



# David S. Ingalls Rink

Amy Huan | Tech 4a Schematic Design Presentation | 12.09.2013

## **| General Building Data**

<b>Building name:</b>	<b>David S. Ingalls Rink</b>
<b>Location:</b>	<b>New Haven, CT</b>
<b>Building Occupant:</b>	<b>Yale University</b>
<b>Architect:</b>	<b>Eero Saarinen</b>
<b>Date Constructed:</b>	<b>1953 – 1959 (renovation 2008-2010)</b>
<b>Building Footprint:</b>	<b>47,983 sf</b>
<b>Total gsf:</b>	<b>61,646 sf</b>
<b>Total Levels:</b>	<b>2</b>

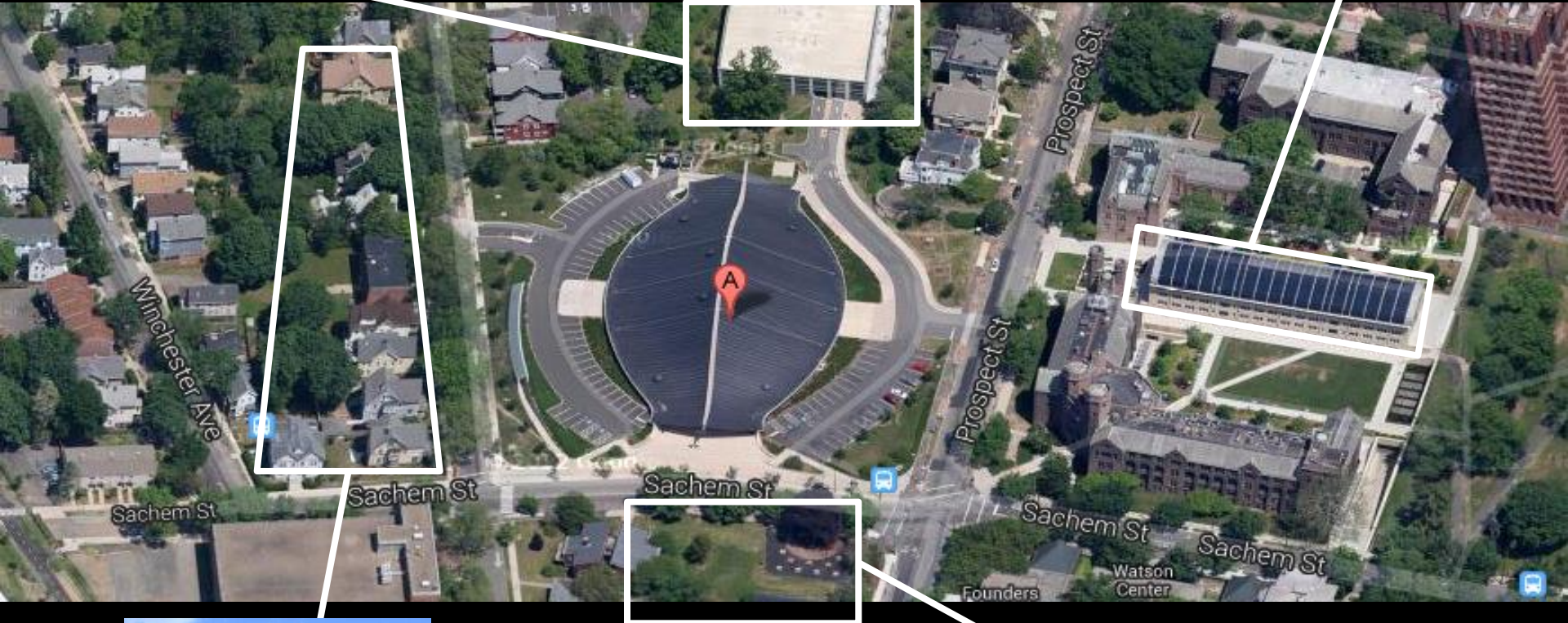
## **| Project Team**

<b>Architect:</b>	<b>Kevin Roche John Dinkeloo and Associates, LLC</b>
<b>Lighting Consultant:</b>	<b>Atelier Ten Consulting Designers</b>

# School of Forestry & Environmental Studies



Prospect Sachem Garage



Residential Houses

Student Housing under construction



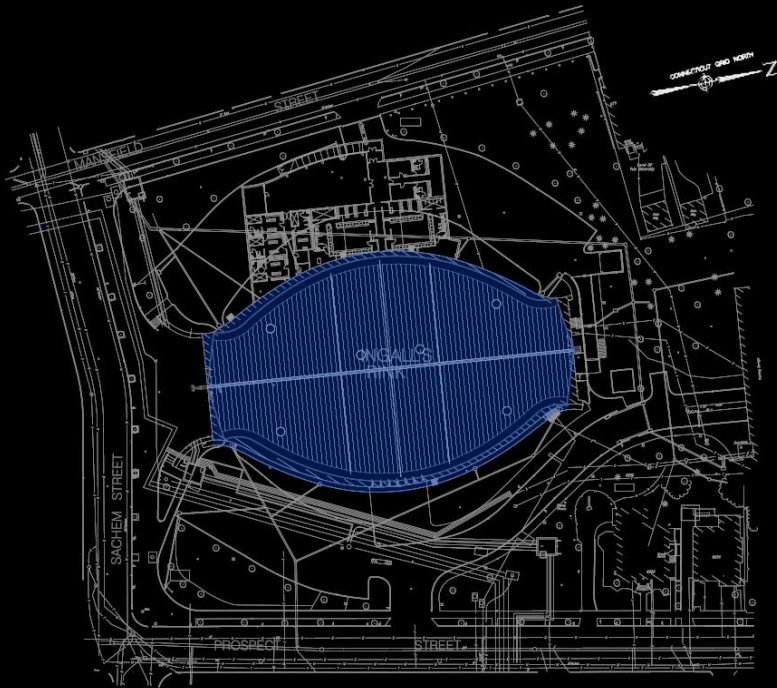
**The Yale “Whale”**



An underwater photograph taken from inside a cave or a narrow opening in a reef. The scene is illuminated from the bottom, creating a bright blue glow. Two divers are visible in the distance, swimming away from the camera. A large school of small fish is gathered in the center, and a larger, dark fish is swimming towards the left. The rocky walls of the cave are visible on the left and right sides.

# Habitation

# | BUILDING EXTERIOR



## | Design Criteria

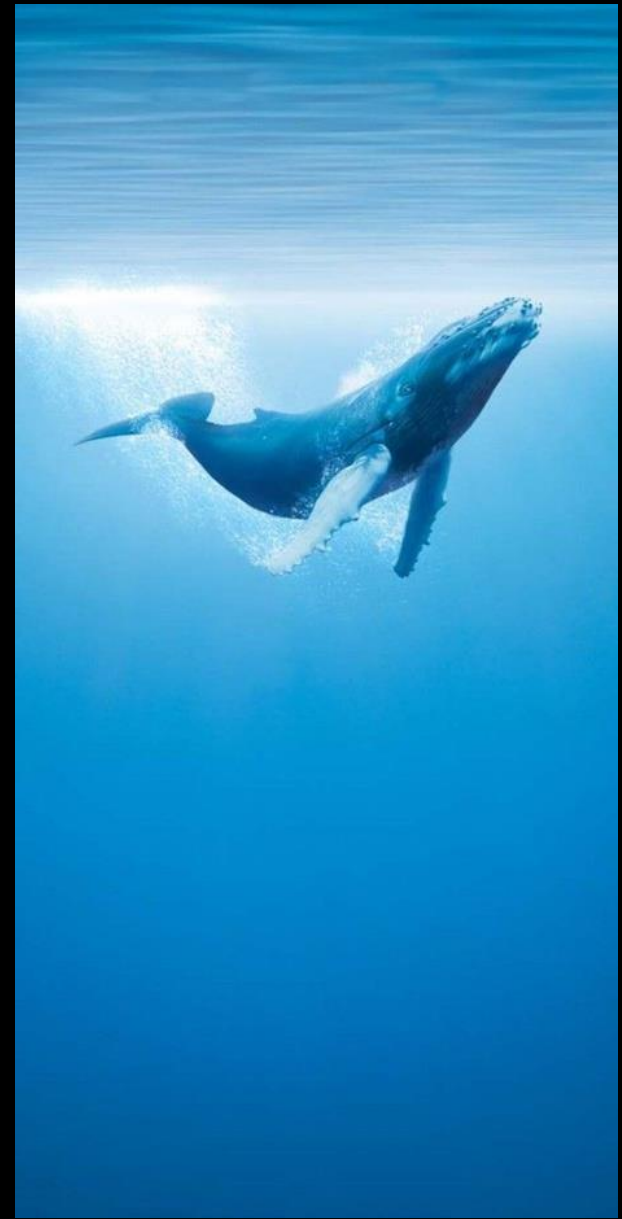
- Enhance architecture + environment
- Respect history
- Establish nighttime identity
- Minimize glare, sky glow and light trespass
- 3 schematic design solution
- $L_{ms}/sf = 2.5$ ;  $L_{ms}/site = 7000$  (LZ2)
- $E_{v_{max}} = 3 \text{ lx @property line}$  (LZ2)



**Jump**



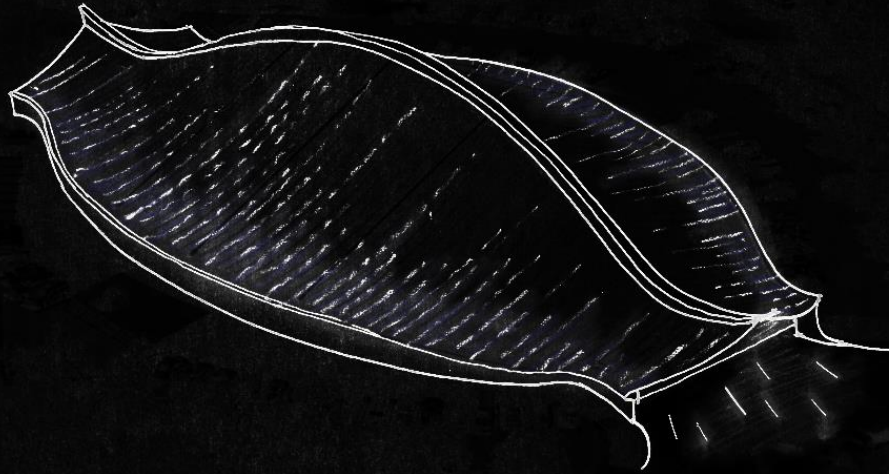
**Dive**



**Swim**



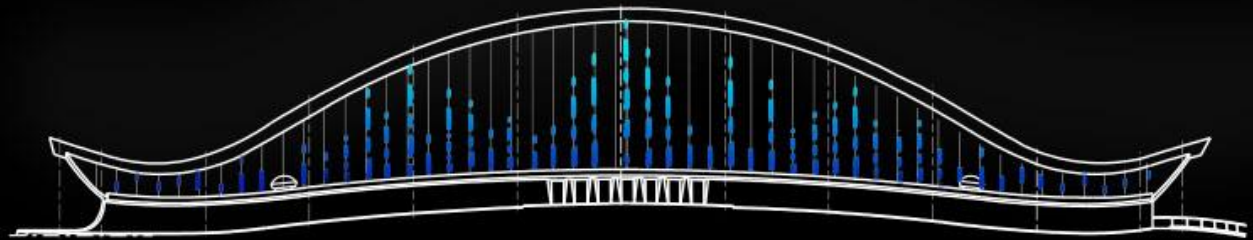
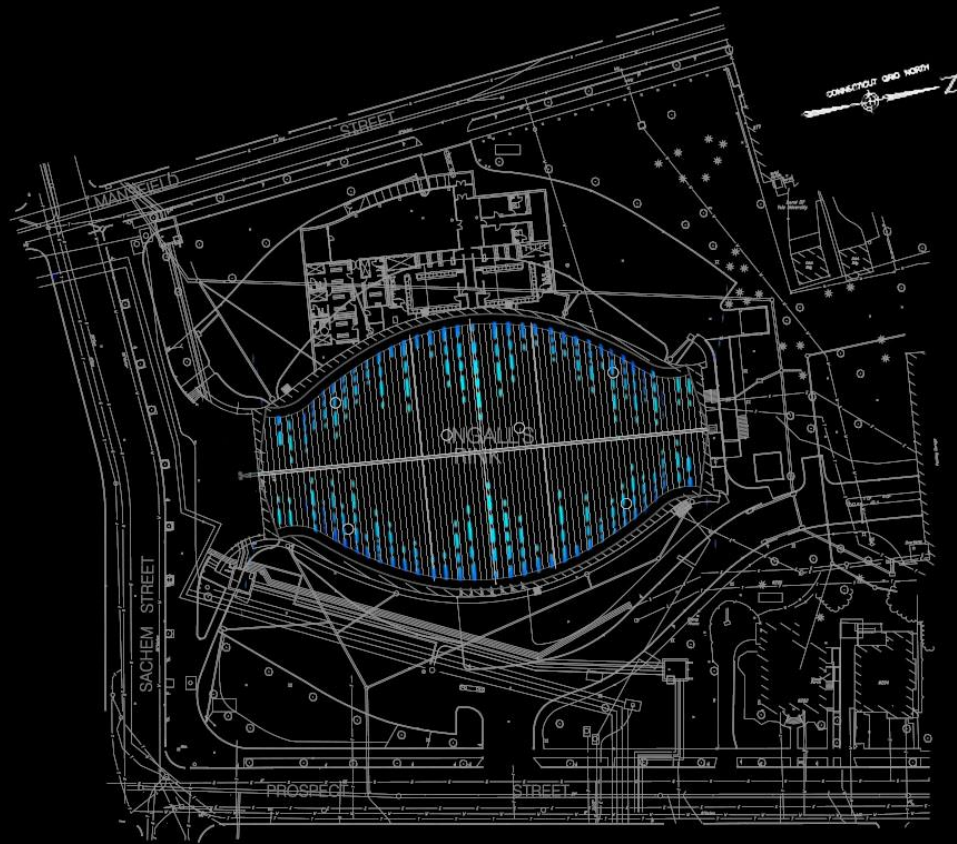
## | BUILDING EXTERIOR



