

INTERNSHIP PORTFOLIO

RAGESH GURU R
38210056



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

Accredited with “A” grade by NAAC | 12B Status by UGC | Approved by AICTE

Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai – 600 119

www.sathyabama.ac.in

SCHOOL OF BUILDING AND ENVIRONMENT
DEPARTMENT OF ARCHITECTURE
PRACTICAL TRAINING PORTFOLIO (SAR4063)
MAY-2023

Name of the Student : **R RAGESH GURU**

Batch : **2018 - 2023**

Reg. No. : **38210056**

Semester : **X**



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SCHOOL OF BUILDING AND ENVIRONMENT

DEPARTMENT OF ARCHITECTURE

VIVA-VOCE EXAMINATION

This is to certify that the practical training SAR 4063 is the work of **R RAGESH GURU** Who had undergone training in **LARSEN AND TOUBRO CONSTRUCTION** (Name of the Firm) has been monitored by the continuous assessment during JANUARY 2023 to MAY 2023.

Dr. Devyani Gangopadhyay
DEAN

R. RAGESH GURU

Submitted for Viva voce Examination held on 08 June 2023

Internal Examiner

External Examiner



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DECLARATION

I, Mr. **R RAGESH GURU** hereby declare that the Training Report **JANUARY 2023 to MAY 2023** done by me under the guidance of **Ar. V GOPINATH** is submitted in partial fulfillment of the requirements for the completion of practical training session.

DATE : 06/06/2023

PLACE : CHENNAI

SIGNATURE OF CANDIDATE

ACKNOWLEDGEMENT

The internship opportunity I had with **Larsen and Toubro** was a great chance for Training and Professional development. Therefore, I consider myself as a very lucky individual to be a part of it. I am also overwhelmed and grateful for having a chance to meet so many wonderful people and professionals who led me throughout this Internship journey.

I am using this opportunity to express my deepest gratitude and special thanks to the senior architect, **Ar. V Gopinath** who inspired me with his amazing thought process and his cheerful approach towards the design. In spite of being extra-ordinarily busy with his works, he spent his time to listen, guide and keep me on the correct path in approaching the design.

It is a wonderful experience and I would like to express my best regards and deepest sense of gratitude to my mentor **Ar. Bhagyalakshmi** for sharing his valuable experience and motivation which is extremely helpful for my future career.

My heartfelt acknowledgement to **Dr. Devyani Gangopadhyay**, Dean, School of Building and Environment and **Ar.Sarath Chandra Kanth**, Design Chair, Department of Architecture for having been a constant source of support and encouragement.

I will strive to use the gained skills and knowledge in the best possible way in my upcoming projects and keep me updated to attain desired career objectives.

Hope to continue co-operation with all of you in future.

- R RAGESH GURU

CONFIRMATION LETTER



Larsen & Toubro Limited,
Construction
Buildings & Factories
P. B. No. 979, Mount Poonamallee Road,
Manapakkam,
Chennai - 600 089, INDIA
Tel : +91-44-2252 6000, 2252 8000
Fax : +91-44-2259 7288
www.Lntecc.com

B&F IC/EDRC-HR/Training/682-2022

07 January 2023

Head of the Department,
Sathyabama Institute of
Technology And Science,
(Deemed University)
Chennai.

Dear Sir/Madam,

Sub: Project Training

This has reference to your letter dated **23 December 2022** regarding Project Training for your student **Mr. Ragesh Guru (38210056)**. As a special case, we agree to admit his for project Training from **30 January 2023 to 30 May 2023**.

Please advise his to carry 3 Passport size photographs, copy of his College ID card and Aadhaar card copy while reporting for the project training.

Please note that:

- He has to undergo the training without any financial commitment to our Company and fully at his own risk and responsibility.
- He must strictly comply with safety & other rules applicable at the project site/Office.
- He will be awarded his Project Training completion certificate on submission of the Project Report.

Thanking You,

Yours faithfully,
SUNEET KUMAR
DGM - HUMAN RESOURCES

*Registered Office: L&T House, N. M. Marg, Ballard Estate, Mumbai - 400 001. INDIA
Licence No.: CIN - L99999MH1946PLC004768*

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MONTHLY REPORT



SATHYABAMA
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PROFESSIONAL PRACTICAL TRAINING REPORT 2023

(Monthly Progress to be documented and submitted to the HOD by the Architect in charge of Trainee of the Organization)

- Name of the Office / Organization** : LARSEN & TOUBRO CONSTRUCTION
- Address & Contact Number** : MANAPAKKAM, CHENNAI. Tel. no. 044 2252 6000
- Name of the Student** : R RAGESH GURU
- Duration** : From 30/01/2023 to 30/05/2023
- Total No. of days** : 28 days
- Evaluation of Performance Criteria shall be on**

Description of works	Excellent	Good	Fair	Poor	NA
Office Culture Comprehension	✓				
Participation in the Office	✓				
Reading of Drawings	✓				
Presentation Techniques		✓			
Model Making					✓
Understanding of Construction Details		✓			
Drafting Skills (Manual/Computer)	✓				
Site Supervision / Client Interaction Skills					✓
Time Schedule Adherence	✓				
Other Computer Skills	✓				
Files and Office Maintenance	✓				
Coordination with other Consultants					✓
Overall Grading*	✓				

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month* (9/10)

7. Any other Remarks:

Signature of the Head of the Office / Organization (With Seal)

Monthly report- 1



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PROFESSIONAL PRACTICAL TRAINING REPORT 2023

(Monthly Progress to be documented and submitted to the HOD by the Architect in charge of Trainee of the Organization)

- Name of the Office / Organization** : LARSEN & TOUBRO CONSTRUCTION
- Address & Contact Number** : MANAPAKKAM, CHENNAI. Tel. no. 044 2252 6000
- Name of the Student** : R RAGESH GURU
- Duration** : From 30/01/2023 to 30/05/2023
- Total No. of days** : 23 days
- Evaluation of Performance Criteria shall be on**

Description of works	Excellent	Good	Fair	Poor	NA
Office Culture Comprehension		✓			
Participation in the Office	✓				
Reading of Drawings	✓				
Presentation Techniques		✓			
Model Making (Physical)		NA			
Understanding of Construction Details		✓			
Drafting Skills (Manual/Computer)	✓				
Site Supervision / Client Interaction Skills		✓	NA		
Time Schedule Adherence	✓				
Other Computer Skills	✓				
Files and Office Maintenance		✓			
Coordination with other Consultants			NA		
Overall Grading*		81/90			

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month*

7. Any other Remarks:

Ragesh has Very good understanding of basics of Architecture. He Needs to work on his communicating skills to excel further.

Signature of the Head of the Office / Organization (With Seal)

Bm
BHAGYALAKSHMI. V

Monthly report- 2



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PROFESSIONAL PRACTICAL TRAINING REPORT 2023

(Monthly Progress to be documented and submitted to the HOD by the Architect in charge of Trainee of the Organization)

- Name of the Office / Organization** : LARSEN & TOUBRO CONSTRUCTION
- Address & Contact Number** : MANAPAKKAM, CHENNAI. Tel. no. 044 2252 6000
- Name of the Student** : R RAGESH GURU
- Duration** : From 30/01/2023 to 30/05/2023
- Total No. of days** : 24 Days
- Evaluation of Performance Criteria shall be on**

Description of works	Excellent	Good	Fair	Poor	NA
Office Culture Comprehension	✓				
Participation in the Office	✓				
Reading of Drawings	✓				
Presentation Techniques		✓			
Model Making	✓				
Understanding of Construction Details		✓			
Drafting Skills (Manual/Computer)	✓				
Site Supervision / Client Interaction Skills			NA		
Time Schedule Adherence		✓			
Other Computer Skills	✓				
Files and Office Maintenance		✓			
Coordination with other Consultants			NA		
Overall Grading*		85			

* Note: Kindly grade the student as per his/her overall performance in the office during the assessment month*

7. Any other Remarks: Ragesh has very good understanding of basic Architecture principles and possesses good computer and manual skills. With more focus on soft skills and productivity he will excel further.

Signature of the Head of the Office / Organization (With Seal)

Bm
(BHAGYALAKSHMI. V)

Monthly report- 3

JANUARY 30- FEBURARY 18	NDRS NEW DELHI RAILWAY STATION	Massing and surface form modelling
FEBURARY 18,20	RARS REDEVELOPMENT OF AHMEDABAD RAILWAY STATION	Furniture quantification Sanitary fixtures quantification
FEBURARY 20-22	GSR GUWAHATI STADIUM REDEVELOPMENT	Stage 1-overall planning, modelling and rendering for various conceptual stadium design options.
FEBURARY 22- MARCH 12	RMRS REDEVELOPMENT OF MUMBAI RAILWAY STATION	Presentation on the project management and project understanding Planning and Modelling various structural design options.
MARCH 12-17	S00 STATUE OF ONENESS	Drafting and modelling the various parts of the project Furniture quantification
MARCH 20-24	PEERLESS PLAZA MULTI USE DEVELOPMENT	Façade material palette Sanitary fixtures quantification Flooring and false ceiling quantification Parking area planning
MARCH 24-MAY 31	GSR GUWAHATI STADIUM REDEVELOPMENT	Stage 2 -overall planning, modelling and rendering for various conceptual stadium design options

COMPLETION CERTIFICATE



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B&FIC/EDRC-HR/Training/682-2022

3rd June 2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Mr. RAGESH GURU R (38210056)** from **SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY** has undergone her project internship at our Engineering Design & Research Centre (EDRC) – Headquarters from **30th JAN 2023 – 30th MAY 2023**

We wish her all the best for her future endeavors.

Yours faithfully,

for **LARSEN & TOUBRO LIMITED**

SUNEET KUMAR
DGM - HUMAN RESOURCES

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STATUE OF ONENESS

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REDEVELOPMENT OF MUMBAI RAILWAY STATION





L&T Construction's Headquarters at Manapakkam in Chennai is acknowledged as an 'Outstanding Corporate Green Campus'. It is spread over 27 acres, amidst scenic eco-friendly surroundings with ample greenery. Almost every concrete structure in the campus has won prestigious awards for excellence in construction and has green features which add to its aesthetic value. Today, the campus accommodates built up area of 1.4 lakh sq.m and has a significant tree carbon sequestering capacity

Engineering Design and Research Centre (EDRC)

LEED-EB Silver Rated Green Building

The Chennai campus offset its entire GHG (Green House Gases) emissions in 2016-2017, thus becoming carbon neutral. Part of its Sustainability Roadmap 2021,

carbon offsetting and energy efficiency of L&T campuses is a key objective and one

that they continuously work towards.

The Engineering Design and Research Centre (EDRC), titles the tree of knowledge,

is triangular in shape and rises like the branches of a tree from the floor. A built up

area of 8,686 sq.m in the ground plus four floors, the EDRC building is designed as

two symmetrical wings one on either side of a service core.

EDRC is the recipient of the 2002 Federation International Du Beton (FIB) Award for an Outstanding Concrete Structure. EDRC was also awarded the LEED Silver rating by the US Green Building Council in the Existing Building category for design,

construction and operation of Green Buildings. EDRC is the second building in India

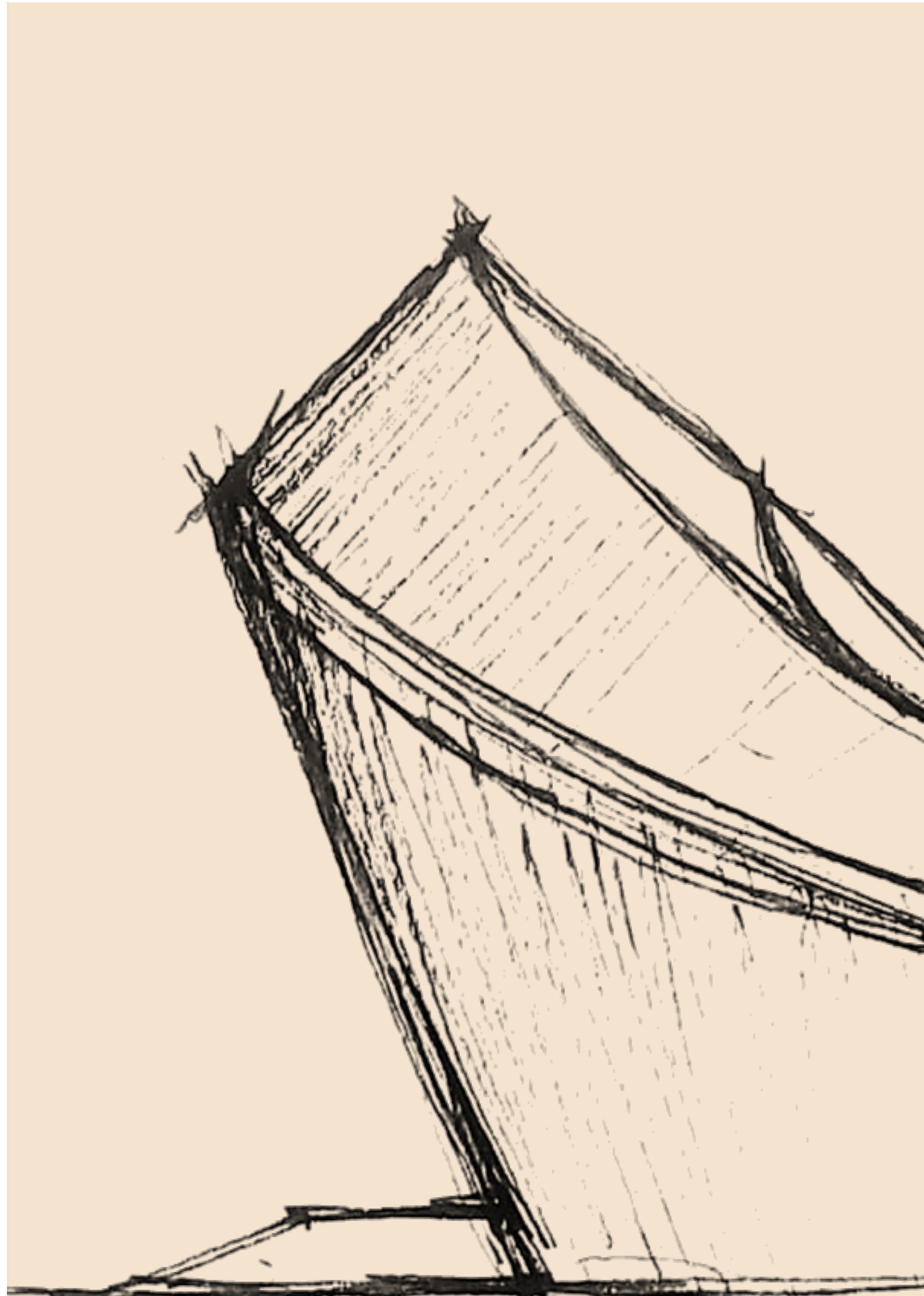
and the second one in Chennai to get this rating under LEED EB category.

Besides business of the Construction Group, the campus houses offices of L&T Technology Services and the iconic Henning Holck-Larsen Centre

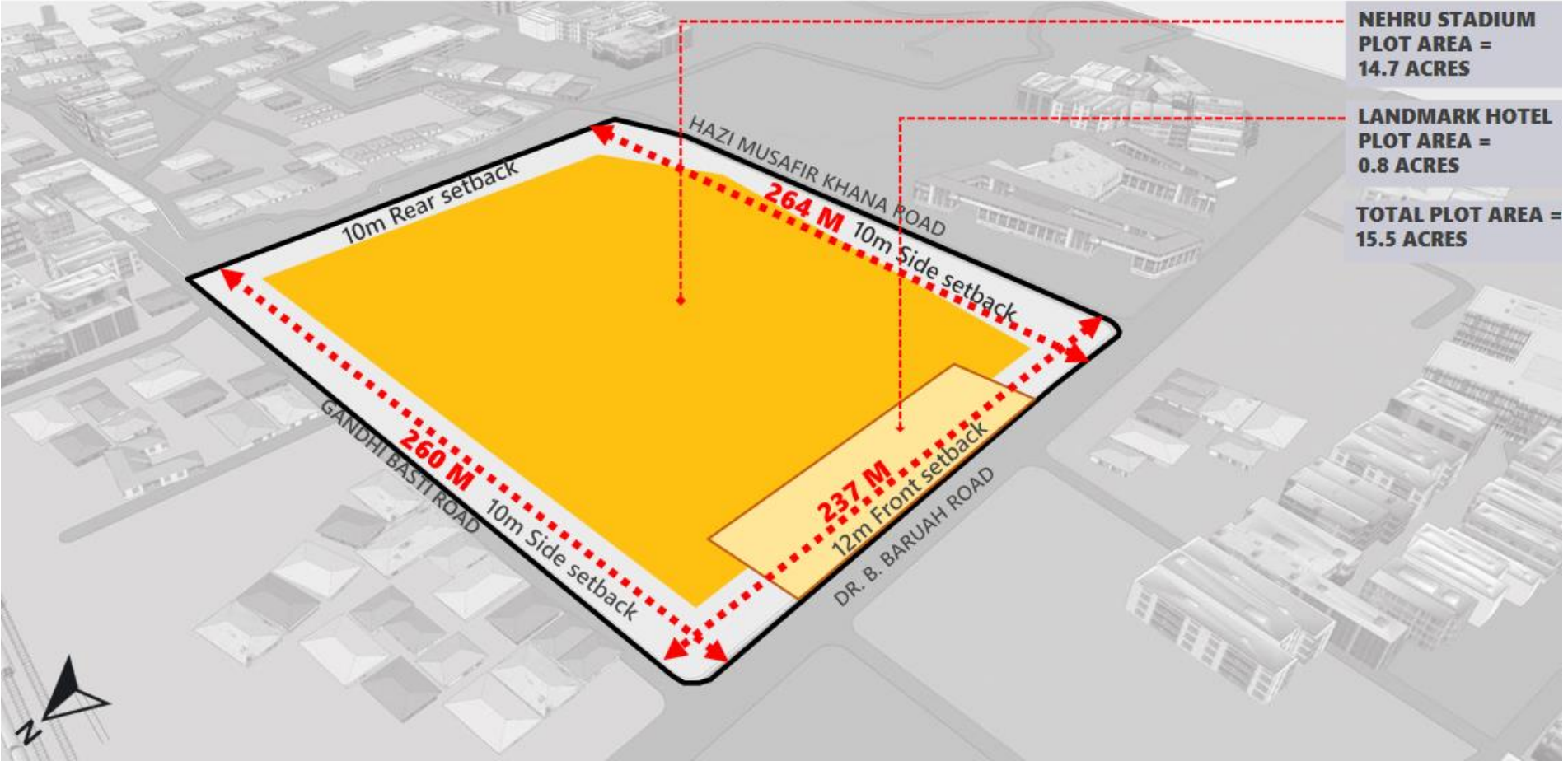


1

GUWAHATI STADIUM REDEVELOPMENT



ABOUT PROJECT



STADIUM

45000 SQM

INDOOR SPORTS

MULTIPURPOSE SPORTS HALL

- 1000 Seating capacity Stadium
- 2 sets of dressing rooms
- Press, Medical, Coaches Room

4500
SQM

- 1 Swimming Pool
- 1 Warm-up pool
- Toddler Pool
- Lockers
- Coach Office
- Timing Room

3000
SQM

- 6 Badminton courts
- 8 Table tennis tables
- 1 Basketball & 1 Volleyball court
- Fencing & Shooting
- Wushu, Karate, Judo
- Taekwondo & Lawn Tennis
- Kabaddi, Kho Kho

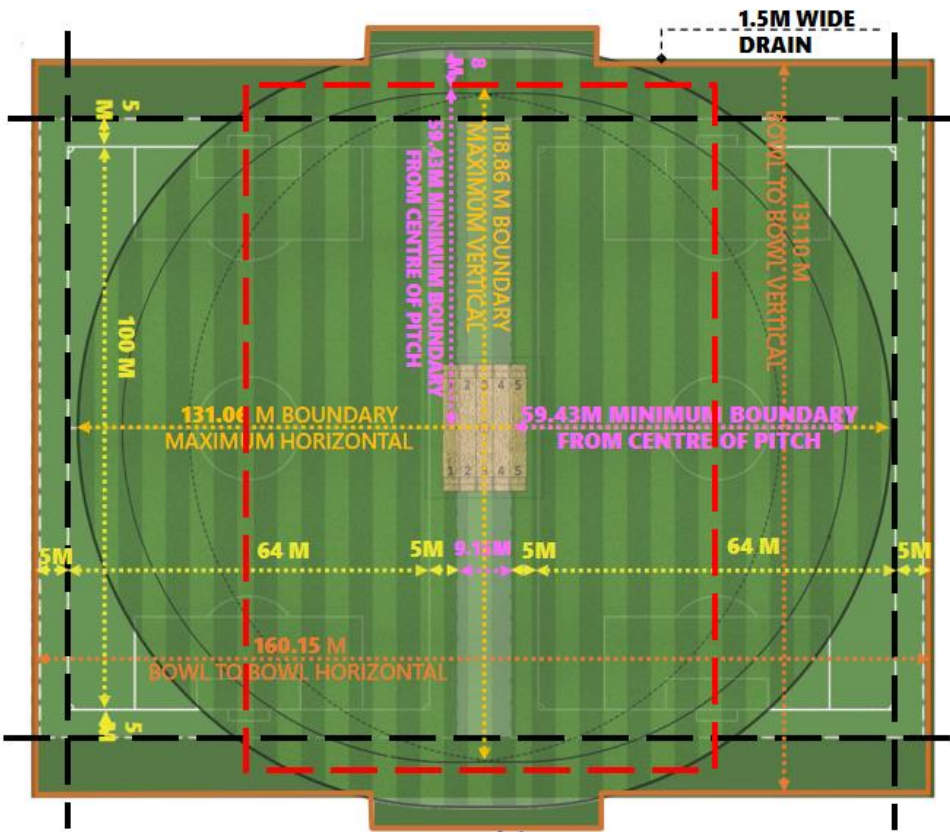
15000
SQM

PLAYERS' ACCOMMODATION

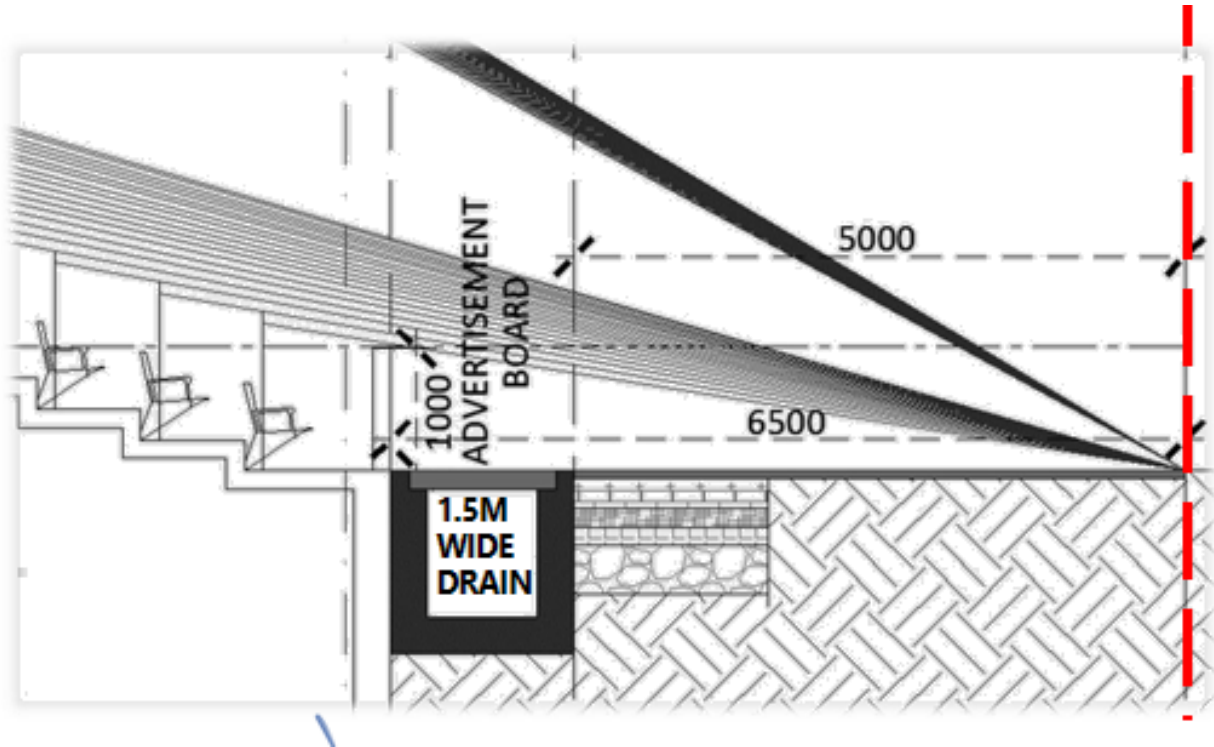
15000 SQM

**OFFICES / SPORTS
MUSEUM / COMMON
FACILITIES**

10000 SQM



-  **CRICKET MIN. BOUNDARY**
-  **CRICKET FOP (5 Pitches)**
-  **FIFA complaint FOOTBALL FOP – 2 Nos (110M x 74M) including run-off**
-  **BOWL TO BOWL DISTANCE**
-  **EDGE OF FIELD CONSIDERED FOR VISIBILITY FROM EACH SEAT**
-  **FULL-SIZE FOOTBALL FOP (125M x 85M) including run-off**

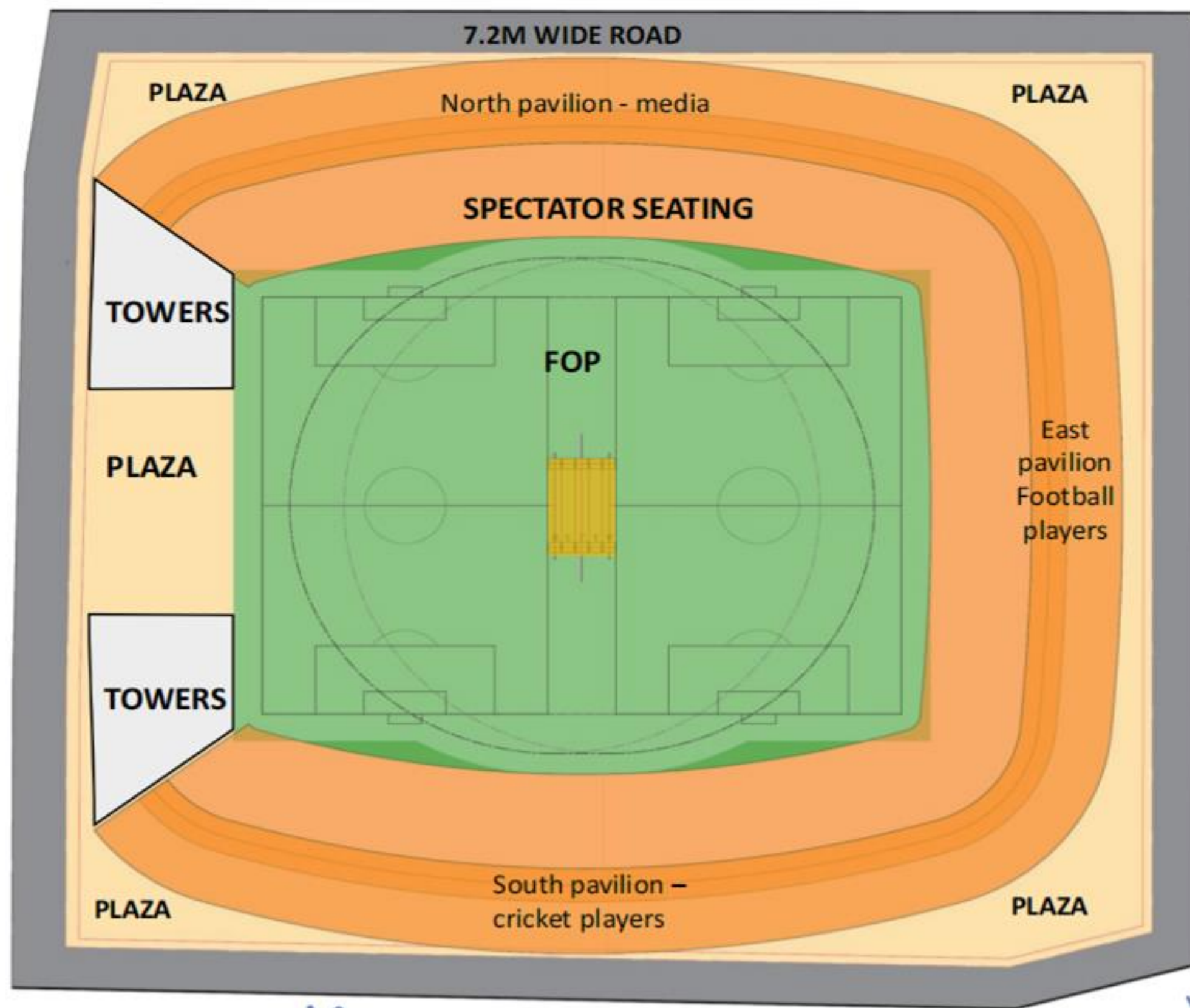
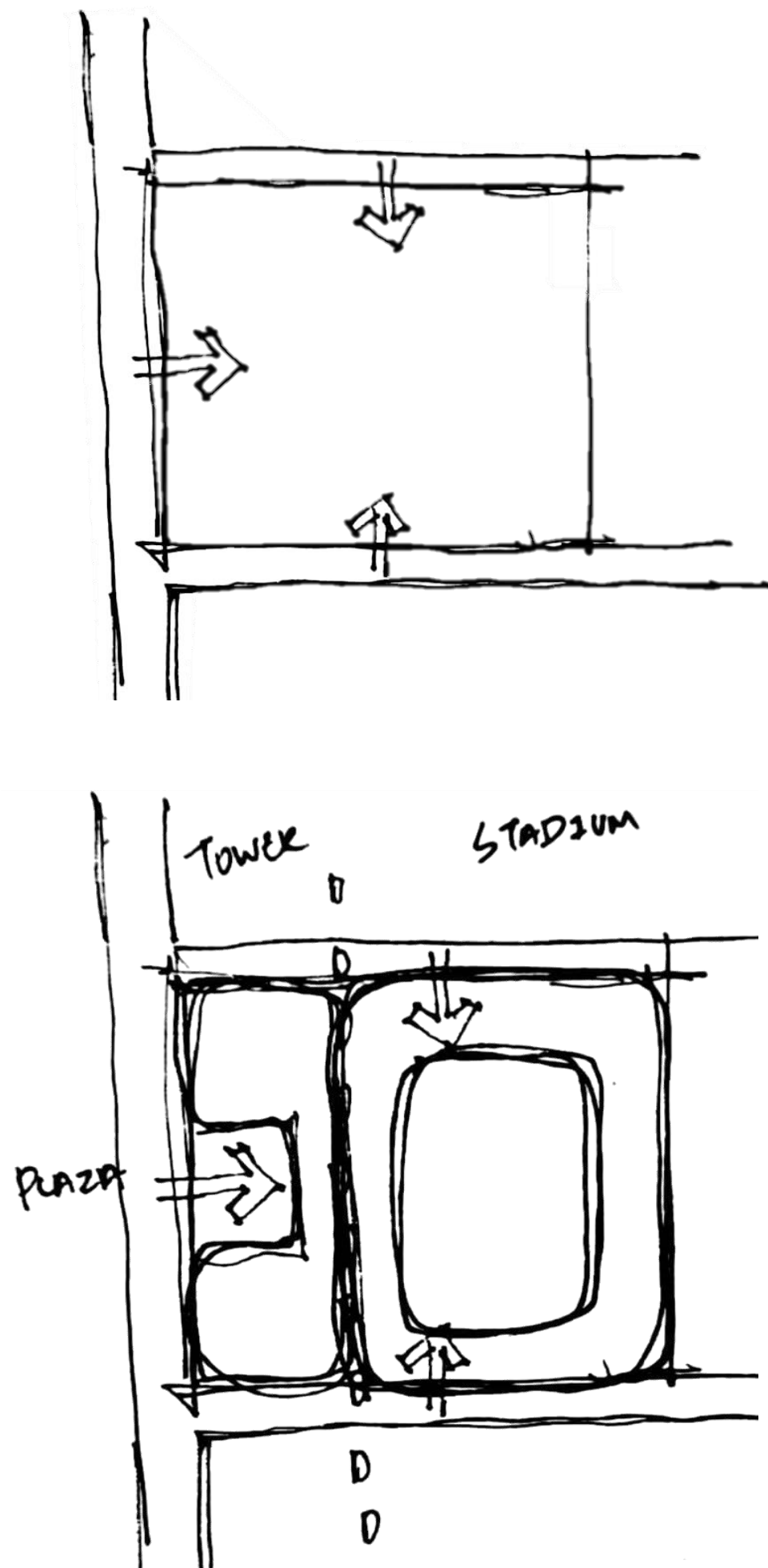


