

# Deepwater pit proves popular for TLP model tests

MARIN's deepwater pit in the Offshore Basin allows modeling of TLPs, including their tendons, over the full water depth. Here, we delve the inner depths of the deepwater pit and examine these challenging projects.

**F**ull depth modelling is crucial to represent the set-down and related airgap decrease of the TLP correctly. In 2010, the deepwater pit was used intensively for several TLP projects.

SHELL is considering a TLP for the Ormen Lange future compression development offshore Norway, in an 850 m water depth. In January 2010, model tests investigated the hydrodynamic behaviour of the platform in operational, extreme and survival conditions. Basin waves were generated with two different methods, denoted as random phase (RP) and random coefficient (RC). The application of RC-waves in the Offshore Basin was one of the techniques new to MARIN last year.

The Big Foot TLP, which is designed by FloaTEC and operated by Chevron, represents three important milestones. Firstly, this was MARIN's 9000th model! Secondly, Big Foot will be the world deepest TLP, at 1,581 m. Big Foot actually required the use of the full depth of the deepwater pit. The third mile-

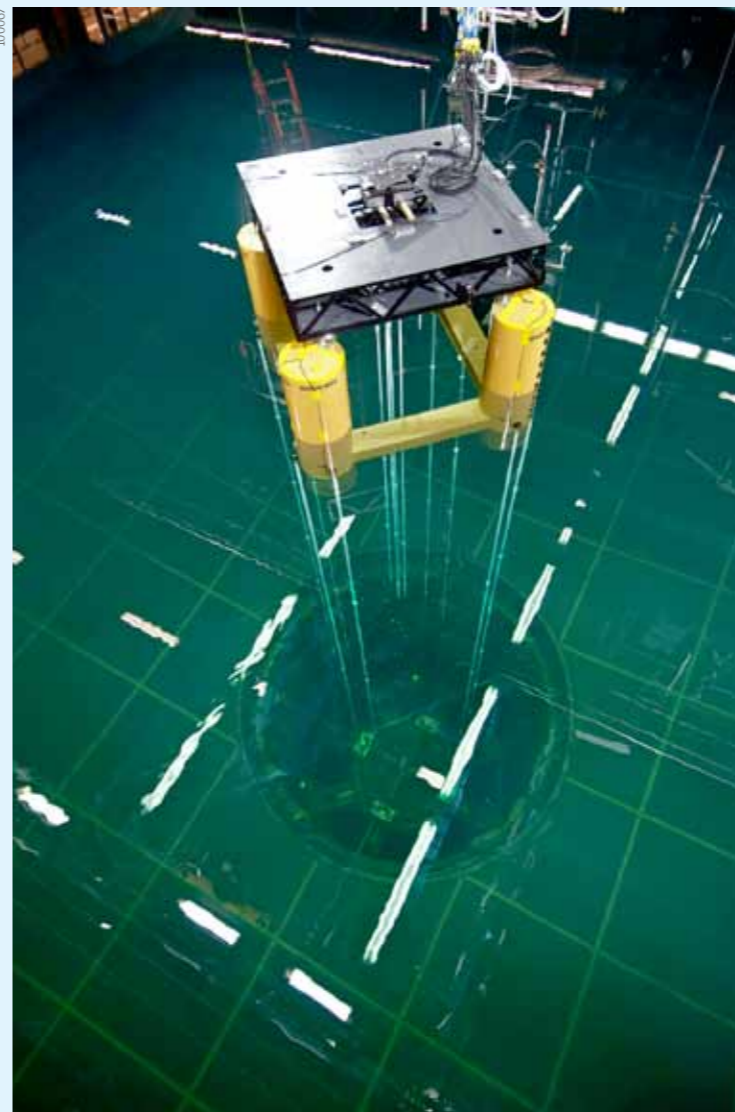
stone was the individual modelling of all 16 tendons. Thanks to the detailed engineering of this complex model the test programme was completed successfully.

The WISON TLP concept is based on an industry standard, four-column design. The TLP has been engineered to accommodate a full drilling package, as well as having the ability to process production from both dry and wet trees. A model of the WISON TLP concept was tested in wave, current and wind corresponding to a severe offshore environment prior to undertaking the detailed design of the structure.

