

### SYAFIQAH BINTI SHAFIQ LEE, MENG NAVAL ARCHITECT

Newcastle University, Master of Engineering (Hons) Offshore Engineering 2016

Associate Member of Institution of Marine Engineering, Science & Technology 2019

[s.lee@solis-marine.com](mailto:s.lee@solis-marine.com)

Syafiqah is a Naval Architect at Solis Marine Engineering Ltd, the engineering division of Solis Marine Group, providing engineering, design and analysis services to the offshore, shipping and renewables industries.

Prior to this, Syafiqah was a Graduate Naval Architect at KBR Inc, where she worked on a range of projects including detailed design of offshore gas platforms in the Caspian Sea, a feasibility study of Singapore's LNG jetty, and developing the design of offshore renewable facilities. Throughout her role, she used numerous marine related commercial software packages and developed hydrostatic and hydrodynamic analysis skills in areas including moorings, motions and stability. Syafiqah also has experience as a Research Associate at Newcastle University where she worked on a project that investigated the effect of wind and tide on fuel consumption. As a researcher, Syafiqah worked on analyses and simulation of data using Minitab software as well as producing progress reports and presentations.

Syafiqah graduated from Newcastle University with an MEng in Offshore Engineering and prior to that degree she gained experience working onboard a container ship as an Engine Cadet carrying out various duties as a seafarer. Syafiqah also holds a Diploma in Marine Engineering from UniKL MIMET, Malaysia, where she has learned to use workshop tools and machines such as welding and lathes.

### NAVAL ARCHITECT, SOLIS MARINE ENGINEERING

- MORWIND

Performed a feasible study on comparing two different hull materials, steel and concrete, for offshore floating wind turbine. IEA Wind floating wind turbine designed by NREL was used in this study. OrcaFlex analyses were performed to understand the different in motions when wave is applied at different water depth for both hulls. This study helps to understand if concrete is a feasible hull material to use for floating wind turbine.

- TELFORD

Produced a literature review for lightweight jacket structures available in the market that can be install using Telford crane barges.

- ARMADA

Provide long term engineering support such as deck planning in 2D and 3D models, sea fastening calculation and check, and umbilical and ROV payloads. Deck arrangements were performed using AutoCAD, Rhino and Navisworks software to ensure sufficient clearance that meets safety regulations. Umbilical payloads were modelled for various operations scenarios and environmental conditions in OrcaFlex to determine the maximum tension that occurred and check it is within the limit.

- INNOVATE UK CLEAN MARINE

It's a feasibility study for converting an existing Diesel fuel vessel into a Hydrogen fuel vessel with a battery pack. Provide support in ensuring the conversion of the vessel meet the classification rules and regulations, vessel stability is within limits, and have sufficient and safe storage for hydrogen.

- SS RICHARD MONTGOMERY MAST REMOVAL- KML

Estimated the mass of the three masts on SS Richard Montgomery for cutting and removal. The estimation is calculated based on drawings and corrosion rate. Cutting these masts will reduce the weight and stress on the bulkhead which will reduce the risk of the mast collapsing through the degrading bulkhead and impacting the munitions contained in the hold beneath.

- ISLAND PRIDE-OCEAN INFINITY

Provide a complete detailed deck plan drawings and sea fastening calculations for containers and equipment mobilisation for the Island Pride vessel. Designed sea fastenings including deck strength assessments for all containers and equipment including walkways and access for stacked container structures. Performed sea fastening calculation in accordance with DNVGL-ST-N001.

- WITT

A WITT device converts six degrees of freedom movements to electricity and can be applied to any situations where motions are present. This task looks into optimising the Vortex Induced Vibration (VIV) to power a WITT device. OrcaFlex analyses were performed to predict the VIV occurrence at

given current flow speed where the model will be deployed using various variables to optimise VIV to power a WITT device.

- **STL**

Seakeeping analyses using OrcaFlex for a range of vessels where the RAO's were developed using OrcaWave. The vessels run through a range of sea states using three-hour JONSWAP spectra at varying headings. The results of the Six degrees of freedom are extracted and analysed to compared with the STLs Motion-compensated personnel-access system operating limits.

### GRADUATE NAVAL ARCHITECT, KBR INC

- **UMID 2 - DRILLING & QUARTERS PLATFORMS**

Detailed design of three platforms for gas production in the Caspian Sea where 2 will be installed using the launch method and 1 will be installed using the lifting method. Various analysis and studies conducted to ensure designed platforms are feasible for construction, installation and commissioning.

- **FEASIBILITY STUDY OF LNG JETTY IN SINGAPORE**

The aim of this study is to improve berthing capability of an existing LNG jetty. To able to cater the berthing of LNG carriers as big as 80,000 m<sup>3</sup> to as small as 1,500 m<sup>3</sup>. The study includes reviewing the impact and limitation of operations at the studied jetty, feasibility modifications operations, related costs, possible disruption to current operations, and mooring and berthing simulation.

- **DEVELOPING BARBOX DESIGN**

A new simple design initiative to cater to the future of the renewable industry. Developing an orthogonal shape floating or fixed structure design that can be used as a renewable facility such as HVDC or HVAC.

### RESEARCH ASSOCIATE, NEWCASTLE UNIVERSITY

- **INVESTIGATION INTO EFFECT OF WIND AND TIDE ON FUEL CONSUMPTION**

The aim of the research project was to produce a regression model predicting fuel consumption on ferries using the environmental conditions in West Scotland. The results would allow ship operators to have efficient ferries complying with the EU and IMO regulations for harmful gas emissions and greenhouse effect. The project was funded by the Engineering and Physical Sciences Research Council (EPSRC).

### TECHNICAL EXECUTIVE, FAST FLOW SDN BHD, MALAYSIA

- Fast Flow provides solutions for rainwater management in building projects across Asia Pacific. The company designs drainage systems for buildings, optimizing material use and achieving architectural and engineering requirements.

### ENVIRONMENTAL ASSISTANT ENGINEER, G ENERGY (M), SDN BHD, MALAYSIA

- G Energy is an energy consultancy offering a range of energy services ensuring that sustainable solutions are feasible and suitable to buildings' needs.

### ENGINE CADET, HUB SHIPPING SDN BHD, MALAYSIA

- Performing daily duty in the engine room to ensure smooth journey of the vessel to designated destination.

### EMPLOYMENT HISTORY

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|-----------------|--|
| 2021 to Present | Solis Marine Engineering Ltd<br>Naval Architect                    |
| 2019 to 2020    | KBR Inc.<br>Graduate Naval Architect                               |
| Jan – May 2019  | Newcastle University<br>Research Associate                         |
| Jan – July 2018 | Fast Flow SDN BHD, Malaysia<br>Technical Executive                 |
| Jan – Dec 2017  | G Energy (M) SDN BHD, Malaysia<br>Environmental Assistant Engineer |
| July 2013       | Hub Shipping SDN BHD, Malaysia<br>Engine Cadet                     |