



THESIS REPORT ON  
**“THE MUSEUM OF MOTION –GREATER NOIDA”**

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT  
FOR THE DEGREE OF:

**BACHELOR OF ARCHITECTURE**

BY  
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**(1200101010)**

THESIS GUIDE  
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SESSION  
2024-25

TO THE  
**SCHOOL OF ARCHITECTURE AND PLANNING**  
**BABU BANARASI DAS UNIVERSITY**  
**LUCKNOW.**

**SCHOOL OF ARCHITECTURE AND PLANNING  
BABU BANARASI DAS UNIVERSITY, LUCKNOW (U.P.).**

**CERTIFICATE**

I hereby recommend that the thesis entitled “MUSEUM OF MOTION- GREATER NOIDA” under the supervision, is the bonafide work of the students and can be accepted as partial fulfillment of the requirement for the degree of Bachelor’s degree in architecture, school of Architecture and Planning, BBDU, Lucknow.

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4. Degree for which the thesis is submitted: BACHELOR'S OF ARCHITECTURE
5. Faculty of University to which the thesis is submitted: Yes / No
6. Thesis preparation guide was referred to for preparing the thesis. Yes / No
7. Specification regarding thesis format have been closely followed. Yes / No
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**-Hitesh Motiwala**

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# INTRODUCTION

# THE MUSEUM OF MOTION



The *Museum of Motion* is a futuristic car museum that narrates the evolution of the automobile through architecture. Blending **retro futurism** with advanced technology, the museum creates an emotional journey using light, color, and motion. With sustainable materials and dynamic spaces, it's not just a building—but a living timeline celebrating the past, present, and future of mobility. The architectural language speaks of **retro futurism**—a fusion of nostalgia and aspiration. A visitor's path is designed like a kinetic exhibition, guiding one through a timeline where vehicles appear to glide through open galleries and transitional corridors. Within this fluid continuum, sustainability is not an afterthought but an underpinning: structural systems and materials are selected for energy efficiency, recyclability, and lightness, minimizing environmental impact without compromising grandeur.

## 1.1 INTRODUCTION:

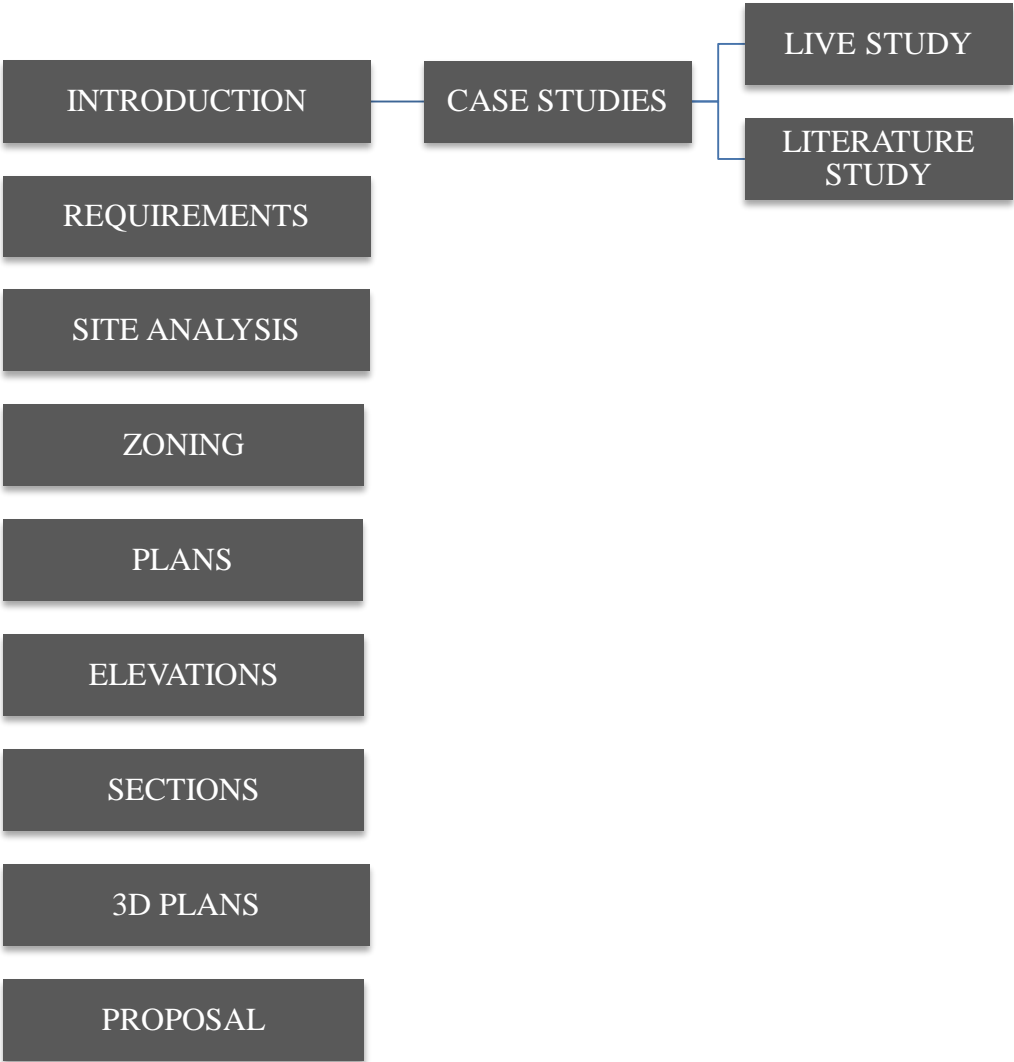
The Museum of Motion, as an architectural thesis project, presents an innovative approach to the design and curation of an automotive museum. It explores the intersection of space, movement, and automotive history through a modern architectural lens, emphasizing the fluidity and dynamic qualities inherent in both the cars it houses and the building that contains them. The museum's design reflects the evolving nature of automotive technology, innovation, and culture, while creating a space that is not only a showcase for vehicles but also an immersive experience that communicates the essence of motion.

## 1.2 Scope of this topic:

As automobile industry is going under revolution and human life is majorly influenced by transportation. Here arises a need of knowledge of what exactly we are going to face in future. There's a need to understand the path of execution for educating people in this field by demonstration and exhibition and also provides a platform for further convention over



## 1.3 METHODOLOGY:



## 1.4 Why Museum?

- A museum of motion is a perfect architectural thesis topic because it blends:
- Motion-inspired design (curves, fluidity, aerodynamics)
- Dynamic experiences (ramps, kinetic elements, AR/VR)
- Technological innovation (smart facades, projections, interactive exhibits)
- A connection to speed, transportation, and human

## 1.5 NEED FOR THE STUDY:

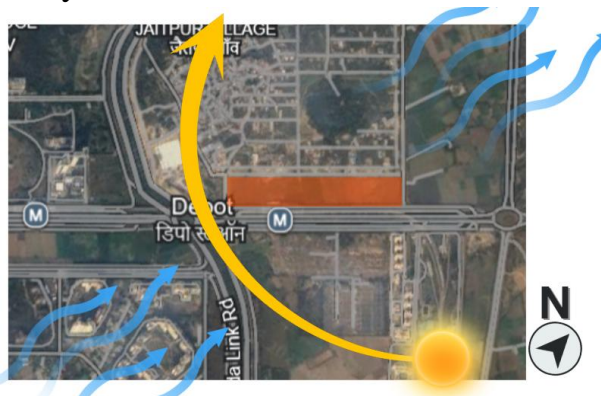
- **Annual Auto Expo:** Held every two years in New Delhi, originally at Pragati Maidan, now at India Expo Mart, Greater Noida.
- **Reason for Shift:** Poor human resource management and overcrowding.
- **Current Issues:**
  - Limited exposure for viewers and businesses.
  - Lack of awareness and excessive crowding.
  - Long waiting times reduce interaction opportunities.

## 1.6 AIM OF THE STUDY:

- The aim of "The Museum of Motion: Architecture for the Automotive Legacy" is to design a car museum that captures the dynamic essence of automobiles through innovative architectural elements, creating an immersive and interactive experience that celebrates
  - automotive history while inspiring future advancements in both automotive and architectural design.
  - To identify factors which create awareness about automobile advancement by understanding the global impact and to exhibit India's Auto Inventions and Heritage.

## 1.7 SITE AREA: 10.5 acre

**Location: Theta II, Greater Noida** a commercial zone as per the Greater Noida Master plan 2031. The sector lies near the Depot metro station and is unique in its superbly accessible & functional connectivity options.





# SITE & CLIMATE ANALYSIS

## 2.1 SITE



MASTER PLAN Greater Noida

## 2.2 SITE STUDY:

**Location:** Theta II, Greater Noida

**Site Area:** 42,560 M<sup>2</sup> (10.5 Acres)

**Latitude & Longitude** = 28°29'24"N 77°32'39"E

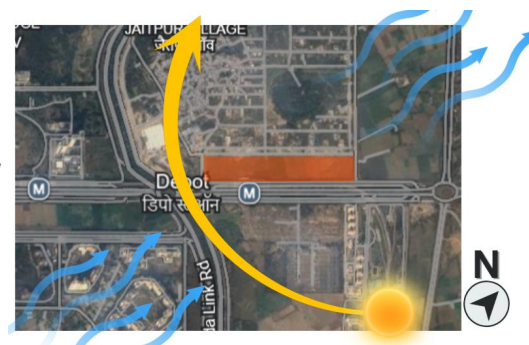
**Total Site ACRE** = 10.5 Acres = 42560

**Maximum Ground Coverage** 40% -50%

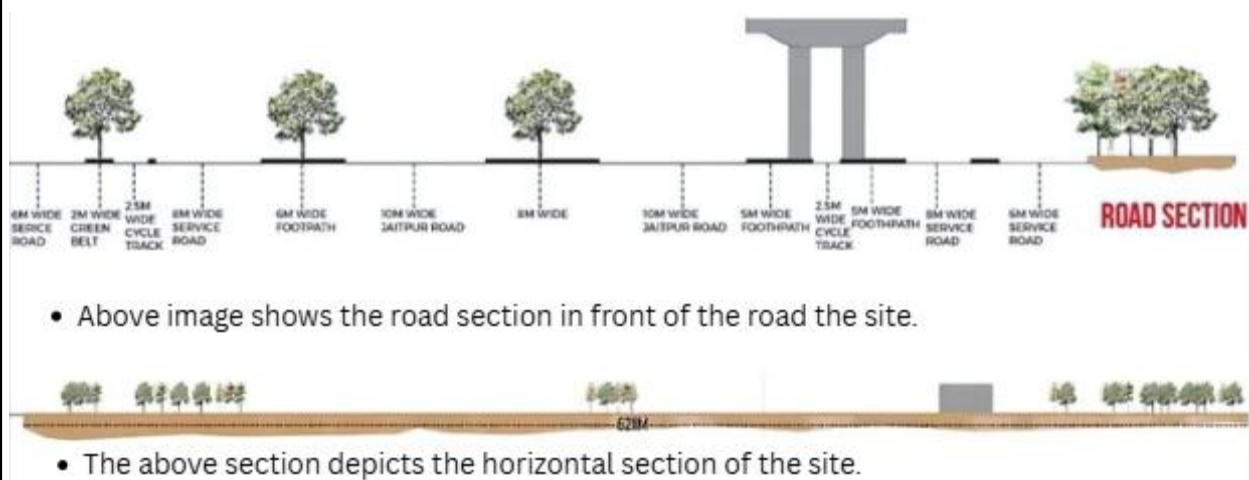
**Maximum Permissible F.A.R-4**

**Max Permissible Height:** No Limit

**Sethacks:** Front-12m Rear-6m Back-6m



## 2.3 SITE SECTION:

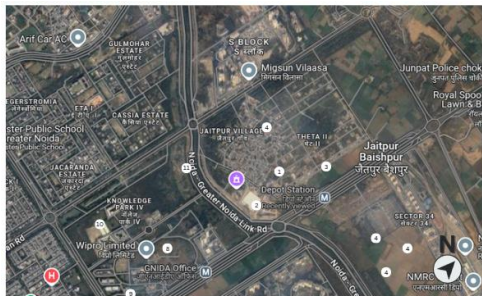


- Above image shows the road section in front of the road the site.

- The above section depicts the horizontal section of the site.

The main electricity source in the nearby region is NOIDA POWER COMPANY LIMITED which is located in the proximity to site in the nearby areas. We can see that illustrated in the site context diagram.

## 2.4 LANDMARKS:



## CONTEXT OF THE SITE

- 1 PROPOSED SITE  
2 DEPOT METRO STATION  
3 BUS STOP  
4 NMRC STAFF QUARTERS  
5 NOIDA METRO DEPOT  
6 G .NOIDA METRO OFFICE  
7 SIDH BABA TEMPLE AND PARK  
8 GREATER NOIDA INDUSTRIAL

- DEVELOPMENT AUTHORITY  
9 GNIDA METRO STATION  
10 NOIDA POWER COMPANY LIMITED  
11 JAIPUR VILLAGE  
12 ANSAL SUSHANT SERENE  
RESIDENCY  
13 MIGSUN VILLASA

## 2.5 SITE TOPOGRAPHY:

- **Vegetation-** lush green, vegetation existing on the north- east and small green belt on the north
- **Shape-**the site is almost flat and rectangular in shape.
- **Soil type-** alluvial soil, bearing capacity off soil is 150 kg/sq.



The site is accessible via an 8m wide service road on the front side, back side and on the right side too there is an 8m wide road thus this would help me get flexibility in choosing and deciding the entries and exits for the site.

## 2.6 DRAINAGE PATH:

The drain pipes are being laid in the current scenario on the right side of the site which is depicted in the site analysis diagram above. Thus, this will be taken into consideration while laying out the swage path of the site.



## 2.7 AREA ANALYSIS:

### 2.7.1 BYE LAWS OF GREATER NOIDA

- Permissible far = 4
- Permissible ground coverage 40% of plot area
- Setback
  1. Front setback = 12 mt
  2. Side setback = 6mt
  3. Rear setback = 6 mt

Site area of 10.5 acres ( $\approx 42,400$  sqm) and an FAR of 4 would be as follows:

#### 1. Built-up area calculation

Total site area: 10.5 acres

FAR (floor area ratio): 4

Total permissible built-up area:

$$42,400 \text{ sqm} \times 4 = 169,600 \text{ sqm}$$

#### 2. Ground coverage(40%)

$$= 40\% \text{ of } 42492.03 = 16996.81 \text{ sqm}$$

#### 3. Number of floor required

$$= 169968.12 / 16996.81 = 10 \text{ floors (no height limit)}$$

#### 4. Zoning and Space Allocation

**Exhibition Spaces (40-50%) →**

**67,840–84,800 sqm**

Classic cars gallery

Modern and concept car exhibits

Interactive displays and simulation zones

**Public spaces (15-20%) →**

**25,440–33,920 sqm**

Entrance lobby

Cafeteria and restaurants

Outdoor plaza and landscape

**Auditorium and conference (5-10%) →**

**8,480–16,960 sqm**

Multipurpose hall

Seminar and training rooms

**Parking & services (15-20%)**

**→ 25,440–33,920 sqm**

Basement/multi-level parking

Mechanical workshop

Security and fire safety zones

#### 5. Circulation & open spaces

Roads and pedestrian paths: 20-25% of the site

Green and landscaped areas: 30-35%

#### 6. Parking requirement

Depending on visitor flow and staff, consider 1 parking spot per 50 sqm of built-up area.

Use multi-level or basement parking to optimize space.





