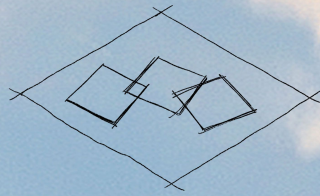
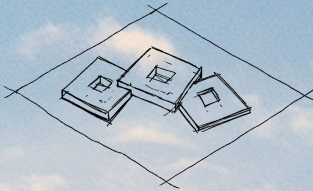


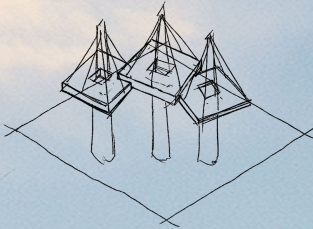
Forms arranged according to area and program requirements of client and brief and detailed in depth studies of general requirements based on best practices



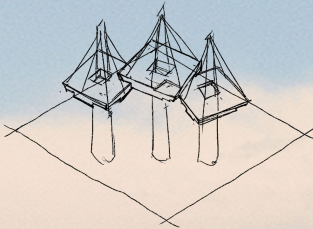
Orientation using genetic algorithm based advanced computational solar analysis. The forms were rotated at different angles and offsets adjusted between floors for most efficient form



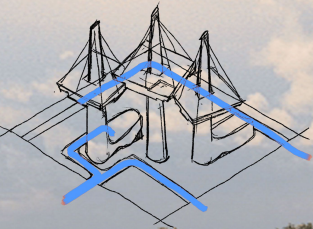
Forms hung from concrete shear wall based pylons. This reduces site footprint and minimizes loss of tree cover on site. This also ensures site drainage is maintained without any hinderance



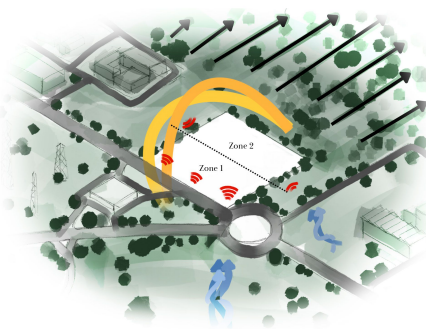
Introduction of overhangs and projections optimized using computational solar analysis. The final form is an interesting self shaded form that is highly efficient.



Heavy and high volume spaces are placed on the ground to keep the floatig structure lights and structurally feasible. Circulation corridors are kept to a minimum to reduce site intervention

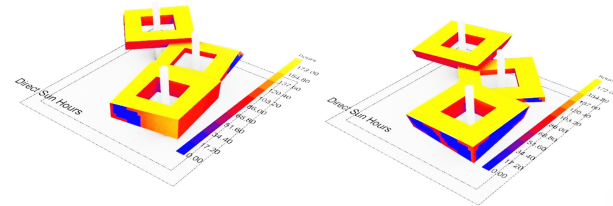


Concept



Site analysis for the project was carried out. It was primarily observed that the site lies in the green belt separating Vishakapatnam city proper from the Tata Steel plant. This zone had been earmarked as blue-green belt for the city as per the RMP 2041 and hence the conservation of on site flora was a prime concern considered when developing the design concept.

Site analysis



During our computational analysis project, we explored the intricacies of rotating geometric shapes and devised sophisticated algorithms for advanced design generation. Employing tools like Python and Rhino-Grasshopper, we manipulated shapes dynamically and created intricate patterns, demonstrating both technical precision and creative innovation in computational design techniques.

