

## RÉSUMÉ AND CURRICULUM VITAE

### PERSONAL DETAILS & QUALIFICATIONS

**Name:** Dan Bigwood  
**Position:** Engineering Consultant  
**Nationality:** British  
**Education:** MSc Offshore & Ocean Technology – Cranfield University

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### EMPLOYMENT RECORD

<b>2019 – Present</b>	<b><i>Argo Engineering Solutions Ltd</i></b> , Engineering Consultant
<b>2017 – 2019</b>	<b><i>Quantum Offshore Ltd</i></b> , Design Manager
<b>2016 – 2017</b>	<b><i>ISO Spaces Ltd</i></b> , Design Engineer
<b>2015 – 2016</b>	<b><i>Eliquo Hydrok</i></b> , Design Engineer
<b>2007 – 2015</b>	<b><i>BMT Nigel Gee Ltd</i></b> , Design Engineer
<b>2006 – 2007</b>	<b><i>Monitor Offshore Systems Ltd</i></b> , Graduate Engineer
<b>2004 – 2006</b>	<b><i>Collars (Freeland Yacht Spars Ltd)</i></b> , Machinist

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### RÉSUMÉ

I have worked in design, engineering & manufacturing since 2004, predominantly in the marine & offshore sectors. My specialisms are 3D modelling & Product Data Management (PDM), draughting and visualisation. I have extensive experience in all areas of the design process from front end concepts through to Design for Manufacture (DFM), detail CAD/CAM design, and Building Information Modelling (BIM).

I have always been focused on integrating newer technologies to improve productivity and make processes more efficient. This has involved 3D modelling using algorithms, data visualisation techniques and using a BIM based methodology. This has been driven by the need to coordinate large, multidisciplinary projects involving multiple subcontractor companies and extensive parts databases. In addition to working with engineering & fabrication I am routinely involved with producing visualisations for clients and subcontractors. This involves a blend of rendering 3D models and post processing images for communication, marketing & sales. I have worked on numerous project of varying sizes, below are some notable examples:-

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## **EXPERIENCE – A brief summary of some of the projects I have had a key role in.**

### **8.5m & 11m rib design**

I generated models, arrangements & fabrication drawings for 2 sister ribs to be used for near shore defence. These designs involved the development of structure, outfit, instrumentation & mechanical systems in accordance with the clients' requirements.

### **Air Cushioned Barges platform development**

As part of an ongoing series of projects, I have provided modelling support for the development of large air cushioned barge platforms for industrial applications. I have developed parametric models that enable the rapid generation of structural models, derived from the principal particulars of the vessel. This enables structural weight estimates to be generated quickly, with an increased confidence, as a part of the structural analysis.

### **Autonomous sensor gondola maintenance trolley**

I designed an adjustable trolley that enabled the operator to remove & perform routine maintenance on a sensor gondola fitted to the keel of its parent vessel. These gondolas house sensitive equipment but are large, heavy & expensive. A solution was developed that could support the weight of these units, while providing quick access & allow safe manoeuvring within the workshop. For this project I produced a complete parametric model, with fabrication drawings & Bill of Materials for purchasing.

### **Autonomous Underwater Vehicle (AUV) storage system**

I developed the design of a storage system that enabled the client to manoeuvre & vertically store their fleet of AUVs. AUVs house sensitive equipment but are large, heavy & expensive. A solution was developed that could support the weight of these units, while providing quick access & minimise the floor footprint in the workshop. For this project I produced a complete parametric model, with fabrication drawings & Bill of Materials for purchasing. I also provided concept images to facilitate understanding by all stakeholders.

### **Offshore Micro Gas Turbines for ATEX Explosive environments**

Design Engineer for the housing of Capstone C65 gas turbines for offshore use in potentially explosive environments. I provided the complete design package on this project: Initial concepts, layouts, 3D model, CNC files for laser cutting, detail design, manufacture drawings & sales renders. The designs had to comply to strict regulations, both HSE & offshore, for explosive atmospheres.

### **Wind Farm Vessel Fleet**

Design Engineer for the fleet of 18-24m wind farm support vessels designed by BMT Nigel Gee. The fleet currently includes 30 vessels across 8 designs that have been launched and proven in service. I modelled structural modules of these vessels & produced associated drawings, CNC files & parts lists. I also produced arrangements for on board systems, winches, shaft lines & dynamic fenders.

### **96m Motor Yacht**

Design Engineer on this superyacht constructed by Devonport Shipyards. I modelled large structural modules of the aluminium superstructure & produced associated drawings, CNC files & parts lists. I also provided on-site support to the shipyard during the build.

### **85m Motor Yacht**

Design Engineer on a superyacht constructed by Derecktor Shipyards and launched in 2010. I modelled mechanical systems & produced associated drawings, Piping & Instrumentation Diagrams (P&IDs) and fabrication models.

### **44m Catamaran Sailing Yacht**

Design Engineer for world's largest aluminium sailing catamaran yacht structure, launched in 2011 by Pendennis Superyachts. I provided on-site support for Pendennis during the final stages of the build where I produced 'As-built' models & drawings.

### **Modular Combined Sewer Overflow (CSO) Tank Assemblies**

Design Engineer on several turnkey CSO projects for various water boards. These are large stainless-steel tank structures complete with mechanical wastewater screens and automated water control mechanisms. For example, I designed a 10m stainless steel modular CSO unit which was fabricated 100% off site and then installed underground in Agamemnon Street, Glasgow. These offsite fabrications drastically reduce disruption, cost & installation time. I designed & modelled numerous tank assemblies and worked with on-site fabricators.

### **CNR Unmanned Power Buoy**

Graduate Engineer on the Canadian Natural Resources (CNR) Power Buoy built in Dundee. This was the design and build of a pioneering project – a steel buoy 10m diameter, 50m tall with 5 decks (4 below the sea surface). It contained six MTU diesel generators (and all associated systems) providing an unmanned, low cost solution to power subsea well pumps. The buoy was designed to operate in marginal North Sea oil fields tethered to the seabed in 150m water.

### **Yacht Spars**

Machinist making some of the worlds' largest wooden yacht spars including the Farlie Restorations refit of the 19m class *Mariquita*, and the 52ft Sparkman & Stephens yawl *Cometa*.

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## **OUT OF WORK INTERESTS**

My main interests are water sports, in particular freediving, paddleboarding & kayaking. I am an active member of a local freediving club & also an outdoor swimming group. I can also often be found walking the Cornish coast path.

In addition, when time allows, I tinker with illustration & practice Spanish, having studied both in evening classes for many years.

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