

Floating home designs that rock the boat

Architecture How living on the water has evolved, from Amsterdam to California. By *Nick Foster*

Having a new home built can be nerve-racking for anyone, but imagine this: your three-storey townhouse is pulled by a tug across an inland sea, then a storm causes a diversion, adds an extra day to the voyage before your property finally appears on the horizon. "It was a strange feeling," says Therese van Blijswijk, a mother of two teenage children living in the IJburg neighbourhood of Amsterdam, which is built on reclaimed land. "The house was so near, but the whole operation felt so risky."

In 2010, van Blijswijk's new house, one of IJburg's cluster of 50 floating homes (the first were towed into position in 2006), was guided through a sluice into the calm internal pool of the IJburg's Waterbuurt, or Water District. Then the prefabricated structure, made principally of wood, glass and aluminium - together with its concrete base - was nestled into place on the side of a jetty. Two steel mooring poles keep the 275 sq metre house fixed to the jetty and allow it to move up and down with the water level.

Amsterdam is not the first city to have a community of floating homes. The indented Pacific coastline of the US has given people the chance to drop permanent anchor in bays and estuaries since the 19th century. But in IJburg, Dutch designers used to

tight, highly-regulated urban planning, have arguably achieved something new. Put simply, they have taken the "boat" out of homes that float on water.

By arranging them as you would a housing development on land, the Waterbuurt design breaks with the improvised way in which houseboats have traditionally appeared in Amsterdam (there are an estimated 2,300 converted barges moored on the canals of the Dutch capital, some of which obstruct views of the water and hamper canal traffic).

Waterbuurt also creates extra space to build homes in a city where building sites are already scarce.

The project has two sections: on the west side of the lake, 55 gleaming white floating homes were designed as a homogenous project; on the east side, there is a more colourful collection of individually designed floating dwellings. There are 38 of these, including van Blijswijk's.

"Building the houses is the fast bit," says Marlies Rohmer, the architect behind the scheme's western section. "After all, they are constructed indoors, so they're not weather dependent. What's more difficult is getting the utility services (fresh water, waste water and electricity) into the homes through the jetties."

Rohmer's project is rational in its use of space as well as functional -



Houseboats in Sausalito, California

Gerry



Children playing in the water near floating homes in IJburg, Amsterdam

Stock/Alamy

the metal jetties and sparse wooden cladding give the houses a faintly industrial appearance - but it is also a bit dreamy. For example, the lights on the jetties were placed underneath the railings, since lampposts would have looked incongruous. Thanks to the soft lighting, residents are able to see the stars on clear nights.

Rohmer's main design conundrum was how to give the water its due prominence as a distinctive feature of the neighbourhood. This seems counter-intuitive: in this eastern fringe of Amsterdam, there is a surfeit of two things: sky and water. But in the Waterbuurt there are as many residents per hectare as in the Jordaan, a pleasant if cramped Amsterdam inner-city district. "It is still a challenge to have residents 'feel' the water when the housing is so dense. What we did was position the houses carefully so they have as much of a view of the

Design Classic

Frank Gehry's
Wiggle side chair

Frank Gehry was one of the first designers to produce cardboard furniture, having created the Wiggle side chair in 1972. Manufacturers had been seeking an alternative to plastic since the 1960s but struggled to find anything that could compete with its light flexibility.

At that time, cardboard was often just a single layer and attempts to reinforce it were made by taping and inserting tabs and slots. But Gehry, who was born in 1929, came up with a solution thanks in part to childhood spent playing in his grandfather's hardware store every Saturday morning, building villages and cities from scraps of plywood.

After a stint as a truck driver and a radio announcer, Gehry turned to architecture and eventually graduated in the 1950s.

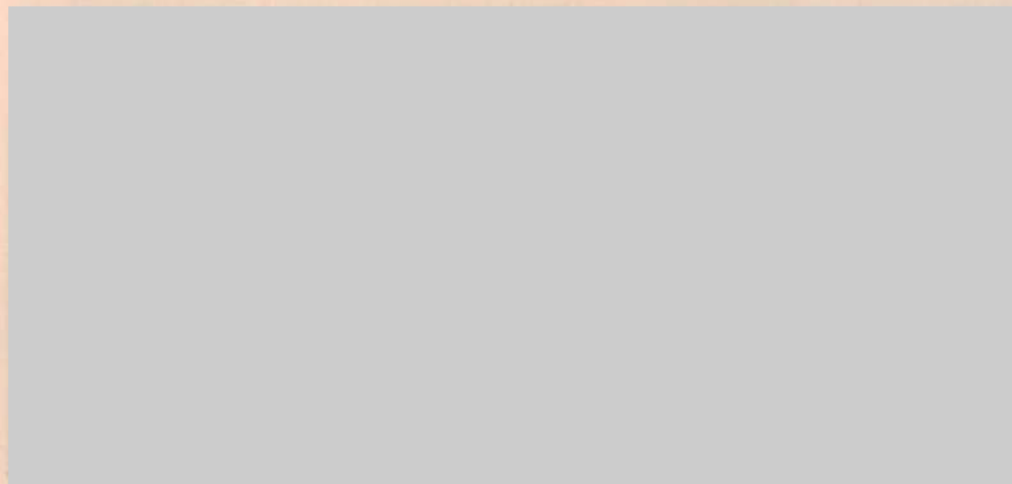
According to Vitra, the Swiss contemporary furniture company that has produced Gehry's cardboard furniture designs since 1996, the architect saw a pile of corrugated cardboard outside his office one day and began to experiment. He was already using cardboard to build architectural models and realised that it became very strong when glued together.

