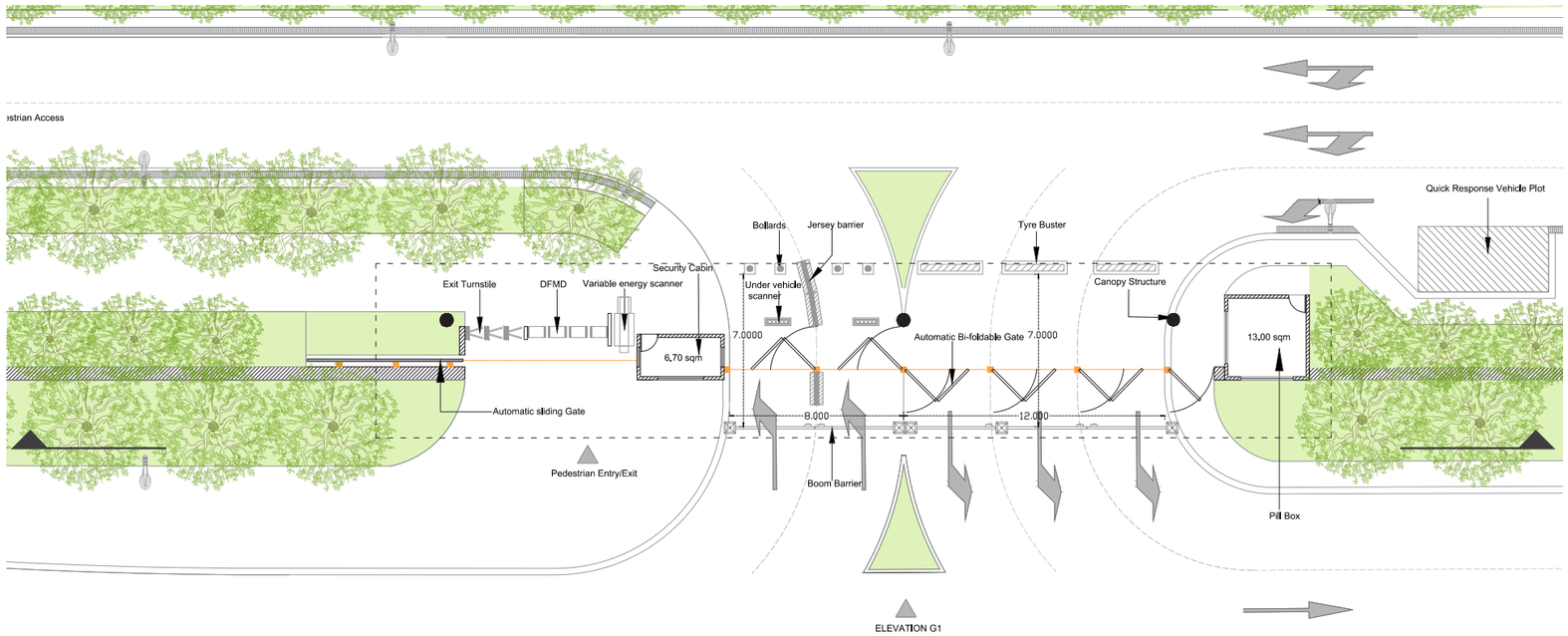
4.7 BOUNDARIES AND GATEWAYS

BOUNDARY TYPE 02

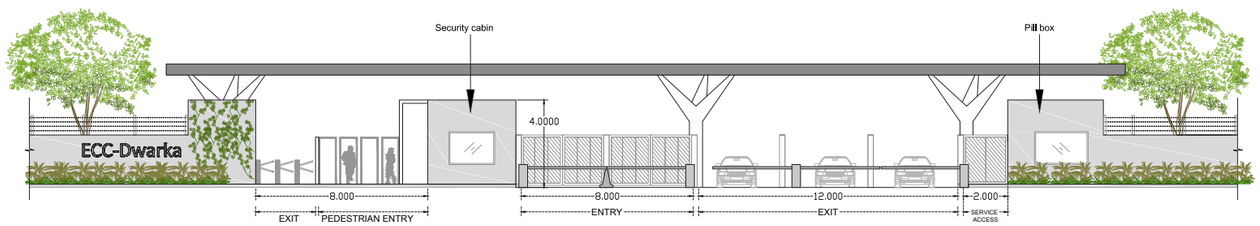


4.7 BOUNDARIES AND GATEWAYS

GATE G1

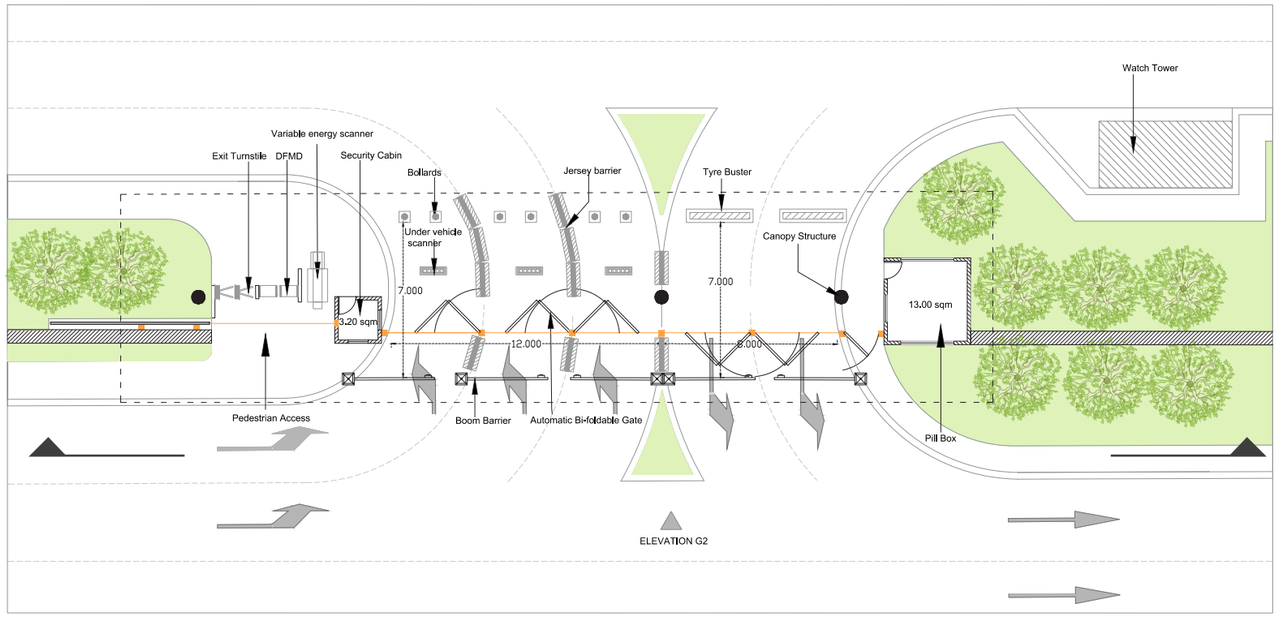


Gate Plan- G1

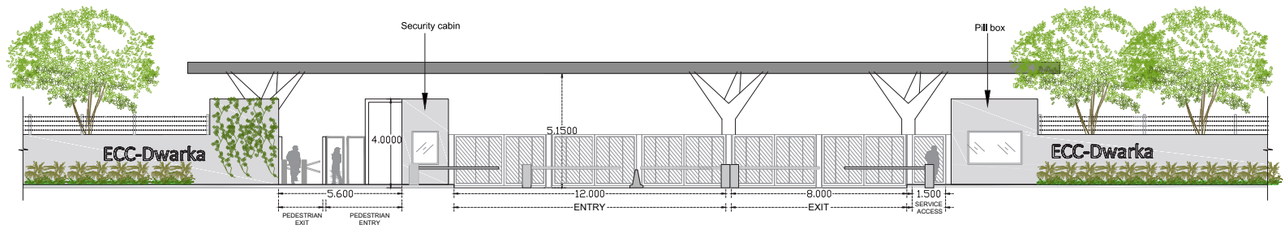


- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

GATE G2



Gate Plan- G2



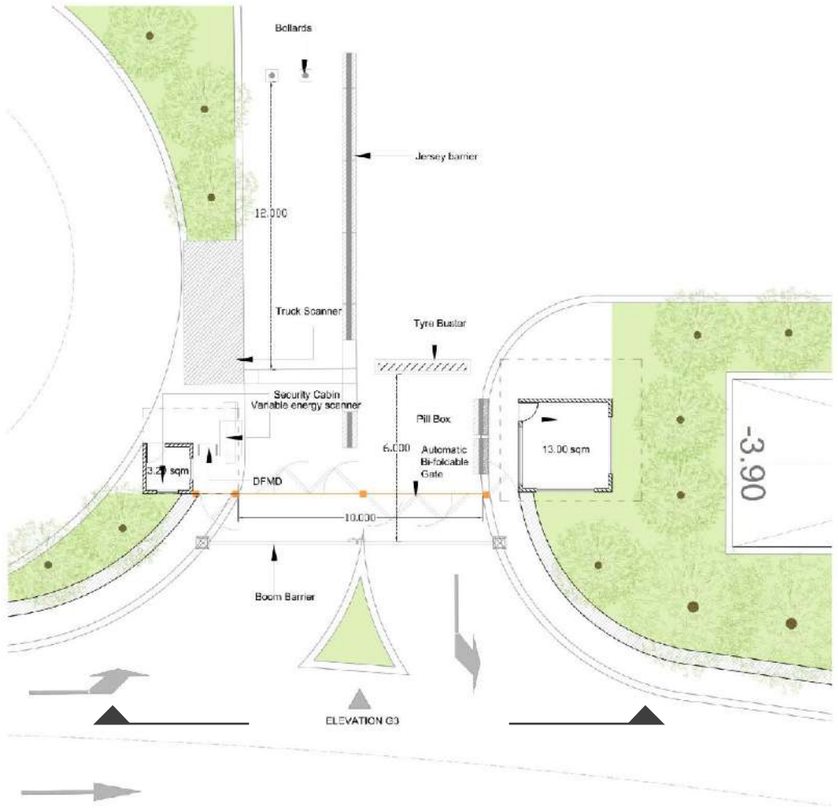
Gate Elevation - G2

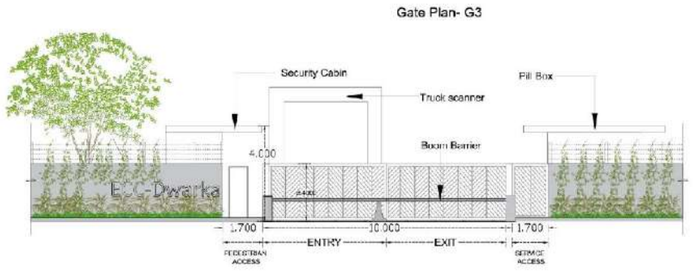
4.7 BOUNDARIES AND GATEWAYS

- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

4.7 BOUNDARIES AND GATEWAYS

GATE G3

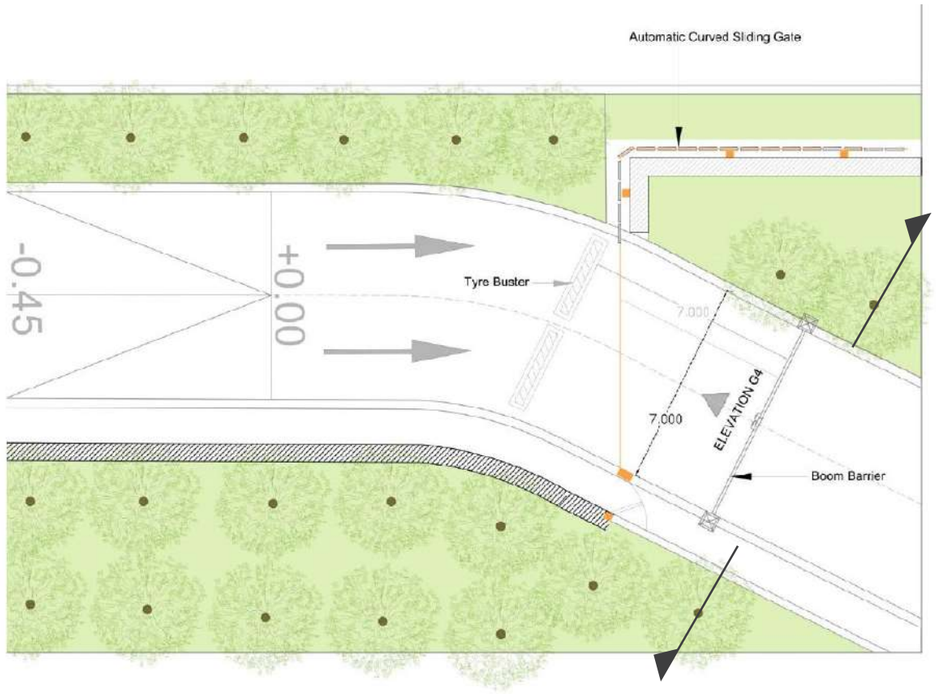




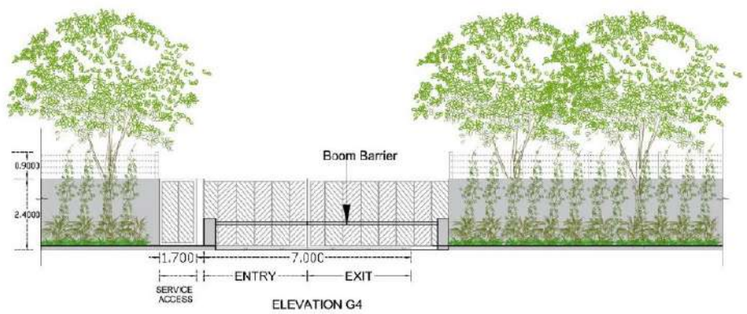
- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

4.7 BOUNDARIES AND GATEWAYS

GATE G4



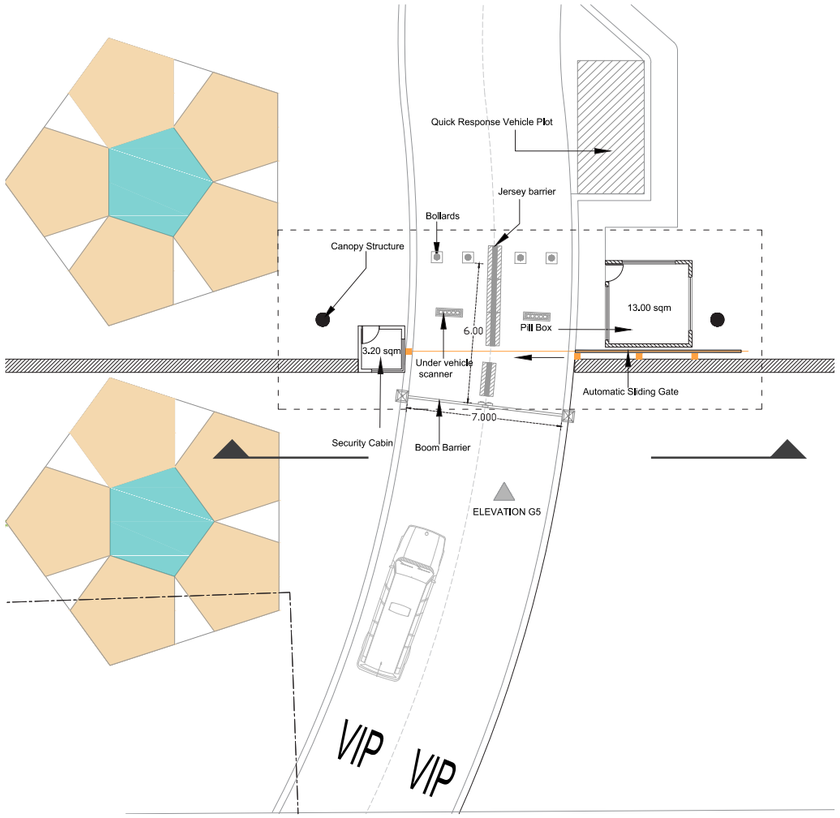
Gate Plan- G4



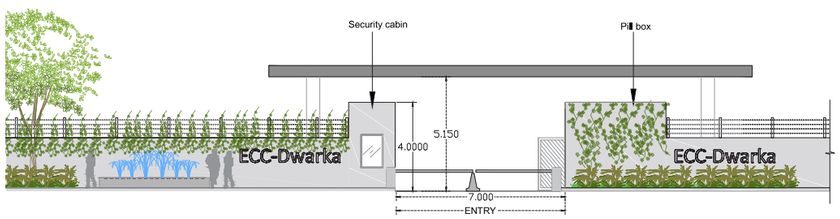
ELEVATION G4

- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

GATE G5



Gate Plan- G5



Gate Elevation - G5

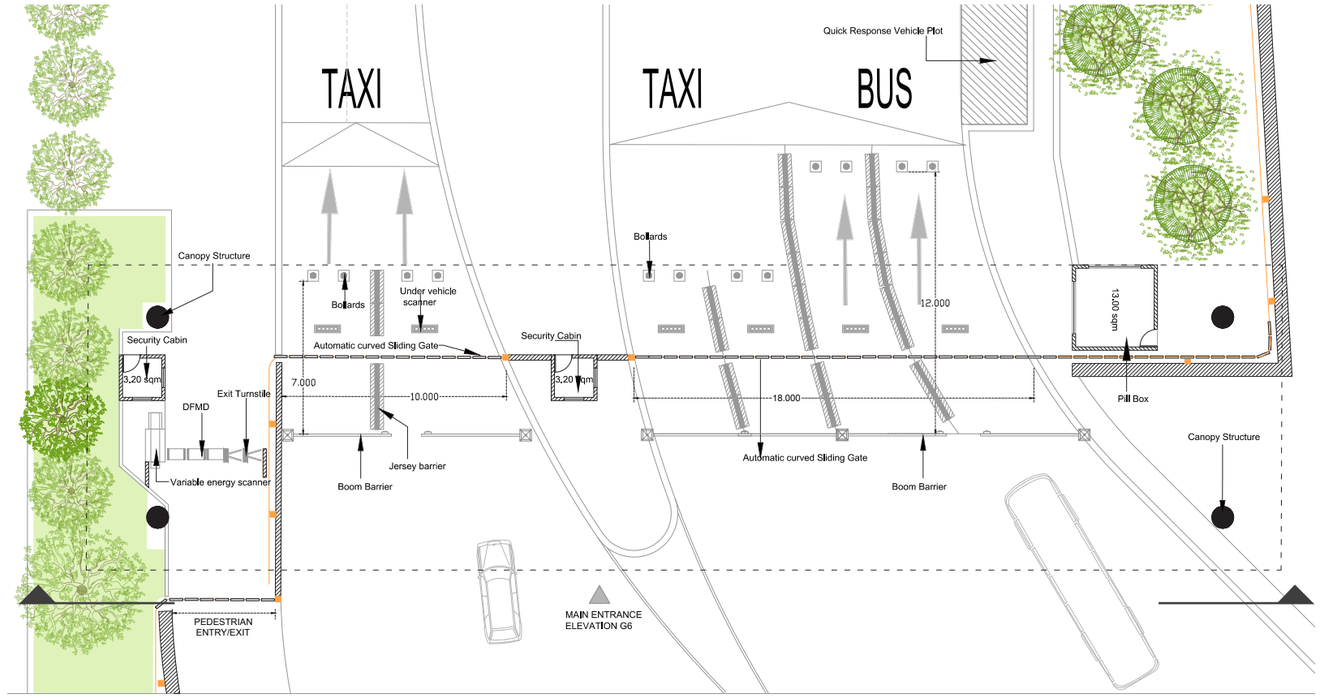
5 Entrance - G5
1:100

4.7 BOUNDARIES AND GATEWAYS

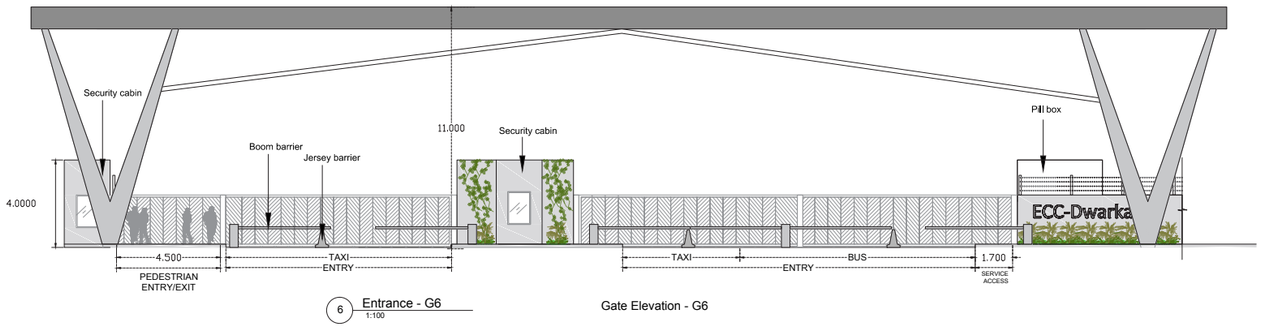
- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

4.7 BOUNDARIES AND GATEWAYS

GATE G6



Gate Plan- G6

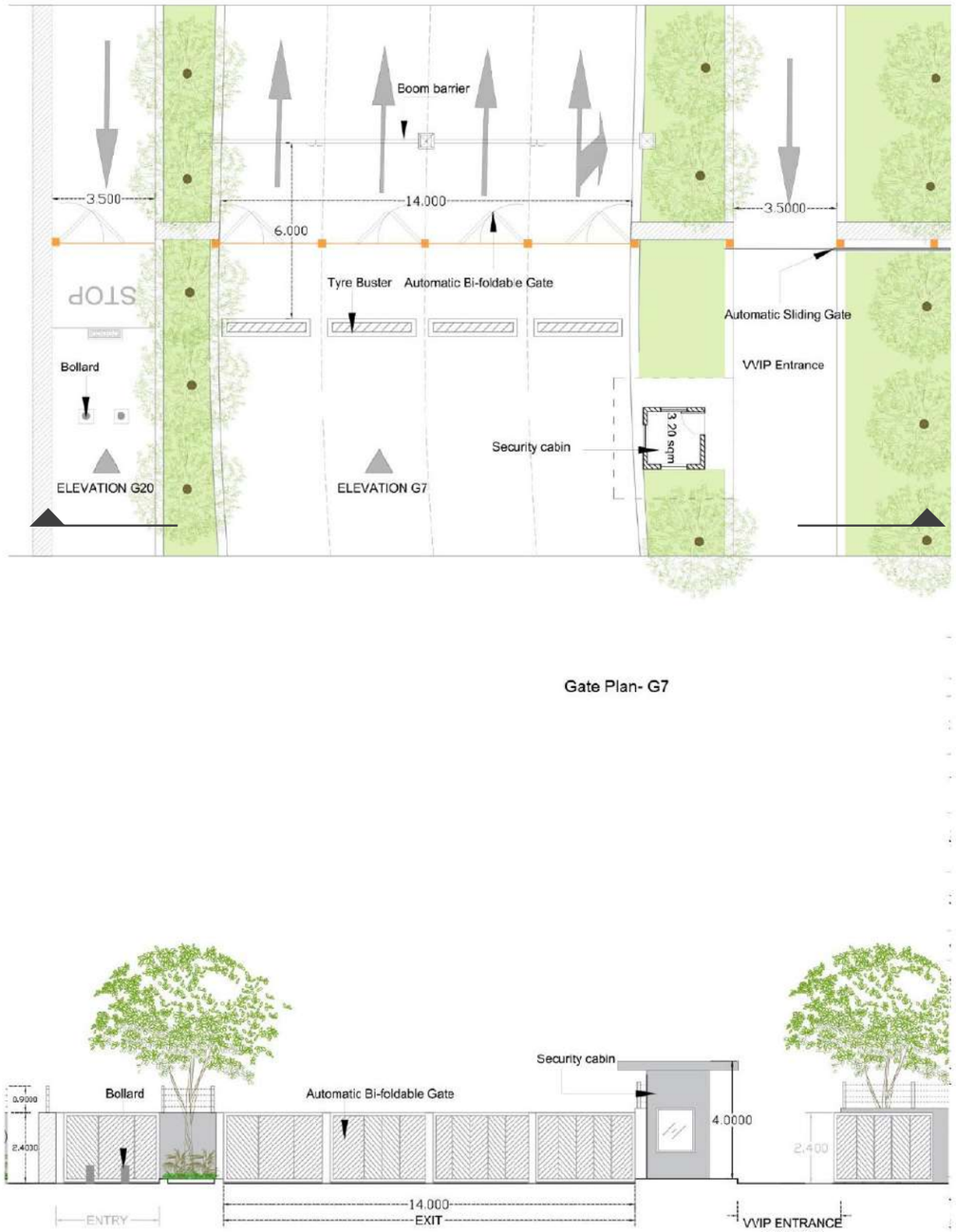


6 Entrance - G6
1:100

Gate Elevation - G6

- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

GATE G7



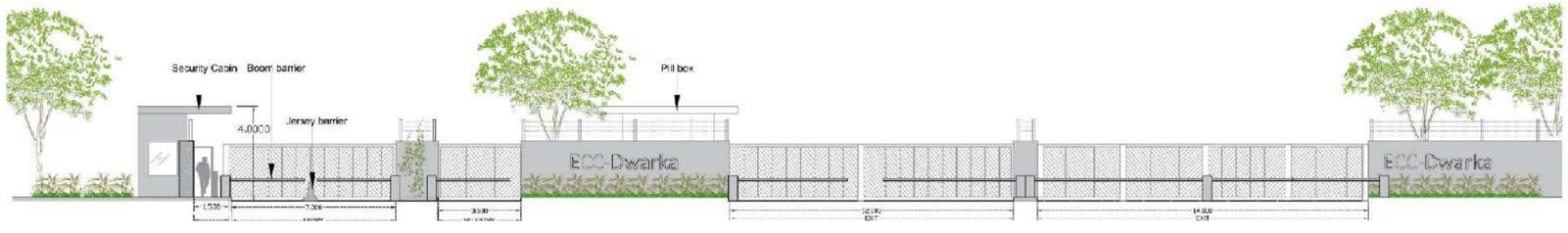
4.7 BOUNDARIES AND GATEWAYS

- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

4.7 BOUNDARIES AND GATEWAYS

GATE G8

Gate Plan - G8

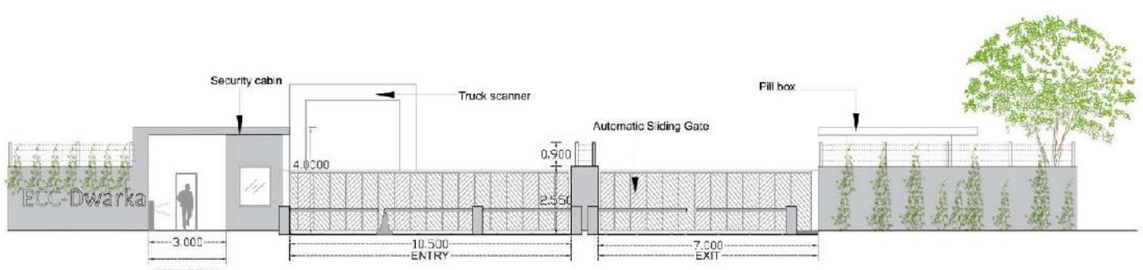


- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

4.7 BOUNDARIES AND GATEWAYS

GATE G9

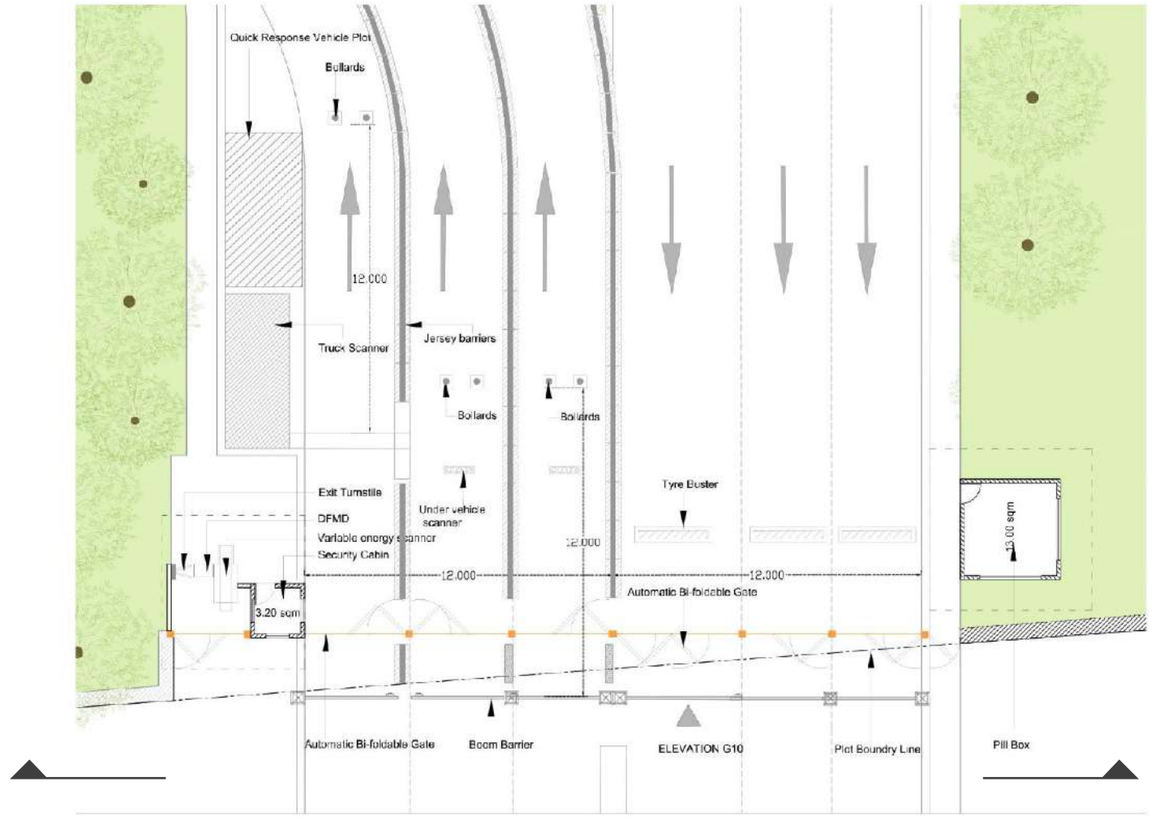
Gate Plan- G9



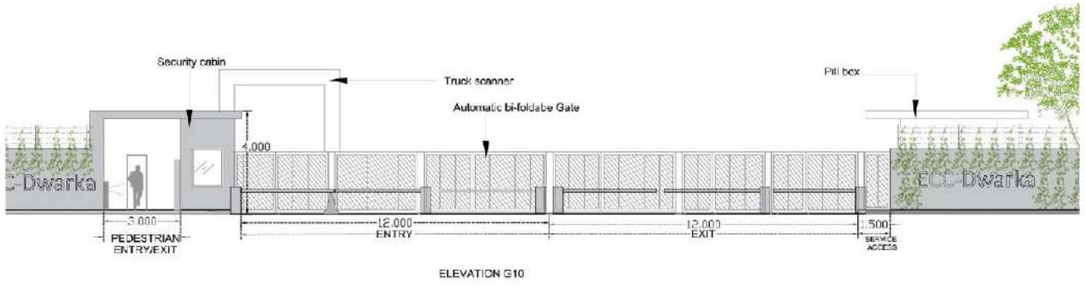
- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

4.7 BOUNDARIES AND GATEWAYS

GATE G10



Gate Plan- G10

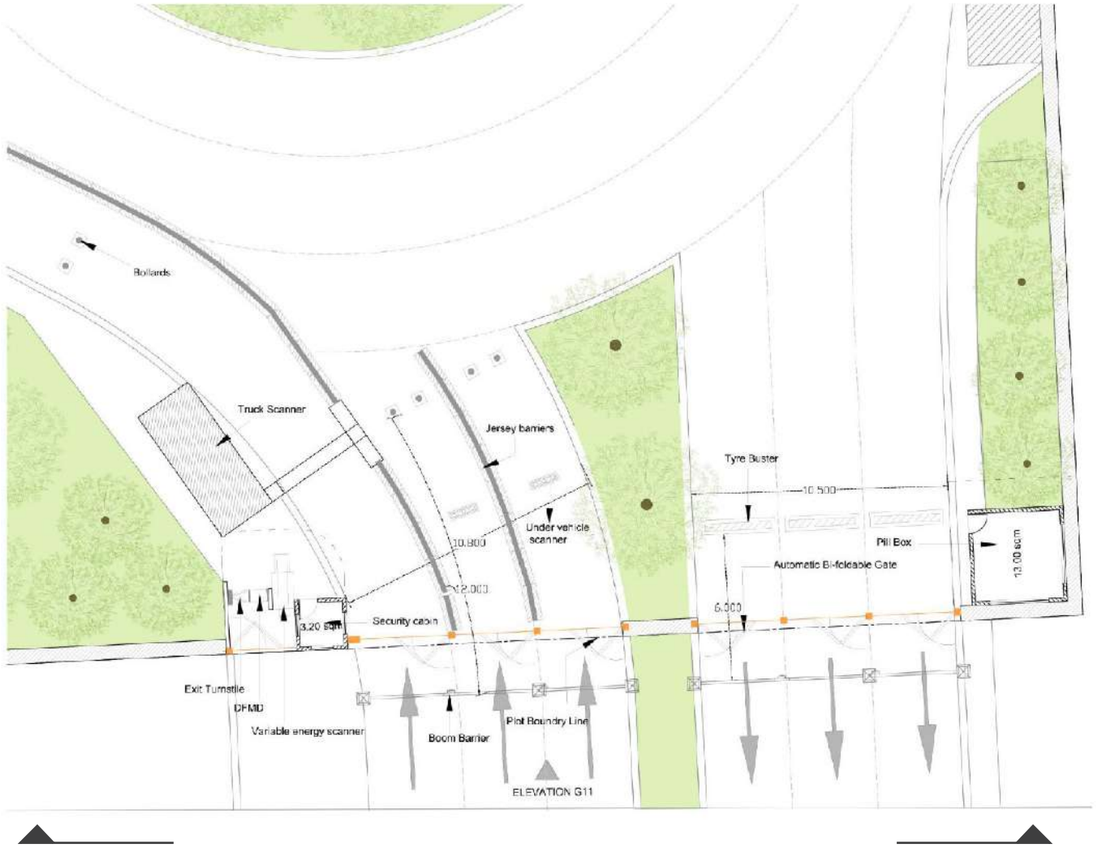


ELEVATION G10

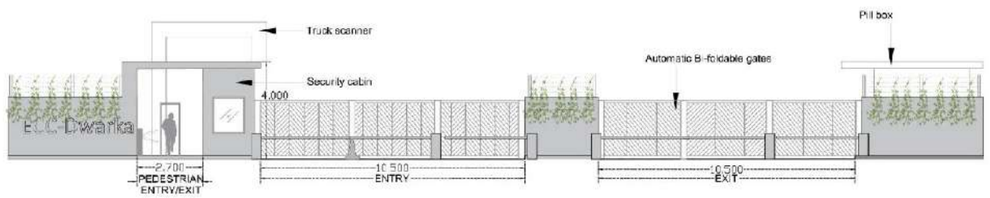
- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

4.7 BOUNDARIES AND GATEWAYS

GATE G11



Gate Plan- G11

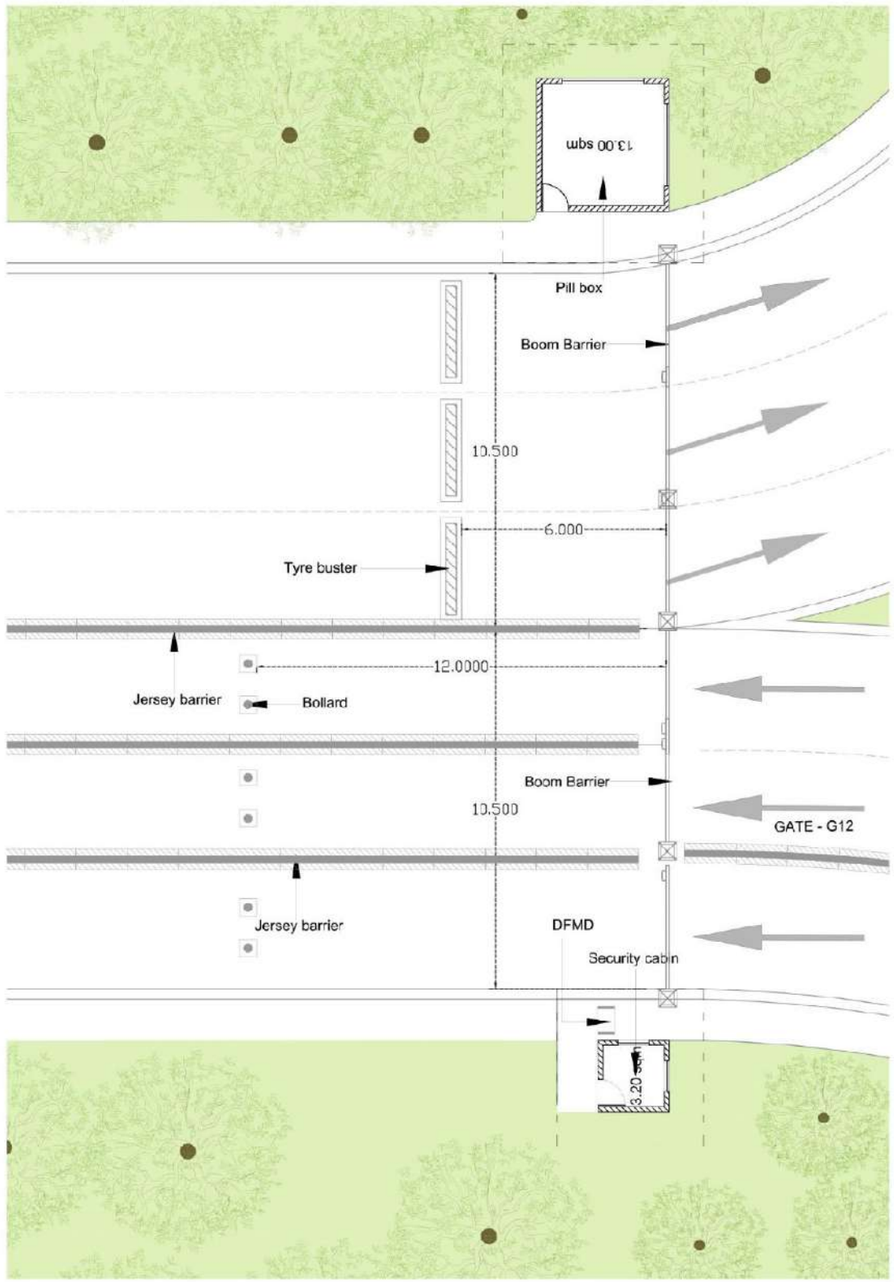


- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

4.0 PUBLIC REALM

4.7 BOUNDARIES AND GATEWAYS

GATE G12

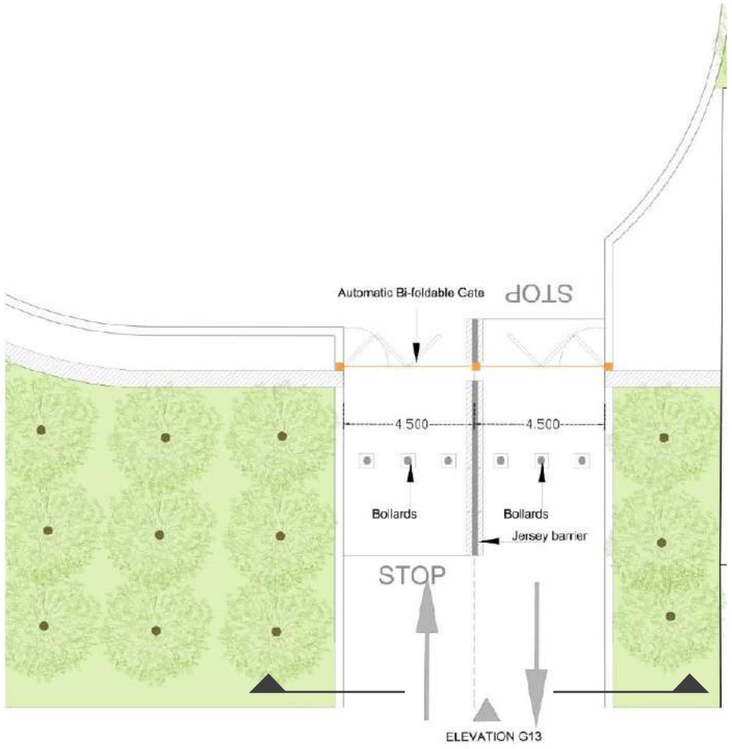


- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

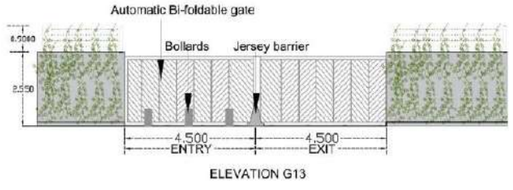
4.0 PUBLIC REALM

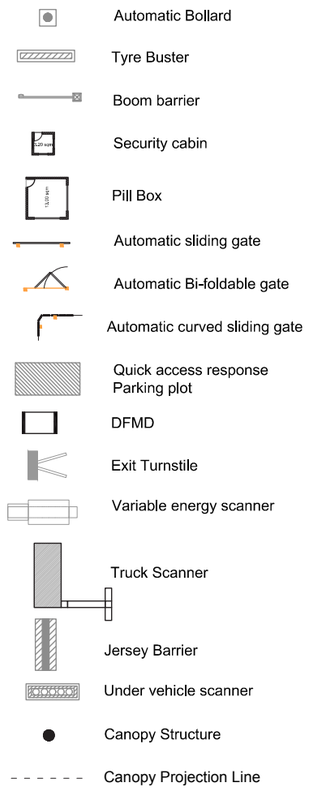
4.7 BOUNDARIES AND GATEWAYS

GATE G13



Gate Plan- G13

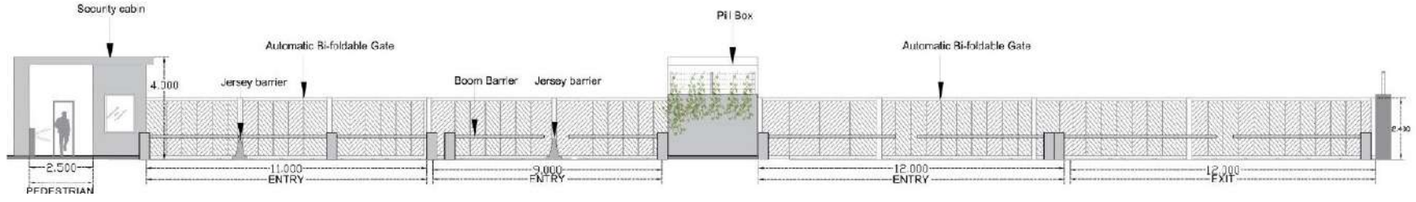


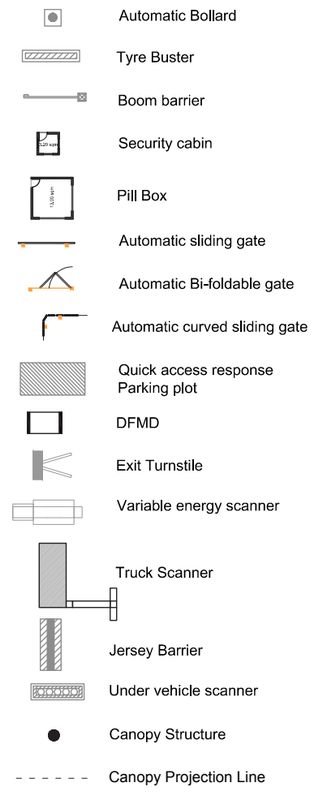


4.7 BOUNDARIES AND GATEWAYS

GATE G14

Gate Plan- **G14**

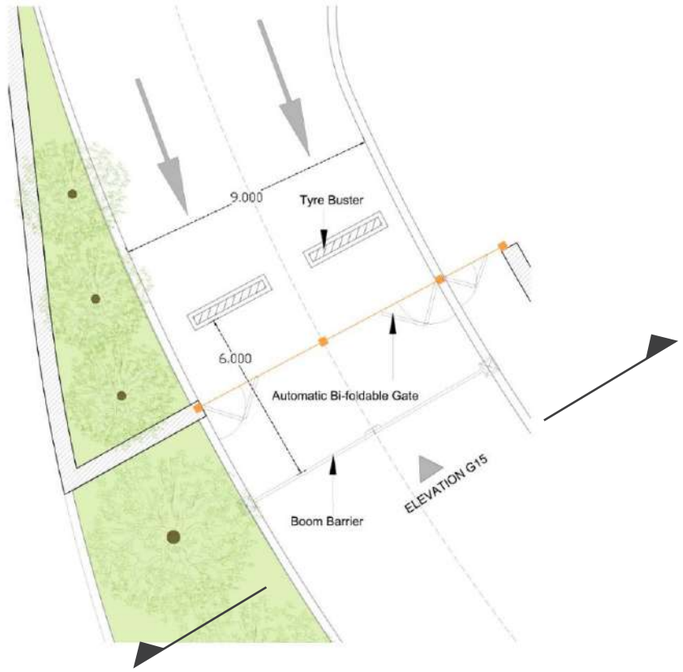




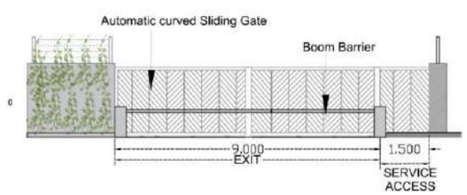
4.0 PUBLIC REALM

4.7 BOUNDARIES AND GATEWAYS

GATE G15



Gate Plan- G15



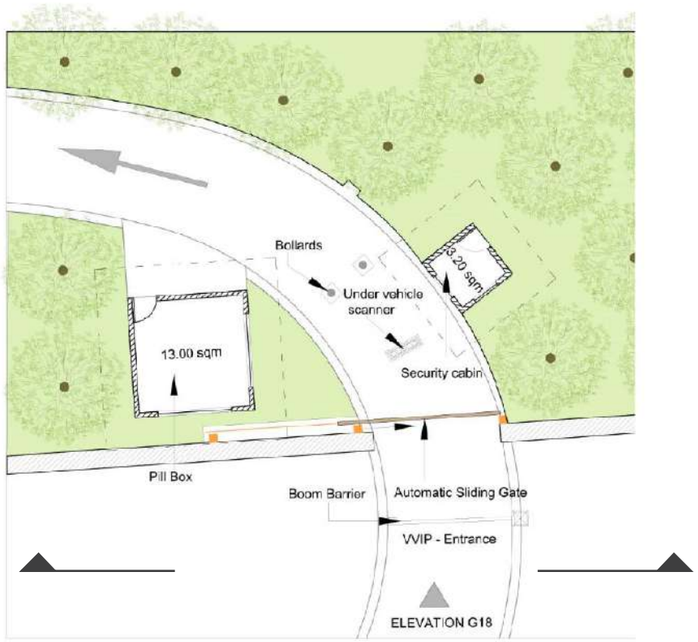
Gate Elevation - G15

- Automatic Bollard
- Tyre Buster
- Boom barrier
- Security cabin
- Pill Box
- Automatic sliding gate
- Automatic Bi-foldable gate
- Automatic curved sliding gate
- Quick access response Parking plot
- DFMD
- Exit Turnstile
- Variable energy scanner
- Truck Scanner
- Jersey Barrier
- Under vehicle scanner
- Canopy Structure
- Canopy Projection Line

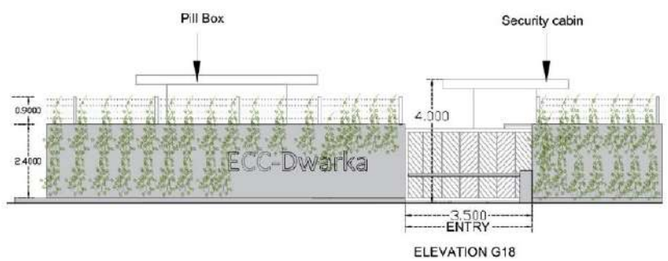
4.0 PUBLIC REALM

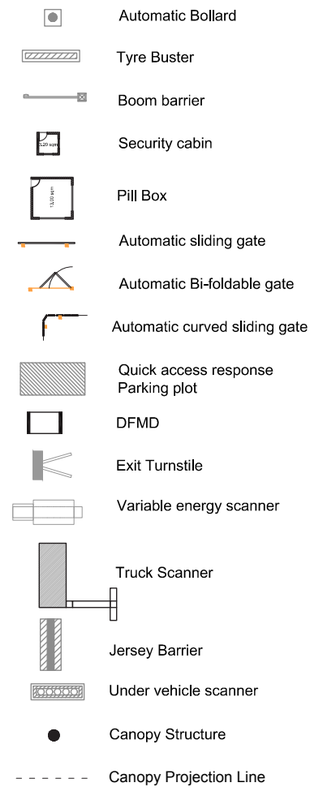
4.7 BOUNDARIES AND GATEWAYS

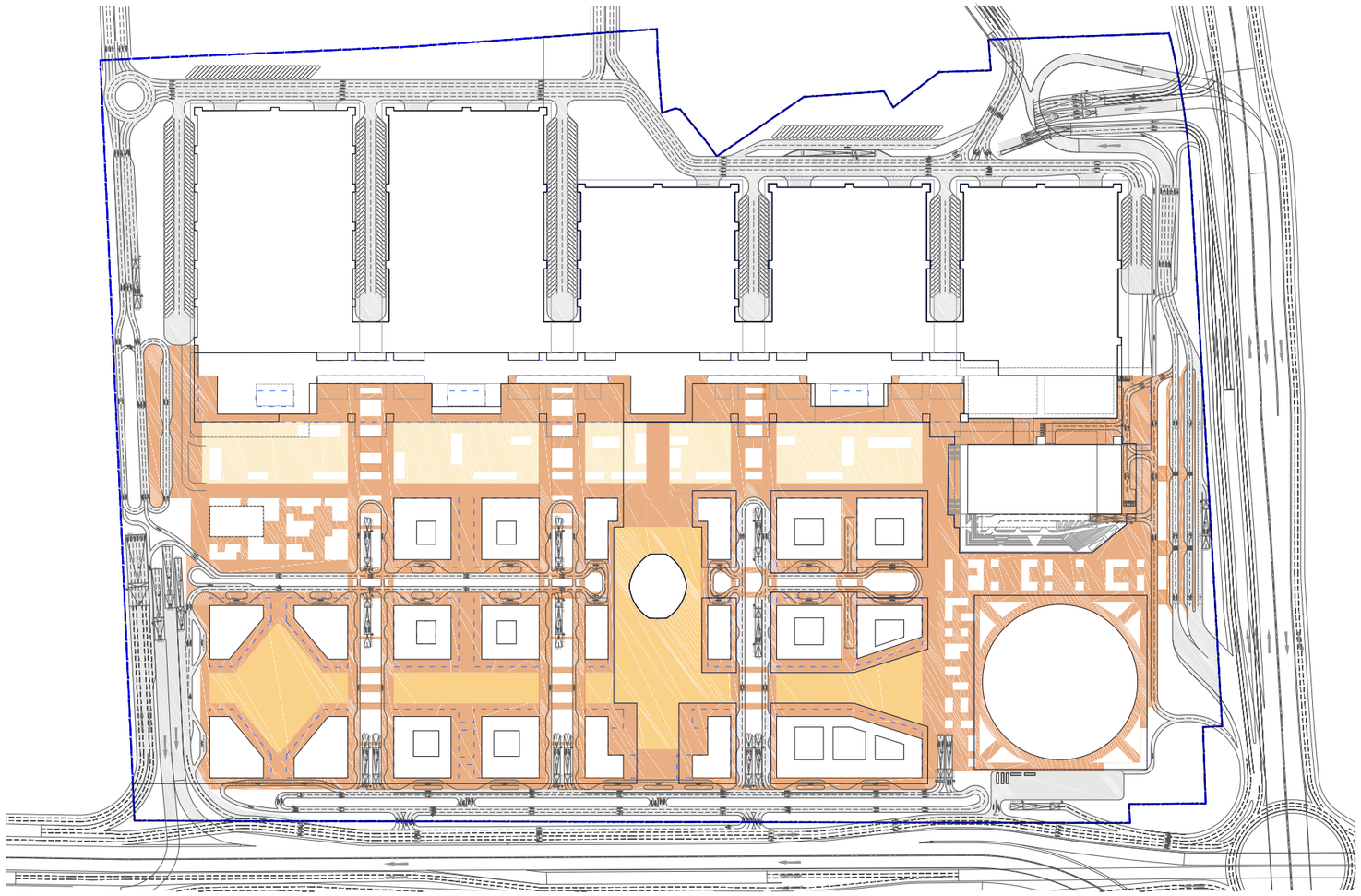
GATE G16



Gate Plan- G18







1.

2.

3.

4.

4.8 HARDSCAPE APPROACH

There are four main different types of walkways:

GENERAL WALKWAYS AND SHARED SURFACE

These along the Eco-Lanes. These walkways are mainly directional walkways and their main objective is to connect the different buildings and open spaces in the Dwarka IICC area. Shared surface roads run along these walkways. They will have slow traffic mainly for Supplies. Therefore, they will be pedestrian preferred roads.

GRASS-PAVING WALKWAYS

These Walkways run along the centre of the Eco-lanes. They are mixed grass and concrete or granite surface. They run along lush vegetation and palm trees.

STREETS AND PLAZAS

These walkways comprise the whole Bazaar area and plazas, Arena plaza and access plazas at the North and at the South. The main objective of these walkways is to serve as spill- out areas for commercial podiums as well as for floating activities and big crowd gatherings.

OPEN EXHIBITION AREAS

Open Exhibition Areas are in front of the Foyer and on them the Open Exhibitions will take place.

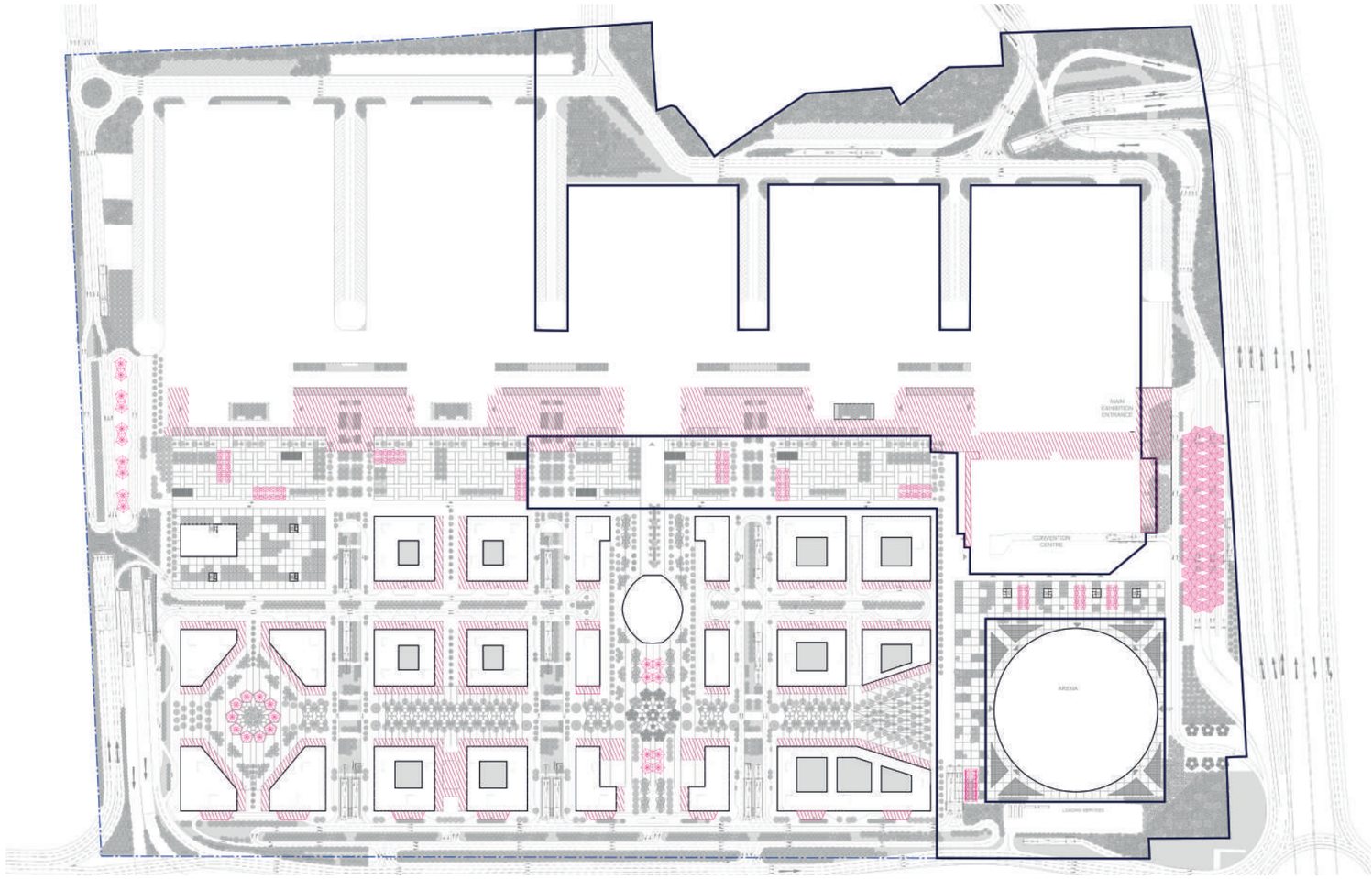
All hardscape materials are to have a high SRI.

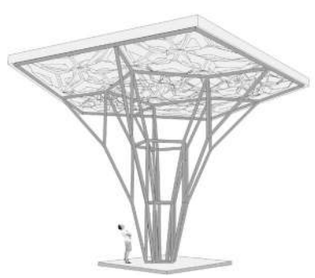
PAVING 01: GENERAL WALKWAYS AND SHARED SURFACE
(Linear granite paving)

PAVING 02: MAIN COMMERCIAL BOULEVARD AND ACCESS PLAZA (Granite paving with geometric patterns)

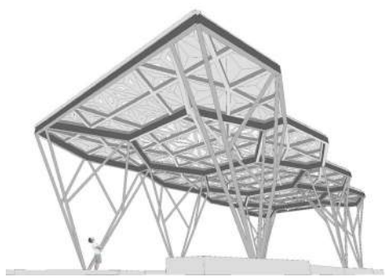
PAVING 03: OPEN EXHIBITION AREA
(Linear granite paving)

PAVING 04: ROADS
(White Asphalt)

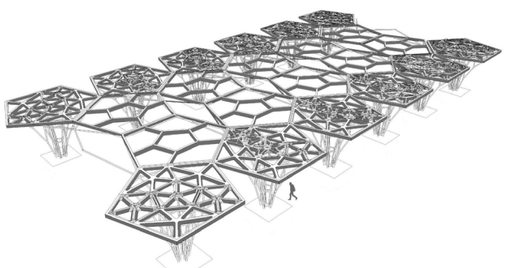




PENTAGON PERGOLA



FLAT PERGOLA



NORTH DROP-OFF PERGOLA

4.9 SHADED WALKWAYS

Colonnades are set within the buildings allowing for sheltered walking both in summer as in monsoon time. Pergolas located in the main drop-off zones, open exhibition area and main plazas contribute to sheltered resting and recreation.

There are three different types of pergolas; Pentagon, Flat and North Drop-off Pergola. All pergolas are of steel structure with GRC sandwich panel cladding on top and have an integrated lighting system. Pentagon pergolas also have water cooling system integrated. There are three different types of Flat pergolas; Flat pergola Type 1 and Type 2 have similar design with different dimensions. Flat Pergola Type 3 is located in the metro entrance/exit and has additional side panels attached to the main structure to create an impression of an enclosed environment.

	Pentagon	Flat	North Drop-Off
Height	7.50 m	8.55 m	11.03 m
Width	11.21x11.80 m	14x32 and 12x24 m	88.62x35 m
Lighting	Yes	Yes	Yes
Cooling System	Yes	No	No

IICC SITE BOUNDARY

SCOPE OF WORKS EPC

PENTAGON PERGOLA

FLAT PERGOLA TYPE 1

FLAT PERGOLA UNDERGROUND EXIT

FLAT PERGOLA TYPE 2

NORTH DROP-OFF PERGOLA

COLONNADES/CANOPIES/GRAND FOYER

4.0 PUBLIC REALM

4.10 LIGHTING

Lighting will be evenly distributed throughout the site. It will also serve to enhance features of the landscape such as the trees, the pergolas and the water features.

In a accordance with the IGBC requirements all lighting has been designed to reduce light pollution to allow greater night sky access and enhance the nocturnal environment.

A. LIGHT COLUMN CURVED POLES
B. LIGHT COLUMN STRAIGHT POLES
C. LIGHT COLUMN
D. FLOOR LIGHTING
E. TREE LIGHTING
F. WATER FEATURE LIGHTING
G. PENTAGON PERGOLA LIGHTING
H. FLAT PERGOLA LIGHTING
H. NORTH DROP-OFF PERGOLA LIGHTING

4.10 LIGHTING

A. LIGHT COLUMN CURVED POLES

B. LIGHT COLUMN STRAIGHT POLES

C. LIGHT COLUMN

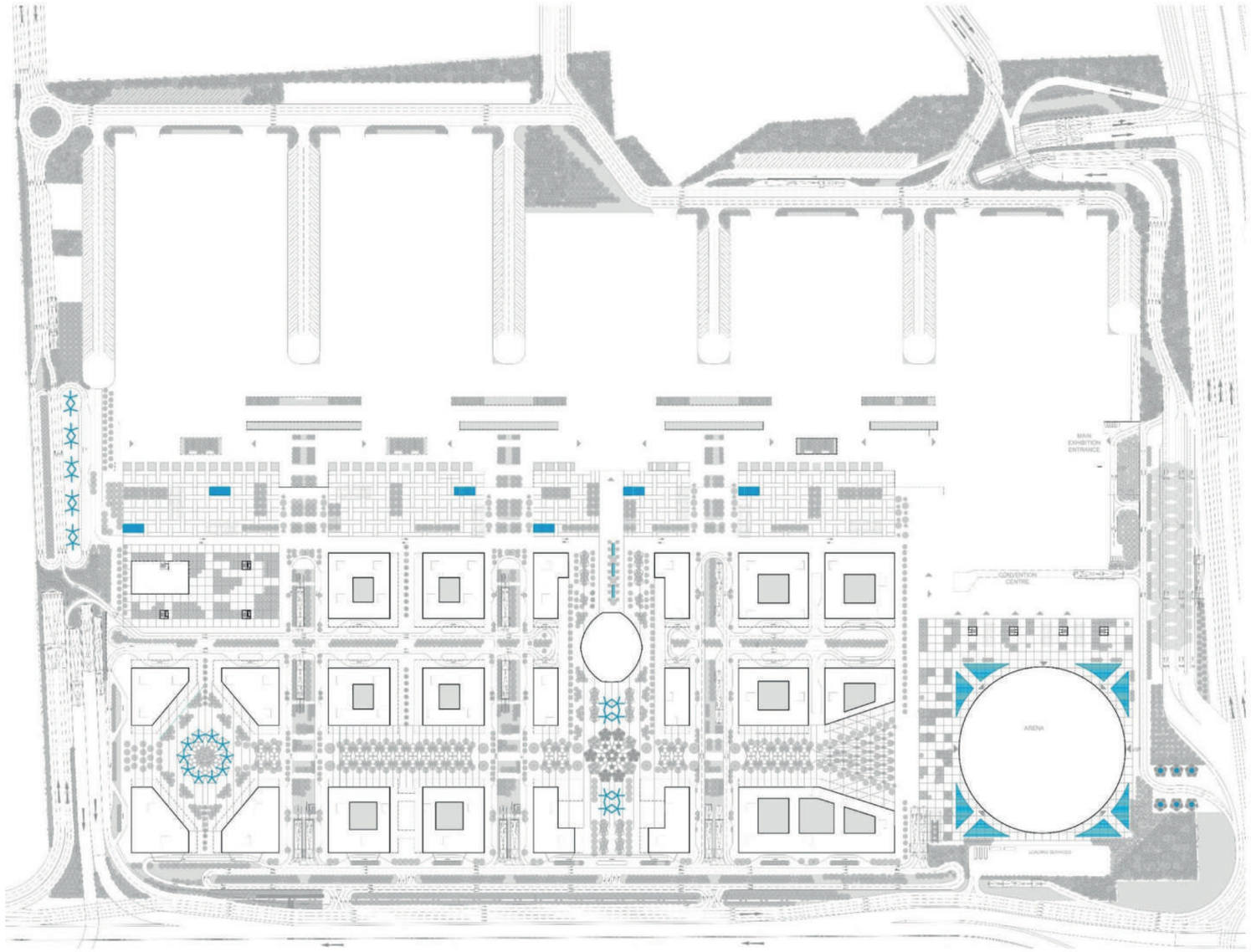
D. FLOOR LIGHTING

E. TREE LIGHTING

F. WATER FEATURE LIGHTING

G. PENTAGON PERGOLA LIGHTING

H. FLAT PERGOLA AND NORTH DROP-OFF PERGOLA LIGHTING



4.11 WATER FEATURES

WATER FEATURES

Water features have been located to enhance some specific areas:

Arena: mirror-water features have been located around the arena to enhance it as an iconic element, as well as refreshing the area surrounding it.

Open Exhibition Area: Some water features have been located in this area to allow for fresh resting and walking while visiting the exhibitions.

Pentagon Pergolas: water diffusion has been proposed for the pentagon pergolas located in the south drop-off, main entrance plaza and rhomboid plaza.

A. WATER FEATURE OPEN EXHIBITION
SPECIFICATION CODE: LA.03.01

B. WATER FEATURE PENTAGON
SPECIFICATION CODE: LA.03.02

C. WATER FEATURE ARENA
SPECIFICATION CODE: LA.03.03

D. WATER FEATURE LINEAR
SPECIFICATION CODE: LA.03.04

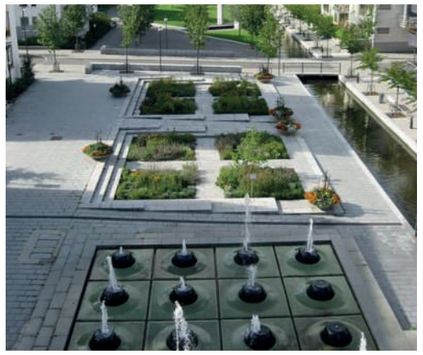
E. WATER FEATURE PERGOLA
SPECIFICATION CODE: LA.03.05

4.0 PUBLIC REALM

4.11 WATER FEATURES

A. WALK-IN FOUNTAINS

Granary Square,
London, UK

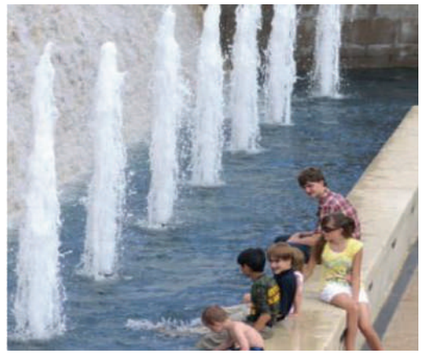


B. WATER FOUNTAIN UPSTAND

Hammarby Sjostad,
Stockholm, Sweden

C. WATER MIRROR

Hammarby Sjostad,
Stockholm, Sweden



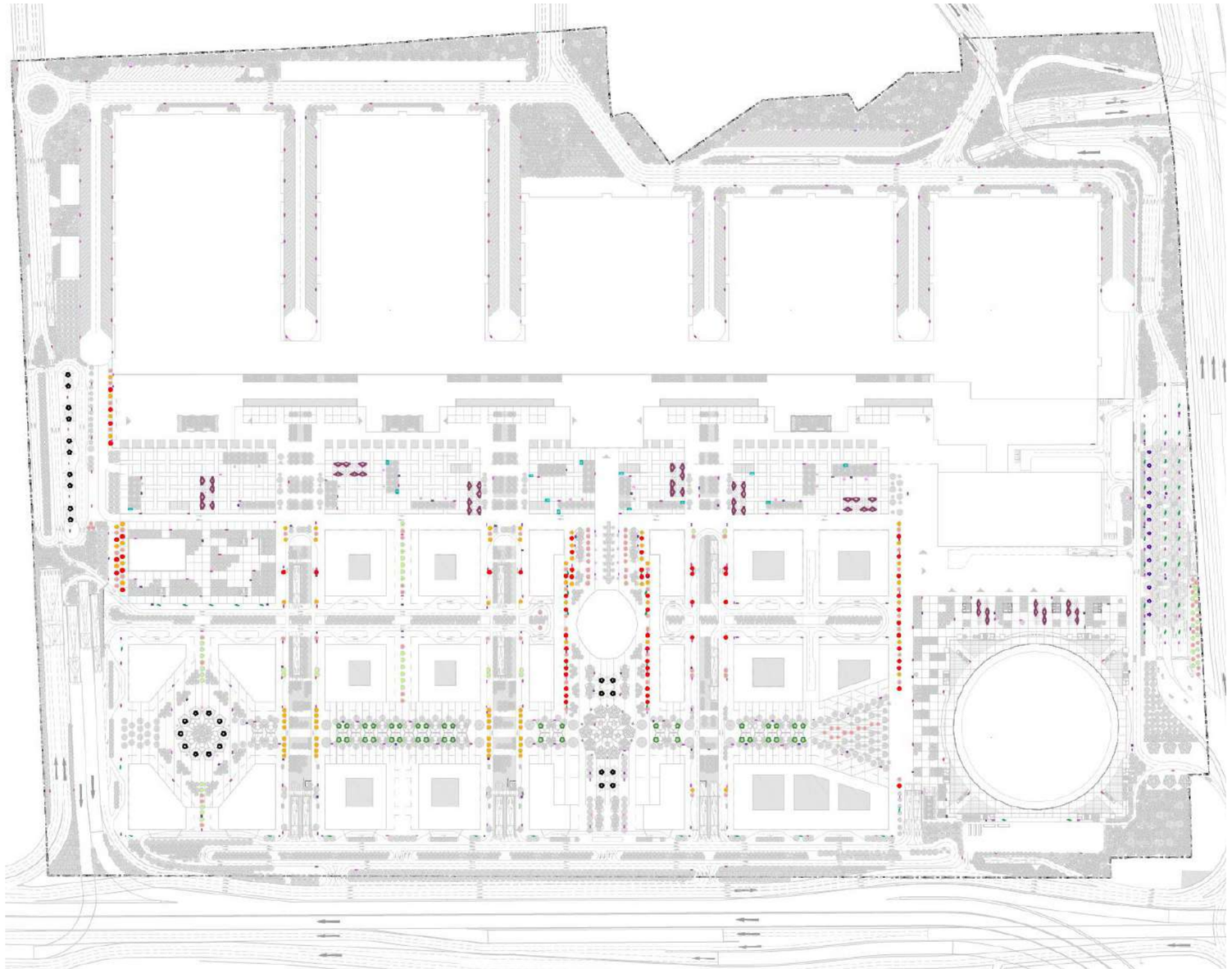
D. WATER FEATURE PLAZAS

Gasset Park,
Ciudad Real, Spain

E. WATER FEATURE PERGOLA

Marina Bay Waterfront Promenade,
Zhangjiagang, China

4.12 FURNITURE



BENCH BIG FLOWER
CODE - LA.04.01

C BENCH SMALL FLOWER
CODE - LA.04.02

D BENCH OPEN EXHIBITION
CODE - LA.04.03

F BENCH BIS
CODE - LA.04.10

PLANTER OPEN
CODE - LA.04.04 A

A PLANTER WITH SEATING
CODE - LA.04.05

PLANTER DOUBLE
CODE - LA.04.06

B PLANTER CLOSE
CODE - LA.04.04 B

BIN
CODE - LA.04.08

DRINKING FOUNTAIN
CODE - LA.04.11

E CAST-IN-SITU PLANTER WITH SEATEI
CODE - LA.04.13

FLAT PERGOLA PLANTER & SEATING
CODE - LA.04.14

PENTAGON PERGOLA PLANTER
AND SEATING
CODE - LA.04.15

TREE SEATER
CODE - LA.04.12

NORTH DROP-OFF
PERGOLA
PLANTER

A. PLANTER + BENCH

Hornstull Shopping Centre,
Stockholm

B. PLANTER

Antonio Machado Square,
Barcelona, Spain

C. BENCH

Puerto Venecia,
Zaragoza, Spain

D. BENCH

Diagonal Mar,
Barcelona, Spain

E. BENCH

Plaza de Santo Domingo,
Madrid, Spain

F. BENCH

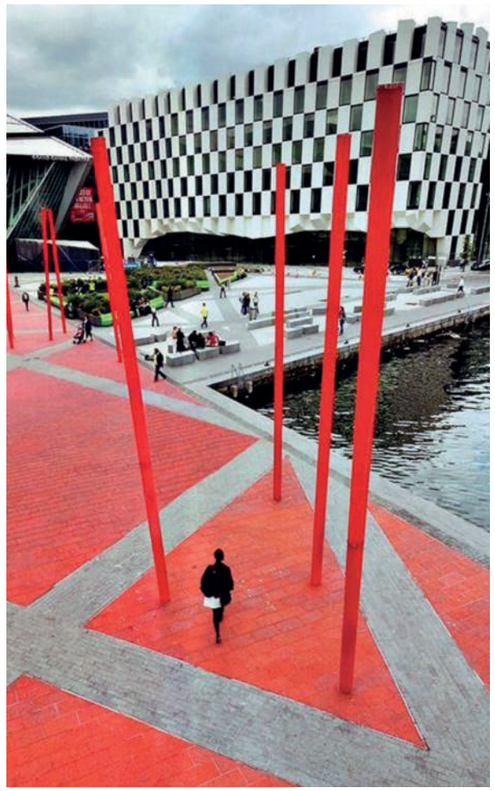
BGU University,
BeerShava, Israel

4.13 URBAN ART

URBAN ART

4.0 PUBLIC REALM

4.13 URBAN ART



A. BAZAAR LANES AND PLAZAS

Grand Canal Square,
Dublin, Ireland.

B. ECO LANES

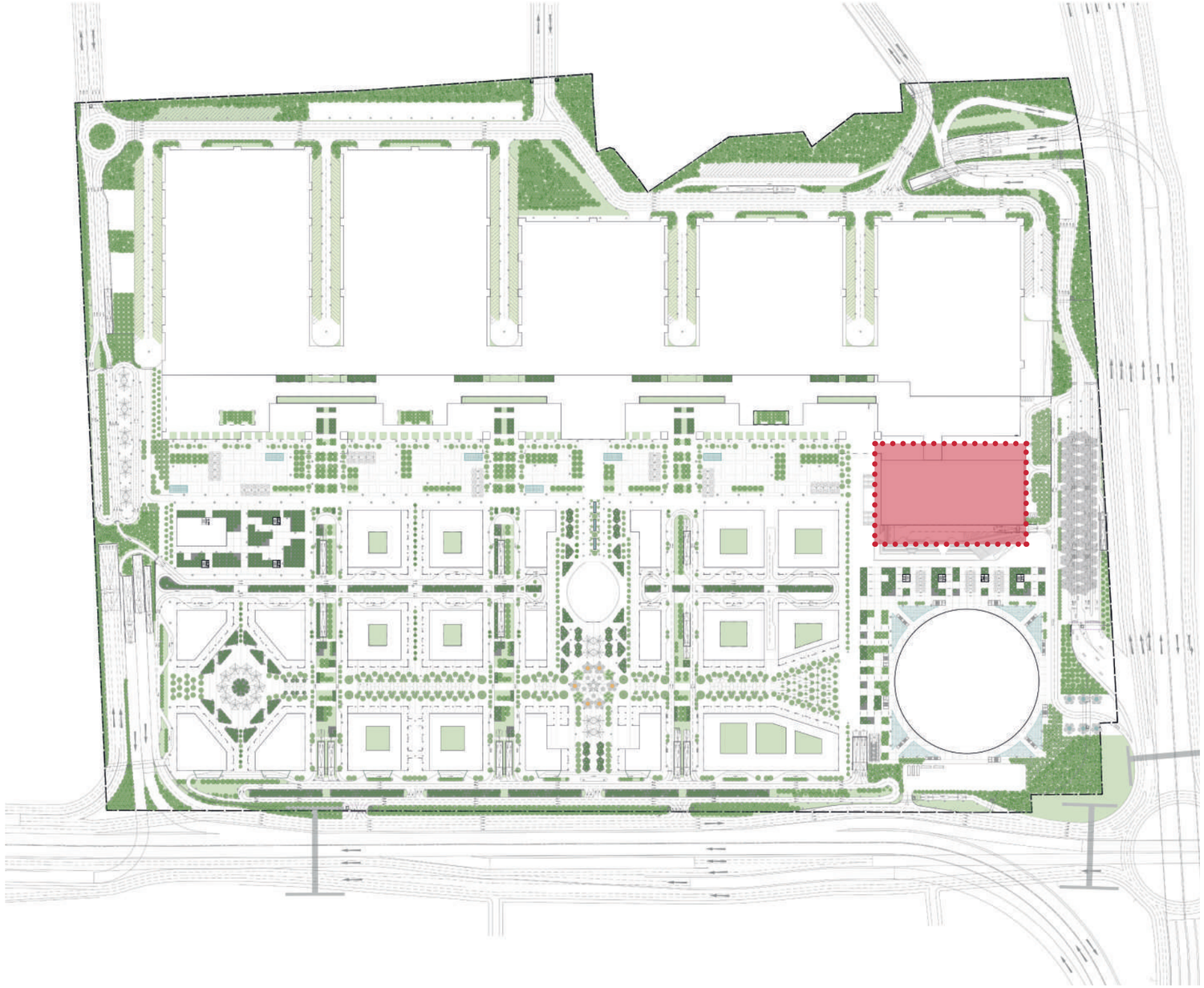
Wenceslas Square,
Prague, Czech Republic.

C. OPEN EXHIBITION AREAS AND ARENA PLAZA

Guggenheim museum,
Bilbao, Spain

5.0 IICC COMPLEX

5.0 IICC COMPLEX



5.1 LAYOUT PLAN

The proposed Convention Centre building consists of 60,000sq.m of FAR area, and has a ground coverage of 14,755.50sq.m. The building is 41.75m in height (roof slab level) and has 12 levels serving the various functions including a main auditorium space with a 6,000 seating capacity.

The buildings location at the North end of the site, creates an iconic reference point in the masterplan.

The convention centre building is directly linked to the 5 no. Exhibition halls, which vary in size creating over 240,000 sq.m of exhibition space.

Arranged in a north to south linear configuration the Exhibition halls are connected by a “grand foyer” which provides a covered climate control zone to act as the main entrances to each hall. The grand foyer also provides a connection to the Convention centre.

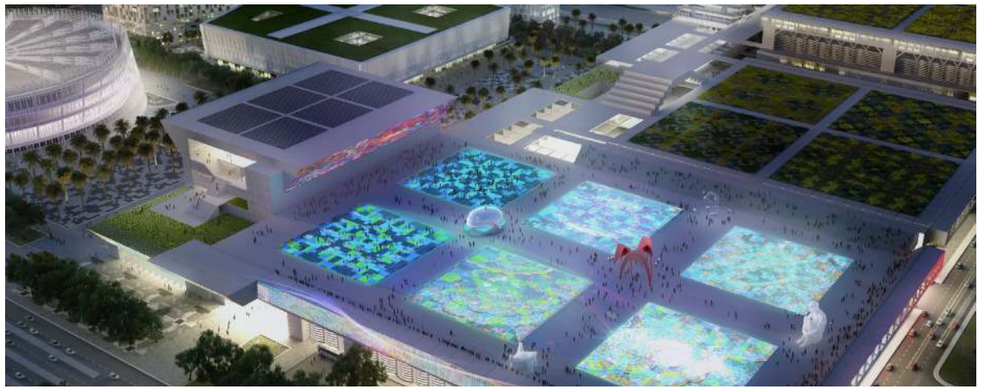
5.0 IICC COMPLEX

5.2 ARCHITECTURAL CHARACTER

The images provide an overview of the architectural character of the IICC complex, and in particular the main features of the Convention centre, and the Grand Foyer.

GRAND FOYER EXTERIOR VIEW

CONVENTION CENTRE EXTERIOR VIEW



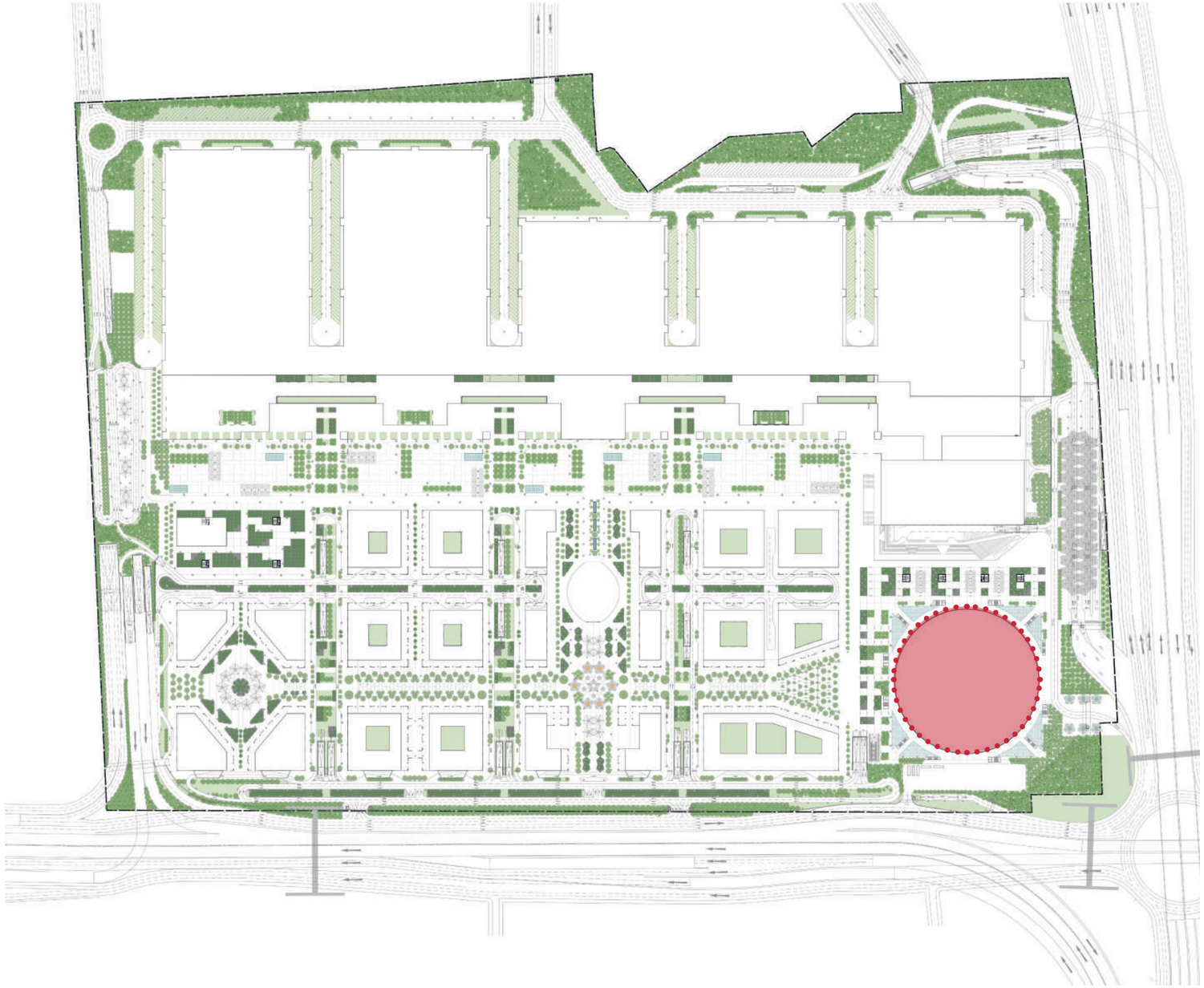
AERIAL VIEW

VIEW OF THE ENTRANCE AND INTERNAL TERRACE

INTERIOR VIEW OF THE MAIN HALL

6.0 ARENA COMPLEX

6.0 ARENA COMPLEX



6.1 LAYOUT PLAN

Situated on the North-East end of the site, the Arena is the focal point of the IICC complex. It benefits from unobstructed views from the main arterial roads and has an important relationship with the Convention Centre located adjacent to it.

Thus the intent underlying the proposed arena is to create an icon that symbolises the development and reflects the Indian art and culture.

The arena will have a capacity of 20,000 visitors under a covered roof and will provide a multi-purpose floor apace for various sports and other activities.

The circular plan of the arena allows it to integrate harmoniously within its context and the water ponds designed shaping the access points to the building.

As a part of a state-of-the-art venue, the arena's facade incorporates innovative systems for lighting while the roof is a retractable structure.

The building provides catering facilities for the public and premium lounges and viewing boxes for VIP.

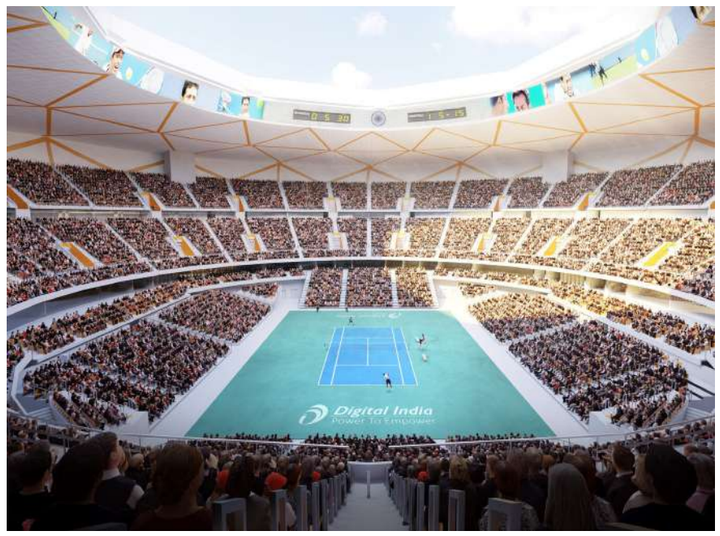
6.0 ARENA COMPLEX

6.2 ARCHITECTURAL CHARACTER

The images provide an overview of the architectural character of the Arena complex, and in particular the main features of the facade.

EXTERIOR VIEW

EXTERIOR VIEW

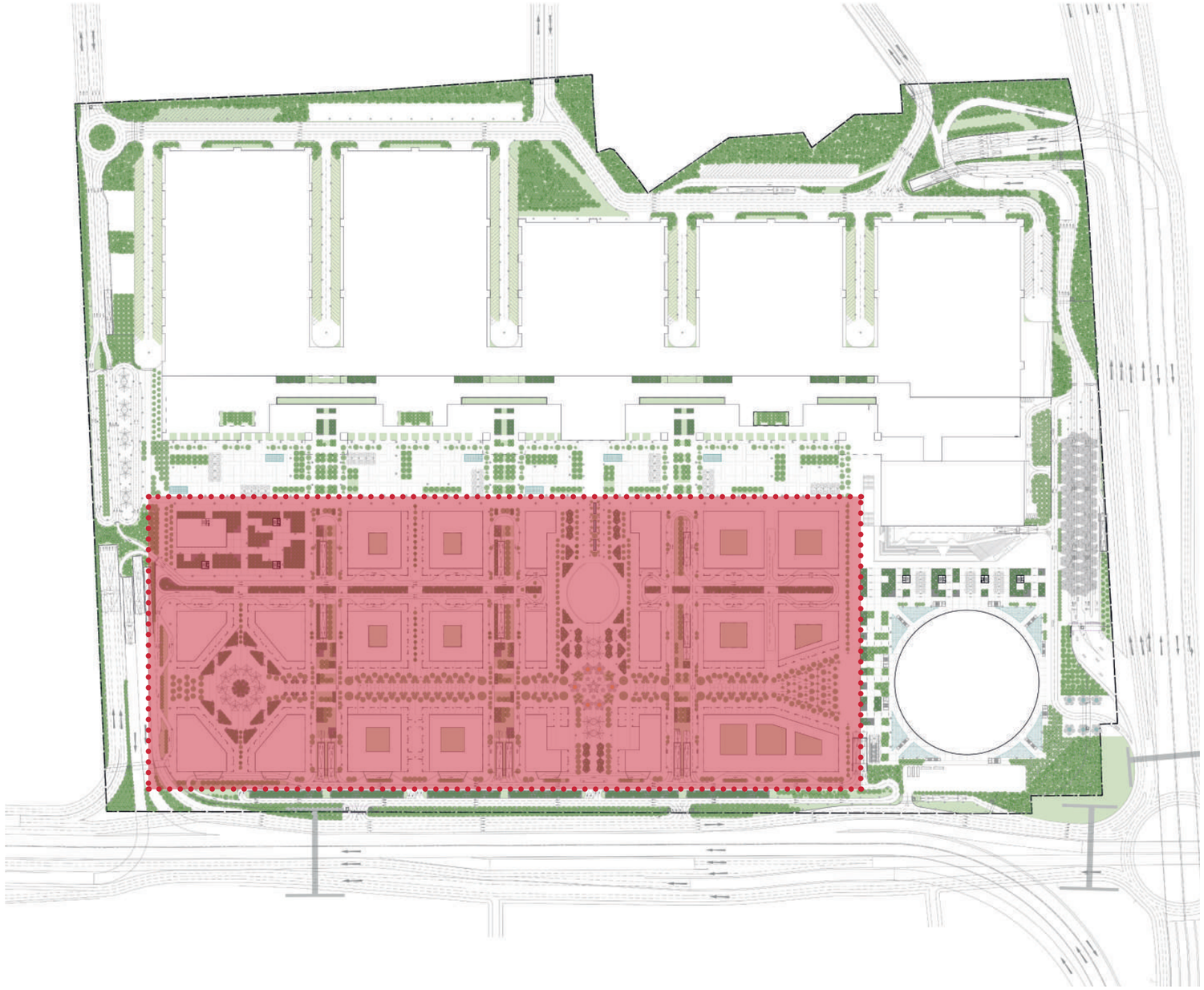


INTERIOR VIEW - SPORTS CONFIGURATION

INTERIOR VIEW - END STAGE CONFIGURATION

7.0 MIXED USE DEVELOPMENT AREA

7.0 MIXED USE DEVELOPMENT AREA



7.1 LAYOUT PLAN

Situated towards the South-Eastern end of the site, the Mixed Use District constitutes to approximately half of the sites area and benefits from flanking key pedestrian and arterial roads. There are a wide category of buildings that service this new district such as a mall, offices, hotels, metro station and various retail units. The multi-use structures vary in height, and are designed as perimeter blocks, divided into public and private space.

