



TILES STORY 40 PAGES OF FRESH MATERIALS

THE JOURNEY TO DIGITAL

Cloud Walk

Should we fight or fear water?
Is construction in water the solution to some major city problems?
Why to squeeze the Land when we can build in water?

FLOATING CITIES

THE FUTURE IS IN WATER!?

Name - Citadel, Client - ONW/BNG
Architect - Koen Olthuis - Waterstudio.NL
Location - Project The New Water, City of Westland, The Netherlands, Project - Floating apartment building (60 units)
Depth - 9 feet, Height - 40 feet, Platform - 240 x 420 feet
Photo credits: Architect Koen Olthuis - Waterstudio.NL
Developer - ONW/BNG GO



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Cloud Walk

HOW FAR CITIES WILL EXPAND TO THE OUTSKIRTS... HOW TALL THE NEXT GENERATION BUILDINGS WOULD BE OR HOW DEEP WOULD WE DIG TO CREATE MORE SPACE. HOW WOULD CITIES ACCOMMODATE THE EVER-GROWING POPULATION WHILE THE LAND MASS ON EARTH IS LIMITED? WHILE THESE QUESTIONS KEEP PLAGUING OUR MINDS, THERE IS AN ARCHITECT WHO CLAIMS THAT HE HAS THE ANSWER TO WHERE THE CITIES NEAR THE WATER BODIES SHOULD EXPAND AND HOW THE FLOOD AFFECTED AREAS SHOULD TAKE THE HELP OF ARCHITECTURE TO LIVE LIFE PEACEFULLY. HE SAYS, 'THE FUTURE IS IN WATER'

"LET WATER IN AND MAKE FRIENDS WITH WATER" - HE FURTHER ADDS WHILE TALKING ABOUT THE SOLUTIONS FOR FLOODING ISSUES IN HIS COUNTRY NETHERLANDS WHERE NEARLY ONE THIRD OF LAND LIES BELOW SEA LEVEL. HE FOUNDED WATERSTUDIO.NL IN 2002; THE FIRST ARCHITECTURE FIRM IN THE WORLD EXCLUSIVELY DEDICATED TO LIVING ON WATER. IT ENVISIONS THAT LARGE-SCALE FLOATING PROJECTS IN URBAN ENVIRONMENT WHICH IS BOTH FLEXIBLE AS WELL AS SUSTAINABLE, WOULD PROVIDE A SOLUTION TO LAND CRISIS!

For the rest of the queries which are hovering in your mind, Surfaces Reporter is presenting an one-to-one with Ar. Koen Olthuis...



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Ar. Koen Olthuis, Founder, Waterstudio, Netherlands

Surfaces - Why do you think that the future is in the water?

Ar. Olthuis - While the land is limited, there is a lot of open space on water. All the cities have the same problem. Urban planners build vertical cities with high rise buildings and digging undergrounds to extend space. However, as the population and need of cities are growing, we need the support of technology to take us to the next level densification. I strongly believe that expansion beyond the waterfront is the answer for solving the current & future problem of cities. Water is the basis for a dynamic city. Water brings space and flexibility, opening a new level of urban design in which development and location are no longer connected for life. The era of urban planning on water starts with new freedom to change city parts when there is a need for it.

Surfaces - Which was your first project in water and how many such projects have you done so far?

Ar. Olthuis - We started with waterhouse in Aalsmeer. This house was the first in Holland with a complete floating cellar underneath the water level. But because the wife of the owner did not like to sleep under water we built a cinema in that

space and brought the bedrooms and living room above the water level. This house was the starting of more than hundred waterhouses we have built till now. Several projects are under development like floating hotels, golf course, private islands and apartment complexes. On urban scale, we designed several master plan for hydro cities which contain amphibious and floating houses as well as normal land based houses

Surfaces - In relation to making a structure on land, how much more time is required for a similar structure in water?

Ar. Olthuis - Time wise you could say that it is faster to build floating houses because they can be produced in factories near the water. This means that the production can be done in controlled environment and that you can build in several factories at the same time for one large project. When these factories finish their floating developments they can be towed over the water to the location.

Surfaces - How safe & durable a floating building can be? What are the Materials used?

Ar. Olthuis - Holland has a history of more than 100 years with building houseboats. The old house boats look different than our new contemporary ones but the concrete for the foundation is almost kept similar. With the concrete we make floating boxes of 20 by 6 meters. On top of this box we build a house with regular material like wood or bricks.

For larger structures like a floating island we use concrete and EPS. Concrete for the rigidity and EPS for the buoyancy; we have patented this technique and it is a very simple way to build low tech floating foundations from prefab elements. The trick is that we bring those materials together in a sandwich construction which provides a low cost. We design our floating foundations on a technical lifespan of minimum 100 years.

Surfaces - Do you have proper regulations in your country to drive systematic constructions in water?

Ar. Olthuis - Yes, in Holland we have complete regulations that describe where and how you should build. These regulations tell exactly how much stability and safety is required so that people can live on water with the same comfort and pleasure as on land. But off course now that new and unexpected ideas and concepts rise up, like floating towers, we have to adjust regulations too.

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This revolutionary concept for a cruise ship-terminal consists of a floating construction in a triangular shape measuring 700 by 700 meters - enough to simultaneously host three of the world's largest cruise ships. The basic triangular ring is lifted up at one point creating a smaller inner harbour with a spectacular entrance arch.

Construction and exterior

The terminal consists of three floating legs to which the lightweight construction of the raised point is attached as a cantilever. The whole structure is rigged to a foundation in the seabed by means of anchoring cables with dampers, allowing flexibility in vertical sense while ensuring stability in the horizontal plane. The exterior surface is clad with aluminium panels. Ten percent of the considerable roof surface is covered with PV-cells, a sustainable energy source decreasing the demand of external energy.

Floating Cruise ship terminal
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Photo credits: Waterstudio.NL and Dutch Docklands

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