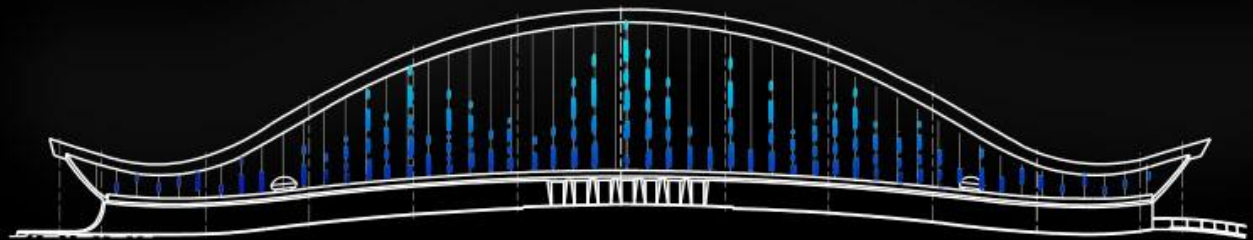
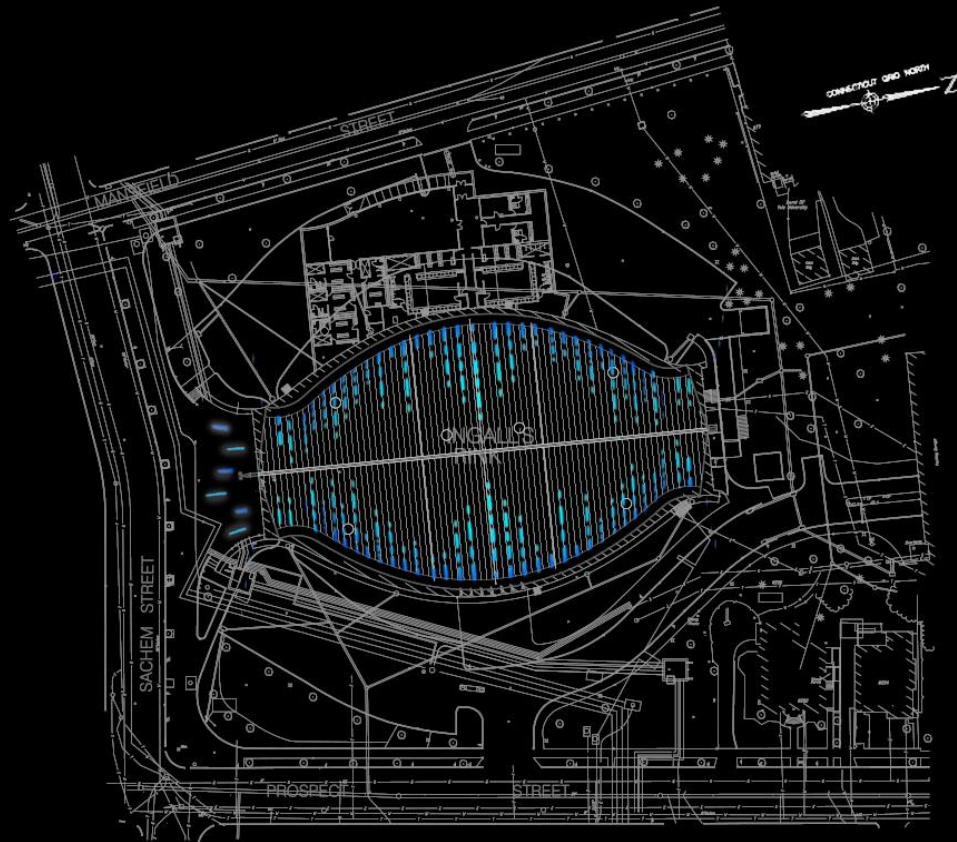
### | Schematic 1: Jump motion + splash

- LED node with programmed sequence
- in-ground uplights
- linear grazer for exterior walls
- Existing lighting sculpture with “dragon eye”

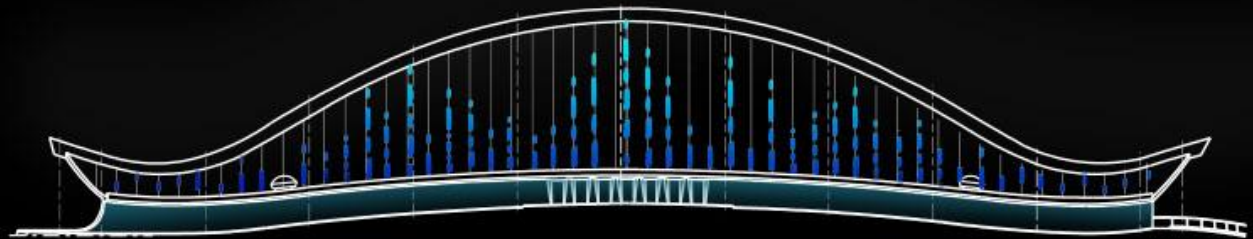
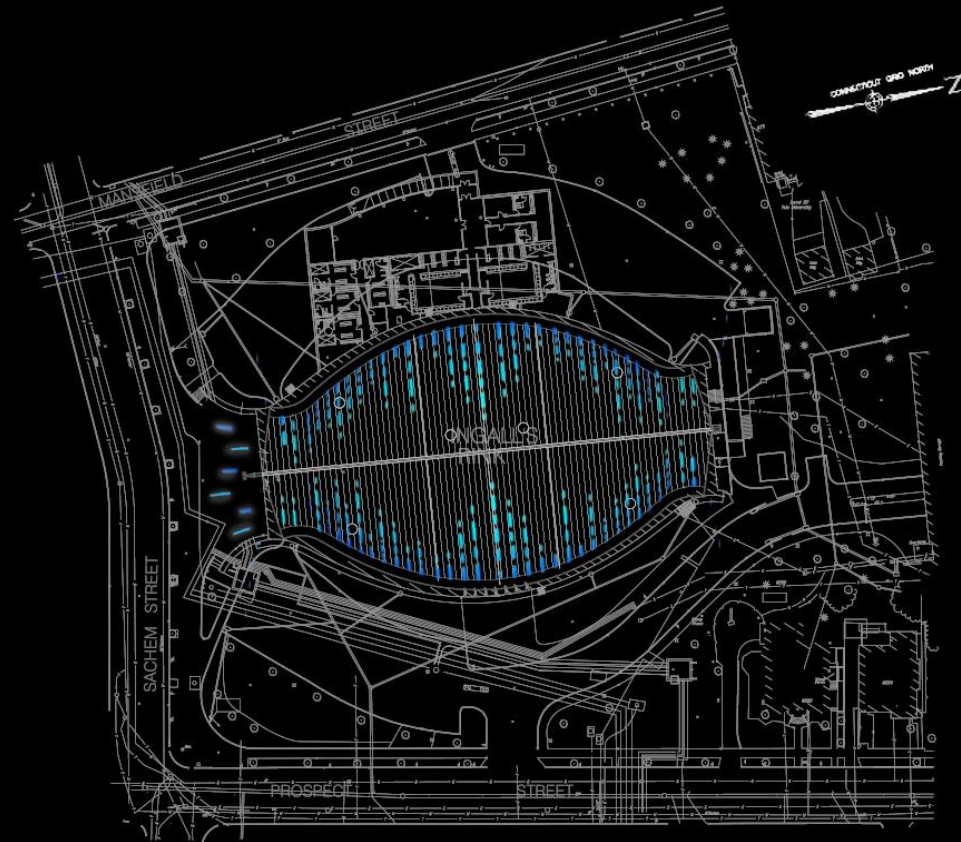
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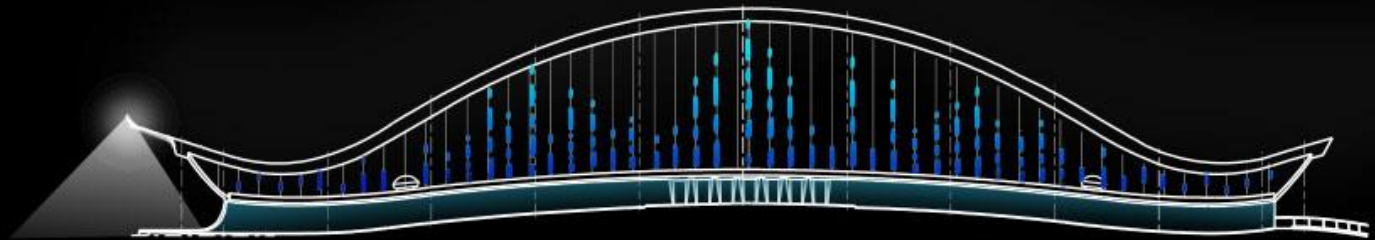
