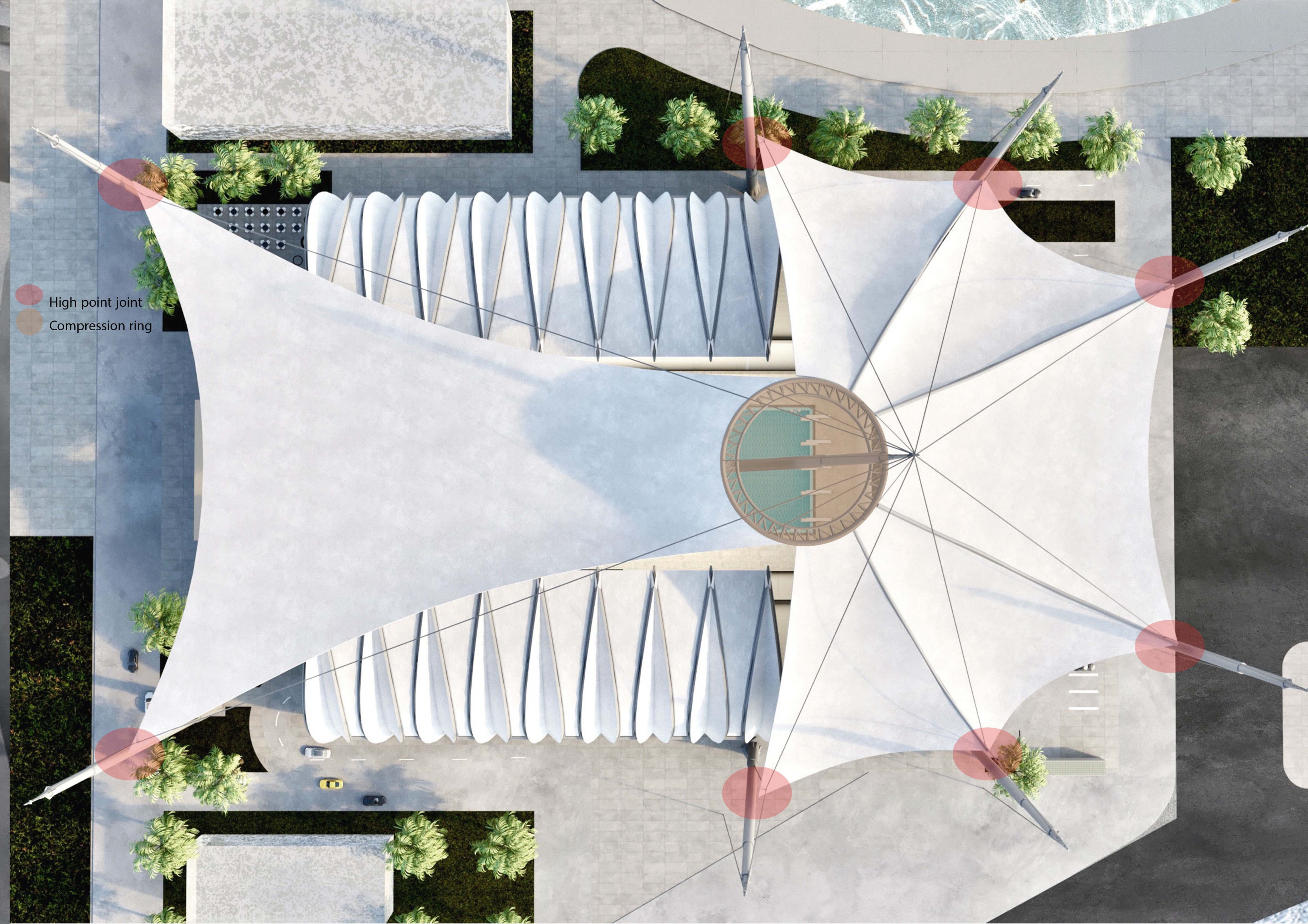
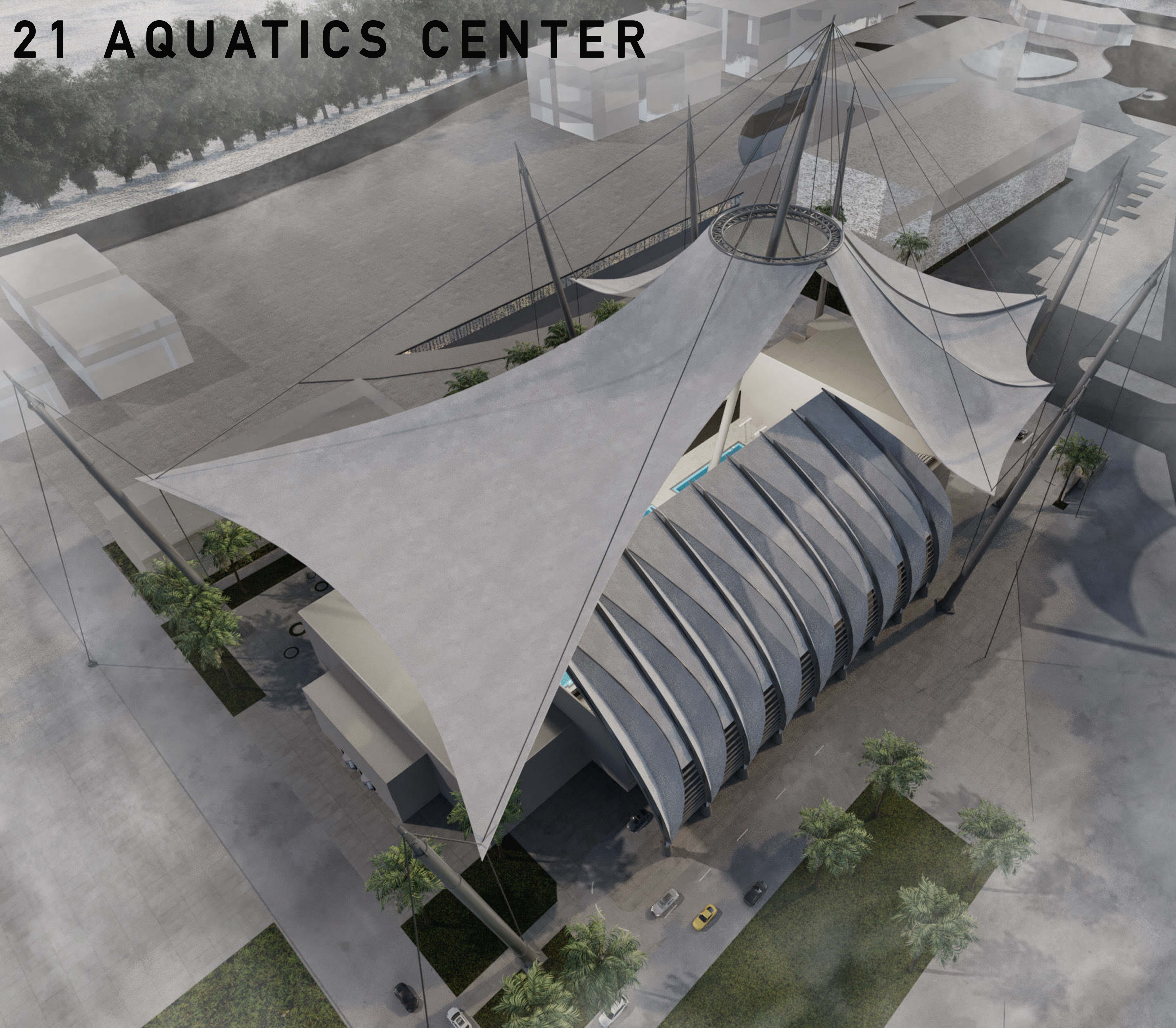


