

Building when land is at a premium

By Tina Reinders

Dutch companies have earned an international reputation for their creative use of the limited space available for building. Waterstudio.NL in The Hague, for example, takes the view that water is a virtue rather than an enemy. Information Based Architecture, meanwhile, is enjoying the challenge of building a 610-metre tower on a tiny plot of land.

Wherever you are, building land is a scarce commodity. Cities are steadily expanding and the water level is rising. The Netherlands is a small, densely populated country, much of which lies below sea level. As there is often no choice but to build on or near the water, other countries are happy to make use of the innovations resulting from Dutch expertise in this field.

According to Koen Olthuis, an architect with Waterstudio.NL, the floating city is the future. It is a future that he is actually shaping in Dubai, where he is designing a series of floating islands that form the sentence “not everybody who rides a horse is a jockey” in Arabic letters. Houses will then be built on the islands. Floating building land is the ideal solution for the Arab emirate, where sand to construct islands is in short supply.

“Floating building land is the ideal solution for the Arab emirate”

“Dubai is wealthy and has vision,” says Olthuis. “Although there is enough space for development inland, the climate is the problem. So they are expanding into the water instead. They turned to the Netherlands for advice because of our experience with building on, in and near the water.”

Other countries have also consulted Waterstudio.NL. Aruba asked the firm to design a floating rehabilitation centre for disabled people, with the rooms laid out around an inner courtyard where the patients can swim directly in the sea. The Belgian city of

Antwerp asked the firm to design a floating boulevard four hundred metres long and twenty metres wide. The existing buildings in Antwerp reach to the water’s edge and there is no more room for expansion on land. Building on the water is the only option.

Made in Holland 2007

Building on water

Olthuis sees plenty of options for urban expansion on the water. Using water as building land can allow a city to grow and at the same time make it a more pleasant place to live.

Many cities are built in river deltas and large areas of the inner cities are watery and marshy. Although the cities are becoming crowded, the water is scarcely used. According to Waterstudio.NL, it is possible to construct buildings, and even entire neighbourhoods, on the water. In Mumbai, India, for example, environmental organisations have protested against the reclamation of more land in the bay. Waterstudio.NL’s alternative suggestion is to construct floating islands on poles so that the water can continue to flow and so preserve marine life.

In London, Olthuis has proposed building part of the Olympic Village on the water, with construction immediately taking into account the use of the buildings after the Olympic Games in 2012. With this approach, the new buildings can already generate cash flow and increase the financial options.

Building on water is also an option in areas that are now threatened by water, for example the Netherlands itself, where much of the land is below sea level and will encounter problems if the sea level rises, or New Orleans, where the water table fluctuates wildly. The solution is to build houses that can rise and fall by up to ten metres with the water level by sliding up and down mooring poles. The water no longer poses a threat but becomes a safe and pleasant environment in which to live and work.

Building in the sky

Information Based Architecture in Amsterdam is interested in form and structure. Architects Barbara Kuit and Mark Hemel regard these two elements as equally important. They use the solutions provided by the steady evolution of nature as a source of information for their projects.

A study into the structure of bone, which consists of thin fibres and consequently produces maximum strength with a minimum of materials, was the inspiration for their winning entry in a competition for the design of a television tower organised by the Chinese city of Guangzhou.

The result is a slender, transparent tower with a “twist” half-way up. The tower is constructed of steel columns, the vertical ones being filled with concrete. Around the concrete central core are various zones with exhibition spaces, a conference centre, cafés, observation decks and, at the very top, a revolving restaurant.

The tower is the highlight of a cultural axis that will be constructed at right angles to the river. The competition comprised two elements: the design of the tower itself and a master plan for the surrounding area with offices and hotels. In their design, Kuit and Hemel took into account the old city and the view of the river delta and the cultural axis. With the twist in the tower, the base fits in with the new building while the top faces what already exists: a centuries-old city in a river delta. An important element of the entire concept is the journey to the top. To create a perfect harmony with the

immediate surroundings, Kuit and Hemel designed an open structure with lifts offering panoramic views that stop at every level, so that visitors become more aware of the height of the tower during their journey upwards. A visit to the tower is a day out.

The tower is 610 metres high, including the antenna, and stands on a site of just eighty by sixty metres. One of the main factors in Information Based Architecture’s victory in the competition was that Guangzhou was looking for an icon. The firm’s competitors focused primarily on the tower’s functionality and produced angular, boxy designs. For the Dutch firm, aesthetics, quality and creating a pleasant living space were just as important as the functionality. In the end, it was simply the most beautiful design: simple and gracious.

Information Based Architecture’s partner in the construction of the tower is the British engineering firm Arup, which has branches in the Netherlands and Hong Kong. It is a partnership that gives the city confidence in the financial and technical feasibility of the design. The foundations have already been laid and the tower will be completed before Guangzhou hosts the Asian Games in 2010.

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