## 2.7.2 SITE SURROUNDINGS:



Pathway



Green belt



Metro line



Sewage line



Electricity line

## 2.7.3 SITE CONTEXT:

### Context of the site

1. Proposed site
2. Depot metro station
3. Bus stop
4. Nmrc staff quarters
5. Noida metro depot
6. Noida metro office
7. Sidh baba temple and park
8. Greater Noida industrial development authority
9. G-noida metro station
10. Noida power company limited
11. Jaitpur village
12. Ansal sushant serene residency
13. Migsun villasa



## 2.7.4 SITE BOUNDARY:



Perspective view



West view



East view



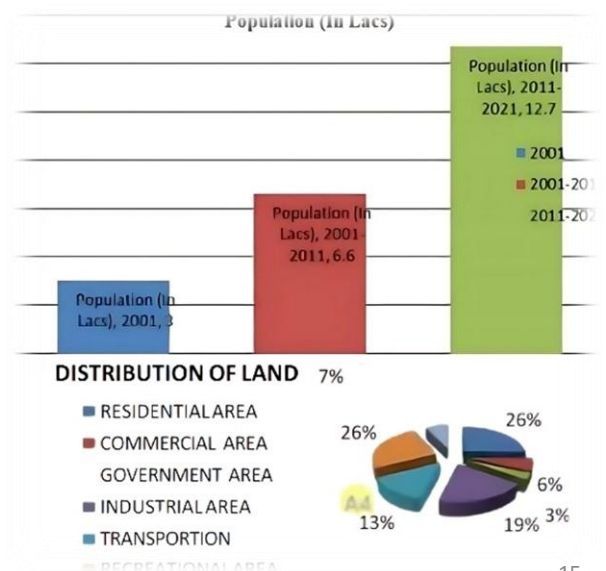
North view



South view

## 2.7.5 DEMOGRAPHIC:

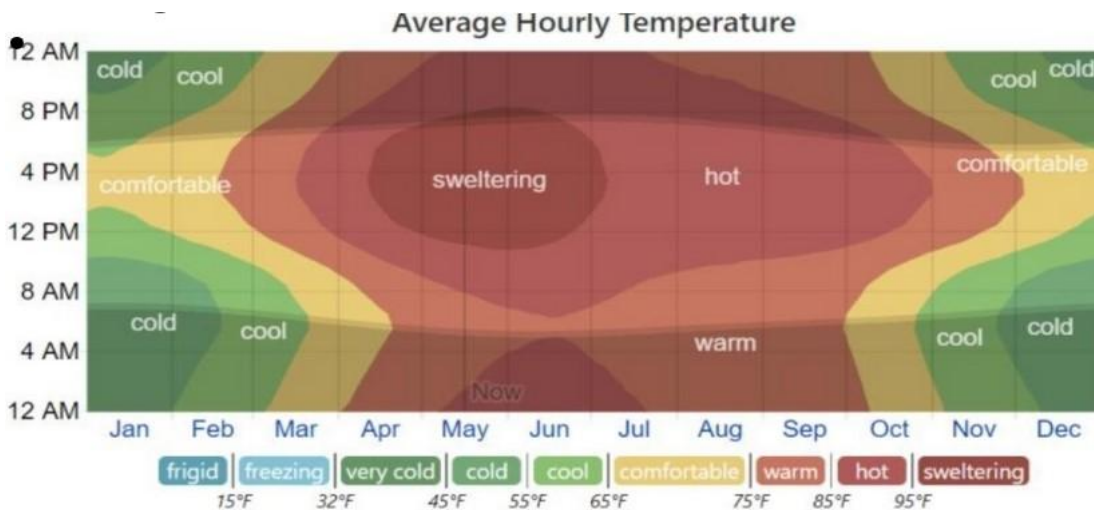
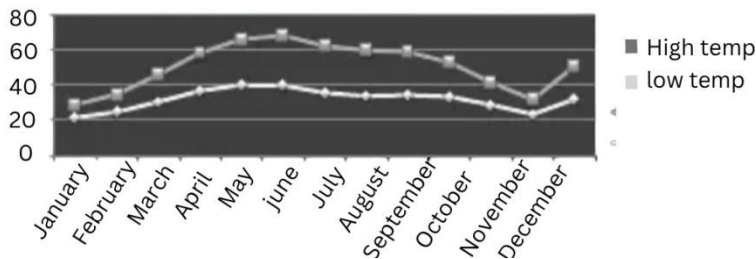
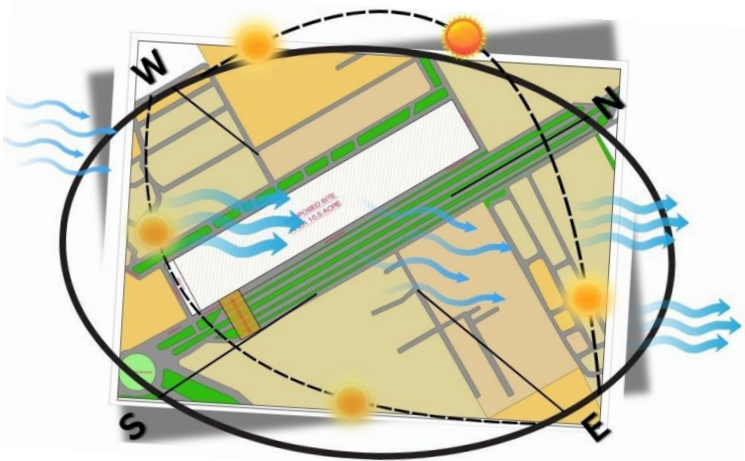
- The current population of greater Noida according to demographics and census is 12 lacs
- Thus, the provisions of functions while designing need to be considered keeping this factor in mind. Moreover, the target population is not just the people of greater Noida we are also focusing towards tourist attraction in the design that means that the 15 lakhs population of Noida at least must also be taken into consideration while designing the Automobile Museum.





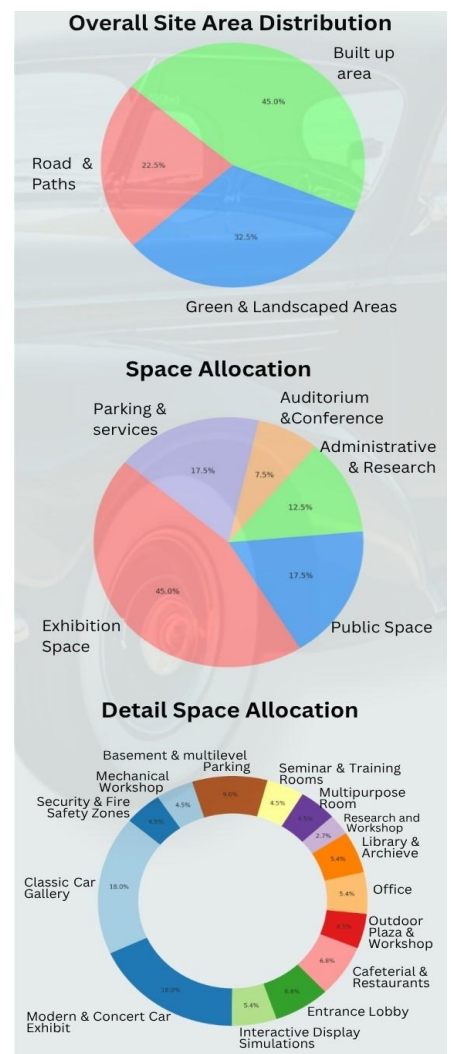
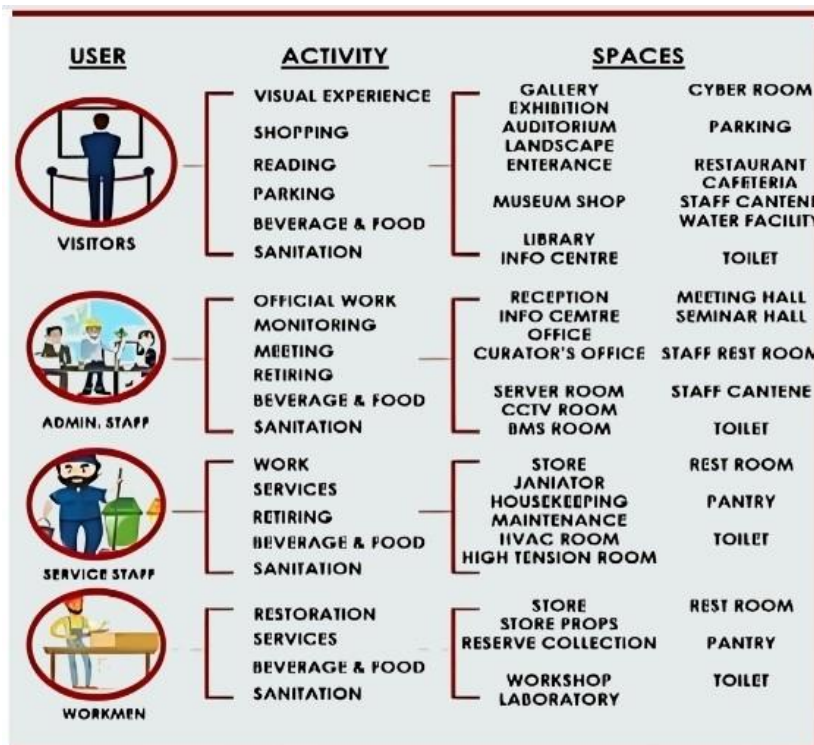
# 2.7.6 CLIMATE ANALYSIS:

- The climate of greater noida is composite and monsoon-influenced luanid subtropical climate with high variation between summer and winter.
- **Temperature range** here has been between 0.6°-47° C .
- **Precipitation** receives on average 715 mm of precipitation annually or 60 mm each month on balance there are 57 days annually on which greater than 0.1 mm of precipitation occurs or 5 days on an average month.



Season	Temperature range
Winter	5°C-20°C
Spring	15°C-30°C
Summer	30°C-45°C
Monsoon	25°C-35°C
Autumn	15°C-30°C

## 2.7.8 ACTIVITY ANALYSIS:



## 2.7.9 SWOT ANALYSIS:



### STRENGTHS

- Strategic Location – Well-connected to expressways & highways, attracting Delhi-NCR visitors.
- Automobile Industry Hub – Close to Maruti, Honda, and major industrial zones.
- Rising Car Culture – Increasing interest in motorsports & vintage cars.

- Limited Footfall – Requires strong promotion to attract consistent visitors.



- High Investment – Depends on sponsorships for vintage cars & exhibits.



### OPPORTUNITIES

- Automobile Heritage Hub – Promotes India's car history & education.
- Smart & Green Tech – Uses sustainable design, VR & interactive exhibits.
- Auto Shows & Events – Ideal venue for expos, races & design workshops.

- Entertainment Competition – Malls & theme parks may attract visitors away.
- Regulatory Challenges – Land use & vehicle policies may impact operations.



### THREATS



# LITERATURE STUDY

## 3.1 LITERATURE STUDY – 01

### 3.1.1 MERCEDES BENZ MUSEUM: STUTTGART

Architect: UNStudio

Location: Stuttgart, Germany

Site Area: 35,000 m<sup>2</sup>

Exhibition Space: 16,500 m<sup>2</sup>

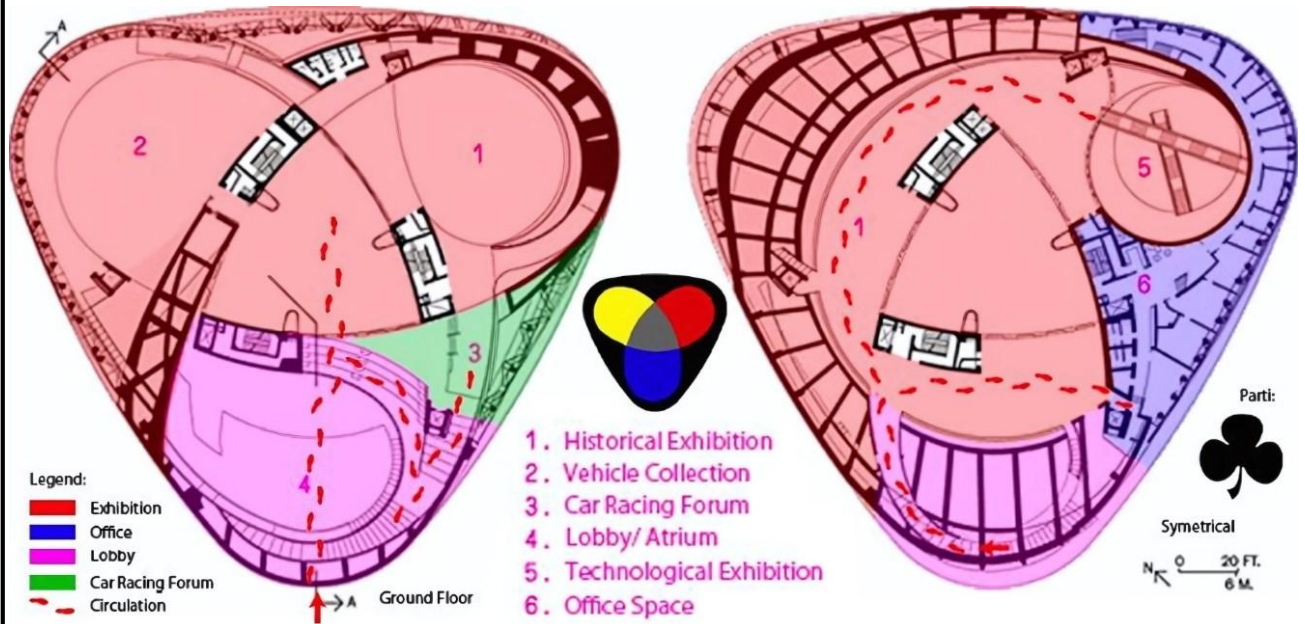
Technical Space: 1,300 m<sup>2</sup>

Height of the Building: 47.5 m. [9 Levels]

Exhibited Vehicles: 160

**Building Concept:** The structure of the MB Museum is based on a trefoil; both in its internal organization and in its outward expression this geometry responds to the car-driven context of the museum. Inside, walking down the ramps of the Museum, surrounded by cars of different ages and types, the visitor is reminded of driving down the highway. Outside, the smooth curves of the building echo the rounded vernacular of nearby industrial and event spaces, such as the soccer stadium, the Mercedes-Benz test course, and the gas and oil tanks along the river, as well as the recurrent loops loops of the road system on site.





Ground Floor & 1<sup>st</sup> Floor Plans showing various Spaces



The Mercedes Benz Museum intricately combines structure and content. The Museum is dedicated to a legendary car; its unique structure has been specifically devised to showcase a collection in which technology, adventure, attractiveness and distinction are merged. It is also a Museum for people to freely move through, to dream, learn, look and let themselves be oriented by fascinations, light and space...

Lastly, it is a Museum for the city, a new landmark to celebrate the enduring passion of Stuttgart's most famous inventor and manufacturer.



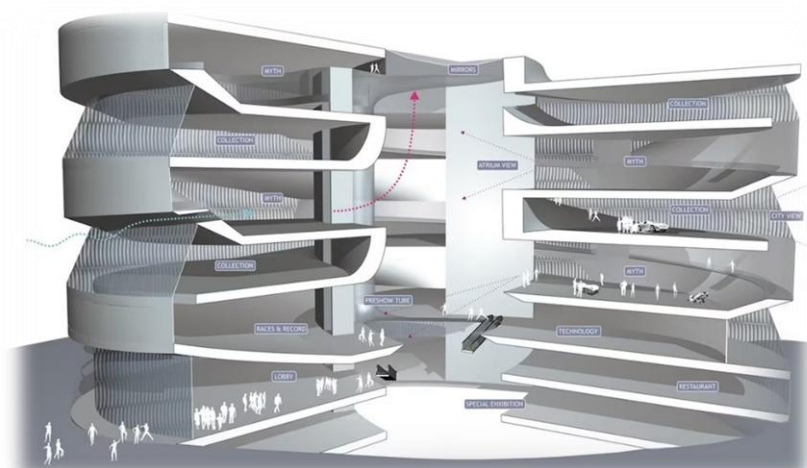
### **3.1.2 CONTEXT:**



### Site Plan



Circulation among various



### Cross Sectional Detail

## 3.2 LITERATURE STUDY – 02

### 3.2.1 ENZO FERRARI MUSEUM: ITALY

Architect: Future Systems-Jan Kaplicky + Shiro Studio

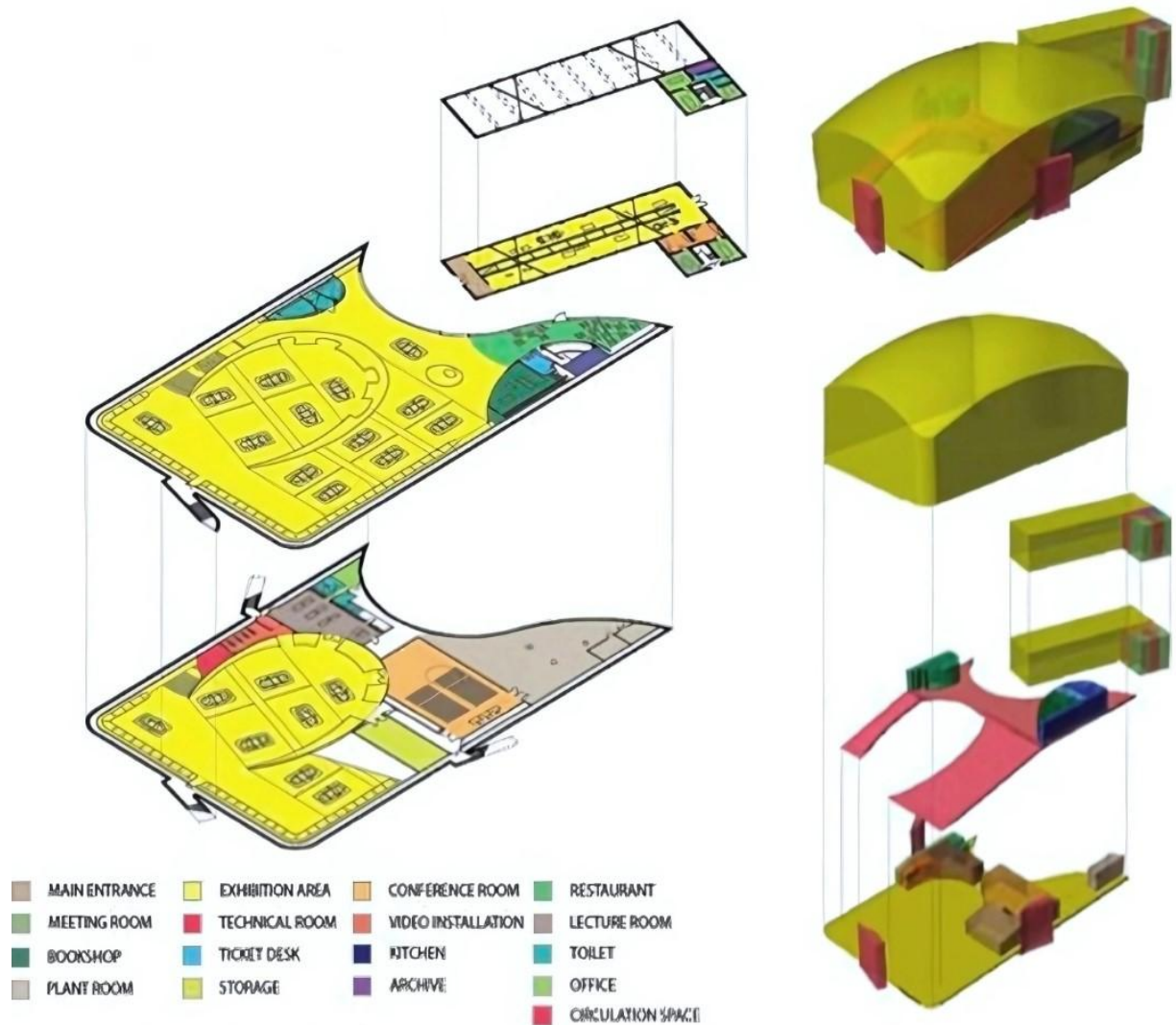
Location: Province of Modena, Italy

Site Area: 10,600 m<sup>2</sup>

Gross Floor Area: 5,200 m<sup>2</sup> [4,200 m<sup>2</sup> Galleria + 1,000 m<sup>2</sup> Ferrari House]

Project Year: 2012

Building Concept: The non-linear structure has a streamlined yellow aluminium roof that matches the colour of the Ferrari Logo and features sliced incisions intended to resemble the air intake vents on the bonnet of the car.