Computational analysis



Coloured powder coated steel sheets as louvers. Made of reflective surface to prevent heat gain



High tensile steel cables to support the floating structure anchors to composite steel pylon supports



Square tubular rolled steel sections serving as primary columns and steel beam sections for long span trusses as required by structure

Materials



- 01 Entry plaza
- 02 Iron ore inspired art installation
- 03 Bus bay (For employees and visitors)
- 04 Auditorium block (1000pax)
- 05 Lobby for entrance to visitor centre ring

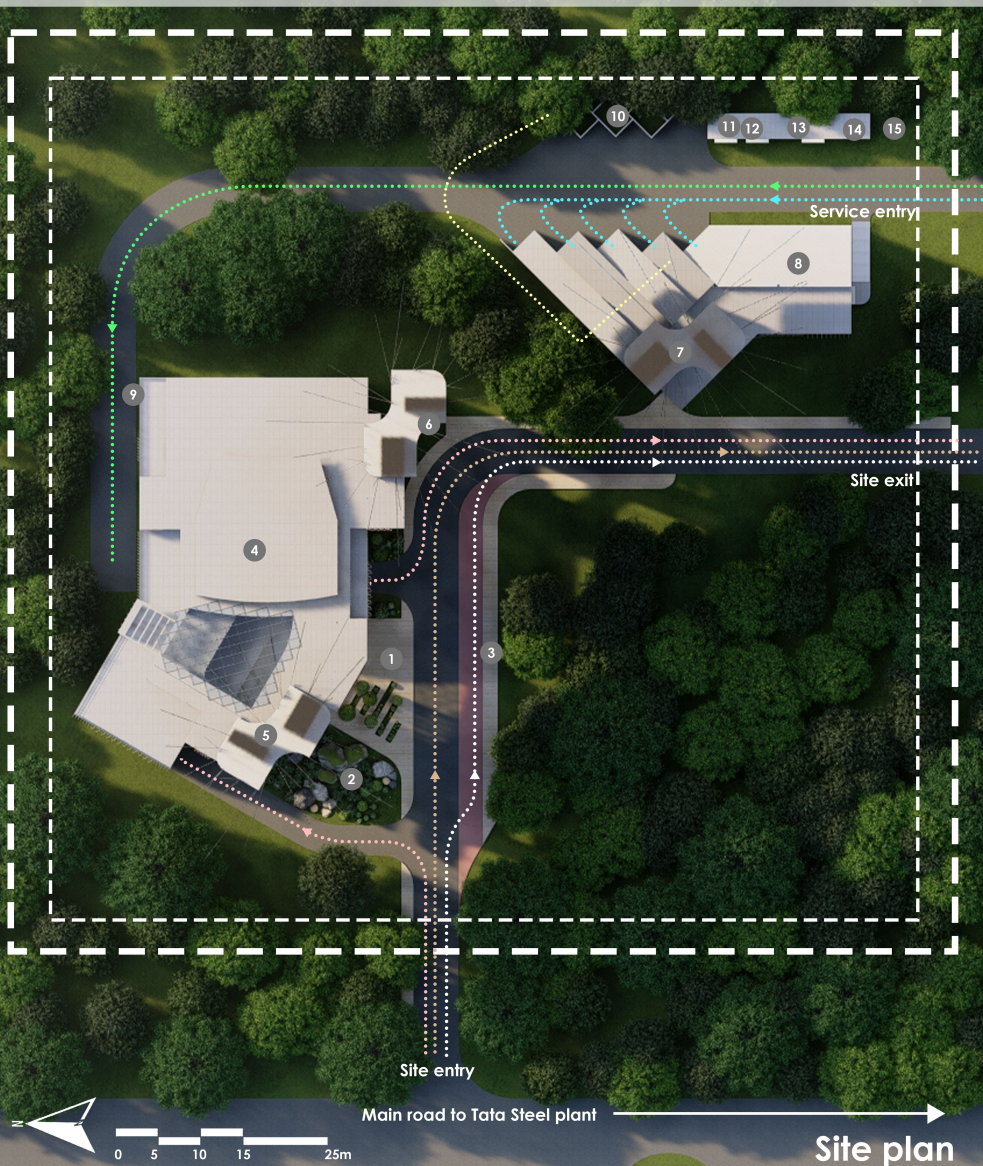
- 06 Lobby for entrance to research ring-1
- 07 Lobby for entrance to research ring-2
- 08 Pilot facilities block
- 09 Service entrance for auditorium and back stage entry (Performers)
- Storage yard for raw

