



## **Specialised Ship Design**

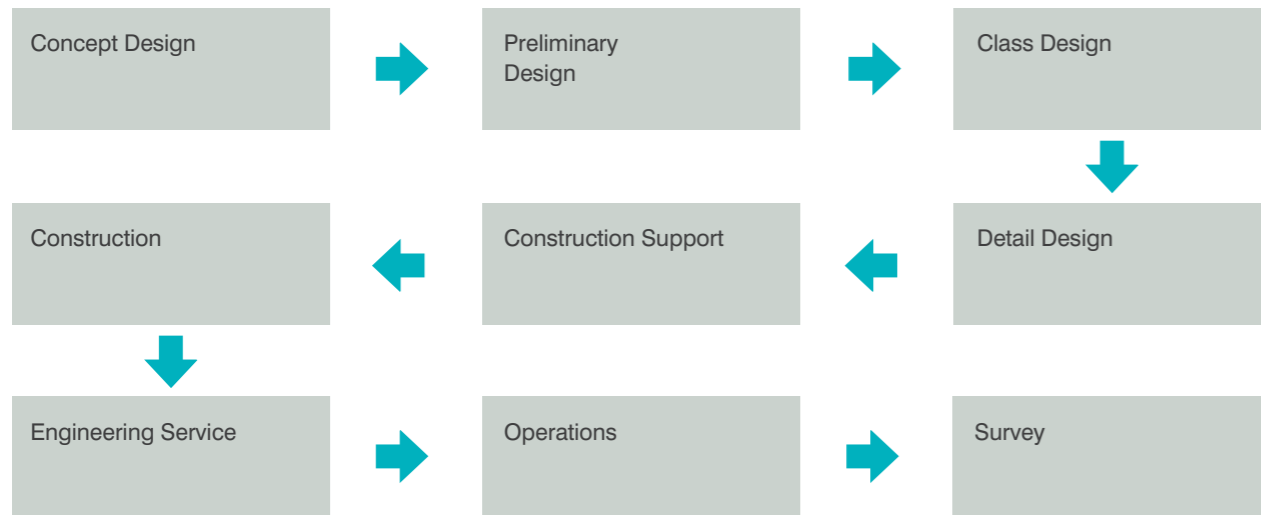
Services and solutions

# Where will our knowledge take you?

BMT produces complete vessel designs, and provides specialist design support such as, model testing, computer simulation, voyage simulation, material sciences, fatigue analyses, human factors engineering and cold-

climate technology. We offer design support from initial concept, through detailed design to production. BMT's track record comprises experience of a wide range of vessel designs, including many specialist

types ranging from high-speed passenger ferries, workboats, offshore windfarm support vessels to yachts, and specialist military vessels.



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## Offshore Utility Vessels

We provide specialist designs to support both the offshore Oil and Gas market and Offshore Renewables industries, with vessels ranging from 18m up to 80m. Our suite of wind farm support vessels and fast, fuel efficient monohull crew boats have confirmed our ability to deliver vessels that can outperform other vessels in each market.



### TULPAR

TULPAR is a Shallow Water Icebreaking Offshore Support Vessel designed by BMT. The vessel is especially designed and constructed to meet the requirements for standby support work, ice breaking, and barge towage in the shallow waters in the North Caspian Sea.

### Oil and Gas

BMT offers a portfolio of specialised vessel designs and associated consultancy services. We also provide bespoke vessel designs optimised to provide high performance solutions for challenging requirements.

### Penguin

BMT designed two 25-metre monohull Fast Crew Boats to be built at Penguin's Shipyard. Penguin is building the BV classed, 70-passenger Fast Crew Boats for ARCO Marine and Oilfield Services for deployment to Nigeria's offshore oil and gas industry.



### Windfarm

At BMT, we pride ourselves on tailoring our designs of Windfarm Support vessels to meet the specific requirements of each operator. BMT has developed a range of vessel designs to provide the next generation of offshore wind turbine support vessels.

Benefitting from extensive customer feedback and operational experience, BMT has developed a suite of Windfarm Support Vessel (WSV) designs from 18m to 26m in length, all with options for waterjet, fixed or controllable pitched propellers and a variety of main machinery options. The design has been developed from a well proven hull form which has been in service for a number of years in rough weather environments.

As an independent designer, BMT is able to supply vessel designs to any shipyard worldwide, working either directly for an operator or the shipyard as required. The company has established relationships with a number of shipyards, many of whom are currently building WSVs to BMT designs.