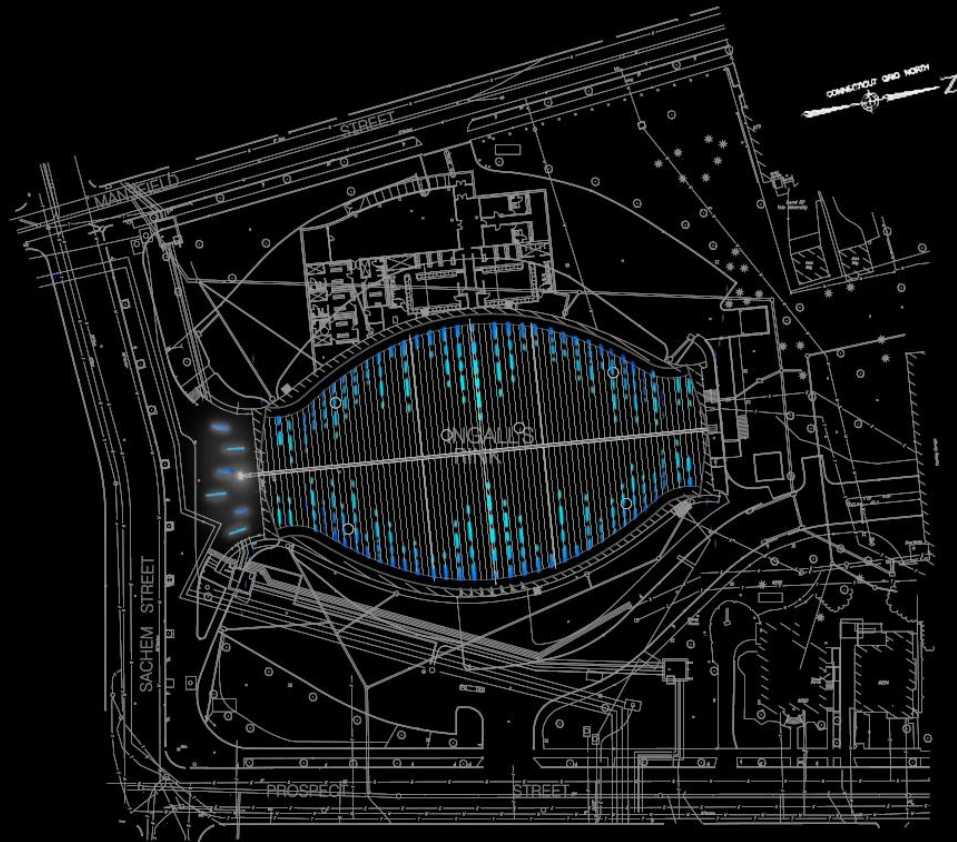
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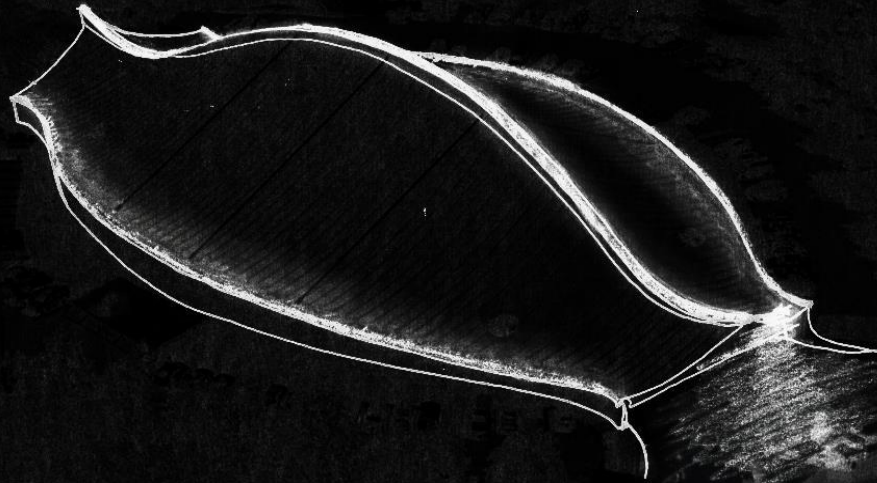
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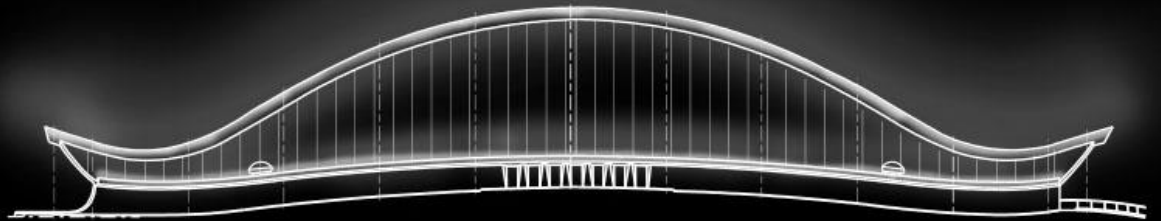
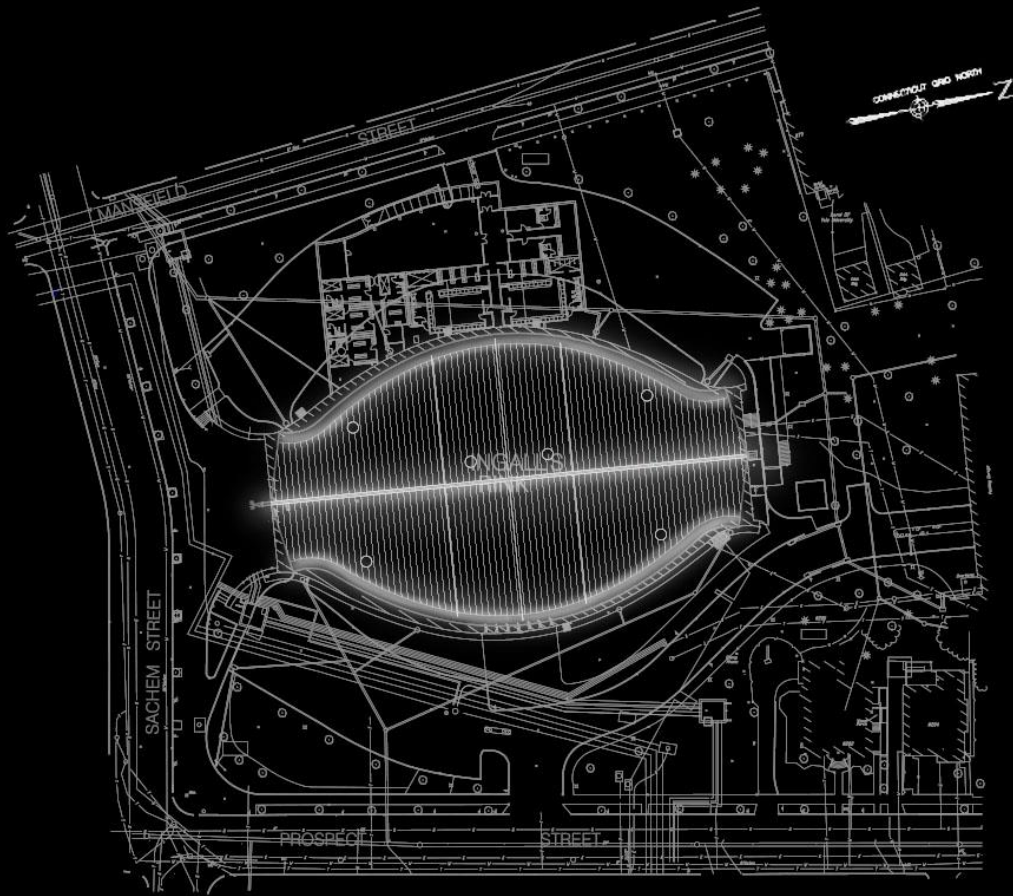
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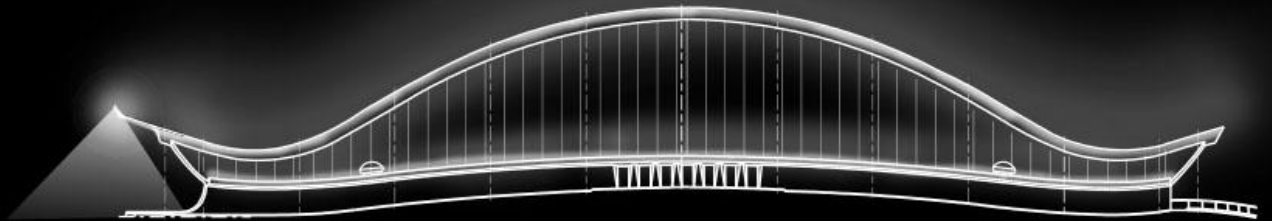
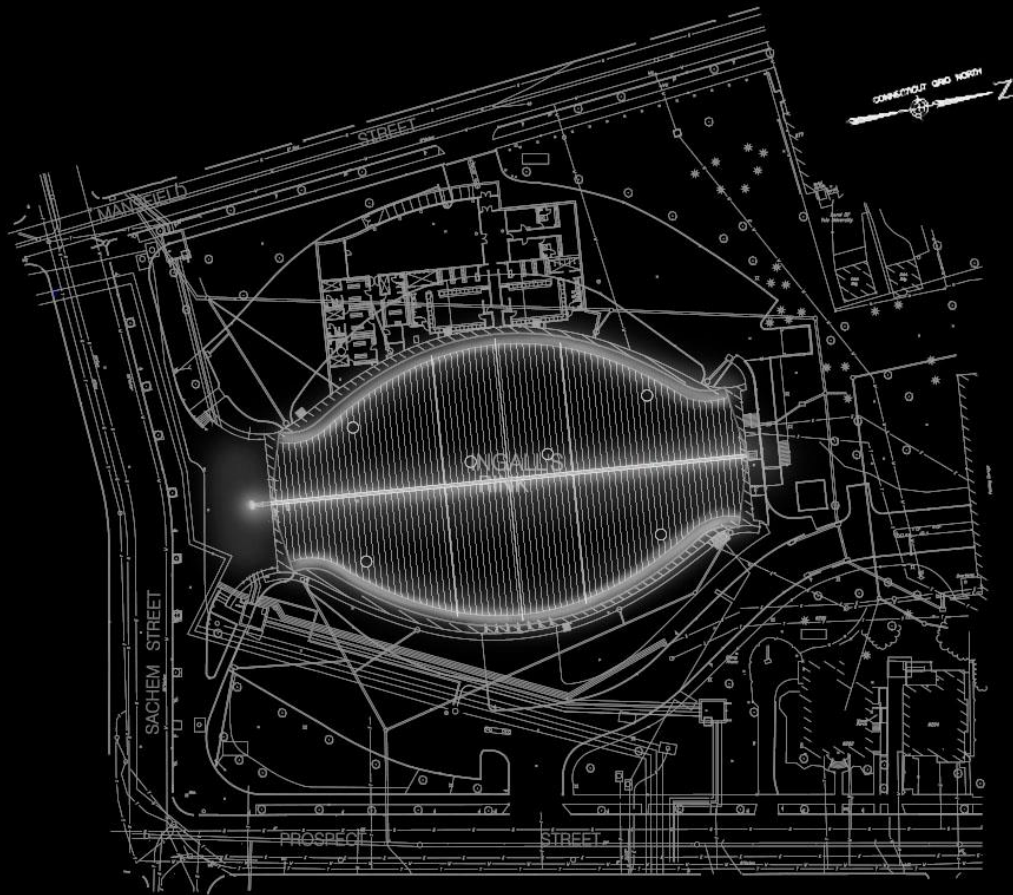
### | Schematic 2: Dive curve + tail fins