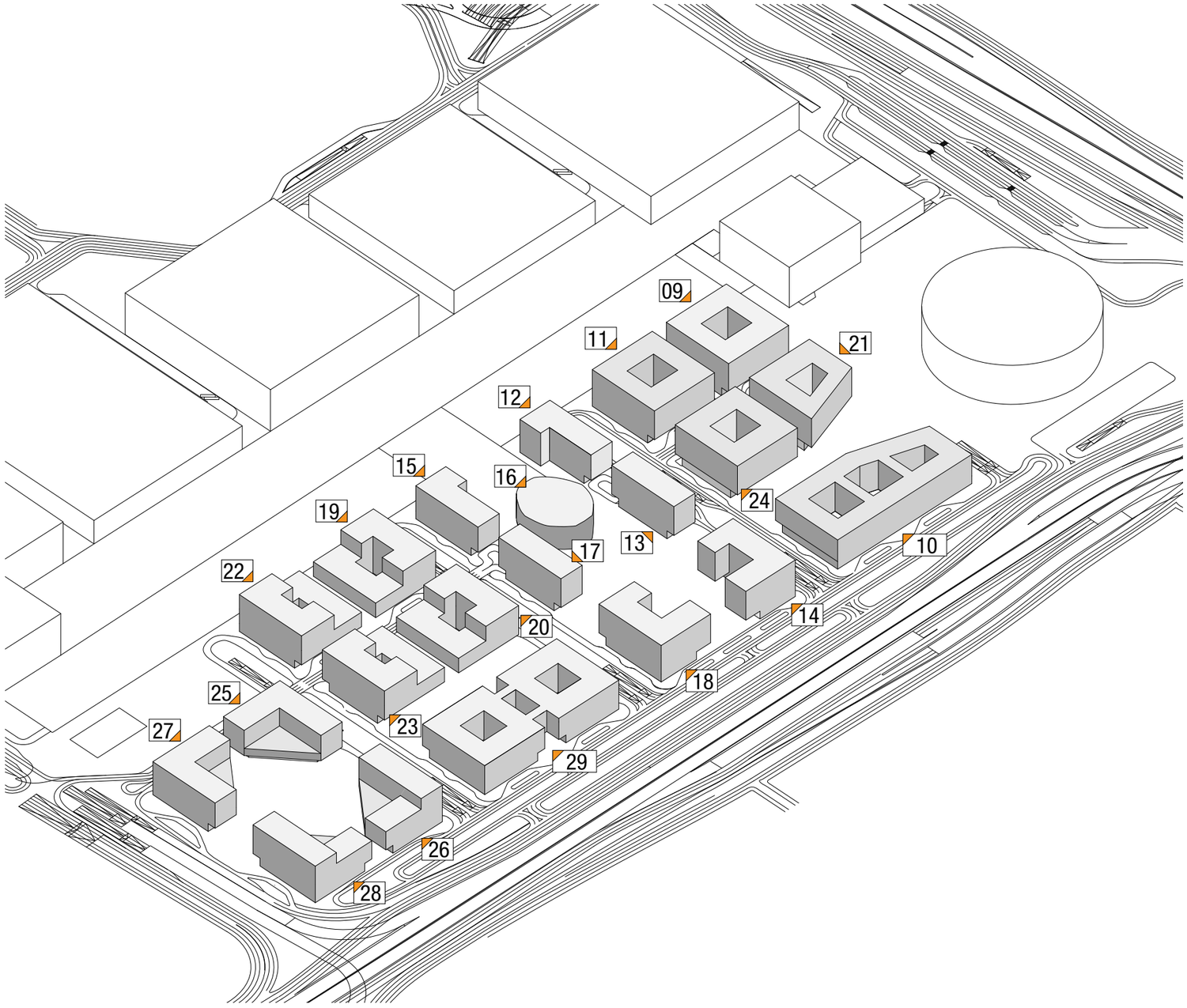
A mall and cluster of hotels serve the northern area that adjoins the Arena and Exhibition halls, while a mix of office and retail services the rest of the district. Retail, restaurants and neighbourhood orientated business populate the ground floor podiums which will warranty the necessary life at street level.

The district will be a hive of mixed use activity including smart façades, shops, terraces and small businesses crowned by office space and accommodation. At street level the movement will be organised through pavements and landscape features allowing easy orientation to users. Pedestrian access is promoted by wide walkways, landscaped grounds and shading solutions.

In total the Mixed use Development buildings provide 6,42,000sq.m. FAR above ground, with additional basement parking provision. The breakdown by use is as follows:

Use:	FAR (sq.m.)	%
Retail	169,790.00	26.5%
Hospitality	260,123.00	40.5%
Offices	212,087.00	33.0%
Total	642,000.00	100.0%

7.0 MIXED USE DEVELOPMENT AREA



7.2 BUILDING MASSING

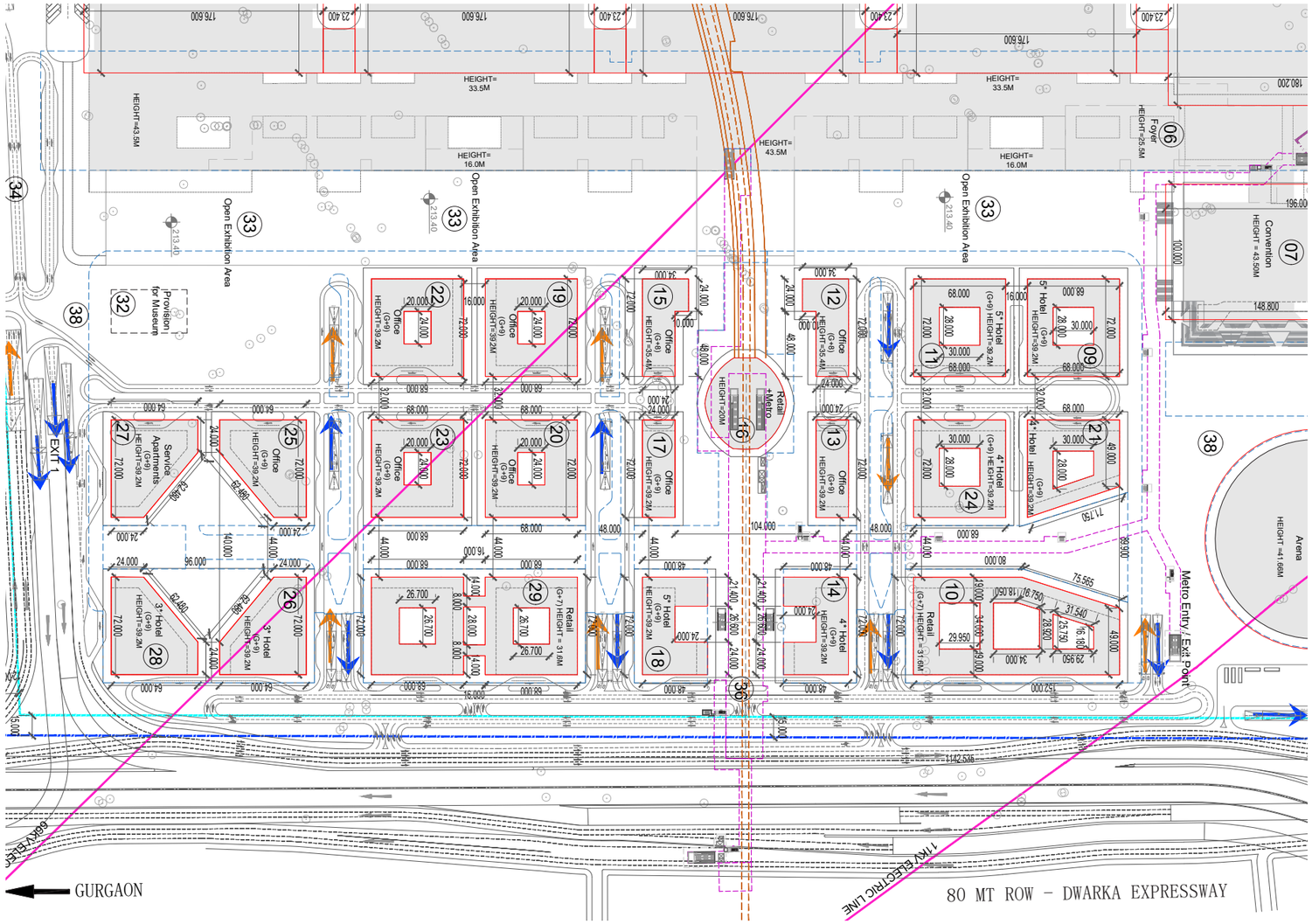
The buildings consist of 3 main components: the podium (a ground floor footprint covering 2 floors), the main volume (a larger floor plate over the podium creating colonnades at ground floor level) and then a further tower element. The amount of towers vary among each building, with buildings 28-25 containing 4 different volumes.

The massing has been designed considering the relationships between adjoining buildings and the need to comply with height restrictions of the site. The proposal provides a variety of spaces, with the creation of internal courtyards to help alleviate deep floor-plates, and to provide private areas.

Below is a table of the breakdown of key numbers for each building:

	Use	max FAR (sq.m.)
09.	Hotel (5*)	39,472.00
10.	Retail	56,048.00
11.	Hotel (5*)	39,472.00
12.	Office	17,326.00
13.	Office	16,512.00
14.	Hotel (4*)	26,370.00
15.	Office	17,326.00
16.	Retail + Metro	10,000.00
17.	Office	16,512.00
18.	Hotel (5*)	26,370.00
19.	Office	33,792.00
20.	Office	32,832.00
21.	Hotel (4*)	32,034.00
22.	Office	33,792.00
23.	Office	32,832.00
24.	Hotel (4*)	38,384.00
25.	Office	28,163.00
26.	Hotel (3*)	26,179.00
27.	Service apartment	28,163.00
28.	Hotel (3*)	26,179.00
29.	Retail	64,242.00
	TOTAL	642,000.00

7.0 MIXED USE DEVELOPMENT AREA



7.3 PLOT LOCATIONS

1. Exhibition Hall 1
2. Exhibition Hall 2
3. Exhibition Hall 3
4. Exhibition Hall 4
5. Exhibition Hall 5
6. Grand foyer
7. Convention centre
8. Multi-purpose arena
9. Hotel (5*)
10. Retail mall
11. Hotel (5*)
12. Offices
13. Offices
14. Hotel (4*)
15. Offices
16. Retail hub
17. Offices
18. Hotel (5*)
19. Offices
20. Offices
21. Hotel (4*)
22. Offices
23. Offices
24. Hotel (4*)
25. Offices
26. Hotel (3*)
27. Service Apartments
28. Hotel (3*)
29. Retail mall

7.0 MIXED USE DEVELOPMENT AREA

7.4 AREA DISTRIBUTION

PLOT NUMBER	PLOT AREA (sq.m)	GROUND COVERAGE (sq.m)	NUMBER OF FLOORS	ROOF SLAB HEIGHT (sq.m)	BASEMENT LEVELS	MIN CAR PARKING (ECS)	RETAIL ASPECT FAR (sq.m)	PODIUM RETAIL FAR (sq.m)	OFFICE FAR (sq.m)	HOTEL 3* FAR (sq.m)	HOTEL 4* FAR (sq.m)	HOTEL 5* FAR (sq.m)	APARTMENT FAR (sq.m)	TOTAL FAR (sq.m)
9	6,880.00	4,056.00	G+9	39.2	4	1,184	-	-	-	-	-	39,472.00	-	39,472.00
10	12,831.53	7,355.00	G+7	31.6	4	1,681	56,048.00	-	-	-	-	-	-	56,048.00
11	6,880.00	4,056.00	G+9	39.2	4	1,184	-	-	-	-	-	39,472.00	-	39,472.00
12	3,476.00	1,968.00	G+8	35.4	4	520	-	1,200.00	16,126.00	-	-	-	-	17,326.00
13	3,024.00	1,728.00	G+9	39.2	4	495	-	1,000.00	15,512.00	-	-	-	-	16,512.00
14	5,040.00	2,816.00	G+9	39.2	4	791	-	2,800.00	-	-	23,570.00	-	-	26,370.00
15	3,476.00	1,968.00	G+8	35.4	4	520	-	1,200.00	16,126.00	-	-	-	-	17,326.00
16	4,408.27	3,103.00	G+3	20.0	-	300	10,000.00	-	-	-	-	-	-	10,000.00
17	3,024.00	1,728.00	G+9	39.2	4	495	-	1,000.00	15,512.00	-	-	-	-	16,512.00
18	5,040.00	2,816.00	G+9	39.2	4	791	-	1,000.00	-	-	-	25,370.00	-	26,370.00
19	6,880.00	4,416.00	G+9	39.2	4	1,014	-	2,400.00	31,392.00	-	-	-	-	33,792.00
20	6,720.00	4,416.00	G+9	39.2	4	985	-	1,900.00	30,932.00	-	-	-	-	32,832.00
21	5,736.00	3,427.00	G+9	39.2	4	961	-	3,500.00	-	-	28,534.00	-	-	32,034.00
22	6,880.00	4,416.00	G+9	39.2	4	1,014	-	2,400.00	31,392.00	-	-	-	-	33,792.00
23	6,720.00	4,416.00	G+9	39.2	4	985	-	1,900.00	30,932.00	-	-	-	-	32,832.00
24	6,720.00	4,056.00	G+9	39.2	4	1,152	-	4,800.00	-	-	33,584.00	-	-	38,384.00
25	5,265.12	3,648.00	G+9	39.2	4	845	-	4,000.00	24,163.00	-	-	-	-	28,163.00
26	5,265.12	3,648.00	G+9	39.2	4	785	-	3,650.00	-	22,529.00	-	-	-	26,179.00
27	5,265.12	3,648.00	G+9	39.2	4	845	-	3,100.00	-	-	-	-	25,063.00	28,163.00
28	5,265.12	3,648.00	G+9	39.2	4	785	-	3,650.00	-	22,529.00	-	-	-	26,179.00
29	13,776.00	8,622.00	G+7	31.6	4	1,928	64,242.00	-	-	-	-	-	-	64,242.00
TOTAL		76,852.00				19,260	130,290.00	39,500.00	212,087.00	45,058.00	85,688.00	104,314.00	25,063	642,000.00

7.0 MIXED USE DEVELOPMENT AREA

EXTERIOR VIEW ALONG THE MAIN ARTERIAL ROAD

7.5 BUILDINGS CHARACTER

It is intended that the mixed use Development area is to be built by private developers and accordingly the design of the area has been created to allow flexibility for the overall facade treatments.

However certain controls have been established to ensure that there is a clear relationship between the different buildings and to create an identity within the masterplan area. The following sections define in further detail the specific requirements for the development of each building, including the parameters of the site layout, built form dimensions, and facade approach.

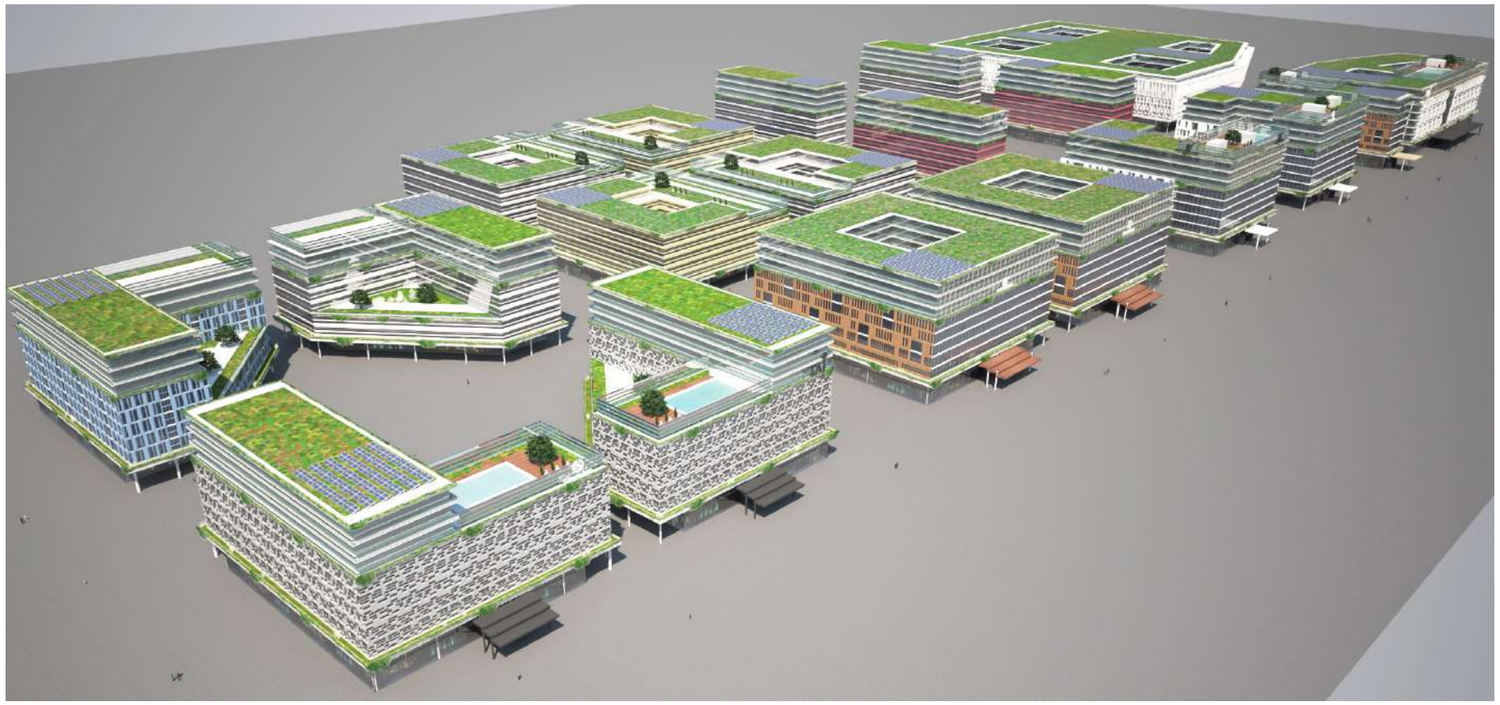
The images show an indicative appearance of the overall character of the area only and are not representative of the final design of buildings, which will be developed as per the guidelines in sections 8 and 9 of this report.

BOULEVARD

ECO LANES

8.0 MUD CHARACTER

8.0 MUD CHARACTER



8.1 DESIGN INTENT

The aim of this section is to define the key principles of design for the external appearance of each of the MUD buildings. It is not intended that the Urban Design Guidelines be a set of highly prescriptive design requirements, but rather a set of principles which define site wide controls for buildings that are mandatory for an integrated appearance. The requirements establish a harmonious relationship between each building whilst allowing for flexibility in the final composition of the façades to meet the end users requirements.

The guidelines have been developed considering the locations of each of the buildings within the masterplan, with key aspects considered as follows:

- Controls of appearance of the building façades in the East Elevation of the site to provide a principal frontage to the Dwarka Express-way Road.
- Control of appearance and use of buildings along the main north south pedestrian boulevard, to maximise active frontages, and to create sheltered areas as part of the public realm design.
- Consideration of the variety of building uses, and the need for different architectural languages to be applied accordingly for offices and hotel buildings.
- Control of use and appearance of roof tops and terrace areas.

The image shown to the left is a portrayal of the MUD area buildings with the application of the principles defined in the following pages. The potential for innovation and alternative design responses are recognised and welcomed, final drawings are to be prepared and submitted for approval based on this handbook and the end user requirements.

8.0 MUD CHARACTER

8.2 ELEVATION COMPOSITION

One of the main aspects of the massing of the MUD area is that the buildings are defined to be of various heights and shapes as a direct result of the masterplan area distribution requirements.

To bring an order to the massing, as well as to the help distinguish the different uses, the massing of each building is to be broken down into 3 components as follows:

- Base (Podium Level): the ground and level 01 of all buildings are to be used primarily for retail, and entrance/lobby areas of buildings, and is to have a predominantly transparent feel.
- Middle (Tower Lower Level): levels 02 to 06 of all buildings are to be used for the main uses, such as office space or hotel rooms, and is considered to have a more solid/opaque appearance
- Top (Tower Upper Level): the remaining floors of each building can be used to house any additional functions of the buildings, however are to appear as more lightweight and transparent elements.

The Base component also introduces recessed façades in some buildings, to help create a sheltered colonnade along principal pedestrian streets, as part of the public realm approach.

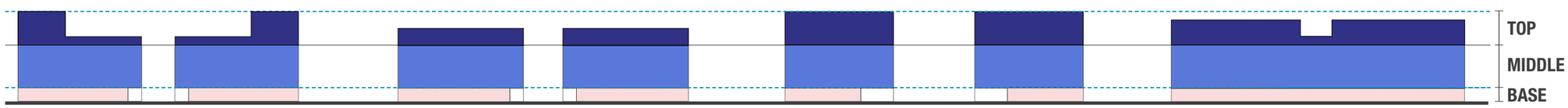
Based on the elevation composition breakdown of each building, each component (base, middle, and top) are considered to have different appearances, however continuity of a facade module composition is to be applied throughout. The design intent for the appearance and materials of each element is as follows:

ELEVATION

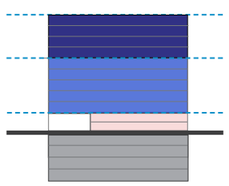
SECTION

BUILDINGS WITH DIFFERENT HEIGHT AND MASSING

ELEVATION



SECTION



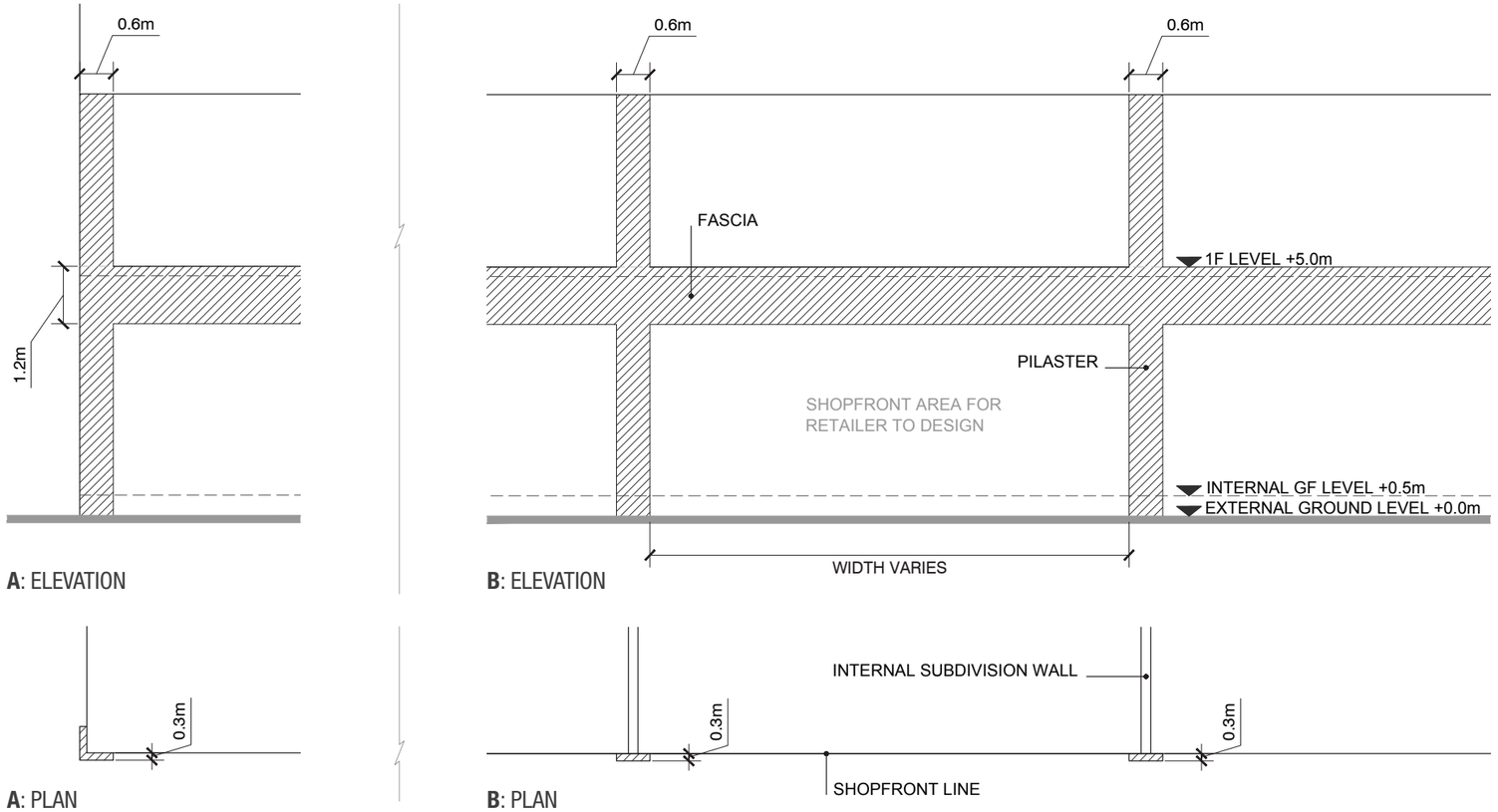
BUILDINGS SPLIT INTO 3 COMPONENTS

8.0 MUD CHARACTER

REFERENCE : MODULAR FACADE

REFERENCE : TYPICAL SHOP FRONTAGES

REFERENCE : HIGH LEVELS OF TRANSPARENCY



A: ELEVATION

B: ELEVATION

A: PLAN

B: PLAN

PODIUM LEVEL DEMARCATION

8.3 ELEVATION APPEARENCE - PODIUM

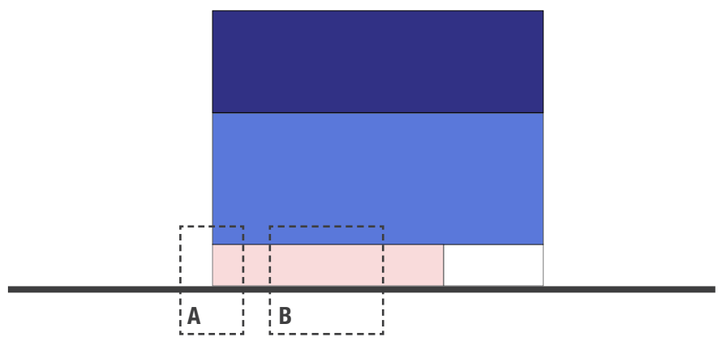
Base (Podium): A high street frontage appearance is to be provided to the ground and first floor façades to allow high levels of transparency to retail units and principal entrance areas, particularly where these face onto the main pedestrian routes. Service areas are to be minimised and where required these should be integrated with the shop-front appearance. Solid to void ratios of 15-25% are expected to be achieved for this element. Suggested materials: glazing, powder coated aluminium frames, high quality natural stone finishes.

Where ground floors are required to be subdivided, demarcation is to be controlled in order to achieve uniformity. This is to be achieved by pilasters and fascia boards in the facade design.

The width of the pilasters is to be 600 mm. and the height continuous throughout the podium levels (GF & 1F). The fascia boards are to be 120mm wide, creating a continuous horizontal band that will serve to conceal the first floor slab and accommodate the signage.

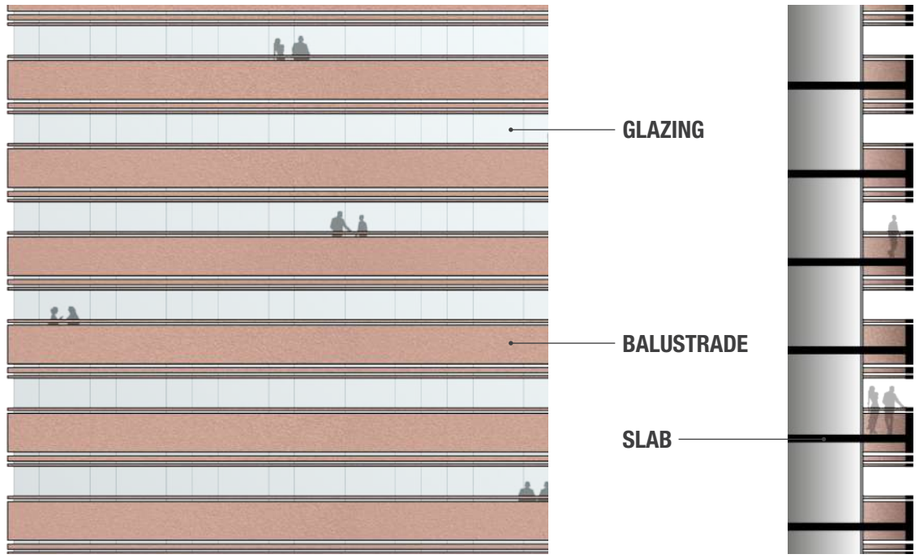
Regarding the materials, high quality natural stone finishes such as red sandstone and white marble/ceramic are suggested and consistency with the overall facade design and materiality is required.

The remaining facade area is to be flexible in design, although high levels of transparency to retail units and principal entrance areas, particularly where these face onto the main pedestrian routes is required.



PILASTERS AND FASCIAS

8.0 MUD CHARACTER



8.4 ELEVATION APPEARANCE - TOWER LOWER LEVEL

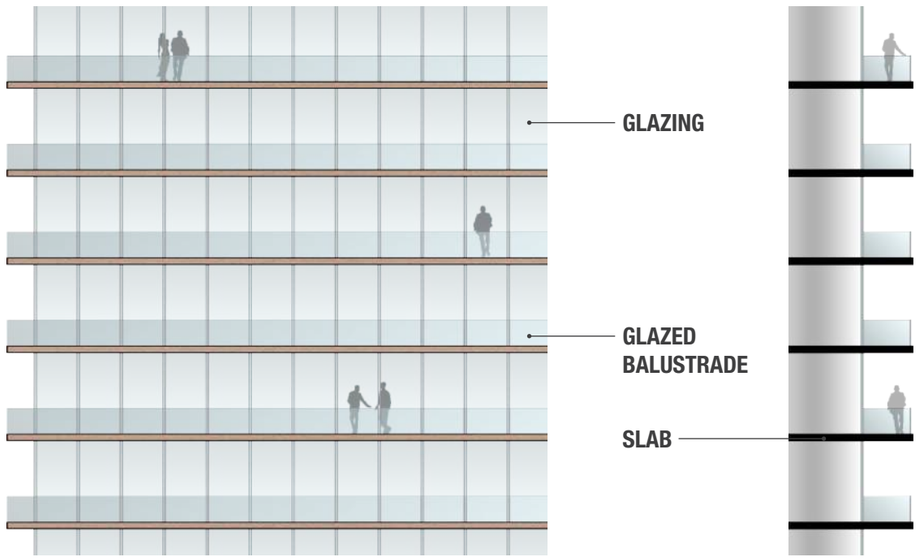
Middle (Tower Lower Level): To allow for a more solid appearance it is suggested that brise soleils systems (at least 0.5m depth) are introduced to provide solar protection as well as depth to the facade to create integrated balcony areas if required. A main facade is then to be provided behind the brise soleil element. Overall a solid to void ratios of 50-65% are expected to be achieved for this element. Suggested materials: glazing, natural stone/metal cladding systems. There are five suggested elevation types that are to be applied in the buildings.

ELEVATION TYPE A

This type is to be designed on a rhythm that enhances the horizontality of the facade. If required, balconies are to be created within the building envelope, as shown in the indicative section diagram. This type is to be applied to buildings 19, 20, 22, 23.

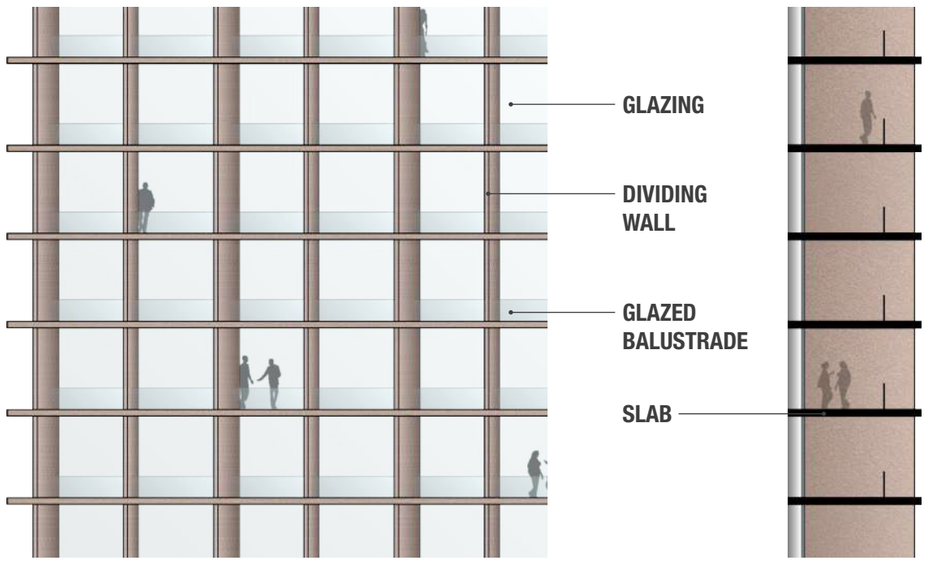
ELEVATION TYPE B

This type is to be designed with a transparent feel. A design with lightweight glazing, powder coated aluminium frames, curtain-walls and glazed balconies is suggested in order to allow for high levels of transparency and bring out the solid horizontal elements (slabs). This type is to be applied to buildings 12, 13, 15,17.

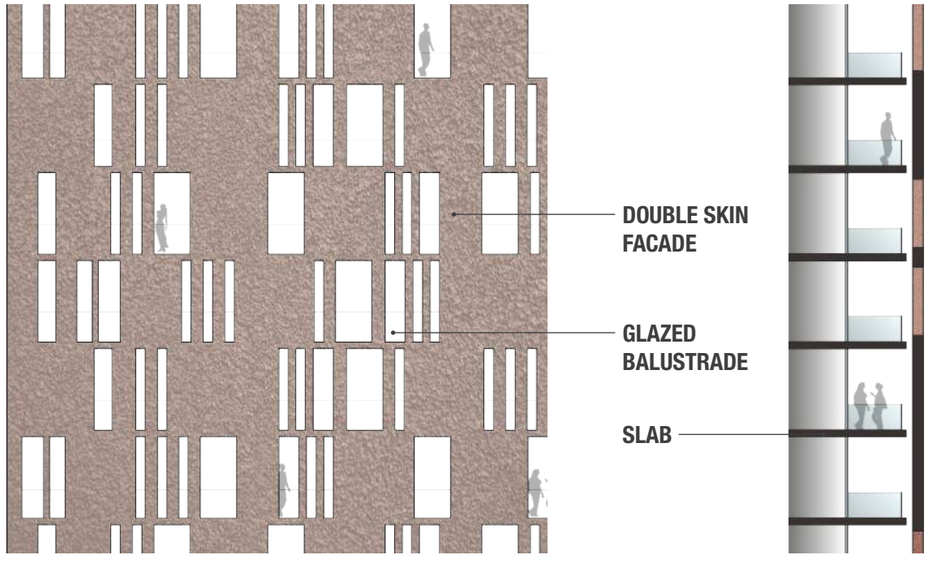


ELEVATION TYPE B

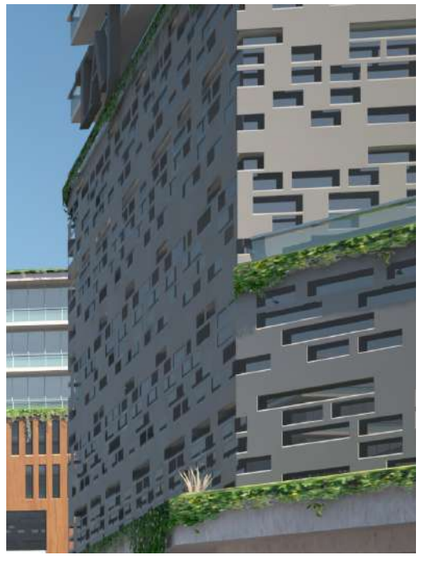
8.0 MUD CHARACTER



ELEVATION TYPE C



ELEVATION TYPE D



8.4 ELEVATION APPEARANCE - TOWER LOWER LEVEL

ELEVATION TYPE C

This type is to combine the horizontal element of the slabs with an equally solid vertical element of balcony walls. This pattern created should stand out provided that lightweight glazing will be used for the rest of the facade elements. This type is to be applied to buildings 09, 11, 21, 24, 14, 18.

ELEVATION TYPE D

This type is to be a double-skin facade with a featured pattern. High quality natural stone finishes are to be used for the exterior layer. Balconies can be incorporated in the in-between space of the double-skin, if required. This type is to be applied to buildings 25, 26, 27, 28.

8.0 MUD CHARACTER

8.4 ELEVATION APPEARANCE - RETAIL

ELEVATION TYPE E

This type is to be a highly glazed shop-front style at podium level with more opaque upper floors. This reflects the use of the malls as the internal circulation would constitute the arrangement of stores fronting internal walkways.

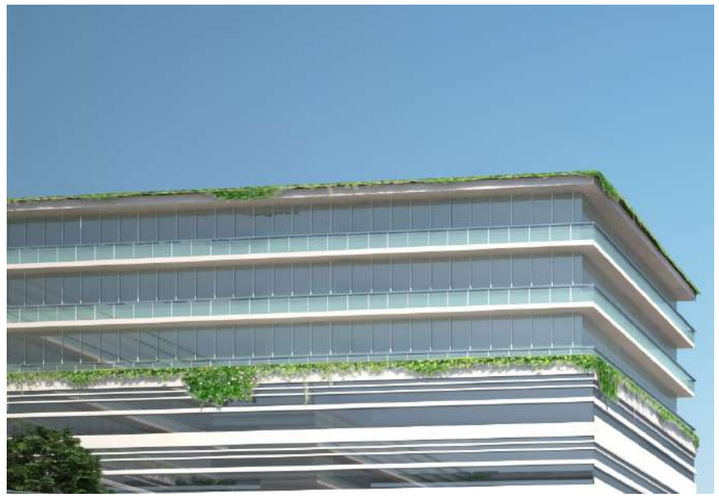
It is suggested for the open and inviting lower levels to be designed with lightweight glazing, powder coated aluminium frames and curtain walls to be in keeping with the wider language of the MUD buildings.

Opaque patterned facade systems are to be provided to create a uniform wrap to the buildings. Openings can be introduced in upper floors' elevation as small windows puncturing the facade. Where larger openings are desired they can be disguised via a double skin system with a featured pattern. Suggested materials are metal cladding systems. This type is to be applied to buildings 10, 16 and 29.

ELEVATION TYPE E REFERENCES

8.0 MUD CHARACTER

REFERENCE : LIGHTWEIGHT ROOF DESIGN



8.5 ELEVATION APPEARANCE - TOWER UPPER LEVEL

Top (Tower Upper Level): This element is envisaged to have a lightweight appearance and is based on the idea of a rooftop conservatory which counters the more solid appearance of the middle element. The design is to agree with the rest of the building regarding the design patterns and materials. Solid to void ratios of 25-40% are expected to be achieved for this element. Suggested materials: glazing, powder coated aluminium frames, natural stone/ metal cladding systems.

8.0 MUD CHARACTER

REFERENCE : CORNER TREATMENT

REFERENCE : ROOF PARAPET

8.6 ELEVATION APPEARANCE

There are two additional guidelines regarding the overall design of the MUD buildings. Within each building the following principles are to be applied:

Corner Treatments: Buildings corners are to respect the overall massing defined in the masterplan so external chamfers and projecting corner balconies are not permitted. Balconies on corners are only permitted if they are integrated within the buildings envelope as shown in the reference image, and therefore do not compromise the massing shape and facade line.

Roof Parapets: These are to be created as a glazed element with a lightweight appearance, to meet safety requirements. This is to maintain the visual control all elevations to appear to be at the same height.

8.0 MUD CHARACTER

REFERENCE : PERFORATED CONCRETE PANELS

REFERENCE : RED SANDSTONE/TERRACOTTA

REFERENCE : NATURAL STONE

8.7 MATERIAL PALLET

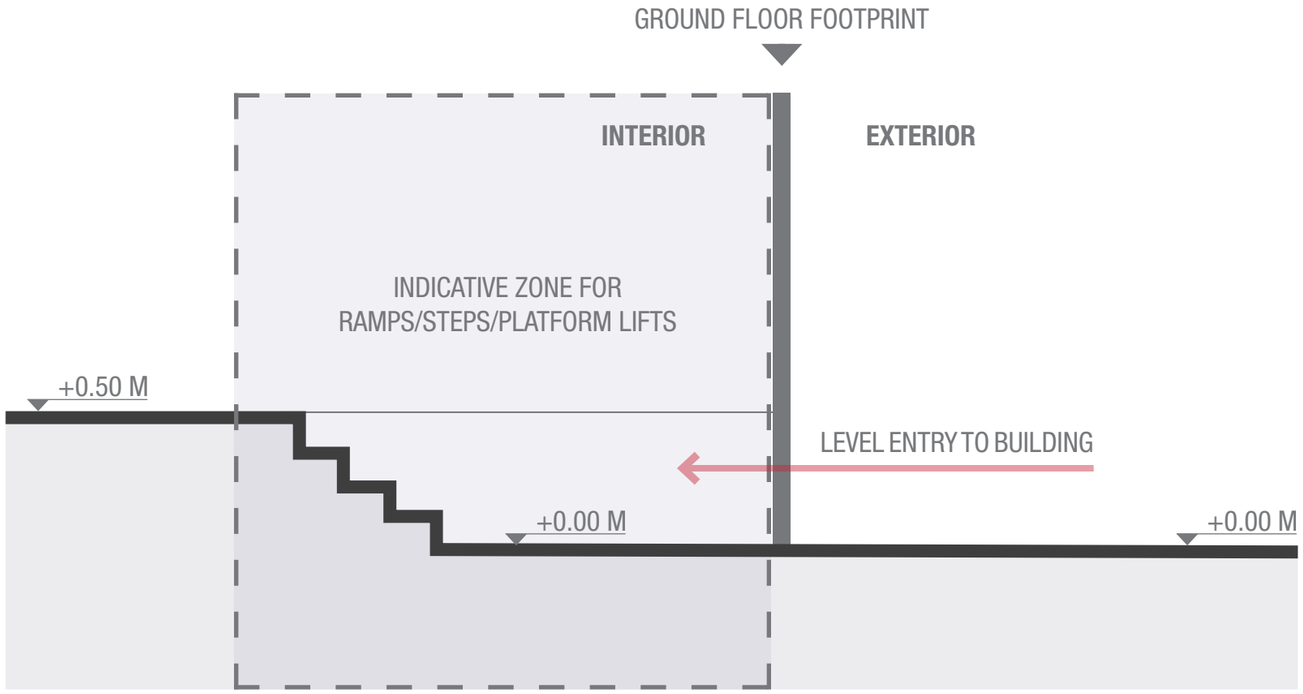
Materials and colours: Delhi has a tradition of built form dominated by masonry surfaces (red sandstone, light sandstone, marble) accompanied by bold forms. While heritage facsimiles are not sought and contemporary, high performance materials are encouraged, references to local materials and colours will help to create a coherent visual language for new development. Suggested materials include high quality natural stone finishes such as red sandstone and white marble/ceramic. Patterns are encouraged as part of the facade design to help provide a language for openings and solar protection.

All materials should be selected in accordance with IGBC requirements and are to have a high SRI limit.

REFERENCE : FACADE PATTERNS

REFERENCE : DOUBLE SKIN FACADE

8.0 MUD CHARACTER



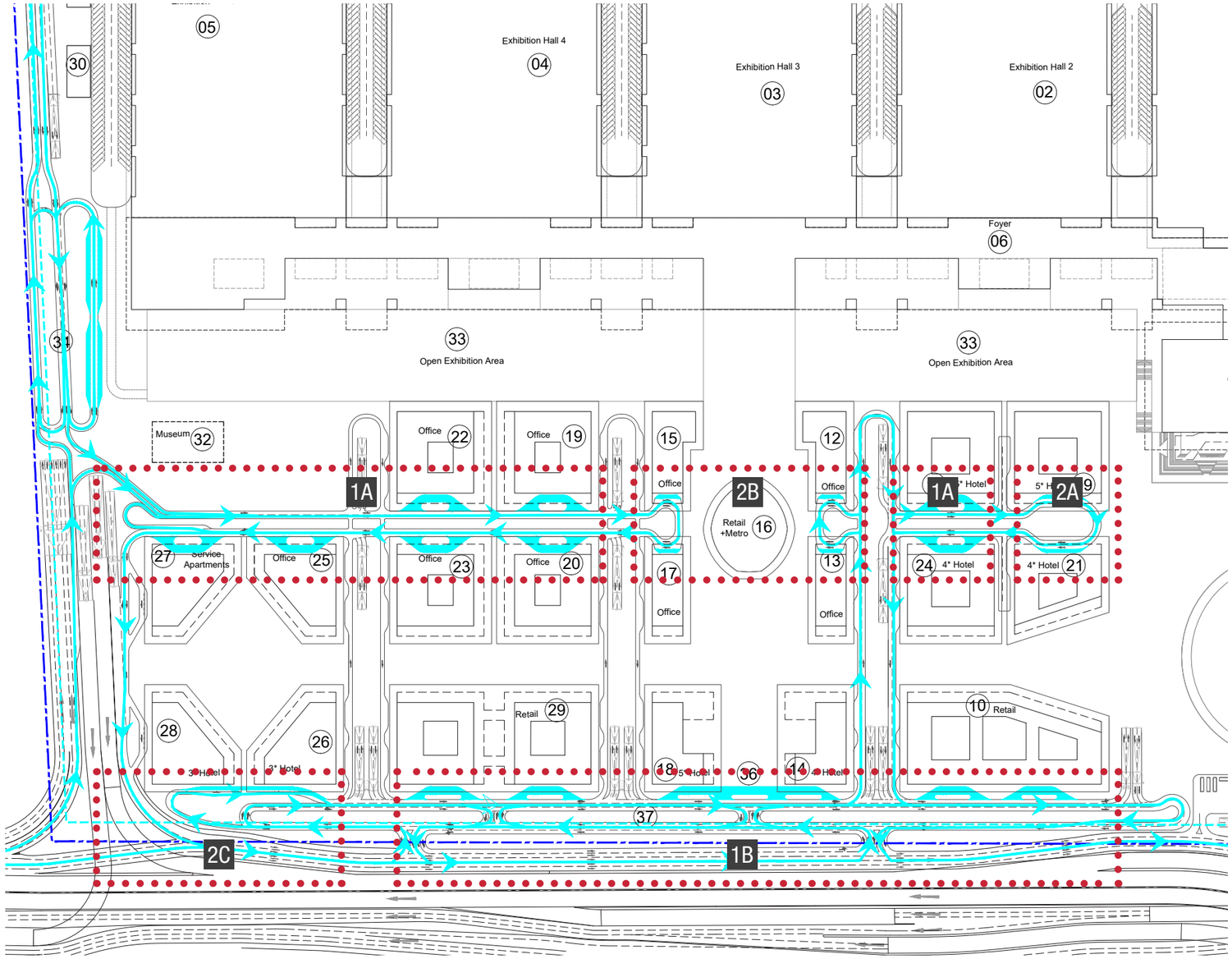
SECTION DIAGRAM

8.8 RAMP/STEPS/LIFTS AT ENTRANCES

The ground floors of all MUD buildings are to be raised by 0.5m above the external pavement level to mitigate against flooding impact. Accordingly all buildings will require steps/ramps/platform lifts at entry/exit points to meet the requirements of universal accessibility for physically disabled.

It is intended that all these elements are to be located within the extents of the ground floor footprint and behind the main facade line. Hence an area of the ground floor slab at the respective entry/exit points will be required to be lowered to allow the level threshold between the exterior and interior. The extents of this lower slab level will be dependant on the internal configuration of the buildings to meet the developers requirements, however the extents should be minimised as far as possible.

8.0 MUD CHARACTER



8.9 MAIN DROP OFF ZONES

Circulation within the masterplan is designed to create a pedestrian friendly environment. Parking has therefore been excluded at ground level and is located within 4 levels of basement, access is provided by common ramps near each building.

To allow for vehicular access, drop off bays are located along the streets at ground floor level. Each building is provided with 2 drop off bays: one drop off to the main elevation for Front of House activities, and a secondary servicing drop off bay to the side elevation.

This page addresses the different types of main drop off bay for each building. Positioned along the primary elevation, they are to be used by taxis, private cars and small coaches only. As the bays vary slightly in design and dimension, they have been divided into two types: type 1 and type 2.

Type 1 has two variations; 1A & 1B, while type 2 has three variations; 2A, 2B & 2C.

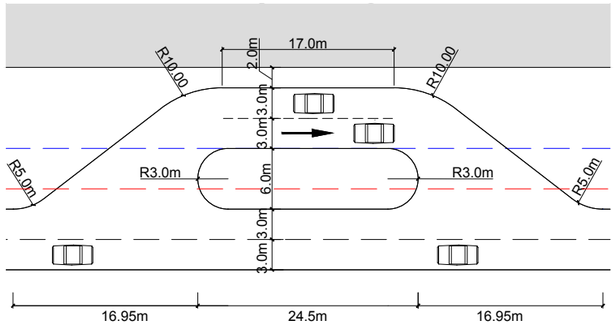
DROP OFF MATERIALS PALETTE

All islands created as part of drop off zones are to follow the landscaping hardscape strategy which generally defines the material as Linear granite paving.

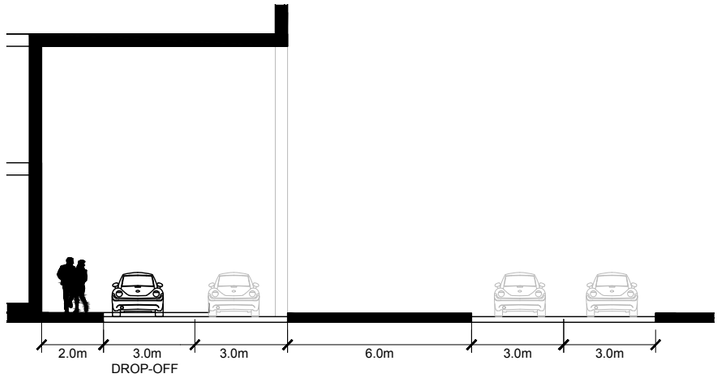
LEGEND:
MAIN CIRCULATION
TAXI & MAIN DROP OFF

8.0 MUD CHARACTER

1A: DROP OFF UNDER COLONNADE



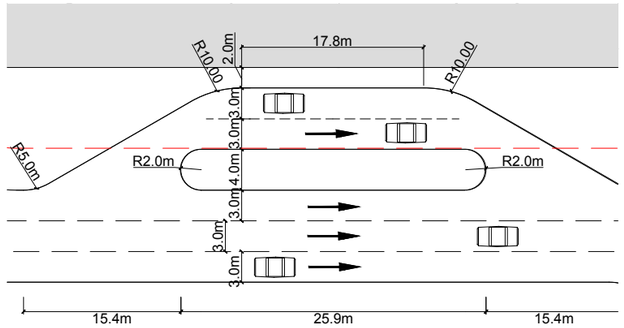
PLAN



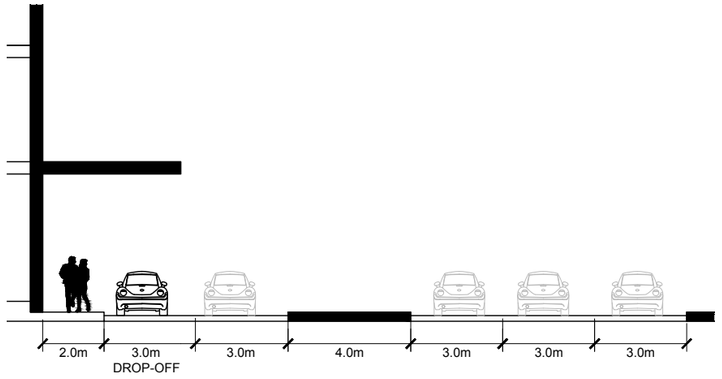
SECTION

REFERENCE IMAGE

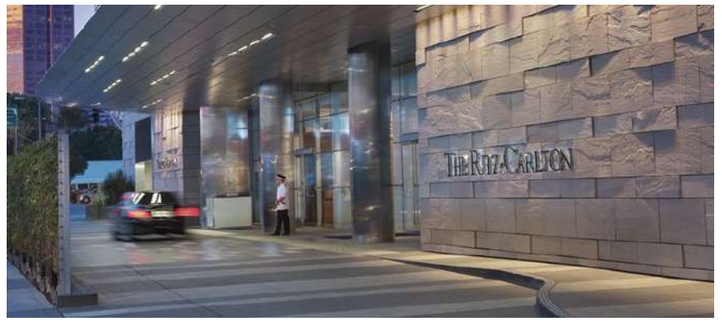
1B: DROP OFF UNDER CANOPY



PLAN



SECTION



REFERENCE IMAGE

8.9 MAIN DROP OFF ZONES

Type 1: is a typical drop off bay configuration. The bay is positioned 2m from the front of the building, the road is 6m wide allowing for 2 lanes that connects with the main circulation.

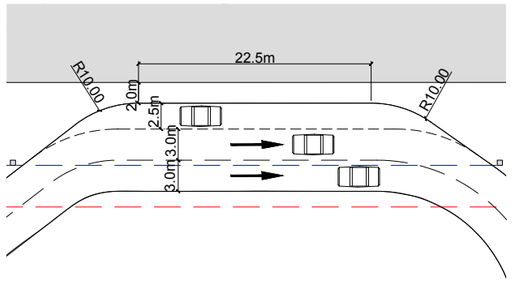
Type 1A: the drop off lane is allocated beneath the buildings colonnade (e.g Plot 19). It is to be noted that supports for the colonnade cannot interrupt the road, therefore additional support is needed.

Type 1B: the drop off lane is located beneath a suspended canopy (e.g Plot 10B).

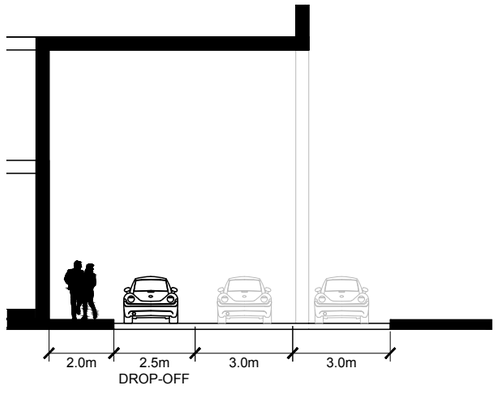
LEGEND:
- BUILDING
- UPPER FLOOR PROJECTION
- VEHICULAR DROP-OFF CANOPY
- PLOT BOUNDARY

8.0 MUD CHARACTER

2A: DROP OFF UNDER COLONNADE



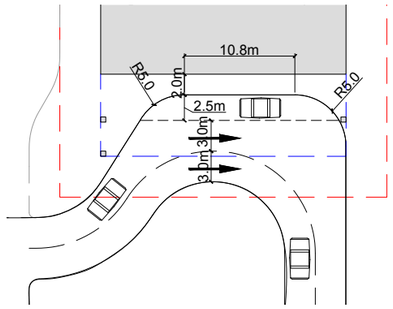
PLAN



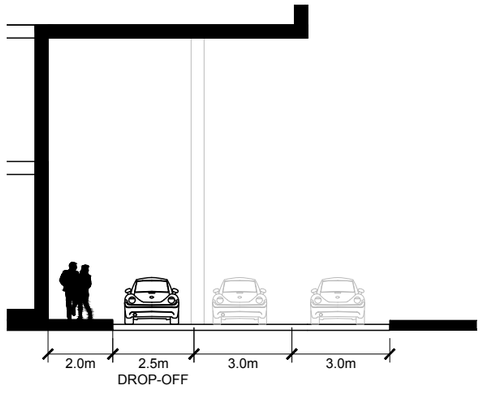
SECTION

REFERENCE IMAGE

2B: DROP OFF UNDER COLONNADE



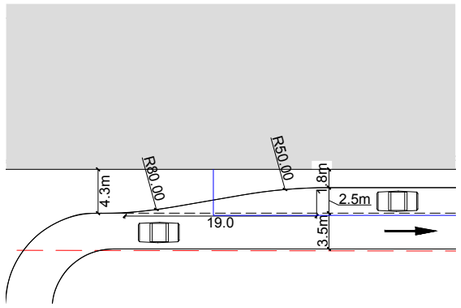
PLAN



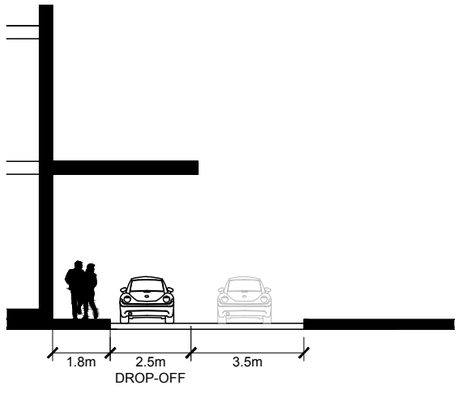
SECTION

REFERENCE IMAGE

2C: DROP OFF UNDER CANOPY



PLAN



SECTION

REFERENCE IMAGE

8.9 MAIN DROP OFF ZONES

Type 2: drop off bays are integrated into the main circulation of the MUD area, and have a variation of road lengths. The bays are positioned approx 2m from the front of the building with an allocated drop off lane of 2.5m in width. Unlike type 1 drop off zones, these do not have median to separate the drop off area from the main road, but rather serve as a direct taper from the main road.

Type 2A: the drop off lane is located beneath the colonnade (e.g Plot 09). It is to be noted that supports for the colonnade cannot interrupt the road, therefore additional support is needed.

Type 2B: the drop off lane is located beneath the colonnade (e.g Plot 15). It is to be noted that supports for the colonnade cannot interrupt the road, therefore additional support is needed.

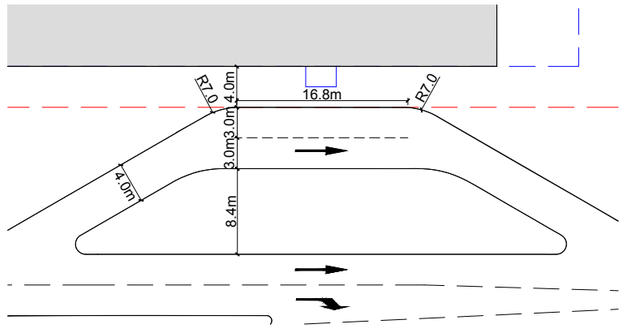
Type 2C: the drop off lane is located beneath a suspended canopy (e.g Plot 28).

LEGEND:
- BUILDING
- UPPER FLOOR PROJECTION
- VEHICULAR DROP-OFF CANOPY
- PLOT BOUNDARY

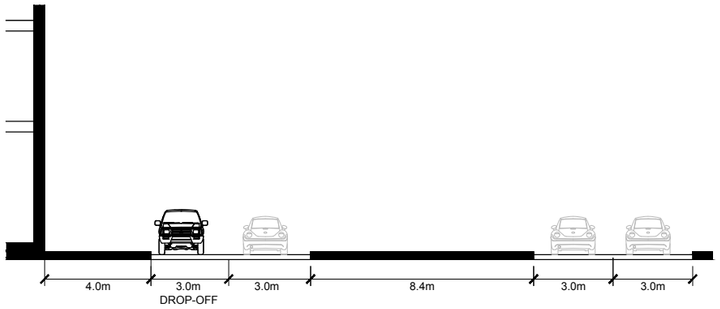
8.0 MUD CHARACTER

8.10 SERVICE DROP OFF ZONES

3A: SERVICE DROP OFF

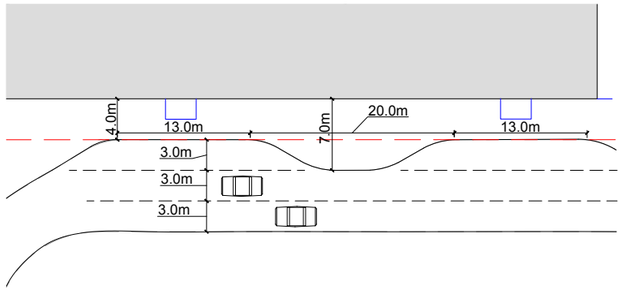


PLAN

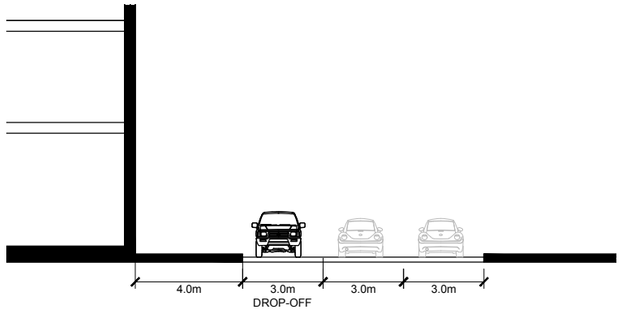


SECTION

3B: SERVICE DROP OFF



PLAN



SECTION

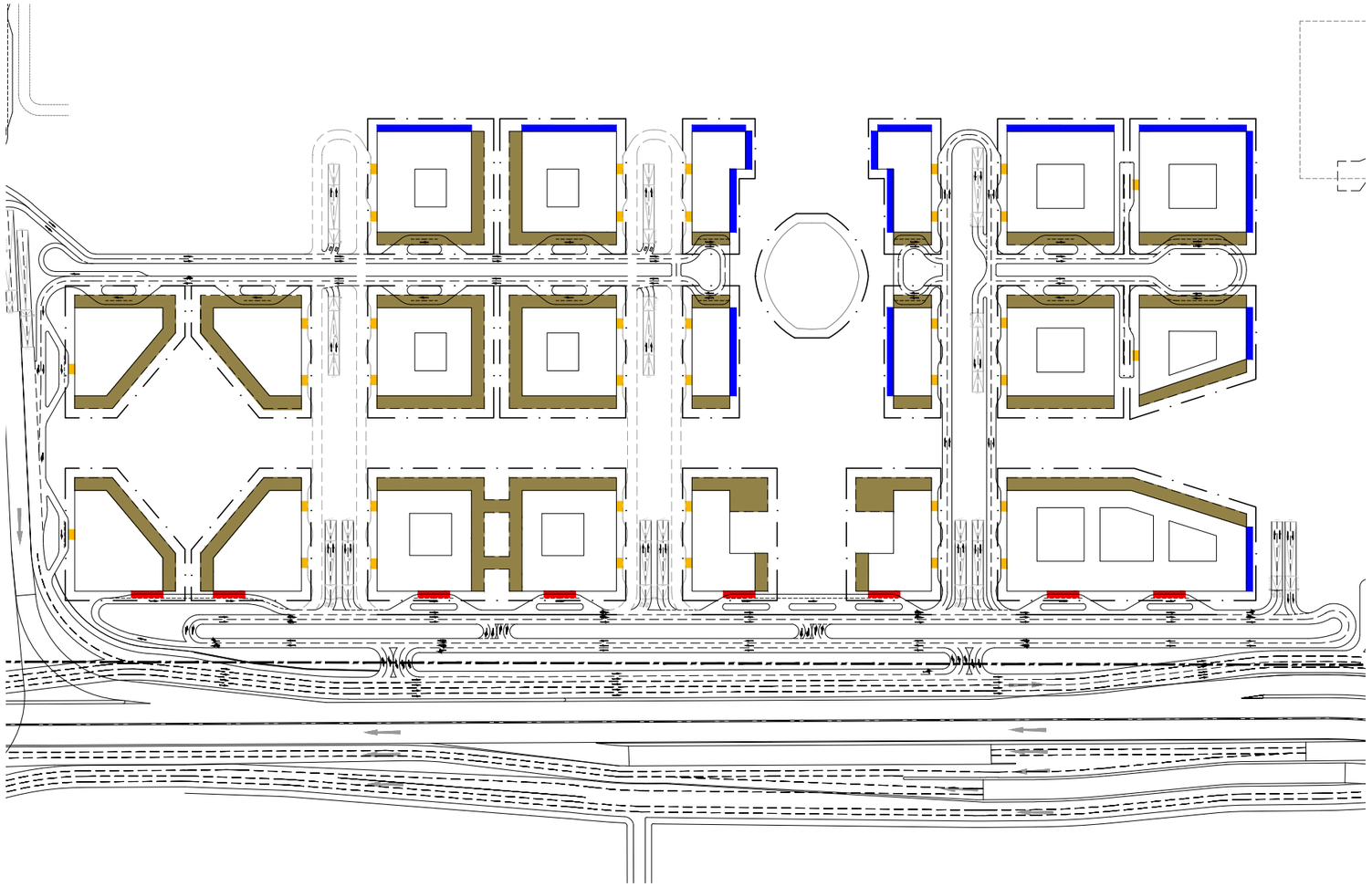
Service drop off

Service and maintenance vehicles can enter the site through the Dwarka Expressway access or the Arterial road access. Each building within the MUD area has a designated drop off zone for services, these are located along the Eco lanes which sits perpendicular to the main road. These lanes are strictly for trucks, lorries or vans making deliveries to the buildings within the MUD area. They will be controlled and only allowed to be used at certain times of the day. They follow a cul-de-sac or dead end distribution, being wide enough to offer a safe 180 degree turn in order to go back to the main road and exit the site.

There are two types of service drop off bays, type 3A and 3B. Type 3A provides a single bay for delivery vehicles for buildings 27 and 28. All other buildings have a type 2 service bay that connects directly to a main roadway.

Both service drop off zones are offset 4 meters from the building. For Type A, the drop off zone is 17 m in length with a lane width of 2.5m. For Type B, the drop off zones are to have a length of 13 m and a lane width of 3m.

LEGEND:
- BUILDING
- UPPER FLOOR PROJECTION
- VEHICULAR DROP-OFF CANOPY
- PLOT BOUNDARY



LEGEND:
COLONNADE
VEHICLE DROP-OFF CANOPY
AWNINGS
PEDESTRIAN CANOPY

8.11 CANOPY TYPES

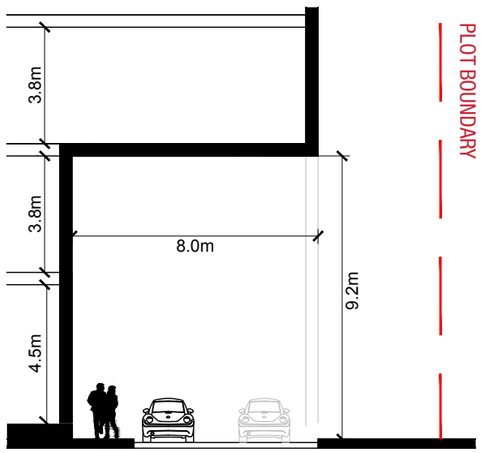
In response to the climate, shading solutions are considered an essential aspect of building design within the masterplan. 4 types of canopy protection elements are proposed: colonnades, canopy for vehicle drop-off, pedestrian canopy and awnings. These are positioned according to key routes, access points and building use.

Every building has been designed with a double height colonnade along at-least one main elevation. Where there is no colonnade but is a main access/egress point, a permanent canopy is proposed. The style and length of canopy is determined by the use of the entrance, be it a vehicle drop off or smaller pedestrian entrance. Lastly, an awning is proposed along elevations where none of the above is applicable. These are mainly along the open exhibition area and surrounding the metro station.

All types of canopy are mandatory and are only permitted in the positions shown, this is to allow for regularity and unity within the overall aesthetic of the MUD area. Height restrictions, projections and styles for each style of canopy are set out within the following pages.

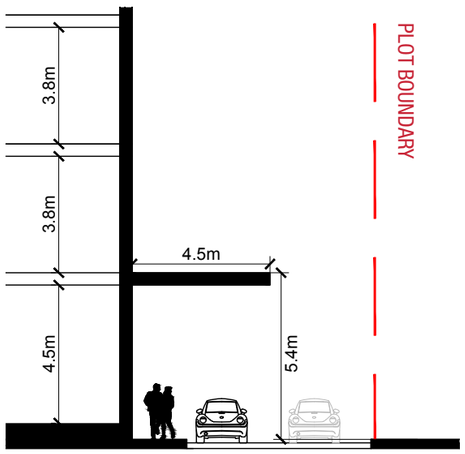
8.0 MUD CHARACTER

COLONNADES



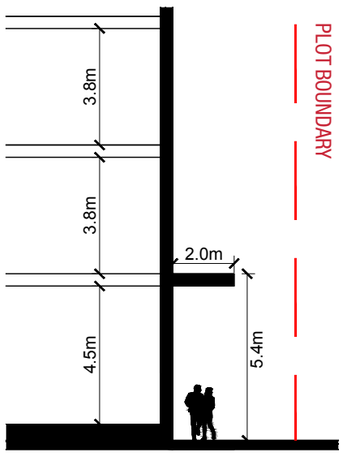
TO BE USED FOR VEHICLE DRO P-OFF AND/OR PEDESTRIAN MOVEMENTS

VEHICLE DROP-OFF CANOPY



TO PROVIDE SHELTER TO VEHICLE DROP-OFF BAYS

PEDESTRIAN CANOPY



TO PROVIDE PROTECTION OVER SECONDARY PEDESTRIAN ENTRANCES

8.11 CANOPY TYPES

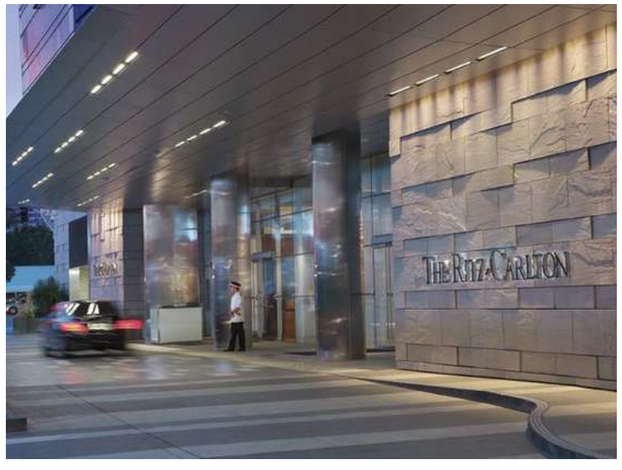
Colonnades are designed as double height spaces within the buildings envelope, and have the mandatory dimensions of 8m in depth and 9.2m in height.

Every building also has 2 types of external canopy for vehicular drop off areas and pedestrian entrances, this allows for the framing of key entrance points and protection from the elements. To ensure a continuous canopy is not created around the entire facade, canopy dimensions are restricted.

Vehicle drop-off canopy: For a vehicular drop off bay, canopies are restricted to a maximum of 25m in length. They are to be designed to sit in harmony with the overall appearance of the facade design, and are to be cantelivered as per the reference image shown. Heights are to not exceed ground floor level and therefore have the mandatory dimensions of 5.4m to the top of the canopy. Only 1 is permitted for each main drop off bay.

Pedestrian canopy: For additional entrances, a smaller pedestrian style canopy is specified. These will only be permitted in the positions shown on the previous page; located within the Eco Lanes for service entrances. Dimensions are restricted to 3m in length and 5.4 in height. A maximum of 2 are permitted per elevation.

REFERENCE : COLONNADE



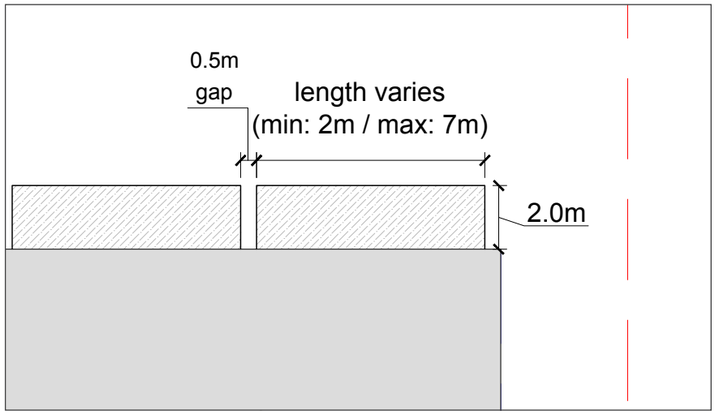
REFERENCE : VEHICLE DROP-OFF AREAS CANOPY

REFERENCE :PEDESTRIAN ENTRANCES CANOPY

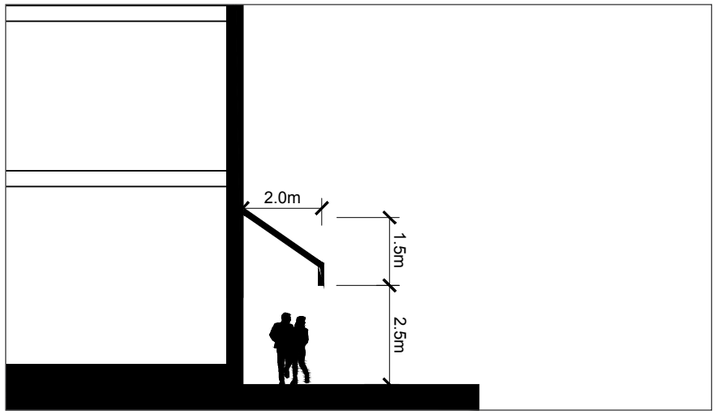
8.0 MUD CHARACTER

8.12 AWNINGS

RETRACTABLE AWNING



AWNING PLAN



AWNING SECTION

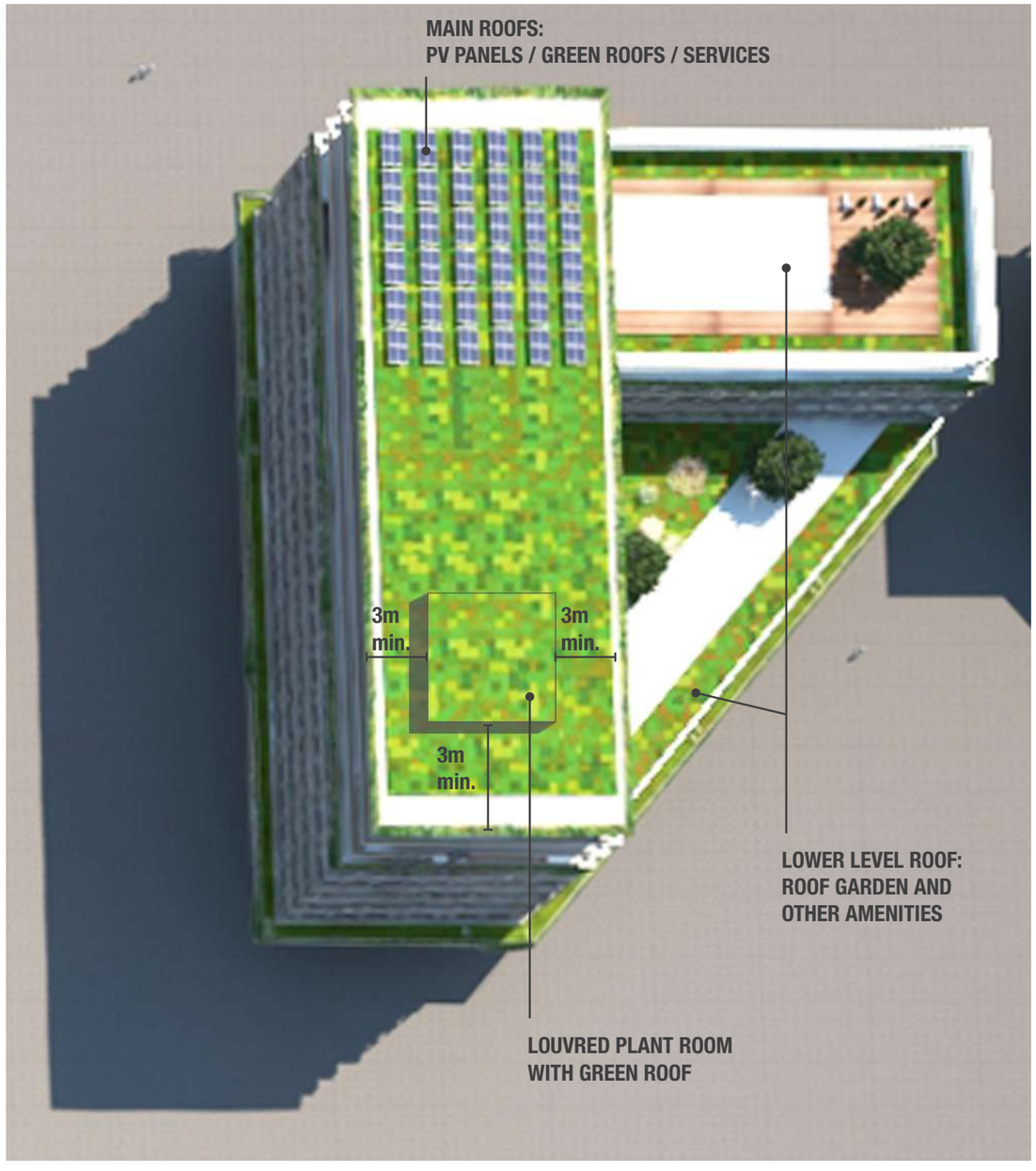
Awnings: Retractable awnings are only permitted in the positions shown previously. They are to be of high quality, integrated within the shop front design as shown in the reference images. The overall width of the awnings and the amount per elevation are not restricted, however to ensure a consistency throughout the site some controls apply. Awnings must be of the sloped variety and cannot project more then 2m from the building. They are to be made of a light weight, waterproof, durable material such as an acrylic or polyester fabric. The awnings are to have a set incline of at least 30 degrees in order to allow rain water to run off. They are to be RAL-7032 (“pebble grey”) colour with a matte finish that allude to the individual buildings overall character.

The maximum width of the awnings can vary for each building, however it is imperative that the length of the awnings on any one elevation are the same, this is to ensure a regularity within the aesthetic of the overall MUD area. The distance of the top of the awning from ground level can not exceed 4.0 m. The max height of the awning structure is to be no more than 1.5 m. The minimum height of the bottom of the awning to ground level is 2.5 m.

REFERENCE : AWNING

REFERENCE : AWNING

8.0 MUD CHARACTER



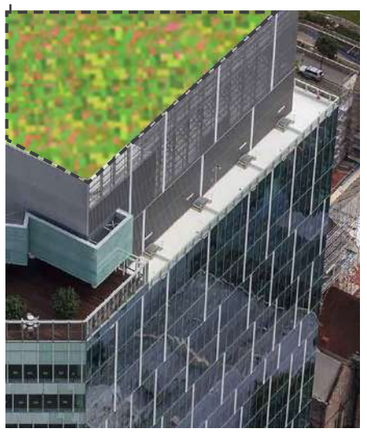
INDICATIVE ROOF STRATEGY

8.13 ROOF / TERRACE DESIGN

Primarily each building within the MUD has a main roof (top level) which is to be used for the mandatory installation of PV panels alongside any specific building services equipment. The intent is for the majority of the main roof surface to be covered using a green roof system. Where building services equipment is to be installed these are to be contained within a metal louvred structure that is also to have a green roof. This is to hide the equipment so it is not visible from above or from adjoining buildings, and provides acoustic protection for noisy machinery. All rooftop installations are to be set back from the perimeter by at least 3m.

Within the MUD area, the design of certain buildings result in a number of roof elements. Low level roofs can be utilised by terraces and gardens if required. These roofs should not contain any building services equipment or PV panels. They are to be used to create roof gardens, open swimming pools, and spaces like terrace cafés/restaurants. Lightweight fabric or open trellis structures are permitted on these lower levels. Any additional structure cannot exceed a maximum height of 2.4m, parapets are to be flush and an extension if the existing facade. Any covering/protection should be in materials such as canvas, ETFE, and glass.

ALL PLANT ROOMS ARE TO BE CONCEALED BENEATH GREEN ROOFS



REFERENCE: PLANT ROOM SCREENING

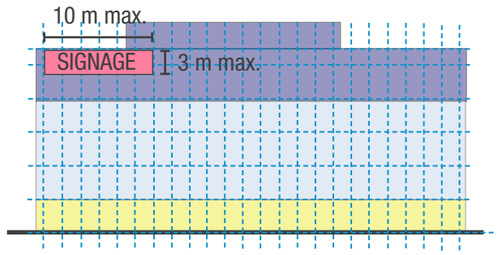
REFERENCE: LOWER LEVEL ROOF AREA WITH LIGHTWEIGHT SHELTER

8.14 WINDOW CLEANING SYSTEMS

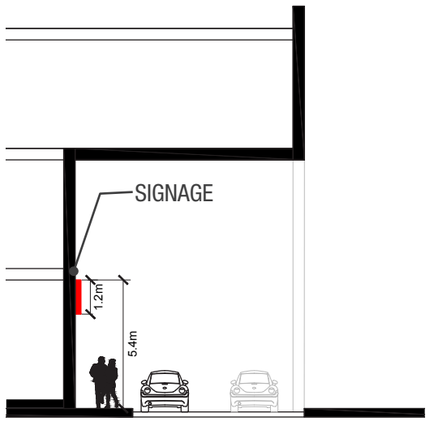
Where possible, the need of window cleaning from the outside should be avoided. However, if the installation of window cleaning equipment, such as suspension systems on the roof is necessary, the following restrictions will apply.

All equipment are to be demountable and to be stored on site so to be concealed from view when not in use. If stored on roof, then when not in use it should be fully stored within the services enclosure.

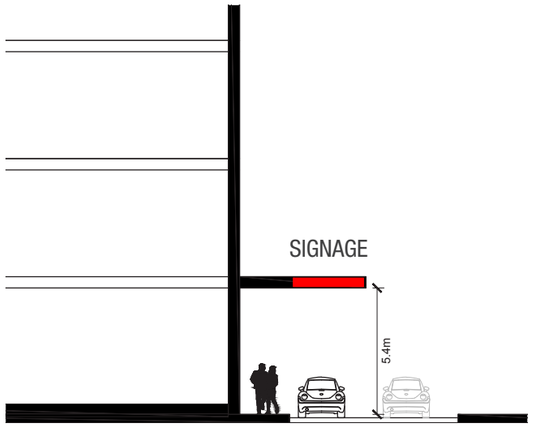
8.0 MUD CHARACTER



BUILDING SIGNAGE



CONTINUOUS SHOP FRONT SIGNAGE



CANOPY SIGNAGE

8.15 SIGNAGE

Advertising signs on buildings will be permitted as follows:

Building Signs: Large scale signs are to be located within the last level of each building, and have a maximum of 3m height x 10m width. Illuminated signs are permitted, and only one sign is allowed per elevation. Signs to be positioned in corners or central to elevation.

Shop Front Signs: It is anticipated that multiple retail units will be established on the lower levels of the buildings. As part of the shop frontage signage is to be integrated within the individual facade design. A continuous signage zone of 1.2m in height is permitted, with a max height of 5.4 from ground level.

Canopy Signs: Signage is also permitted on external canopies, which are to be integrated within the overall canopy design as per the reference image. Signs must be non-illuminated and of 0.5m maximum height.

REFERENCE

REFERENCE

REFERENCE

8.0 MUD CHARACTER

REFERENCE: MUD BUILDINGS LIGHTING

REFERENCE: COLONNADE PENDANT LIGHTS

REFERENCE: COLONNADE LIGHTING

8.16 LIGHTING

External lighting for all MUD area buildings is to be strictly controlled. Illumination of façades using external light fittings mounted to the ground, roof or any other parts of the elevation is not permitted. Internally buildings are to be designed to have subtle internal lighting to avoid excessive light pollution.

Ground floor areas around the building are to be illuminated in accordance with the public realm, incorporating light fittings as prescribed. Please refer to section 4 for further details.

Regarding the colonnade lighting, in order to achieve uniformity and an impression of continuity, only one product is to be used in all buildings of the M.U.D. and the spacing between the lights is to be exactly the same in all cases. This product must comply with the following requirements:

Mounting: Pendant

Shape: Cylindrical

Lamp Code: LED

Material: Stainless steel or aluminium top and safety glass bottom

Reflector material: Pure anodised aluminium

Colour Temperature: Neutral (4000 ºK)

Colour Rendering Index: 80

Average light level: 30 lux

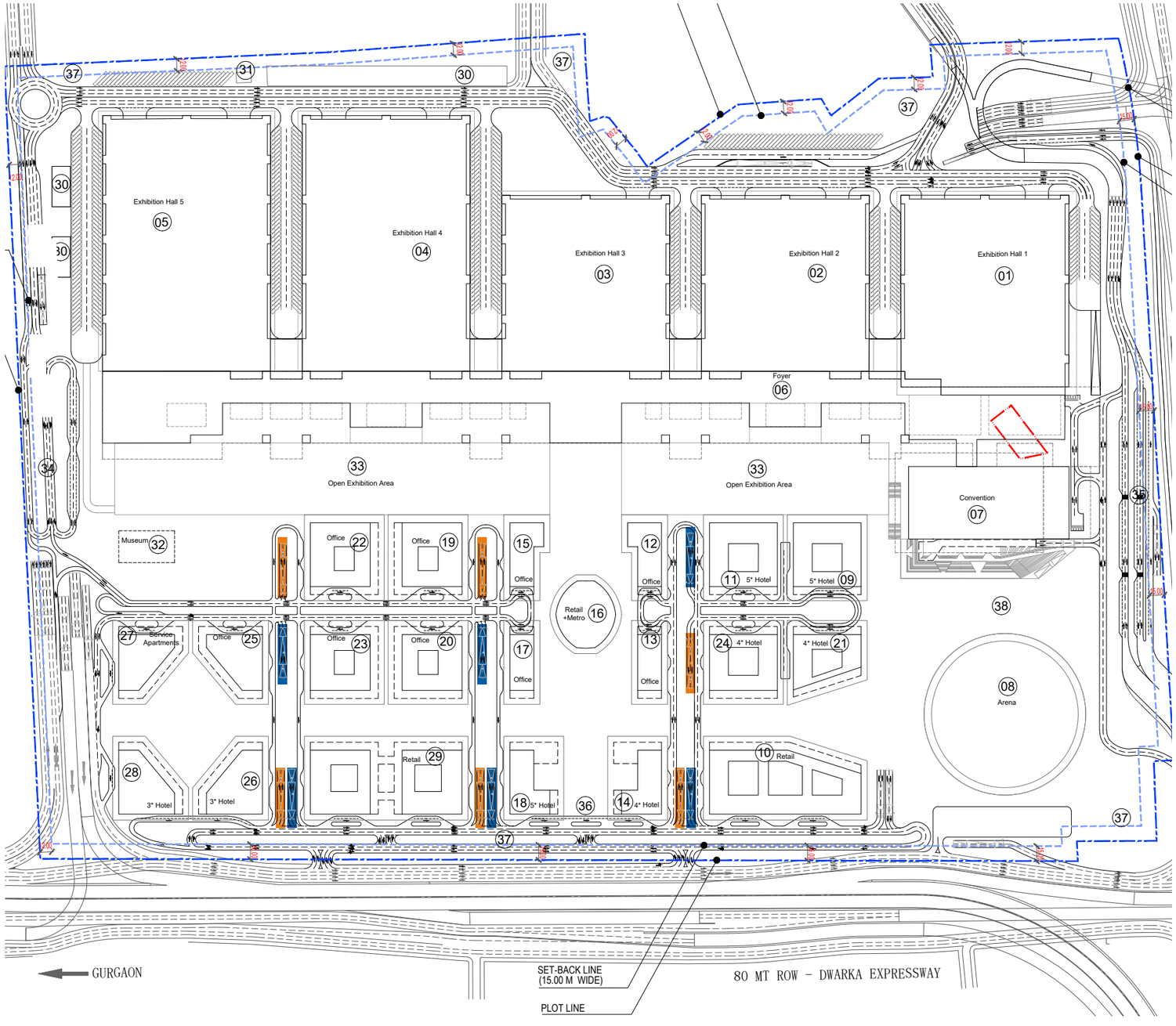
Protection Class: Waterproof

All lighting is to be designed to meet IGBC requirements to reduce light pollution through outdoor lights, to increase night sky access and enhance nocturnal environment.

