DLR CRUISE TENDER PONTOON

Volume A: Works Requirements - Specification

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VOLUME A

WORKS INFORMATION SPECIFICATION

Introduction to the Specification

1. The Specification for this Contract is comprised of 2nr. elements:
   - The *Core Specification*
   - *Appendices* to the Specification

2. The *Core Specification* for this Contract shall be the “Specification for Road Works CC-SPW” published by Transport Infrastructure Ireland.

3. The Contractor shall be deemed to possess a copy of the *Core Specification* and to have knowledge of its contents.

4. The Core Specification is modified and extended with Clauses and Tables specific to this Contract as set out in the *Appendices* to the Specification.

Preamble to the Specification

1. The Specification referred to in the Tender shall be the " Specification for Road Works CC-SPW published by Transport Infrastructure Ireland", as modified and extended by the following:
   (i) Appendix 0/1: Contract-specific Additional, Substitute and Cancelled Clauses, Tables and Figures.
   (ii) Appendix 0/2: Contract-specific minor alterations to existing Clauses, Tables and Figures.
   (iii) The Numbered Appendices listed in Appendix 0/3.
   (iv) Appendix 0/4 contains a list of the Drawings and the Numbered Appendices.

2. An Additional Clause as indicated by a suffix "AR" in Appendix 0/1 is a Contract-specific alteration.

3. A Substitute Clause as indicated by a suffix "SR" in Appendix 0/1 is a Contract-specific alteration.

4. A cancelled Clause indicated by a suffix "CR" in Appendix 0/1 is a Contract-specific alteration.

5. Insofar as any of the Numbered Appendices may conflict or be inconsistent with any provision of the Specification for Road Works the Numbered Appendices shall always prevail.

6. Any reference in the Contract to a Clause number or Appendix shall be deemed to refer to the corresponding substitute Clause number or Appendix listed in Appendix0/1 or 0/2.

7. Where a Clause is altered any original Table/Figure referred to in the Clause shall apply unless the Table/Figure is also altered. Where a Table/Figure is altered any reference in a Clause to the original Table/Figure shall apply to the altered Table/Figure.

8. Where a Clause in the Specification relates to work goods or materials which are not required for the Works it shall be deemed not to apply.

9. Any Appendix referred to in the Specification which is not used shall be deemed not to apply.

Appendix 0/1 – Contract-Specific Additional, Substitute and Cancelled Clauses, Tables and Figures

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Series 000 – General

070AR Background

This project comprises the provision and installation of a seasonal pontoon at Berth 4 within Dun Laoghaire Harbour in Dun Laoghaire – Rathdown for use by cruise tenders during the cruise season. The project will require the design, fabrication, delivery and installation of a modular pontoon facility of length 40m and minimum width 4.5m as well as the construction of 2nr. separate accesses; 1nr. articulating 30m long gangway and 1nr. 10m long self-levelling steps with cantilevered steel bankseat platform.

The pontoon system is to be seasonal, only in position during the cruise season. Accordingly the whole system must be removable and able to be detached and relocated for storage during the off-season. This shall also include the access gangway, self-levelling steps and cantilevered bankseat platform, which shall be able to be removed from the exiting pier structure, secured and stored on the pontoon deck outside of the cruise season.

This document provides a description of the Works and the Specification for the Works, and details various constraints or requirements which apply.

071AR Title of the Contract

The title of this Contract shall be “DLR Cruise Tender Pontoon”.

072AR Location of the Works

The proposed Works are located at Berth 4, Dun Laoghaire Harbour in Dun Laoghaire – Rathdown County. The Location of the Works is shown on Drawing M0827-RPS-00-XX-DR-C-1000.

073AR Description of the Works

The following Works description is included to provide general information as to the nature of the Works and contractual requirements for guidance. The entire scope of Works to be accounted for within the Contractor’s tender shall be ascertained from the Contract as a whole.

The proposed Works comprises 4nr. main elements:

1. Design (to the requirements of Series 6000 of this Specification), fabrication, delivery and installation of a 40m long x min. 4.5m wide berthing pontoon for cruise tender vessels.
2. Fabrication, delivery and installation of a single new H-pile mooring and bracket to be supported by an existing circular concrete bearing pile.
3. Design, Fabrication, delivery and installation of 2nr. pontoon accesses:
   (i) 1nr. 30m long x 1.2m wide (width between hand-railing) galvanised steel articulating gangway along with hinge arrangement fixed to the existing cope beam at the Ro-Ro linkspan.
   (ii) 1nr. 10m long set of self-levelling galvanised steel steps with galvanised steel cantilevered access platform at the opposite end of the pontoon.
4. Minor demolition works to include cutting-down of timber piles, partial demolition of the existing cope beam at the Ro-Ro linkspan and removal of specified features on the existing pier deck.

074AR Construction Environmental Management Plan (CEMP)

The Contractor shall prepare a Construction Environmental Management Plan (CEMP) in accordance with the requirements set out in Specification Appendix 1/7 that will be developed and implemented as the Works proceed.

The CEMP will provide a framework for the management and implementation of construction activities incorporating the mitigation measures identified in the relevant chapters of this Outline CEMP, including dust and odour. The CEMP will be reviewed regularly, and revised as necessary, to ensure that the measures implemented are effective.

The Tenderer will be required to submit a draft Construction Environmental Management Plan (CEMP) to fulfil the requirements of the relevant conditions of the planning decision with his Tender. The Contractor is required to finalise his CEMP within 7 days from the date of the Letter of Acceptance.

075AR Works Reasonably Inferred by Specification & Drawings

The Contract includes all Works reasonably inferred, or to be inferred, by or from the Works Requirements to achieve the Works.

076AR Method Statement

The Contractor shall supply to the Employer's Representative all method statements required by the Contract, and further method statements as the Employer's Representative may reasonably request.

The Contractor's method statements shall be in sufficient detail to allow the Employer's Representative to satisfy himself that the Works will be designed (where applicable) and carried out in a safe and expedient manner and shall be linked to the detailed programme. Method statements shall be provided for but not limited to the following aspects of the Works:

- All demolition Works
- Delivery and installation of pontoon units
- Installation of accesses including detachable cantilevered platform for self-levelling steps
- Installation of H-pile mooring and bracket to existing circular concrete bearing pile.

077AR Substantial Completion

The Works will be deemed complete for the purposes of the Employer's Representative issuing a Substantial Completion Certificate, under clause 2.5 of the Conditions of Contract, when the Contractor completes all of the Works identified in the Drawings and Specifications and submits, as a minimum, the following documentation for acceptance by the Employer's Representative:

- Operation and Maintenance Manuals for all specified elements of the Works
- Test Certificates for all specified elements of the Works
- As Built Drawings including Reinforced Concrete Schedules
- Information for the Safety File
- As built survey of the fender locations accepted by the Employer's Representative in accordance with the dimensional positions and tolerances shown in the Works Requirements
- As built drawings for the main structures
- All warranties shall be in place from the following as appropriate:
    - Contractor
    - Subcontractors
    - Suppliers
    - Subcontractors with Design Input

The Contractor is to provide the final versions of the Operation and Maintenance Manual and the Health and Safety File no later than 5 working days prior to the issue of the Substantial Completion Certificate, in the following format:

- Format: A4 size, plastics covered, loose leaf, four-ring binders with hard covers, each indexed, divided and appropriately cover titled.
- Numbers of copies: 1 no. hard copies of each document and 1 no. electronic copy on CD. The electronic copy is to include all drawings in CAD & pdf format.
- Drawing larger than A4, to be folded and accommodated in the binders so that they may be unfolded without being detached from the rings.
- As-built drawings.

The precise structure and content for each of the Contractor's Document will be agreed with the Employer's Representative at Pre-Completion meetings.

The Contractor is to issue a complete draft of all information referred to in this clause not less than 6 weeks prior to the date for submission of the final versions for review by the Employer, Employer's Representative and PSDP as may be appropriate.

The Employer's Representative will collate all the comments and / or changes required and respond to the Contractor within the period for reply. The Contractor is to incorporate all such comments and / or changes into the documents and resubmit updated documents, as may be appropriate to the Employer's Representative within the period for reply for the Employer's Representative's acceptance.

On Completion of the whole of the Works and before the issue of the Substantial Completion Certificate, the Contractor, shall clean down all the surfaces after removal of all plant, tools, temporary structures, materials, protective casings and coverings etc. leaving the Works and the Site in a condition acceptable to the Employers Personnel.

The Employer's Representative will issue a Substantial Completion Certificate when all of the above information has been completed and forwarded to the Employer's Representative and has been reviewed/accepted by him.

078AR Interference with Traffic & Adjoining Properties

1. The Contractor shall programme and execute the work as to ensure the safety of the general public and cause the minimum of inconvenience to road or marine users. Whenever the Works interfere with existing public or private roads, footpaths or other ways over which there is a public or private right of access the Contractor shall ensure that there are alternative routes which shall include alternative accesses for vehicular and pedestrian traffic constructing temporary diversion routes or roads or footpaths where necessary with a clear sign system installed of a similar standard to the existing. A care and maintenance system must be introduced by the Contractor on a daily basis to ensure that all footpaths, roads and accesses are safe, level and effective for the duration of the Works.

