



CEE 220B
Advanced Building
Modeling Workshop

Final Presentation

Anjana Mohan

March 25, 2023

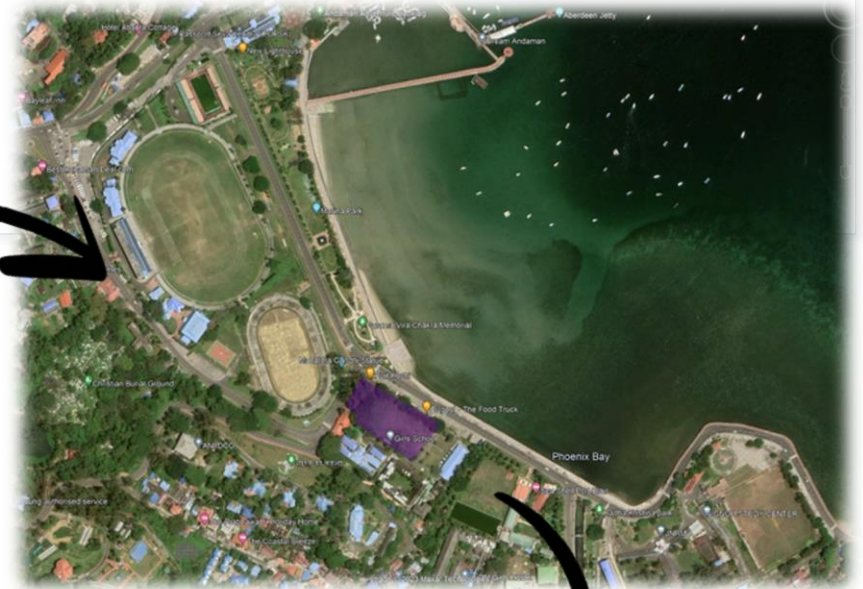
Location



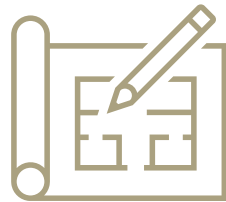
Port Blair

The Andaman Islands
India

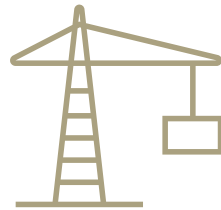
Museum



Pillars



Design

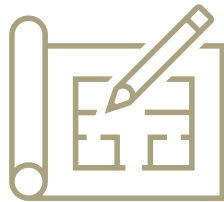


Systems



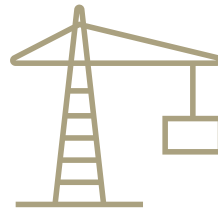
Sustainability

Pillars



Design

- Form Concept
- Space Planning
- Lighting
- Circulation



Systems

- Structural
- HVAC
- Plumbing



Sustainability

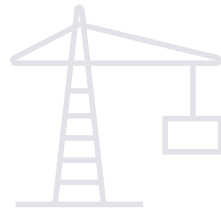
- Energy Analyses
- Climate Consultant
- Autodesk Insight