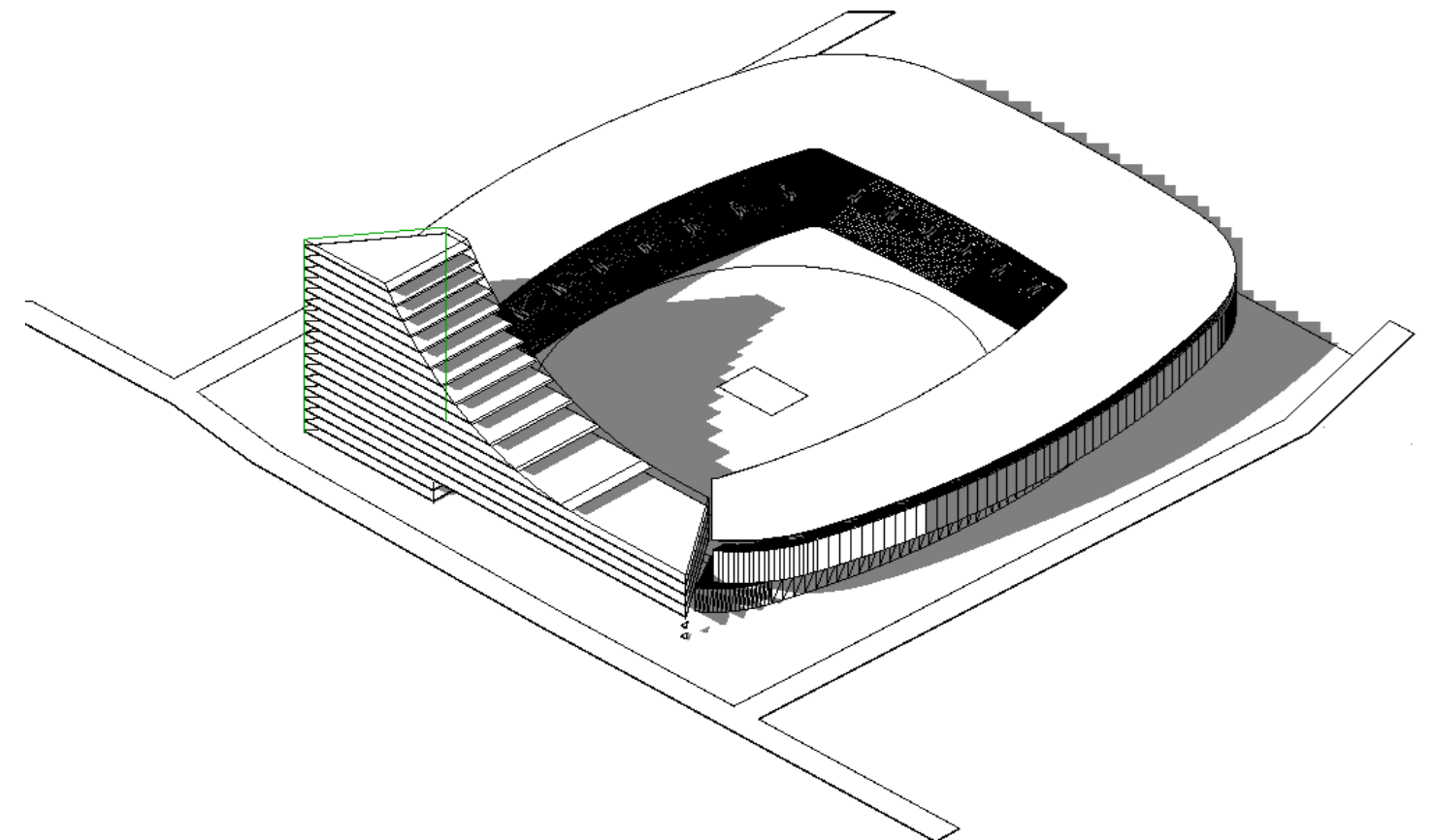
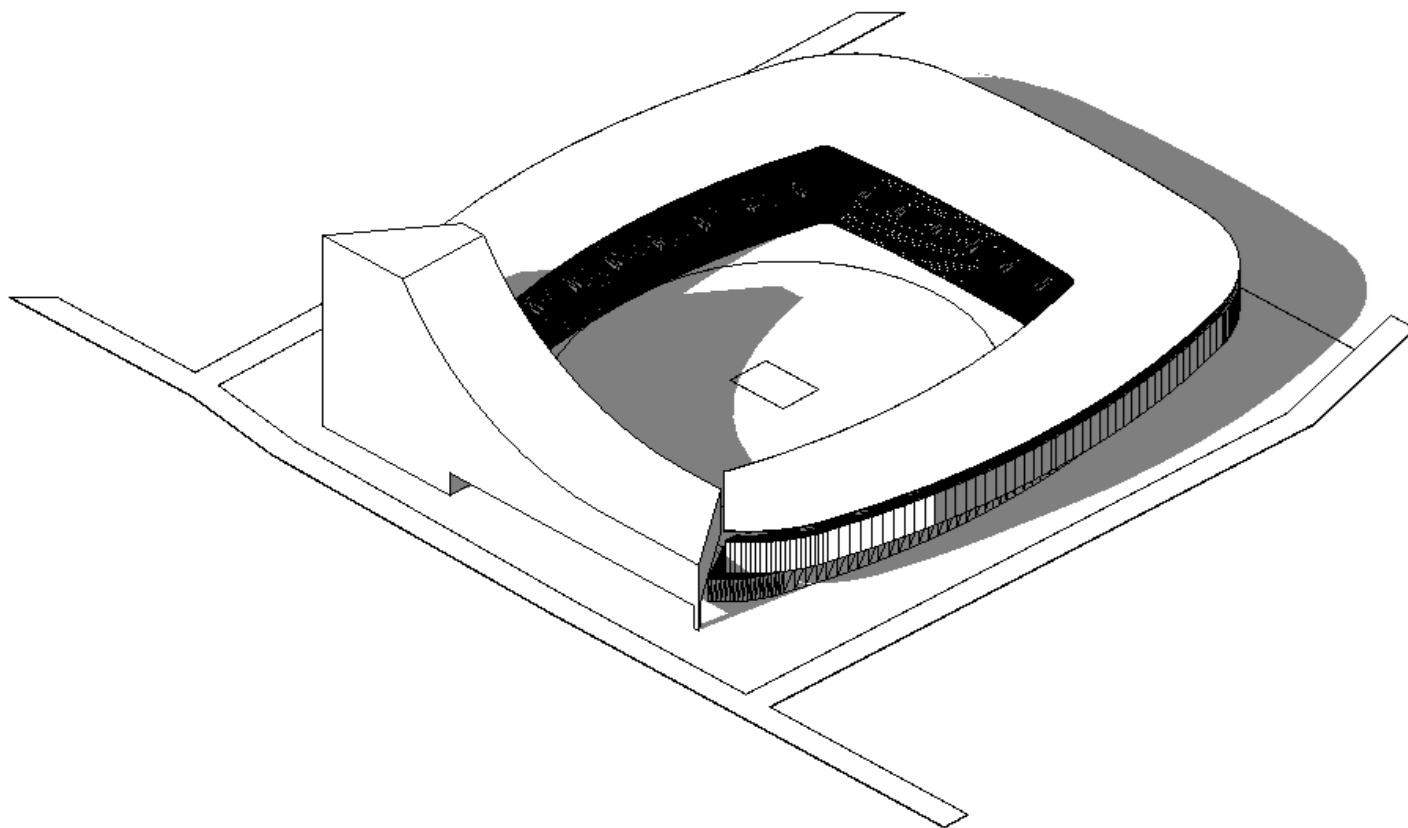
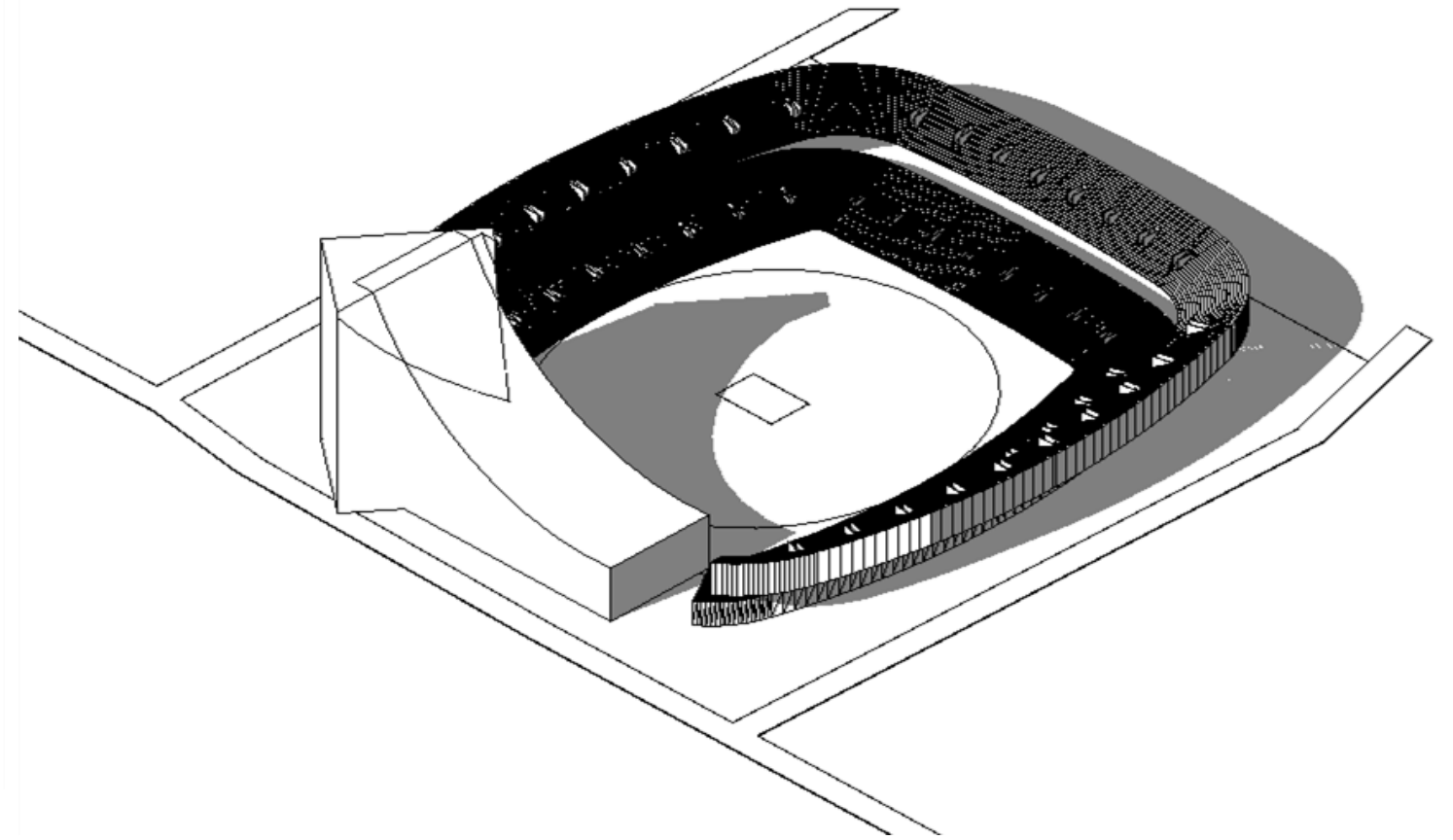
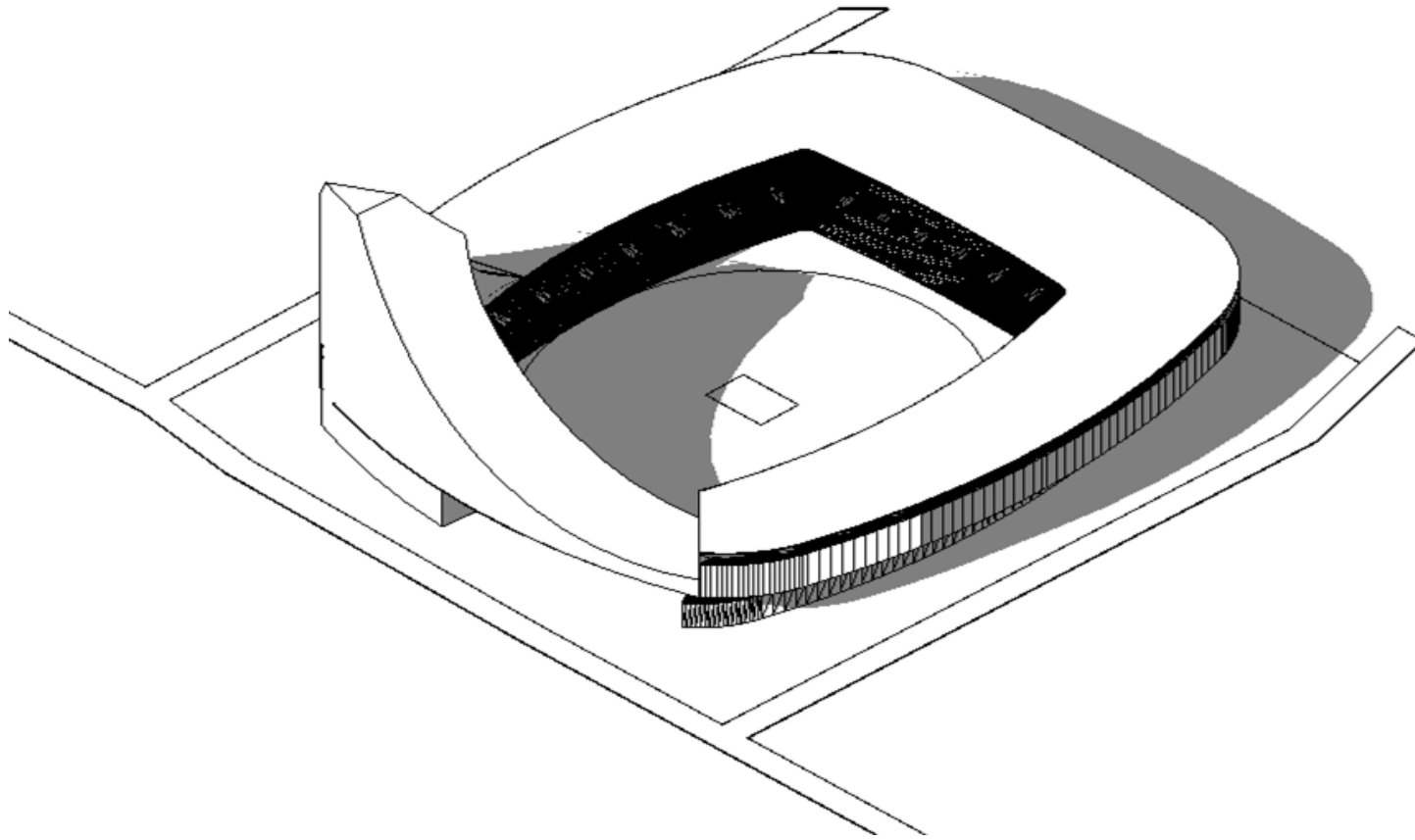
STAGE 1

PROJECT REQUIREMENTS

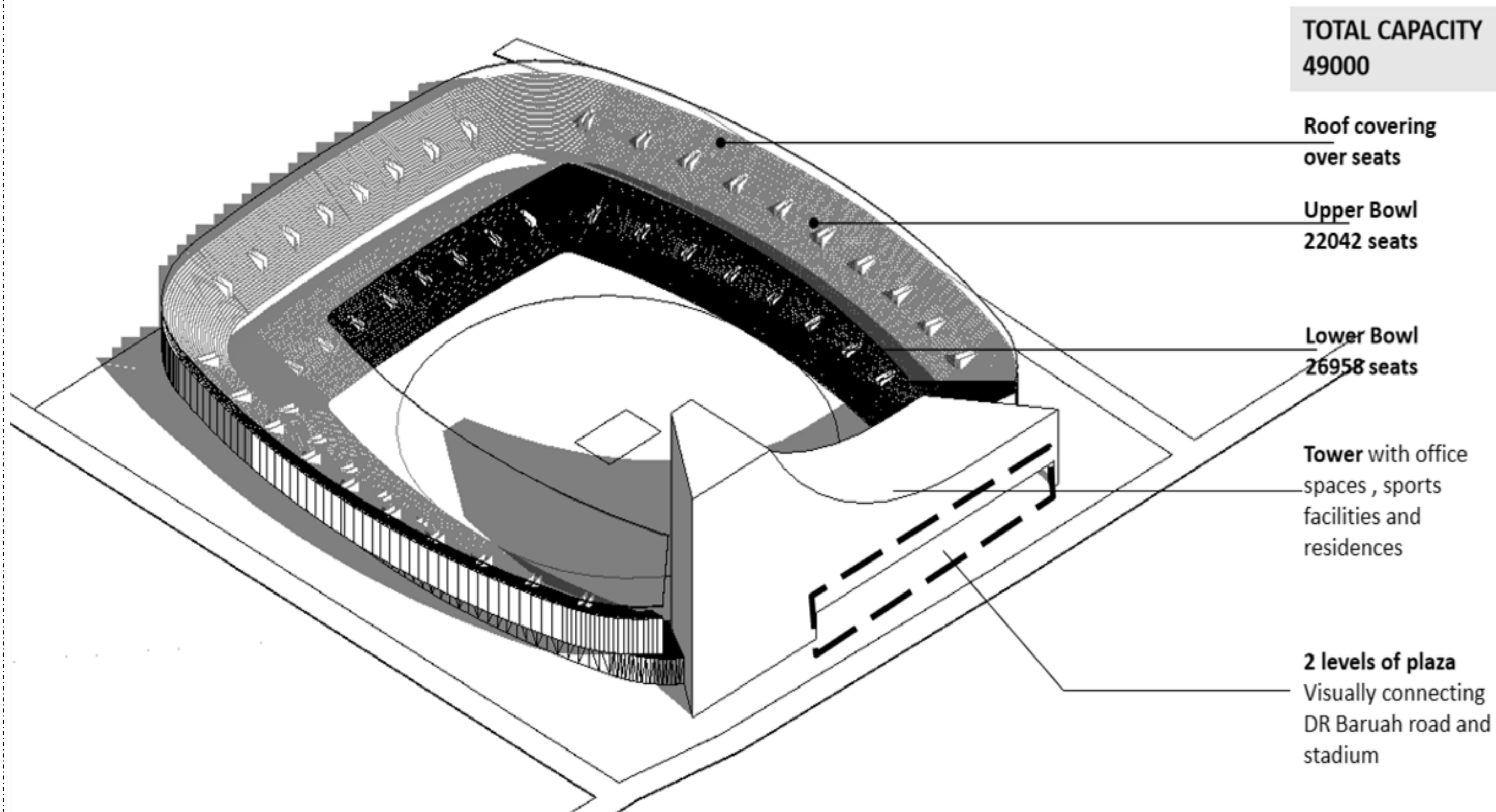
PROJECT REQUIREMENTS



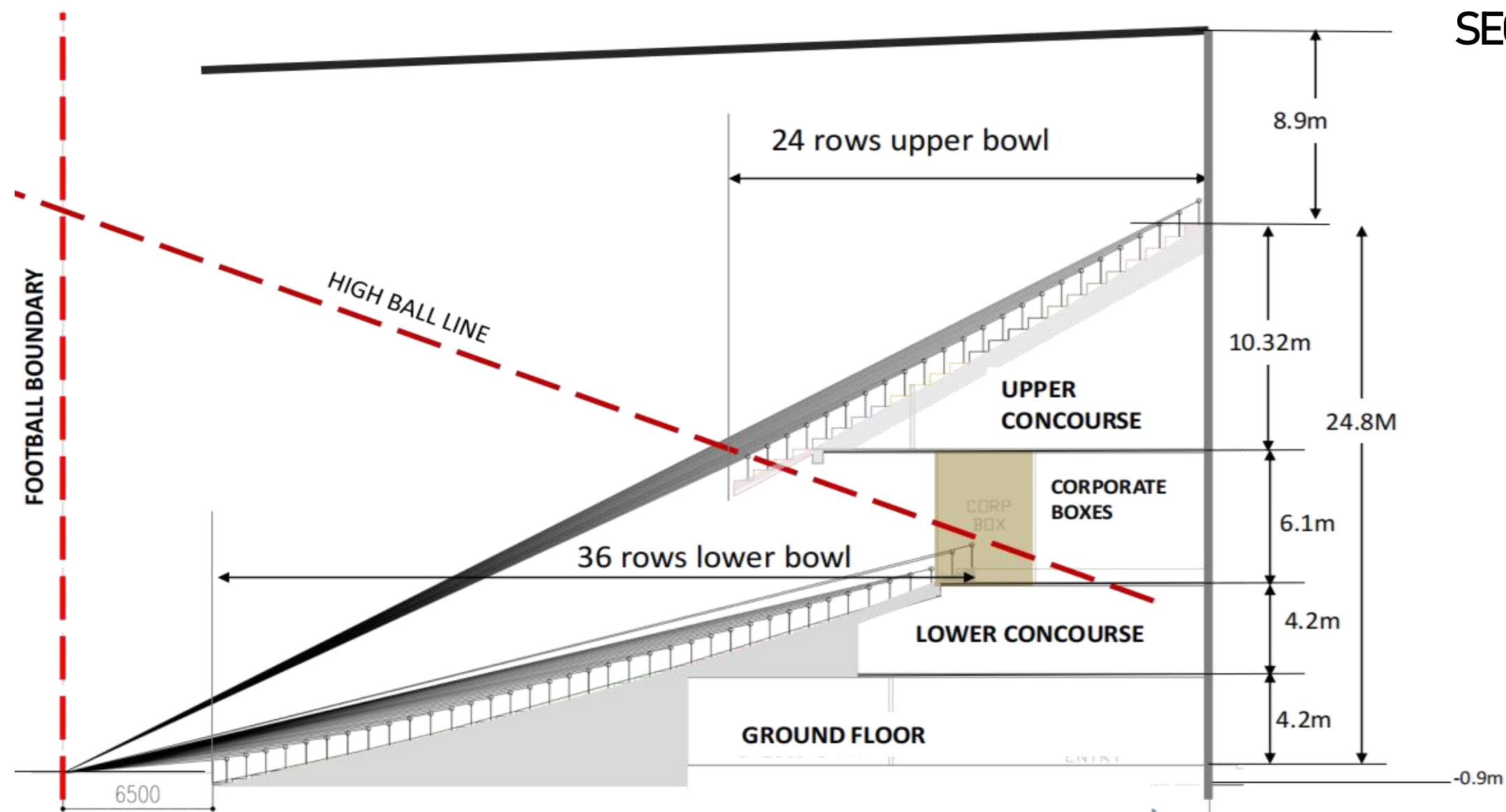




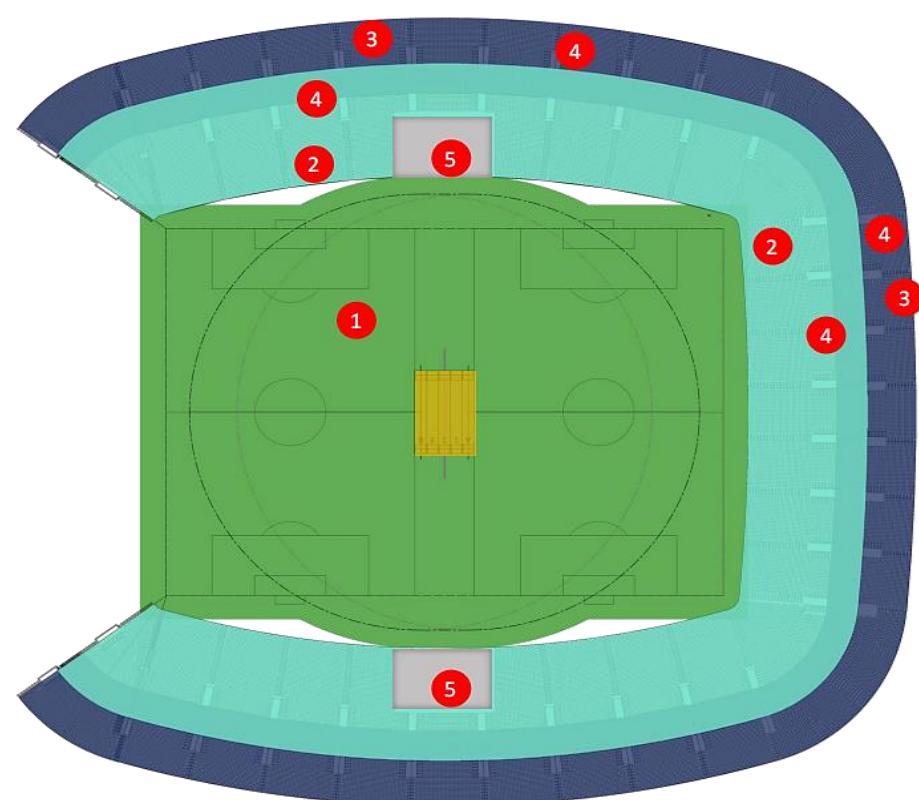
MASSING



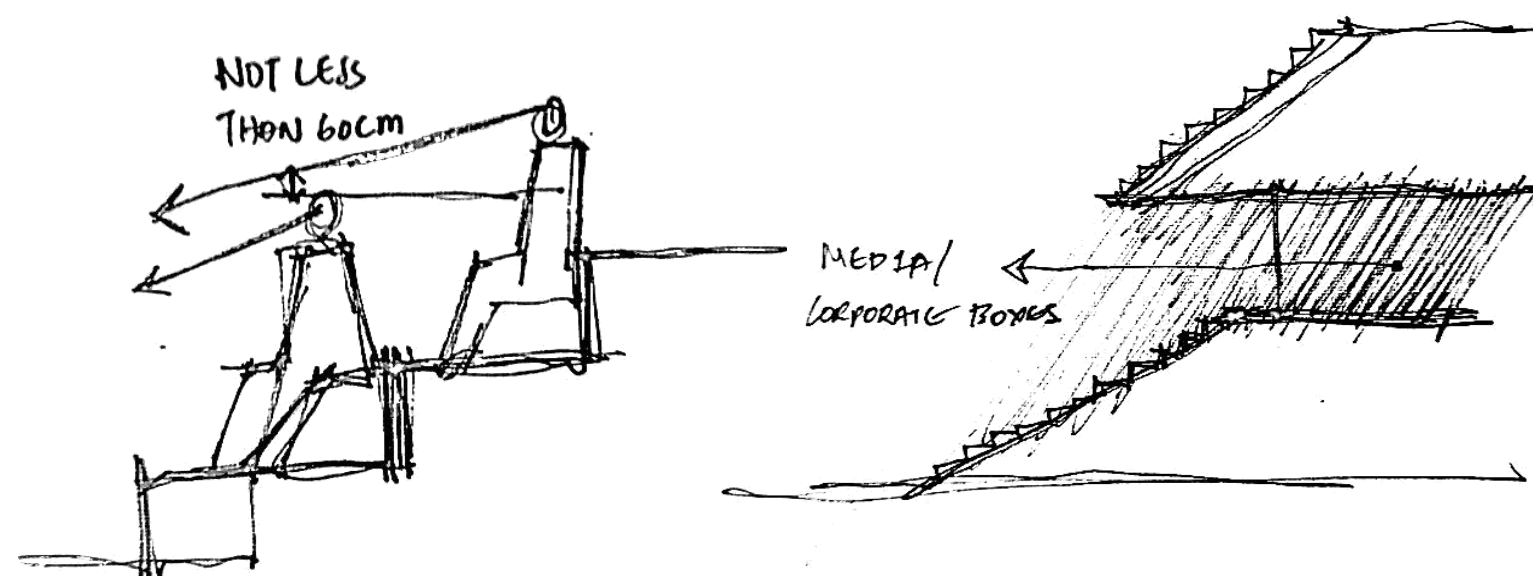
SECTION



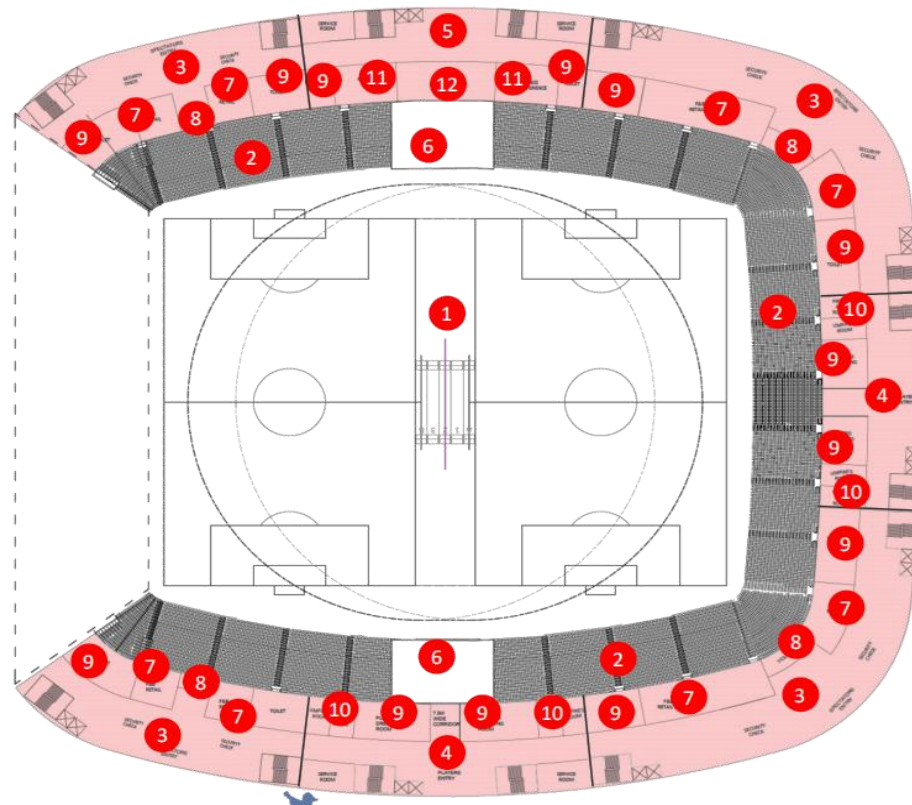
BOWL PLAN



- 1 FOP
- 2 Lower bowl
- 3 Upper bowl
- 4 Vomitories
- 5 Sight screen

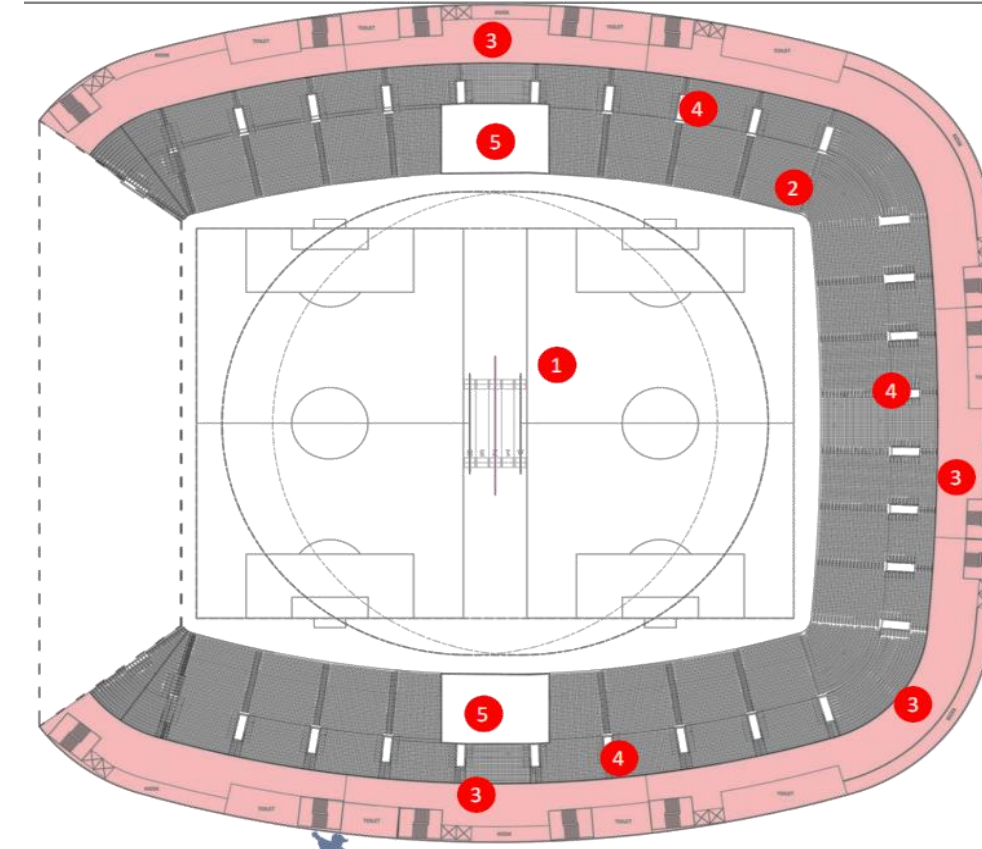


GROUND FLOOR PLAN



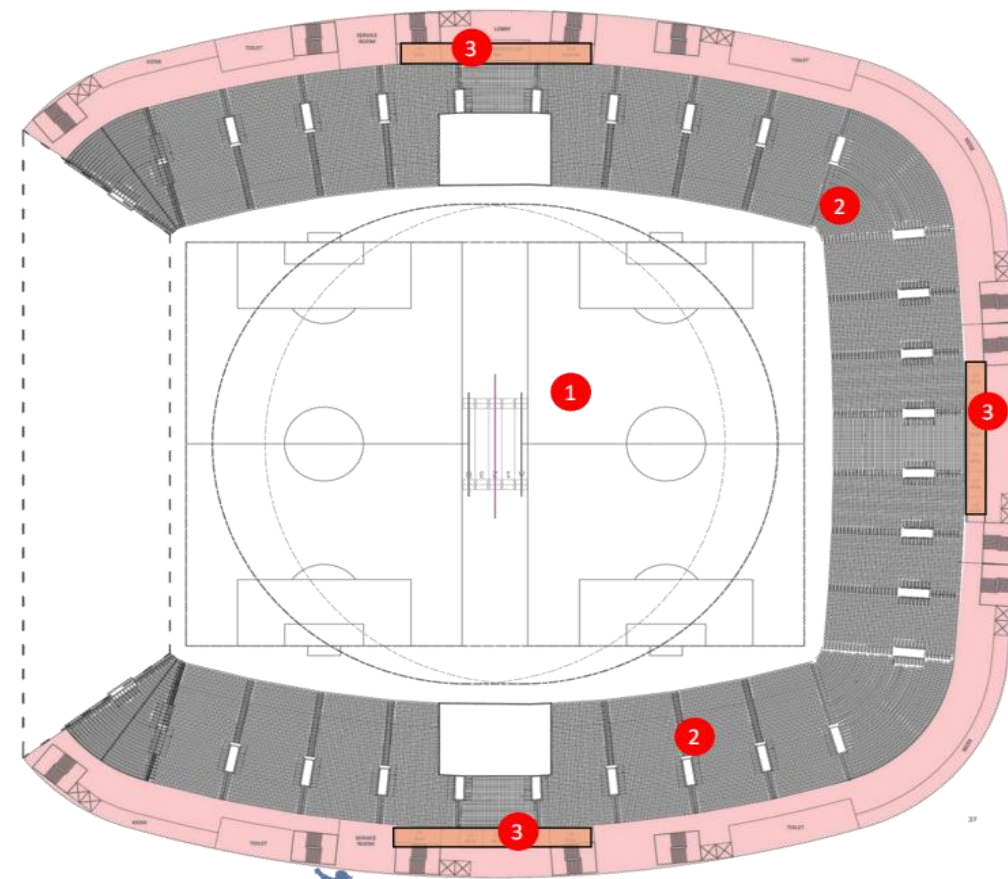
- 1 FOP
- 2 Lower bowl
- 3 Spectators lobby
- 4 Players lobby
- 5 Media lobby
- 6 Sight screen
- 7 F&B retail
- 8 Ticketing
- 9 Toilets /lockers
- 10 Umpire/ coach/first aid room
- 11 Broadcast & press conference room
- 12 Lounge

FIRST FLOOR PLAN



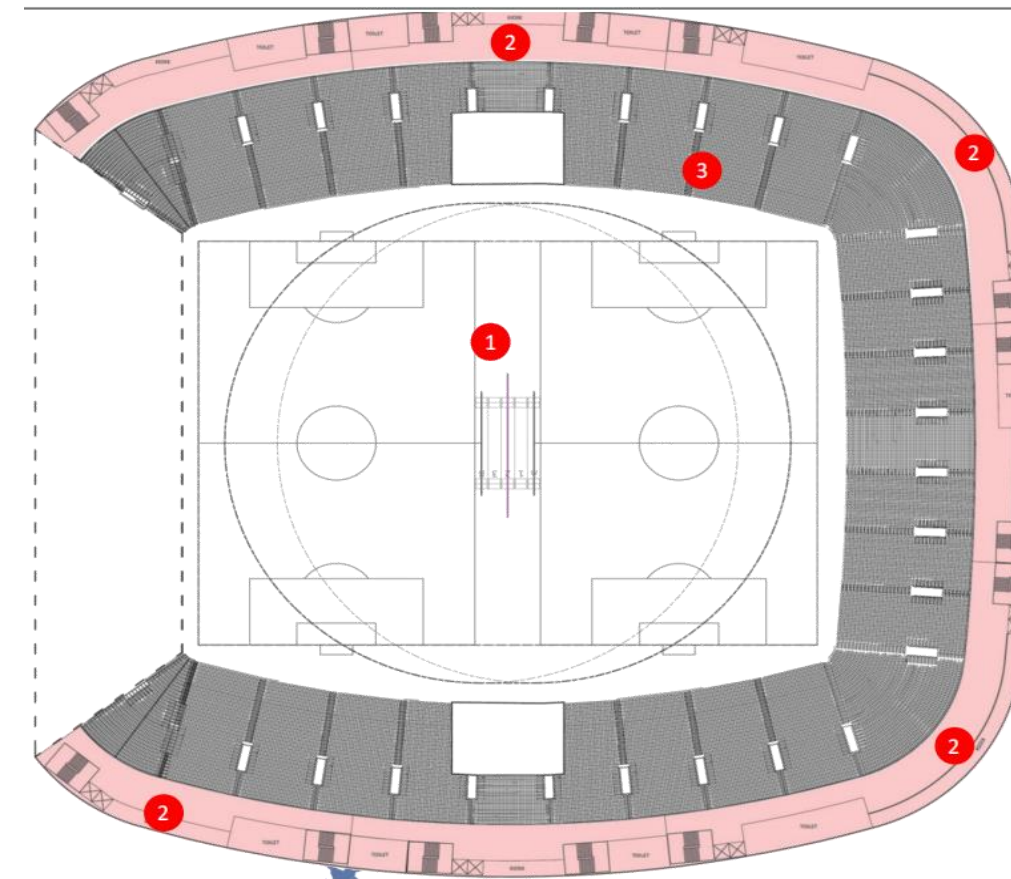
- 1 FOP
- 2 Lower bowl
- 3 Lower concourse
- 4 Vomitory
- 5 Sight screen