### Turbine Access System (TAS™)

Windfarm availability is dependent on the ability to access turbines for servicing. Turbine access systems need to be improved to enhance safety and to allow access in the weather conditions expected far offshore. In conjunction with Houlder Ltd, BMT has designed TAS™, a lightweight, heave compensated gangway system without the requirement for dynamic positioning systems. The system has the potential to significantly improve the safety of personnel transfer and will also allow transfer in higher wave conditions. The Carbon Trust has selected the system for further development funding as TAS2 under the Offshore Wind Accelerator – Access programme.



### XSS

The XSS (Extreme Semi-SWATH) offers significant improvements in motion levels over conventional platforms and is on target for delivery to Turbine Transfers later this year, in time to demonstrate its capabilities in the rougher autumn and winter weather. Its success will enable improved availability throughout the year, enabling operations and maintenance when they are most needed.

# Yachts

We provide a broad scope of services from early concept design and naval architecture through to detailed design for production as well as a wide range of consultancy services. BMT retains a long term core of experienced individuals who are committed to the company's desire to deliver high quality work with a practical, pragmatic emphasis and attention to detail.

## Hemisphere

The structural design and engineering of Hemisphere have pushed the boundaries of classification society rules. BMT worked closely with the vessel's classification society during the development of a new set of rules for the structural design of vessels of this type and size which subsequently became BV Yacht Rules.

BMT delivered a full Class Level Design, ultimately leading to provision of a comprehensive detailed production engineering package. Utilising ARL ShipConstructor for the development of the structure and pipe work systems, BMT provided full CNC cutting files and pipe spools as well as extensive engineering for the yacht's complex outfit items.

## Ruea

This new yacht has been created as an ideal craft for tropical cruising with extensive covered external areas, offering plenty of shade and the ability to cover large distances between refuelling stops. At her cruising speed of 12 knots she has a range of nearly 5,000 nautical miles, and can achieve 16 knots when required.

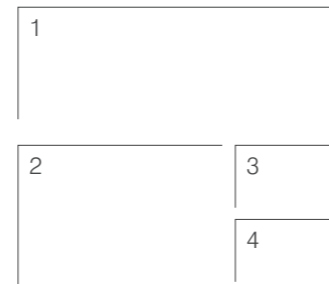
## Project Utopia

Project Utopia, an avant-garde vision of a future concept breaks the traditional naval architectural mould which the market has come to expect and offers a truly unique outlook, free from any conventional design constraints.

The design is based on a four legged platform employing the same principles of any small waterplane area design for minimum motions in even the most extreme sea conditions. Each leg supports a fully azimuthing thruster and with four such units, the design can redeploy between desired locations at slow speeds. A large central structure bisects the water surface acting as the conduit for the mooring system which is a critical element of the design, as well as housing a wet dock for access by tenders. In addition to tender access, the design features multiple helicopter pads.

## Project Oxygen

Based on a highly advanced 55m catamaran platform, Project Oxygen offers outstanding speed and seakeeping performance, combined with the luxury of a true superyacht. Equipped for all manner of pursuits, the yacht's primary role is as a dedicated dive-explorer vessel carrying not only extensive diving equipment but also her own submarine, launched from an innovative stern lift that doubles as an adjustable swim platform.