   The Contractor shall ensure that his plant does not cause public nuisance due to fumes, dust, water pollution, noise, leakages, or causing an obstruction.

   The Contractor shall maintain as far as reasonably practicable the free flow of traffic in the vicinity of the Works. If the Contractor wishes to carry out any work which will cause restriction of the traffic flow beyond the limits set out in the Specification and Drawings, he shall seek, in writing, the permission of the Employer's Representative and Garda during any period of restriction and he shall ensure that vehicles passing are allowed through with the very minimum of delay.

Before commencing works on the road verge or footway along the any public roads the Contractor should seek the relevant permission from National Roads Authority or the local Authority.

The Contractor shall be entirely responsible for ensuring that the public roads in the vicinity of the Works are kept clear of mud and other debris falling from vehicles connected with the Works or spreading on the public road as a result of the Works in any way.

Refer to Appendix 1/7 for further details

2. The Contractor shall carry out and complete all work and duties specified in Appendix 1/7 associated with the use of the Site or required to enable the Contractor to have use or optimum use of the Site in accordance with the Contract.

   The Contractor shall comply with all Statutory Orders concerning the Site and the use or operation of the Site for the Works and in particular with the requirements and directions of Cork County Council concerning access to, and use of the Site and/or restrictions thereto.

   The Contractor shall note that the Works are being carried out in and around a live working port and shall take all necessary measures to allow the port activities to continue unimpeded, and the limitations on the use of the Site that such operations may cause.

079AR Consents Responsibility

The proposed project does not entail any works requiring Foreshore Licencing and/or consenting.

The Contractor must obtain all consents, approvals and the like which are required for the Works and do so in adequate time. The Contactor is to supply such documents to the Employer's Representative within 14 days of receipt.

080AR Statutory Compliance

In preparing his methodologies the Contractor must comply with all the Statutory Orders, conditions and constraints in relation to the Works.

081AR Soils, Geology & Contamination

Material imported onto the Site must be tested and assessed to ensure that contamination is not introduced to the Site.

Dun Laoghaire Harbour Oil Spill Contingency Plan shall be implemented and complied with by the Contractor.

082AR Product Collateral Warranties

The Contractor shall provide product collateral warranties in terms and a form acceptable to the Employer's Representative for the following elements of the Works and for the periods stated:-

Element	Service Life	Notes
Pontoon Steel Section Frame & Concrete Floats	25 years	25 years to first major maintenance
Rubber Fender Units & Rubbing Strips	25 years	Period to first major maintenance in accordance with suppliers requirements
Galvanised Mooring Brackets on Pontoons	25 years	25 years to first major maintenance

Table 1 – Particular Vessel Characteristics

083AR Subcontractors Warranties

The Contractor shall provide Sub-contract warranties in the form set out below in respect of all Sub-Contractor's carrying out significant parts of the Works, including, but not limited to:-

- Structural steelwork.
- Galvanised steel access gangway and self-levelling steps.
- Reinstatement of partially demolished concrete cope beam.

084AR Statutory Orders

All references in Statutory Orders to obligations of the Department of Agriculture Food and the Marine or the developer, or the applicant, or otherwise shall (to such extent as the context allows) be deemed for the purpose of the Contract to be obligations of the Contractor.

085AR Compliance with COVID-19 Protocol Measures

The Contractors tender shall include provisions for compliance with the Work Safety Protocol: Covid-19 National Protocol for Employers and Workers (20th November 2020) by the Department of Enterprise, Trade and Employment, Department of Health, Health and Safety Authority and Health Service Executive.

Series 100 – Preliminaries

170AR Boundary of Site and Possession of Site

The Site area shall be as is shown on Tender Drawing M0827-RPS-00-XX-DR-C-1000: Proposed DLR Berth 4 Site Location Plan. The Contractor shall confine his operations to this area, or other such areas as may be identified by the Engineer during the course of the works, and endeavour to cause minimum inconvenience to any other operation within the vicinity.

The Contractor shall make good any damage to the land or property, whether in the vicinity of the works or on the access route thereto, to the satisfaction of the Engineer.

171AR Site Compound

The site compound will be used for site offices, plant storage and materials storage and concrete batch mixing facilities. The area identified for use as a site compound are shown on Tender Drawing M0827-RPS-00-XX-DR-C-1000.

The Contractor shall be responsible for setting up the site compound, maintaining it throughout the duration of the works and reinstating it to its former condition on completion of the works. Reinstatement should include, re-levelling the land and repairing any other damage including that arising from storage of materials.

Potable water and power supply are readily available in close proximity to the site compound area identified, and will be provided free of charge by the Employer to facilitate the Works. The Employer will also assist the Contractor with connection to the existing water and power supply upon mobilisation to site.

Sewer/foul connection is not present for Contractor's offices at the compound area, therefore, the Contractor shall be required to provide suitable provisions accordingly at their own cost.

Existing lighting is available at the identified compound areas, however, should any additional lighting be required by the Contractor, then this shall be provided by the Contractor at their own cost.

172AR Cleanliness on Site and on Haulage Routes

The Contractor shall take every precaution to prevent dirt and mud or other material being dropped or spread by traffic from or associated with the Works on roads in public use. Particular attention shall be paid to the loading of lorries carrying bulk materials onto the Site to ensure that these are not overloaded, nor loaded in such a way that spillage occurs. The Contractor shall also be responsible for the vehicles of his Sub-Contractors and Suppliers. Accordingly, before permission is given for operations to start, the Contractor shall be required to provide facilities for cleaning.

While the intent of this clause is to prevent the spilling and spreading of dirt and mud and other materials on roadways, nevertheless the Contractor shall also clean the roadways of any such dirt, mud and other materials as may be spilled or spread by traffic travelling to or from the site in connection with the Works whether such traffic is the Contractor's, his Sub-Contractors or his Supplier's. Any cleaning work which may be ordered by the Engineer shall be carried out during hours which will reduce interference with public traffic to a minimum. The Contractor shall be required to maintain a high standard of cleanliness on the haulage routes.

173AR Statutory Certificates and Use of Public and Private Roads

The Contractor shall be entirely responsible for ensuring that the public roads in the vicinity of the Works are kept clear of mud and other debris falling from vehicles connected with the Works or spreading on the public road as a result of the Works in any way.

The Contractor shall be responsible for reinstating all roads to their original condition and repairing any damage caused as a consequence of the works.

174AR Co-ordination by Contractor

The Contractor shall be responsible for the co-ordination of work by all Sub-contractors.

175AR Safety Supervisor

The Contractor shall inform the Engineer in writing, before the start of the Works, of the name of the person, resident on site responsible for the duties of Safety Supervisor.

176AR Night or Sunday Work

The Contractor shall, if required in writing by the Employer's Representative, carry out work at night and on Sundays if in the opinion of the Employer's Representative, it is necessary to do so to avoid interference with or damage to traffic, or for the safety of persons or property, or for any reason or urgency of any kind, and the Contractor shall be entitled to payment of any additional expense reasonably incurred thereby, except insofar as the Contract provides that such work is to be carried out at night or on Sundays, or is the duty or responsibility of the Contractor under the Contract.

177AR Record of Plant and Labour etc.

The Contractor shall make a written submission to the Employer's Representative each week giving details of all items of plant used and the labour employed on Site during the previous week. The Contractor shall also maintain accurate records, plans and charts showing the dates and progress of all the main operations in relation to the approved Programme. The Employer's Representative shall be supplied with a copy of these records in conjunction with the plant and labour returns.

178AR Working with Due Care and Attention

The Contractor shall take such precautions as are necessary to prevent damage occurring to existing structures, drains, tarmac areas etc., whilst working in or around these features. Any subsidence, cracks or other damage caused by the Contractor shall be made good to the satisfaction of the Employer's Representative.

179AR Control of Dust

The Contractor shall take all measures necessary to control dust at the site of the Works during the course of the Works, including spraying the affected area with water as required by the Employer's Representative.

180AR Damage to Roads and Adjacent Property or Buildings

The Contractor shall satisfy himself as to the condition of the walls, fences and any adjacent property or structures before commencing work on site and shall report in writing any defects to the Employer's Representative. The Contractor shall be responsible for any damage to roads, footways or entrances (public or private) and adjoining property, buildings or structures that may be caused by his workmen or Sub-Contractors in the carrying out of the Works and shall make good any damage to the satisfaction of the Employer's Representative and those concerned.