8.0 MUD CHARACTER

8.17 RAMPS

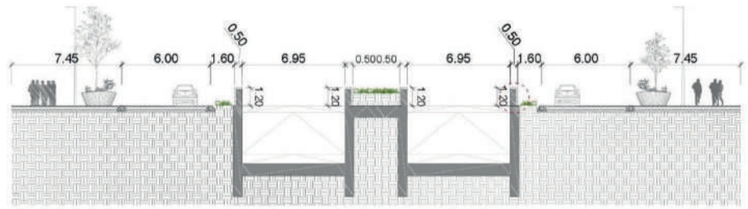
Parking has been excluded at ground floor level, dedicated parking areas have been provided for the MUD within 4 levels of basement. Access is provided by common ramps located along each of the eco lanes.



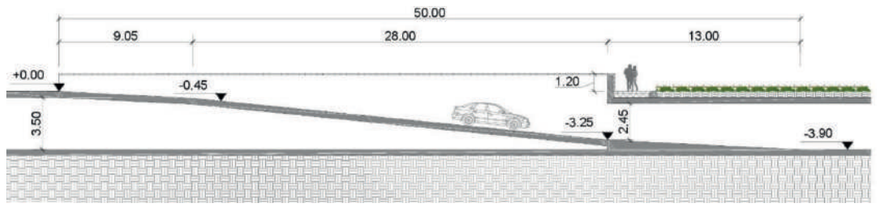
REFERENCE: RAMPS INTO BASEMENT PARKING

LEGEND:
MUD basement access ramp
MUD basement egress ramp

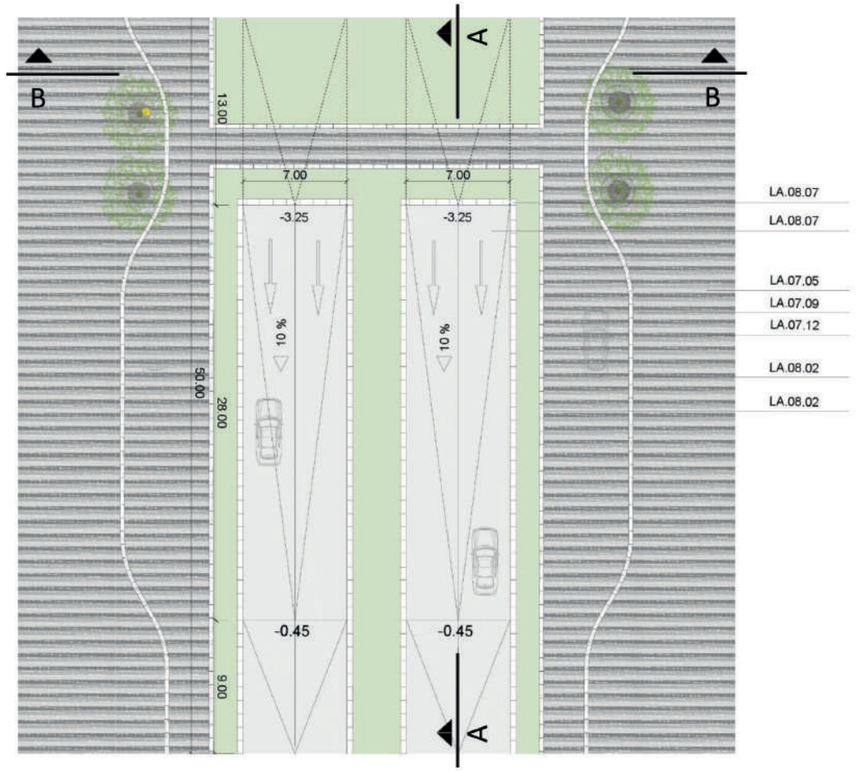
8.0 MUD CHARACTER



TRANSVERSAL SECTION



LONGITUDINAL SECTION

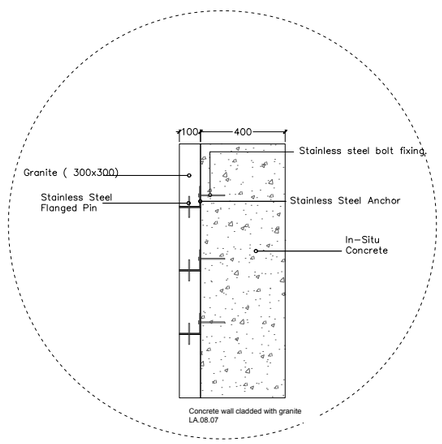


PLAN

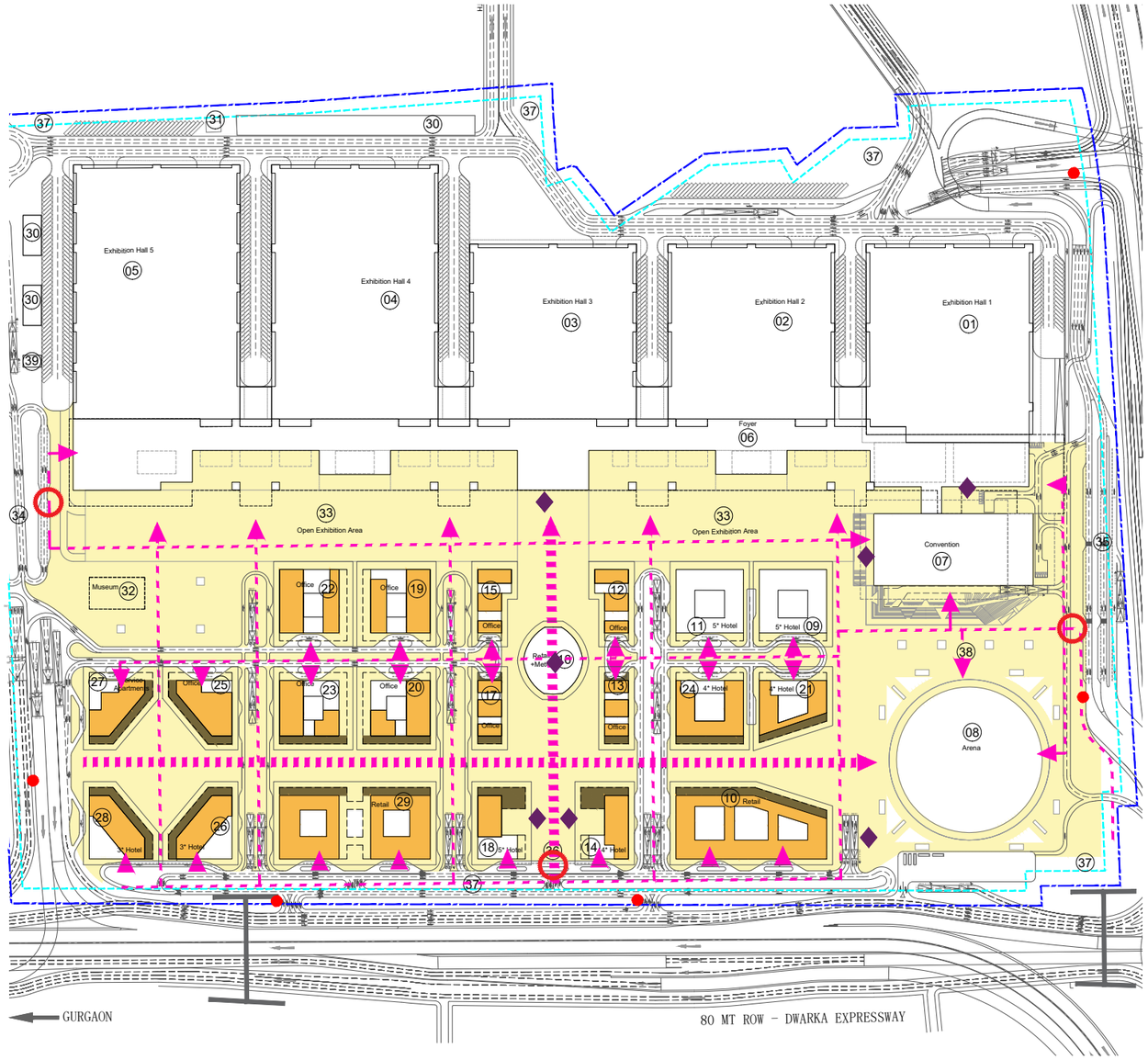
8.17 RAMPS

All ramps within the site will have the same appearence and finishes, therefore the MUD ramps are to follow the same design principles which are as follows:

- Overall length of 50m
- 10% incline
- Width of 7m
- 1.2m high barrier surrounds each ramp for safety, constructed of concrete and cladded with granite.
- Road constructed from white asphalt



CONCRETE WALL CLADDED WITH GRANITE
SECTION A



LEGEND

- IICC Site Boundary
- Set Back Line
- Pedestrian Zone
- Pedestrian Drop Off
- Pedestrian Access Points
- Metro Access Points
- Buildings Main Entry/Exit
- Primary Pedestrian Circulation
- Underground Crossing
- Retail Frontage Under Colonnade
- Podium Retail

8.18 MANDATORY RETAIL FRONTAGES

RETAIL FRONTAGE AND PODIUM RETAIL

The proposal includes a retail boulevard to be created as part of the Mixed Use area, and accordingly the mandatory retail frontage requirements are shown in the diagram to ensure this area is activated with retail units such as shops and restaurants.

9.0 BUILDING ELEMENTS

9.0 BUILDING ELEMENTS

OVERVIEW

Plan diagrams indicate the mandatory design requirements and summarize the general design implementation for each individual building.

The plot size, setback lines, ground coverage and drop-off bays are fixed and directly derive from the general arrangement guidelines of the masterplan. Compliance of the final design and construction with these guidelines is mandatory.

Primary and secondary frontages are as shown in the following diagrams and correspond to the main access routes in the masterplan. Accordingly, primary frontages should be used for main entrances and other Front Of the House (FOH) uses only, particularly when glazing is used.

Vehicle access is via dedicated drop-off bays at the roadside, with parking provided at the basement (Levels -01 to -04).

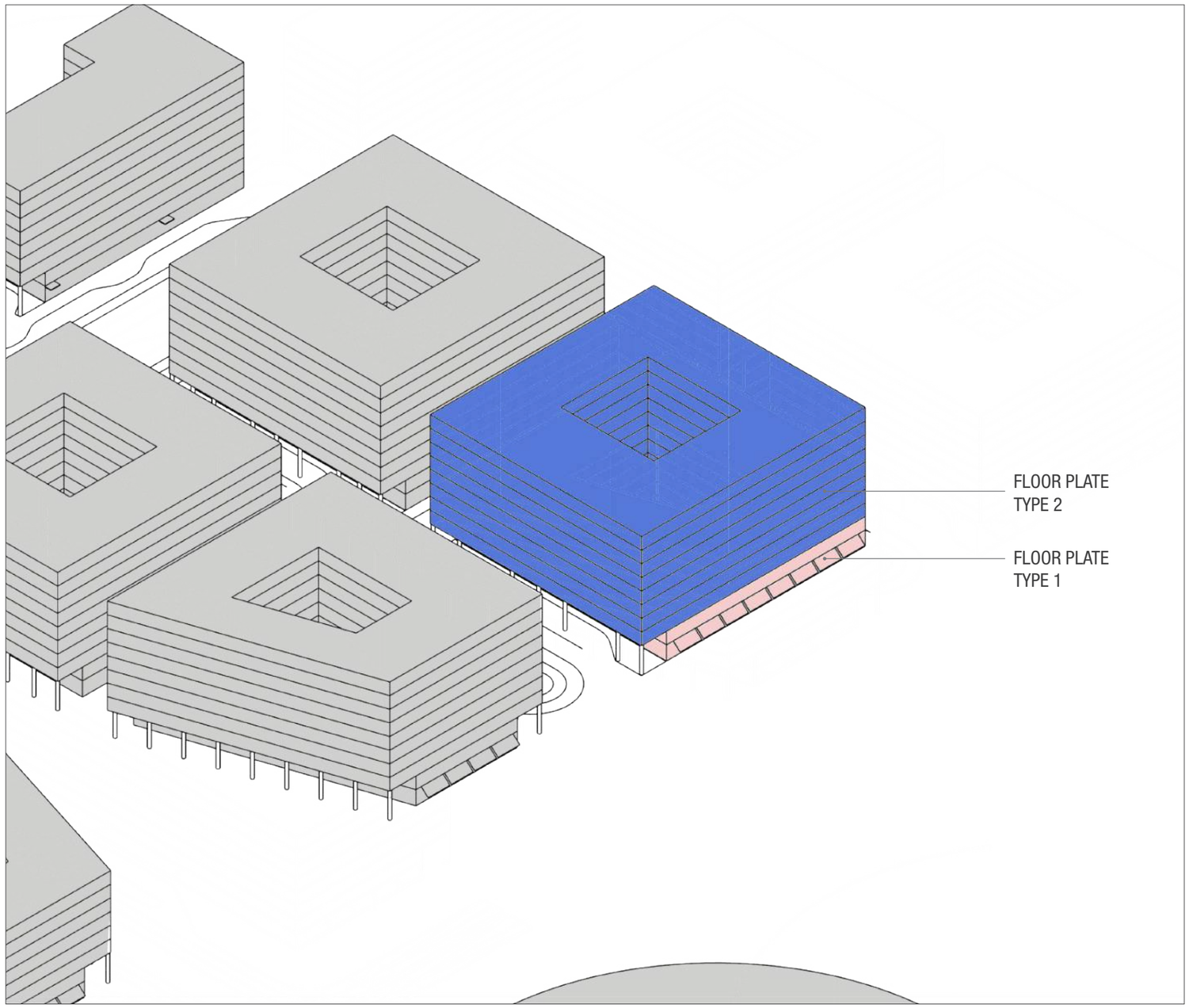
Landscaping is required to cover the open spaces (setback area) in between the building block and boundary line for each individual plot. Please refer to the public realm section 4.0 for landscaping details.

The setback areas are required to be kept open and free from built spaces as defined within the Local Building Byelaws: UBBL 2016 for Delhi. No construction (built structures),other than: entrance canopies (of defined max height and size), sunshade protections (up to 750 mm width), roads, pathways, greens or lawns are allowed in these specified setback areas.

Each buildings main roof (top level) will be used for the mandatory installation of PV panels, alongside any specific building services equipment. An area of the roof space for the solar panels has been allocated for each building, this area corresponds to the overall sustainability guidelines for the project. The dimensions of the PV panels are 1x1.95m, and will be orientated south. The remaining roof area will be flexible in programme.

Please, refer to the general design guidelines of the M.U.D. area for further details.

9.0 BUILDING ELEMENTS



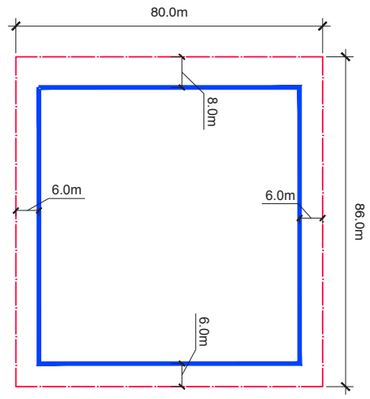
9.1 PLOT 09 - HOTEL 5*

GENERAL OVERVIEW

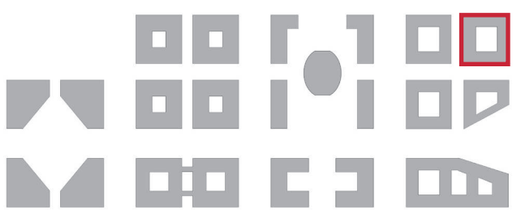
Building No.09 is to be used as a 5* hotel.

Plot No.09 is located on the northwest side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

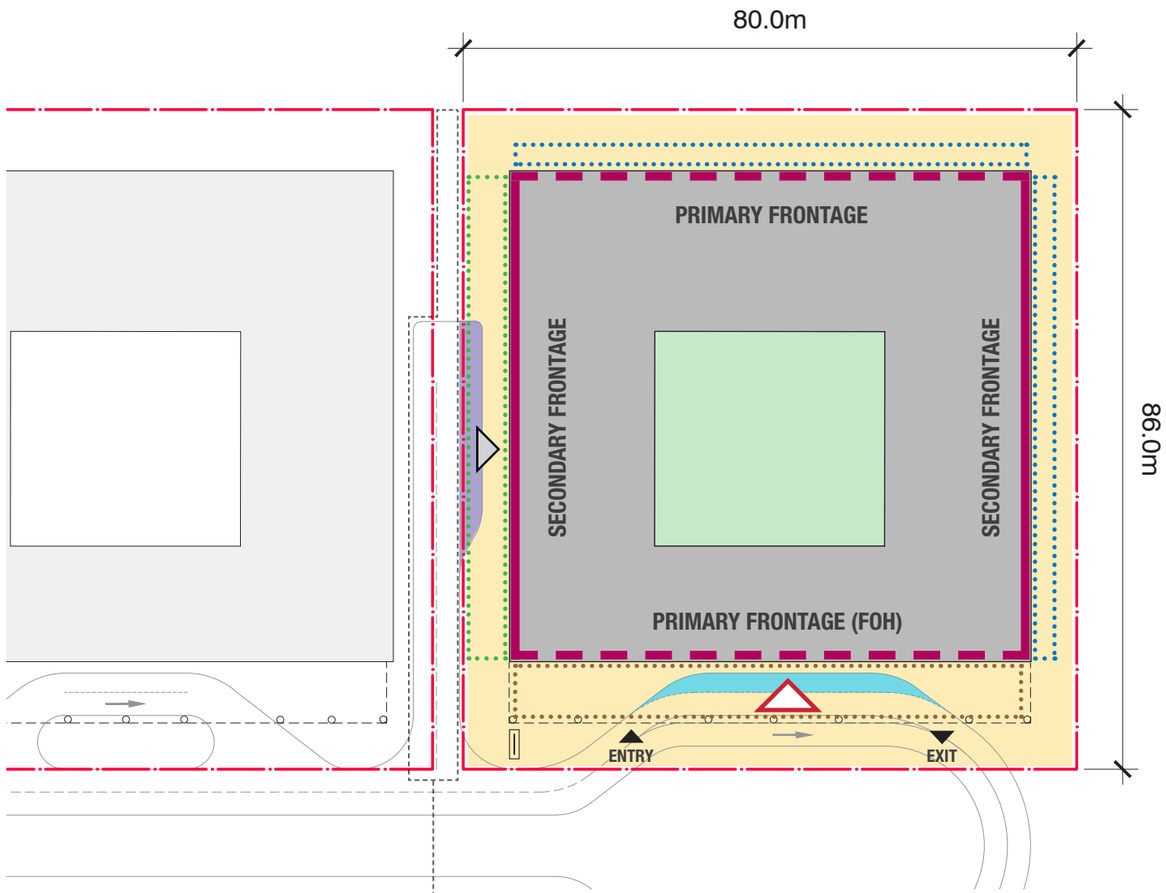
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



The development of the area and of the road in-between adjacent plots is the responsibility of the first developer to commence the works.

9.1 PLOT 09 - HOTEL 5*

KEY NUMBERS

PLOT SIZE	6,880.00 SQ.M.
MAX F.A.R.	39,472.00 SQ.M.
GROUND COVERAGE	4,056.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R.)	39,472.00 SQ.M. (HOTEL)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

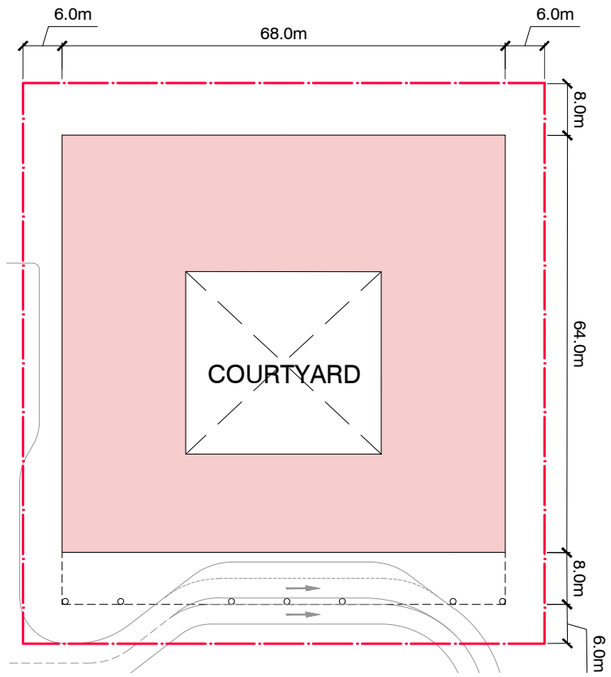
KEY

- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

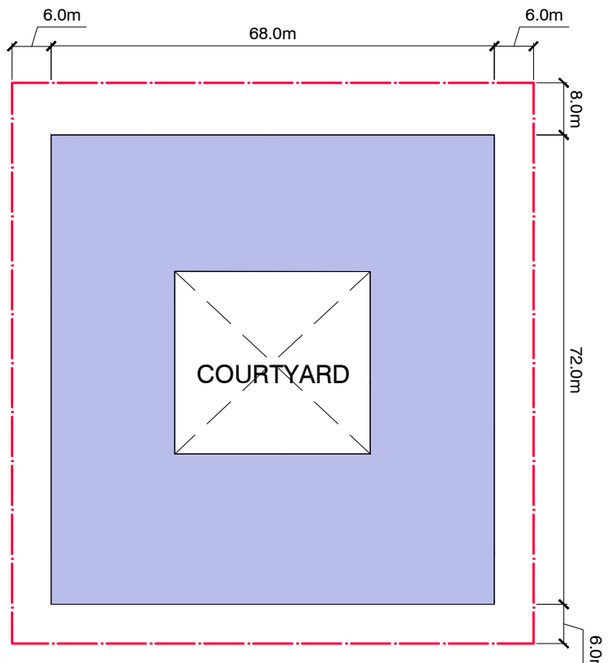
* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 91

9.0 BUILDING ELEMENTS

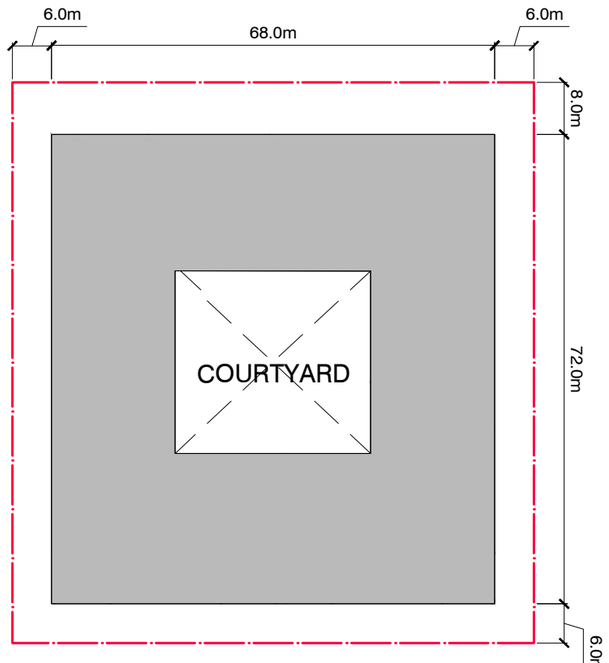
9.1 PLOT 09 - HOTEL 5*



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	3,512.00 SQ.M.
LEVEL 01	3,512.00 SQ.M.
LEVEL 02	4,056.00 SQ.M.
LEVEL 03	4,056.00 SQ.M.
LEVEL 04	4,056.00 SQ.M.
LEVEL 05	4,056.00 SQ.M.
LEVEL 06	4,056.00 SQ.M.
LEVEL 07	4,056.00 SQ.M.
LEVEL 08	4,056.00 SQ.M.
LEVEL 09	4,056.00 SQ.M.
TOTAL	39,472.00 SQ.M.

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS

9.1 PLOT 09 - HOTEL 5*

HEIGHT REQUIREMENTS AND PARAMETERS

KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

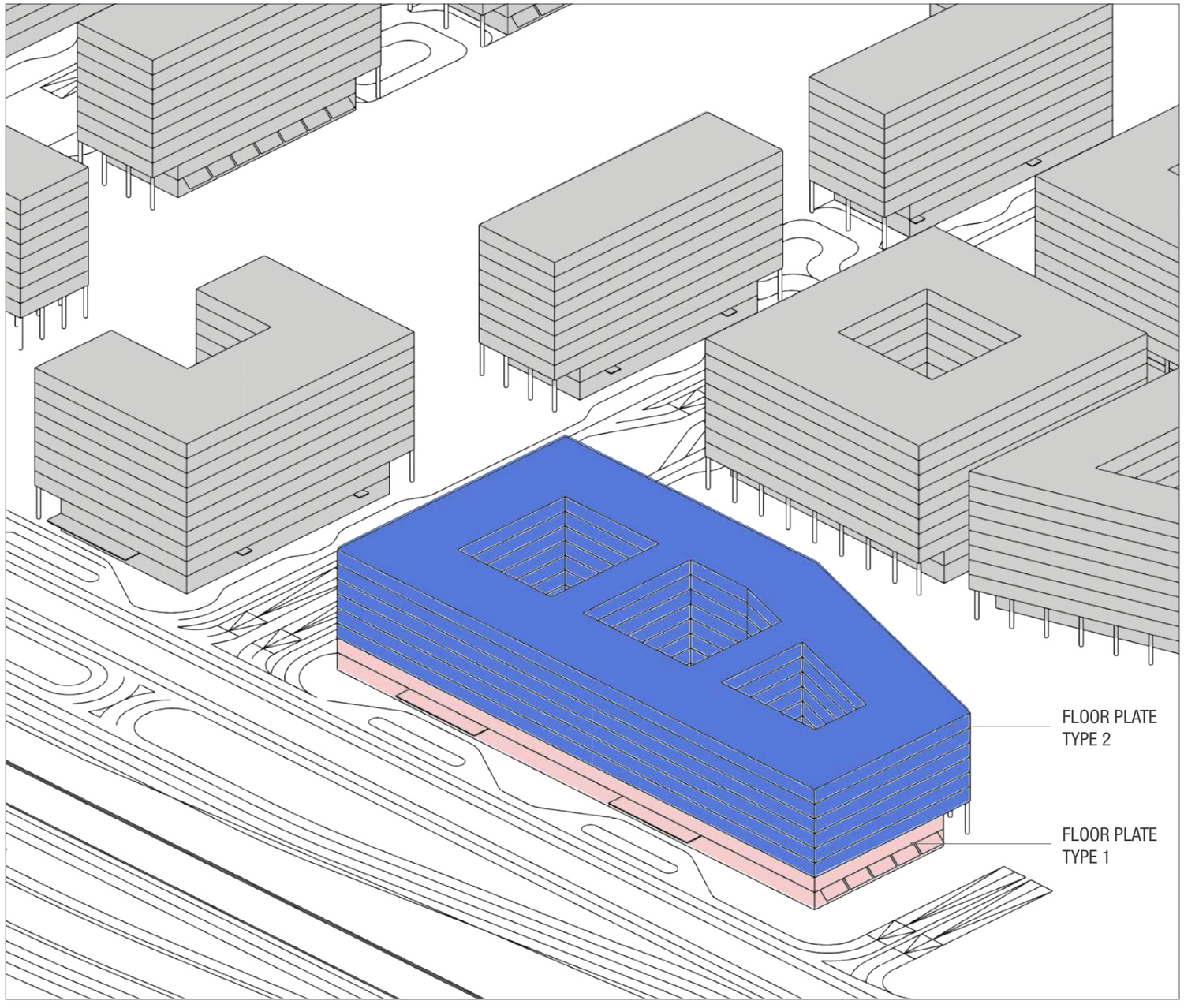
The permitted maximum level according to the AAI approval is 258.4m. The building's roof slab FFL is to be at 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

SECTION A
SCALE 1:600

HOTEL
BASEMENT

9.0 BUILDING ELEMENTS



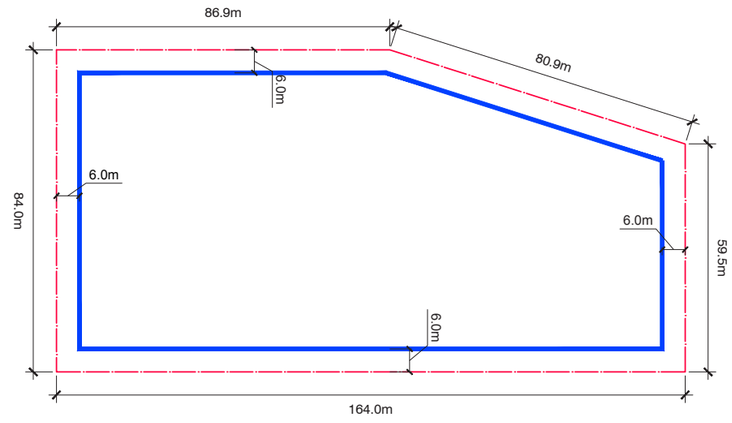
9.2 PLOT 10 - RETAIL

GENERAL OVERVIEW

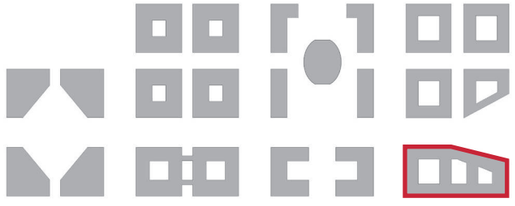
Building No.10 is to be used as a retail mall.

Plot No.10 is located on the northeast side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

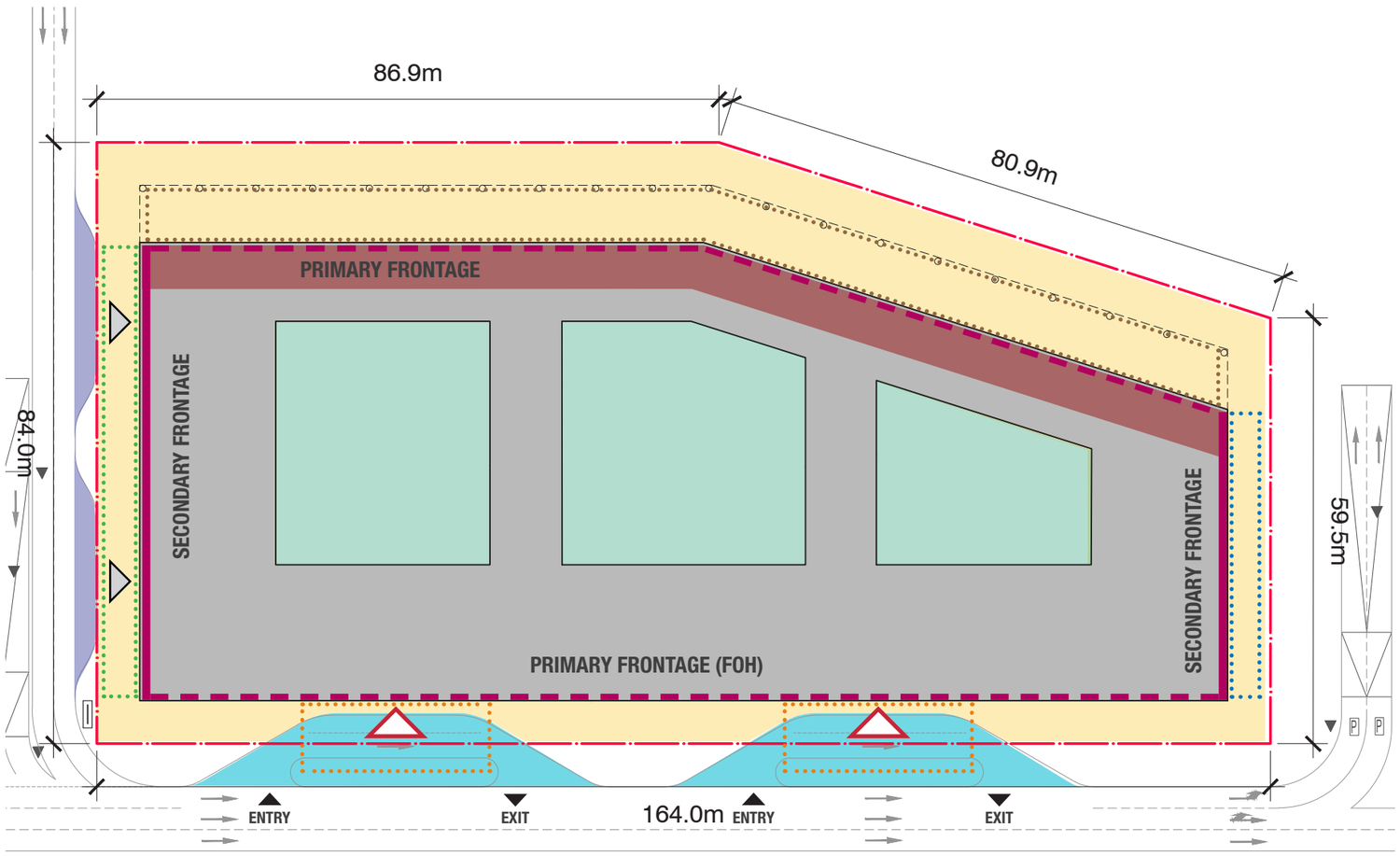
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 91

9.2 PLOT 10 - RETAIL

KEY NUMBERS

PLOT SIZE	12,831.53 SQ.M.
MAX F.A.R.	56,048.00 SQ.M.
GROUND COVERAGE	7,355.00 SQ.M.
HEIGHT TO ROOF SLAB	31.60 M
NO. LEVELS	8+4 BASEMENTS
BUILDING USE (F.A.R.)	56,048.00 SQ.M. (RETAIL)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

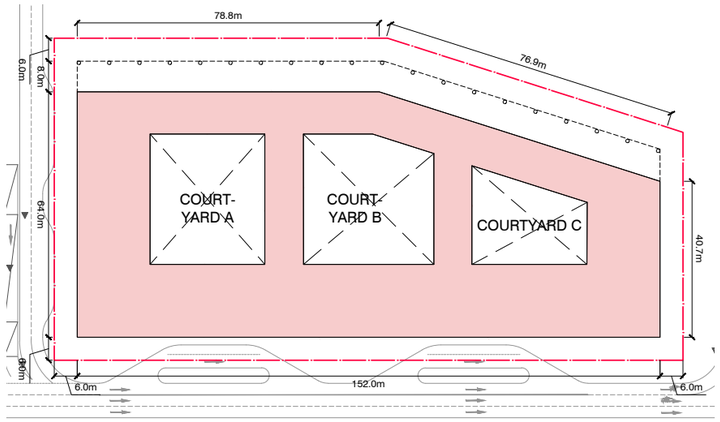
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

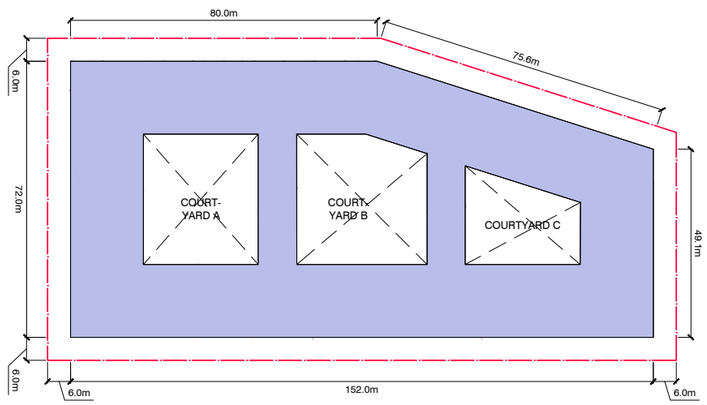
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

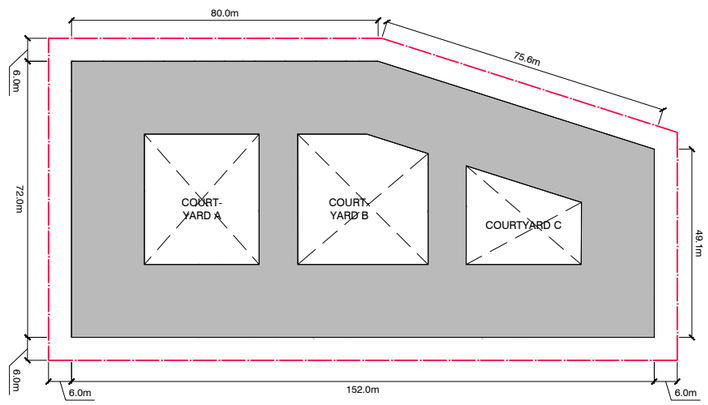
9.2 PLOT 10 - RETAIL



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

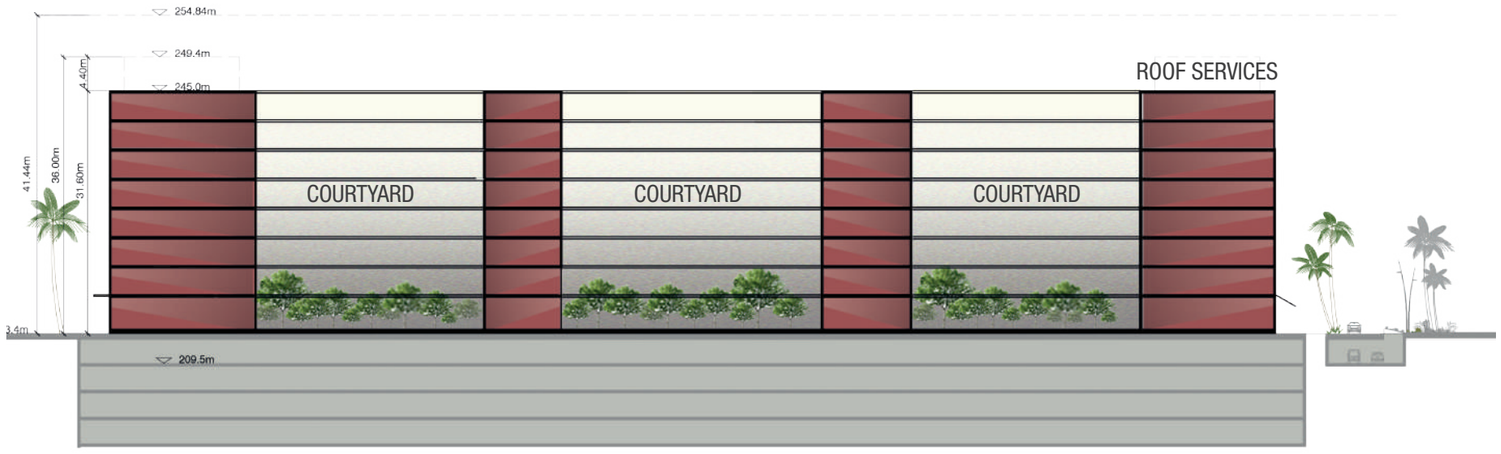
KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	6,110.62 SQ.M.
LEVEL 01	6,110.62 SQ.M.
LEVEL 02	7,355.00 SQ.M.
LEVEL 03	7,355.00 SQ.M.
LEVEL 04	7,355.00 SQ.M.
LEVEL 05	7,355.00 SQ.M.
LEVEL 06	7,355.00 SQ.M.
LEVEL 07	7,355.00 SQ.M.
TOTAL	56,351.24 SQ.M.

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS



SECTION A
SCALE 1:800

9.2 PLOT 10 - RETAIL

HEIGHT REQUIREMENTS AND PARAMETERS

KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 6 X TOWER (02 TO 07)
MAX HEIGHT	31.6M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 8 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

The permitted maximum height according to the AAI approval is 254.84m. The building's roof slab FFL is to be at 245.0 meters.

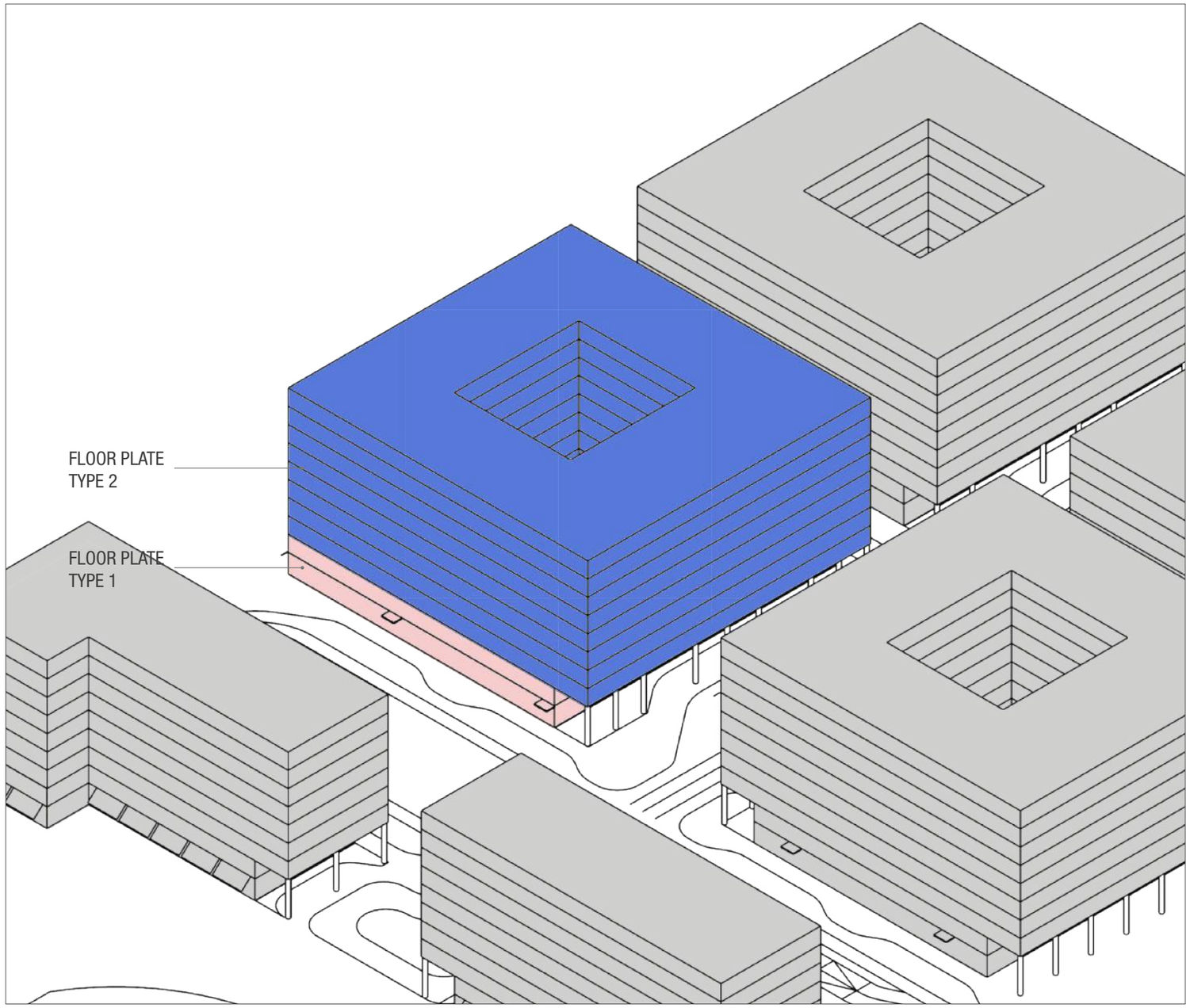
The overall height is to be 31.6 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

SECTION A
SCALE 1:1000

RETAIL

BASEMENT

9.0 BUILDING ELEMENTS



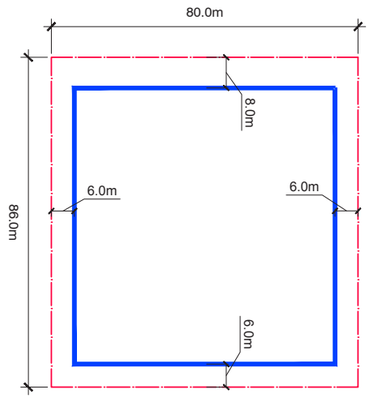
9.3 PLOT 11 - HOTEL 5*

GENERAL OVERVIEW

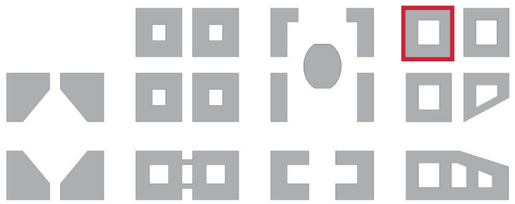
Building No.11 is to be used as a 5* hotel.

Plot No.11 is located on the northwest side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

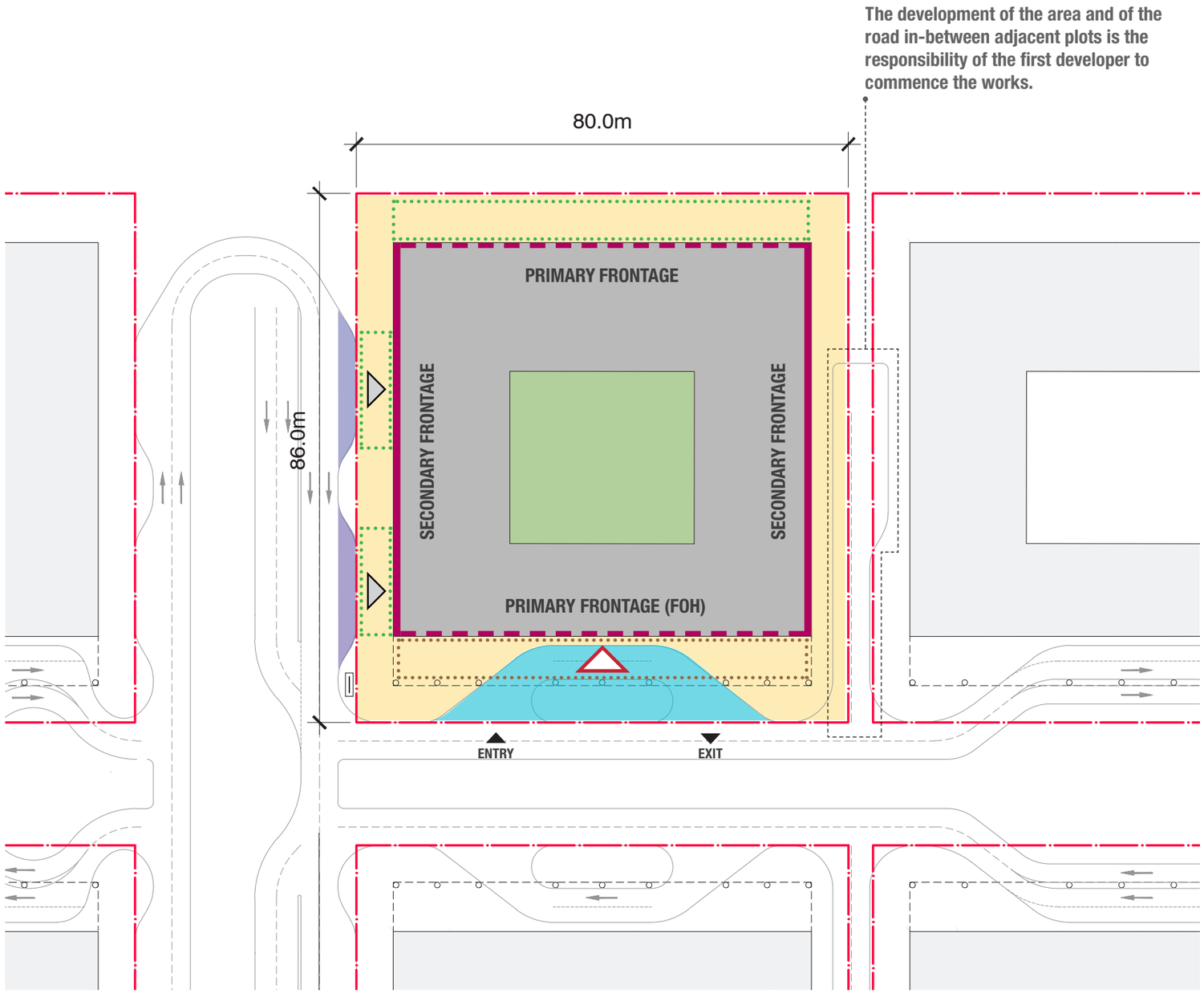
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 91

9.3 PLOT 11 - HOTEL 5*

KEY NUMBERS

PLOT SIZE	6,880.00 SQ.M.
MAX F.A.R.	39,472.00 SQ.M.
GROUND COVERAGE	4,056.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R.)	39,472.00 SQ.M. (HOTEL)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

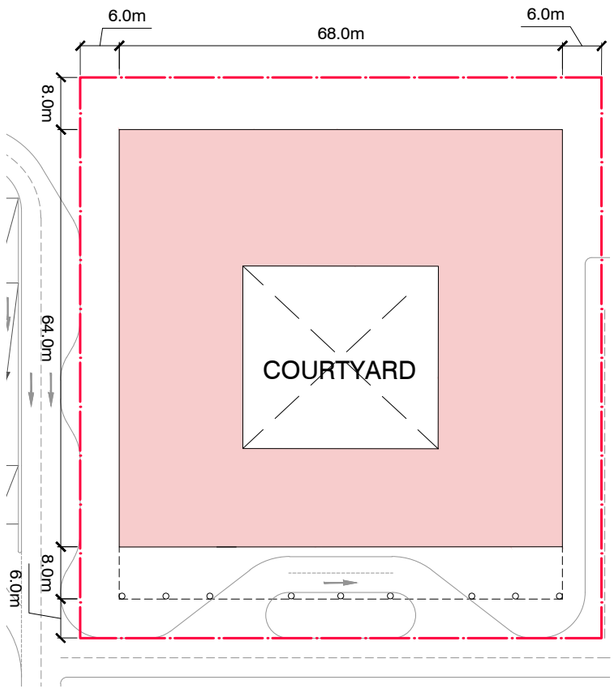
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

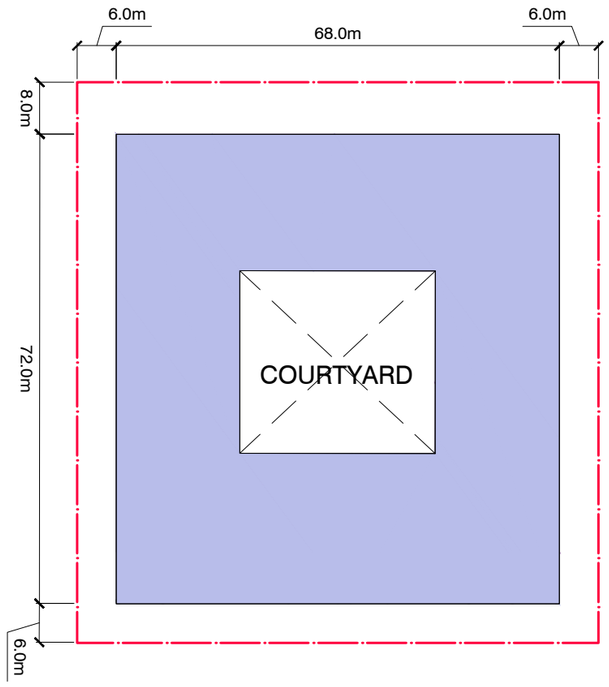
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

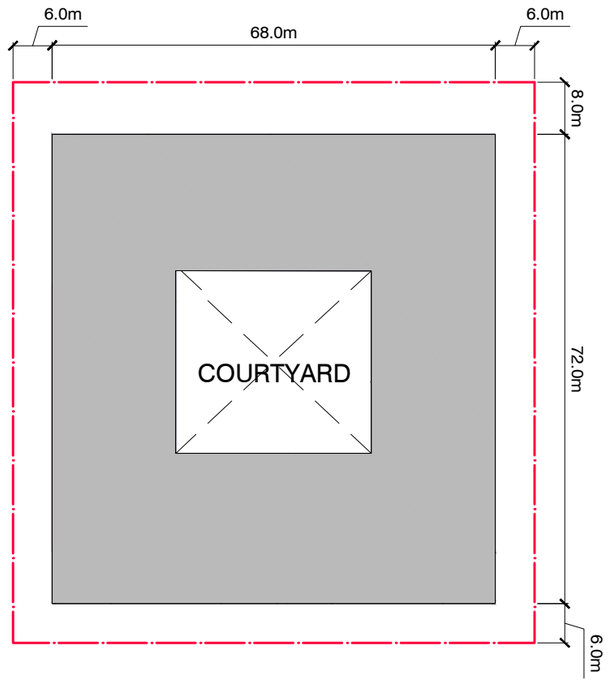
9.3 PLOT 11 - HOTEL 5*



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

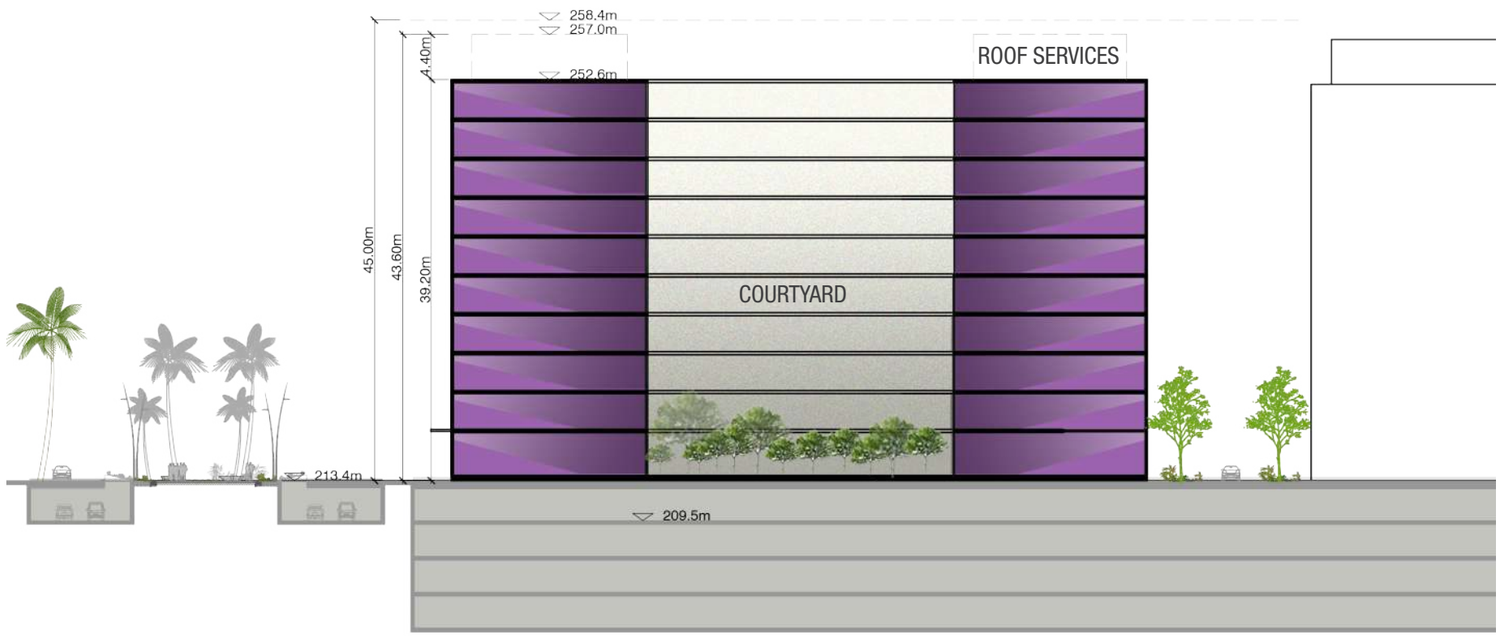
KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	3,512.00 SQ.M.
LEVEL 01	3,512.00 SQ.M.
LEVEL 02	4,056.00 SQ.M.
LEVEL 03	4,056.00 SQ.M.
LEVEL 04	4,056.00 SQ.M.
LEVEL 05	4,056.00 SQ.M.
LEVEL 06	4,056.00 SQ.M.
LEVEL 07	4,056.00 SQ.M.
LEVEL 08	4,056.00 SQ.M.
LEVEL 09	4,056.00 SQ.M.
TOTAL	39,472.00 SQ.M.

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS



SECTION A
SCALE 1:600

9.3 PLOT 11 - HOTEL 5*

HEIGHT REQUIREMENTS AND PARAMETERS

KEY NUMBERS

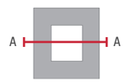
LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 07)
MAX HEIGHT	39.2M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

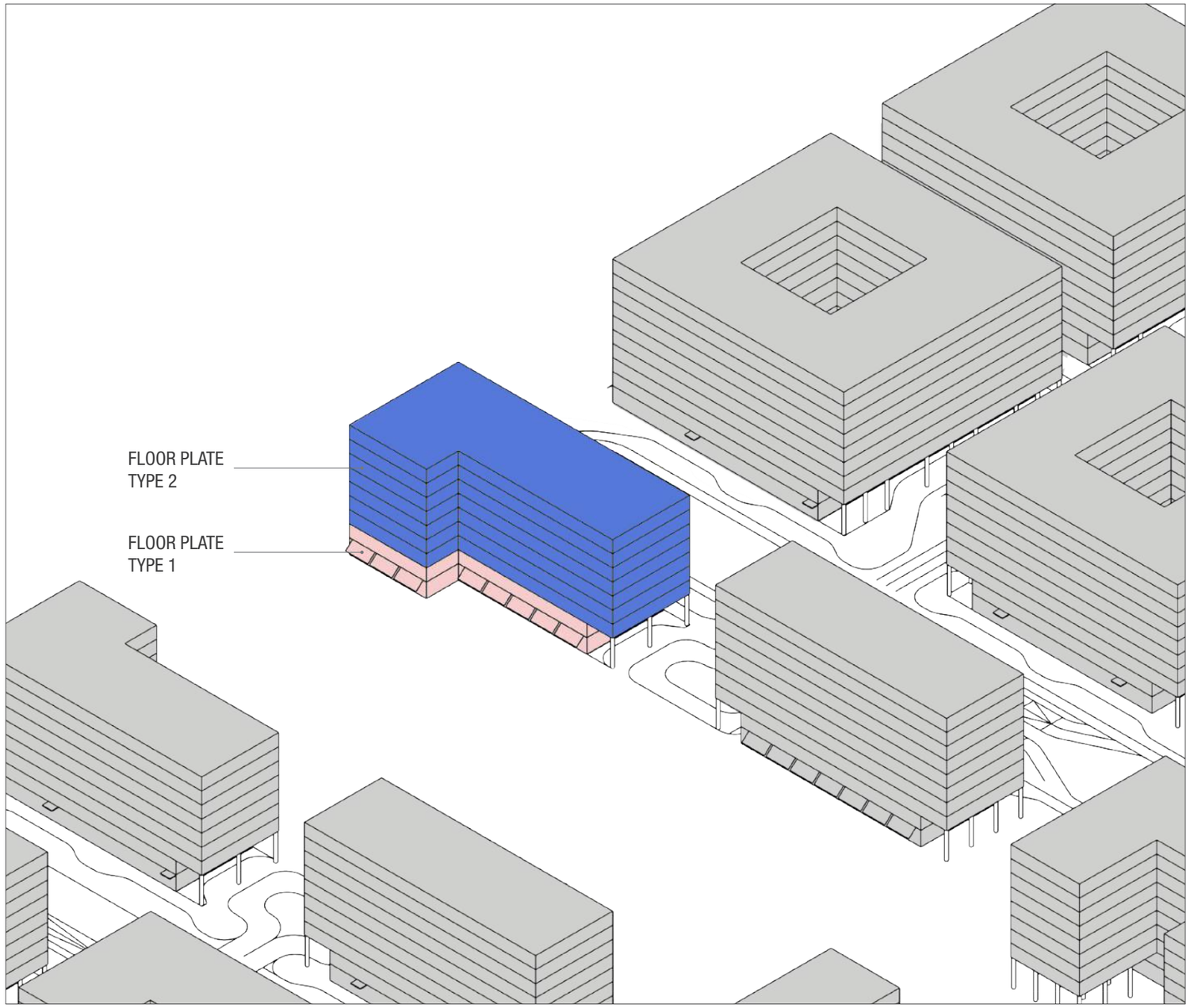
The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be at 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

HOTEL
BASEMENT



9.0 BUILDING ELEMENTS



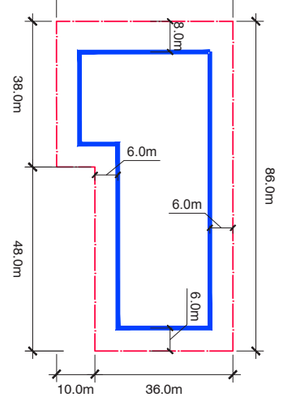
9.4 PLOT 12 - OFFICES

GENERAL OVERVIEW

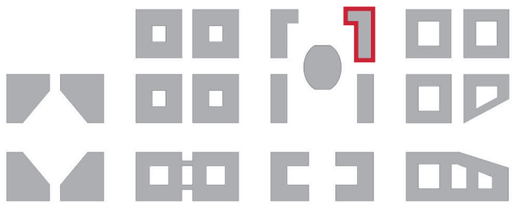
Building No.12 is to be used as offices.

Plot No.12 is located on the southeast side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

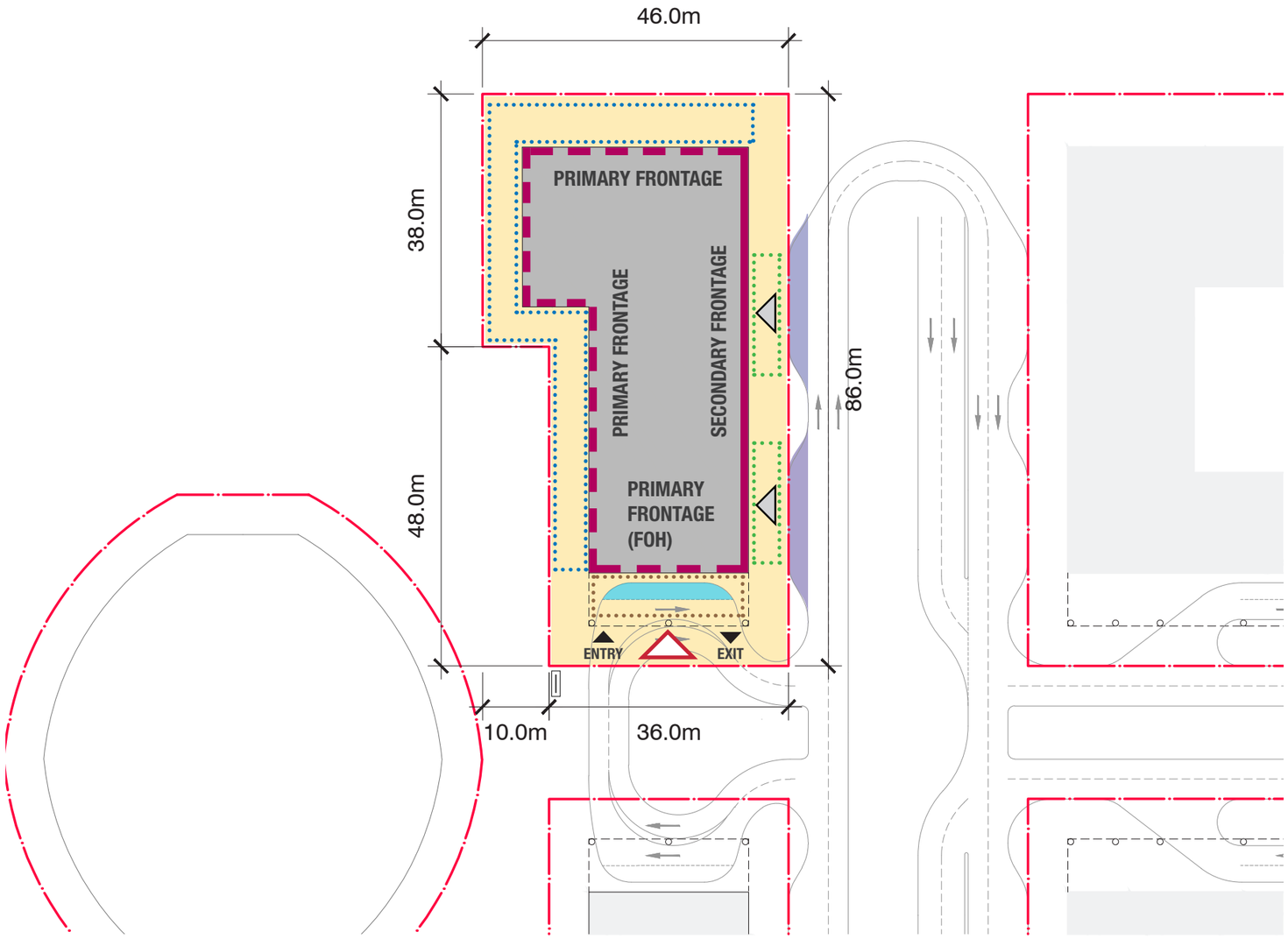
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 92

9.4 PLOT 12 - OFFICES

KEY NUMBERS

PLOT SIZE	3,476.00 SQ.M.
MAX F.A.R.	17,326.00 SQ.M.
GROUND COVERAGE	1,968.00 SQ.M.
HEIGHT TO ROOF SLAB	35.40 M
NO. LEVELS	9+4 BASEMENTS
BUILDING USE (F.A.R.)	1,200.00 SQ.M. (RETAIL) 16,126.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

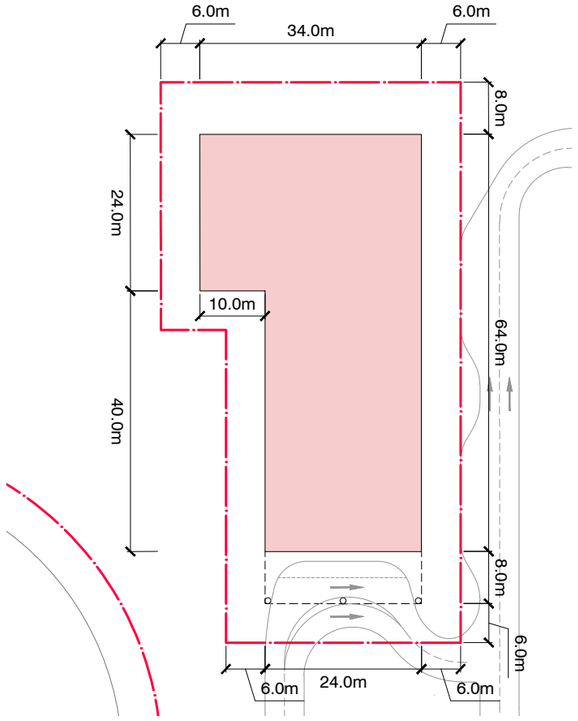
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

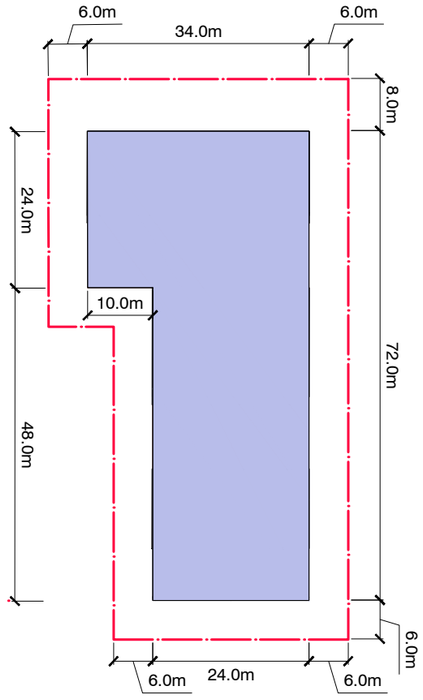
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

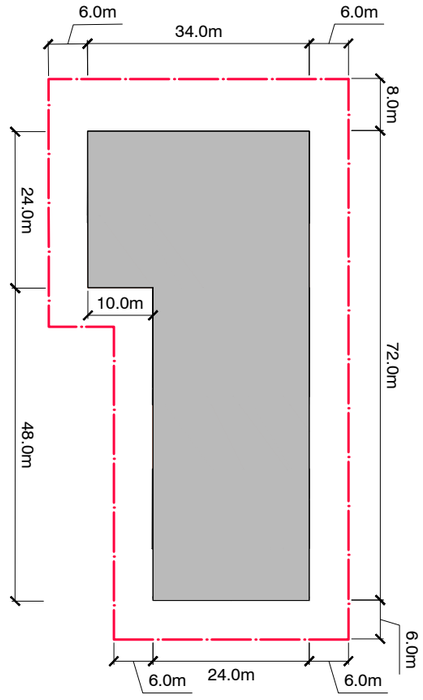
9.4 PLOT 12 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

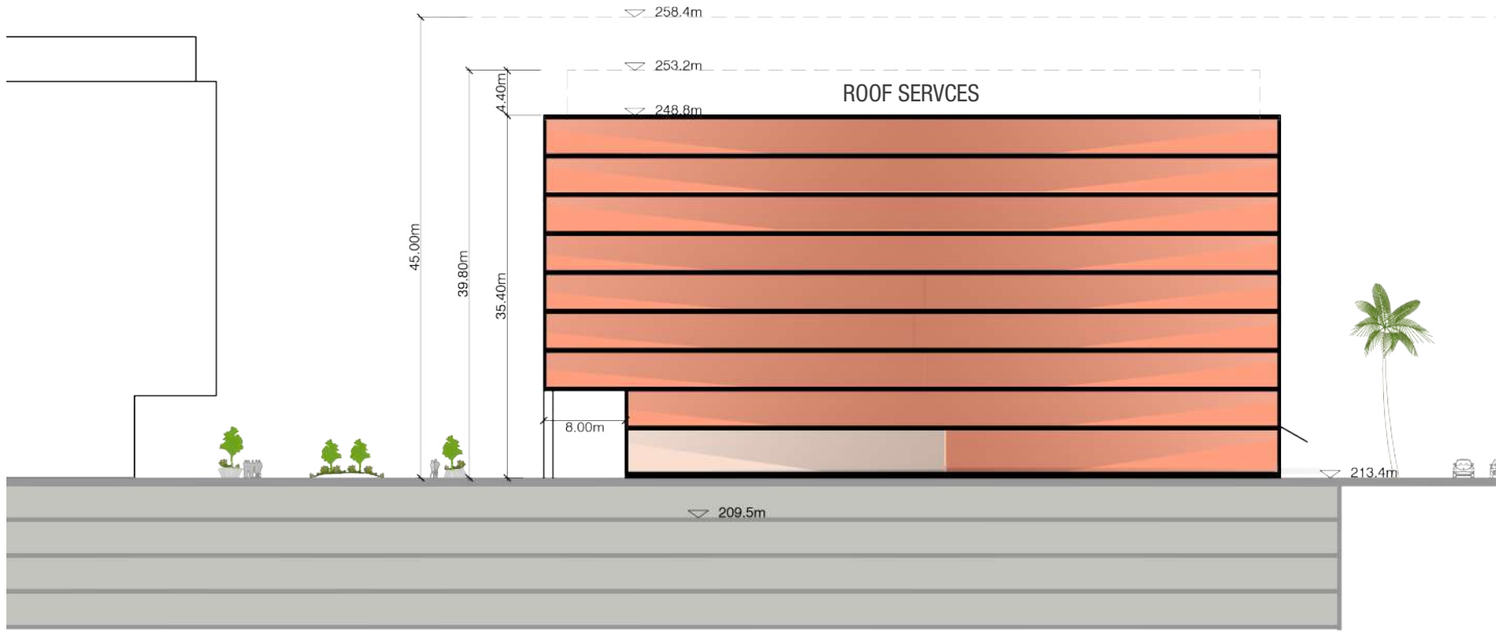
	B.U.A.
LEVEL 00	1,776.00 SQ.M.
LEVEL 01	1,776.00 SQ.M.
LEVEL 02	1,968.00 SQ.M.
LEVEL 03	1,968.00 SQ.M.
LEVEL 04	1,968.00 SQ.M.
LEVEL 05	1,968.00 SQ.M.
LEVEL 06	1,968.00 SQ.M.
LEVEL 07	1,968.00 SQ.M.
LEVEL 08	1,968.00 SQ.M.
TOTAL	17,328.00 SQ.M.

1,200.00 SQ.M. OF RETAIL F.A.R. IS TO BE PROVIDED ON LEVEL 00

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS



SECTION A
SCALE 1:600

9.4 PLOT 12 - OFFICES

HEIGHT REQUIREMENTS AND PARAMETERS

KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 7 X TOWER (02 TO 08)
MAX HEIGHT	35.4M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

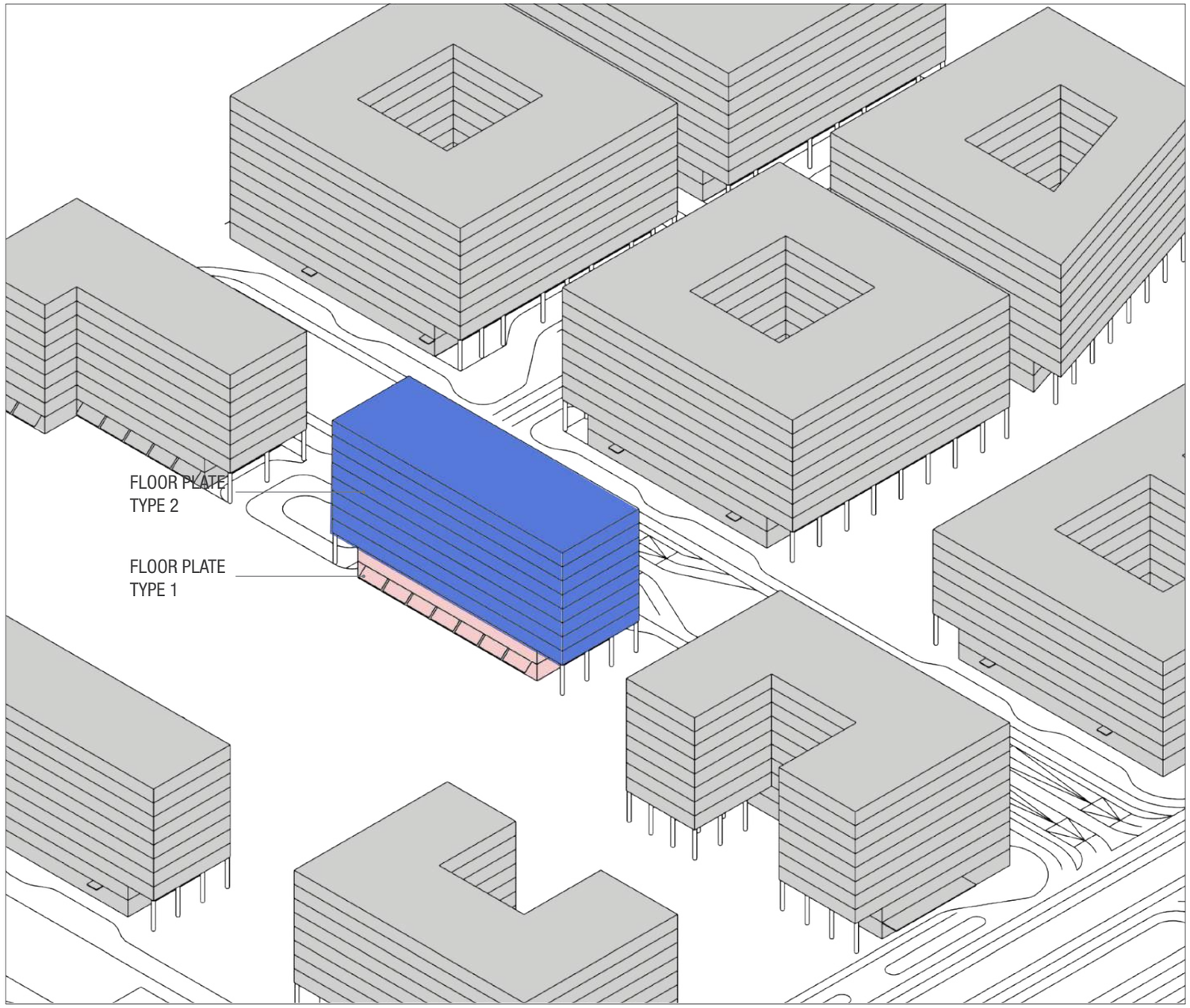
The building, which is raised on a plinth of 0.5 m, has 9 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

The permitted maximum level according to the AAI approval is 258.4. The building's roof slab FFL is to be 248.8m.

The overall height is to be 35.4 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

OFFICE
RETAIL
BASEMENT

9.0 BUILDING ELEMENTS



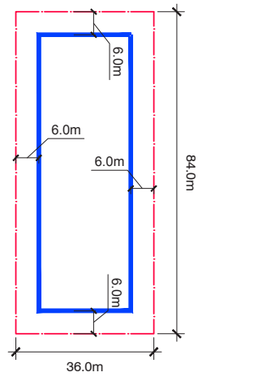
9.5 PLOT 13 - OFFICES

GENERAL OVERVIEW

Building No.13 is to be used as offices.

Plot No.13 is located on the north side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

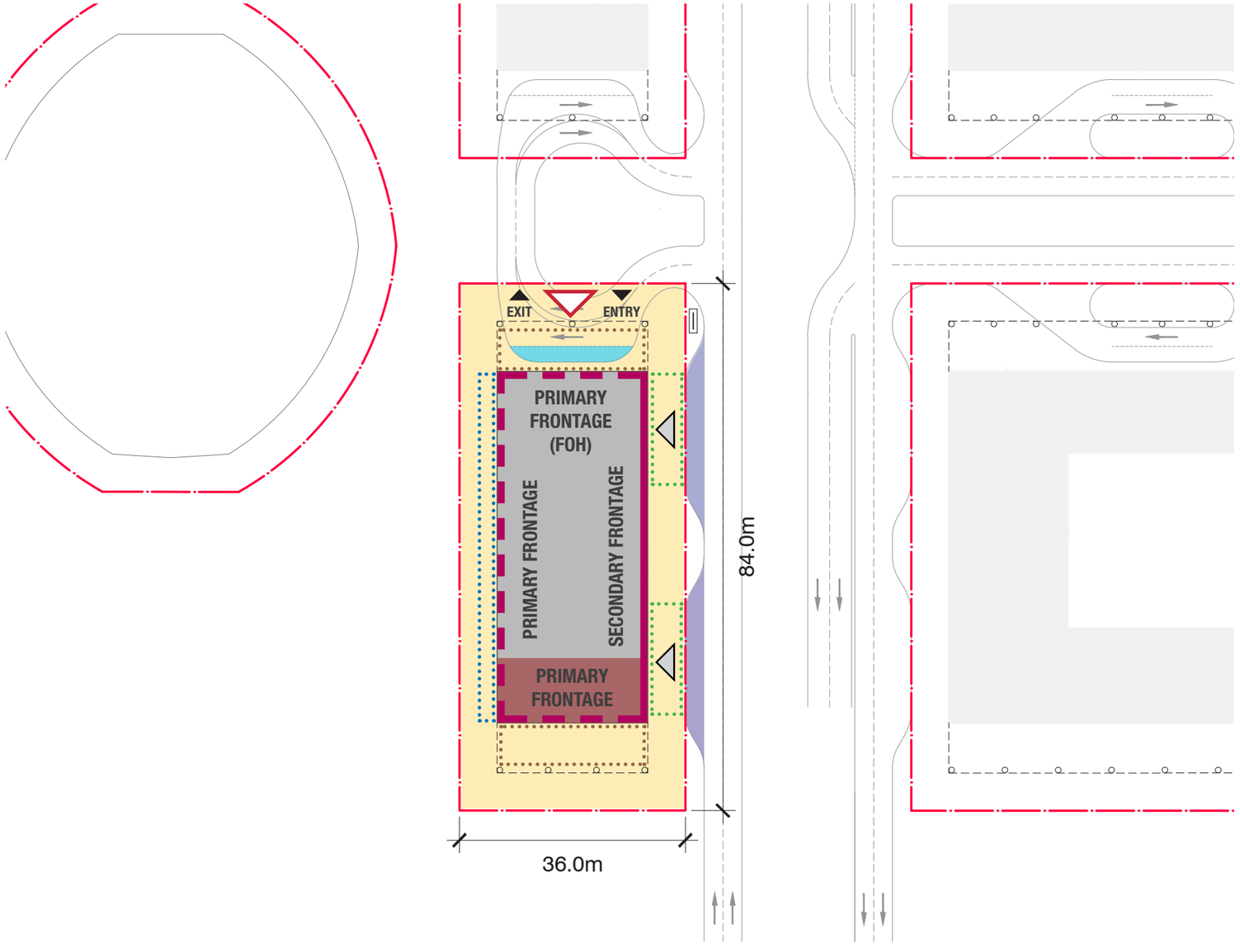
SETBACKS:



PLOT LINE
SETBACK LINE

KEY PLAN:

9.0 BUILDING ELEMENTS



9.5 PLOT 13 - OFFICES

KEY NUMBERS

PLOT SIZE	3,024.00 SQ.M.
MAX F.A.R.	16,512.00 SQ.M.
GROUND COVERAGE	1,728.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R.)	1,000.00 SQ.M. (RETAIL) 15,512.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

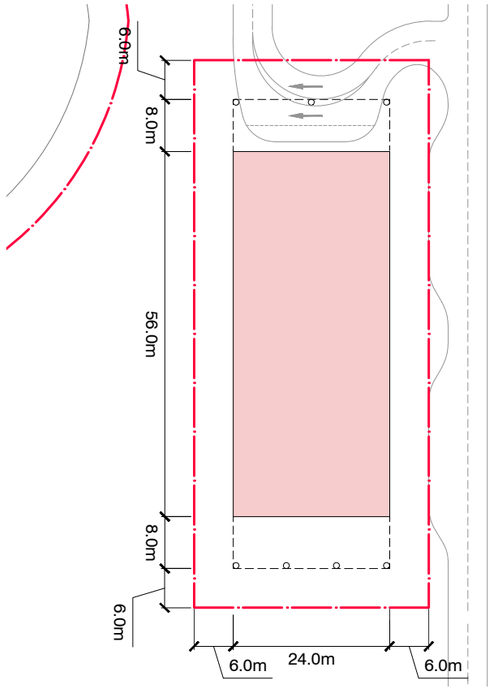
KEY

- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

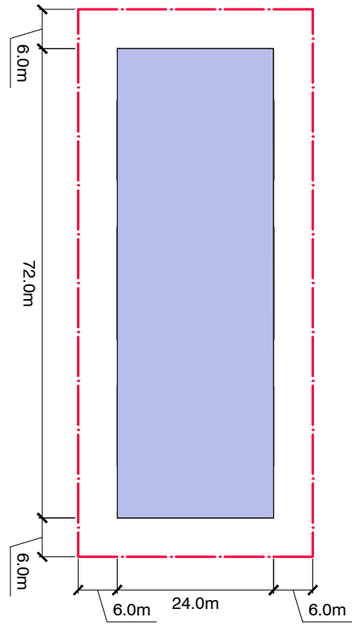
* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 92

9.0 BUILDING ELEMENTS

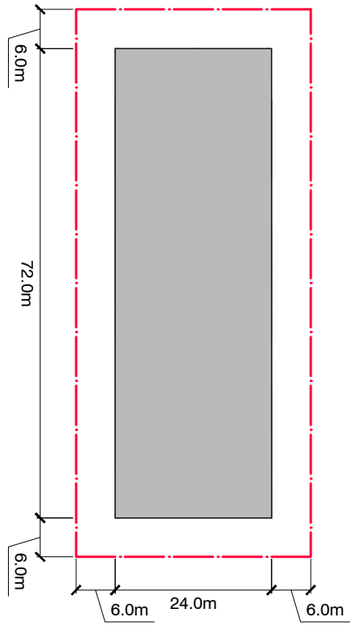
9.5 PLOT 13 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

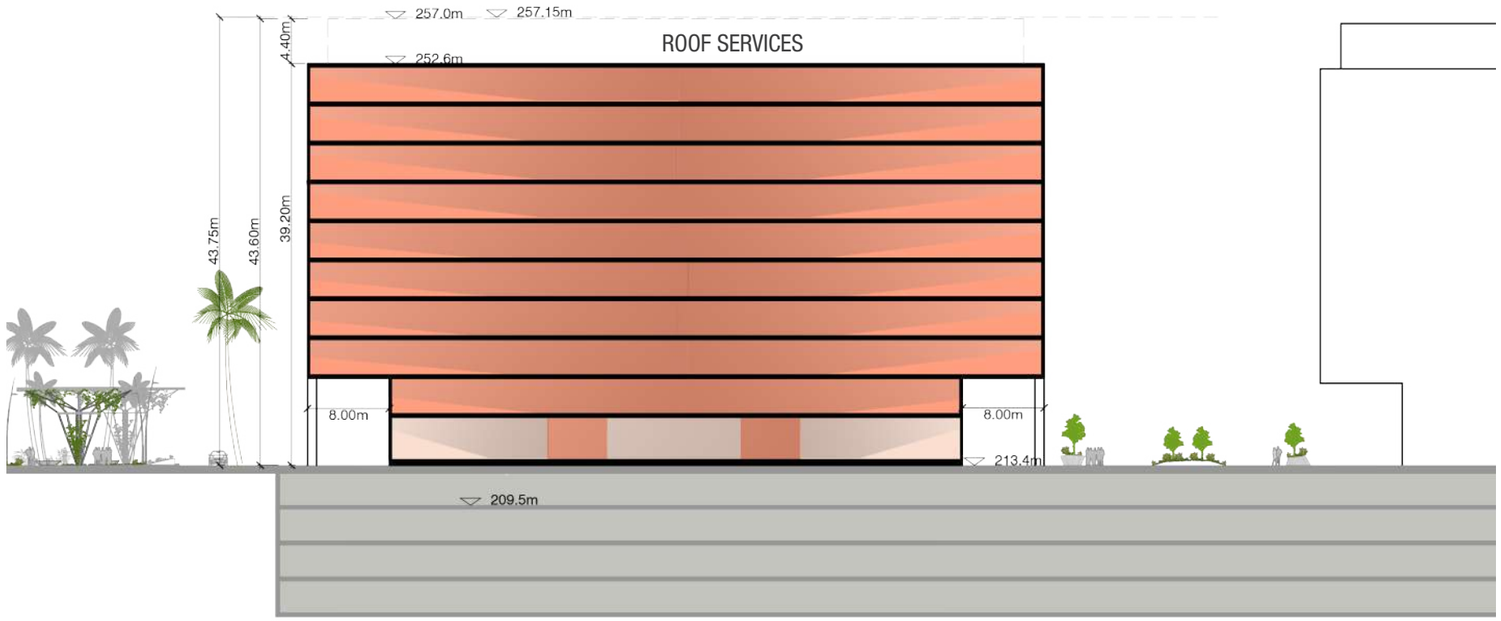
	B.U.A.
LEVEL 00	1,344.00 SQ.M.
LEVEL 01	1,344.00 SQ.M.
LEVEL 02	1,728.00 SQ.M.
LEVEL 03	1,728.00 SQ.M.
LEVEL 04	1,728.00 SQ.M.
LEVEL 05	1,728.00 SQ.M.
LEVEL 06	1,728.00 SQ.M.
LEVEL 07	1,728.00 SQ.M.
LEVEL 08	1,728.00 SQ.M.
LEVEL 09	1,728.00 SQ.M.
TOTAL	16,512.00 SQ.M.

