International

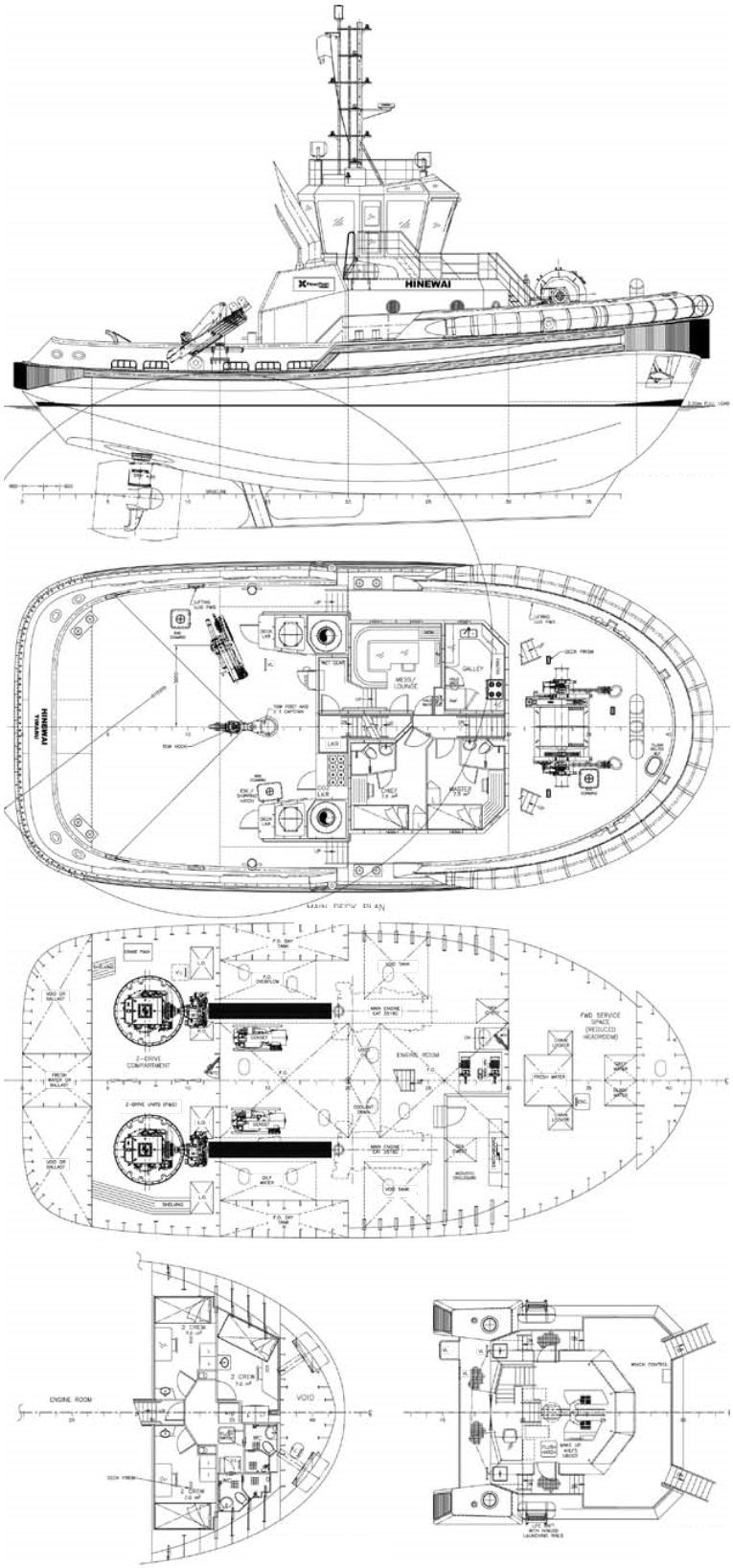
Tug&OSV

Annual Review 2019

Featuring 101 tugs and OSVs, with GA drawings

Hinewai

Top to bottom: Profile, Main Deck Hold, Lower accommodation/Bridge Deck



‘Water maiden’ completes a 30-day journey to new home

The co-operation between Robert Allan Ltd and Cheoy Lee dates back to 2003, with the construction of the first of the Z-Tech® series tugs for PSA Marine. Since that time the two companies have developed a close and co-operative working relationship, providing high quality custom-tailored tugs for the international market. The Hong Kong headquartered shipyard has built well over 100 tugs to designs by the Vancouver-based tug design specialists.

A 100-year-old company still run by the same family, Cheoy Lee was originally formed in Shanghai, China, but it moved to the then British colony of Hong Kong in 1936.

