

# Floating cities: our future is on the water

MARIN is working together with the social enterprise and collaboration platform 'Blue21' to create a floating city. MARIN starts open innovation projects to stimulate new developments at sea, and one of these projects is helping to develop a floating city concept.

Olaf Waals, o.waals@marin.nl

**F**loating cities are already developed in areas with a dense population and where there is a danger of flooding. The first projects are in near shore locations and sheltered waters.

Blue21 (see [www.blue21.org](http://www.blue21.org)) has developed very interesting concepts as shown. At the same time, MARIN has started a project for the design of a flexible island, which may be used for multiple purposes, including one application for a floating city in waves.

The idea is to use standardised triangles that are connected in the middle of each side. Using this method a semi-flexible surface can be made and various island configurations are developed. However, the challenge is to understand the physics of the island's behaviour in waves. Taking this idea, MARIN wants to push the limits and see if there are possibilities to design floating cities in waves.



Courtesy Blu21

**Model tests** MARIN is developing a numerical model that can predict the response of various configurations of the island in waves. The focus of the research will be on the hydrodynamic interaction, the connections between the triangles and the degrees of freedom that are needed to create a 'well-behaved' floating island. As part of this study, MARIN wants to understand the behaviour of the related physics and to develop a numerical model. As a final step, MARIN will conduct model tests for a floating city together with Blue21. The result of these tests will be used

to validate the response of the floating island. Additionally, MARIN and Blue21 are jointly involved in a consortium to develop multi-use floating islands. In this project we are aiming to combine the floating cities with sustainable developments such as farming at sea and renewable energy.

Interested? To further develop these activities in the near future, your innovative ideas are welcome. We look forward to cooperating with you and exploring this exciting floating future! ▢