1,000.00 SQ.M. OF RETAIL F.A.R. IS TO BE PROVIDED ON LEVEL 00

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS



SECTION A
SCALE 1:600

9.5 PLOT 13 - OFFICES

HEIGHT REQUIREMENTS AND PARAMETERS

KEY NUMBERS

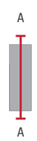
LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2 M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

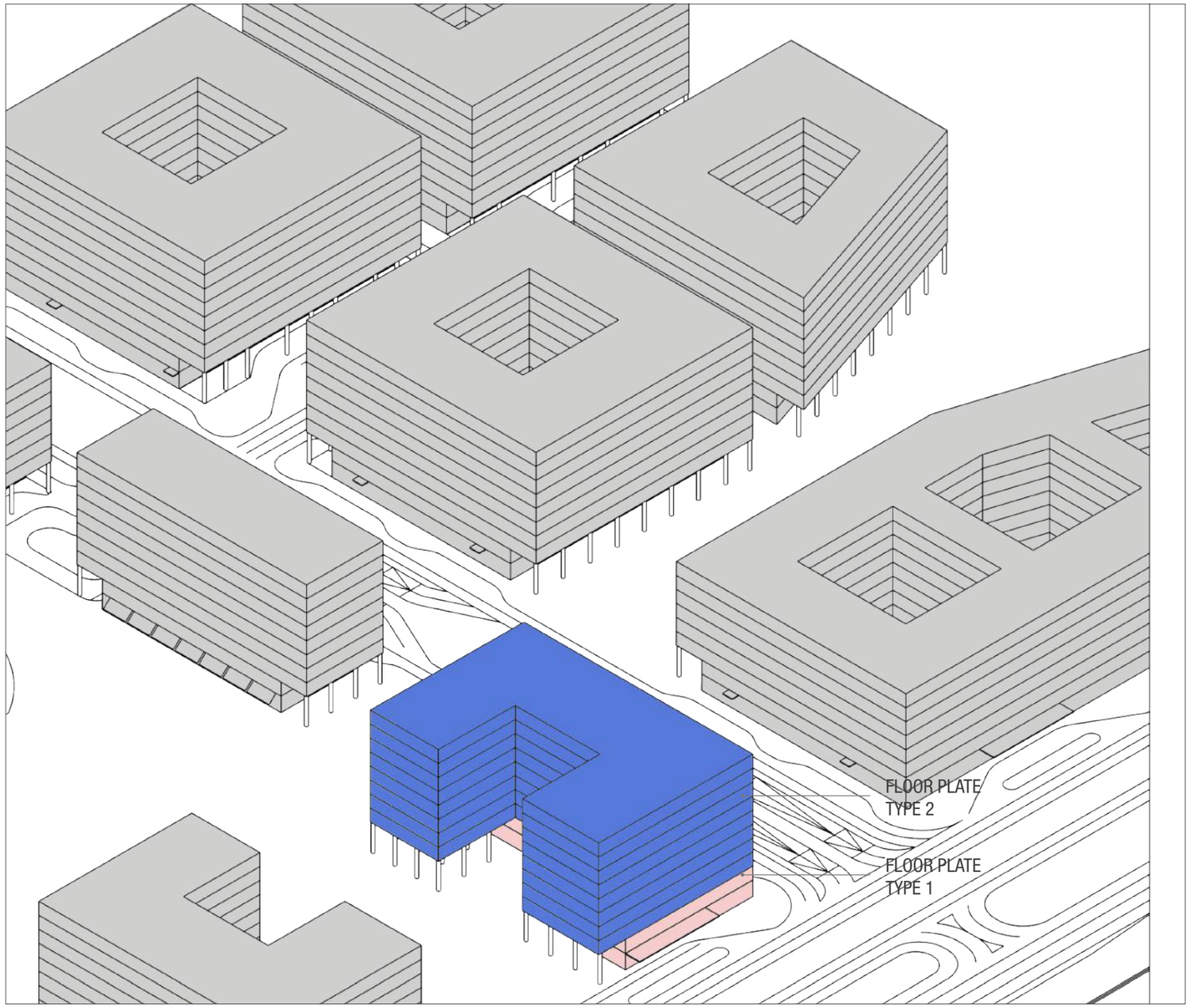
The permitted maximum height according to the AAI approval is 257.15m. The building's roof slab FFL is to be 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

OFFICE
RETAIL
BASEMENT



9.0 BUILDING ELEMENTS



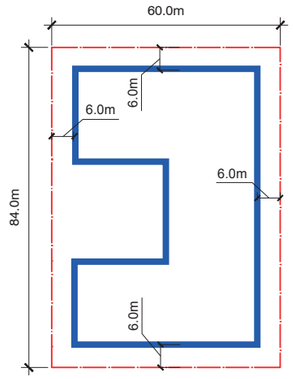
9.6 PLOT 14 - HOTEL 4*

GENERAL OVERVIEW

Building No.14 is is to be used as 4* hotel.

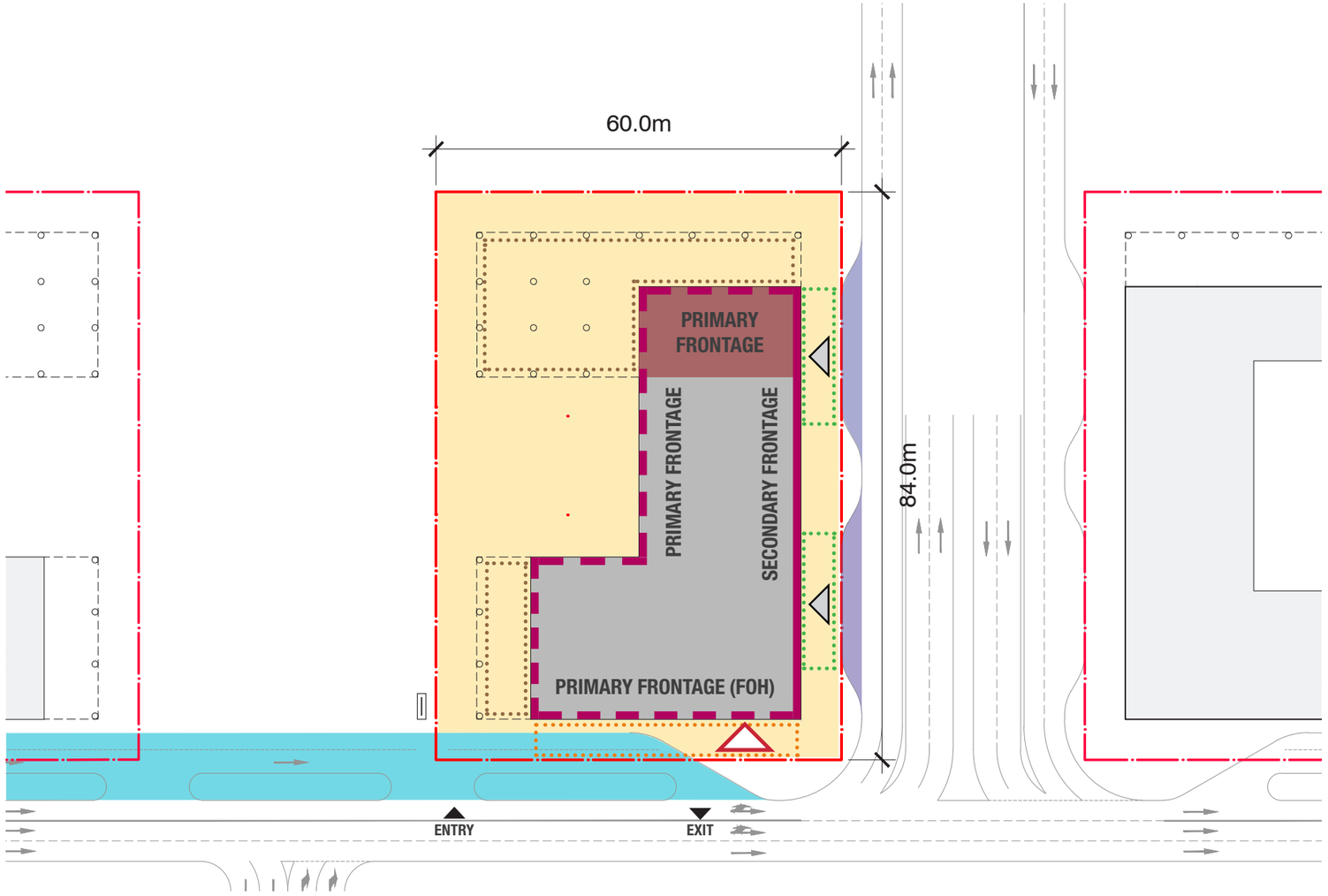
Plot No.14 is located on the north side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

SETBACKS:



KEY PLAN:

9.0 BUILDING ELEMENTS



9.6 PLOT 14 - HOTEL 4*

KEY NUMBERS

PLOT SIZE	5,040.00 SQ.M.
MAX F.A.R.	26,370.00 SQ.M.
GROUND COVERAGE	2,816.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R.)	2,800.00 SQ.M. (RETAIL) 23,570.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

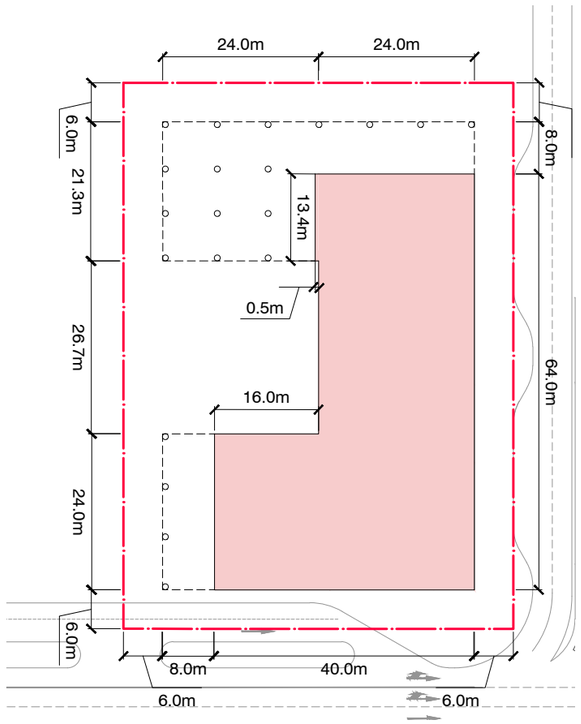
KEY

- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

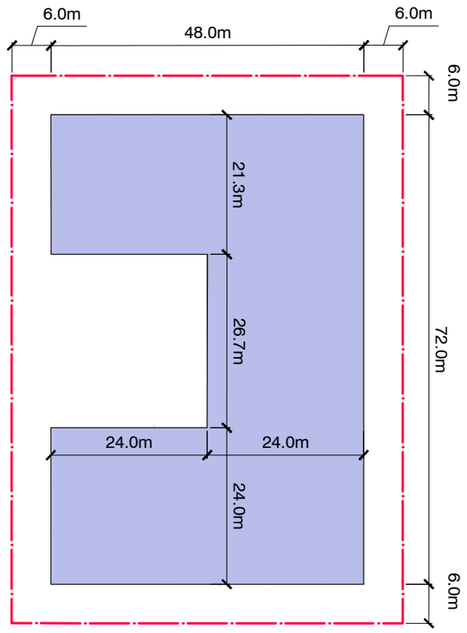
* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 92

9.0 BUILDING ELEMENTS

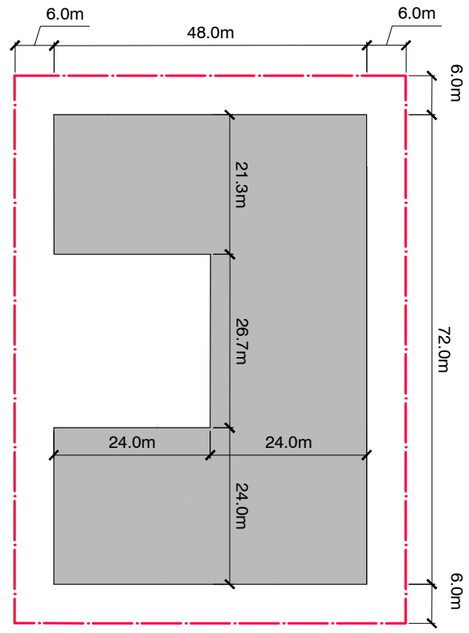
9.6 PLOT 14 - HOTEL 4*



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	1,926.67 SQ.M.
LEVEL 01	1,926.67 SQ.M.
LEVEL 02	2,816.00 SQ.M.
LEVEL 03	2,816.00 SQ.M.
LEVEL 04	2,816.00 SQ.M.
LEVEL 05	2,816.00 SQ.M.
LEVEL 06	2,816.00 SQ.M.
LEVEL 07	2,816.00 SQ.M.
LEVEL 08	2,816.00 SQ.M.
LEVEL 09	2,816.00 SQ.M.
TOTAL	26,381.33 SQ.M.

1,400.00 SQ.M. OF RETAIL F.A.R. IS TO BE PROVIDED ON LEVEL 00

1,400.00 SQ.M. OF RETAIL F.A.R. IS TO BE PROVIDED ON LEVEL 01

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS

9.6 PLOT 14 - HOTEL 4*

HEIGHT REQUIREMENTS AND PARAMETERS

KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

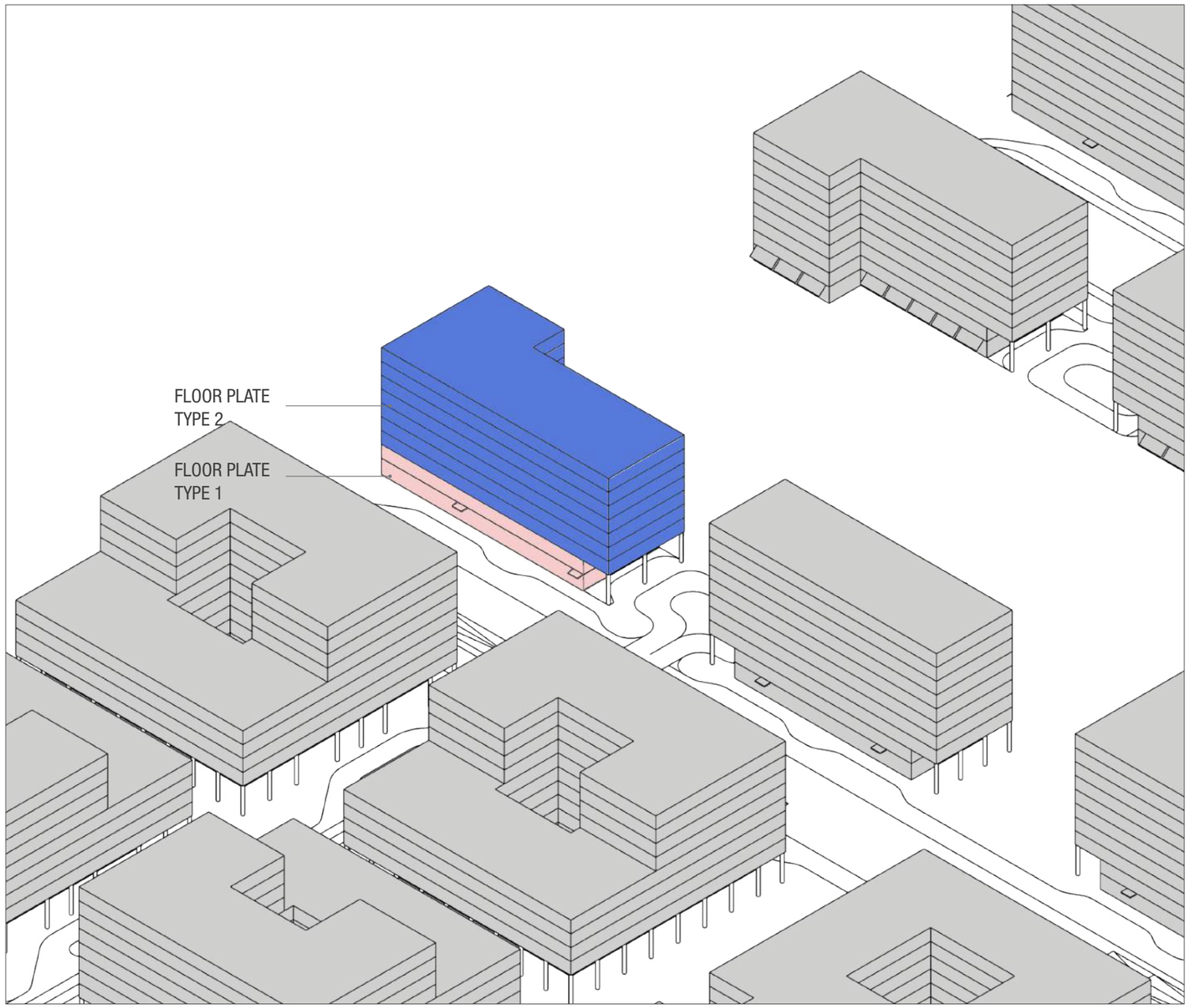
The permitted maximum level according to the AAI approval is 257.15m. The building's roof slab FFL is to be at 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

SECTION A
SCALE 1:600

HOTEL
RETAIL
BASEMENT

9.0 BUILDING ELEMENTS



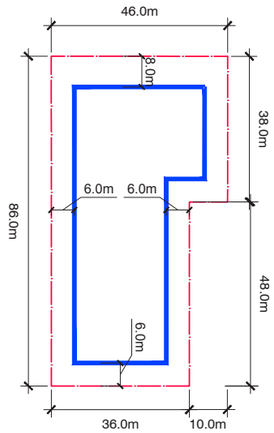
9.7 PLOT 15 - OFFICES

GENERAL OVERVIEW

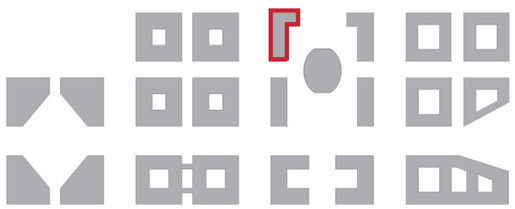
Building No.15 is to be used as offices.

Plot No.15 is located on the west side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

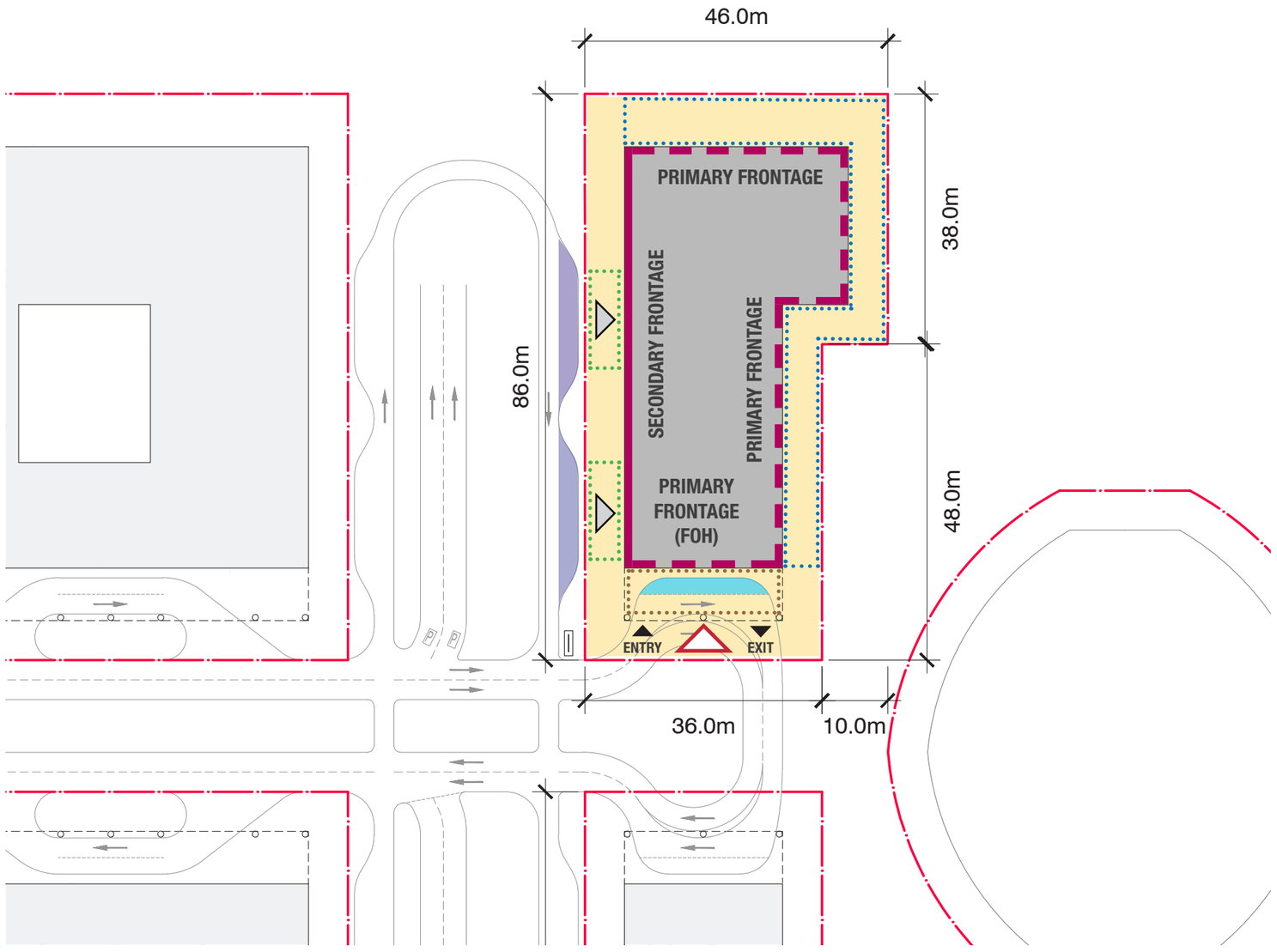
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 92

9.7 PLOT 15 - OFFICES

KEY NUMBERS

PLOT SIZE	3,476.00 SQ.M.
MAX F.A.R.	17,326.00 SQ.M.
GROUND COVERAGE	1,968.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	9+4 BASEMENTS
BUILDING USE (F.A.R.)	1,200.00 SQ.M. (RETAIL) 16,126.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

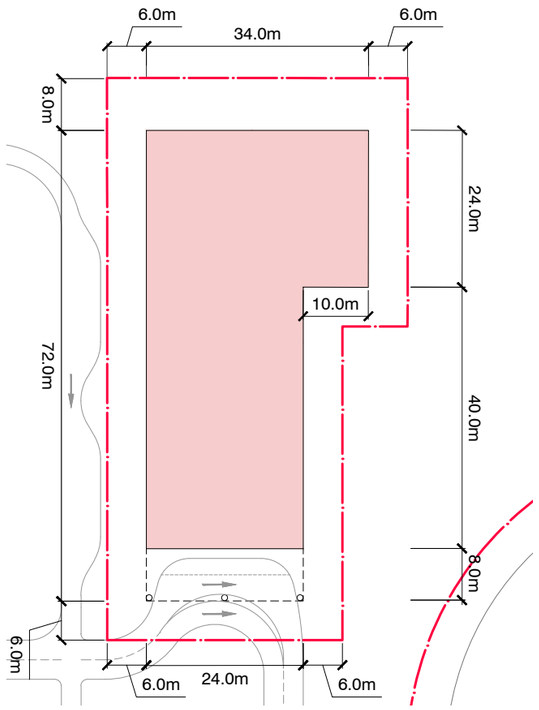
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

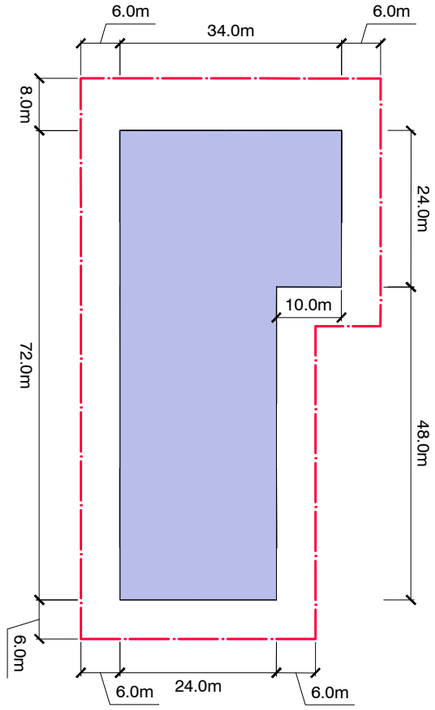
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

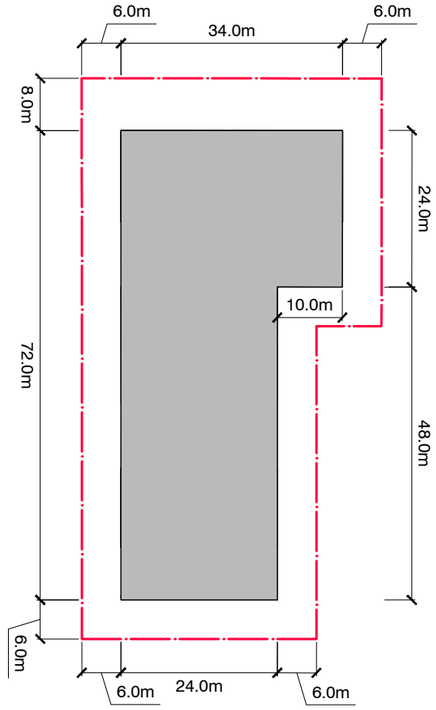
9.7 PLOT 15 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	1,776.00 SQ.M.
LEVEL 01	1,776.00 SQ.M.
LEVEL 02	1,968.00 SQ.M.
LEVEL 03	1,968.00 SQ.M.
LEVEL 04	1,968.00 SQ.M.
LEVEL 05	1,968.00 SQ.M.
LEVEL 06	1,968.00 SQ.M.
LEVEL 07	1,968.00 SQ.M.
LEVEL 08	1,968.00 SQ.M.
TOTAL	17,328.00 SQ.M.

1,200.00 SQ.M. OF RETAIL F.A.R. IS TO BE PROVIDED ON THE GROUND FLOOR

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS

9.7 PLOT 15 - OFFICES

HEIGHT REQUIREMENTS AND PARAMETERS

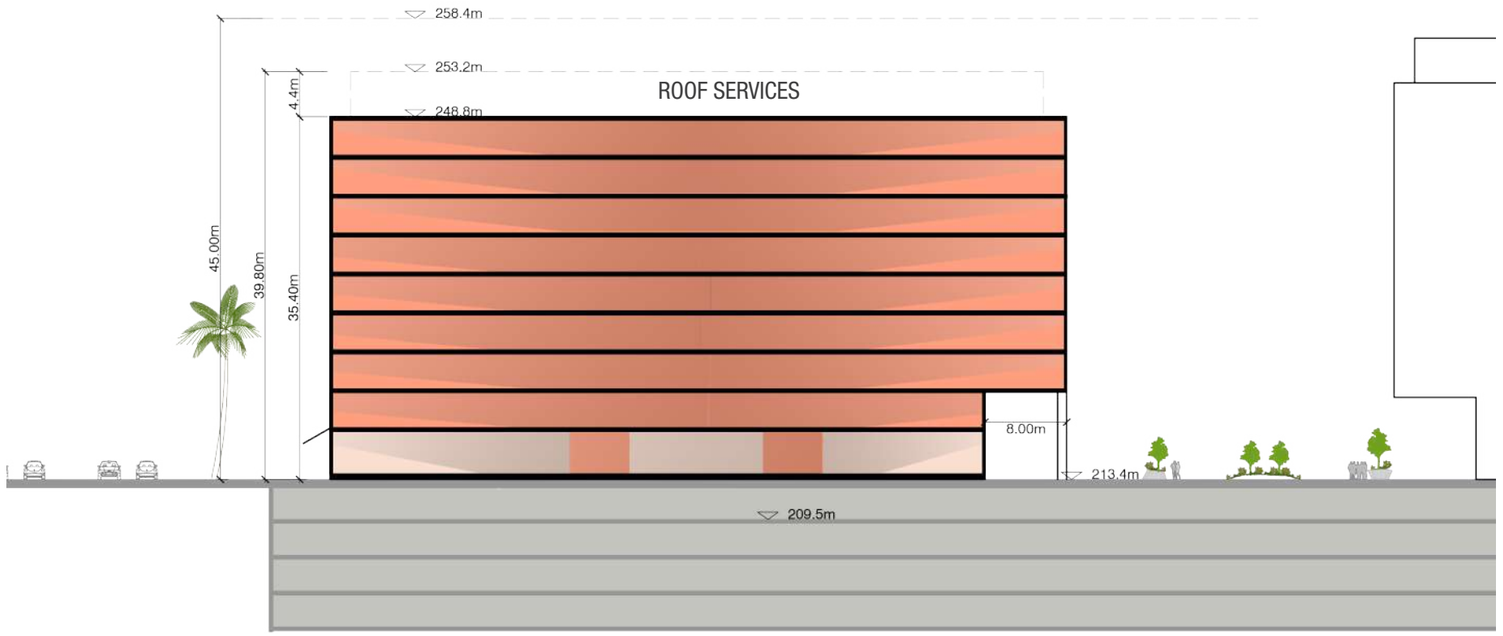
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 7 X TOWER (02 TO 08)
MAX HEIGHT	35.4 M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 9 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

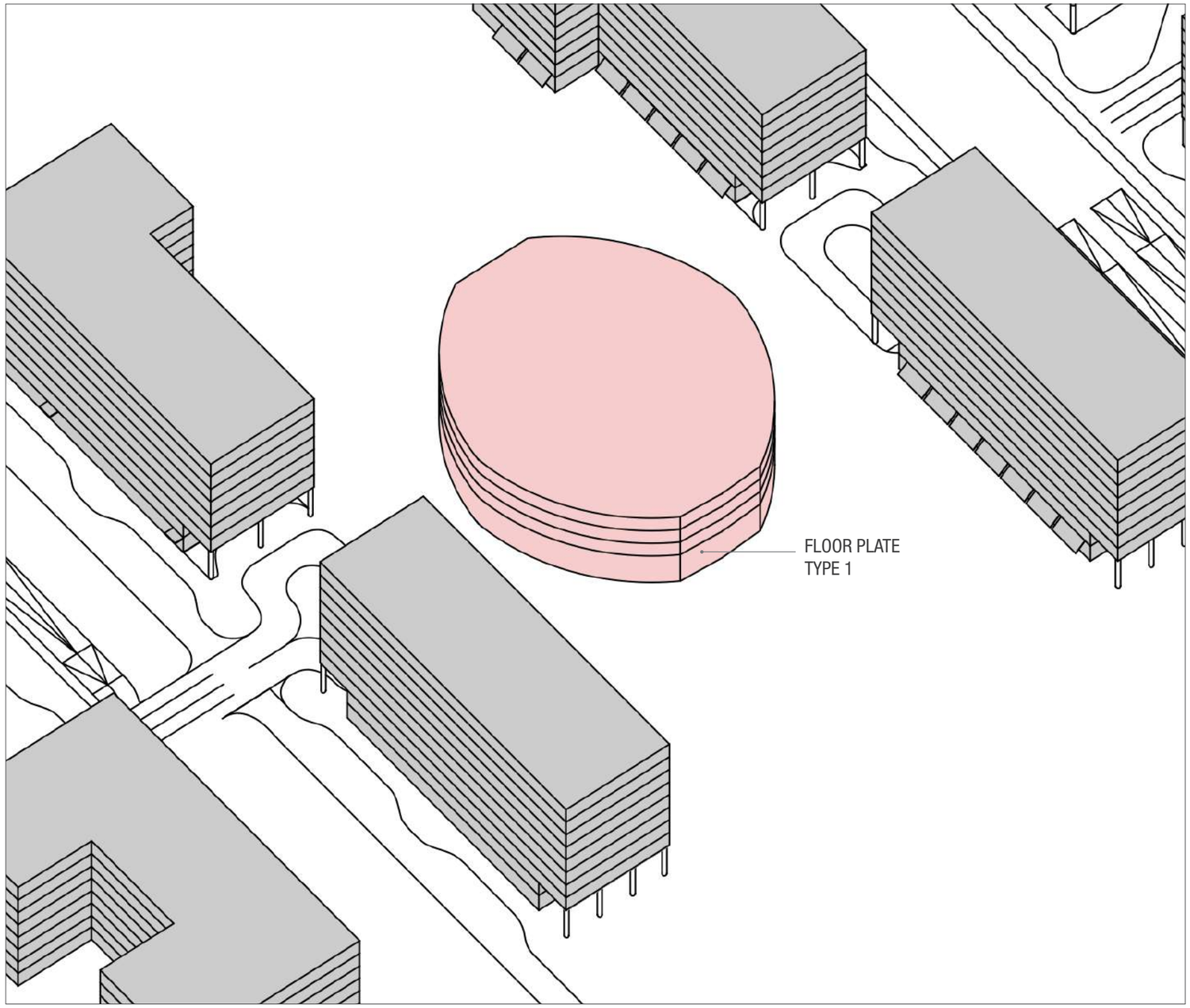
The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 248.8m.

The overall height is to be 35.4 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

HOTEL
RETAIL
BASEMENT



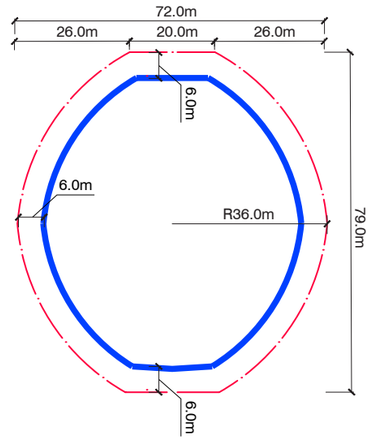
9.8 PLOT 16 - METRO HUB

GENERAL OVERVIEW

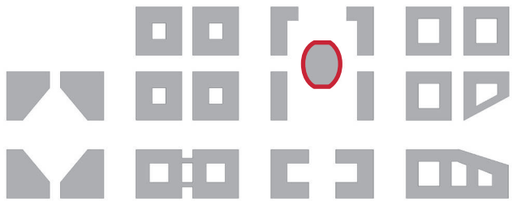
Building No.16 is to be used as retail and is to provide connection to the metro station below ground.

Plot No. 16 is located in the centre of the M.U.D. area.

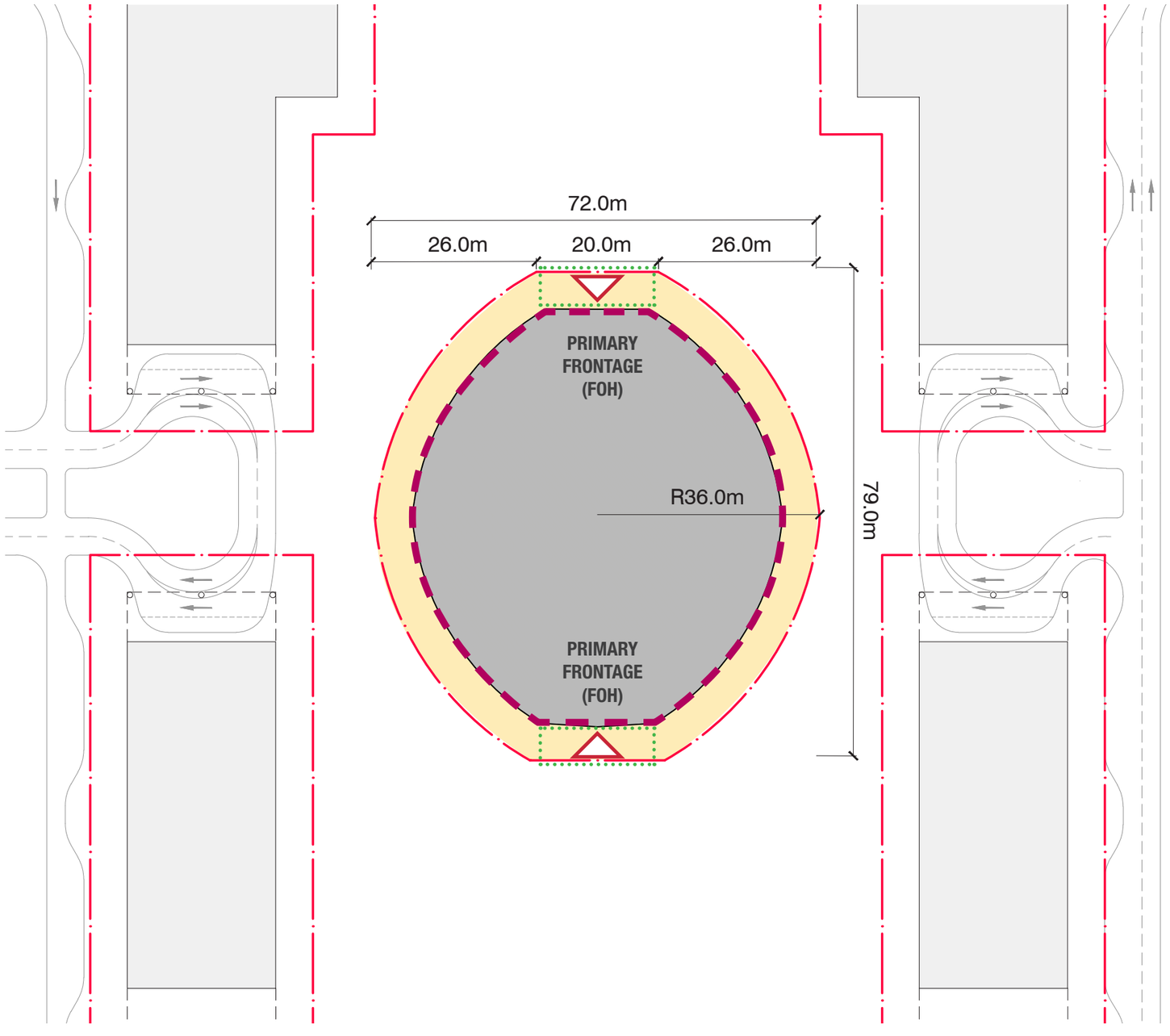
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



9.8 PLOT 16 - METRO HUB

KEY NUMBERS

PLOT SIZE	4,408.27 SQ.M.
MAX F.A.R.	10,000.00 SQ.M.
GROUND COVERAGE	3,103.00 SQ.M.
HEIGHT TO ROOF SLAB	20.0 M
NO. LEVELS	4
BUILDING USE (F.A.R.)	10,000.00 SQ.M. (RETAIL)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size and ground coverage are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

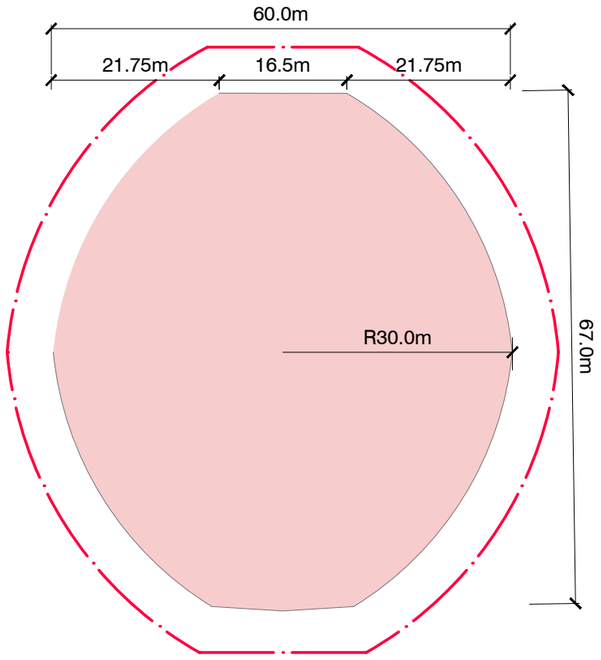
Note: this plot does not have a dedicated service/loading bay as it is positioned in the centre of a fully pedestrianised zone. It is intended that all servicing requirements will need to be carried out from adjacent roads at specific periods to be agreed with IICC.

KEY

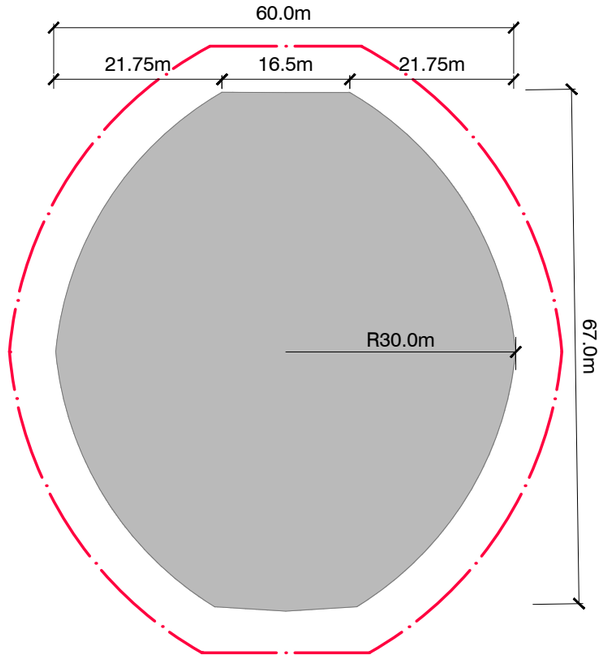
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

9.8 PLOT 16 - METRO HUB



PODIUM LEVELS: GF & 1F AND UPPER LEVELS 2ND - 3RD



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	3,103.00 SQ.M.
LEVEL 01	3,103.00 SQ.M.
LEVEL 02	3,103.00 SQ.M.
LEVEL 03	3,103.00 SQ.M.
TOTAL	12,412.00 SQ.M.

KEY

BUILT TO LINE

PLOT

GF & 1F AND UPPER LEVELS 2ND - 3RD

ROOF

9.0 BUILDING ELEMENTS

9.8 PLOT 16 - METRO HUB

HEIGHT REQUIREMENTS AND PARAMETERS

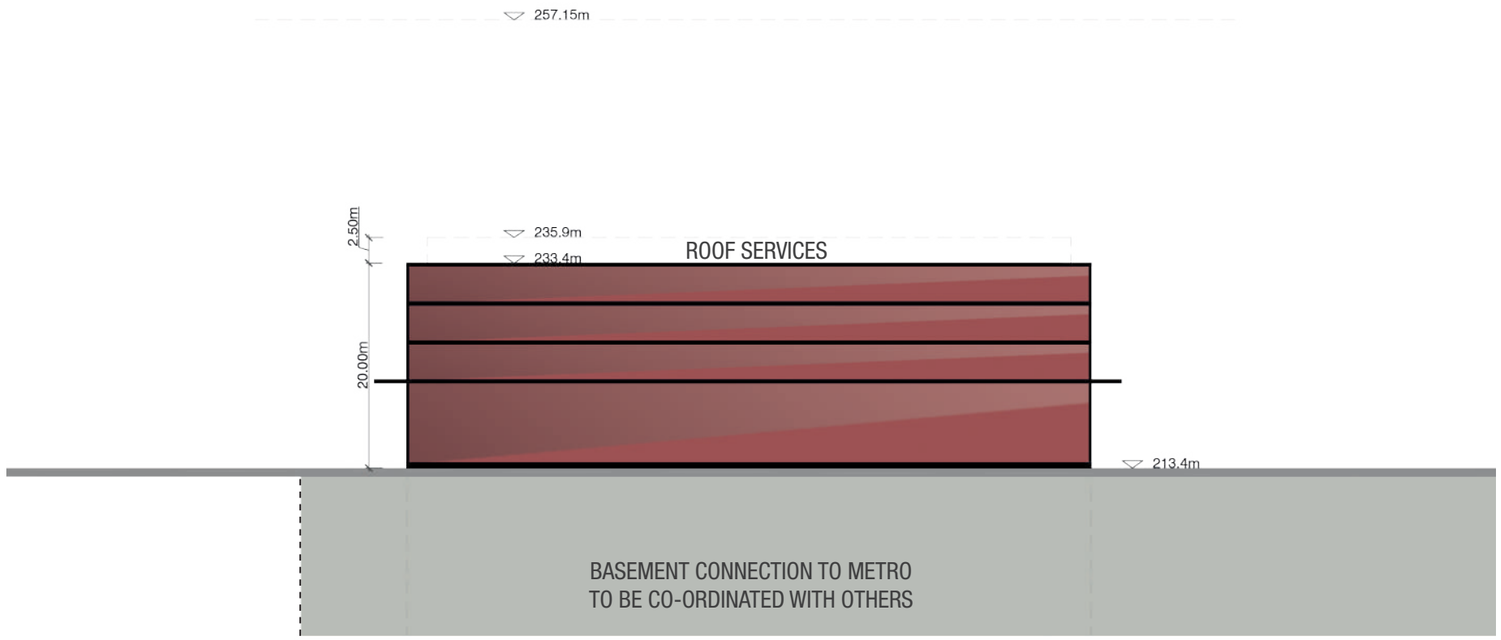
KEY NUMBERS

LEVELS	4 (00 TO 03)
MAX HEIGHT	20.0 M (+ 2.5 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 4 floors in total, with the ground floor being 8.1m floor to floor, and the upper floors being 3.8m floor to floor.

The permitted maximum height according to the AAI approval is 257.15m. The building's roof slab FFL is to be 233.4m.

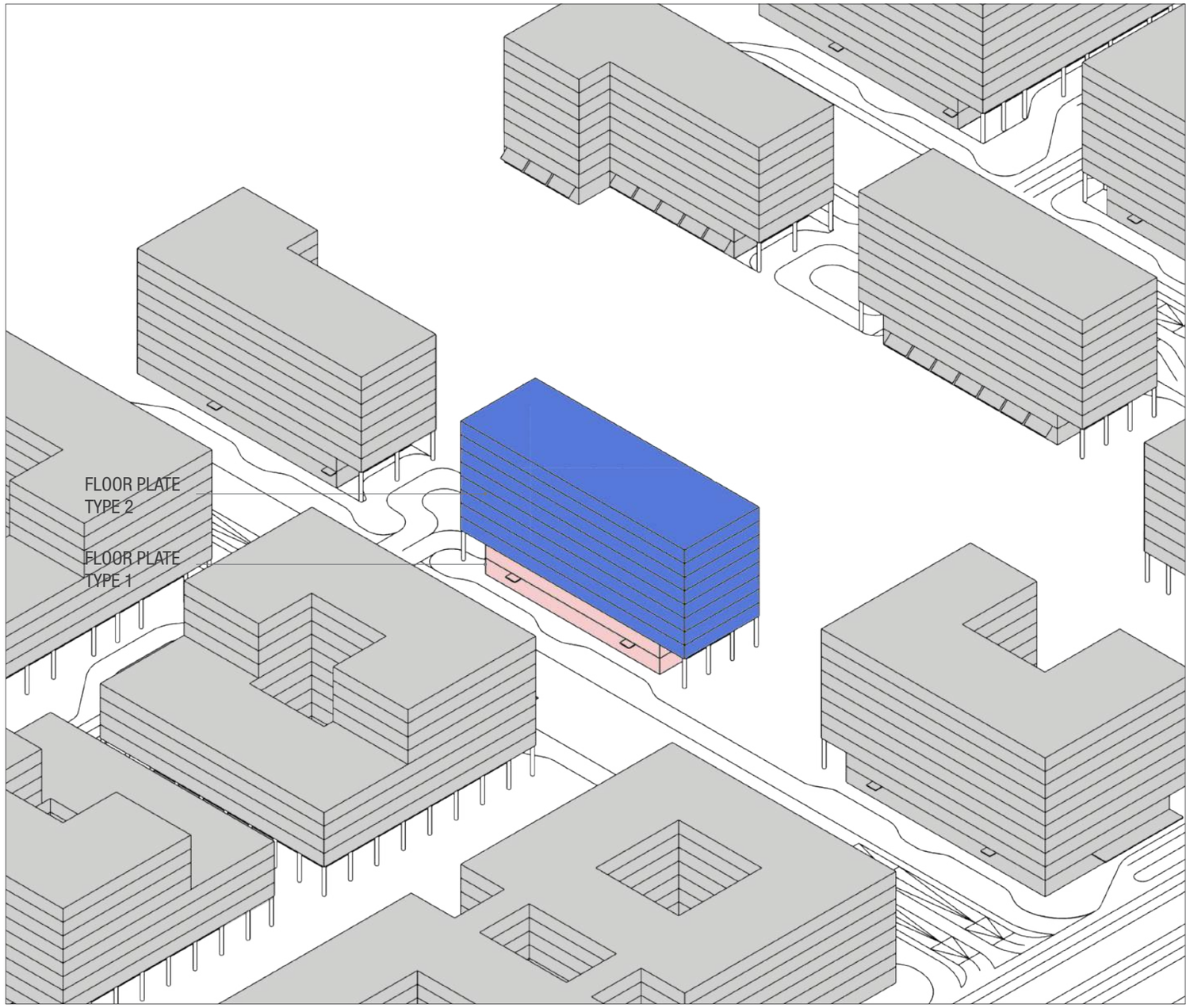
The overall height is to be 20.0 meters. An allowance of 2.5m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

RETAIL
BASEMENT

9.0 BUILDING ELEMENTS



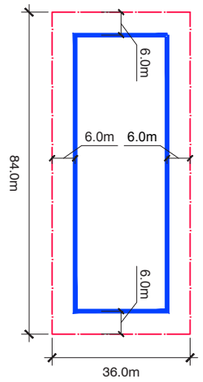
9.9 PLOT 17 - OFFICES

GENERAL OVERVIEW

Building No.17 is to be used as offices.

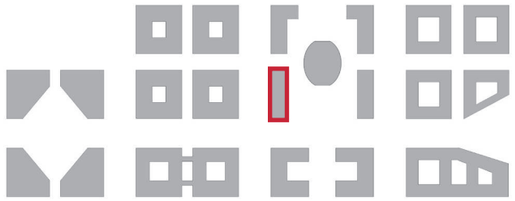
Plot No.17 is located in the middle of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

SETBACKS:

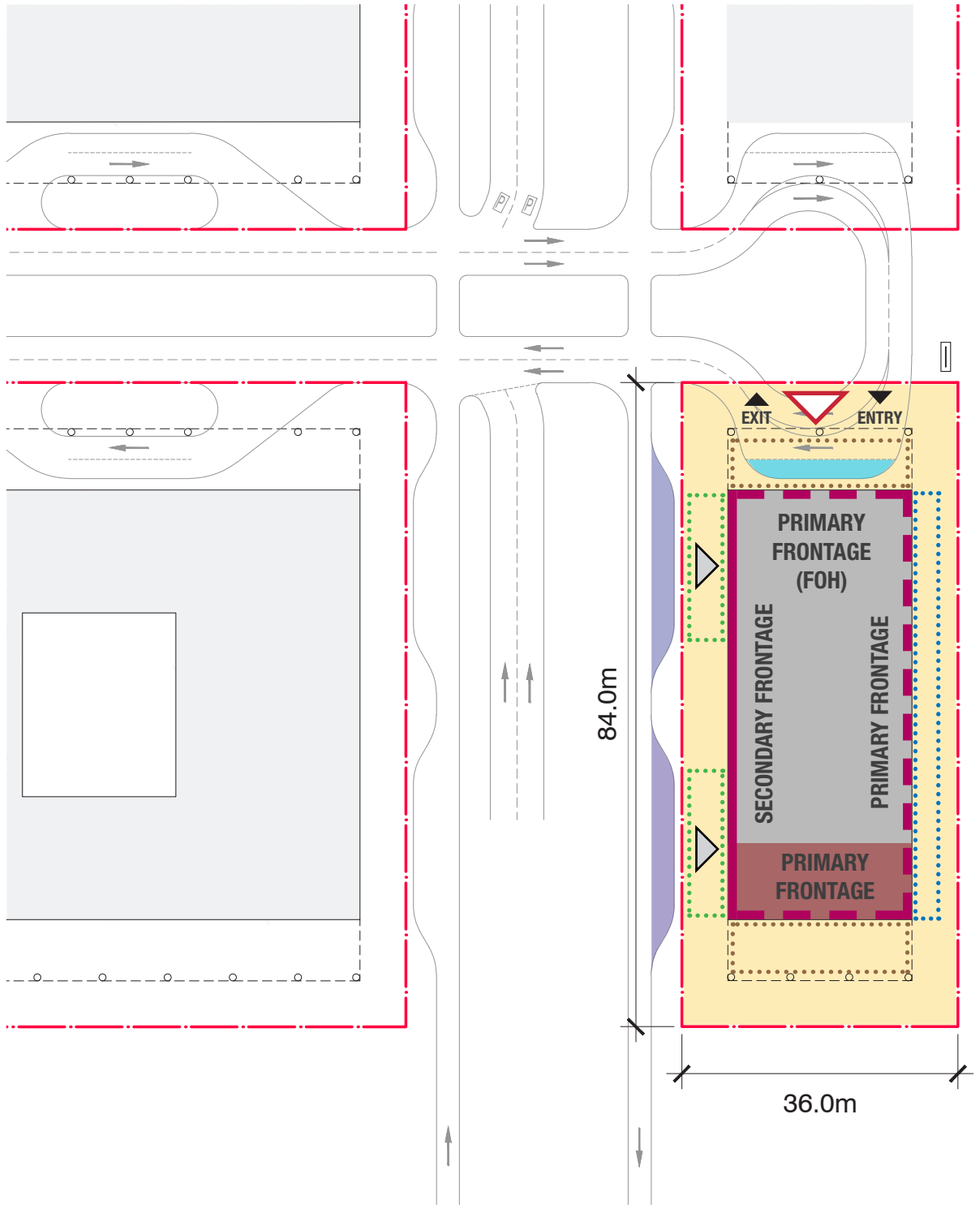


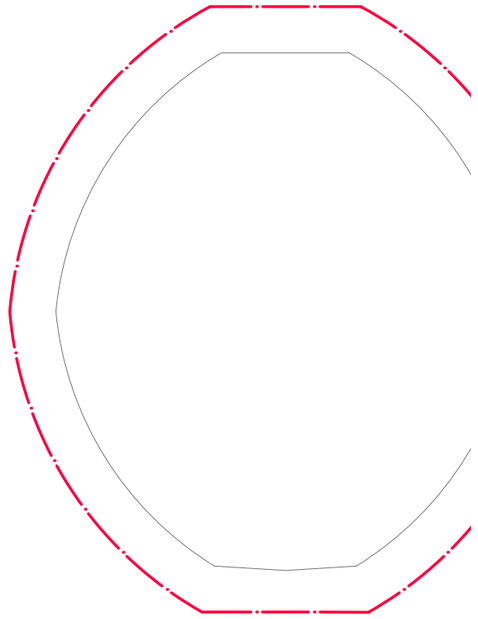
PLOT LINE
SETBACK LINE

KEY PLAN:



9.0 BUILDING ELEMENTS





* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 92

9.9 PLOT 17 - OFFICES

KEY NUMBERS

PLOT SIZE	3,024.00 SQ.M.
MAX F.A.R	16,512.00 SQ.M.
GROUND COVERAGE	1,728.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	1,000.00 SQ.M. (RETAIL) 15,512.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

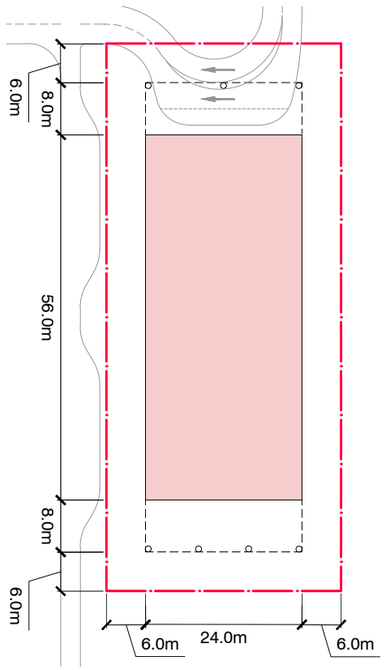
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

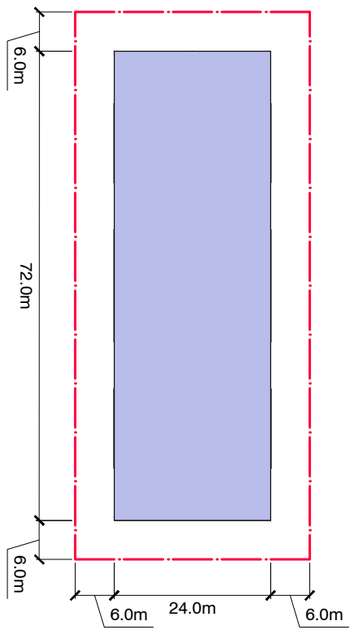
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

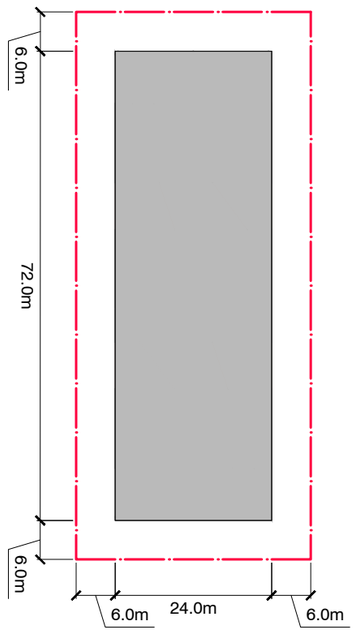
9.9 PLOT 17 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	1,344.00 SQ.M.
LEVEL 01	1,344.00 SQ.M.
LEVEL 02	1,728.00 SQ.M.
LEVEL 03	1,728.00 SQ.M.
LEVEL 04	1,728.00 SQ.M.
LEVEL 05	1,728.00 SQ.M.
LEVEL 06	1,728.00 SQ.M.
LEVEL 07	1,728.00 SQ.M.
LEVEL 08	1,728.00 SQ.M.
LEVEL 09	1,728.00 SQ.M.
TOTAL	16,512.00 SQ.M.

1,000.00 SQ.M OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS

9.9 PLOT 17 - OFFICES

HEIGHT REQUIREMENTS AND PARAMETERS

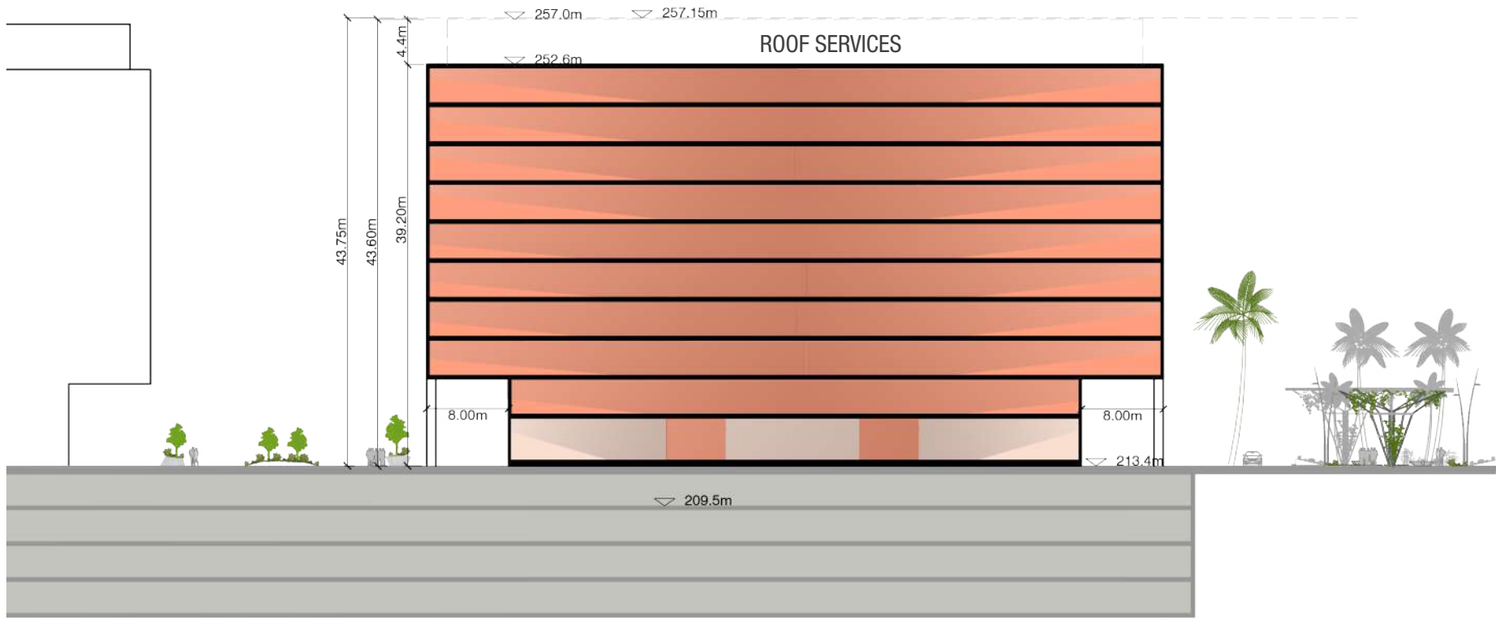
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2 M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

The permitted maximum height according to the AAI approval is 257.15m. The building's roof slab FFL is to be 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

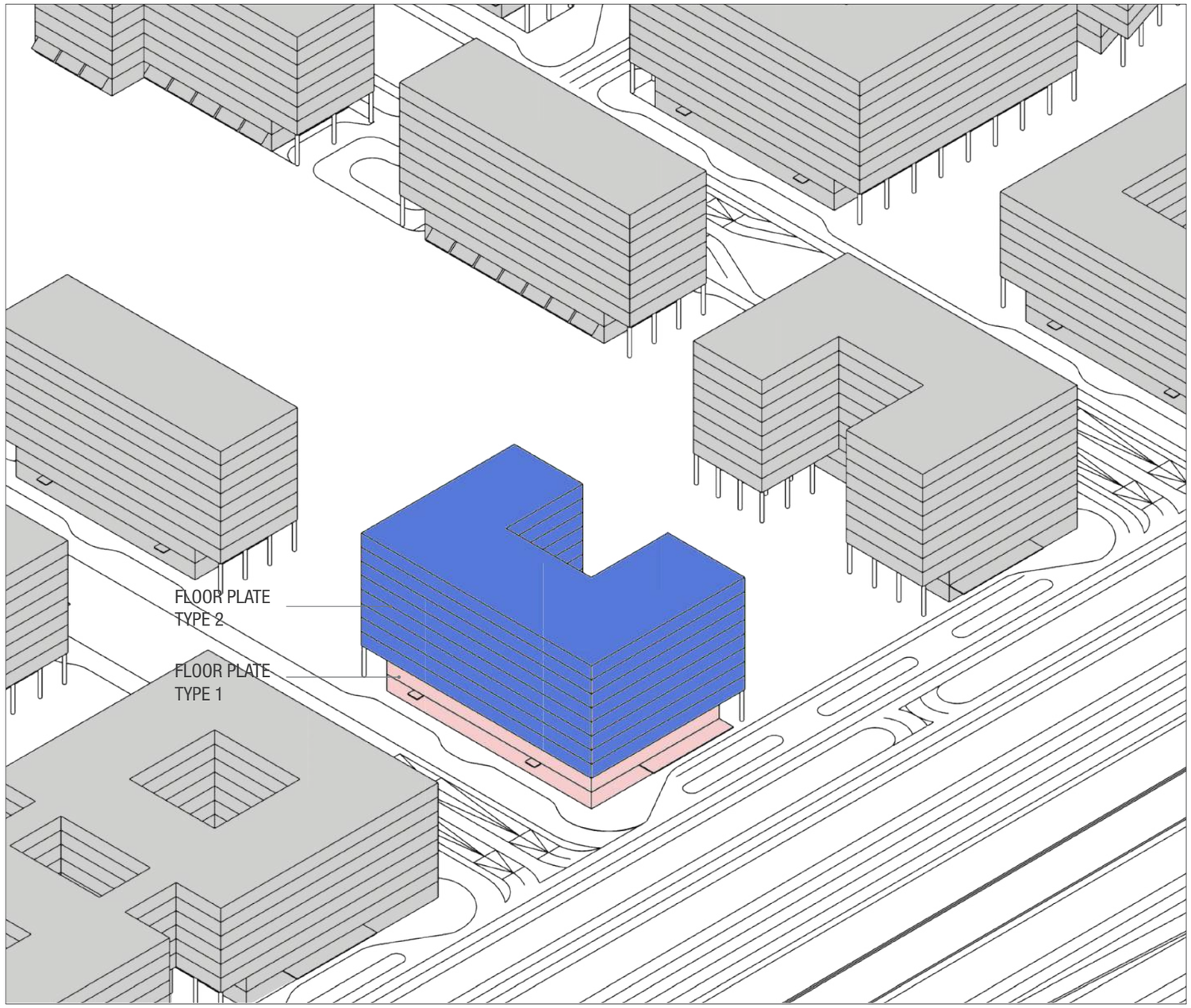


SECTION A
SCALE 1:600

OFFICE
RETAIL
BASEMENT

A
A

9.0 BUILDING ELEMENTS



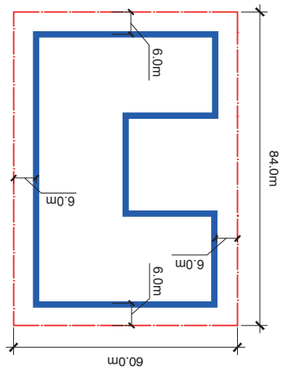
9.10 PLOT 18 - HOTEL 5*

GENERAL OVERVIEW

Building No.18 is to be used as 5* hotel.

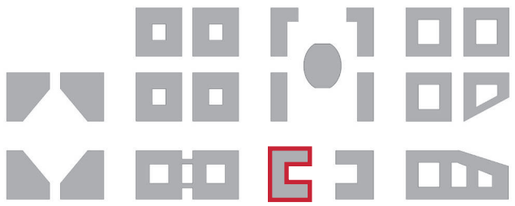
Plot No.18 is located on the east side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

SETBACKS:

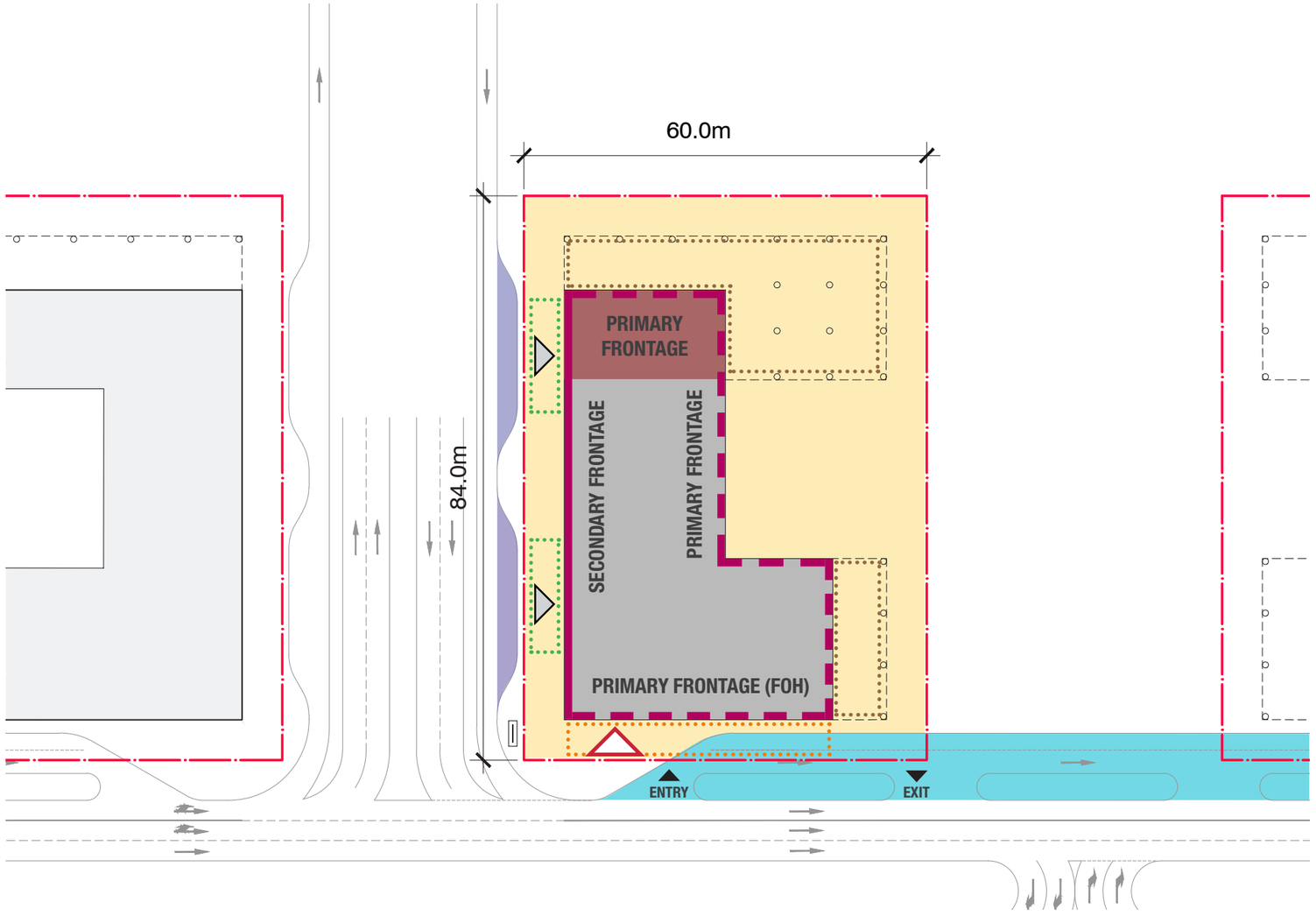


PLOT LINE
SETBACK LINE

KEY PLAN:



9.0 BUILDING ELEMENTS



9.10 PLOT 18 - HOTEL 5*

KEY NUMBERS

PLOT SIZE	5,040.00 SQ.M.
MAX F.A.R	26,370.00 SQ.M.
GROUND COVERAGE	2,816.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	1,000.00 SQ.M. (RETAIL) 25,370.00 SQ.M. (HOTEL 5*)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

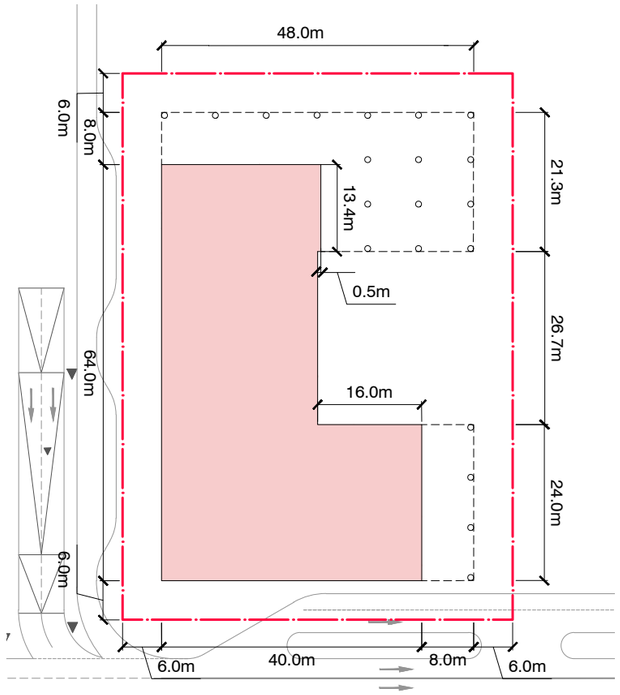
KEY

- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

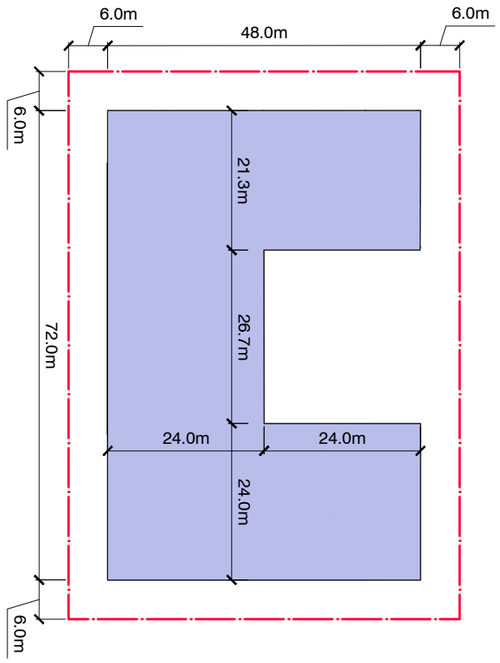
* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 92

9.0 BUILDING ELEMENTS

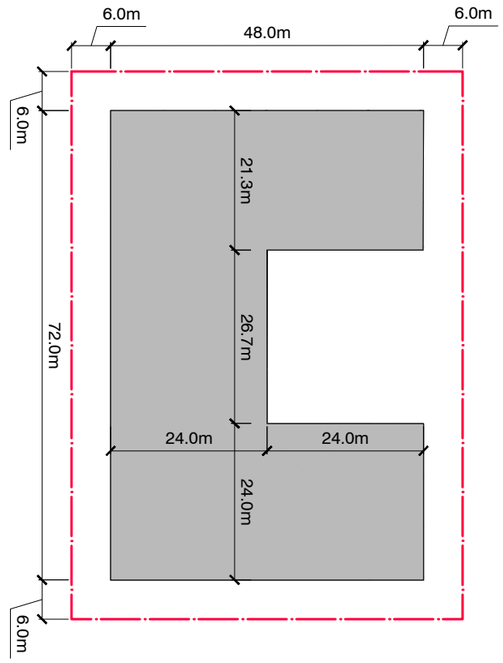
9.10 PLOT 18 - HOTEL 5*



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	1,926.67 SQ.M.
LEVEL 01	1,926.67 SQ.M.
LEVEL 02	2,816.00 SQ.M.
LEVEL 03	2,816.00 SQ.M.
LEVEL 04	2,816.00 SQ.M.
LEVEL 05	2,816.00 SQ.M.
LEVEL 06	2,816.00 SQ.M.
LEVEL 07	2,816.00 SQ.M.
LEVEL 08	2,816.00 SQ.M.
LEVEL 09	2,816.00 SQ.M.
TOTAL	26,381.33 SQ.M.

1,000.00 SQ.M OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS

9.10 PLOT 18 - HOTEL 5*

HEIGHT REQUIREMENTS AND PARAMETERS

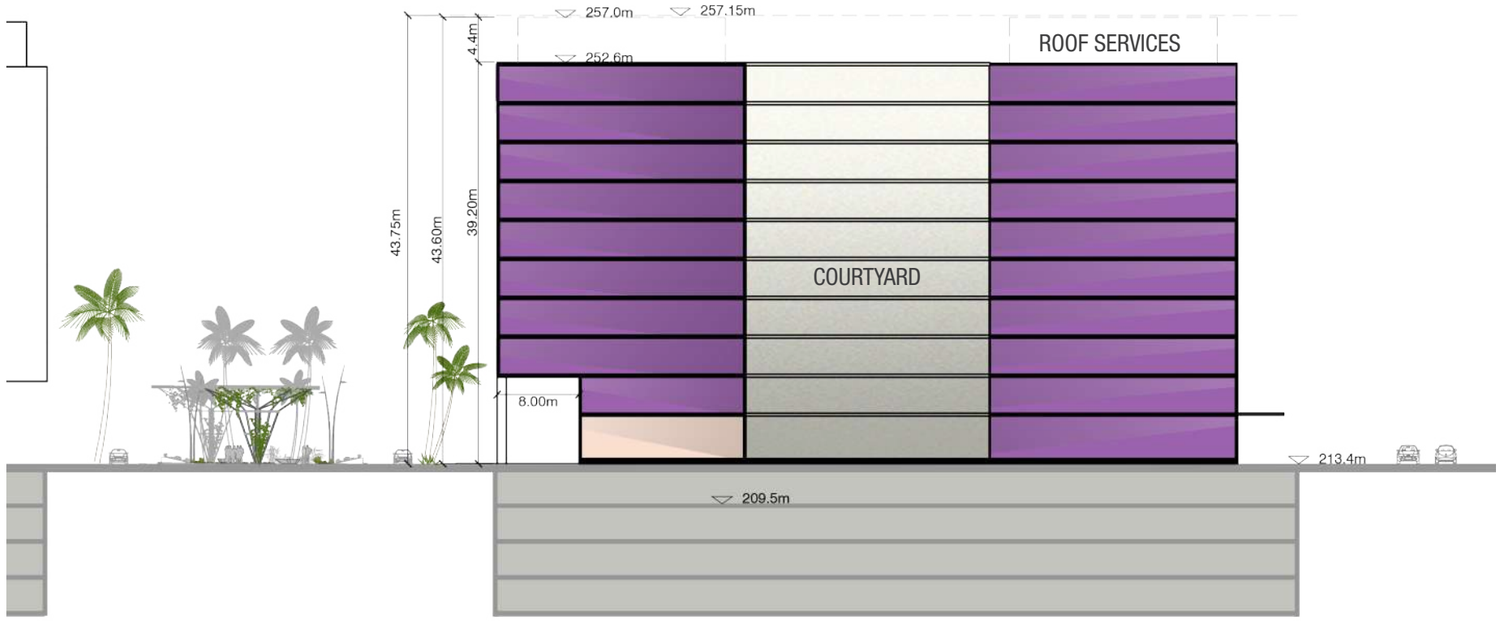
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2 M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

The permitted maximum height according to the AAI approval is 257.15m. The building's roof slab FFL is to be 252.6m.

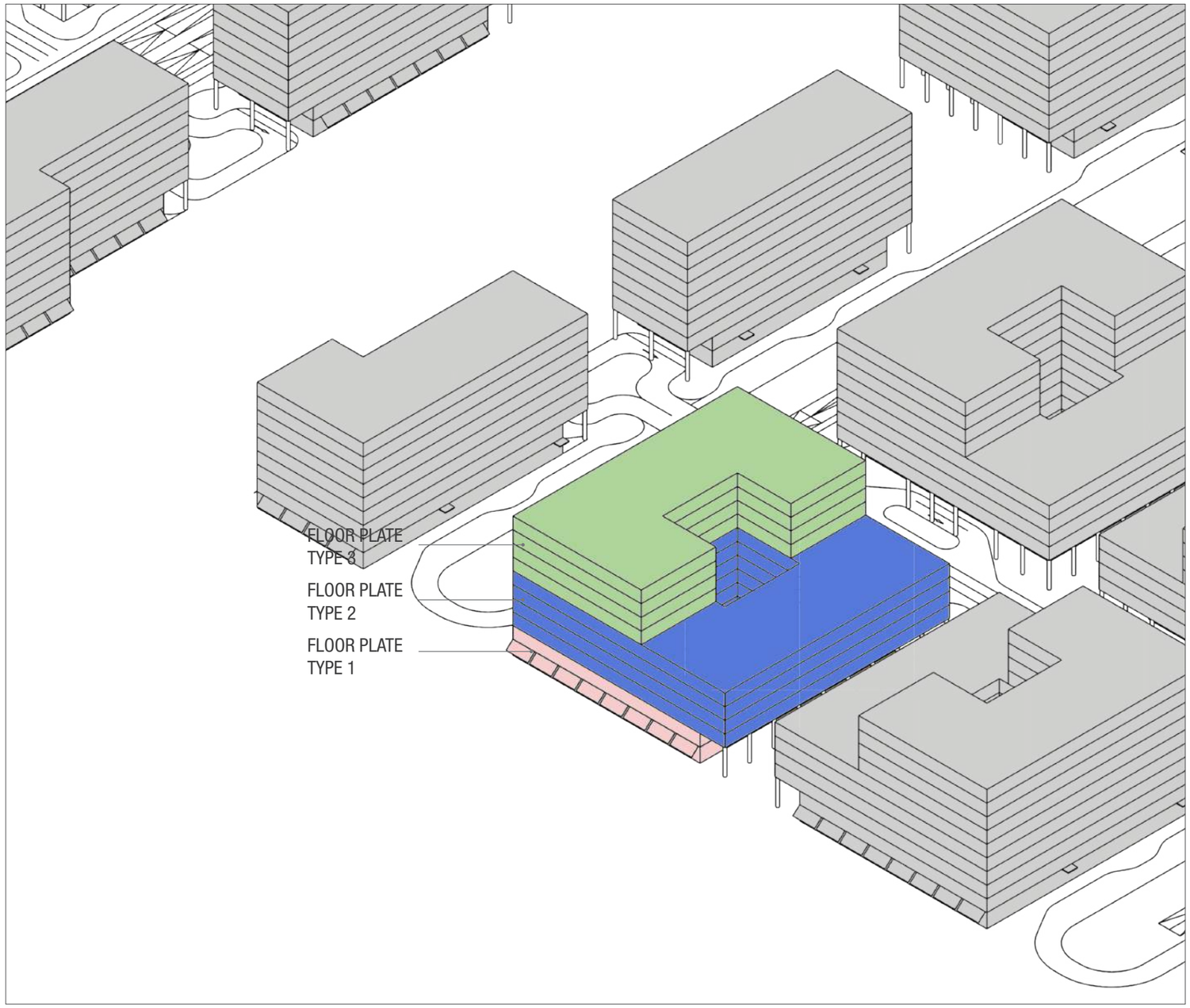
The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

HOTEL
RETAIL
BASEMENT

9.0 BUILDING ELEMENTS



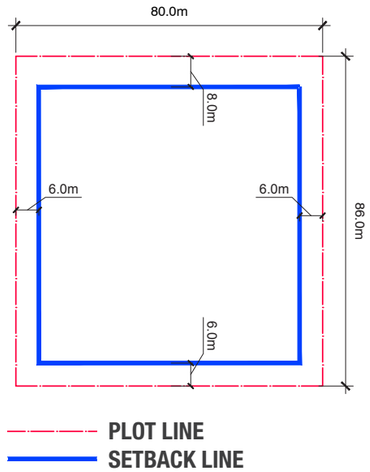
9.11 PLOT 19 - OFFICES

GENERAL OVERVIEW

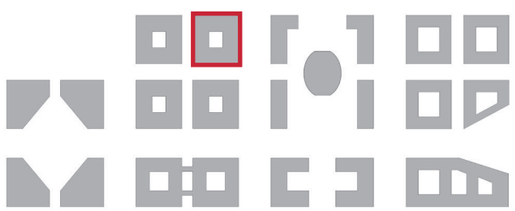
Building No.19 is to be used as offices.

Plot No.19 is located on the west side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

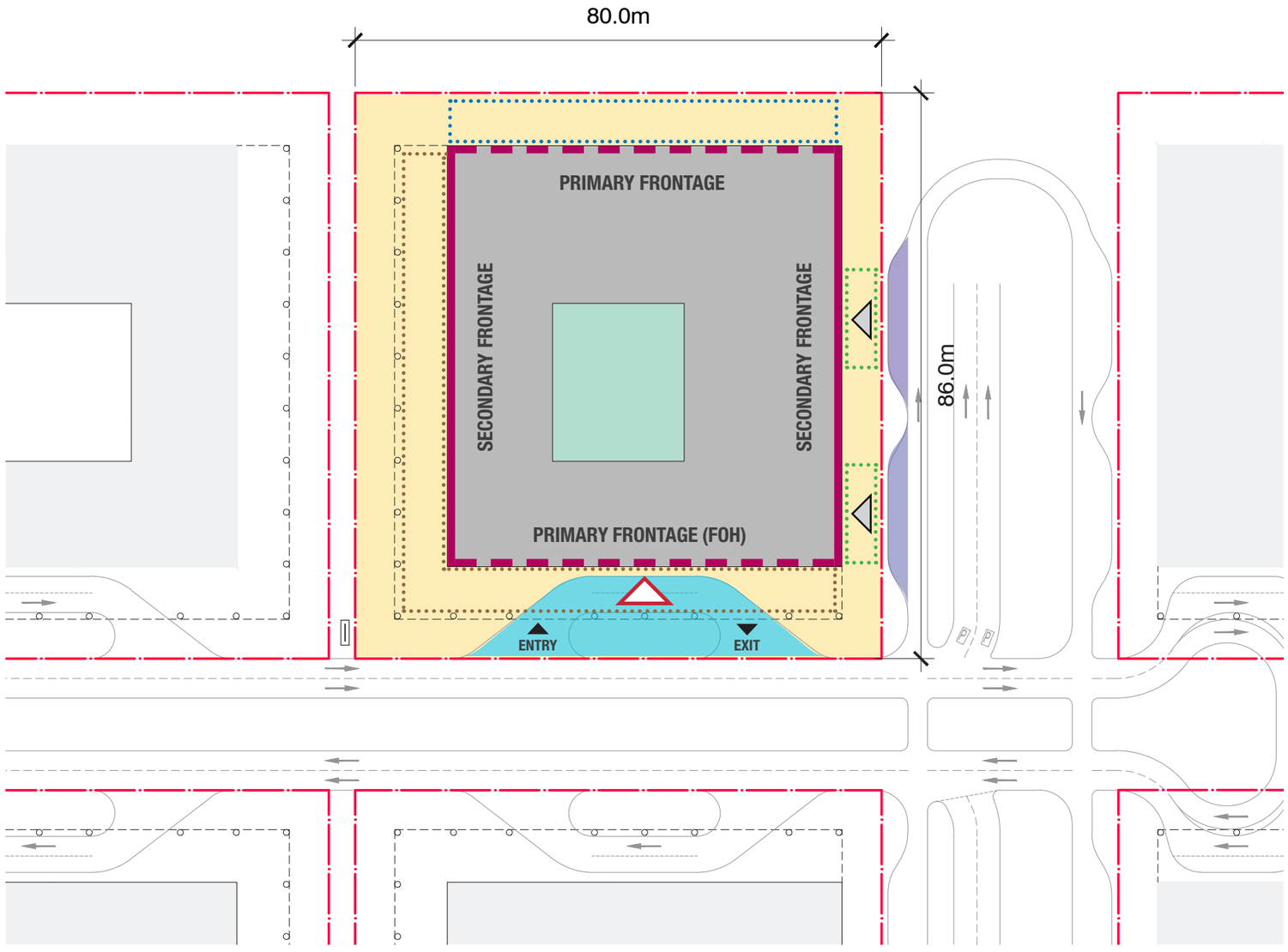
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 93

9.11 PLOT 19 - OFFICES

KEY NUMBERS

PLOT SIZE	6,880.00 SQ.M.
MAX F.A.R	33,792.00 SQ.M.
GROUND COVERAGE	4,416.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	2,400.00 SQ.M. (RETAIL) 31,392.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

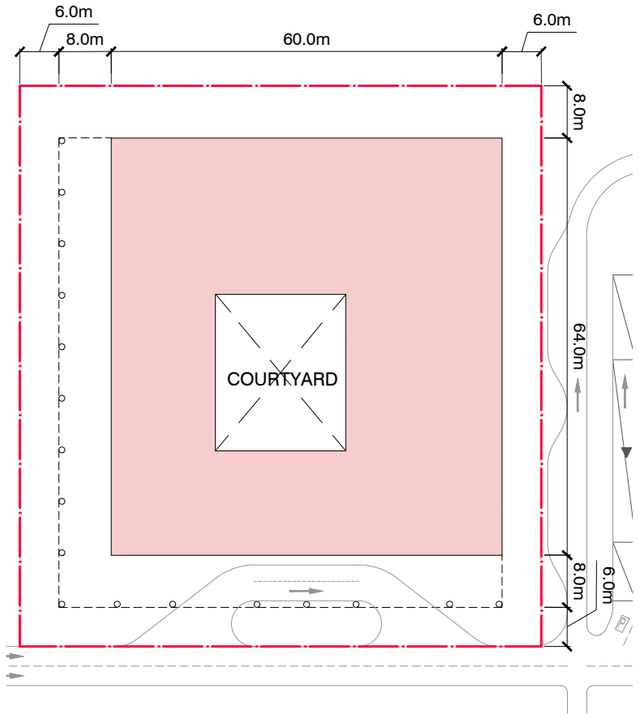
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

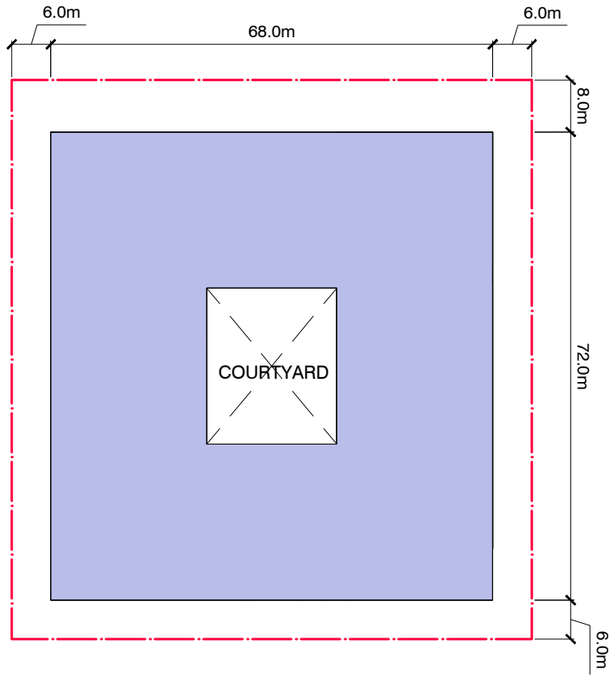
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

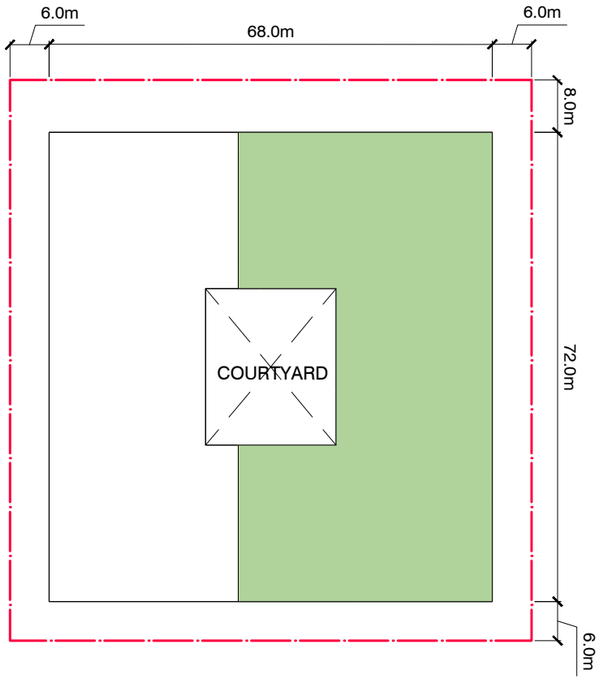
9.11 PLOT 19 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-05



TOWER LEVELS: 06-09

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	3,360.00 SQ.M.
LEVEL 01	3,360.00 SQ.M.
LEVEL 02	4,416.00 SQ.M.
LEVEL 03	4,416.00 SQ.M.
LEVEL 04	4,416.00 SQ.M.
LEVEL 05	4,416.00 SQ.M.
LEVEL 06	2,448.00 SQ.M.
LEVEL 07	2,448.00 SQ.M.
LEVEL 08	2,448.00 SQ.M.
LEVEL 09	2,448.00 SQ.M.
TOTAL	34,176.00 SQ.M.

