# Stranraer Marina Expansion Project

# Framework CEMP

## August 2025

FAIRHURST

FAIRHURST

**CONTROL SHEET**

**CLIENT:** **Dumfries and Galloway Council**

**PROJECT TITLE:** **Stranraer Marina Expansion Project**

**REPORT TITLE:** **Framework Construction Environmental Management Plan (CEMP)**

**PROJECT REFERENCE:** **161379**

**DOCUMENT REFERENCE:** **161379/505**

**BIM DOCUMENT REFERNCE: 161379-FRH-ZZ-00-RP-000505**

| Original Issue | Issue 1 | Name | Signature | Date |
|---|---|---|---|---|
| | Prepared by | Michael Jones | [Redacted] | 13.08.2025 |
| | Checked by | Stephen Raggett-Batchen | [Redacted] | 13.08.2025 |
| | Approved by | Simon Shillington | [Redacted] | 13.08.2025 |

| Update Record | Issue | Date | Status | Description | Signature | |
|---|---|---|---|---|---|---|
| | 2 | 22/01/2026 | Final | Minor amendments to the construction method | Prepared By | JM |
| | | | | | Checked | JM |
| | | | | | Approved | SS |
| | 3 | | | | Prepared By | |
| | | | | | Checked | |
| | | | | | Approved | |
| | 4 | | | | Prepared By | |
| | | | | | Checked | |
| | | | | | Approved | |

FAIRHURST

# Framework Construction Environmental Management Plan (CEMP)

## Contents Page

## 1.0 Introduction

1.1 Fairhurst have been appointed by Dumfries and Galloway Council ("The Applicant") to prepare a Framework Construction Environmental Management Plan (CEMP) relating to a project for the expansion and redevelopment of Stranraer Marina, including dredging ("hereafter referred to as the proposed development"). Fairhurst's appointment is by Balfour Beatty Civil Engineering Limited (BBCEL) who in turn are appointed by Dumfries and Galloway Council (DGC) ('the Applicant').

1.2 This Framework CEMP, has been prepared to support the following consent applications:

- Planning Permission from the Local Planning Authority (LPA) under the Town and Country Planning (Scotland) Act 1997 (As amended)[1] for licensable activities above Mean High Water Springs (MHWS); and
- Marine Licences from Marine Directorate – Licensing Operations Team (MD-LOT)[2] under the Marine (Scotland) Act 2010[3] for licensable activities below MHWS, including for construction works below the MHWS tide level, and for the associated capital and maintenance dredging and disposal of sediment for beneficial use.

1.3 This Framework CEMP will outline at an early stage the relevant operational measures and procedures which will be implemented during construction of the proposed development. It is anticipated that if planning permission and marine licenses are granted then suitably worded conditions would require the construction of the proposed development in compliance with an updated CEMP.

1.4 The Applicant is aware that the contractor will be required to produce and agree a final CEMP to describe how construction will be managed to avoid, minimise and mitigate any potential construction effects on the environment and any sensitive receptors. Therefore, this Framework CEMP has been provided in support of the planning and marine license applications to help illustrate to the consenting authorities the environmental measures, which will be considered suitable during the construction phase of the proposed development.

1.5 The Applicant is proposing to ensure that the arrangements in place are appropriate with regards to amenity of sensitive receptors, highway safety, and the surrounding environment

[1] Town and Country Planning (Scotland) Act 1997
[2] Marine Directorate - Licensing Operations Team (MD-LOT) is the regulator responsible for determining marine licence applications on behalf of the Scottish Ministers in the Scottish inshore region (between 0 and 12 nautical miles (nm)) under the Marine (Scotland) Act 2010, and in the Scottish offshore region (between 12 and 200 nm) under the Marine and Coastal Access Act 2009.
[3] Marine (Scotland) Act 2010

during the construction period. The scope of this Framework CEMP covers the following issues:

- Site, Surroundings and Proposed Development;
- Key Construction Stages/ Activities;
- Highway and Traffic Management;
- Environmental Control Measures;
- Site Management and Community Liaison; and
- Conclusions.