SECOND FLOOR PLAN



- 1 FOP
- 2 Lower bowl
- 3 Corporate boxes

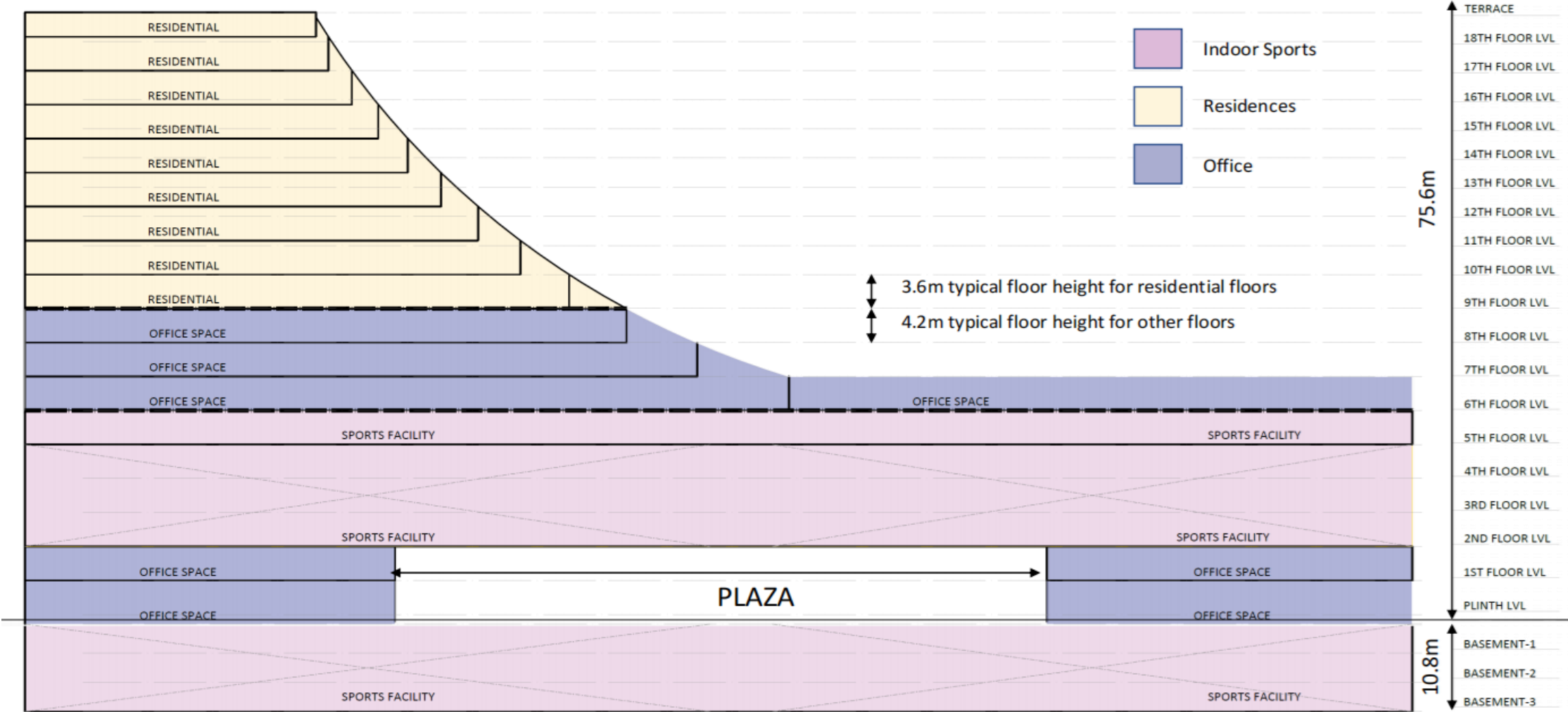
THIRD FLOOR PLAN



- 1 FOP
- 2 Upper concourse
- 3 Lower bowl below

WEST TOWER SECTION

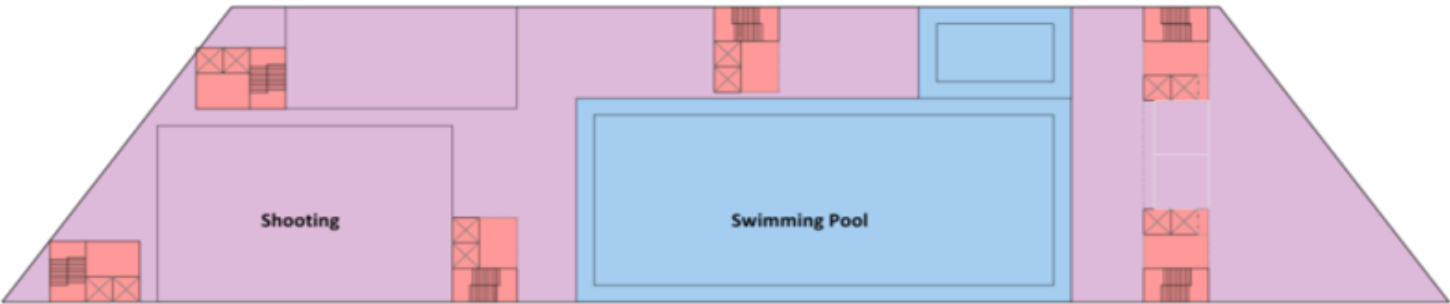
TOWER PLANS



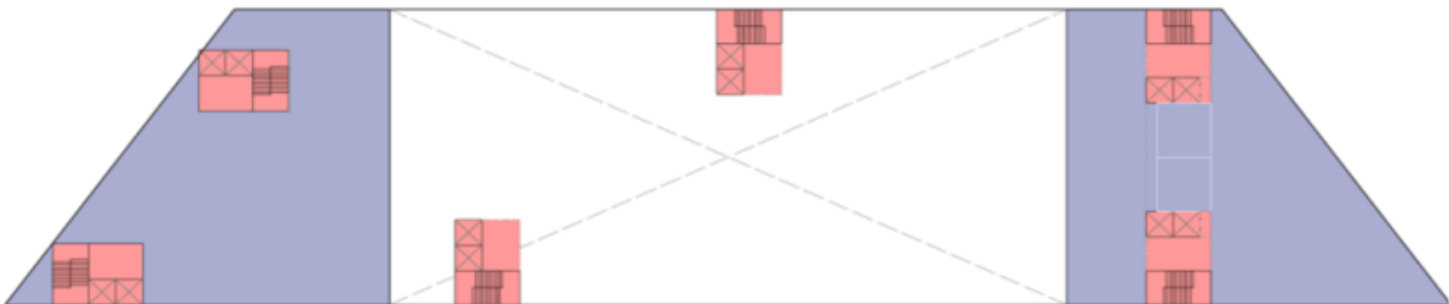
- Recreational
- Toilets
- 16-bed Rooms
- 8-bed Rooms
- 2-bed Rooms
- Service
- Vertical Core
- Indoor Sports
- Swimming Pool
- Office



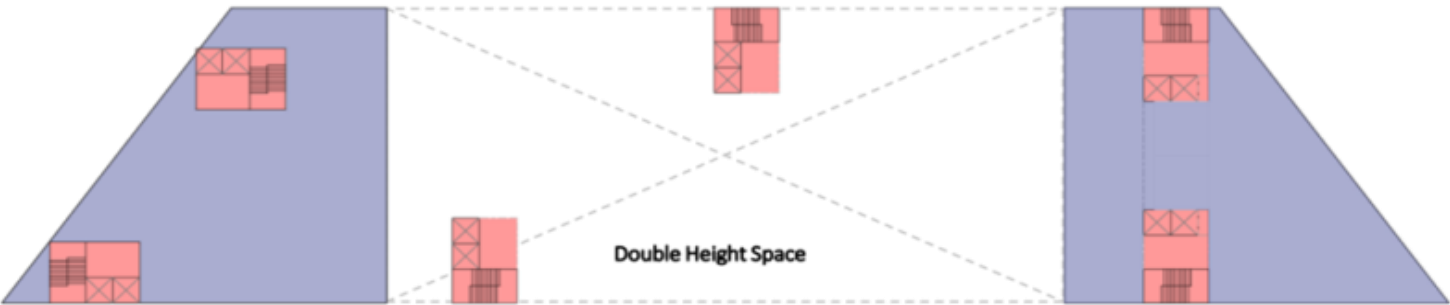
BASEMENT 2



FIRST FLOOR



GROUND FLOOR

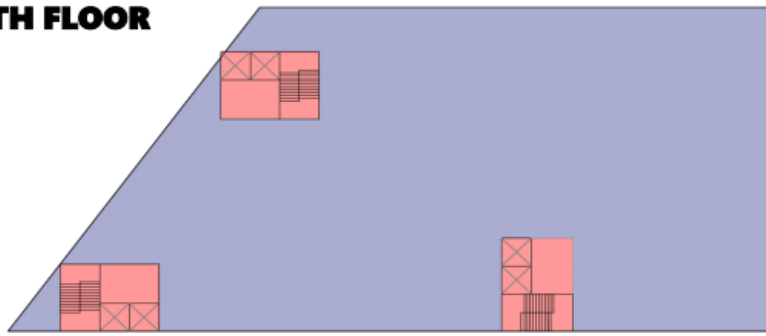


SECOND FLOOR

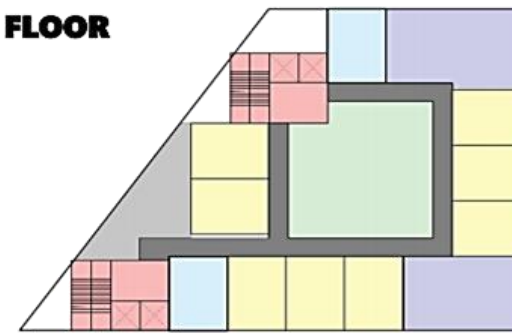


TOWER PLANS ◀ z

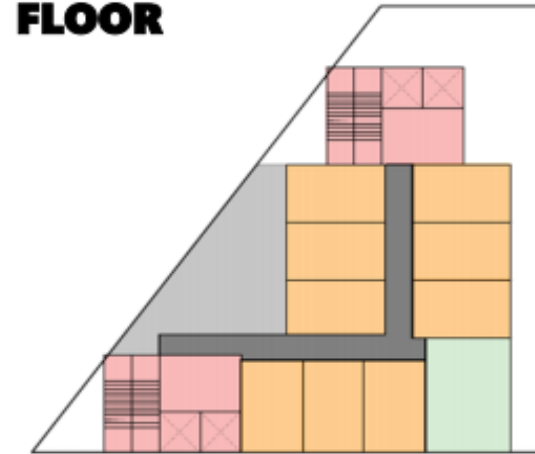
EIGHTH FLOOR



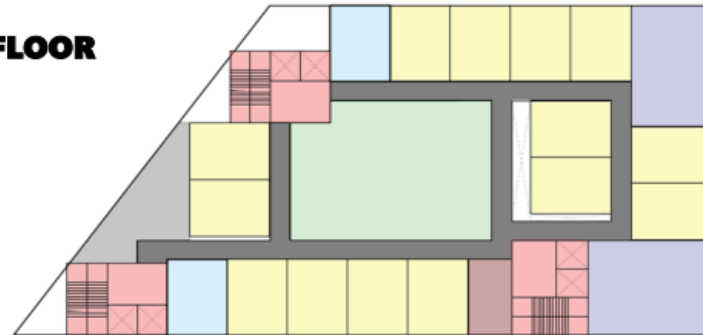
12TH FLOOR



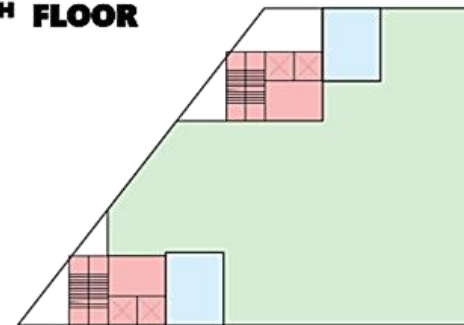
16TH FLOOR



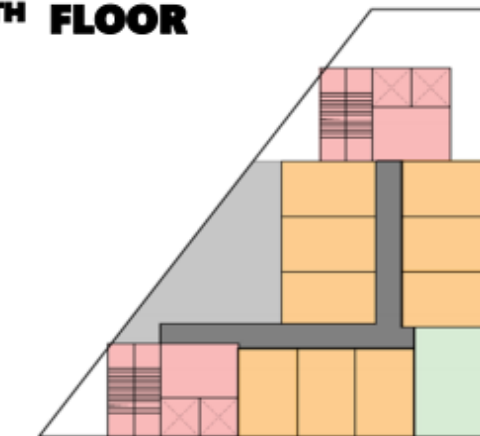
NINTH FLOOR



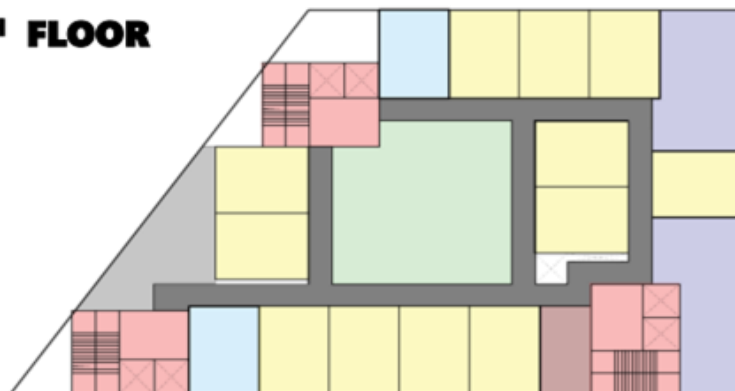
13TH FLOOR



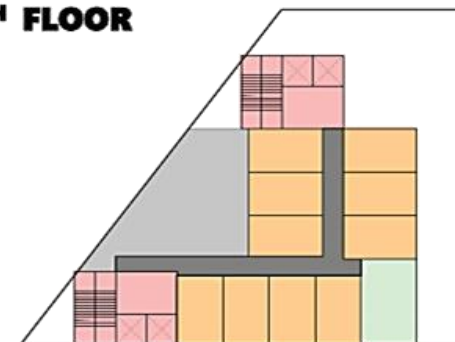
17TH FLOOR



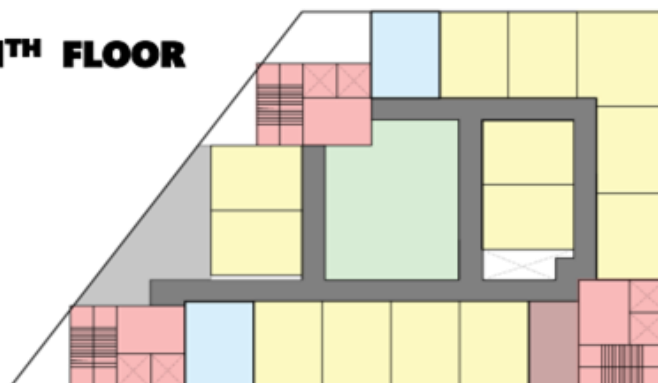
10TH FLOOR



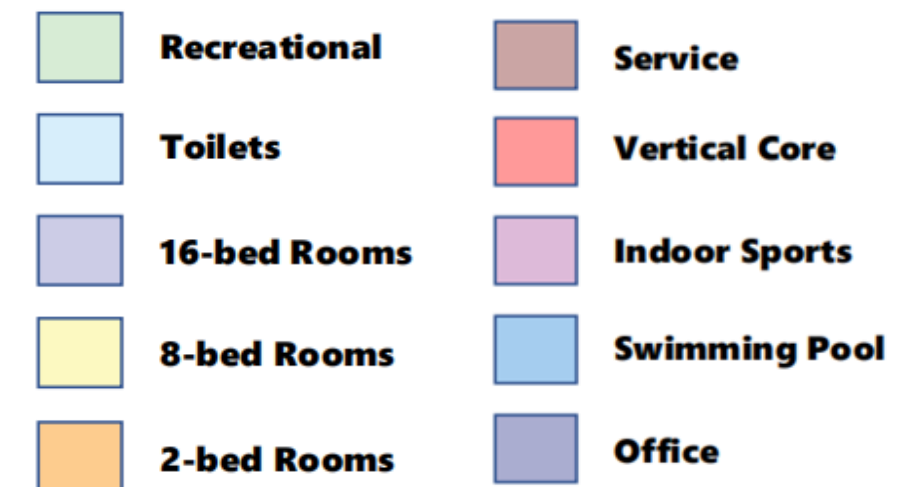
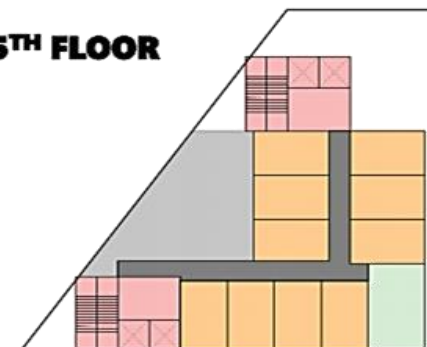
14TH FLOOR

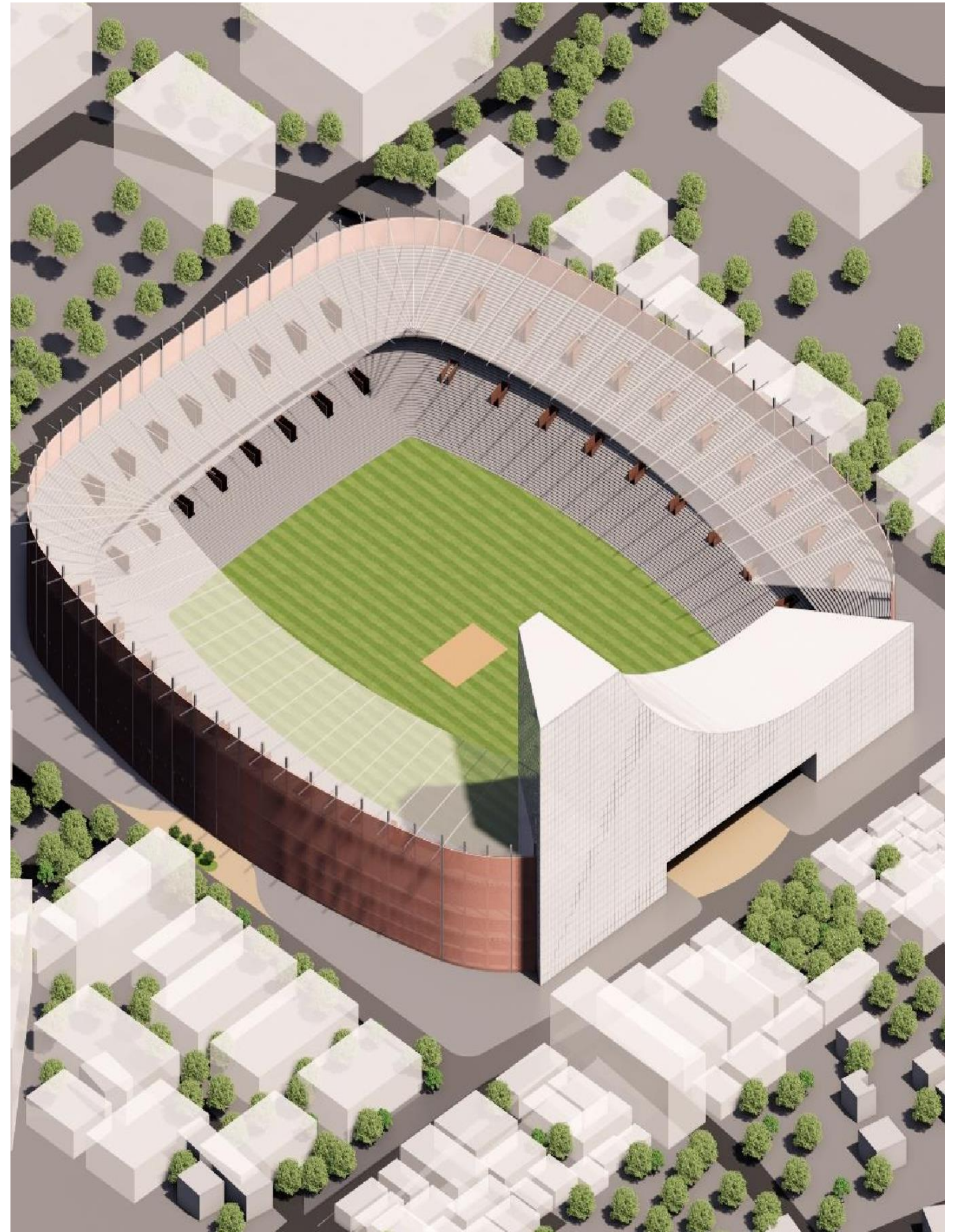


11TH FLOOR



15TH FLOOR





STAGE 2

STADIUM

- Football ground
- 8 lane athletic track
- 3500 spectators seating
- Roof cover for 1500 spectators
- Corporate boxes

- Concourse area
- Floodlights +Score board
- Plaza-Pickup/Drop off
- Ticketing
- Info/Enquiry desk

- Security check
- Café/Food court
- Toilet

PLAYERS FACILITIES

- Players Dressing room
- First aid/medical room
- Referee/jurors room
- Coach room
- Drug test room
- Sports equipment store
- Athletics prevent call room

- Dining area +Finishing kitchen
- Administration office
- Store
- Meeting room-65 persons
- Press conference
- Broad casting room
- Announcers /Commentators room

- VIP lounge/Dining/ Finishing Kitchen /Pantry.
- Toilet

ACCOMMODATION FACILITIES

- Gym Cum Basketball court
- Room/Dormitories for 150 trainees
- Single occupancy rooms for 30 coaches
- Dining area with Kitchen

OFFICE FACILITIES

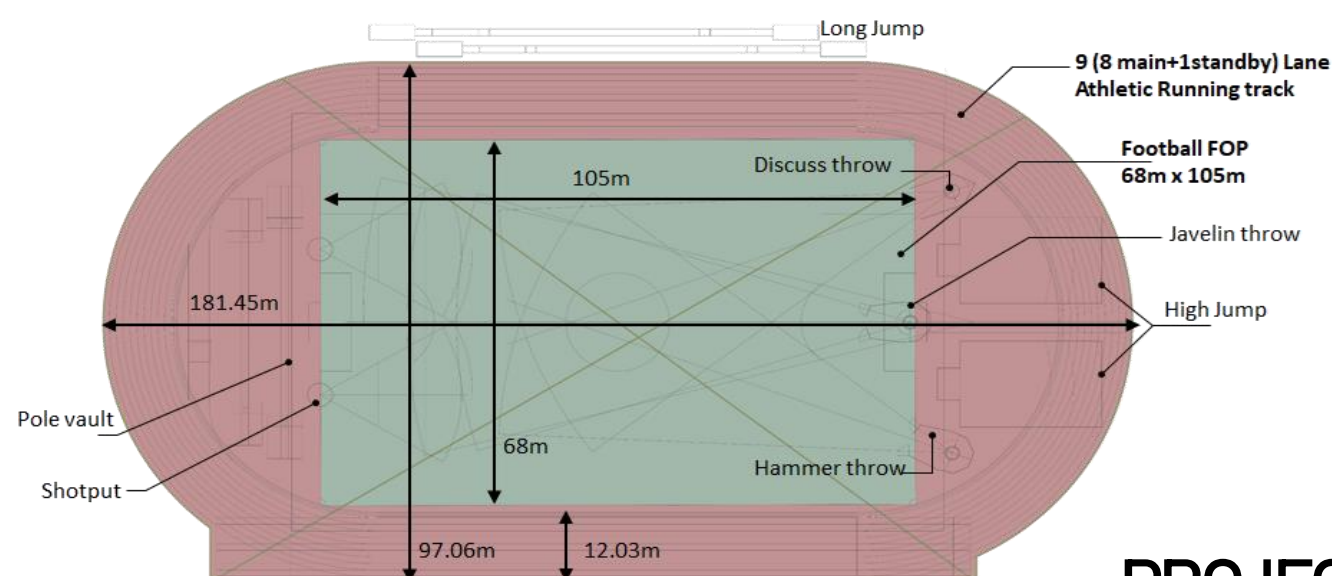
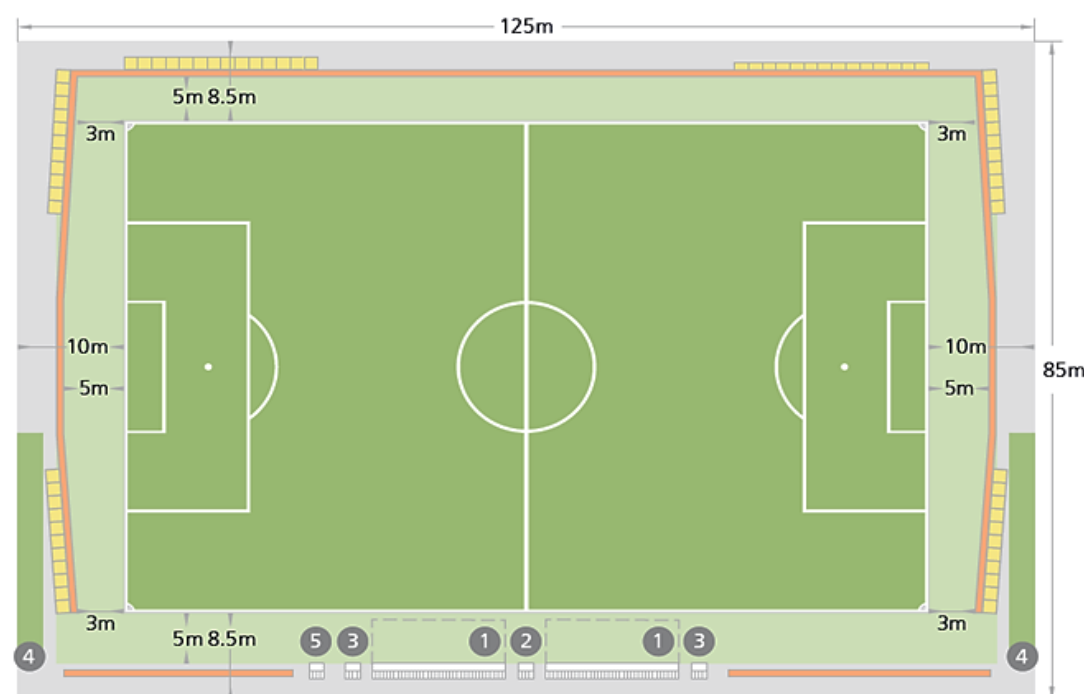
- Board of sports Assam
- Directorate of sports & Youth welfare
- District sports office
- Assam Olympic association
- Office for 40 nos of sports Association

OTHER FACILITIES

- Badminton court
- Swimming pool
- MLCP for 1300 cars (outside the site connected via elevated corridor)

FUTURE PROVISIONS

- Space provision for Future Indoor sports facility
- Provision in accommodation facility to extend to a total capacity of 500 persons

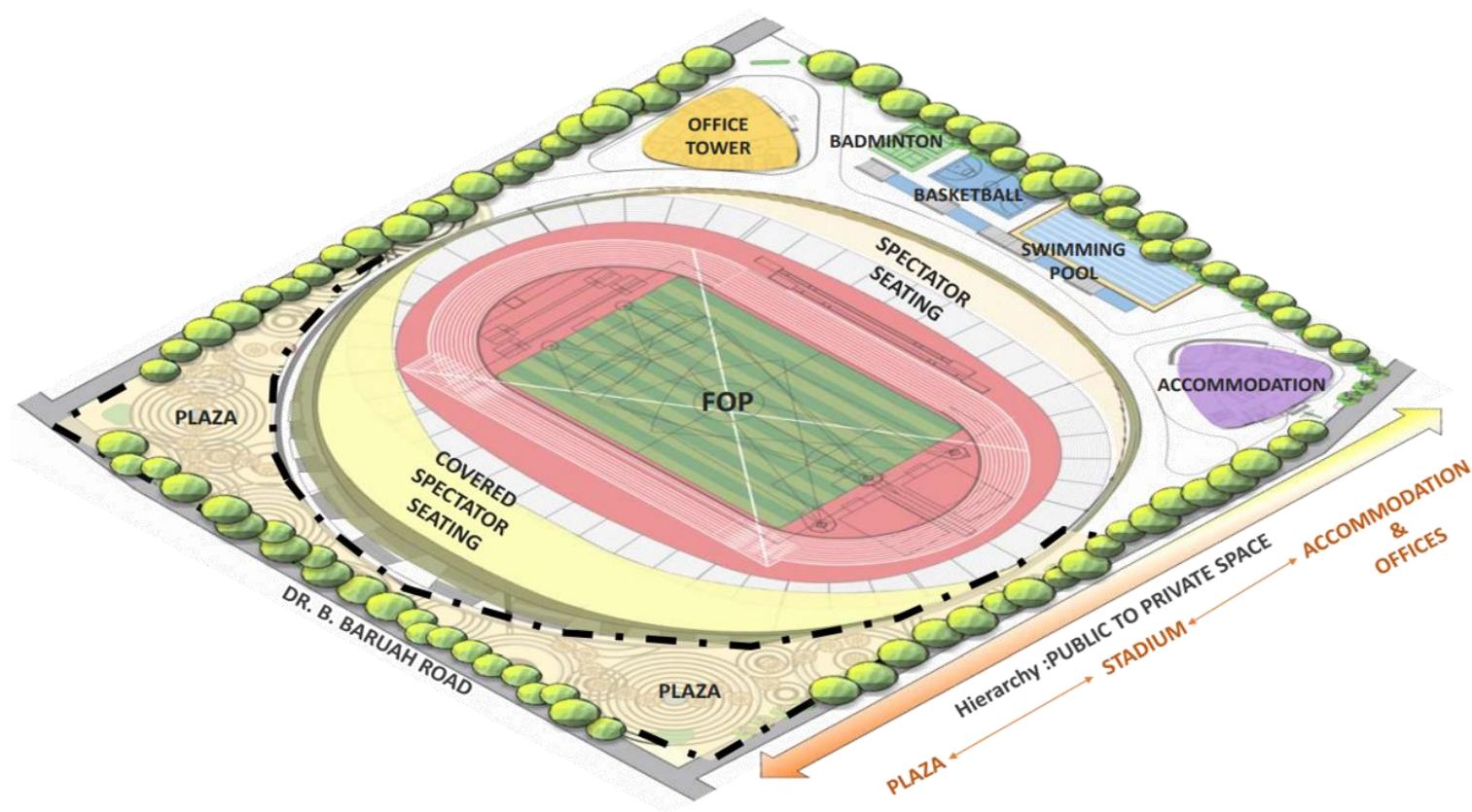
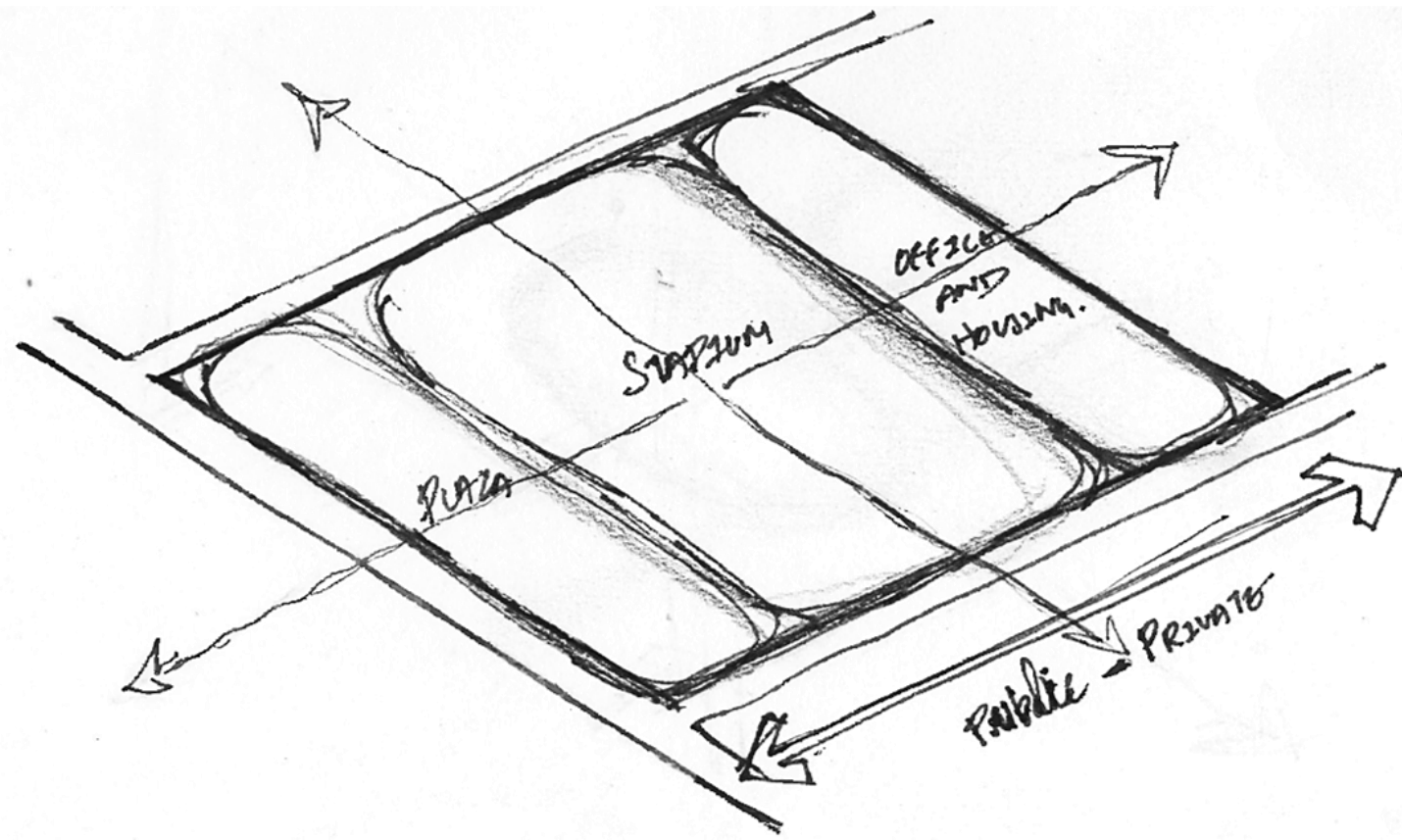


WE ARE CONSIDERING
CONSTRUCTION
CATEGORY III AS PER
SITE CONSTRAINT.
IT CAN UPHOLD
COMPETITIONS UPTO
CONTINENTAL/
REGIONAL & AREA
CUPS.