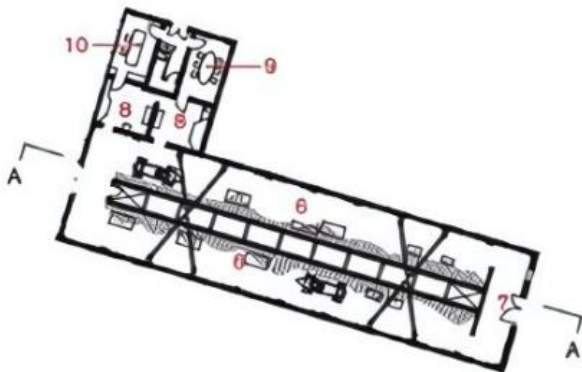
Internal Zoning & form Analysis





# 3.2.2 FLOOR PLAN & SECTION:

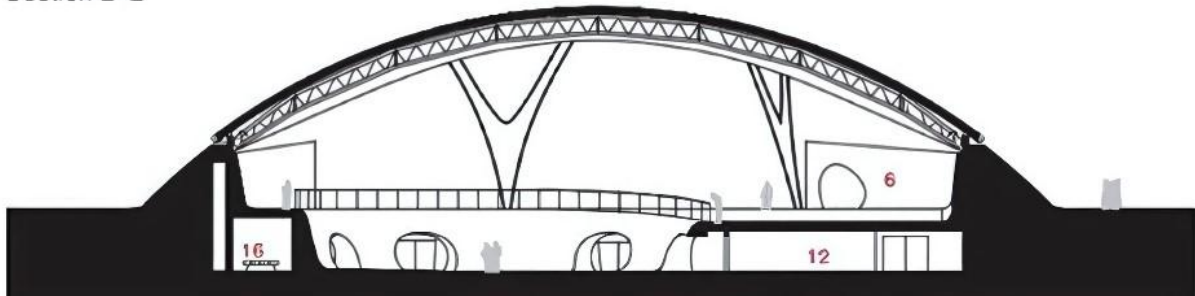
Ferrari house first floor



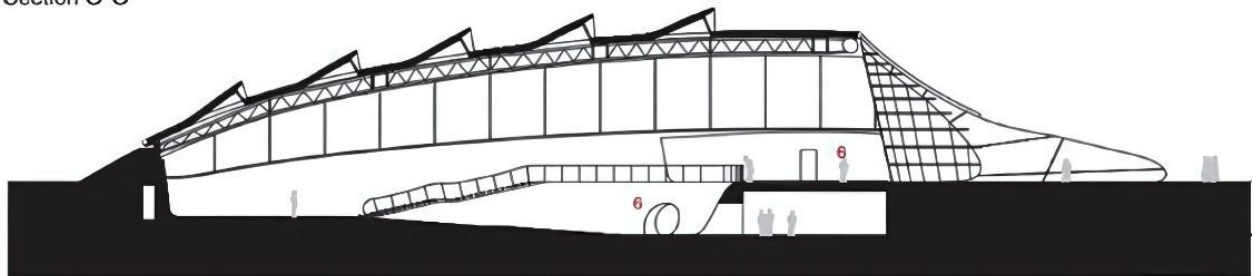
Section A-A

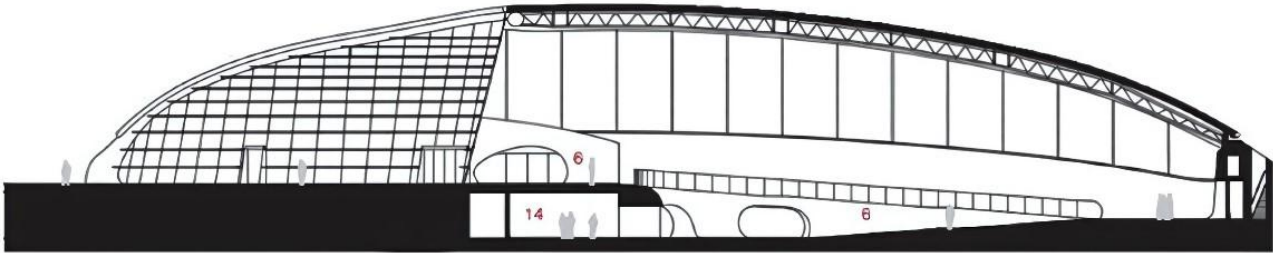


Section B-B



Section C-C

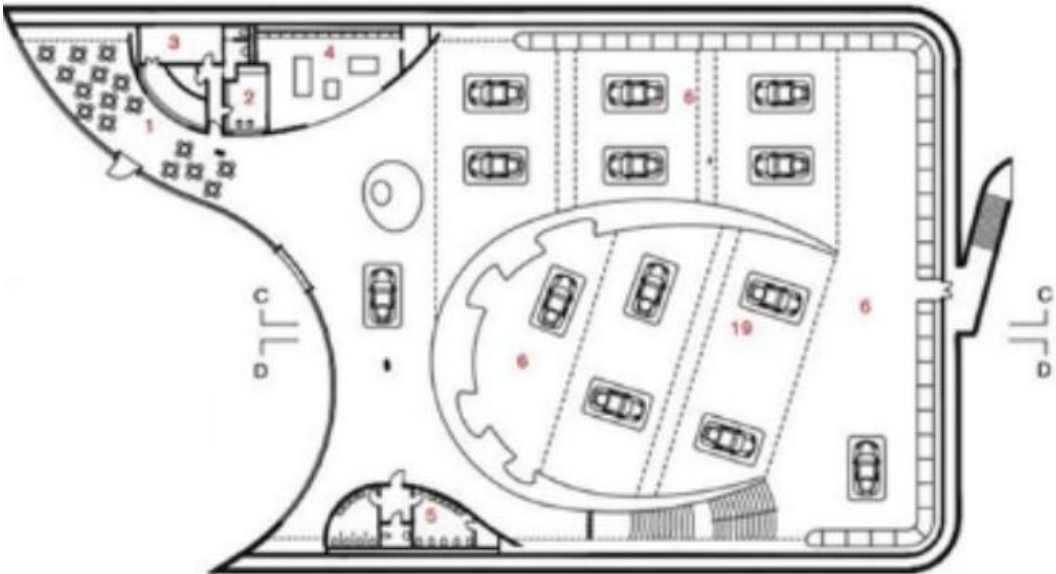
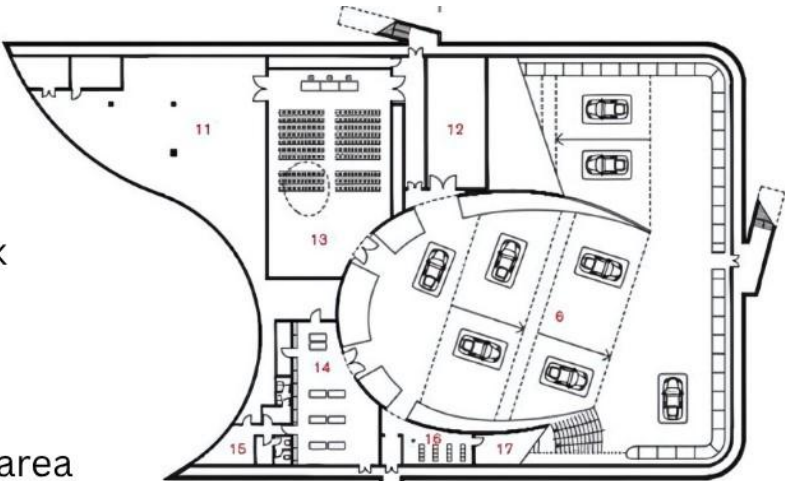




**Legend**

- 1. Cafeterial  
restaurart
- 2. Ticket desk
- 3. Kitchen
- 4. Bookshop
- 5. WC
- 6. Exhibition area
- 7. Main entrance to  
house
- 8. Exhibicion room
- 9. Meeting room
- 10. Office
- 11. Plant
- 12. Storage
- 13. Conference room

- 14. Didactic room
- 15. Staff room
- 16. Video installation  
room
- 17. Technical room
- 18. Archive room
- 19. Void



# CASE STUDY



## 4.1 CASE STUDY – 01

### 4.1.1 HERITAGE TRANSPORT MUSEUM : HARYANA

- Location: taoru, gurugram, haryana, india
- Architect: m.N. Ashish ganju
- Year of completion: 2013
- Site area: ~90,000 sq. Ft
- Built-up area: ~100,000 sq. Ft
- Typology: transport museum
- Significance: india's first comprehensive
- Transport museum, dedicated to the evolution of mobility in india.



### 4.1.2 SITE SURROUNDINGS:



**CHAUDHARY DHABA**



**APOLLO TYRE**



**EXHIBITION AREA**



**SITE PLAN**



**HP PETROL PUMP**



**HERITAGE TRANSPORT  
MUSEUM**



**AGRICULTURE LAND**



### 4.1.3 SITE LOCATION:



INDIA



HARYANA



SITE PLAN

### 4.1.4 SITE PLAN:



### 4.1.5 AMENITIES & SPACES PROVID

- Cafeteria: 50 sq.m, capacity of 50-60 people, square tables with four chairs.
- Mini Auditorium: Seats 15-20 people for regular transport-related film screenings.
- Souvenir Shop: 15 sq.m, located next to the cafeteria.
- Library & Reference Centre:
- Level 3 – Books & magazines on cars and transport.
- Conference Room:
- Capacity: 300+ people, used for corporate/events.
- Terrace Access: Connected to a spacious outdoor terrace.



## 4.1.6 EXHIBITION INCLUDE

- Automobile gallery
- Two wheelers
- Railways
- Aviation
- Art gallery
- Maritime gallery
- Rural transportation



## 4.1.7 CONCEPT:

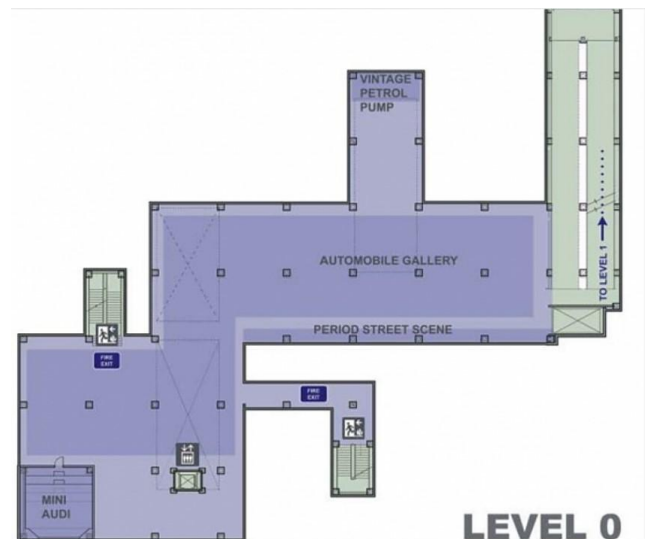
The insides and the outsides of the gallery utilizes a solid mechanical language and makes an impression of a manufacturing plant that may have been utilized to create huge numbers of the displays. Huge numbers of them are shown in settings where they would be required to be found, all things considered, roads, before shops and noticeable all around



## 4.1.8 FLOOR LAYOUT:



Basement Layout of Heritage Transport museum (source- Jyothi Rath and Associates)



Ground Floor Layout of Heritage Transport museum (source- Jyothi Rath and Associates)



Figure 2.21 First Floor Layout of Heritage Transport museum (source– Jyothi Rath and Associates)

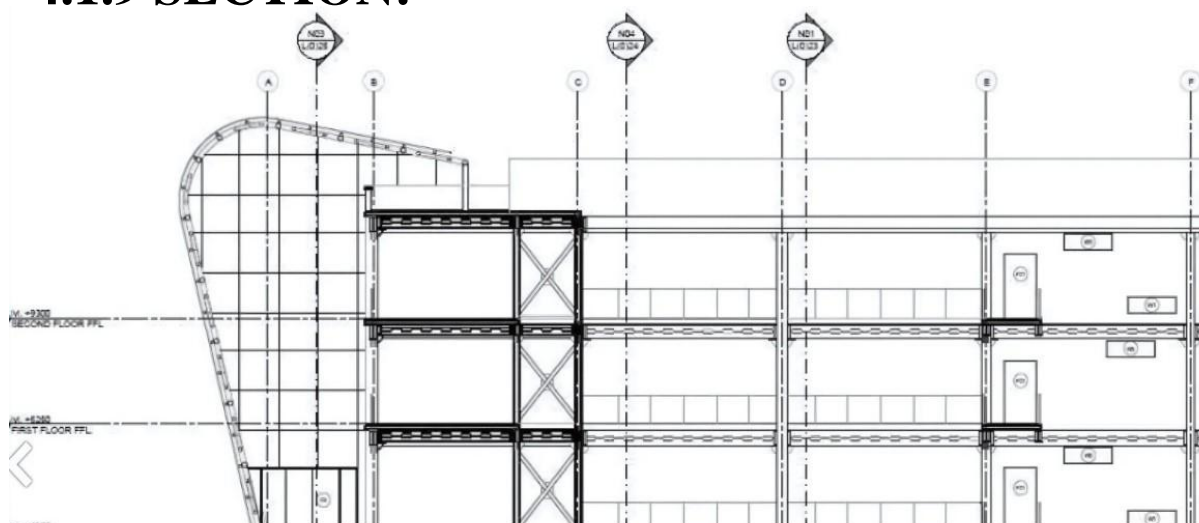


### LEVEL 3

Second Floor layout of heritage Transport museum (source – jyothis Rath Associates)

- |                   |                |                   |
|-------------------|----------------|-------------------|
| • SERVICE AREA    | • PRIVATE AREA | • SERVICE AREA    |
| • DISPLAY AREA    | • LIBRARY      | • DISPLAY AREA    |
| • PEDESTRIAN AREA |                | • PEDESTRIAN AREA |
| • EXHIBITION AREA |                | • EXHIBITION AREA |

## 4.1.9 SECTION:



Section of Heritage Transport museum (source– Jyothi Rath and Associates)

## 4.1.10 INFERENCES

The entry for the museum is not welcoming as it is supposed to be for a public place like a museum. It has no separate service entry.

The museum is well planned for all the types of people (including handicaps)

The use of natural light is avoided, which puts strain on energy consumption by encouraging the use of artificial lighting.

## 4.2 CASE STUDY– 02

### 4.2.1 AUTOWORLD VINTAGE CAR MUSEUM :AHMEDABAD

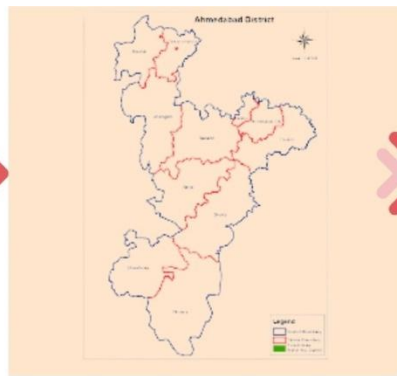
- Location: Dastan Estate, Kathwada, Ahmedabad, India
- Founder: Pranalal Bhogilal
- Established: 1927 (Collection), Opened as a museum in 2006
- Typology: Vintage Car Museum
- Significance: Houses one of India's largest collections of vintage and classic automobiles.



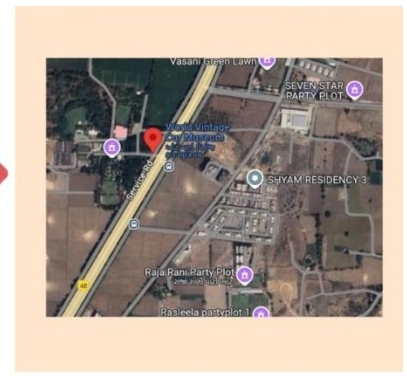
### 4.2.2 SITE LOCATION:



INDIA



AHMEDABAD



SITE PLAN



### 4.2.3 ARCHITECTURE CONCEPT & DESIGN PHILOSOPHY

Designed to preserve and showcase heritage automobiles in a semi-open setting. Inspired by colonial and industrial architecture, integrating large-span pavilions for easy movement. Focuses on experiential storytelling, emphasizing the craftsmanship of vintage cars.



