

SIMON HINDLEY MENG, AMRINA
MANAGING DIRECTOR, NAVAL ARCHITECT

University of Southampton, Master of Engineering (Hons) Ship Science 2007
Associate Member of Royal Institution of Naval Architects 2007

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Simon is the managing director of Solis Marine Engineering Ltd, the engineering division of Solis Marine group providing engineering, design and analysis services to the offshore, shipping and renewables industries. His work includes hydrostatic and hydrodynamic analysis, finite element analysis, engineering design, project management and planning. He has delivered many technically challenging projects with particular emphasis on integrating the offshore operational experience with design engineering.

Upon graduating with a Masters of Engineering in Ship Science (Naval Architecture) in 2007 from the University of Southampton, he then worked as a Naval Architect at BMT Defence Services for four years and has extensive knowledge of ship and submarine design and operation, stability analyses, structural analysis, hydrodynamics, and standardisation. In 2011 Simon joined James Fisher Marine Services, then operating as Mojo Maritime, a marine contractor in the offshore renewable industry. His experience with submerged structures, hydrodynamics and detailed design was utilised on numerous engineering projects ranging from research and development through to offshore construction, often in demanding sites subject to significant tidal and wave environments. This work included planning, mobilisation, transportation, lifting analyses, subsea cable analysis, mooring design, ballasting structures, computational fluid dynamics, finite element analysis, tank testing, dynamic positioning, energy converter design, ship design, ROV design, contribution to standards, logistics.

SOLIS MARINE ENGINEERING

- **JACK UP SALVAGE**
Dynamic analysis of jack up leg loads during salvage parbuckling operation.
- **TANKER MOORING ANALYSIS**
Analysis of mooring system following failure.
- **MINESTO DEEP GREEN KITE DEPLOYMENT**
OrcaFlex model for tidal kite launch and recovery, feedback that model closely resembled offshore trials data.
- **TRIMARAN RESISTANCE**
Calculation of resistance of novel high efficiency trimaran using CFD (Computational Fluid Dynamics), model is free to pitch and heave.
- **MAKAI OCEAN ENGINEERING**
Calculation of bollard pull capacity of anchor handling vessel for offshore tow in a seaway
- **MINESTO DEEP GREEN GRAVITY BASE**
OrcaFlex model for deployment of gravity base anchor (GBA), used to inform offshore operations, structure now safely installed.
- **TUGDOCK**
Naval architecture for novel dry dock design, focus on stability during all submergence cases, design wave loads.
- **RUDDER FAILURE**
Review of Finite Element Analysis of rudder impact.
- **SEMI SUBMERSIBLE MOORING ANALYSIS**
Mooring analysis following failure, detailed analysis of hydrodynamic and aerodynamic loading.
- **FENDERTEAM**
Mooring design for trans-shipment terminal in Finland, detailed bill of materials for procurement working closely with C-Waves.

JAMES FISHER MARINE SERVICES (EX. MOJO MARITIME)

- **SABELLA**
Subsea cable recovery analysis, cable route design, marine operations planning, sea-fastening, lifting equipment design review.

- **MEYGEN**
Front End Engineering Design (FEED), detailed design, installation and maintenance of an array of 4 tidal turbines in the Pentland Firth, including subsea cables, foundations, metocean data, vessel mobilisation, transportation, sea fastening design, marine operations planning and bespoke lifting equipment.
- **WAVEPOWER**
Mooring design for 4 wave energy converters, including deriving their hydrodynamic properties and estimating installation and operational costs to inform levelised cost of energy calculations.
- **PHILLIPS 66**
Fatigue analysis of mooring system for CALM buoy for crude oil discharge to refinery. Including development of hydrodynamic models for the buoy and range of tankers. Ultimately used to inform maintenance regimes for continued operation of the asset.
- **ROV DESIGN (HFROV)**
Technical lead for EU funded R&D project in partnership with IKM subsea, joint development of a work class ROV with greater hydrodynamic performance. Enabling it to work in greater tidal currents, or perform survey roles at a greater pace. This involved requirements capture, operational scenario development, hydrodynamic modelling for the ROV, and load development for the supporting systems (umbilical, tether management system, launch and recovery system).
- **WAVEHUB**
Subsea cable tail installation from hub to each of the four berths, including route design, installation analysis, vessel sea-fastening, mobilisation support and client documentation.
- **MODULAR TIDAL GENERATOR**
Collaborative research project, supporting University of Plymouth with numerical model of mooring system for integration with their computational fluid dynamics model, concept design of floating structure with shipyard to accommodate tidal turbine.
- **TIDAL ENERGY LIMITED**
Tidal turbine installation, including subsea cable repair works, sea-fastening and mobilisation support in Ramsey Sound, Wales.
- **BOSCH REXROTH**
Co-ordinated design workshop to enable rapid down-selection of wave energy converter foundation options for further development.
- **WELLO**
Deployment of wave energy converter with electrical grid export at WaveHub, including logistics, array topology, mooring design.
- **MITSUBISHI**