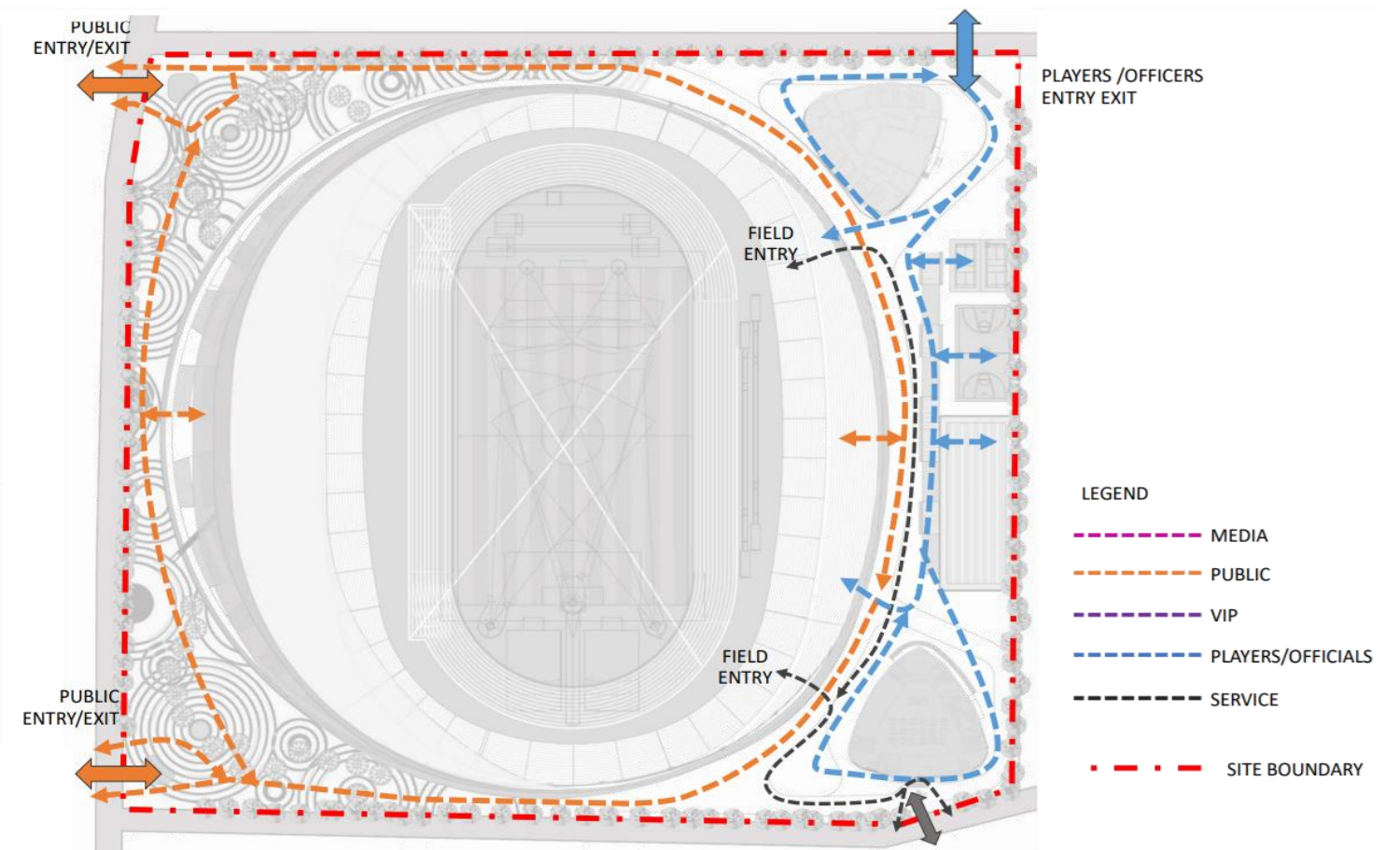
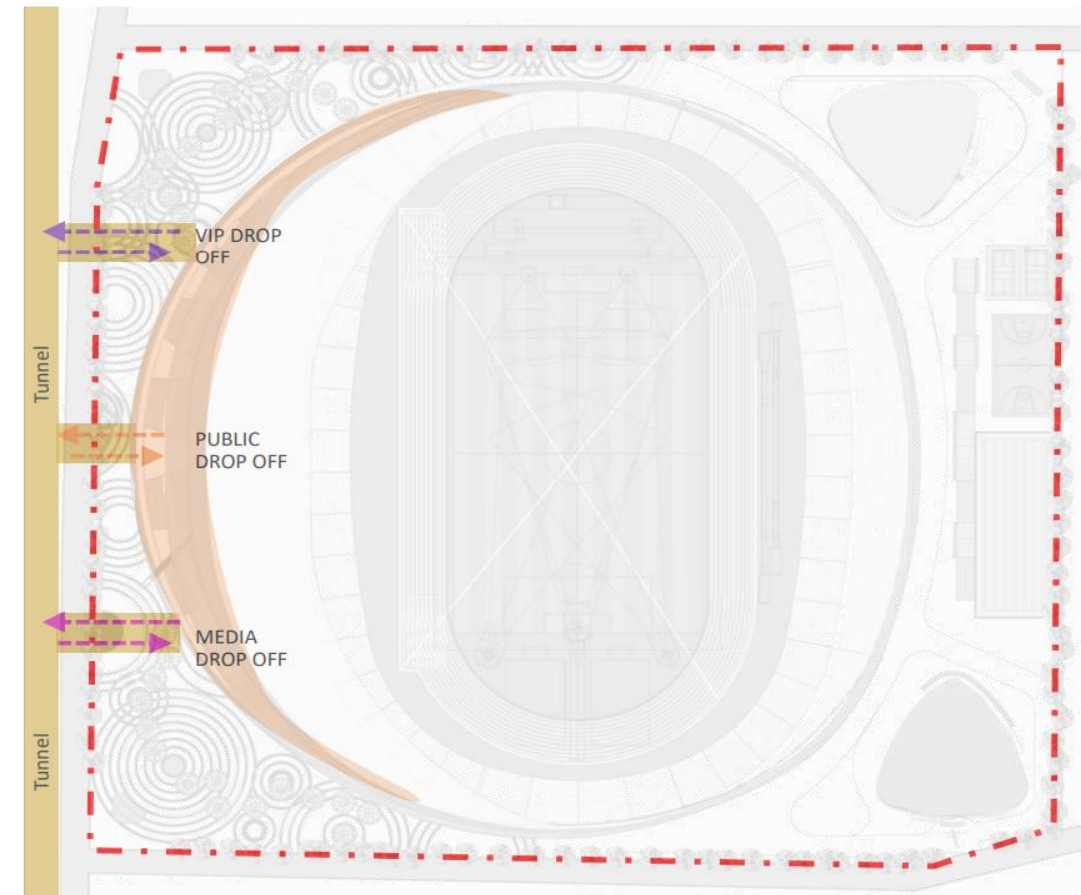
PROJECT REQUIREMENTS

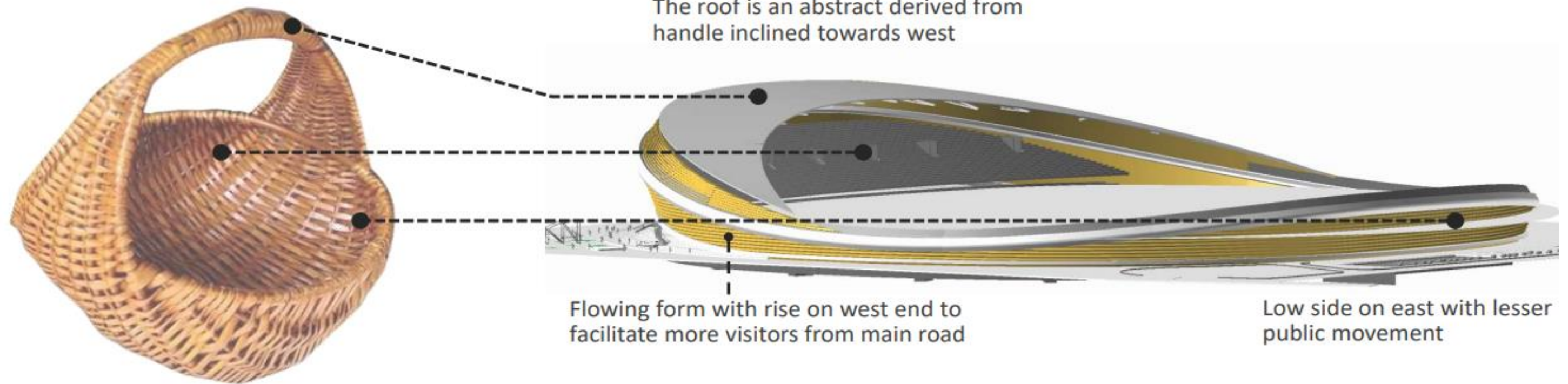


PLANNING

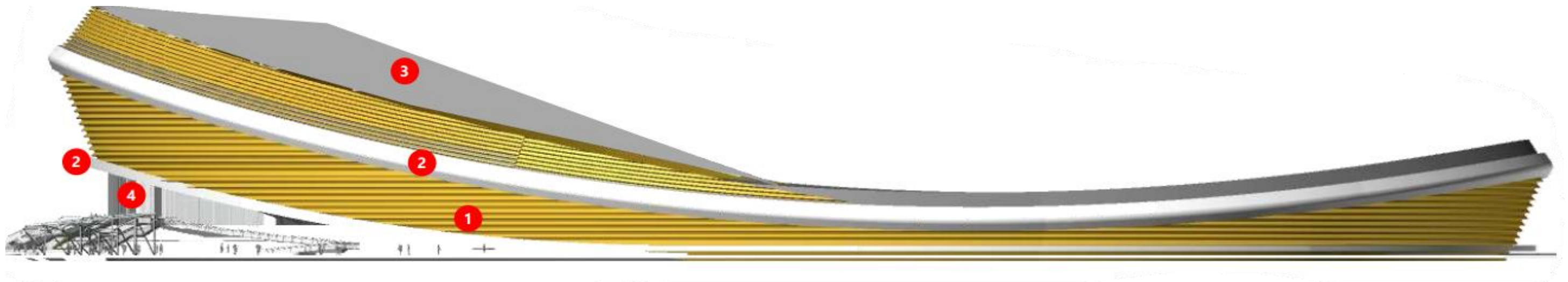


CIRCULATION





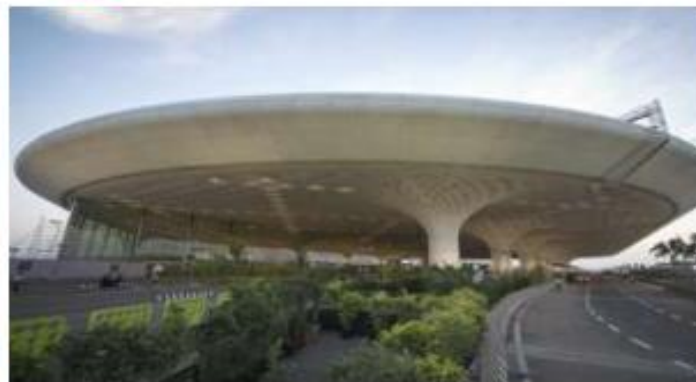
“THE STADIUM DESIGN IS INSPIRED BY THE TRADITIONAL BAMBOO BASKET OF ASSAM”



1 TERRACOTTA SLATS FACADE



2 GRC BAND



3 TENSILE CANOPY



4 INCLINED COLUMNS –PAINT FINISH



PLANNING

- 1 GRAND STAIRCASE
- 2 PLAZA
- 3 BENCHES
- 4 CANOPY ELEMENT
- 5 DENSE GREEN BUFFER
- 6 BRIDGE
- 7 FOUNTAIN

Canopy resembling Assamese Jaapi to act as covered shade to reach the stadium bowl

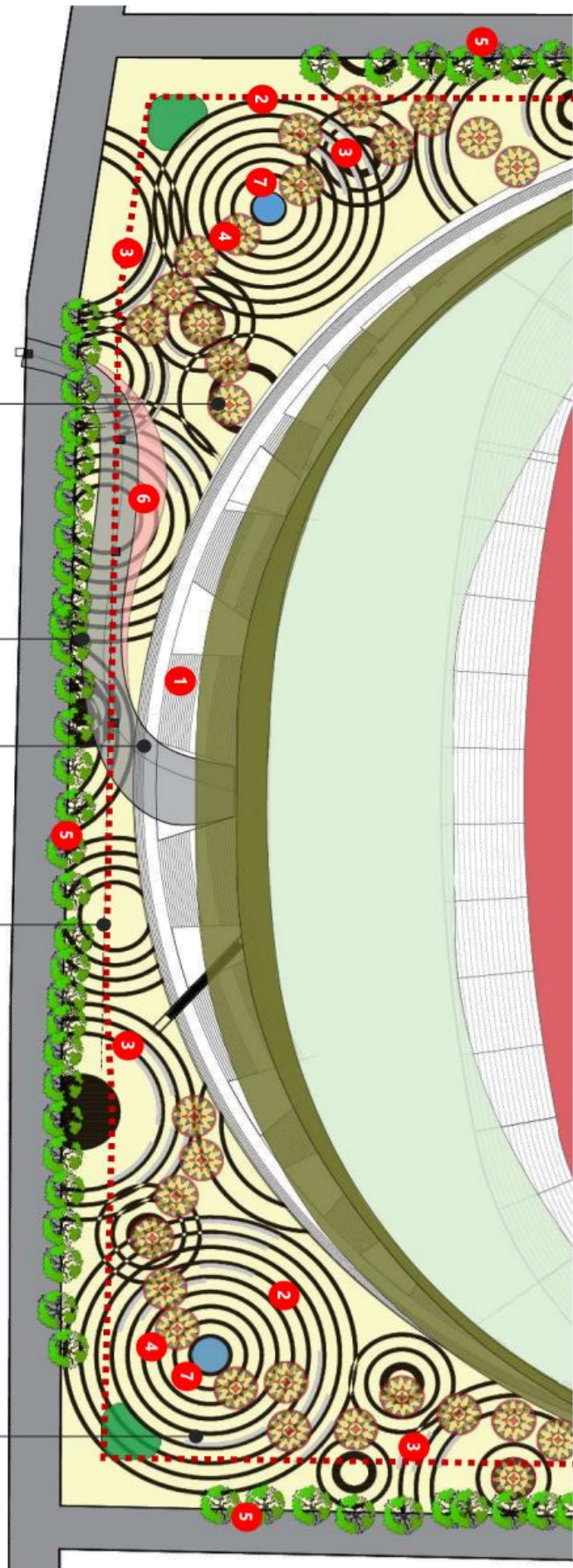
Dense Green Vegetation between site boundary and plaza

Bridge connecting pedestrians and Shuttle service from MLCP to stadium

Radial flooring pattern in tones of brown to resemble the bamboo basket its circular form and shape

Plaza with motorable road confined to 6m from site boundary

Benches to provide points of rest

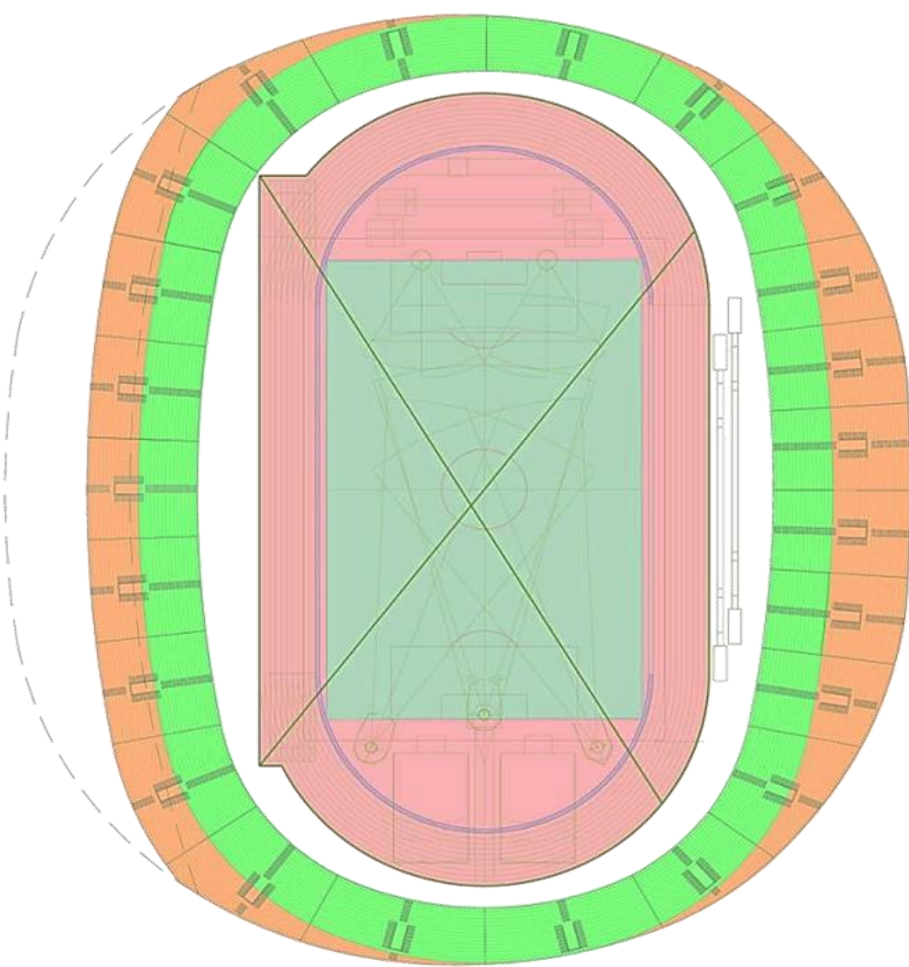


CIRCULATION



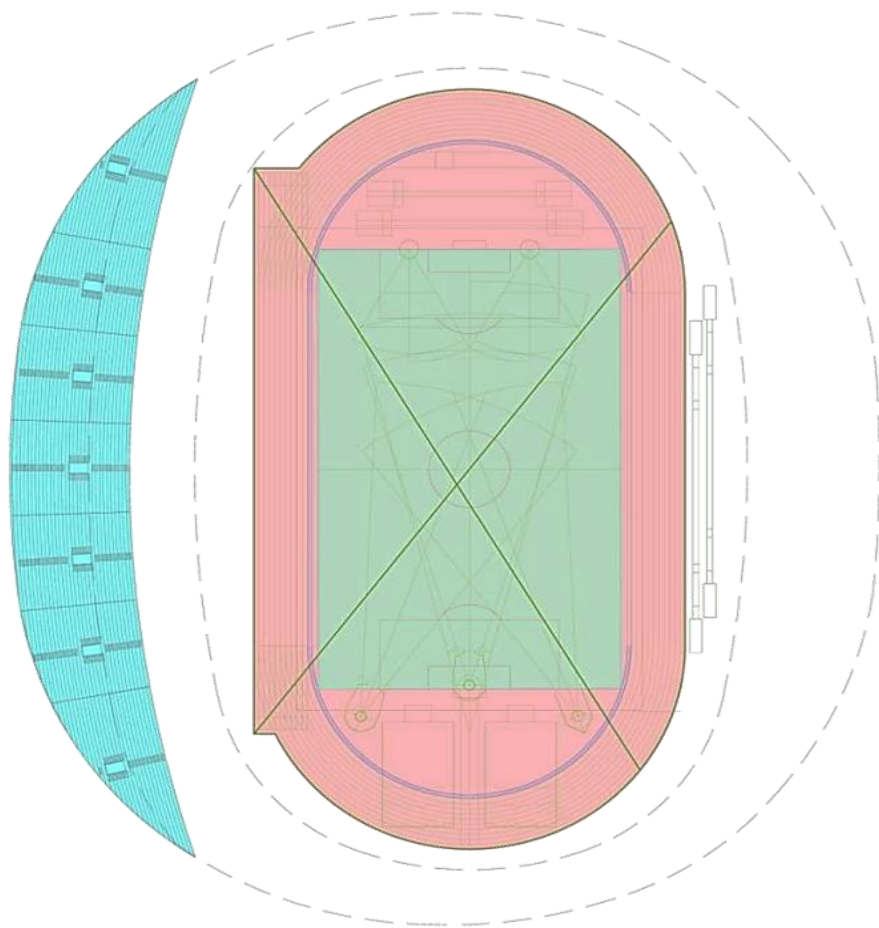
- ALL-AROUND BOWL
- WEST & EAST – ADDITIONAL BOWL

LOWER TIER



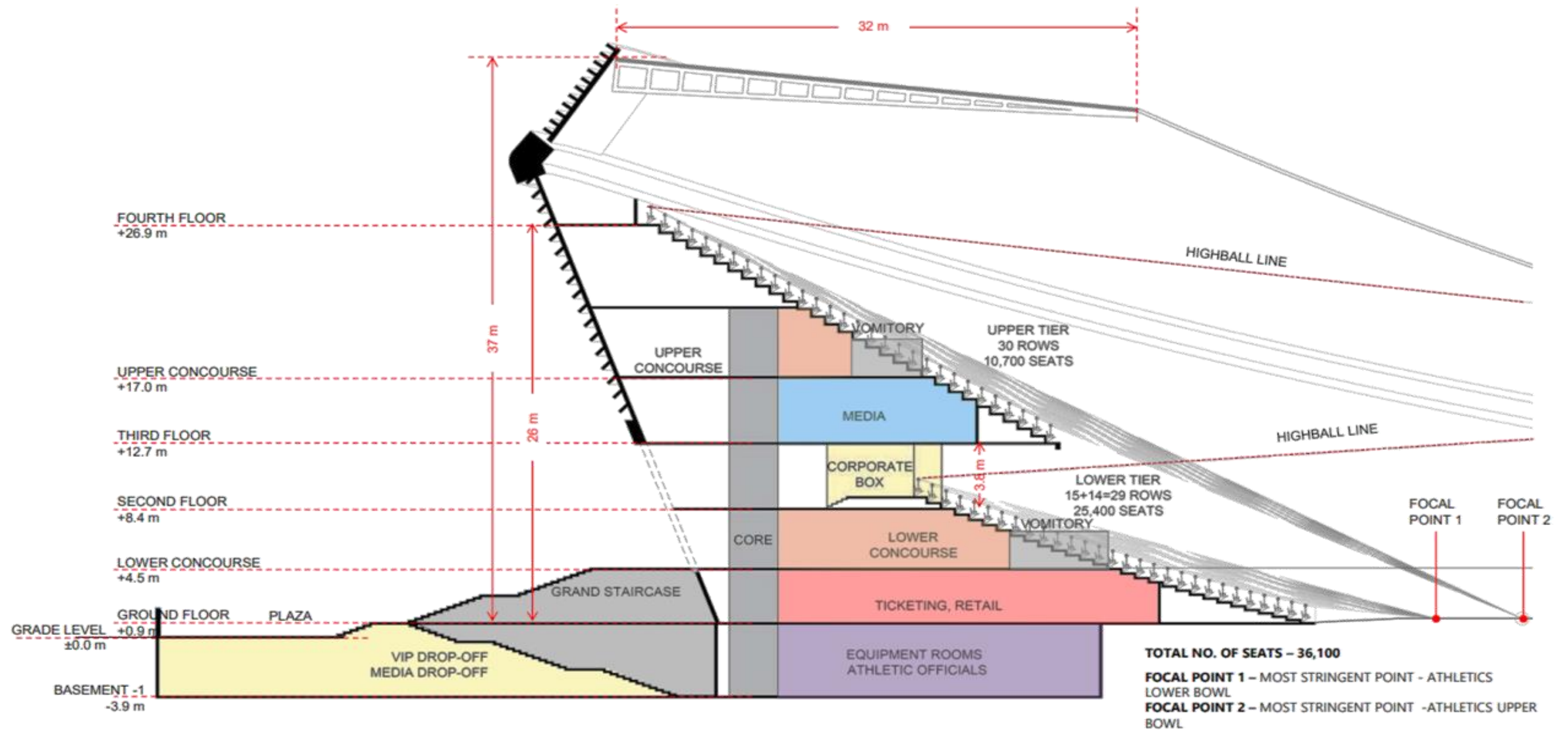
- UPPER BOWL - WEST

UPPER TIER



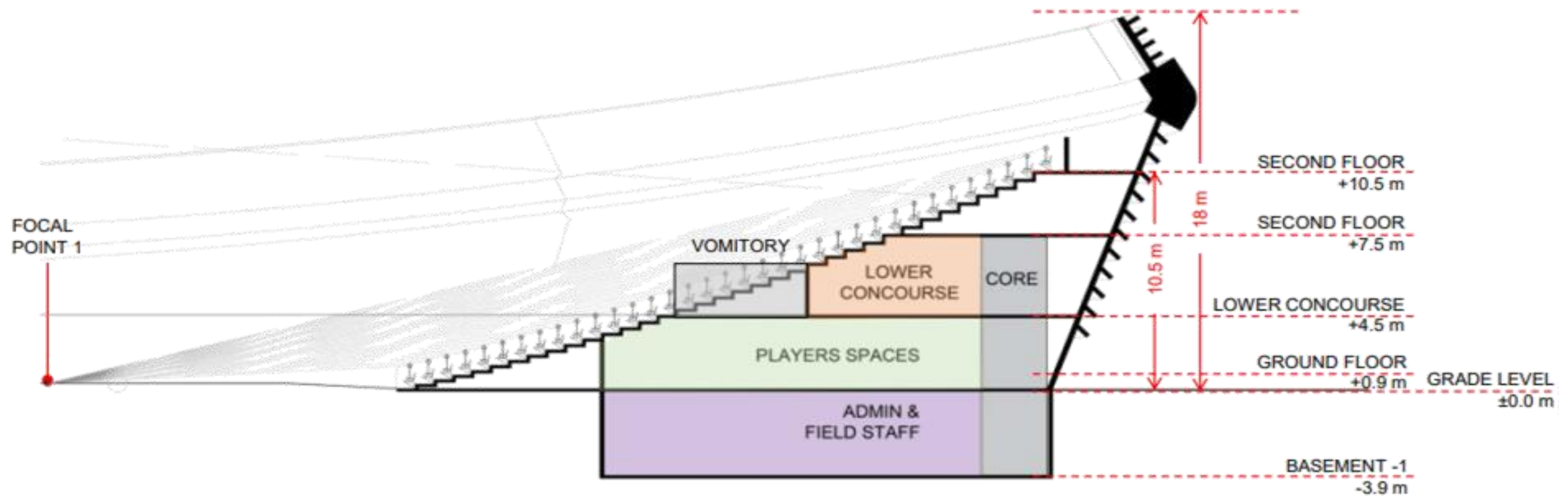
SECTION

West stand-indicating schematic connection from basement- VIP and Media



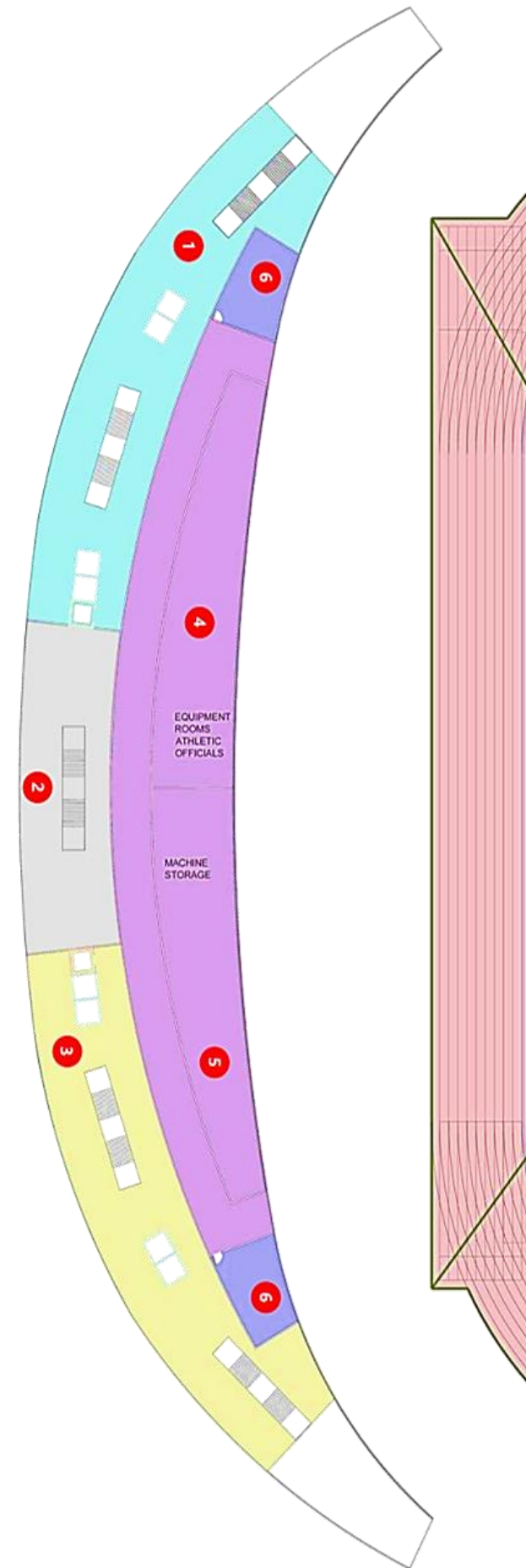
SECTION

East stand



WEST STAND-BASEMENT PLAN

- 1 MEDIA ENTRANCE LOBBY
- 2 VIP ENTRANCE LOBBY
- 3 PUBLIC LOBBY
- 4 EQUIPMENT ROOMS
- 5 MACHINE STORAGE
- 6 TOILETS



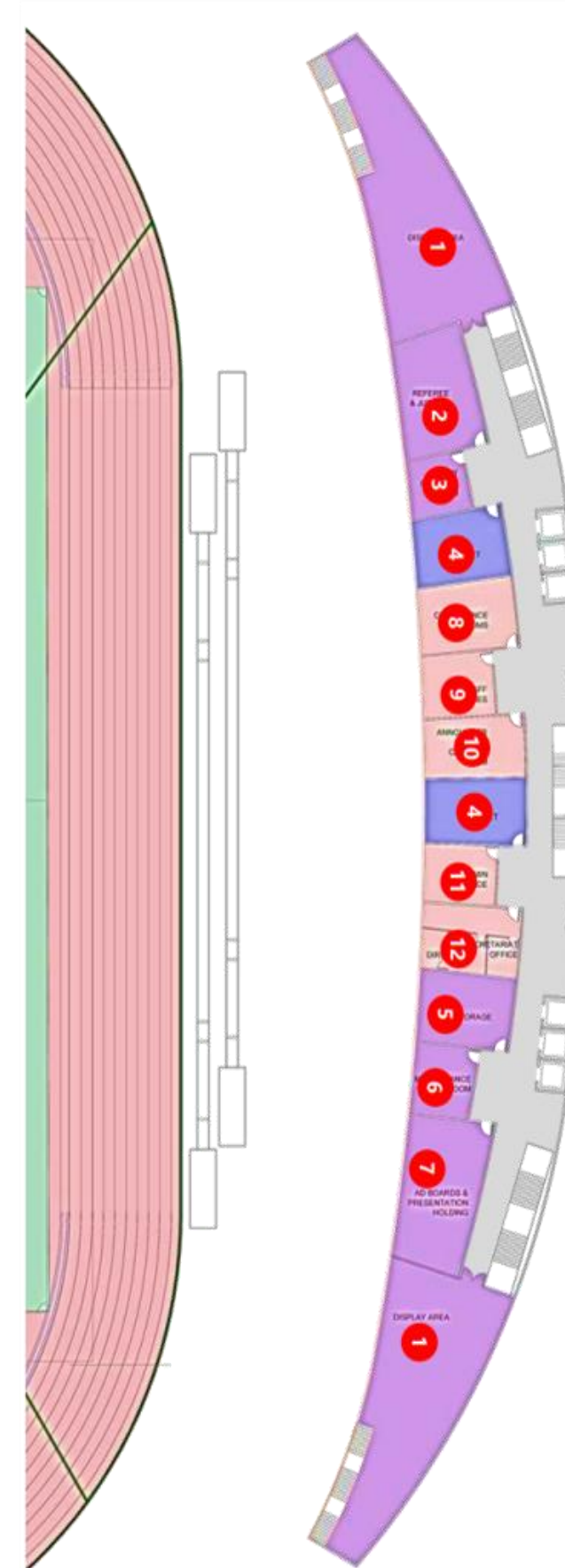
EAST STAND-BASEMENT PLAN



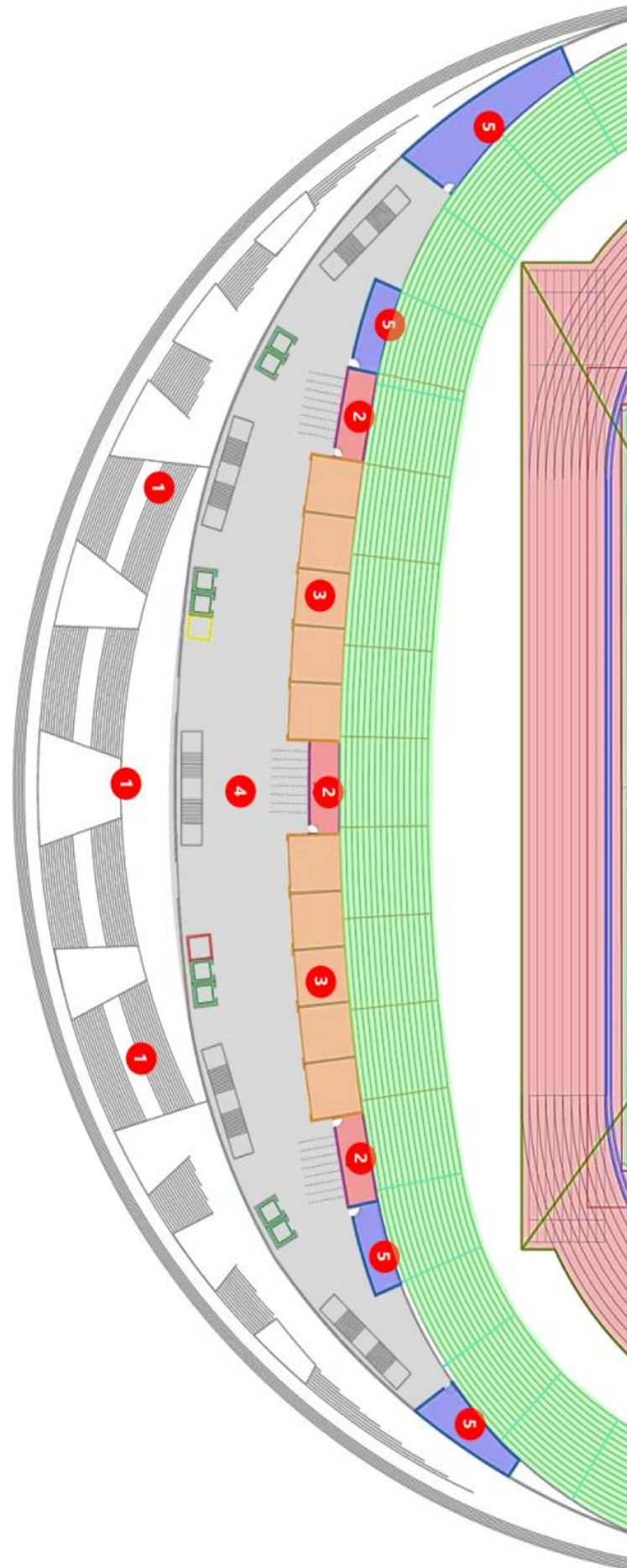
LEGENDS

- RETAIL
- TICKETING
- TOILETS
- ADMIN SPACES
- FIELD STAFF
- PLAYERS SPACES
- VIP SPACES
- MEDIA
- PUBLIC CIRCULATION
- SERVICES

- 1 DISPLAY AREA
- 2 REFEREE & JUDGES
- 3 EVENT CONTROL ROOM
- 4 TOILETS
- 5 STORAGE
- 6 MAINTENANCE ROOM
- 7 AD-BOARDS & PRESENTATION HOLDING
- ADMIN ZONES**
- 8 CONFERENCE ROOMS
- 9 STAFF OFFICES
- 10 ANNOUNCER CALL-OUT ROOM
- 11 ADMIN OFFICE
- 12 DIRECTOR & SECRETARIAT

