

MARINE CONSULTANCY SERVICE

Introducing Clough Naval Architecture & Raebel Design

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1. Background

Ensign Ship Brokers was established in 1980 and has spent the last 28 years expanding our marine knowledge and developing our reputation. We are continuously finding ways to increase our reputation in the boat business and come up with new ways of selling.

Although we list and sell sailboats, catamarans, cruisers, houseboats and commercial vessels, our database of vessels has become so large that we've had to section off particular corners of the market to separate websites.

Due to constant and increasing demand for commercial vessels such as ships, barges, ferries, trawlers and other business-attached commercial vessels, Ensign has created Ensign Commercial, a separate division that specializes in the sales and sourcing of vessels for businesses from parasailing and whale watching to seismic research ships.

Ensign has people who understand the product we sell - people who have operated and run commercial vessels. We have a number of qualified commercial skippers on staff who have driven tankers and operated barges in many challenging environments, from evacuations to building resorts in remote locations.

Experience is abound in the team regarding large ships and the fishing industry. A fully-qualified and experienced business REIQ-approved broker also operates to ensure we can sell and advise on the purchase and sale of entire marine businesses, such as tourist operations, houseboat fleets, river cruises and the like.

Ensign Ship Brokers, Clough Naval Architecture and Raebel Design now have undertaken a joint venture to provide a complete marine consultancy service. To that end further specialist services have also been incorporated such as marine electrical design and survey, which is provided by Tipeta Pty Ltd.

The desired effect is that all required marine consultancy services can be sourced within one group. This also includes the complete construction of a vessel if required as the group has access to a number of builders suited to a variety of vessel styles. Hence a complete design – construction service is possible.

However, the group is not restrictive, so if an owner or operator is already using a consultant for a particular part of a project, the group would endeavour to liaise with that consultant on any project.

As a result of initial investigations and meetings with various stakeholders in Gladstone concerning the pending marine activity, this document outlines some possible smaller commercial vessels which may be required in the foreseeable future.

The outline is intended to be expanded as more specific information and requirements become available. Larger commercial vessels are expected to be design specific to client's requirements. Two examples of possible base designs are provided.

2. Outline of Professional Services

2.1 Marine Design Service

- Custom Designs
- Production Designs
- Commercial Vessel Analysis
- Structural Analysis
- Tender Preparation

To assist in the design process we use **marine specific computer software**:

- Three dimensional modelling
- Hydrostatics
- Stability Calculations
- Trim and Equilibrium analysis
- Weight analysis
- Tank calibrations
- Longitudinal strength calculations
- Structural code requirements
- Sailing velocity performance prediction
- Power/resistance analysis
- Engineering structural design

2.2 Queensland Certification

Within the group various personnel are accredited by the QLD government to provide certifications for commercial vessels, enabling any vessel to be assessed by the group to ascertain its suitability for commercial work within Queensland. The certificates of compliance covered by the accreditation include:

- Design
- Design (electrical)
- Loadline
- Survey
- Survey (electrical)
- Survey (loadline)
- Safety Equipment
- Stability

2.3 Construction Supervision – Project Management

For any project whether it be a complete new construction down to a minor repair, the group can offer supervision to any level. This may be quality inspections outside of commercial compliance certification right through to complete project management inclusive of administration. For differing facets of any project personnel with the individual skills pertaining to that area can be utilised from within the group.

2.4 Condition Survey Inspections

Condition inspections of any existing vessels on behalf of a client can be undertaken to whatever level is deemed necessary. Again the individual skills within the group can be utilised for any specific section of a vessel to assess its suitability and provide a qualified opinion pertaining to that area.

For vessels offshore we also have some access to overseas surveyors who can provide initial reports as to the viability of any vessel prior to committing to travel expenses to ascertain specific suitability for Australian conditions.

3. Anticipated Small Commercial Vessel Requirements

The following drawings indicate some anticipated design requirements based on proven hull forms. Where possible, designs have been offered just below significant length considerations for commercial compliance, whether this be an equipment - construction consideration or operator restriction.

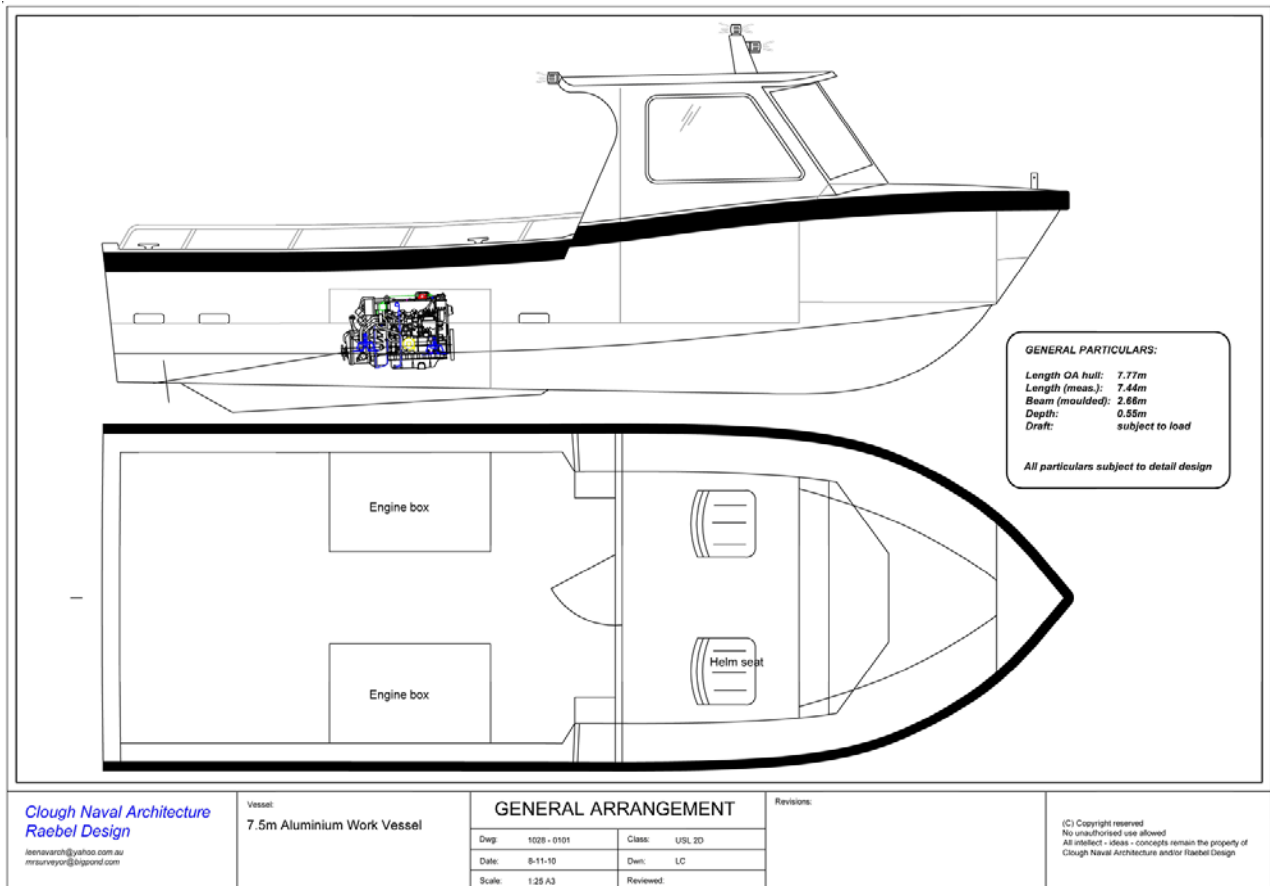
The designs offered are all of aluminium construction as it is considered most suitable for commercial work, but other construction methodologies are possible.