Pillars



Design

- Form Concept
- Space Planning
- Lighting
- Circulation



Systems

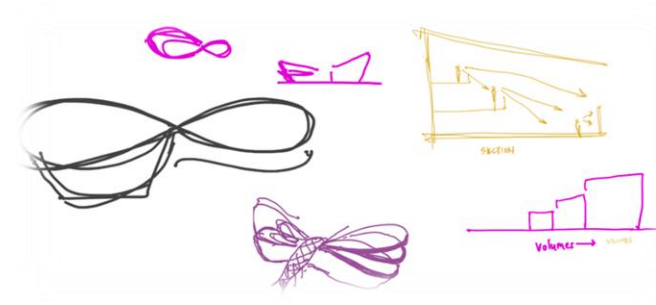


Sustainability

Form Concept

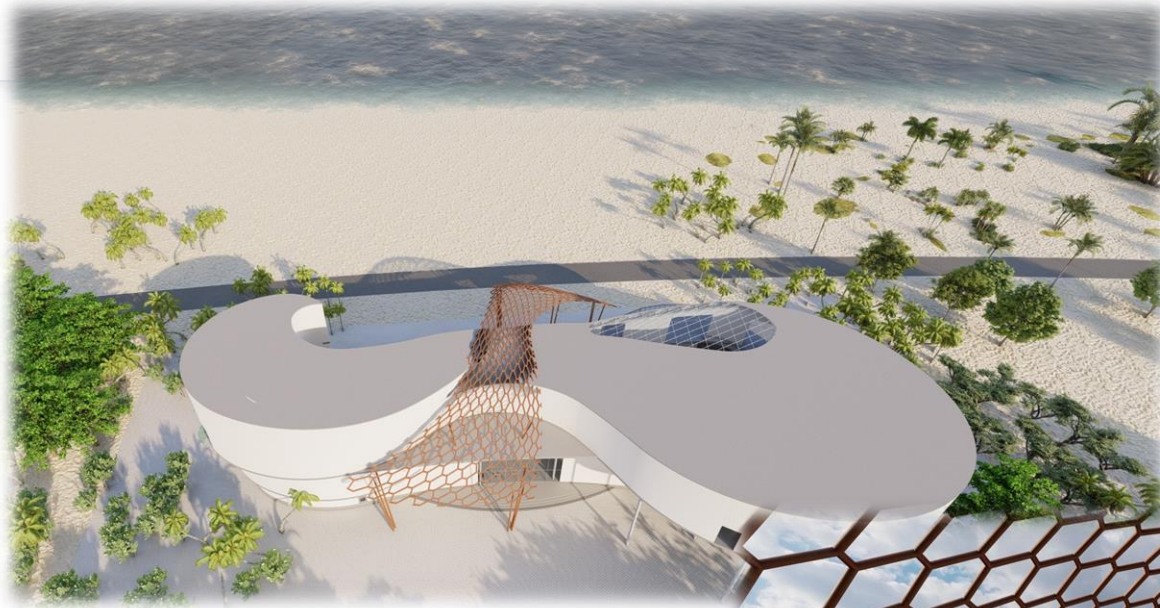


- Waves, infinity
- Canopy
- Volumes
- Terraces



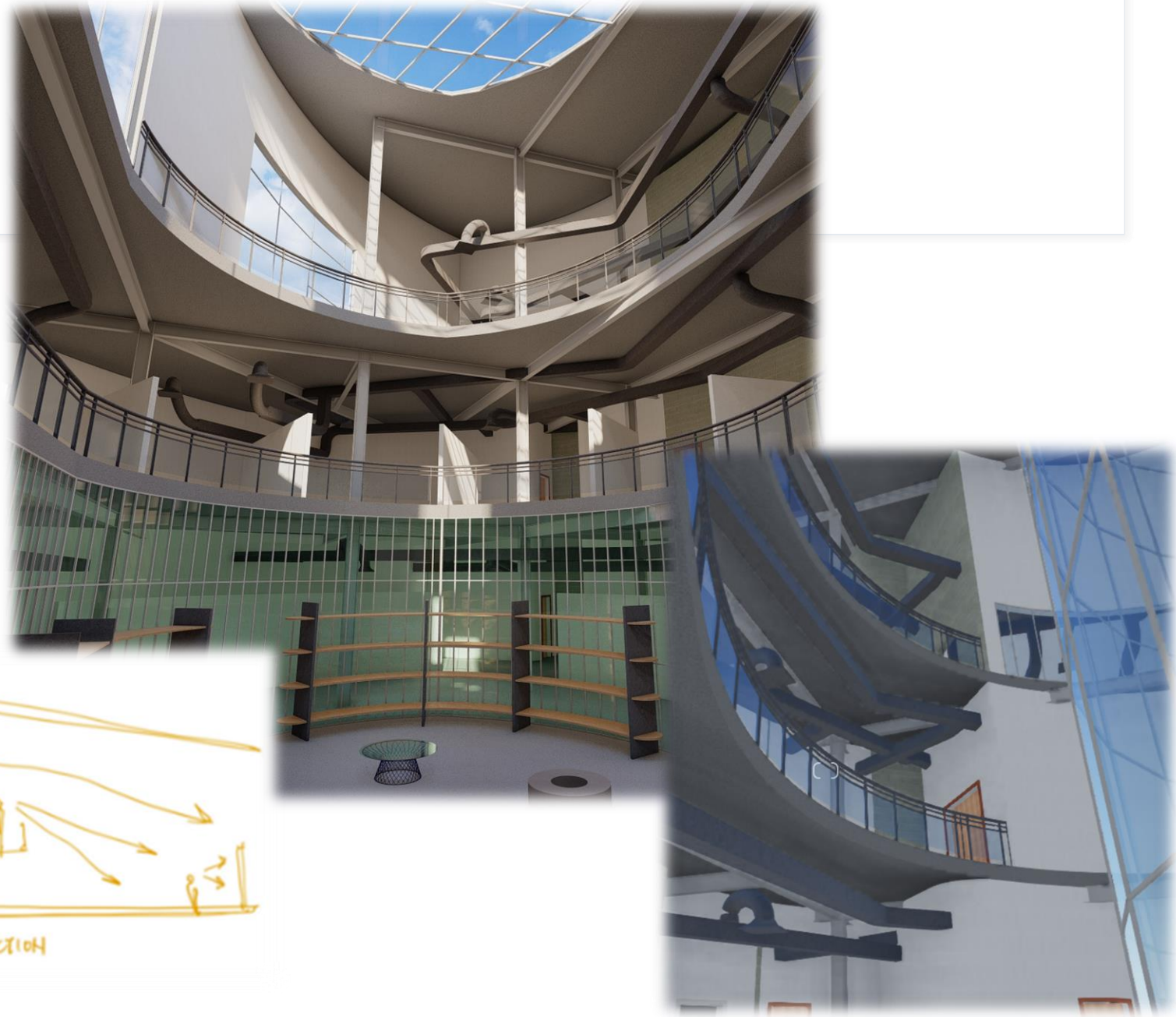
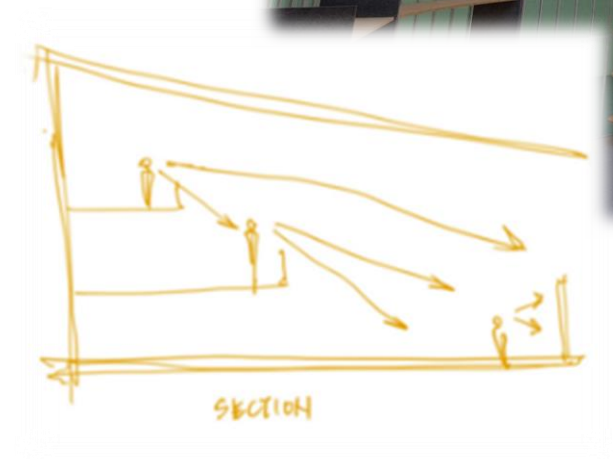
Form Concept

