

Swansea Bay Tidal Lagoon Phase 1 Ground Investigation

Simon Holt

Principal Engineering Geologist, Ground Engineering, ATKINS

Seminar overview:

The proposed scheme by Tidal Lagoon (Swansea) plc comprises a 9.5km breakwater embankment up to 20m high, enclosing an 11.5km² lagoon. The average Spring tide range is 8.5m and this will be harnessed to provide 320MW of electricity to 155,000 homes. In order to provide sufficient information for Front End Engineering Design (FEED) and the planning application, a Phase 1 preliminary ground investigation ensured a good understanding of the potential geological and geotechnical risks and provided greater certainty on proposed construction costs. One of the objectives was to determine properties of shallow sediments and assess suitability for hydraulic fill from insitu and laboratory tests.



Following a desk study phase and initial geophysical survey, the ground investigation was designed by Atkins Limited; Environmental Scientifics Group was the Principal Contractor for the £0.5M works. A variety of techniques were required, including dynamic sampling in intertidal areas, overwater boreholes from a jackup platform and CPT and vibrocoring from a survey vessel. Geological units were derived based on their origin and geotechnical properties from geotechnical laboratory and insitu testing. The spatial distribution of marine and glacial deposits together with geophysical profiles led to the development of a preliminary geological model. A central ridge of fluvio-glacial sands and gravels divides different marine deposits and large variations in rockhead level are present as a result of glacially incised rock basins.

When and where:

Wednesday, 3 February, 19:30
Room N7, Pembroke College

Queries:

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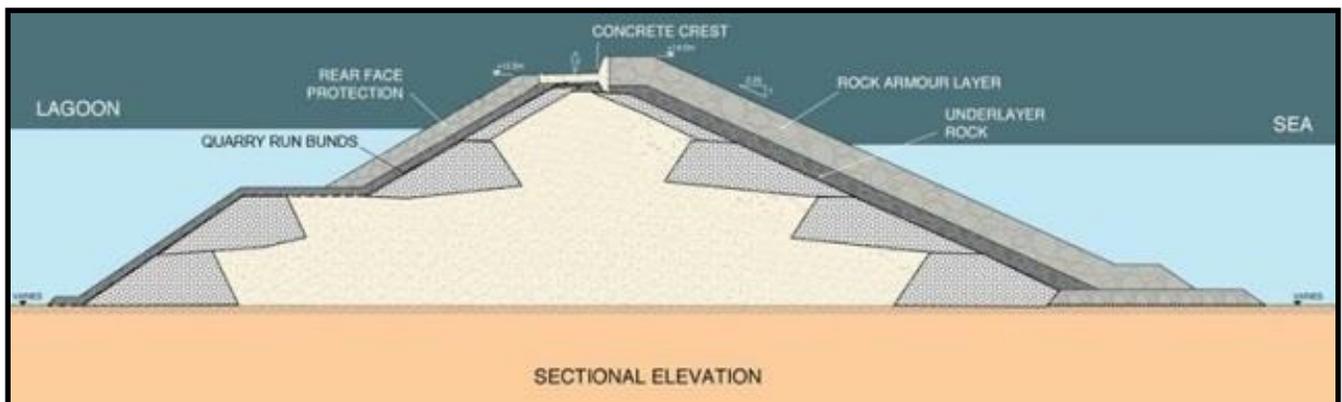
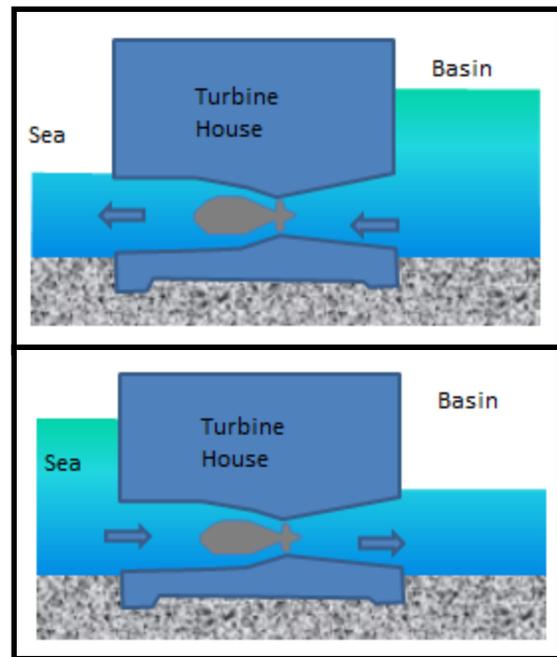
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Short biography:

Simon Holt is a Principal Engineering Geologist at Atkins and has over 18 years' experience working in the Ground Engineering sector in the UK and Hong Kong. He previously managed the initial ground investigation phase for the Swansea Bay Tidal lagoon and presented the project at the 2015 European Conference for Soil Mechanics and Geotechnical Engineering in Edinburgh. Simon currently manages a team in Croydon providing ground engineering services to the Rail sector including earthworks within the Anglia Region



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