- Linear uplift on the spine
- Linear grazer on roof edge
- Existing lighting sculpture with “dragon eye”  
(@higher level)

# | BUILDING EXTERIOR

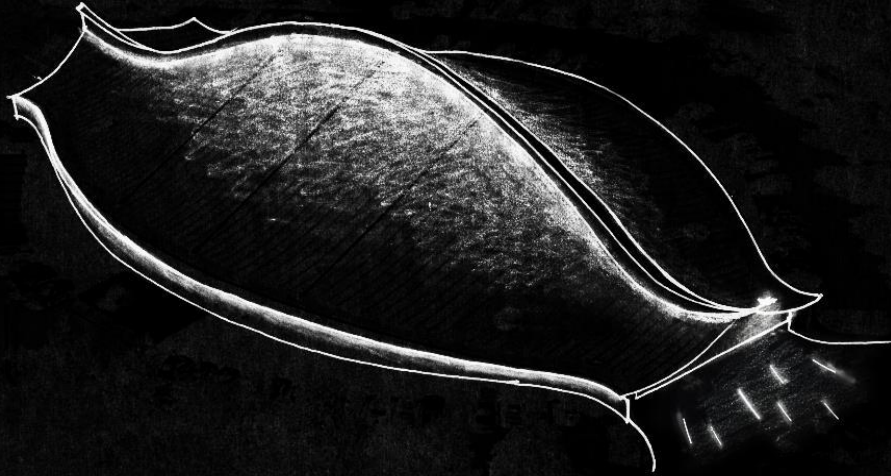


# | BUILDING EXTERIOR





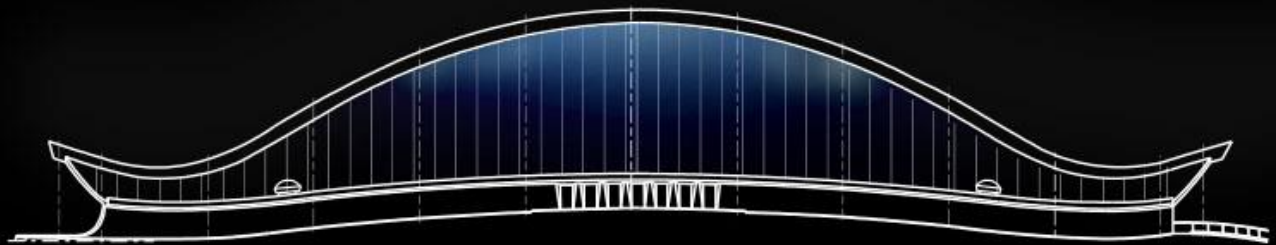
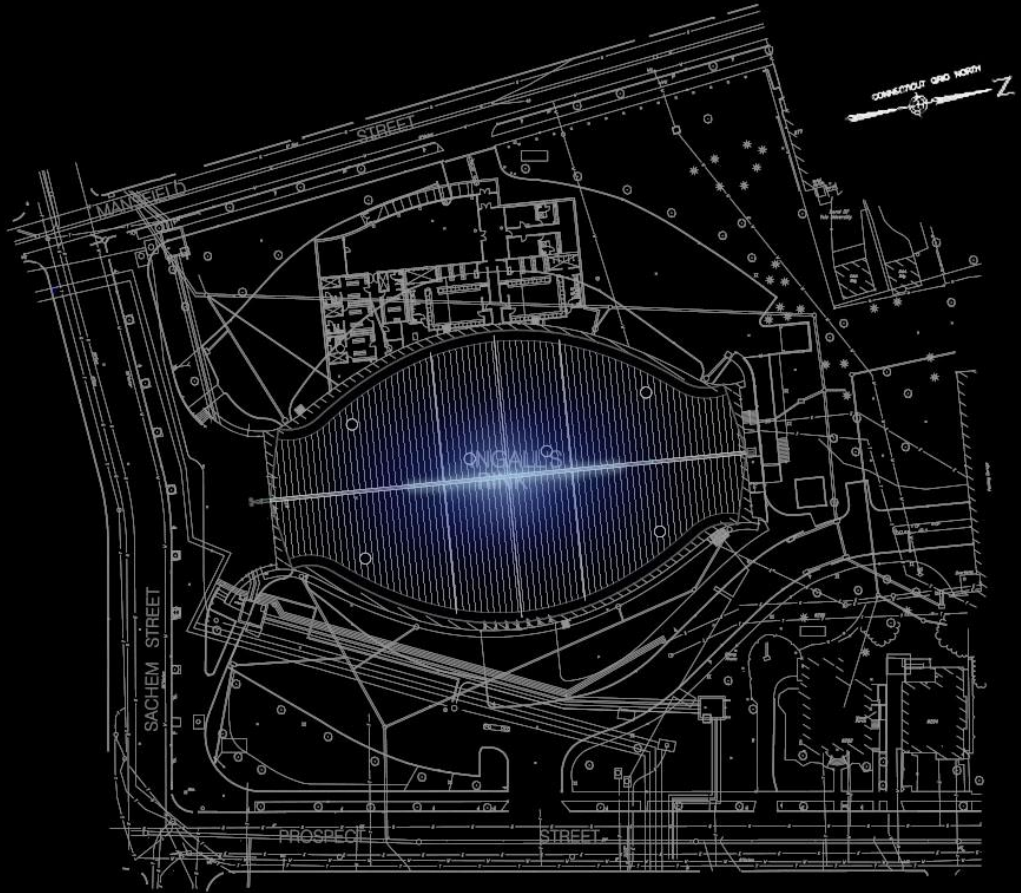
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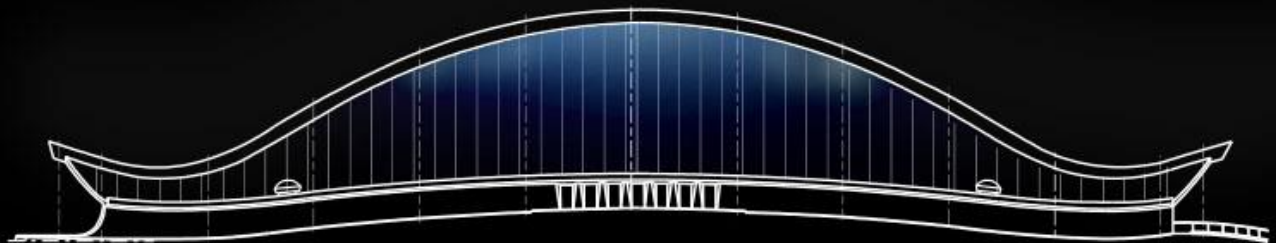
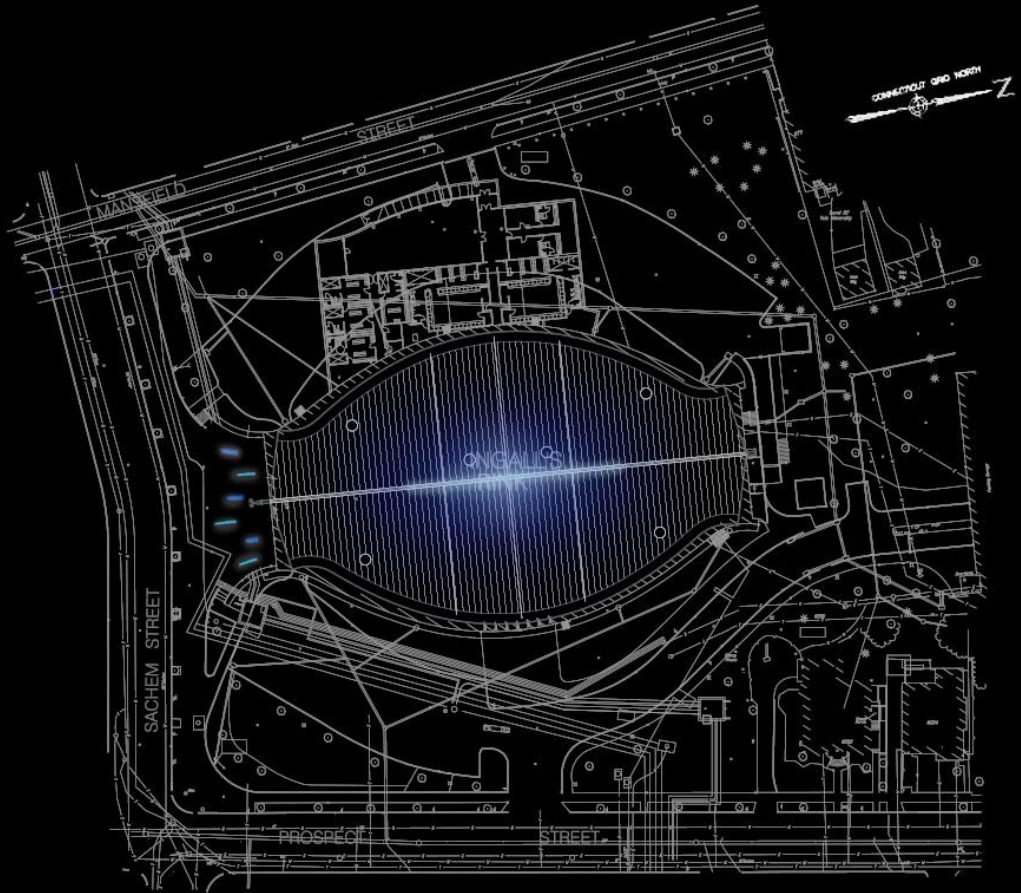
### | Schematic 3: Swim highlight + shimmer

- Linear grazer from mid-spine
- in-ground uplights
- Linear grazer for exterior walls
- Existing lighting sculpture with “dragon eye”

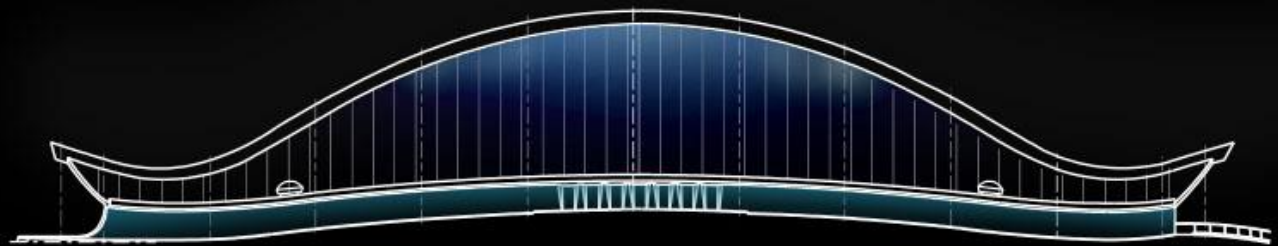
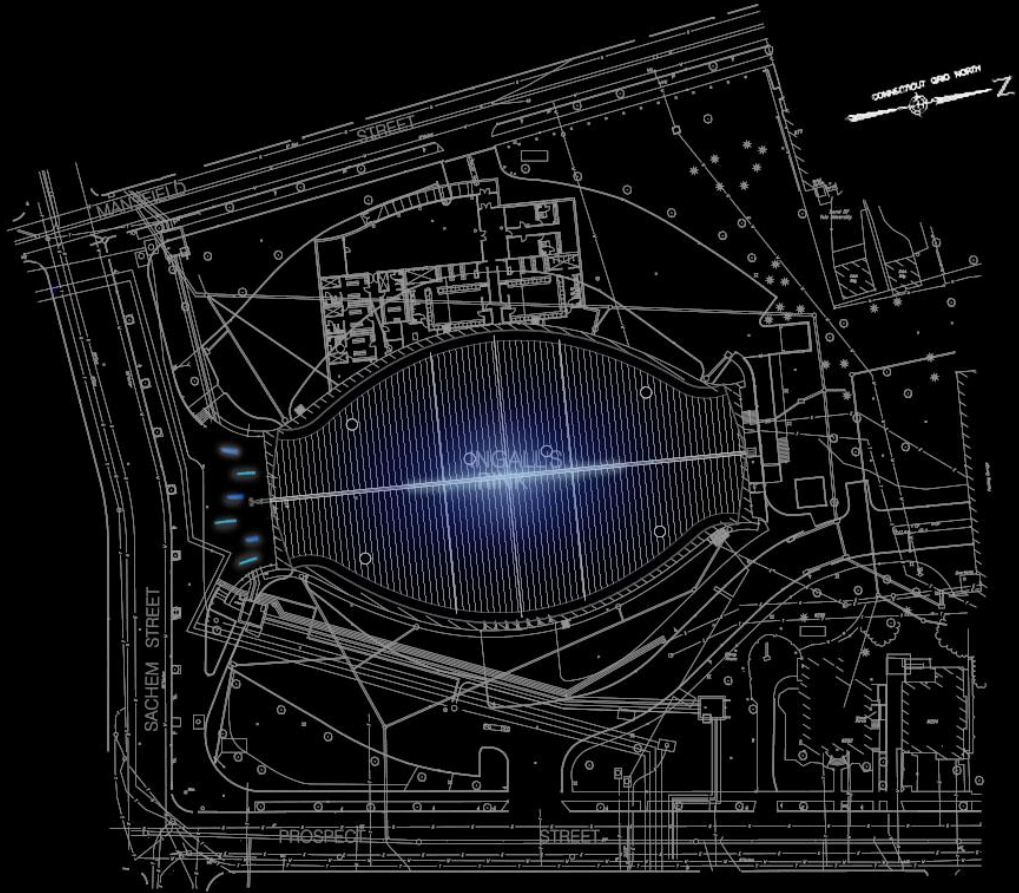
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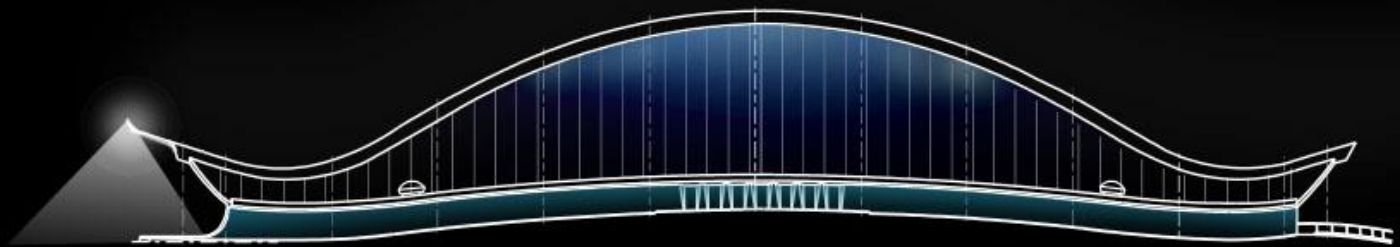
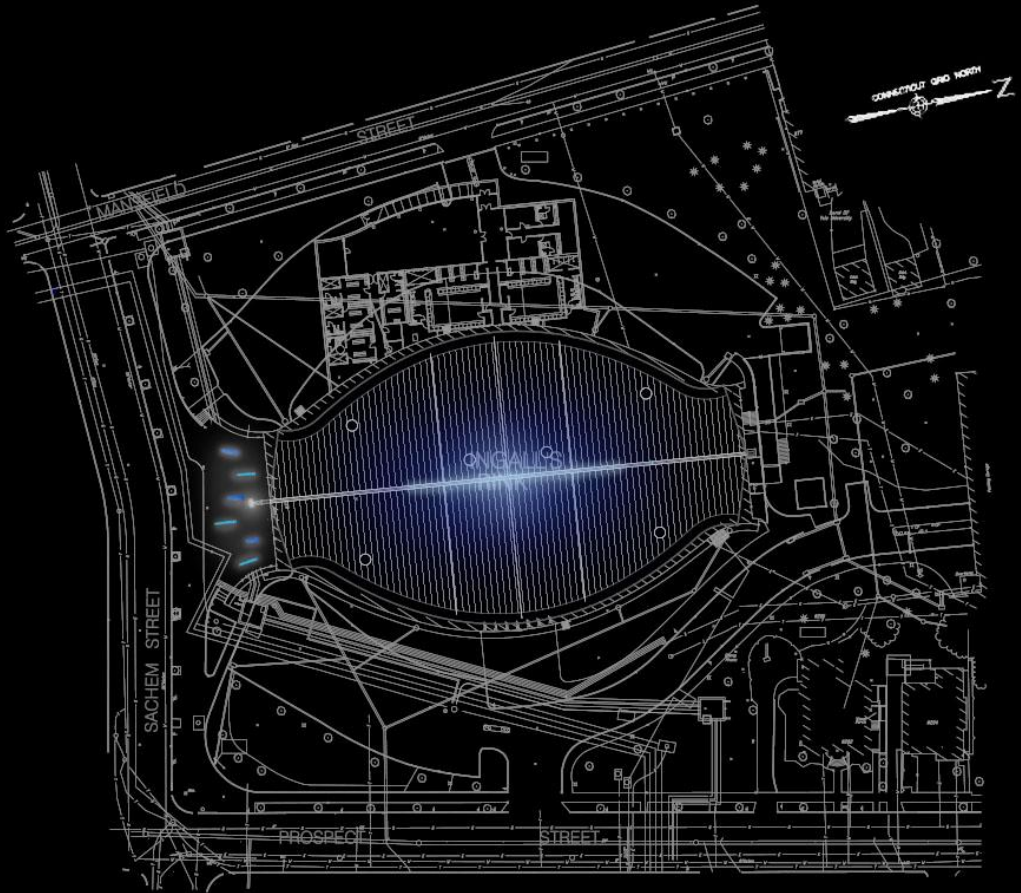
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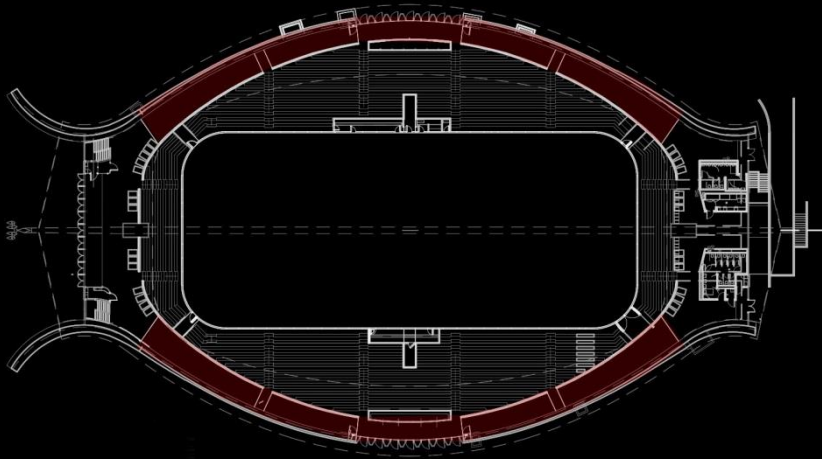
# | BUILDING EXTERIOR