21 AQUATICS CENTER



STEEL TENSION CABLE
The cable is spiral strand, where wires are spinned together to add endurance. The high strength of the rope wire enables the cable to support large tensile forces. The cables are anchored and tensioned where each node is stabilised by force in opposite directions in equilibrium.

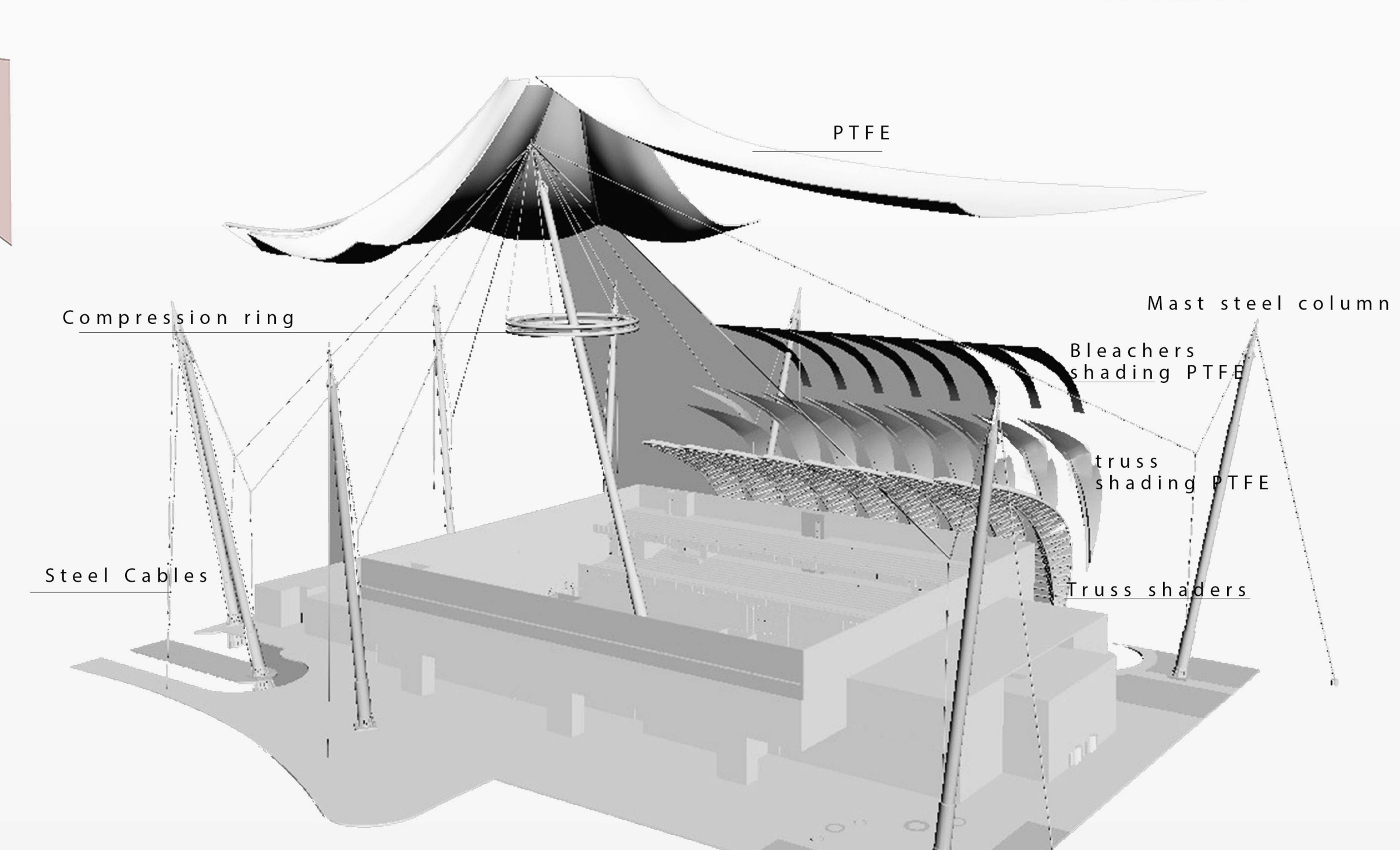
STEEL MAST
Steel structure erected and welded together to with stand compression strength of the tensile structure. Steel is used because of its high strength in corrosion resistance after galvanizing

PTFE-Coated fabric membrane
High tensile strength low of 10Mpa all the way up to 35-40Mpa, fire resistance, lightweight

C-1
Steel column column flange and web in compression

Plate Washer
Bolt with nut and washer
Anchor
Use plate washer to reinforce light sheet metal housings

Section
Elevation



Concept Statement
The swimming human simulation was developed to resolve the six degrees of freedom absolute movement of the entire swimmer's body as a single rigid body using inputs from the swimmer's body morphology and relative joint motion. Swimming speed, roll, pitch, and yaw motions, propulsive efficiency, joint torques, lower and higher waist, lower and upper chest, shoulder, neck, head, upper and lower hip, legs, shanks, feet, upper arms, forearms, and hands are among the output data. These are the 21 stiff body segments that help the body of a swimmer compensate. A truncated elliptic cone represents each individual component External forces acting on the entire body are the unstable fluid force and gravitational force. velocity, acceleration, direction, angular velocity, and angular acceleration for each part of the human body at each time step are calculated using this equation $D = \frac{1}{2} CD \rho v^2$ Where ρ represents the fluid density, CD represents the drag coefficient, S represents the projection surface of the swimmer and v represents the swimming velocity

Keywords
stroke cycle, indirect light, outdoor, cones, points, rigid lines and curves.

Absolute motion of body
Body data
Angle of joint
Swum
Body data
Absolute motion of body
Angle of joint
Fluid force
Anybody modeling system
Muscle activity
Tension property of swimsuit
 F_{up}
 F_{thrust}
 $m\vec{g}$
 F_{drag}

CLIMATE ANALYSIS:
SUN PATH
PREVAILING WINDS
VEGETATION
PARKING/PEDESTRIAN WALKWAYS

S
1-Multi-purpose venue
2-located on a highway; no traffic and leads to a touristic place
3- Public transportation

W
1-Location of the sports city is 45 km away from Cairo
2-Not easy to enter as there are many stops

O
1-Great parking spaces
2-Great space around, to extend the place if needed

T
1-Located on a highway; could cause traffic density.
2-Extreme weather changes from day to night

