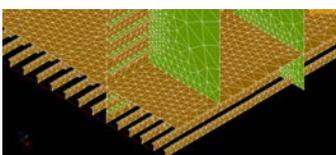
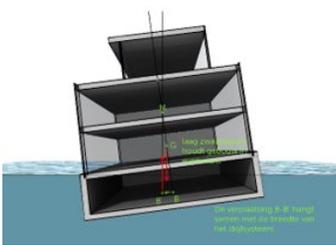
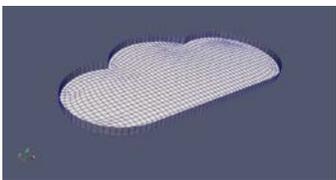
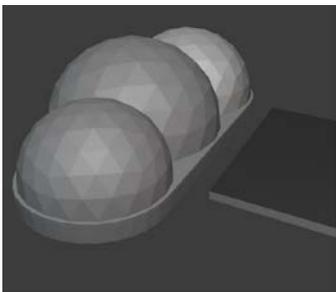


# HydroMEC+

The world's first design and simulation toolkit  
for floating urban development in maritime conditions

## APPLICATION

Blue21 has been designing and engineering floating projects for years. We found that none of the available commercial hydromechanics software around the world could answer the most basic but complex questions. Therefore, our engineers enclosed the 15 years of know-how of Blue21 and developed **HydroMEC+**. This is a breakthrough in-house toolkit for calculating floating structures in various conditions. It further strengthens our engineering services to our clients.



Examples of models used in  
HydroMEC+

Hydromechanics software main features	HydroMEC+	Others
Offshore application	✓	✓
Urban application (houses & buildings)	✓	✗
Early-stage urban project	✓	✗
Small-scale urban project	✓	✗

Questions which **HydroMEC+** helps to answer:

- + What is the best size of the floating platforms?
- + Is a breakwater needed?
- + Will the structures balance out (equilibrium)?
- + What are the connection/mooring forces/behaviors?
- + What is the level of comfort?
- + How much raw materials will be needed for the floating platforms?

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## INPUT

- + Architectural model
- + Functional requirements
- + Location bathymetry
- + Location environmental conditions (wind, waves, currents)

## OUTPUT

- + Video animation
- + Geometrical characteristics
- + Time series and statistical information of motions, stresses, loads on components, etc.
- + Reports (with Blue21's analysis & advice)

## CONTACT

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## CAPABILITIES

**HydroMEC+** is based on a fluid-structure interaction model and its main capabilities consist of:

- ✓ Visualization of realistic three-dimensional motion of buildings, floating platform and waves
- ✓ Evaluation of motion of multi-module floating platforms under maritime conditions
- ✓ Stability analysis
- ✓ Specification of required wave protection systems (breakwaters)
- ✓ Assessment of comfort level in floating buildings and surrounding areas
- ✓ Determination of environmental loads on the structure (wind, wave, currents)
- ✓ Calculation of mooring loads and forces in connectors between floating platforms
- ✓ Structural analysis of the floating platform
- ✓ Design and optimization of floating structures based on the building and on the location conditions, with specification of its sub-components
- ✓ Selection of the most adequate mooring pile arrangement
- ✓ Characterization the most adequate connectors for multi-module platforms based on specifications

The modular functionalities of the toolkit allow the applications of different numerical approaches for the simulation of floating structures, depending on how quick or detailed a solution is required. Interested? Get in touch!