The resulting series of furniture was called Easy Edges and included the Wiggle side chair. The furniture was made by gluing layers of card in alternating directions.

The Wiggle chair and table were hugely successful but Gehry was unhappy because the prices did not conform to his philosophy that furniture should be affordable to all.

Gehry abandoned furniture design and returned to architecture. His most recognisable design is probably the Guggenheim Museum in Bilbao, Spain. Last October, he was appointed joint architect with Foster + Partners to design the High Street phase

of the Battersea Power Station redevelopment



The new floating headquarters of Arctic Shipping in Helsinki

Mike Hulse



Floating homes in Utrecht, the Netherlands

Jonathan Archer

water as possible, and we also kept the storage areas and garages hidden away out of sight," says Rohrer.

Most of the floating homes in the Waterbuurt have at least one boat tied up outside. "But it's not just the proximity to water that is attractive," says van Blijswijk. "It's the impression of having so much space and being so close to the city centre."

Like all the floating houses in Lbureg, the design deliberately avoids maritime references, apart from a railed deck made of wooden planks on the top level of the house.

There are no portholes on display and there are no curves, only angles. Inside, the ceiling is high enough to accommodate a chandelier above the dining table and the living area is decorated with curved African figures. It is what the Dutch call *gezellig*, or "cozy", but it is resolutely urban, too. Some teething troubles at Waterbuurt

involved getting the balance right in a literal sense. Heavy items of furniture, such as pianos, risked making homes tilt to one side. One home on the east side of the lake was at one stage

"They were amazed... every single houseboat here is different. That's the beauty of it"

declared uninhabitable because of a serious tilting problem.

Katherine Boschetto, who chairs the Floating Homes Association – a volunteer group representing the interests of a community of 484 floating



GGI of Helsinki's floating home project

City of Helsinki

dwellings in Sausalito, California – recalls the visit of a group of Dutch architects several years ago. "They were amazed we weren't a planned development," she says. "Every single houseboat here is different. That's the beauty of it."

Some homes in Sausalito's Richardson Bay are converted boats, but others are pure flights of fancy. One of the largest, called the Taj Mahal, was supposedly modelled on the Indian mausoleum; another – dubbed the "train wreck" – was partly made from an old train carriage cut in two.

Boschetto recounts that the community started as a cluster of lived-in structures on piers in the 1960s. The authorities, keen to rein in the bohemian floating community (and to make its members pay property tax) persuaded almost everyone to join the residential mainstream. Apart from four or five "anchor-outs" floating

homeowners who live permanently moored in the bay, all of the homes have berths on decks and are hooked up to essential services.

Gentrification led to a secondary market of floating homes in Sausalito and this has made the community more diverse, with doctors and young families moving in, according to Boschetto. "The floating home real estate market mimics the wider market in Marin County," she says.

The average value of a floating home is now about \$500,000. But earthquakes are a worry for Boschetto. "Our needs are unique [compared with people living on land]," she says. "If there's a quake and the dock breaks up, we need to figure out how to tether ourselves together to stay afloat."

While the Dutch housing market is in the doldrums, van Blijswijk is confident that she and her husband have made a good investment, estimating that after an initial investment of €650,000 their house is now worth about €1m.

In Helsinki, meanwhile, a colony of 40 floating houses is planned as part of the conversion of the East Harbour at Kalasatama into a business and residential area. Although these are not expected to be built before 2017, each floating home will have a living area of about 130 sq metres.

Finland's harsh winters pose a particular problem, with the Baltic sea sometimes freezing for weeks at a time. According to Tuomas Hakala, who is responsible for the East Harbour project at Helsinki city council, the pressure exerted by ice building up can be reduced by building a protective breakwater, such as an off-shore barrier, in front of the homes.

But one structure next to a pier in the Finnish capital gives a tantalising glimpse of the direction floating homes may take. Local icebreaker company Arctic Shipping's 950 sq metre floating headquarters, designed by K2S Architects, shares the same water as its icebreaker ships, and is closer to the vessels than it would be if it was on dry land.

Arctic Shipping's floating office shows how materials and intelligent design could one day produce a truly luxurious floating house – a dwelling that is mobile and flood-resistant, big enough to appeal to high-end buyers and green enough to convince planning departments around the world.

Rohrer has identified opportunities for floating homes in London's Docklands, Singapore and elsewhere, but in the low-lying Netherlands the solution of preserving areas for drainage that can also house people has a particular resonance. "Our water has to drain somewhere. This means that we have a need for water storage areas. And that goes for other parts of the world, too," she says.