

Industries

# Specialised ship design

Industry leaders in vessel design





**Andrew Holdcroft,**  
Managing Director,  
Specialised Ship Design  
andrew.holdcroft@bmtglobal.com

**An uncomplicated Team and Communication.**

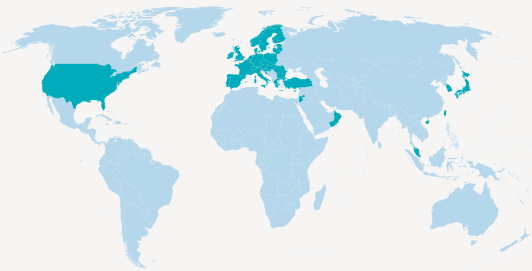
As a premier naval architecture and marine design consultancy, what makes BMT unique is the sheer diversity of our portfolio. No two projects are the same, and we apply our broad skills and knowledge to deliver innovative solutions within each of our designs. The whole team recognises the rewards that innovation and close teamwork brings. For me, it is this collaborative culture that has delivered sustained performance over the past four decades and continues to be a key strength as we look to the future.

Welcome  
Index

Our Current Projects	04
Our Philosophy	06
Leading The Way	08
BMT Knowledge	12
Complete Design Services	14
Innovative Ideas	30

# Our Current Projects

11 COUNTRIES WORLDWIDE



207

VESELS  
2019/2020I

2382m IN DESIGN

2300m IN BUILD

416m IN REFIT

5098m  
TOTAL LENGTH

6 FERRIES 351m

17 YAUGHTS 1451m

17 DEFENCE 3006m

173 OFFSHORE 290m

136m  
MOTOR YACHT



125m  
SAILING YACHT



117m  
MOTOR YACHT



111m  
EXPEDITION VESSEL



109m  
MOTOR YACHT



109m  
MOTOR YACHT



95m  
MOTOR YACHT



93m  
MOTOR YACHT



85m  
MOTOR YACHT



85m  
PASSENGER FERRY



80m  
SAILING YACHT



80m  
SEMI-SWATH MOTOR YACHT



74m  
MOTOR YACHT



70m  
LNG PASSENGER FERRY



69m  
MOTOR YACHT



66m  
MOTOR YACHT



58m  
MOTOR YACHT



45m  
SAILING YACHT



42m  
PASSENGER FERRY



40m  
HEAVY RESCUE VESSEL



40m  
PASSENGER FERRY



37m  
PATROL BOAT



36m  
SATV



35m  
FAST LANDING CRAFT



35m  
MARINE RESCUE VESSEL



33m<sup>H</sup> x 30m<sup>Dia</sup>  
YACHT ISLAND



27m  
WINDFARM SUPPORT VESSEL



27m  
WINDFARM SUPPORT VESSEL



27m  
TROOP CARRIER



27m  
WINDFARM SUPPORT VESSEL



26m  
WINDFARM SUPPORT VESSEL



26m  
PATROL INTERCEPTOR VESSEL



20m  
CREW TRANSFER VESSEL



19m  
HIGH SPEED PATROL CRAFT



12m  
FAST PATROL BOAT





# Our Philosophy



**Customer focussed**

Collabroative approach



**Industry-leading**

Technical Innovation



**Efficiency**

Across Every Aspect



**Environmentally Concious**

Sustainable Designn



Our multidiciplinary team at our office Southampton, UK

# Leading the way for over 35 years

## About us

BMT Specialised Ship Design, based in Southampton UK, have the skills and capabilities to offer world-class naval architecture and engineering services. Through drawing on a large library of proven pedigree hullforms, coupled with innovative developments, BMT are able to offer a low risk design to our customers.

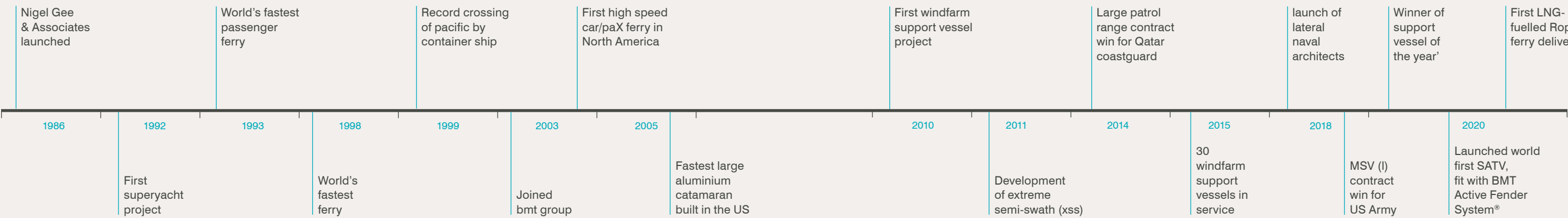
As well as our proven vessel designs, we share insight into performance requirements, design and build implications and through life operation to reduce capital and operational costs.

Great design is a collaborative process. We have a large team of designers and engineers able to respond quickly throughout the evolution of a project. We are focused on the outcomes; highlighting and ensuring solutions to any variation that could compromise the agreed specification.

Key to our success has been our reliability and track record to deliver challenging designs that meet performance and specification time and time again.