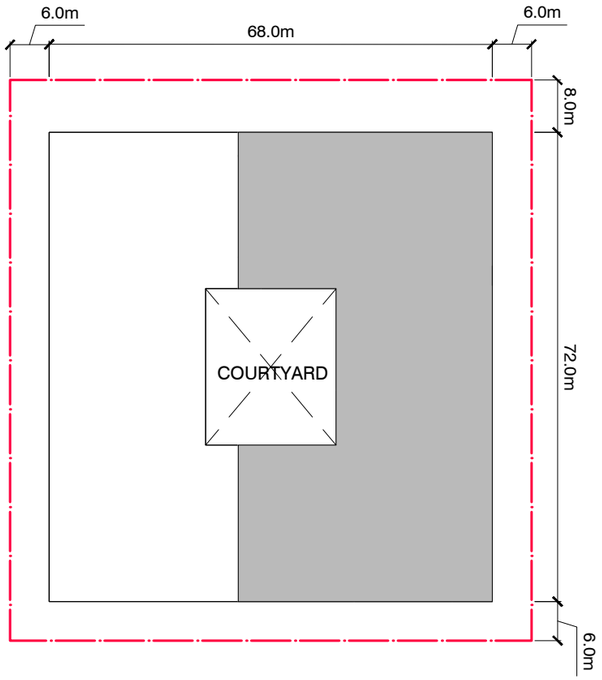
2,400.00 SQ.M OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-05
- TOWER LEVELS: 06-09
- ROOF

9.0 BUILDING ELEMENTS

9.11 PLOT 19 - OFFICES



ROOF

9.0 BUILDING ELEMENTS

9.11 PLOT 19 - OFFICES

HEIGHT REQUIREMENTS AND PARAMETERS

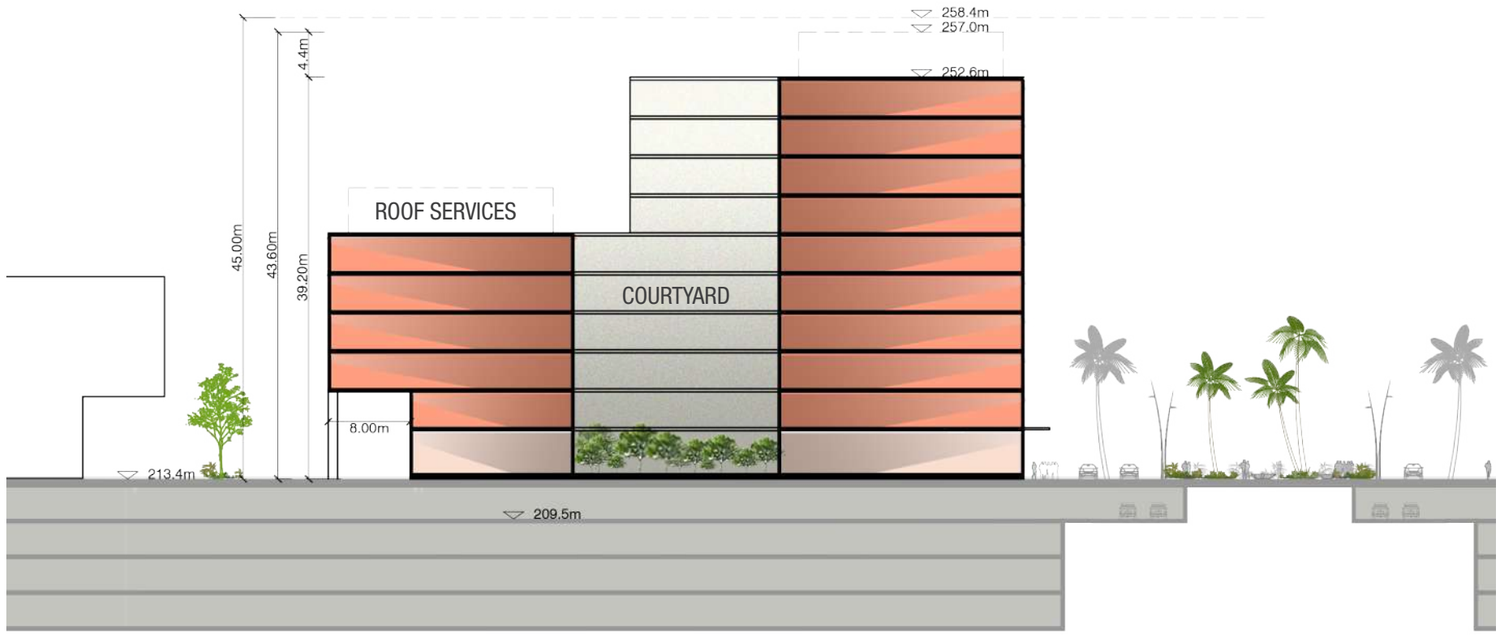
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

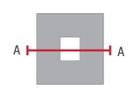
The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

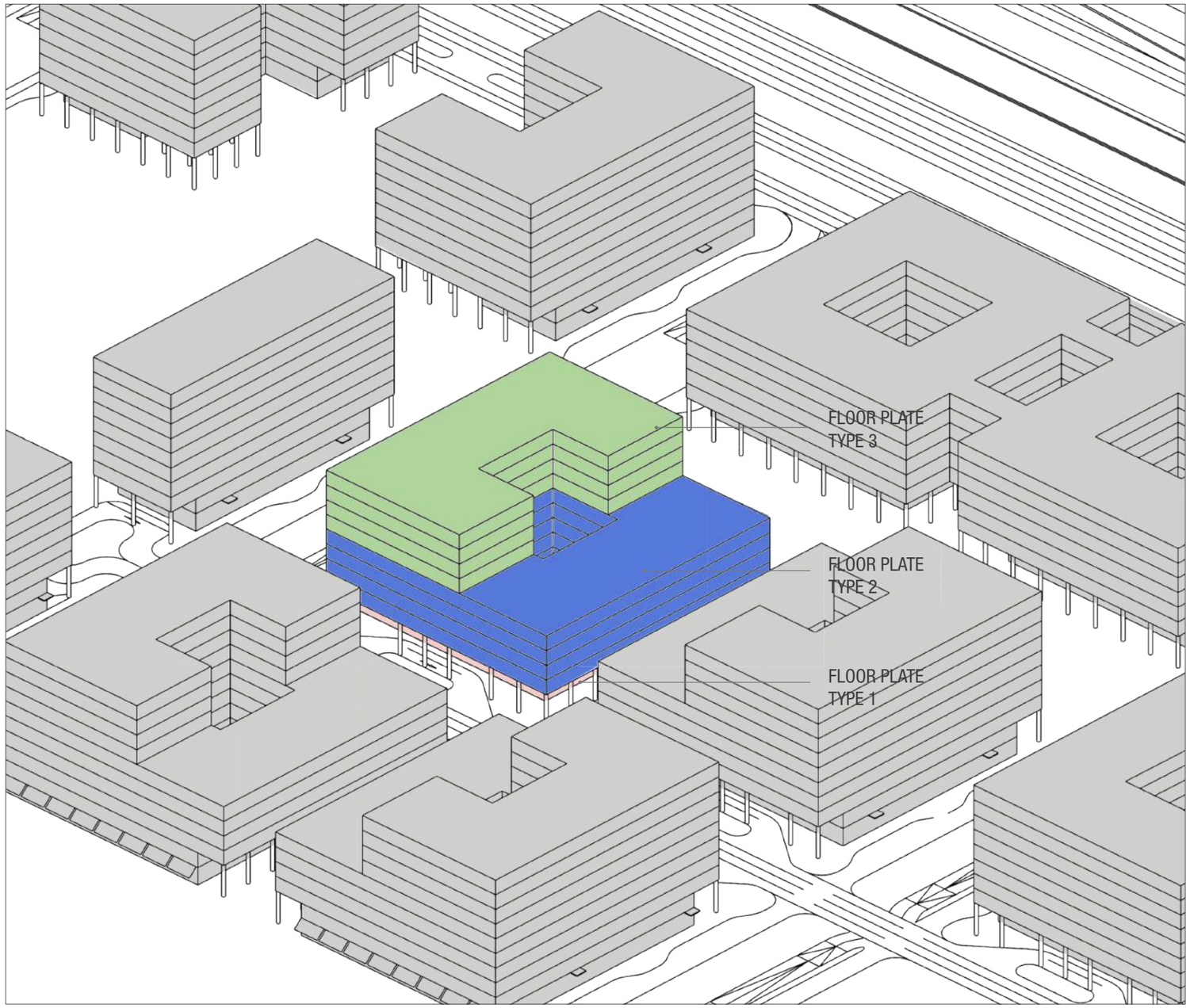


SECTION A
SCALE 1:600

OFFICE
RETAIL
BASEMENT



9.0 BUILDING ELEMENTS



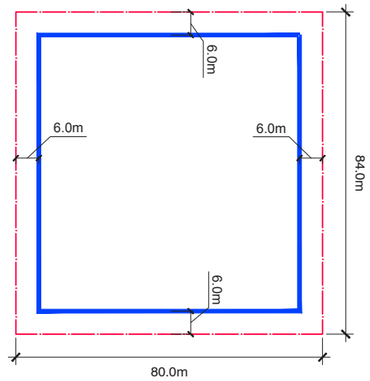
9.12 PLOT 20 - OFFICES

GENERAL OVERVIEW

Building No.20 is to be used as offices.

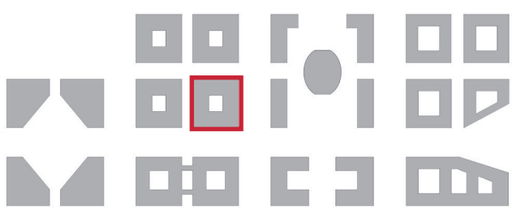
Plot No.20 is located in the middle of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

SETBACKS:

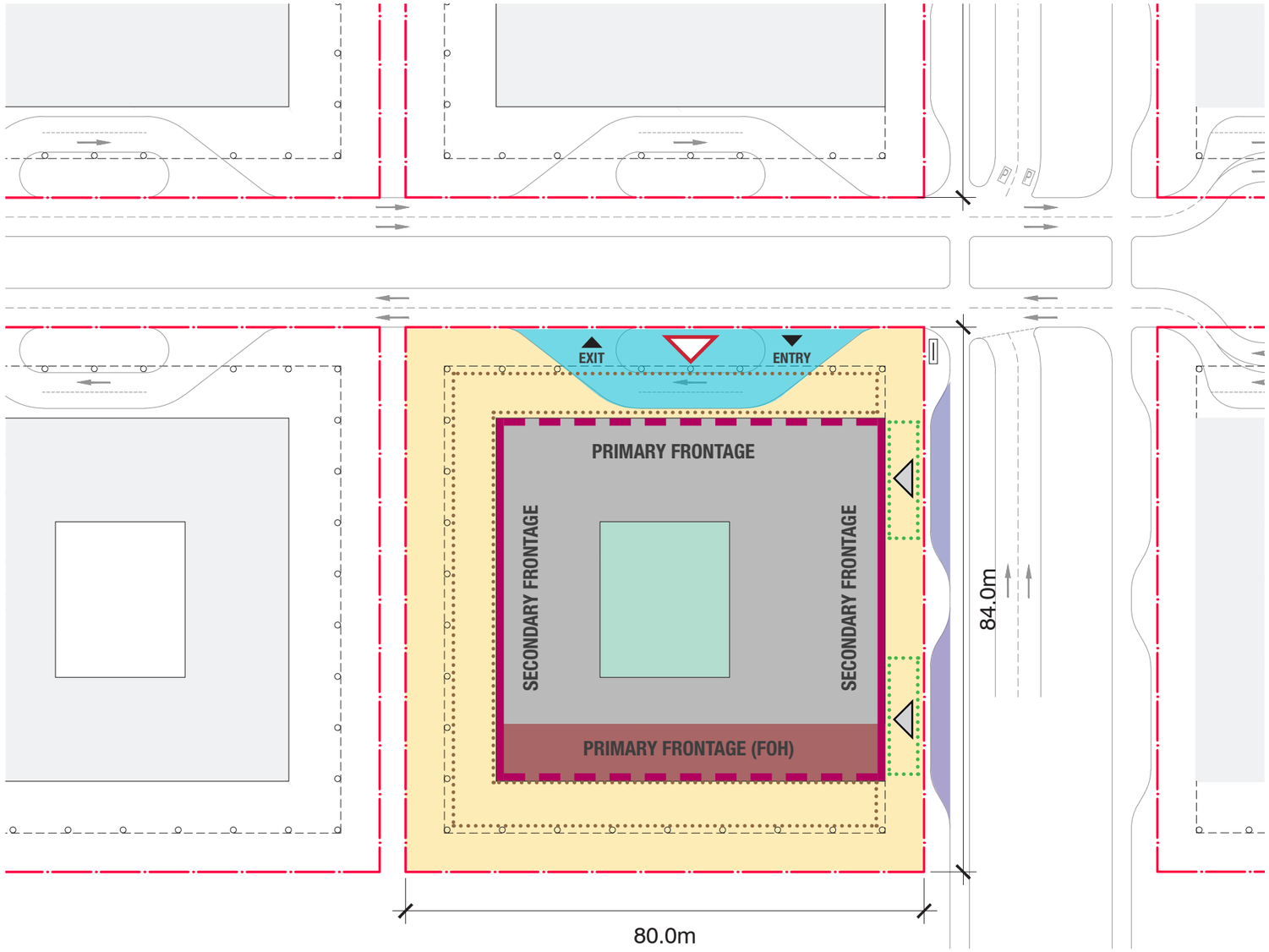


PLOT LINE
SETBACK LINE

KEY PLAN:



9.0 BUILDING ELEMENTS



9.12 PLOT 20 - OFFICES

KEY NUMBERS

PLOT SIZE	6,720.00 SQ.M.
MAX F.A.R	32,832.00 SQ.M.
GROUND COVERAGE	4,416.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	1,900.00 SQ.M. (RETAIL) 30,932.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

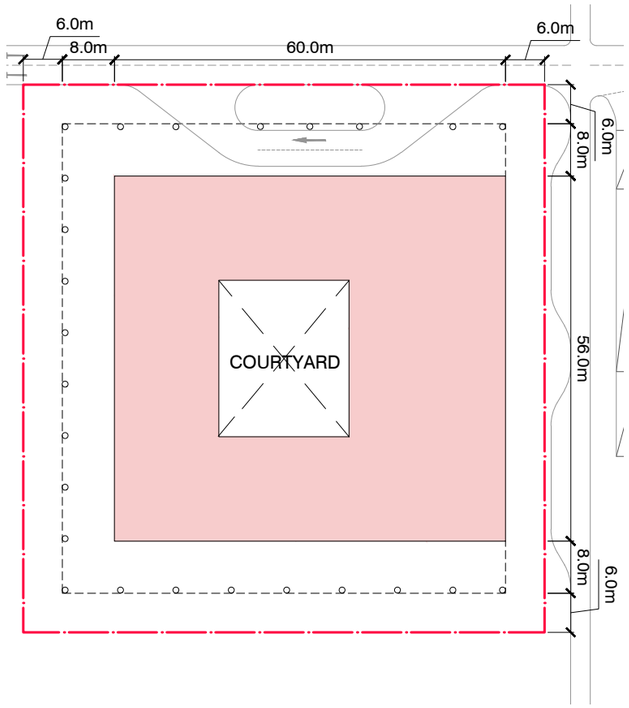
KEY

- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

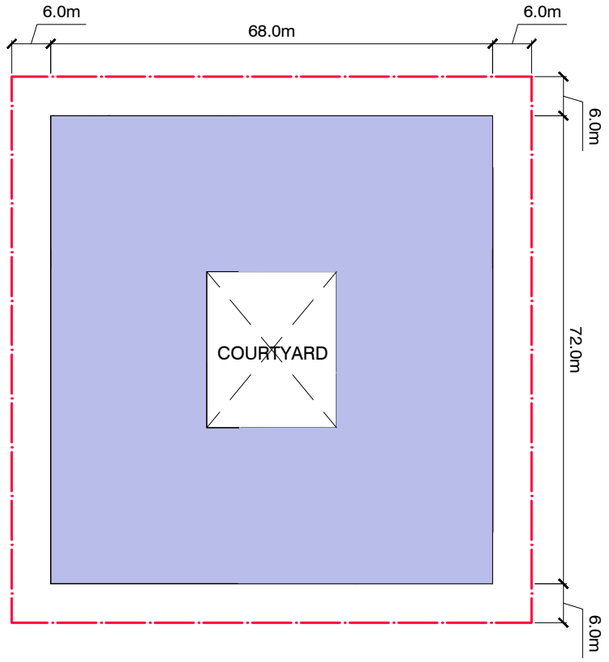
* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 93

9.0 BUILDING ELEMENTS

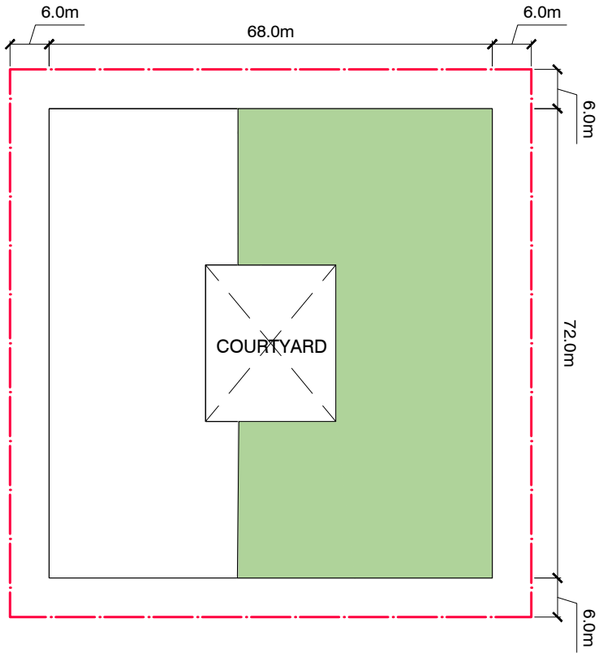
9.12 PLOT 20 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-05



TOWER LEVELS: 06-09

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	2,880.00 SQ.M.
LEVEL 01	2,880.00 SQ.M.
LEVEL 02	4,416.00 SQ.M.
LEVEL 03	4,416.00 SQ.M.
LEVEL 04	4,416.00 SQ.M.
LEVEL 05	4,416.00 SQ.M.
LEVEL 06	2,448.00 SQ.M.
LEVEL 07	2,448.00 SQ.M.
LEVEL 08	2,448.00 SQ.M.
LEVEL 09	2,448.00 SQ.M.
TOTAL	33,216.00 SQ.M.

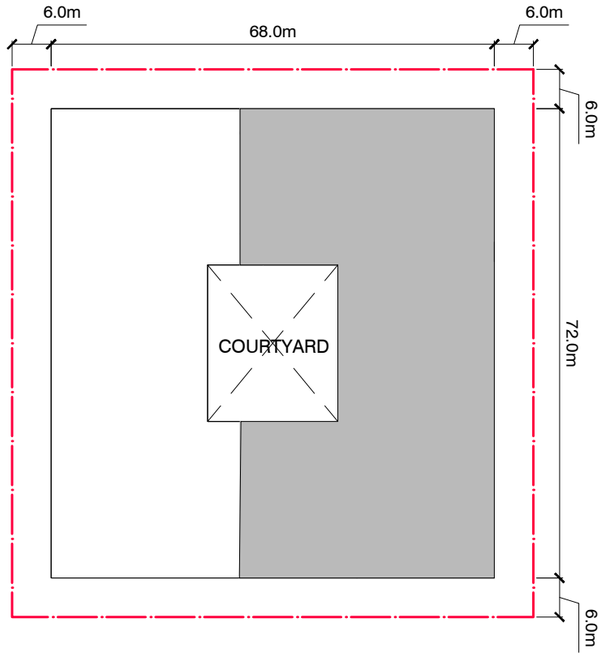
1,900.00 SQ.M OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-05
- TOWER LEVELS: 06-09
- ROOF

9.0 BUILDING ELEMENTS

9.12 PLOT 20 - OFFICES



ROOF

9.0 BUILDING ELEMENTS

9.12 PLOT 20 - OFFICES

HEIGHT REQUIREMENTS AND PARAMETERS

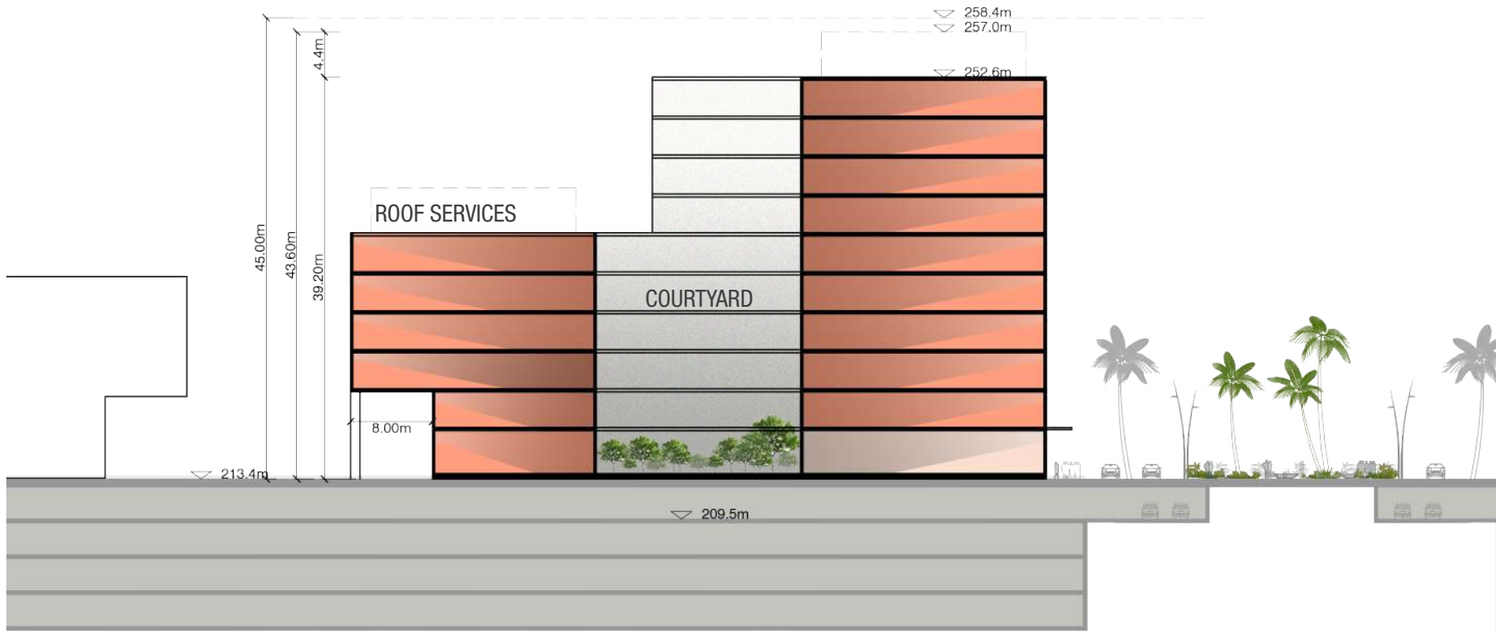
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2 M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

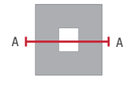
The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

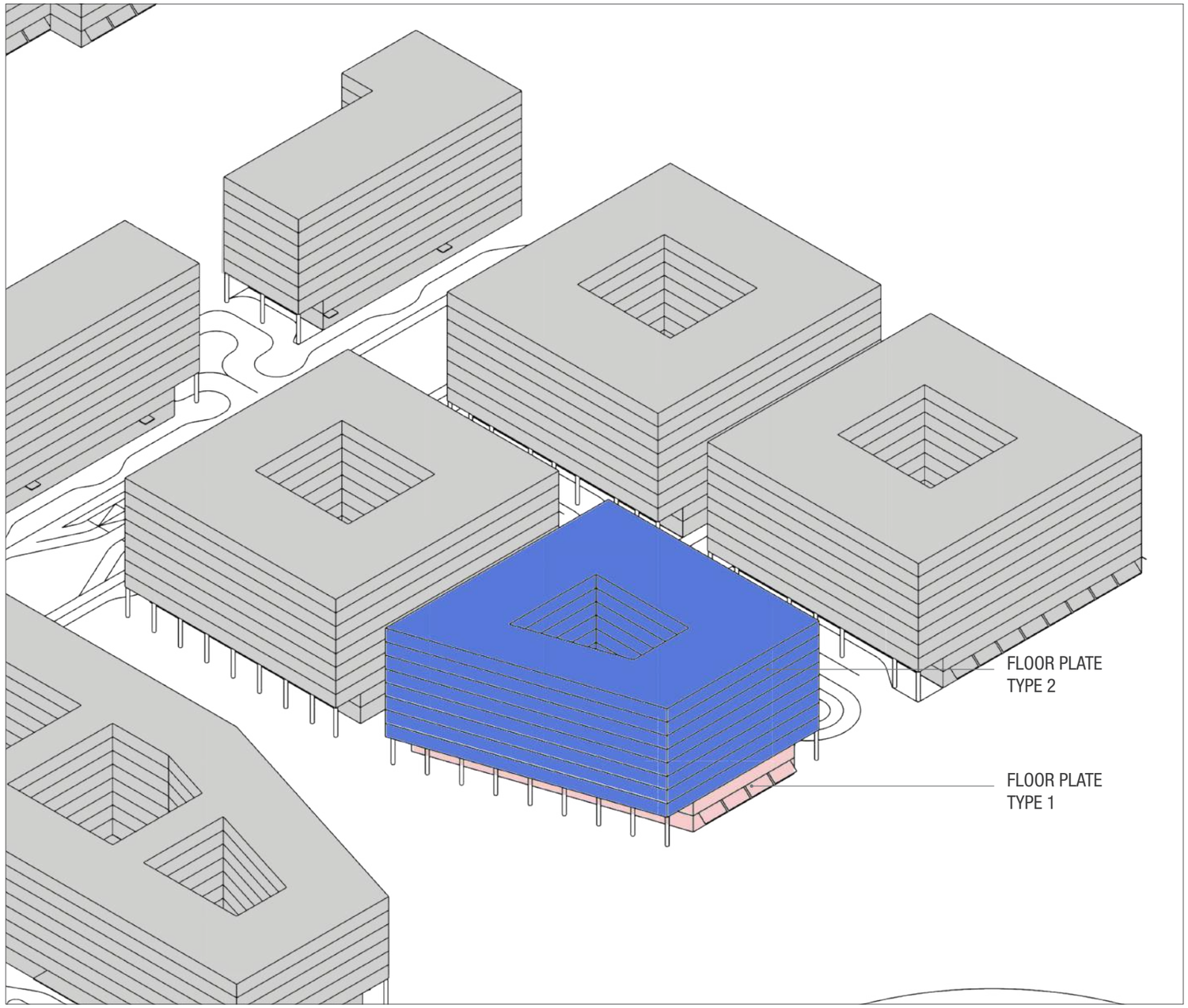


SECTION A
SCALE 1:600

OFFICE
RETAIL
BASEMENT



9.0 BUILDING ELEMENTS



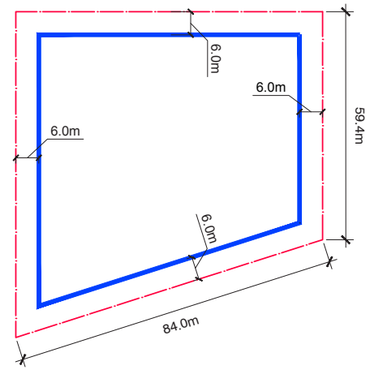
9.13 PLOT 21 - HOTEL 4*

GENERAL OVERVIEW

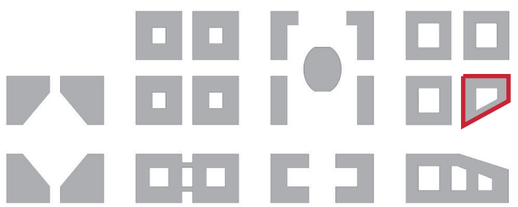
Building No.21 is to be used as 4* hotel.

Plot No.20 is located on the north side of the M.U.D. area. The west side of the building has a drop-off bay to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

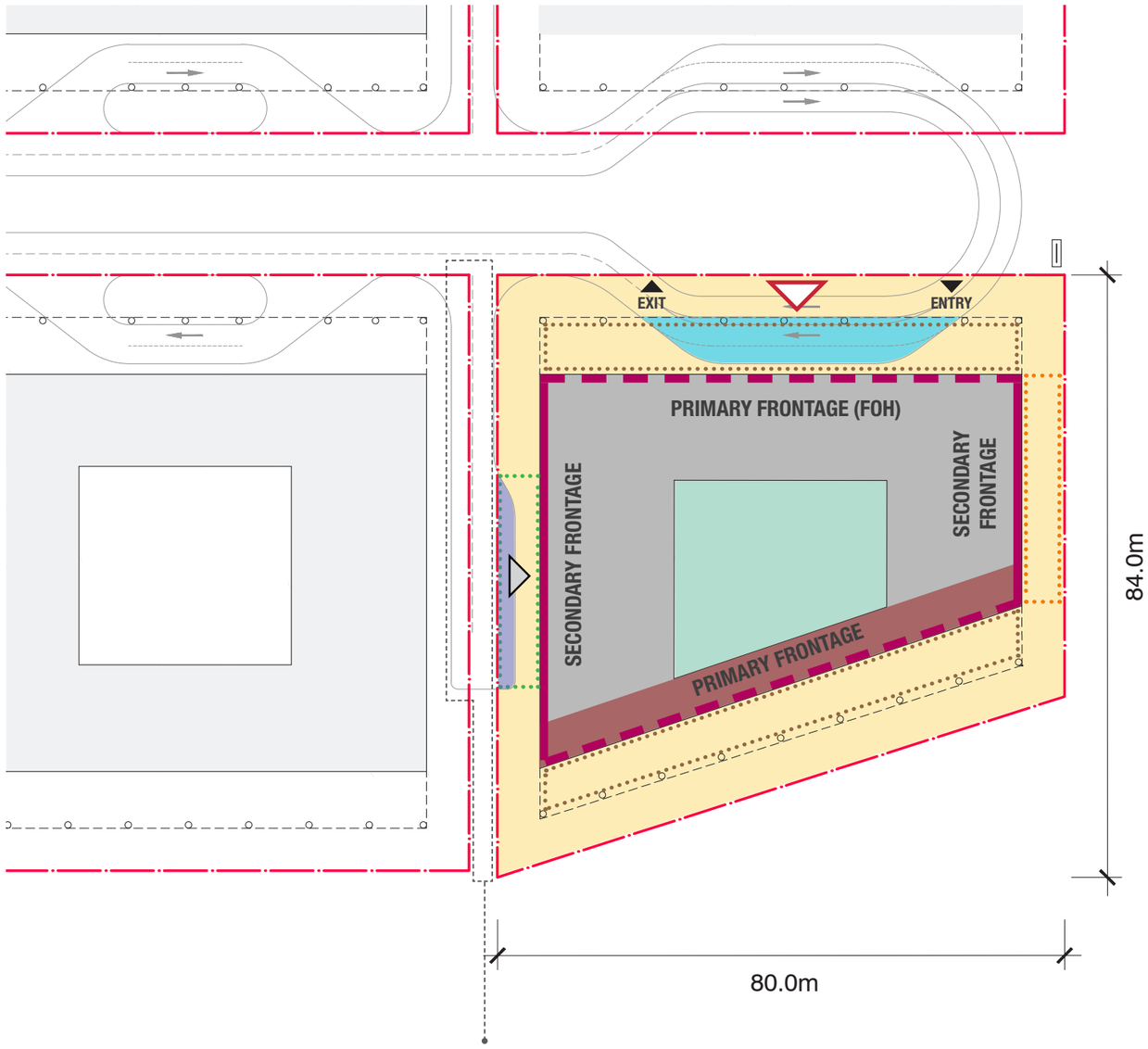
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



The development of the area and of the road in-between adjacent plots is the responsibility of the first developer to commence the works.

* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 91

9.13 PLOT 21 - HOTEL 4*

KEY NUMBERS

PLOT SIZE	5,736.00 SQ.M.
MAX F.A.R	32,034.00 SQ.M.
GROUND COVERAGE	3,427.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	3,500.00 SQ.M. (RETAIL) 28,534.00 SQ.M. (HOTEL 4*)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

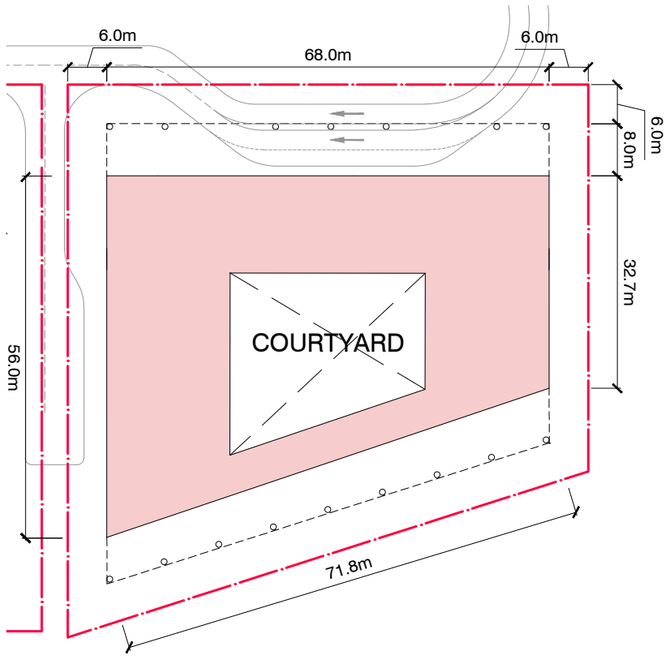
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

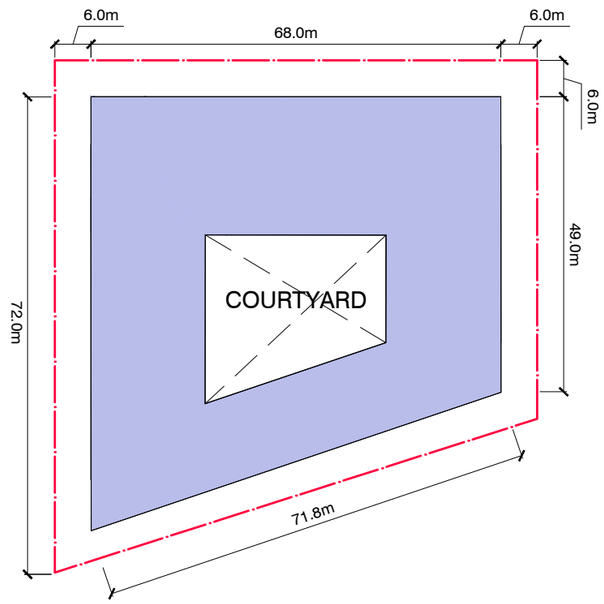
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

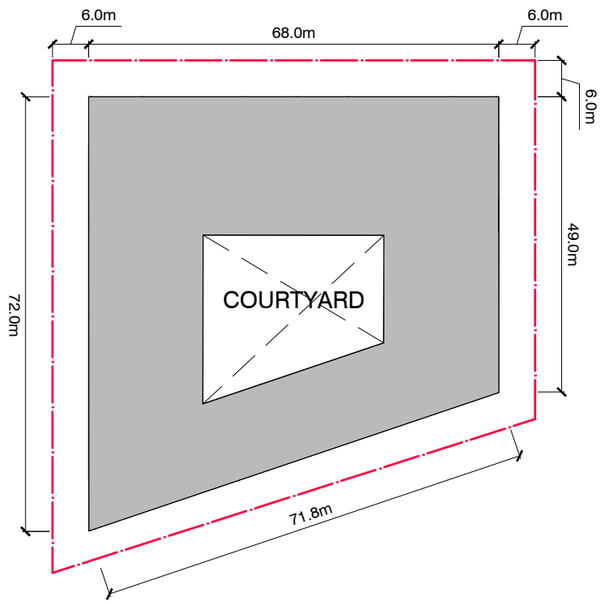
9.13 PLOT 21 - HOTEL 4*



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	2,328.80 SQ.M.
LEVEL 01	2,328.80 SQ.M.
LEVEL 02	3,427.00 SQ.M.
LEVEL 03	3,427.00 SQ.M.
LEVEL 04	3,427.00 SQ.M.
LEVEL 05	3,427.00 SQ.M.
LEVEL 06	3,427.00 SQ.M.
LEVEL 07	3,427.00 SQ.M.
LEVEL 08	3,427.00 SQ.M.
LEVEL 09	3,427.00 SQ.M.
TOTAL	32,073.60 SQ.M.

1,750.00 SQ.M OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

1,750.00 SQ.M OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 01

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS

9.13 PLOT 21 - HOTEL 4*

HEIGHT REQUIREMENTS AND PARAMETERS

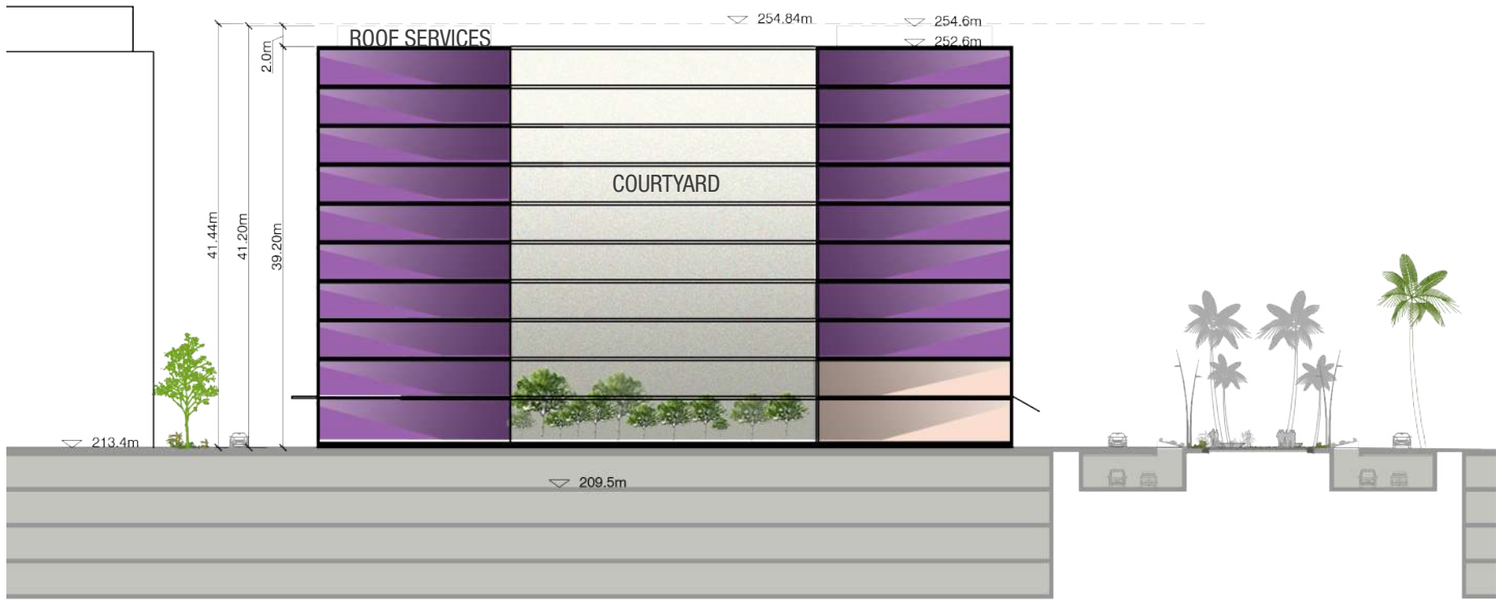
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2 M (+ 2.0 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

The permitted maximum height according to the AAI approval is 254.84m. The building's roof slab FFL is to be 252.6m.

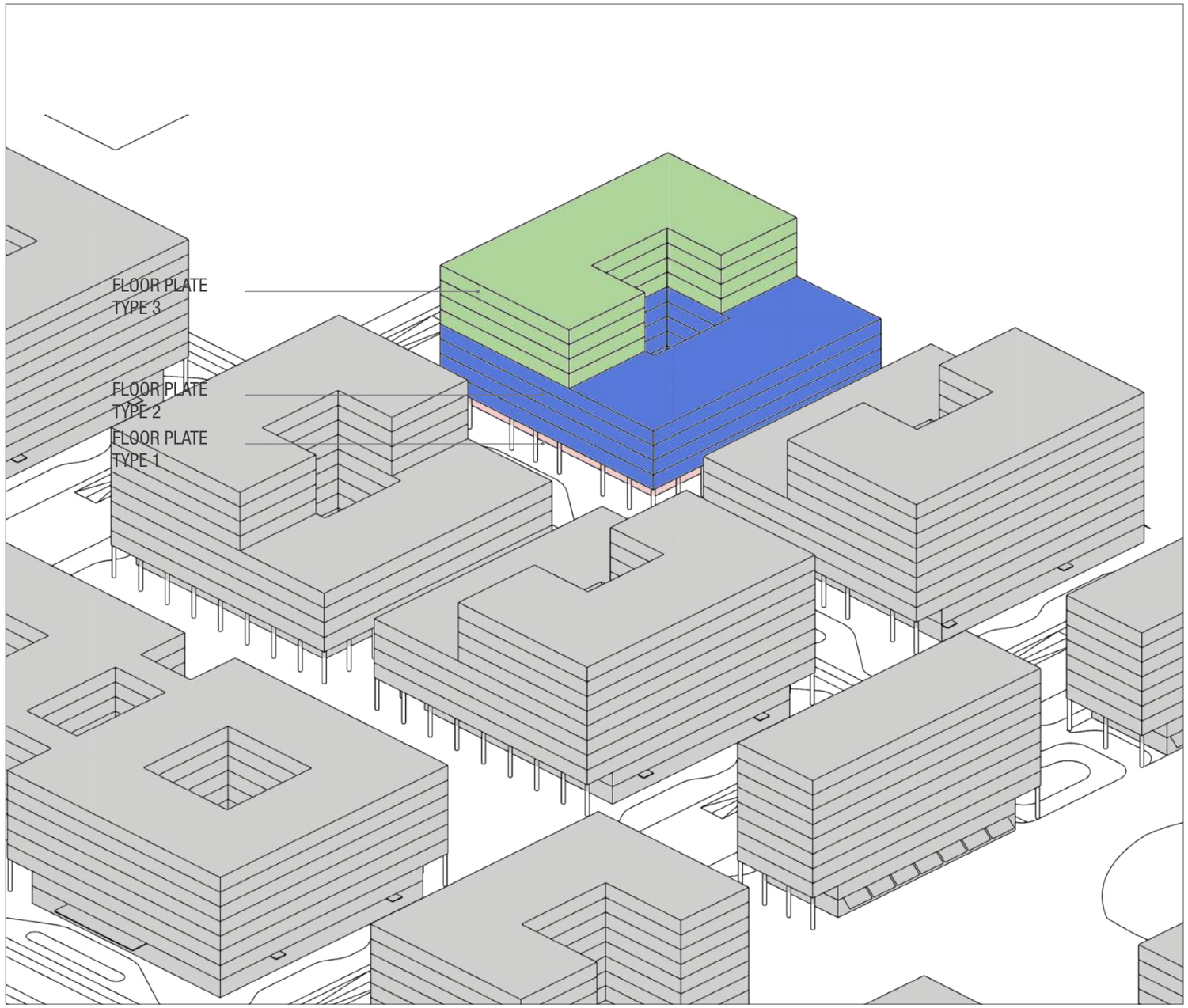
The overall height is to be 39.2 meters. An allowance of 2.0m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

HOTEL
RETAIL
BASEMENT

9.0 BUILDING ELEMENTS



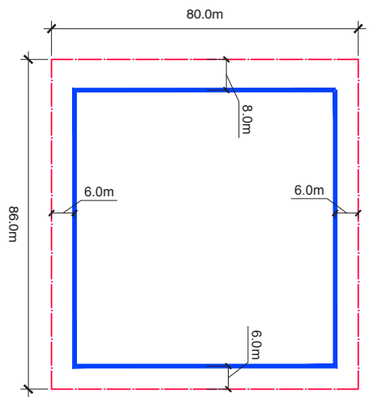
9.14 PLOT 22 - OFFICES

GENERAL OVERVIEW

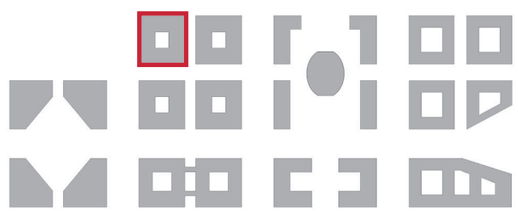
Building No.22 is to be used as offices.

Plot No.22 is located on the southwest side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

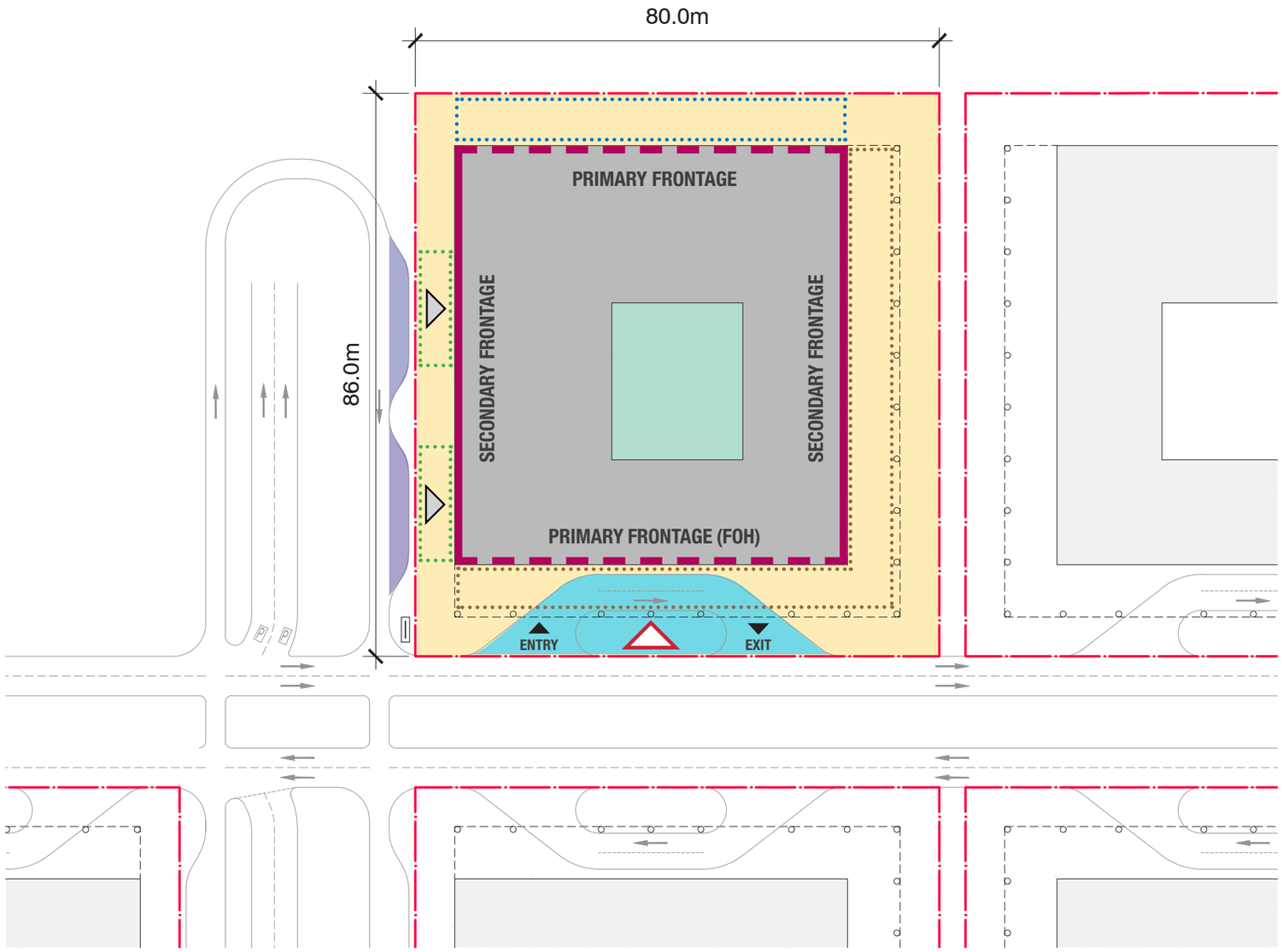
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 93

9.14 PLOT 22 - OFFICES

KEY NUMBERS

PLOT SIZE	6,880.00 SQ.M.
MAX F.A.R	33,792.00 SQ.M.
GROUND COVERAGE	4,416.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	2,400.00 SQ.M. (RETAIL) 31,392.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

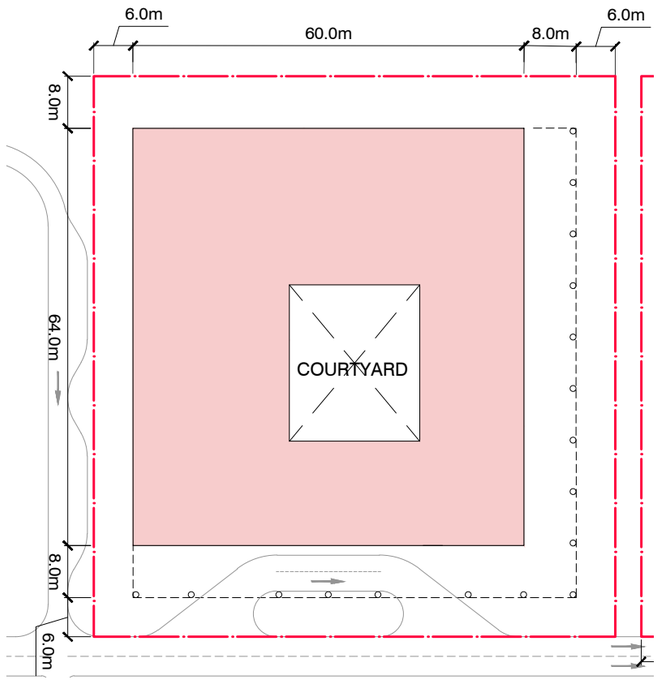
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

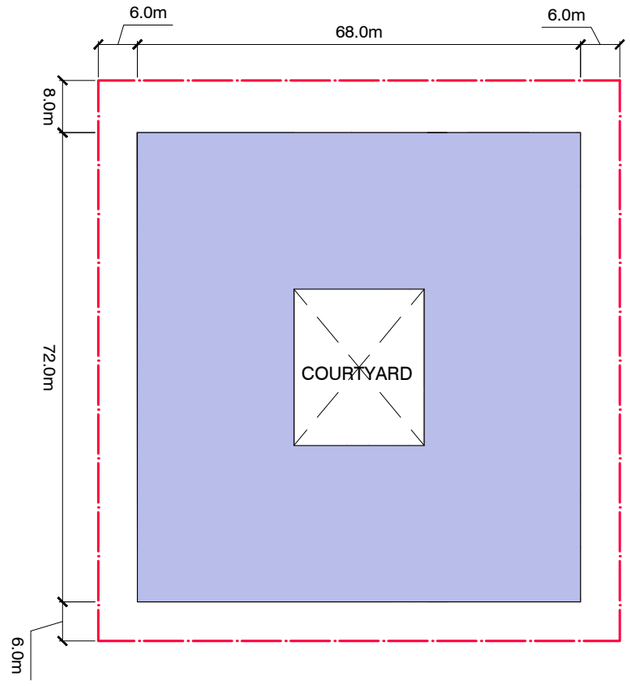
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

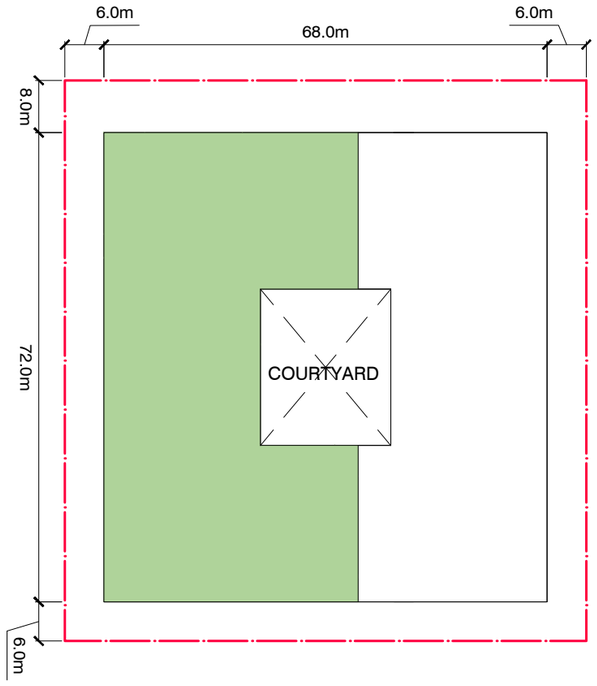
9.14 PLOT 22 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-05



TOWER LEVELS: 06-09

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	3,360.00 SQ.M.
LEVEL 01	3,360.00 SQ.M.
LEVEL 02	4,416.00 SQ.M.
LEVEL 03	4,416.00 SQ.M.
LEVEL 04	4,416.00 SQ.M.
LEVEL 05	4,416.00 SQ.M.
LEVEL 06	2,448.00 SQ.M.
LEVEL 07	2,448.00 SQ.M.
LEVEL 08	2,448.00 SQ.M.
LEVEL 09	2,448.00 SQ.M.
TOTAL	34,176.00 SQ.M.

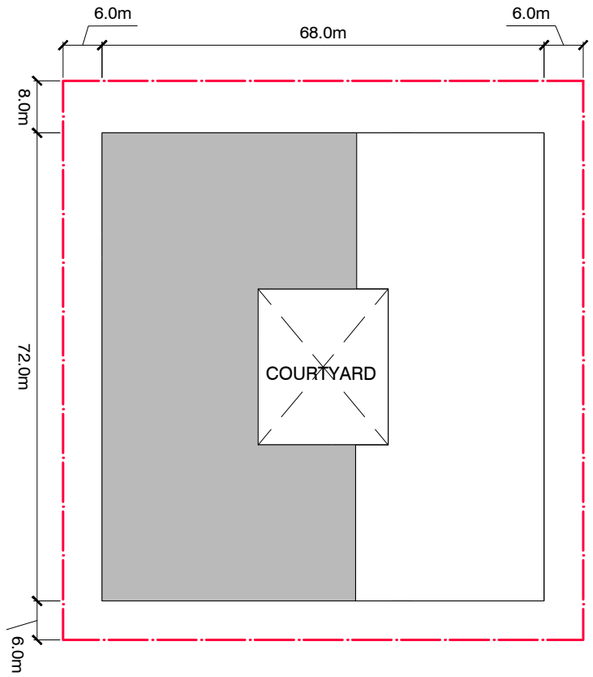
2,400.00 SQ.M OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-05
- TOWER LEVELS: 06-09
- ROOF

9.0 BUILDING ELEMENTS

9.14 PLOT 22 - OFFICES



ROOF

9.0 BUILDING ELEMENTS

9.14 PLOT 22 - OFFICES

HEIGHT REQUIREMENTS AND PARAMETERS

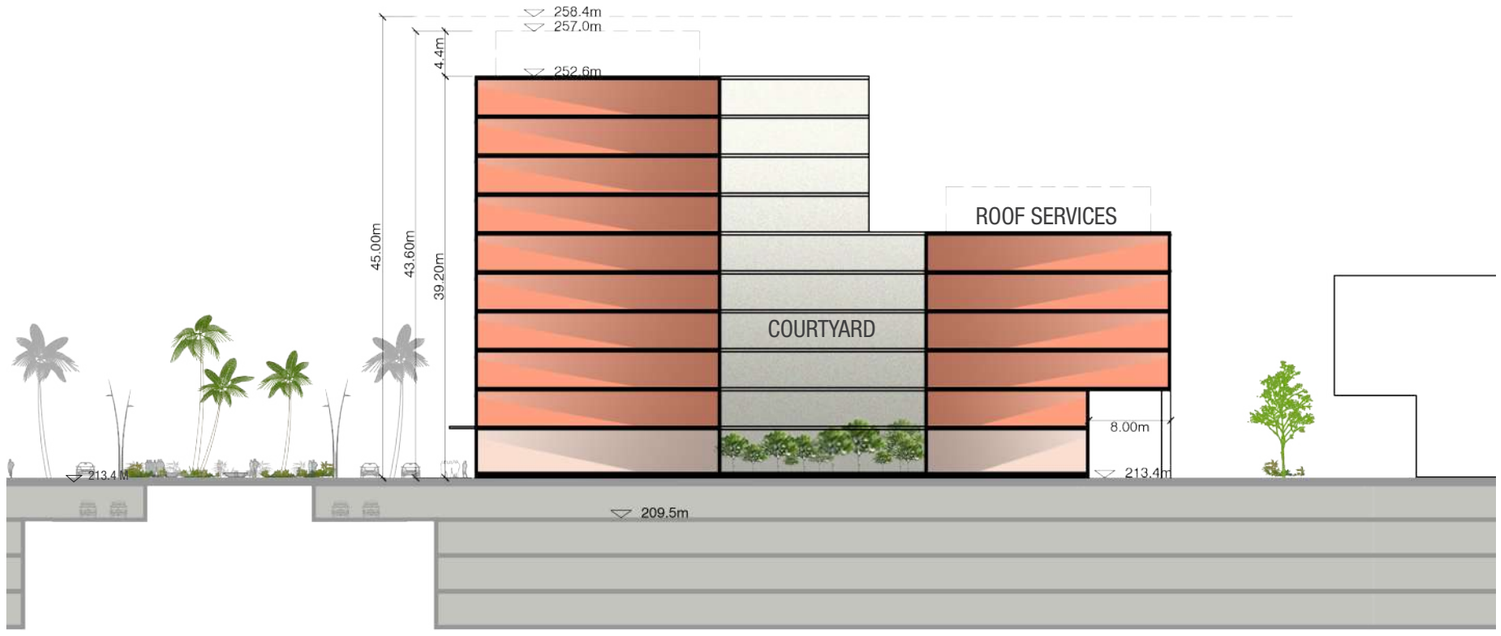
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

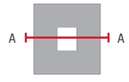
The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

OFFICE
RETAIL
BASEMENT



9.0 BUILDING ELEMENTS

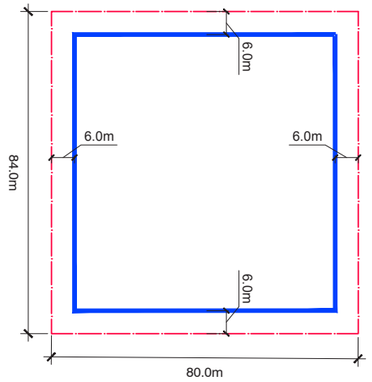
9.15 PLOT 23 - OFFICES

GENERAL OVERVIEW

Building No.23 is to be used as offices.

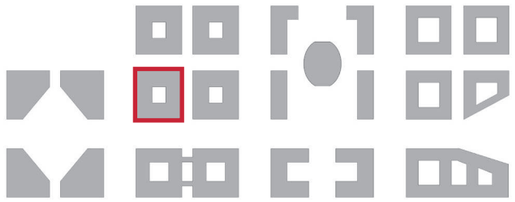
Plot No.23 is located on the south side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

SETBACKS:

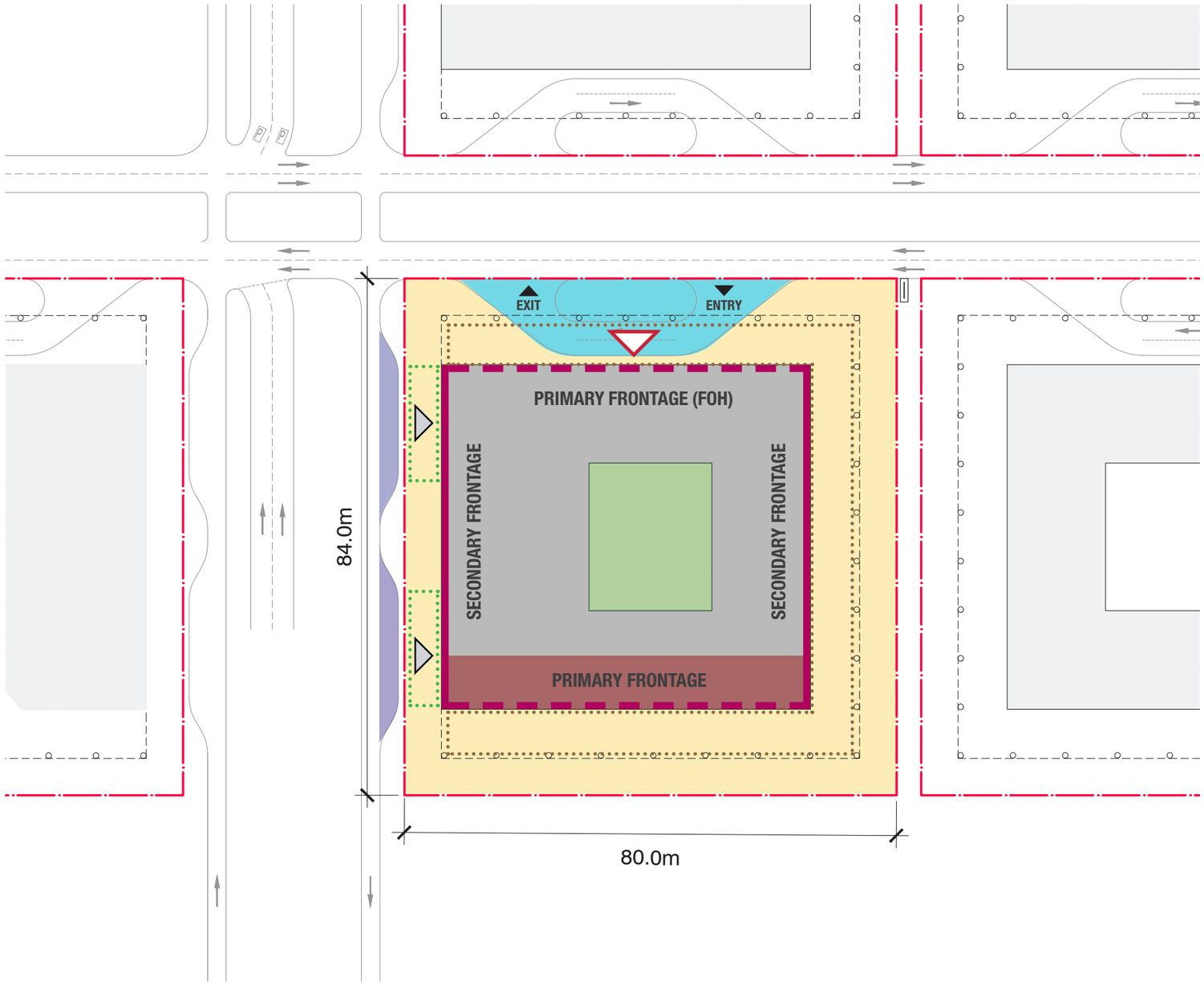


PLOT LINE
SETBACK LINE

KEY PLAN:



9.0 BUILDING ELEMENTS



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 93

9.15 PLOT 23 - OFFICES

KEY NUMBERS

PLOT SIZE	6,720.00 SQ.M.
MAX F.A.R	32,832.00 SQ.M.
GROUND COVERAGE	4,416.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	1,900.00 SQ.M. (RETAIL) 30,932.00 SQ.M. (OFFICES)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

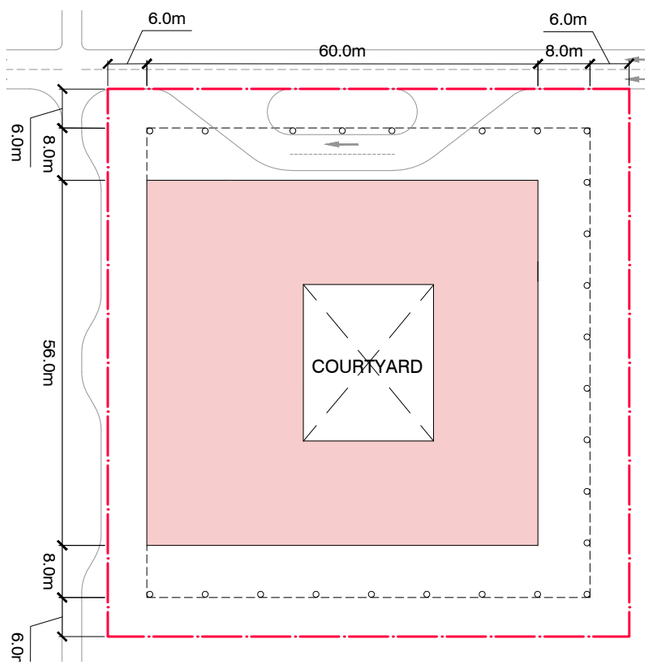
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

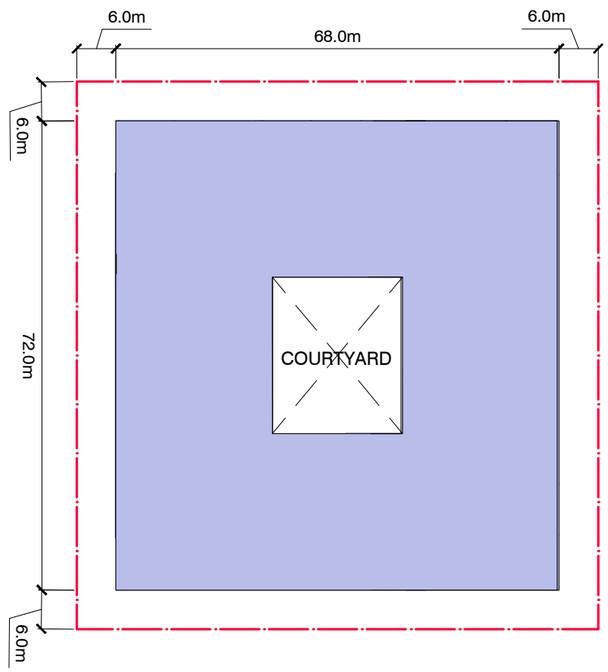
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

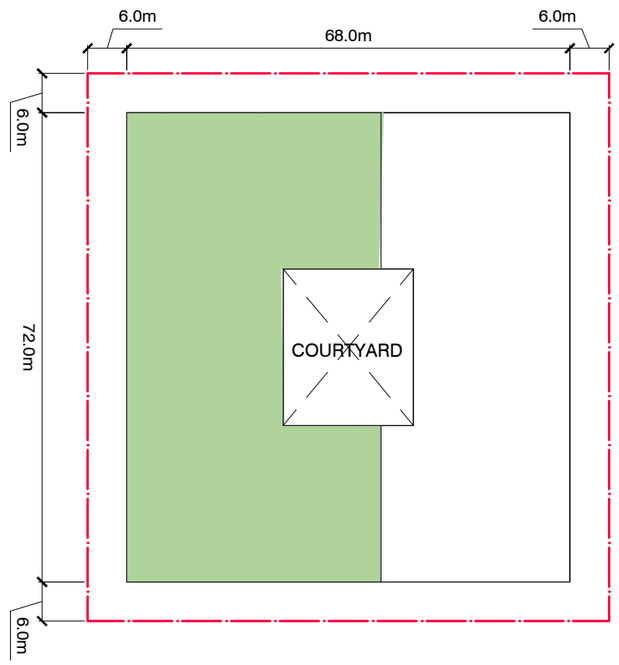
9.15 PLOT 23 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-05



TOWER LEVELS: 06-09

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	2,880.00 SQ.M.
LEVEL 01	2,880.00 SQ.M.
LEVEL 02	4,416.00 SQ.M.
LEVEL 03	4,416.00 SQ.M.
LEVEL 04	4,416.00 SQ.M.
LEVEL 05	4,416.00 SQ.M.
LEVEL 06	2,448.00 SQ.M.
LEVEL 07	2,448.00 SQ.M.
LEVEL 08	2,448.00 SQ.M.
LEVEL 09	2,448.00 SQ.M.
TOTAL	33,216.00 SQ.M.

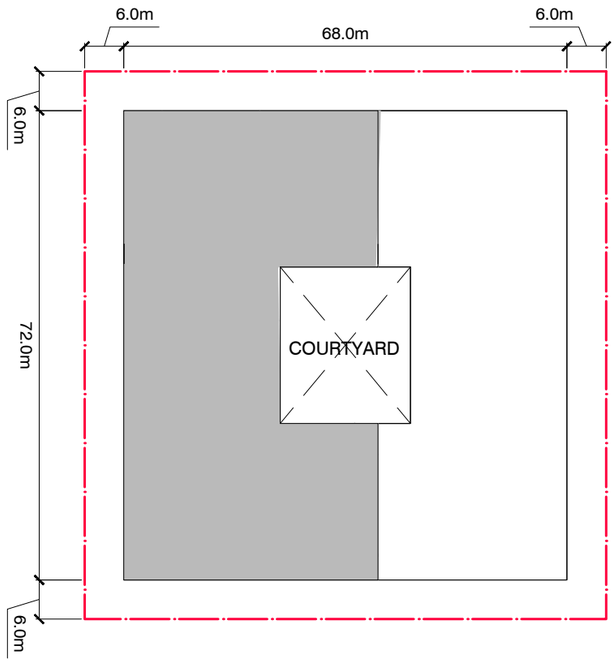
1,900.00 SQ.M OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-05
- TOWER LEVELS: 06-09
- ROOF

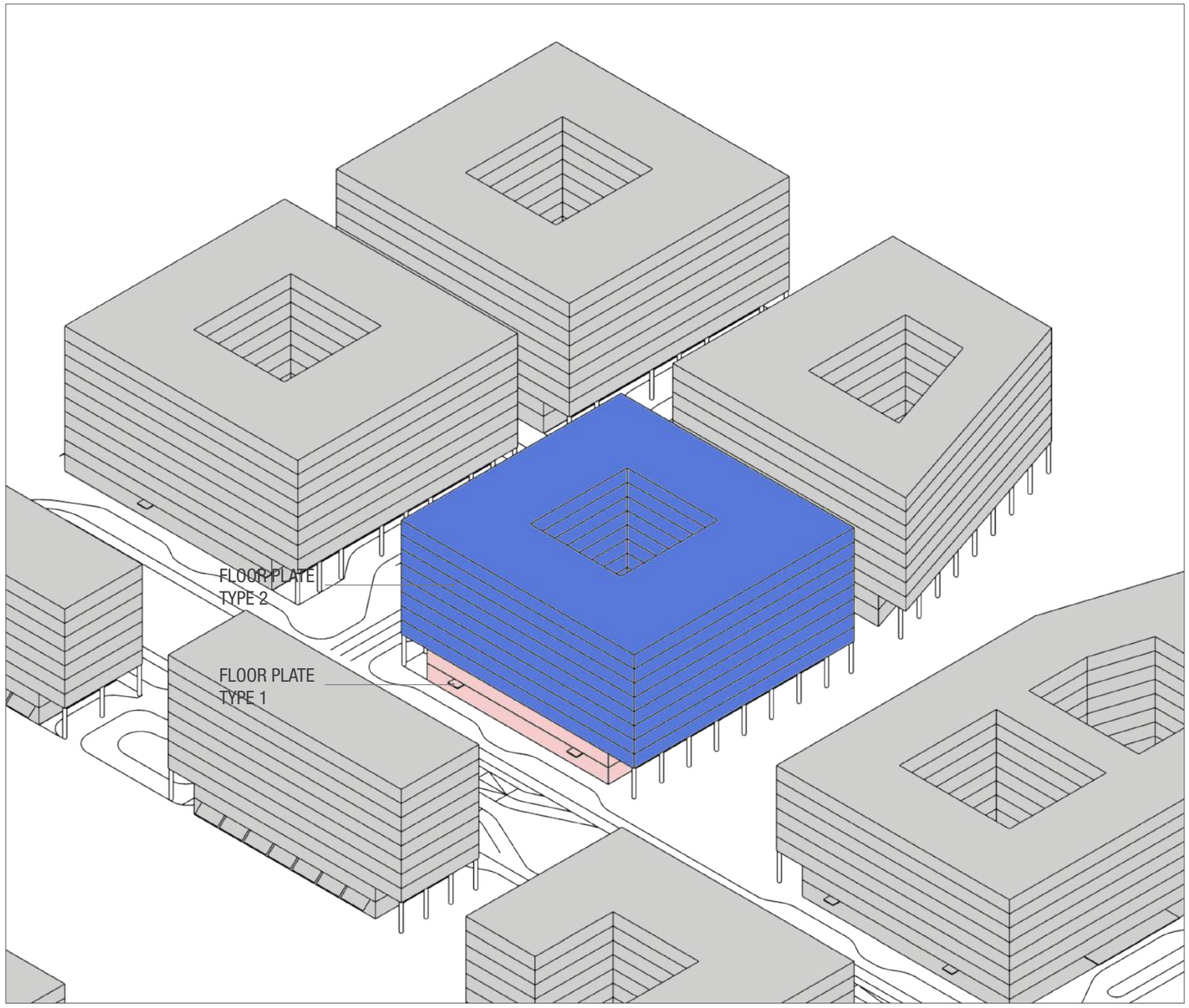
9.0 BUILDING ELEMENTS

9.15 PLOT 23 - OFFICES



ROOF

9.0 BUILDING ELEMENTS



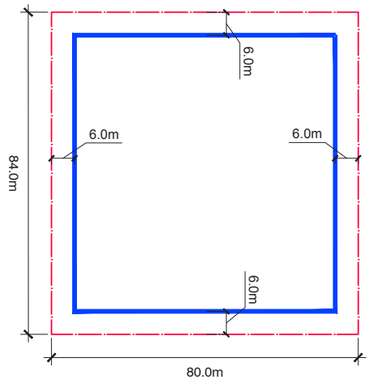
9.16 PLOT 24 - HOTEL 4*

GENERAL OVERVIEW

Building No.24 is to be used as 4* hotel.

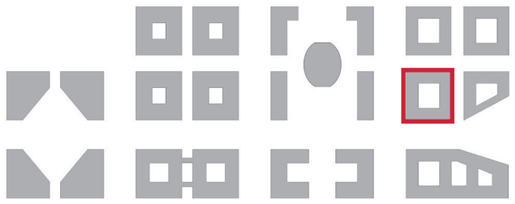
Plot No.24 is located on the north side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

SETBACKS:



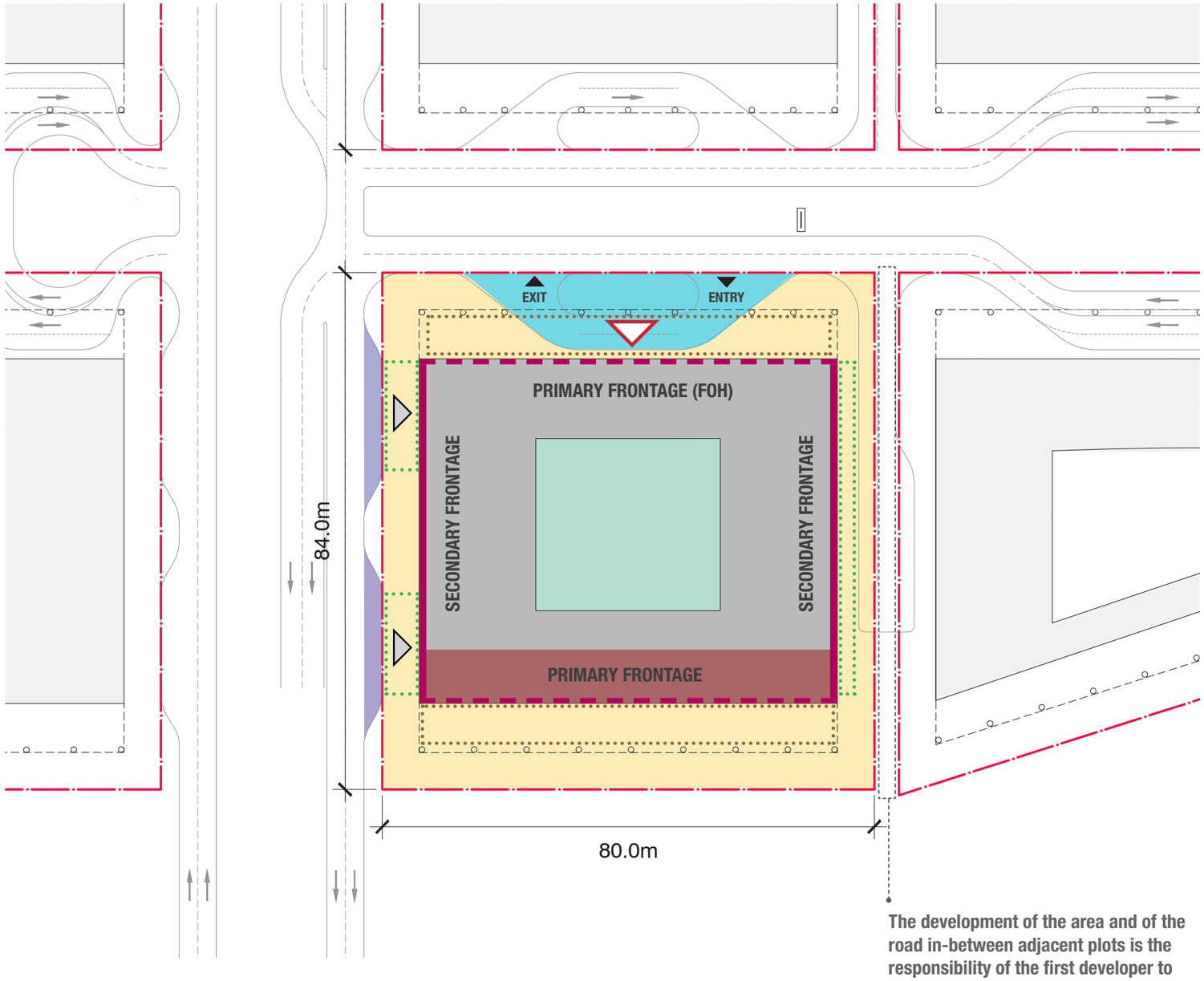
PLOT LINE
SETBACK LINE

KEY PLAN:



9.0 BUILDING ELEMENTS

9.16 PLOT 24 - HOTEL 4*



The development of the area and of the road in-between adjacent plots is the responsibility of the first developer to commence the works.

KEY NUMBERS

PLOT SIZE	6,720.00 SQ.M.
MAX F.A.R.	38,384.00 SQ.M.
GROUND COVERAGE	4,056.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R.)	4,800.00 (RETAIL) 33,584.00 (HOTEL 4*)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

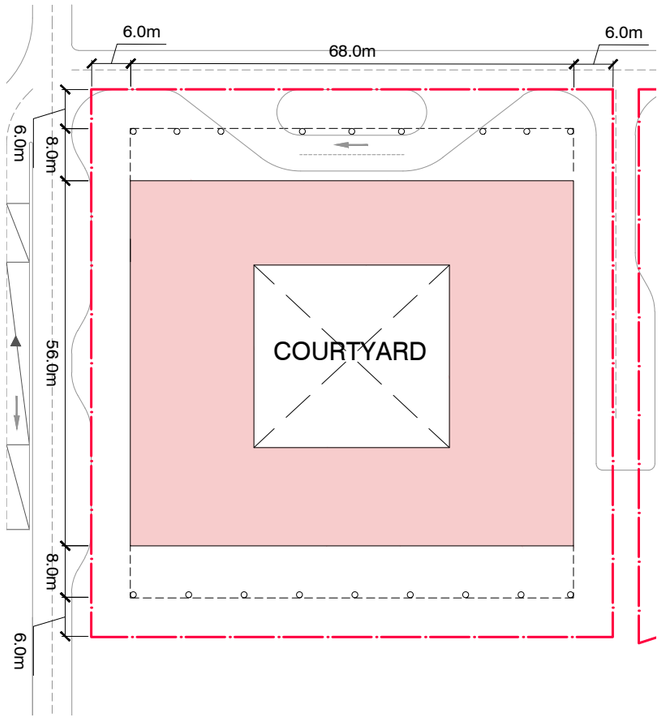
KEY

- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

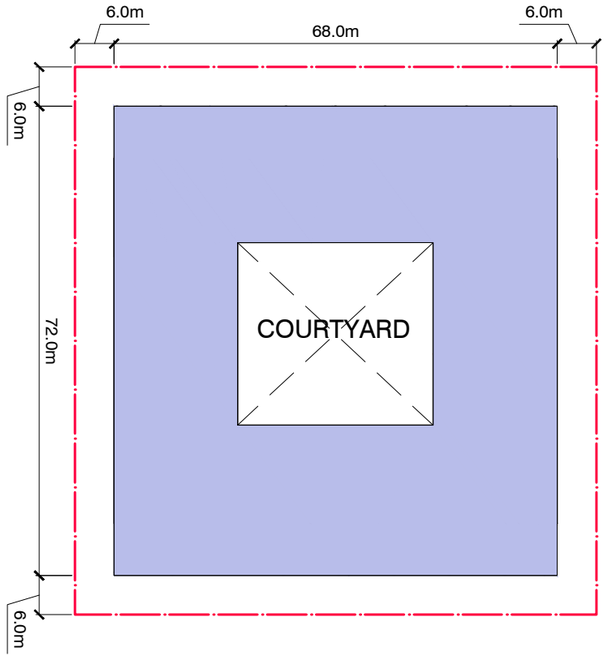
* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 91

9.0 BUILDING ELEMENTS

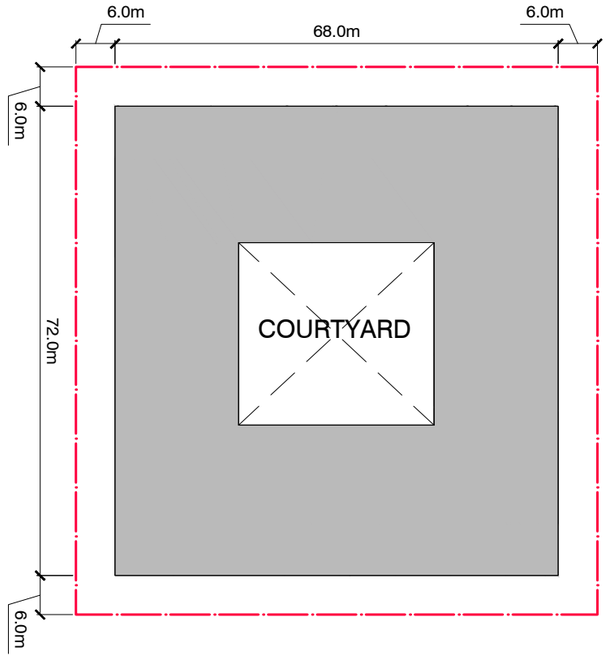
9.16 PLOT 24 - HOTEL 4*



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	2,968.00 SQ.M.
LEVEL 01	2,968.00 SQ.M.
LEVEL 02	4,056.00 SQ.M.
LEVEL 03	4,056.00 SQ.M.
LEVEL 04	4,056.00 SQ.M.
LEVEL 05	4,056.00 SQ.M.
LEVEL 06	4,056.00 SQ.M.
LEVEL 07	4,056.00 SQ.M.
LEVEL 08	4,056.00 SQ.M.
LEVEL 09	4,056.00 SQ.M.
TOTAL	38,384.00 SQ.M.

2,400.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

2,400.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 01

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS

9.16 PLOT 24 - HOTEL 4*

HEIGHT REQUIREMENTS AND PARAMETERS

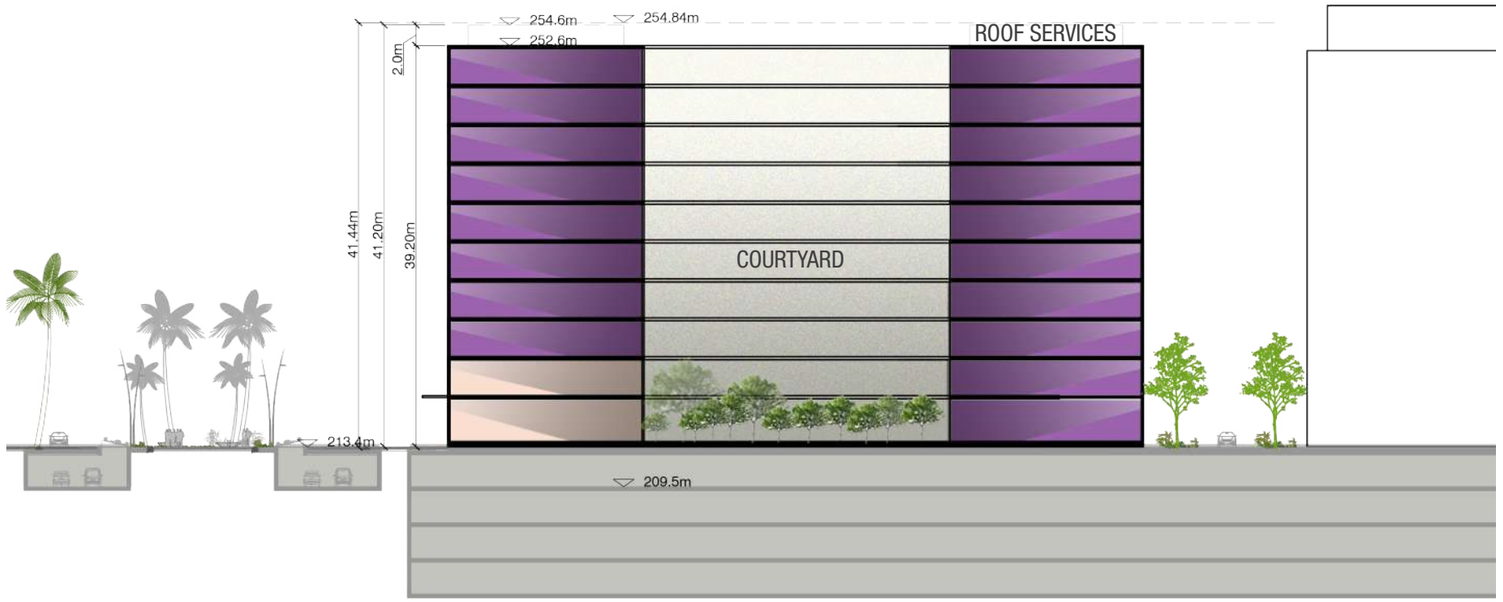
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2 M (+ 2.0 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which stands on a plinth of 0.5m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

The permitted maximum height according to the AAI approval is 254.84m. The building's roof slab FFL is to be 252.6m.