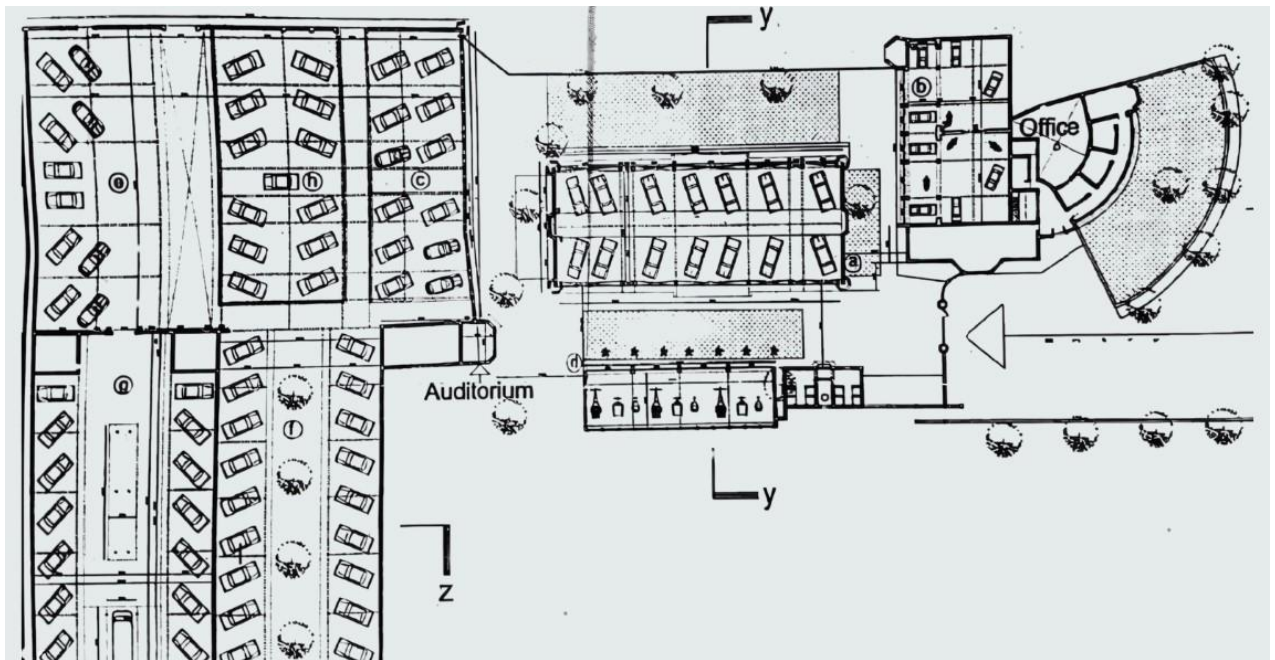


## 4.2.4 SITE ZONING:

1. Admin office and souvenir shop
  2. Cafeteria
  3. Vintage village restaurant
  4. Fun world (play area for kids)
  5. Auto world museum
- Sardar patel ring road (-----)



## 4.2.5 FLOOR LAYOUT:



## 4.2.6 ADMINISTRATION:

The museum is governed by Mr. Bhailal Patel who is the director of the museum.

- Security: 5 officials

Cleaning and maintenance of cars is on a weekly basis by 15 to 20 employees.

The revenue obtained from the museum is used for donation by the royal family.



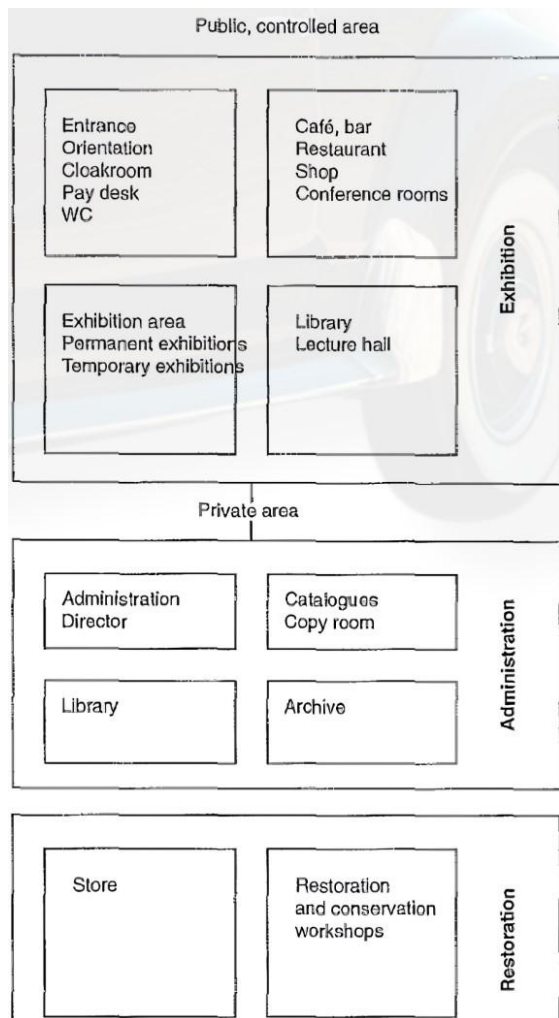
## 4.2.7 INFERENCES

The museum houses 105 vintage cars but the exhibition of these cars is not visually appealing. They are just placed adjacent to each other which resembles a parking lot.

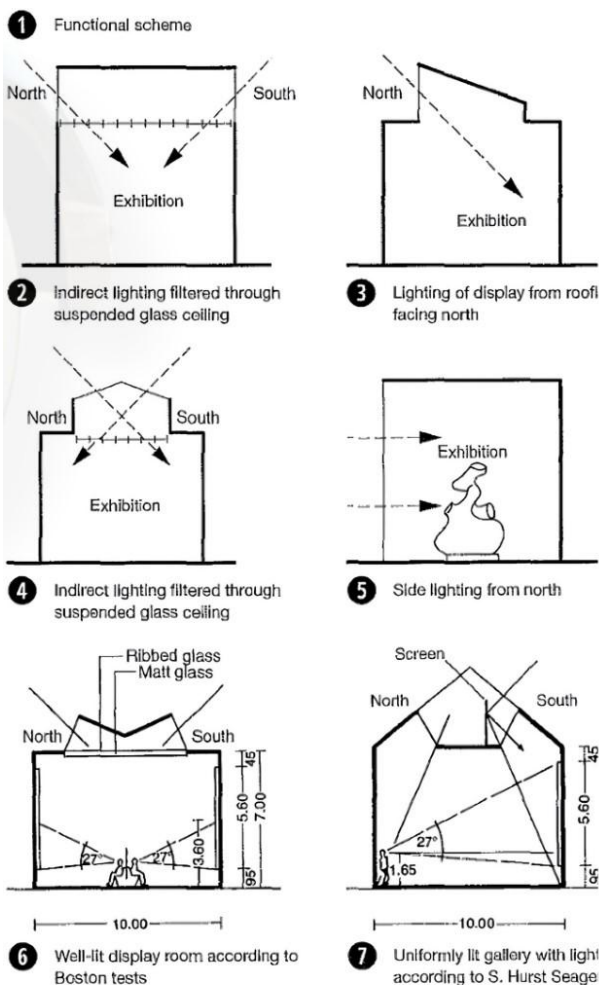
As the farm was converted into a museum, the important design parameters of a museum were not been incorporated.

# Standard

# 5.1 NEUFERT STANDARDS:



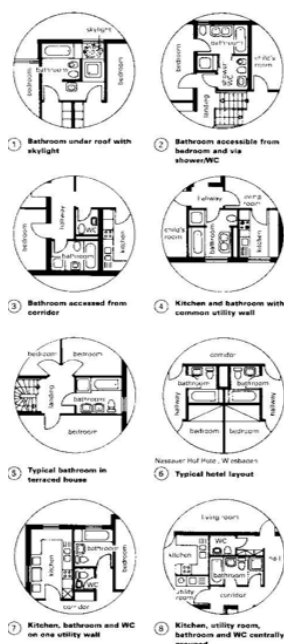
AREAS DIVISION



LIGHTING NORMS

## BATHROOMS

### Location



Bathrooms with WCs are self-contained rooms which are equipped with all of the fittings necessary to meet all the sanitary needs of the occupants. However, the plan should ideally include two separate lockable rooms for the bathroom and WC and this is essential in dwellings for more than five people. A bathroom with WC can be directly accessible from the bedroom as long as another WC can be reached from the corridor - (2) + (3).

A bathtub and/or shower tray plus a wash-basin are installed in the bathroom, while a flushing toilet, bidet and hand washing basin are installed in the WC. For cost efficiency and technical reasons the bathroom, WC and kitchen should be planned such that they can share the same service ducts - (3) + (4), (7) + (8). In multistorey homes, an arrangement such that the utility walls for the bathrooms and WCs are directly above one another helps to keep installation costs and the necessary sound insulation measures as low as possible. However, adjacent bathrooms in two different flats must not be connected to a single supply or discharge pipe system.

The bathroom and WC should be orientated towards the north, and should normally be naturally lit and ventilated. At least four air changes per hour are required for internal rooms. For comfort, a bathroom temperature of 22 to 24°C is about right. A temperature of 20°C is suitable for WCs in homes. This is higher than that encountered in office buildings, where 15 to 17°C is the common norm.

Bathrooms are particularly susceptible to damp so appropriate sealing must be provided. Surfaces must be easy to clean because of high air humidity and condensation, and the wall and ceiling plaster must be able to withstand the conditions. Choose slip resistant floor coverings.

Consider the required noise insulation: the noise levels from domestic systems and appliances heard in neighbouring flats or adjoining rooms must not exceed 35 dB(A).

At least one sealed electrical socket should be provided at a height of 1.30m beside the mirror for electrical equipment. It is also necessary to consider the following for the bathroom/WC: cupboards for towels, cleaning items, medicines and toiletries (possibly lockable), mirror and lighting, hot water supply, supplementary heater, towel rails, drier, handles above the bathtub, toilet paper holder within easy reach, toothbrush holder, soap container and storage surfaces.

## LIGHTING REQUIREMENTS:-

EXHIBITION AREA	100-200 LUX
FOYERS	150 LUX
OFFICES	300 LUX
PARKING	50 LUX
RESTAURANT	100 LUX
TOILETS	100 LUX

• Different types of Display techniques can be incorporated inside a Museum.

• The selected typology shall be able to communicate the intent of the displayed item with the people, so as to give maximum understanding of the object.

• Displaying technique widely depends upon the type of object displayed.

**FREESTANDING DISPLAY TECHNIQUE**

**MODULAR & DRAWER DISPLAY TECHNIQUE**

**TABLE TOP DISPLAY TECHNIQUE**

**WALL DISPLAY TECHNIQUE**





# LIBRARY STUDY

	STANDARDS	
	COMMERCIAL	RETAIL
ENTRY	N/A	N/A
EXIT	N/A	N/A
FIRE LIFT	1 PER 30 mt.	1 PER 30 mt.
SERVICE LIFT	1 PER 30 mt.	1 PER 30 mt.
PASSENGER LIFT	1 PER 30 mt.	1 PER 30 mt.
FIRE STAIRCASE	1 PER 30 mt.	1 PER 30 mt.
MAXIMUM RISER	150 mm	150 mm
MAXIMUM TREAD	300 mm	300 mm
MAXIMUM WIDTH	1 UNIT/ 25 PERS.	1 UNIT/ 25 PERS.
BASEMENT	ACCORDING TO BUA	ACCORDING TO BUA
BASEMENT ENTRY	AS PER REQUIREMENT	AS PER REQUIREMENT
BASEMENT HEIGHT	FFL TO BOB 2400 mm	FFL TO BOB 2400 mm
BASEMENT RAMP WIDTH	1 UNIT/60 PERS.	1 UNIT/60 PERS.
HANDICAPPED RAMP	MIN. WIDTH 1200 mm	MIN. WIDTH 1200 mm
FIRE TENDER ROAD	MIN. 6000 mm	MIN. 6000 mm
TOILET	1/25 PERS.	1/25 PERS.
FIRE TANK	MIN. 2 LAC.LT.	MIN. 2 LAC.LT.
WATER TANK	45 LT. PER PERSON	45 LT. PER PERSON
HVAC	25-30 TONS/100 SQ.FT.	25-30 TONS/100 SQ.FT.
DG SET	15 SQ.FT. PER WATT	15 SQ.FT. PER WATT
PARKING	ACCORDING TO BUA	ACCORDING TO BUA
FIRE EXIT	1 PER 30 mt.	1 PER 30 mt.
FAN ROOM	N/A	N/A
SMOKE DETECTORS	1/6MT. RADIUS	1/6MT. RADIUS
SPRINKLERS	1/3MT. RADIUS	1/3MT. RADIUS
GARBAGE CHUTE	N/A	N/A

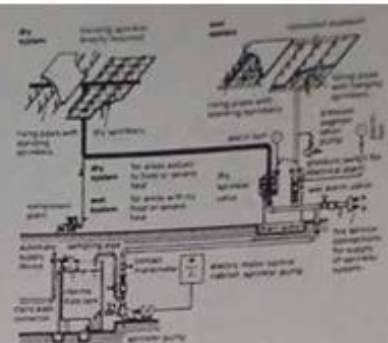
# FIRE FIGHTING :

BUILDING REGULATIONS REQUIRE THAT DUE CONSIDERATION MUST BE GIVEN IN BUILDINGS TO:  
THE ARRANGEMENT OF ESCAPE ROUTES.  
THE AIM IS TO PREVENT THE START AND SPREAD OF A FIRE  
SYSTEM THE SPREAD OF SMOKE AND FACILITATE THE ESCAPE  
OR RESCUE OF PERSONS.

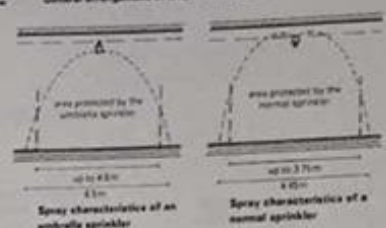
IN ADDITION CONSIDERATION MUST BE GIVEN TO EFFECTIVE  
EXTINGUISHING OF A FIRE. ACTIVE AND PASSIVE PRECAUTIONS  
MUST BE TAKEN TO SATISFY THESE REQUIREMENTS.  
ACTIVE PRECAUTIONS ARE THOSE SYSTEMS THAT ARE  
AUTOMATICALLY DEPLOYED IN THE EVENT OF FIRE.  
ACTIVE PRECAUTIONS INCLUDE SMOKE AND  
FIRE ALARM SYSTEMS, SPRINKLER SYSTEMS.

WATER SPRAY EXTINGUISHERS PLANT, CO2 EXTINGUISHING  
INSTALLATIONS, POWDER AND FOAM EXTINGUISHER PLANT,  
AND AUTOMATIC SMOKE AND HEAT VENTING SYSTEMS.

EXIT AND DOORWAYS : EXITS SHALL BE LOCATED SO THAT  
THE TRAVELL DISTANCE ON THE FLOOR SHALL NOT EXCEED 30M.  
EXIT SHALL NOT BE LESS THAN 1000 MM IN WIDTH.  
DOORWAYS SHALL NOT BE LES THAN 200 MM IN HEIGHT.  
EXIT DOORWAYS SHALL OPEN OUTDOORS.  
FIRE STAIRCASE : FIRE ESCAPE STAIRS HAVE STRAIGHT  
FLIGHT NOT LESS THAN 1250MM WIDTH.



