05 Graduation Project // Partially Revamped

Permanent Submerged Research Facility

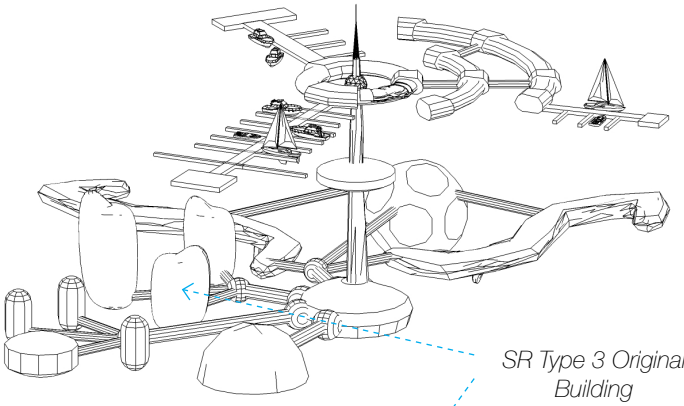
Year: 2006 (4th Academic year). **Use:** Residential+research facility **Area:** 8,200 m2. **Client:** Academic project. **Status:** Concept Design. **Location:** Red Sea (submerged), Lowest point is 100 m below sea level, Sharm el Shaikh, Egypt.

The project is a self sustaining submerged research station which can accommodated scientists and researchers permanently.

One of the buildings (SR type 3) was redesigned recently to enhance its water pressure resistance which could exceed 160 psi at 100m below surface.
The proposed solution was to increase panels curvature, add an Exoskeleton and to reinforce glass panels with hexagonal structure.

Panels were designed as a 180 degree revolved sine curve, arranged into 2D linear array and then morphed to building surface. Panels which attached Exoskeleton shares the exact sine curve boundary.

The new proposal consist mainly of two parts: The first part is the base which is 10m high 6m in Diameter, piled to seabed and connected with other building through tunnels.The second part is the main building which is almost 30m high and 20m in diameter. It contains 5 residential levels and a mechanical level witch is connected to main ballast tanks. The building is designed to be buoyant and in case of emergencies, it can disconnect itself from the base and reach the surface by discharging all the water from main ballast tanks.



SR Type 3 Original Building