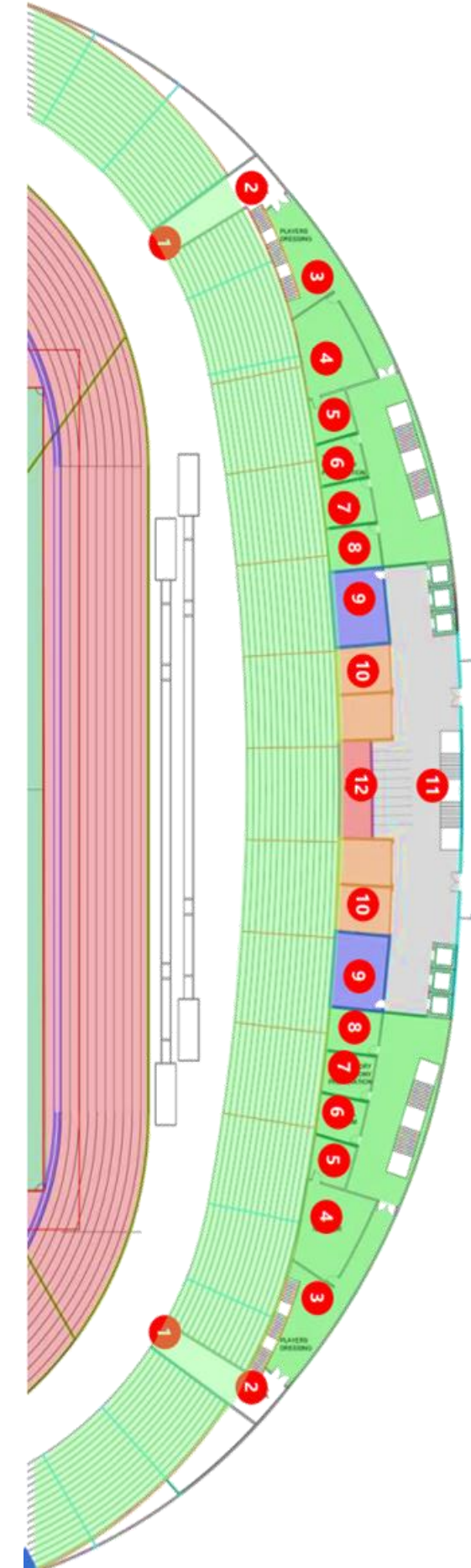


WEST STAND-GROUND FLOOR PLAN



- 1 GRAND STAIRCASE
- 2 TICKETING & INFODESK
- 3 RETAIL
- 4 ENTRANCE LOBBY - PUBLIC
- 5 TOILETS

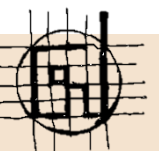
EAST STAND-GROUND FLOOR PLAN



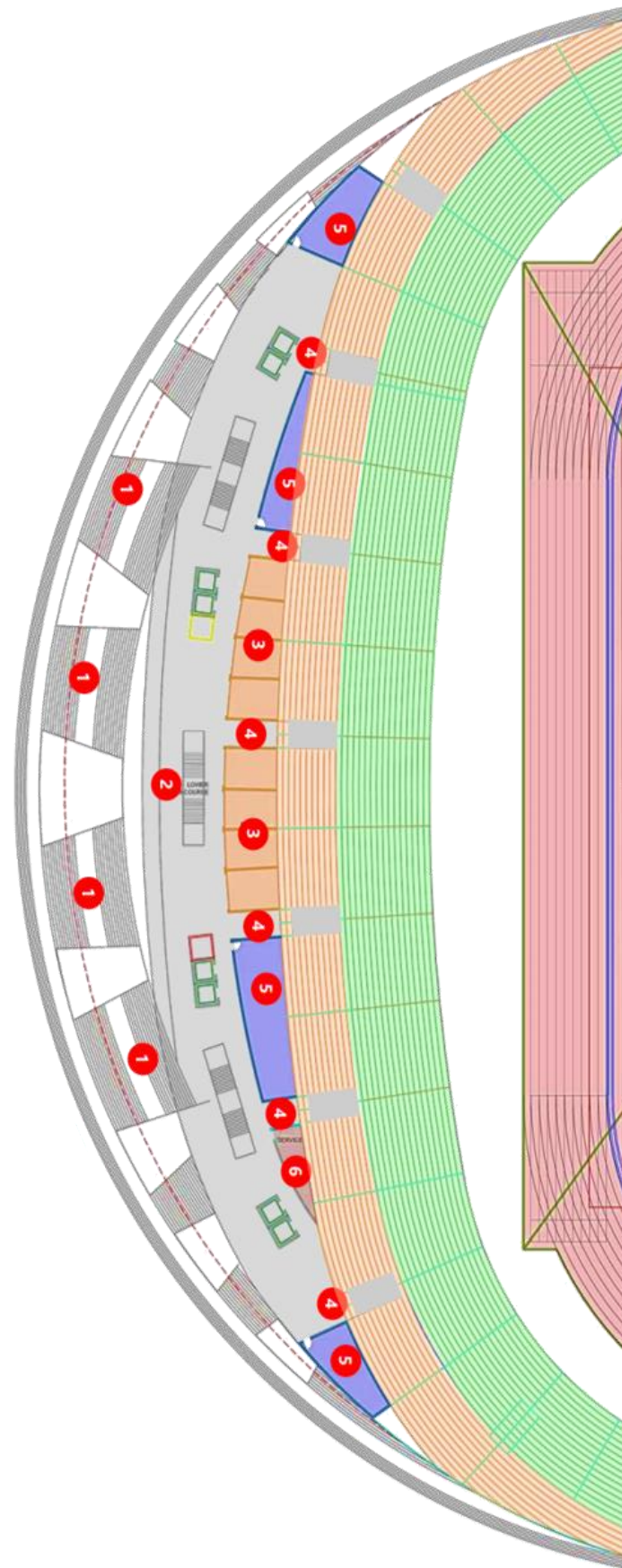
- 1 FIELD ENTRY
- 2 CALL ROOM
- 3 PLAYERS DRESSING
- 4 PLAYERS TOILET/SHOWER
- 5 SAUNA/MASSAGE ROOM
- 6 VICTORY PREPARATION ROOM
- 7 MEDICAL ROOM/DOPE ROOM
- 8 COACH
- 9 PUBLIC TOILETS
- 10 RETAIL
- 11 ENTRANCE LOBBY
- 12 TICKETING & INFODESK

LEGENDS

- RETAIL
- TICKETING
- TOILETS
- ADMIN SPACES
- FIELD STAFF
- PLAYERS SPACES
- VIP SPACES
- MEDIA
- PUBLIC CIRCULATION
- SERVICES

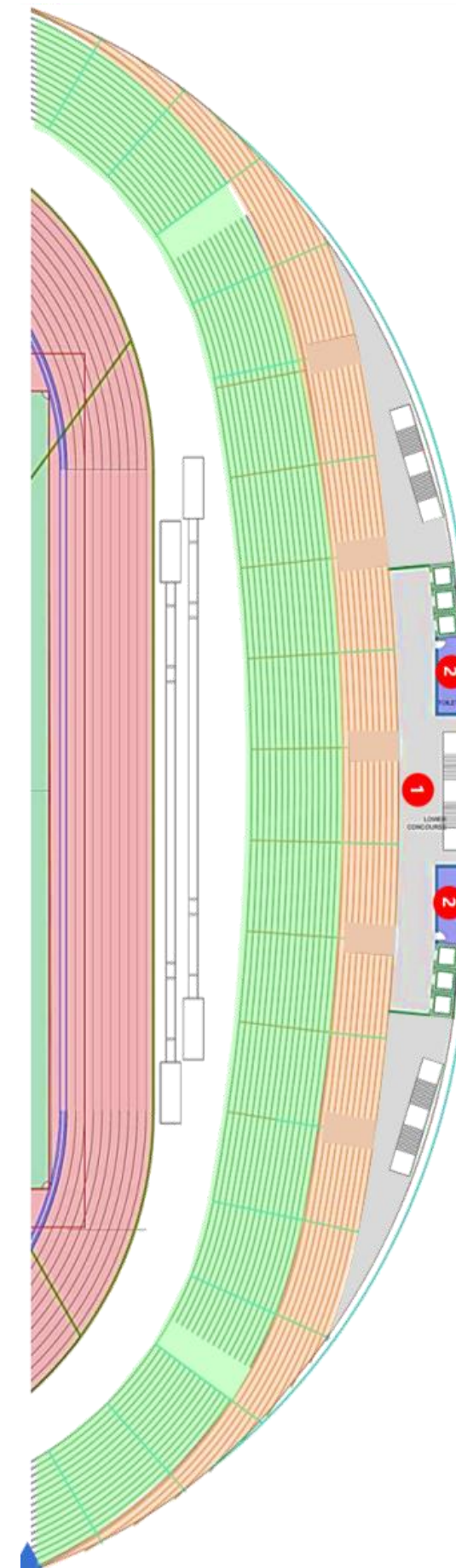


WEST STAND-LOWER CONCOURSE PLAN



- 1 GRAND STAIRCASE
- 2 ENTRANCE LOBBY - PUBLIC
- 3 RETAIL
- 4 ENTRANCE TO STADIUM SEATING
- 5 TOILETS
- 6 SERVICES

EAST STAND-LOWER CONCOURSE PLAN

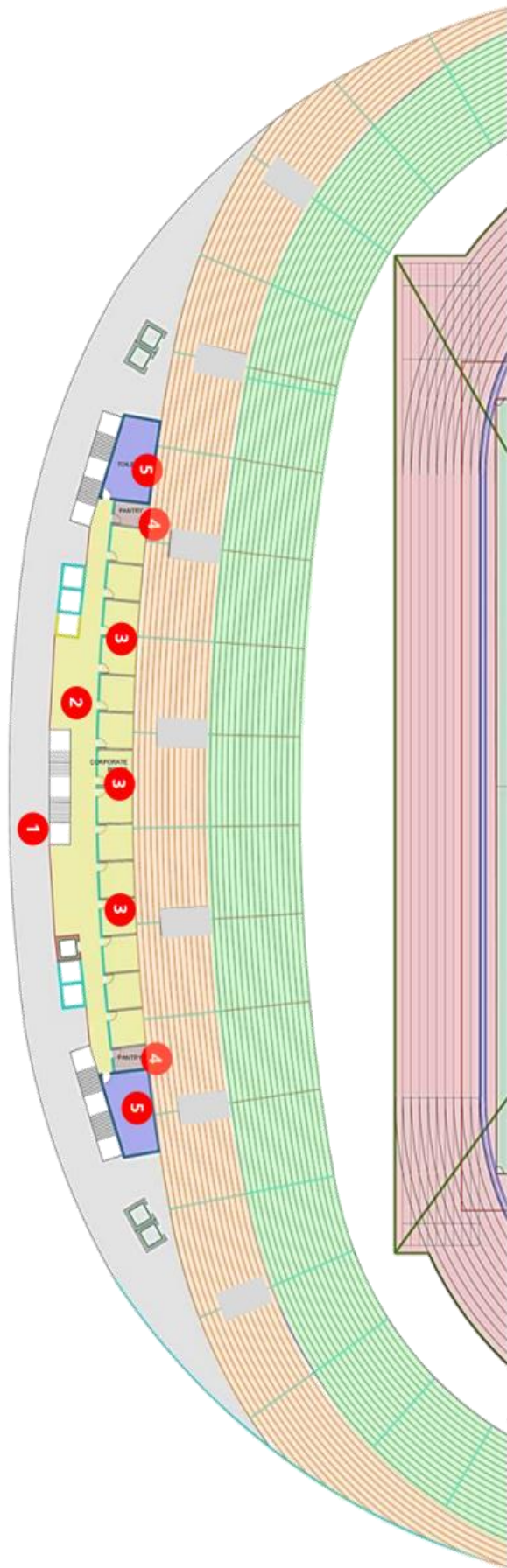


LEGENDS

- RETAIL
- TICKETING
- TOILETS
- ADMIN SPACES
- FIELD STAFF
- PLAYERS SPACES
- VIP SPACES
- MEDIA
- PUBLIC CIRCULATION
- SERVICES

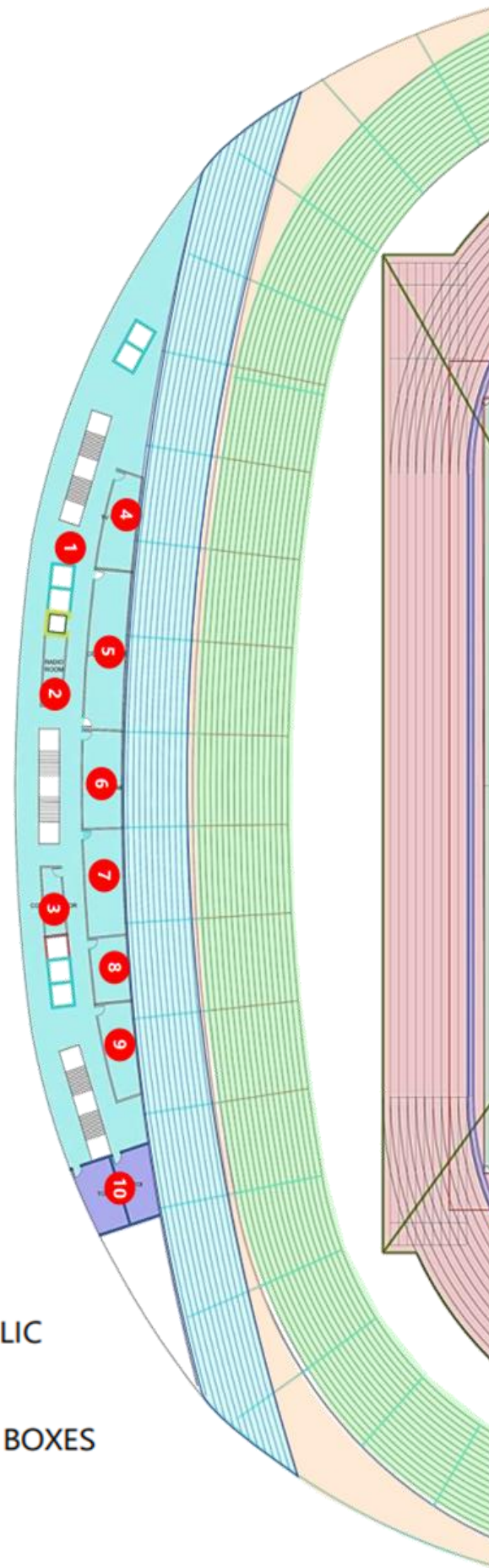
- 1 LOBBY – PUBLIC
- 2 TOILETS

WEST STAND-SECOND FLOOR PLAN – VIP FLOOR



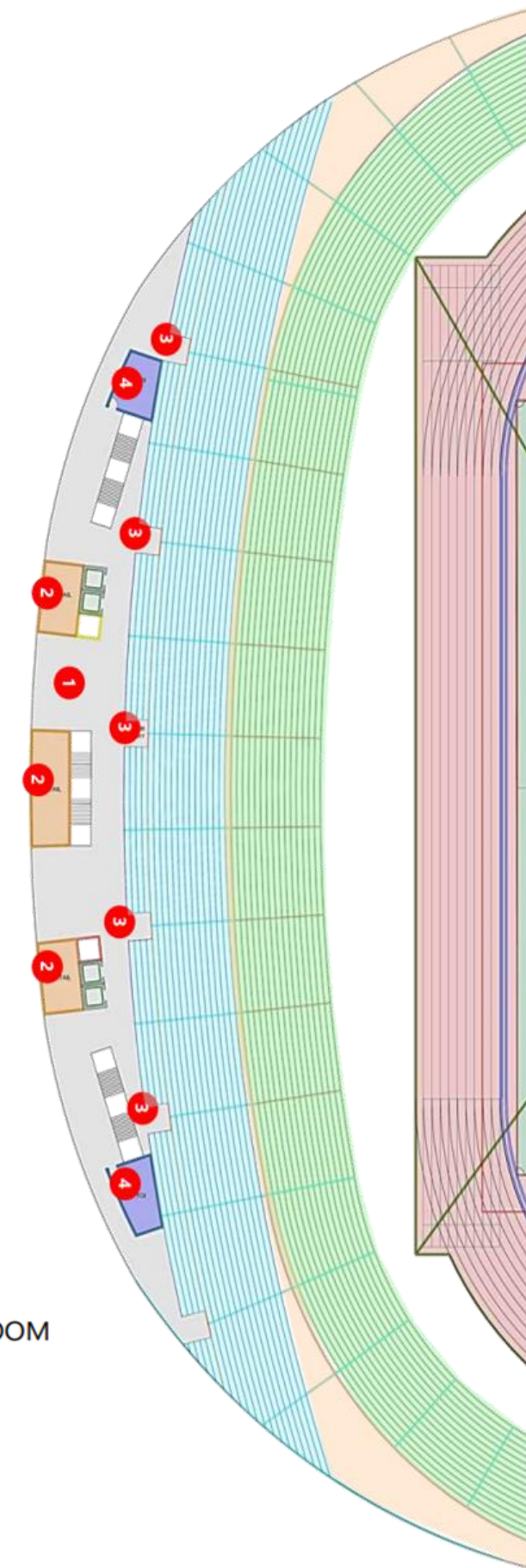
- 1 LOBBY - PUBLIC
- 2 VIP LOBBY
- 3 CORPORATE BOXES
- 4 PANTRY
- 5 TOILETS

WEST STAND-THIRD FLOOR PLAN – MEDIA FLOOR



- 1 LOBBY - MEDIA
- 2 RADIO ROOM
- 3 COMMENTATOR ROOM
- 4 TV STUDIO
- 5 PRESS CONFERENCE ROOM
- 6 BROADCAST ROOM
- 7 VAR ROOM
- 8 OFFICE
- 9 CONTROL ROOM
- 10 TOILETS

WEST STAND-FOURTH FLOOR PLAN – UPPER TIER



- 1 LOBBY - PUBLIC
- 2 RETAIL
- 3 ENTRANCE TO STADIUM SEATING - UPPER TIER
- 4 TOILETS

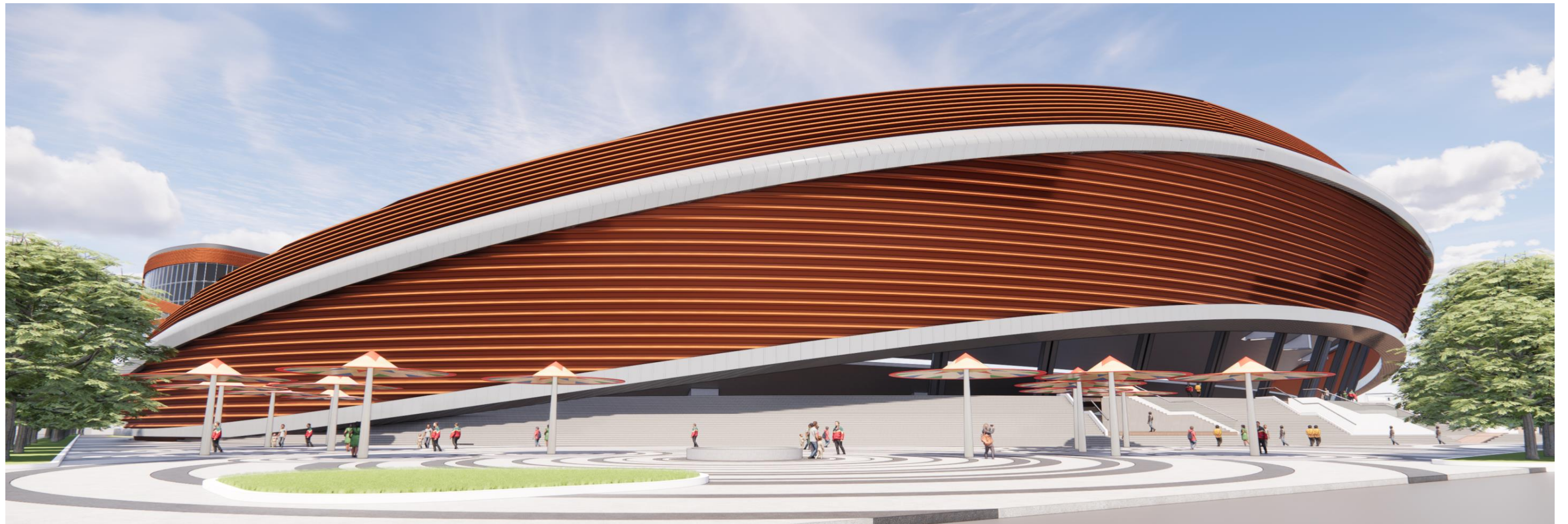
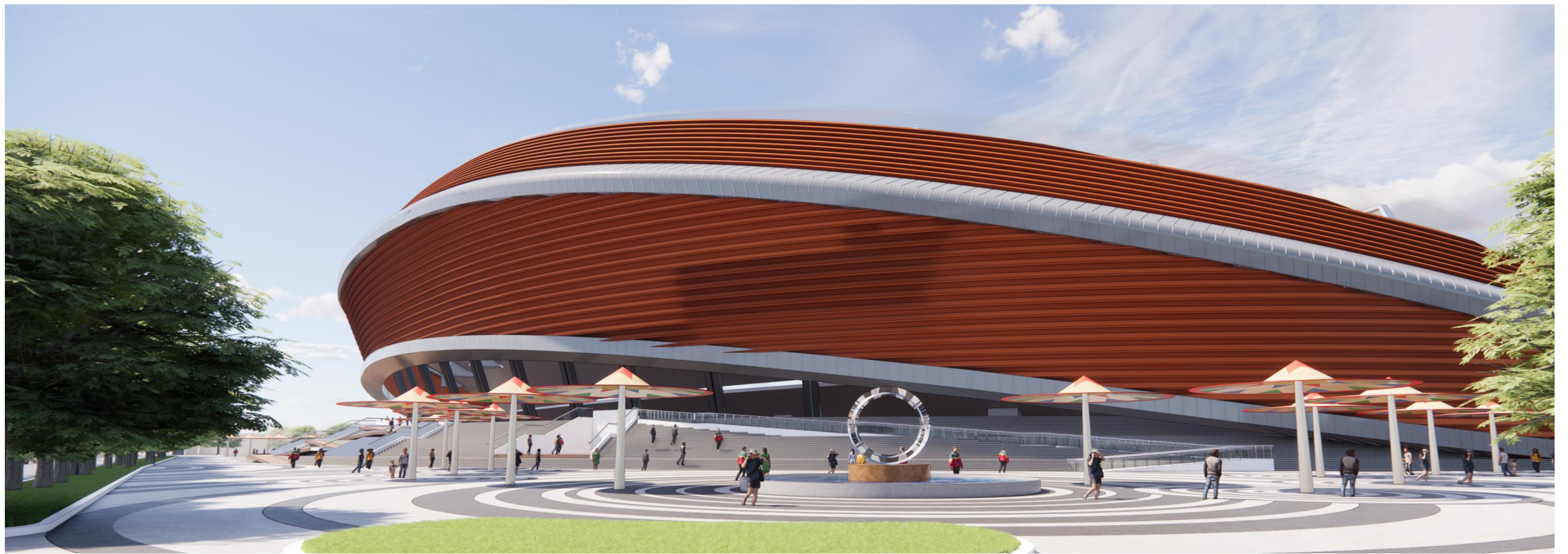
LEGENDS

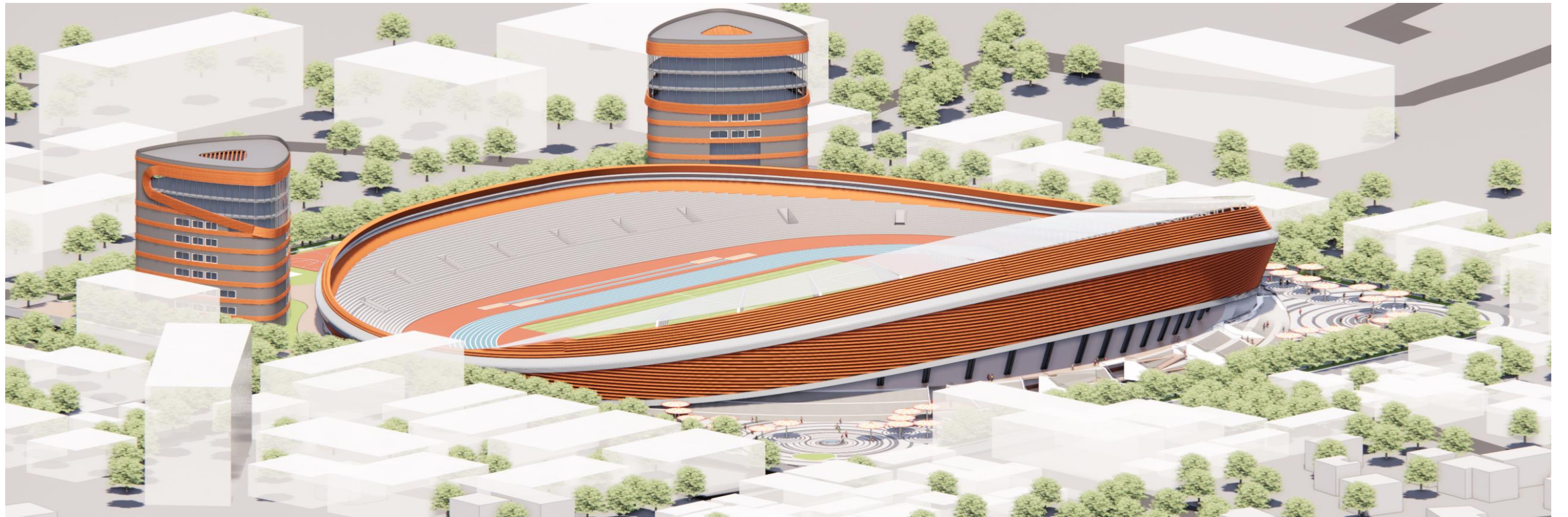
- RETAIL
- TICKETING
- TOILETS
- ADMIN SPACES
- FIELD STAFF
- PLAYERS SPACES
- VIP SPACES
- MEDIA
- PUBLIC CIRCULATION
- SERVICES







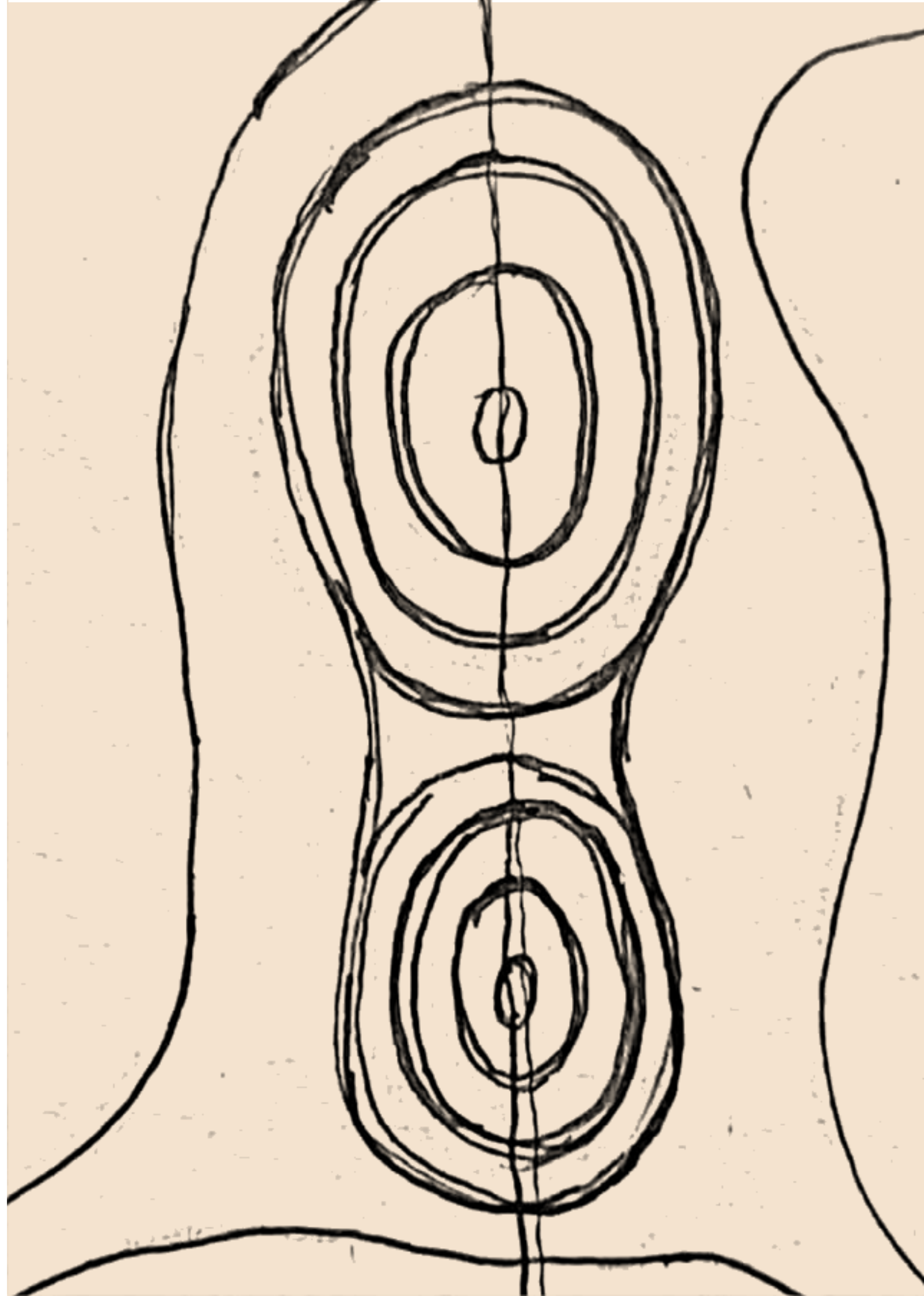


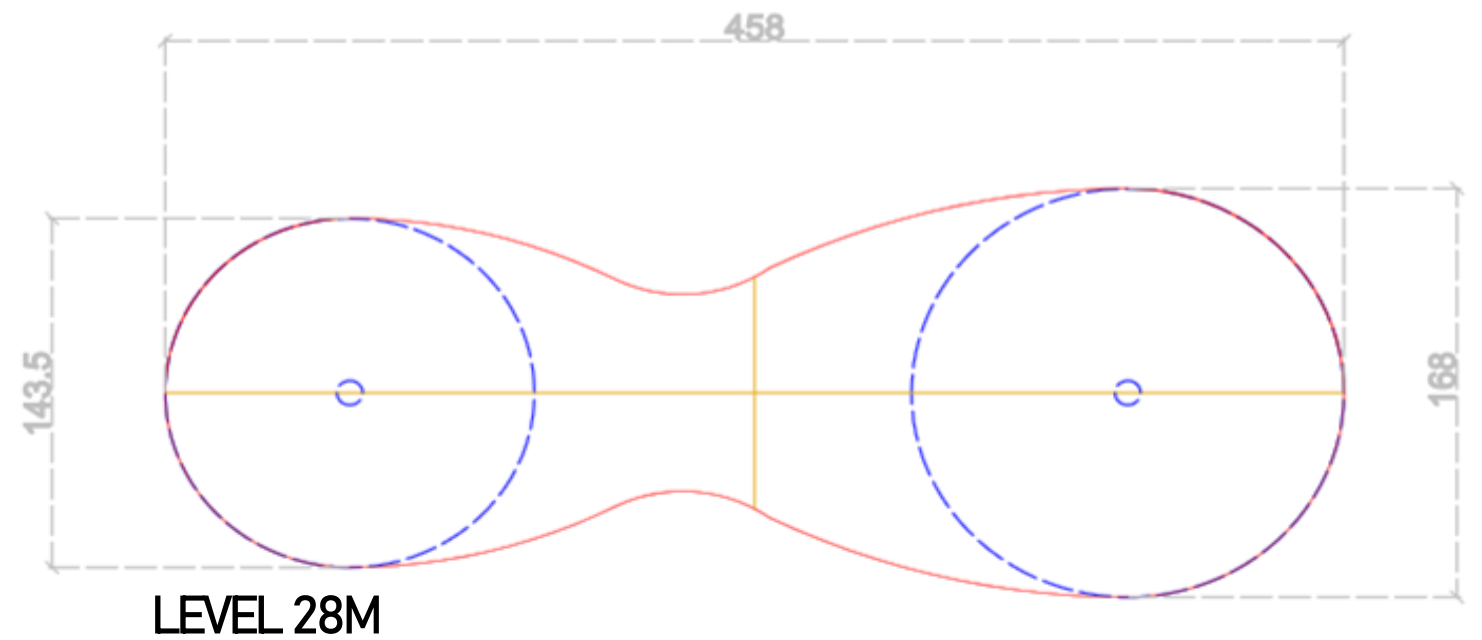
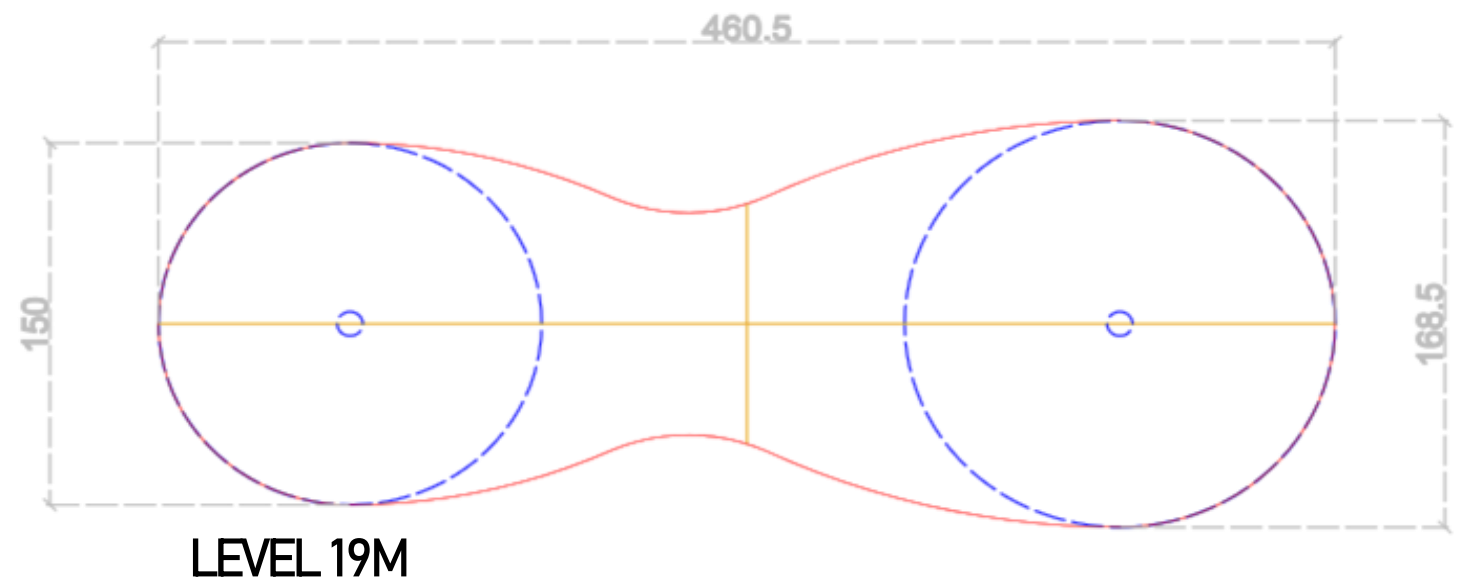
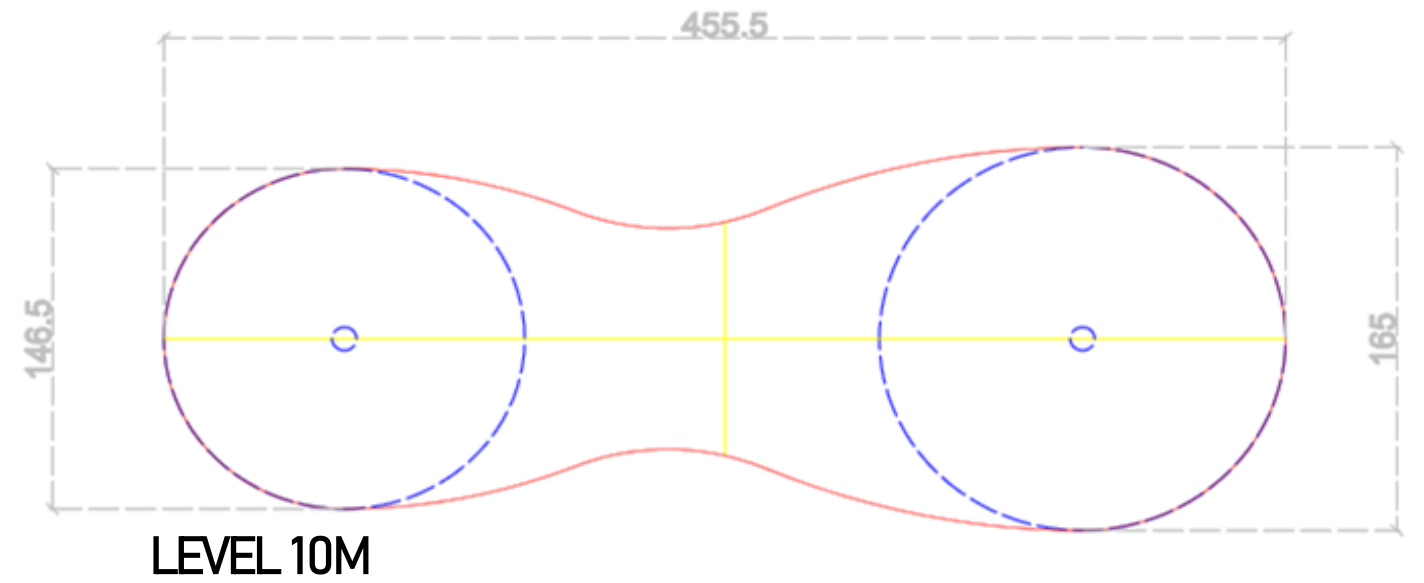
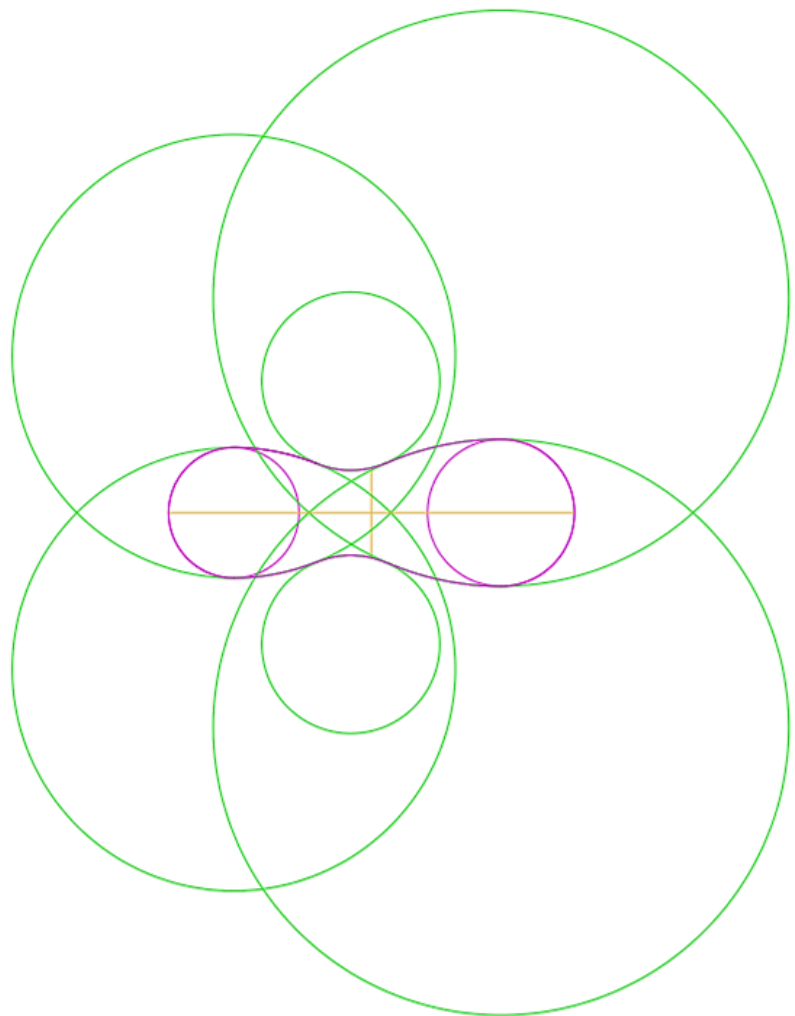
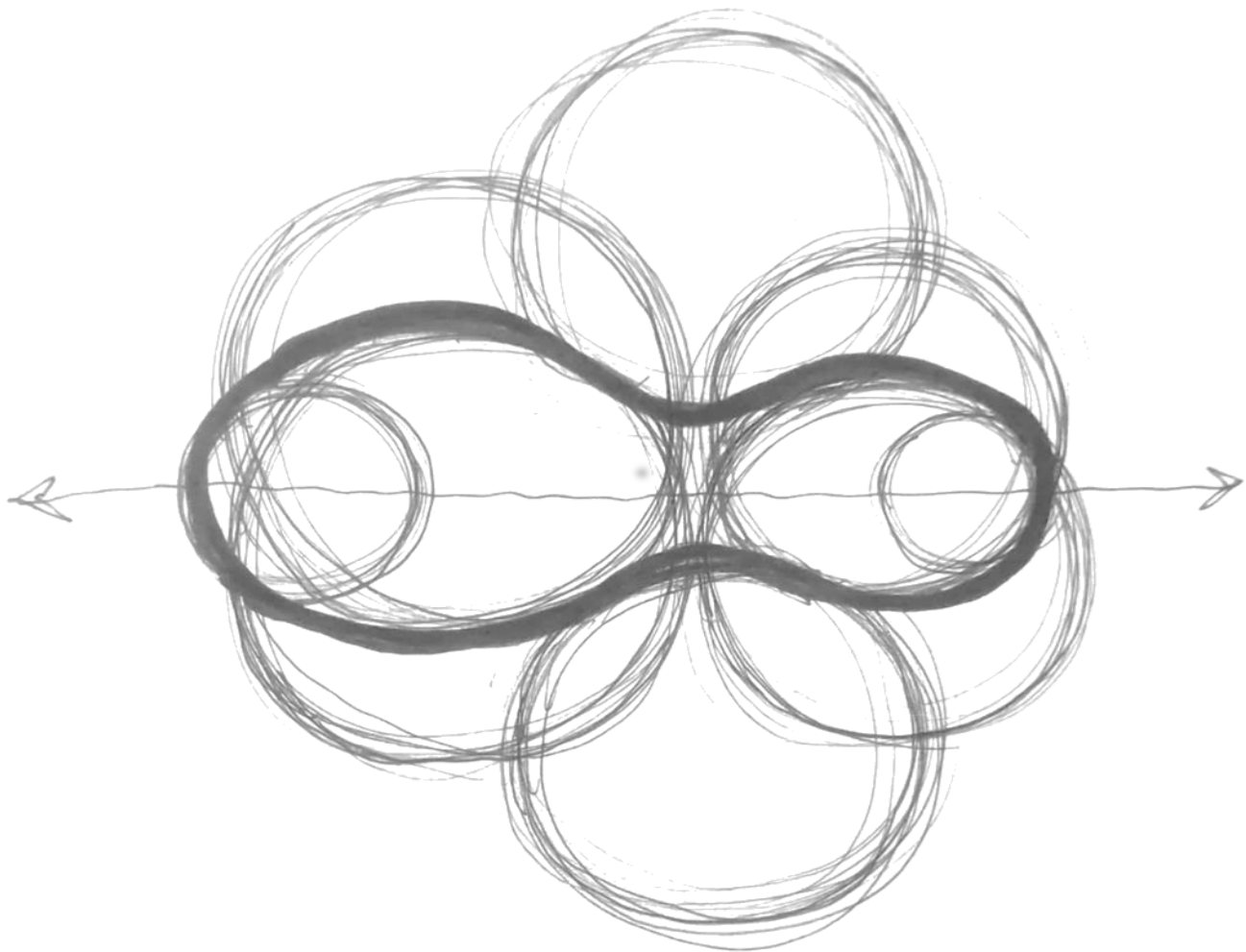




