

Company Profile



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PROFILE

Background

McAlpine Marine Design, now trading as MMD Naval Architects, was established in Sydney in 1982 and was founded in response to a need for technically qualified naval architects specialising in the small and novel craft areas. MMD moved to Western Australia in 1986 and now has a diverse area of expertise, ranging from high speed light craft through to fishing vessels, tugs, dredges and floating industrial plants.

In 2018, MMD Naval Architects expanded into the eastern states opening a second office in Victoria. MMD also services the Northern Territory with a number of visits each year. Additionally, we are able to attend any other location Australia wide, and overseas, upon request.

Mission Statement

Set the standard for consulting Naval Architects by creating unprecedented value and opportunity for our customers and employees.

We achieve this through our four tenets of service;

1. Understanding the needs of our clients and employees.
2. Creating an environment that ensures we remain approachable and easy to deal with.
3. Keeping people informed.
4. Keeping our promises.

Values

MMD Naval Architects has a policy of providing designs and services which have the requisite quality to ensure customer satisfaction over the life of the design.

In order to achieve this, our core values are:

- Placing our clients first.
- Being honest and ethical.
- Always behaving with integrity.
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- Utilising our wide expertise and experience to its fullest potential.
- Protecting our reputation for excellence within the industry.
- Applying common sense and intellect to everything we do.
- Enjoying what we do.

As part of our commitment to quality we have been certified to ISO 9001 Quality Assurance since 1998.

Clients

MMD Naval Architects has clients ranging from pleasure craft owners to leading shipyards. Our clients include commercial fishermen, work boat operators, fast ferry operators, shipyards and floating/land based plant operators in the mining and heavy industrial sectors. We recognise and respect our client's knowledge and expertise in developing efficient working relationships. Our clients recognise and value that we provide only the highest quality solutions.

SKILLS AND CAPABILITIES

Design

MMD Naval Architects produces quality designs for anything ranging from a 40 foot luxury motor yacht through to a 56-metre dredge. We have expertise in designing for both new builds and vessels which require modification. MMD also regularly produces designs for custom deck machinery. We have full capabilities to carry out all Naval Architecture and Marine Engineering design in house utilising our staff team of Naval Architects. MMD carries out conceptual design both with traditional two-dimensional drawings, and also with three-dimensional CAD modelling. Three-dimensional modelling allows our clients to see a full visualisation of the design prior to committing to construction. Designs are produced to any stage of completion that the client requires, ranging from preliminary arrangement drawings for tender documents or proof of concept, through to complete detail construction packages, including both structural and engineering construction drawings, schematics, and plate nesting. Documentation is also supplied as required to specify the contractual requirements of the design.

Analysis

MMD has prepared load-out trim and stability analyses for a variety of projects and vessels. We have been able to satisfy the client's requirements at very short notice.

With a broad experience base in stability analysis, both intact and damaged stability investigations are undertaken on a regular basis. On several occasions we have been commissioned to investigate the cause of accidents resulting from insufficient stability. Vessels may be analysed with respect to many different criteria, but are commonly reviewed in accordance to IMO requirements, with respect to the prescriptions of the appropriate survey authority for the vessel.

MMD produces structural and stability analysis reports and documentation to satisfy both client requirements and those of classification societies.

Expert Advice

MMD Naval Architects provides assistance and expert advice and professional advice to the legal profession. MMD Naval Architects has also been employed as client representatives on numerous occasions to ensure client interests are adequately protected during construction and refit work. MMD has provided expert advice to the Western Australian Department for Minerals and Petroleum Resources Taskforce on Risk Management of Floating Plant.

Marine Surveyors

Since July 1, 2013 the Australian Maritime Safety Authority (AMSA) have taken over administration of all domestic commercial vessels and MMD Naval Architects is accredited to undertake marine survey, plan and stability approval and design under AMSA's authority.