The new RAmparts 2500-CL is the latest Cheoy Lee-specific design by Robert Allan Ltd and is an evolution of the designer’s successful RAmparts 2500-W, and allows for a variety of options according to the client’s requirements. Options include propulsion packages for up to 70 tonnes of bollard pull, an aft winch, fire-fighting systems up to FiFi1 and a variety of MLC 2006-compliant accommodation layouts. The standard accommodation houses a crew of eight.

The first unit sold of this model is to PrimePort Timaru in New Zealand. It has been named ***Hinewai***, which means ‘water maiden’ in the Maori language. The vessel is fitted with twin Caterpillar 3516C diesels, each developing 2,500hp, driving Schottel type SRP 430 Rudderpropellers with 2,400mm diameter propellers. Caterpillar also provided two C4.4 generator sets, each of 86kW.

On sea trials the vessel easily attained the required bollard pull of 60 tonnes both ahead and astern. Indeed, a bollard pull ahead of 63.9 tonnes and a free-running speed of more than 13 knots were actually achieved. The tug, which was completed in late 2018, was successfully delivered under its own power to New Zealand by a Redwise crew comprising both Netherlands and Indonesian personnel. The voyage took 30 days.

The hull and skeg of the RAmparts 2500-CL have evolved to provide improved manoeuvring and side-stepping capabilities. The hull form has been optimised for maximum thrust and bollard pull, while maintaining excellent manoeuvring and sea-keeping. A half-raised forecastle deck helps to keep the working deck safe and dry, while a gently rounded deck line in plan ensures that the tug can safely and easily come alongside and remove itself from an attended ship at speed. Most importantly, the characteristic double chine stern, unique to all Robert Allan Ltd designs, ensures that the tug can run astern at higher speeds and maintain good control and directional stability.

Rule length has been kept less than the 24m loadline and tonnage convention limits, yet the design has been optimised for maximum hull volume.

Considering the vessel’s compact overall dimensions – 25.4m LOA x 11.8m beam x 4.8m draft – there is ample accommodation space for the crew. This comprises two generous en suite cabins in the deck house alongside separate galley and mess/lounge room. Stairs down lead to three twin-berth crew rooms, all with wash basins and adjoining a communal shower and head room with two of everything.

OWNER
PrimePort Timaru, New Zealand

BUILDER
Cheoy Lee Shipyard, Hong Kong

DESIGNER
Robert Allan Ltd, Canada

DIMENSIONS

Length overall	25.4m
Moulded breadth	11.8m

PERFORMANCE

Bollard pull	63.9 tonnes
Free-running speed	13 knots

MAIN ENGINES/PROPULSION
Two Caterpillar 3516C diesels each developing 2,500hp and driving Schottel type SRP 430 Rudderpropellers with 2,400mm diameter propellers

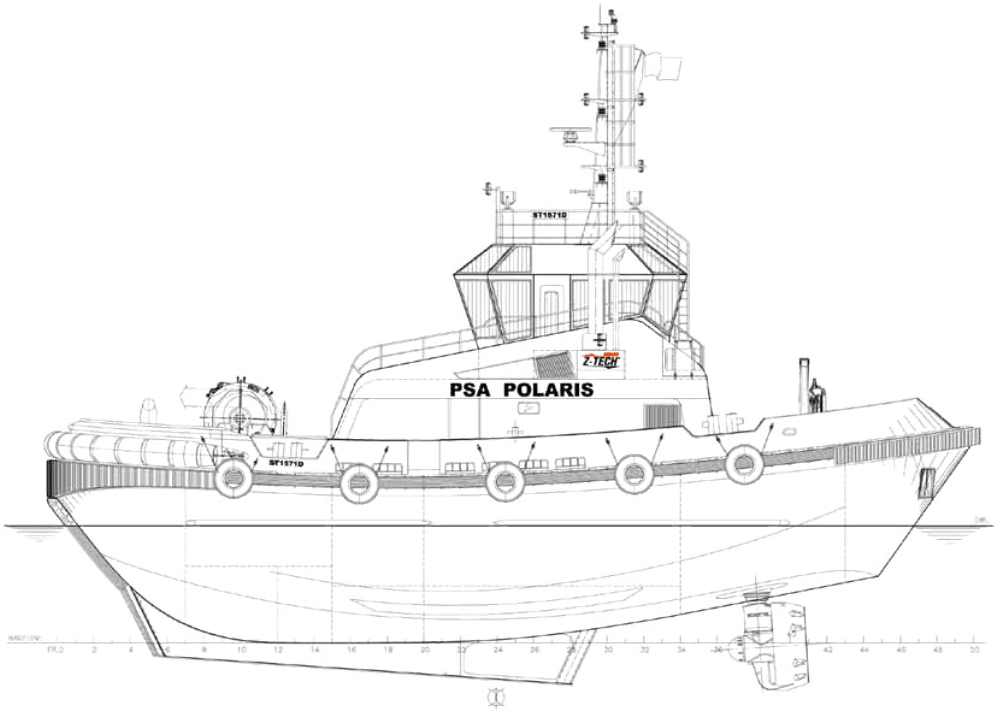
EQUIPMENT
MacGregor combined anchor windlass and towing winch, Palfinger type PK1200MB deck crane