For any specific purpose a budget estimate of design – construction – certification (or any part thereof) can be provided.

3.1 General Purpose Workboats

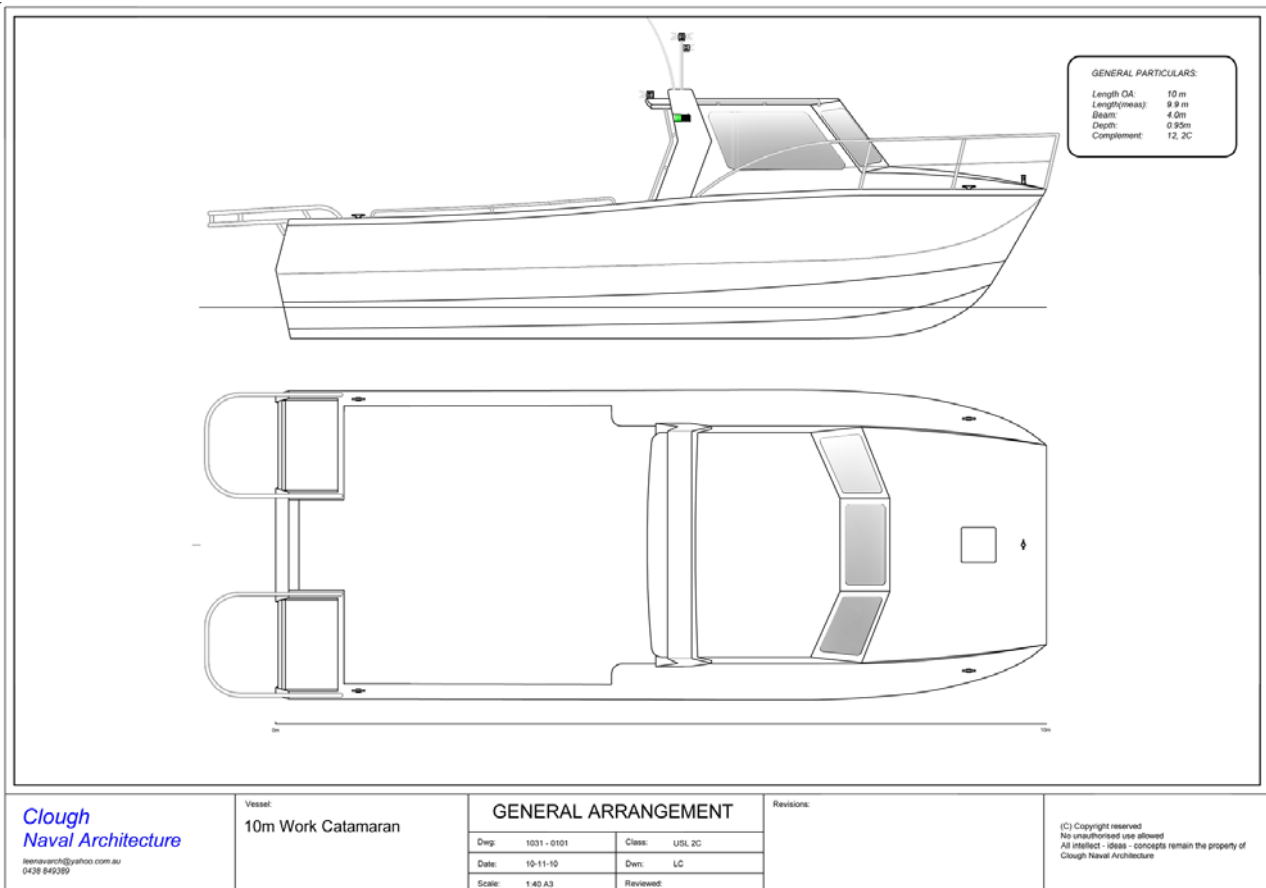
3.1.1 7.5m work vessel

This design is intended for economical mid range speed. The original design incorporated a single inboard with a tunnel but the powering can be configured in a variety of manners including dual inboard as shown or outboards.



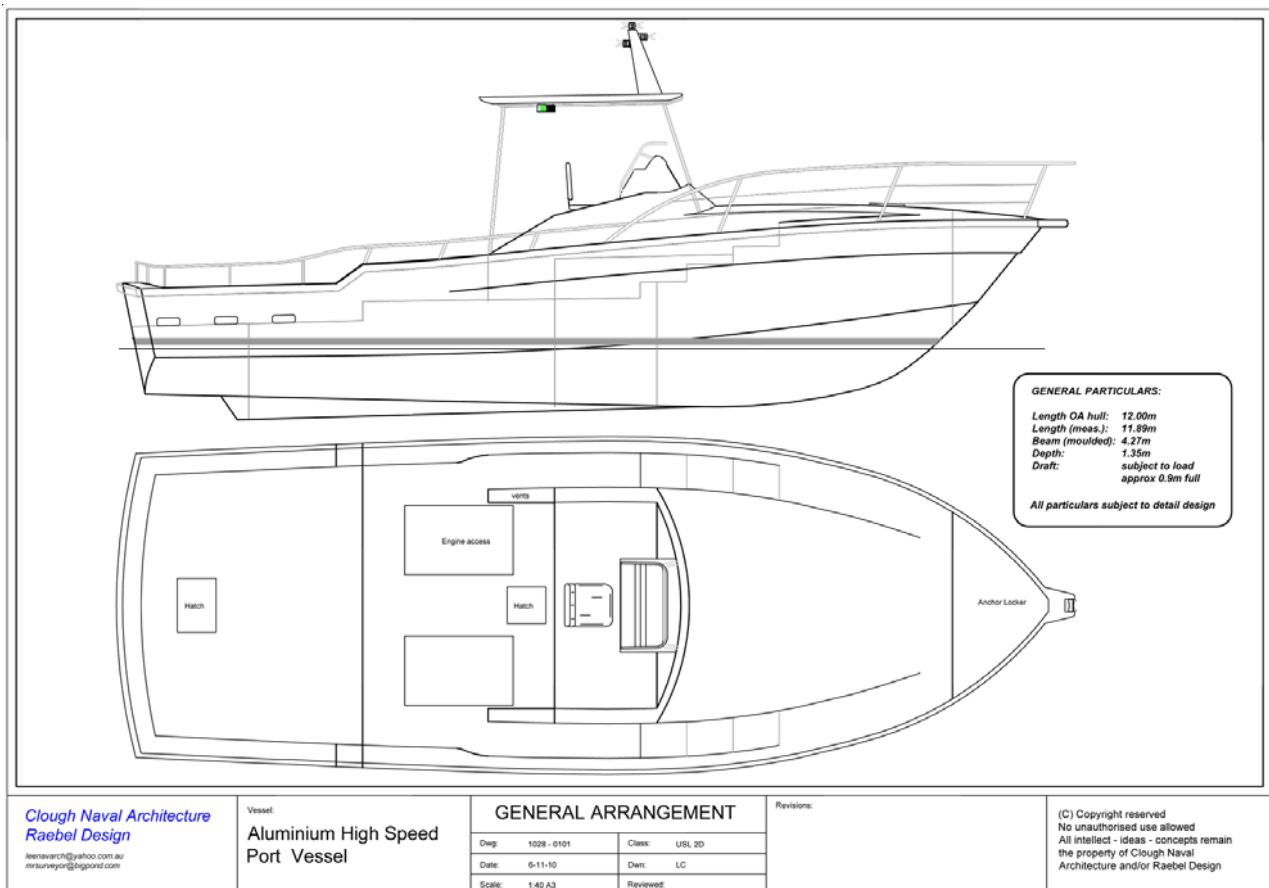
3.1.2 Outboard powered Catamaran

Design is based on the popular “Comet” design built by Nustar. The design has been slightly modified to facilitate ease of construction in aluminium. The hull is a proven performer with good load carrying capacity for a catamaran of this size. Option exists for powering with diesel inboards with either shafts or legs.