General arrangement of a sprinkler system

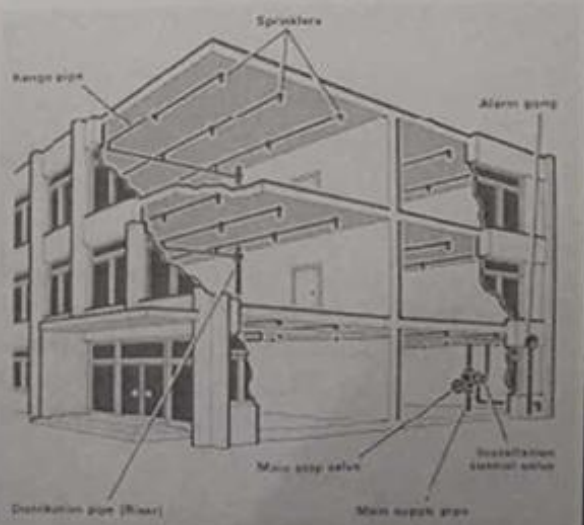
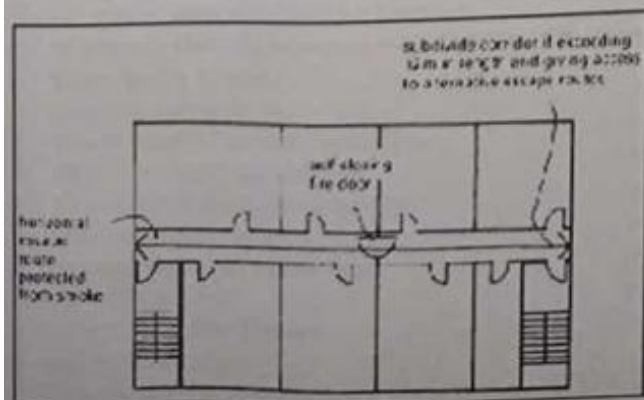


The no. of exits & escape routes required also depends on the maximum no. of people in the area under consideration. Below are typical requirements:-

500 people	2 exits
1000	3
2000	4
4000	5
7000	6
11000	7
16000	8
16000+	8 plus one extra 500 persons

The minimum width of horizontal escape routes is also determined by the no. of people using them. Typical values are:

50 people	800mm
110	900mm
220	1100mm
220+	extra 5mm per person



## 5.2 COMPARITIVE AREA ANALYSIS ANALYSIS:

S.No.	PARAMETER	AREA IN CASE STUDY -1 (HERITAGE TRANSPORT MUSEUM, GURGAON)	AREA IN CASE STUDY -2 ( AUTOWORLD VINTAGE CAR MUSEUM,AHME DABAD)	AREA IN LITERATURE STUDY -1 (MERCEDES MUSEUM, STUTTGART )	AREA IN LITERATURE STUDY -2 (ENZO FERRARI MUSEUM ITALY)	AREA IN NORMS (Neufert/NBC)	REQUIRED AREA	REMARK
1	Site Analysis							
	Locatin	Gurgaon, India	Ahmedabad, India	Stuttgart, Germany	Modena, Italy	Greater Noida		
	Site Area	~9,000sqm	10,000sqm	16,500sqm	5,000 (building), 51,000 (site)	3-5 acres	10.5 acre	
	Built-Up Area	8,825 sq m	-	53,000 sq m	3,300 sq m	25-40% (for low-rise, spread-out use)	169968.12 sqm	
1	Administration							
	Reception	50sqm	160sqm	120sqm	55sqm	10-20 sqm (small), 30-50 sqm (large)	100sqm	
	Waiting Area	30sqm	70sqm	50sqm	25sqm	1.4-1.8 sqm/person (Neufert)	56sqm	
	Staff office	-	-	180sqm	200sqm	-	150sqm	
	Manager's cabin	-	55sqm	30sqm	32sqms	10-15 sqm (Neufert), 12-18 sqm (NBC)	26sqm	1 (manager) + 2-3 visitors
	Chairman's cabin	20sqm	87sqm	50sqm	46sqm	20-30 sqm (executive level)	30sqm	1 (Chairman) + 2-3 visitors
	Confrence Room	-	-	100sqm	80sqm	1.5-2 sqm/person (for 10-20 people: 30-40 sqm)	60sqm	for 30 people
	Pantry	-	-	-	-		20sqm	working platform
	Toilet	84sqm	25sqm	20sqm	28sqm	2.2-4.5 sqm per WC (NBC norms)	80sqm	each floor
	Storage	-	60sqm	-	-	5-10% administration area(NBC)	40sqm	for records & files
2	Entrance and visitor Lobby							
	Information desk	-	15sqm	50sqm	48sqm	Min. 3-5 sqm; ceremonial/public entries: 10-20 sqm	50sqm	
	Baggage Counter	-	-	-	-		20sqm	locker area
	Ticket Counter	-	25sqm	20sqm	60sqm	1.5-2 sqm per visitor; large museums: 100-200 sqm	100sqm	
	Lobby	200sqm	260sqm	300sqm	280sqm	1.8-2 sqm per person (Neufert); higher for museum lobbies	200sqm	
	Toilet	84sqm	25sqm	20sqm	28sqm	2.2-4.5 sqm per WC (NBC); 1 WC per 50-75 visitors recommended	50sqm	each floor
3	Museum							
	Interpretation area (History of Automobile)							
	Interpretation area	500+sqm	-	2000sqm	600+sqm	2-4 sqm/person for exhibit halls (Neufert); museum exhibit ~25-50% of total area	1200sqm	for antique car parts
	Storage	-	-	-	-	5-10% of total built-up area (NBC); conditioned if housing artifacts	70sqm	for interpretation space
	Vlrtual Simulation Rooms	75sqm	-	-	-	6-10 sqm per user station; clear 1.5-2m movement zone (Neufert)	200sqm	game zone
	Toilet	84sqm	25sqm	20sqm	28sqm	2.2-4.5 sqm per WC; 1 per 50-75 users + accessibility units (NBC)	70sqm	each floor
	Museum Gallery (display area)							
	Exhibition area	2800sqm	7500sqm	5000sqm	3000+sqm	2-4 sqm/person for exhibit halls (Neufert); museum exhibit ~25-50% of total area	8800sqm	display area
	Pre Functional room	-	-	-	-	1.5-2.5 sqm/person; design for group waiting or interactive orientation (NBC)	120sqm	
	Storage	-	-	-	-	5-10% of total built-up area (NBC); conditioned if housing artifacts	140sqm	exhibition storage
	Toilet	84sqm	25sqm	20sqm	28sqm	2.2-4.5 sqm per WC (NBC); 1 WC per 50-75 visitors recommended	80sqm	each floor
4	Library							
	Reception & issue Counter	-	-	-	-	Small: 150-300 sqm; Medium: 300-600 sqm; Large: 600-1000+ sqm	150sqm	
	Book Stock Area	27sqm	-	-	-	15-20 sqm for reception; add 5-10 sqm per librarian (NBC)	100sqm	for 1000 books

## 5.3 COMPARITIVE AREA ANALYSIS ANALYSIS:

	Reading Area	15sqm	-	-	-	2.5-3 sqm per reader (quiet reading); 4-5 sqm for informal settings	50sqm	
	E-Corner	-	-	-	-	4-6 sqm per station; 2m clear movement space (Neufert)	25sqm	
	Storage		-	-	-	10-15% of total library area; include compact shelving (NBC)	35sqm	
	Toilet	-	-	-	-	1 toilet per 25-50 users; minimum 2.2- 4.5 sqm/WC + accessible units	40sqm	
5	Food Court							
	Food Kiosk	20sqm	10sqm	40sqm	20sqm	14-2.0 sqm/person; food court: 300-500 sqm (medium), 800+ sqm (large, per Neufert)	500sqm	
	Seating area	60sqm	20sqm	120sqm	40sqm	8-15 sqm per kiosk; separate for prep and service (NBC)	100sqm	
4	Restaurant							
	Dining Area	80sqm	-	200sqm	60sqm	1.6-2.2 sqm/person (formal); 2.5-3 sqm/person (buffet/self-serve) (NBC)	200sqm	400 users
	Kitchen	40sqm	10sqm	100sqm	30sqm	25-40% of dining area; minimum 50-100 sqm for commercial kitchen (NBC)	80sqm	
	Storage	20sqm	5sqm	40sqm	10sqm	10-15% of kitchen area; segregated dry/cold/utensil (NBC)	50sqm	
	Toilets	84(each floor)	50( each floor)	75(each floor)	98(each floor)	1 toilet per 50 guests; 2.2-4.5 sqm/WC + 1 universal accessible unit (NBC/UD guidelines)	40sqm	
5	Auditorium							
	Users	-	150sqm	-	-	0.6 to 0.9 square meters per person	150sqm	
	Entrance	-	45sqm	-	-	0.3-0.5 sqm/person; wide entry with visual connection to hall	45sqm	
	Seating area	-	130sqm	-	-	1.0-1.2 sqm per person (auditorium); add 20% for aisle/circulation	130sqm	
	Stage	-	20sqm	-	-	Depth 3-6 m minimum; width based on sightlines; ~40-60 sqm typical (Neufert)	50sqm	
	Green Room	-	50sqm	-	-	12-25 sqm per room; 1 per event/performance area	50sqm	
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	Projector Room	-	20sqm	-	-	8-15 sqm; visual and acoustic isolation; rear projection/sightlines (NBC)	15sqm	
	vip room	-	20sqm	-	-	15-30 sqm; lounge setup with privacy and rest amenities	20sqm	
	Store room	-	15sqm	-	-	5-10% of total hall area for furniture/tech (NBC)	25sqm	
	Toilets	-	60sqm	-	-	1 toilet per 50 audience members; 2.2-4.5 sqm per WC (NBC), include accessible units	50sqm	
6	Souvenir Shop							
	Shop	80sqm	30sqm	200sqm	100sqm	Small: 40-60 sqm; Medium: 80-120 sqm; Large: 150- 250 sqm (based on footfall & product variety)	50sqm	
	Storage	20sqm	50sqm	50sqm	20sqm	15-25% of shop area; separate dry, inventory & packaging space (NBC)	20sqm	
7	Service							
	Service Area(HVAC Room,AHU plant)	600sqm	200sqm	1200sqm	400sqm	700-1,200 sqm (7-10%) by thumb rule	750sqm	
	Restoration area	800sqm	300sqm	1000sqm	200sqm	250-500 sqm	300sqm	
	Firestaircase	2	-	3	3	NBC/Neufert: 30 m (non-sprinklered), 45 m (sprinklered)	as per building	
	Lift	1	-	7	-	Depends on occupancy/load & travel distance	as per building	
	Goods lift	-	-	-	-	Depends on occupancy/load & travel distance	1	
	Ramp/staircase	Provided	Provided	Provided	Provided	Depends on building height	as per design	
	Circulation	-	-	-	-	25% of floor area		

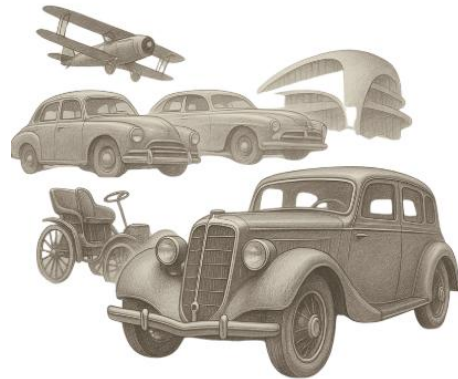
# CONCEPT



## 6.1 CONCEPT:

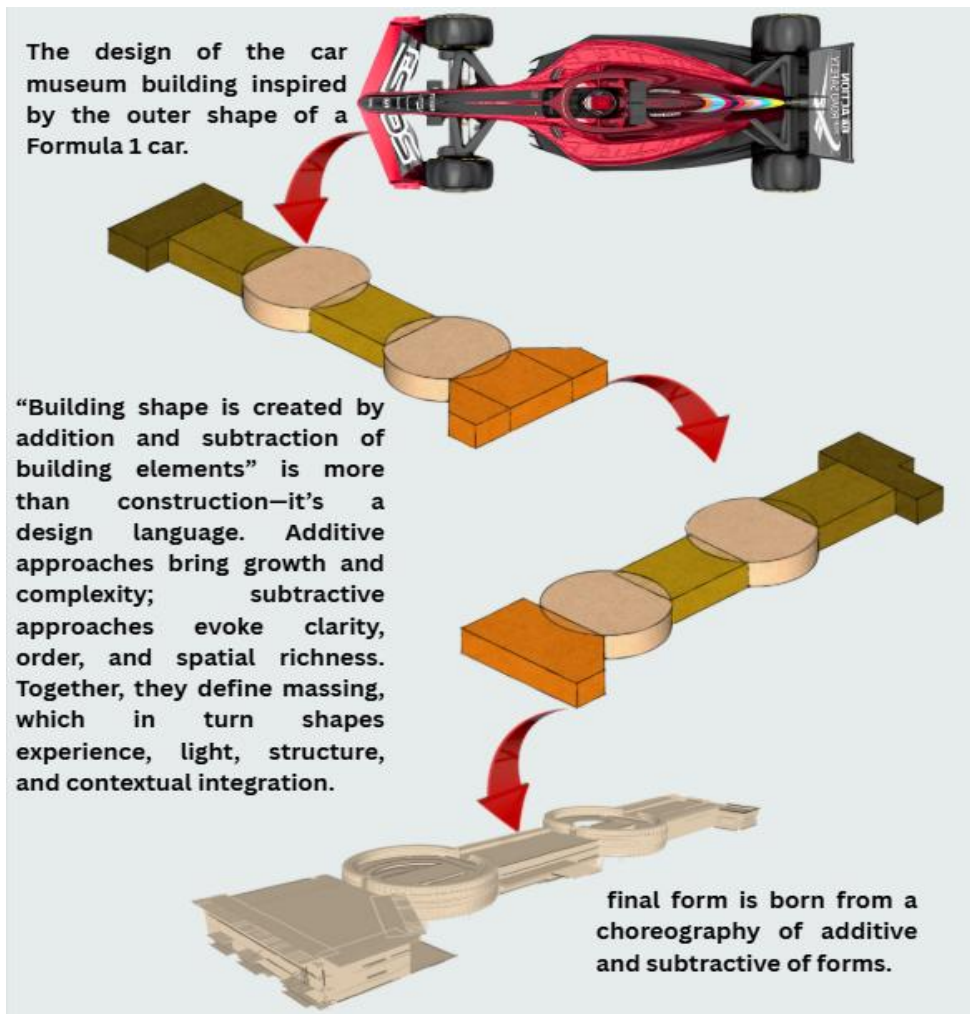
The whole project is a kind of story of an automobile era so the macroportion of a thrust area in my project is to summarize the whole journey through the presentation of the idea retrofuturism in the architecture.

its not only a design of building  
it is something about designing an...  
emotion  
feeling  
future  
support



### 6.1.1 FORM EVOLUTION:

The wheel is not just a mechanical invention — it is the symbol of movement, progress, and human ingenuity. This car museum draws its architectural essence from the geometry, motion, and evolution of the wheel, using it as a metaphor to design an immersive spatial experience that narrates the story of automobiles and mobility.



## 6.1.2 BUILDING FAÇADE:

The design choice not only reflects the museum's focus on automotive history but also serves as a visual metaphor for motion and innovation. The tyre-inspired facade creates a fluid and engaging exterior, drawing visitors into the museum's collection .

Such thematic architectural elements are part of a broader trend in museum design, where the building itself becomes an integral part of the storytelling experience, enhancing the connection between the structure and its exhibits.



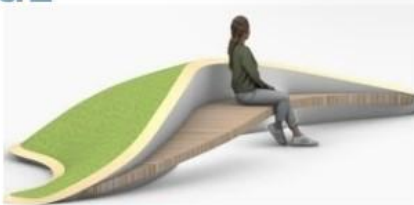
## 6.1.3 CONCEPTUAL VIEW:



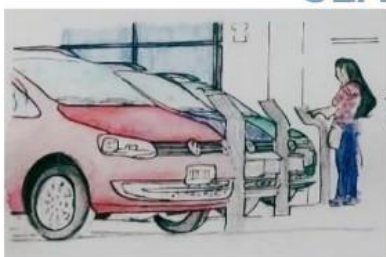
DISPLAY



PASSAGE

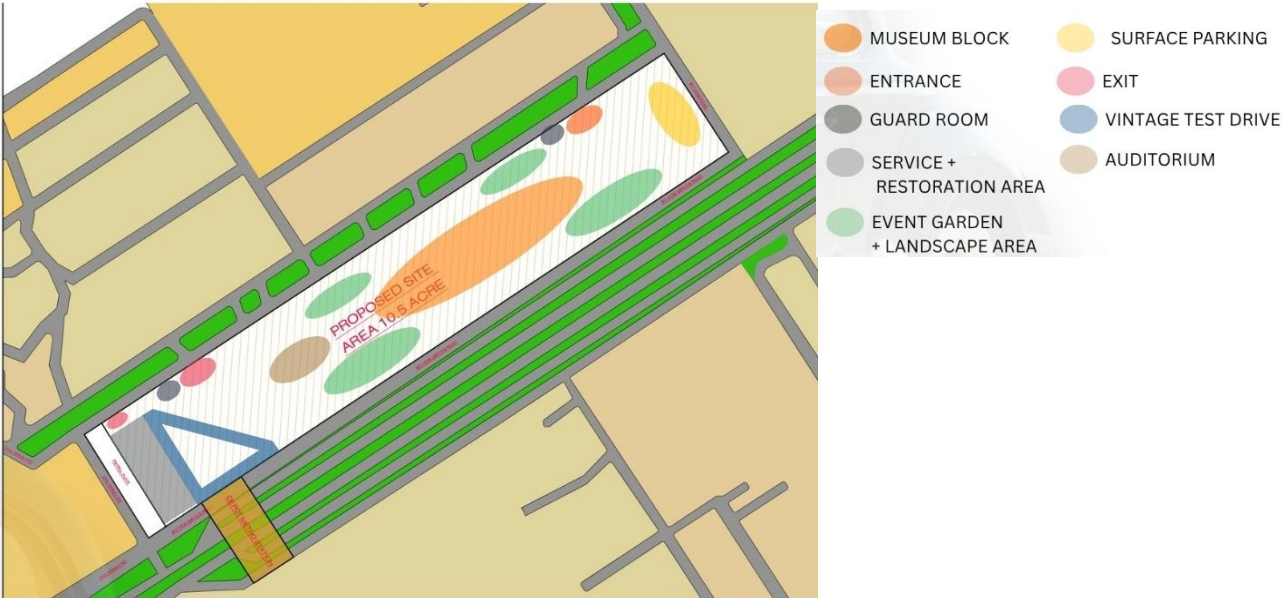


SEATING SPACE



PARKING SPACE

# 6.1.4 ZONING:



# 6.1.5 MUSEUM ZONING:

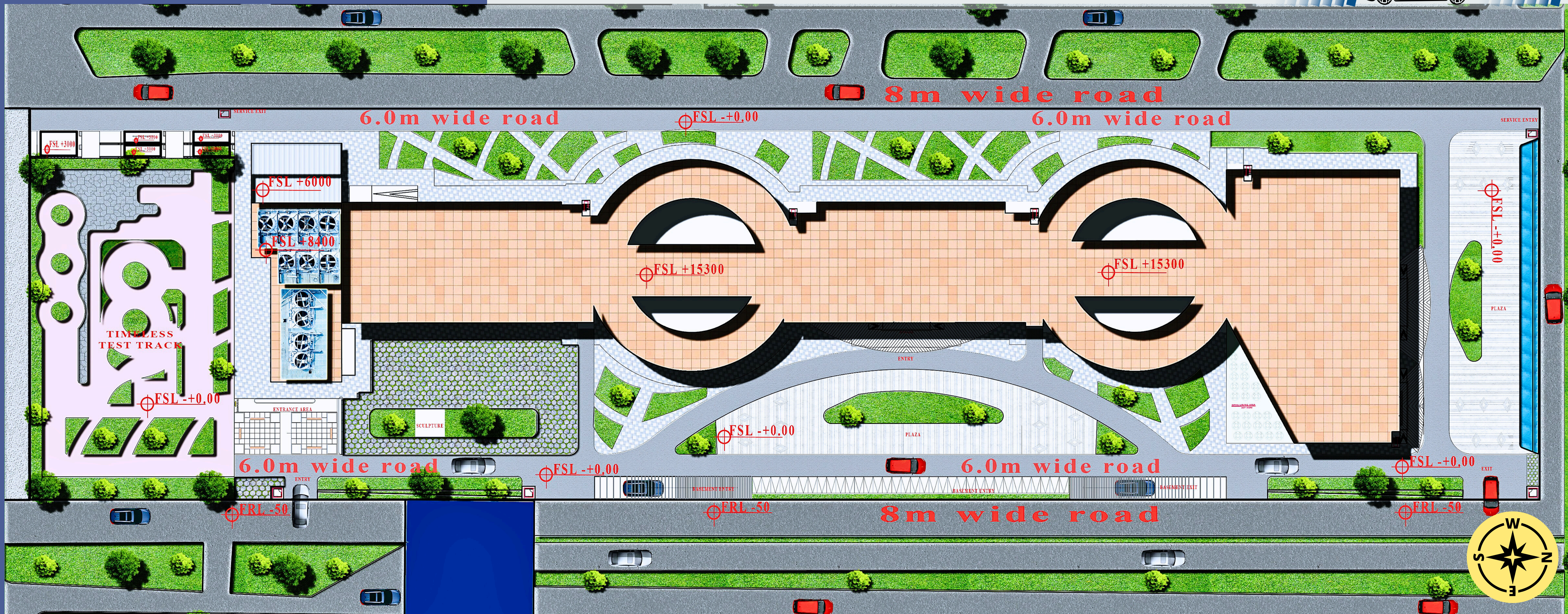




# DRAWINGS



# SITE PLAN



## Site Overview

- Site Area: 405.62 m × 105.68 m = 42,865.92 sqm (10.5 acres)
- Permissible Ground Coverage: 16,996.81 sqm