- 11 Sewage treatment plant
- 12 Effluent treatment plant
- 13 Water treatment and pumping station
- 14 Switchgear room (Heavy duty)
- 15 Transformer and substation (For pilot)

- Pickup/drop
- Vehicular
- Public transport
- Services
- Auditorium
- Materials flow

Legend of spaces on site

Circulation legend



Site plan



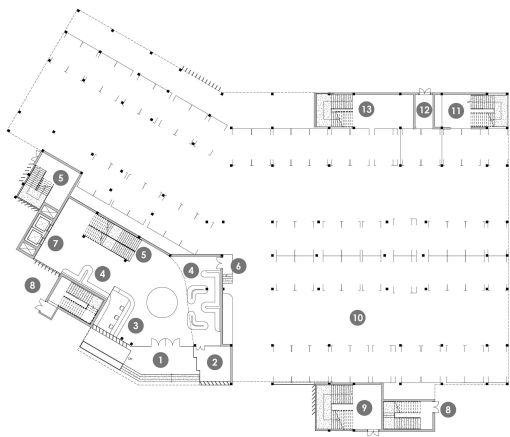
ELEVATION 1



ELEVATION 2

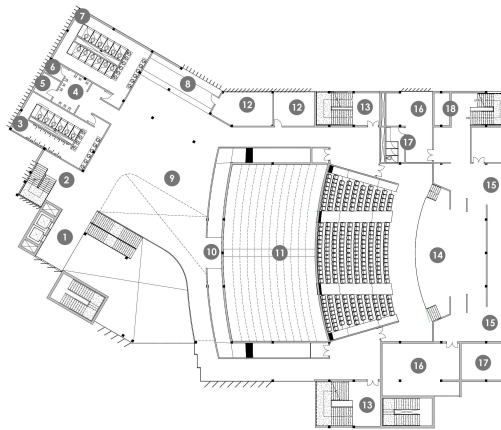


ELEVATION 3



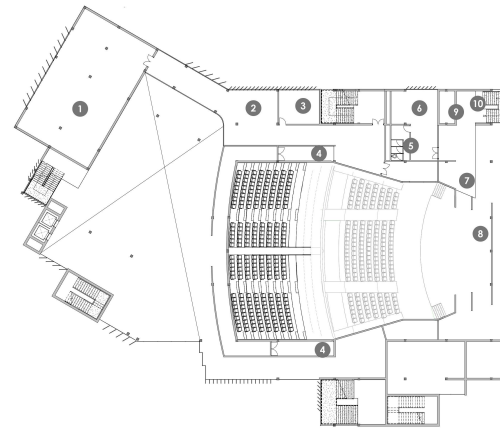
Ground floor plan (Lvl +0.6m)

- | | | |
|-----------------------|-------------------------------------|-------------------------|
| 01 Entrance Lobby | 07 Lift lobby | 12 Set lifts |
| 02 Souvenir Shop | 08 Fire staircase (From rings) | 13 North Fire staircase |
| 03 Reception | 09 Fire Staircase (From auditorium) | |
| 04 Waiting Lounges | 10 Parking | |
| 05 Grand stairway | 11 Entry for backstage | |
| 06 Entry from parking | | |



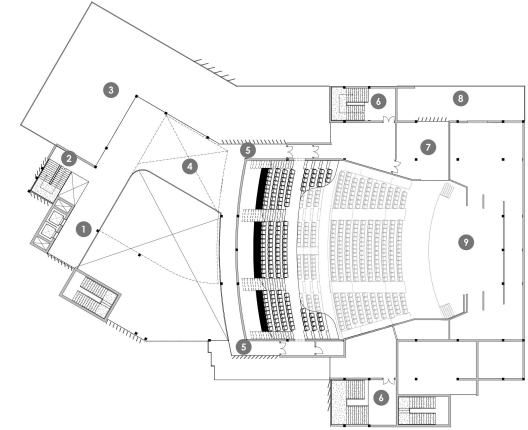
First floor plan (Lvl +3.6m)