# | BUILDING EXTERIOR



# | CIRCULATION



## | Design Criteria

- Lead direction
- Decrease distraction
- Reduce glare at pressbox area
- Accent wall texture
- Avg  $\geq 0.2$  times task  $E_h$  of adjacent space; Min  $\geq 10lx$

# | CIRCULATION



Coral Reef

## | CIRCULATION



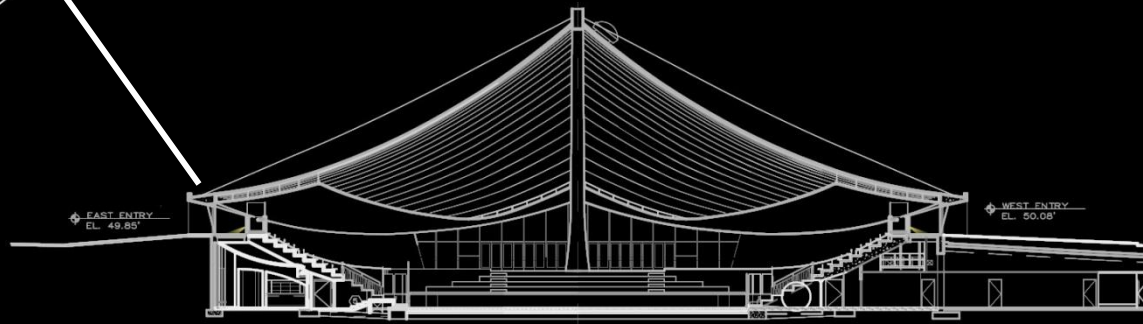
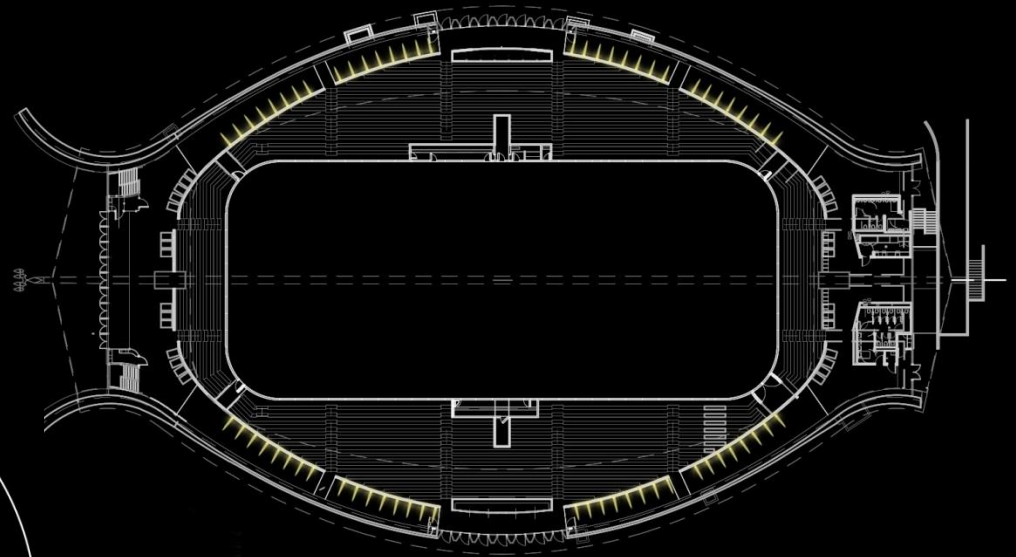
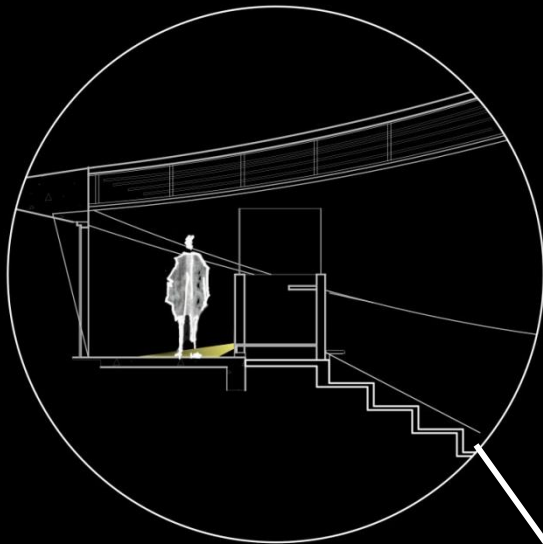
## | Coral Reef verticalness

- Step lights to lead directions
- Linear uplight to graze the wall texture
- Recessed downlights for pressbox task illumination

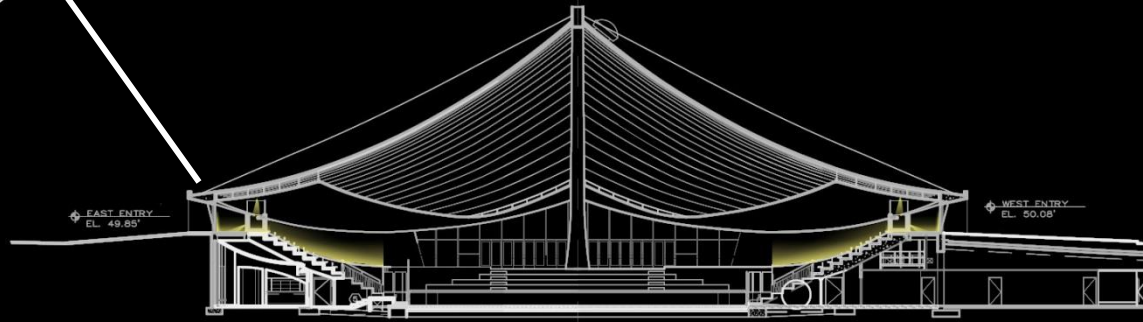
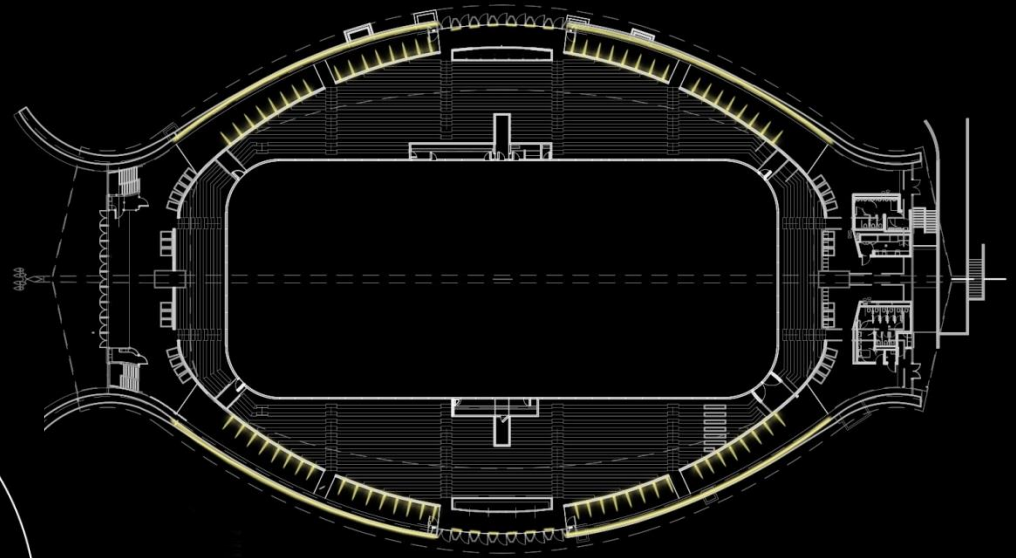
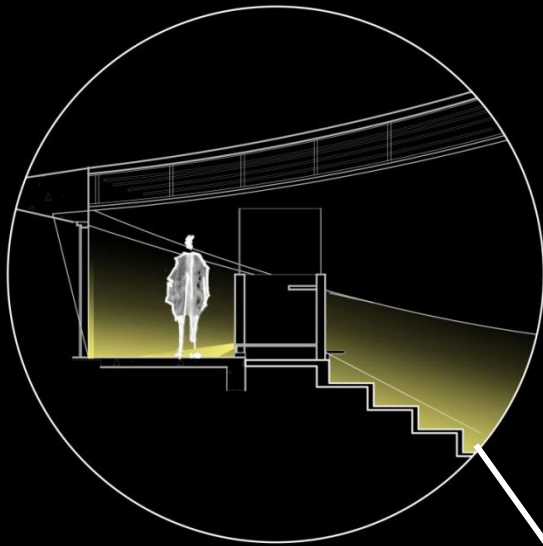




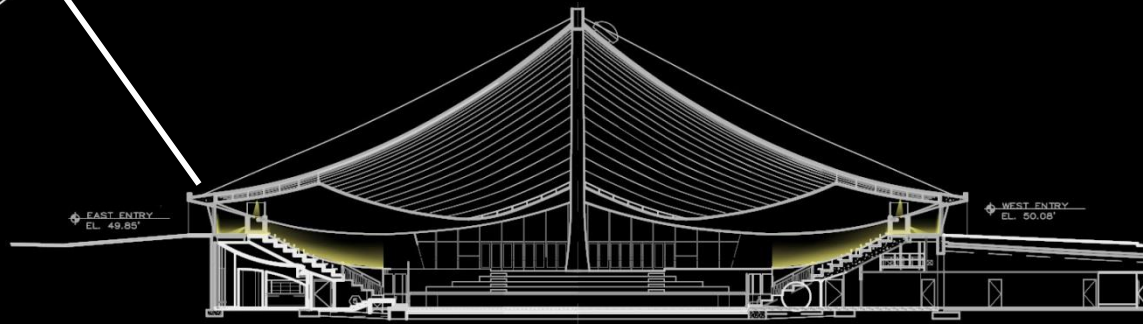
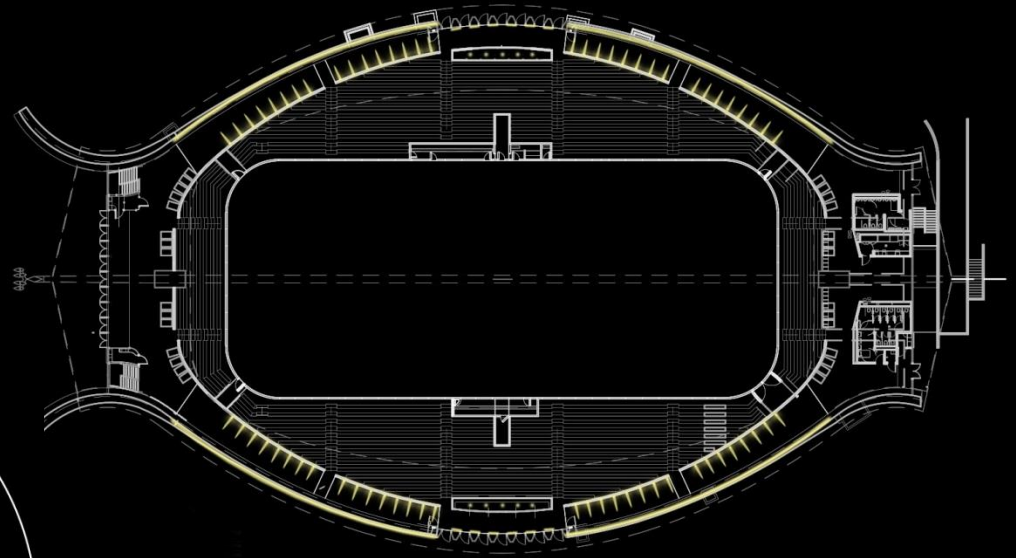
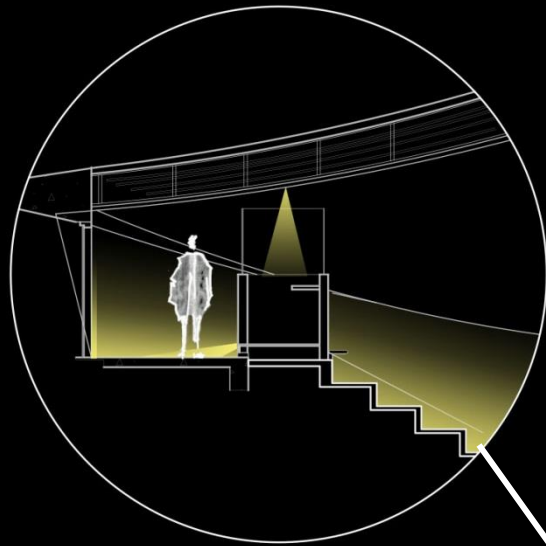
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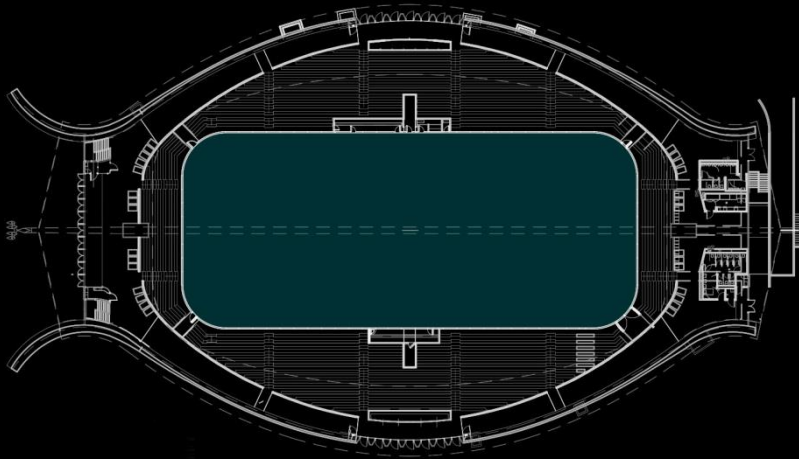
# | CIRCULATION