1.6 This Framework CEMP should be read alongside the following submitted supporting planning and marine documents:

- Environmental Impact Assessment Report (EIAR) (Volumes 1, 2 and 3);
- EIAR Non-Technical Summary (NTS);
- Marine Supporting Statement;
- Planning Supporting Statement;
- Placemaking Report;
- Pre-Application Consultation (PAC) Report;
- Framework Construction Environmental Management Plan (CEMP);
- Energy Statements;
- Design and Access Statement;
- Photos Pack; and
- Crown Estate Scotland Interest Statement.

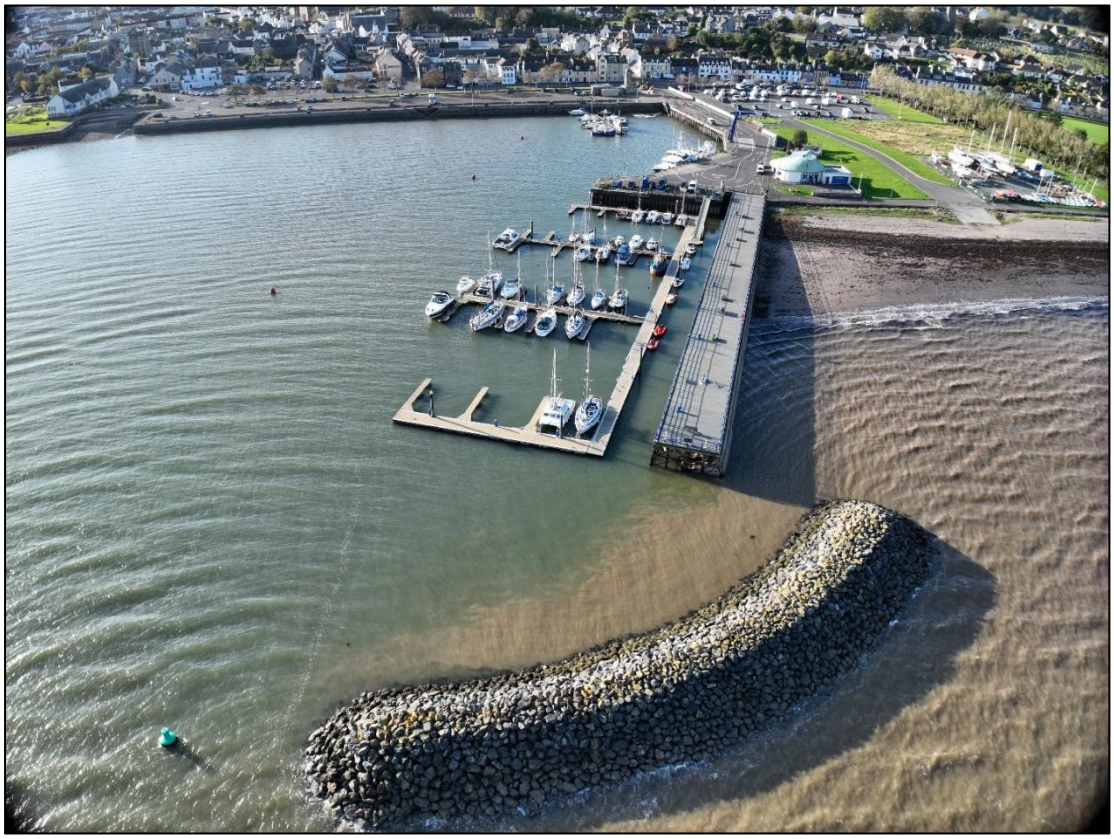
## 2.0 Site, Surroundings and Proposed Development

### *The Proposed Development Site*

2.1 Stranraer is located in Dumfries and Galloway in southwest Scotland and lies at the south of Loch Ryan. The site is adjacent to Market Street, with access into the Marina from the junction of Market Street and Agnew Crescent.

2.2 The Marina is close to Stranraer's town centre, which offers a range of amenities, including shops, restaurants, and accommodation. The marina provides essential services for boat owners, including water and electricity hook-ups. There is also a Boat yard on site, for the storage of boats. This facility also allows for boat owners / berth holders to undertake maintenance when required.