- Waves, infinity
- Canopy
- Volumes
- Terraces



Form Concept

- Waves, infinity
- Canopy
- Volumes
- Terraces



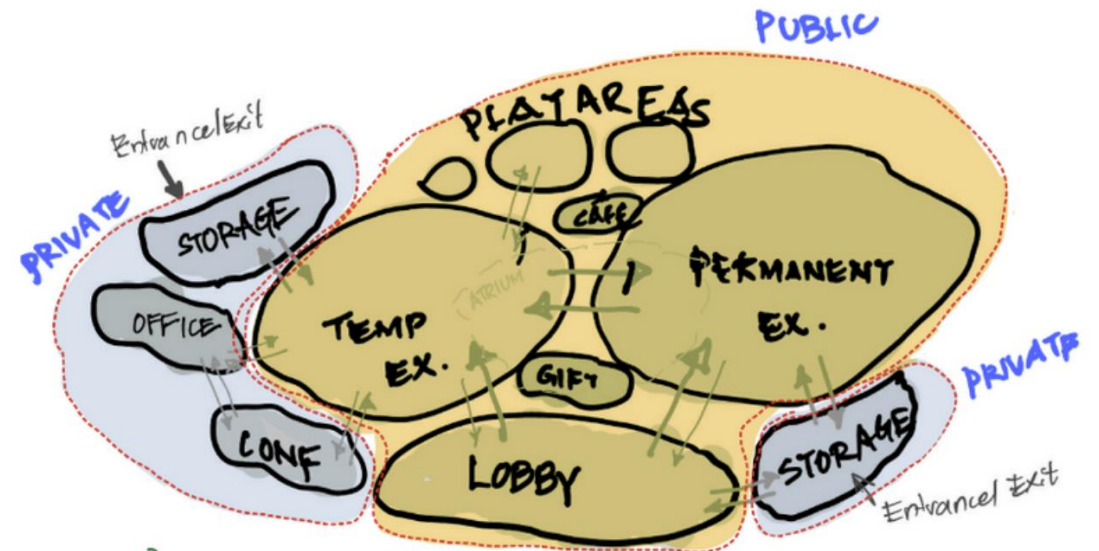
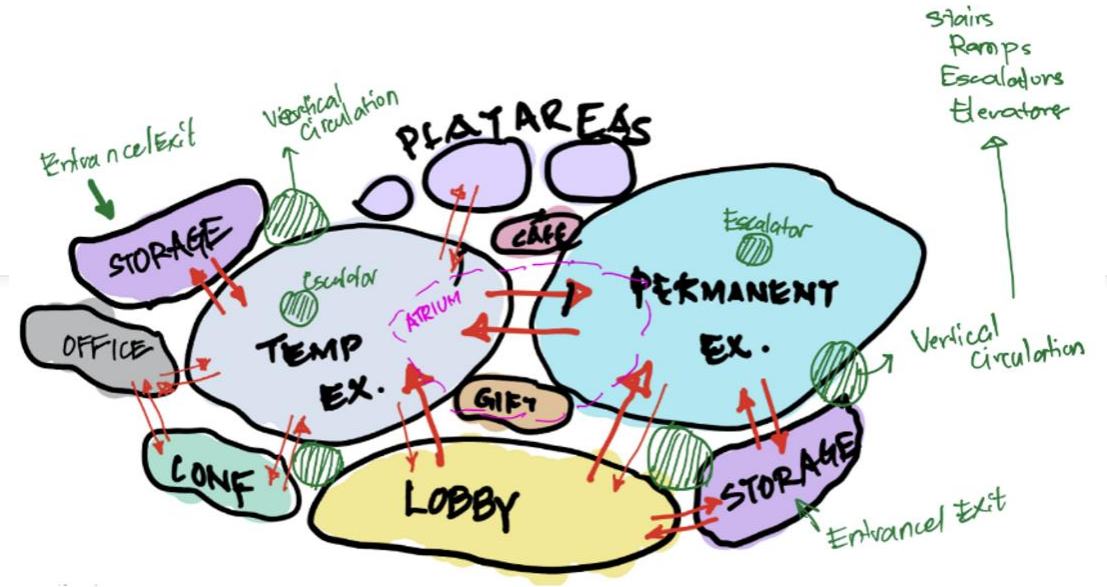
Form Concept