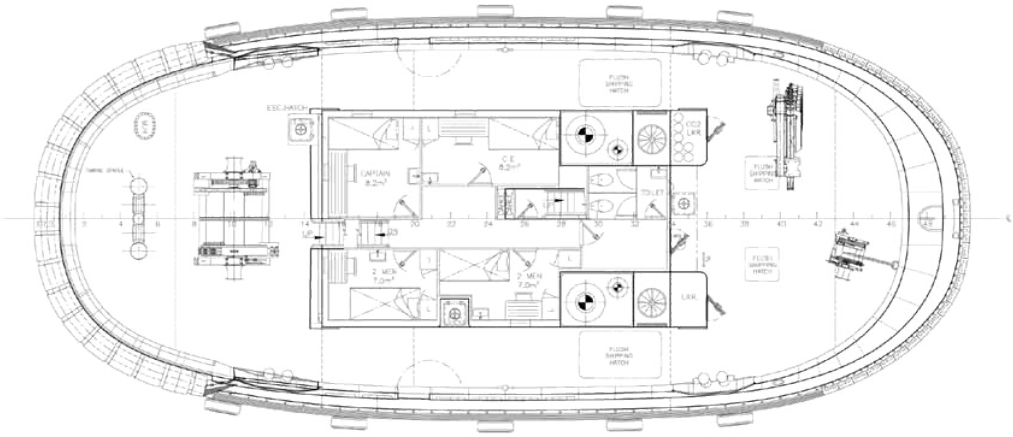
The main component of the deck machinery is a MacGregor combined anchor windlass and towing winch on the forward deck. The winch has capacity for two 105m lengths of 104mm diameter polypropylene rope. The brake holding load is 150 tonnes. Other items include an electro-hydraulic Palfinger type PK12000MB deck crane with three-section hydraulic extension. It has a 10m maximum reach. There is also a tow hook on the aft deck of Chinese manufacture.

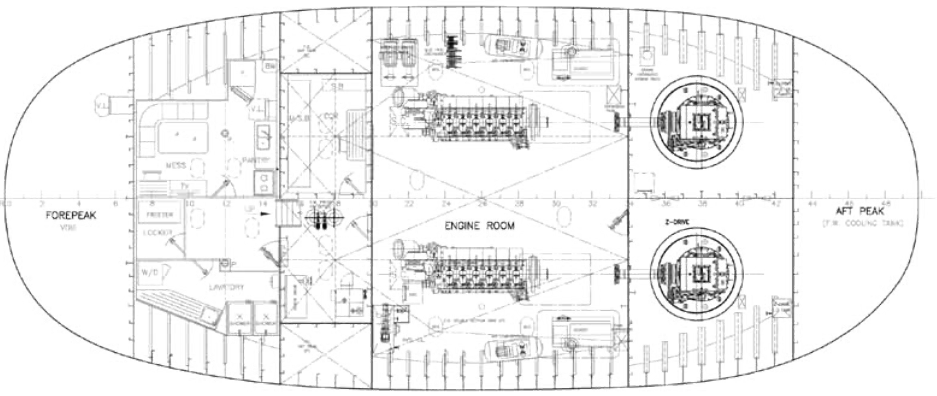
Built to Lloyd’s Register class with the notation ✠ 100A1 Tug, ✠LMC, UMS, *IWS for Unrestricted Service, ***Hinewai*** has onboard tank capacities for 91m^3 of fuel and 11m^3 of potable water.

PSA Capella, PSA Polaris

Top to bottom: Profile, Main Deck, Hold







Tried and tested design goes 'exclusive'

The Z-Tech® series of tugs was initially developed by Canada's Robert Allan Ltd way back in 2003, specifically for PSA Marine of Singapore. The revolutionary design incorporates the best handling and operational characteristics of both Z-drive tractor (thrusters forward) tugs and azimuthing stern drive (ASD) tugs. It was the first and original double-ended tug. Some 80 Z-Techs of varying sizes and bollard pulls have now been built, the bulk operating in the US (including the US Navy), the Panama Canal, Singapore and Australia.