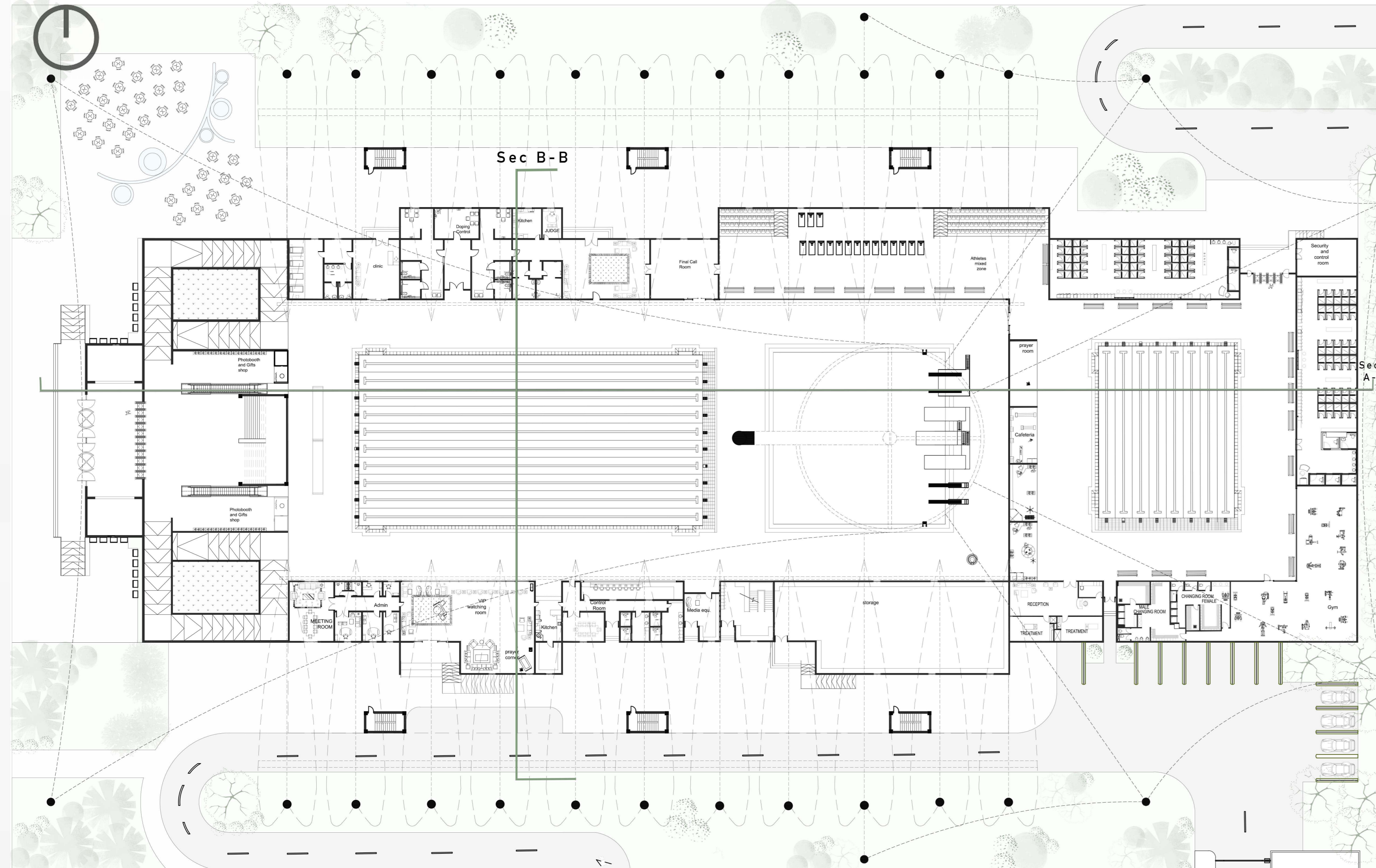
SOLID AND VOID:
APPROACH:
CLIMATE ANALYSIS:

RC Column
Steel Plate
Steel Beam
Anchor Bolts
Reinforced Concrete Column
Pilar De Hormigon

