

# MARIN tests first floating mega island

‘Better Ships, Blue Oceans’ is MARIN’s new motto. A part of our new Strategy focuses on projects that support the sustainable use of our oceans.

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Due to rising sea levels and the increasing global population in coastal areas we need to use our oceans more for food production, working and living. MARIN has recently tested an innovative concept for a floating mega island, which comprises 87 large, floating triangles that are connected to one another. Together they form a flexible island that can be as large as 1-5 km in cross-section.

However, the technological challenges are enormous. How do we develop floating mega structures that are strong and safe enough to withstand wind, waves and currents? How can these systems be connected to the seabed? What is the extent of the island’s motion and what impact does it have on the residents of the island? These and other research questions

need to be resolved to make the island technically feasible.

To spark this development we have carried out a conceptual test at scale 1:250 for a floating mega island. The island is made out of standardised triangles and the modules

are interconnected with springs and fenders.

Due to the flexibility in the connection the island will follow the waves in high seas. In storms, the forward two rows of the island move with the sea and therefore the amount of green water is much smaller than it would be for a rigid island. The forward rows will be used for activities that account for motions (such as solar panels and wave energy converters).

We are carrying out this research using computer simulations with aNySIM and by model tests in our Offshore Basin. This will allow us to predict the motions and further optimise the size and weight of the island modules.

In the next three years we are continuing this work via the Space@Sea project, which is funded by the Horizon 2020 EU programme (project 774253), and has the objective to further develop affordable deck space at sea. Within this project seventeen project partners are investigating different applications for floating mega islands. —