181AR Contractor to Submit Details of Temporary Works

The Contractor shall submit the design of all temporary works if required including stagings, scaffolding, formwork; temporary offloading arrangements, temporary building and protection measures and the like to the Employer's Representative and none of these works shall be put into service unless and until the design, materials and workmanship have been examined by the Employer's Representative. The whole of the temporary works of whatever nature adopted and

the plant, equipment and appliances used shall be the sole responsibility of the Contractor in regard to their construction, sufficiency, safety, maintenance and removal even though these may have been examined by the Employer's Representative, and the Contractor shall indemnify the Employer against any liability for injury or damage arising from the adoption and use of such temporary works.

The Contractor shall consider the necessity for temporary access/working platforms and maintenance of same if so required for the works methodology.

182AR Samples

When requested by the Employer's Representative, samples of materials to be used shall be submitted to the Employer's Representative for approval prior to their placement in the Works. The Contractor shall make all arrangements for such testing.

183AR Services within Site Boundary

During the execution of the Works the Contractor shall take all reasonable steps to prevent damage to mains, service pipes, sewers, drains, cables, wires, overhead telephone lines, poles, etc., and shall provide for protecting and supporting all existing deck mounted services to the satisfaction of the Employer's Representative and the responsible Authorities.

If any damage is caused, then the Contractor shall make good the damage and pay any costs incurred. The Contractor shall satisfy himself by his own enquiries and observations as to the precise position of all existing services. He shall take full responsibility in connection with them and shall hold the Employer indemnified against claims that may arise from any damage caused to such services by his operations.

184AR Electricity Supply to Site

The Contractor shall, at his own expense, make all arrangements with the E.S.B. for supplies required during the execution of the works. The Contractor shall be responsible for the installation and maintenance of supplies in accordance with the appropriate statutory requirements.

185AR Water Supply to Site

The Contractor shall provide an adequate supply of fresh water for use on the Works from a source to be approved by the Employer's Representative.

186AR Contractor's Offices

Any offices, stores, toilets facilities, fuel supplies etc. required by the Contractor for his own use shall be at locations within the site compound agreed with the Employer's Representative.

Sewer/foul connection is not present for Contractor's offices, therefore, the Contractor shall be required to provide suitable provisions accordingly at their own cost.

187AR Contractor's Offices, Stores etc.

The Contractor shall provide and maintain all such general and foremen's' offices, sheds and stores as are necessary for the execution of the Works in a suitable location to be agreed by the Employer's Representative. On completion of the Contract all buildings provided for the purpose of the Contract, including offices, sheds, stores and shelters shall be removed by the Contractor and the sites made good and left clean and tidy to the satisfaction of the Employer's Representative.

188AR Sanitary Conveniences

1. The Contractor shall provide and maintain proper and adequate sanitary conveniences for the use of persons on the Site throughout the Contract; he shall remove these on completion. The Contractor shall provide suitable chemical closets that shall be to the approval of the Employer's Representative and local Public Health Authority. The Contractor shall prevent the workmen from committing nuisances on the works or adjacent lands.
2. The Contractor shall equip these conveniences with chemical or water closets of approved pattern and shall keep them and maintain them in a proper and sanitary condition during the progress of the Contract.
3. On removal of the conveniences the sites shall be properly disinfected and the ground restored to the entire satisfaction of the Employer's Representative and Authorities.

189AR Storage of Materials

Materials stored on site for immediate use shall be stacked in small loads and fenced off from access by the public and Port Operatives. Stacking and stockpiling of materials shall be done in such a manner as to prevent them from collapsing, and shall be situated such that even if a collapse should occur no materials will cause injury or damage to persons and property adjacent to the site.

190AR Site Tidiness

The Contractor shall maintain the whole of the Site of the Works and the area of his offices and stores free from rubbish and in a clean, tidy and safe condition. All materials, tools, plant etc. must be neatly stacked or parked in such a manner so as not to impede or to cause any danger to personnel using the areas. The Contractor shall take all precautions required by the current regulations to protect workmen employed in connection with the Works and all personnel employed or visiting the location and shall, where necessary, provide warning lights and barriers within the vicinity of the Works. He shall remove from the roadway any debris arising from the construction of the Works and shall refrain from discharging any oil, solid or noxious material into the site.

191AR Obstructions arising from Contractor's Operations

The Contractor shall take all reasonable steps to ensure that construction equipment and materials and debris from construction work does not fall into the harbour. In the event that any debris does fall into the harbour, the Employer shall be advised immediately. Any such material shall be removed from the sea immediately after permission has been granted by the Employer.

192AR Structures Adjoining Works

The Contractor shall take all necessary care to prevent damage to existing structures during the execution of the Contract, and shall make good at his own expense and to the satisfaction of the Employer's Representative any subsidence, cracks or other damage which may occur.

Unwarranted record drawings of existing structures and details of imposed loading limitations have been provided in the Background Information. All information has been provided by the Employer in good faith. It shall be the responsibility of the Contractor to ensure the accuracy or otherwise of same. The Employer will not accept any responsibility for inaccuracies in information provided.

The Contractor shall be responsible for confirming that the existing structures can accommodate their proposed construction methodology and associated plant/equipment.

193AR Safety Equipment

All safety equipment necessary for the protection of personnel must be provided by the Contractor and used by his staff. Safety hats and steel toe capped footwear are to be worn at all times by ALL personnel on site including visitors. When there is a risk to eyes suitable goggles must be worn. Other protective clothing or breathing equipment must be worn when required. Reflective jackets must be worn when working in the vicinity of roadways. Life jackets must be worn when working in the vicinity of water.

194AR Electrical Equipment

No work shall be carried out on live electrical circuits. Before any work is carried out on or adjacent to equipment or cables which are normally live, or where danger would arise to men working, it is essential that the apparatus be isolated and proved dead. Isolation should be carried out in accordance with the approved procedure for isolation of electrical equipment.

195AR Screening of Lights

All lights provided by the Contractor shall be so placed and/or screened so as not to cause confusion with or interfere with any vessels in the harbour or vehicles and persons using adjacent roads and footpaths.

196AR Rescue Boat and Life Saving Equipment

The Contractor shall provide a stable and seaworthy motor boat of not less than 5m length for sole use as a rescue boat for the duration of the works. Vessels up to 7m length can be launched from the Coal Harbour slipway. Vessels larger than this should be launched by crane from Carlisle Pier.

Rescue vessel shall be on standby at all times during construction. A trained boat man should be in attendance with the vessel during all marine construction. Rescue vessels shall not be used as work boats.

The Contractor shall be responsible for the repair and upkeep of the boat. The rescue boat shall not be employed for inspection or attendance purposes. A separate vessel will be required for this purpose.

All personnel working from boats or barge mounted equipment shall be provided with life jackets that must be worn at all times. The Contractor shall also provide at least 3 life belts with adequate lifelines attached. These shall be erected in easily accessible positions and shall be clearly visible.

197AR Disclosure of Information and Advertising

1. Disclosure of Information:

   The Contractor shall not, without the written consent of the Employer's Representative, disclose particulars of the Contract to any person, or furnish or publish, or permit to be furnished or published any information with regard to the Works, Contract or business of the Employer to any person, save insofar as may be necessary for the due performance of the Contract, and shall preserve strict confidence with regard to any information of a confidential or secret nature received from the or Employer or Employer's Representative.

2. Advertising and Publicity:

   No advertising whatsoever on either temporary or permanent hoardings or any other parts of the Works shall be permitted. No photographs shall be taken or details describing the Works published without the written consent of the Employer's Representative.

198AR Navigation and Port Regulations

1. General Navigation

Where floating plant or vessels are used, the Contractor's attention is drawn to the fact that he shall have no right under this contract to berthage in the harbour or alongside Carlisle Pier. When plant is at anchor, away from work operations the Contractor shall consult with the Harbour Master and obtain his agreement as to the location of all berthage, anchors and / or mooring lines he intends to use and he shall not unduly interfere with the normal use of the harbour.

All vessels shall comply with the Harbour bylaws.

2. Communications

For communication purposes the Contractor shall be equipped with V.H.F. radio equipment capable of working on marine channels and a listening watch must be kept on the appropriate channel.

The main site staff shall also be provided with mobile telephones. The relevant contact numbers of all site staff shall be provided to the Employer's Representative and Harbour Master. The Harbour Master shall be given a rota showing who is on shift during all working hours. Any changes in contact staff above must be communicated immediately to the Harbour Master.

3. Marking and Lighting of Operations

All floating craft operated by the Contractor shall, at all times display such lights and / or shapes that are stipulated in the "International Regulations for Preventing Collision at Sea" and the "International Association of Lighthouse Authorities" (I.A.L.A.) related to such craft or its nature of work.

The Contractor shall also comply with all relevant requirements for navigation, lighting and the safety of vessels using Dun Laoghaire Harbour.

4. Sunken Plant

In the event of any plant, equipment or materials foundering or sinking during the execution of the works, the Contractor shall immediately notify the navigational authorities. The Contractor shall use display buoys and lights, etc, as may be directed to ensure the safety of shipping and immediately take appropriate steps salvage the plant, equipment or materials.

If such sunken plant causes an obstruction at the Harbour or its approaches the Employer may remove the sunken plant causing the obstruction and all costs involved in such removal shall be borne by the Contractor.