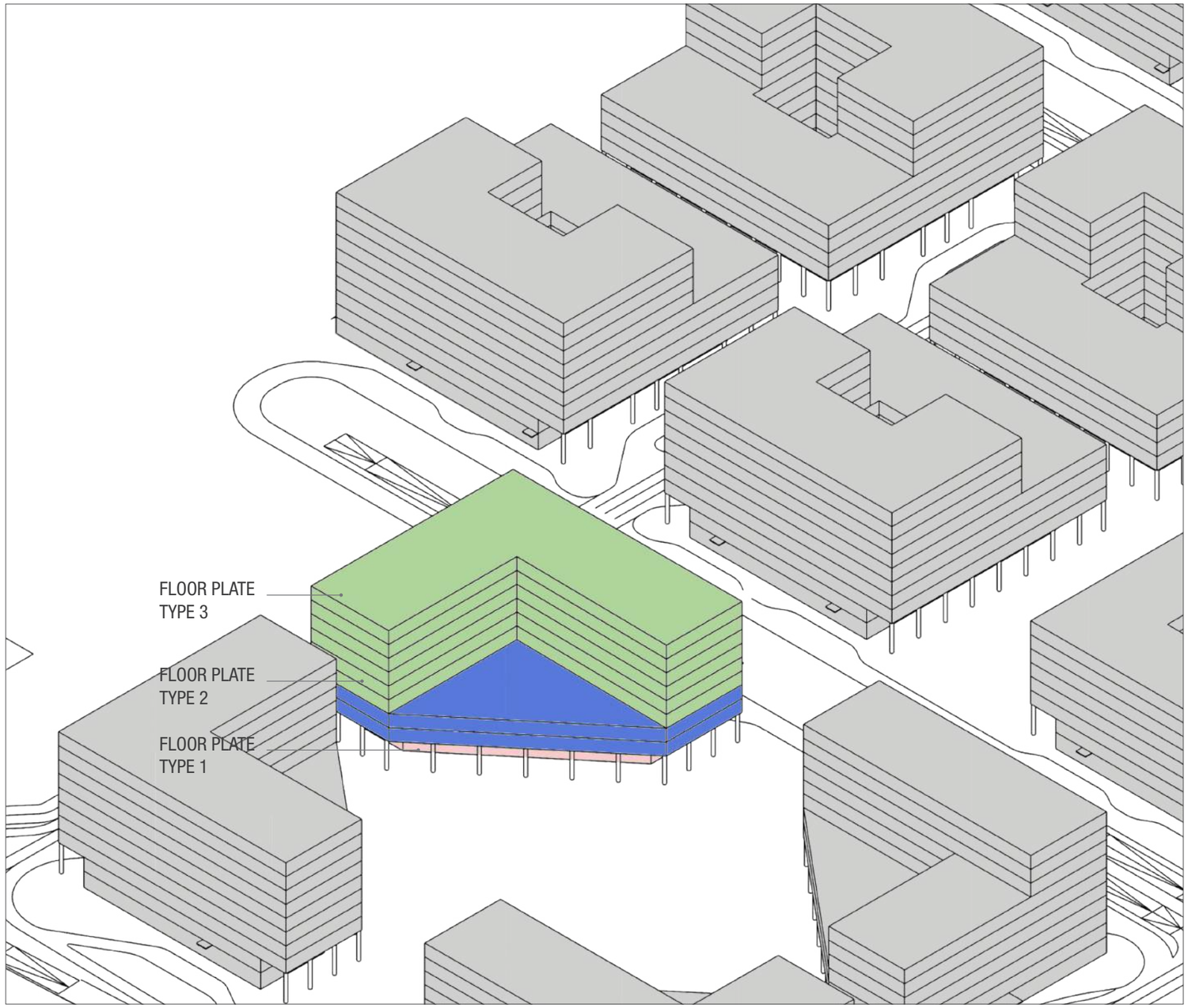
The overall height is to be 39.2 meters. An allowance of 2.0m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

HOTEL
RETAIL
BASEMENT

9.0 BUILDING ELEMENTS



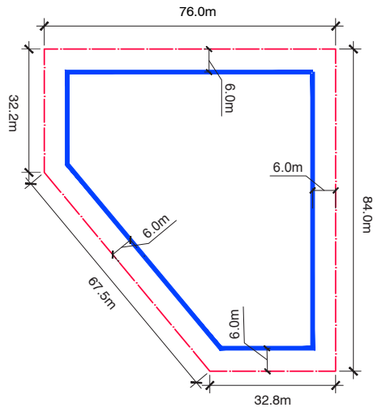
9.17 PLOT 25 - OFFICES

GENERAL OVERVIEW

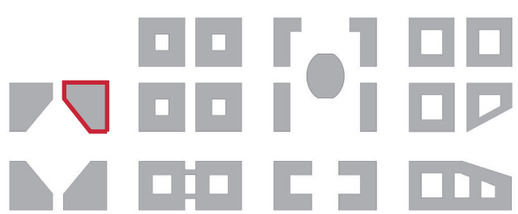
Building No.25 is to be used as offices.

Plot No.25 is located on the south side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

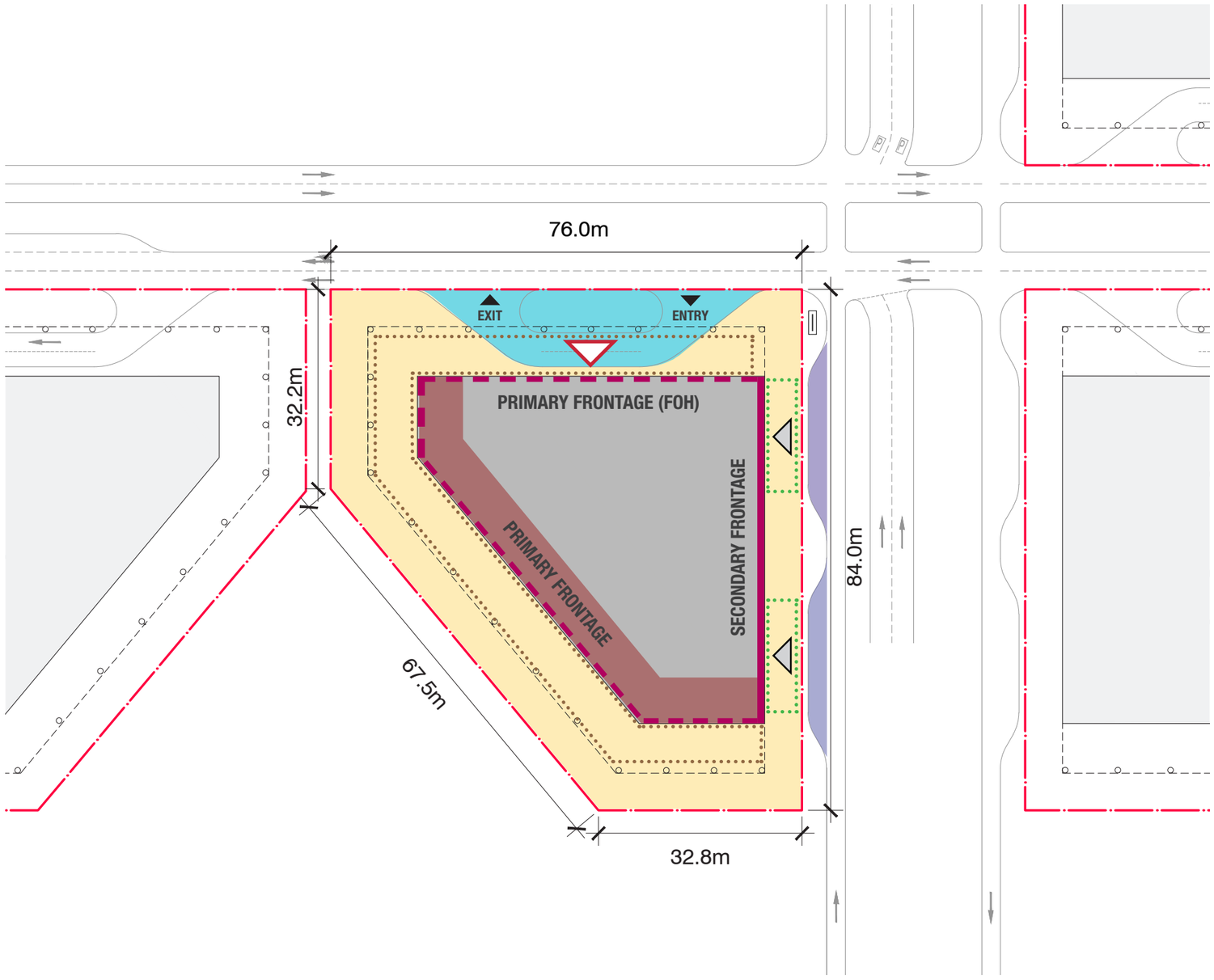
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



9.17 PLOT 25 - OFFICES

KEY NUMBERS

PLOT SIZE	5,265.12 SQ.M.
MAX FAR	28,163 SQ.M.
GROUND COVERAGE	3,648 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	4,000 SQ.M. (RETAIL) 24,163 SQ.M. (OFFICE)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

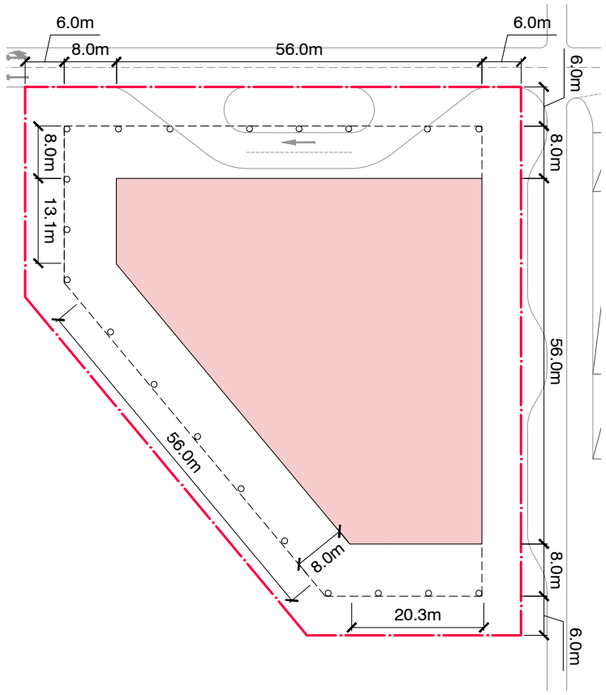
KEY

- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

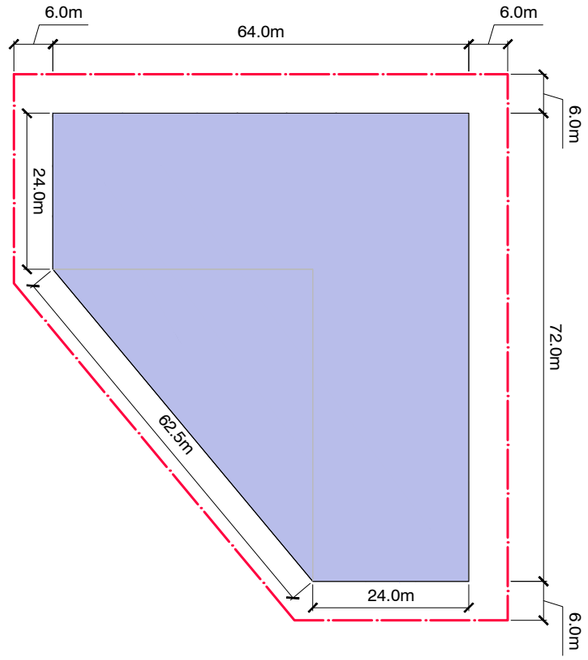
* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 94

9.0 BUILDING ELEMENTS

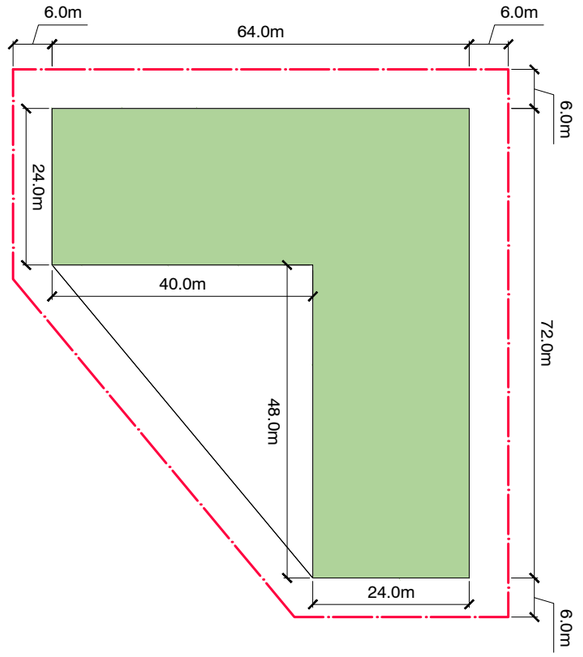
9.17 PLOT 25 - OFFICES



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-03



TOWER LEVELS: 04-09

KEY NUMBERS BREAKDOWN

	B.U.A
LEVEL 00	2,374.05 SQ.M.
LEVEL 01	2,374.05 SQ.M.
LEVEL 02	3,648.00 SQ.M.
LEVEL 03	3,648.00 SQ.M.
LEVEL 04	2,688.00 SQ.M.
LEVEL 05	2,688.00 SQ.M.
LEVEL 06	2,688.00 SQ.M.
LEVEL 07	2,688.00 SQ.M.
LEVEL 08	2,688.00 SQ.M.
LEVEL 09	2,688.00 SQ.M.
TOTAL	28,172.10 SQ.M.

2,000.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00 AND

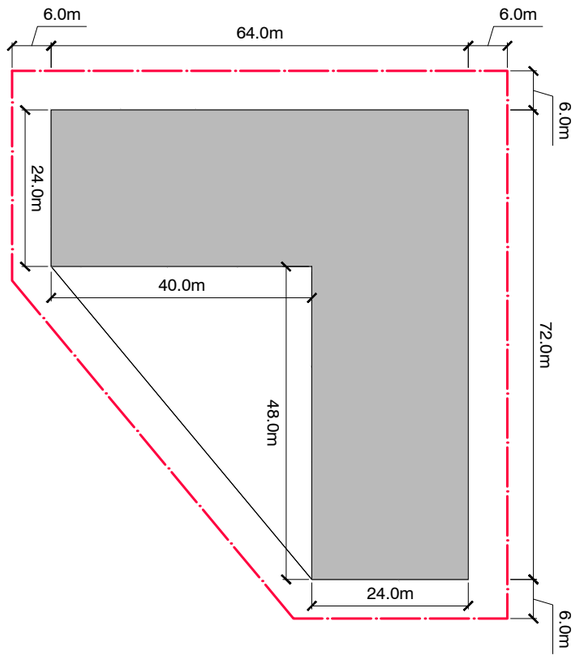
2,000.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 01

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-03
- TOWER LEVELS: 04-09
- ROOF

9.0 BUILDING ELEMENTS

9.17 PLOT 25 - OFFICES



ROOF

9.0 BUILDING ELEMENTS

9.17 PLOT 25 - OFFICES

HEIGHT REQUIREMENTS AND PARAMETERS

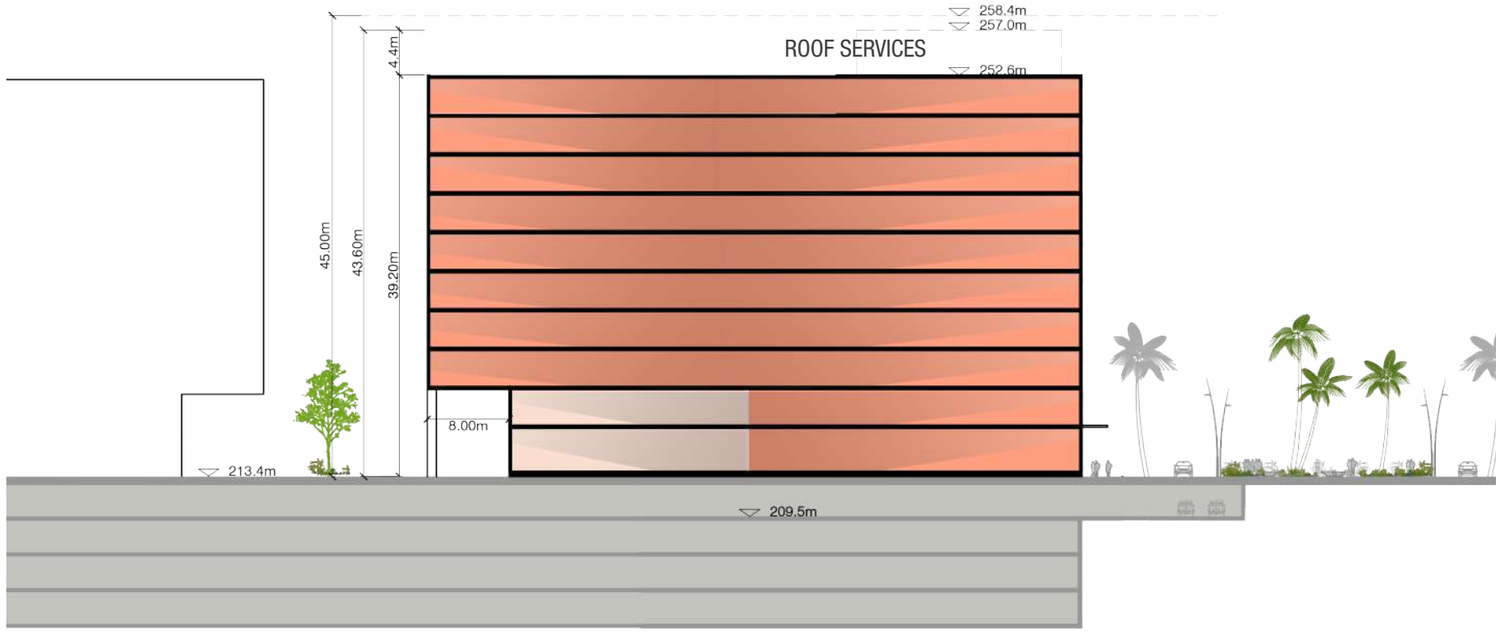
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2 M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

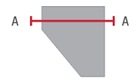
The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

OFFICE
RETAIL
BASEMENT



9.0 BUILDING ELEMENTS

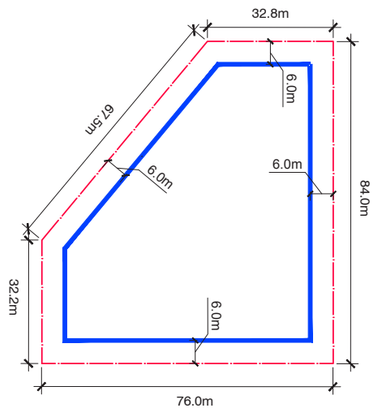
9.18 PLOT 26 - HOTEL 3*

GENERAL OVERVIEW

Building No.26 is to be used as 3* hotel.

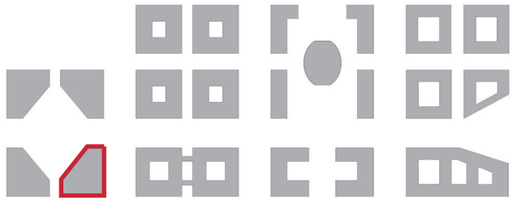
Plot No.26 is located on the south side of the M.U.D. area. Two sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

SETBACKS:

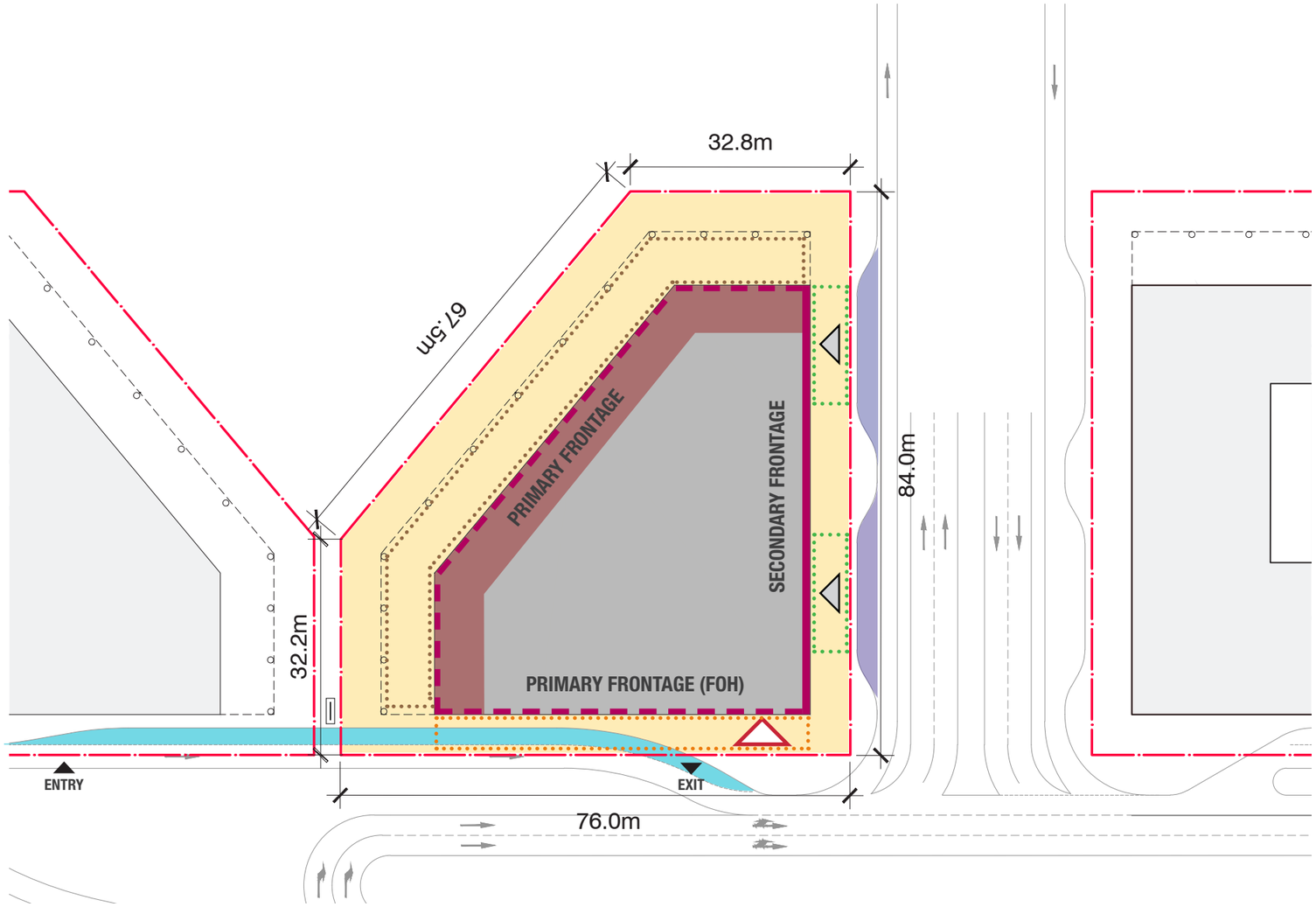


PLOT LINE
SETBACK LINE

KEY PLAN:



9.0 BUILDING ELEMENTS



9.18 PLOT 26 - HOTEL 3*

KEY NUMBERS

PLOT SIZE	5,265.12 SQ.M.
MAX F.A.R	26,179.00 SQ.M.
GROUND COVERAGE	3,648.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	3,650.00 SQ.M. (RETAIL) 22,529.00 SQ.M. (OFFICE)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

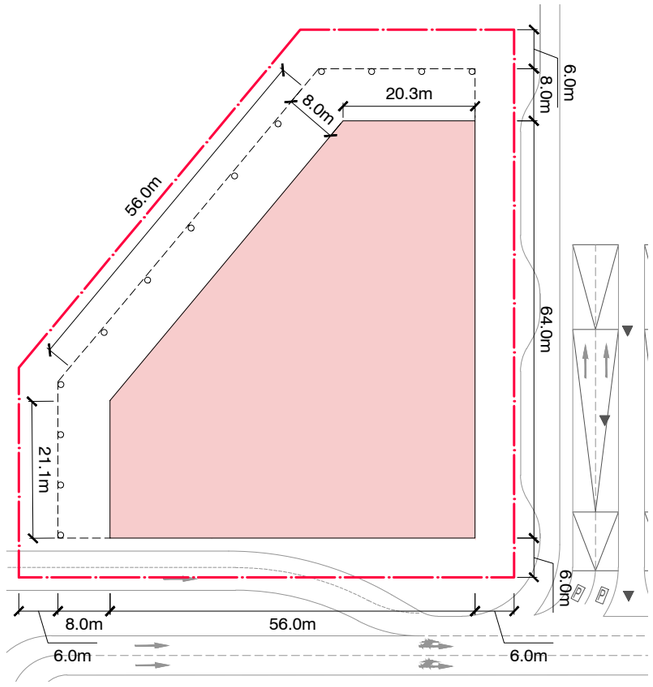
KEY

- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

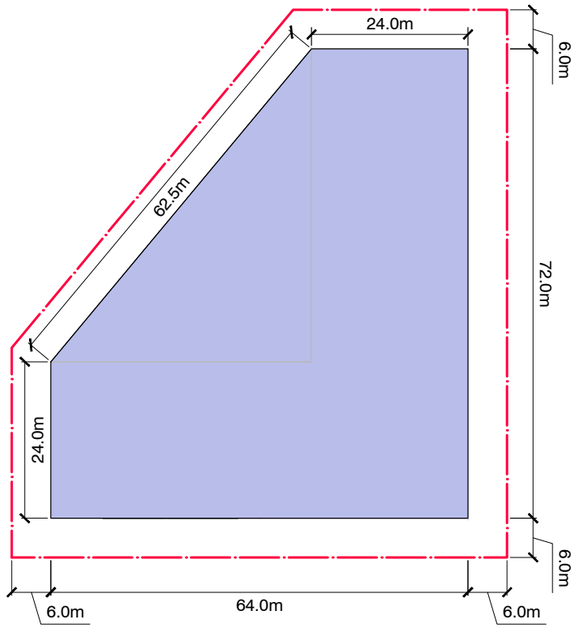
* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 94

9.0 BUILDING ELEMENTS

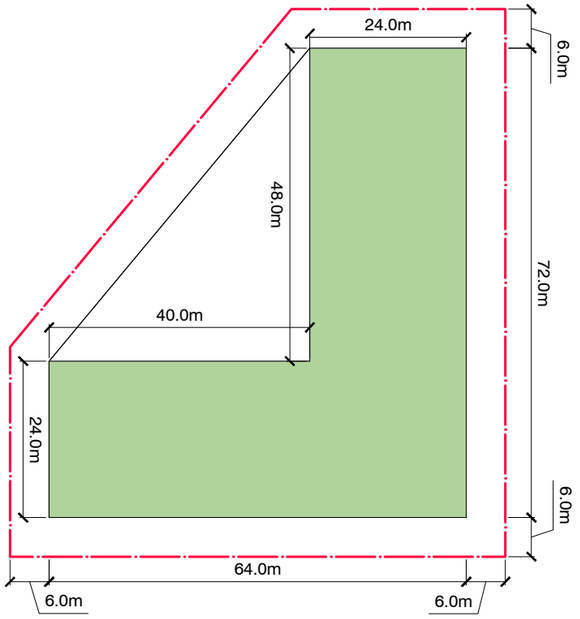
9.18 PLOT 26 - HOTEL 3*



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-03



TOWER LEVELS: 04-06

KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	2,822.05 SQ.M.
LEVEL 01	2,822.05 SQ.M.
LEVEL 02	3,648.00 SQ.M.
LEVEL 03	3,648.00 SQ.M.
LEVEL 04	2,688.00 SQ.M.
LEVEL 05	2,688.00 SQ.M.
LEVEL 06	2,688.00 SQ.M.
LEVEL 07	1,728.00 SQ.M.
LEVEL 08	1,728.00 SQ.M.
LEVEL 09	1,728.00 SQ.M.
TOTAL	26,188.10 SQ.M.

1,900.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

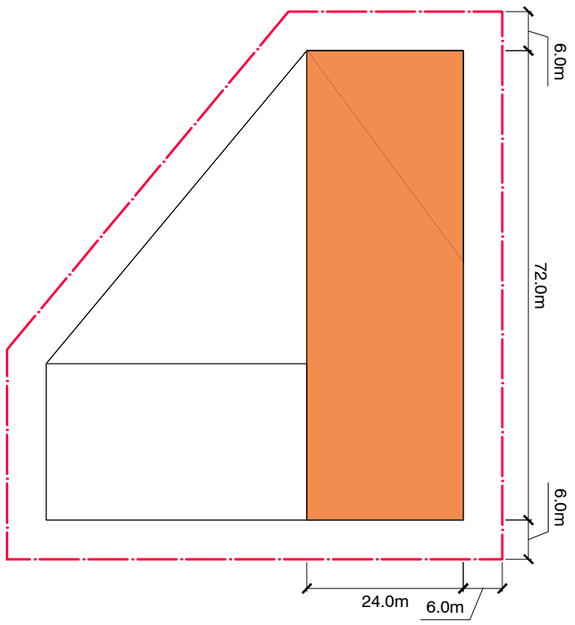
1,750.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 01

KEY

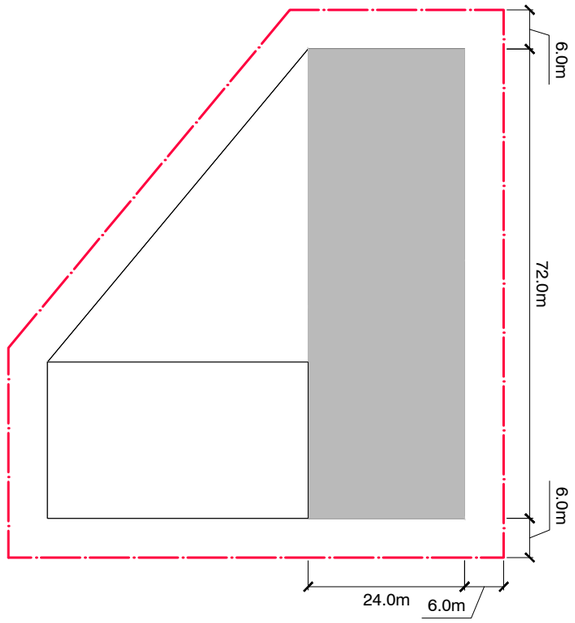
- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-03
- TOWER LEVELS: 04-06
- TOWER LEVELS: 07-09
- ROOF

9.0 BUILDING ELEMENTS

9.18 PLOT 26 - HOTEL 3*



TOWER LEVELS: 07-09



ROOF

9.0 BUILDING ELEMENTS

9.18 PLOT 26 - HOTEL 3*

HEIGHT REQUIREMENTS AND PARAMETERS

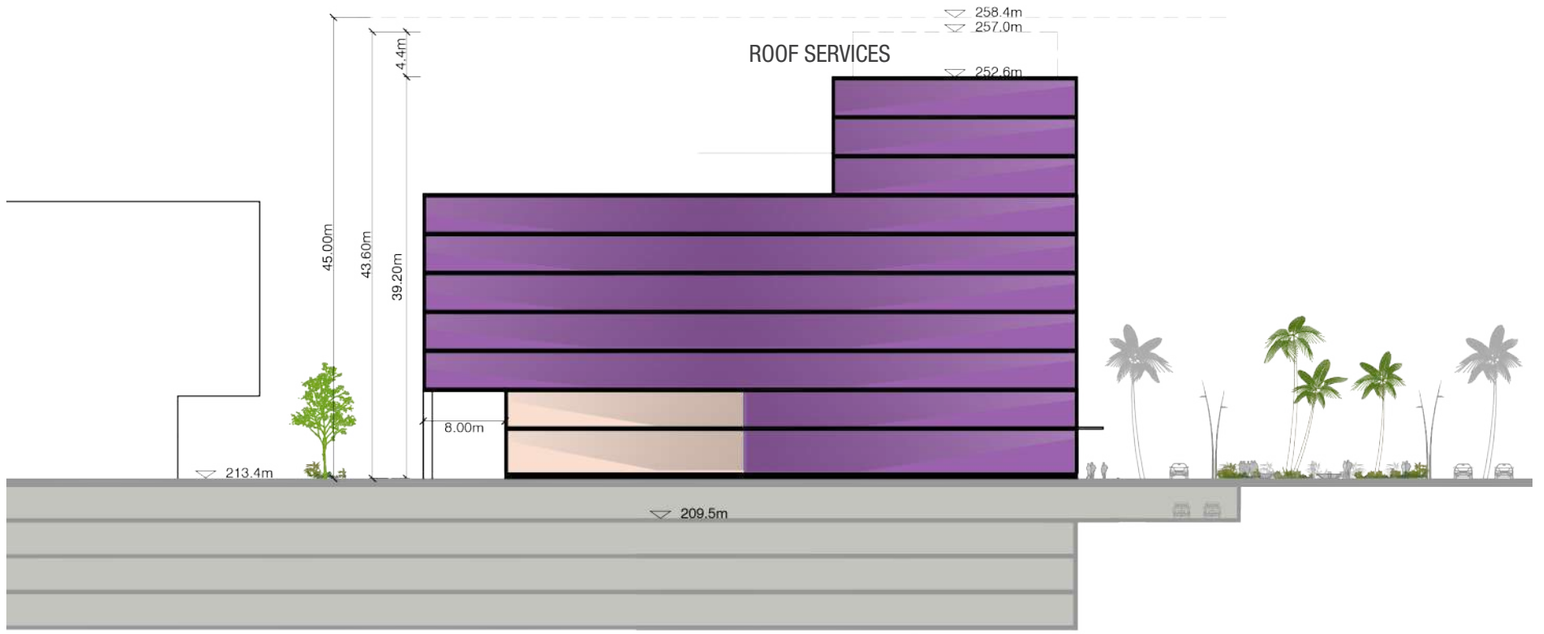
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which stands on plinth of 0.5m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 252.6m.

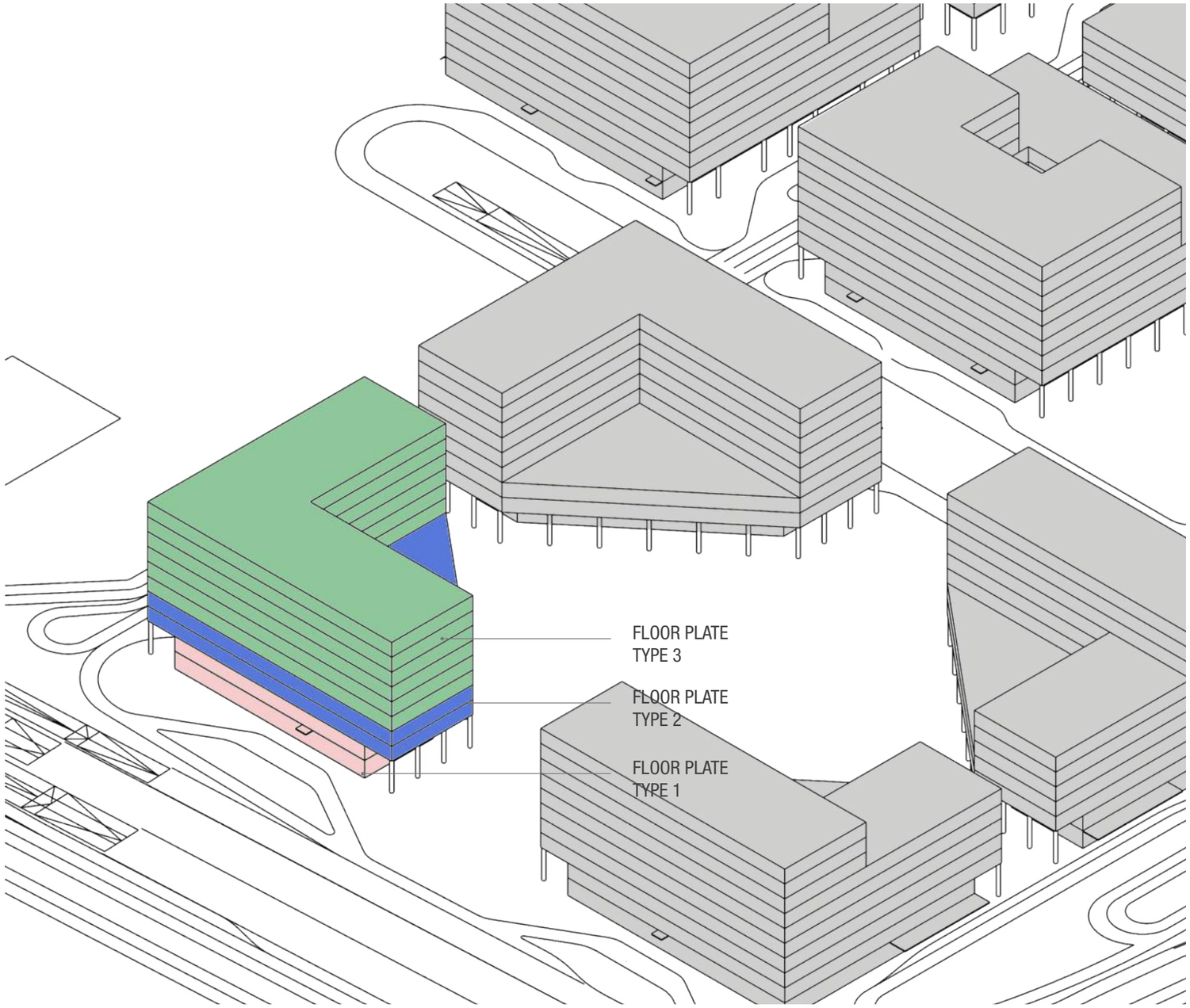
The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

HOTEL
RETAIL
BASEMENT

9.0 BUILDING ELEMENTS



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 94

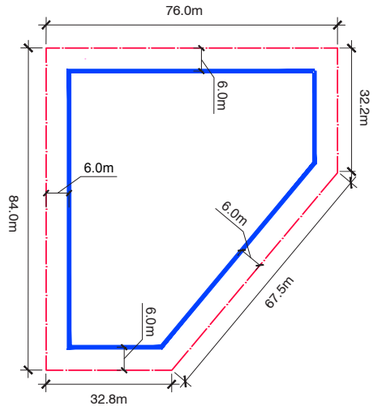
9.19 PLOT 27

GENERAL OVERVIEW

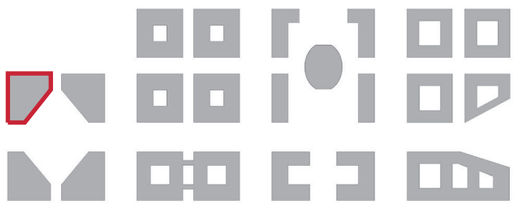
Building No.27 is to be used as serviced appartments.

Plot No.26 is located on the south side of the M.U.D. area. The west side of the building has a drop-off bay to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

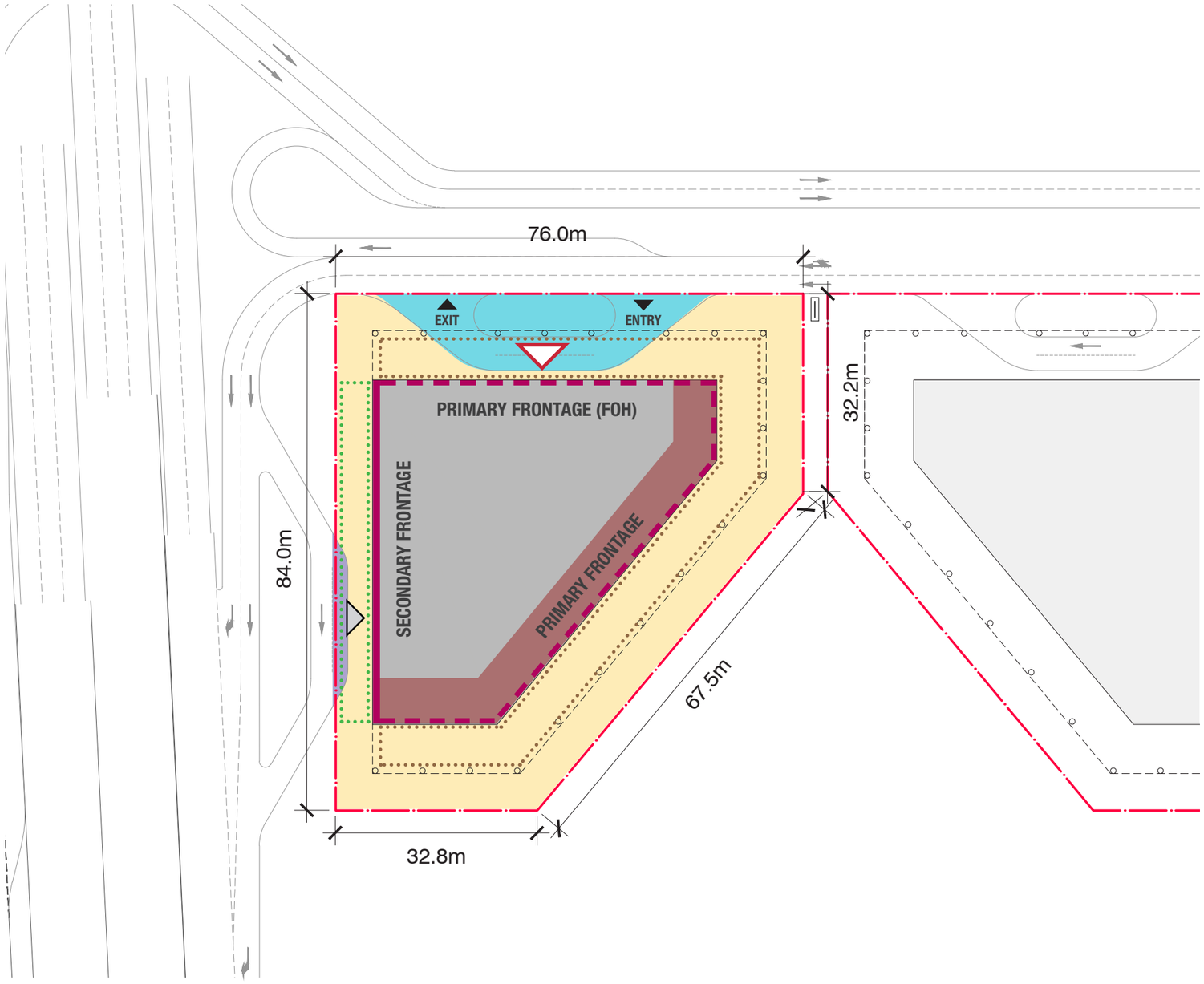
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



9.19 PLOT 27 - SERVICE APTS.

KEY NUMBERS

PLOT SIZE	5,265.12 SQ.M.
MAX F.A.R	28,163.00 SQ.M.
GROUND COVERAGE	3,648 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	3,100 SQ.M. (RETAIL) 25,063 SQ.M. (OFFICE)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

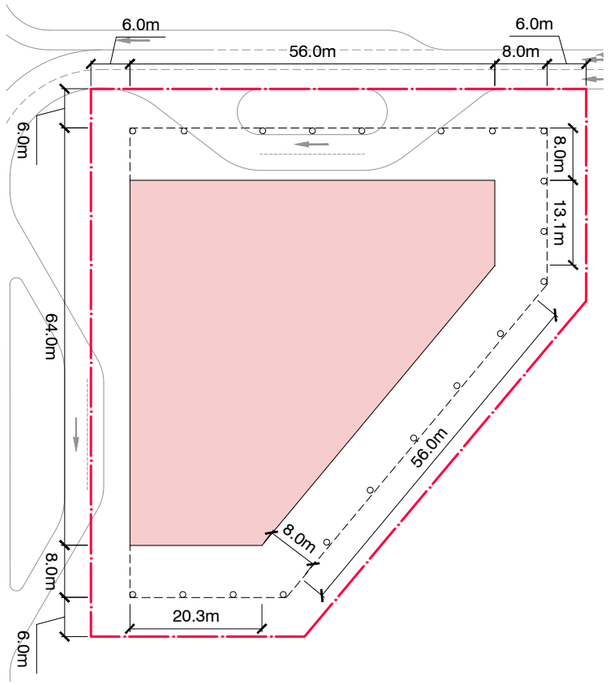
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

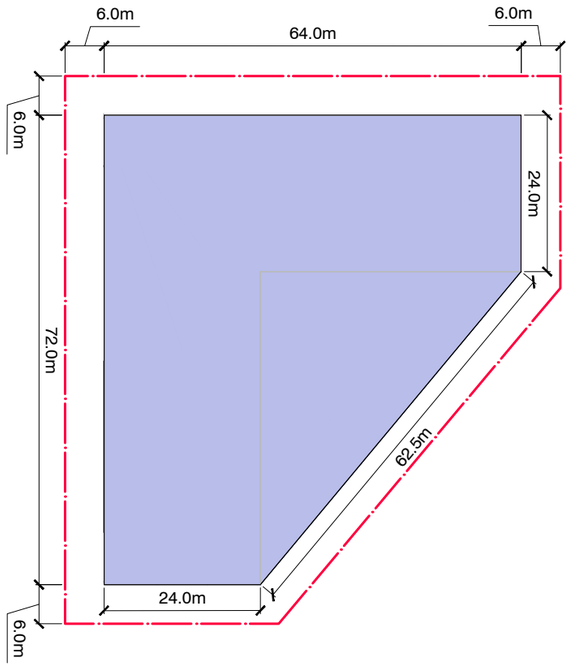
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

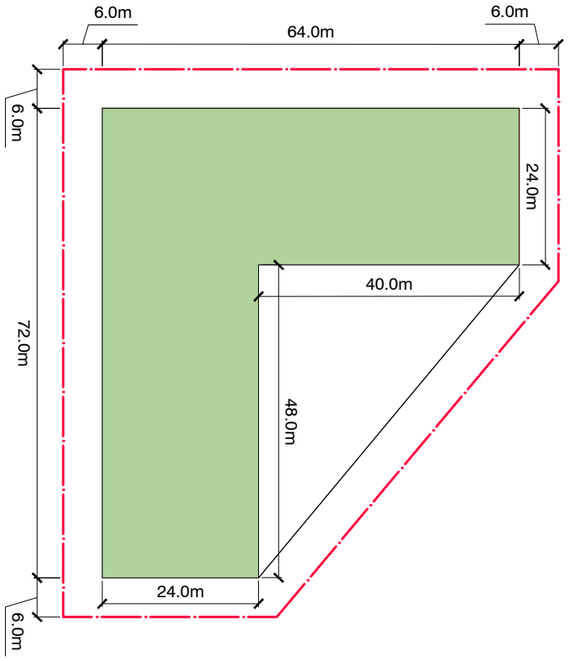
9.19 PLOT 27 - SERVICE APTS.



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-03



TOWER LEVELS: 04-09

KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	2,374.05 SQ.M.
LEVEL 01	2,374.05 SQ.M.
LEVEL 02	3,648.00 SQ.M.
LEVEL 03	3,648.00 SQ.M.
LEVEL 04	2,688.00 SQ.M.
LEVEL 05	2,688.00 SQ.M.
LEVEL 06	2,688.00 SQ.M.
LEVEL 07	2,688.00 SQ.M.
LEVEL 08	2,688.00 SQ.M.
LEVEL 09	2,688.00 SQ.M.
TOTAL	28,172.10 SQ.M.

1,800.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00 AND

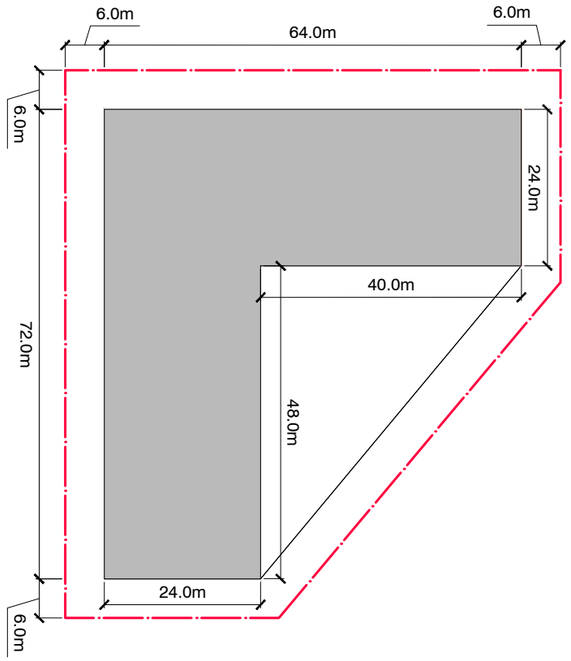
1,300.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 01

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-03
- TOWER LEVELS: 04-09
- ROOF

9.0 BUILDING ELEMENTS

9.19 PLOT 27 - SERVICE APTS.



ROOF

9.0 BUILDING ELEMENTS

9.19 PLOT 27 - SERVICE APTS.

HEIGHT REQUIREMENTS AND PARAMETERS

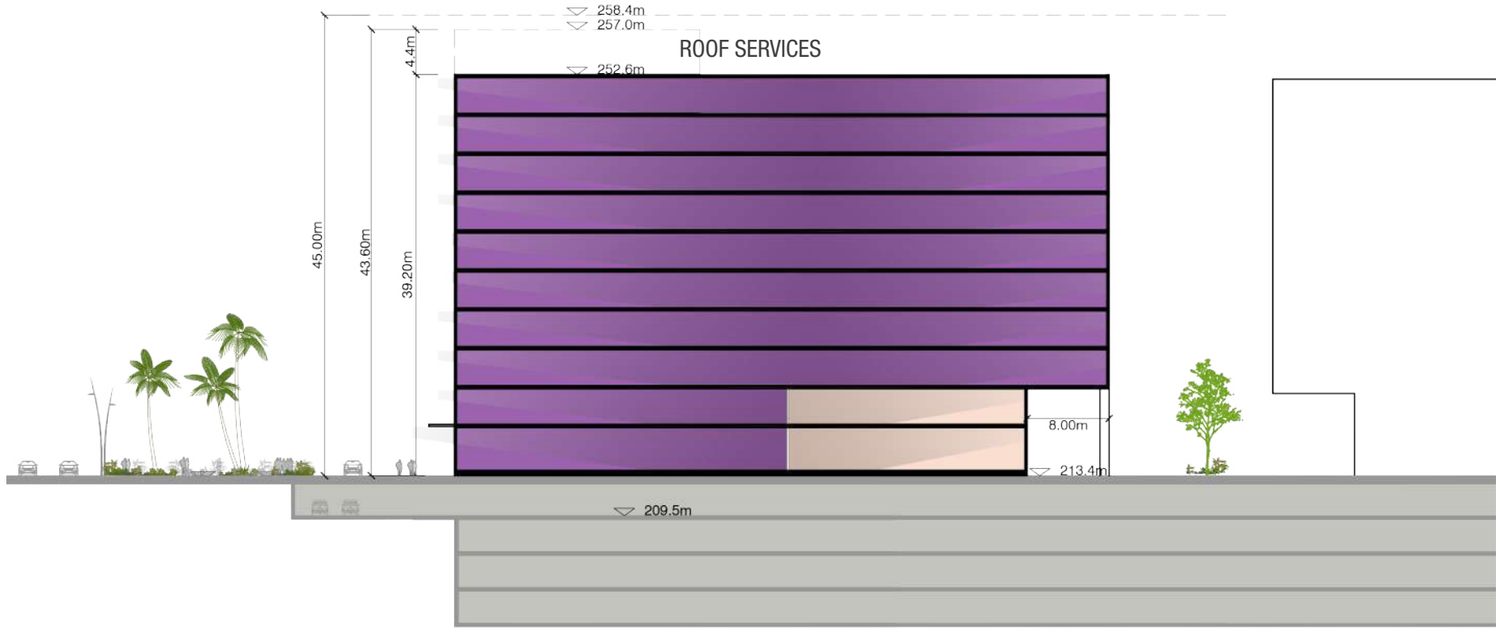
KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	39.2 (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

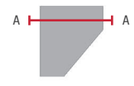
The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.



SECTION A
SCALE 1:600

HOTEL
RETAIL
BASEMENT



9.0 BUILDING ELEMENTS

* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 94

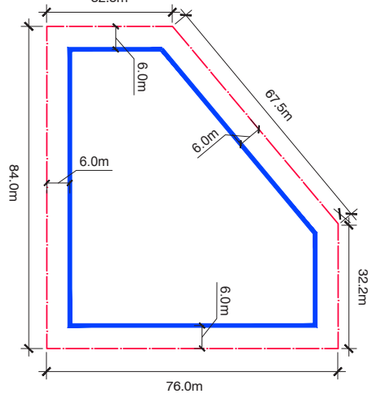
9.20 PLOT 28 - HOTEL 3*

GENERAL OVERVIEW

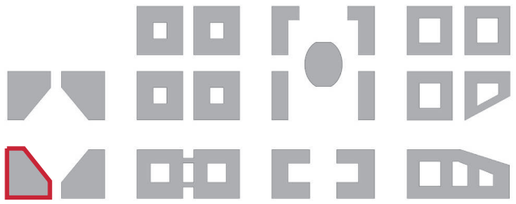
Building No.28 is to be used as 3* hotel.

Plot No.28 is located on the south side of the M.U.D. area. The east side of the building has a drop-off bay to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

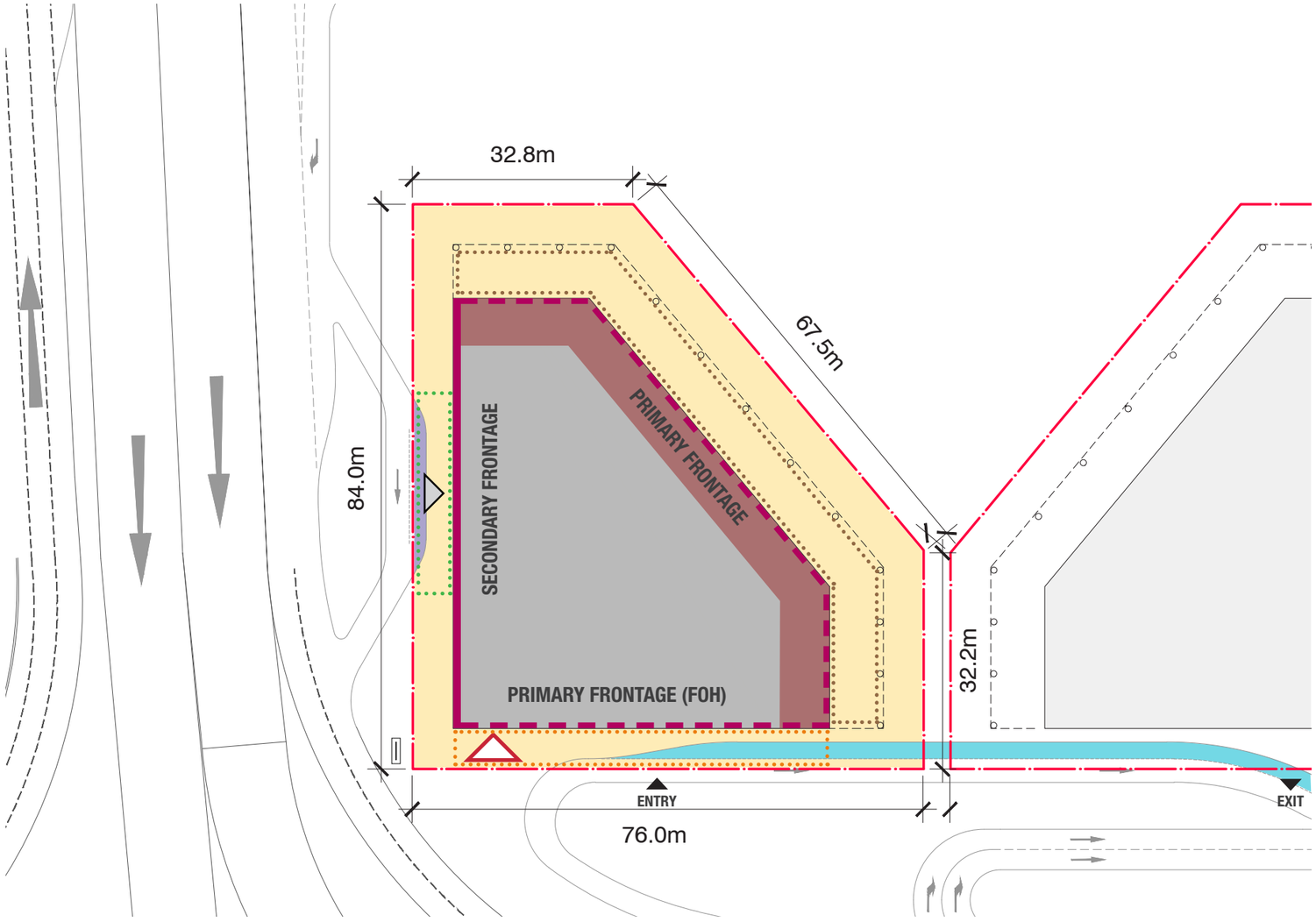
SETBACKS:



KEY PLAN:



9.0 BUILDING ELEMENTS



9.20 PLOT 28 - HOTEL 3*

KEY NUMBERS

PLOT SIZE	5,265.12 SQ.M.
MAX F.A.R	26,179.00 SQ.M.
GROUND COVERAGE	3,648.00 SQ.M.
HEIGHT TO ROOF SLAB	39.20 M
NO. LEVELS	10+4 BASEMENTS
BUILDING USE (F.A.R)	3,650.00 SQ.M. (RETAIL) 22,529.00 SQ.M. (OFFICE)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

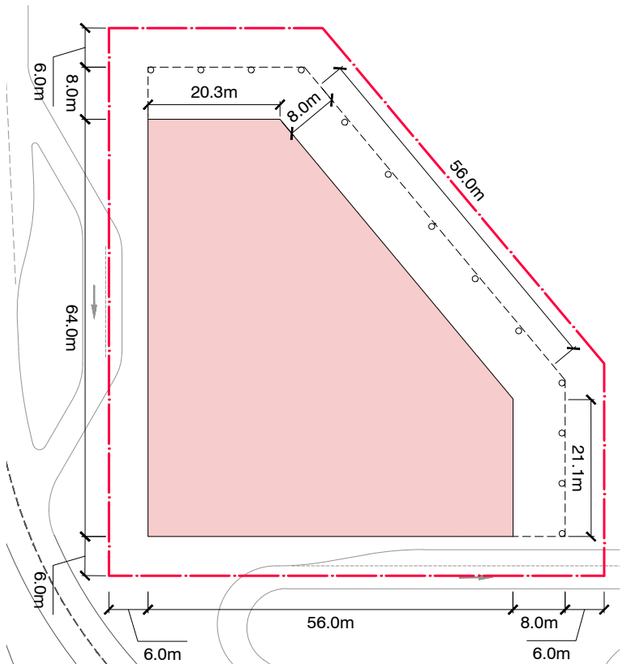
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

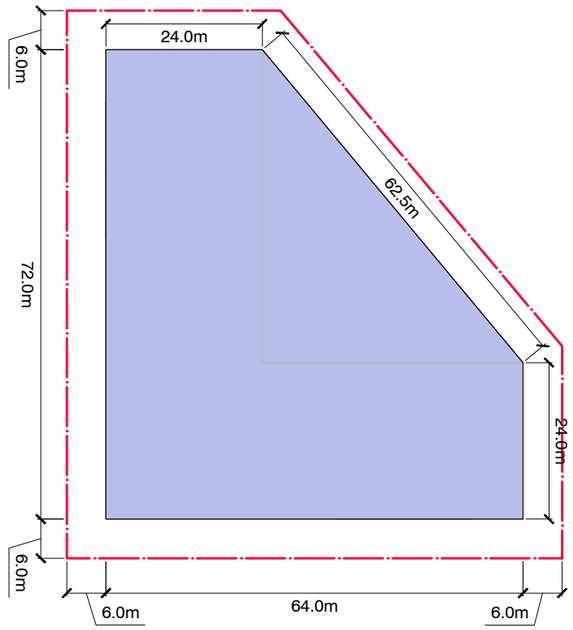
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

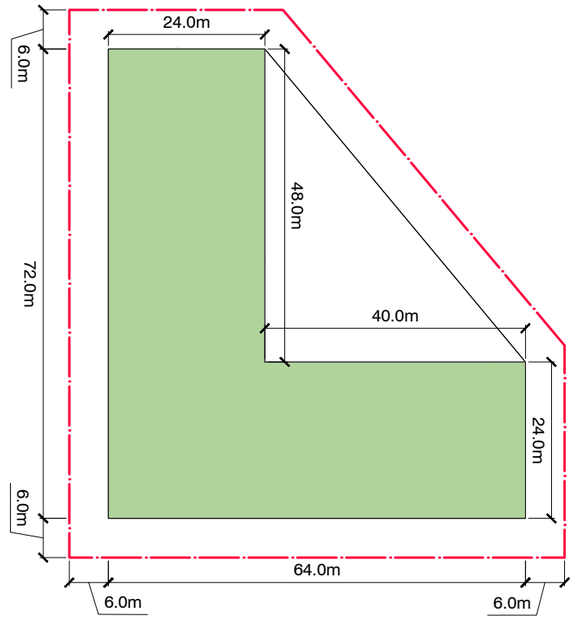
9.20 PLOT 28 - HOTEL 3*



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-03



TOWER LEVELS: 04-06

KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	2,822.05 SQ.M.
LEVEL 01	2,822.05 SQ.M.
LEVEL 02	3,648.00 SQ.M.
LEVEL 03	3,648.00 SQ.M.
LEVEL 04	2,688.00 SQ.M.
LEVEL 05	2,688.00 SQ.M.
LEVEL 06	2,688.00 SQ.M.
LEVEL 07	1,728.00 SQ.M.
LEVEL 08	1,728.00 SQ.M.
LEVEL 09	1,728.00 SQ.M.
TOTAL	26,188.10 SQ.M.

1,900.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 00

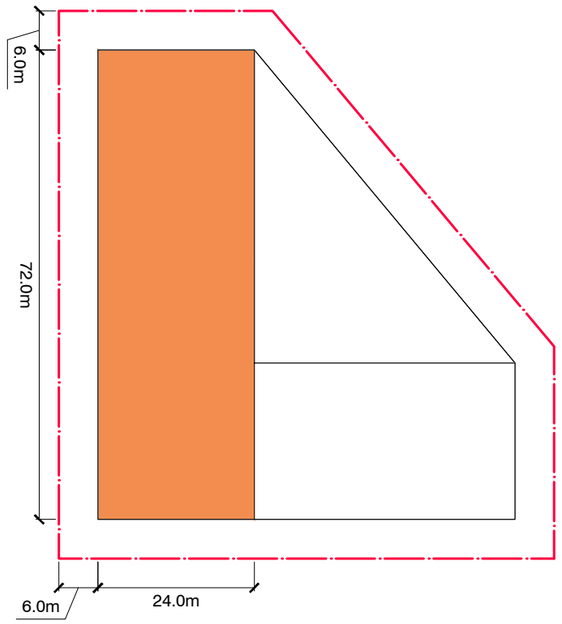
1,750.00 SQ.M. OF RETAIL F.A.R IS TO BE PROVIDED ON LEVEL 01

KEY

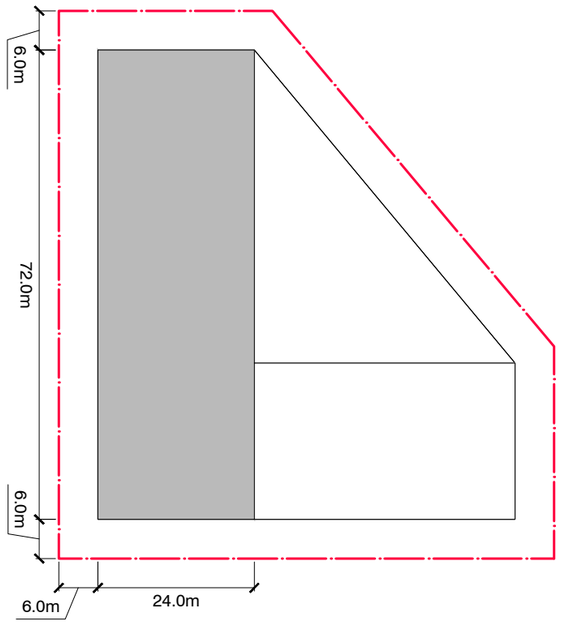
- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-03
- TOWER LEVELS: 04-06
- TOWER LEVELS: 07-09
- ROOF

9.0 BUILDING ELEMENTS

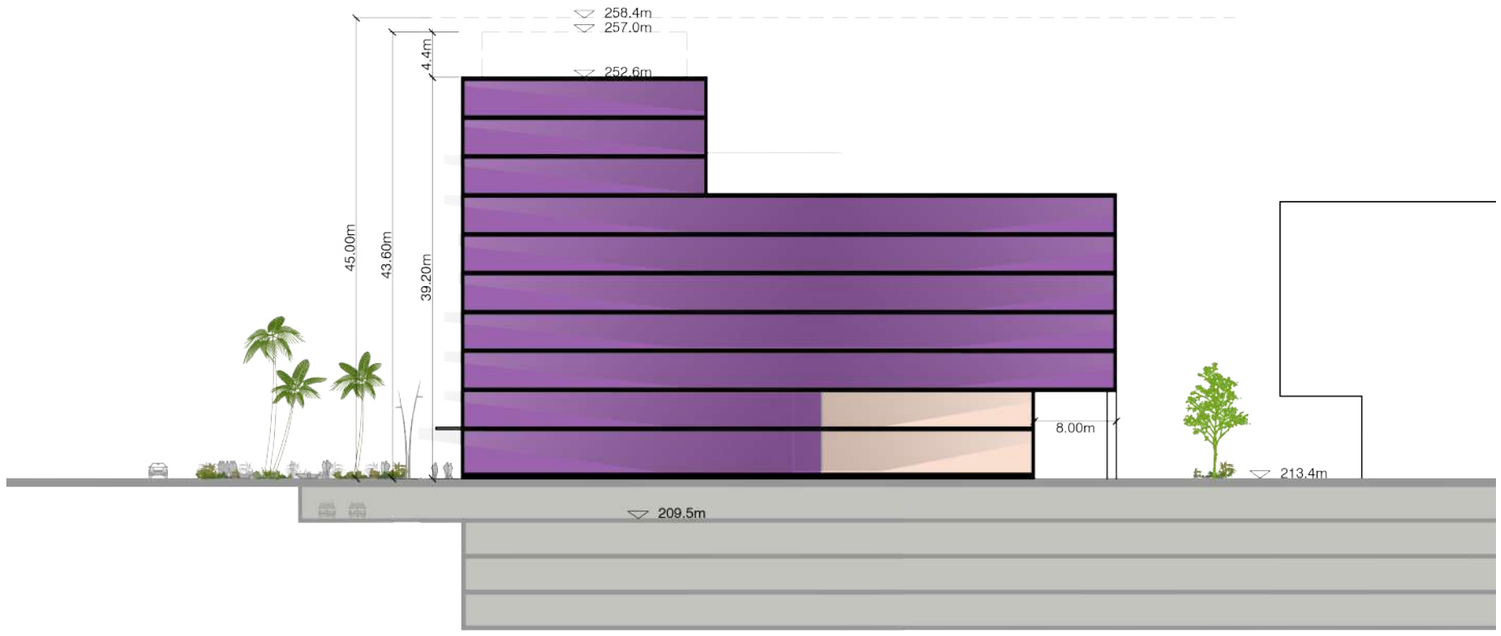
9.20 PLOT 28 - HOTEL 3*



TOWER LEVELS: 07-09



ROOF



SECTION A
SCALE 1:600

9.20 PLOT 28 - HOTEL 3*

HEIGHT REQUIREMENTS AND PARAMETERS

KEY NUMBERS

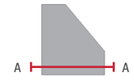
LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 8 X TOWER (02 TO 09)
MAX HEIGHT	38.7 M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 10 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

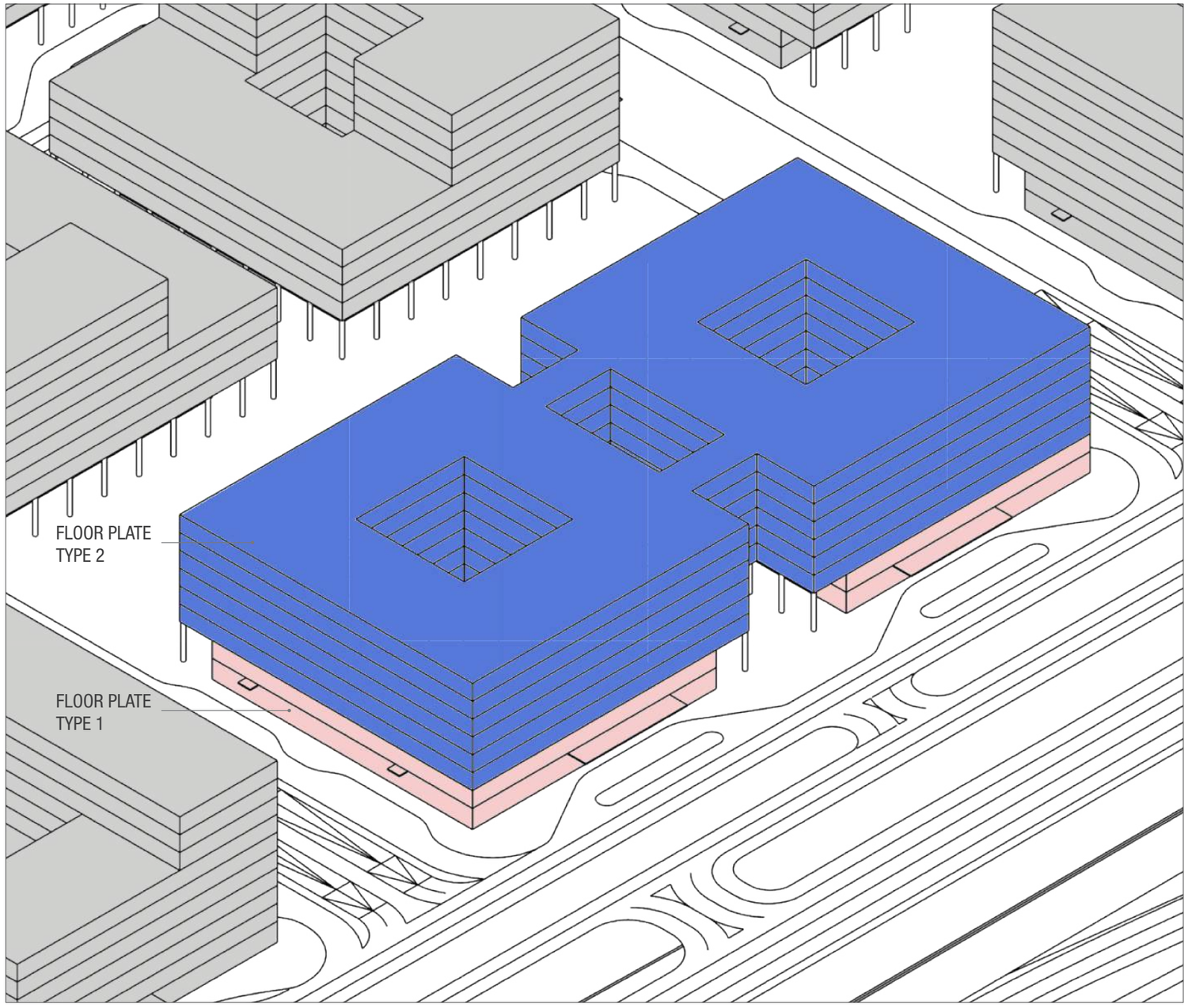
The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 252.6m.

The overall height is to be 39.2 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

HOTEL
RETAIL
BASEMENT



9.0 BUILDING ELEMENTS



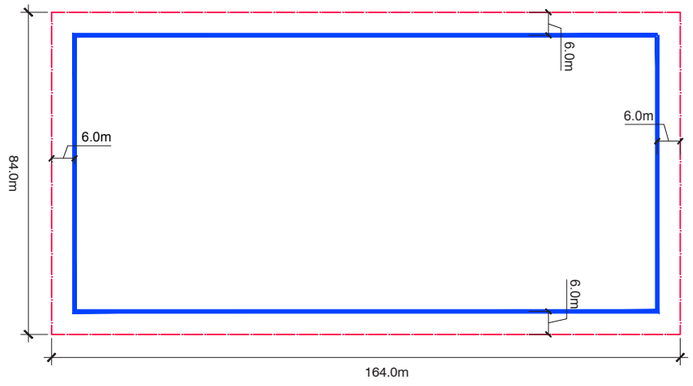
9.21 PLOT 29 - RETAIL

GENERAL OVERVIEW

Building No.10B is to be used as a retail mall.

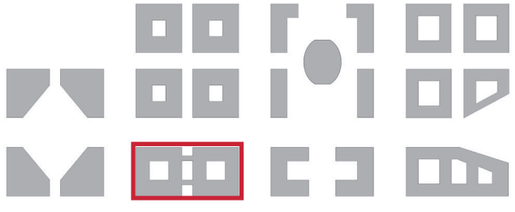
Plot No.10B is located on the southeast side of the M.U.D. area. Three sides of the building have drop-off bays to facilitate vehicle access. Parking for the building is within the basement. Access is as per circulation drawings.

SETBACKS:



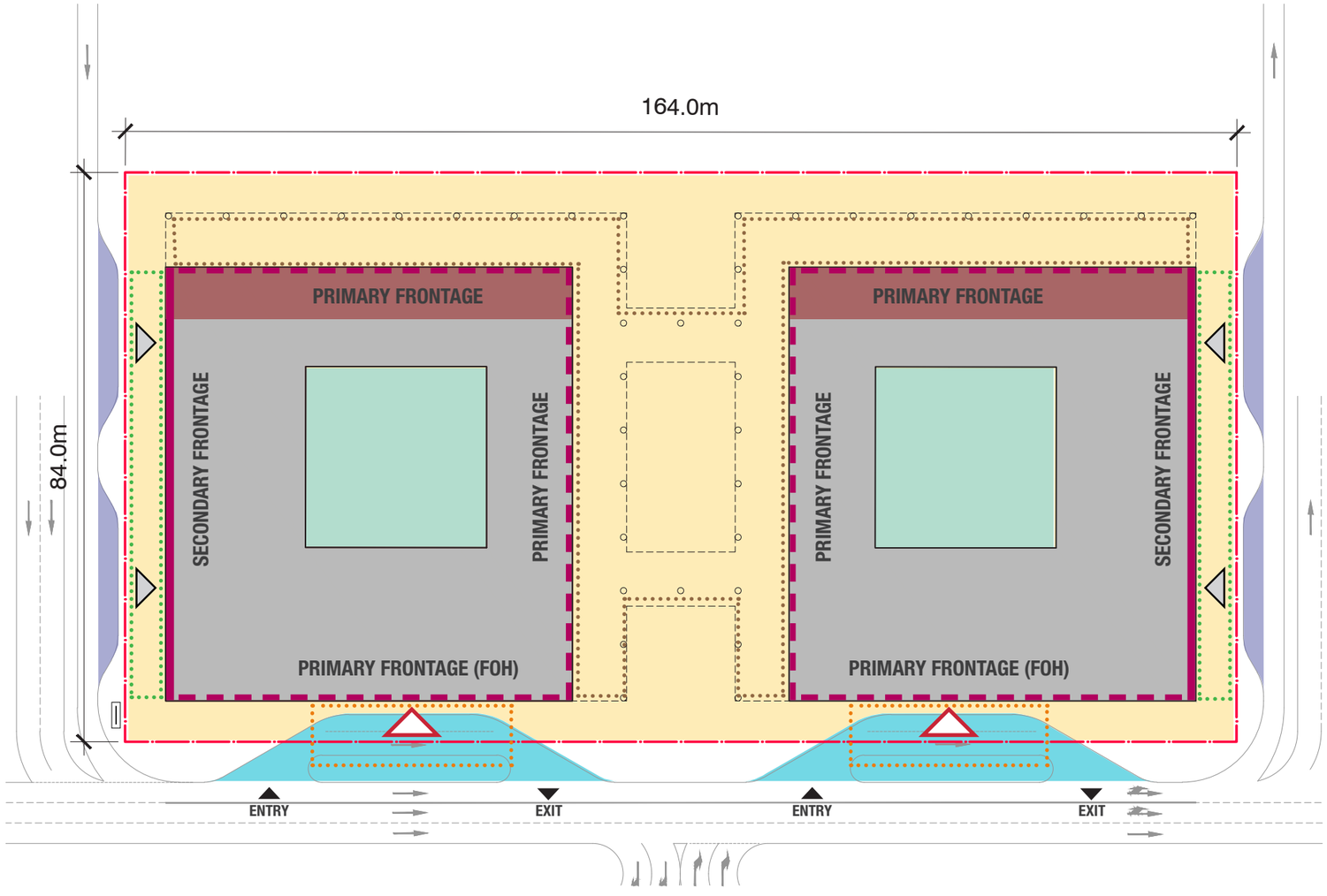
PLOT LINE
SETBACK LINE

KEY PLAN:



* FOR BASEMENT EXTENTS REFER TO SECTION 09 - PAGE 93

9.0 BUILDING ELEMENTS



9.21 PLOT 29 - RETAIL

KEY NUMBERS

PLOT SIZE	13,776.00 SQ.M.
MAX F.A.R	64,242.00 SQ.M.
GROUND COVERAGE	8,622.00 SQ.M.
HEIGHT TO ROOF SLAB	31.60 M
NO. LEVELS	8+4 BASEMENTS
BUILDING USE (F.A.R)	64,242.00 SQ.M. (RETAIL)

PLAN DIAGRAM / BUILDING SITING

This diagram indicates the mandatory design requirements. The plot size, ground coverage and drop-off bays are labelled according to the main access routes. Entrance points, canopies and awnings can be positioned along the elevation as noted to suit developer requirements.

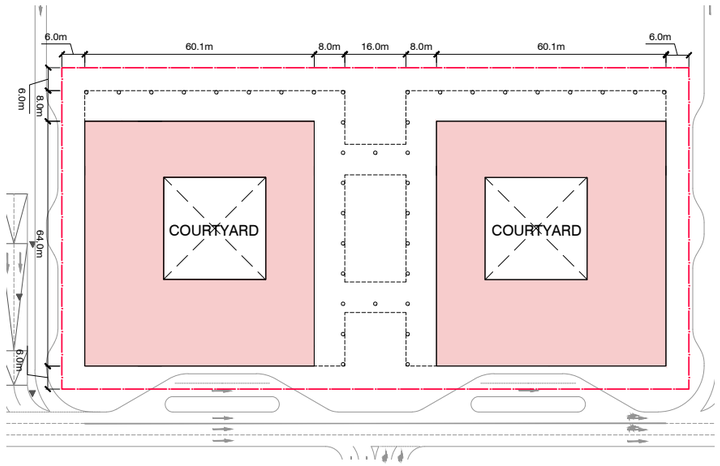
Developers are permitted to alter internal courtyard dimensions as long as overall F.A.R and Ground Coverage parameters are adhered to.

KEY

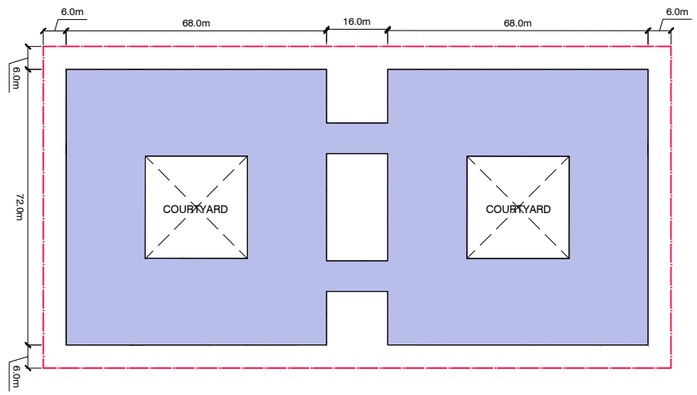
- BUILT TO LINE
- PLOT LINE
- UPPER FLOOR PROJECTION
- VEHICLE DROP-OFF CANOPY
- PEDESTRIAN CANOPY
- AWNINGS
- COLONNADE
- SOLID EDGE
- PERMEABLE EDGE
- VEHICLE DROP-OFF BAYS
- SERVICING / LOADING BAYS
- LANDSCAPING AS PER BUILDING DESIGN
- LANDSCAPING AS PER MASTERPLAN
- MANDATORY RETAIL FRONTAGE
- MAIN ENTRANCES
- SERVICING ENTRANCES
- VEHICLE ENTRY / EXIT
- SIGNAGE

9.0 BUILDING ELEMENTS

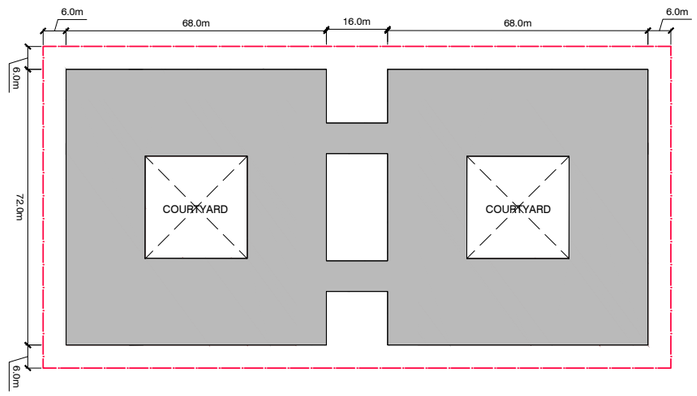
9.21 PLOT 29 - RETAIL



PODIUM LEVELS: GF & 1F



TOWER LEVELS: 02-09



ROOF

KEY NUMBERS BREAKDOWN

	B.U.A.
LEVEL 00	6,262.80 SQ.M.
LEVEL 01	6,262.80 SQ.M.
LEVEL 02	8,622.00 SQ.M.
LEVEL 03	8,622.00 SQ.M.
LEVEL 04	8,622.00 SQ.M.
LEVEL 05	8,622.00 SQ.M.
LEVEL 06	8,622.00 SQ.M.
LEVEL 07	8,622.00 SQ.M.
TOTAL	64,257.60 SQ.M.

KEY

- BUILT TO LINE
- PLOT
- UPPER FLOOR PROJECTION
- PODIUM LEVELS: GF & 1F
- TOWER LEVELS: 02-09
- ROOF

9.0 BUILDING ELEMENTS

9.21 PLOT 29 - RETAIL

HEIGHT REQUIREMENTS AND PARAMETERS

KEY NUMBERS

LEVELS	4 X BASEMENT (-01 TO -04) 2 X PODIUM (00 TO 01) 6 X TOWER (02 TO 07)
MAX HEIGHT	31.6M (+ 4.4 M SERVICES)
PARAPET HEIGHT	MAX 2M ABOVE ROOF SLAB

The building, which is raised on a plinth of 0.5 m, has 8 floors in total, with the ground floor being 4.5m floor to floor, and the upper floors being 3.8m floor to floor. The building also consists of 4 basement levels.

The permitted maximum height according to the AAI approval is 258.4m. The building's roof slab FFL is to be 245.0m.

The overall height is to be 31.6 meters. An allowance of 4.4m above the roof slab is permitted for plant equipment.

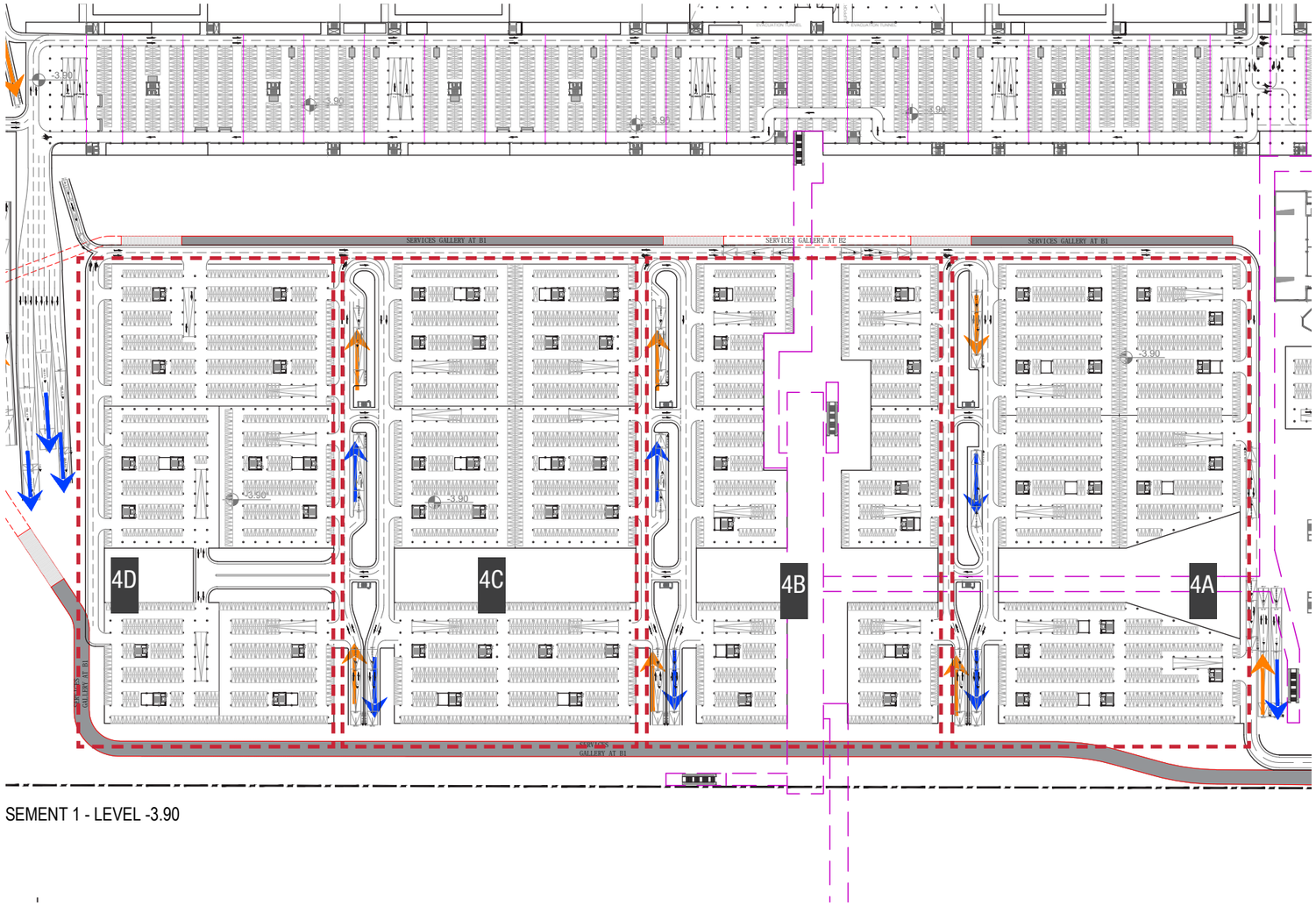
SECTION A
SCALE 1:800

SECTION A
SCALE 1:1000

RETAIL

BASEMENT

9.0 BUILDING ELEMENTS



SEMENT 1 - LEVEL -3.90

9.22 BASEMENT LAYOUT

STRUCTURED PARKING

A Dedicated basement parking areas have been provided for the M.U.D. buildings and is to provide a minimum of 19,260 car parking spaces.

Movements between the various levels of basement parking will be contained within the footprint of each building, while vertical circulation cores located strategically within each basement will provide access to the ground floor areas.

For the MUD buildings, a tunnel link from each of the basement zones will need to be included as each is constructed, to facilitate additional exit and entry points from each basement, creating an underground road network further helping to reduce traffic movements at ground level within the masterplan site area.

The basement parking areas are split into 4 zones as shown in the diagram.