Provision of market intelligence, and operational insight of a range of jack up vessels.

- DONG ENERGY

Subsea cable fatigue analysis of free spans and provision of mitigating repair actions.

- KAWASAKI

Front end engineering design for a single prototype tidal turbine, including interfaces, subsea connections, cable, support structure, marine operations. This was considering through life costs to ensure the capital and operational expenditure could be optimised.

- CARBON TRUST

Offshore wind accelerator program, using bespoke software to determine bottlenecks in the construction of offshore windfarms.

- SHIP DESIGN (HF4)

Design of a novel DP (Dynamic Positioning) vessel from the initial concept, concept development, requirements capture, detailed design and analysis through to outline Plan Approval with DNV GL. This included hull form development, preliminary powering, seakeeping, payload estimates, ship yard engagement, DP simulations and tank testing.

- ALSTOM (Previously working as Rolls Royce TGL)

Design of innovative foundation and installation options for the commercial development of their tidal turbine.

- ATLANTIS RESOURCES CORPORATION

Design of a wet-mate subsea connector system for use in tidal energy sites.

- VOITH HYDRO

Design of systems to interface with tidal turbine, electrical connection, subsea intervention strategies and tools, transportation, marine operations planning. Supporting work from offshore construction vessels to multcats, some using temporary moorings and providing data acquisition with a novel floating platform to monitor the strong currents during construction.

- OWEL

Mooring design for a wave energy device for deployment at the WaveHub demonstration site. This R&D project involved developing a new numerical modelling technique to capture the unique device characteristics. Mooring loads and device motion were validated with tank testing to confirm the accuracy of the new method. The project was awarded with a position in the ANSYS Hall of Fame.

- MARINE CURRENT TURBINES

Development of innovative submerged moored tidal turbine concept SeagenU with a focus on reducing cost.

- BAUER

Stability analysis of BSD3000 sub sea drill for use in a tidal energy site with currents up to 9 knots using computational fluid dynamics. Umbilical analysis including VIV, vessel operational guidance during drilling operations.

- LE GAZ INTEGRAL
Design of innovative foundation and installation options for a prototype tidal turbine (Blu-Stream).

BMT DEFENCE SERVICES LTD

- SUBMARINE SUPPORT MANAGEMENT GROUP
Working with the UK MOD to support in-service submarines with a focus on structure, hydrodynamics, hydrostatics and abandonment.
- SUBMARINE REFIT
Submarine refit project in Devonport, focus on external structures.
- FUTURE SUBMARINE CONCEPT
Submarine concept design hydrostatic and hydrodynamic analysis, general arrangement and development of Monte-Carlo approach to lightship mass definition.
- MOD NAVAL AUTHORITY FOR HYDRODYNAMICS
Development of tools and methodology to reduce fleet-wide fuel consumption.
- NAVAL SHIP ASSURANCE SUPPORT SERVICE
Partnership between UK MOD, BMT and Lloyds Register for implementing naval classification.
- TECHNICAL ASSURANCE
Surface ship stability, inclines, watertight integrity survey, stability models.

EMPLOYMENT HISTORY

2018 to Present	Solis Marine Engineering Ltd Managing Director, Naval Architect
2017 to 2018	James Fisher Marine Services Technical Manager/Principal Naval Architect
2015 to 2017	James Fisher Marine Services Principal Naval Architect
2012 to 2015	Mojo Maritime

2011 to 2012	Senior Naval Architect Mojo Maritime Naval Architect
2007 to 2011	BMT Defence Services Ltd Naval Architect