# | CIRCULATION



# | RINK



## | Design Criteria

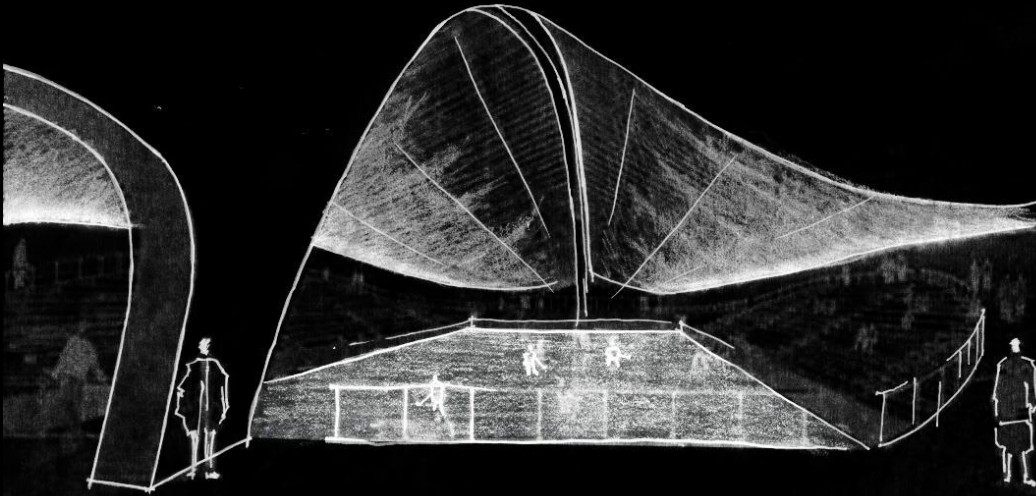
- Promote cheerfulness
- Avoid glare
- Enhance spatial appearance
- Uniformity for sports function
- Expressive for figure skating/recreational function
- Efficiency + Sustainability
- Sports:  $E_h = 1000 \text{ lx}$ ;  $E_v = 300 \text{ lx}$ ; Max:Min = 2.5:1
- Recreation:  $E_h = 30 \text{ lx}$ ;  $E_v = 8 \text{ lx}$ ; Max:Min = 5:1

# | RINK



Ocean

## | RINK

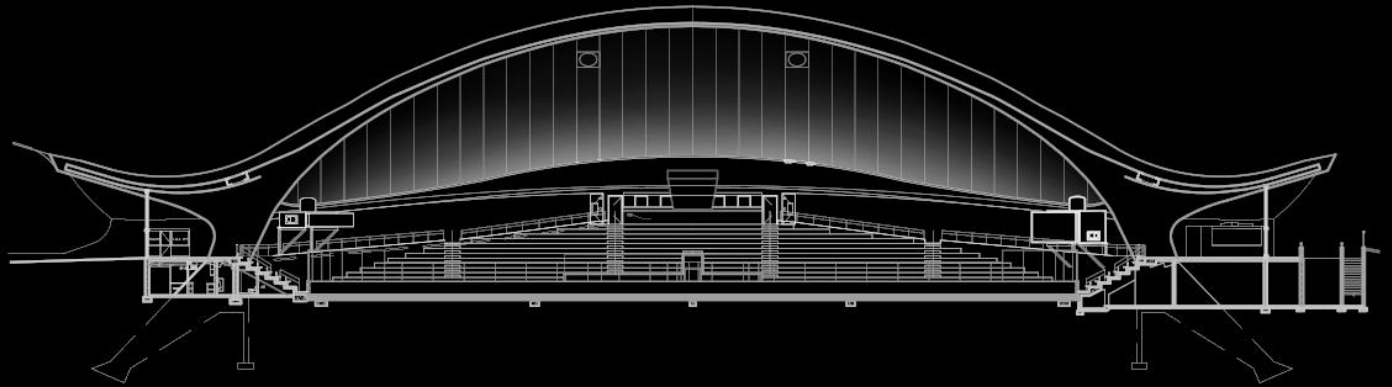


## | Ocean: Sports pattern + uniformity

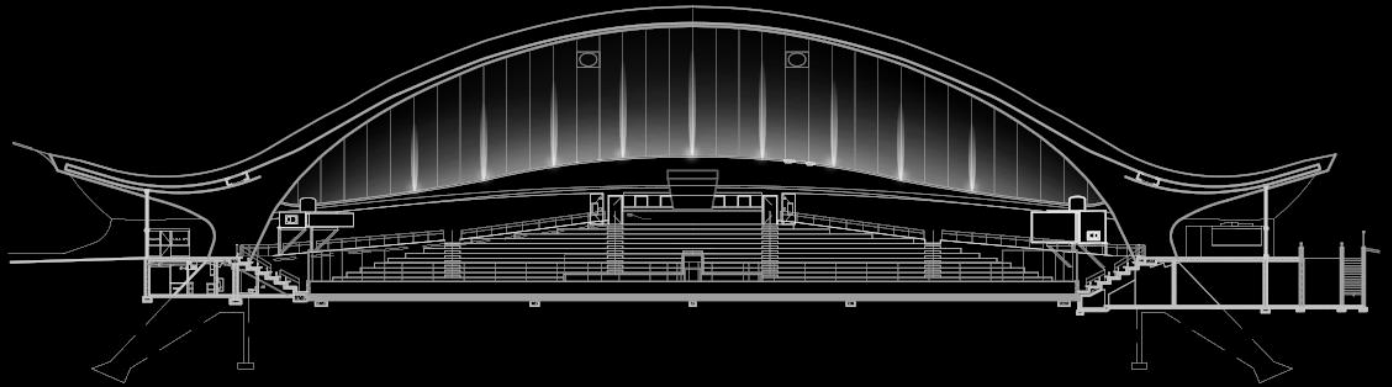
- Linear grazer to accentuate the ceiling
- Use of shadow to expand the dimension
- Pendant downlights to provide uniform distribution on the ice



# | RINK

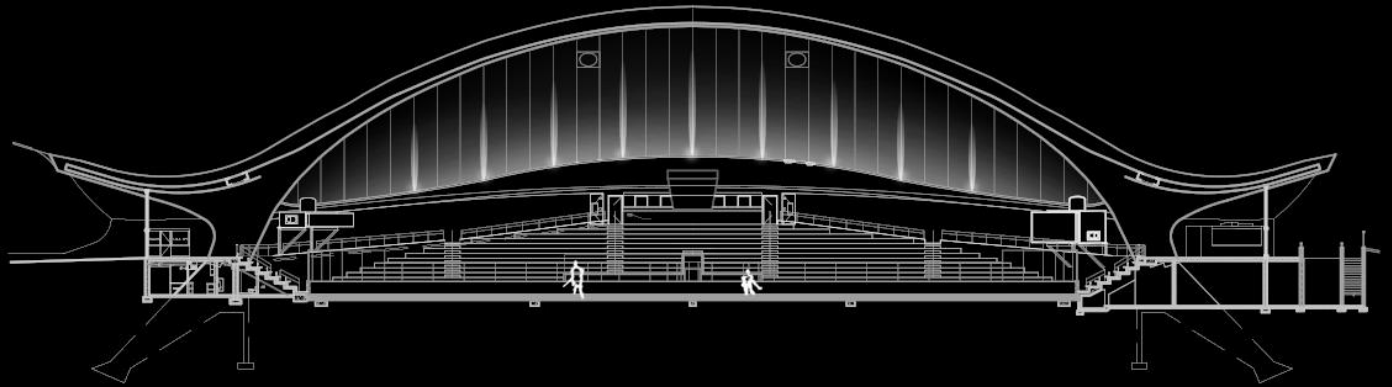


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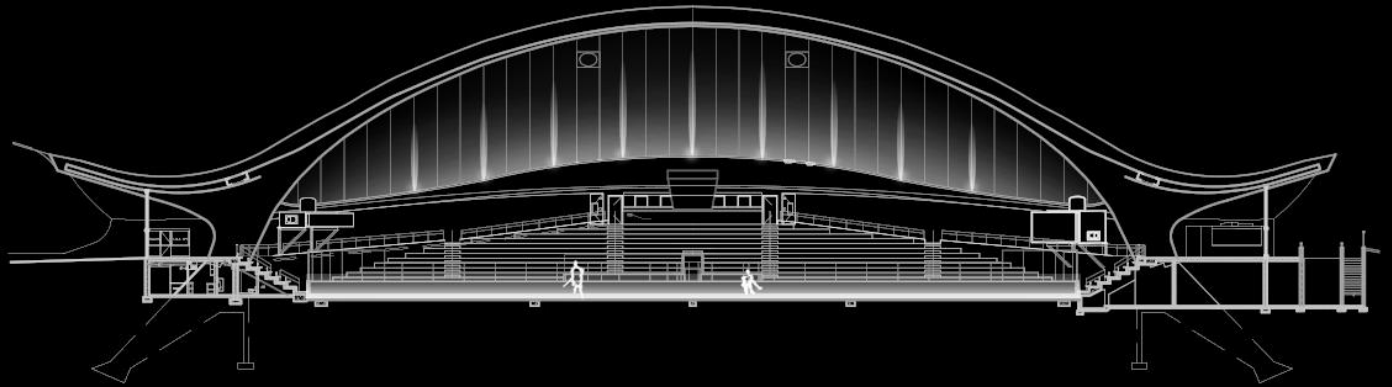




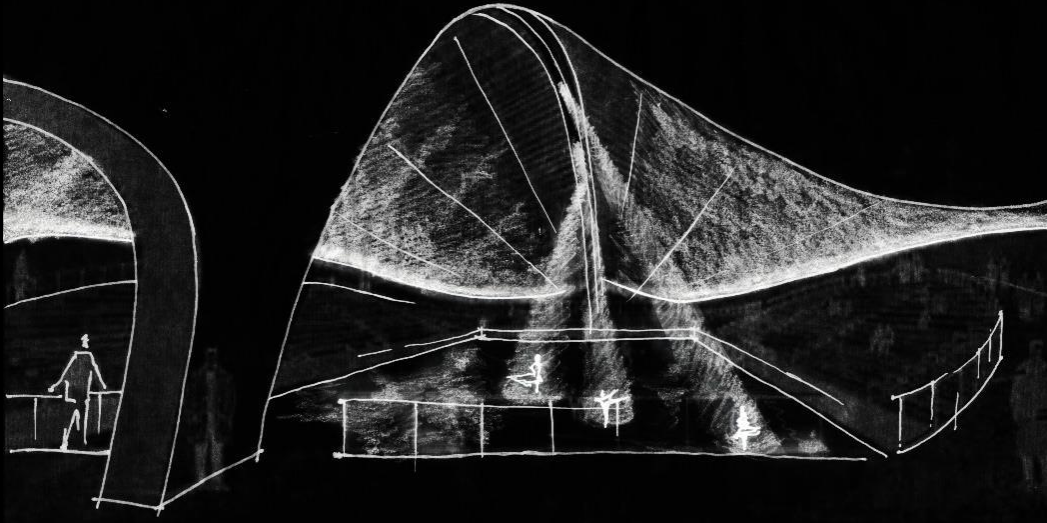
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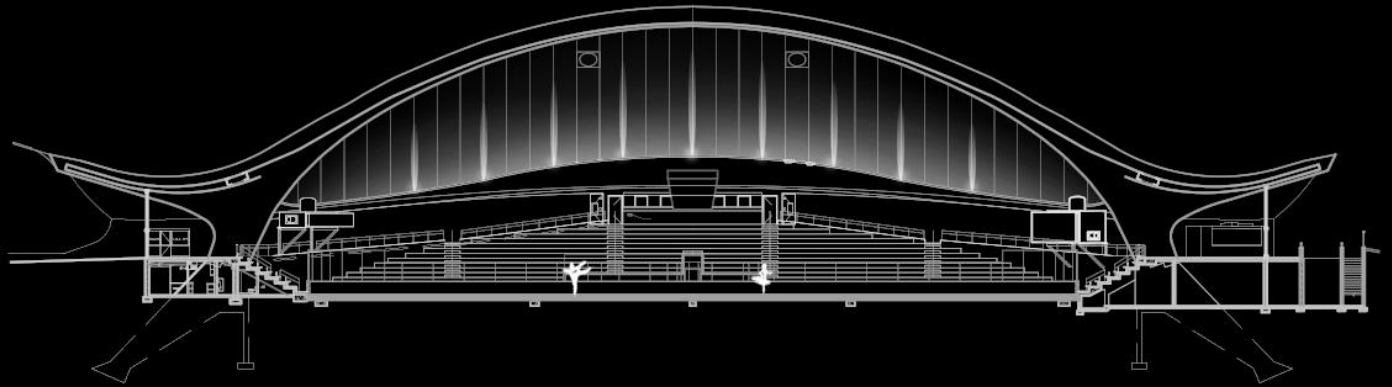
| RINK