### Key milestones

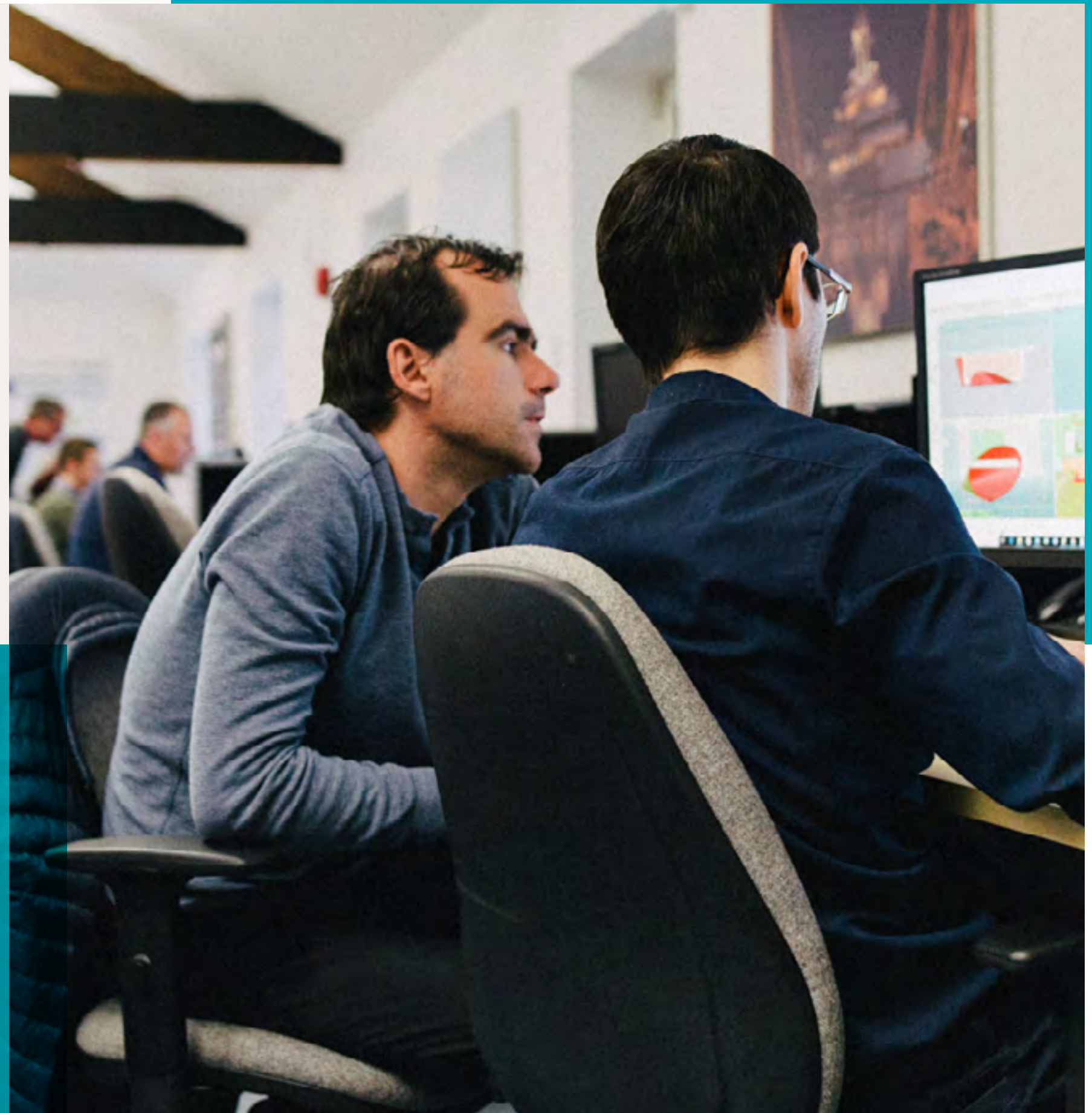




## A global business group Made up of outstanding people.

---

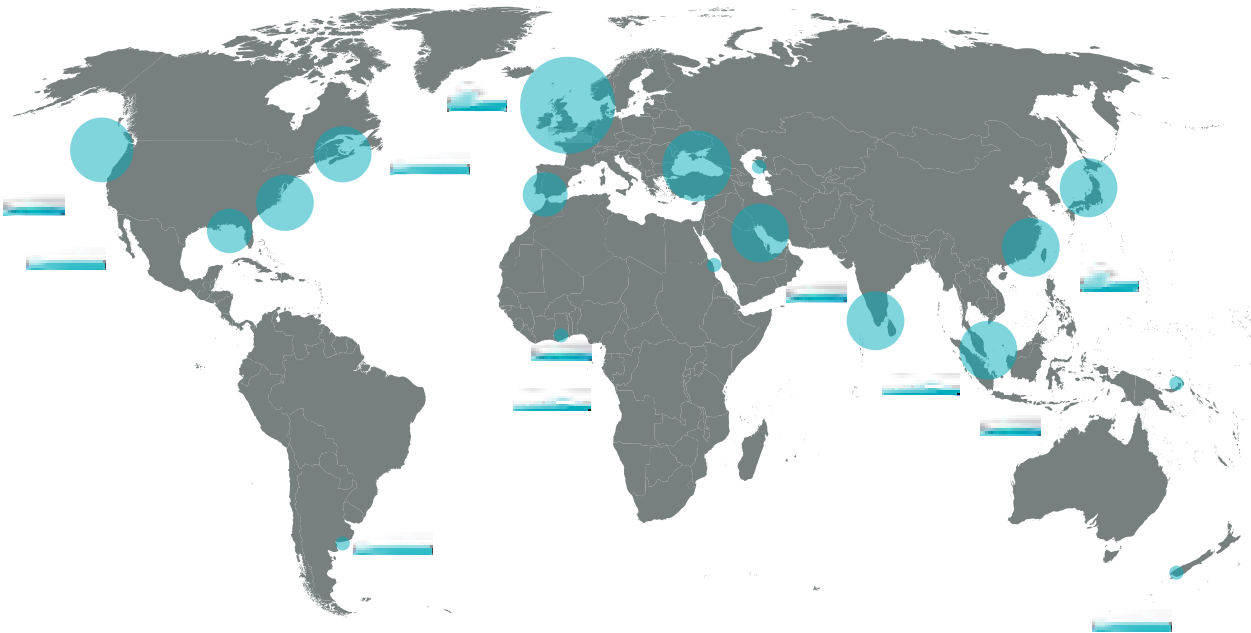
BMT applies engineering, science and technology to help customers develop, manage, maintain and improve their assets. Founded on a century's heritage in the marine environment, BMT is an independent organisation held in trust for its employees.



# BMT knowledge Applied globally

Over two million project hours  
Hundreds of proven designs  
Trusted by shipyards & operators worldwide  
A wealth of experience

BMT vessel designs in operation  
around the world.



