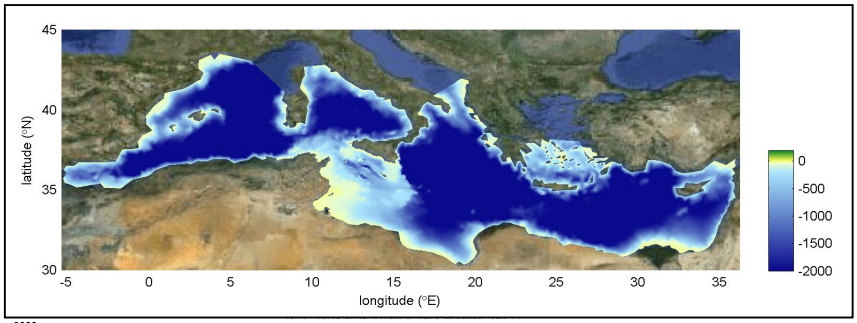

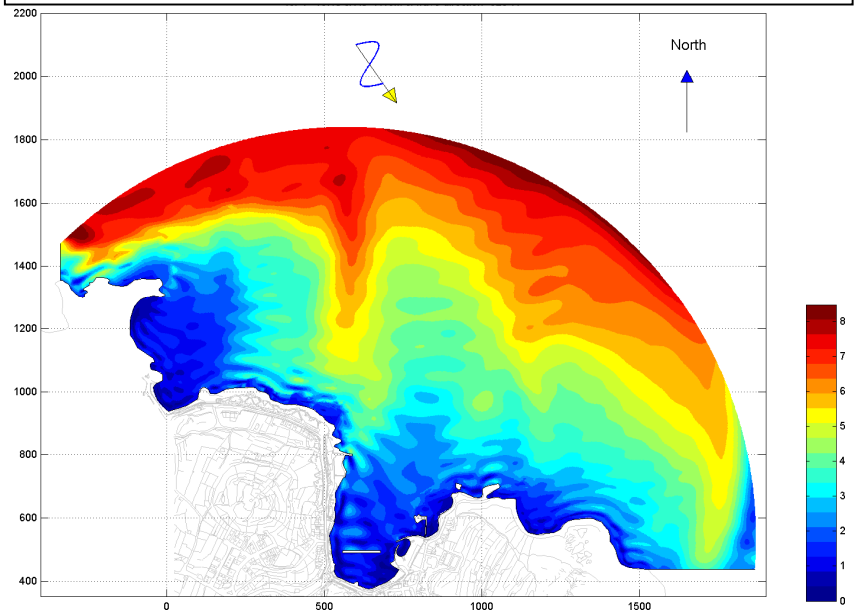

Design Coastal Protection Scheme Marsalforn Bay (Gozo)
Wave modelling and breakwater optimisation study

Hotels and other developments at Marsalforn (Gozo) experience significant wave overtopping during storm events, the most recent of which occurred in January and March of 2012 (see left figures). The ministry of Gozo has asked Svašek Hydraulics to develop a conceptual design and optimisation of the coastal protection scheme. An offshore breakwater and limited beach nourishment are proposed.

The offshore wave climate has been set up by applying 21 years of modelled wind data (NCEP) in a custom made SWAN Mediterranean Sea Model (see figure upper right).

Wave penetration into Marsalforn Bay has been simulated with HARES (with a parallel study conducted with a detailed SWAN model). The storms at the start of 2012 are used in calibration. Numerous HARES simulations were made to study the different lay-outs and for the optimisation of the proposed offshore breakwater.

Finally FINEL2D is applied to study circulation in the basin given the proposed solutions. This research prevents unforeseen stagnancy and/or sand transport issues.

Client
Ministry for Gozo, Directorate for Projects and Development

Location
Gozo (Malta)

Date
2012-2013

Services
Wave and flow modelling
Breakwater optimisation and design

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