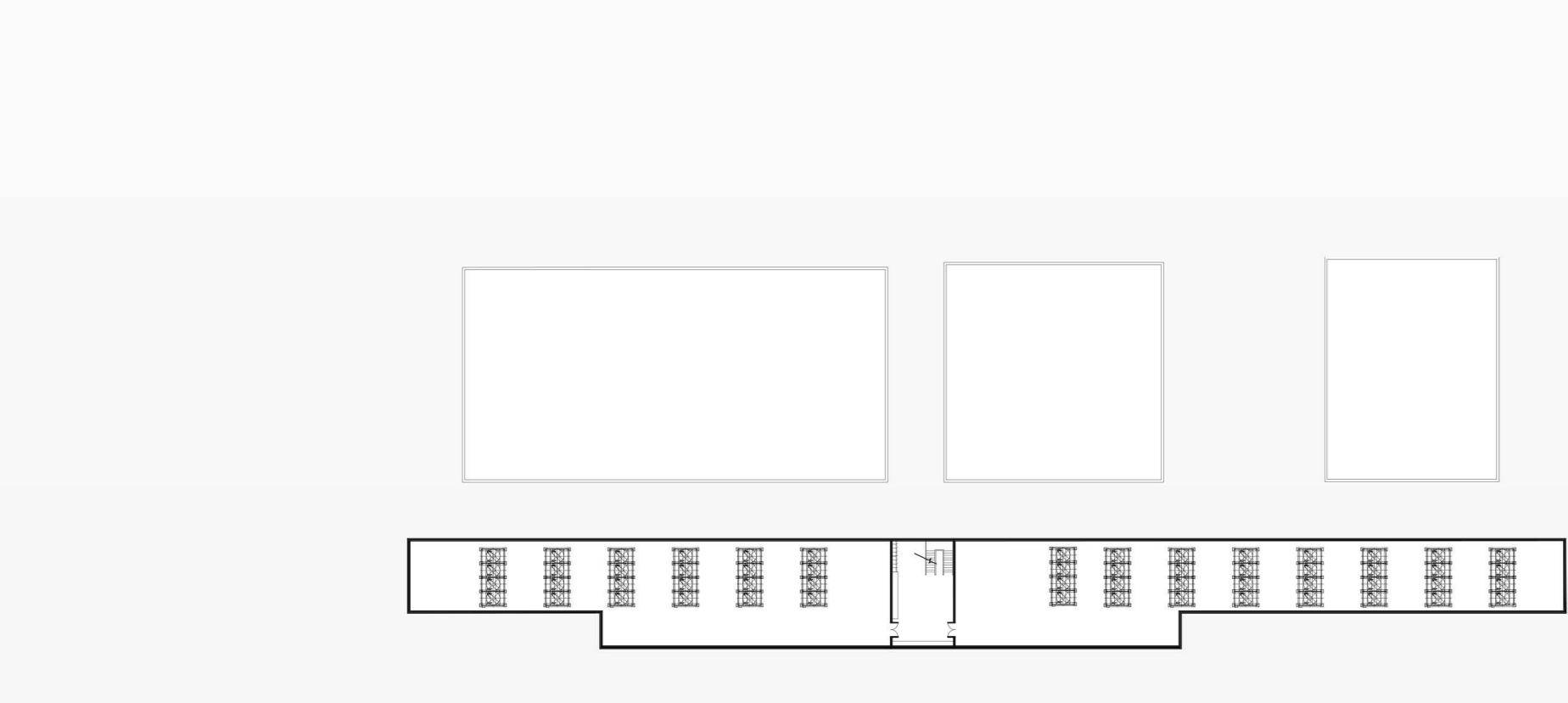
Anchorage system detail
Beveled Drill
Weld
Steel Plate
Column

Structur's cover of fabric
Fabric Cover on a grinder
Steel rods for Lateral Load
height of the stands + 3.5 m
around 28.5 m
length which requires to cover (36.5 m)
48 m