The fact that sunken material, vessel, craft or plant is insured, or has been declared a total loss, or ownership is passed from the Contractor to a third party, shall not absolve the Contractor from his obligations under this Clause to raise and remove the same. The Employer shall have the right to withhold the issue of the Maintenance Certificate until the Contractor has fulfilled his obligations under this Clause.

5. Marine Survey Office

All craft used in the works shall hold current certification from the Marine Survey Office of the Department of Transport, Tourism and Sport, relevant to the particular class of vessel.

All relevant certification shall be submitted to the Employer's Representative and no works shall commence until the Employer's Representative has approved in writing, the details submitted.

6. Statutory Notices

The Contractor shall promulgate all relevant Notices to Mariners and other statutory notices required for the proposed construction operations.

7. Traffic and Shipping

The Contractor shall take all practical steps by daily liaison with the Harbour Master to minimise the effects of his construction on normal Harbour operations and shall at all times during the execution of the work keep quays, storage areas, car parks and approach roads clear of all obstructions or nuisances of any kind. He shall so arrange his work that his operations will not unduly interfere with vessel traffic or the normal usage of the Carlisle Pier, East Harbour and Marina.

The Contractor's method of working must not interfere with marine craft or unduly disrupt normal Harbour operations and work shall be suspended if necessary to ensure such non-interference. The Contractor's rate for the work shall include for such suspensions and no extra cost will be allowed. Daily shipping movement updates will be provided by the Employer throughout the duration of the works.

8. Harbour Dues

No Harbour dues will be charged on the Contractor's plant during the period of the Contract. However, Liquidated Damages may be imposed if plant is to be moored in the harbour for long periods outside the Contract period, after completion of the Contract or if the Contractor fails to complete the Contract within the Contract period indicated in the Contract Document.

9. Marine Plant

All marine plant, barges etc. shall be fully licensed and approved by the Department of Communications, marine and Natural Resources, Marine Survey Office. All licenses including load line certificates, load line exemption certificates, safety provisions certificates, SUR183 etc shall be presented to the Employer's Representative for inspection prior to commencement of the works. This list of certification is not exhaustive and it is the Contractors responsibility to make sure that all the necessary certification is in place.

The Employer's Representatives staff shall be trained in Basic Sea Survival and as such, shall be permitted to board all marine plant being used in the construction works and all necessary certification should be in place to allow access for inspection and supervision of the works.

199AR Statutory Permissions

Foreshore Licence

There is no requirements for Foreshore Licensing for this project, all permanent works are supported by existing structures.

199.1AR Water Quality Monitoring Requirements

The Contractor shall be required to undertake water quality monitoring for the duration of the works. Monitoring shall commence two weeks in advance of commencement of the works to establish a baseline and weekly monitoring at two locations alongside the pier shall be maintained at locations to be agreed with the Employer's Representative

A Water quality anode shall be used to take water quality measurements from a boat, measuring turbidity, dissolved oxygen, conductivity and PH. Water quality samples shall be taken at the same time from the same locations for suspended solids laboratory analysis.

Turbidity readings may be used as a surrogate for total suspended solids provided an agreed site specific relationship between turbidity and a series of laboratory verified total suspended solids is established.

A minimum of six transects are required across the channel, 3 upstream and 3 downstream of the works. Each transect should comprise a minimum of 20 points. Transects shall be spaced at regular intervals upstream and downstream of the works, with the exact locations to be agreed with the successful Contractor upon appointment in consultation with the Employer and relevant Stakeholders.

It is the responsibility of the Contractor to ensure his Water Quality Management Plan is sufficient to ensure compliance with the relevant Statutory Permission. For the avoidance of doubt, compliance and evidential demonstration of compliance are an obligation of the Contract and nothing stated here in anyway absolves the Contractor of his responsibilities in this regard.

The water quality anode shall be calibrated on a monthly basis. The Contractor shall provide weekly reporting of water quality reports.

Series 200 – Site Clearance

270AR Execution of Site Clearance Works

1. The execution of site clearance works shall be undertaken by the Contractor in such a manner as not to impair road safety. The Contractor shall programme and undertake site clearance work so as to coincide with the permanent works, or, following completion of any necessary temporary works.
2. Appendix 2/1 – List of Buildings etc. to be Demolished or Partially Demolished provides particular details of the extent of Site clearance and demolition works.

Series 1800 – Structural Steelwork

1800.7AR General Requirements

1. The specification for structural steelwork on this project comprises Series 1800 of the Specification of Road Works and Appendix 18/1 in this specification. In addition all standards referenced in these documents much be adhered to.

2. Reference should be made to the design drawings for reference locations and additional notes regarding the structural steelwork.

Series 1900 – Protection of Steelwork Against Corrosion

1909.6AR Particular Requirements

1. The specification for the protection of structural steelwork from corrosion on this project comprises Series 1900 of the Specification of Road Works.

2. Reference should be made to the Tender Drawings for reference locations and additional notes regarding the corrosion protection of structural steelwork.

3. All Specified steelwork including ladders, mooring bollards, hand-rails, mooring brackets and mooring fixings and access structures and platform/bankseat steelwork shall be hot-dip galvanised in accordance with IS EN ISO 14713 and IS EN ISO 1461.

   Additionally items to be galvanised shall be shot Blast to S.A. 3, minimum zinc thickness shall be 200µm for steel greater than 6mm thick and 140µm for steel 3mm to 6mm thick. If minimum zinc thickness cannot be obtained consistently for items less than 3mm thick an additional organic coating shall be applied to minimum dry film thickness of 320µm.

4. The Contractor shall ensure that the galvanic protection provides high durability for a minimum design life to first major maintenance of 25 years. The Contractor shall also provide details of the maintenance required to ensure that all steelwork is protected against corrosion for the design life of 25 years which details will form part of the As-Built Documents for the Works.

Series 6000 – Marine Infrastructure and Related Elements

6000AR Design Standards

The design of the floating pontoon units shall in particular comply with the requirements of the Standards and Regulations listed:

- EN 1990 Eurocode 0: Basis of Structural Design
- EN 1991 Eurocode 1: Actions on Structures
- EN 1992 Eurocode 2: Design of Concrete Structures
- EN 1993 Eurocode 3: Design of Steel Structures
- EN 1994 Eurocode 4: Design of Composite Steel and Concrete Structures

(Inclusive of the requirements of the relevant Irish National Annex for each standard)

- BS 6349: Code of Practice for the Design of Maritime Structures:
  - Part 1: Code of Practice for General Criteria.
  - Part 2: Code of Practice for the Design of Quay Walls, Jetties and Dolphins.
  - Part 4: Code of Practice for Design of Fendering and Mooring Systems.
  - Part 6: Code of Practice for Design of Inshore Moorings and Floating Structures.
- ISO 12944 – Part 2 (Corrosion Resistance).

The design shall in particular comply with the guidance provided in the following Design Guides & Additional Reference Documents:

- The Yacht Harbour Association Ltd. Code of Practice for the Design, Construction and Operation of Coastal and Inland Marinas and Yacht Harbours: 2007.
- PIANC Guidelines for the Design of Fender Systems: 2002.
- CIRIA C674 - The use of concrete in maritime engineering - a guide to good practice: 2010.
- CIRIA Report 103 Design of Laterally Loaded Piles.
- The CIBSE Guides, Codes and Technical Memoranda.
- Lloyd's Register: Rules and Regulations for the Classification of Ships, July 2011. In particular Part 4, Chapter 5 "Barges and Pontoons".

Priced elements which deviate from the requirements of these documents may be considered, however the tenderer will be required to demonstrate that these items meet the outline requirements as a minimum.

6001AR Site Location

The proposed pontoons shall be located at Berth 4 within Dun Laoghaire Harbour estate as shown on the contract drawings. The proposed site is located alongside the Dun Laoghaire Harbour, immediately adjacent to the existing dis-used Ro-Ro ferry linkspan location. Refer to Tender Drawing M0827-RPS-00-XX-DR-C-1000: Proposed DLR Berth 4 Site Location Plan for Site Boundary Co-Ordinates.

6002AR Phasing of the Works

It is proposed that the Works are to be completed in a single phase as per the Tender Drawing M0827-RPS-00-XX-DR-C-1001: Proposed Pontoons General Arrangement.

6003AR Pontoon Design – General

All floating pontoon units shall be designed by the Contractor or specialist Sub-contractor or supplier under a domestic sub contract arrangement to the main contract.

The pontoon system shall be designed in accordance with the governing British & European Design Standards, as well as all relevant Design Guide Documents in Clause 6000AR above. It is a requirement that fatigue loading of the pontoon units shall be considered in the design. The pontoons are required to be designed to achieve the requirements of all parts of this Specification Series, considering the unloaded freeboard and proposed vessel particulars.

The individual pontoon units and system as a whole must have sufficient structural stiffness and interconnectivity with adjacent units to act as a single rigid pontoon system. The pontoon unit structure shall be designed to carry the imposed working loads from deck loading as well as mooring/berthing loads from the vessels as well as local stresses at fixing points including fender fixings.