- Waves, infinity
- Canopy
- Volumes
- Terraces



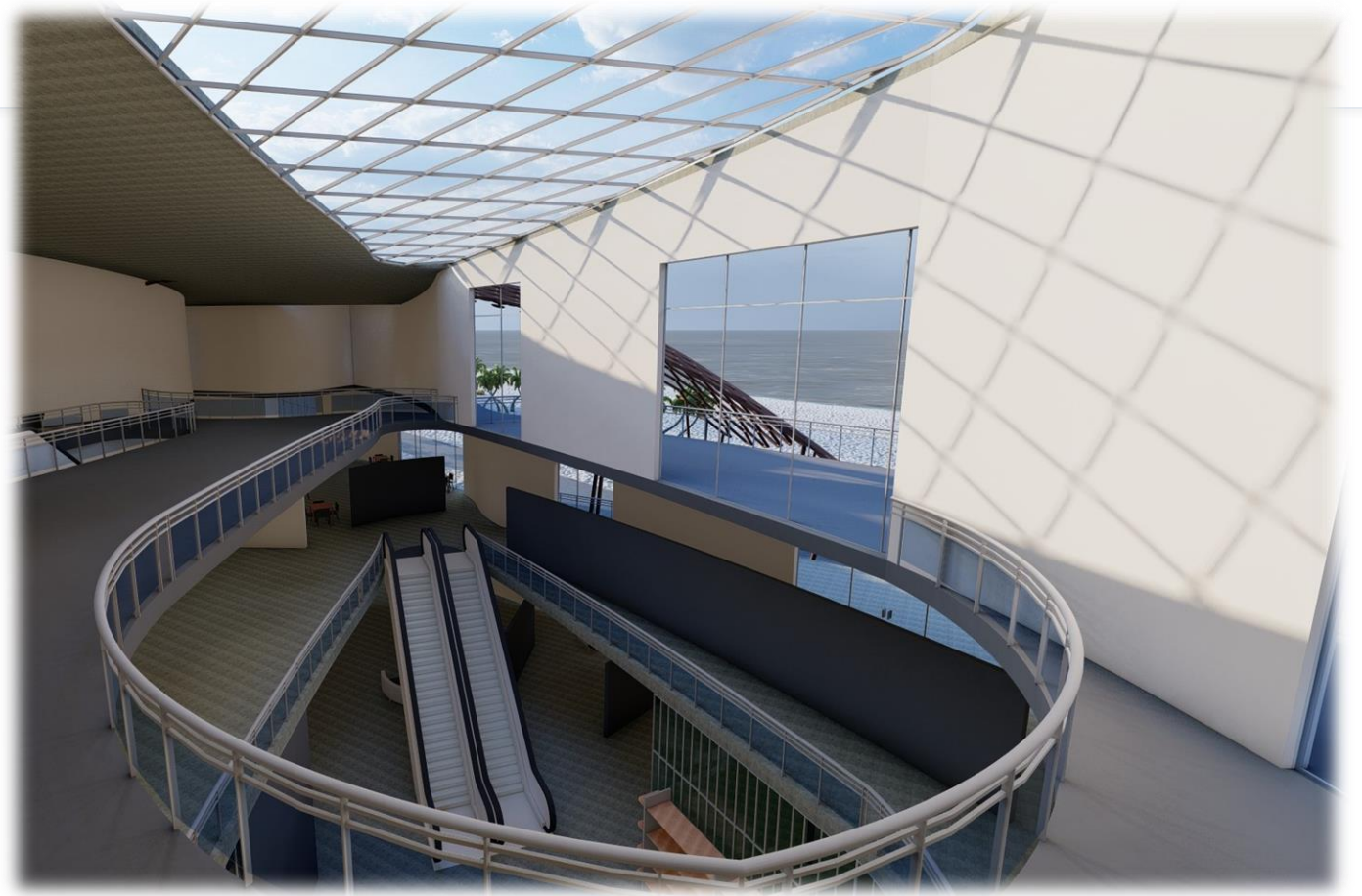
Space Planning

- Bubble Diagram
- Private vs Public Areas



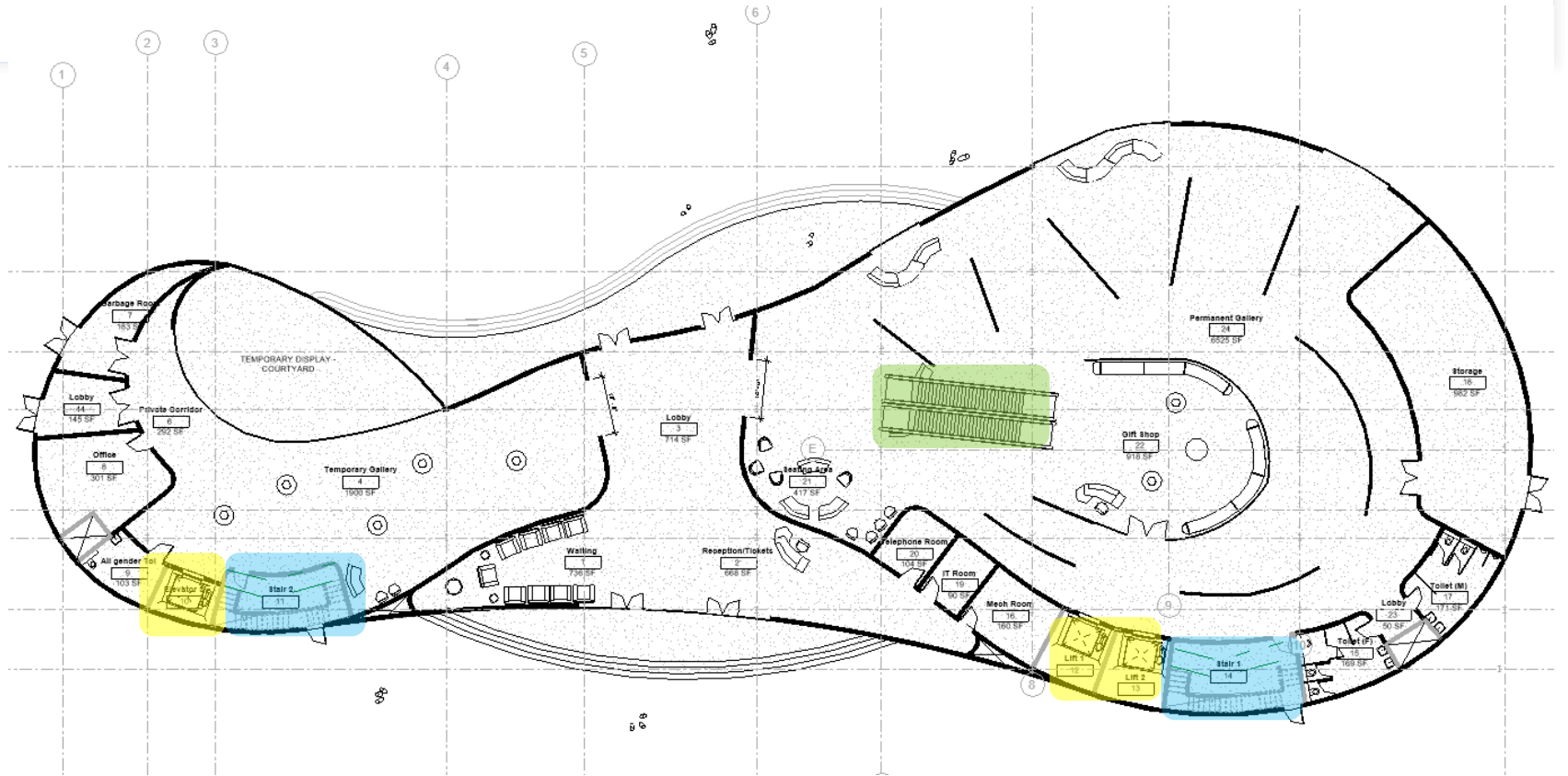