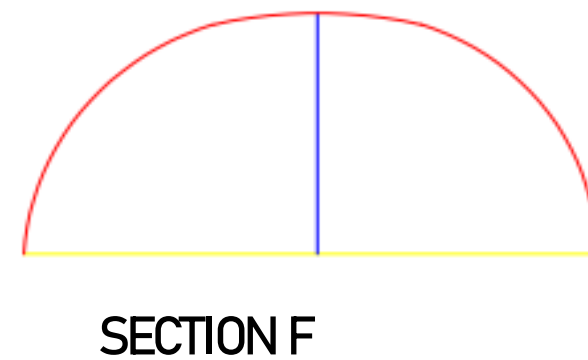
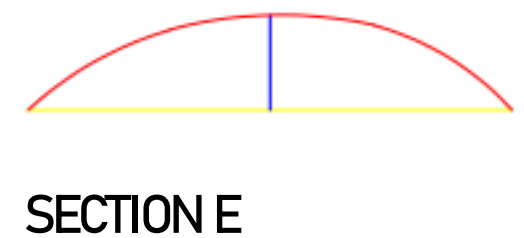
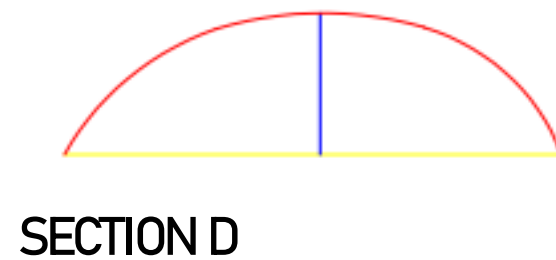
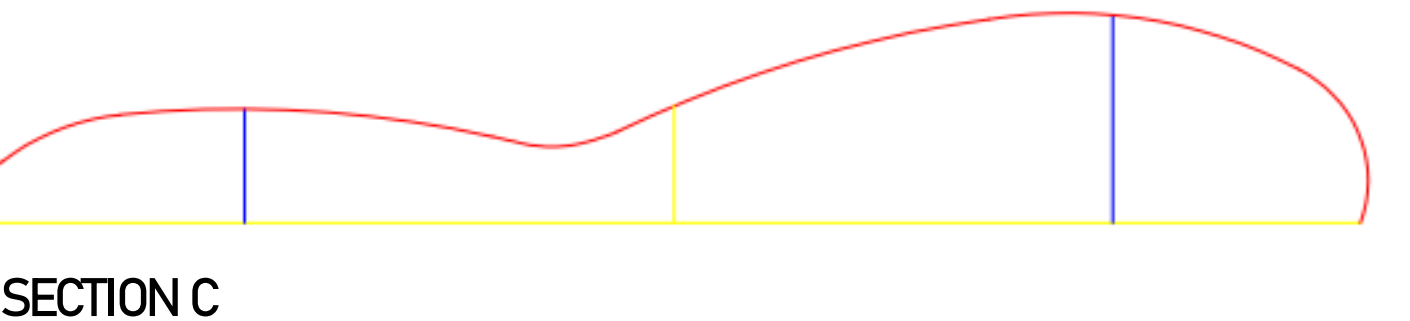
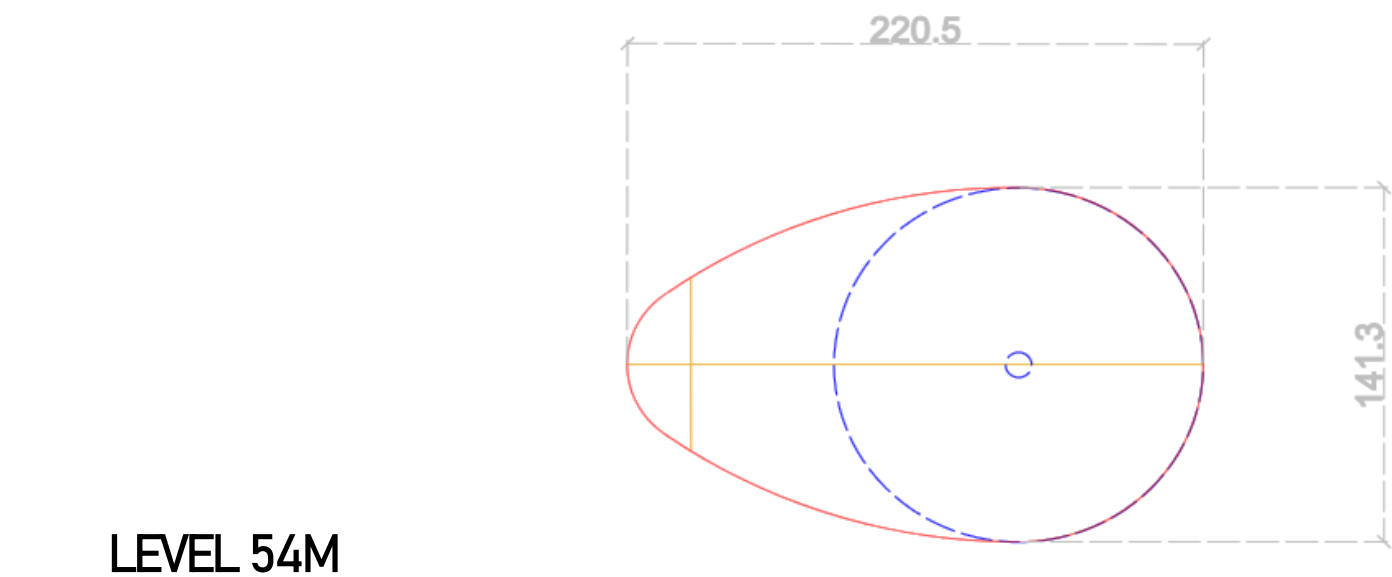
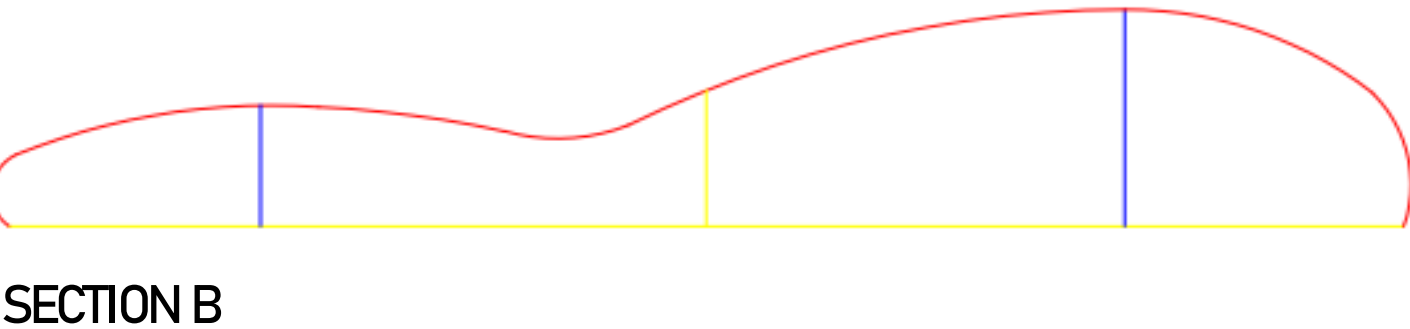
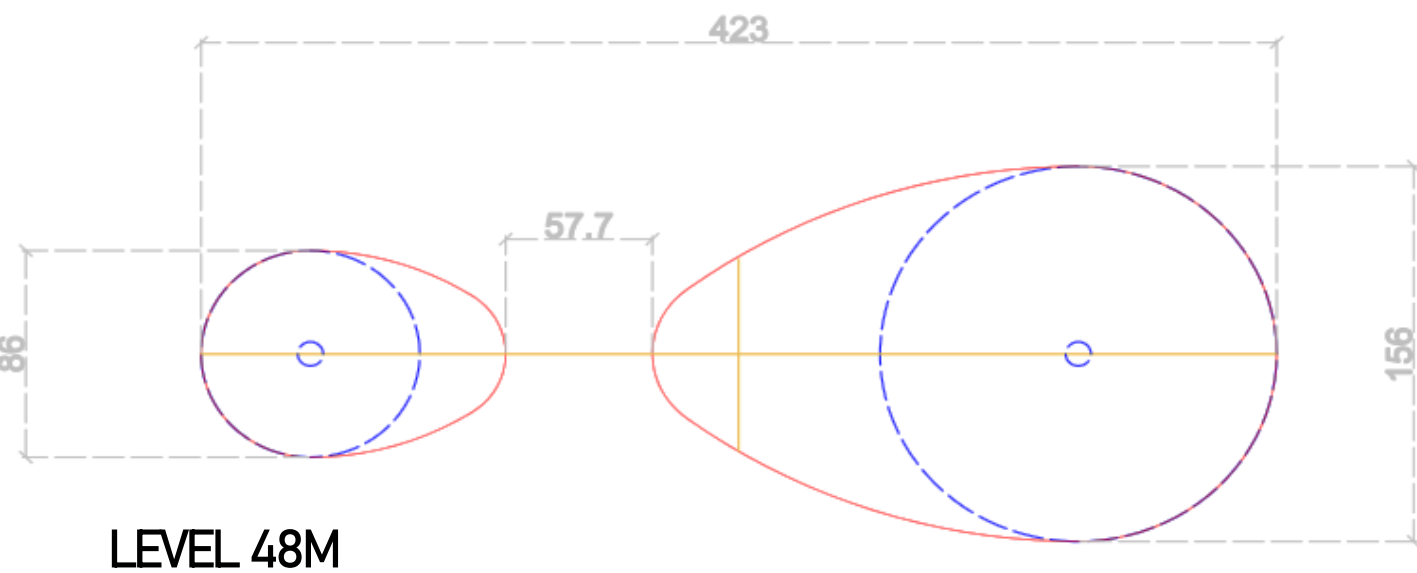
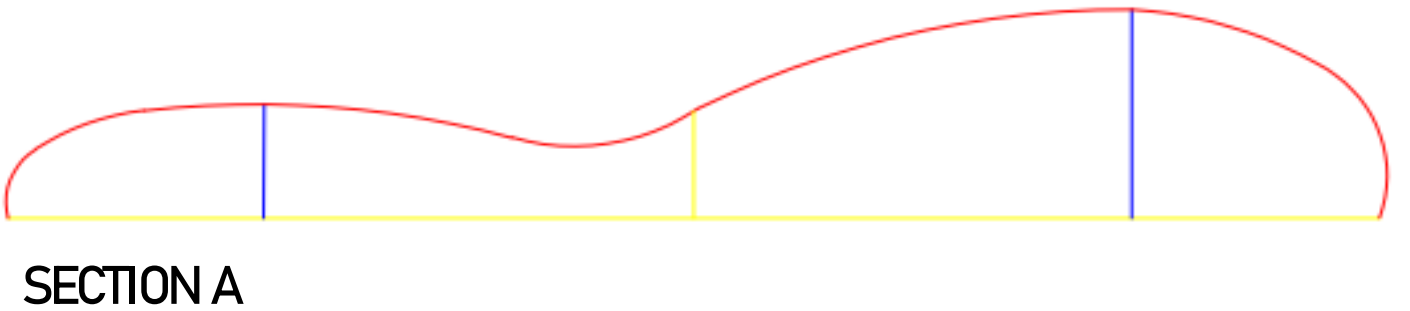
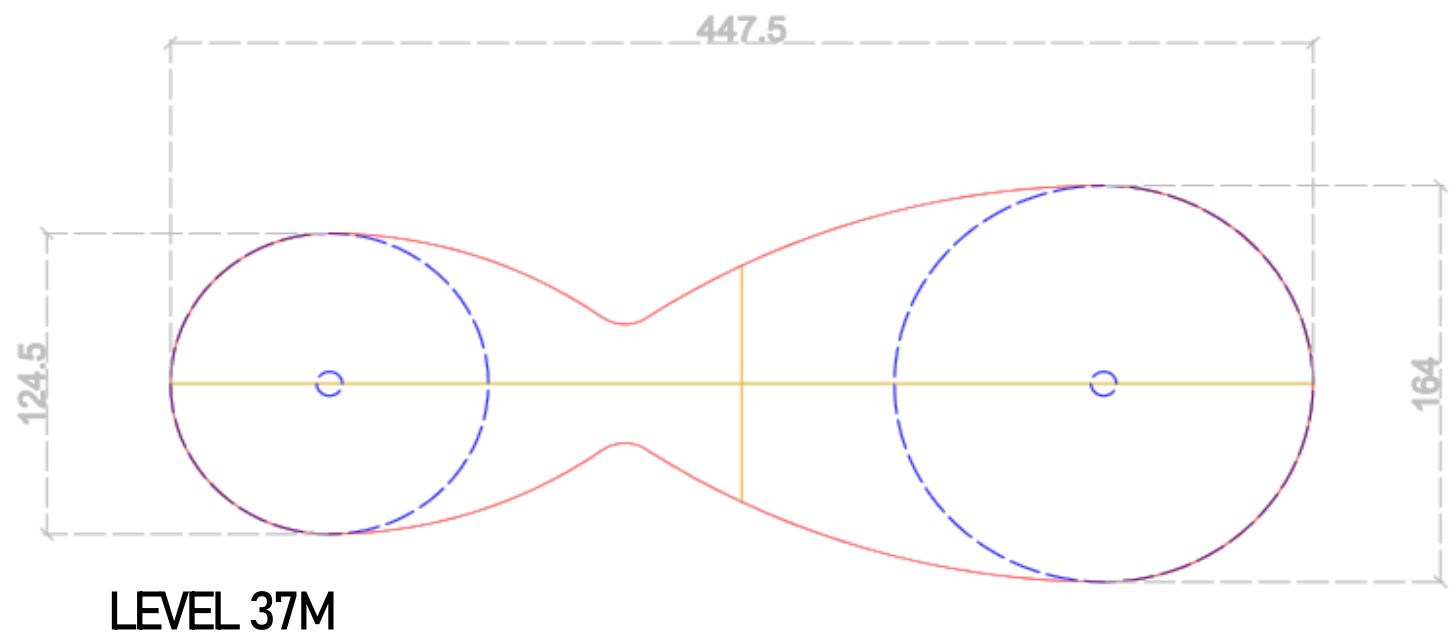
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NEW DELHI RAILWAY STATION SURFACE FORM DESIGN

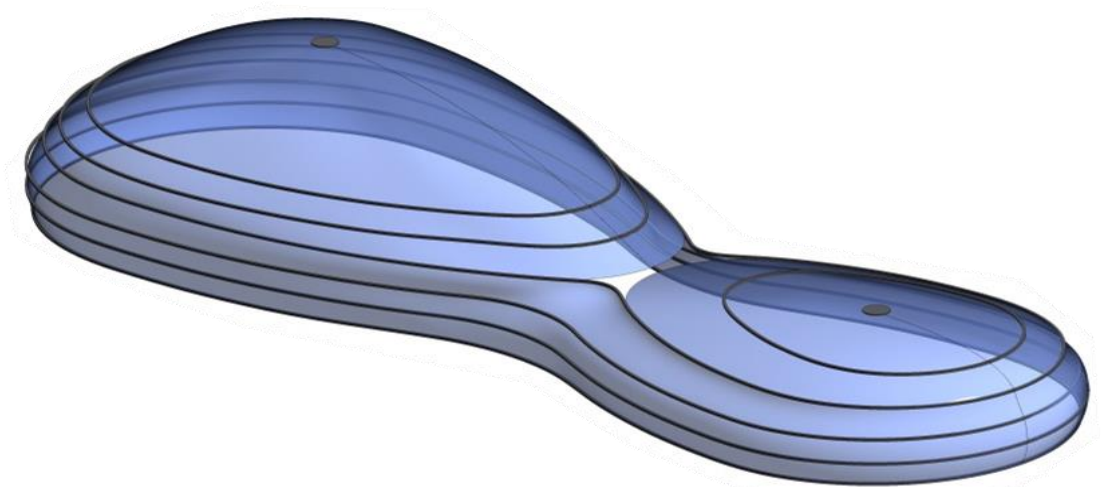
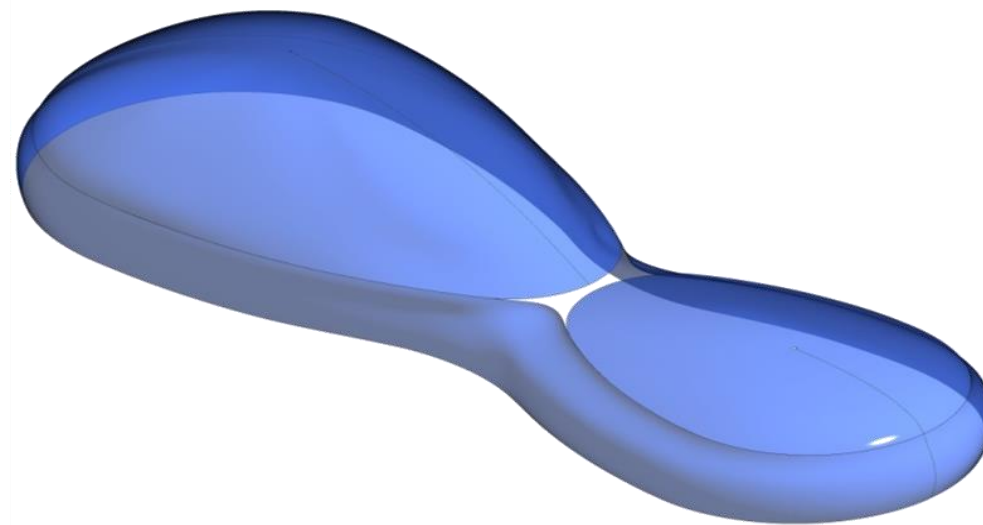
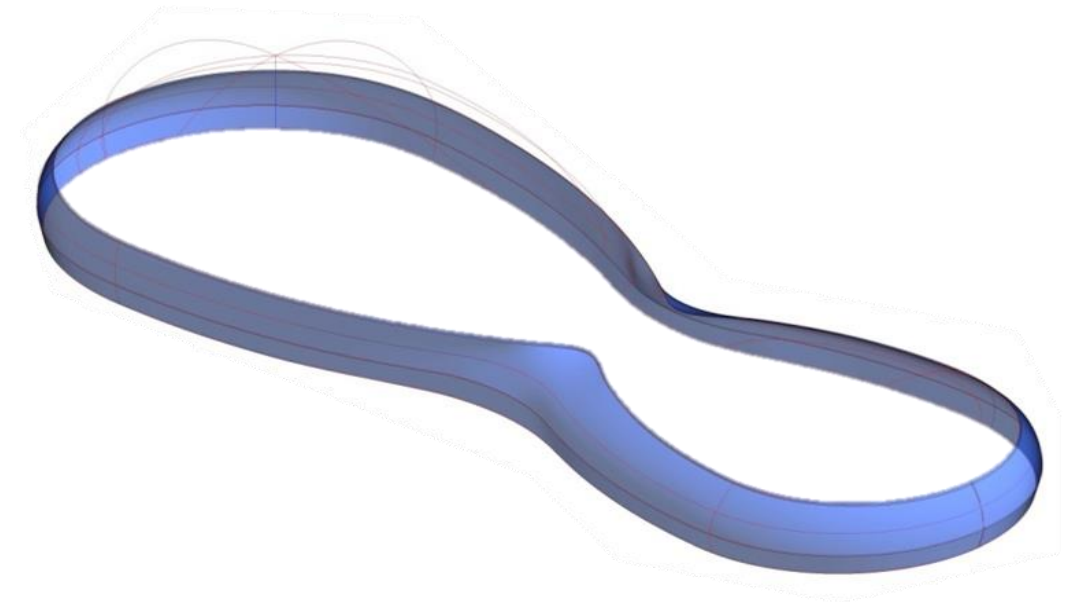
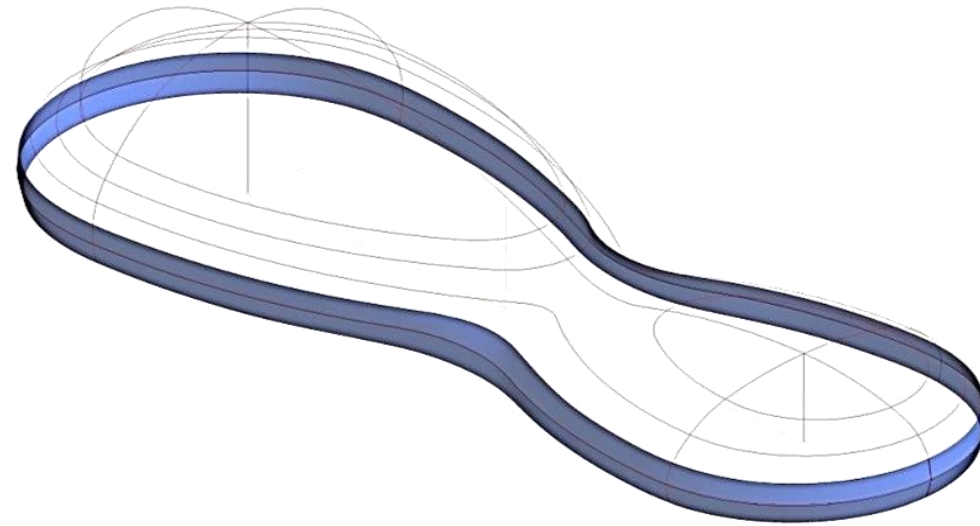
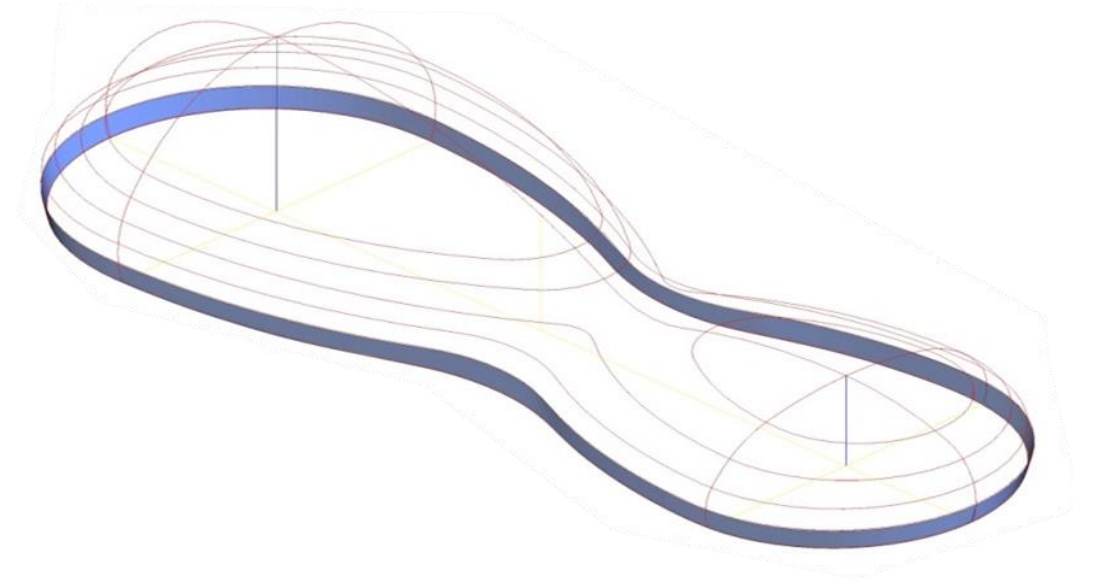
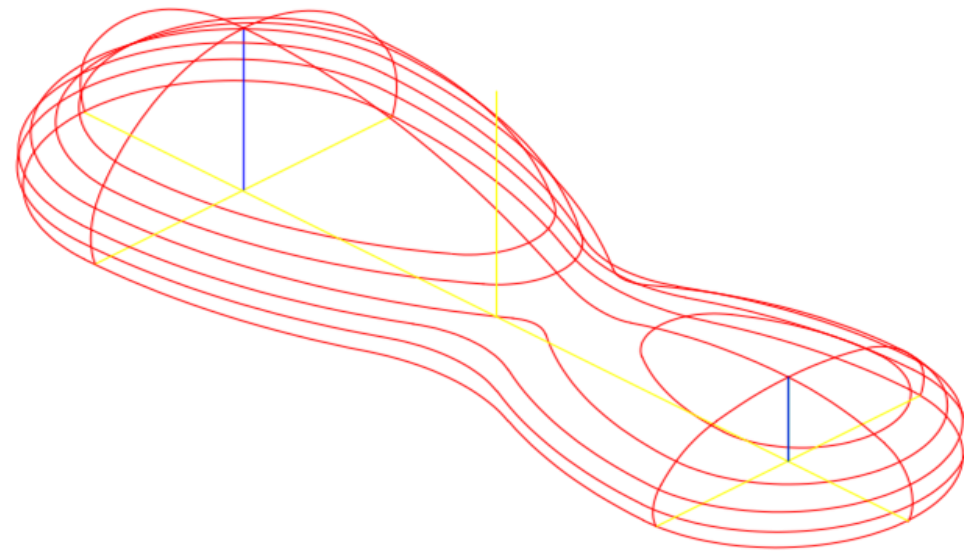
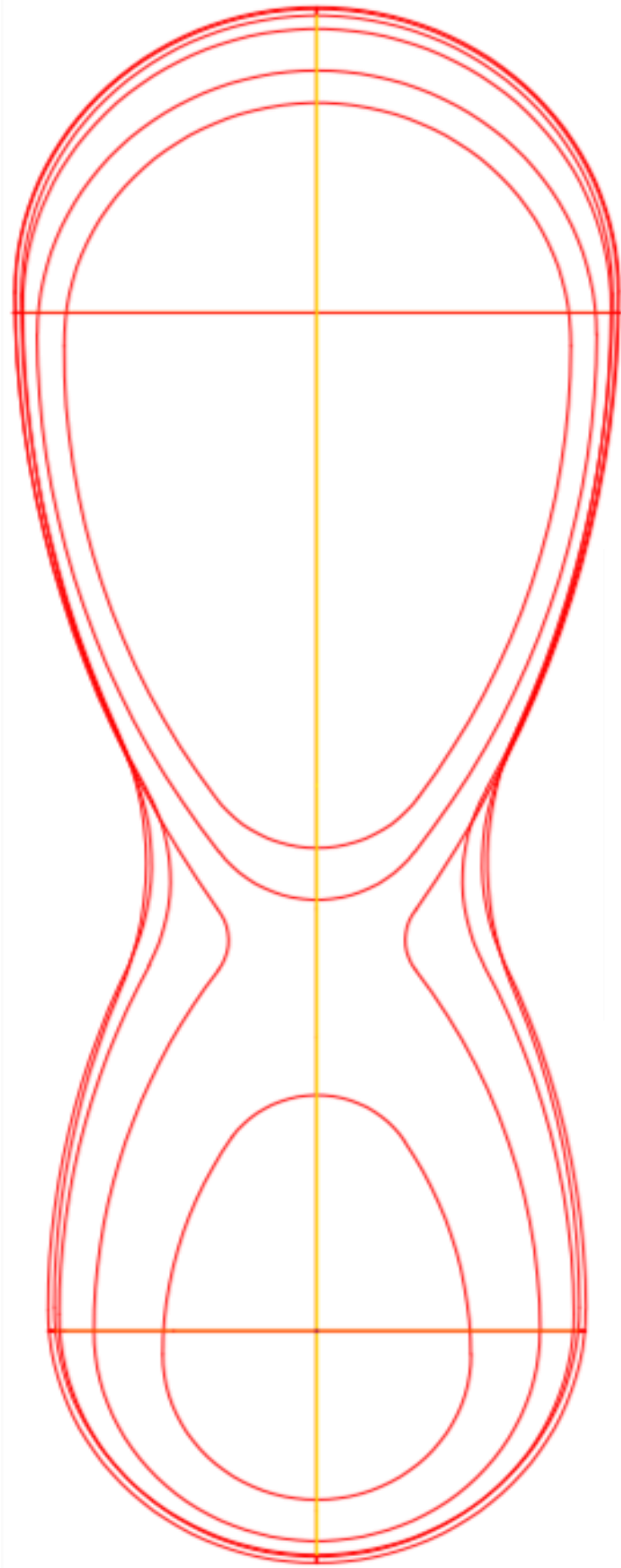