Pontoon to be equipped with all necessary attachments to allow lifting of modular units onto the quayside via crane.

6004AR Pontoon Design – Vessel Particulars

The pontoon facility shall be designed for cruise ship tender vessels. The table below sets out the necessary vessel characteristics to be considered in the production of the design of the pontoon:

(Note: a design maximum vessel displacement of 50t shall be applied when considering vessel particulars for berthing and mooring actions.)

Vessel Characteristic	Celebrity Apex	Jewel of the Seas	Norwegian Getaway	Royal Class Tenders	All Other Vessels
Overall length (m)	17.50m	11.92m	14.81m	14.77m	11.65m
DWT (t)	-	-	16.3t	-	-
Beam (m)	5.70m	4.70m	5.92m	-	-
Operational Speed (knots)	-	-	17 knots	-	-
Draught (m)	1.00m	0.80m	1.15m	1.20m	1.00m

Table 2 – Particular Vessel Characteristics

6005AR Wind, Wave Climate & Tidal Design Criteria

The pontoon system shall be designed for the following environmental loading criteria:

- Wind loading shall be designed in accordance with IS EN 1991-1-4.
- Wave loading:
  - Pontoon suppliers should design for the most onerous of wave conditions that their “frame & float” type pontoon units can withstand.
  - Pontoon suppliers shall provide along with their design and quote, the design wave conditions that must not be exceeded by the pontoons in operation. The pontoon warranty shall also only be applicable during these conditions – See 6012AR.

- Dun Laoghaire – Rathdown County Council will monitor weather forecasts and shall remove the pontoons from their moorings and relocate to a safe location when such weather conditions are anticipated to arise and will be reinstated as conditions subside.
- **The proposed pontoon facility is to be seasonal and only be in operation between April and September every year. The pontoon units shall be separated and relocated onto an adjacent quayside outside of this calendar period.**

HAT & LAT plus a corresponding storm surge of +0.5m shall be considered in the design of all infrastructure elements. An additional allowance for increase in sea-level over design life of +0.5m shall be considered.

The Admiralty Tide Tables 2020/21 published conditions for Dun Laoghaire are as follows and are given for information purposes only:

Tidal State	Level (m CD)
HAT	+4.70m CD
MHWS	+4.10m CD
MHWN	+3.50m CD
MLWN	+1.50m CD
MLWS	+0.70m CD
LAT	-0.10m CD

Table 3 – Dun Laoghaire Tide Tables 2020/21

6006AR Loading & Freeboard

The pontoons shall be designed for a minimum live load of 4kN/m2. The pontoons shall have a 25% total load reserve buoyancy. The unloaded freeboard shall be 900mm and the supplier shall ensure that the unloaded freeboard of adjacent pontoon sections is the same before connection is made. Differential buoyancy shall be provided in the pontoon to maintain horizontal trim of the system under loading from the access gangway.

6007AR Dimensions of the Pontoons

Tenderers are instructed to submit tenders for the installation of pontoons as shown in the Tender Drawings. The proposed pontoon shall comprise multiple pontoon units interconnected to form and act as a singular entity. The proposed pontoons shall be 40m in length, minimum width 4.5m and maximum width 6.0m. The geometric design and layout of the pontoon deck arrangement shall be such to allow a minimum of 3.0m of clear deck space between the hand railing of the access gangway and the pontoon berthing line. This 3.0m clear space shall also be achieved at the landing of both pontoon accesses to allow for suitable disabled access and to mitigate against congestion of passengers.

6008AR Pontoon Construction & Materials

1. Pontoon Structure

   The pontoon structure may comprise either of the following forms of construction, provided that the requirements of this Performance Specification is achieved and maintained throughout the design life of the pontoons:

   Heavy-Duty Frame & Float Unit:

The full structure of the pontoon shall be made of a heavy-duty hot-dip galvanised steel perimeter frame with concrete floats and a core of polystyrene foam. The heavy-duty steel frame shall be designed by the supplier to suitably withstand the operational and environmental loading as detailed within this Specification Series. The concrete shall have a 28 day cube strength of at least 50 N/mm² and shall be suitably reinforced as necessary.

The pontoon shall also have sufficient longitudinal stiffness to prevent flexing greater than 1/400 (ratio of deflection/span) under design dynamic loading, and the overall pontoon frame/structure shall have torsional rigidity to the satisfaction of the Engineer.

Pontoon surfacing shall be of hard-wearing concrete finished with an anti-slip surfacing, require minimal maintenance, be free draining and have a non-slip surface with a co-efficient of friction of 0.75 or greater as defined in the BS 4592 test. This surfacing shall be high friction GRP decking or equivalent.

High-friction surfacing panels shall be a 35mm thick and shall form a smooth-running surface for passengers acing the pontoon with no raised edges/joints between panels or fixings or any other installation defect that constitutes a trip hazard.

2. Pontoon Floatation

The internal flotation shall be made from high impact strength Styrofoam of minimum 65N/mm2 and shall be resistant to or protected from chemical and petro-chemical attack. All flotation shall be designed so that it is inherently within the concrete structure of the pontoon and may be positively retained under all loading circumstances.

3. Pontoon Fendering

All Berthing faces of the pontoon shall have appropriately sized polymer D-Fender units positioned just below the pontoon deck level (affixed to the pontoon frame). Considering the freeboard requirement of 900m, the pontoons shall also have the same rubber-D fenders positioned at mid-height on the pontoon berthing face. They shall be fixed in such a way to eliminate warping of the polymer longitudinally and laterally. End joints between adjacent fenders shall be connected or chamfered to provide a smooth berthing line without snags.

The proposed fendering solution shall Contractor designed to the vessel particulars with a maximum vessel displacement of 50t to be applied.

4. Pontoon Services

The proposed pontoon has no requirement for installed services, and shall be illuminated by lighting on the existing pier.

5. Mooring Bollards

The pontoon shall be fitted with mooring bollards of 10t working load (loaded in any plan direction and up to 30˚ above horizontal) located nominally at 3m intervals along the berthing face of the pontoons. All mooring bollards shall be constructed from corrosion resistant material or have suitable surface coating to the satisfaction of the Engineer.

All vessel moorings shall be Contractor designed in line with the vessel particulars and to the approval of the Engineer.

6. Emergency Ladders

3nr. ladders shall be installed in accordance with the Yacht Harbour Association Marina Design Construction & Operation Code of Practise and BS6349. A fixed ladder shall be

provided at each end of the pontoon and positioned centrally on the berthing face as shown on Tender Drawing 1100.

Ladders shall be constructed in bright colours and include hand supports at least 350mm above the deck and have at least 4 rungs beneath the water surface.

Emergency ladders shall be painted to mitigate against corrosion throughout the design life of the pontoon facility with a minimum dry film thickness of the paint system of 450µm (measured after full paint curing/drying, with a nominal thickness greater than this value). Where required before painting; surfaces shall be prepared for painting by dry air abrasion (Dry Blast Cleaning) in accordance with BS 7079 or BS EN 8501 – 8503. Steel shall be prepared to ISO Sa 2.5 Standard.

7. Life-Saving Equipment

1nr. Lifebuoy shall be installed in accordance with the YHA Code of Practice and BS6349 and shall be provided in the location indicated on the Tender Drawings. The Lifebuoy shall be installed on a stand approved by the engineer and fitted with a throw line in excess of 10m in length.

8. Signage

Fittings and the provision of pier markers in accordance with the YHA Code of Practice shall be provided – notation requirements to be advised post tender.

9. Fittings & Fixtures

All fittings and fixtures for marine infrastructure shall be corrosion resistant and steel fixtures shall be stainless or hot dip galvanised to BS 729, suitable to the exposure conditions.

6009AR Access Structures

Dun Laoghaire Harbour propose to provide 2nr. separate access structures to the pontoons, 1nr. articulating gangway at the Ro-Ro linkspan end of 30m length, and 1nr. self-levelling steps structure to be located at the opposite end of minimum length 10m. These access structures shall each comprise a new hinged connection to the existing pier, and a sliding/roller connection at the landing location on the pontoon. The access gangway shall provide a steepest gradient of 1:5 at MLWS.

The access structures shall be of galvanised steel construction, dissimilar materials with a risk of bimetallic corrosion shall be separated by suitable nylon washers or spacers to prevent contact.

The 30m long galvanised steel articulating gangway shall be designed to a design loading of 5kN/m2 applied to the entire deck area. The self-levelling steps shall be 5kN/shall be designed to a design UDL of 5kN/m2. All pontoon and access design shall be carried out in accordance with all relevant design codes and industry guides listed in Clause 6000AR.

All access structures, cantilevered platform and access ramps shall have high-friction (of co-efficient of friction of 0.75 or greater as defined in the BS 4592 test) surfacing of GRP Decking or equivalent to be Contractor designed for a characteristic UDL of 5kN/m² and point load of 45kN.