## Our Markets

- Ferries
- Government & Security
- Offshore Energy
- Crew Boats
- Yachts
- Specialist



# Complete Design services

## A collaborative approach to project management.

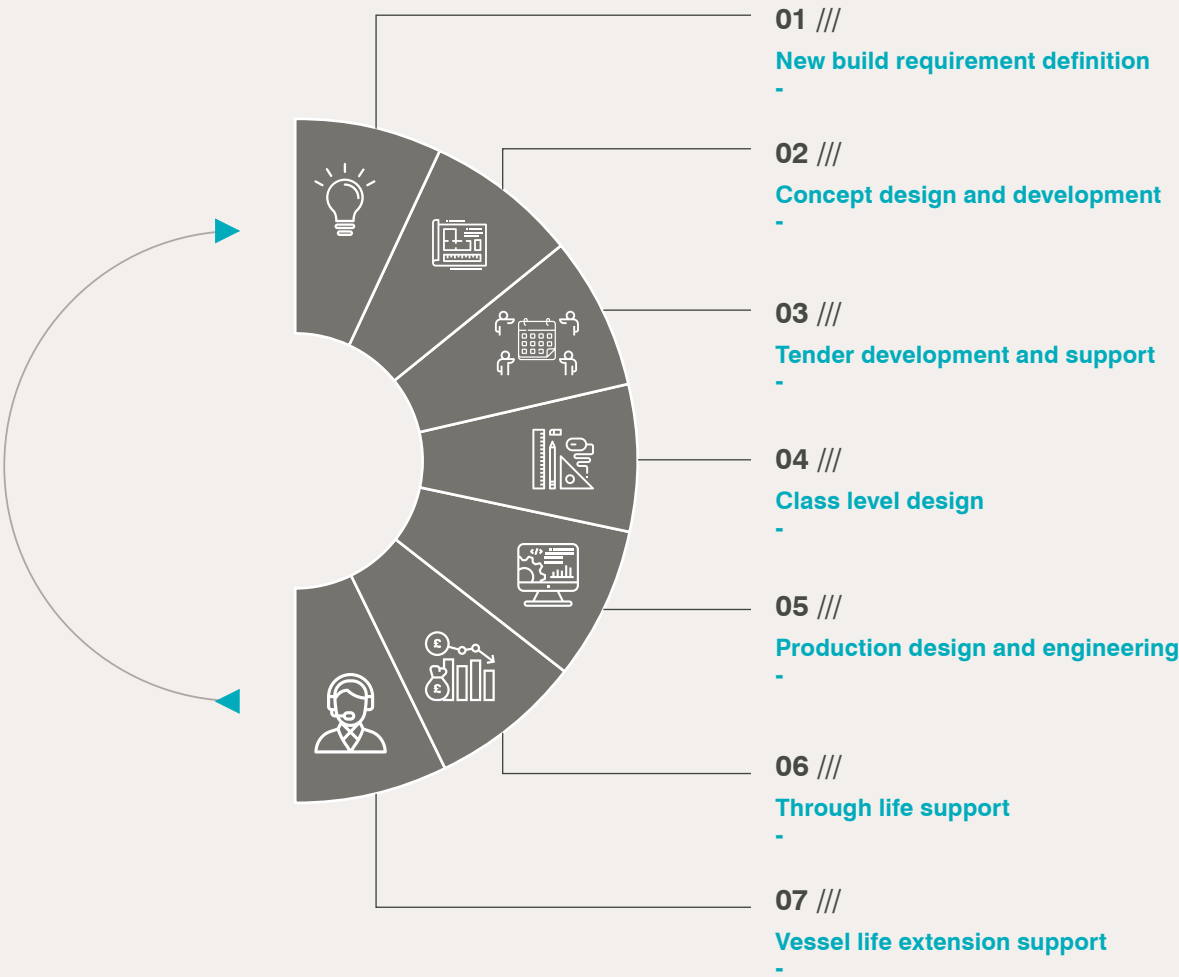
Using our blend of technical knowledge, project management skills and experience in tender development and procurement models we bring a whole enterprise perspective to any project increasing our clients understanding of cost and risk. This is at the heart of our ability to provide Owners, Operators and Shipyards confidence as they work through the development and selection of technical solutions and navigate the future.

Our independence from external shareholders or manufacturing interests sees our advice trusted by governments and industry alike. BMT is proud to have worked with many industry-leading shipyards around the world, meticulously working through comprehensive levels of detail. Collaborating with production teams and operational crew, our drive is to design for producibility, productivity and to ensure minimum rework through quality of the final delivery and through life support with the shipyard.

Operating across the complete project life cycle, our specialist team comprised of naval architects, engineers and project managers draw upon an extensive portfolio made up of diverse vessels and regulatory awareness to provide the best possible solutions. Our agility allows us to respond to complicating factors such as budget and approval delays.

Supporting our clients through the whole vessel life cycle from concept design and vessel procurement, through to maintaining and improving an existing fleet and vessel life extension and replacement programmes.

Through the wider BMT, we bring expertise from metocean forecasting to innovative hull design, infrastructure project management to big data management, fitting the best of commercial practice to our customers.





# + Our vessels







# Our vessels





# Our vessels

## Ferries

We have developed a comprehensive range of both passenger-only and passenger & 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 and high-speed variants.

We have an unmatched reputation for providing innovative designs to meet challenging technical requirements, with a detailed knowledge of all types of hull forms including a substantial portfolio of proven monohull and catamaran designs.

Our ferries are designed specifically for the route they serve. All aspects relevant to the vessel operation are considered in order to define an optimum solution. Beyond “best of class” hull forms, our designs aim at constantly improving operation practicalities and operational cost through practical engineering. Based on a foundation of

30 years of ferry design, supported by an extensive research and development program, BMT navigates flag regulation and class requirements to best leverage new technologies, alternative fuels, innovative propulsion and auxiliary systems to develop your next generation design.



**Sylvain Julien**  
**Ferries LEAD,**  
Specialised Ship Design  
sylvain.julien@bmtglobal.com

### Discover Our Designs



WATER TAXIS



RIVER RUNNERS



HIGH SPEED PASSENGER FERRIES



MEDIUM SPEED ROPAX FERRIES



HIGH SPEED ROPAX FERRIES

Medium Speed LNG ROPAX - 70m





# Our vessels

## Windfarm support

Our high performing, fuel-efficient vessel designs are in operation worldwide. It's this pedigree that solidifies BMT's reputation as a design leader in this field.

We're continually increasing the range of our proven WFSV designs with over 50 in operation, ranging from 18 metres to over 40 metres. These new, longer vessels meet the industry's

growing demand for capacity and prolonged offshore operations.

Advanced hull forms such as our XSS (eXtreme Semi-Swath) provide impressive capacity along with improved seakeeping and unrivalled transfer capability.

BMT designs offer: superior seakeeping; impressive savings in fuel consump-

tion for equivalent vessel payloads; Industry leading personnel transfer performance; high payload capacity.

Beyond the hull design, we have invested in several research and development programs to improve operability, most notably our patented Active Fender System ®.

These significantly help reduce the potential for impact damage to either the vessel or turbine structure and enhance the safety and outcome of the technician transfer. We also offer many different propulsion and powering packages for our vessels along with diesel electric/hybrid capabilities.