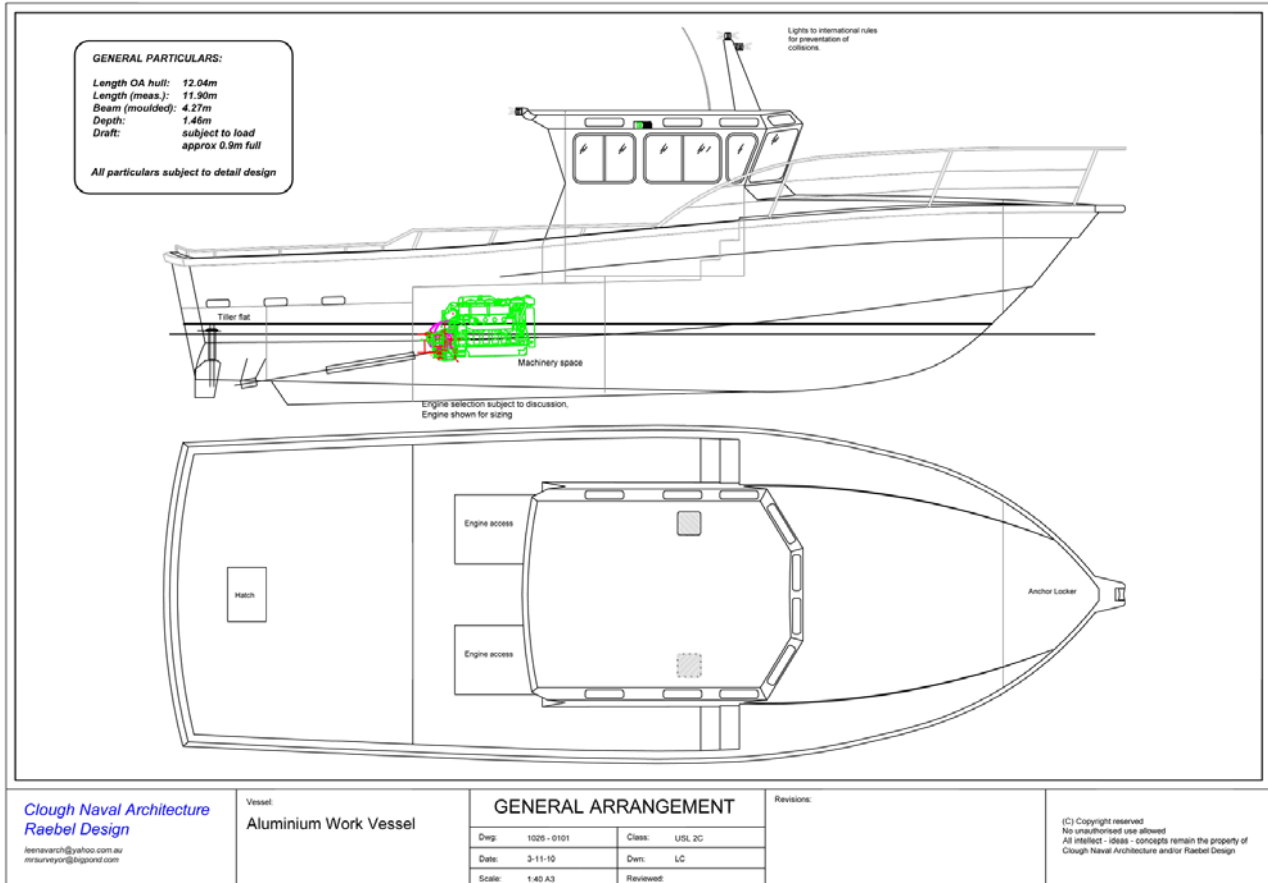
3.1.3 General Purpose Port vessel

The hull for this design utilises the proven offshore capable Blackwatch 40 lines. Slight modifications for suitability of aluminium construction have been incorporated. The design depicted has been configured for general high speed port service duties such as delivery of personnel, equipment, etc.



3.1.4 Offshore Monohull

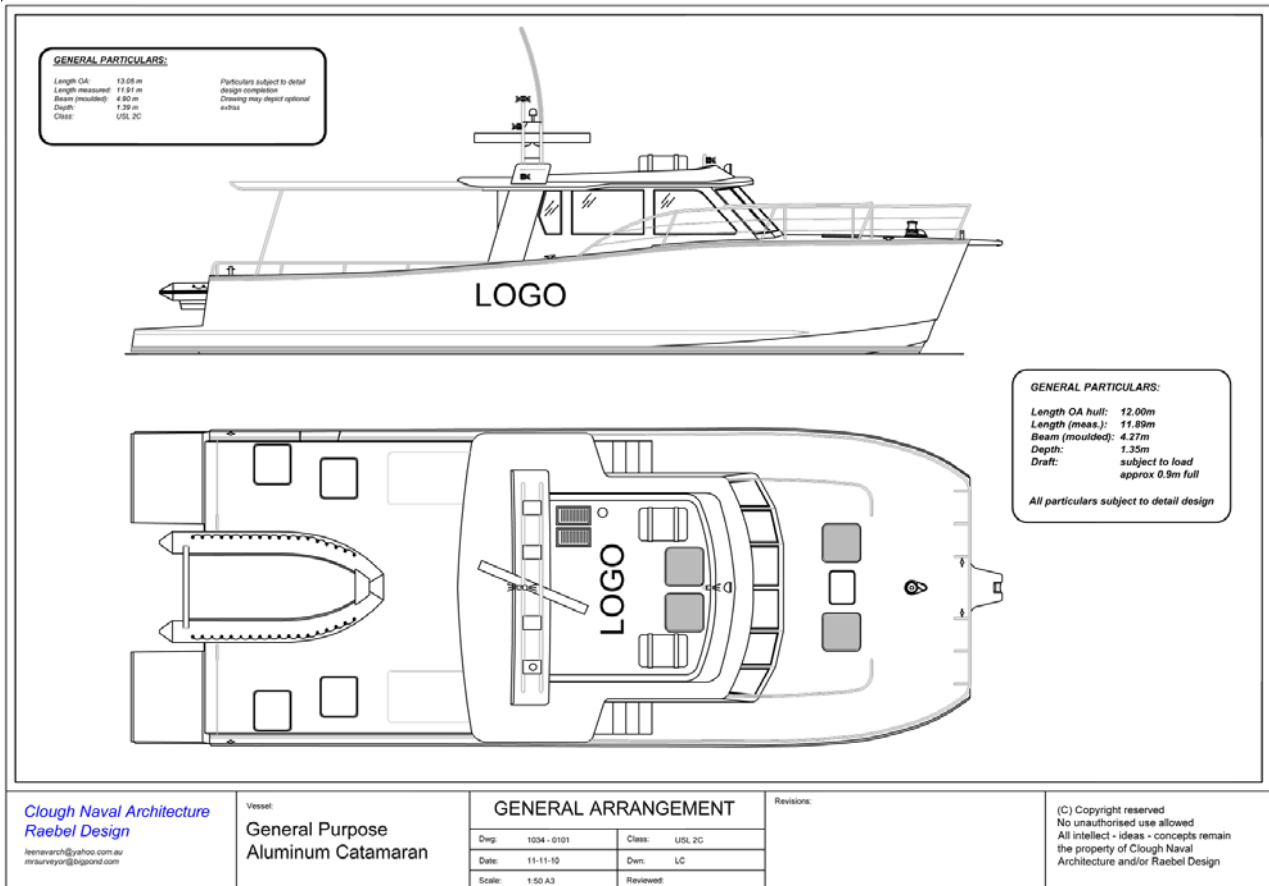
This design uses the same hull as the above but the design has been configured for offshore duties. A comparison between the two drawings indicates the diversity available with construction methodology.