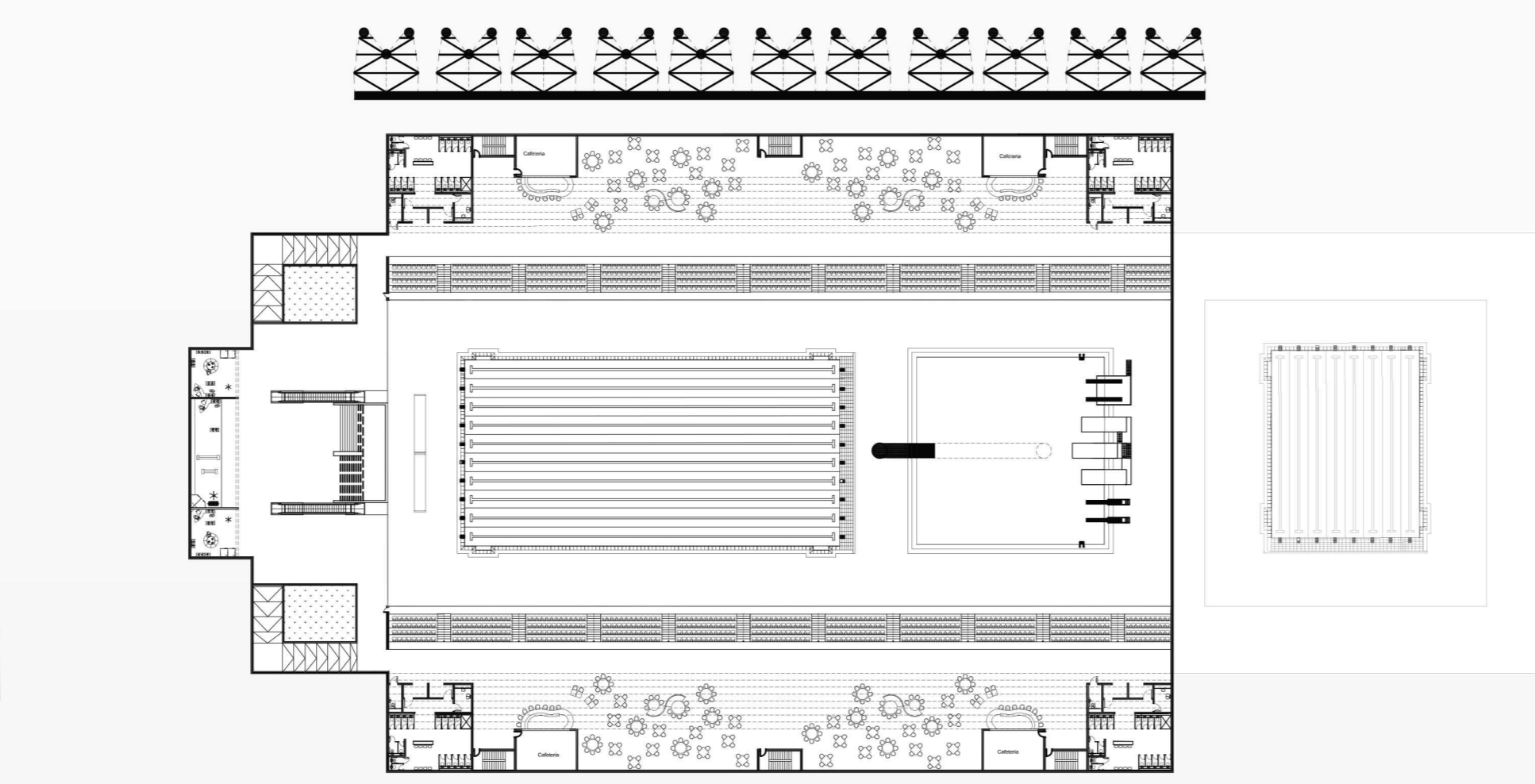
end cap
Catenary cable
Fabric membrane
Pin and anchor base plate
open swage socket and turnbuckle/Anchor bolts
tie back cable
mast