Now often imitated, but rarely equalled, this remarkable series is intended for operation primarily in major ports and marine terminals and continues to be refined. The latest completions by Cheoy Lee, the original Hong Kong headquartered builder, with more than 50 per cent of the global fleet on its reference list, are good examples of this.

Developed in conjunction with PSA Marine, the latest advance is a Z-Tech 5000 with an entirely new-look deckhouse and wheelhouse design. Cheoy Lee was awarded two contracts for the construction of the first three of these Z-Tech 'Exclusive Design Edition' 5000 tugs, two for PSA Marine and one for South China Towing of Hong Kong, another long-standing Cheoy Lee client. All three were built in one batch and completed in late 2018. The Z-Tech Exclusive Design Edition 5000 tugs maintain all features of the operational characteristics of the original concept. These latest deliveries, named ***PSA Capella*** (*pictured*) and ***PSA Polaris*** take to 14 the number of Z-Tech tugs in the fleet of PSA Marine, a discerning and expert customer. The third identical tug in the batch for Hong Kong is called ***Guilin*** after the city in southern China renowned for its dramatic landscape.

The vessels, which have Lloyd's Register Class notation, measure 27.4m LOA x 11.5m beam x 5m draft. Propulsion of every one of this latest trio is by a pair of Yanmar 6EY26W diesel engines, each delivering 2,080hp at 750 rev/min, driving Schottel SRP 360 FP fixed pitch azimuth thrusters. The tugs offer a bollard pull of 50 tonnes and a free running speed of 12.5 knots both ahead and astern – the double-ended design ensures virtually identical performance irrespective of direction. AC electrical power is provided by two Perkins diesel-driven Stamford 90ekW generating sets.

Accommodation on board consists of single cabins each for the captain and chief engineer, with two twin berth cabins for the crew, all located on the main deck.

It is somewhat difficult to use terms such as 'fore' and 'aft' in a vessel designed to be operated in both directions but when in true tractor configuration (the thrusters positioned forward) the below deck quarters of galley and mess room are located aft with the main winch up above. This latter device, supplied by MacGregor, is a split drum machine. At the other end of the boat is a windlass from the same manufacturer and Palfinger knuckleboom deck crane. There are sanitary blocks on both accommodation decks.

OWNER
PSA Marine, Singapore

BUILDER
Cheoy Lee, Hong Kong

DESIGNER
Robert Allan Ltd, Canada

DIMENSIONS

Length overall	27.4m
Moulded breadth	11.5m

PERFORMANCE

Bollard pull	50 tonnes
Free-running speed	12.5 knots

MAIN ENGINES/PROPULSION
Two Yanmar 6EY26W diesels, each delivering 2,080hp at 750 rev/min driving Schottel SRP 360 FP Rudderpropellers

EQUIPMENT
MacGregor split drum main winch and windlass, Palfinger knuckleboom deck crane

A high visibility wheelhouse has its split control consoles overlooking the main winch and positioned either side of a tracked SeaPost Pacific DLX marine pilot suspension chair from HO Bostrom. There is a slightly lower mezzanine level giving a good view of the crane and forming a landing in the staircase down to the main deck. The consoles feature a GPS, plotter, AIS, Weatherfax and GMDSS from Furuno and an autopilot by Raytheon Anschütz.

Deliveries in brief

▲ *Mai Po, Sung Kong*

Mai Po, Sung Kong

Hong Kong Salvage & Towage has added two new high-performance tugs to its fleet in the shape of Robert Allan Ltd designed RAstar 3200 vessels, ***Mai Po*** and ***Sung Kong***.

Built by **Cheoy Lee Shipyards** in Hong Kong, the 32m x 12.8m new arrivals are the most powerful tugs operating in Hong Kong harbour, thanks to the twin Niigata 8L28HX main diesel engines delivering a total of 6,500hp at 750 rev/min and driving fixed pitch Kaplan propellers in 360-degree azimuthing Niigata ZP-41 Z-drive units.

Resulting performance is a service speed of 13.6 knots, an economic speed in excess of 11.7 knots and a maximum bollard pull of more than 88 tonnes. Auxiliary power comes from two 100kW generator sets driven by Yanmar 6HAL2 diesel engines.

On deck, in addition to 36m^2 of clear deck space, fore and aft winches and a tugger winch are all supplied by MacGregor, while Heila supplied a hydraulic knuckleboom deck crane. Additionally, the two tugs are equipped with an external fire-fighting system to FiFi1 standard.

Accommodation for a total crew of 12 comprises single cabins for two officers plus five two-berth cabins, all air-conditioned and MLC-compliant.