**James Lewis**  
**Offshore Energy Lead**  
Specialised Ship Design  
sylvain.julien@bmtglobal.com

### Discover Our Designs



WINDFARM SUPPORT VESSELS



SERVICE & ACCOMMODATION TRANSFER VESSELS



SERVICE OPERATION VESSELS



BMT ACTIVE FENDER SYSTEM®

Service Accommodation Transfer Vessel - 36m





# Our vessels

## Crew boats

BMT crew boat designs are recognised across the industry for their high efficiency, low fuel consumption and low emission characteristics. Our midsize 42m, 30 knots design recently received the Support Vessel of the Year Award for its innovations, speed and design specifications. This is a first for a midsize aluminium crew boat.

Based on 30 years of high speed craft development our crew boats benefit from the technology developed across the different sector of the marine industry we serve to deliver robust high speed vessel exhibiting exceptional seakeeping capabilities.

BMT navigates flag regulation and class requirements to best leverage new technologies, transer system alternative fuels, innovative propulsion and auxiliary system to develop your next generation design.

Our crew boats are developed to best meet the specific requirements of the charterer with a strong emphasis in lower capital cost and reducing through life operation cost. In the design process particular attention is paid to the facilitation of future maintenance activities.



**Sylvain Julien**  
**Ferries LEAD,**  
Specialised Ship Design  
sylvain.julien@bmtglobal.com

**Service Accommodation**  
**Transfer Vessel - 36m**

**Service Accommodation Transfer Vessel - 36m**



### Discover Our Designs



LOGISTIC SUPPORT VESSELS



FAST CREW BOATS



SECURITY AND ESCORT  
VESSELS



FAST SUPPORT INTERVENTION  
VESSELS



# Our vessels Patrol

With hundreds of vessels patrolling the seas around the world, our team of experts possess a vast experience in designing high-performance vessels for Government and Security organisations. BMT's range of vessels is broad, and as such our team can address most applications.

Our designs combine speed with excellent seakeeping and crew comfort. Award winning patrol vessels, high speed interceptors, and fast landing craft form the core of what we can offer. With speeds up to and beyond 50 knots, our proven designs for high-speed patrol boats and theatre support vessels range from 10 to 80m.

Our Caimen range of fast landing craft feature a ground-breaking tri-bow hull form which offers unprecedented performance whilst carrying payloads of up to 150 tons. Innovation is in our DNA; our team is always challenging existing technologies to push the envelope for users that operate in an evolving and onerous military environment.

Our strength is in our ability to use the vast amount of information and knowledge we have accumulated across our different markets, twinned with our team's technical expertise in order to push the boundaries and design vessels that suit the exact requirements of the end users.



**Martin Bissuel**  
**Government & Security LEAD,**  
Specialised Ship Design  
martin.bissuel@bmtglobal.com



HIGH SPEED  
INTERCEPTORS



PATROL BOATS



OFFSHORE  
PATROL VESSELS



FAST LANDING CRAFTS  
(CAIMEN SERIES)

Police Interceptor Vessel - 36m





# Our vessels

## Firefighting ssearch and rescue

Specialised Ship Design team have used proven in-service hull forms and the in-house expertise to develop state of the art vessels that comply with firefighting regulations, up to the highest Class requirement of FIFI 3.

From 20m to 55m, mono-hulls and catamarans, the vessels offer a broad range of capabilities including powerful firefighting systems with multiple remotely operated monitors, multiple casualties rescue, de-contamination facilities, and also the ability to use the vessel as a pump station for land-based fire-fighting operations.

The vessel range offers a broad range of capability options, such as rapid response, fighting large fires, evacuation capabilities and Chemical, Biological and Radiological (CBR) decontamination facilities. Each vessel offers different characteristics and there is one for every type of application.

Each primary design can be customised to any varying customer requirements, including engine and propulsion options. Our team offers packages from Class level design to full production, along with additional engineering, consultancy and design services to meet the most exacting of client specifications.



**Martin Bissuel**  
**Government & Security LEAD,**  
Specialised Ship Design  
martin.bissuel@bmtglobal.com

### Discover Our Designs



FAST RESPONSE  
FIRE BOATS



MONOHULL  
FIRE BOATS



CATAMARAN  
FIRE BOATS



MARINE RESCUE  
VESSELS



HEAVY RESCUE  
VESSELS

Marine Rescue Vessel - 35m





# Our vessels Yachts



Lateral Naval Architects is a specialist subsidiary of BMT, established to meet the unique demands of the superyacht industry. Lateral provides complete engineering expertise to the superyacht industry, from project conception to delivery, operation and refit. Our core competency is engineering, but our unique focus is on meaningful innovation to enable

superyachts that meet the demands of today's owners and those of the future. We collaborate and engage with customers in all segments of the industry ecosystem. Yacht projects span a diverse spectrum of both size and complexity. Lateral has delivered creative engineering and consultancy for some of the world's most advanced,

innovative and iconic yachts. We apply engineering in the search for answers, and innovation in the search for new and better answers. However, we also believe that meaningful innovation means not only looking for better solutions but challenging the very questions we are trying to answer.



**James Roy**  
**Managing Director,**  
Lateral Naval Architects  
jroy@lateral.engineering

**Bravo Eugenia - Life Platform - 109m**



## Discover Our Designs

Our projects cover a diverse spectrum but all share some common factors; they have demanding specifications requiring exceptional engineering and innovative solutions.

A taste of our work is given here, for a full reference list of our current and past projects please contact us.



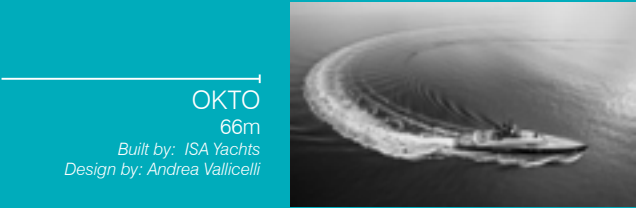
**AQUA**  
112m  
*Design by: SINOT Yacht  
Architecture & Design*



**BLACK PEARL**  
106m  
*Built by: Oceanco  
Design by: Nuvolari Lenard /  
Ken Freivokh Design*



**ESQUEL**  
105m  
*Design by: Bozca Design*



**OKTO**  
66m  
*Built by: ISA Yachts  
Design by: Andrea Vallicelli*

To find out more about Lateral visit:  
[www.lateral.engineering](http://www.lateral.engineering)



# Our vessels Specialist

We've designed a range of specialist vessels and work boats that surpass our customers' needs.