- | | | |
|-------------------------|---------------------------------|--------------------------|
| 01 Lift lobby | 07 Female Toilets | 13 Fire staircase |
| 02 Staircase to Balcony | 08 Serving counter | 14 Stage (+900mm) |
| 03 Male toilets | 09 Grand Ball | 15 Backstage area |
| 04 Water fountains | 10 Entry to Tier 2 | 16 A.C Green room |
| 05 Janitors room | 11 Hydraulic (For moving floor) | 17 Toilets and Bathrooms |
| 06 Feeding room | 12 Store room | 18 Backstage entry |



Second floor plan (Lvl +6.9m)

- | | |
|------------------------------|------------------------|
| 01 Rehearsal rooms | 07 Access to fly loft |
| 02 Meeting zone (Performers) | 08 Fly loft |
| 03 Store room | 09 Set lift |
| 04 Entry for tier 2 | 10 Stairs to backstage |
| 05 Toilets | |
| 06 Green room-3 | |



Third floor plan (Lvl +0.6m)

- | | |
|--------------------------|-------------------------------|
| 01 Lift lobby | 07 Control room |
| 02 Stairs from 1st floor | 08 Terrace and balcony access |
| 03 Terrace | 09 Fly loft |
| 04 Skylight detail above | |
| 05 Entry to balcony | |
| 06 Fire staircase | |



0 5 10 15 25m

Auditorium Block Floor plans and details



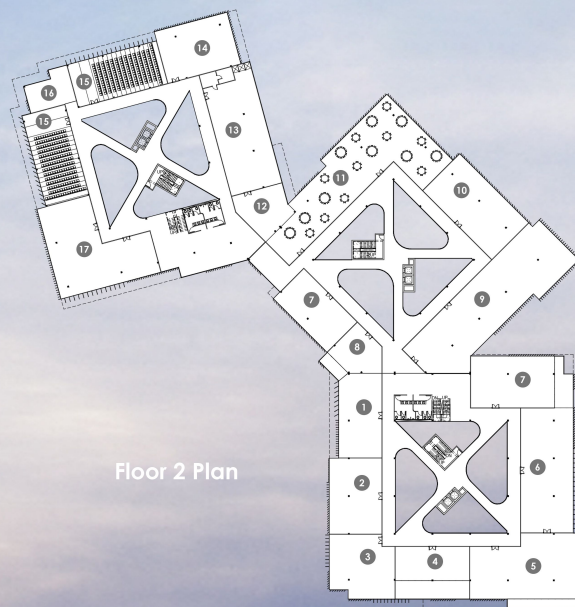
Auditorium entrance view at ground level



LEGEND

- 01 Research Area
- 02 Sample Preparation Lab
- 03 Spectroscopy Lab
- 04 Expansion Zone B
- 05 Microscopy Lab
- 06 Material Characterization Lab
- 07 Expansion Zone c
- 08 Advance Material Characterization Lab
- 09 Green Space