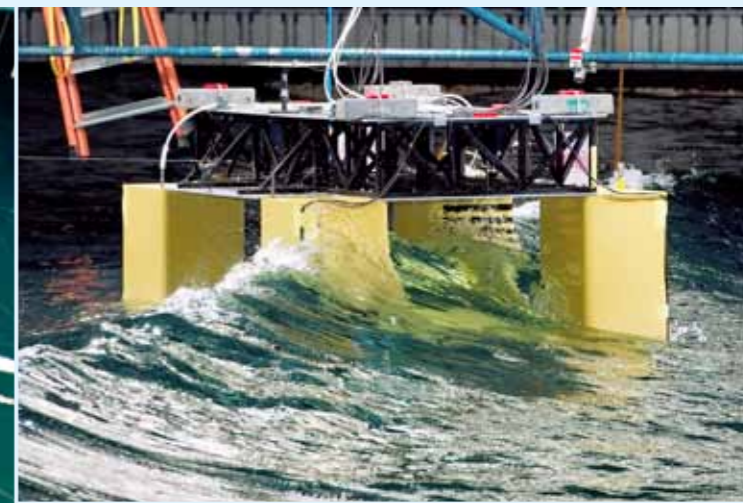
The Papa Terra TLWP, designed by FloaTEC, is part of Papa Terra P61 field development and will be accompanied in the field by a semi-submersible for tender assisted drilling and an FPSO for storage. All three floaters were modelled together in the Offshore Basin and linked to each other by means of a hawser and fluid transfer lines. The presence of three floaters in the basin was again, one of the special moments of 2010. □

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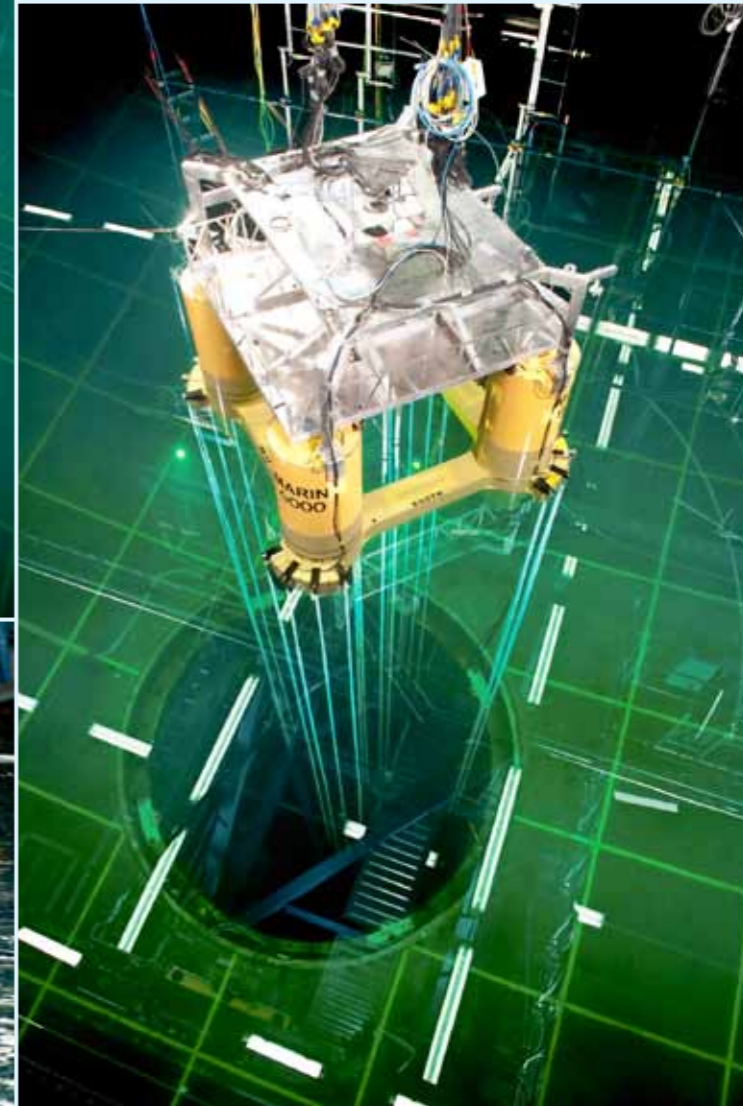
Ormen Lange TLP



Wison TLP



Papa Terra TLP



Big Foot TLP