Our design portfolio includes a range of specialist craft that include (but are not limited to) fisheries research vessels, high deadweight-capacity small cargo vessels, articulated tug boats, hovercrafts and barges. BMT has also developed a patented Pentamaran hull form for high-speed RoPax and container vessels.

As independent designers, we can supply designs to any shipyard in the world, either working directly for an operator or as a sub-contractor to the shipyard. We have established relationships with many shipyards from around the world.



Sylvain Julien  
Ferries LEAD,  
Specialised Ship Design  
sylvain.julien@bmtglobal.com

## Previous Projects



CONTAINERSHIP



AIR CUSHIONED VEHICLE (ACV)



ARTICULATED TUG

High Performance Containership - 217m



Articulated Tug Barge  
(ATB) Tug Boat - 42m

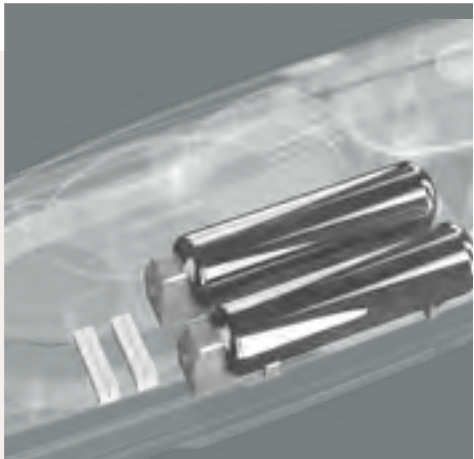


# Innovative ideas Real-world benefits



## Alternative Fuels Power of LNG

With an operating area within an UNESCO World Heritage Site (The Wadden Sea) the main focus for Rederij Doeksen led by its managing director Paul Melles was on reducing the environmental impact of the vessel operation. BMT supported this ambition and provided the technical solution to reduce NOx, CO2, and noise while increasing the efficiency of the design to achieve lower operational costs. The medium speed aluminium catamaran design, developed by BMT, was selected to achieve significant fuel consumption reduction compared to an equivalent monohull while allowing a seamless integration of the LNG systems.



## Zero Emissions Hydrogen design

Our team of experts across BMT/Lateral are constantly working as one to achieve a future target of zero emissions where possible. Project AQUA, 112m superyacht, is the latest concept which conveys the technical innovation we see at the forefront of achieving zero emissions within our industry. This project looks at the utilisation of a hydrogen/electric propulsion and energy architecture system, whilst also challenging the norms of conventional designs to reduce drag and achieve greater seakeeping ability. We are currently looking into the feasibility of these systems in a commercial space.



## High Fuel Efficiency The Pentamaran

BMT has carried out extensive research and development to come up with a novel pentamaran hull form design. This innovative technical platform has been produced to address opportunities such as military Unmanned Surface Vehicles, and a range of commercial applications. This unique hullform offers significant benefits such as high fuel efficiency and reduced drag, which in turn assists applications that require long range or high endurance.



## High Operability Breaking the mould

The pioneering design of the 36m Service, Accommodation and Transfer Vessel (SATV) makes this the first vessel of its kind anywhere in the world. This proven, advanced design offers greater operational versatility than a convention Crew Transfer Vessel, providing providing long term offshore accommodation while still being able to push up against the turbine to transfer technicians. This new concept and size of vessel is able to plug a gap in the market whereby a full size SOV would be unsuitable and too expensive, conversely it negates the need for WFSV's to transit daily to and from port – especially in sites further offshore. The design also features our enhanced Active Fender System ®.

# Insights

## Naval architecture

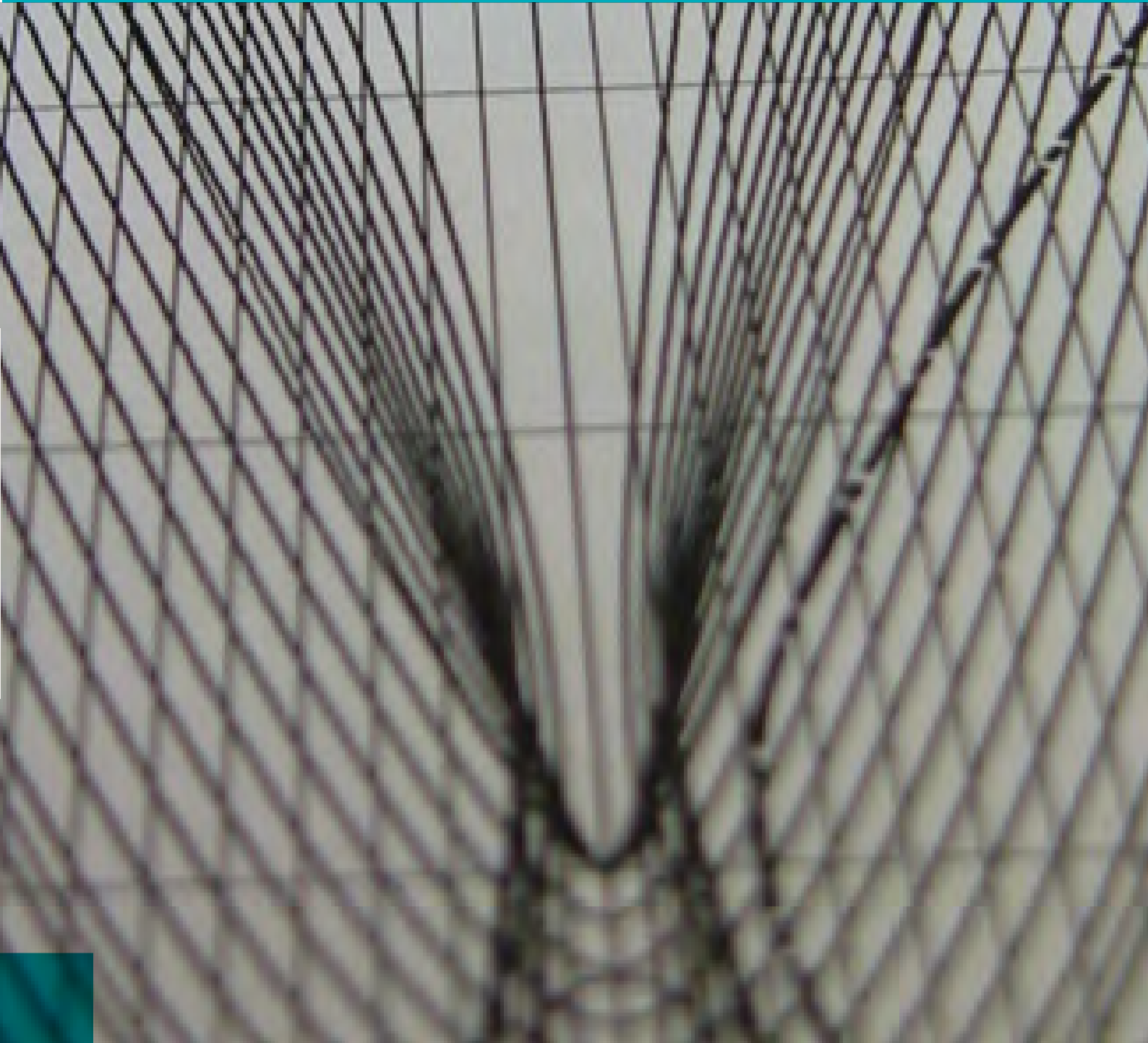
Whatever the challenge, we bring a wealth of experience to every naval architecture project along with the resources to create marine designs that are practical, efficient and effective. Our expertise is evident in our broad portfolio of in-service designs covering all hull types, speed regimes, propulsion systems and construction materials.