High-friction surfacing panels shall be a 35mm thick and shall form a smooth-running surface for passengers acing the pontoon with no raised edges/joints between panels or fixings or any other installation defect that constitutes a trip hazard.

6010AR Access Structure Hinge Connections

The hinged connections to the existing pier structure shall be a Contractor designed item. The articulating gangway (at the Ro-Ro linkspan end) hinged connection shall be affixed to the top surface of the existing cope beam as shown in Tender Drawing 3000. The bankseat hinge assembly shall be designed to be easily disconnected from the existing copes beam, with only a surface-mounted base fixing plate to remain on the existing structure.

The self-levelling steps structure hinged connection shall be mounted onto a removable steel cantilevered platform, as shown on Tender Drawing 3001.

6011AR Design Life

1. Structural Steel Elements

   All steel elements (including; steel access structures, steel pontoon frames, mooring brackets & pontoon unit connections) shall be designed with environmental corrosion allowance included for the 25 year design life.

   Corrosion rates for environmental conditions shall be in accordance with BS EN 1993-5:2007, Section 4.

2. Pontoon Units, Floats, Frames

   The design life of the pontoon units shall be 25 years to the 1st scheduled inspection and maintenance as required.

6012AR Warranty

The supplier shall fully guarantee the equipment and the Warranty shall provide for:

1. The equipment shall conform to and perform its function in accordance with the Specification as stated or as implied by the supplier.
2. Any part of the equipment which is or becomes defective during warranty shall be removed and replaced to the satisfaction of the Engineer without cost to the Employer.
3. The Warranty shall remain in force for a period not less than 24 months following substantial completion on site.

As described in clause 6005AR – Wind, Wave Climate & Tidal Design Criteria, it is extremely important to the Client that the pontoons are removable with ease. As such the pontoons shall not be subject to any adverse weather conditions more severe than a 1:1 year storm event to allow for the structural design of the pontoon frame to be as light-weight as possible, yet still robust enough for service under milder weather conditions.

The supplier shall include within his warranty, stipulations as to the weather conditions under which the design of the pontoons is compliant. Any damage to the Works brought about by operation outside of the scope of the warranty shall be the responsibility of the Client.

6013AR Pontoon Moorings

The proposed pontoon mooring restraints shall make use of the existing steel RHS fender-piles. The pontoon moorings shall comprise 2nr. half-mooring brackets to encapsulate the fender-piles in pairs as shown in Tender Drawing 3002. In addition to the mooring brackets described above, there will also be a requirement for 1nr. H-pile mooring guide to be affixed to an existing concrete bearing pile immediately adjacent to the Ro-Ro linkspan. This H-pile mooring guide is also shown on Tender Drawing 3002.

Appendix 0/4 – List of Tender Drawings

Drawing Number	Drawing Title
M0827-RPS-XX-XX-DC-X-1000	Existing Site Location and Layout
M0827-RPS-XX-XX-DC-X-1100	Proposed Pontoon General Arrangement
M0827-RPS-XX-XX-DC-X-1101	Proposed Pontoon Elevation
M0827-RPS-XX-XX-DC-X-1102	Proposed Pontoon Sections
M0827-RPS-XX-XX-DC-X-1103	Proposed Mooring Details
M0827-RPS-XX-XX-DC-X-1200	Proposed Demolition
M0827-RPS-XX-XX-DC-X-3000	Proposed Gangway Access
M0827-RPS-XX-XX-DC-X-3001	Proposed Cantilever Platform & Access
M0827-RPS-XX-XX-DC-X-3002	Proposed Mooring Bracket Details

Table 4 – Tender Drawings List

Appendix 1/1 – Temporary Accommodation and Equipment for the Employers Representative

(a) **List of Surveying Equipment**

The following equipment should be available on site at all times.

1 No. Automatic level (as Kern GKO) with tripod

1 No. 4m levelling staff with circular bubble plumb

6 No. 2m ranging poles

6 No. Ranging pole tripods

3 No. 1m spirit level

3 No. 100m fibron tape

3 No. 30m steel tape

5 No. 5m steel tapes

1 No. Max/min thermometer

2 No. 3lb Hammer

2 No. Plumb-bob

5 No. Joiner's string line

1 No. Immersion thermometer suitable for measuring the temperature of bituminous materials (black top)

1 No. digital camera with minimum 3 mega pixels resolution

1 No. Total Station EDM (as Zeiss Elta 6/88 or equivalent)

The following equipment to be made available to the Engineer on his request:

Engineer's Theodolite with tripod (as Kern 1S or equivalent)

(b) **List of Protective Clothing (to be provided annually)**

6 No. Safety helmet

6 No. Personal Lifejacket - Self-inflating (Crewfit or equivalent)

4 No. Pairs Safety boots - rigger type

4 No. Gore-tex waterproof coat as directed

4 No. Gore-tex waterproof overtrousers as directed

4 No. Fibrepile jacket

6 No. High visibility waistcoat for roadworks

6 No. Pairs Wellington boots (steel toe-capped)

(Protective clothing shall be without the Contractor's name or symbol. Items of protective clothing and equipment should be replaced when no longer serviceable. The Contractor shall obtain details of the various sizes of clothing required before ordering). The Engineer shall select all of the above items.

Appendix 1/7 – Site Extent and Limitations on Use

(a) **Extent of Site**

The site boundaries are shown on Tender Drawing M0827-RPS-XX-XX-DR-C-1000 – Existing Site Location and Layout.

(b) **Limitations on the Use of the Site**

The Contractor shall be deemed to have included in his rates for such downtime and no additional payment shall be made in the event of the Contractor having to halt the works to avoid disruption to harbour operations.

Structure	Limitations on Use of the Site (and/or requirements for the operation or use of the Site)
General	The Contractor shall maintain access points to adjacent Employer and third party areas.
	The Contractor must ensure that all services to the Carlisle Pier remain operational throughout the duration of the Contract. This will require the provision of a temporary power and temporary pipe work.
	All fenders and bollards on Berth 1 must be fully and safely operational for the duration of the Contract.
	Attention is drawn to the Health and Safety Plan for details of loading restrictions for plant on the existing quay structures. An imposed load limit of 20kN/m² is to be adhered to.

Working Hours

Working hours for the Contract shall be 8am to 6pm Monday to Friday, and 9am to 1pm on Saturdays. The Contractor shall seek approval from the Engineer with regard to extension of the working hours.

Frequency of Shipping

A shipping schedule for the harbour shall be made available to the Contractor upon appointment.

Appendix 1/9 – Control of Noise and Vibration

The Contractor shall be responsible for assessing the levels of noise and vibration resulting from any significant construction works. Noise control shall conform to all statutory requirements and the limits of vibrational amplitude and resultant peak particle velocity shall be such as to cause no damage to adjacent buildings, structures, pipelines, people or traffic.

The Contractor shall implement all requirements for instrumentation and monitoring of vibrational amplitude in conformity with the “no damage” requirements above.

Appendix 1/13 – Programme of Works

(1) The Contractor shall provide the Programme of Works in a form of a Network Diagram produced as a result of a 'Critical Path Analysis' and must abide by the constraints below. It shall show the level of detail appropriate to each stage of the Works and all activities and restraints, each of which shall be given a short title. All events shall be numbered and annotated with earliest and latest event dates. In addition to this the Contractor shall provide resource histograms indicating the Contractor's proposed squad resource levels at all times throughout the duration of the Contract.

(2) A monthly update of the programme is required throughout the duration of the Contract for discussion at Progress Meetings. This is to be forwarded to the Resident Engineer at least one week in advance of all the Site meetings.

(3) **Timing and Phasing of the Works**

(a) The Time for Completion of the whole of the works is estimated to be 6 months to include all lead-in and fabrication time for structural steelwork, access structures and pontoon units.

(b) Provision of noise and environmental protection prior to and during the main Works.

Appendix 1/22 – Progress Photographs

The Contractor shall take progress photographs as the works proceed with a minimum of 12 photographs at weekly intervals. The record should indicate overall layouts of the site from as many views as possible indicating the stage of completion and also highlight construction details which may later be covered up.

The overall views should be taken from clear vantage points, generally high above ground and from the same location every week. One copy of each photograph marked with date of record shall be supplied together with the photographic negatives.

Appendix 1/24 – Quality Management System

(1) The Contractor shall institute and operate a quality management system complying with BS EN ISO 9002 and Spec Cl 104. The quality management system shall be described in a Quality Plan that shall be submitted to the Engineer for his acceptance.

The Quality Plan shall cover the following items:

(i) Contractor's organisation and management

(ii) Contractor's method statements and construction procedures

(ii) Contractor's construction quality control

(iv) Suppliers' Quality Plans

(2) Items i) and iii) of the Quality Plan shall be submitted to the Engineer for his acceptance not later than 21days after award of the Contract.

The Contractor shall submit other parts of the Quality Plan prior to commencement of any related work or activity and to a timetable included in item i).