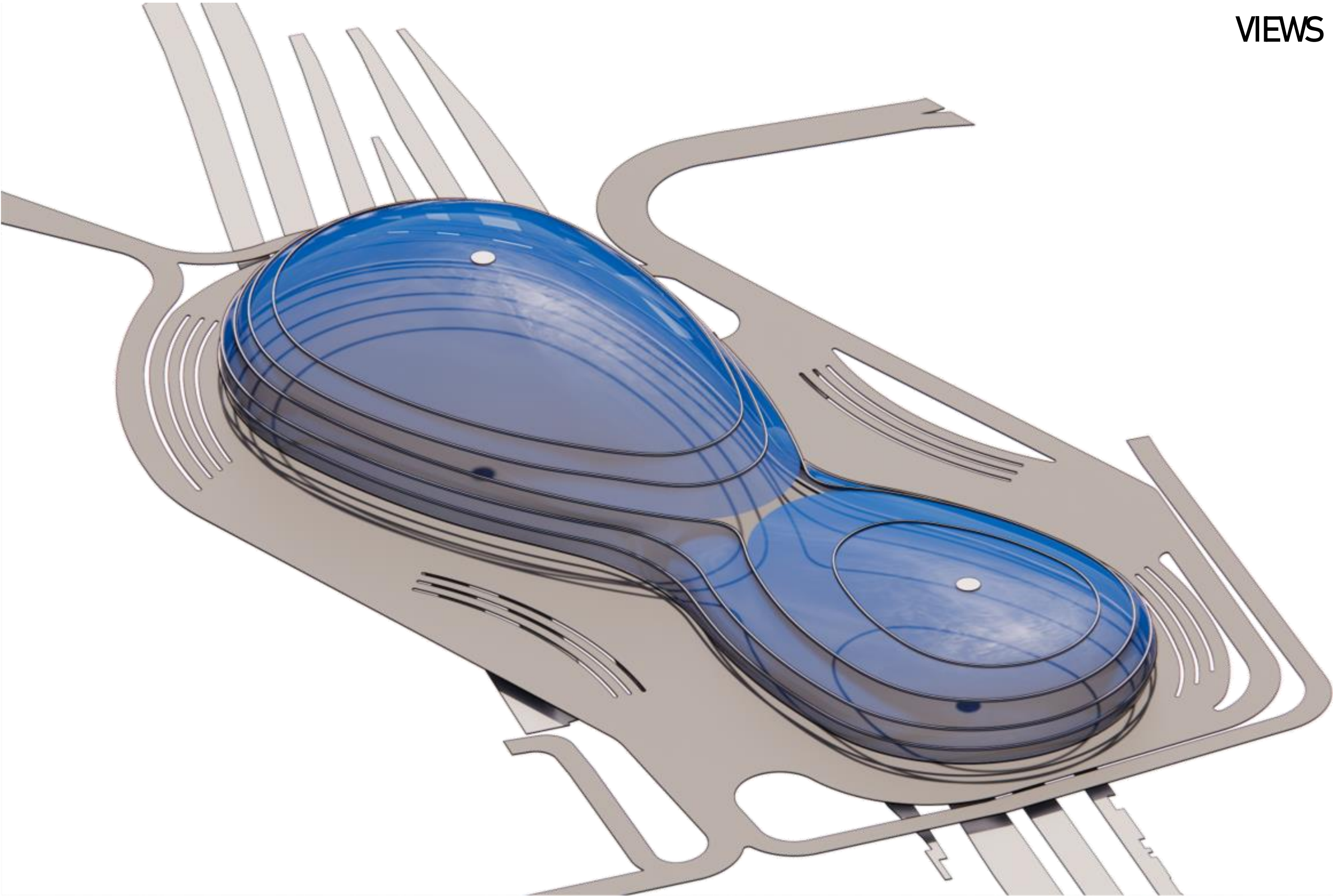


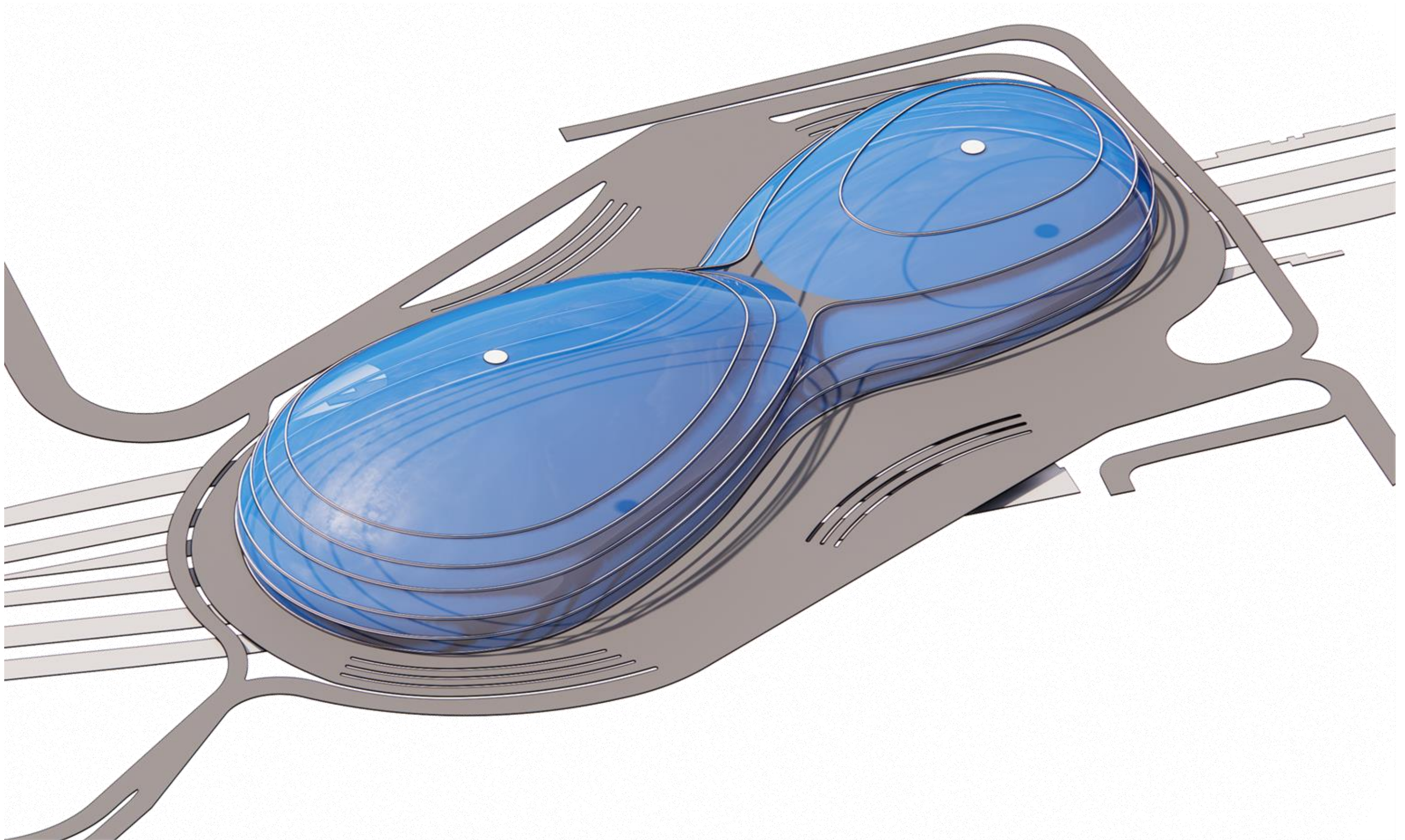
SECTIONS

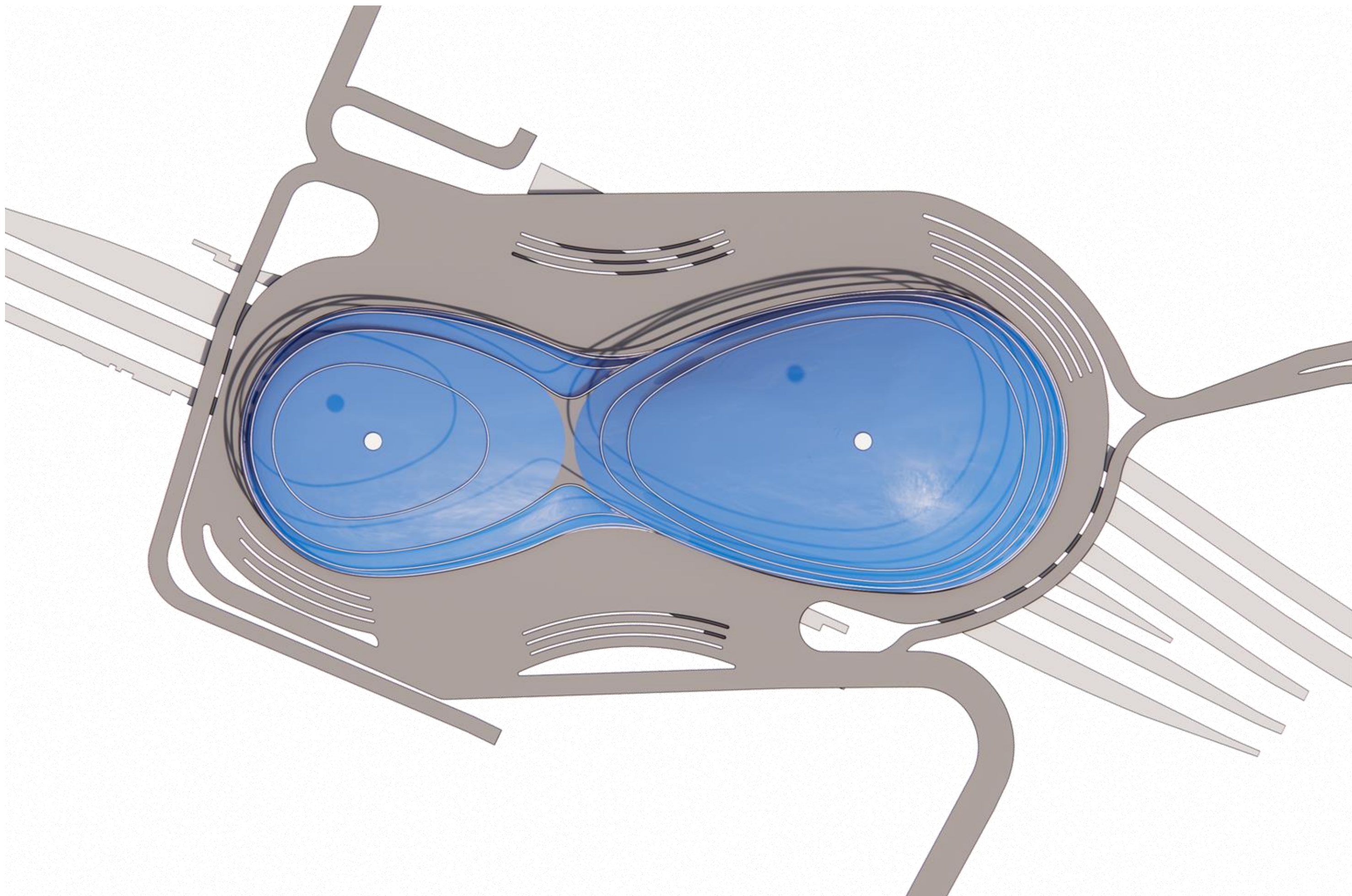


SURFACE FORM EVALUATION









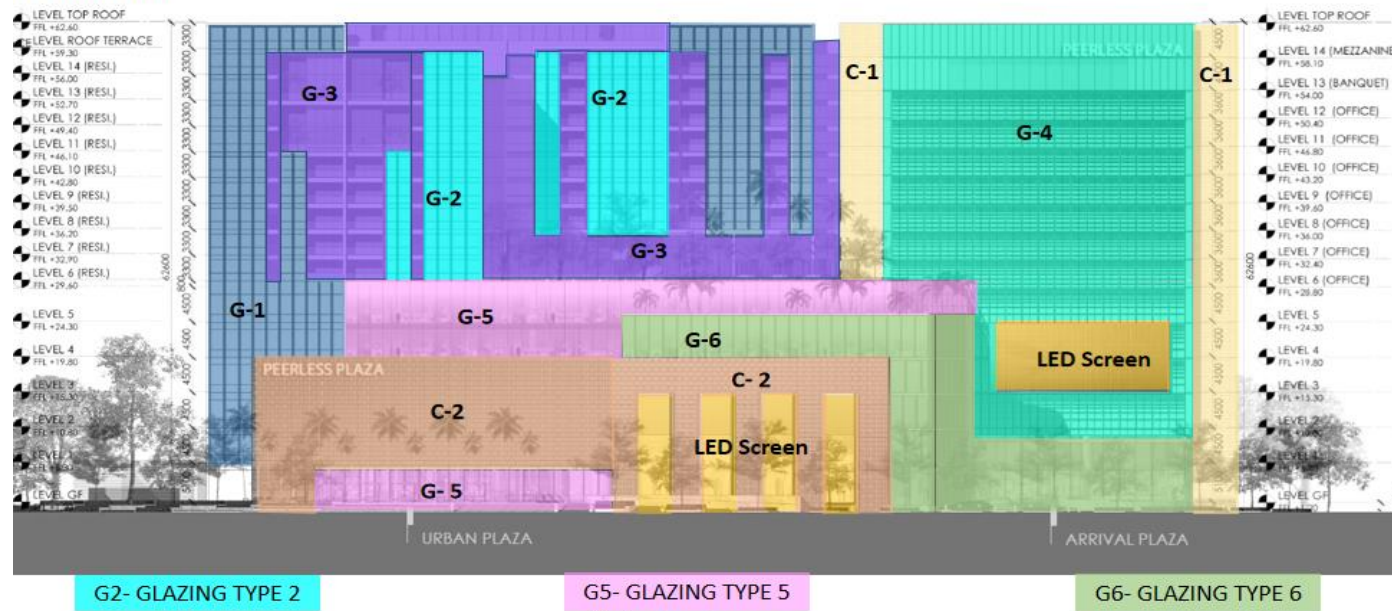
3

PEERLESS PLAZA

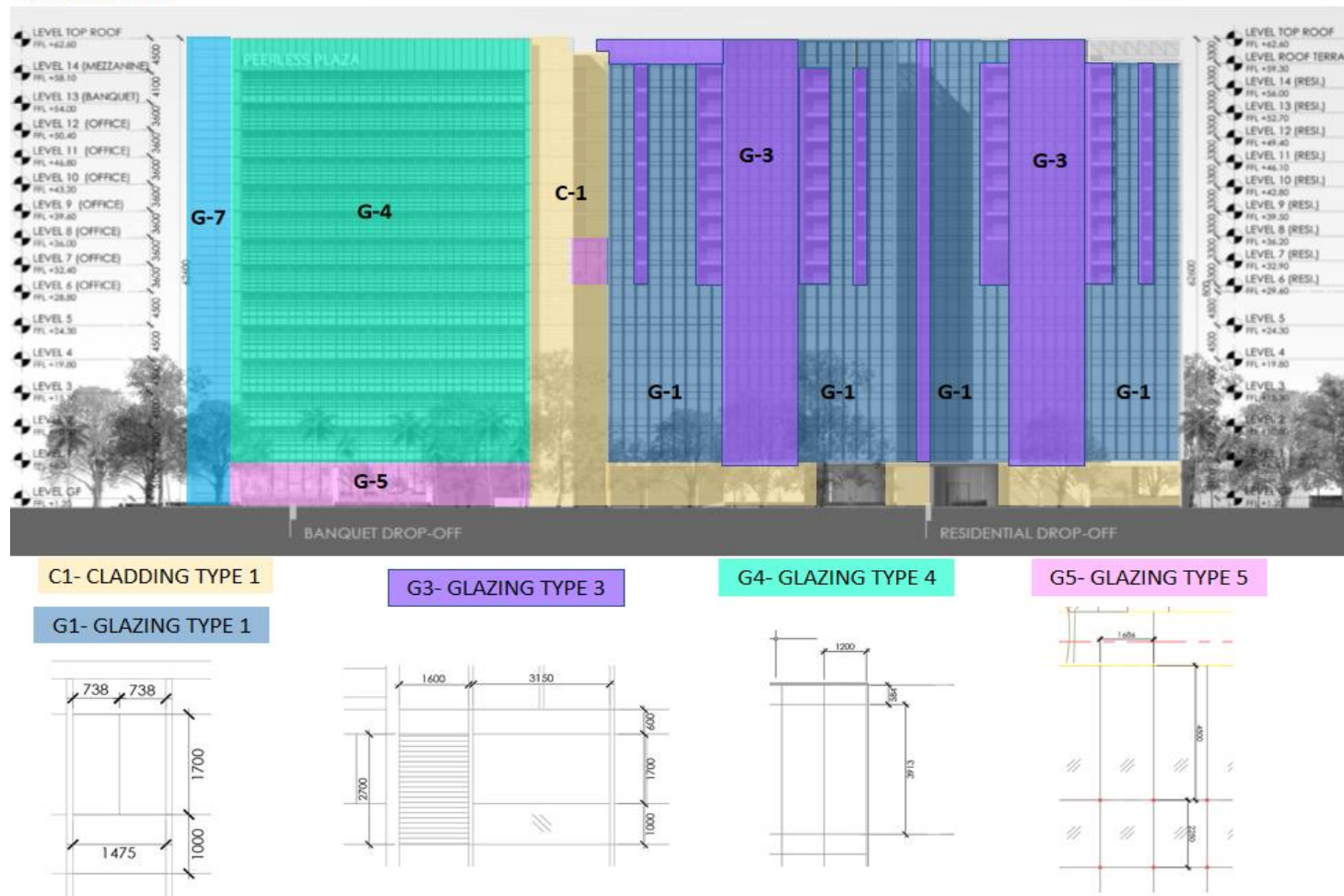


FAÇADE MATERIAL PALETTE

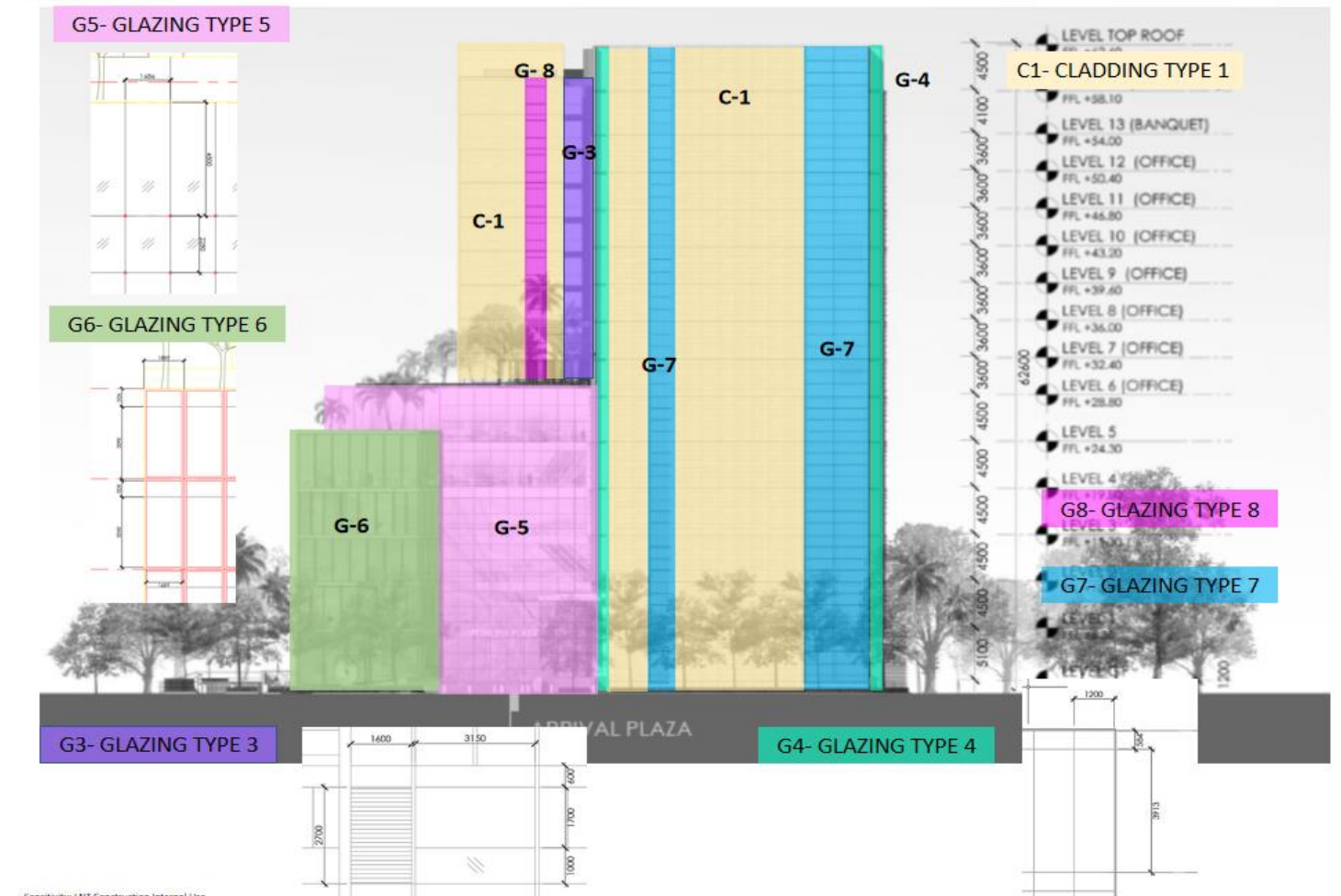
ELEVATION



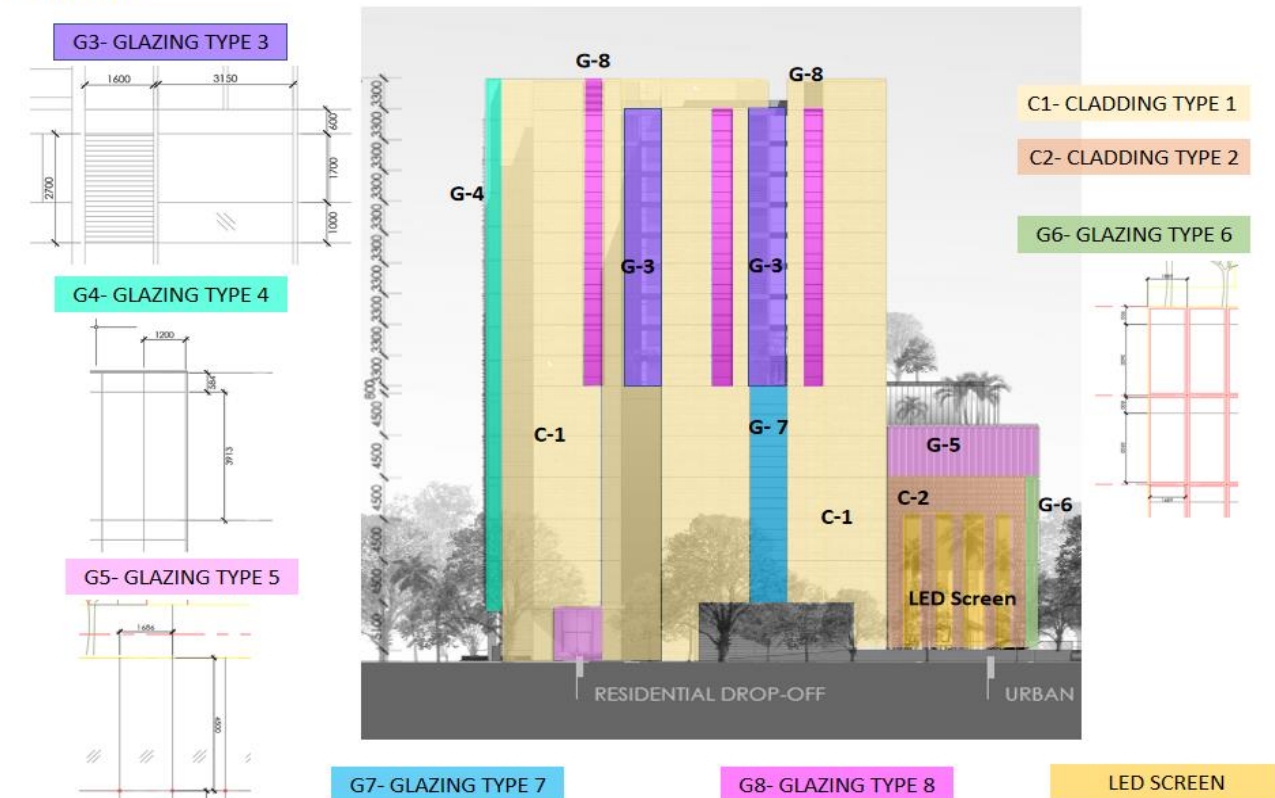
ELEVATION



ELEVATION



ELEVATION



PEERLESS PLAZA- SANITARY FIXTURES QUANTITY

PEARLESS PLAZA - Toilet count						
S.No	Floor	WC	WB	Urinals	Shower	Bathtub
A BASEMENT 1						
CORE 2						
1	Male Toilet	8	8	8		
2	Female Toilet	7	7			
Sub Total		15	15	8		
B GROUND FLOOR						
CORE 1						
1	Male Toilet	3	2	3		
2	Female Toilet	3	2			
3	RESIA LOBBY Toilet	1	1	1		
CORE 2						
4	RESI.B LOBBY Toilet	1	1	1		
CORE 4						
5	Male Toilet	1	1	1		
6	Female Toilet	2	2			
7	H. Toilet	1	1			
Sub Total		12	10	6		
C LEVEL 1- RETAIL						
CORE 2						
1	Male Toilet	8	7	8		
2	Female Toilet	8	8			
3	H. Toilet	1	1			
Sub Total		17	16	8		
D LEVEL 2- RETAIL						
CORE 2						
1	Male Toilet	8	7	8		
2	Female Toilet	8	8			
3	H. Toilet	1	1			
Sub Total		17	16	8		
E LEVEL 3- RETAIL						
CORE 2						
1	Male Toilet	8	7	8		
2	Female Toilet	8	8			
3	H. Toilet	1	1			
Sub Total		17	16	8		
F LEVEL 4- CINEPLEX AND FOOD COURT						
CORE 2						
1	Male Toilet	8	7	8		
2	Female Toilet	8	8			
3	H. Toilet	1	1			
CORE 3						
4	Male Toilet	3	3	10		
5	Female Toilet	3	3			
Sub Total		23	22	18		

G LEVEL 5- DINNING AND NIGHT CLUB						
CORE 2						
1	Male Toilet	8	7	8		
2	Female Toilet	8	8			
3	H. Toilet	1	1			
CORE 3						
4	Male Toilet	2	3	2		
5	Female Toilet	2	2			
Sub Total		21	21	10		
H LEVEL 6- ECO DECK						
CORE 1						
1	3BHK-1 UNIT					
	Toilet - 3 nos/unit	3	3		3	
2	4BHK-2 UNIT					
	Toilet - 5 nos/unit	10	10		8	
CORE 2						
3	3BHK-2 UNIT					
	Toilet - 3 nos/unit	6	6		6	
CORE 3						
4	Male Toilet	3	2	3		
5	female Toilet	3	2			
6	Janitor		1			
Sub Total		41	39	3	31	

I LEVEL 7- RESIDENTIAL AND OFFICE						
CORE 1						
1	3BHK-1 UNIT					
	Toilet - 3 nos/unit	3	3		3	
2	4BHK-2 UNIT					
	Toilet - 5 nos/unit	10	10		8	
CORE 2						
3	3BHK-2 UNIT					
	Toilet - 3 nos/unit	6	6		6	
CORE 3						
4	Male Toilet	3	2	3		
5	female Toilet	3	2			
6	Janitor		1			
Sub Total		25	24	3	17	
J LEVEL 8- RESIDENTIAL AND OFFICE						
CORE 1						
1	3BHK-2 UNIT					
	Toilet - 3 nos/unit	6	6		6	
2	4BHK-2 UNIT					
	Toilet - 5 nos/unit	10	10		8	
CORE 2						
3	3BHK-5					
	Toilet - 3 nos/unit	15	15		15	
CORE 3						
4	Male Toilet	3	2	3		

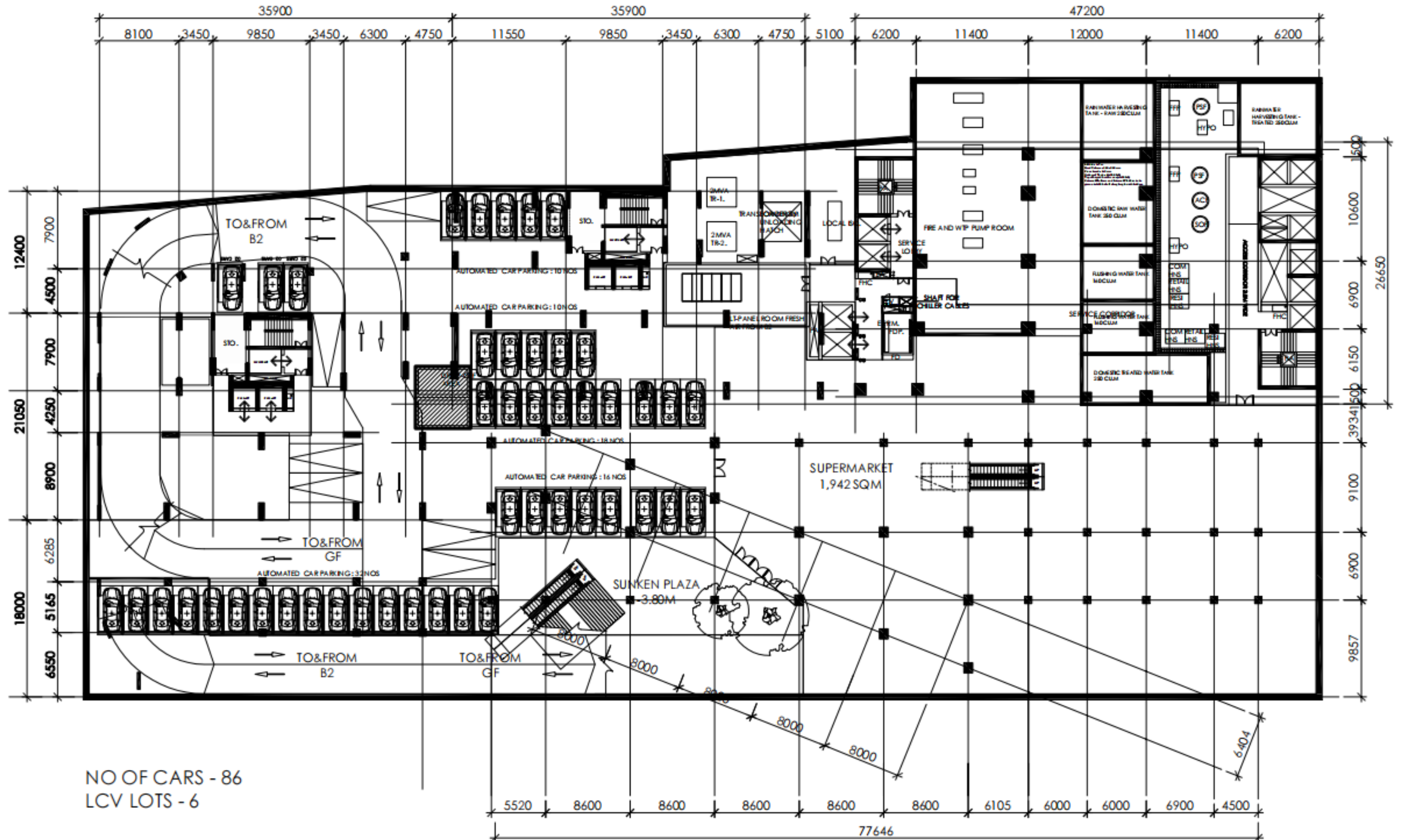
S.No	Floor	WC	WB	Urinals	Shower	Bathtub
5	Female Toilet	3	2			
6	JANITOR		1			
Sub Total		37	36	3	29	0
K LEVEL 9- RESIDENTIAL AND OFFICE						
CORE 1						
1	3BHK-2 UNIT					
	Toilet - 3 nos/unit	6	6		6	
2	4BHK-2 UNIT					
	Toilet - 5 nos/unit	10	10		8	
CORE 2						
3	3BHK-5					
	Toilet - 3 nos/unit	15	15		15	
CORE 3						
4	Male Toilet	3	2	3		
5	Female Toilet	3	2			
6	JANITOR		1			
Sub Total		37	36	3	29	0

L LEVEL 10- RESIDENTIAL AND OFFICE						
CORE 1						
1	3BHK-2 UNIT					
	Toilet - 3 nos/unit	6	6		6	
2	4BHK-2 UNIT					
	Toilet - 5 nos/unit	10	10		8	
CORE 2						
3	3BHK-5					
	Toilet - 3 nos/unit	15	15		15	
CORE 3						
4	Male Toilet	3	2	3		
5	Female Toilet	3	2			
6	JANITOR		1			
Sub Total		37	35	3	29	0
M LEVEL 11- RESIDENTIAL AND OFFICE						
CORE 1						
1	3BHK-2 UNIT					
	Toilet - 3 nos/unit	6	6		6	
2	4BHK-2 UNIT					
	Toilet - 5 nos/unit	10	10		8	
CORE 2						
3	3BHK-5					
	Toilet - 3 nos/unit	15	15		15	
CORE 3						
4	Male Toilet	3	2	3		
5	Female Toilet	3	2			
6	JANITOR		1			
Sub Total		37	36	3	29	0

N LEVEL 12- RESIDENTIAL AND OFFICE						
CORE 1						
1	3BHK-2 UNIT					
	Toilet - 3 nos/unit	6	6		6	
2	4BHK-2 UNIT					
	Toilet - 5 nos/unit	10	10		8	
CORE 2						
3	3BHK-5					
	Toilet - 3 nos/unit	15	15		15	
CORE 3						
4	Male Toilet	3	2	3		
5	Female Toilet	3	2			
6	JANITOR		1			
Sub Total		37	36	3	29	0
O LEVEL 13- PENTHOUSE LOWER AND BANQUET						
CORE 1						
1	3BHK-2 UNIT					
	Toilet - 3 nos/unit	6	6		6	
2	5BHK LOW-2					
	Toilet - 4 nos/unit	8	8		6	
CORE 2						
3	3BHK-5					
	Toilet - 3 nos/unit	15	15		15	
CORE 3						
4	Male Toilet	5	3	18		
CORE 4						
5	Female Toilet	8	3			
6	H. Toilet	1	1			
Sub Total		43	36	18	27	0
P LEVEL 14- PENTHOUSE UPPER AND BANQUET MEZZANINE						
CORE 1						
1	3BHK-2					
	Toilet - 3 nos/unit	6	6		6	
2	5BHK UP-2					
	Toilet - 3 nos/unit	6	8		6	2
CORE 2						
3	3BHK-5					
	Toilet - 3 nos/unit	15	15		15	
Sub Total		27	29	0	27	2
TOTAL		443	423	105	247	2