Our naval architecture services include:

- » Concept design development
- » Specification writing
- » Hull form design and development
- » Computational fluid dynamics
- » Performance predictions
- » Propulsion system design
- » Seakeeping and manoeuvring analysis
- » Model testing
- » Weight engineering & stability analysis
- » Loadline and other statutory calculations

This extensive experience helps us to deliver exceptional naval architecture at any stage of a project, from early concept and feasibility studies, contract and class level design to detailed production engineering, commissioning and refit. Working across all stages of the vessel lifecycle, we can advise on the correct level of scope and project structure necessary to deliver maximum added value, whilst minimising technical risk and engineering cost.

Our Naval Architects have an established reputation as leaders in the field of hull form development. They combine our breadth and depth of experience in the yacht, commercial and naval markets to deliver designs that are optimised for good seakeeping ability, low resistance, high propulsive efficiency and exceptional range. Our proven design portfolio extends far beyond conventional monohulls and includes specialist hull forms such as catamarans, SWATHs, hydrofoils and air-cushioned vessels.





# Insights

## Mechanical engineering

Thanks to our long experience of engineering specialist commercial and naval vessels, we can deliver excellent capabilities in mechanical and systems engineering. Critically we undertake whole-vessel engineering from concept to production design, enabling us to distinguish ourselves in the following areas:

### 01 - Simplicity

We believe that complex technology needn't be arranged in a complex way and we aim for simplicity of design wherever possible.

### 02 - Intergration

We integrate mechanical and system engineering concerns into all disciplines to ensure the most efficient use of space.

### 03 - Installation

We bring our extensive production engineering experience to bear from the outset, ensuring that our designs are focused on efficient production and installation.

### 04 - Operation

Our unparalleled knowledge of in-service operation ensures that our designs are easy to operate and service throughout their lives.



### Application

Hybrid solutions

BMT has a proud heritage, with ferries operating across the world. When combining this expertise with its proficiency in hybrid design we produce some of the most highly performing hybrid ferry designs.

The MS Brugenstock is one example where an alternative energy source, when combined with high efficiency hull forms and an holistic engineering approach, allows the vessel to compete on an increasing number of ferry routes traditionally served by diesel powered ferries.

With approximately 50% of the total travel time based on electric propulsion only, this is a great example of how zero emission can be achieved when operating closer to an urban centre. BMT developed the hull form to optimise the power requirement at the different operating speeds while enabling a solution that suits the sleek vessel styling. This work was in support to Shiptec who built the vessel and provided the hybrid propulsion system.

In addition to the green credentials, this vessel have been shown to provide a positive experience for passengers. The Eco-ferry glides in and out of dock silently and smoke free, completely under electric power. No longer will there be noise and diesel fumes at the dock as passengers embark and disembark.



# Insights

## Structural engineering

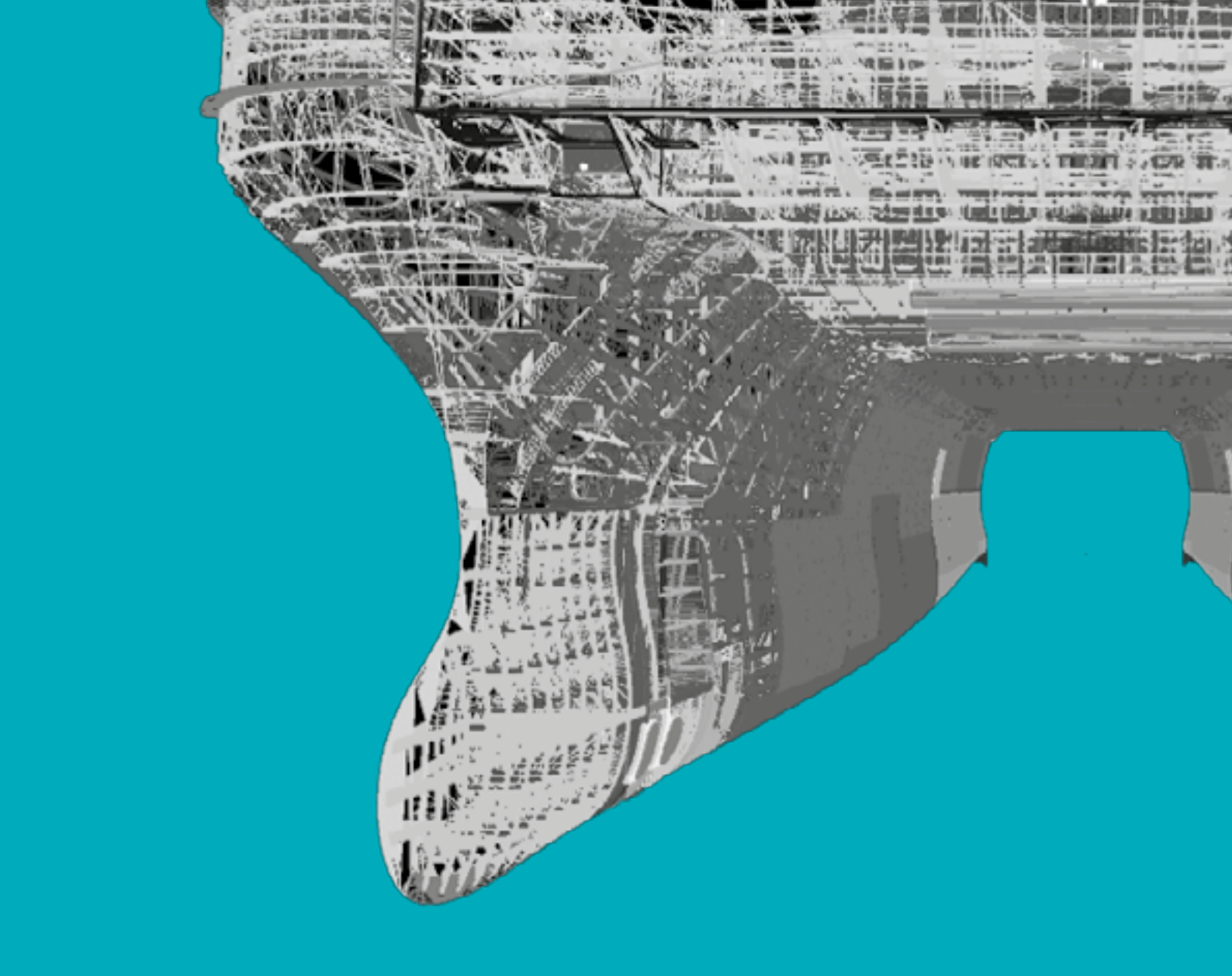
We specialise in the design of steel, aluminium and composite structures. With over 30 years’ experience of developing structural designs for specialised commercial vessels, our team uses its extensive knowledge to deliver practical solutions.

