

**REPLACEMENT FLOATING BRIDGE
Statement of Requirements Rev A
BCP/J/10384/00**

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QUALITY STATEMENT

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1. Introduction

Burness Corlett Three Quays (BCTQ) has been awarded the contract to provide marine consultancy services to the Isle of Wight Council for the design and procurement of a new floating bridge for the service between the east and west banks of the river Medina in Cowes on the Isle of Wight. As part of this project, BCTQ has been asked to produce a statement of requirements covering the vessel requirements, construction class, testing requirements, installation, bringing the new floating bridge into service and staff training.

2. Scope of Requirements

Following discussions with all identified stakeholders and the objectives set out by the Isle of Wight Council the following list sets out the main requirements for the new design of floating bridge:

- Reduce queuing times (foot passengers and vehicles).
- Increase number of daily crossings (introduce timetable service 6 crossings per hour).
- Shorter turnaround times (depends on efficiency of fare collection time & smart ticketing).
- Greater vehicle capacity.
- Separation of vehicles and foot passengers when loading/unloading.
- Improved passenger accommodation.
- Reduce carbon emissions.
- Improved energy efficiency.
- Reduced running costs (reduce refit time and one dry docking after 5 years).
- Increase clearance over chains from 1.3m to preferably 2.5m.
- Iconic Design.
- Reduce vessel protrusions into the channel especially at low water.
- Car deck to be preferably flat or with a slight reverse sheer.
- Ramps to have higher stowage angles.
- Options for preventing grounding on the slipway.
- Fendering for tugs.
- Lifelines underneath fendering.
- To be constructed from steel.
- Single high mounted wheelhouse offset with good visibility and to avoid restricting the car lane below.
- Passenger accommodation to be single sided with interior seating and upper deck seating.
- Glass windows for good outboard views, no WC, electronic screens for advertising and information.
- Back ground heating for passenger area.
- Keel coolers, dry exhaust with silencers.

3. Construction Class

As per the MCA Code of Practice for construction, machinery, equipment, stability and operation of Chain/ wire ferries, carrying passengers and vehicles, the hull of a new vessel is required to be surveyed and certified by one of the assigning authorities accepted by the MCA. The following authorities are acceptable to the MCA:

Lloyd's Register of Shipping

British Technical Committee of American Bureau of Shipping

British Committee of Bureau Veritas

British Committee of Det Norske Veritas, Germanischer Lloyd

The new Floating bridge hull, machinery and electrical installations will be built under special survey by Lloyd's Register in accordance with their Rules and Regulations for Special Service Craft. A build certificate will be issued on completion of the build and presented to the MCA.

4. Testing Requirements

On completion of construction, all oil fuel tanks, ballast tanks, water tanks and void spaces to be pressure tested and inspected, according to Classification Society requirements and prior to the application of the paint system. Prior to testing all tanks to be thoroughly cleaned with the removal of all slag, grit and debris followed by fresh water washing and drying. Clients' representative to approve such tests and cleaning of each space before the paint system is applied.

All piping systems to be hydrostatically tested according to Classification Society requirements, fully flushed and openings sealed to prevent ingress of foreign materials all in the presence of Clients' representative.

All lubricating, hydraulic and fuel oil systems to be flushed with an appropriate flushing fluid after installation. After flushing, new filter elements to be fitted throughout each system. Flushing to the specified standards to be completed before connecting the system.

For hydraulic oil systems the flushing to be carried out by the equipment/system supplier and comprise a two stage process. Contractor's pipe system to be flushed to an acceptable standard with slave filters in use, then the entire system to be flushed, using slave filters to a standard acceptable to the relevant manufacturer, Classification Society and Client's representative. Details of proposed methods and acceptance standards to be subject to the Client's Representative's approval. Final particle count to conform to ISO 4406 (BS5540).

Machinery installation to be tested on completion to demonstrate satisfactory working and compliance with specification requirements. Representatives of the sub contract items to be in attendance at dock and commissioning trials.

Electrical machinery, equipment, alarm and monitoring systems and circuits to be tested after installation to demonstrate compliance with specified requirements.

Records to be maintained of all tests and trials including NDT of structure, whether performed by him or manufacturers and be responsible for recording and collating all such data. Contractor to obtain from the manufacturers all readings and data of various tests performed prior to the installation of the equipment in the Vessel and these to be supplied to the Client prior to installation.

Dock trials to be held prior to Ferry leaving the builder yard and a detailed test programme to be prepared by the Contractor and submitted to the Clients for consideration and approval at least 30 days prior to the commencement of the trials.

During the dock trials programme an Inclining Experiment to be carried out to obtain the lightship particulars of the Floating Bridge.

The trials to include at least the following:

- Main Machinery
- Function tests of generator sets
- Switchboard load trials and function test
- Emergency power supply tests
- All pumps and other Machinery Space system function tests
- Test and calibration of all alarm systems, data channels etc.
- Firefighting/safety equipment and fire/smoke alarm systems.
- Watertight Doors and Fire Doors
- Ventilation Systems
- Check of all accommodation spaces.
- All electrical, lighting and communication equipment.
- Lighting levels – accommodation, working spaces and external decks to be recorded and verified against specified requirements.
- Environmental Noise – in port noise to be measured at 65m from the Vessel in still air conditions, with an auxiliary generator running at 100% MCR and air conditioning and ventilation operational.
- East and West Ramps
- Test of all lifting points, etc.

Final testing of the Ferry will be carried out once the floating bridge has been towed to the River Medina and attached to the chains. A detailed test programme to be prepared by the Contractor and submitted to the Clients for consideration and approval prior to the commencement of these

5. Installation

All machinery and equipment to be installed as per manufactures recommendations and to Classification requirements.

6. Bringing New Floating Bridge into Service

On successful completion of the dock trials and after completion of the chain repositioning, to be completed by separate civil engineering company, the floating bridge is to be relocated from the builder yard to the River Medina and attached to the chains. 'On Chain' trials are to then be carried out in the presence of the client and/or their representative. A detailed test program is to be prepared by the builder and submitted to the client for consideration and approval at least 30 days prior to the commencement of the trials. On successful completion of these trials the MCA will be invited to carry out their final survey, on successful completion of this survey the floating bridge will then be ready to enter service

7. Staff Training

One of the problematic areas in delivering a new vessel into service, especially with the considerable number of years between vessels as in this project, is the suitable training of staff. The key is the cooperation between the operational staff running the current vessel, the Council and the Shipyard. The release of staff for suitable periods of time to undertake training often impacts on current operations. One of the best approaches is to incorporate some of the training on the vessel towards the final stages of the build. There is no substitute for completing training on the very asset that crew will be operating.

The shipyard, pending the final selection, should be able to accommodate the training of selective crew members on-site with hands on training. Specific training for the vessel would be outlined in the delivery specification, whereby the senior staff (Deck and Engineering) would have the opportunity to attend the vessel in the build yard and undertake initial training. The senior staff can then replicate their training back to the other crew members in Cowes.

For the main drive system, training courses run by the engine manufacturer could be arranged. This will only be completed once the shipyard is selected and the contractual obligations regarding the supply of equipment confirmed.

The qualifications and competencies of the current staff will be used to determine the level of training required and therefore mitigate the risks of issues / breakdowns etc. on entering service. Training packages can be determined post initial audit to fully quantify the needs of the crew, however the need to focus on the substantial change in technology for the crews cannot be over emphasised. The current requirements and demands for equipment and service delivery will bring a wealth of change for the crews and the support / operational staff. Integration with the operational stakeholders to release crews for training will need to form part of the project plan.