***Photograph 1: West Pier and existing Breakwater***



2.3 A number of residential dwellings and commercial properties are situated along Market Street and Agnew Crescent, opposite the site, with the A717/A7178 road running in-between.

2.4 The site of the proposed development consists of Stranraer Marina and will comprise of both land (terrestrial) and marine development. The existing marina is located in the north of the town of Stranraer and is operated by the Applicant, DGC. All of the areas that are part of the marina that are not 'on land' are owned by Crown Estate Scotland.

2.5 The existing marina serves the southern end of Loch Ryan and has historically been one of the busiest ports in the region. The marina itself currently consists of dogleg quay, and a finger pontoon, which is used by smaller fishing vessels, excursions and recreational craft. The current marina has approximately 70 berths over two locations within the harbour. One area is mainly set aside for commercial operators and there are 7 dedicated berths for visitors. The existing harbour also includes a number of larger commercial and fishing vessel berths against the harbour wall. Ferry terminals are also located north of the harbour in Cairnryan, giving access to the Clyde, the Solway, Isle of Man and the North Channel, and beyond to the Irish Sea.

2.6 Stranraer offers several walking and cycling routes that allow residents and visitors to explore the town and its surrounding landscapes. These routes cater to various fitness levels and interests, from leisurely strolls along the waterfront to more challenging cycling paths through the countryside.

2.7 Public access through the harbour and along the promenade is via the Coastal Walkway path, which forms part of the Rhins of Galloway Coast Path Core Path (No: 544)[4]. The Loch Ryan Coastal Path is one of the most popular walking routes in Stranraer. It runs along the shores of Loch Ryan, offering stunning views of the loch, the town, and the surrounding hills. Starting from the Stranraer Marina, the path follows the coastline northward towards Cairnryan, passing by picturesque beaches, historical sites, and areas of natural beauty. The path is mostly flat and well-maintained, making it suitable for all ages and fitness levels.

2.8 In terms of public transport, several local bus stops are within 800m walking distance of the site, on Harbour Street, Market Street and Port Rodie. These stops offer access to all bus services operating within Stranraer.

2.9 Land within the western section of the site, includes the existing boat yard, and adjacent grassed areas, which now benefits from planning permission (LPA Reference:

[4] Dumfries and Galloway Council: Core paths | Dumfries and Galloway Council (dumgal.gov.uk)

23/0976/FUL) for the erection of a boat shelter, extension of boat yard area, and instructor platform, etc.

*Photograph 2: View towards Existing Boat Yard to the west of the site*

2.10 Further north-east in this area, is an existing public pier and pontoon, alongside the Harbourmaster and Coastguard building and Fisherman's compound. Land within this part of the site also benefits from planning permission (LPA Reference: 23/0970/FUL) for the erection of a new watersports centre, formation of an additional parking area with associated hard and soft landscaping.

2.11 Vehicular access into this area is via an existing road, providing access to a public carpark, the West Pier and boat yard.

2.12 There is one designated heritage asset within the site. This is the Harbour Office with weighbridge (LB49655), which is a Category C Listed Building, and is the former harbourmaster's office.

2.13 The site lies partially within the Stranraer Conservation Area.

2.14 There are a further 65 Listed Buildings in the Study area. These comprise:

- Three Category A Listed Buildings;
- 28 Category B; and
- 34 Category C.


***Photograph 3: View of Listed Harbour Office (former harbourmaster's office) within Breastworks Car Park***

2.15 Whilst the site of the proposed development is located within the existing townscape associated with Stranraer, it lies adjacent to two landscape character types, identified from NatureScot[5] as Peninsula (LCT 156) and Coastal Flats – Dumfries and Galloway (LCT 158). Both of these identified LCT's are influenced by the existing built form of Stranraer at a local level.

2.16 No international or nationally designated sites are located within 2km of the proposed development boundary. The Loch Ryan Important Bird Area (IBA) overlaps with the site boundary. The IBA was designated as such as it supports the only commercial native oyster beds in Scotland. The IBA supports important numbers of wintering waterbirds.