- 1: Hemisphere
- 2: Ruea
- 3: Project Utopia
- 4: Project Oxygen



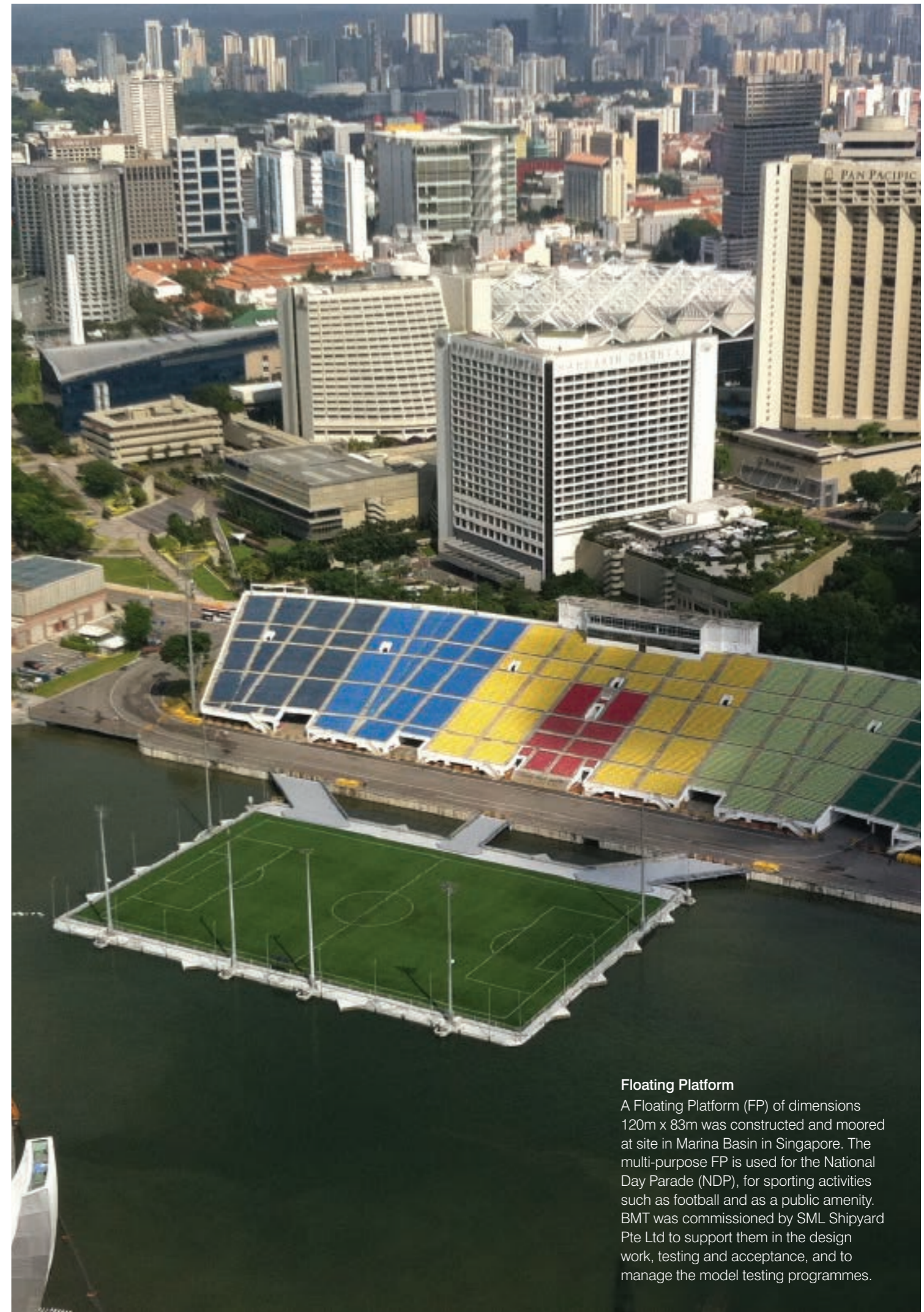
## Specialist Platforms and Barges

BMT provides technical, construction support and project management services to customers interested in developing special purpose platforms. Technical consultancy services include concept design, detailed design, production design and specialist studies. These platforms are typically used for infrastructure development applications such as storage facilities, performance stages, floating operational facilities in lagoons, etc. Some of these platforms are designed to be modified for ability to re-configure for required operations. In addition to traditional Naval Architectural services, an experienced team of Marine Civil Structural engineers support the projects for interface requirements with shore-side facilities.



### Tailings Pond Marine Services

BMT provides expert design of marine products for oil sands producers who require marine infrastructure such as mobile and fixed barges, booms, environmental platforms, service/support boats, floating walkways, pipelines, ramps and process infrastructure. We offer proactive management of vessel design, industry regulations, maintenance programmes and emergency response plans for oil sands marine infrastructure, as well as technical assurance services, naval architecture and engineering solutions.



### Floating Platform

A Floating Platform (FP) of dimensions 120m x 83m was constructed and moored at site in Marina Basin in Singapore. The multi-purpose FP is used for the National Day Parade (NDP), for sporting activities such as football and as a public amenity. BMT was commissioned by SML Shipyard Pte Ltd to support them in the design work, testing and acceptance, and to manage the model testing programmes.

## Ferries

BMT has developed a comprehensive range of both passengers only and passenger and car (ROPAX) ferry designs ranging from small water taxi vessels and commuter ferries to open water transit vessels and ocean going craft including both medium speed and high speed variants. The company has particular expertise in low wake wash environmentally friendly vessels and has recently completed a comprehensive study into the use of hybrid propulsion systems.

### BC Ferries

BMT has been extensively involved with the recent upgrades to six of the major vessels in the BC Ferries fleet. These upgrades included total strip out of all passenger and crew accommodations, refitting to latest comfort and fire protection standards. Modern technology life-saving systems were installed and significant mechanical modifications were undertaken. BMT is also involved with the overseas procurement of large new builds for BC Ferries.



### Ultra low wash

An ultra low wash fast ferry design was produced by BMT for Damen Shipyards in Holland, for application on riverine and estuarial services throughout Europe and world-wide. The vessel offers an extremely low wash, whilst maintaining speed in excess of 20 knots. Numerous vessels have since been built.