Lighting

- Natural light
- Interesting shadows



Vertical Circulation

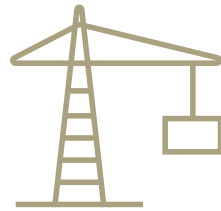
- Elevators
- Staircases
- Escalators



Pillars



Design



Systems

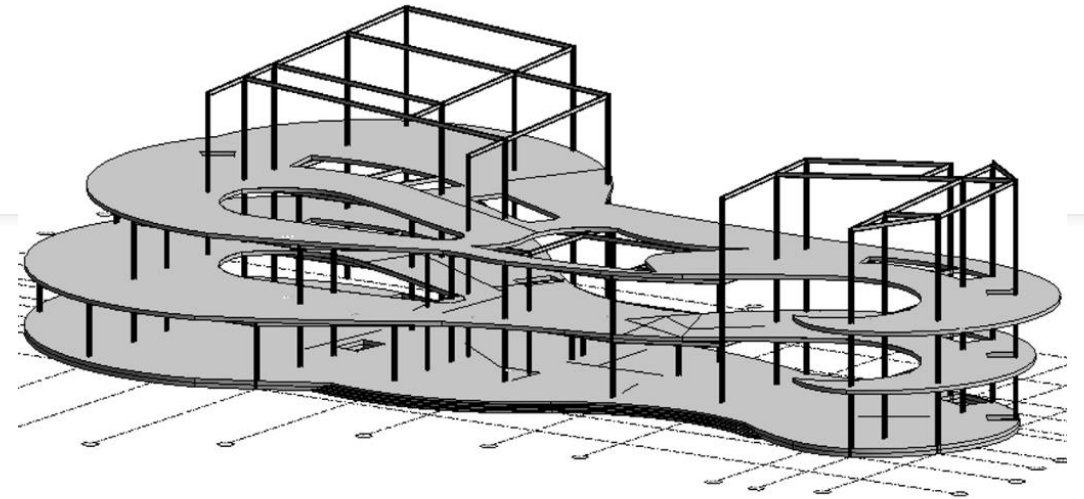
- Structural
- HVAC
- Plumbing



Sustainability

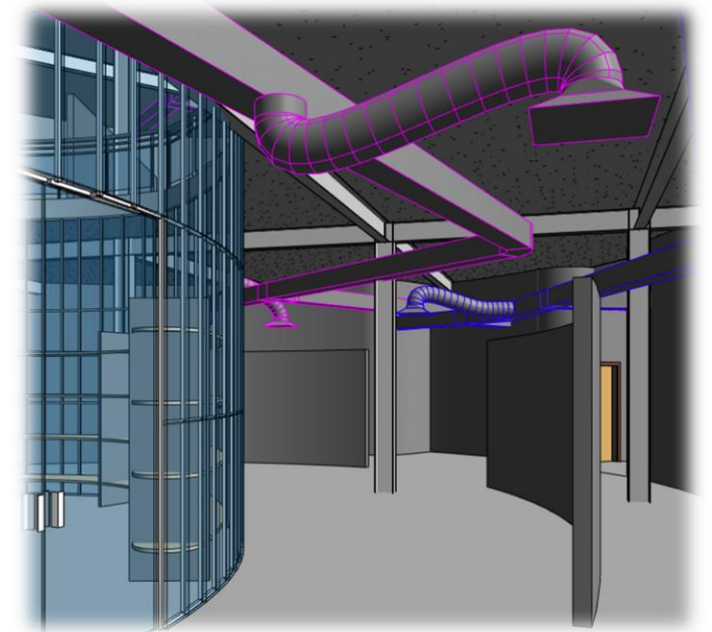
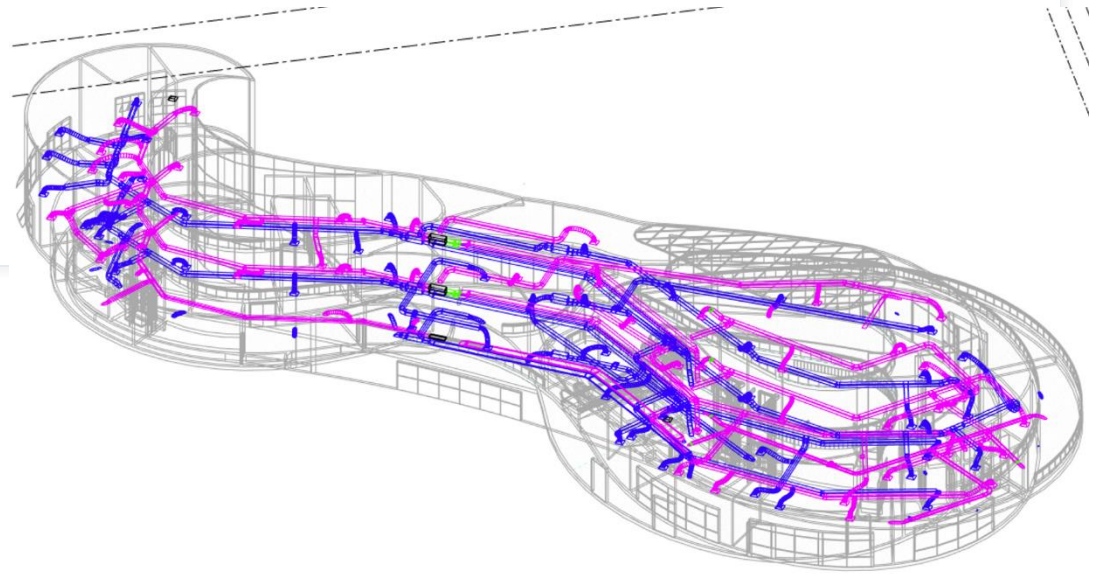
Structural System