3.1.5 General Purpose Catamaran

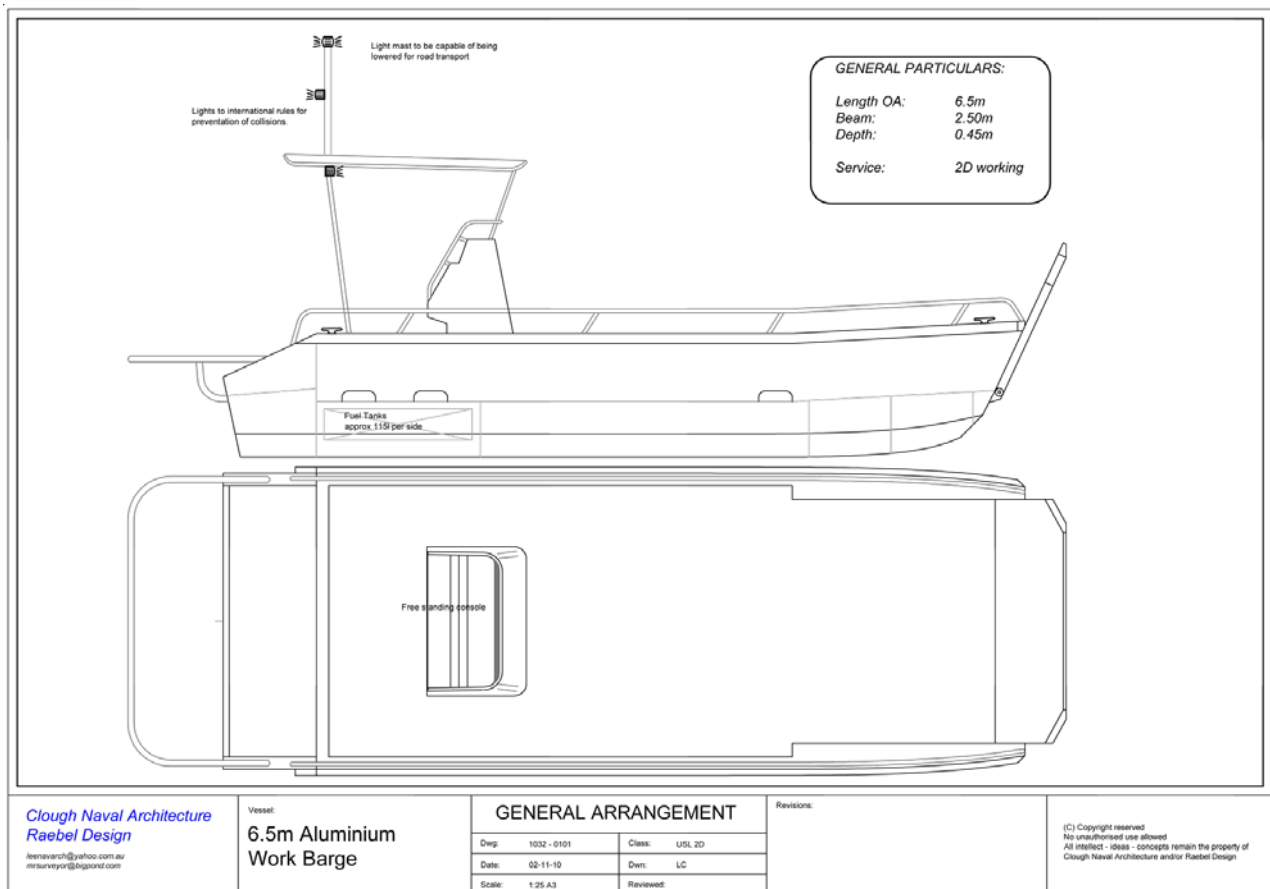
This design is based on a previously successful catamaran. It uses a semi displacement hull providing excellent economy at good speed (20 knot +). The layout shown is for indicative purposes only as it is considered that a vessel of this size would be configured to the specific requirements of the operator.