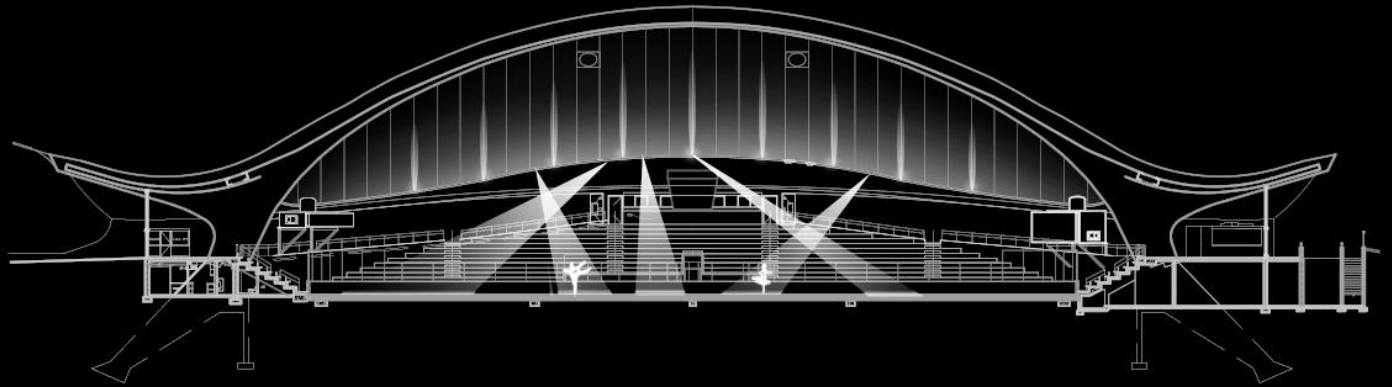
## | Ocean: Performance/Recreational pattern + romance

- Linear grazer to accentuate the ceiling
- Use of shadow to expand the dimension
- Spotlights to focus
- Gobo

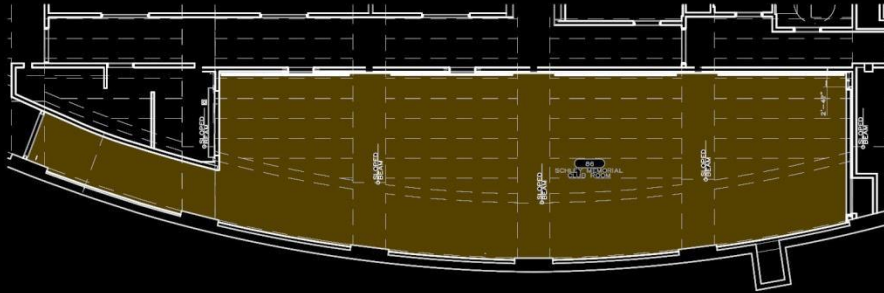
# | RINK



# | RINK



# | SCHLEY CLUBROOM



## | Design Criteria

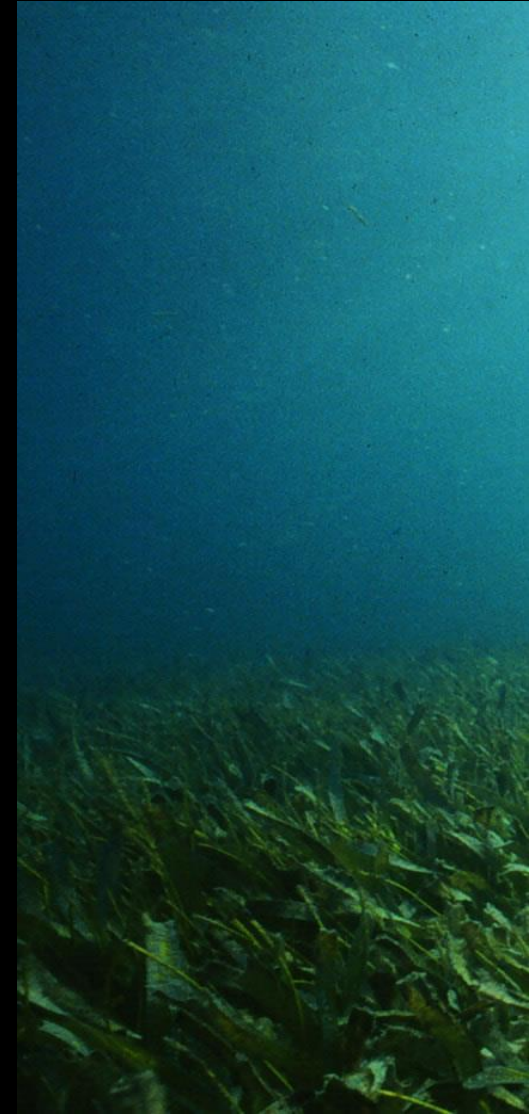
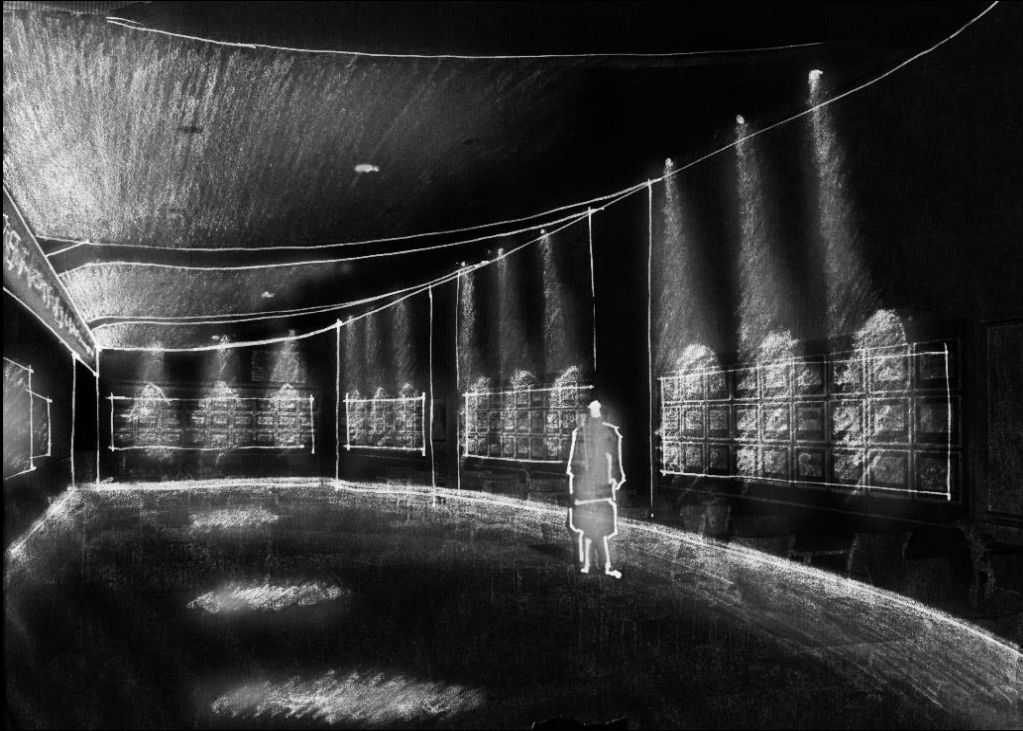
- Provide adequate light level and desirable highlights for art display
- Create a comforting atmosphere
- Enlarge the space
- Private psychological impression

# | SCHLEY CLUBROOM



Deep Ocean Floor

# | SCHLEY CLUBROOM

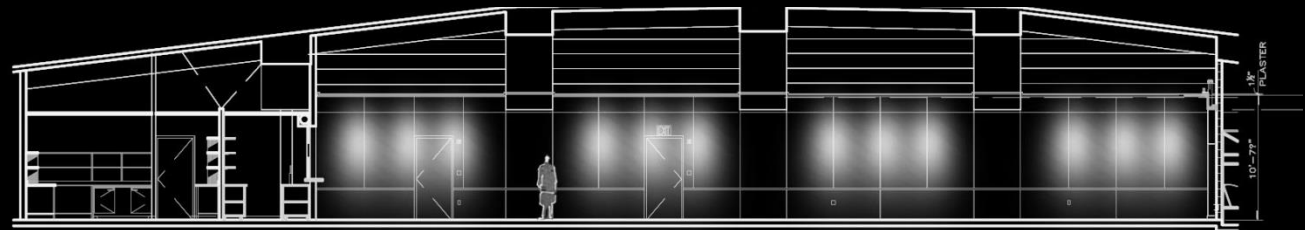


## | Schley Clubroom: Deep Ocean Floor quiet + peaceful

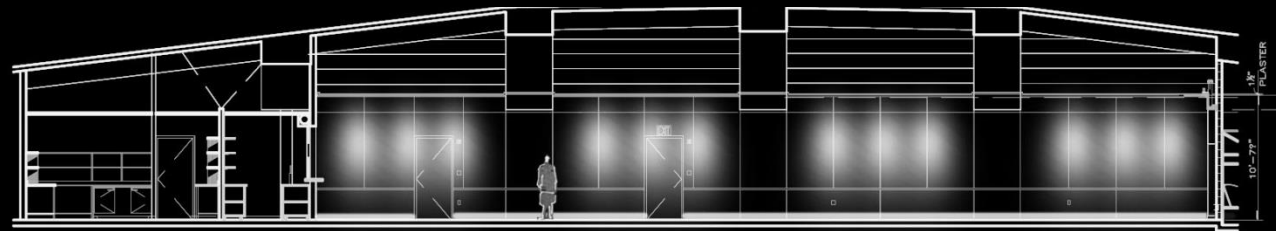
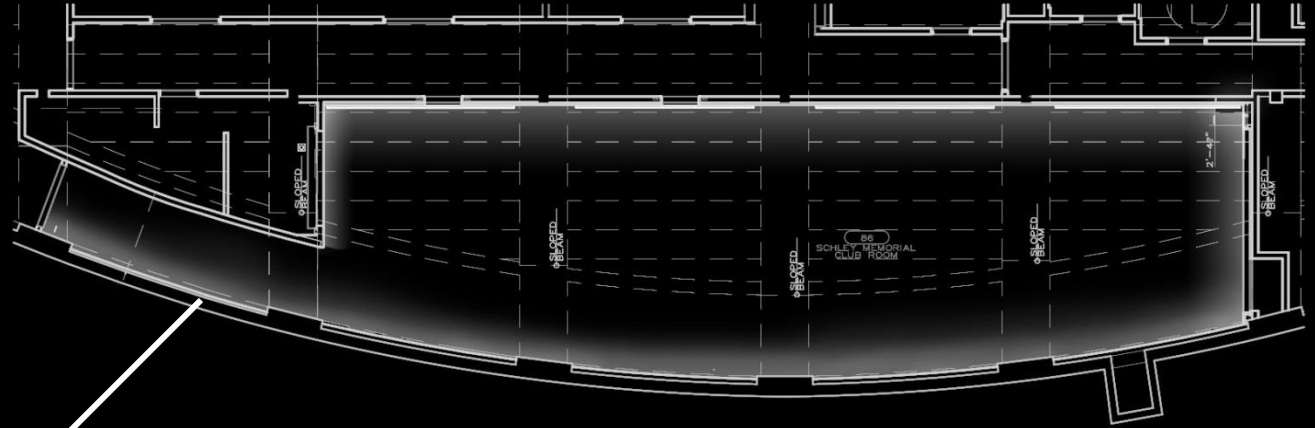
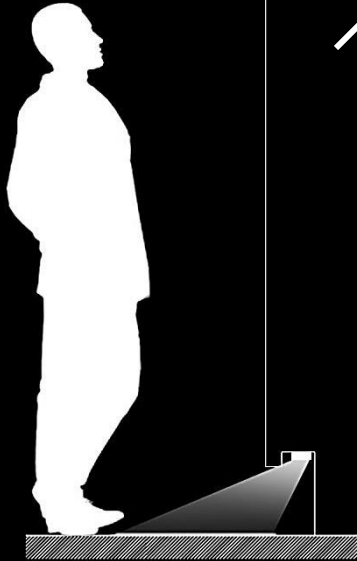
- Recessed spotlights to highlight artworks
- Linear washer for wood panels
- Perimeter lighting on floor level
- Recessed downlights