- Metal frame simple grid
- Steel I-channels
- Columns : 12x24
- Beams: 12x26
- Clear spans of up to 50 ft



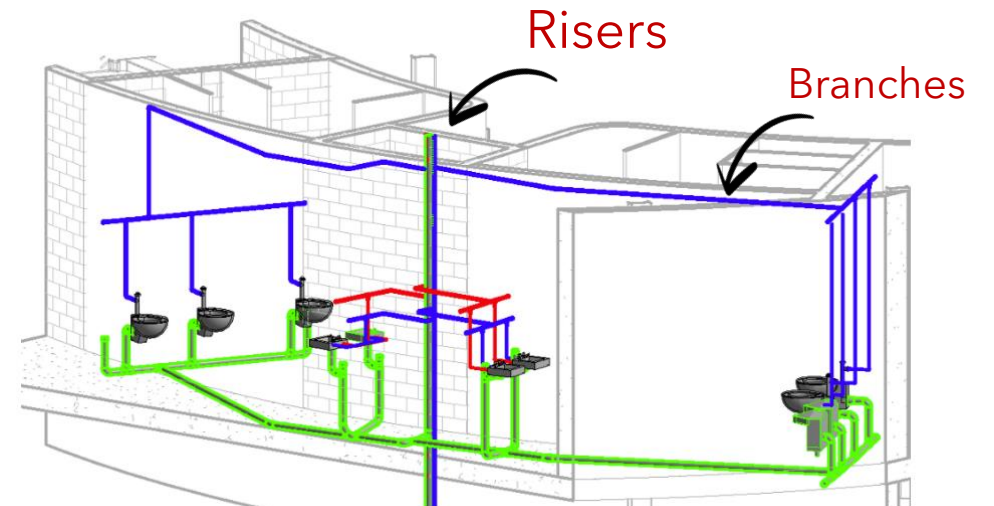
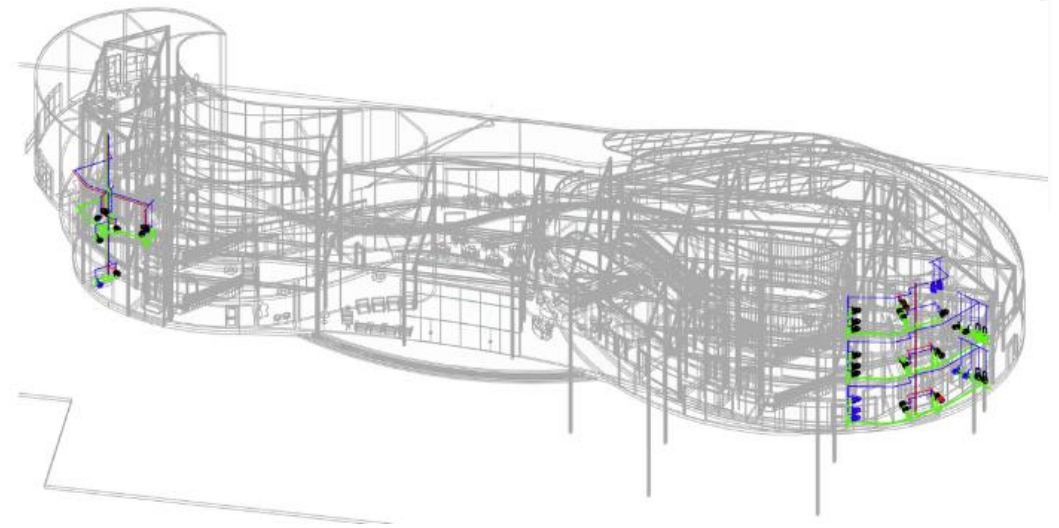
HVAC System