Appendix 1/27 – Quality Management System

(1) General Safety

The Contractor shall comply with all National Safety Standards and Regulations.

The Contractor shall also comply with all requirements and shall take any necessary or requested action from the Harbour Master to observe the agreed procedures as laid down in the Employer's Major Emergency Plan, a copy of which is available for inspection upon request.

(2) Safety and Health Regulations

The Contractor's attention is drawn to its Contract and legal obligations arising under the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013) and any amendment thereof ("*the Regulations*").

Unless previously furnished, the Contractor shall, at the latest, 7 days before Commencement Date submit the following documentation to the Engineer:-

- the proposed Site specific Safety Statement for the Project
- the developed Safety & Health Plan

(3) Project Supervisor (Construction Stage)

The Project Supervisor shall mean the person or persons appointed in accordance with the provisions of regulation 6 of SI 291 of 2013.

The Contractor shall employ a competent person to act as Project Supervisor (Construction Stage) ((PSCS)) to carry out the duties and responsibilities described in the Safety, Health and Welfare at Work (Construction) Regulations 2013. The Safety and Health Plan and the Site Specific Safety Statement shall comply with the Regulations and with the Special Requirements of the Conditions of Contract. The Preliminary Safety and Health Plan is included in the Information Pack.

For the avoidance of doubt the Contractors role as PSCS will continue in respect of other Contractors on Site.

(4) Safety Statements & Safety Supervisor

On receipt of the Letter of Acceptance the Contractor shall confirm to the Engineer that he possesses a Safety Statement in accordance with section 12 of the Safety Health and Welfare at Work Act, 2005. The Contractor shall ensure that any Subcontractor employed by him on the Works possesses a Safety Statement covering the services of the Subcontractor to the Employer.

(5) Safety Meeting

At an early date following the Letter of Acceptance and before the Commencement Date, the Contractor shall make himself available for a minuted meeting with the Harbour Master and Engineer in charge of the project to discuss safety.

The basic agenda of this meeting shall be for the Contractor to give to the Engineer information regarding hazards being brought to Site in the form of work operations, equipment, chemicals, flammable materials, power, explosives etc., together with controls in force to counteract these hazards. The Contractor and Engineer shall subsequently pass on this information on hazards to their respective staffs.

(6) Accident Reporting

All accidents reported under The Safety, Health and Welfare at Work Regulations shall be reported immediately to the Engineer. A copy of the subsequent written report to the Health and Safety Authority shall also be provided.

The Contractor shall initially report verbally to the Engineer and Employer Safety Representative all accidents, "near misses", loss and damage to any personnel or third party whether caused by his own employees or by any other person on Site IMMEDIATELY these occur.

The Contractor shall within 2 working days submit a written account of the incident to the Engineer and Employers Safety Representative.

Such reporting to the Engineer will not absolve the Contractor from his statutory responsibilities on accident reporting to the relevant statutory authorities and/or insurers.

(7) Site Works

The Contractor shall provide industrial safety helmets for use by all personnel on the Works, and he shall ensure that these helmets are worn at all times. The helmets shall be to a standard not less than that provided under BS 5240 or equivalent approved.

The Contractor shall maintain adequate stocks of protective clothing and other safety equipment and distribute these to his employees and other visitors to the Site as and when required.

The Contractor shall provide high visibility, reflective vests or coats to Class 2 EN471 and ensure that his employees, Subcontractors and all staff or visitors to the Site wear such safety clothing

The Contractor shall provide and maintain an adequate first aid kit. The Contractor shall ensure that at least one of his staff, fully qualified in the administration of first aid, is present on Site while work is progressing. This includes shift overtime, Sunday and Bank Holiday working.

Labour working in or above water shall be protected with adequate safety harnesses, life lines and buoyancy aids, and when working in unprotected, unfenced areas above or in the water, there shall be a fully manned rescue boat standing by.

The Engineer shall have full authority to stop the Works if Site staff are not compliant with this clause or the Contractor fails to discharge his responsibility under this clause. The cost of such stoppage shall be borne by the Contractor.

(8) Plant Safety

All Contractor's Plant, whether mobile, floating or stationary and including but not limited to excavators, rock breakers, cranes, forklift trucks, tractors, shovels and the like shall be equipped with all proper safety devices applicable to the type and class of plant. Cranes and lifting equipment shall not be used without evidence of current certification having been presented to the Engineer. Safety devices shall at all times be operative and shall be properly maintained during the progress of the Works.

(9) Public Safety

The Contractor shall take such measures to ensure the safety of the harbour users and other members of the public adjacent to the Works and shall warn them by suitable signs.

The Contractor shall also provide and maintain at his own expense suitable safety fencing, notice boards, lighting and watchmen when or where necessary as required by the Engineer or by any competent statutory or other authority to protect people, property and the works from injury or damage.

All barriers breached or otherwise disturbed during the execution of the Works shall be immediately repaired or replaced.

(10) Marking and Lighting of Operations

The Contractor shall place satisfactory marks, lights and notices in accordance with "*The International Regulations for the Prevention of Collision at Sea*" and "*International Association of Lighthouse Authorities*" and agree with the Harbour Master and the Engineer to warn vessels moving in the vicinity of the Works.

(11) Operational Safety precautions

The following measures, if applicable, shall be included in safety precautions undertaken by the Contractor to protect representatives of the Employer while present at the Contractor's work site or premises in connection with the Contract:

(a) Adequate lighting.

(b) Adequate work space. Area to suit amount of equipment present.

(c) A tidy work surface free of any substance or materials likely to cause slipping, tripping or falling.

(d) Adequate shelter.

(e) Safe work practices with a safe limit to the number of hours worked.

(f) Adequate first aid facilities.

(g) Telephone or radio in case of emergency.

(h) Life buoy rings with easy safe access in prominent positions on the land.

(12) Safety Equipment

All safety equipment necessary for the protection of personnel must be provided by the Contractor and used by his staff. Safety hats and steel toe capped footwear are to be worn at all times by ALL personnel on Site including visitors. When there is a risk to eyes suitable goggles must be worn. Other protective clothing or breathing equipment must be worn when required. Reflective jackets must be worn when working in the vicinity of roadways and railways. Lifejackets must be worn at all times. Other protective clothing or breathing equipment must be worn when required.

Appendix 2/1 – List of Buildings etc. to be Demolished or Partially Demolished

(1) The items listed in the table below shall be **demolished** as part of the Works:

Description	Drawing Number	Ref. Nr.	Requirements
3.2m³ raised concrete platform and cope beam at Ro-Ro ferry linkspan	M0827-RPS-XX-XX-DR-C-1200 – Proposed Demolition	D521	Concrete to be broken-out and arisings disposed of in accordance with the CEMP. Broken-out surface to be reinstated to match surroundings to the satisfaction of the Employer's Representative.
1nr. steel plate (grab-chain fixing plate) affixed to the front face of the existing cope beam		D541.1	Plate to be removed and fixing recesses in-filled with cementitious grout.
2nr. timber fender piles		D551.1	Timber fender files shall be saw-cut at mid tide to ensure no snagging with the proposed pontoon facility or articulating gangway.
Unknown retained formwork to circular concrete bearing pile collar		D551.3	The formwork used to contain remedial concreting works to the bearing pile to receive the mooring bracket was left in-situ. This is to be stripped prior to bracket installation
Approx. 6.4m length of steel barrier		X600.1	Steel barrier to be disconnected and relocated to a storage are to be instructed by the Client post-appointment. Fixing recesses on the existing quayside shall be in-filled with cementitious grout.

(2) **General**

2.1 All works in relation to Site Clearance shall be carried out in accordance with Series 200 of the Specification.

2.2 Storage of any demolished material awaiting removal, recycling or relocation shall be entirely within the site boundary in designated areas within the Contractor's Compounds, unless otherwise agreed with the Employer. A maximum height for stockpiles will be agreed with the Employer. Reference to the Site Waste Management Plan and Construction Environmental Management Plan shall be made prior to the removal for recycling or disposal of any demolished material.

2.3 The foundations of superficial obstructions that are subject to general site clearance including safety barriers, fencing etc., shall be removed down to formation level.

2.4 The Contractor shall give consideration to the site clearance of road restraint systems to ensure that its untimely removal does not create hazards to road users.

2.5 Voids left by the removal of equipment otherwise unaffected by the permanent works shall be backfilled immediately in accordance with Series 600 of the Specification for Road Works. Where appropriate the upper reinstatement shall match the existing or proposed construction.

2.6 All existing traffic signs within the Site shall be maintained or temporary signs used until the new permanent signs are installed and functioning satisfactorily.

2.7 The Contractor will develop the Site Waste Management Plan. This will include a waste flow analysis which identifies the generation volumes, nature, and timing of all waste generated during construction, including hazardous waste. The Contractor shall liaise with the appropriate authorities to agree acceptable measures for the tracking, handling, storage, and disposal of hazardous material found in the course of site clearance.