3.2 Light-Medium Duty Barges

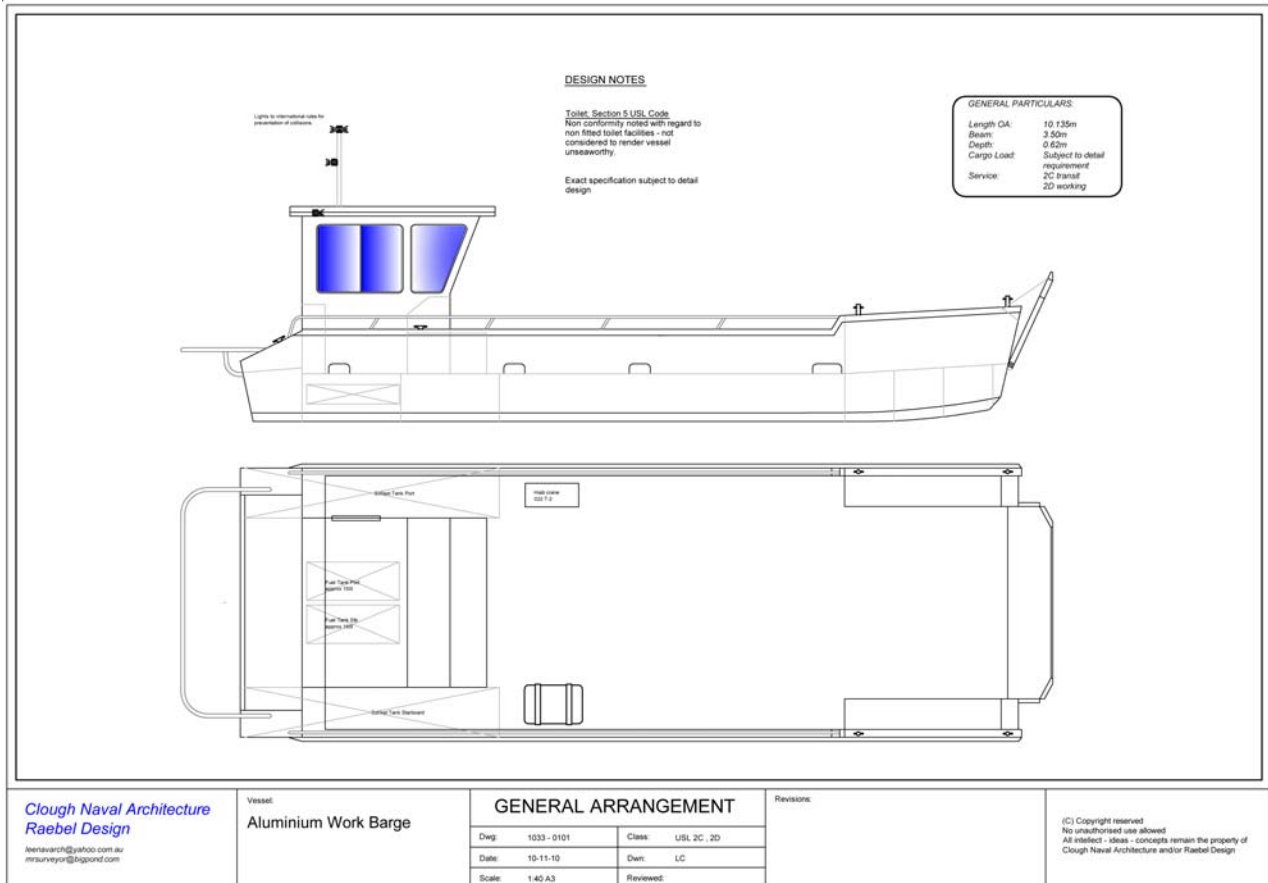
3.2.1 6.5m Barge

Design uses standard barge hull form with robust scantlings for commercial use. Deadrise allows for reasonable speed capability especially in smooth water operations. This design is aimed at high trailer use. In consideration of Queensland specific rules design could be shortened slightly to measure less than 6m allowing for far easier certification process. The original design was intended for operation in NSW waters and hence the length was not as critical.



3.2.2 10.2m Barge

This design is aimed at the carriage of heavier loads particularly at the forward extremity of the vessel hence rear ballasting tanks are incorporated. Given the specific requirements of work duty these tanks could be omitted. Enclosed cabin allows for some crew comfort for working in adverse conditions.