Long Term Ongoing Clients

MMD Naval Architects has a number of long term ongoing clients who continue to use our services whenever they need professional design assistance. These clients include Mackenzie Marine and Towage, Serco (previously Defence Maritime Services), SBF Shipbuilders, Structural Marine, Pearl Marine Engineering Darwin, Harbour Services Australia, TAMS, AST Oceanics (formerly Gardline Australia), MG Kailis, Westmore Seafoods, WA Seafoods, Ocean Wild Tuna, JFK Engineering, Tronox (formerly Tiwest), Toll, Global Hire, Strategic Marine, Evolution Commercial, Broadspectrum, Van Oord, Boskalis, PTTEP, Jadestone, Cristal Mining, Sea Harvest Fishing and Paspaley Pearls. The services provided to these clients vary from simple engineering analysis right through to complete vessel design.

PROJECTS

ACV *Thaiyak* (replacement for Ashmore Guardian)

MMD completed the design for the replacement vessel Ashmore Guardian, ACV *Thaiyak* for Australian Customs and Border Protection in 2013. The vessel is a 40m on station vessel with an endurance of 120 days and 2750 nm. The vessel is constructed in steel with an aluminium superstructure. The vessel was built in Vietnam by Strategic Marine and was launched in March 2014. The vessel is stationed at Ashmore Reef off north western Australia.



Principal Particulars:

LOA: 40.00m

Beam: 11.50m

Draft (loaded): 2.45m

Displacement: 640 tonnes

Cruise speed: 12 knots

15 & 15.5 Metre Workboats

These six vessels were designed by MMD and built in steel by Structural Marine in 2003 and 2007 for Defence Maritime Services (now Serco) and in 2010 for Mackenzie Marine and Towage. They have a free running speed in excess of 11 knots and a bollard pull of 11.5 tonnes. The Serco vessels provide ship movement services to the Royal Australian Navy in Perth, Darwin and Sydney. We have also completed preliminary design for 12 metre, 10 metre and 20 metre versions.



Principal Particulars:

LOA: 15.77m

Beam: 5.75m

Draft: 1.93m

Bollard pull: 12 tonnes approx.

Cruise speed: 11 knots

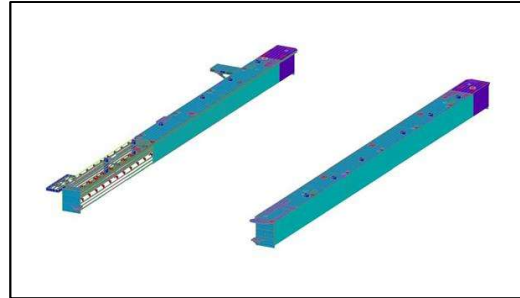
Ferry Pontoon

MMD completed the design of a new pontoon for the ferry terminal at Cullen Bay in Darwin for the Northern Territory Government in 2013. The pontoon is 61 metres long, 6.1 metres wide and is built in marine grade aluminium. It is also designed for cyclonic conditions and has a service life of 30 years.



AMC Floating Dock

Late in 2007 and into 2008, MMD Naval Architects was engaged to provide all the detailing and parts takeoff for the upper sections of the floating dock being constructed for the AMC facility at Henderson WA. The upper sections were drawn in 3D, enabling all the parts to be NC cut.



24 Metre x 58 Tonne Bollard Pull Tugs

Two of these tugs were built by Structural marine in 2003. MMD Naval Architects provided all the drawings and NC Cutting files for these vessels. These vessels are working in Gove, NT. They achieved a free running speed of 12.7 knots forward, 12.3 knots in reverse and 5.7 knots sideways!



Offshore Industry Line Boat

A 10-metre workhorse was designed to provide a high degree of flexibility in operation for a lightweight, heavy duty workboat. The vessel is arranged to be single point lifted off the deck of an FPSO and provide line handling services. Several of these vessels have been built by Structural Marine and are now in service. These are highly reliable, rugged vessels, which thrive in the harsh offshore environment.



Swissco Swan Aluminium Crew Boat

The lines and arrangement of this 28 metre, 22 knot crew boat were penned by SBF Shipbuilders. MMD undertook the complete structural design and stability analysis for this vessel. MMD has a long history of working closely with SBF to ensure successful operation of new designs. *Swissco Swan* is now operating successfully out of Singapore. We have designed scores of other crew boats, fast ferries and work boats for SBF Shipbuilders over the past 20 years.