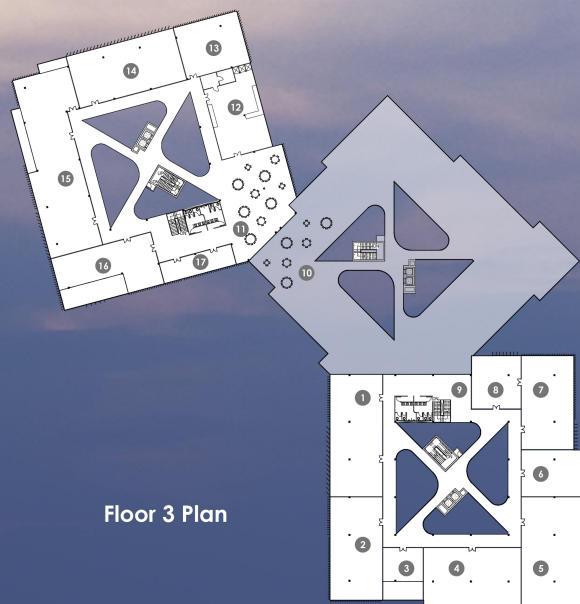
Floor 1 Plan



Floor 2 Plan

LEGEND

- 01 Coating and Development Lab
- 02 Sample Preparation Lab
- 03 Furnaces & Oven
- 04 Expansion Zone A
- 05 Ceramic Lab
- 06 Testing Lab
- 07 Research Area
- 08 Corrosion Lab
- 09 Advance Process Lab
- 10 Product Workshop
- 11 Canteen
- 12 Serving Area
- 13 Main Kitchen
- 14 Meeting Room
- 15 Seminar Room
- 16 Green Space
- 17 Visitor Centre



Floor 3 Plan

LEGEND

- 01 Research Area
- 02 Data Analytics Lab
- 03 Expansion Zone E
- 04 Computational Lab
- 05 Digital Modelling & Simulation Lab
- 06 Expansion Zone D
- 07 Environment Lab
- 08 Energy Lab
- 09 Outdoor Dining
- 10 Indoor Dining
- 11 Satellite Kitchen
- 12 Multipurpose Hall
- 13 Meeting Room
- 14 Director's Chamber
- 15 Admin Area
- 16 Library
- 17 Assistance Services





LEGEND

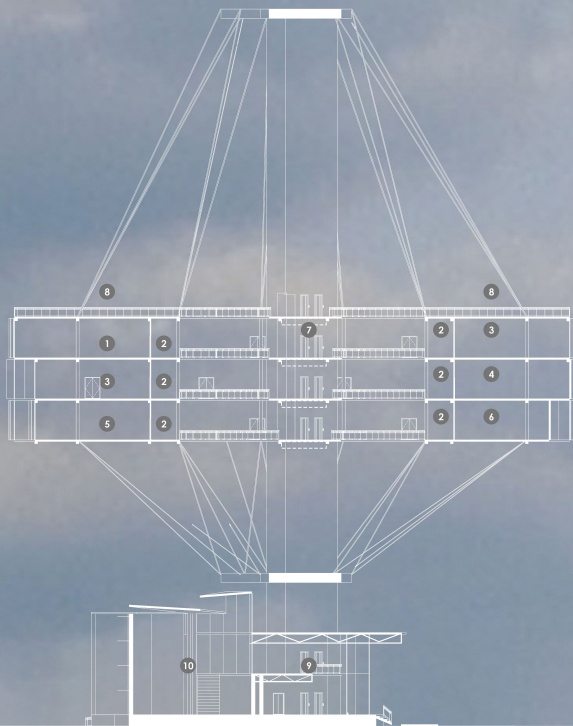
- 01 Raw Material Characterization and Beneficiation
- 02 Coke Making
- 03 Agglomeration and Iron Making
- 04 Lockers
- 05 Changing and Cleansing
- 06 Welding
- 07 Foundry
- 08 Metal Forming
- 09 Steel Making
- 10 Truck Parking
- 11 Storage
- 12 Refer to Site Plan
- 13 Toilets
- 14 Conference Room
- 15 Control Room
- 16 Process Lab
- 17 Double Heighted Space

