

Aquatics Center- Design and Precedents Essay

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The Aquatics Centre is located on a large empty site within a suburban area. The design challenge is to create a building with a very specific program for a specific type of user, while also time creating a building which is a beacon for the surrounding community; creating a space which can be used by all. Looking to the Structure, Skin and Planning of the project allows for the design challenge to be met through all aspects of the design. When looking to these different aspects of the design it is clear that each of these elements have been used in past designs, as a way to convey a vision for the building and its purpose. Through observing others designs as a precedent for understanding a design vision, a new design can be solidified and unified. All aspects of the design can draw upon these precedents to create a visionary Aquatics Center.

Steel structure provides the ability to create a unique structure that could not be created using other structural materials. To create a building which could allow for the use of almost the entire site as outside communal space, steel was used to raise the building off the ground plane so only as minimal program as possible would touch the ground. A series of Steel columns act as pilotis holding the building 6 meters off the ground; the space created under the building with the series of columns acts as an urban scale portico. The portico (Fig 1.) is a porch that leads to the entryway of the building. The idea of the urban scale portico, is to create a space on the ground plane that will welcome people into a large park



Fig. 1 – Pantheon, Portico, Rome.

space that can be enjoyed and used by all members of the community. The building design also required a large open space to house the pool program. To create a building with a minimal footprint, the entire pool program was consolidated onto a single floor. Achieving a large open space using a traditional column grid was not possible. A structure that could span long distances and required little columns would be ideal for the space. It was also desired that this



Fig. 2 - Lille Belt truss bridge ,Denmark

same structure would be able to hold heavy loads and cantilever a good distance. The vierendeel truss (Fig. 2) met all these requirements. This type of truss is often used in bridge building. The ability to carry large loads and span

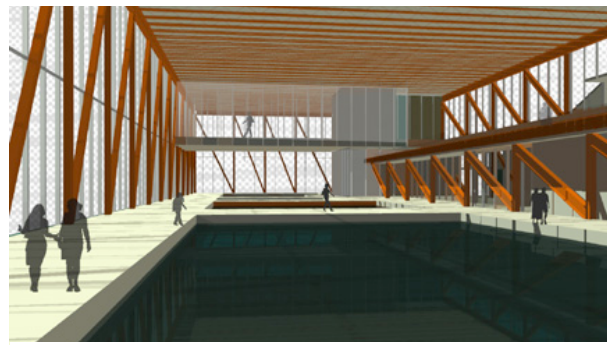


Fig. 3 – Interior View of Pool Deck showing exposed vierendeel trusses

long distances are the same requirements that the structure of a bridge must meet. The vierendeel truss is often used in high-rise buildings as a means to remove the use of shear walls and excess columns, however it is usually covered. By considering the structure in the same way as a bridge design, as an element that is both functional and beautiful, it becomes a design element of the Aquatic Center. The large trusses are visible to the public. They are painted a bright red so they stand out against the glass. This immense structure that allows for this unique building to hover 6 meters above the ground is showcased as an important design element of the building rather than being hidden.

The skin of the Aquatic Center is also a very important part of the overall design. The building is meant to have a coherent outward appearance, making it a beacon for the community. By night the building would act as a large lantern, a glowing form, hovering above the rooftops of the houses. In the day, the building would be clearly visible from a distance while approaching the site by car or foot. The skin had to allow for large areas of glazing, to permit for natural light into all public areas; but must also be flexible enough to allow for areas of screening where light but not view was required and areas of solid where privacy or coverage was needed. An ideal system incorporating all these needs into one skin is a curtain wall system in which different panels of either glass, screen or solid could be used. There was also a desire for the exterior skin to express the use of the building within. The skin was able to do this by responding to the programmatic needs of the plan and also through displaying a halftone image of water. The half tone image transforms a rather simple curtain wall façade into dynamic screen evoking the movement of water. The image of the water would be displayed on glass panels using a printed white frit, and on the metal panels using either an embossing technique or punched holes. A similar technique was used in Herzog and De Menron's De Young Museum. (Fig. 4) This technique allowed the museum and in turn the Aquatic Center to have a façade that as the day



Fig. 4 – Detail of Copper Screen, Herzog and De Menron, De

passes is constantly changing due to the reflection of the sun. The change and movement further evokes the idea of water. The metal material that was used for the Aquatics Center is a weathered copper. The copper is aqua blue in colour reflecting the blue of the water. Steven Holl used this pre-weathered copper in his design of the Sarphatistraat Offices, Amsterdam (Fig. 5) Unlike Steven Holl's project the copper was not used to create a contrast between old and new, but rather to reflect the idea of blue water on the exterior of the building, so that the program could be understood from the outside.



Fig. 5 – Steven Holl, Sarphatistraat Offices, Amsterdam.

The planning of the project aimed to create a building footprint that was as minimal as possible. This space would be the lobby space, and act as a pavilion in the larger landscape. By using minimal space on the ground plane, most of the site's ground plane could be used as a large outdoor space for the community. The idea of lifting the building off the ground plan was often used by Le Corbusier. "Pilotis" allowed him to lift his buildings off the ground plane and also allowed for the bulk of the structure to be located on the ground while the building above could have a more open floor plan such as in Villa Savoye. (Fig. 6) As in Villa Savoye the Aquatics Centers rises above the landscape, hovering above the treetops. The park space created on the site is to be used as an urban meeting space. As central park in New York City acts as a space where all people of the city can go to escape. A place that reflects a natural landscape that is lost in the city. (Fig 7) The park will be a space like that of central park that draws the people of a city together into one space. The park has a large



Fig. 6 – Le Corbusier, Villa Savoye.



Fig. 7 – Fredrick Law Olmsted, Central Park, New York City.

paved space under the building for meetings, markets, concerts etc. It also provides outdoor recreational spaces: a large wading pool sheltered from the street by trees and landscaping (Fig. 8) and two beach volley courts located alongside large stairs, that are used both to bring people into the sunken spaces of the landscape and also as areas that can be used as spectator seating for volley ball games, or merely a place to rest. A path cuts through the site allowing a connection from one end of the site to the other. Skylights are located on the ground plane allowing natural light into the underground parking. Large openings have also been cut in the ground plane to allow for trees planted on the level of the parking garage to protrude into the public landscape. A water feature is also



Fig. 8 – View of Park Area From North East Corner of Site.

created on the site that the pathway bridges over. The water feature uses long metal rods that span the full height of the building. Water flows along the rods creating a waterfall visible behind the stairs on the façade. This water feature ends in a pool that creates a threshold between the sidewalk and the urban portico. The planning of the interior also reflects an important relation to the exterior. Circulation and private program, such as change rooms and offices are located on the south side of the building. Large public spaces are located on the North side of the building. By pushing all the circulation of the building to south the pool can take advantage of north light. The orientation allows for the stairs and entrance to be located along the south and south-east corner closet to the bus stop and largest roadway. The plan creates a clear flow throughout the building making it easy to navigate from within and also allowing for a direct relationship for pedestrians, automobiles and public transit.

By considering at each aspect of the design; structure, skin and planning as integral parts of a whole, the design created is a coherent one, based around the idea of creating a unique space for the public. The space gives a public park back to community and also asserts itself as a symbol for that community. Looking to techniques used into other designs and by others designers, as well as to different typologies of building, new ideas can be formed of how the techniques can be re-thought and reused in yet a different way to create a new building. Drawing upon these concrete

examples of successful architecture allows for the creation of a new successful design, for the Aquatic Centre.

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