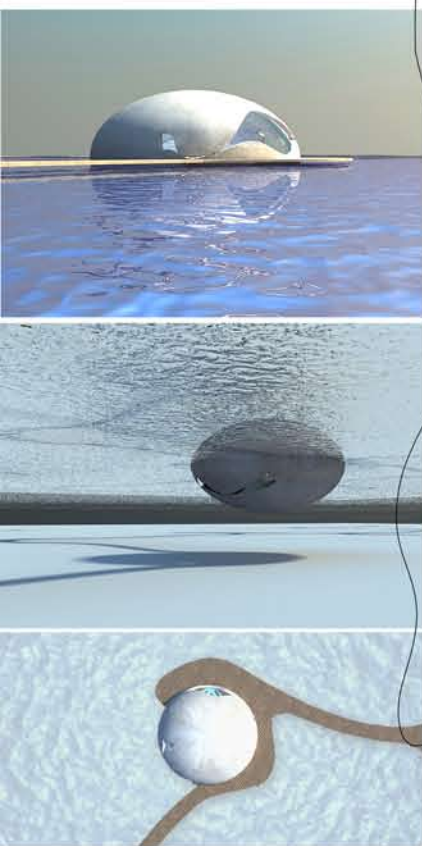


Reverse Effect



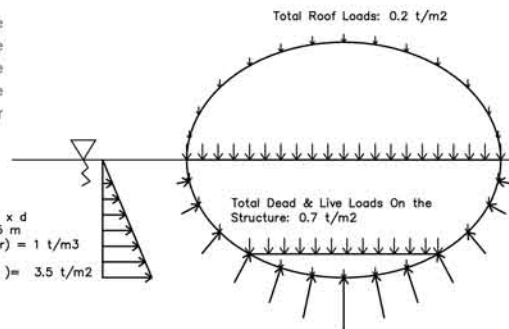
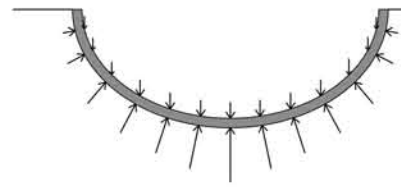
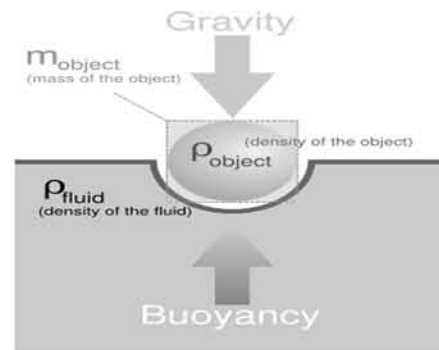
[Hybrid] as a System

The project suggests a particular solution for an alternative life on the water, emphasizing the advantages of the concrete, reinforced with steel fibres. This composition provides the opportunity to construct a floating structure which differs from the traditional systems in terms of its homogeneity, flexibility and the ease of production. As a whole, the project is questioning the limits of the concrete and suggests a whole new water-based urban quarters.

The floating houses neither require earth removal nor touching on the vegetation. The structure, taking the advantage of buoyancy and the uniform bearing pressure of the water, eliminates the foundation structure need.

The steel fibers inside concrete, lowering the permeability against water, lets the structure have a more life time without the need of extra water protection. Even if, some fibers close to the surface are corroded, due to their scattered and independent state, the strength of the structural element is not affected significantly. Besides, galvanizing the fibers or the using stainless fibers easily eliminate the corrosion risk in the structure.

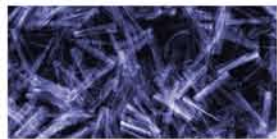
The uniform water pressure, which increases to the base of the structure, utilizes the dome geometry to decrease tensile stresses in the dome, resolving them to the compressive stresses which can be well borne by concrete itself. The reduced amount of tensile stresses can be resisted by fiber reinforcements in the concrete.



[Hybrid] as Material

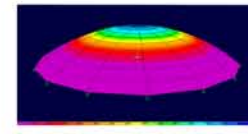
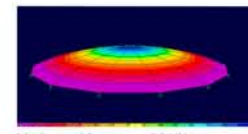
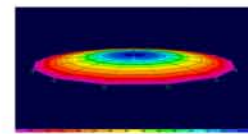
Fiber Reinforcement:

Unlike the traditional steel bar reinforcements, steel fibers are homogeneously oriented inside the concrete section which results in a better shear strength capacity of the element. Also, the steel fiber reinforced concrete is more resistant to minor cracks which may cause permeability problems to a structure floating on the water.



Self Compacting Fiber Reinforced concrete:

The Self Compacting Fiber Reinforced concrete is very well diffused to every part of the formwork that makes the concrete work with its full strength capacity at every point of the structure.



The bottom part of the structure loaded by the water pressure, has lower moment values thanks to its dome geometry. The hybrid material that forms the structure, effectively balances the stresses due to the characteristics of its concrete and steel fiber components.

CONSTRUCTION PROCESS

The structure composes of three main precast elements. The top dome, the slab and the bottom dome. A normal capacity crane can immediately start their life on the water, just after the elements are mounted in the site. Anytime during their lifetime, they can be disassembled, and rebuilt in somewhere else, or simply sailed to another place.

The Pier - House Connection

For overall stability and serviceability concerns, the houses are locked to the piers by anchors, which constraint their horizontal translation, whereas the buoyancy of the water maintains their vertical stability.