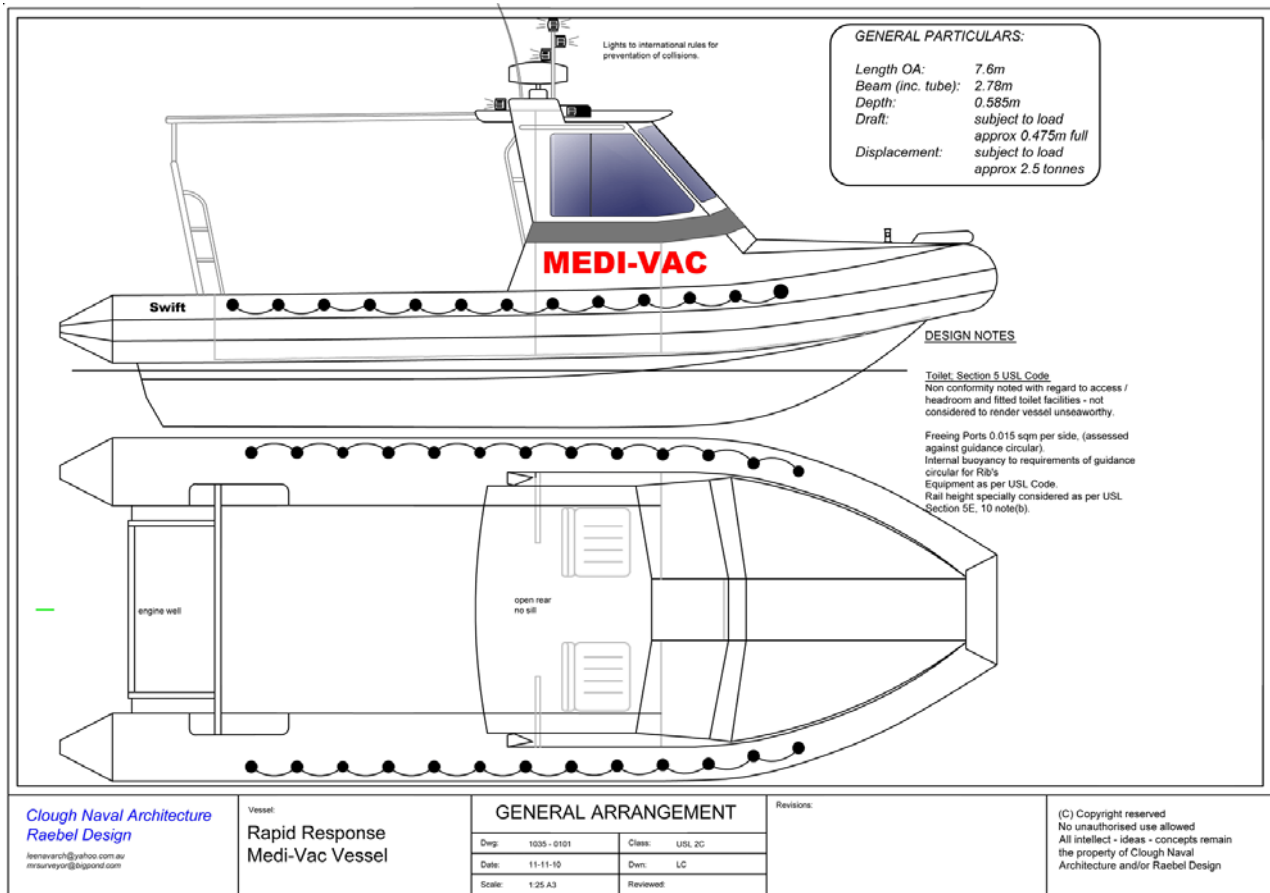




3.3 Medi-Vac Vessels

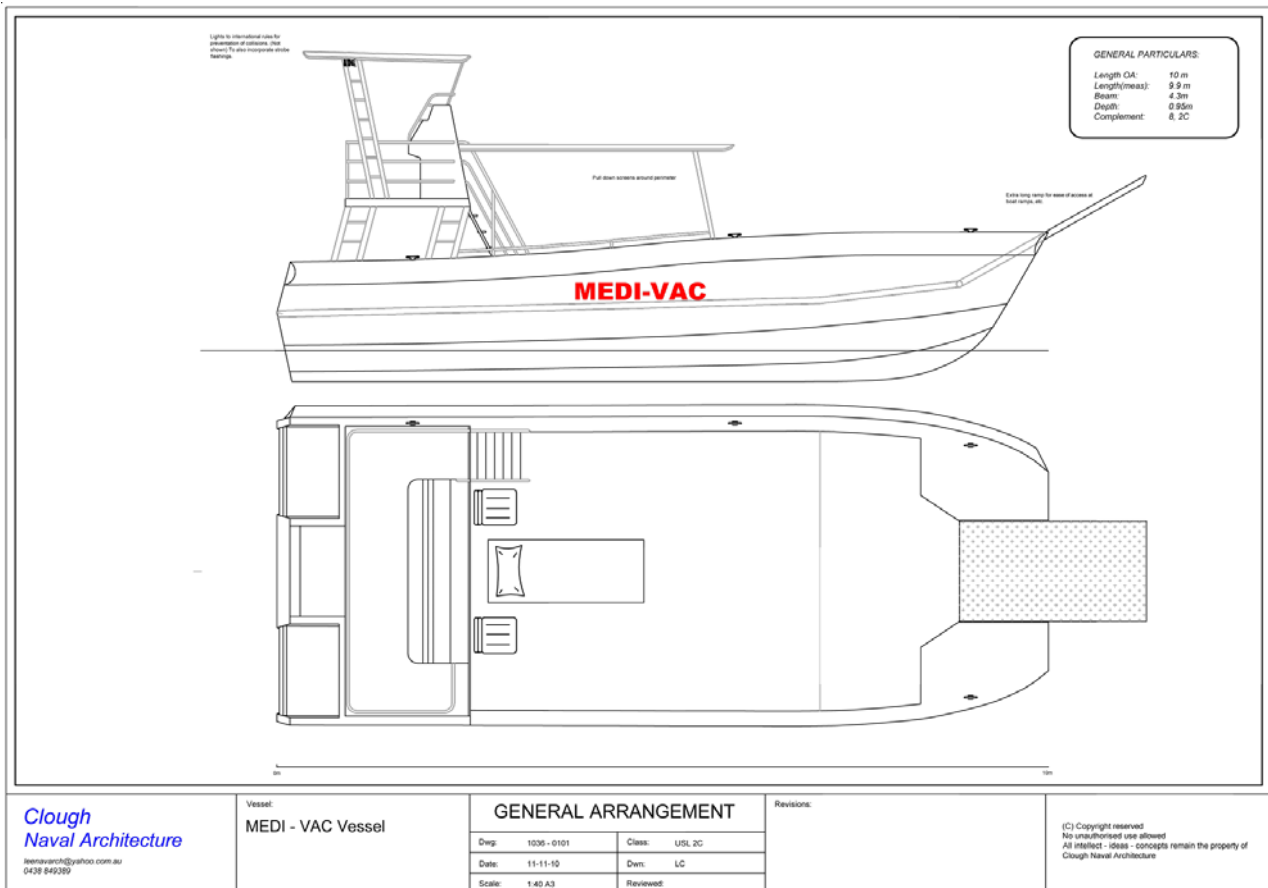
3.3.1 Rapid response vessel

Utilising standard hull form used by Water Police and Boating and Fisheries in Queensland for patrol duties. Vessel is a proven offshore performer with high speed capabilities (45 knots +). RHIB design allows for safe docking against other vessels for transfer of injured personnel and/or medical equipment.



3.3.2 Critical Injury vessel

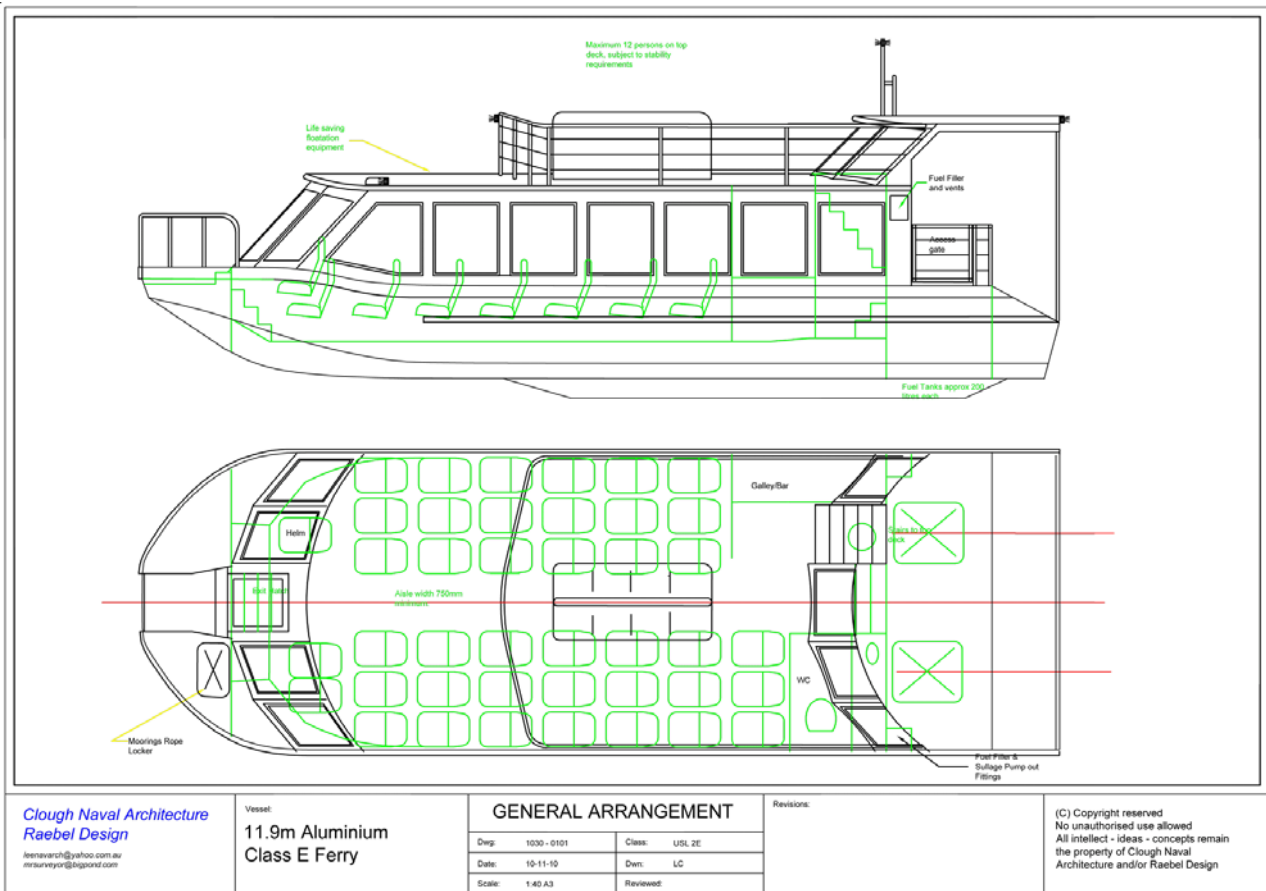
This design is based on the previously detailed “Comet” catamaran hull form with specific features pertaining to the Medi-vac use. A Dtube fender collar has been incorporated to allow for docking against other vessels. Also a bow door has been included to provide walk on – walk off delivery of patient direct to other medical facilities such as an ambulance at a boat ramp.