Each zone are to provide the following minimum number of spaces:

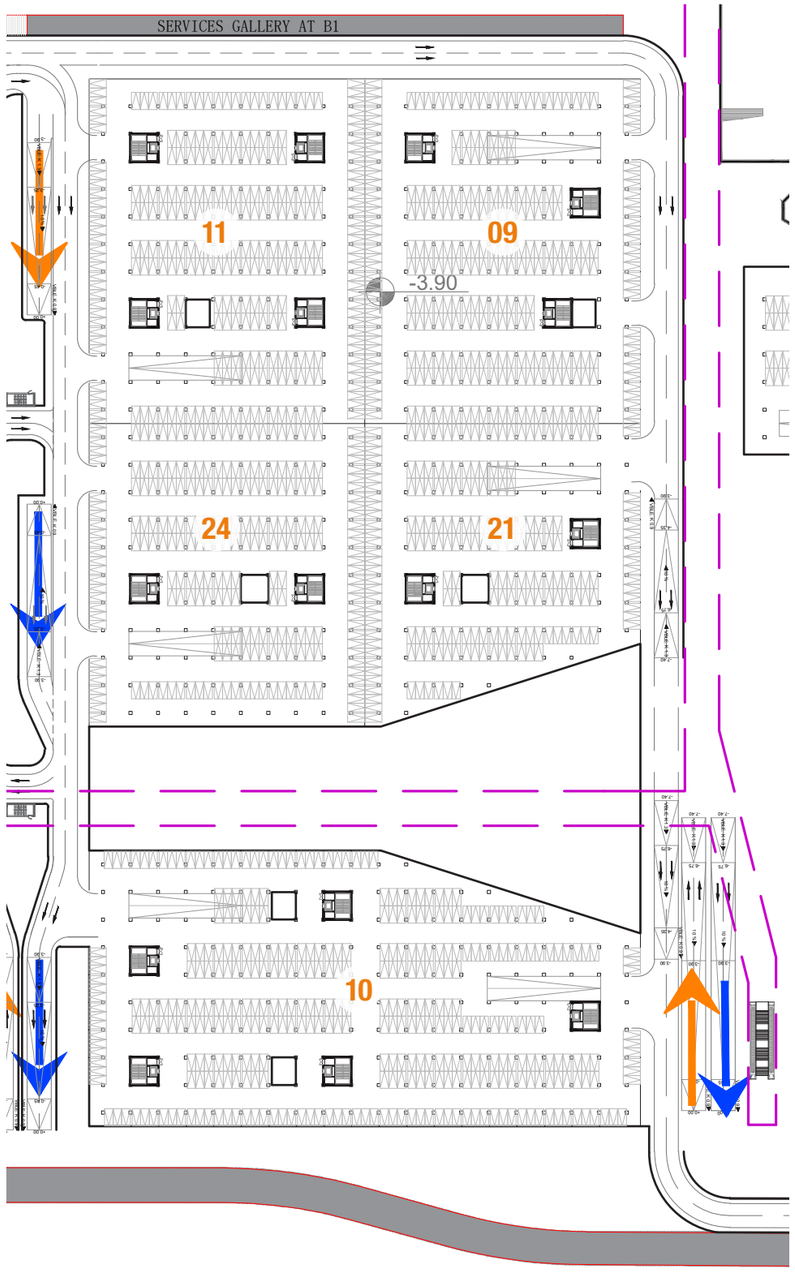
Zone 4A	5,215 Spaces
Zone 4B	3,728 Spaces
Zone 4C	5,446 Spaces
Zone 4D	4,871 Spaces
TOTAL	19,260 Spaces

It is intended that each zone is to be compartmentalised to relate with the buildings/plots above and this is indicated on the following pages.

FIRE PROTECTION SECTORS
SERVICE GALLERY
BASEMENT RAMP (ENTRY)
BASEMENT RAMP (EXIT)

9.0 BUILDING ELEMENTS

9.22 BASEMENT LAYOUT



BASEMENT AREA 4A:

A Dedicated basement parking areas to provide a minimum of 5,215 spaces, and serve the following buildings: 09, 10, 11, 21, and 24.

PLOT NO.	MIN SPACES
9	915
10	1555
11	915
21	915
24	915

FIRE PROTECTION SECTORS
SERVICE GALLERY
BASEMENT RAMP (ENTRY)
BASEMENT RAMP (EXIT)

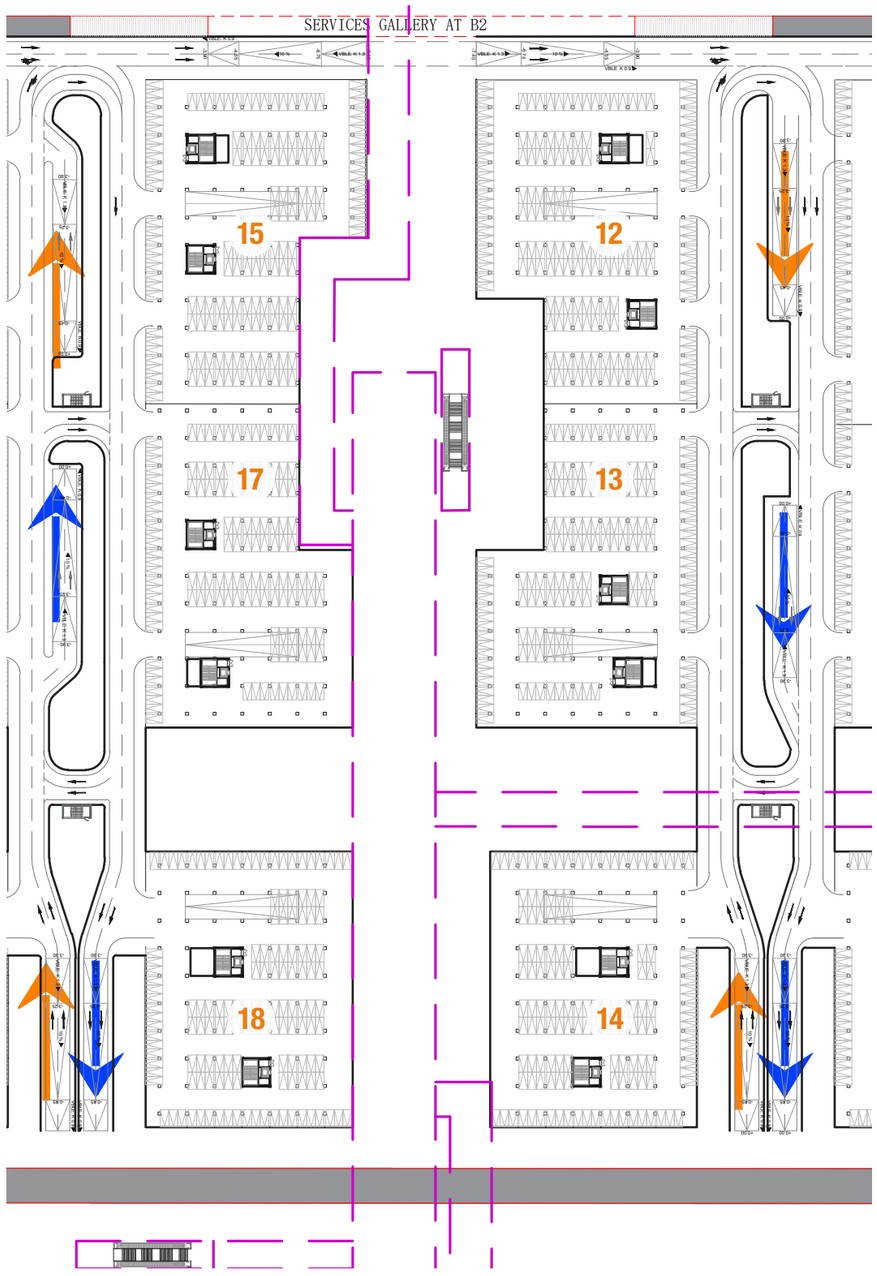
9.0 BUILDING ELEMENTS

9.22 BASEMENT LAYOUT

BASEMENT AREA 4B:

A Dedicated basement parking areas to provide a minimum of 3,728 spaces, and serve the following buildings: 12, 13, 14, 15, 17 ,and 18.

PLOT NO.	MIN SPACES
12	674
13	674
14	549
15	641
17	641
18	549



FIRE PROTECTION SECTORS
SERVICE GALLERY
BASEMENT RAMP (ENTRY)
BASEMENT RAMP (EXIT)

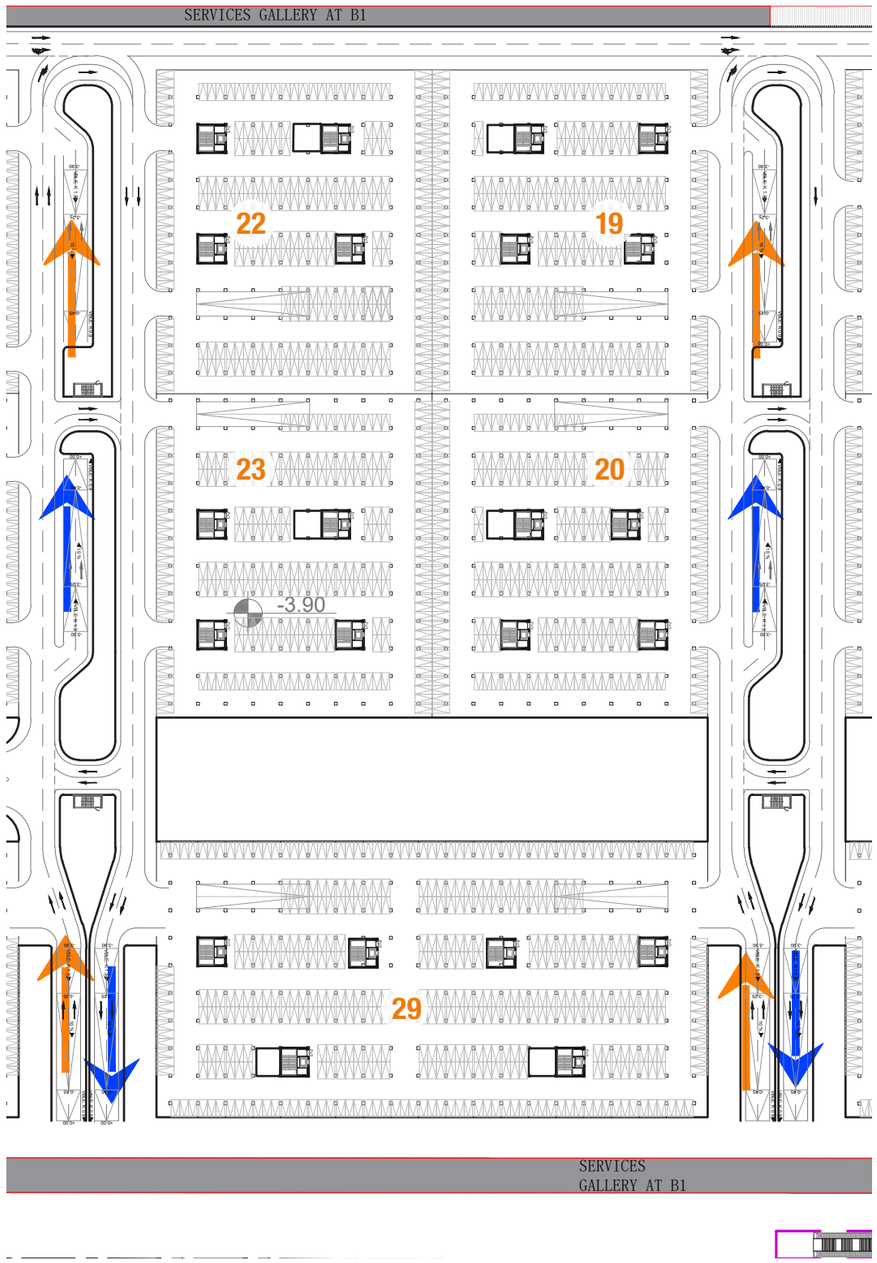
9.0 BUILDING ELEMENTS

9.22 BASEMENT LAYOUT

BASEMENT AREA 4C:

A Dedicated basement parking areas to provide a minimum of 5,446 spaces, and serve the following buildings: 19, 20, 22, 23, and 29.

PLOT NO.	MIN SPACES
19	944
20	944
22	944
23	944
29	1670



FIRE PROTECTION SECTORS
SERVICE GALLERY
BASEMENT RAMP (ENTRY)
BASEMENT RAMP (EXIT)

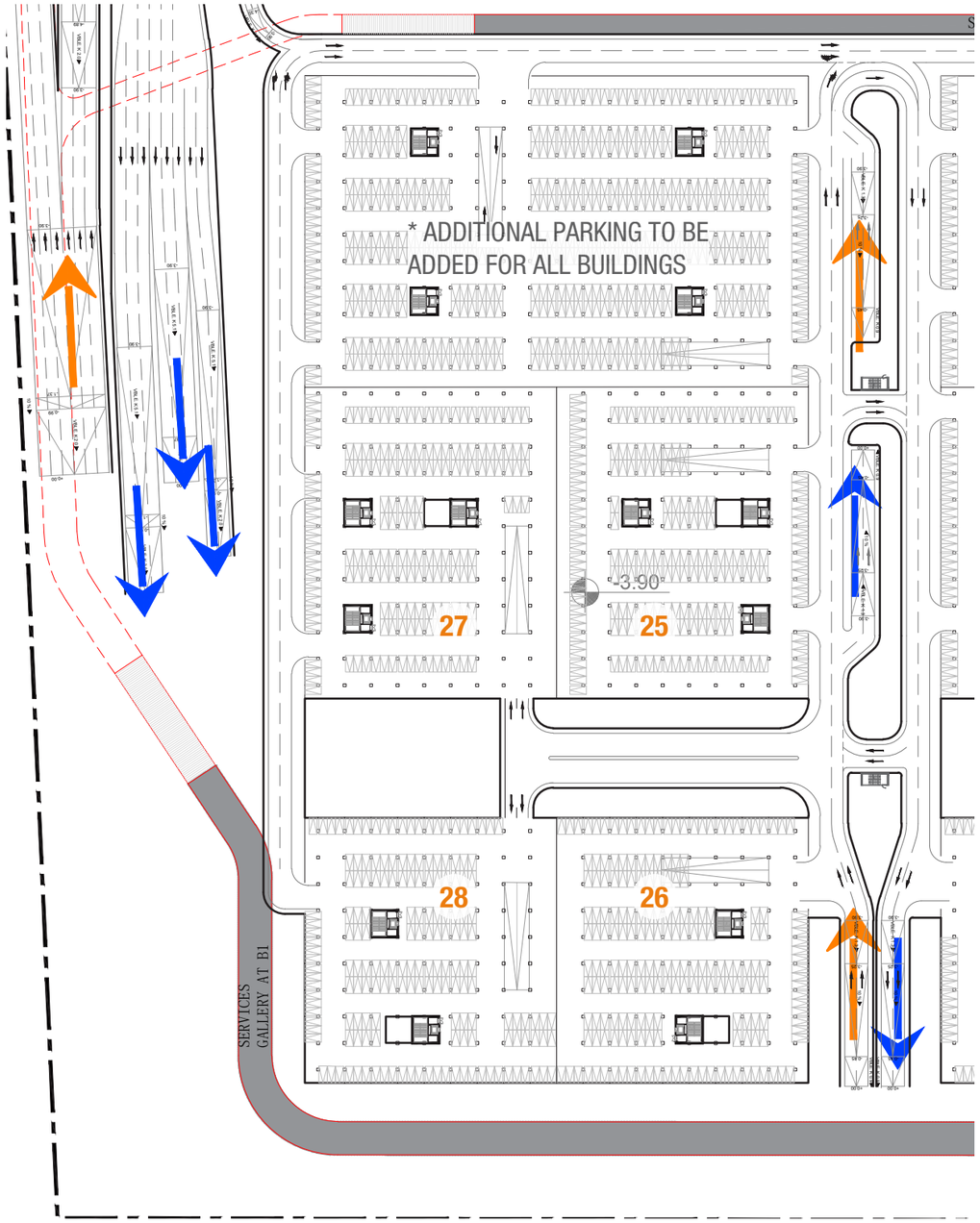
9.0 BUILDING ELEMENTS

9.22 BASEMENT LAYOUT

BASEMENT AREA 4D:

A Dedicated basement parking areas to provide a minimum of 4,871 spaces, and serve the following buildings: 16, 25, 26, 27, and 28, as well as to provide surplus parking for the entire MUD development area.

PLOT NO.	MIN SPACES
16	300
25	1,492
26	794
27	1,491
28	794



FIRE PROTECTION SECTORS
SERVICE GALLERY
BASEMENT RAMP (ENTRY)
BASEMENT RAMP (EXIT)

9.0 BUILDING ELEMENTS

9.23 BASEMENT CONSTRUCTION STRATEGY

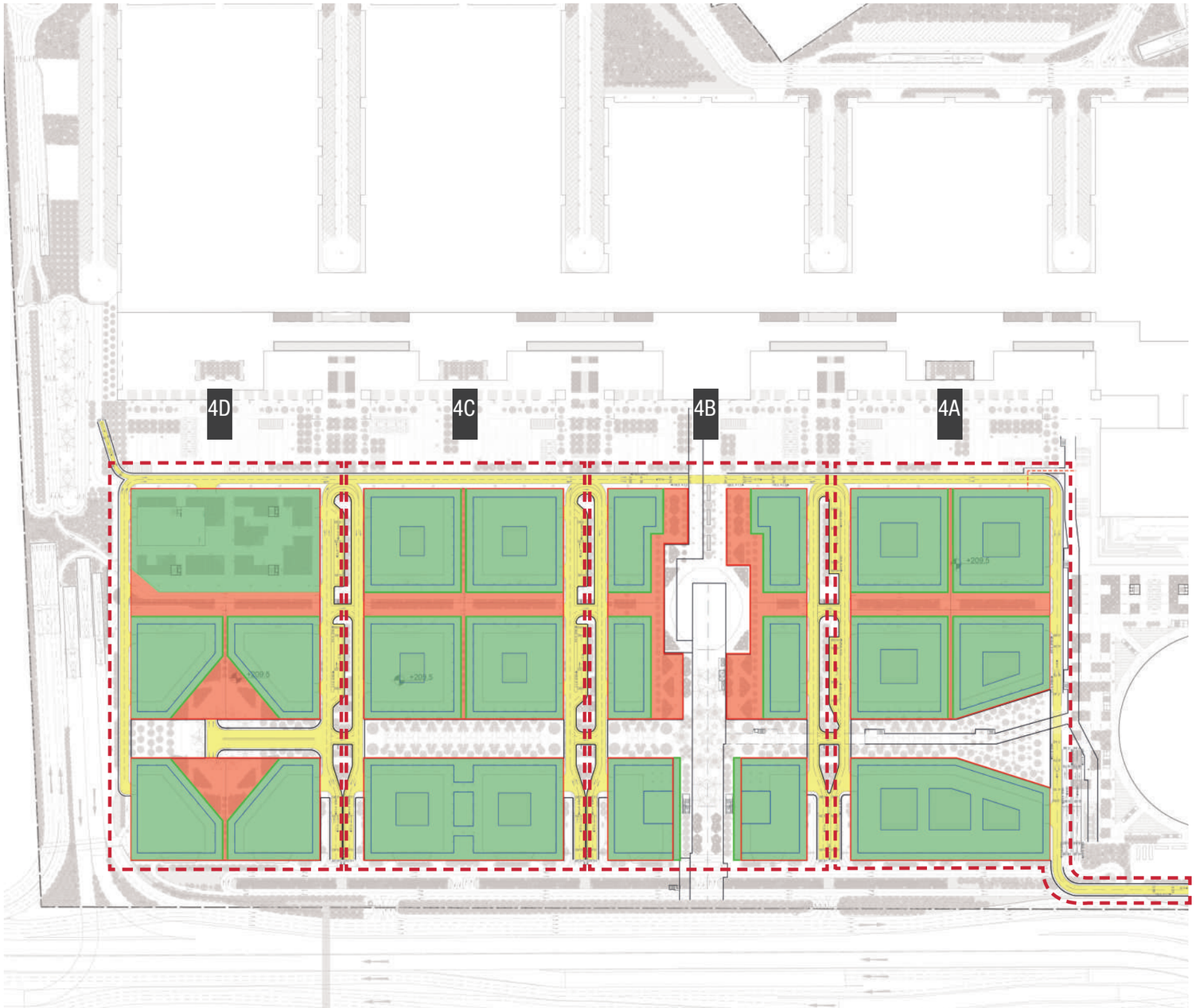
EXCAVATION STRATEGY

Basement areas are to be built according to the zones as defined in the previous section.

All basement parking areas and associated roadways are to be constructed from within the extents of the plot boundaries at ground level.

Within the limits of the plot boundaries, basements can be created with open excavations. Where the basement exceeds the plot boundary line, then these areas should be excavated sideways maintaining the full integrity of the ground above at all times.

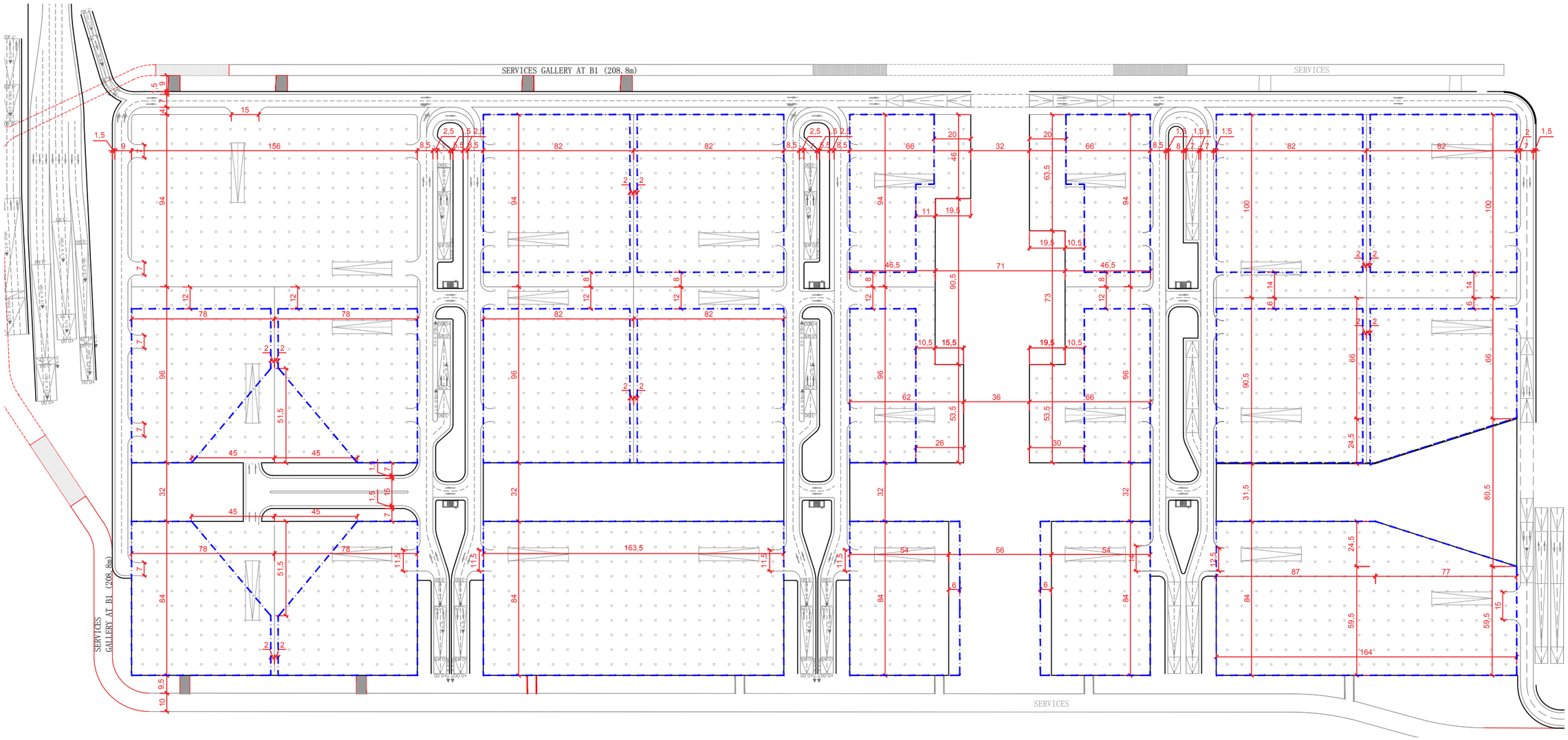
Basement access roads shown to be excavated sideways maintaining the full integrity of the ground above at all times.



IICC SITE BOUNDARY
MUD BASEMENT EXTENTS
MUD PLOT BOUNDARIES
MUD BUILDING FOOTPRINTS
BASEMENT ACCESS ROADS TO BE EXCAVATED (MAINTAINING FULL INTEGRITY OF GROUND ABOVE)
BASEMENT AREA TO BE EXCAVATED: OPEN EXCAVATION WITHIN PLOT BOUNDARIES
SIDEWAYS EXCAVATION (MAINTAINING FULL INTEGRITY OF GROUND ABOVE)
BASEMENT ZONE & ASSOCIATED ROADS CONSTRUCTION EXTENTS

9.0 BUILDING ELEMENTS

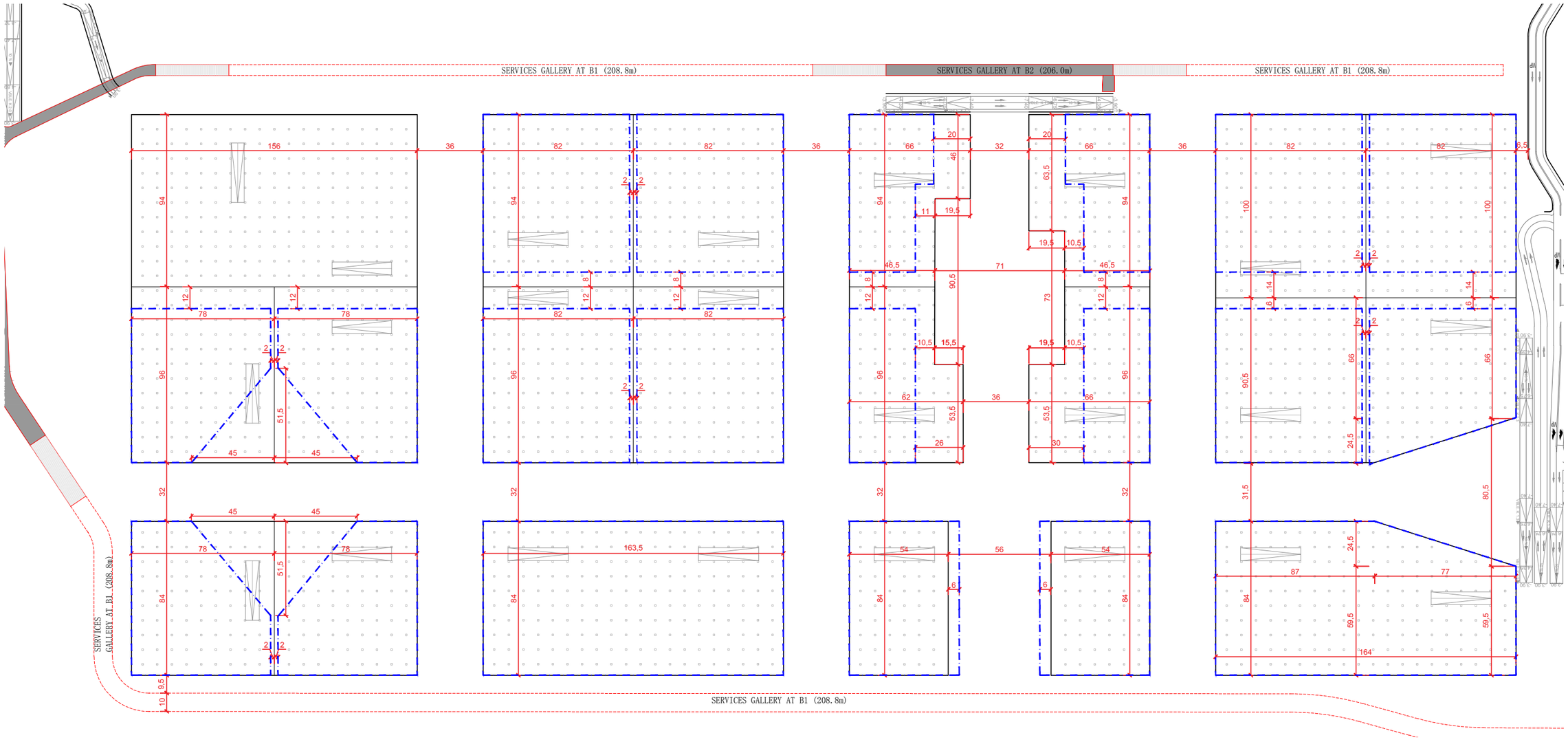
9.24 BASEMENTS DIMENSIONS



BASEMENT -1

PLOTS

9.24 BASEMENTS DIMENSIONS

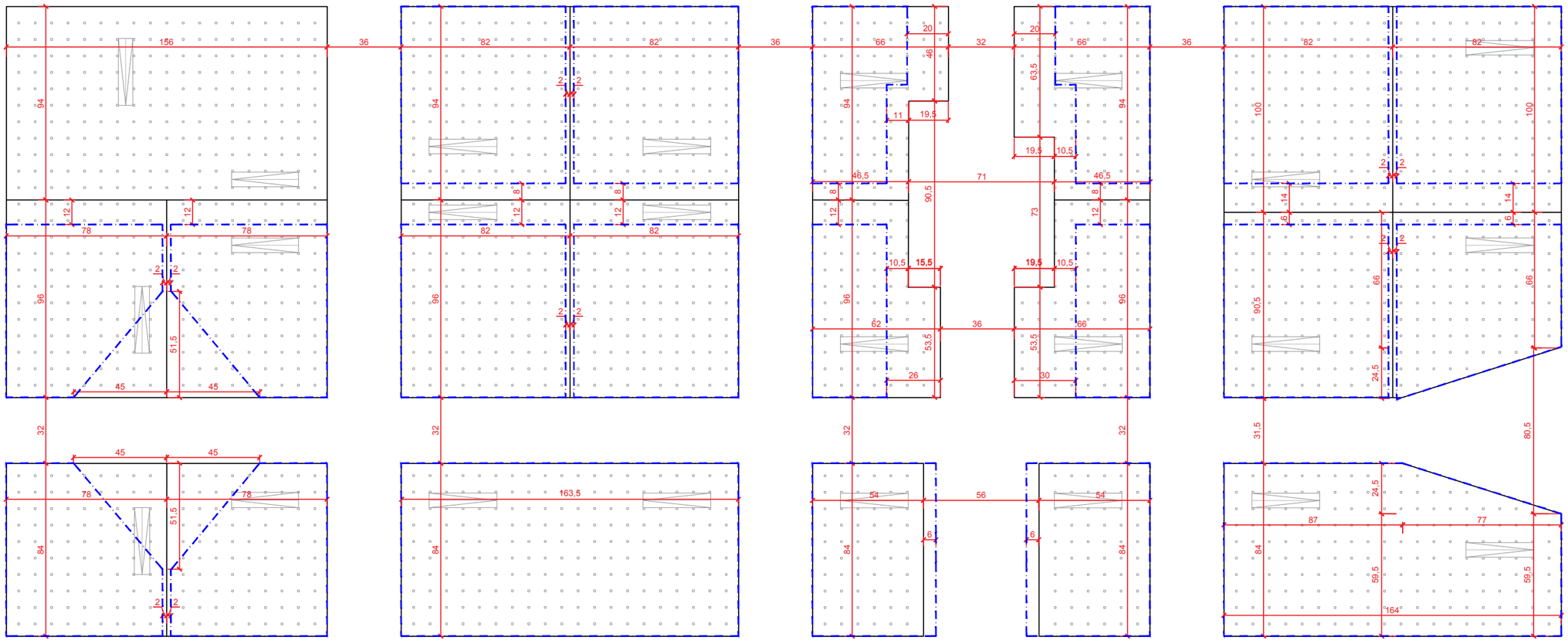


BASEMENT -2

PLOTS

9.0 BUILDING ELEMENTS

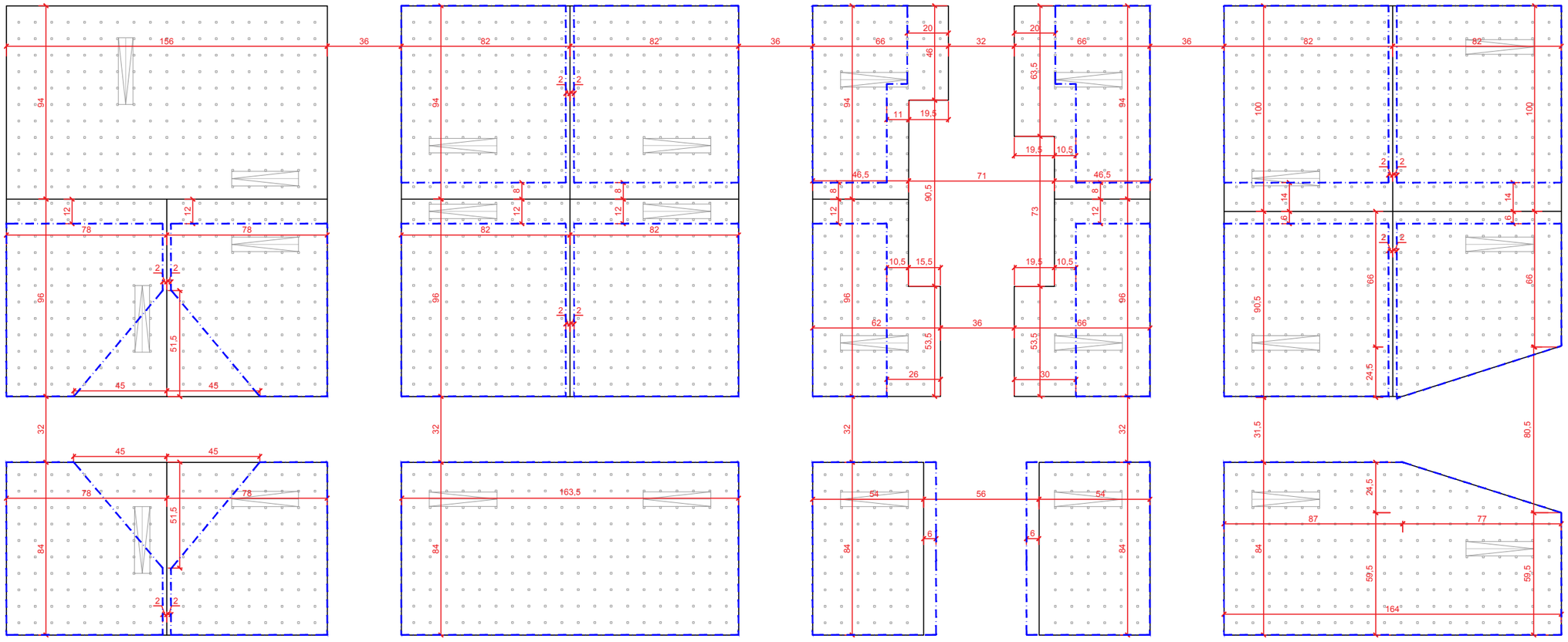
9.24 BASEMENTS DIMENSIONS



BASEMENT -3

PLOTS

9.24 BASEMENTS DIMENSIONS



BASEMENT -4

PLOTS

10.0 SUSTAINABILITY

SUSTAINABLE DEVELOPMENT AND IGBC PLATINUM GUIDELINES

OBJECTIVES

The requirements of the ECC are numerous. Energy consumption must be minimised and the necessary building services must be provided in the most sustainable way in order to ensure adequate indoor climate and healthy conditions for the users.
High standards of environmental sustainability are targeted by the design of the Mixed Use District with commitment to energy efficiency, construction waste minimisation, and operational recycling, as described in the general sustainability goals for the whole Campus.
The strategy proposed aims to accomplish various sustainability objectives, including:
- The future achievement of **IGBC Platinum in Green Campus certification**.
- The Energy Strategy will be designed to obtain significant **CO_2 reductions**, with the implementation of passive design and energy efficiency measures.
- **Water efficient devices** will be specified to reduce water consumption from 30% to 50% reduction over baseline consumption.
- The chosen **materials** will be composed of renewable, recyclable or reusable resources.
- Incorporation of **Renewable Energy**; Solar Photovoltaic Panels will be installed in the roof of the Mixed Use District buildings.
- **Site Waste Management Plans** will be put in place to monitor, sort and recycle construction waste on site.

CO_2 EMISSIONS

Considerations:
- Reduce energy demand with high thermal performance envelopes and air tightness requirements that exceed minimum regulations requirements.
- Reduce demand by enabling and encouraging energy efficient occupier behavior including the provision of smart energy meters and building energy management systems.

ENERGY EFFICIENCY

The Mixed Use District buildings are designed following high standards of energy efficiency. Improved energy efficiency is among the fastest and most cost efficient ways of lowering energy use.
A complex group of systems related one to another allows us to speak about efficiency. This elements are: the envelope, the general installations and the control systems.
The use of occupancy sensors, local switching and daylight sensors efficiently controls the building's lighting.
Low level air delivery and high level air exhaust provide excellent air change effectiveness at low energy consumption.

The envelope shall guarantee a comfortable and healthy interior space, adding acoustic and hygrothermic quality to the building. The façades and green roofs are designed for avoiding the possible energy gains and losses, presenting sometimes solar protection elements that avoid direct solar radiation inside the building.

The HVAC systems and equipment will be chosen in terms of high efficiency and durability means. Special effort will be made in the mechanical ventilation system, where heat recovery, free-cooling and speed variable fans will be used for the energy reuse and consumption reduction. Noise pollution will be minimized, ensuring the maximum indoor air quality.

10.0 SUSTAINABILITY

GREEN AND OPEN AREAS

The Mixed Use District buildings present several approaches to natural features:

- Green patios, where the trees will shade the circulation areas and provide natural ventilation, thermal inertia and insulation, improving comfort and energy efficiency, with a finishing material that reduces the heat island effect.
The exterior openings influence directly in the solar shading of indoor spaces and the impact of the wind on the building. Due to a good orientation, the MUD buildings can take advantage of the wind directions for ventilation, presenting openings when required. The positioning of openings allow the penetration of solar radiation, visible light and ventilation.
- Green roofs are also a part of the sustainable strategy due to the following reasons:
    - Improve urban clime: Green roofs humidify the air, reducing the heat in the atmosphere. In addition, they reduce HVAC systems consumption which favours CO2 emissions reduction.
    - Reduce pollution : The green roofs act as environmental filter, helping in reducing the quantity of general dust and other toxic elements normally versed to the atmosphere.
    - Rainwater attenuation through healthy soils: green roofs slow stormwater runoff.
    - Acoustic improvement : Recommended in areas with high acoustic pollution as it is considered the location of the ECC. The proximity to the airport and several highways makes acoustic insulation a key issue.
    - Energy savings thanks to the thermal insulation provided by the green roofs, improving efficiency and indoor comfort by reducing heat transfer.
    - Waterproofing system: green roofs extend the life span protecting the material from the weather.
    - Improve natural habitat

HVAC SYSTEM

The MUD buildings benefit as well from bioclimatic architectural design as described in the general IGBC PLATINUM GUIDELINES – MUD (solar control with shadings, external but covered and naturally ventilated areas, thermal mass, etc.). The HVAC is the most important system regarding the hygrothermal comfort and is therefore a key aspect for the project quality as perceived by the users.
The bioclimatic architectural design of the project and the selection of high performance HVAC systems will result in a significant reduction of the project consumption and costs according to a sustainable approach. This as well, will lead us to obtain a Platinum IGBC Green Campus certification.
The HVAC equipment installed will comply with the minimum efficiency/ COP requirements as prescribed in ASHRAE Standard 90.1-2010/ Energy Conservation Building Code (ECBC) baseline.

LIGHTING

The design of the lighting system is very flexible, efficient and with strong capabilities.
The whole system will be managed by a control installation that reaches high efficiency levels, monitoring occupation, type of activity and time of the day.
A major goal is to maximise natural light in order to reduce consumption and provide comfort to the occupants.
Lighting solution: LED lights with linear lighting control system shall be used to reduce energy consumption adding energy efficient lighting design.

RENEWABLE ENERGY

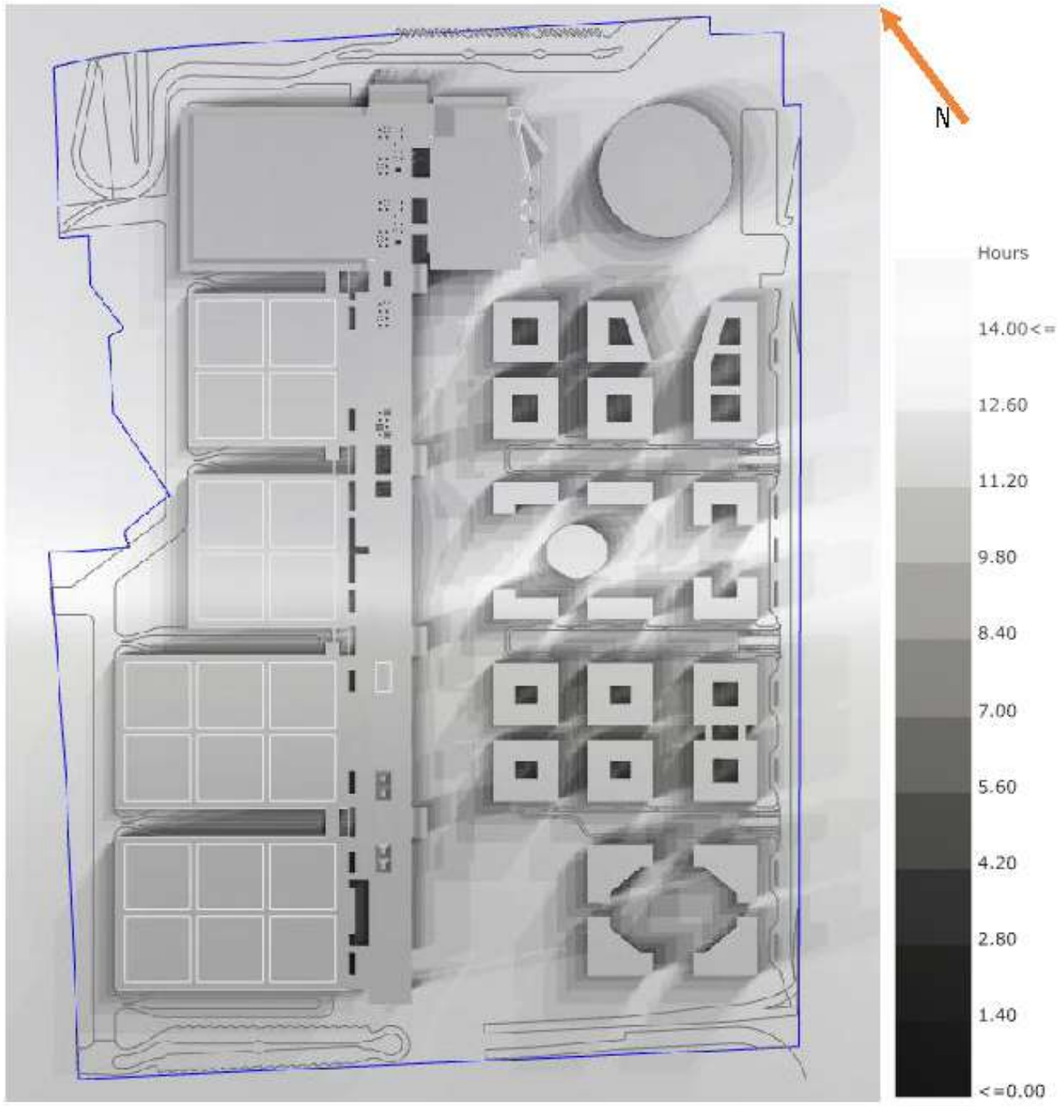
According to IGBC and NBC requirements, a minimum of 5% of project connected load shall be covered with PV panels. Solar Photovoltaic System will be installed in the roofs of all the MUD buildings, combined with the green roofs.

MATERIALS

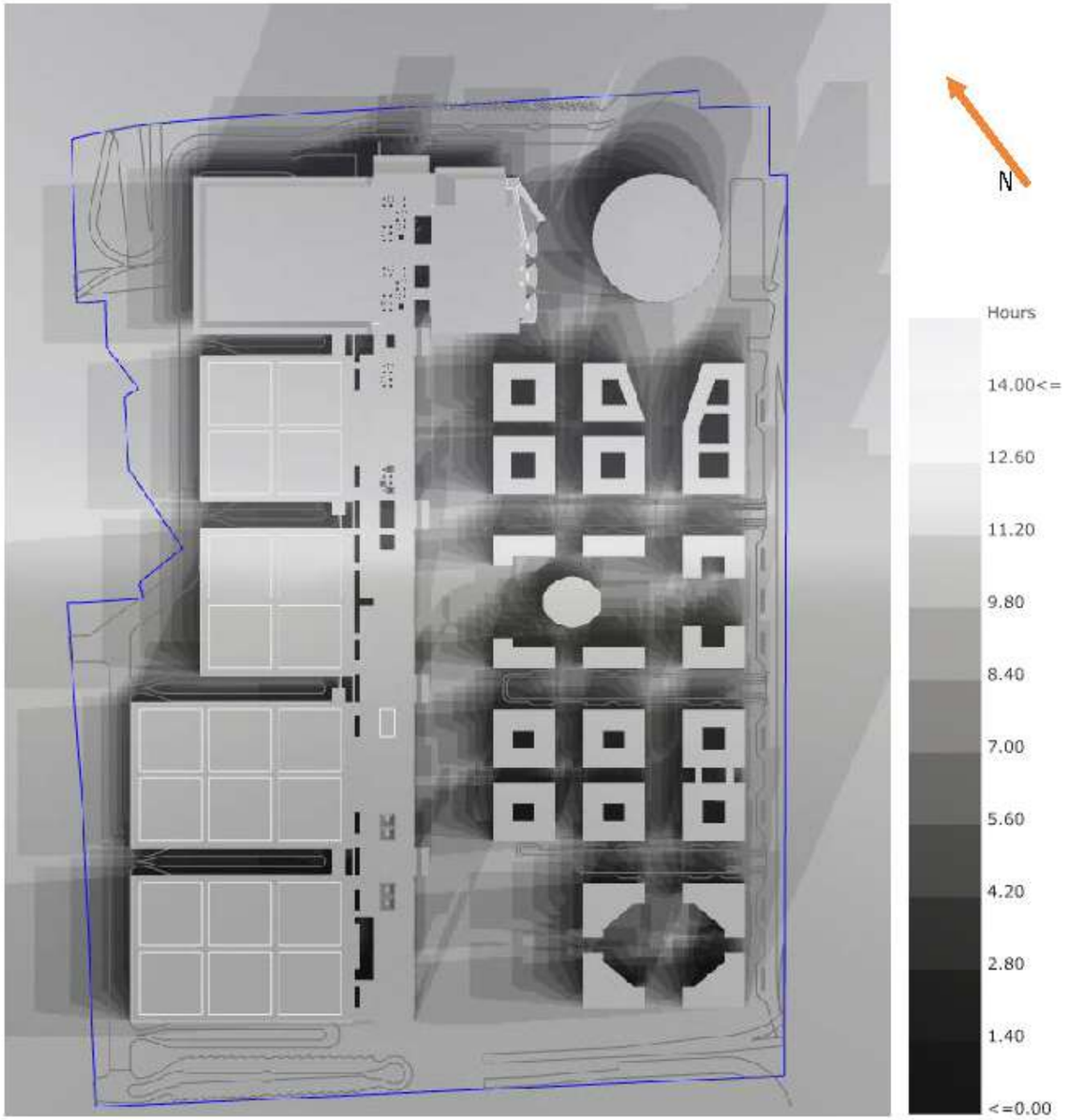
The ECC Dwarka innovative sustainable design and operational features ensure the comfort of occupants, going hand-in-hand with the protection of the environment. For that, the use of the appropriate materials indoors as well as for the envelope is one of the key aspects, and the following strategies will be adopted when possible:

Low Volatile Organic Compounds (VOC)
Carpets, paints adhesives and sealants are low in VOCs to enhance indoor air quality.
Sustainable use of building materials
Materials and components with a high recycled content and minimal PVC (polyvinyl chloride) content.
Glass Reinforced Concrete (GRC) is proposed for the façades.

PROJECTED SHADOWS ANALYSIS ON ECC

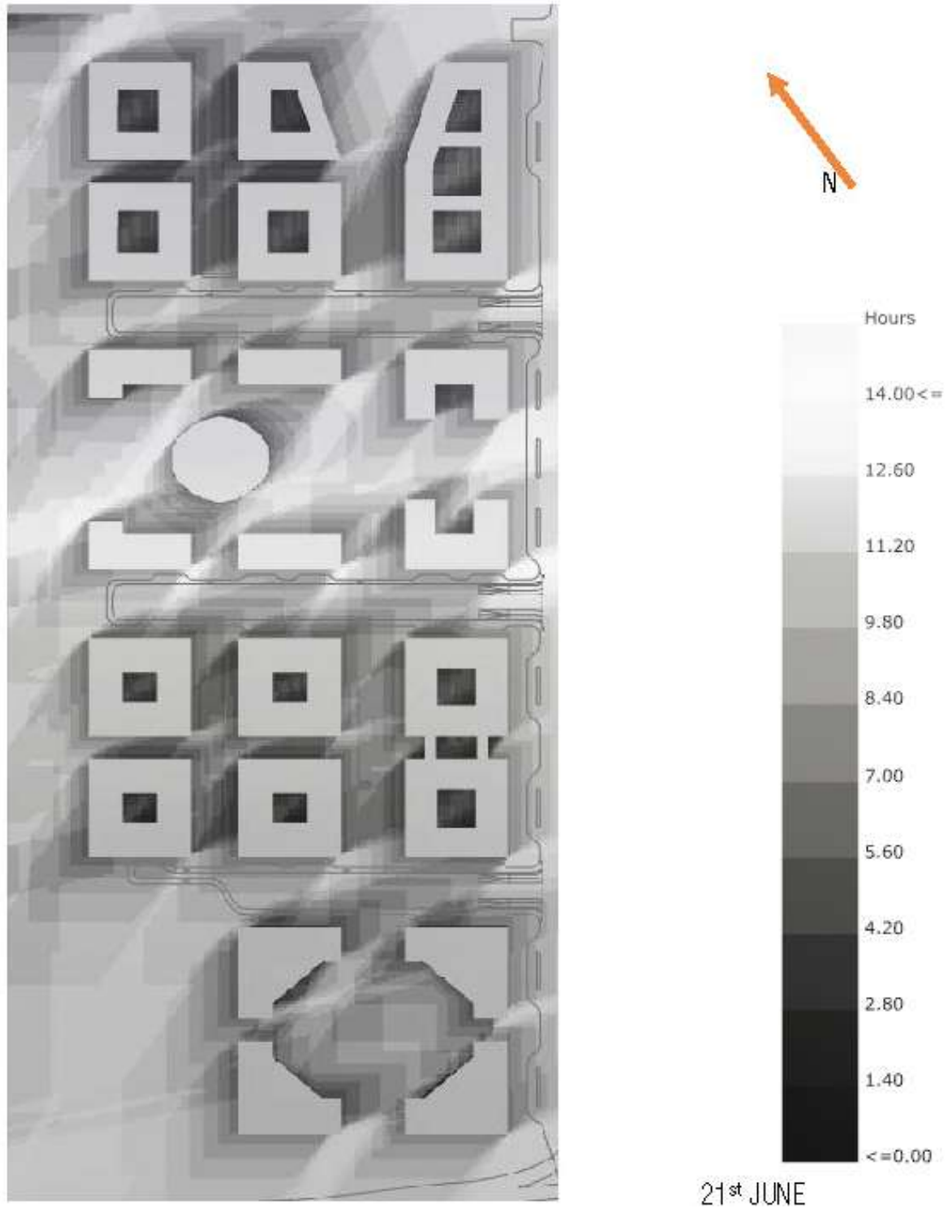


21st JUNE



21st DECEMBER

PROJECTED SHADOWS ANALYSIS ON THE MUD



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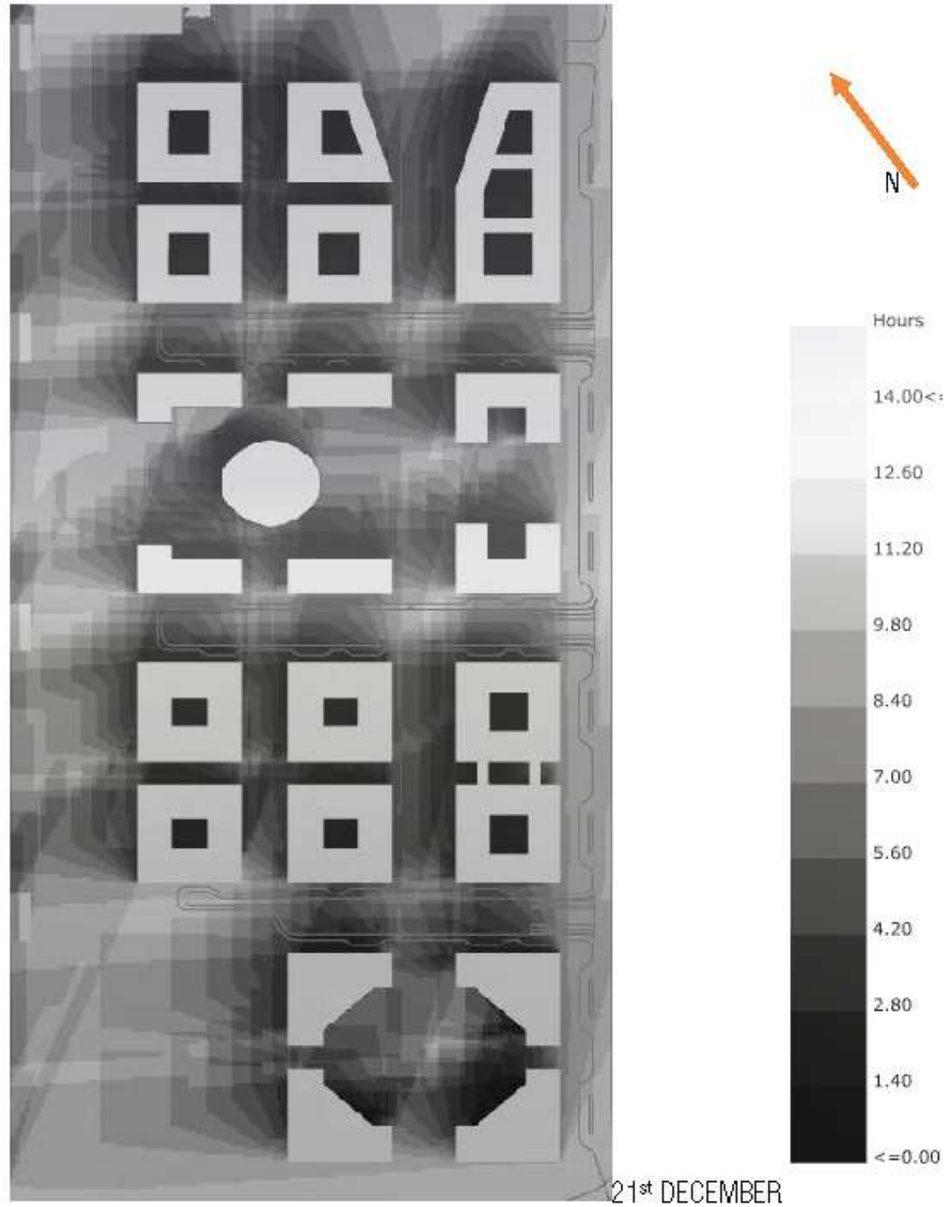
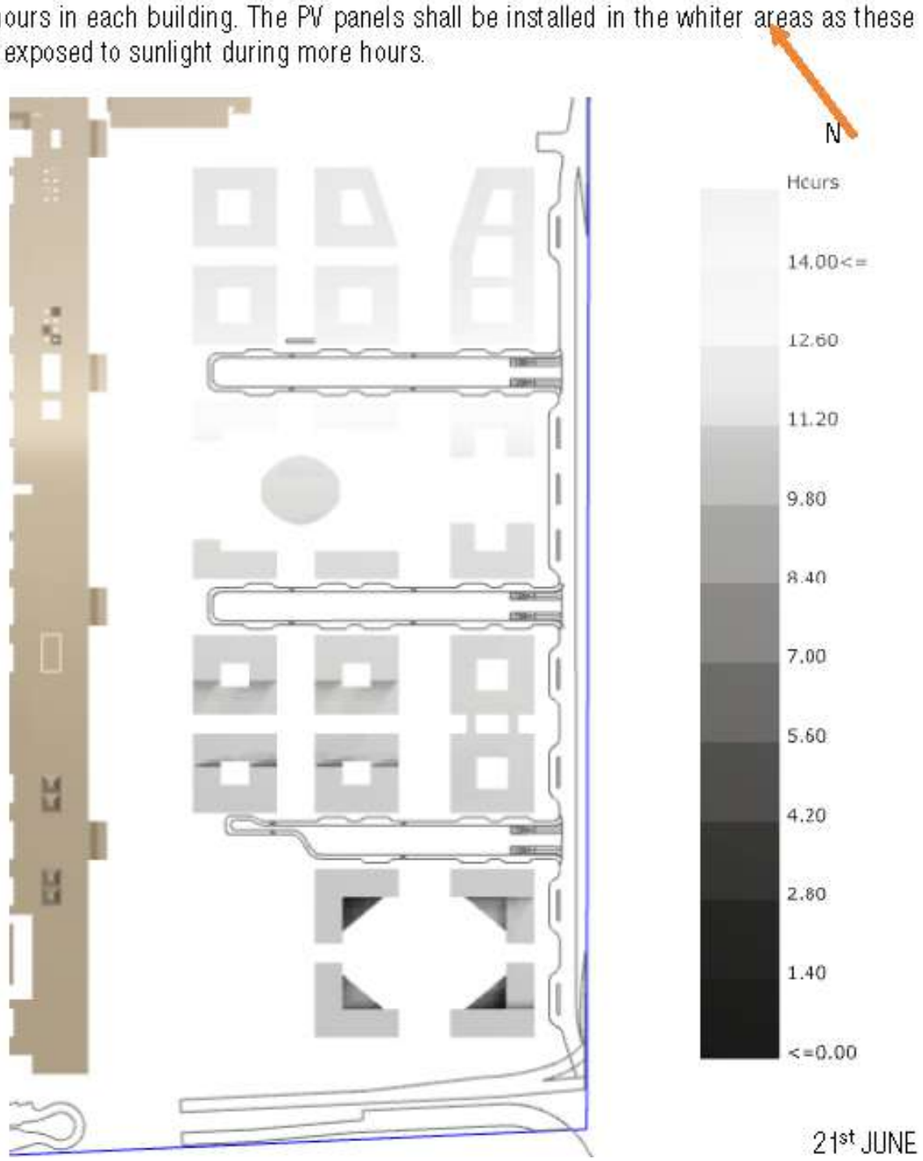


21st DECEMBER

SUNLIGHT HOURS ANALYSIS

ROOFS
Sunlight hours in each building. The PV panels shall be installed in the whiter areas as these zones are exposed to sunlight during more hours.



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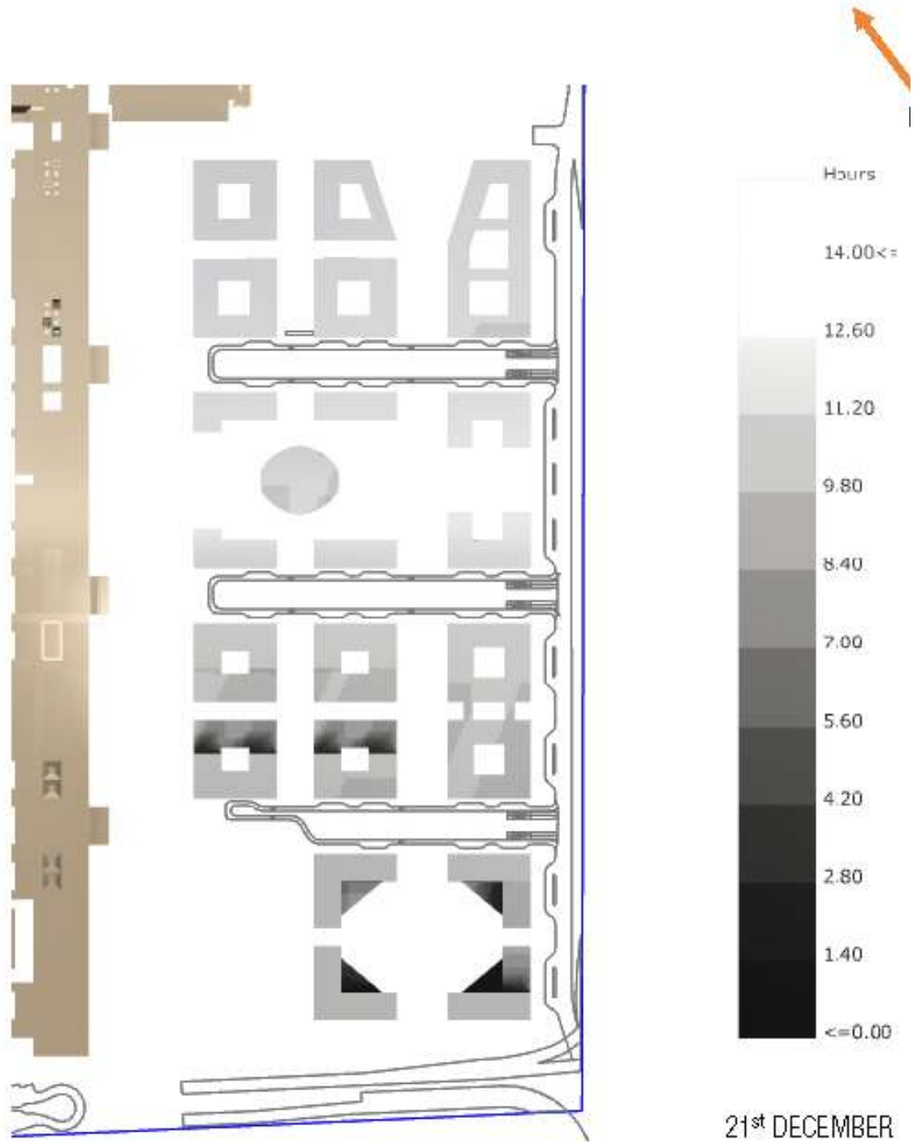
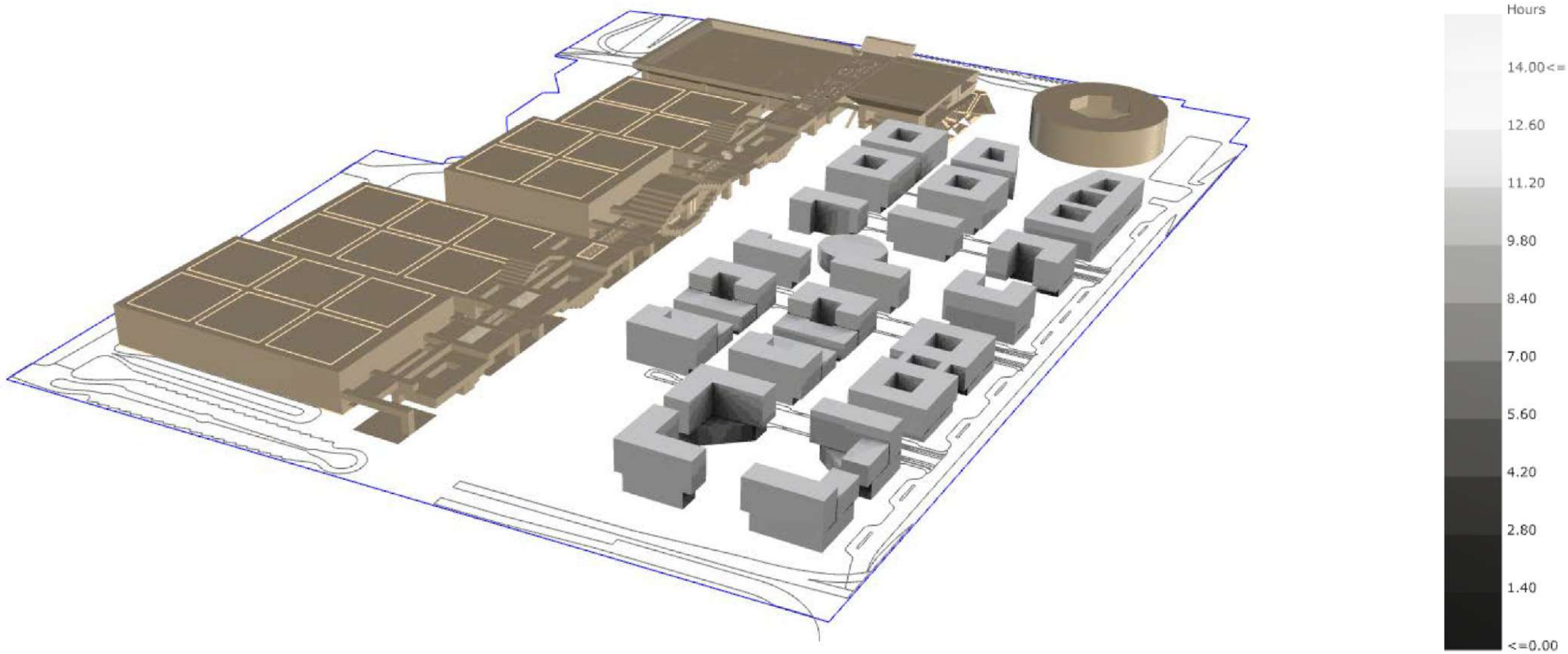


21st DECEMBER

SUNLIGHT HOURS ANALYSIS

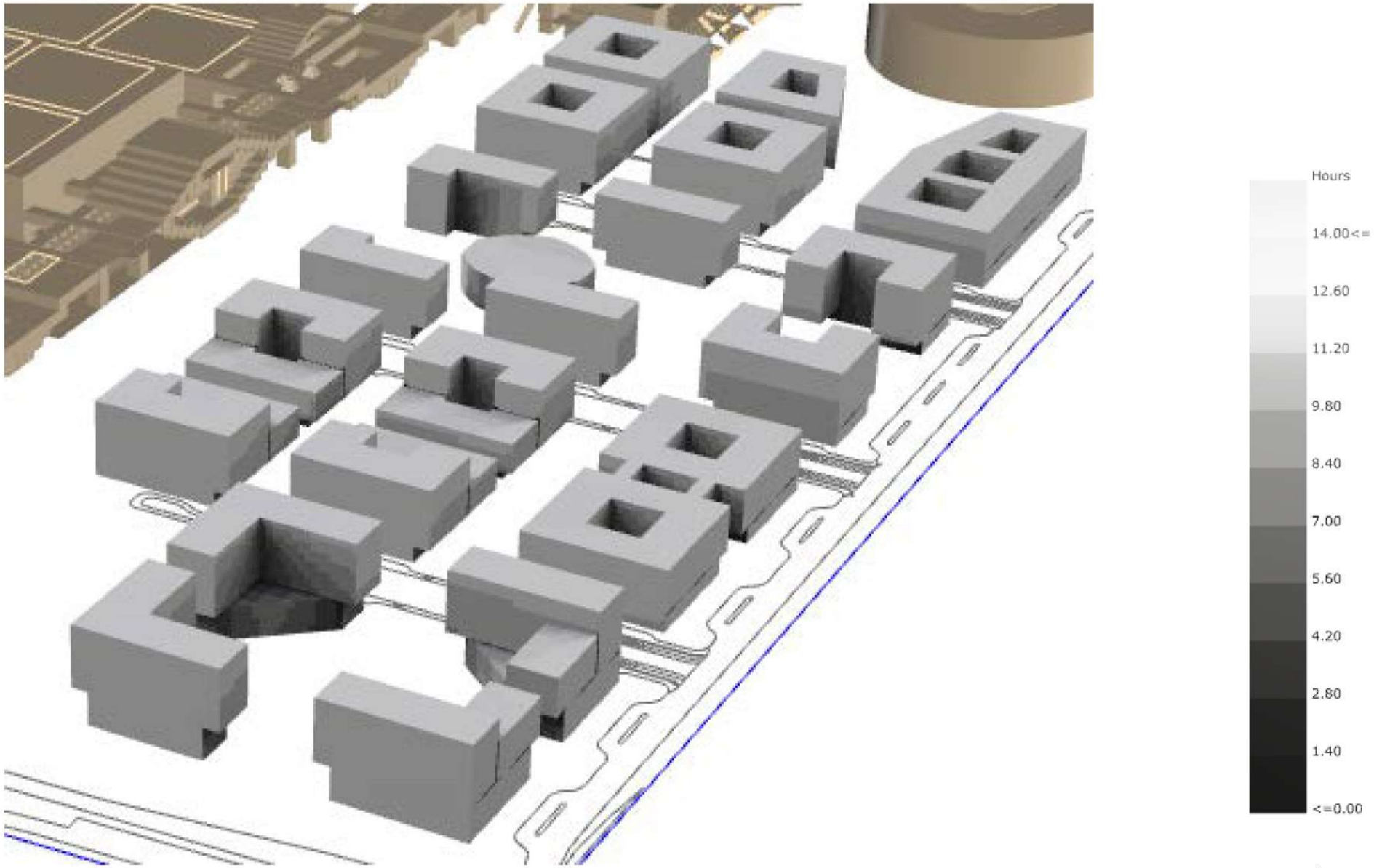
ROOFS
Sunlight hours



21st JUNE

SUNLIGHT HOURS ANALYSIS

ROOFS
Sunlight hours



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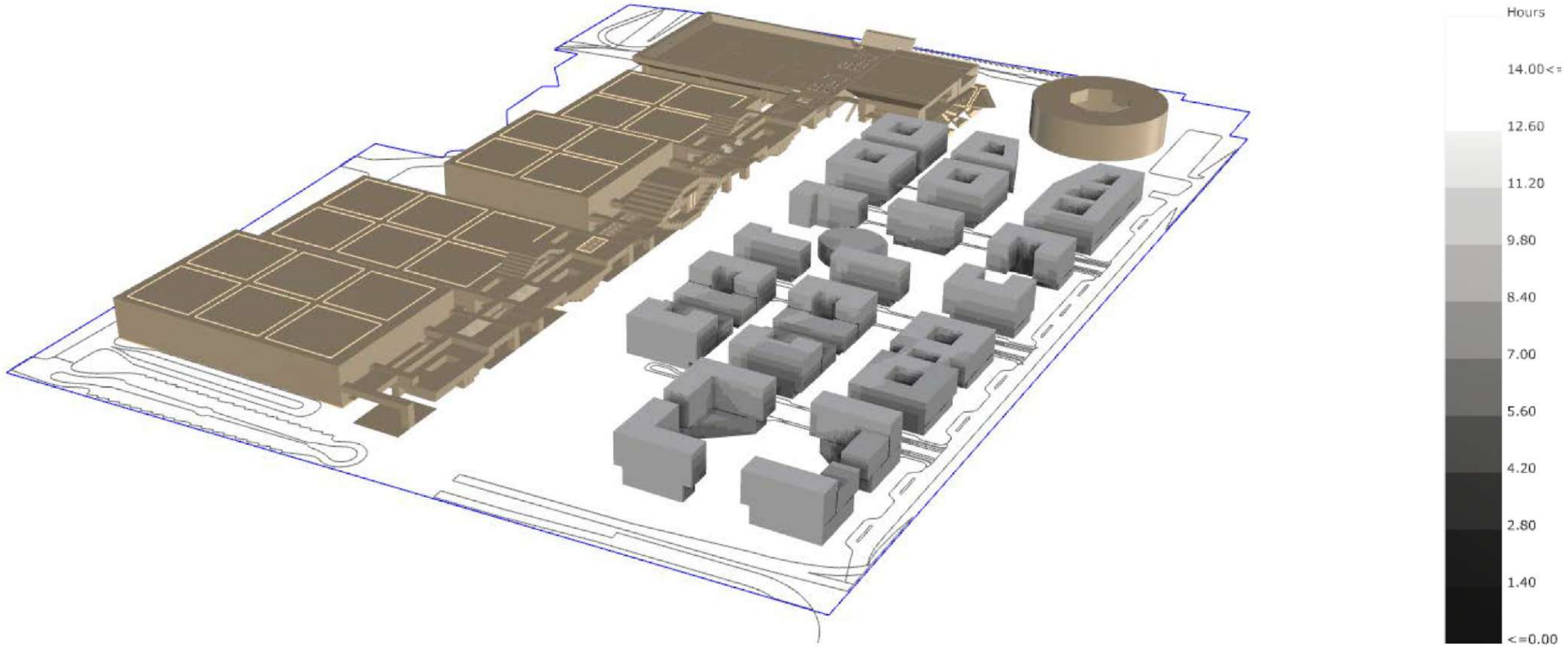
SUNLIGHT HOURS ANALYSIS

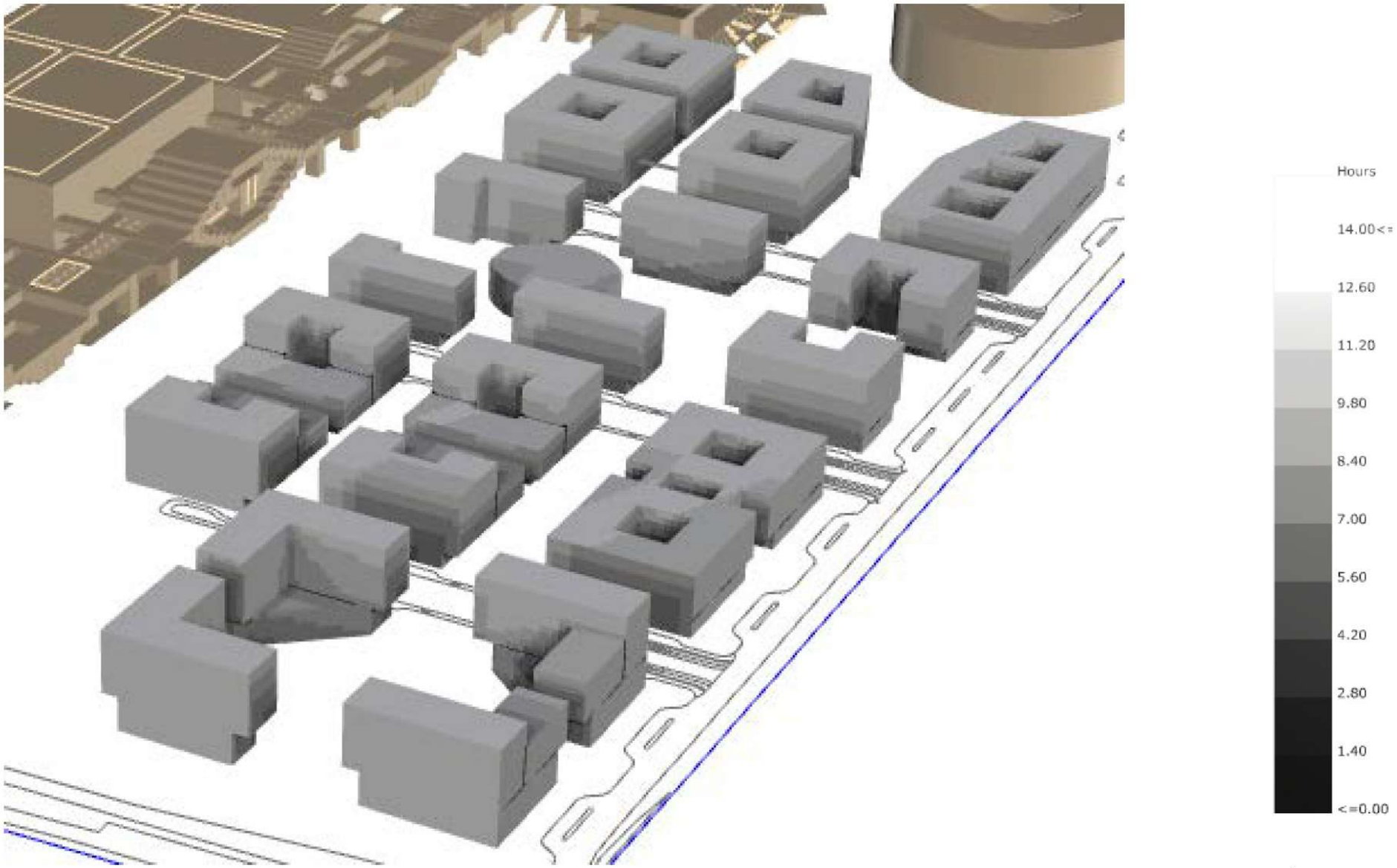
ROOFS
Sunlight hours



21st DECEMBER

SUNLIGHT HOURS ANALYSIS

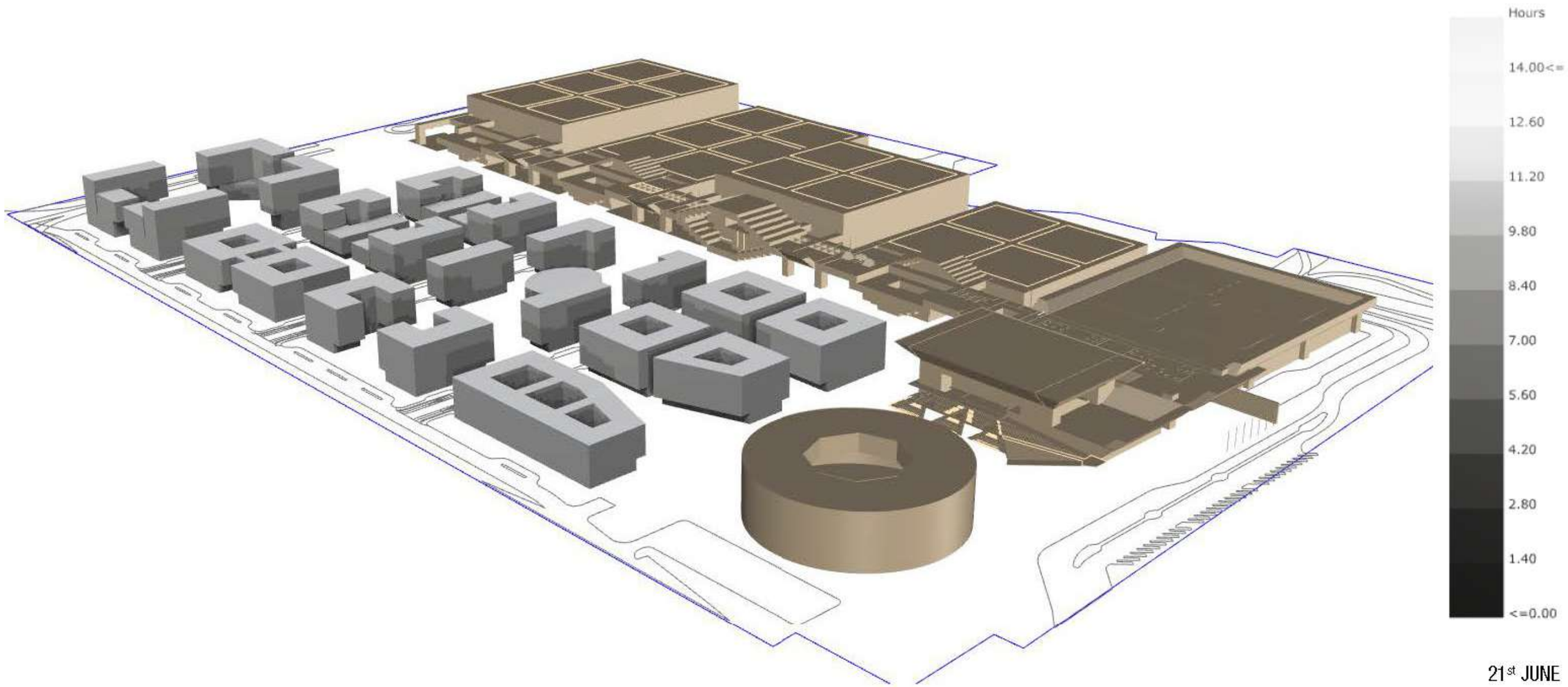
ROOFS
Sunlight hours



21st DECEMBER

SUNLIGHT HOURS ANALYSIS

FAÇADES
Sunlight hours



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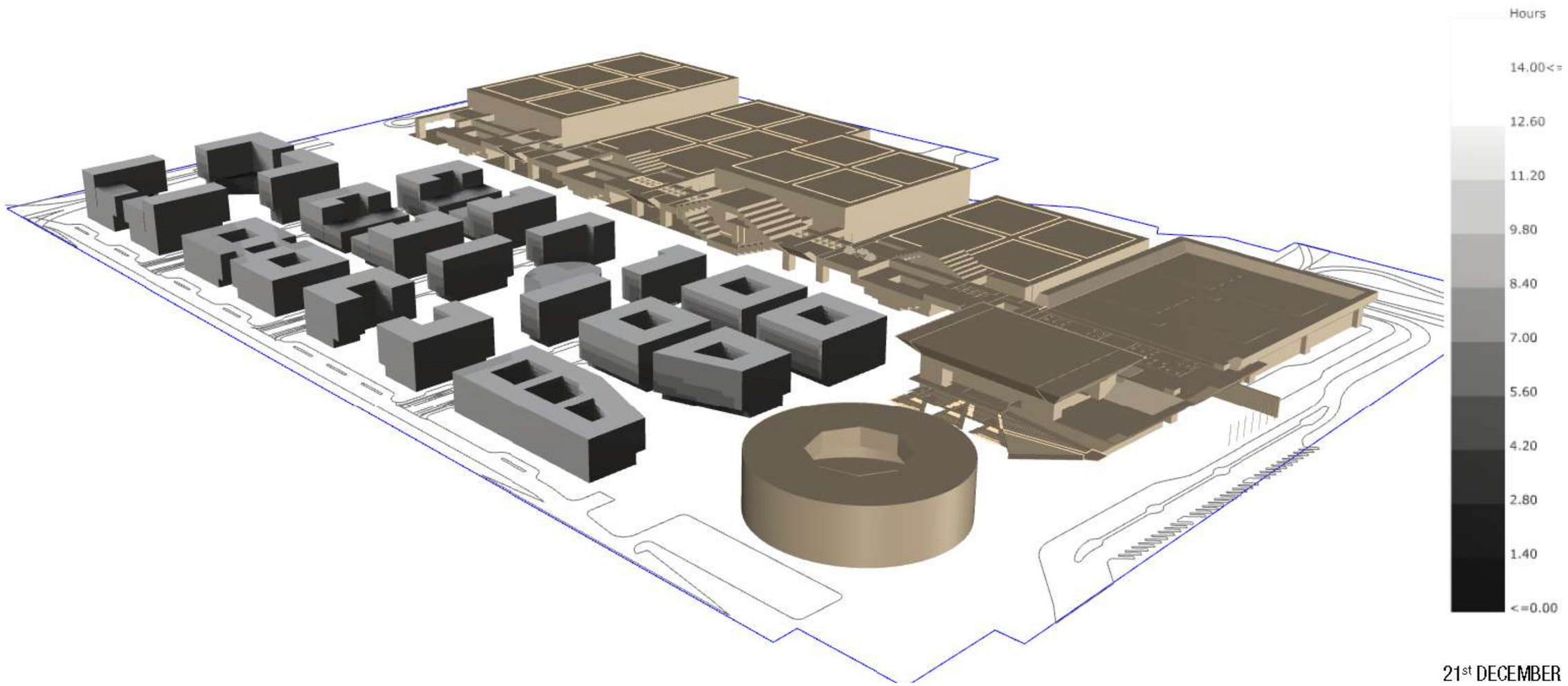
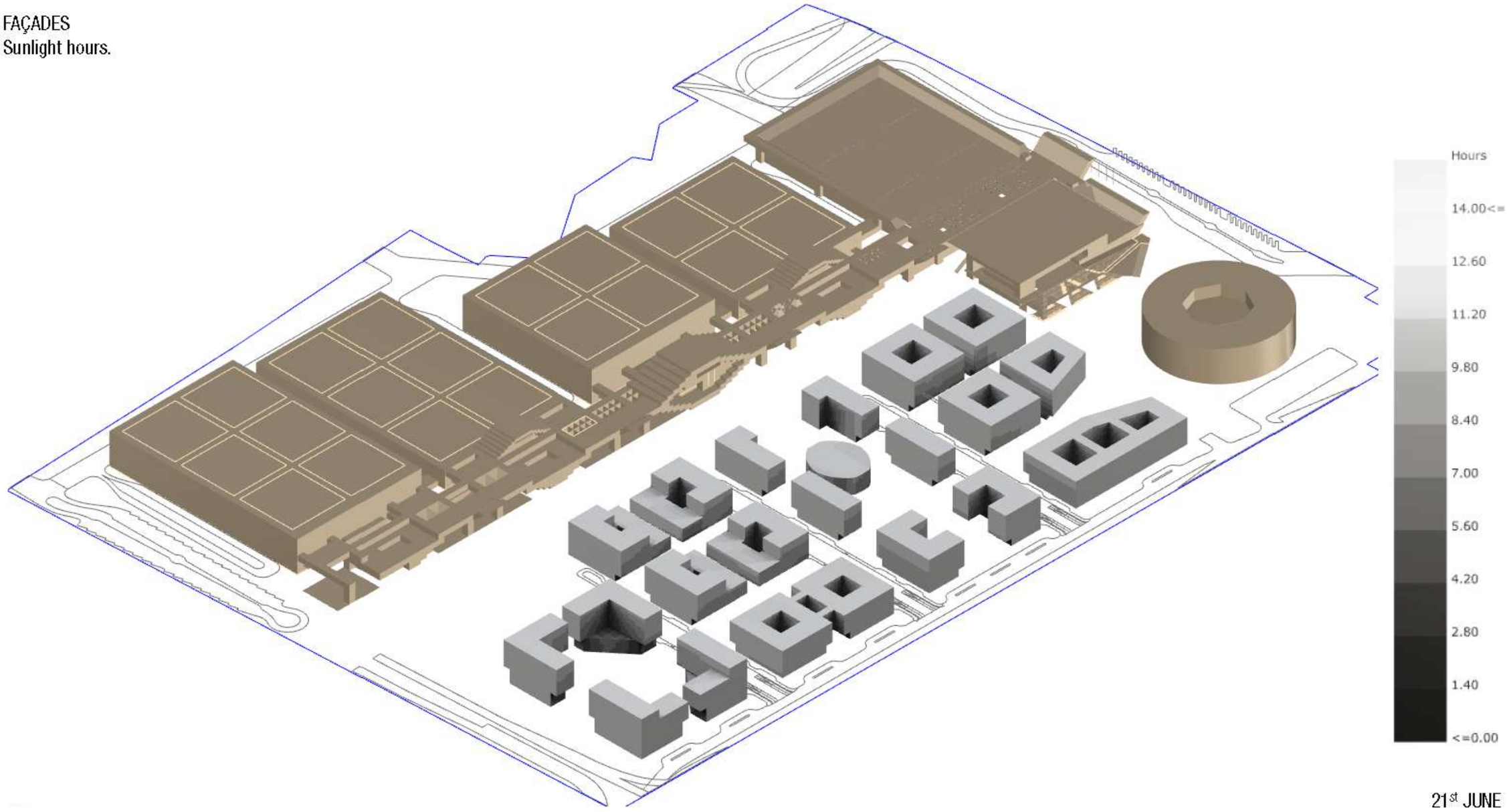
SUNLIGHT HOURS ANALYSIS

FAÇADES
Sunlight hours



SUNLIGHT HOURS ANALYSIS

FAÇADES
Sunlight hours.



