



Case 16 Amsterdam, The Netherlands: Iborg and Steigereiland floating housing. 2009^{1,2,3,4}

Problem to resolve:

Climate Change brings about a rise in the level of sea water surface and the result of wide spread inundations – or even the disappearance of small island states. Currently occupied land and land reserves may become inhabitable as a consequence.

A solution:

‘Special planning for floating apartments is one way to adapt to the effects of rising sea levels and increasing rainfall due to climate change. According to experts from the Dutch government’s Delta Commission, the sea level will rise in the country by 1.3 meters (4.3 feet) in the next century, and up to 4 meters (13 feet) over the next 200 years. One-third of the Netherlands is situated either at sea level, or below it’.⁵

‘There are two types of floating homes, permanently floating homes and homes that float only when flood waters swell, but sit on the ground during the dry season. Requiring floatability for new construction within floodplains, and considering same for threatened shorelines, is one way to plan for the future. Although floating homes near the coast need protected waters, like wave attenuation through wave walls and dykes (as used in Europe) they represent a future urbanization possibility’.⁶ →Tool URR 1





Floating houses in IJburg, close to Amsterdam are attached to moorings which can adjust vertically with the tides and other sea level rises.⁷



43 floating homes in Steigereiland, East Amsterdam.⁸

The idea for Amsterdam's floating city was born during a land shortage. However, Amsterdam carries a long tradition of houseboat living—about 2,300 converted barges floats along the capital's canals—and reimagine it as a contemporary community.

Whilst planning IJburg dates from 2009 onwards, the urban expansion project to the east of Amsterdam, Steigereiland ('jetty island') was designated as experimental area. IJburg lies on man-made islands in the IJmeer, without the ring-dike that is common in conventional reclamation practices. At Steigereiland, the base of the building is filled with cement and heavy-duty foam. Rings attached to sunken posts make sure the house stays up. They also allow the structure to move up and down, depending on water level. As a result, the water is present all around, giving the district its unique and distinct character as city archipelago. →Tool URR 1

Background:

Since late **2009**, developers have tugged prefabricated homes through a series of canal locks and into a corner of IJ Lake in Amsterdam's IJburg neighbourhood, where they have formed a **floating housing project**: Waterbuurt is a collection of 75 buildings designed to prove that regular people—there are roughly 1,000 residents of various ages and income levels—can live comfortably on the water.

The Netherlands is uniquely qualified to offer solutions that float. Because more than two-thirds of the population lives below sea level, the country has spent billions keeping water at bay and is widely regarded as the world's leading source for flood-proof architecture. As you might expect, the idea for Amsterdam's floating city was born during a land shortage. More specifically, local contractors were running out of affordable land to develop in the early '90s—the existing neighbourhoods were too dense, and everything else was underwater—just as the city's population was starting to boom. So officials greenlighted the construction of a new urban district, meant to house some 45,000 people, which would sit atop artificial islands (much as parts of Chicago and Boston, among other cities, sit on filled-in land).

Then the officials did something wholly unconventional: they zoned the water itself near one of the islands for an experimental housing development. There city officials hoped to take Amsterdam's storied tradition of houseboat living—about 2,300 converted barges float along the capital's canals—and reimagine it as a contemporary community. By **2001**, the chosen developer had laid out rough designs for what would become the world's largest planned floating city. It would be called Waterbuurt, or "water quarter."

Moreover, there was the issue of transportation. The homes were set to be built at a shipyard about 40 miles (65 km) north of IJ Lake, then tugged through canal locks that were fairly narrow—meaning home widths couldn't exceed 21 ft. (6.5 m).

The first structures were completed in 2009, Today the floating community is as densely populated as downtown Amsterdam, and other cities have expressed interest in similar projects.



IJburg floating homes.

Whilst planning IJburg, the urban expansion project to the east of Amsterdam, Steigereiland ('jetty island') was designated as experimental area. IJburg lies on man-made islands in the IJmeer, without the ring-dike that is common in conventional reclamation practices. As a result, the water is present all around, giving the district its unique and distinct character as city archipelago. It is the perfect place to explore the opportunities of building on water in an urban density, elaborating on initiatives of a single or a few floating houses elsewhere in the country. This has been realised in two varieties: on the western part of the inner lake on a project basis, and on the eastern side by means of private commis Basically, a floating house differs only in one respect from other Amsterdam houses: The house rests on the water instead of piles. But that single difference has many consequences, ranging from swinging chandeliers to deviating mortgages, and from risks regarding water quality to jetties that have to be passable under all weather conditions. Many of the things that are routine on land had to be reinvented, technically, legally and financially, and both on the level of urban development and organisational issues. And, in the end, it has all been reinvented, be it sometimes by trial and error.

Credentials

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References

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- ⁴ <http://www.dac.dk/en/dac-cities/sustainable-cities/all-cases/master-plan/ijburg-city-of-islands/> viewed 04/06/2015
- ⁵ <http://www.dw.com/en/floating-houses-to-fight-climate-change-in-holland/a-17532376> seen 17/07/2015
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