

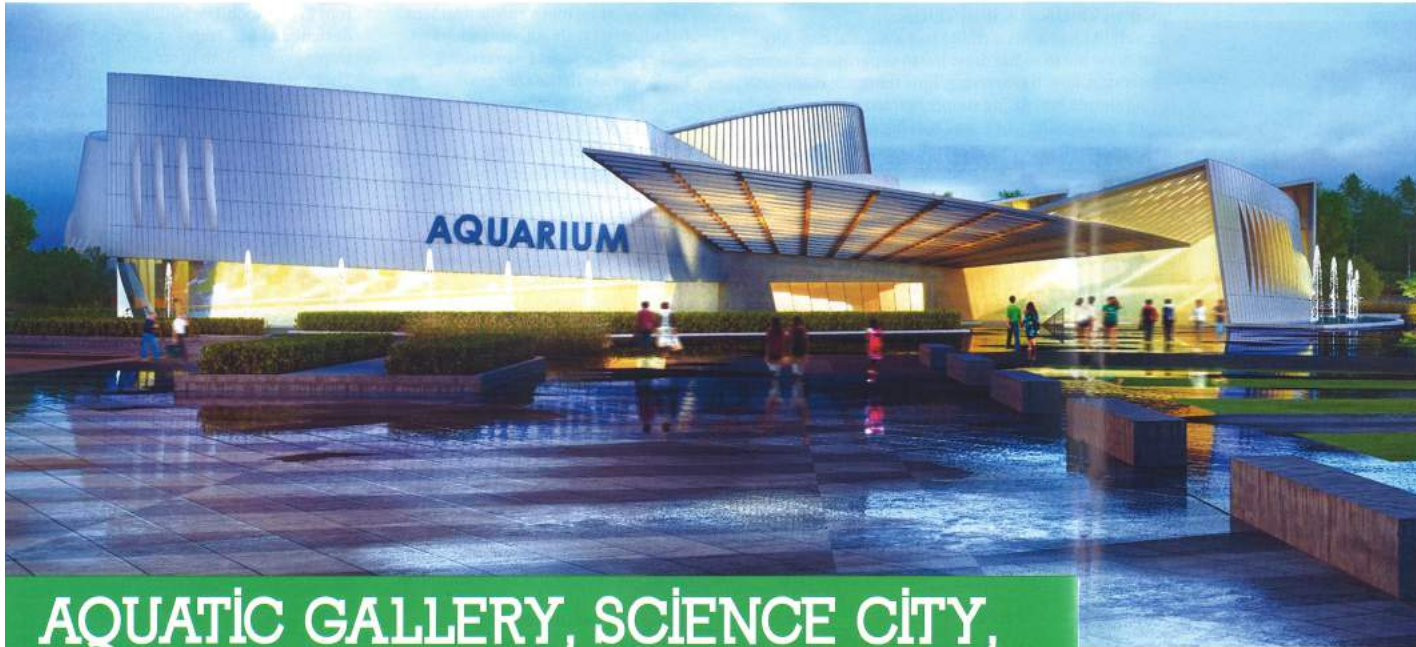
FACT FILE

Client: Gujarat Science & Technology Department
Architect: INI Design Studio Pvt Ltd
Consultant: Ducon Consultants Pvt Ltd
Steel Contractor: Shapoorji & Pallonji
Steel Tonnage: 185 Tonnes
Status: Ongoing

FASTER CONSTRUCTION

“ The relatively easy process of fabrication and mass production of steel members and their accurate detailing helped in arriving at uniform quality, and, made it economical. Offsite fabrication of components and rapid on-site assembly by skilled personnel makes steel an inherently safe construction material. Moreover, steel sections designed along with concrete made the project simpler and affordable in line with construction methods and construction cost of the project.

RAKHI RUPANI
ASSOCIATE PRINCIPAL, INI DESIGN STUDIO



AQUATIC GALLERY, SCIENCE CITY, AHMEDABAD

The upcoming Aquatic Gallery at Science City is a 5th generation, world class public aquarium providing catering to client's vision of education and entertainment. It is an Inland Aquarium planned in a 2.5 Acre site with a built-up area of 13000sqmts and estimated cost of 250cr.

The form of the building is inspired by the nature, and, natural forms like spiraling gallery and shell-like structure found in abundance along the Gujarat coast.

Architectural Features

It is an Inland Aquarium planned in a 2.5 Acre site with a built-up area of 13000sqmts and estimated cost of 250cr. It is planned to house –

- Underwater viewing walkway
- Multi-level viewing gallery
- Interpretation Centre
- Advanced life support systems
- Indigenous and freshwater species

The Aquarium has 72 different tanks, housing approx.181 types of species, and,

around 11500 total fishes. the galleries offer the visitors a sensory and absorbing experience of a world below the surface: the combination of lights, sounds, av technology, projection, movies, interactive elements, graphics, signage is provided at various points to enrich the experience.

The building form is sculptural with its 7 different volumes rising to different heights, depending upon the location and functions. The form of the building is inspired by the nature, and, natural forms like spiraling

gallery and shell-like structure found in abundance along the Gujarat coast. Based, on the principles of the golden spiral, the form gets wider as it moves further from the origin, but, yet maintaining the ratio for every quarter turn it makes.

The circular spiral form of the building adapts nicely, to the space needs and continuity of the galleries. Each segment varies in height, and, volume in the natural order of the spiral and the program needs of the gallery within. This gradually increasing height of segments creates a dynamic exterior form as well, as the galleries are expressed on the outer facade.

The central circular atrium structure provides a multipurpose space from where the galleries emanate; its form rises at the center of the spiral, reaching upward for light, received through clerestory windows. The spiral form allows for drawing people into the aquarium. The movement within the building is also similarly developed, with clear and easy and clear Movement paths.

The building materials used mimics the natural forms. On the exterior three materials are used in the overall building development - metal cladding, concrete and glass. Clad in metal panels, the facade is designed to suggest the scale of a fish or the pattern/texture of the shell. The openings within the facade also similar to that of the gills of a fish. The metal panel provide for an ever-changing aesthetic quality to the facade.

The panels will reflect the surrounding, thus when the sky is blue the panels will look blue, orange during the evening, and the double curve facade will reflect the light in different ways thus making the building unique from each angle. The glass is provided along the few public and support areas, allowing for natural day light into the building. The building entrance is enhanced with a steel canopy, in a huge cantilevered petal form. There is a 26mt diameter atrium covered with steel deck slab resting on fabricated trusses.

Tools and Experience

The software used for designing and details – Revit, Sketchup, Photoshop, Auto Cad, Etab, Staad.

The static and dynamic analysis of the structure, designing of steel members and columns were done using 3D ETABS modelling under various loading conditions and their combinations.

The experience of working with steel was a learning curve for the entire project team. Steel being strong but relatively light and versatile, provided flexibility to achieve the desired form. In steel buildings, the time of delivery, lead time, curing time and other factors that are involved while working with concrete structures get eliminated because of the completely mechanized process that steel construction follows. This made the construction process rapid and helped in the substantial elimination of delays. ■