- Achieved Ground Coverage: 13,894 sqm
- Permissible Built-Up Area: 16,996.81 sqm

- Achieved Built-Up Area: 39,922 sqm
- Permissible Building Height: 10 floors

- Achieved Building Height: Ground + 2 floors (G+2)
- Total Hardscape Area: 20538.92 sqm
- Total softscape area: 8433 sqm

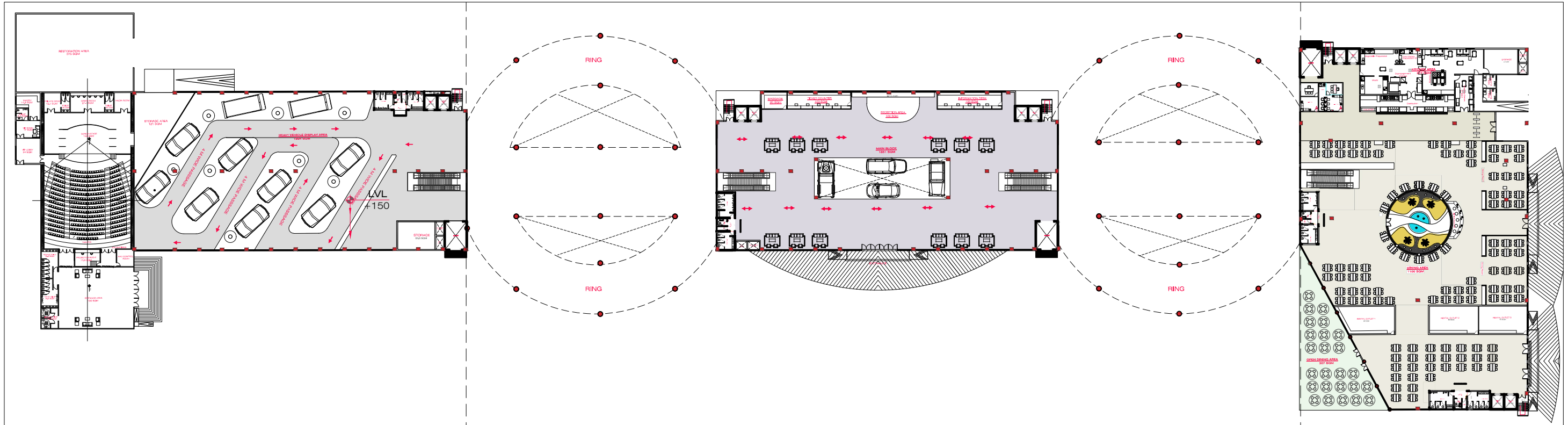
# The Museum Of Motion : Greater Noida

Thesis Guide: Prof. Mohit Kumar Agarwal

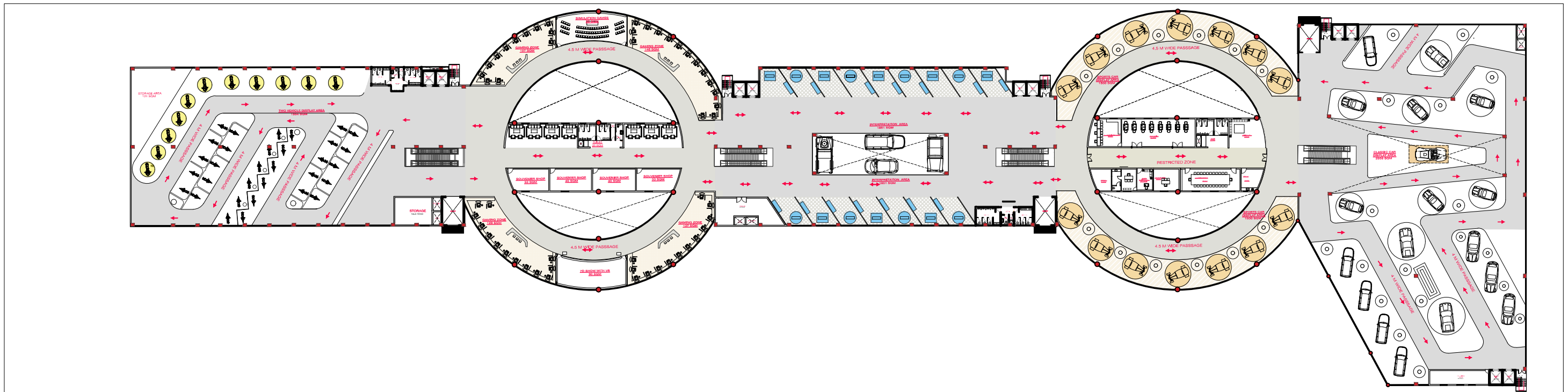
Hitesh Motiwala | 5th yr B.arch | 1200101010 | SAP BBDU



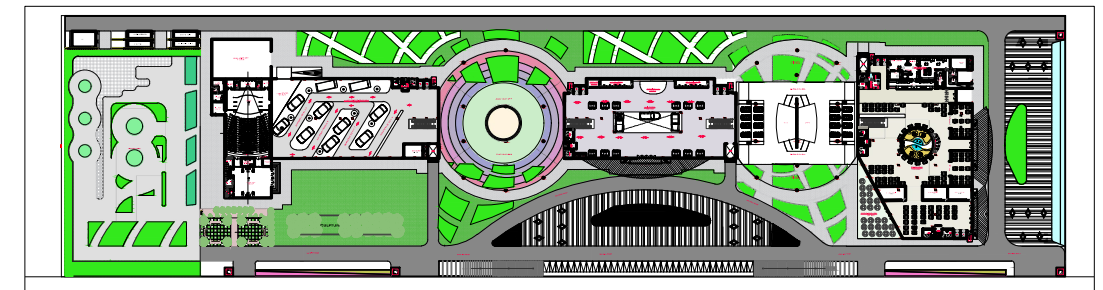




1 GROUND FLOOR PLAN  
Scale: 1:550

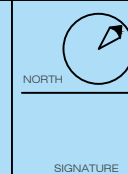


2 FIRST FLOOR PLAN  
Scale: 1:550



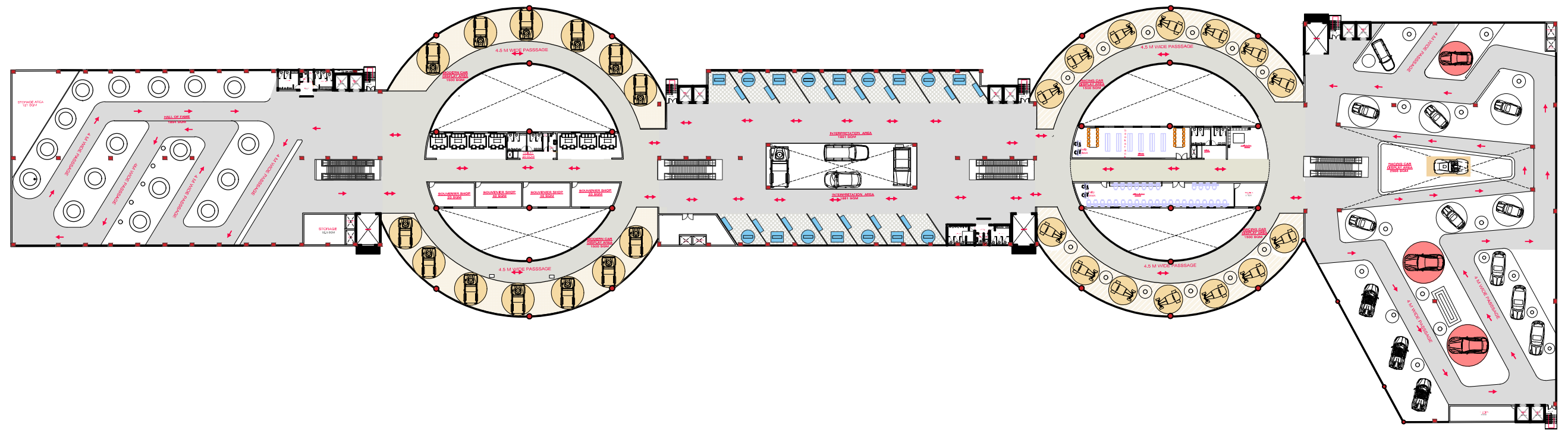
3 KEY PLAN  
Scale: 1:2000

# THE MUSEUM OF MOTION : GREATER NOIDA

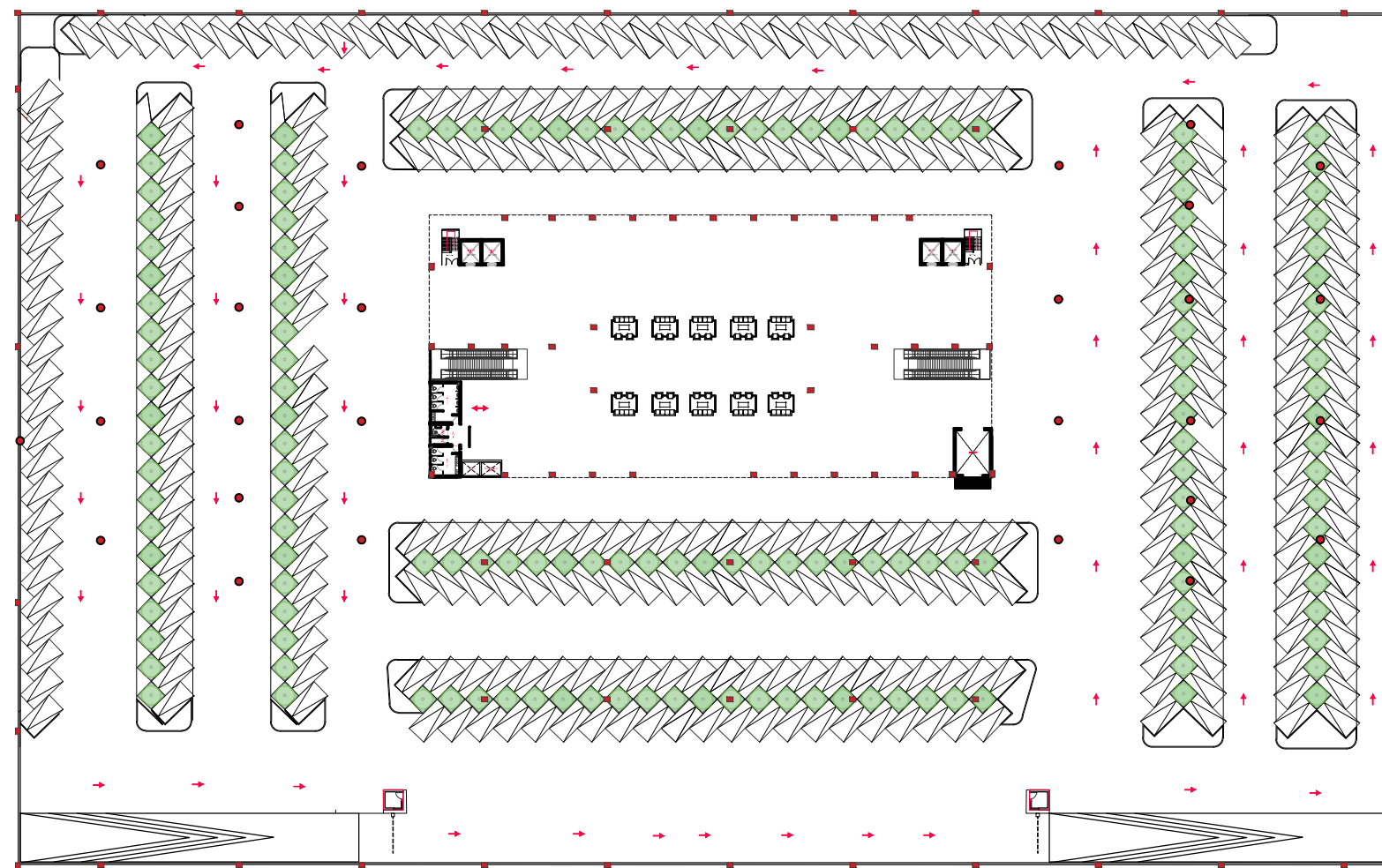


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GUIDE :Prof. MOHIT KUMAR AGARWAL