2.8 The Site Waste Management Plan shall consider the following points as a minimum:

(i) The Contractor will refer to the Site Waste Management Plan and manage all Site Clearance Waste arisings in line with the requirements and procedures set out in the Plan unless otherwise agreed with the Employer.

(ii) Site Clearance Waste (hereon referred to as 'Waste') is defined as any materials or items to be removed, cleared, or demolished as part of the Site Clearance works as described in this Appendix.

(iii) The Contractor will manage Waste arisings in line with all relevant Statutory Regulations and Guidelines

(iv) All Waste awaiting further handling, including removal, relocation, reuse, reprocessing, recycling, treatment or disposal must be stored within the site boundary in designated areas within the Contractor's Compound to be agreed with Dun Laoghaire – Rathdown County Council unless otherwise agreed with the Employer.

2.9 **Construction Environmental Management Plan**

Prior to any works commencing on site, a Construction Environmental Management Plan shall be submitted to and approved in writing by the Overseeing Organisation. Thereafter the works shall be carried out entirely in accordance with the approved plan, unless otherwise agreed in advance in writing with the Overseeing Organisation.

Appendix 18/1 – Requirements for Structural Steelwork

The component specification comprises Series 1800 (CC-SPW-01800 June 2014) and this Appendix 18/1, which includes the drawings and documents referred to in the table below.

Series 1800 Clause Reference	Additional Information Required:	Not Applicable	See drawings listed in Appendix 0/4	See Appended Documents
1804 – Specifications and Documentation				
1804.1.1	Execution Specification, General Refer to drawing numbers listed and TII Specification for Road Works Series 1800 – Structural Steelwork			
1805 – Constituent Products				
1805.1	**Constituent Products, General** No additional requirements			
1805.3.1	**Structural Steel Products, General** All specified structural steel to be cold-formed mild steel grade S355 in accordance with IS EN 1993-1-10, EN 10025-1 and EN 10025-2		M0827-RPS-XX-XX-DR-C-1103 – Proposed Mooring Details M0827-RPS-XX-XX-DR-C-3000 – Proposed Gangway Access M0827-RPS-XX-XX-DR-C-3001 – Proposed Cantilever Platform & Access M0827-RPS-XX-XX-DR-C-3002 – Proposed Mooring Bracket Details	Refer to Series 1900 for details of corrosion protection
1805.3.3	**Surface Conditions** No additional requirements			
1805.3.4	**Special Properties** No additional requirements			
1805.4	**Steel Castings** No additional requirements			
1805.6.3	**Structural bolting assemblies for non – preloaded applications** Bolts shall be grade 8.8. All bolts and nuts shall be galvanised in accordance with IS 7371-6		M0827-RPS-XX-XX-DR-C-3000 – Proposed Gangway Access	

Series 1800 Clause Reference	Additional Information Required:	Not Applicable	See drawings listed in Appendix 0/4	See Appended Documents
1805.6.4	**Structural bolting assemblies for preloaded applications**	✓		
1805.6.7	**Foundation Bolts**	✓		
1805.6.8	**Locking devices** Lock nuts to be provided at fender cone backing structures as shown on drawings		M0827-RPS-XX-XX-DR-C-3000 – Proposed Gangway Access	
1805.6.8.	**Locking devices** Referred standards to be used			
1805.8	**Grouting materials** Grouting/ Levelling materials should be in accordance with TII Specification for Road Works Series 2600			
1805.9	**Expansion joints for bridges**	✓		
1805.10	**High strength cables, rods and terminations**	✓		
1805.11	**Structural Bearings**	✓		
1806 – Preparation and Assembly				
Requirements of Specification for Road Works Series 1800 to be followed				
1807 – Welding				
1807.5.6.1	**Temporary Attachments** No additional requirements			
1807.5.9.1	**Butt welds, generally** No butt welds are proposed			
1807.5.9.2.1	**Single side welds** Single side welds not to be used unless agreed with Employer's Representative			
1807.5.13	**Slot and plug welds**	✓		
1807.5.14.	**Arc and spot welds** No additional requirements			
1807.5.15	**Other weld types**	✓		
1807.5.17	**Execution of welding** No additional requirements			
1807.7.2	**Amendments to EN 1011-3 requirements**			

Series 1800 Clause Reference	Additional Information Required:	Not Applicable	See drawings listed in Appendix 0/4	See Appended Documents
	No amendments			
1807.7.3	**Welding dissimilar metals**	✓		
1808 – Mechanical Fastening				
1808.2.1	**Use of bolting assemblies, General** No additional requirements, unless required by fender cone supplier for securing fender and backing plates		M0827-RPS-XX-XX-DR-C-3000 – Proposed Gangway Access	
1808.2.1.1	**Welding of mechanical fasteners** Locations if proposed by Contractor to be agreed with Employer's Representative			
1808.2.2	**Bolts** Bolts shall be grade 8.8 and comply with all relevant codes and standards. All bolts and nuts shall be galvanised in accordance with BS 7371. Bolt diameters to be used as per drawings		M0827-RPS-XX-XX-DR-C-3000 – Proposed Gangway Access	
1808.2.4	**Washers** Oversized holes not to be used. Tapered washers not to be used.			
1808.3	**Tightening of non – preloaded bolts** Refer to 1806.8			
1808.4	**Preparation of contact surfaces in slip resistant connections**	✓		
1808.5	**Preloaded joints**	✓		
1808.7	**Installation of rivets**	✓		
1808.8	**Fastening side laps**	✓		
1808.9	**Use of special fasteners**	✓		
1809 – Erection				
1809.4.1.1	**Survey, Reference System**			

Series 1800 Clause Reference	Additional Information Required:	Not Applicable	See drawings listed in Appendix 0/4	See Appended Documents
	Reference temperature of 15° to be used			
1809.5.3	**Maintaining suitability of supports** Temporary Stability and support for backing structure should be maintained throughout erection to ensure exact alignment of fender/ collar.			
1809.5.4	**Temporary Supports** Contractor to provide full methodology for erection of steelwork for approval for Employer's Representative. Approval to be granted prior to commencement of works.			
1809.5.5	**Grouting and sealing** No additional requirements			
1810 – Surface Treatment				
1810.1 (5)	**Surface treatment, General** No additional requirements. Surface treatment to be in accordance with requirements of coating system and Specification for Road Works 1900 series			
1810.1 (7)	**Surface treatment, General**			
1810.1 (8)	**Preparation of fasteners** No additional requirements			
1810.1 (9) 1810.1 (10) 1810.5	**Galvanising** Galvanising of steelwork is proposed in accordance with Series 1900 of this Specification		M0827-RPS-XX-XX-DR-C-1100 – Proposed Pontoon General Arrangement M0827-RPS-XX-XX-DR-C-3000 – Proposed Gangway Access M0827-RPS-XX-XX-DR-C-3001 – Proposed Cantilever Platform & Access	

Series 1800 Clause Reference	Additional Information Required:	Not Applicable	See drawings listed in Appendix 0/4	See Appended Documents
			M0827-RPS-XX-XX-DR-C-3002 – Proposed Mooring Bracket Details	
1810.2	**Preparation of steel substrates** Requirements of Clause 1810.2 to be followed.			
1810.2 (1)	**Preparation of steel** Preparation of steel substrates to be in accordance with requirements of paint supplier and Specification for Road Works Series 1900.			
1810.3	**Weather resistant steels**	✓		
1810.6	**Sealing of spaces**	✓		
1810.7	**Surfaces in contact with concrete** Requirements of Specification of Road Works Series 1800 to be met.		M0827-RPS-XX-XX-DR-C-3000 – Proposed Gangway Access M0827-RPS-XX-XX-DR-C-3001 – Proposed Cantilever Platform & Access	
1810.9(2)	**Repairs of coatings to pre-coated constituent products** Requirements of Specification of Road Works Series 1800 to be met.			
1810.10.2	**Cleaning of stainless steel components**	✓		
1811 – Geometric Tolerances				
1811.1	**Tolerance types** Tolerances prescribed in Specification of Road Works Series 1800 to be used throughout.			
1811.3.3	**Alternative criteria**	✓		
1812 – Inspection, Testing & Correction				
1812.2.1 (1)	**Tolerance types** Tolerances prescribed in Specification of Road			

Series 1800 Clause Reference	Additional Information Required:	Not Applicable	See drawings listed in Appendix 0/4	See Appended Documents
	Works Series 1800 to be used throughout.			
1812.5.1	**Inspection of non – preloaded bolted connections** Requirements of Specification of Road Works Series 1800 to be met.			
1812.5.2.1	**Inspection of friction surfaces**	✓		
1812.5.5.1	**Special fasteners and fastening methods, general**	✓		
1812.7.1 (1)	**Inspection of trial erection**	✓		
1812.7.3.4	**Location and frequency** No additional requirements			
1812.7.3.6	**Definition of non – conformity**			
	Significant movement of steel backing structure is not expected.			
1812.7.4	**Other acceptance tests** Components not erected to specific load unless shown on drawings			