Offshore drafting and engineering services

MMD has appropriately qualified personnel to attend offshore oil and gas facilities and currently carries out services including drafting, structural engineering, mechanical engineering design, lashing plans, loadout design and stability assessment to the offshore industry.



***Territory Westmore* Trawler Major refit**

MMD was commissioned to undertake the major refit work required to upgrade *Territory Westmore* trawler. The project involved minor structural modifications to the vessel, removal and replacement of all processing gear including the supporting decks, redesign of trunking and trawl booms, design of a new net winch and upgrade the vessel's stability.



12m Crane Work Boat (*Sunny*)

This vessel was designed by MMD and was built in steel by Robinson's Welding for In-Situ Construction and Maintenance. The vessel is twin engined with steerable nozzle propulsion equipped with a deck crane and deck winch. The vessel is designed for wharf construction and maintenance. This vessel is now operating in the Northern Territory by Bhagwan Marine.



***Duyfken* - 20th Century Naval Architecture**

Following our successful involvement with the Endeavour Foundation, we again provided all 20th Century Naval Architectural services required to allow *Duyfken* to operate carrying passenger, meeting current survey requirements. Great care was taken to ensure that all modern outfit and engineering was located discretely so as not to detract from historic feel of the vessel. MMD also provided the necessary 20th Century interface expertise for *James Craig*.



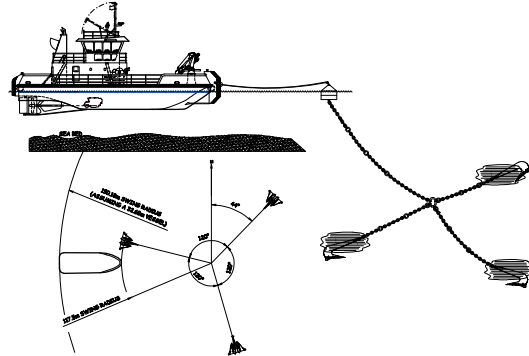
A-Frames and Lifting Equipment

MMD have been commissioned to design a number of A-frames for various vessels. The A-frame shown is of steel construction with a safe working load of 10 tonnes. We have designed A-frames in aluminium as well as steel and with varying capacities and applications. We have also designed, certified and assessed various lifting equipment such as lifting beams, spreader beams, container lifting frames and test rigs.



Storm and Cyclone Mooring Design

In response to a number of enquiries from vessel owners and operators, MMD Naval Architects committed considerable resources into researching and developing mathematical models for the design of cyclone moorings. To date MMD Naval Architects has designed and/or assessed many moorings for various applications. Moorings have been approved by both local port authorities and insurance companies.



Tronox Feed Prep Module Second Skin

During 2007 MMD Naval Architects developed a concept, provided all the naval architectural services and supervised the installation of a steel second skin to extend the working life of a major piece of floating mining plant. This project involved submerging the second skin, moving it under the existing floating plant and then raising it to encapsulate the existing pontoon. MMD continues to provide naval architectural consulting to Tronox on an ongoing basis.



Fendercare/Van Oord Darwin Moorings

MMD has recently completed the remedial engineering consultancy for 6 cyclone moorings for Fendercare's client Van Oord. The moorings were for a range of vessels from 25 m to 73 m. MMD also attended on site for the installation and testing of the moorings.



Pelican Dredge Conversion

MMD was engaged by Tronox to assist with a dredge conversion aimed at increasing the throughput of its Cooljarloo mineral sands mine. The project entailed coupling an existing bucket wheel dredge to a spud barge to increase its capacity and dredging depth. MMD carried out all structural and stability work including, but not limited to, A-frame and ladder modifications & analysis, longitudinal strength analysis, hull structural design, 3D modelling and all stability analysis.