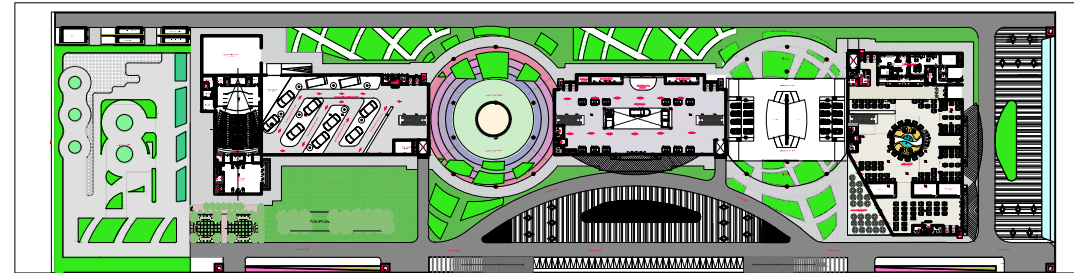




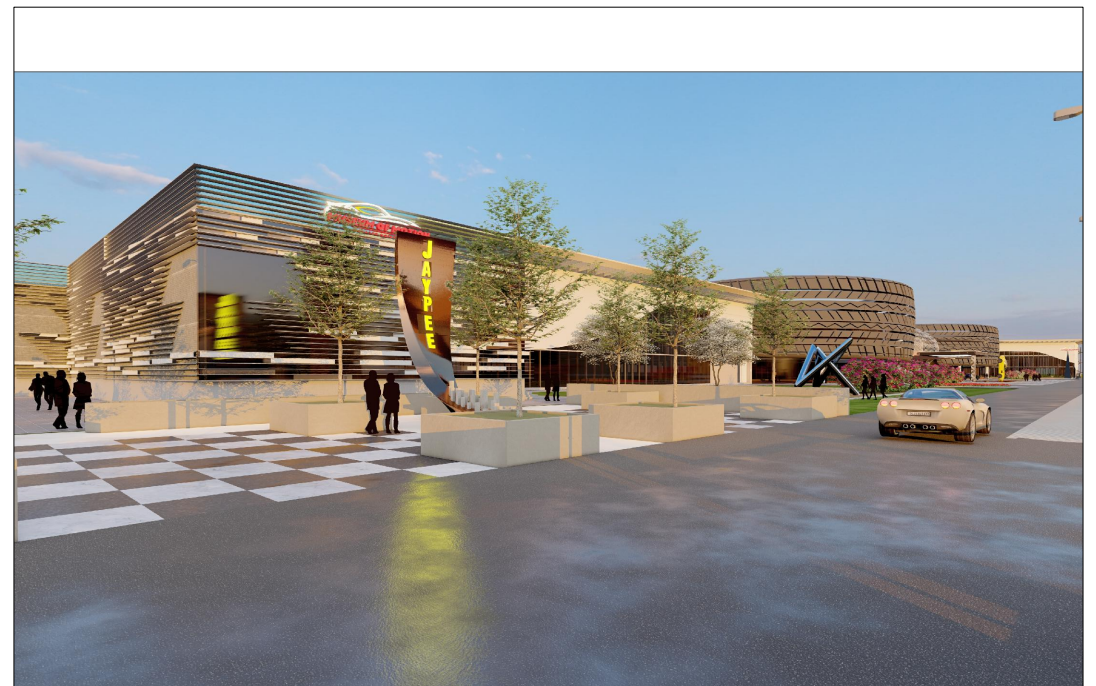
1 SECOND FLOOR PLAN  
Scale: 1:550



2 BASEMENT FLOOR PLAN  
Scale: 1:550

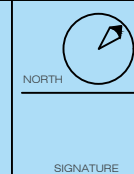


3 KEY PLAN  
Scale: 1:2000



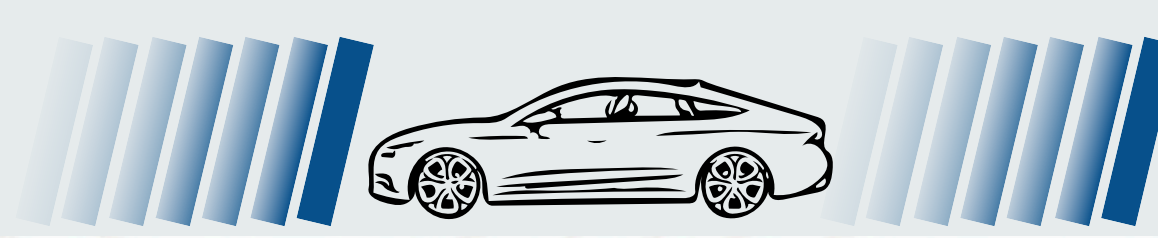
4 VIEW

# THE MUSEUM OF MOTION : GREATER NOIDA

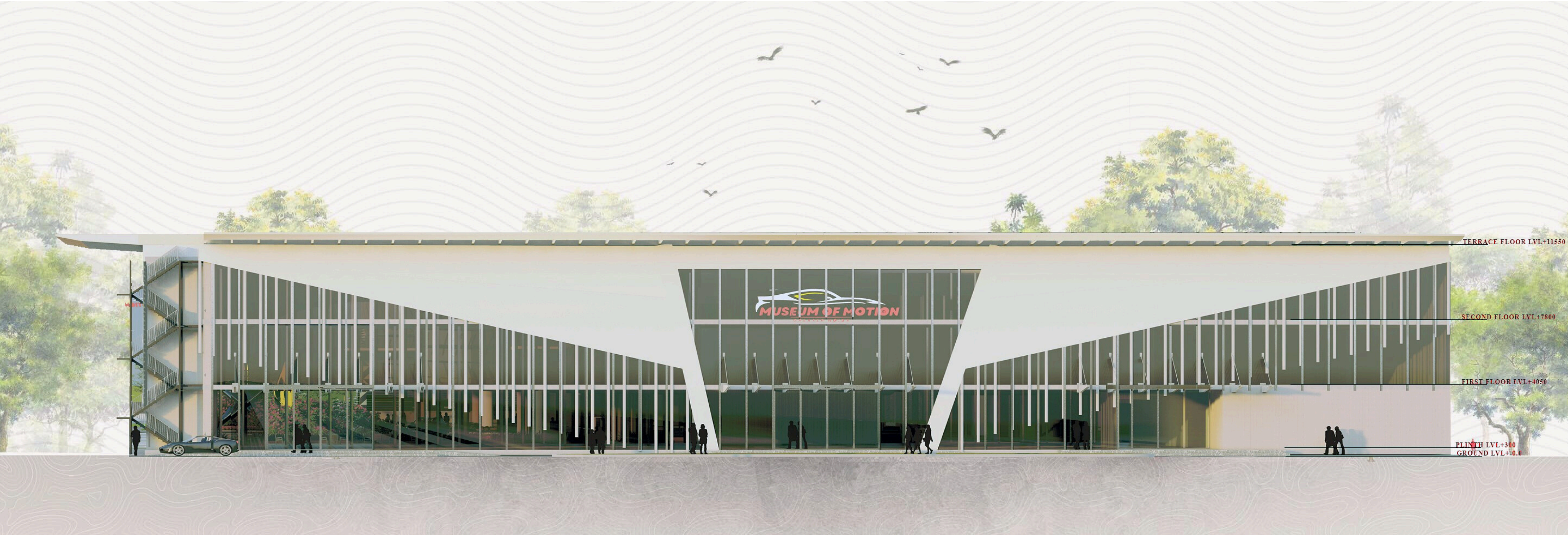


NAME :HITESH MOTIWALA  
ROLL NO.1200101010  
B.ARCH 5TH YR  
GUIDE :Prof. MOHIT KUMAR AGARWAL





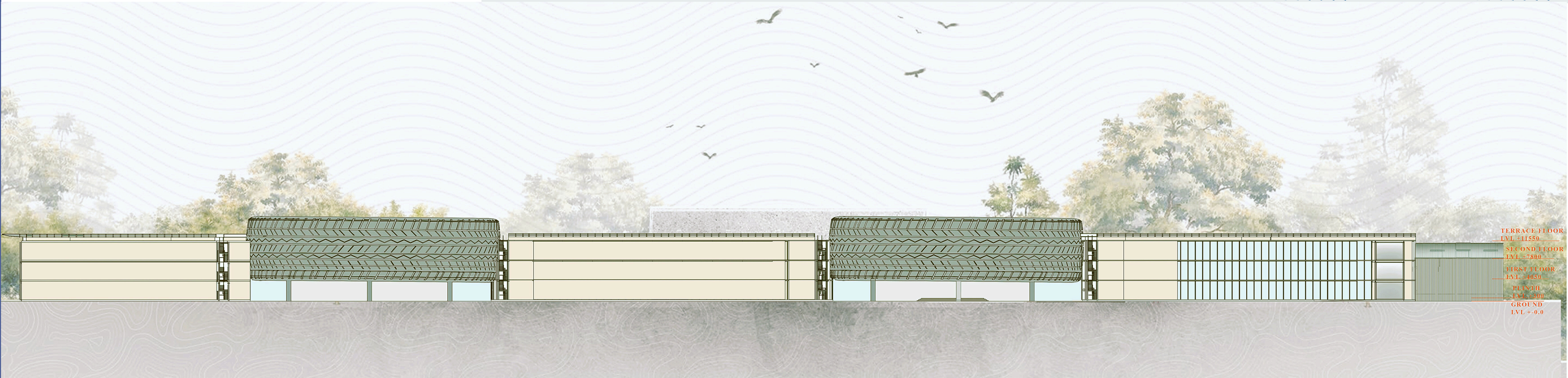
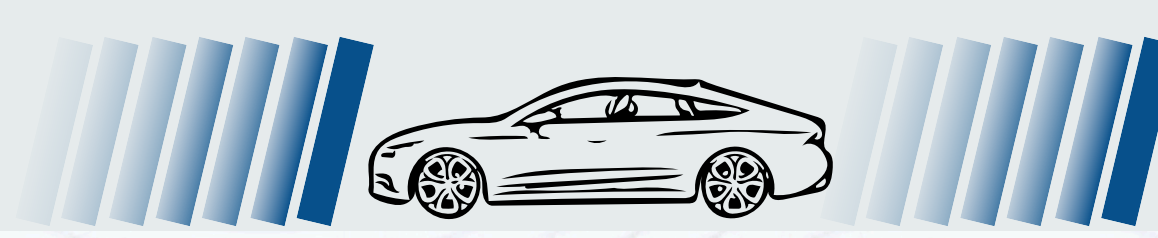
WEST ELEVATION