## Specialist Military

BMT offers a comprehensive portfolio of design services for advanced and specialised naval vessels. We combine innovation with our long experience of working for defence organisations to deliver practical, effective solutions. BMT designs include the revolutionary twin island design of the new Queen Elizabeth class aircraft carriers for the Royal Navy through to the UK and Norwegian navies latest support vessels based on the Aegir® family of replenishment vessels. Our highly qualified and multi-disciplined designers and engineers also supports the complete life-cycle of conventional and nuclear submarines from concept designs to their safe disposal.

### Joint Support Ship (JSS)

BMT has supported the Canadian JSS project office for several years with concept studies, preliminary designs, safety assessments, through-life support assessments and a contract design concept to allow a value for money comparison with the selected design. All these elements have made a strong contribution to this crucial programme for replacing the Royal Canadian Navy's ageing Auxiliary Oiler Replenishment ships.



### ONUK

BMT undertook the full detailed design and construction drawing of this as well as extensive hull optimisation to allow it to achieve a speed of 45 knots with excellent sea-keeping characteristics and extended range.



### Caimen

As amphibious platforms become increasingly vulnerable to coastal craft and shore batteries, the operating range of landing craft launch has increased to beyond the horizon, making speed important for maintaining tempo and reducing the threat of interdiction. BMT's family of Caimen® designs provide a step capability change thanks to an innovative tribow hull design and water jet propulsion system enabling operation at high speeds.

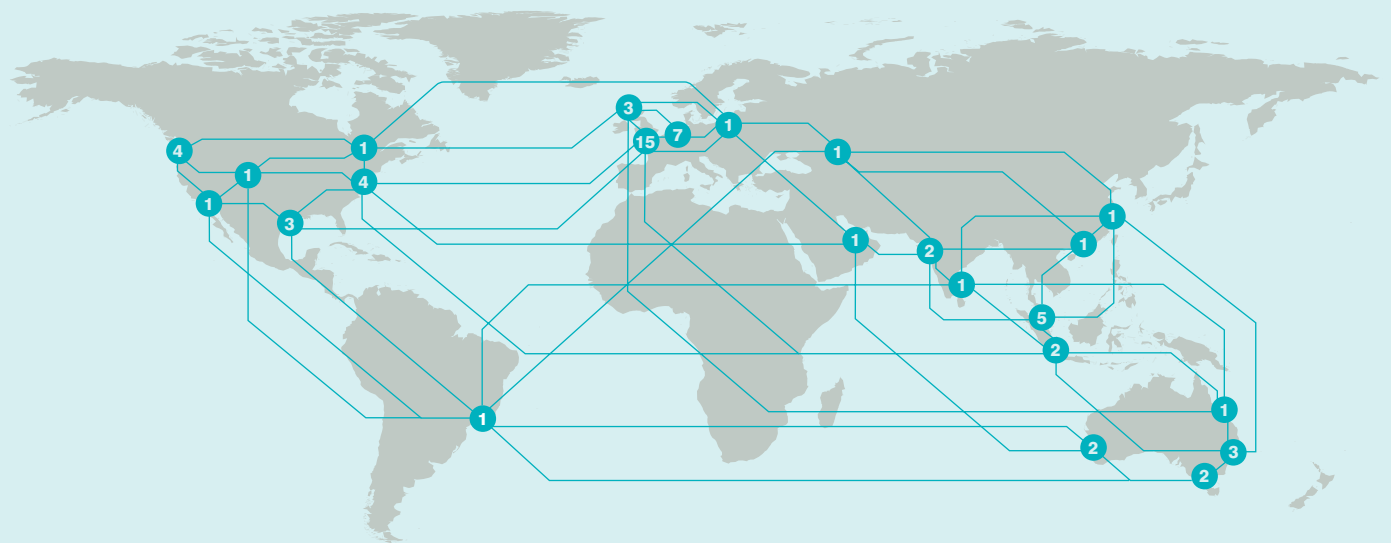


### MARS

BMT is working alongside Daewoo Shipbuilding and Marine Engineering (DSME) to deliver the Royal Navy's MARS (Military Afloat Reach and Sustainability) tanker, which will provide fuel, food and fresh water to naval vessels at sea. BMT is providing the design, safety assessment, and through-life support assessment of the new tanker.

**BMT is an international design, engineering and risk management consultancy, working principally in the energy and environment, transport and defence sectors.**

**With locations in all of the major markets we serve, ours is an active network that sees us sharing skills and knowledge, combining disciplines and building international teams to create integrated answers to the questions of our national and international customers.**



● Number of local offices.

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