



EMPIRE
engineering

FATHOM v0.1
offshore deep thinking

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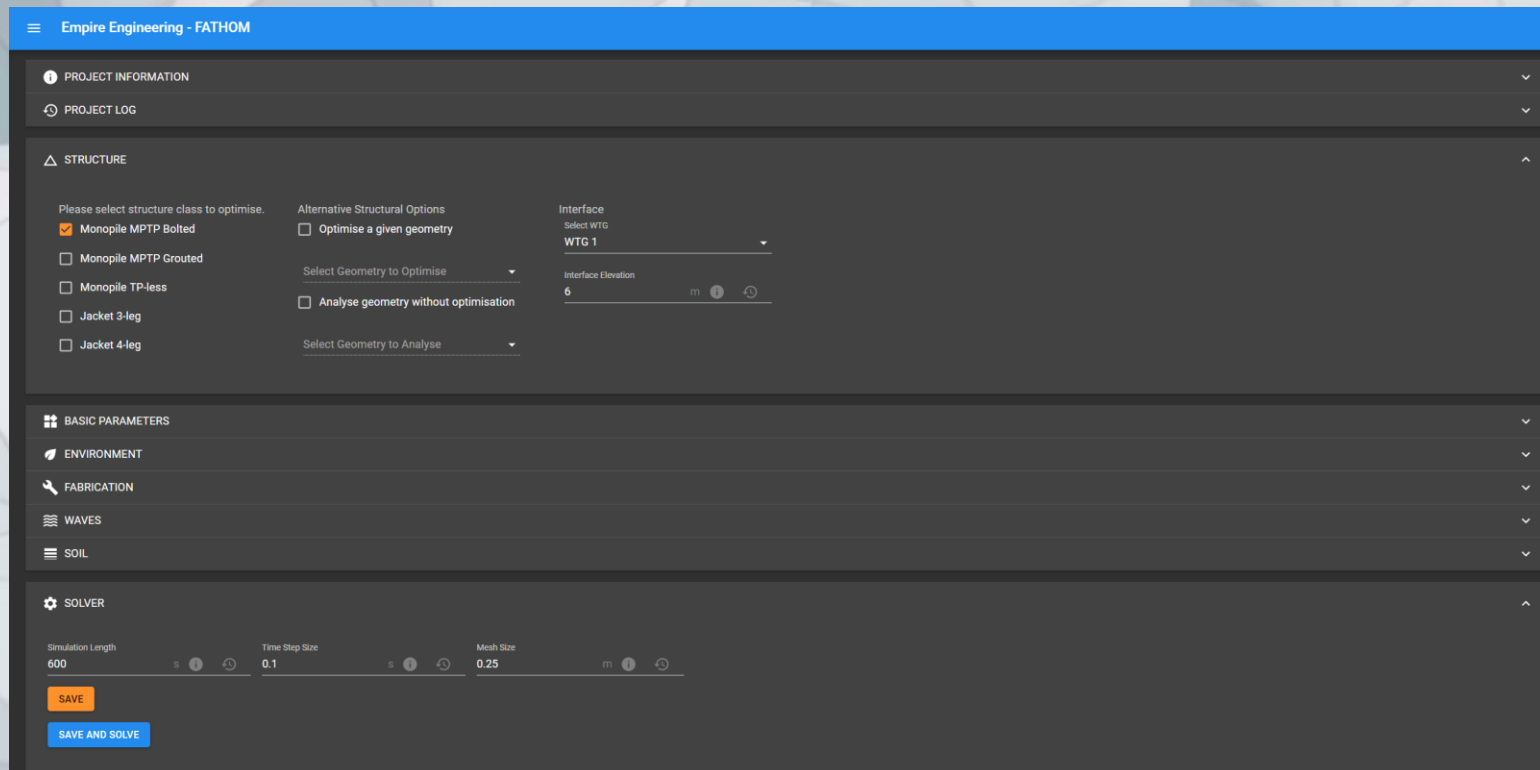
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- Fathom is Empire Engineering's internal foundations concept design and analysis tool.
- Users can enter a range of analysis parameters (met-ocean, geotechnical, turbine, etc) and Fathom will perform analyses using these parameters to design monopile, jacket and gravity base WTG foundations.
- Unlike current analysis packages, Fathom does not rely on the user entering a geometry and analysing it. Fathom will generate a structure based on the user inputs and iterate the design to an optimised structure.
- This eliminates the geometry creation, analysis, and redesign, and reanalysis cycles, allowing Fathom to create foundation designs faster and more cost effectively for clients.

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- Fathom uses a novel web based interface to which allows users to enter analysis parameters and view results.
- This allows users located anywhere in the world to access Fathom without the need to install software locally which typically requires IT authorisation.



The screenshot displays the FATHOM web interface for 'Empire Engineering - FATHOM'. The interface is organized into several sections:

- PROJECT INFORMATION** and **PROJECT LOG**: Collapsible sections at the top.
- STRUCTURE**: A section for selecting structure classes and options.
 - Please select structure class to optimise:** Includes checkboxes for Monopile MPTP Bolted (checked), Monopile MPTP Grouted, Monopile TP-less, Jacket 3-leg, and Jacket 4-leg.
 - Alternative Structural Options:** Includes checkboxes for 'Optimise a given geometry' and 'Analyse geometry without optimisation'.
 - Select Geometry to Optimise** and **Select Geometry to Analyse**: Dropdown menus.
 - Interface:** Includes a 'Select WTG' dropdown (set to WTG 1) and an 'Interface Elevation' input field (set to 6 m).
- BASIC PARAMETERS**, **ENVIRONMENT**, **FABRICATION**, **WAVES**, and **SOIL**: Collapsible sections.
- SOLVER**: A section for simulation parameters.
 - Simulation Length:** 600 s.
 - Time Step Size:** 0.1 s.
 - Mesh Size:** 0.25 m.
 - Buttons for **SAVE** and **SAVE AND SOLVE**.

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Live Fathom Demonstration