- Main mech room in 1 floor
- Local ceiling AHUs distributed
- Air diffusers - ceiling mounted
- 24x12 and 12x12 rectangular ducts
- 12x12 diffusers



Plumbing System

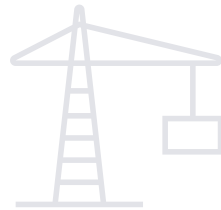
- One complex in each wing
- 2 main shafts : 7x4.5 sqft
- Risers: 4" for sanitary system, 1" each for hot and cold water
- Branches: 3" for sanitary system, 1" each for hot and cold water



Pillars



Design



Systems

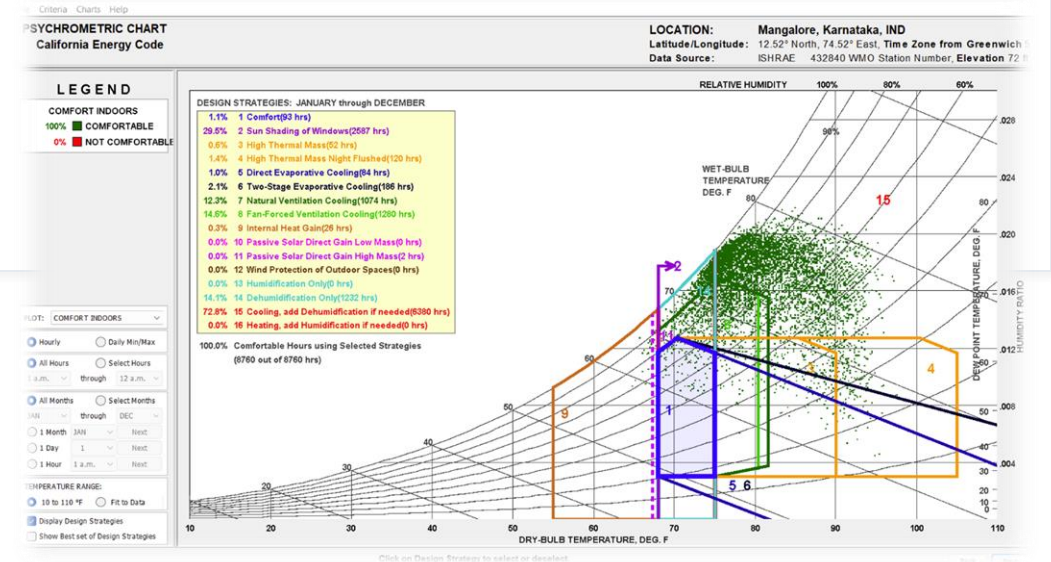


Sustainability

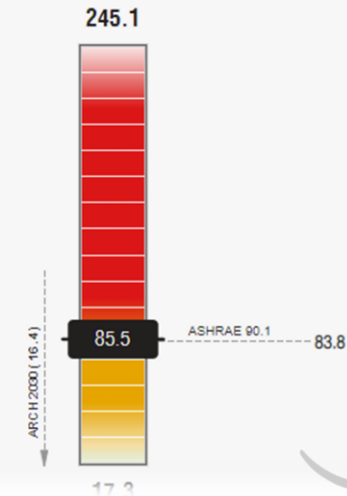
- Energy Analyses
- Climate Consultant
- Autodesk Insight

Sustainability

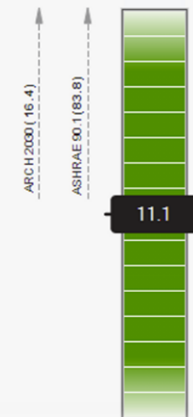
- Energy Analyses
- Natural lighting
- Natural ventilation
- Use of solar panels
- Materials per Insight suggestions



Benchmark Comparison
kBtu / ft² / yr



Benchmark Comparison
kBtu / ft² / yr

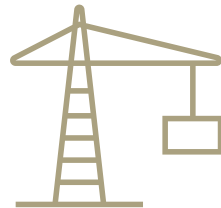


Pillars



Design

- Form Concept
- Space Planning
- Lighting
- Circulation



Systems

- Structural
- HVAC
- Plumbing



Sustainability

- Energy Analyses
- Climate Consultant
- Autodesk Insight

Rendered Views



Façade – South

Rendered Views



Café



Temp Gallery



Walkthrough



Thank you