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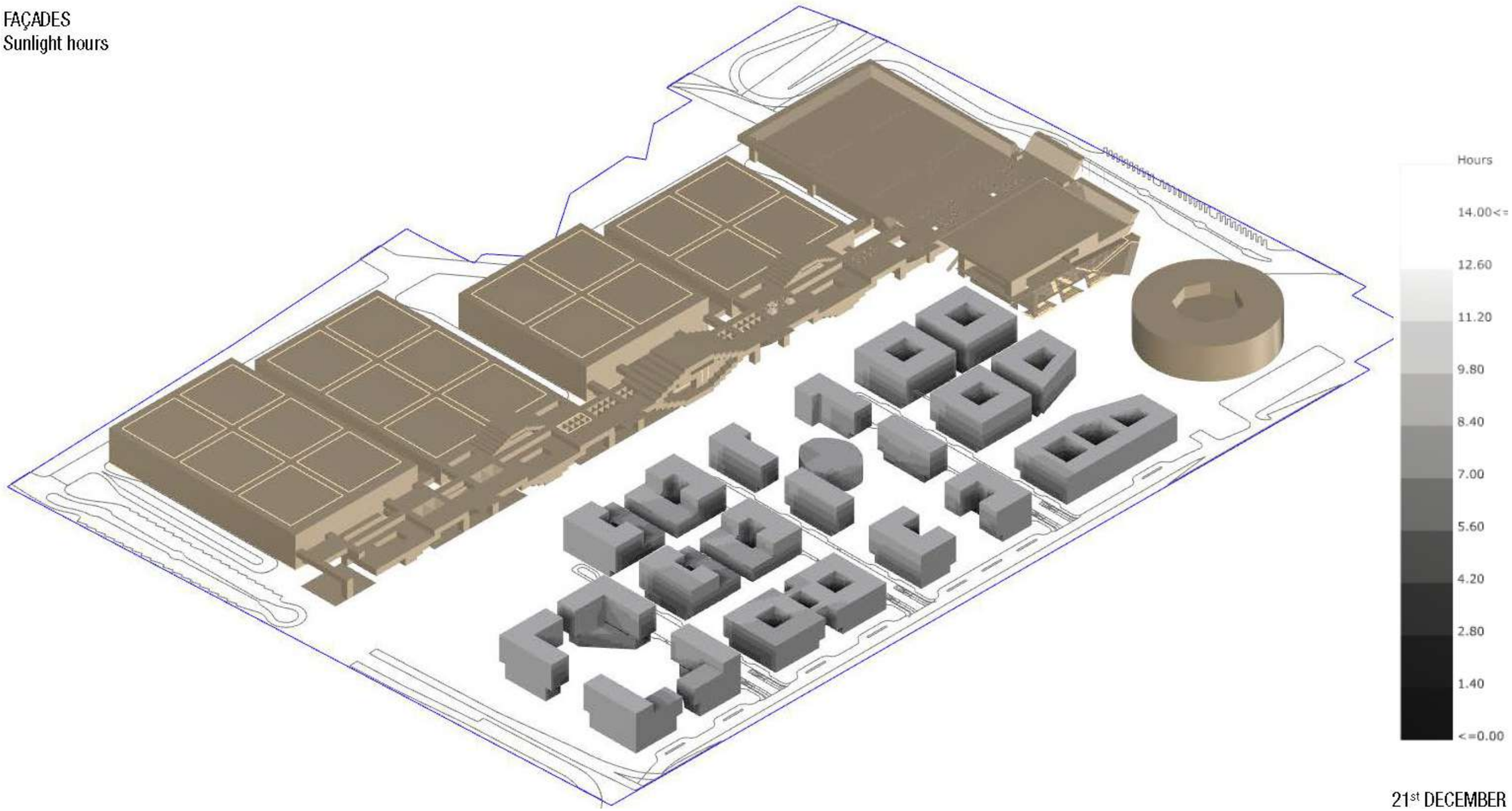
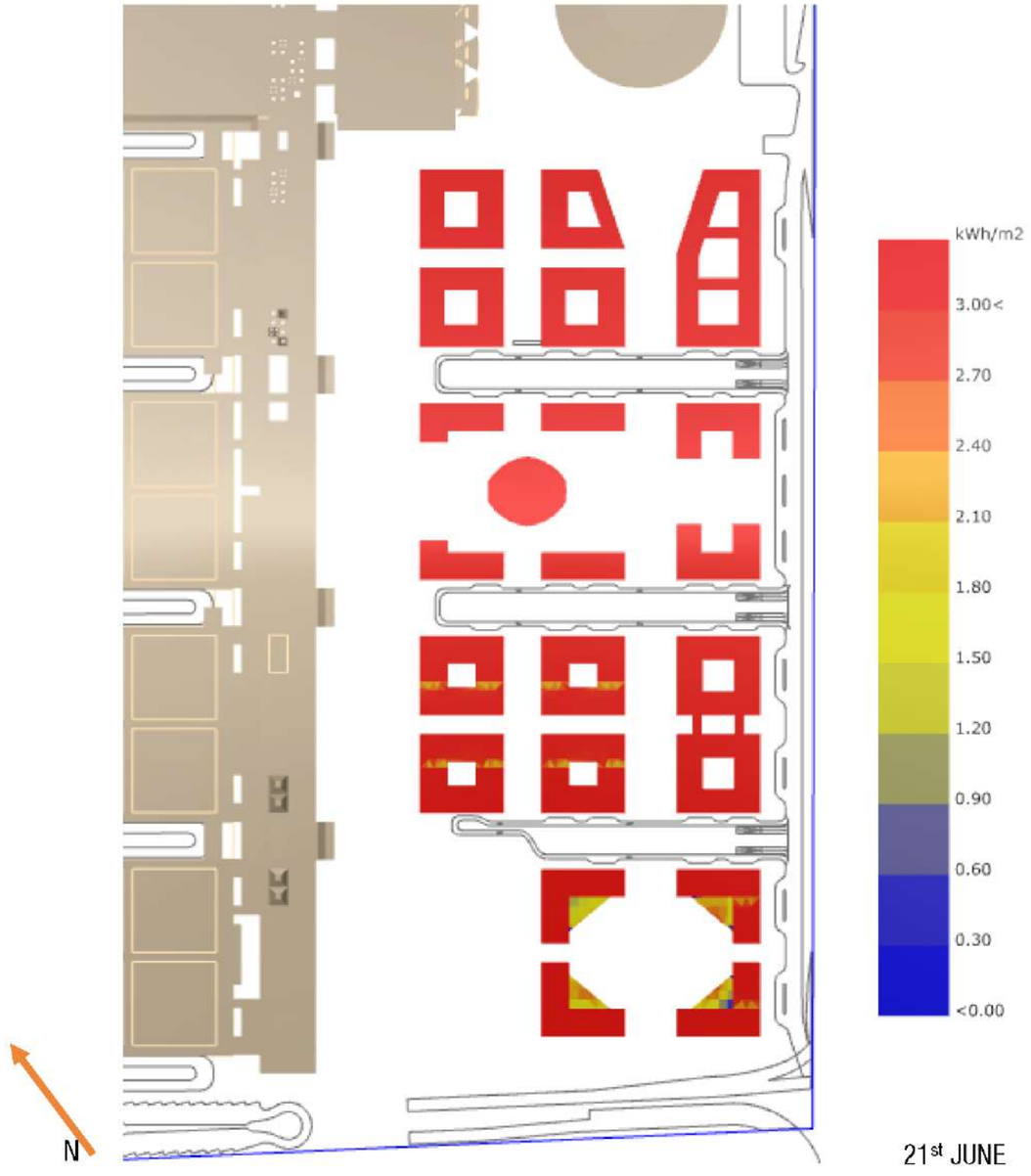
SUNLIGHT HOURS ANALYSIS

FAÇADES
Sunlight hours



21st DECEMBER

ENERGY ANALYSIS



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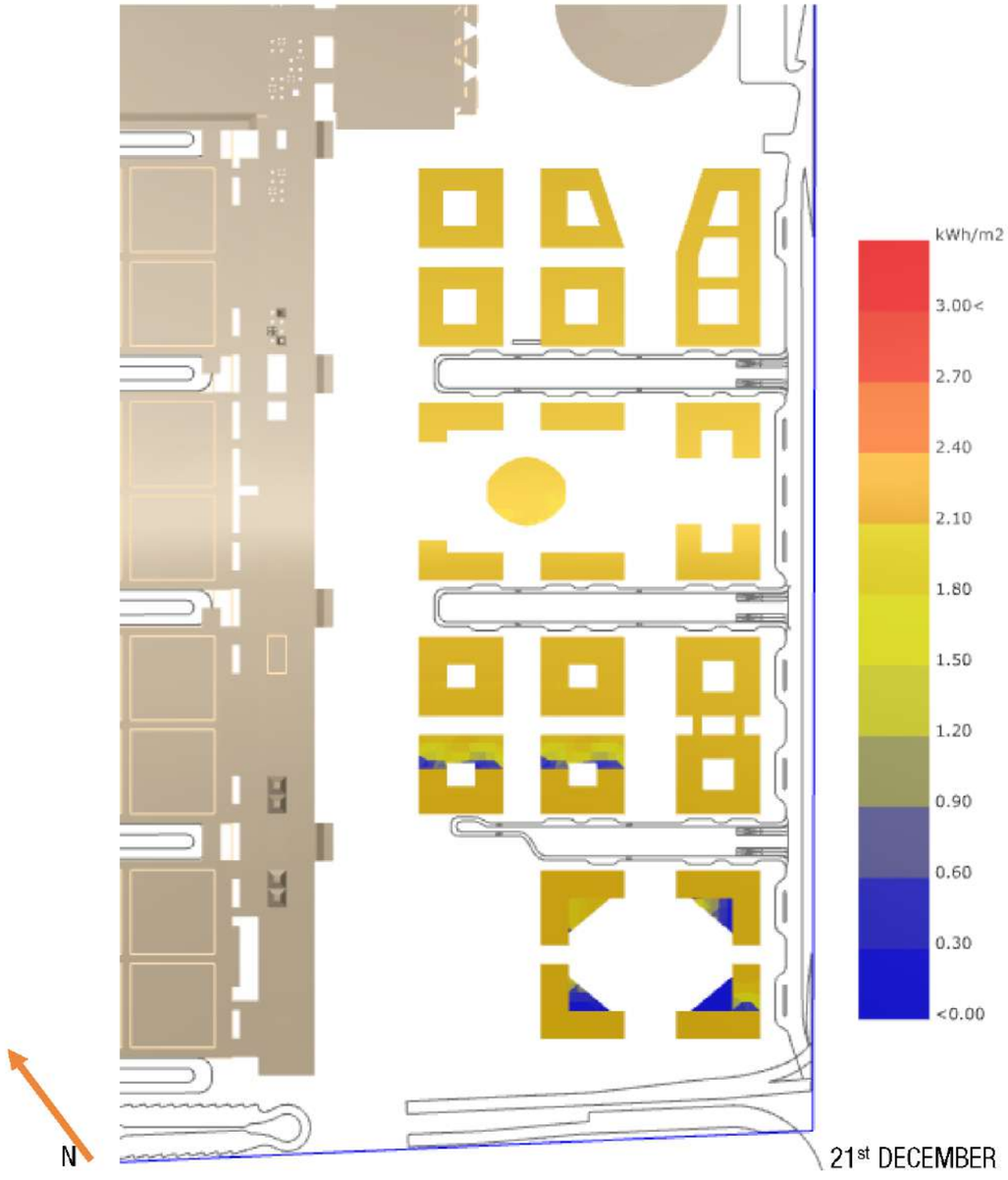
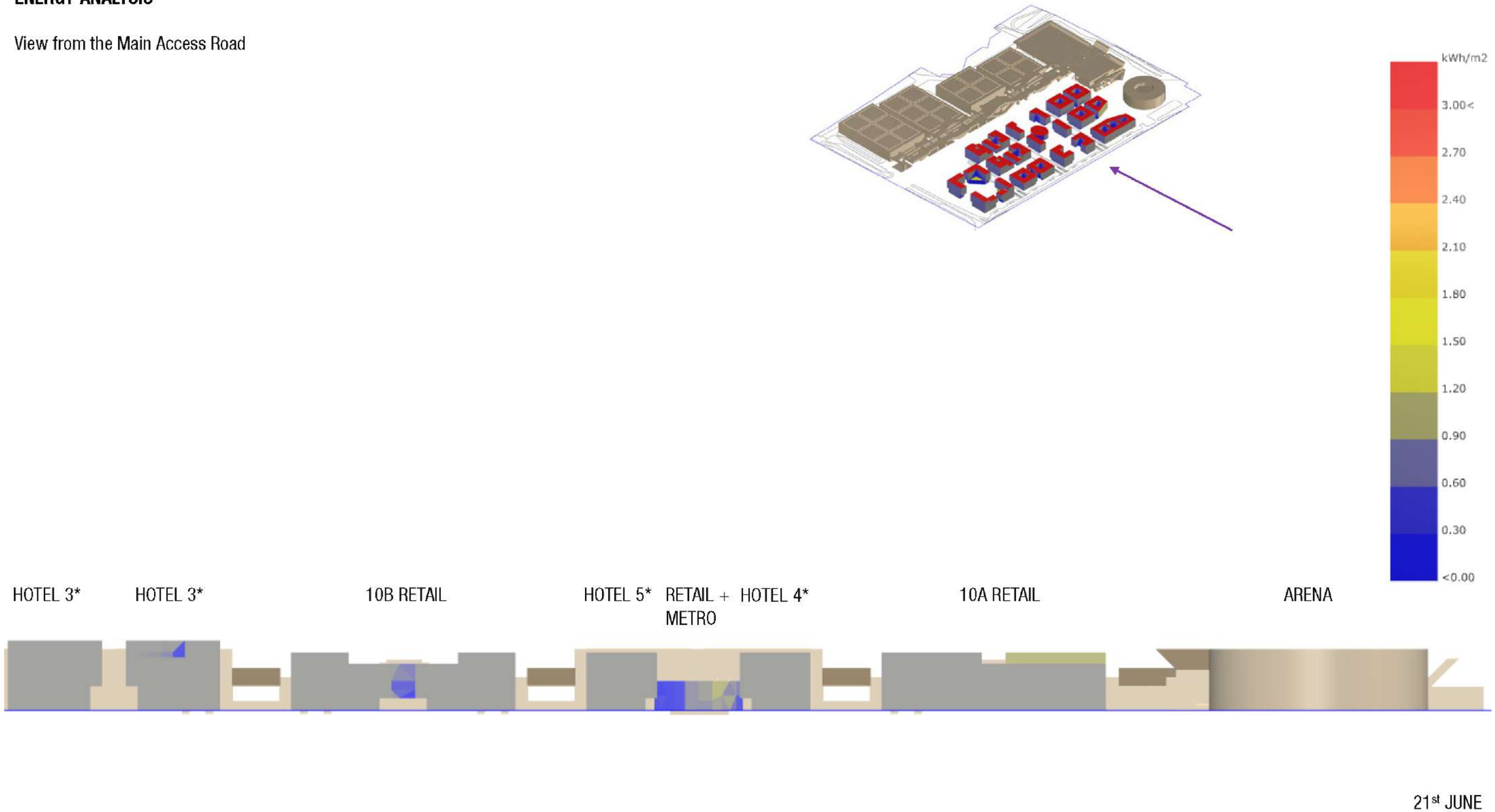


21st DECEMBER

ENERGY ANALYSIS

View from the Main Access Road



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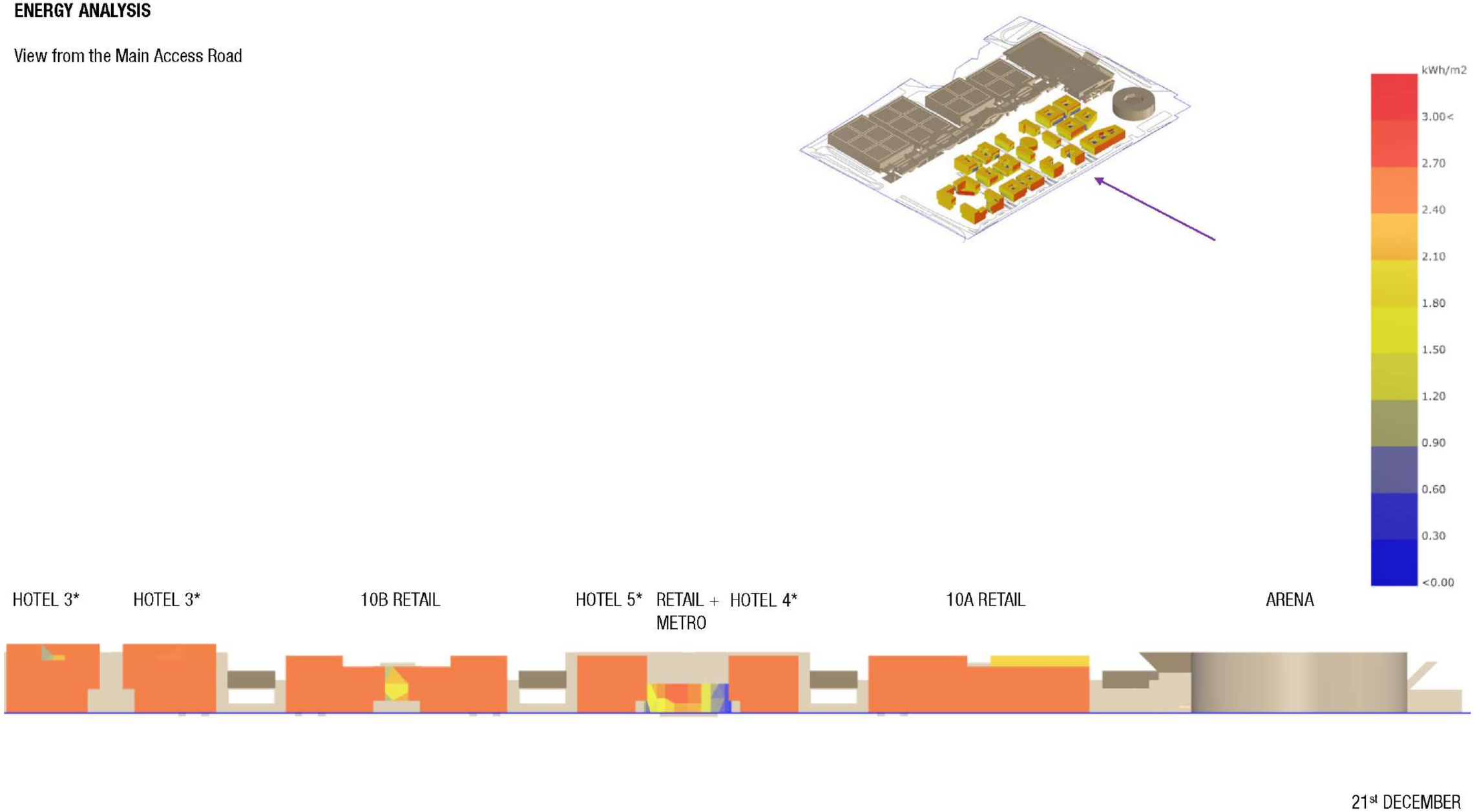
ENERGY ANALYSIS

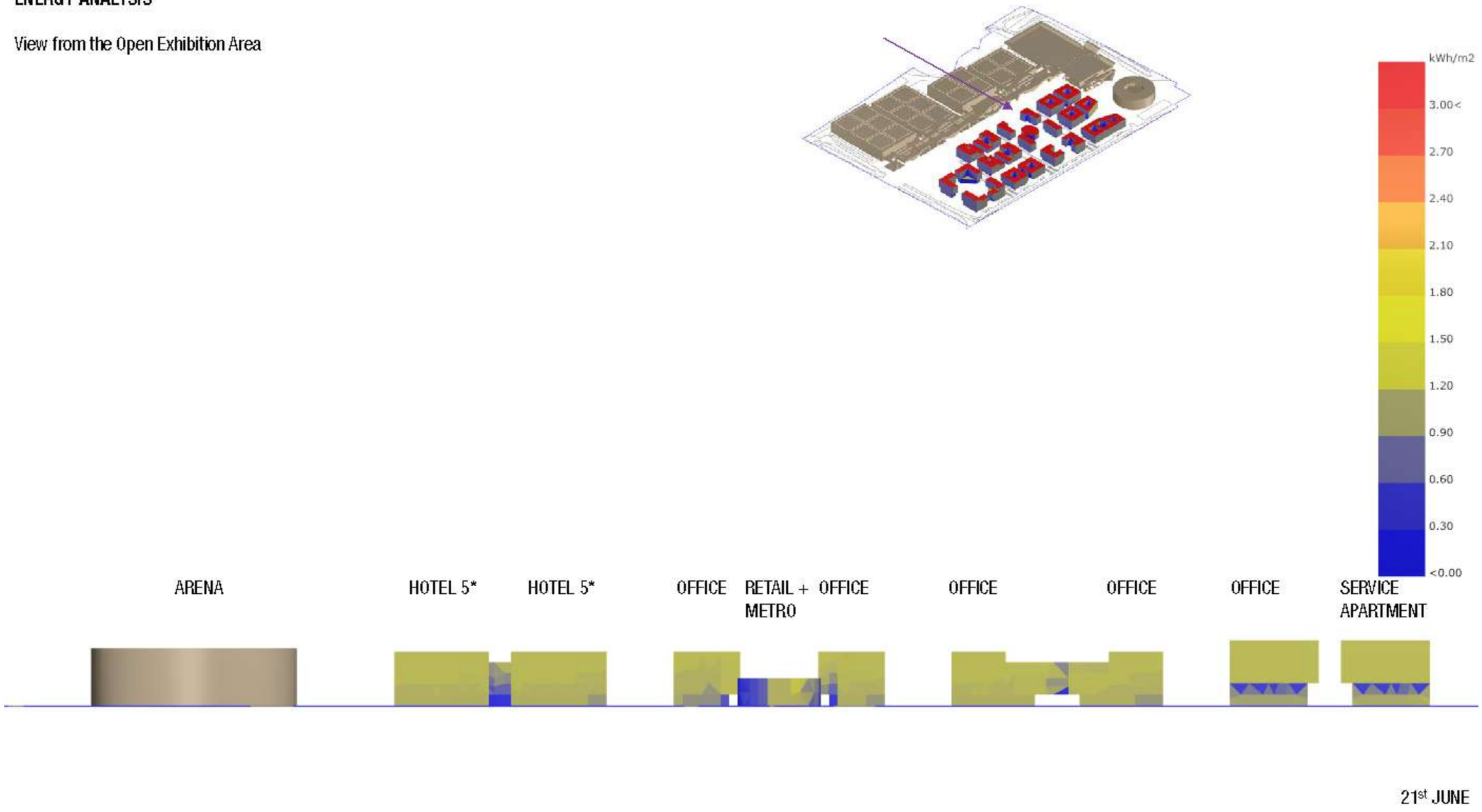
View from the Main Access Road



21st DECEMBER

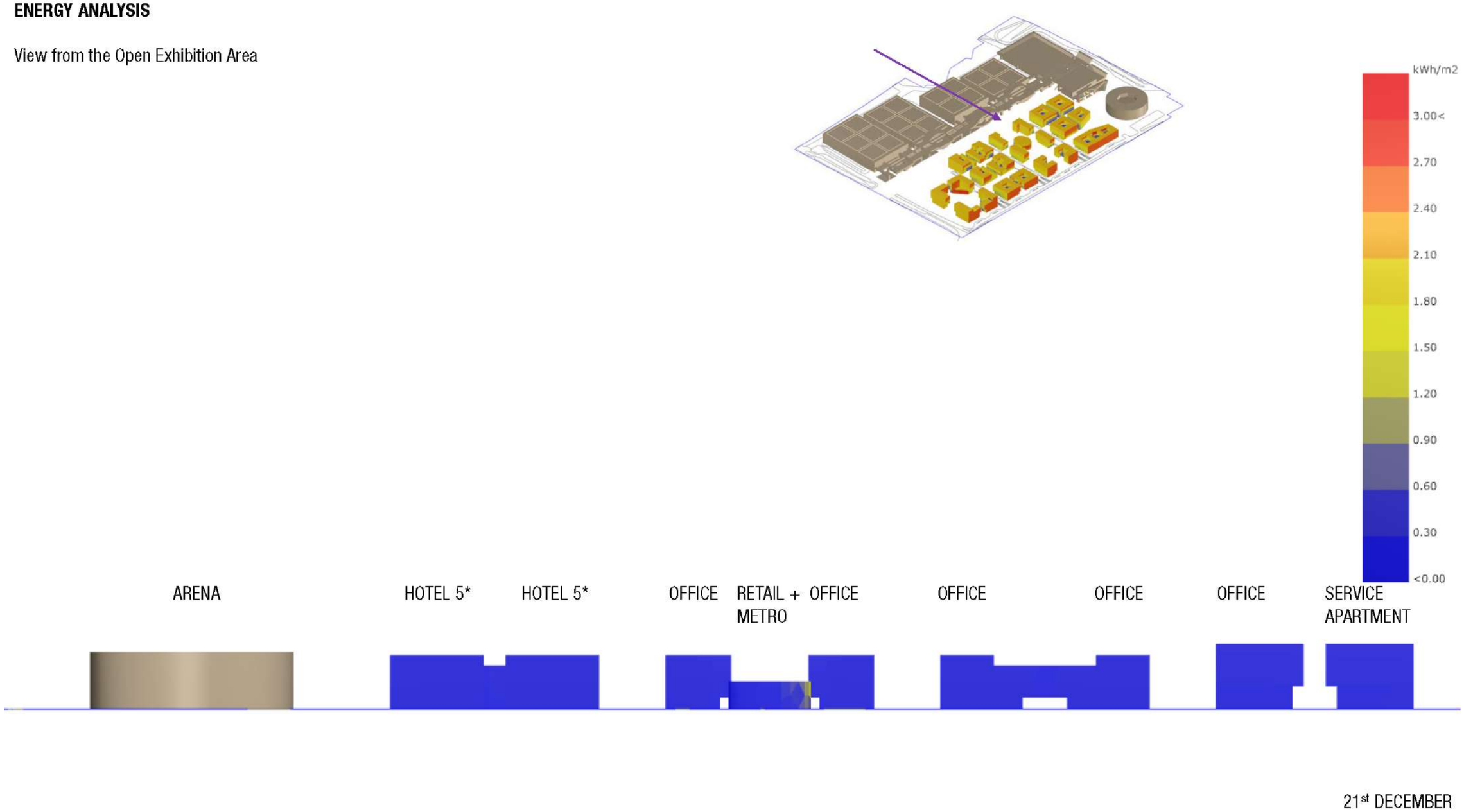
ENERGY ANALYSIS

View from the Open Exhibition Area

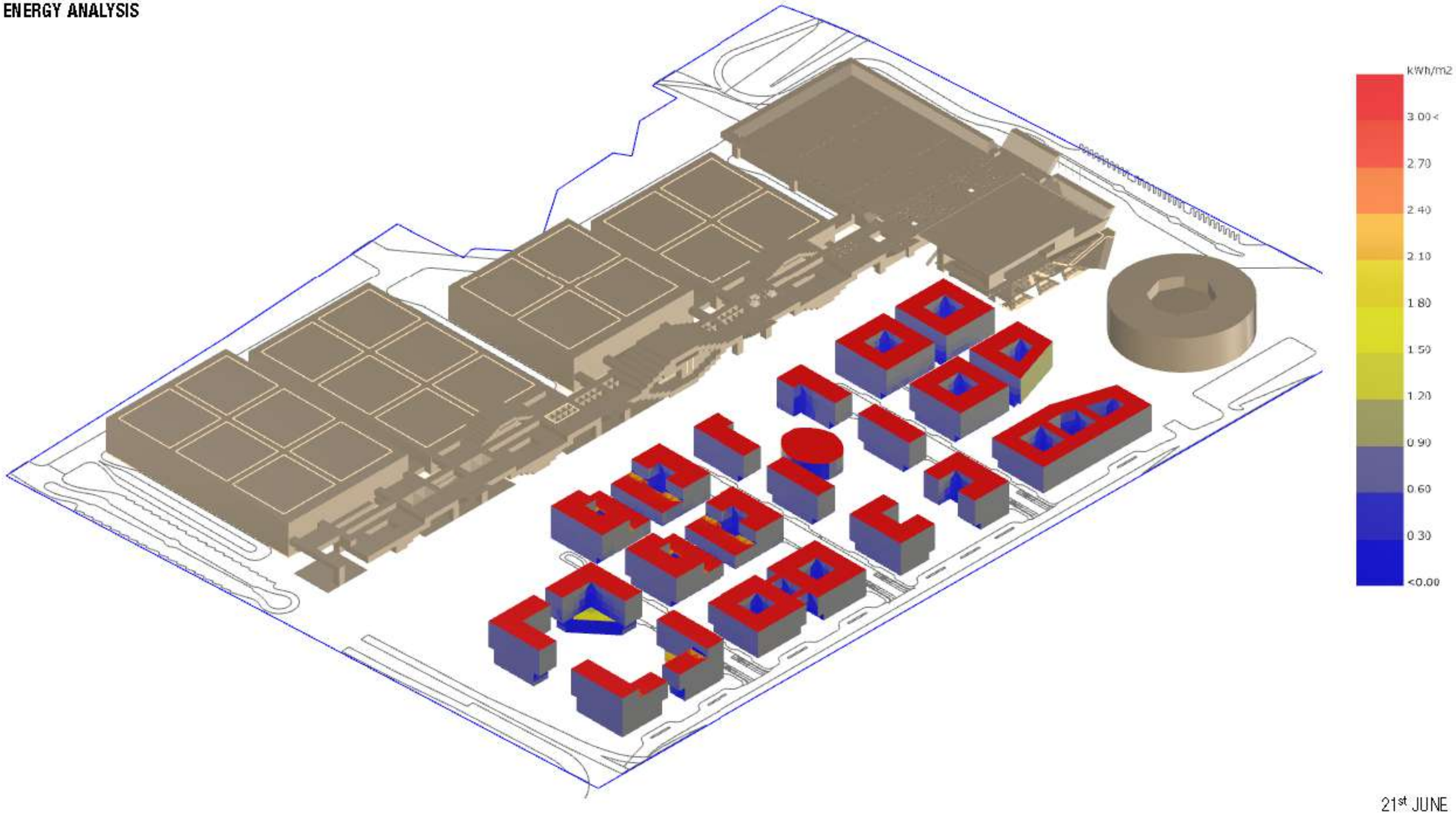


ENERGY ANALYSIS

View from the Open Exhibition Area



ENERGY ANALYSIS



21st JUNE

ENERGY ANALYSIS

21st DECEMBER

ANALYSIS ON THE MUD – CONCLUSIONS

PROJECTED SHADOWS

The walkways are designed considering the overall movement patterns in the site. The projected shadows analysis help us verify that the streets are shaded for maximum period of the year and where required, pergolas have been added to provide shaded areas

During summer solstice (21st June), the inner streets do not receive many hours of sunlight (up to 4 hours a day).
During winter solstice (21st December) the shadows intensify.
In any case, the projected shadows enhance the street life and the pedestrian circulation due to the decrease of temperature in the harsh months.

SUNLIGHT HOURS

ROOFS
The majority of the roofs receive more than 14 hours of sun per day.
During summer solstice (21st June), most of the roofs are likely to allocate Photovoltaic panels. The exception comes with the Podium of the hotels (buildings number: 25, 26, 27, 28) whose height (16.40m) and position favors the shadowing of these spaces, making them the preferred areas for placing uses.
During winter solstice (21st December), the shade intensifies in the podiums and the lower floors (24.00m) of the offices (buildings number: 19, 20, 22, 23)

SUNLIGHT HOURS

FAÇADES
The lower floors of the buildings benefit for the shading of the other buildings located nearby. Thereby reducing heat gain and energy consumption.
In any case, all buildings profit from natural daylight in all orientations, being the south the most lit.
During the winter, the north façades are the less favourable as they will get little sunlight hours.

ENERGY

The energy analysis assesses the potential for solar energy systems.
During summer solstice (21st June), we can see how the faces of the buildings that receive more radiation are the roofs, and how the patio façades receive less.
However, during winter solstice (21st December) the situation changes. The upper floors of the buildings receive solar radiation.

During summer, the horizontal planes are all very heated because of the long daylight time. However, the vertical planes facing south barely get radiation hitting them during the day, which is a good feature for New Delhi's climate.

The upper floors are well heated in winter because of their orientation, but the same can't be said for the façades on first floors, facing patios or inner streets which are shaded.

Through these three analysis (projected shadows, sunlight hours and energy), we can **conclude** the following statements:

- The PV panels location in the roofs is proven as the most favourable one.
- The pedestrian areas are shaded, enhancing the active circulation. Pergolas have also been added where required.
- The low level roof areas are shaded during summer, making them the ideal location to be utilised as terraces.
- The buildings are mutually shaded by one and other, hence reducing incident solar radiation. Thereby reducing heat gain and energy consumption in the buildings.
- The way buildings are planned and placed in the site enhances the daylight received within the building.

10.0 SUSTAINABILITY

IGBC PLATINUM GUIDELINES

The strategies described in the Reference Guide of the IGBC Green Campus Rating System: Annexure II - Criteria for Green Features in the Campus Buildings will be developed:

1) PASSIVE ARCHITECTURE (2 POINTS)

The Mixed Use District buildings profit from passive architecture strategies that result in energy savings, such as:

EXTERIOR OPENINGS.
At least 50% of the MUD buildings shall have a Projection Factor [(ratio of the length of overhang projection divided by height from window sill to the bottom end of the overhang (must be permanent). For more details (Energy Conservation Building Code: ECBC)] of 0.5 or more for the exterior openings.
The compliance shall be met for at least 75% of the exterior openings.
Influencing directly in the solar protection for indoor spaces and the impact of the wind on the building. The positioning of openings allow the penetration of solar radiation, visible light and ventilation.

PASSIVE COOLING AND HEATING TECHNOLOGIES
At least 10% of the Campus built up area (excluding services areas) shall have Passive Cooling/Heating technologies. As it has been planned in the Building Engineering chapter, the MUD buildings will use passive technologies.
HVAC design parameters cooling : The demand peak of cooling in May, on the base temperature of 26ºC cooling.

2) HEAT ISLAND EFFECT, ROOF. (2 POINTS)

In ECC Dwarka a combination of materials with high solar reflective index and vegetation to cover 95% of the total exposed roof area is implemented. SRI values are provided by the fabricant with a range from 0 to 100, the higher value, the better. The material selection will help the heat island effect reduction. Simply selecting lighter colored materials that reflect solar radiation rather than absorbing can significantly reduce urban temperatures and so the need for active systems to provide cooling. We recommend to implement a maintenance program that ensures all high-reflectance roof surfaces are cleaned at least every three years to maintain good reflectance.
Due to the Low – slopped roof type present on the buildings, Minimum Solar Reflective Index shall be 78. The chosen material is white coating on metal roof (**FL.24**) with a SRI=82

All buildings in the Mixed Use District will have, when possible, the exposed roof area covered by green roof system (**ER.03**).
The roofs will also count with an installation of PV panels (**ER.01**), described in 8-ON SITE RENEWABLE ENERGY.
The PV panels maintenance area, as well as other roof areas which are not occupied by equipment, shall have white coating (**FL.24**) on the Kalzip roof system (**ER.04**).

Relevant notes:
Exposed roof area need not include equipment platforms, areas covered with solar photovoltaic & solar water heaters, skylights, water body, driveways, pathways, roads, play areas, etc.

3) WATER EFFICIENT PLUMBING FIXTURES (3 POINTS)

This point shall be further developed in chapter BUILDING ENGENEERING: TRUNK INFRASTRUCTURES. Baseline Flow Rates / Consumption for Plumbing Fixtures

Fixture Type	Maximum Flow Rate/ Consumption	Duration	Estimated Daily Uses per FTE**
Water Closets (Full-flush)	6 lpf	1 Flush	1 for male 1 for female
Water Closets (Half-flush)	3 lpf	1 Flush	2 for female
Urinals	4 lpf	1 Flush	2 for male
Faucets / Taps*	6 lpm	15 seconds	4
Health Faucet*	6 lpm	15 seconds	1
Showerhead / Hand-held Spray*	10 lpm	8 minutes	0.1

Source: Uniform Plumbing Code – India

In order to achieve the aimed points under the credit related to this mandatory requirement (SPM Credit 1 Green Features in the Campus Buildings – Water Efficient Plumbing Fixtures), the flow rates must be as shown in the chart below:

	Fixtures	Max. Flow rates in order to comply with prerequisite
1	Water Closets (half flush/full flush)	2/4 LPF
2	Urinals with Sensors	1 LPF
3	Kitchen Faucets	4 LPM
4	Lavatory faucets	4 LPM
5	Showerhead	8 LPM

* Reporting pressure for these fixtures shall be at 3 bar.
** Full Time Equivalent (FTE) represents a regular building occupant who spends 8 hours per day in the building. Part-time or overtime occupants have FTE values based on their hours per day divided by 8.
Relevant notes:
· Faucets / Taps installed for hand wash in restrooms and canteen shall be considered; whereas, faucets / taps installed for dish washing and washing clothes will not be considered.
· Rain showers will be considered in the calculations under 'Showerhead'.
The baseline flows can be demonstrated at a flowing water pressure of 3 bar. Flowing water pressure of 3 bar does not mean that the water supply in the building is at 3 bar. The building fixtures can operate at lower pressures, however to show compliance under this credit, the design flow rates are to be submitted at 3 bar.
· Default occupancy is considered as 50% for male and female.
· FTE occupancy shall be considered in calculation, including visitors.
· It will be positive to use plumbing fixtures that are certified by IGBC under Green Product Certification Program or by a third party agency approved by IGBC.

4) WASTE WATER REUSE (2 POINTS)

Waste Water Treatment Plant to handle 100% of the waste water generated in the Convention Centre. Treated waste water must comply with quality standards suitable for reuse, as prescribed by Central (or) State Pollution Control Board.
The contractor must ensure that 50% of the water required for flushing and cooling tower make-up is treated waste water, according to the IGBC Green Campus Reference Guide. The Flushing Water network supplies non-drinkable water to all buildings. This network is supplied by the Waste Water Treatment Plant, where 95% of return of the flushing water is treated.

5) ECO-FRIENDLY REFRIGERANTS (1 POINT)

The refrigerants used for 100% of the buildings in campus, HVAC equipment, are eco-friendly and have low or no Ozone Depletion Potential (ODP) and Global Warming Potential (GWP). The chosen refrigerant R1233zd (E) with Ozone Depletion Potential (ODP) = 0 and Global Warming Potential (GWP) = 1 which is considered to be low.
The HVAC equipment must comply with the following formula, which sets a maximum threshold for the combined contributions to ozone depletion and global warming potential:

$$LCGWP + LCODP \times 10^5 \leq 13$$

LCODP = [ODPr x (Lr x Life +Mr) x Rc]/Life
LCGWP = [GWPr x (Lr x Life +Mr) x Rc]/Life
LCODP: Lifecycle Ozone Depletion Potential (kg CFC 11 / kW-Year)
LCGWP: Lifecycle Direct Global Warming Potential (kg CO2 / kW-Year)
GWPr: Global Warming Potential of Refrigerant (0 to 12,000 kg CO2 / kg r)
ODPr: Ozone Depletion Potential of Refrigerant (0 to 0.2 kg CFC 11 / kg r)
Lr: Refrigerant Leakage Rate (0.5% to 2.0%; default of 2% unless otherwise demonstrated)
Mr: End-of-life Refrigerant Loss (2% to 10%; default of 10% unless otherwise demonstrated)
Rc: Refrigerant Charge (0.065 to 0.65 kg of refrigerant per kW of gross AHRI rated cooling capacity or Eurovent Certified cooling capacity)
Life: Equipment Life (10 years; default based on equipment type, unless otherwise demonstrated)
Notes:
· For multiple types of equipment, a weighted average of all base building HVAC&R equipment must be calculated using the following formula:

$$\Sigma \frac{(LCGWP + LCODP \times 105) \times Q_{unit}}{Q_{total}} \leq 13$$

Q unit = Eurovent Certified cooling capacity of an individual HVAC or refrigeration unit (kW) (or) Gross AHRI rated cooling capacity of an individual HVAC or refrigeration unit (kW)
Q total = Total Eurovent Certified cooling capacity of all HVAC or refrigeration (kW) (or) Total gross AHRI rated cooling capacity of all HVAC or refrigeration.
· Small HVAC units (containing less than 0.25 kg of refrigerant) need not be considered in calculation.

6) ENERGY EFFICIENT LIGHTING (3 POINTS)

In all cases, the luminaires will be with LED technology, they will have different luminous intensity depending on the lighting needs of the environment in which they are installed. The luminaires will always include electronic drivers with linear level control to guarantee a high degree of energy efficiency.
The Lighting Power Density (LPD) ASHRAE 90.1 Standard (2010) has been analysed. The most efficient lighting systems will be implemented in order to comply with the 40% reduction.

The design criteria of the lighting installation shall be different depending on the area of the building in question.
The considered illumination levels, as well as the average power density of each type of area, are listed in the chart.

10.0 SUSTAINABILITY

Proposed Lighting Power Density strategy of all interior spaces shown in the following chart:

AREA	LUX LEVEL	Maximum LPD (ASHRAE Standard 90.1-2010) (W/sqm)	40% Reduced LPD (ASHRAE Standard 90.1 2010) (W/sqm)
Public Rooms	200 lux	13,24	7,944
Foyers (lobbies???)	150 lux	9,7	5,82
Dressing Rooms	200 lux	4,3	2,58
Entrance Halls	200 lux	21,53	12,918
Corridors, Stairs	50-100 lux	7,1	4,26
Restrooms and toilets	100-150 lux	10,55	6,33
Changing & Locker Rooms	100 lux	8,1	4,86
Cloakrooms Rooms	150 lux	8,1	4,86
Cleaning Rooms	100 lux	10,55	6,33
Staff Rooms	150-200 lux	17,11	10,266
Cafeterías, Canteens	200-300 lux	14,1	8,46
Lounges	200-250 lux	7,85	4,71
Kitchens	300-500 lux	10,66	6,396
Storerooms	100-150 lux	6,78	4,068
Offices	500 lux	11,95	7,17
Lecture Rooms	300-500 lux	13,25	7,95
Control Rooms	300-500 lux	17,1	10,26
Switchboard & ICT Rooms	200-300 lux	10,2	6,12
Electrical Power Rooms	200 lux	10,2	6,12
Mechanical Plant Rooms	200 lux	10,2	6,12
Interior Parking Areas	50 lux	2,04	1,224

7) HIGH PERFORMANCE HVAC EQUIPMENT. (3 POINTS)

The bioclimatic architectural design of the project and the selection of high performance HVAC systems will result in a significant reduction of the project consumption and costs according to its sustainable approach that will obtain a Platinum IGBC sustainability certification.
At least 50% of the campus buildings (with higher energy demand), which have installed air conditioning equipment, will comply with the minimum efficiency/ COP requirements as prescribed in ASHRAE Standard 90.1-2010/ Energy Conservation Building Code (ECBC) baseline.
The Chillers and the heat pumps will have an efficiency/COP 10% over ASHRAE Standard 90.1-2010 or ECBC, whichever are higher.
ECC Dwarka Campus chosen Chillers have a COP of 6.68 & IPLV of 9.5

	ASHRAE 90.1	ECC Dwarka	% over ASHRAE requirement
COP	5.961	6.68	12%
IPLV	8.792	9.5	8%

HVAC equipment affectation to the users (noise, vibrations, building roofs without HVAC equipment, etc.).
Chilled water is produced by water treatment plant and distributed by water pipes to buildings equipped with energy transfer stations (sub-stations).

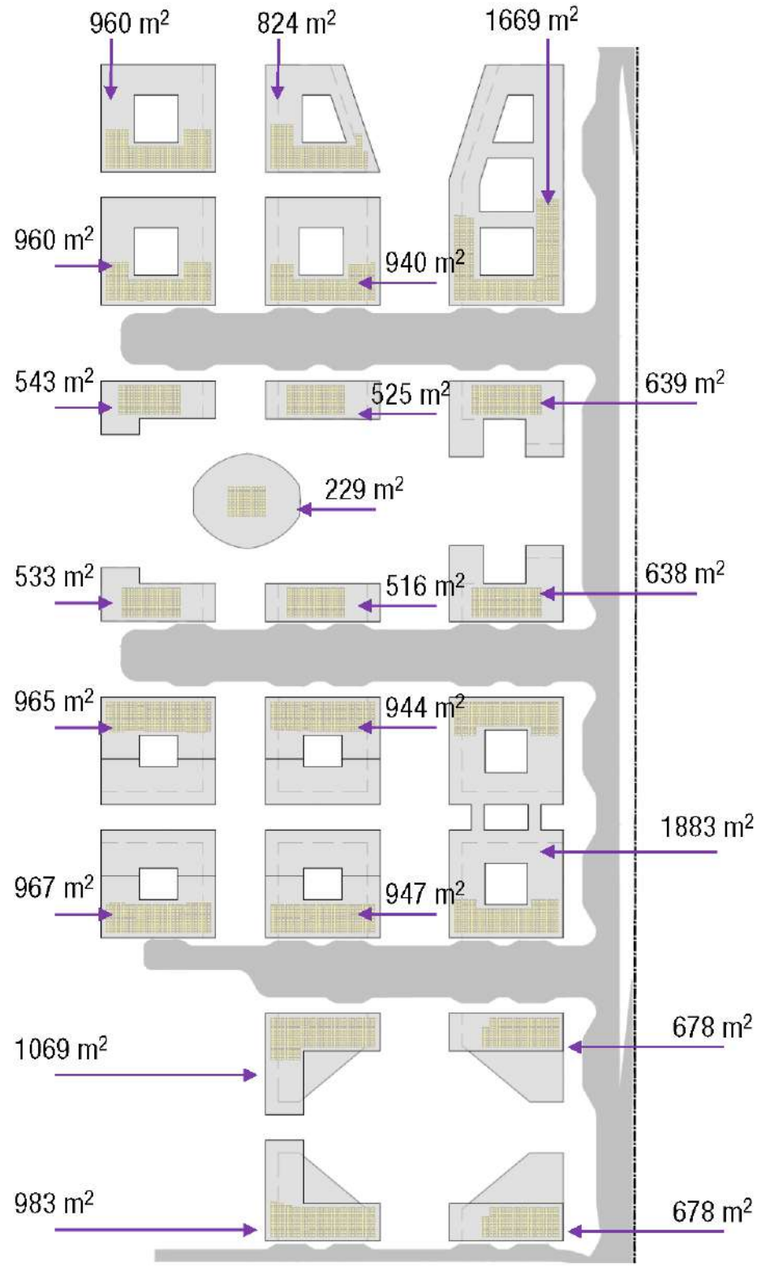
The heat pumps chosen for ECC Dwarka Campus are out of scope of ASHRAE Standard 90.1-2010. The equipment type is water source water to water (for cooling and heating mode), and the size category is >40kW; in fact, 2MW, hence the minimum efficiency requirements are not described in ASHRAE.

8) ON-SITE RENEWABLE ENERGY (1 POINT)

Solar Photovoltaic Panels will be installed by phases, representing at least 5% of the project connected load.
As shown in the sunlight hours analysis, the less favorable month is December. In any case, the roofs are going to profit from sun radiation during long hours. The surface of PV panels installed in the roof of the MUD buildings is described in the chart:

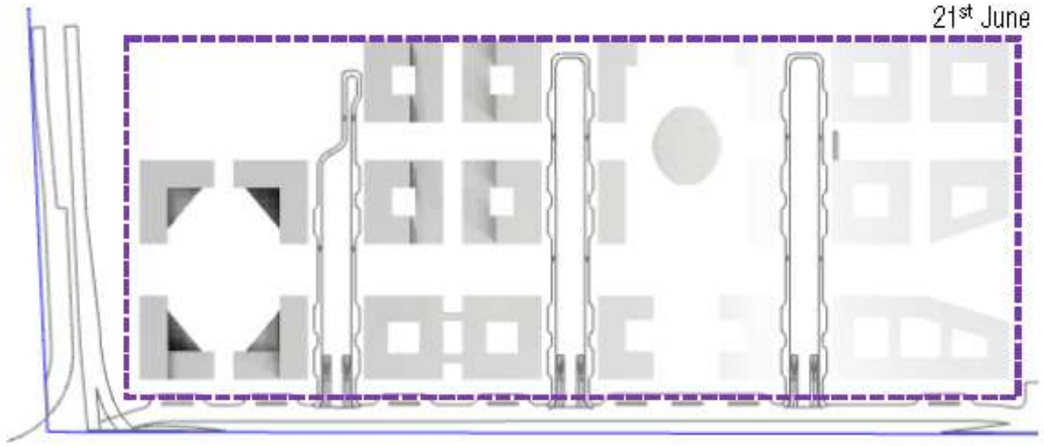
10.0 SUSTAINABILITY

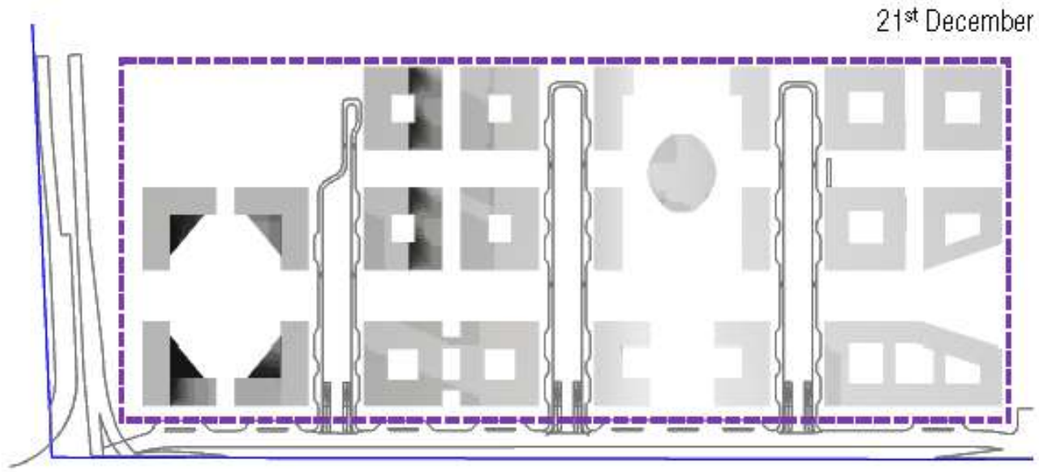
	Connected Load in KW	PV Solar (KW)	AREA (m2)	PANELS (1,95x1m)
Hotel-9	3149,55	157	960	492
Hotel-11	3149,55	157	960	492
Hotel-21	2703,27	135	824	422
Hotel-24	3084,27	154	940	482
Retail-10A	5477,45	274	1.669	856
Retail 10B-29	6181,73	309	1.883	966
Office-12	1781,15	89	543	278
Office-13	1724,17	86	525	269
Hotel-14	2096,33	105	639	328
Office-15	1749,72	87	533	273
Retail-16	750,00	38	229	117
Office-17	1692,74	85	516	264
Hotel-18	2094,38	105	638	327
Office-19	3166,44	158	965	495
Office-20	3099,24	155	944	484
Office-22	3174,72	159	967	496
Office-23	3107,52	155	947	486
Office-25	3508,79	175	1.069	548
Hotel-26	2225,02	111	678	348
Service Apartments-27	3227,16	161	983	504
Hotel-28	2225,02	111	678	348
Museum-32	135,00	7	41	21



10.0 SUSTAINABILITY

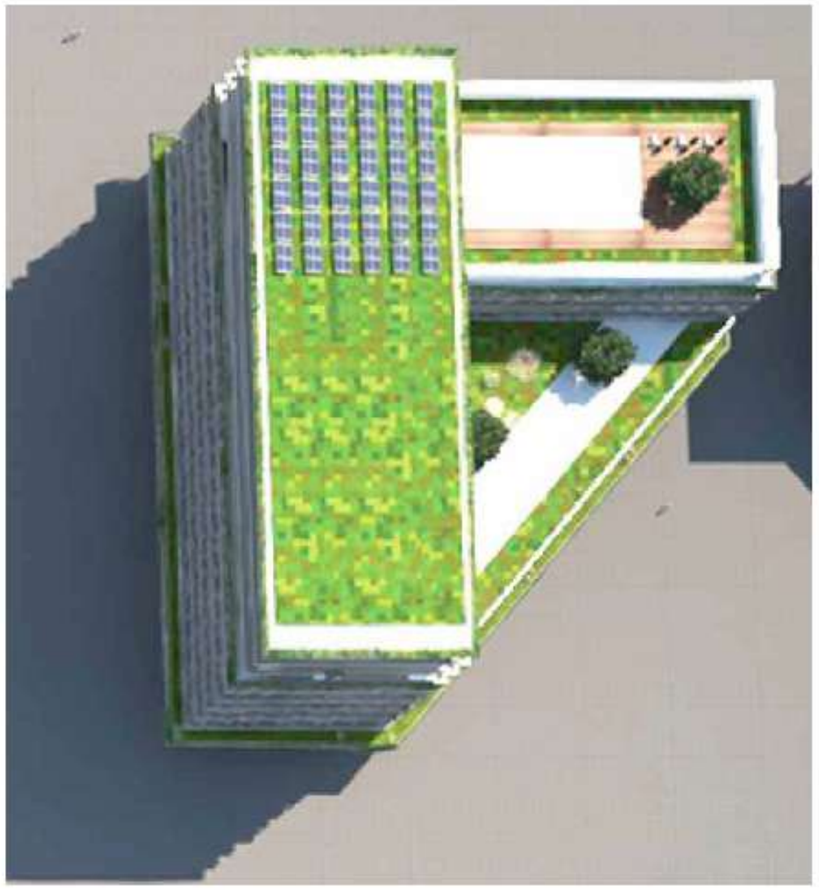
The dimensions of the chosen PV panels are 1x1.95 m, and the technical corridor must be of 1 meter width in order to allow the maintenance staff to get to the panels





Within the MUD area, certain buildings massing create low level roof areas, which are available to be utilised as terraces if required.
These roofs should not contain any building services equipment or PV panels. They are to be used to create roof gardens, open swimming pools, and spaces like terrace cafés/restaurants. Lightweight fabric or open trellis structures are permitted in these roofs, with a maximum height of 2.4m, and any covering/protection should be in materials such as canvas, ETFE, and glass.

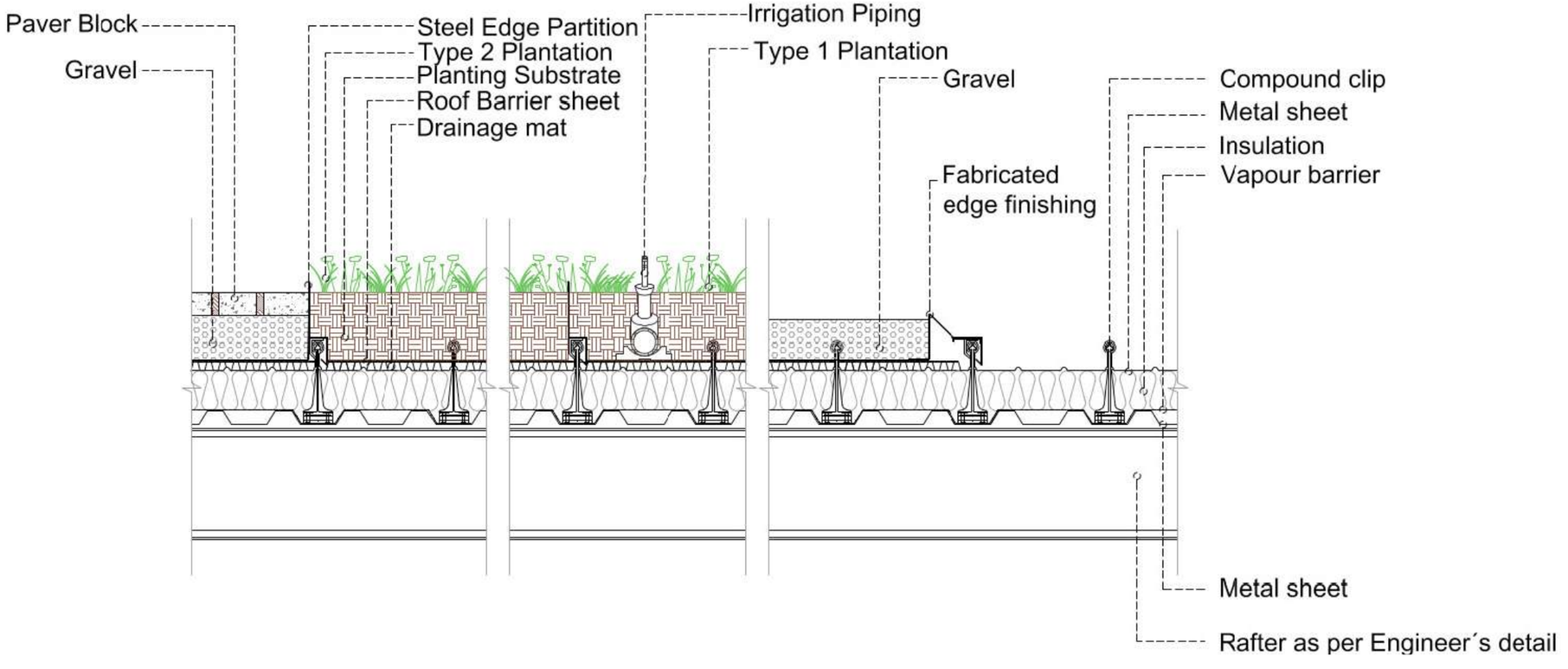
Indicative roof strategy, showing the PV panels and the green roof installation.



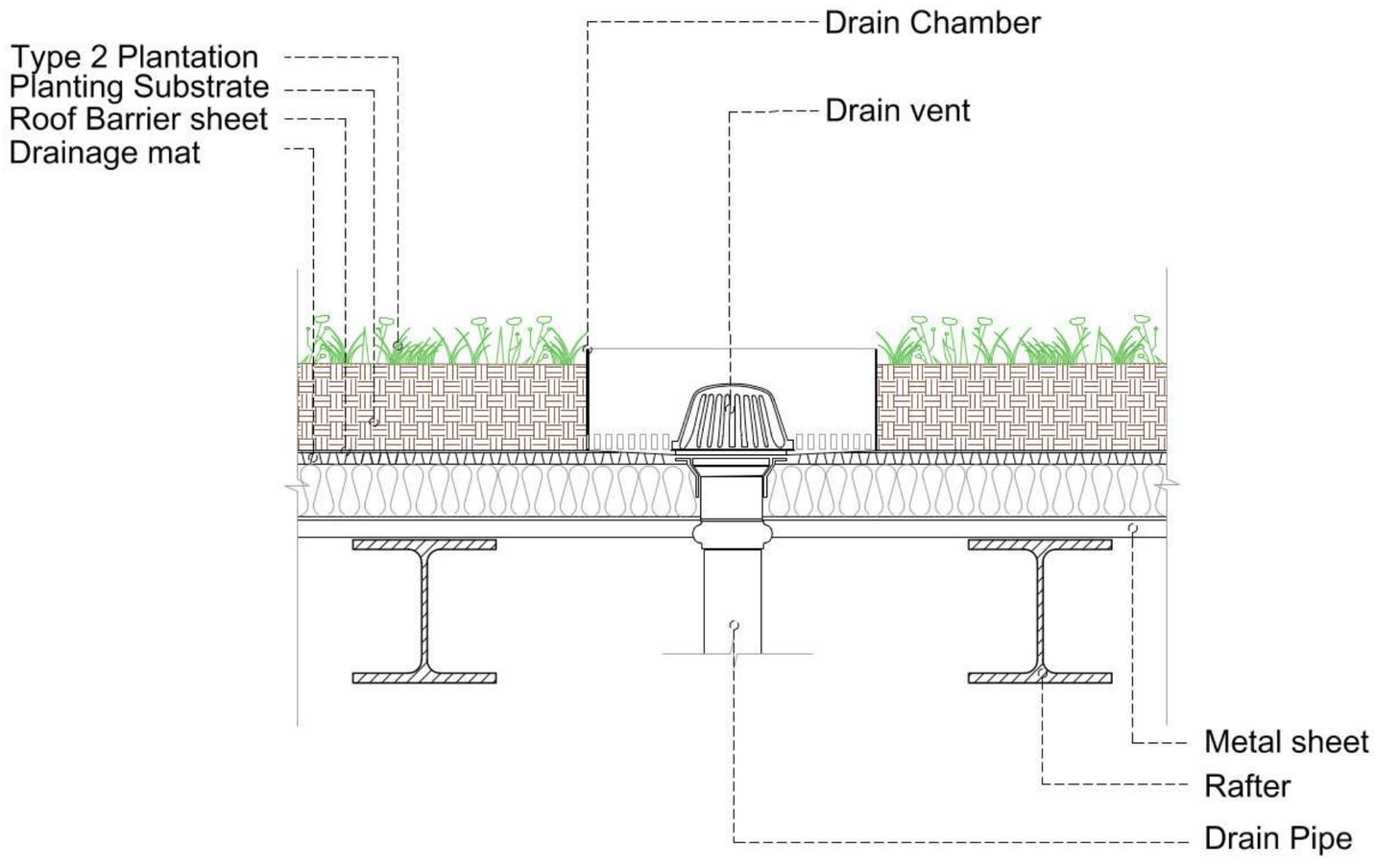
10.0 SUSTAINABILITY

Primarily each building has a main roof (top level) which is to be used for the mandatory installation of PV panels, alongside any specific building services equipment. Where equipment is installed these are to be contained within metal louvered enclosures to avoid visibility from adjoining buildings and to provide acoustic protection for noisy machinery. All rooftop installations are to be set back from the perimeter by at least 3m.
As shown in the diagram, the area needed for the installation of the PV panels don't occupy the whole roof. The part of the roof that is not occupied by PV panels or other building service equipment shall have a green roof.

GREEN ROOFING DETAIL WITH METAL SHEET



GREEN ROOFING DRAIN DETAIL WITH METAL SHEET



10.0 SUSTAINABILITY

Following plants which can be use in India for green roof with minimum ground cover of 150mm height.

Wadelia Trilobata

Lantana Yellow

Ficus Longisland

Lantana Red

Ophiophogon Varigated

Eranthemum Nigrum

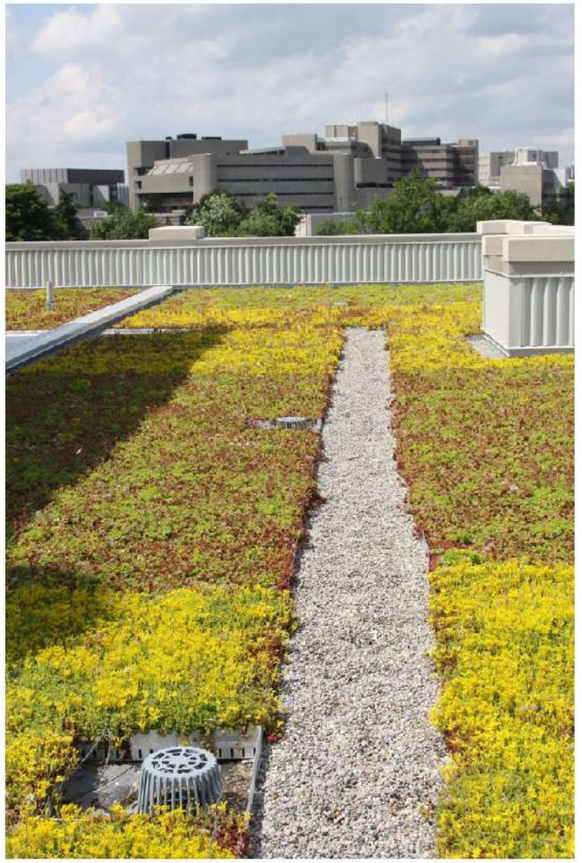
Pennisetum Green

Pennisetum Red

Rheo Discolor

Dianella Varigated

Green roof details



9) DAYLIGHTING. (2 POINTS)

Should be integrated from the beginning of the design process, focusing in the right orientation and location of the openings. The MUD buildings shall receive daylight through the openings in the façade.
A simulation or measurement approach should be chosen to show compliance. 75% of regularly occupied areas should profit from daylight to get 1 point. In order to get 2 points the percentage raises to 95%.

Through computer simulation it shall be demonstrated that 75% of the regularly occupied areas achieve daylight illuminance levels for a minimum of 110 LUX and a maximum of 2200 Lux in a clear sky condition at working plane.

Note from IGBC Guide:
Regularly occupied areas include work stations, cabins, meeting rooms, etc.; whereas, areas with audio-visual facilities such as auditoriums, conference rooms, etc., can be excluded from this credit calculation, with justification and supporting documents.

10) OUTDOOR VIEWS (1 POINT)

The most optimal views shall be pursued in the MUD buildings. Achievement of direct line of sight to vision glazing between 0.9 meters and 2.1 meters above the finished floor level, for building occupants in at least 75% of all regularly occupied spaces in at least 50% of the buildings in campus.
The buildings occupants must bit have any obstruction of views at least 8 metres from the exterior vision glazing, and, the buildings occupants must have access to sky, flora and fauna when possible.
Regularly occupied areas are those where people sit or stand as they work. Regularly occupied areas shall included only enclosed spaces.
Offices buildings and work spaces must be considered for this credit calculation.

Note: The MUD buildings design, as well as all buildings in the ECC, caters to differently abled and senior citizens in accordance with the guidelines of the National Building Code (NBC) of India.

At least one preferred car park space (having an easy access to the building's main entrance) for the first 100 car park spaces and one additional for every 250 car park spaces thereafter are provided. These measure amongst others (in accordance with the guidelines of the NBC of India) ensure that the campus buildings caters different abled and senior citizens as it is expected from a complex of this magnitude.

11.0 SITE SERVICES PROVISIONS

11.0 SITE SERVICES PROVISIONS

11.1 SITE SERVICES PROVISIONS

The following pages provide further detail on the exact provisions and requirements of the trunk infrastructure that will be provided to each plot/building within the site. it also defines where and how the individual building systems will need to be designed to allow for the connections.

WATER MANAGEMENT

Delhi Jal Board will supply water for the complex. The total demand as per Annexure 7.66 MLD. The water supply from DJB is as per IS 10500.

WATER DEMAND FOR PHASE
As per DJB

Water demand estimated for the proposed ECC

The total water demand for the project is based on the Delhi Jal Board norms.
The demand for the Phase
2.59 MLD for potable water, and 1.87 MLD for non treated water.

Potable water is 4.87 MLD and non treated water is 1.86 MLD.

Underground water storage tank
Capacity: 5 tanks x 1.5 ML = 7.5 ML.

Softening plant for cooling towers for DG set and AC Plant

Capacity of Softening plant:

2 MLD with 1.5 MLD Storage tank
2 MLD with 1.5 MLD Storage tank

11.0 SITE SERVICES PROVISIONS

NETWORK

Flushing Water
Horticulture
Transfer of water to Overhead tanks from cooling towers

- Hydro pneumatic system to maintain 1.5 bar pressure at the terrace level of the highest building.
- Hydro pneumatic pumps

-

3x20LPS, 85meter head + 2x10 LPS meter head.
3x15 LPSx85 meter head

-

3x20LPSx 85meter head + 2x10

Water Distribution:
Ring main in services gallery:
- 250mm dia. for domestic water and flushing water.
- 150mm dia. for Horticulture

Connection to each building:
Connection shall be metered:
Type of Meter Electro Mechanical Indicating, Integrating and Recording facility.

All water meters shall be in central gallery and will be connected to maintenance office through BMS.

Horticulture Network:
- 150 mm dia. HDPE pipe in service gallery. Connections to landscaping with valves at suitable locations as per landscaping plan.

SOIL AND STORM WATER PIPE NETWORK:
- Double wall Coiled HDPE pipe
- HDPE manholes
- Double Seal CI manhole covers
- SRFC Gratings

- Rain water piping designed for 50 mm per hour rainfall as per NBC 2016.
- Modular Rain Water Harvesting.
  Total capacity 19050 CUM. provided to comply IGBC guidelines.
- Rain water harvesting pits Phase 1: 12400 Cum.

SEWER DESIGN CRITERIA
Flow from Buildings
Flushing Water
Domestic Water

SEWAGE TREATMENT PLANT
Total plant capacity for Phase
10 MLD (Phase 1: 4 mld & Phase
MBR technology treated water conditions from STP.

Grease < 5 ppm
TDS < 500

Treated water shall be UV treated before distribution.
The treated water will be used for:

Horticulture
To meet shortage of water for cooling towers

- 2 MLD water softening plant provided to achieve commercial hardness. Zero for supply to cooling towers.

STORM WATER CONNECTIONS TO CITY MAIN:
The high flood level of city storm water drain is higher than invert levels of the pipes within the complex. Six RCC storage tanks with submersible pump provided to discharge water above HFL to the city drain

1.3.2.2 ELECTRICITY

OBJECTIVES

The Exhibition cum Convention Centre (ECC) is envisioned as a “World Class”, mixed-use district, creating one of the largest facilities of its kind in India and Asia. Elements include Exhibition Halls, Grand Foyers, Convention Centre, Sports Arena, Offices/Retail/Hospitality/Service Apartments Blocks, and Open Areas, in an area of 89.72 Hectare. A terminal Metro Rail Station is also planned at a central location.

The Electrical Infrastructure will include two 66kV main power receiving electrical substations, 11kV distribution through services tunnel, 11/0.415kV substations for DPC (district cooling plant) various blocks, central DG Backup Facility, AC Plant, solar power generation in LT, optical fiber cables for data/voice networking, Building Management System (BMS) and other low voltage facilities.

To ensure the public understanding of this sustainability-based project, a third party certification will confirm the sustainable approach of the project. The IGBC (Indian Green Building Council) Green Campus Certification will be obtained with its maximum score: Platinum. The services design shall comply with all energy conservation standards, green energy norms and sustainability requirements.

MAIN DESIGN CRITERIA

The intent of this document is to promote the implementation of cost effective and energy efficient strategies for systems design and arrangements, equipment selection, distribution, and overall systems integration. These strategies will be undertaken during subsequent design phases. The Electrical System components and layouts will be planned in accordance with the following characteristics:

- Modular approach.
- Energy efficiency and responsiveness.
- Flexibility for future changes.
- Durability.
- Ease of maintenance.
- Reliability.
- Redundancy of critical components.
- Energy Saving and sustainability in accordance with the IGBC platinum rating requirements.

The general design criteria for the Electrical Infrastructure and Services will refer to the following standard and codes:

- Local By-Laws.
- National Building Code of India (2016).
- Relevant codes of National Fire Codes (2008).
- Relevant codes of Bureau of Indian Standards.
- Institute of Electrical & Electronic Emgineers (Design Hand Book).
- Illuminating Engineering Society of North America (Design Hand Book).
- IEC 60726 / IS: 2026 (Part I, II and IV) / IS: 1117 / IS: 10028 / IS: 1180 – Dry Type Transformers (Cast Resin).
- IS: 6600 – Oil Filled Type Transformers.
- IEC 60831 / IS 13340 & IS 13341: Capacitors.
- IEC 60947 / IS 13947: Specification for low voltage switchgear & control gear.
- BS 7430 and IS 3043: Earthing & Bonding.
- BS 7671: Requeriments for Electrical Installation.
- NEC – NFPA 70: National Electric Code.
- NFPA 101: Life Safety Code.
- NEC: National Electric Code of India (2011).

11.0 SITE SERVICES PROVISIONS

requirements

requirements

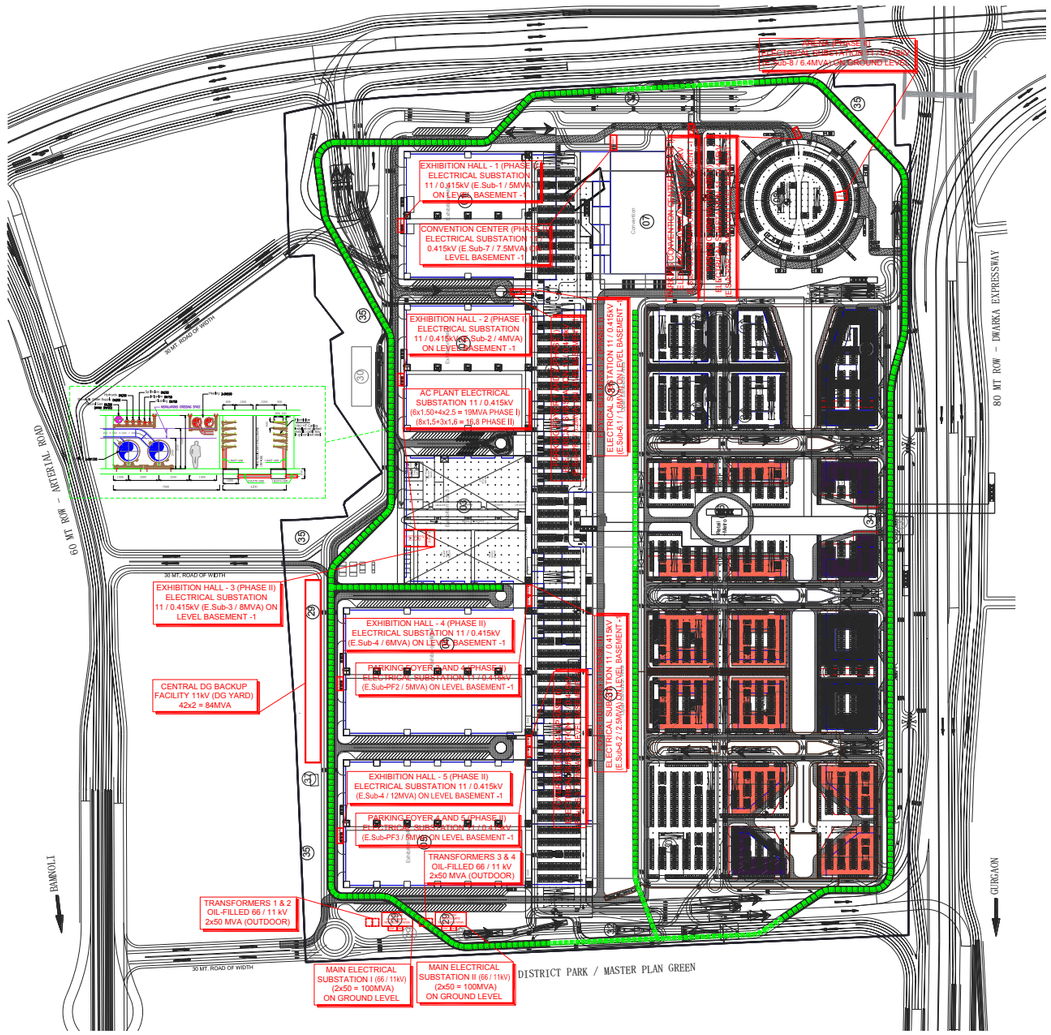
INFRASTRUCTURE

infrastructure installations

Substations connections Substations

interconnections

SD_ECC_PEAC_XX_ELE_X_XX_RP_



11.0 SITE SERVICES PROVISIONS

POWER

connections, information

transformers, ONAN/ONAF

transformers

transformer

connections Substations

encapsulated

compartment

Substations connections

connections

transformers preliminary calculations,

Substations,

transformers

connections,

switchgear, consideration

management

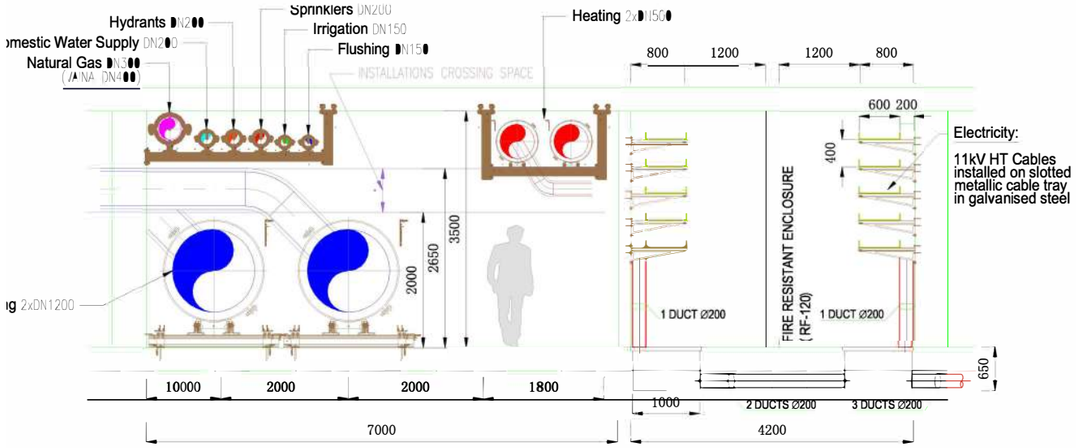
Furthermore, Substations

transformers

substations

11.0 SITE SERVICES PROVISIONS

Power distribution between the main 66/11kV substation and the localized 11/0.415kV shall be made through two independent supply connections, each one will be capable of provide the total electrical power required by the entire building. Both connections will dispose of main electrical supply (from Delhi Transco) and emergency electrical supply (from Diesel Generators). The 11kV HT cables shall be run in technical trenches and service tunnels, and through ducts of insulated material as needed for entry in each building.



With the purpose of ensuring the continuity of the electrical power supply, full Diesel-Generated backup power is considered for all blocks and utilities. A central DG Backup facility (DG Yard) is considered to supply full backup power to the following blocks: Exhibition Halls, Convention Centre, Grand Foyer, Sports Arena, Central AC Plant, heir Parking Areas and Landscape. Diesel generation shall be at 11kV and shall be integrated with the normal power supply through 11kV DG Synchronization Panels and 11kV change over panels. For the other blocks (Hotels, Offices, Retail, and their Parking Areas) not provided by this central DG Backup Facility, DG power backup shall be planned indoors in each block as required, and installed in the spaces next to substations.

It is estimated for the DG Backup Facility that a total of 40 (16 + 2 spare for Phase I and 24 + 6 spare for Phase II) diesel generating sets of continuous prime duty (2.000kVA), water-cooled, with soundproof canopy for silent operation shall be required to meet the load requirement (full electrical load in the Exhibition Halls, Convention Centre, Grand Foyer, Sports Arena, Central AC Plant, their Parking Areas and Landscape). Operation shall be through PLC control for automatic start/stop, synchronizing and load management. Additional spare space will be reserved for the possible future installation of another 8 diesel generating sets.

MUD Building's DG Exhaust pipe will be taken up to the roof as per the CPCB requirements. Day tanks will be required inside each MUD building. Bulk storage, next to DG Backup Building, is provided for a duration of autonomous operation of 24 hours. Diesel pipes will join the bulk storage with each MUD Building Day Tank using the services gallery.

All equipment (i.e. circuit breakers, transformers, HT & LT panels in Main receiving station and substations) shall be monitored for status by BMS at a Centralized location. All energy meters in the HT & LT panels shall also be soft linked to BMS for monitoring power consumption and for billing purpose.

The electrical design shall conform to relevant Indian and International standards; NBC-India, local bylaws, IS, ECBC-India, and IGBC/LEED platinum rating requirements.

For further details see SD_ECC_PEAC_XX_ELE_X_XX_RP_0001_07 document, 1.2.1 and 1.2.2

1.3.2.4 HVAC

(See SD_ECC_PEAC_XX_HVC_X_XX_RP_0001_07 “HVAC Description” for detailed information)

OBJECTIVES

The buildings will look to utilize bioclimatic architectural design (solar control with shadings, external but covered and natural ventilated areas, buildings taking advantage of its thermal mass, etc.) and will include high performance cooling systems inside the buildings to ensure the maximum comfort levels.

The HVAC is the most important system regarding the hygrothermal comfort and is therefore a key aspect for the project quality as perceived by the users.

The bioclimatic architectural design of the project and the selection of high performance HVAC systems (geothermal energy) will result in a significant reduction of the project consumption and costs according to its sustainable approach that will obtain a Platinum IGBC sustainability certification.

MEP systems must have the capability and functionality to allow energy consumption to be measured and verified in line with the project’s Measurement and verification plan.

The design of the ventilation systems will comply with the minimum requirements of sections 4 – 7 of ASHRAE 62.1-2017. The design of the ventilation systems must exceed the minimum ventilation rates required by ASHRAE 62.1-2017.

The project shall provide individual comfort controls for 50% (minimum) of the building occupants (for applicable areas) to enable adjustments to meet individual needs and preferences. Provide comfort system controls for all shared multi-occupant spaces to enable adjustments that meet group needs and preferences.

The standards that will be taken into account in the development of the documentation will be the following ones:

- NBC India 2016
- The norms codes India
- IGBC (Green Campus Rating System)
- Energy conservation building Code ECBC 2007 (revised version May 2008)
- ASHRAE Systems 2016
- ASHRAE Applications 2015
- ASHRAE Refrigeration 2014
- ASHRAE Fundamentals 2013
- ASHRAE 52.1-1992 and 52.2-2007
- ASHRAE 62.1-2010
- National electric codes NEC
- ASHRAE Standard 90.1.2010

OUTDOOR DESIGN CONDITIONS

For New Delhi based on weather data compiled and published jointly by ASHRAE India and recommended by NBC 2016 have been considered as follows:

Summer

- Dry Bulb Temperature: 43.3ºC
- Mean coincident wet bulb temperature: 23.9 ºC

Monsoon

- Wet Bulb Temperature: 35.0ºC
- Mean coincident dry bulb temperature: 28.3 ºC

Winter

- Dry Bulb Temperature: 7.2ºC
- Mean coincident wet bulb temperature: 5.0 ºC

NOTE: Outdoor conditions based on ISHRAE weather data handbook.

INDOOR DESIGN CONDITIONS

	INDOOR TEMP +- 1°C WINTER / SUMMER	RELATIVE HUMIDITY
Exhibition hall	17/ 24 °C	Less than 60%
Convention center and Arena	17 / 21 °C	Less than 60%
Service Apartment	17 / 24 °C	Less than 60%
Office Building	17 / 24°C	Less than 60%
Retail	17 / 24 °C	Less than 60%
Atrium, lobby and corridors	17 / 24 °C	Less than 60%
Hotels	17 / 24 °C	Less than 60%

VENTILATION REQUIREMENTS

	Outdoor air ventilation
Exhibition hall	3.8 l/s per person + 0.3 l/s square meter
Convention center and Arena	3.8 l/s per person + 0.3 l/s square meter
Service Apartment	2.5 l/s per person + 0.3 l/s square meter
Office Building	2.5 l/s per person + 0.3 l/s square meter
Retail	3.8 l/s per person +0.3- 0.6 l/s square meter

11.0 SITE SERVICES PROVISIONS

DESCRIPTION

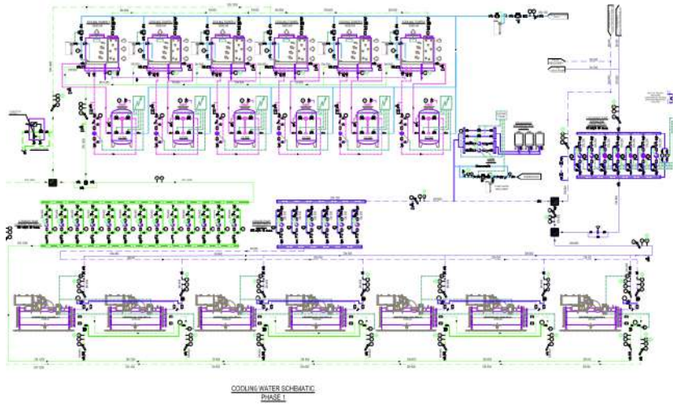
equipment,

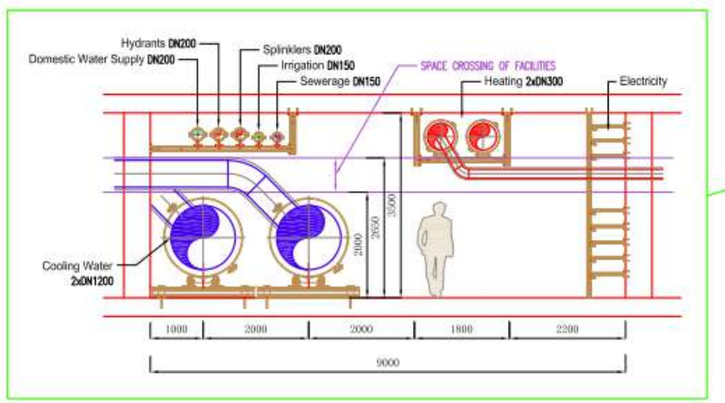
dimensions

conditioning
conservation

condensing

infrastructure mechanical





11.0 SITE SERVICES PROVISIONS

CONFIGURATION

hermetically compressor
refrigerants

condensation
atmosphere

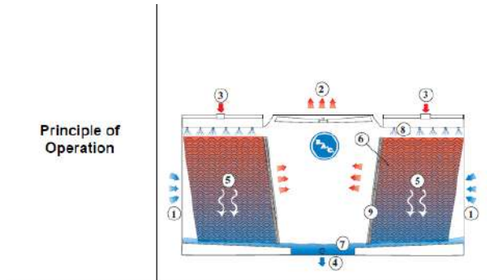
accordance
Certification

ahridirectory

Evaporation

parameters

CENTRIFUGAL



Configuration	Crossflow
Water Distribution	Gravity
Fan System	Axial Fan, Induced Draft
Capacity Range (Single Cell)	40 to 260 l/s
Maximum Entering Water Temperature	50 °C standard wet deck 55°C Alternative wet deck material
Typical Applications	Medium to large HVAC & industrial applications Replacement of field erected towers

11.0 SITE SERVICES PROVISIONS

DESCRIPTION

equipment,

dimensions

conditioning
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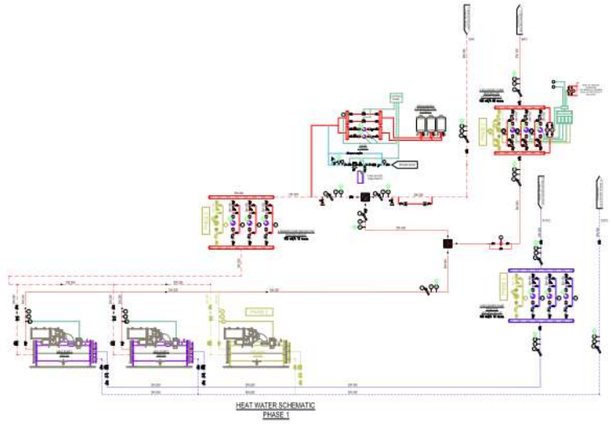
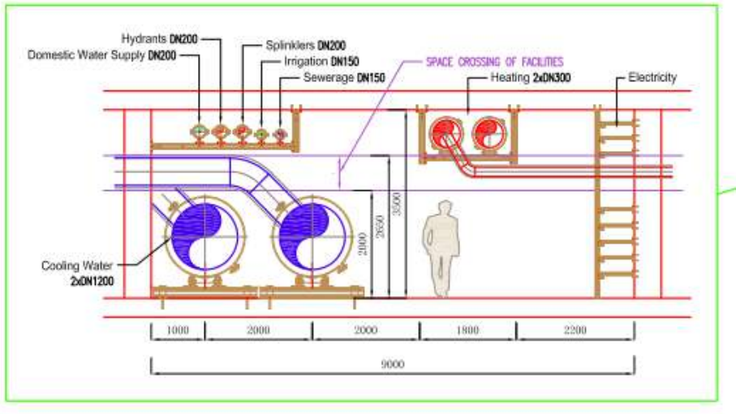




11.0 SITE SERVICES PROVISIONS

CONFIGURATION

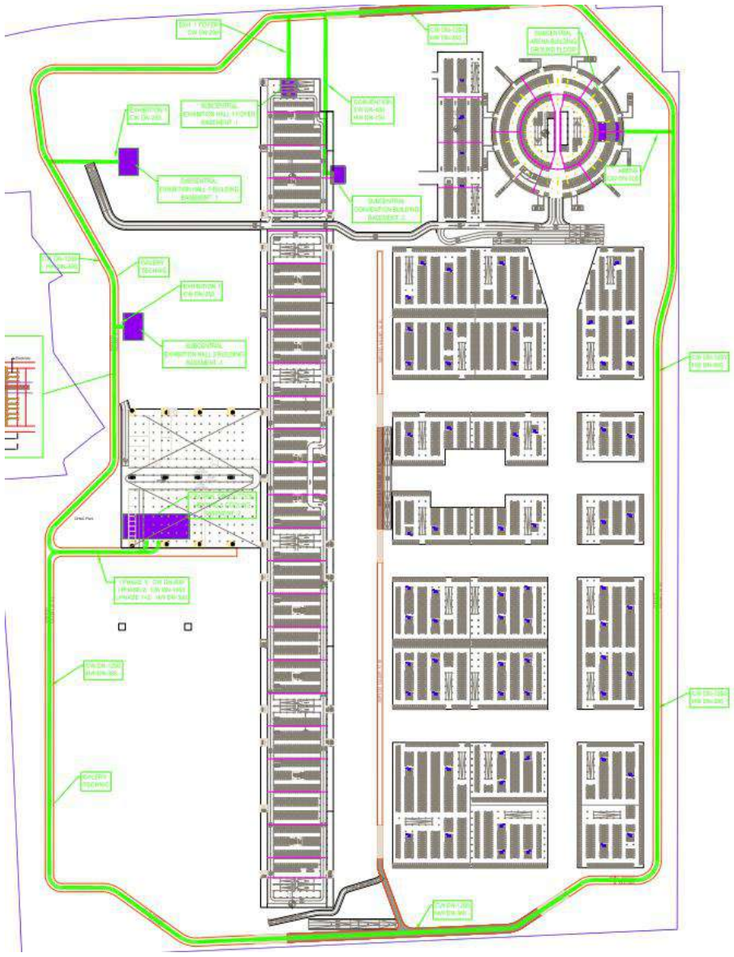
hermetically compressor
refrigerants

accordance
Certification

ahridirectory

parameters

equipment,



11.0 SITE SERVICES PROVISIONS

FIRE FIGHTING

- arrangements
-
- Underground
-
- underground
-
-
-
-
-

An electric Driven Water Curtain pump is also being provided.

The building shall have external and internal fire fighting hydrants and sprinklers.

- Drencher system shall be installed in ramps and trusses.
- Each building shall have 4 way fire brigade inlet
- Entire complex will have sprinkler system
- Auto sprinkler, smoke detectors and jet fans for smoke evacuation.

Life safety in service gallery:

Service gallery shall have cat ladder and hatches at every 500 meters.

Sumps with pumping arrangement at every 500 meters.
Automatic sprinklers, Smoke detectors and exhaust fan for smoke evaporation.

Approach doors at Grid Sub station DG Plant room, AC Plant room, Arena etc.

11.0 SITE SERVICES PROVISIONS

GAS

Gas network shall be laid by Indraprastha Gas Limited in the service gallery.

Connection to each building shall have extended by IGL.

Gas meter to be installed in the premises of the user. Each consumer to enter into agreement with Indraprastha Gas Limited directly.

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