Pilot Floor 2



0 5 10 15 25m

Pilot Floor 1



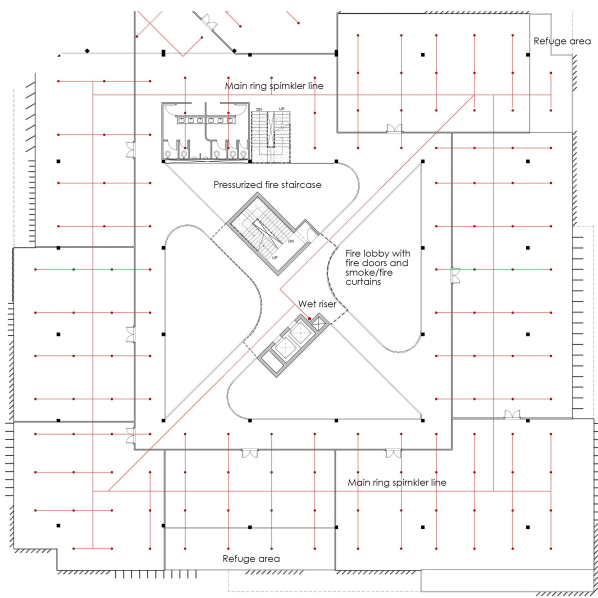
LEGEND

- 01 Expansion Zone D
- 02 Corridor
- 03 Phase transformation laboratory
- 04 Testing laboratory
- 05 Sample preparation laboratory
- 06 Expansion Zone C
- 07 Sample Preparation laboratory
- 08 Terrace
- 09 Lift lobby
- 10 Pilot facility

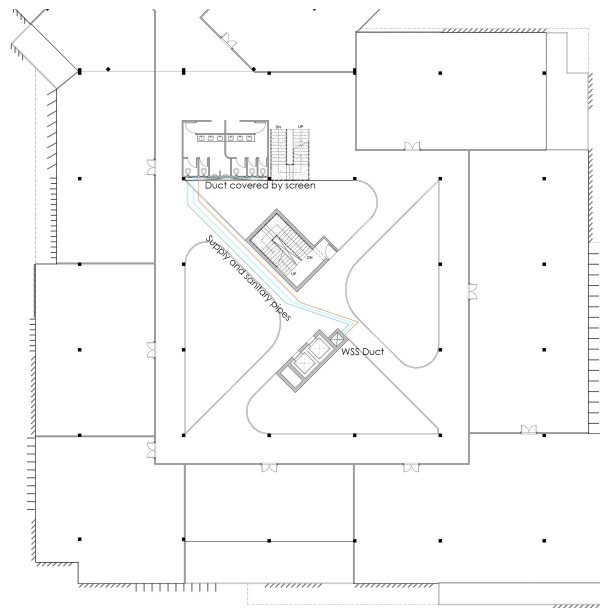
Section AA'

0 5 10 15 25m

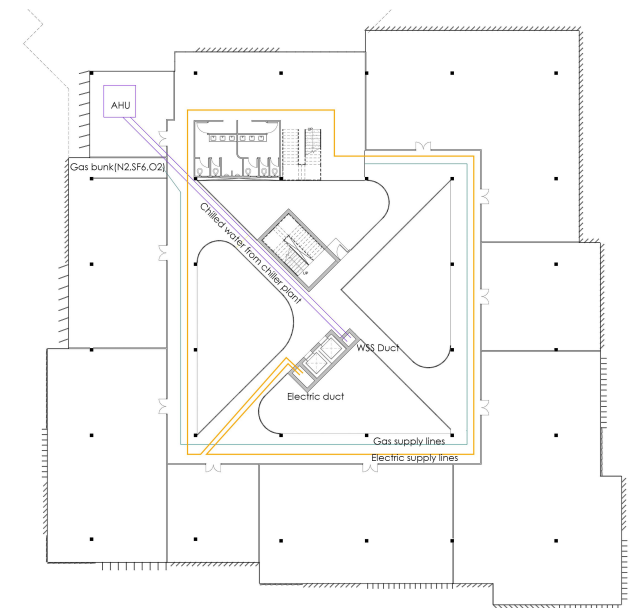




Typical fire and life safety plan



Typical water supply and waste water plan



Typical plan of electric supply, HVAC and gas supply