3.4 Ferries – Taxis

3.4.1 11.9m 1E passenger ferry

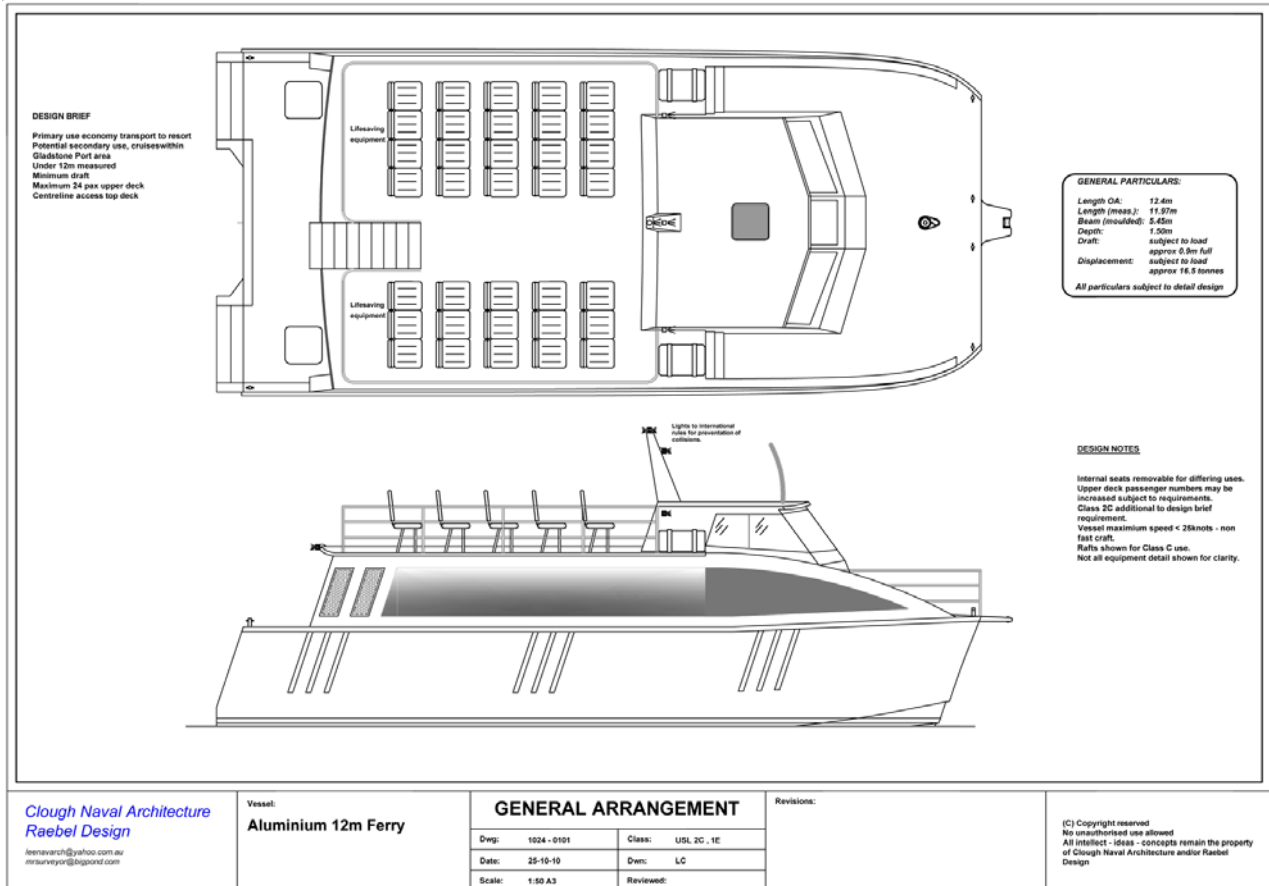
This design is aimed at maximum passenger numbers in a relatively small volume vessel. The hull has a low deadrise with punt style bow delivering shallow draft. The vessel can be powered by outboards or inboard outboards, with the outboard version depicted. As well as a simple people mover the design has also been used for tourism sight seeing.





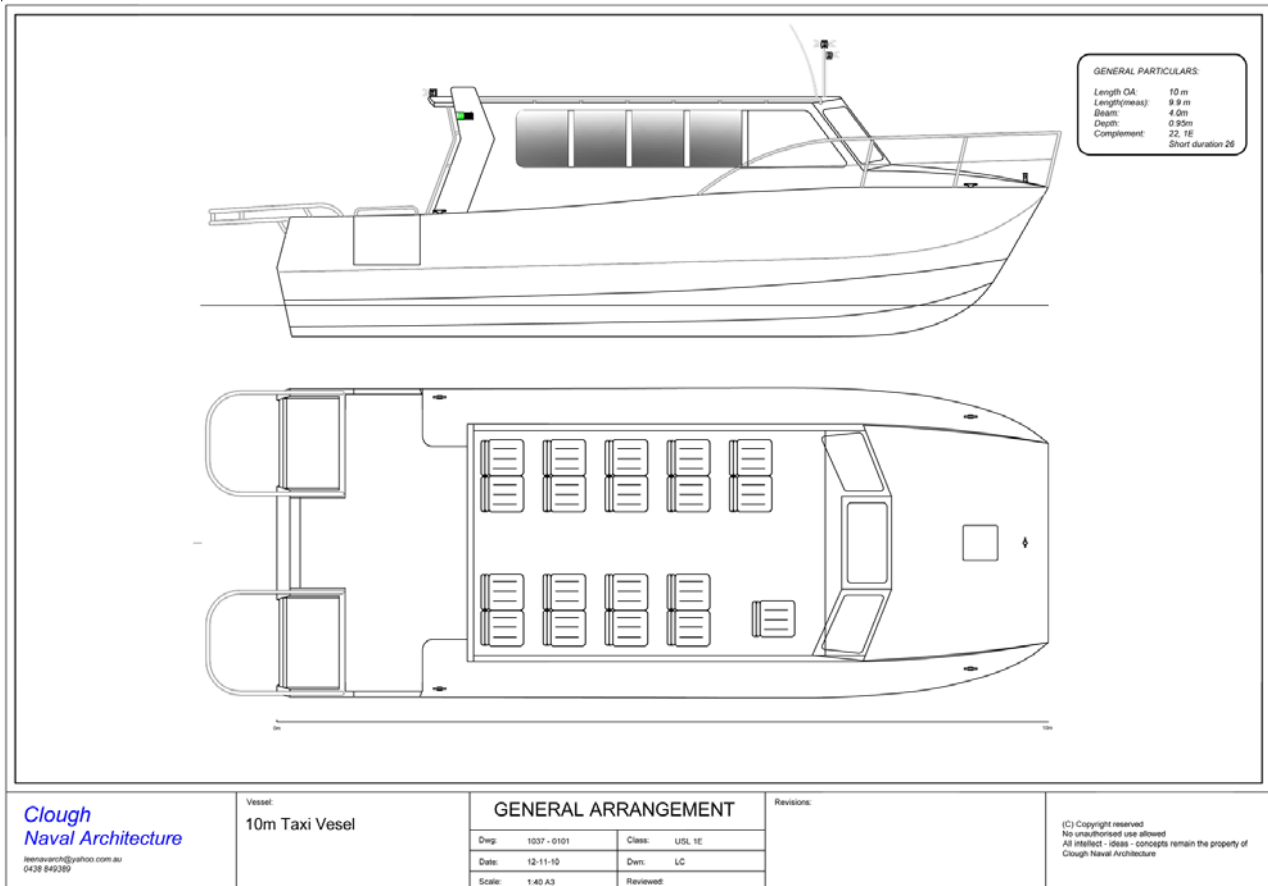
3.4.2 12m 1D/2C passenger ferry

This hull for this vessel is based on the widely used Nustar hull form. The hull is of a full planning ability and hence reasonable speed capabilities are available. The layout shown is for short duration journeys providing maximum passenger numbers for the vessel length.