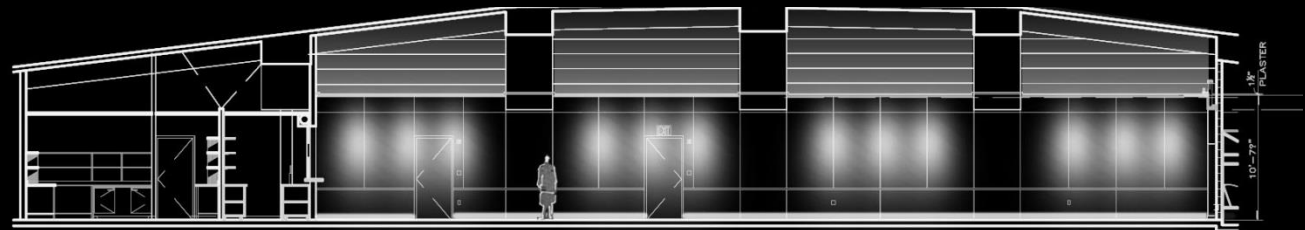
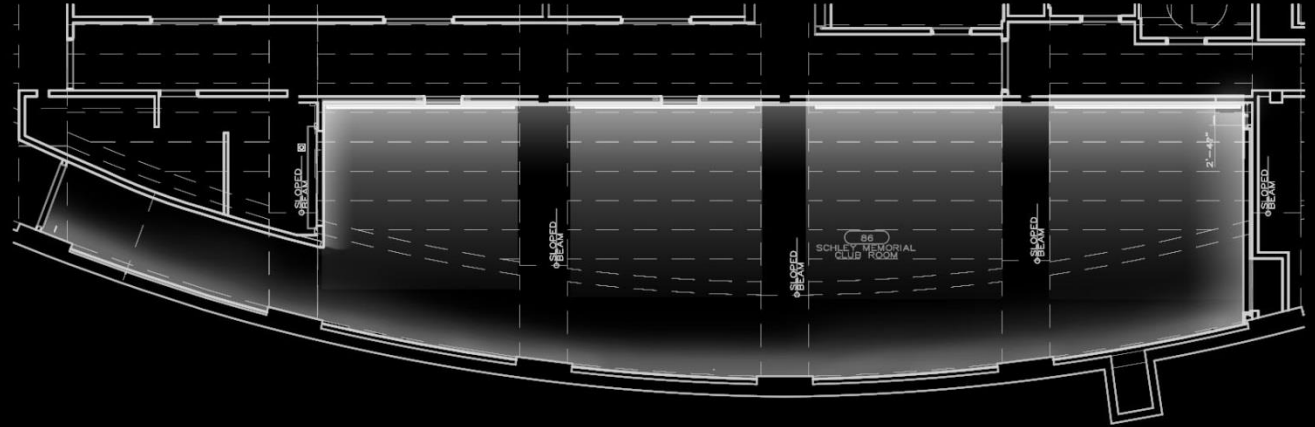
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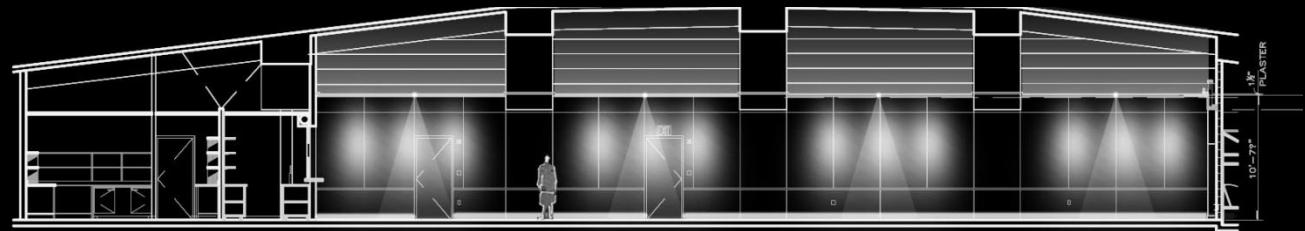
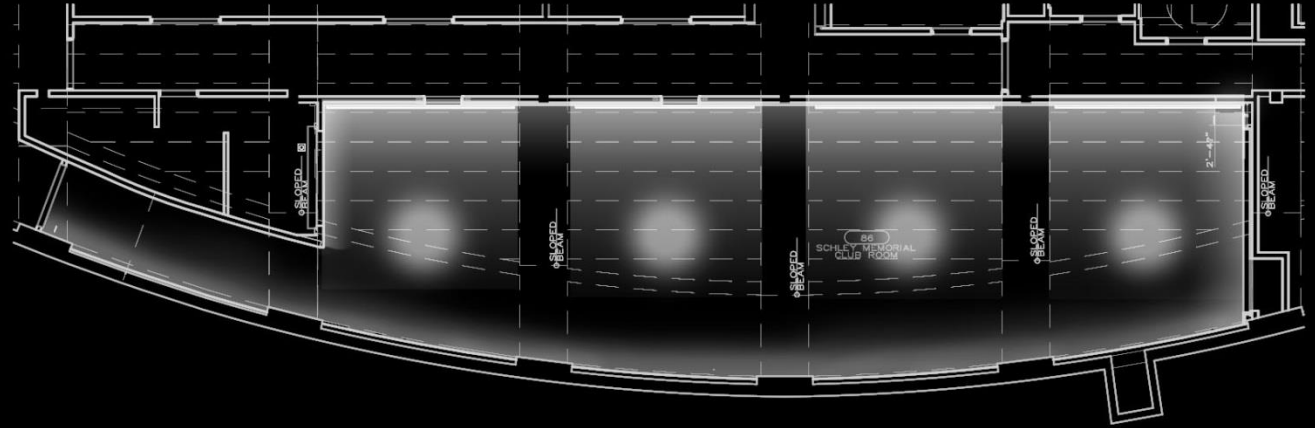
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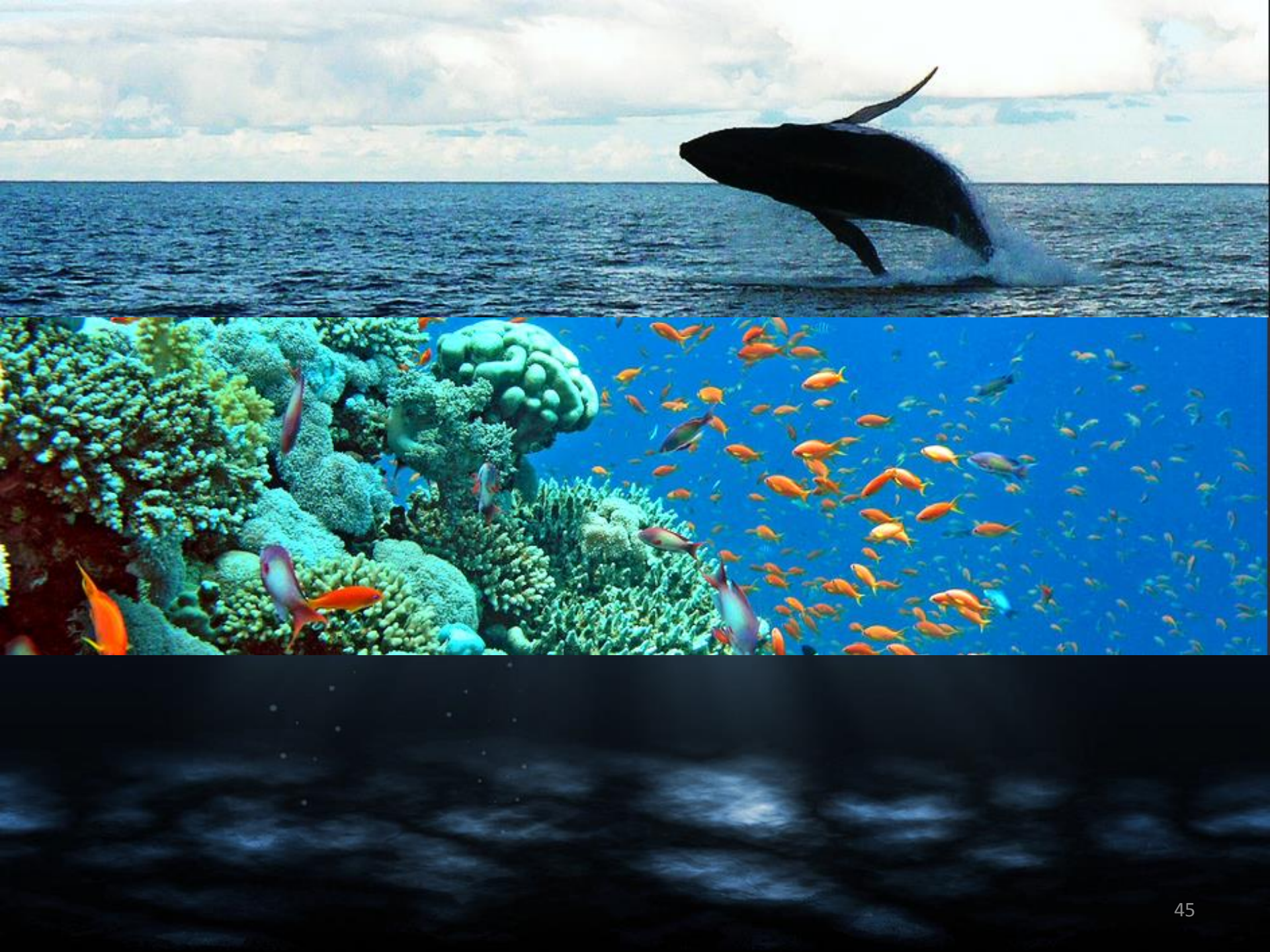


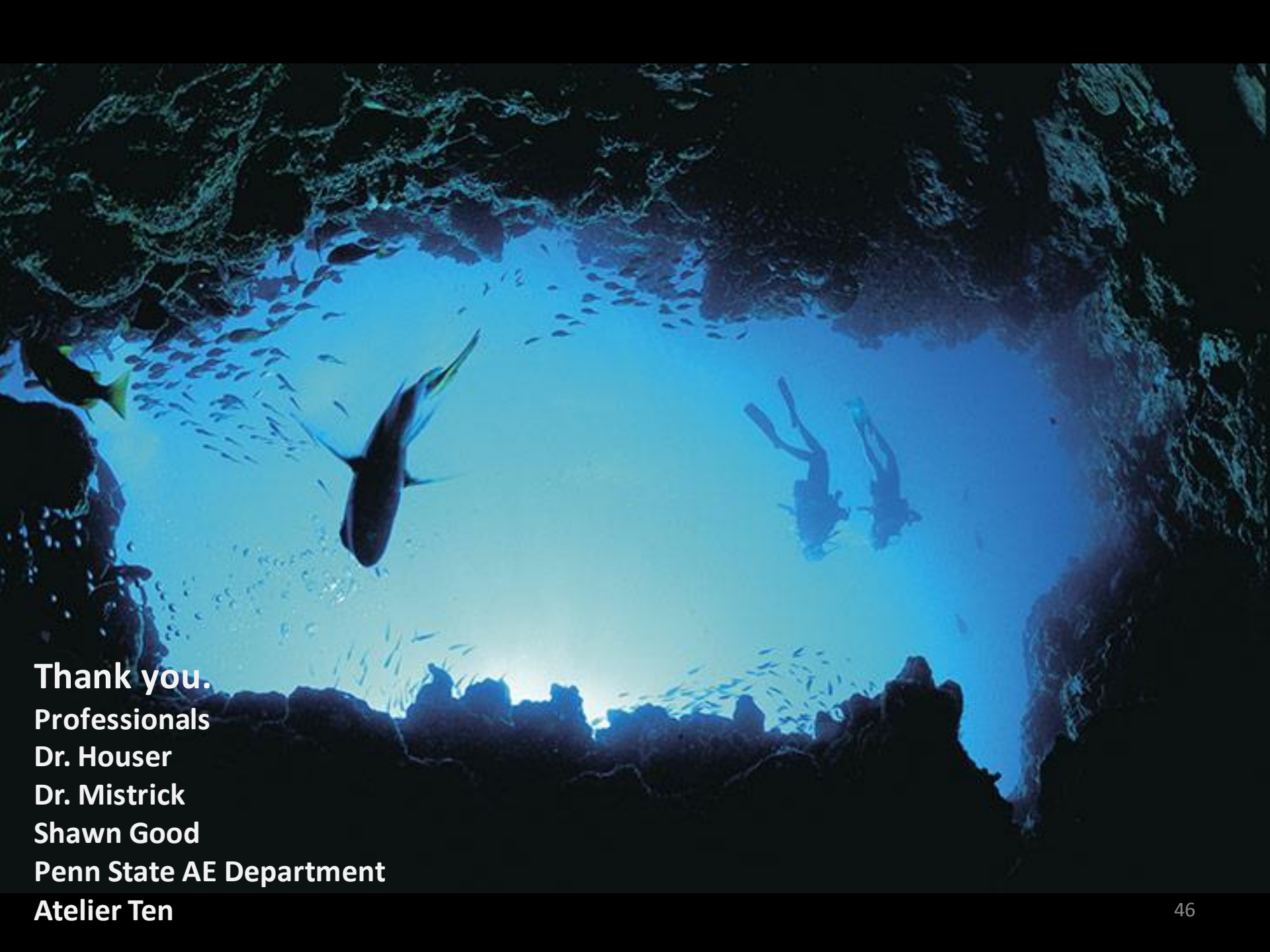
# | SCHLEY CLUBROOM



# | SCHLEY CLUBROOM







**Thank you.**  
**Professionals**  
**Dr. Houser**  
**Dr. Mistrick**  
**Shawn Good**  
**Penn State AE Department**  
**Atelier Ten**