

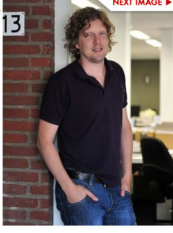
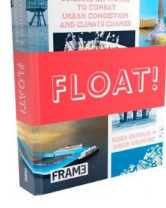
ARCHITECTURE

INHABITAT INTERVIEW: Waterstudio's Koen Olthuis on FLOAT!

by Bridgette Meinhold, 12/14/10

Filed under: Architecture, Floating Houses, Interviews

INHABITAT PHOTO GALLERY



NEXT IMAGE ►

World-renowned architect **Koen Olthuis** is the leading designer of **floating structures** — he has built a number of floating houses all over the world and has designed for the likes of Dubai and other metropolises. Recently, he and his colleagues at **Waterstudio** finished a new book, called **FLOAT!**, which is a compendium of his knowledge on floating architecture. He details historical projects, discusses the practical uses for floating architecture, explores scenarios for a future world with higher sea levels, and rallies behind sustainability as a necessity for future development on the water. In between his busy travel schedule, Koen was able to take some time to answer a few questions about the future of hydrocities and building on the water - [read on for our exclusive interview!](#)



Photocredits: Architect Koen Olthuis — Waterstudio.NL and Pieter Kers

FLOAT! is a beautiful volume that explores the world of floating architecture through historic, current, and future developments as well as the technologies behind them. Eye-catching images, bright neon typography and a well-written narrative all make this a book you will want to have in your collection. Think: **Christmas present** to yourself — or the architecture lover in your circle.

Q. What are some of the technologies or design features that make living on the water more sustainable, energy-efficient, and/or resource efficient?

A. Sustainability is good, *sustainaquality* is better! *Sustainaquality* is sustainability on water by using the unique qualities and conditions of aqua territory. *Sustainaquality* is the combination of sustainability — aqua- and quality. Cooling wind effects of water, enormous fluid mass with buffer temperature for water cooling, wave and tidal energy as well as floating solar fields.

Q. As sea levels rise, do you think we will realistically see billions people who live on the waterfront transitioning into housing that floats, rather than relocating away from the water line?

A. Urbanization will grow in the coming years and 90% of the metropolises are located near the water, so it is just logical that cities will find a way to live with the water instead of going away. Look at the Dutch — we are living below sea level for hundreds of years instead of leaving for higher Europe. Nobody wants to leave **New York**, **Tokyo** or **London**. We'd rather deal with the sea level rise by using the space in the cities on water.



Photocredits: Architect Koen Olthuis — Waterstudio.NL and Dutch Docklands

Q. Do you think entire cities could be built as floating habitats — or even entire countries like the Maldives? What are the current limitations of such an endeavor in terms of economics, public opinion/education or technology?

A. Technically, entire cities could be built on water, but now, the necessity and perception is not there. First, you will see an ideal combination of hydrocity with land-based and water-based developments with wet and dry infrastructure. Neither technology nor economics — but perception of the politics is the key in the evolution of a dry city to a hydrocity. For normal people living in a **hydrocity** it would be a better city that is adaptable to changing needs.

Q. How do you imagine that city/country? A series of floating platforms with canals as streets?

A. A city on water will not look so different from a normal city as we are used to today. The foundation will be floating on a combination of large mega floats, but on the platforms itself you will find normal structures as housing, offices, parks, roads etc. The extra advantage of a floating city are the city apps. Floating functions can easily be added to the city by placing them on the water. A floating sport stadium, a floating golf course, floating housing units, roads etc. So with these city apps you could easily adapt the city to its changing needs. Planning for change is what it's all about.

Q. How does urban planning differ for floating cities compared to land based ones?

A. Urban planning on water brings urban planning in another dimension. For the last hundred years urban planners have tried to build more densely to provide for more prosperity along with the cost-effective infrastructure of health care, education, transportation etc. Growing vertically with skyscrapers and underground structures has been the norm. Now, using the water in the city partly for building and additional functions creates new opportunities for new density and flexibility.



Photocredits: Architect Koen Olthuis — Waterstudio.NL and Dutch Docklands

Q. What is the largest or tallest building you believe can be constructed as a floating structure?

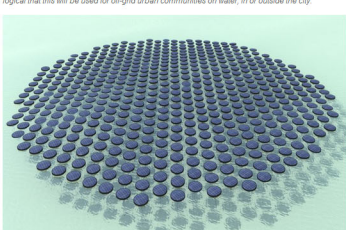
A. I believe technically we can build even beyond imagination, but making a feasible structure on water you have to mirror with offshore technology. Floating oil rigs that are 100 meters high and cruise ships that are 700 meters long show the possibilities for floating structures; we only have to add new functions and respect needed comfort targets for living on water.

Q. Tell us about buoyant concrete — when do you see it becoming available?

A. In 5 years time I foresee the product ready for large-scale projects on water. You can pour this concrete in any shape and it weighs less than water (400 kilograms per meter cubed). We are waiting for the right strength, which has to be developed by using different kinds of strengthening fibres in the aerated concrete. When more water-based building developments start to happen the innovation behind these kinds of material solutions will take off rapidly.

Q. Are there any floating projects currently built that are completely off-grid, powered by renewable energy and self-sufficient?

A. There are **ecocities on water** on the drawing board now for China and the Maldives. The urge for sustainable urban solutions is very high, and water provides new ways of providing energy. It is logical that this will be used for off-grid urban communities on water, in or outside the city.



Photocredit: Architect Koen Olthuis — Waterstudio.NL

Q. What about large off-shore farms? Do you see floating farms as a viable food production method?

A. Yes — not the main source of providing food — but because you can grow on water close or in a city, it could be the next step for cities which want to become less dependent on food from centralized production. The answer for worldwide food production is towards local foods that don't have traveled over the whole world before they are on your plate — this is necessary for a more sustainable world.

Q. What kind of safety mechanisms are available to protect floating buildings from the threat of flooding or tsunamis? Specifically, if a country like the Maldives were rebuilt as a floating country, how do they protect themselves against a rogue wave?

A. When countries like the **Maldives** fall victim to sea level rise and are replaced by floating communities, those will be on open water. In the Maldives however, the wave climate is quite mild. Waves above a meter in the atolls and lagoons are rare. Tsunamis have no landmass to build up to, so the wave stays just within acceptable ranges. I think you are better off on the water when a tsunami hits your country than on land.

Q. How can we use floating architecture to improve water quality and reduce our environmental impact?

A. Floating developments can be scarless developments, leaving no carbon footprint during their lifetime and no physical footprint after their lifespan. *Sustainaquality* provides us with new possibilities to make more effective sustainable developments. The temperature on the water in hot countries is always better than on land. Water-cooling and wind cooling are new forms of energy sources that will open the road for cities on water with less environmental impact.

Cities are dynamic and we should provide cities with dynamic floating components to change and adapt when needed without impacting the environment.

+ [Waterstudio](#)

+ [FLOAT! on Amazon](#)

Images Courtesy of Waterstudio