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ADRIFT

Floating parking lots launch in the Netherlands.

By Jasper Mulder

With real estate at a premium, especially in crowded city centers, developing new parking lots and garages is becoming increasingly difficult. Obstacles to potential locations include financial viability, planning procedures, environmental considerations, and infrastructural implications. New solutions have to be found, and in the Netherlands, floating and mobile parking lots are one possibility.

Docklands International B.V., founded in 2005, has worked to change the mindset from fighting against the water, to living with the water when it comes to new parking structures.

Innovations in floating foundations have made water a realistic option for building space for different purposes. This presents new temporary or permanent opportunities for fast and effective parking solutions wherever needed. In addition,

planning procedures for temporary developments tend to be less complicated than for permanent parking facilities.

The Basics

The foundation of a floating parking structure consists of a concrete and expanded polystyrene (EPS) foam sandwich with a lightweight floor. The building system for floating



Parking, Parking, O'er the Bounding Seas

The concept of floating parking lots and garages seems revolutionary, but it's not entirely new. Consider Umihotaru, which is an offshore parking garage in Japan that has become a tourist attraction unto itself, complete with shops, restaurants (including a Starbucks), and observation decks looking out over Tokyo Bay.

Umihotaru opened in 1997 after 31 years of construction, and cost \$11.2 billion (U.S.) to complete. It's part of a massive 2.73-mile-long bridge that connects the cities of Kawasaki and Kisarazu and has inspired other cities since it opened; one of those is Moscow, which is currently finalizing plans to open several of its own floating parking structures along the Moscow River to help alleviate downtown congestion. Additionally, several U.S. cities are said to be exploring the possibility of either turning decommissioned aircraft carriers into floating parking lots, or building buoyant garages from scratch.

bases allows for on-shore construction and assembly of prefab components without a traditionally-required dry dock. An average floating car park of three stories requires 2.5 meters (8.2 feet) of water to stay afloat. The local fluctuations of the water level define the costs for the entrance and exit. There are extra procurements for sediment transport so they will never affect the water quality.

Floating parking lots are dynamic in terms of location and are easy to move to different places. Therefore, a floating car park could be a solution for events such as the Olympic Games, where the need for extra temporary parking places is dramatic. The possibility of moving a floating car park from location to location makes it a profitable option, especially near a large waterfront area.

City Applications

Urbanization and climate change put enormous pressure on the world's growing cities. Of all the cities with populations of 1 million, 89 percent are on various forms of waterfronts. This can pose a serious problem for growth: cities have to build backward into the land when the waterfront gets crowded. In addition, rising water can take away real estate from already crowded metropolises.

The needs of a city can be answered with floating urban components such as islands for housing, offices, leisure, infrastructure, and parking lots. Configuration, location density, and function can be changed. This will lead to new economic opportunities, where governments



can cost-effectively lease islands with flexible solutions, instead of investing in static developments. If every waterfront city was to expand by only 5 to 10 percent over urban waters, it would still bring enormous change in the flexibility and density of these cities

These dynamic developments, including floating apartment complexes, floating cruise terminals, floating parking lots, and even floating energy plants, will leave no scars after their lifespan.

In Practice: Maldives

The theories are being put into practice through a joint venture between the government of the Maldives and Dutch Docklands. This partnership will develop 80 million square feet of floating projects.

The Maldives is a popular tourist destination that is strategically located in the middle of emerging markets. There are bright blue skies, pristine seas, year-round sunshine, fresh ocean breezes, and fantastic snorkeling and diving lagoons. It is one of the world's most exclusive holiday destinations with high occupancy figures and a very high percentage of returning visitors. The Maldives have a total land area of just 298 square kilometers (115 square miles), and the island's natural beauty together with the lack of construction space make this destination premium priced among



international real estate investors.

Currently in development is the Five Lagoons Property, which will include a floating 18-hole golf course, villas and townhomes, and floating private islands owners can customize with any development they choose. Of course, this will also include floating parking. The development is expected to begin sales this month with construction starting soon after.

A floating parking lot in Tokyo has become both a much-used amenity and a tourist attraction, with people driving the bridge to it just to say they've done it. Other cities have also begun exploring the concept. It's an intriguing idea, and we're looking forward to seeing if it becomes a trend in waterfront cities.



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