Gorgon & Inpex Gas Projects

MMD has supplied naval architectural and engineering services to a number of companies involved with the Gorgon & Inpex projects. Our services included, but were not limited to, pontoon and vessel design and stability, mooring plans and equipment design, lifting and transportation studies and lashing plans.



ACV Ashmore Guardian nee Roper K

Due to our long relationship with Kailis Seafoods and our detailed knowledge of their fleet, we were engaged by the new owners of this vessel to carry out the design and stability work for the conversion refit of *Roper K*. The project involved converting the vessel from a fisheries support vessel to Australian Customs Base Vessel for Ashmore Reef, located off the north western coast of Australia. This conversion was completed in March 2008.



Excavator Barge

MMD supplied naval architectural and engineering services to a major marine contractor for the conversion of the Fuel Lighter *FT3* into an excavator barge. This project involved the design and analysis of the excavator base, the spud installation and lift mechanisms in addition to stability and station keeping analysis.



Heavy Lift Analysis

MMD has carried out, on a number of occasions, analysis of heavy lifts and design of lifting equipment on behalf of Global Hire. We have also provided professional engineer certification to Global Hire of their lifting appliances including spreader bars, lifting beams, snatch blocks and stools.



KEY PERSONNEL

Sean Cribb

Naval Architect, Director
BEng (Nav. Arch.) | MIEAust CPEng | MRINA CEng | AMSNAME | AMSA Surveyor

Sean has been with MMD since 2006, in 2013 he became a director. Sean completed his Naval Architecture degree at the University of New South Wales in 2004. After university, he worked in the defence industry specialising in finite element analysis and stability before joining MMD.

Sean has extensive experience in naval architecture and also general engineering, quality management and project management.

He has been appointed as an accredited Ship Designer and a Registered Professional Engineer in Queensland and an AMSA Accredited Surveyor.

Shaun Ritson

Naval Architect, Director
BEng (Nav. Arch.) | MIEAust CPEng | MRINA CEng | AMSA Surveyor

Shaun completed his Naval Architecture degree at the Australian Maritime College in 1994 and started with MMD in 1995. He became a director in 2007 and continued with the company through until 2011. In 2017 Shaun re-joined MMD and has taken responsibility for establishing and managing the Melbourne branch of the business. Shaun has extensive experience in vessel design with a strong background in structural and stability calculations, report preparation and project management.

He has been appointed as a Registered Professional Engineer in Queensland and an AMSA Accredited Surveyor.

Hamish Stevens

Naval Architect
BEng (Nav. Arch.) | AMRINA | AMSA Surveyor

Hamish has been with MMD since 2013, after graduating from the Australian Maritime College (University of Tasmania) in 2011. Prior to graduating Hamish worked at a ship chandlery and for SBF Shipbuilders.

Hamish is experienced in structural design and analysis of aluminium, steel, FRP and polyethylene, major vessel modifications and refits, machinery and systems design and a wide range of other aspects of naval architecture and engineering. Hamish's experience has been provided to offshore oil and gas, often travelling to remote rigs and locations.

Since 2015 Hamish has been an AMSA Accredited surveyor.

James Coleiro

Naval Architect
BEng (Nav. Arch.) | AMRINA

James joined MMD in 2018 after graduating from the Australian Maritime College (University of Tasmania) in December 2017. Prior to graduating James worked at OMC International where he performed vessel motion analyses and channel design.

James has since been involved and gained experience in mooring design, stability analysis and vessel modifications, as well as a wide range of other aspects of naval architecture and engineering. As of 2018, James has taken over management of the company's ISO 9001 certified quality management system.

Kalian Barnes

Naval Architect
BEng (Nav. Arch.) | AMRINA

Kalian completed his Naval Architecture degree at the Australian Maritime College (University of Tasmania) in 2017, with a year of study completed as an exchange student at Memorial University of Newfoundland, in Canada. He began with MMD in the late stages of 2018 after working at Pearl Marine Engineering in Darwin and King Bros Marine in Batemans Bay.

Kalian is now based at the Melbourne office, after 6 months in the Perth office, and has been applying his practical knowledge to vessel design and structural analysis as well as a wide range of other naval architecture and general engineering.