PARKING AREA PLANNING-BASEMENT 1



N

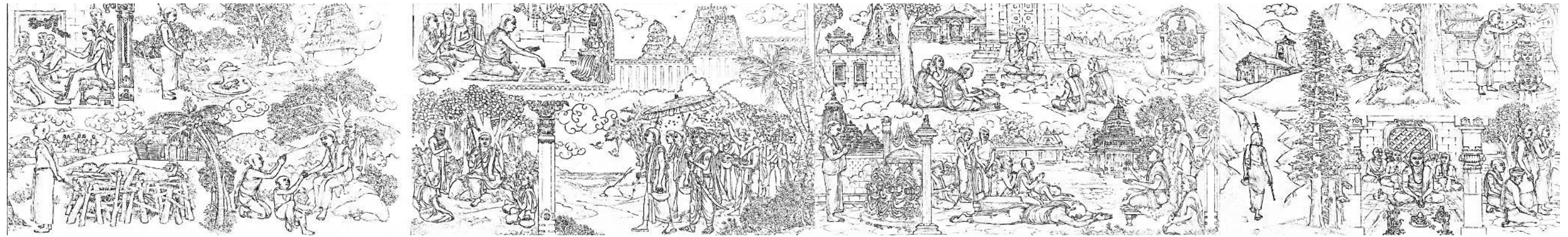


4

STATUE OF ONENESS STAMBH DESIGN



UPPER PANEL SKETCH



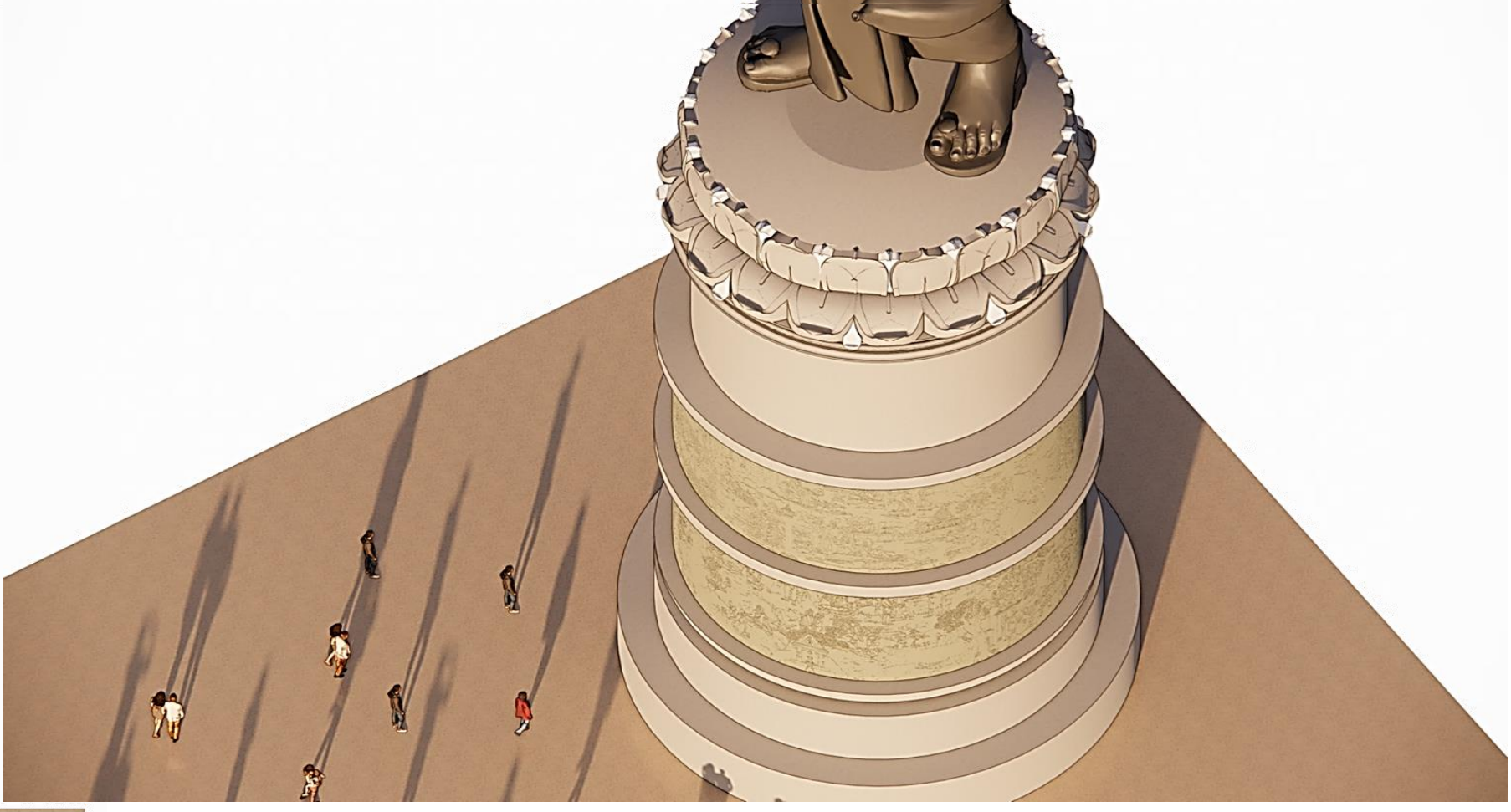
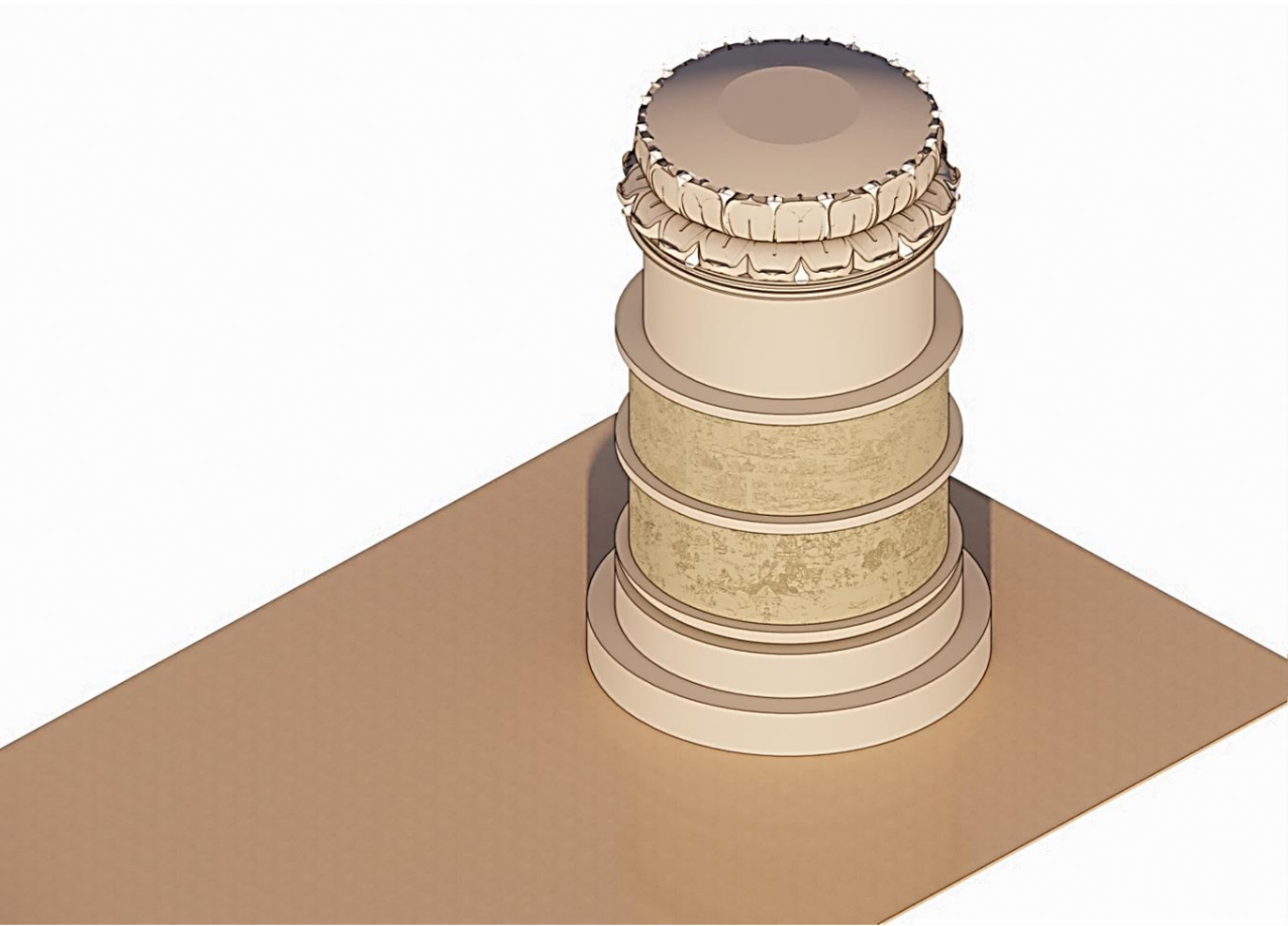
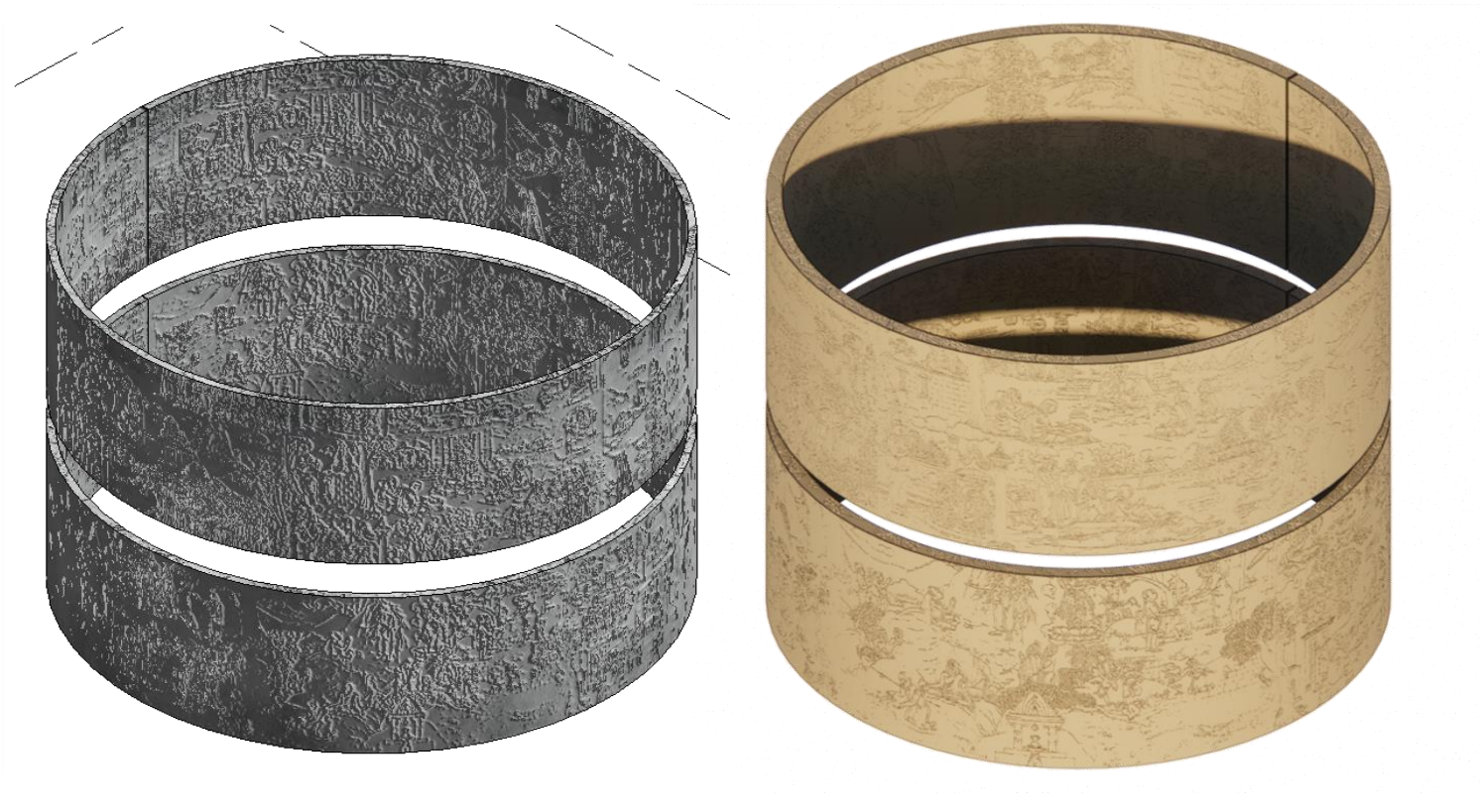
LOWER PANEL SKETCH



SKETCH TO MURAL



MURAL STAMBH EVALUATION





STATUE OF ONENESS

VIEWS



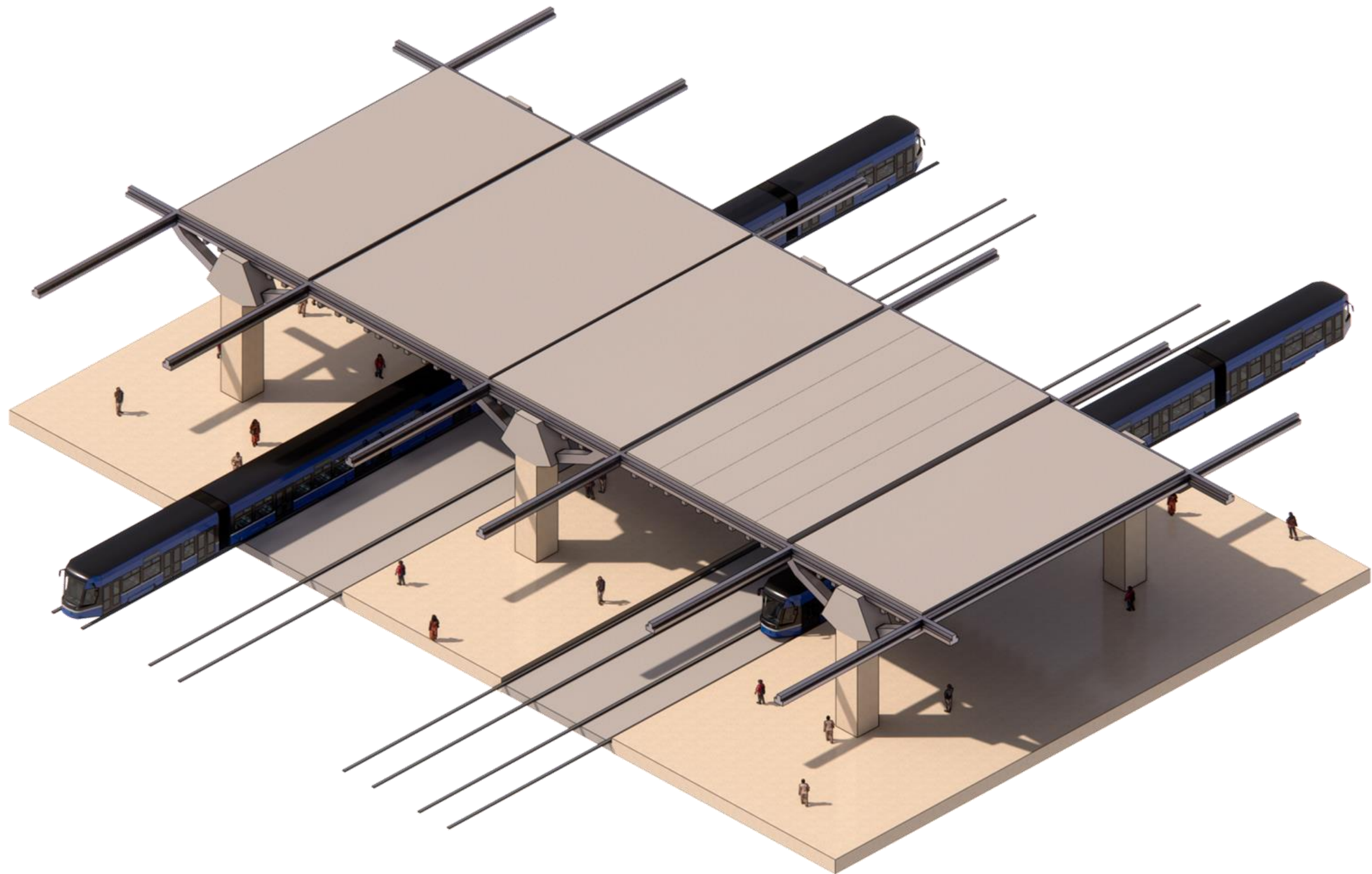
5

REDEVELOPMENT OF MUMBAI RAILWAY STATION STRUCTURAL DESIGN

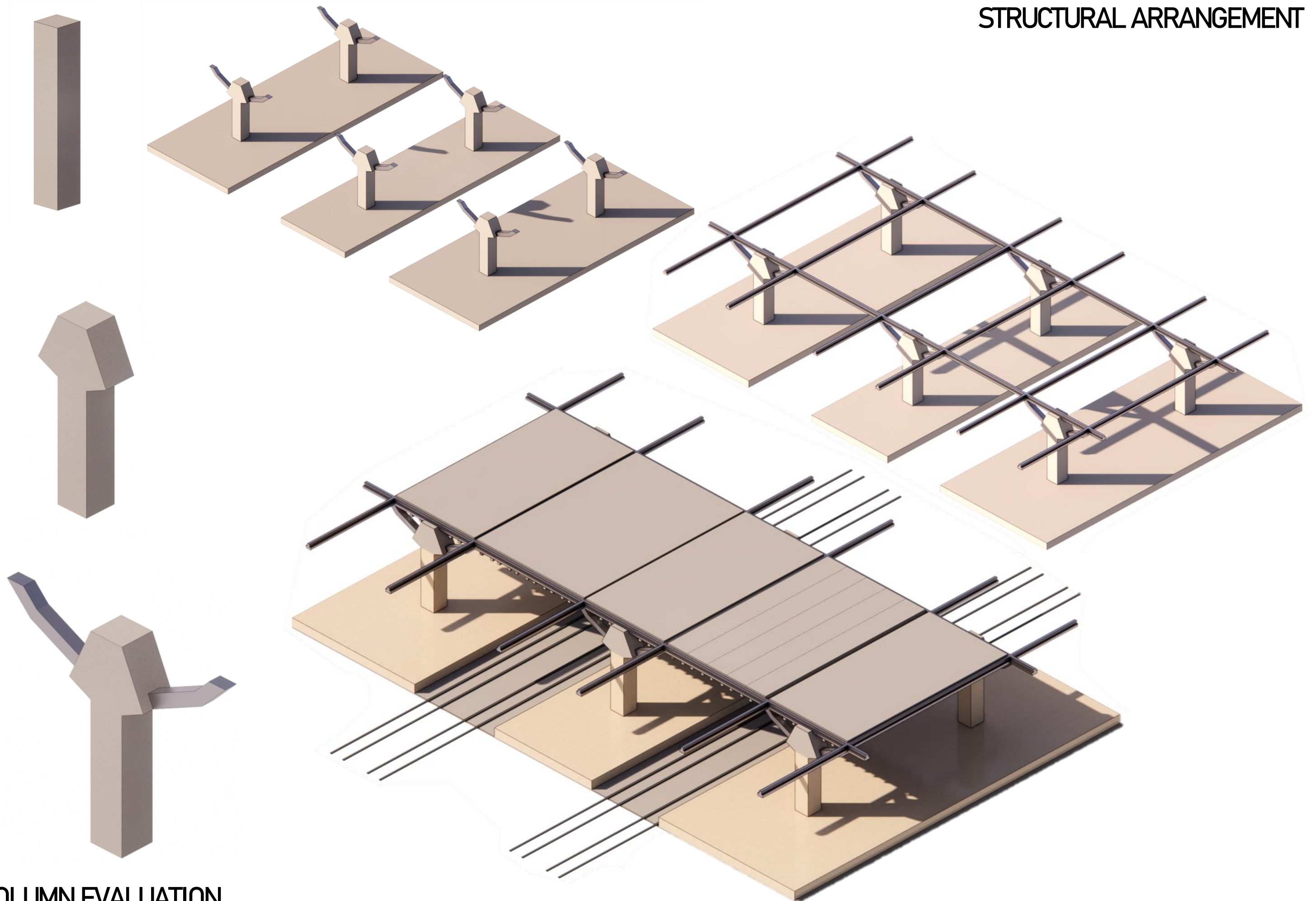


OPTION

1



STRUCTURAL ARRANGEMENT

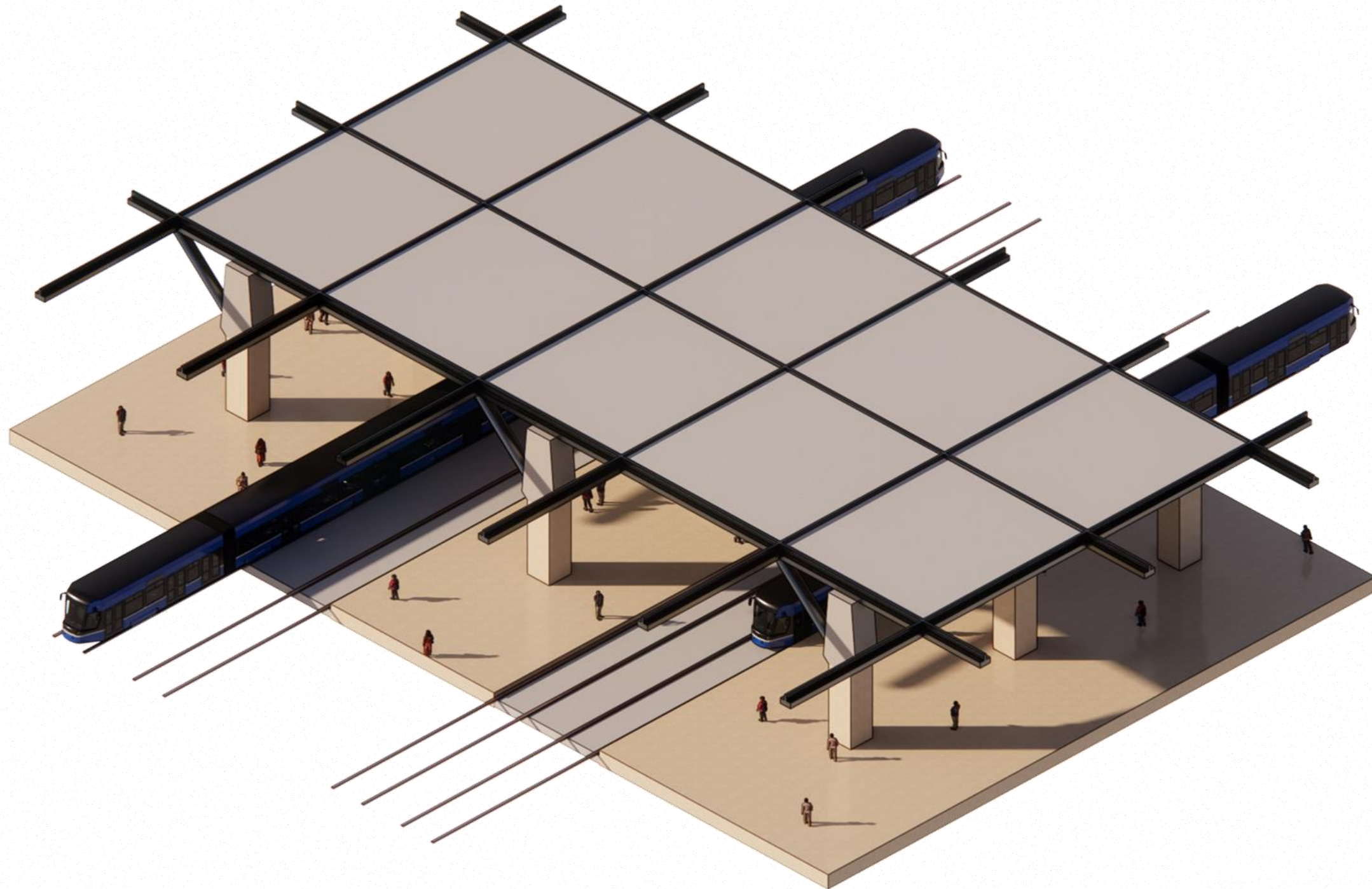


COLUMN EVALUATION

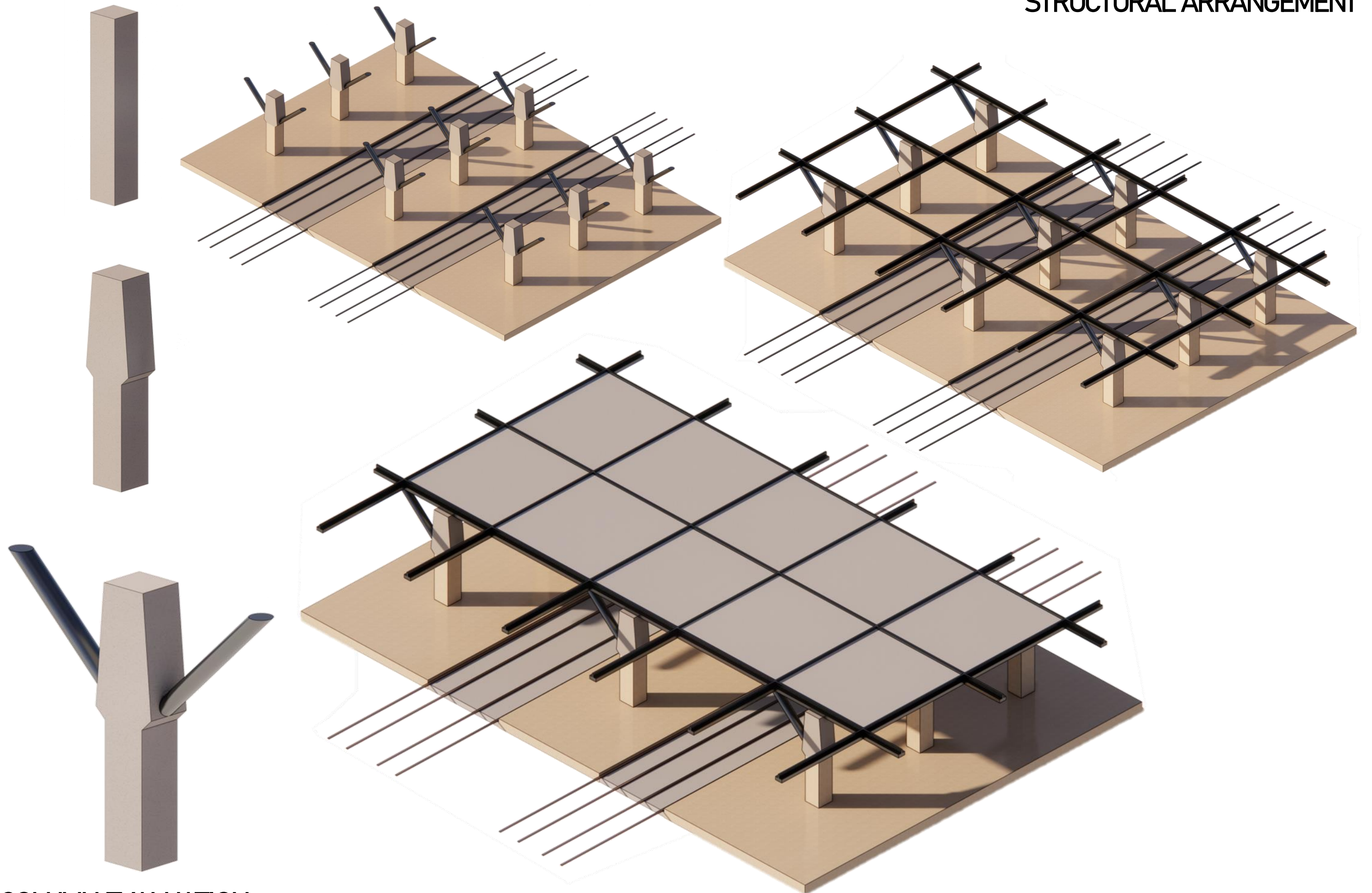
REDEVELOPMENT OF MUMBAI RAILWAY STATION



OPTION 2



STRUCTURAL ARRANGEMENT

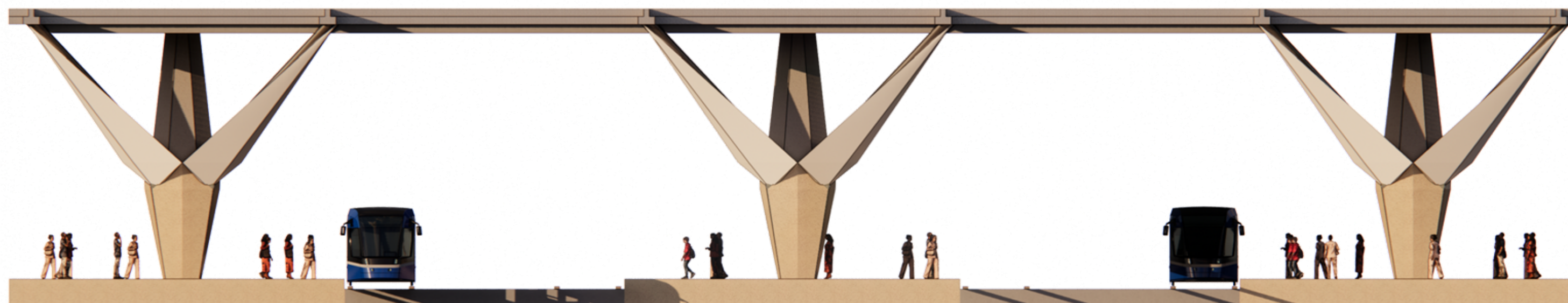
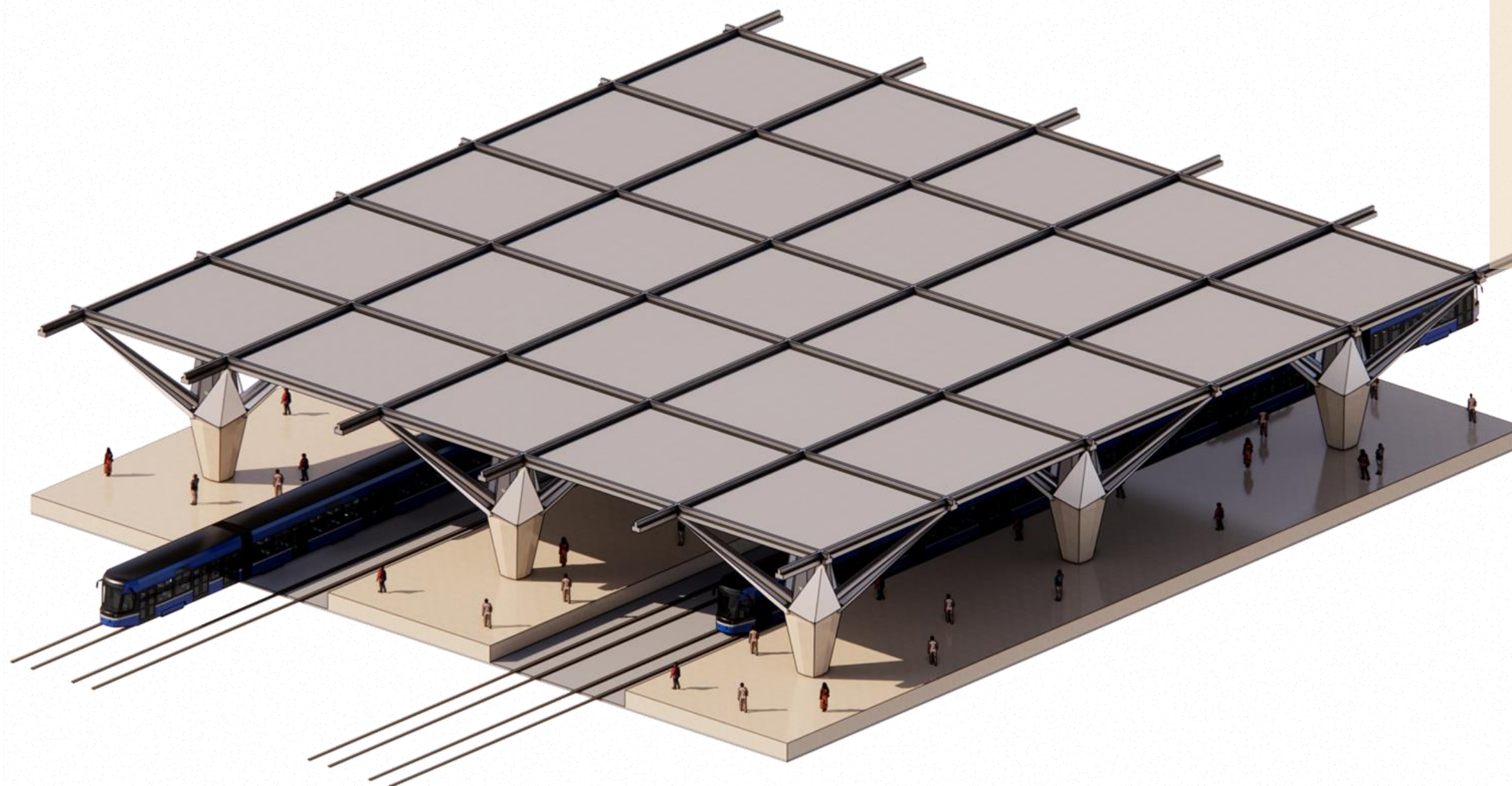


COLUMN EVALUATION

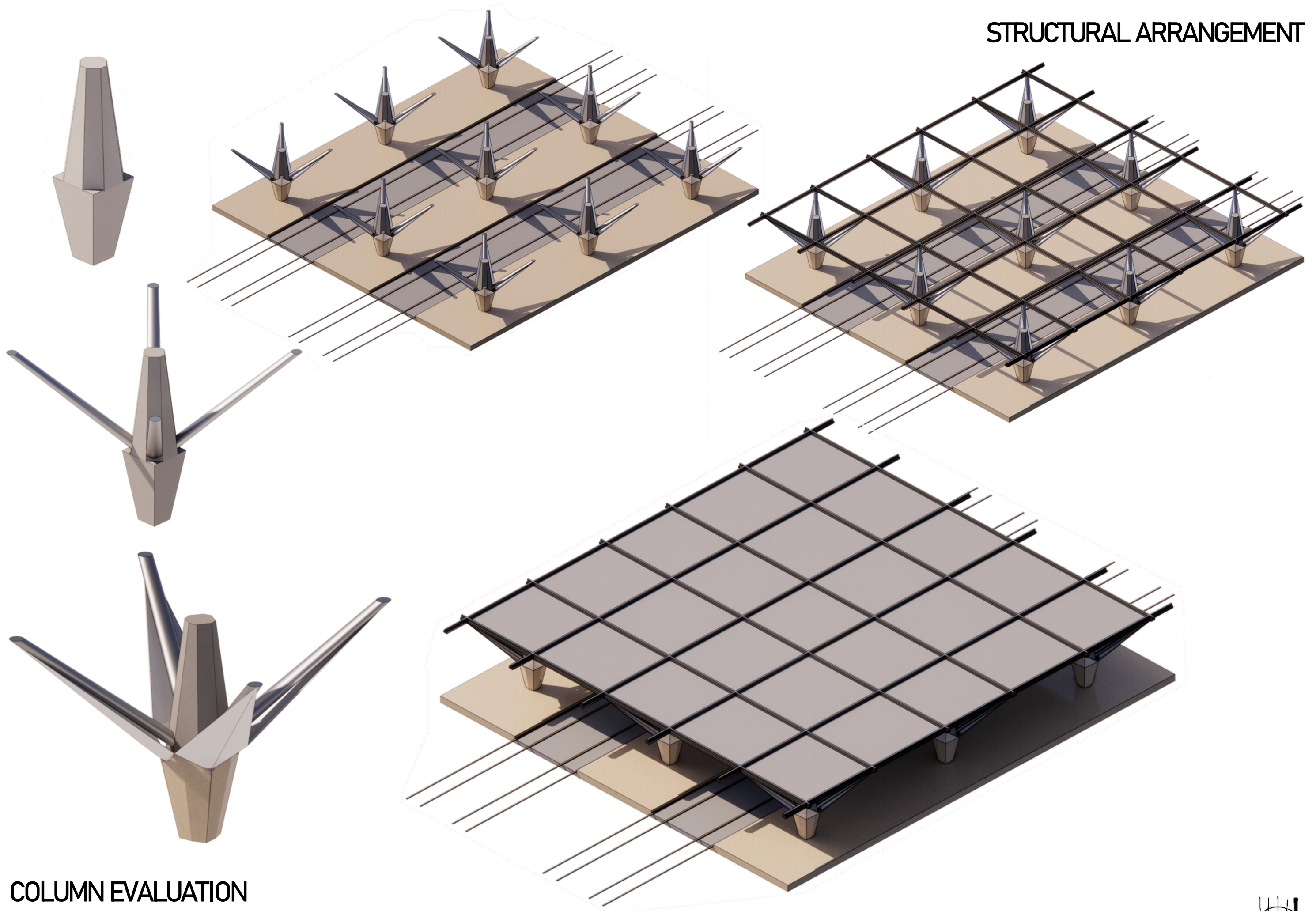
REDEVELOPMENT OF MUMBAI RAILWAY STATION



OPTION 3



STRUCTURAL ARRANGEMENT

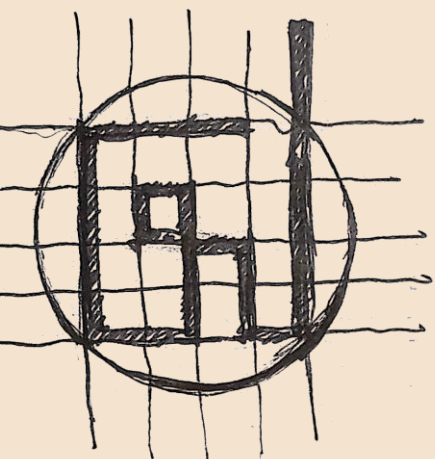


COLUMN EVALUATION

REDEVELOPMENT OF MUMBAI RAILWAY STATION







NANDRI