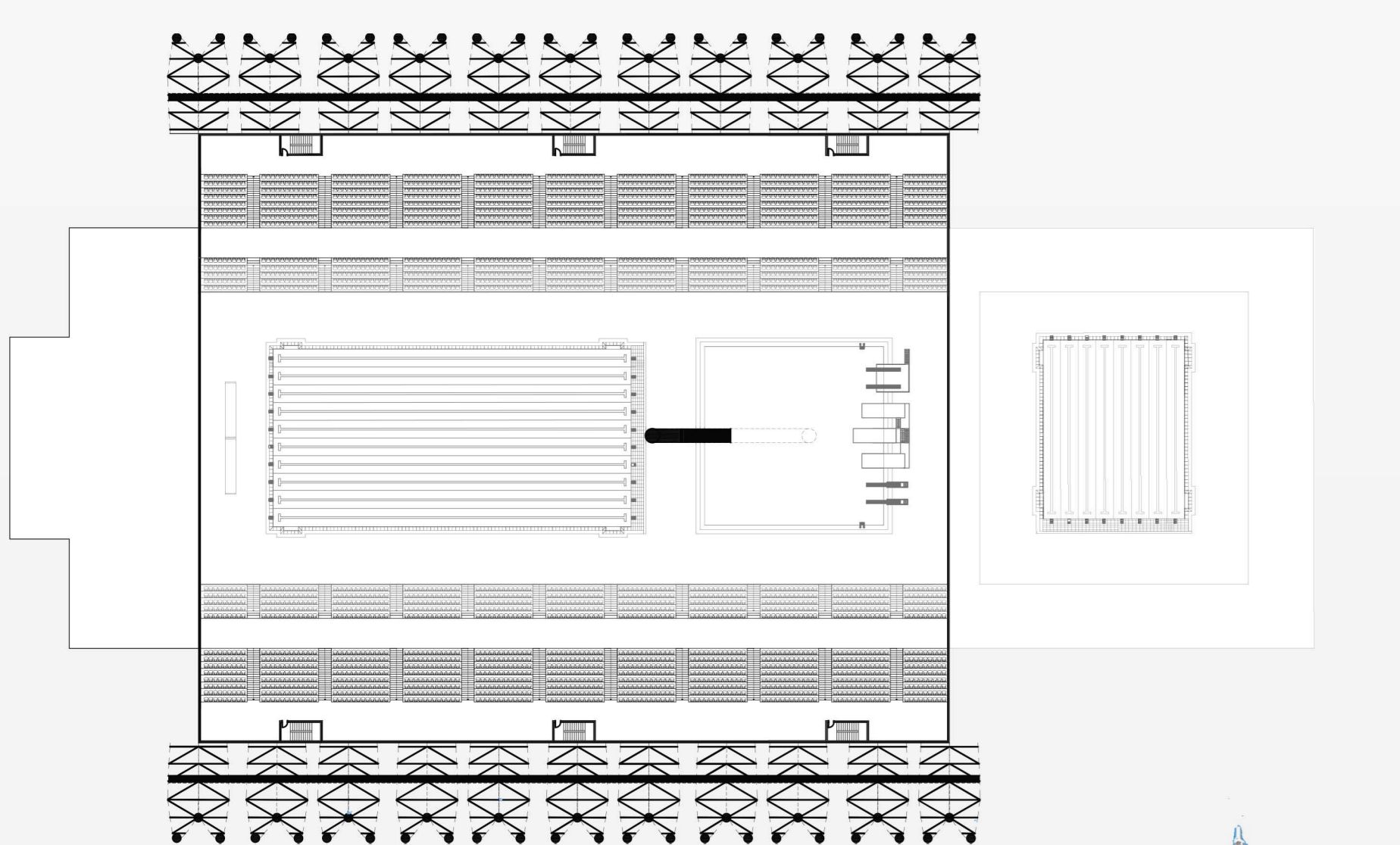