3.4.3 10m Catamaran Taxi

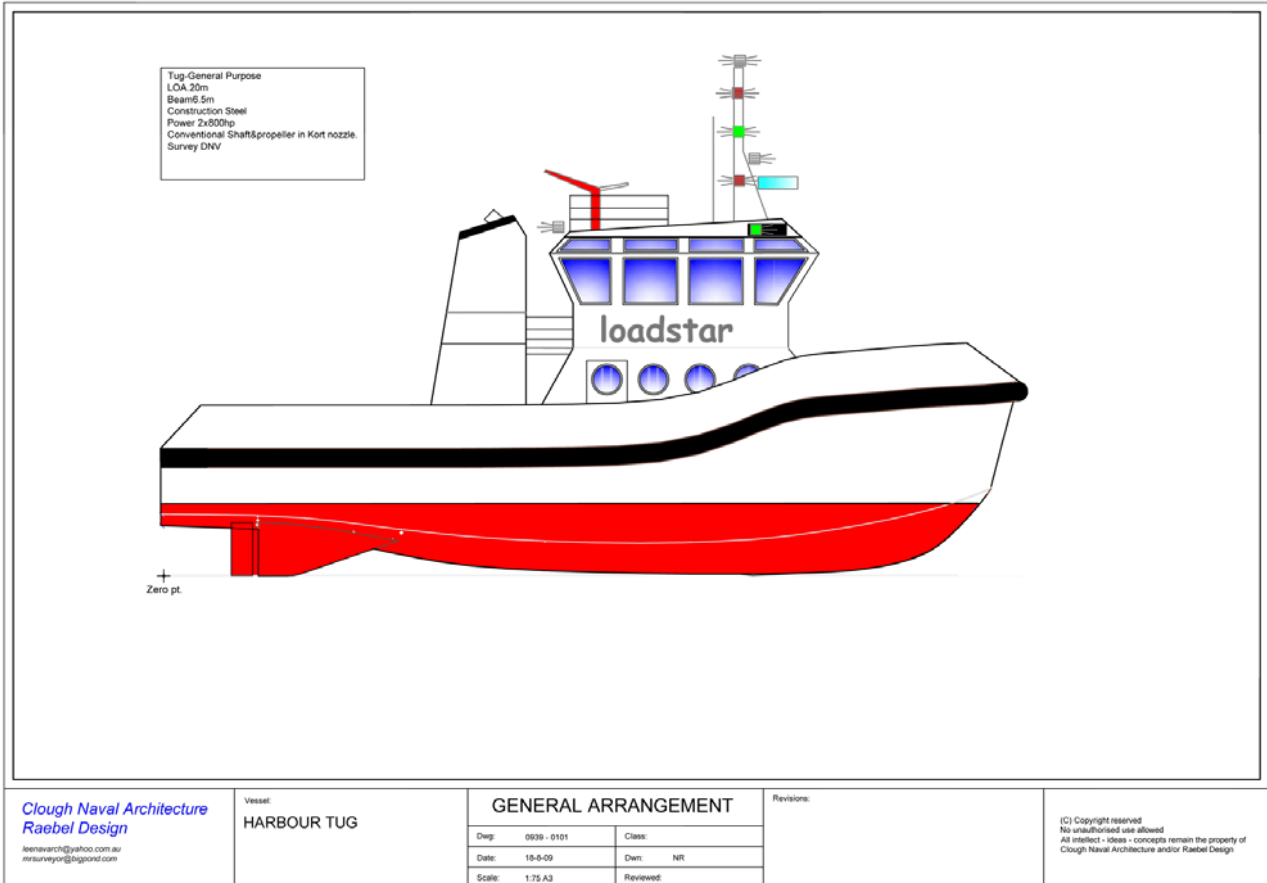
This design uses the previously detailed “Comet” hull again. A full cabin is detailed providing a reasonable number of passengers for the vessel length. The hull form is capable of good speeds depending on the powering chosen.



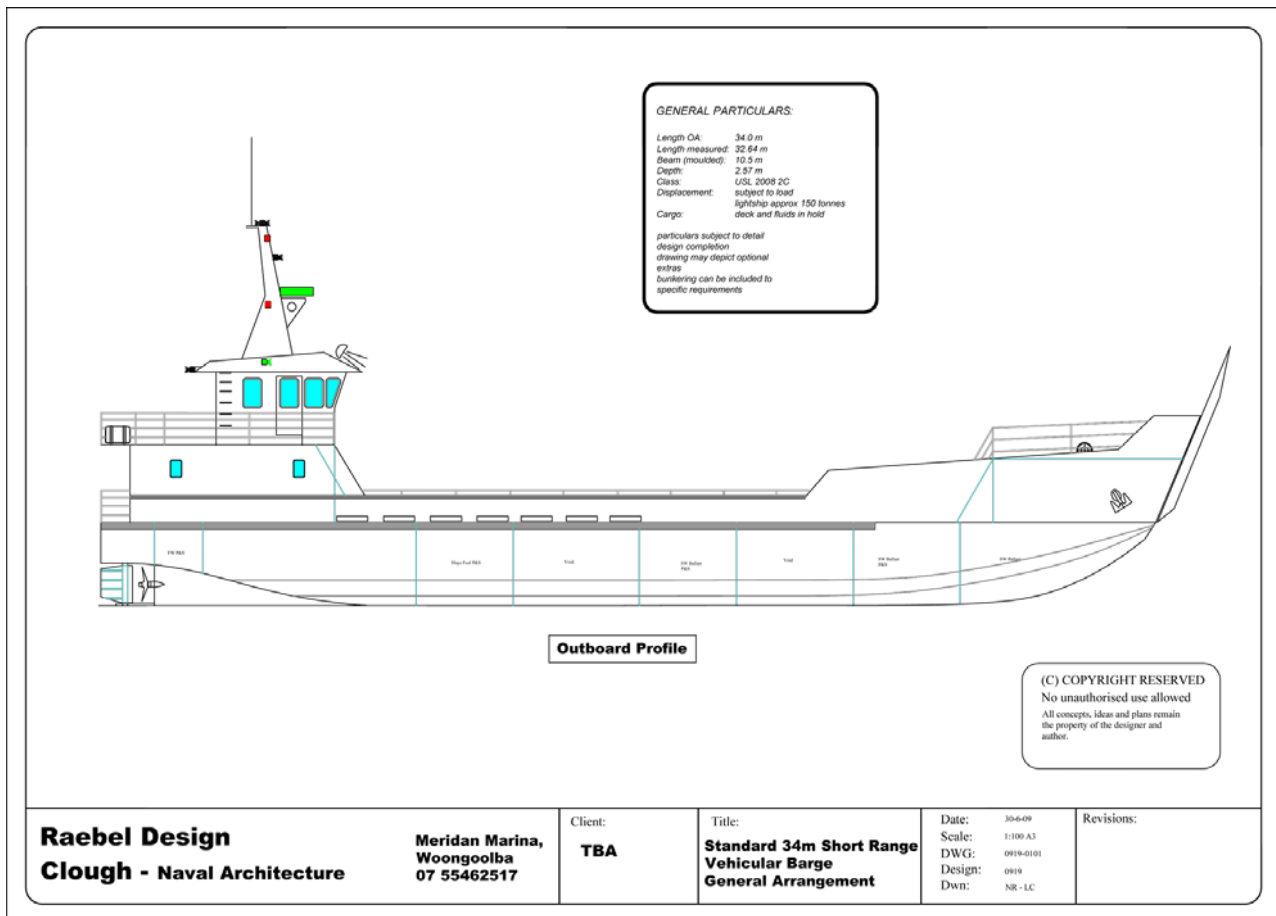


3.5 Other

3.5.1 Harbour Tug



3.5.2 34m Short Range Vehicular Barge



4. Contacts

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