Our structural design services include:

- » Concept and feasibility studies
- » Advice on material specifications
- » Design to class and management of class approval
- » First principles calculations
- » Load prediction
- » Finite element analysis
- » Local and global structural optimisation
- » 3D solid and surface modelling
- » Mould and plant design
- » Laminate schedules
- » Production design drawings
- » Weight engineering and control
- » Engineering audits, consultancy and troubleshooting
- » Design to small craft codes
- » Refit and repair
- » On-site build and engineering support

Our structural design experience ranges from small composite production designs to large steel and aluminium vessels that are dominated by complex global loads. This experience, coupled with our proud heritage in the design of high-speed commercial and naval craft, sets us apart as leaders in the field of lightweight and robust structures.

Our history of working with all the major classification societies gives us huge depth of knowledge and a record of efficiently and effectively achieving full Class approvals. With each Class society subject to its own nuances, we have the insight to engage Class in educated debate at the appropriate points and ensure that designs are unencumbered by heavy, redundant or expensive features.



# Insights

## Outfit engineering

We offer a range of outfit engineering services from concept through to Class and production level.

Our outfit engineering team’s primary goal is to ensure that outfit items such as windows, anchors and ships or boats integrate seamlessly with the structural and mechanical engineering.

At the concept level, our work includes feasibility studies, sketches and design proposals to demonstrate to the builder and operator how the whole design meets requirements.

At the Class level, we develop all outfit drawings and documentation required by Class and Flag for approval.

At the production level, we work closely with the shipyard to develop the vessel’s detailed outfit design. This includes working with the shipyard’s nominated and preferred suppliers to ensure integration with other disciplines. We do this while maintaining practicality for production, operation and maintenance. Our work in this field is diverse and includes examples such as the detailed development of anchoring and mooring systems, concealment systems for lifeboats, life rafts, deck cranes and other ancillary equipment through to fine production detailing for hand rails, window bonding systems and machinery ventilation louvres.



Application  
BMT Active Fender System

Offshore Wind Energy delivers large amounts of clean, renewable energy. As momentum builds, the demand for this form of energy is expanding, along with the need for bigger, more complex offshore windfarms. The successful operation and maintenance of these highly valuable and complex assets is solely dependent on the vessels that provide the vital access to the turbines for technicians and supplies. As the size of the vessels increase and the environmental conditions become more challenging, the risk of physical damage to the turbines, injury to personnel and costly downtime has been increasing.

**BMT’s globalised and patented Active Fender System® (AFS®) provides WFSV/SATV-operators with a more successful rate of personnel transfer, and most importantly the safety and control of impact.**

Key benefits

- » Concept and feasibility studies
- » Advice on material specifications
- » Design to class and management of class approval
- » First principles calculations
- » Load prediction
- » Finite element analysis
- » Local and global structural optimisation
- » 3D solid and surface modelling





# Insights

## Concept & preliminary design

**We support operators and shipyards by developing customised vessel designs to meet specifications for speed, performance, range, seakeeping and efficiency.**

We work with our customers to develop concept and preliminary designs that meet all functional requirements. Our ability to tackle whole-vessel engineering from concept to detailed production design allows us to add significant value in the early stages of design development and ensure that the final design is practical and feasible without compromising the original intent.

Whenever concept designs are based on new or novel technology, advanced engineering or innovative naval architecture solutions, we can bring our extensive experience and solid results in the other marine markets to bear, allowing us to share ideas and technology in a collaborative way and foster innovation.

Our outstanding reputation in hull form design and development is founded on vessels that offer excellent seakeeping ability, low resistance and high propulsive efficiency. Additionally, our background in configuring conventional and high-tech propulsion systems coupled with our experience in integrating active stabilisation and dynamic positioning systems means that we can provide the highest levels of capability for even the most demanding owners.

**Our front-end design services include:**

- » Hull form design and development
- » Hydrodynamic model testing
- » Performance predictions
- » Weight assessments and stability analysis
- » Specification development
- » Concept design development
- » Propulsion, machinery and systems layout
- » Tender level designs and vessel specifications





# Insights

## Class level design

**By combining every engineering discipline under one roof, we’ve successfully delivered Class-approved designs for vessels from 9m to 220m.**

We’ve worked extensively with all the major Classification Societies and offer a profound knowledge of how to achieve full Class approvals as efficiently and effectively as possible. Where designs do not fit within existing regulatory frameworks, we work closely with Class and Flag to agree compliance based on a pragmatic design solution that meets equivalent levels of safety.

By combining this invaluable capability with our experience in pre-contract design, we can offer single-source engineering for development of all naval architecture, structural, mechanical and outfit factors to meet the most demanding rule requirements. Where appropriate, we integrate a high level of production-ready detailing into our Class level designs, thereby making it possible to progress quickly into production engineering and potentially saving the shipyard valuable time and cost.