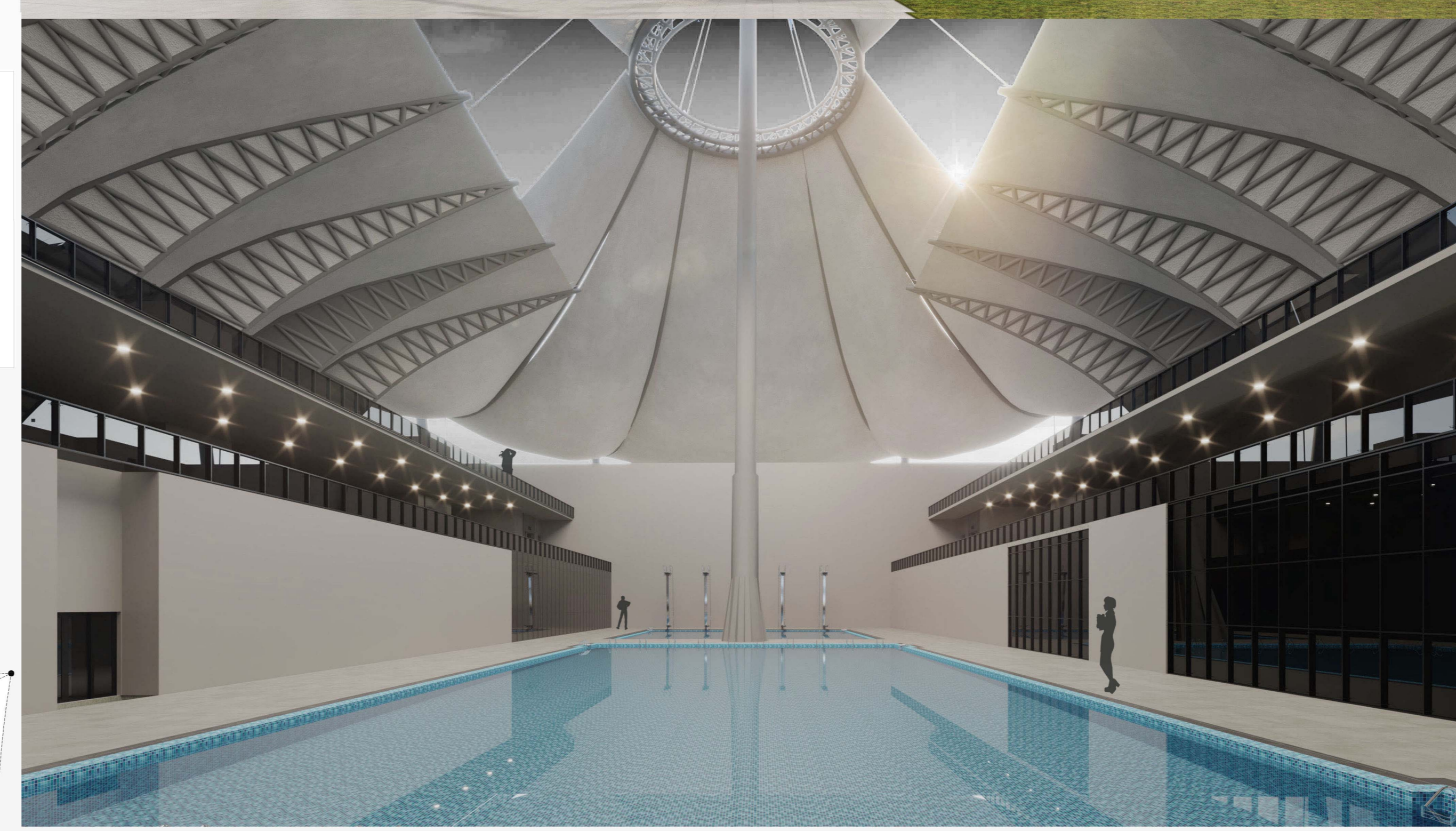
Ground Floor 1:400