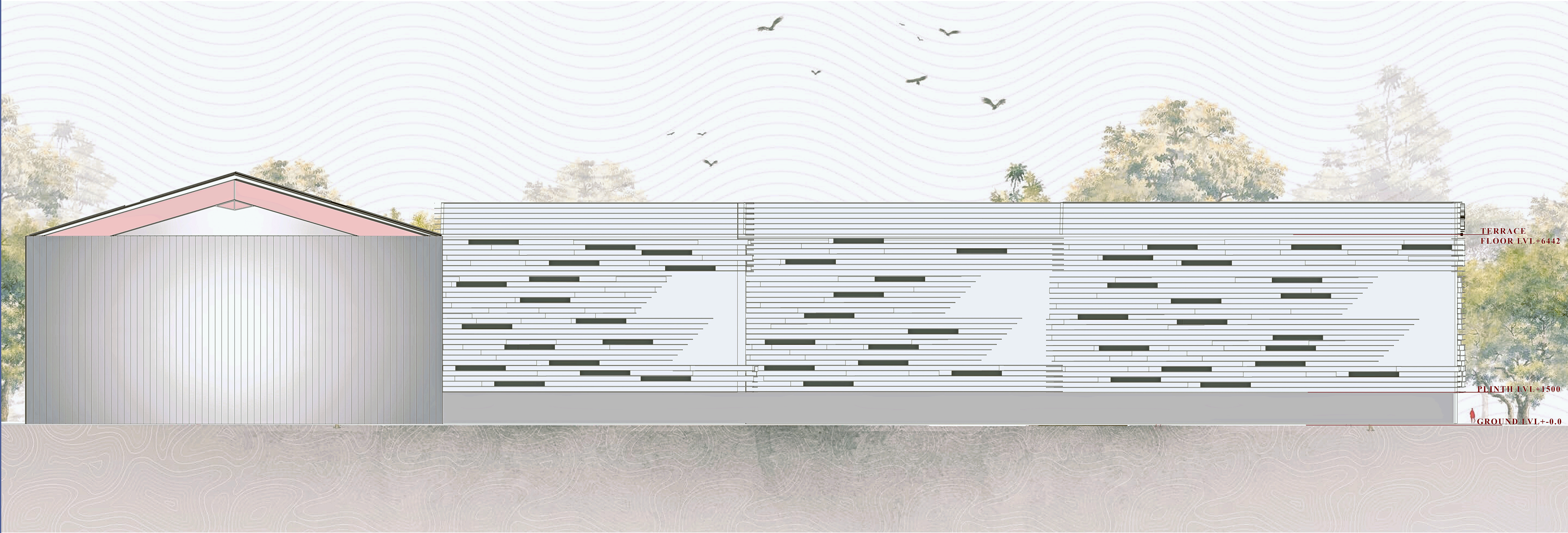
SOUTH ELEVATION







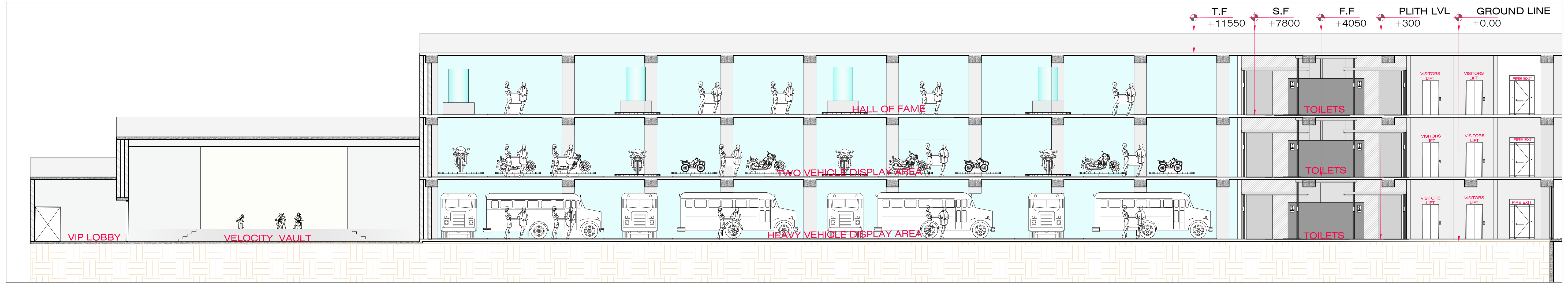
EAST ELEVATION



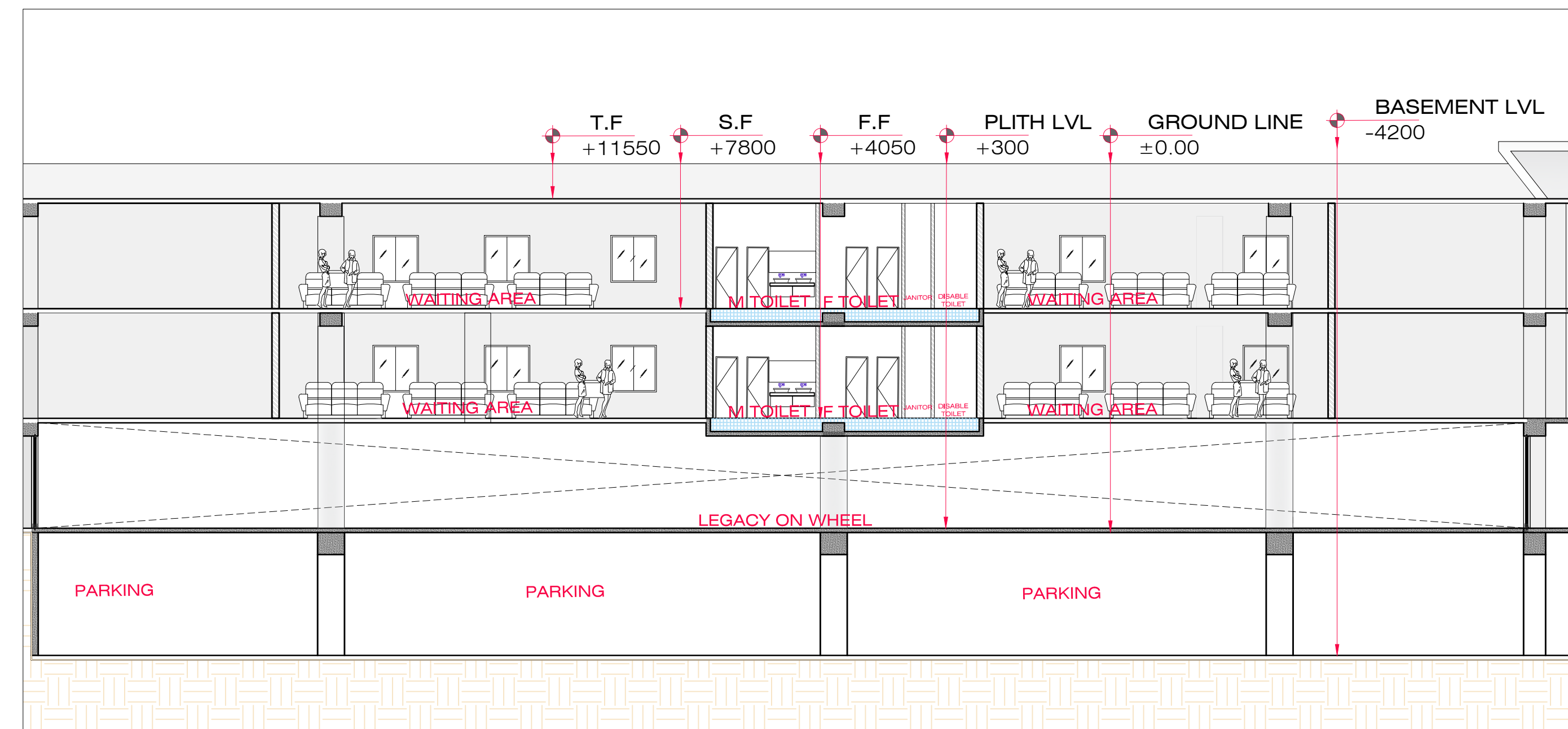
NORTH ELEVATION



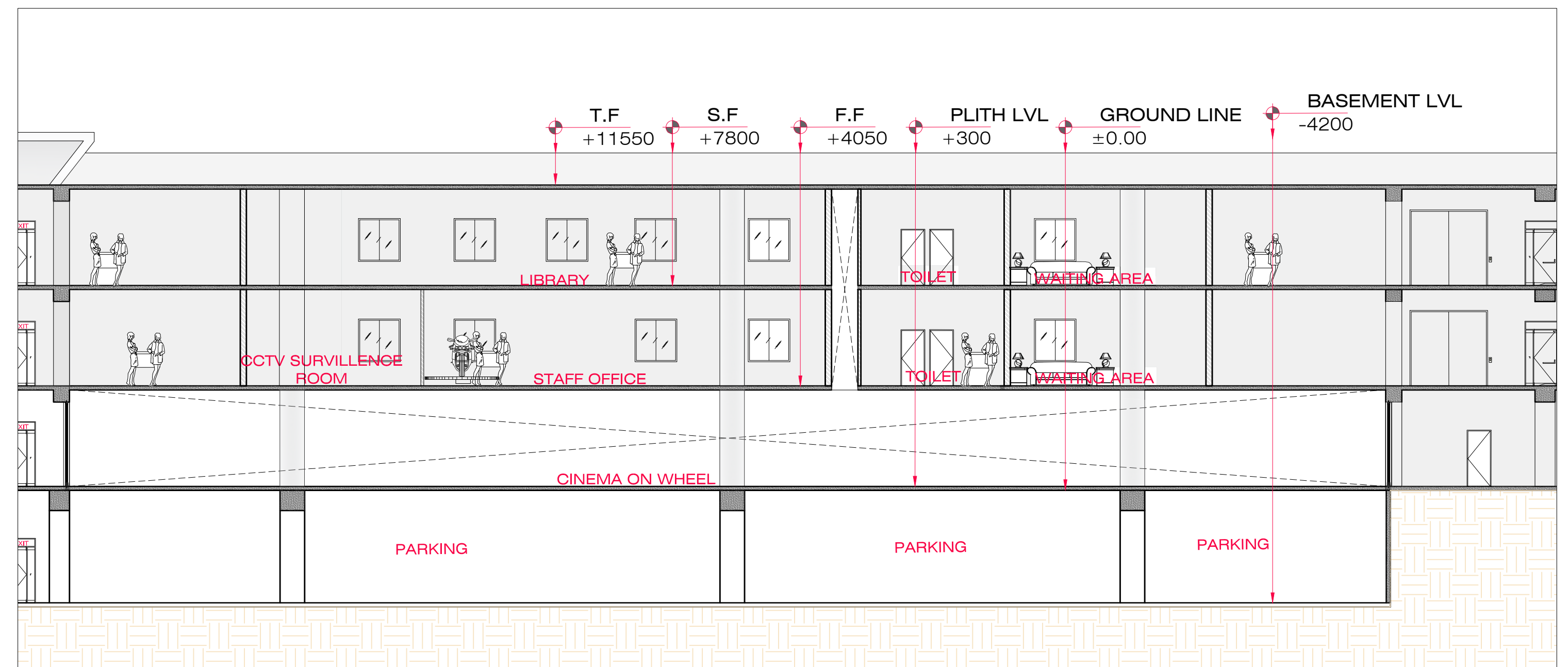




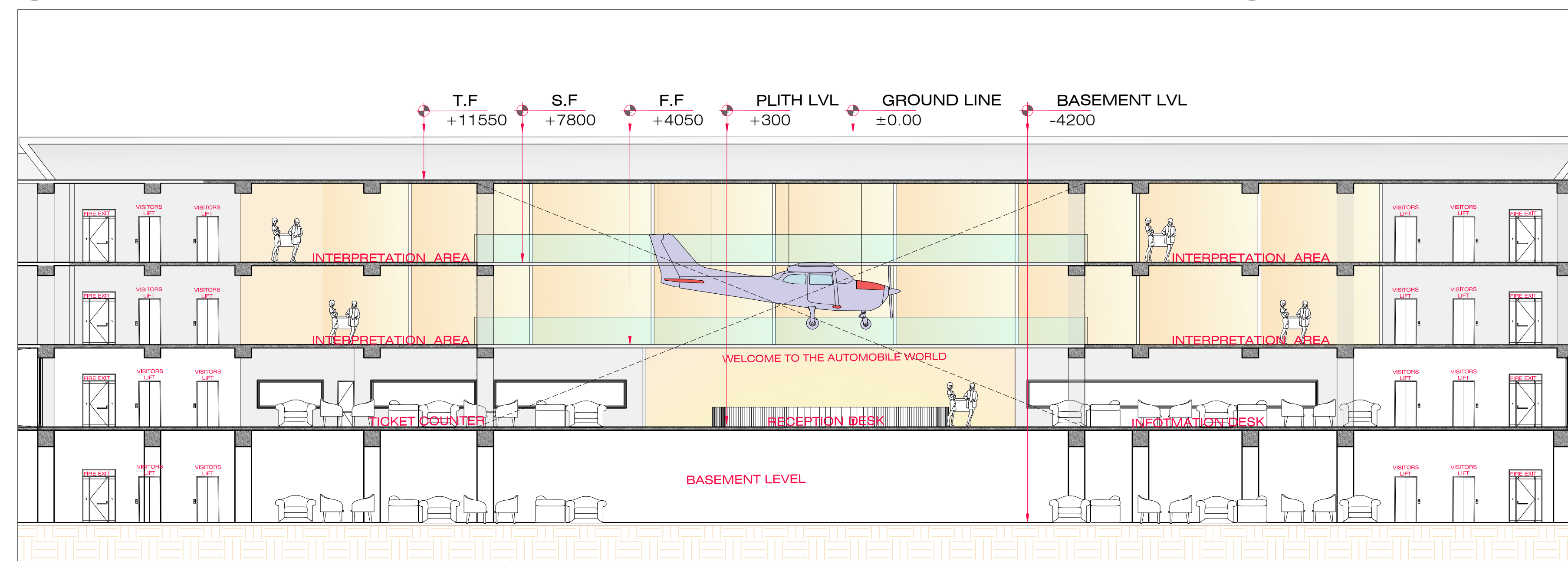
1 SECTION A1'  
Scale: 1:200



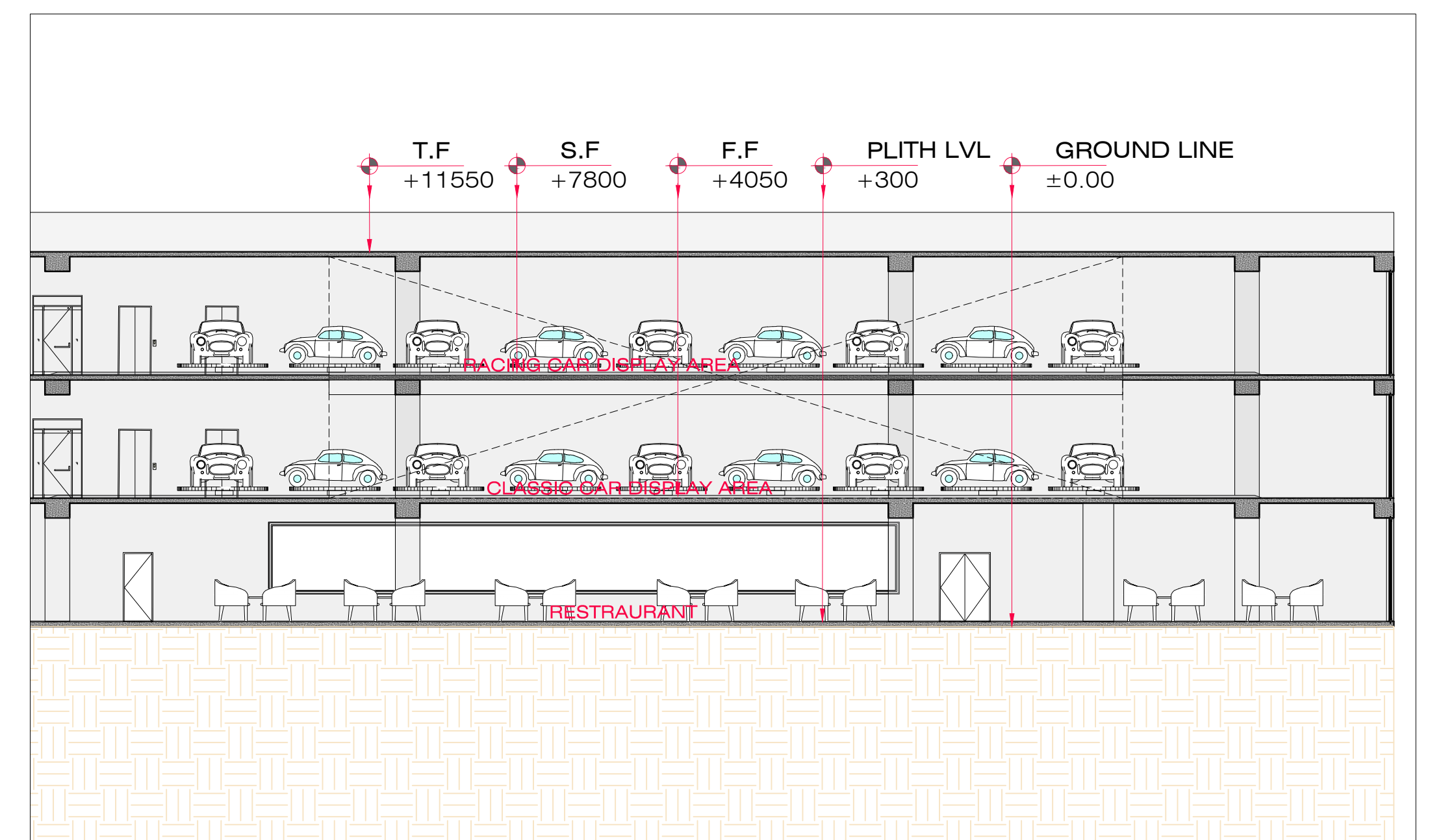
2 SECTION A2'  
Scale: 1:200



3 SECTION A4'  
Scale: 1:200

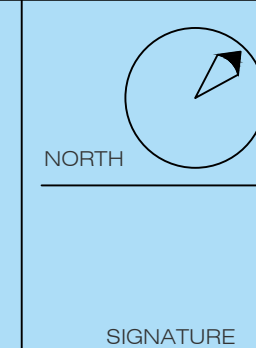


4 SECTION A3'  
Scale: 1:150



5 SECTION A5'  
Scale: 1:200

# THE MUSEUM OF MOTION : GREATER NOIDA



NAME :HITESH MOTIWALA  
ROLL NO.1200101010  
B.ARCH 5TH YR  
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1 INDIAN CORK TREE



2 KASSOD TREE



3 KADAM TREE



4 BADMINTON BALL



4 SEMAL TREE



5 ARJUN TREE



5 KAPOK TREE



6 PALAS TREE



7 WHITE MULBERRY



10 KASOD TREE



11 JAMAICA CHERRY



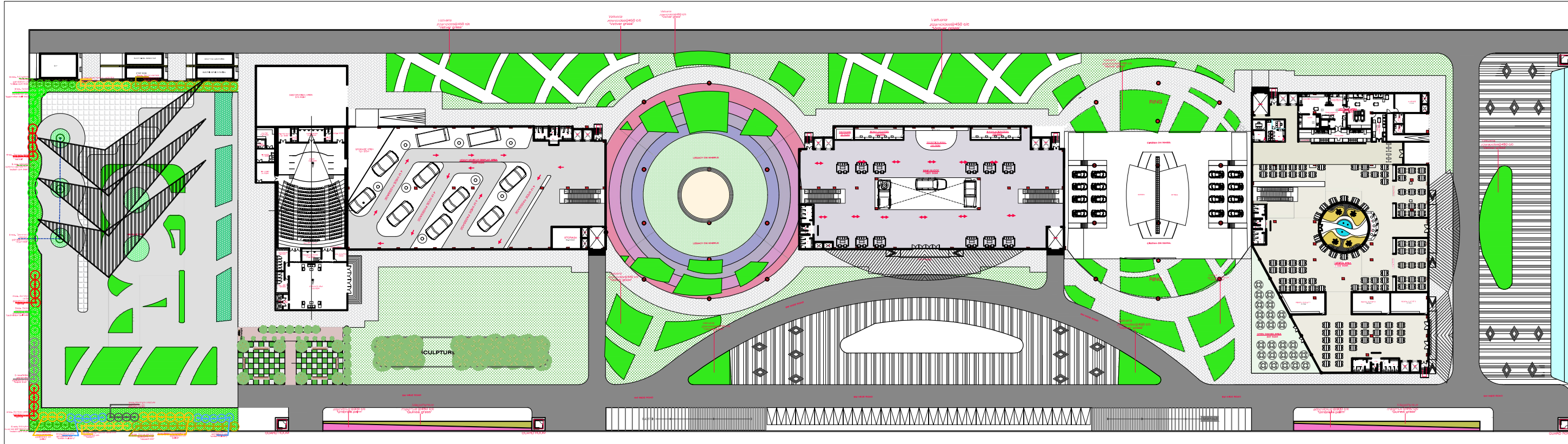
10 UMBRELLA PALM



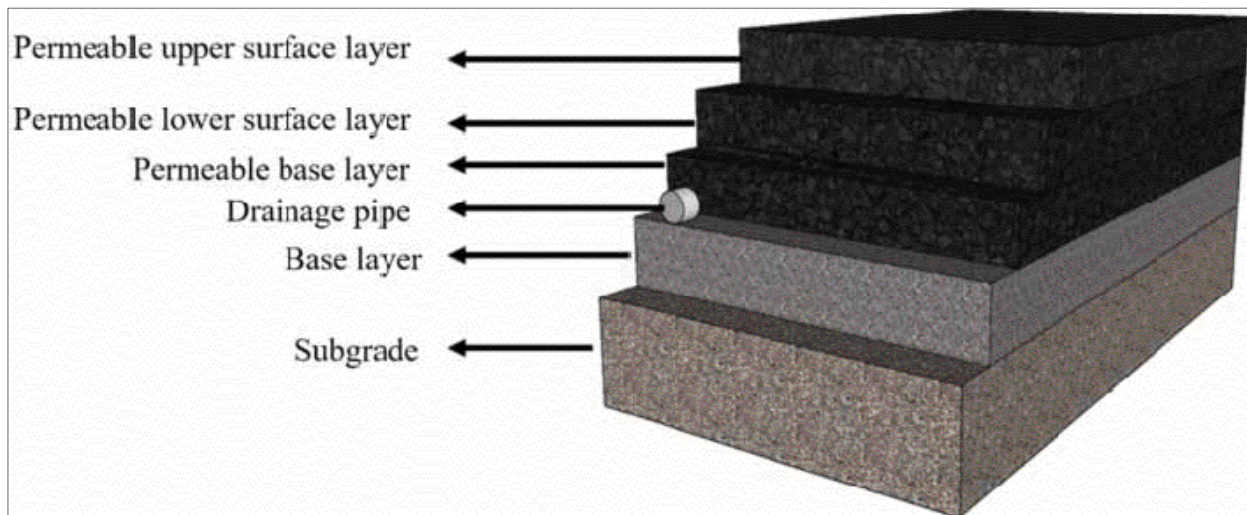
10 GUINEA GRASS



10 KASOD TREE



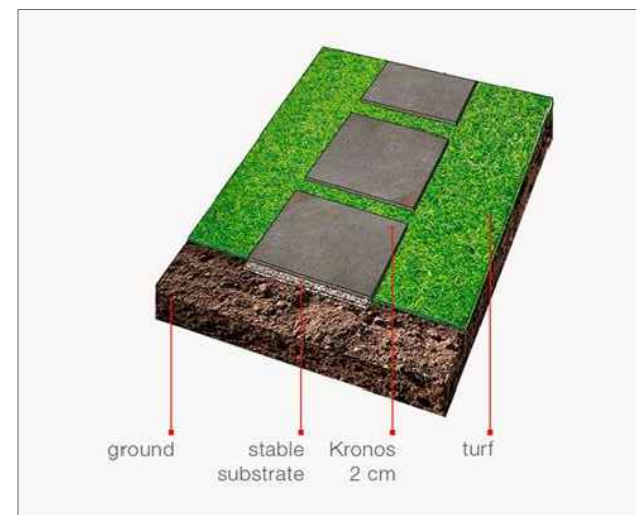
11 LANDSCAPE LAYOUT



12 DETAIL 1

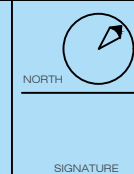


12 DETAIL 2



13 DETAIL 3

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# SITE PLAN:



# SITE OVERVIEW:

- **Site area:** 405.62 m × 105.68 = 42,865.92 sqm (10.5 acres)
- **Permissible ground coverage:** 16,996.81 sqm
- **Achieved Ground coverage:** =3,894 sqm
- **Permissible built-up area:** 16,996.81 sqm
- **Achieved built-up area:** 39,922 sqm
- **Permissible building height:** 10 floors
- **Achieved building height:** ground + 2 floors (G+2)
- **Total hardscape area:** 20538.92 sqm
- **Total softscape area:** 8433 sqm



## VIEWS:



## ENTRANCE AREA



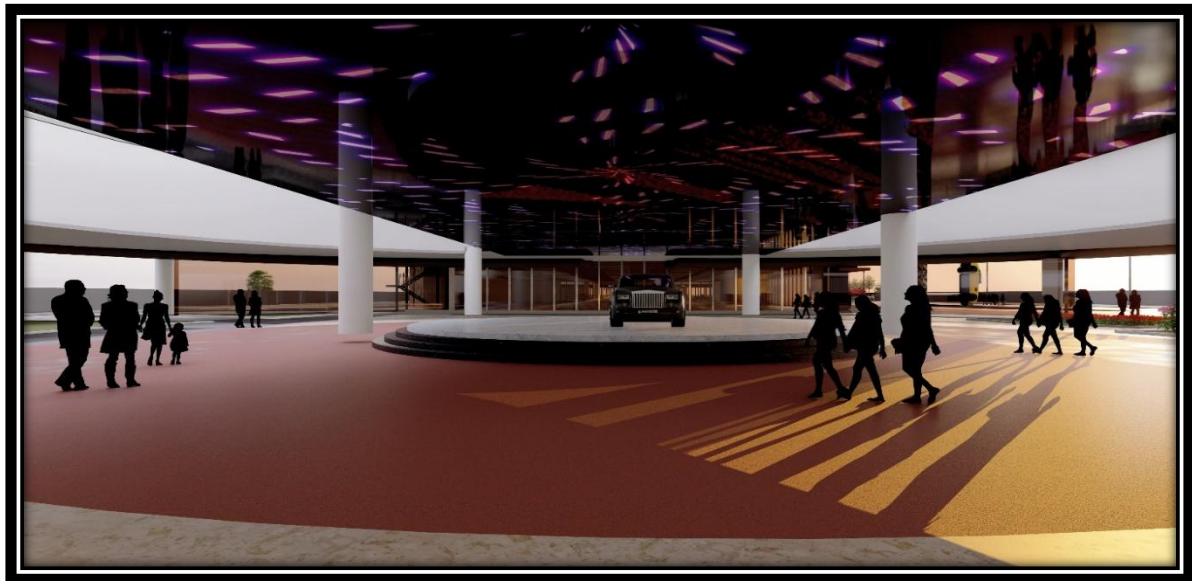
## RESTAURANT AREA



## ENTRANCE AREA



## VIEWS:



## BRANDING DISPLAY AREA



## CINEMA ON WHEEL AREA



## SCULPTURE

## VIEWS:



**RECEPTION AREA**



**DISPLAY AREA**



**ENTRANCE AREA**



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