**Our Class level design engineering services include:**

- » Class rule calculations
- » First principles structural calculations
- » Finite element structural analysis
- » Machinery and propulsion installation design
- » System design
- » Fire protection, detection and suppression
- » LSA requirements
- » Anchoring and mooring
- » Hydrostatics
- » Intact and damaged stability analysis
- » Tonnage and load line calculation
- » Operational limitations

Windfarm support vessel - 19m





# Insights

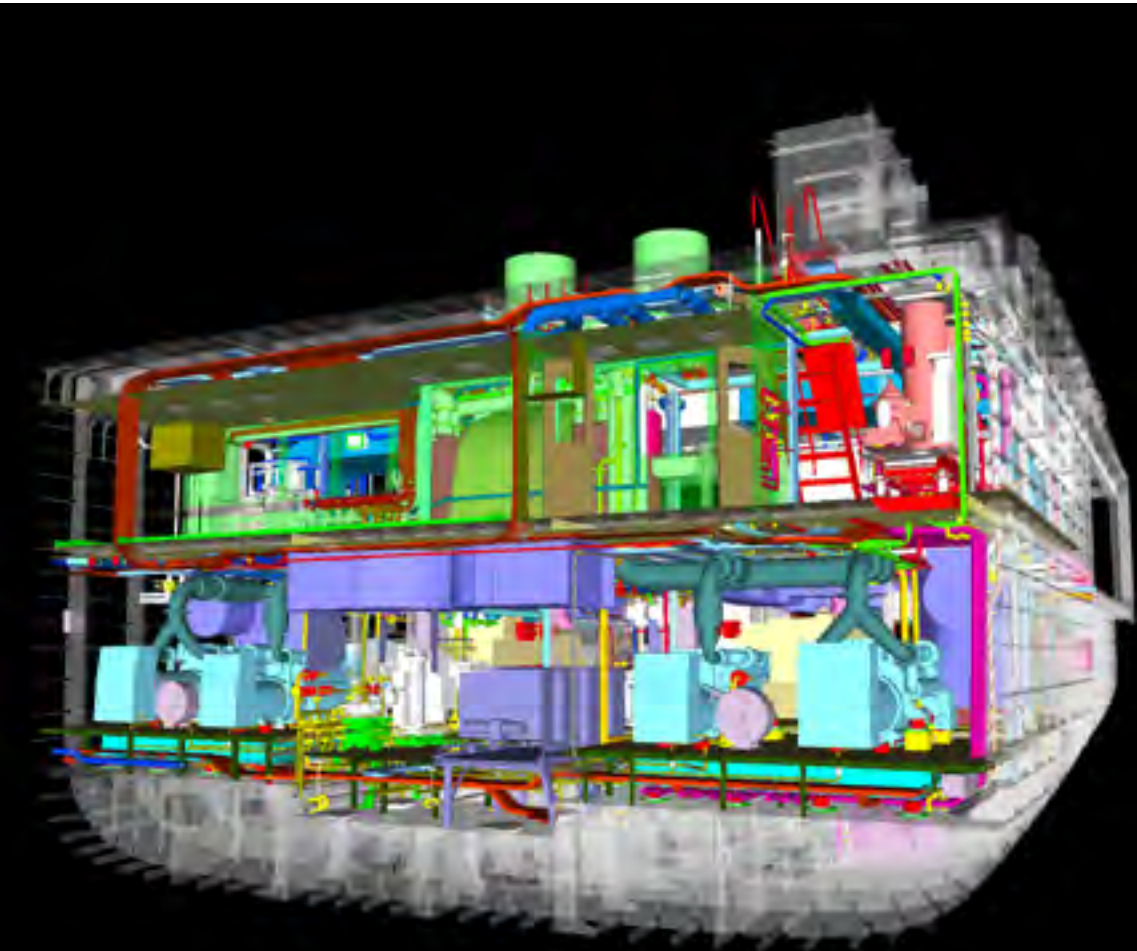
## Production design



We offer a comprehensive suite of production engineering services that use state-of-the-art production software and qualified, experienced operators to provide a comprehensive service for a wide range of vessels.

We have extensive experience in the design of steel, aluminium and advanced composite vessels, and a proven design pedigree for structures that are lightweight, robust, easy to construct and maintain, and fatigue-resistant thanks to our close attention to detail.

We collaborate closely with shipyards to ensure that the engineering details used are within the accepted practice of the yard and the capability of their equipment, whilst also making optimum use of the yard's production facilities.



**Our detailed production design services include:**

- » Class rule calculations
- » First principles structural calculations
- » Finite element structural analysis
- » Machinery and propulsion installation design
- » System design
- » Fire protection, detection and suppression
- » LSA requirements
- » Anchoring and mooring
- » Hydrostatics
- » Intact and damaged stability analysis
- » Tonnage and load line calculation
- » Operational limitations

By combining this invaluable capability with our experience in pre-contract design, Classification-level design and build support, we can offer single-source engineering responsibility for development of all naval architecture, structural, mechanical and outfit aspects of design, from concept to reality.



# Insights

## Consultancy services

**In addition to new build design and detailed engineering, we offer a wide range of consultancy services to help our customers achieve the optimum and most cost and operationally effective solution.**

These consultancy support services are fully tailored to meet your requirements and range from detailed forensic analysis of a problem to strategic procurement advice covering the full range of marine, naval engineering and naval architecture disciplines.

This capability is further supported by the additional skills from across BMT globally and coordinated via a single point of contact to ensure that we provide advice clearly and consistently.

Our strength lies in our dedication to the long-term support of our customers, from inception, build and trials to in-service support. What's more, our independence from any manufacturing or production issues guarantees that we can provide completely impartial advice to meet your requirements.

**Our consultancy services include:**

- » Owner's representative
- » Plan approval
- » Structural analysis and audits
- » Motion predictions and stabilisation studies
- » Machinery retro-fit feasibility studies
- » Performance predictions and model testing
- » Weight verification studies and monitoring
- » Proof of concept studies
- » Factory acceptance trials
- » Inclining experiments and stability books
- » Sea trials
- » Tender documentation and assessment







## **Specialised Ship Design**

Industry Leaders in Vessel Design

T: +44 (0)23 8022 6655

E: [ship-design@bmtglobal.com](mailto:ship-design@bmtglobal.com)

### **Follow us**



[/showcase/bmt-specialised-ship-design/](#)



[@BMTVesselDesign](#)



[www.bmt.org/youtube](http://www.bmt.org/youtube)



[www.bmt.org](http://www.bmt.org)