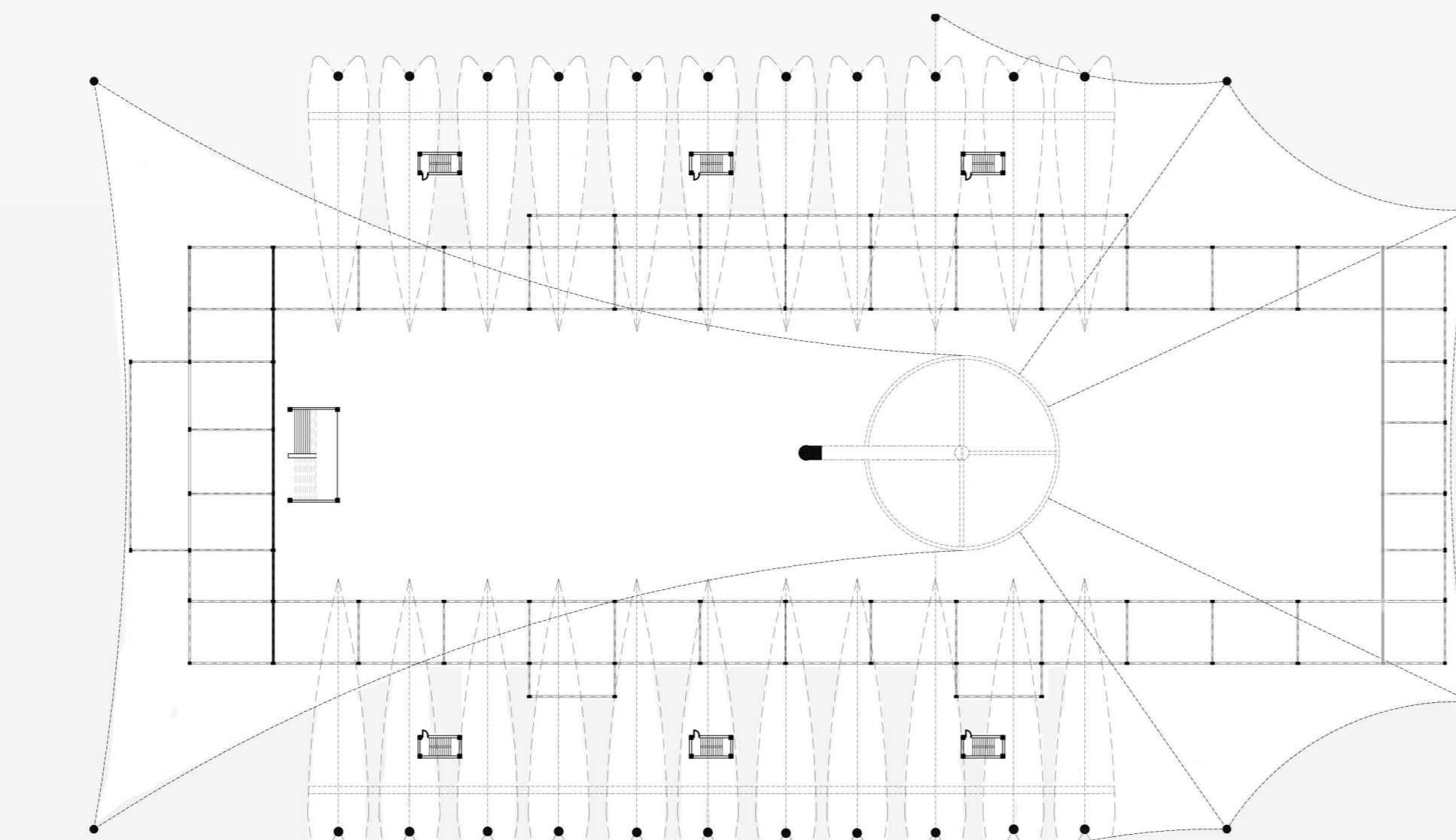
Basement 1:800



First Floor 1:800



Second Floor 1:800



Structural plan 1:800