[5] NatureScot: Landscape Character Types 2019

2.17 Outside 2km from the site, a number of designated sites identified for breeding bird interests are present. These include Glenn App and Galloway Moors Special Protection Area (SPA) which is located >4km away at the nearest point and is designated for its important population of breeding Hen Harrier.

2.18 There are three Sites of Special Scientific Interest (SSSI) located within 5km of the site. Auchrochar Wetlands is located circa 3km south east of the proposed site. White Loch – Lochinch SSSI is located circa 4km east of the site and is also a Special Protection Area (SPA).

2.19 Glen App and Galloway Moors is a SSSI and SPA, covering an area of approximately 9000 hectares (ha). The southernmost parcel of this designation, is located circa 4.6km north east of the site.

2.20 In terms of flood risk, the Scottish Environment Protection Agency (SEPA) flood maps provide guidance on the possible extent, depth and velocity for different likelihoods ('High, Medium and Low') of fluvial, coastal and pluvial flooding, alongside various associated information. The SEPA flood maps indicate that the entire site and its immediate surroundings are at risk of coastal flooding in the 1 in 200 year plus climate change (+ CC) event: the flood maps show complete inundation of the site in this scenario.

2.21 The SEPA flood maps also indicate that an area immediately south of the site boundary, along the A717 road, is at risk of fluvial flooding associated with the Town Burn in the 1 in 200 year + CC event. The indicative fluvial flood extents impact the Market Street/ Harbour Street (A717) roundabout access to the site and encroach marginally into the site in the vicinity of the Town Burn outfall and slipway. However, this watercourse is culverted along much of its length and so these maps are unlikely to be representative of flood risk associated with this watercourse.

2.22 The British Geological Survey (BGS) Online GeoIndex viewer[6] has recorded the presence of Made Ground within the onshore area of the site, which is considered to relate to the former reclamation of this area.

2.23 The British BGS Online GeoIndex viewer records the superficial geology underlying the majority of the onshore area to comprise of Marine Beach Deposits, documented to consist of clay, silt, sand and gravel. The southern onshore area is recorded to be underlain by Raised Marine Beach deposits comprising gravel, sand, and silt.

[6] BGS online viewers (geology and hydrogeology) - www.bgs.ac.uk

2.24 In terms of bedrock geology, the BGS Online GeoIndex viewer records the bedrock underlying both the onshore and offshore investigation areas as belonging to the Loch Ryan Formation of Permian Age. This formation is documented to comprise coarse breccia-conglomerate of greywacke clasts in a red sandstone matrix and thin beds of sandstones.

2.25 Bedrock was not encountered during the onshore and offshore intrusive investigations.

2.26 In terms of hydrogeology, the BGS hydrogeological digital map (1:625,000)[7] indicates that the Loch Ryan Formation belonging to the Stewarty Group parent unit (Bedrock), underlying the site, is classed as a moderately productivity aquifer with unfractured low permeability Breccias.

2.27 The SEPA Water Environment Hub Interactive Map[8] records the bedrock aquifer to belong to the Stranraer groundwater body which is present beneath the site (SEPA ID: 150557), with the overall environmental condition recorded as being poor.

2.28 The groundwater vulnerability (Scotland) map[9] indicates the groundwater underlying the Site to have a vulnerability class of 4a indicating it is vulnerable to pollutants not readily adsorbed or transformed.

2.29 In terms of hydrology, the closest classified surface water body is the Loch Ryan, which is within the site boundary forming the offshore area. The SEPA Water Environment Hub Interactive Map[10] records the overall condition of Loch Ryan (SEPA ID: 200011) to be good, with this water body being classified as 'Coastal'. Given the proximity and scale of Loch Ryan, it is considered that the onshore groundwater will flow in a northerly direction towards this.

[7] BGS online viewers (geology and hydrogeology) - www.bgs.ac.uk
[8] Scottish Environment Protection Agency (SEPA) - www.sepa.org.uk
[9] BGS. User Guide: Groundwater Vulnerability (Scotland) GIS dataset, Version 2. Revised Report. Open Report OR/15/002. 2015
[10] BGS. User Guide: Groundwater Vulnerability (Scotland) GIS dataset, Version 2. Revised Report. Open Report OR/15/002. 2015.

### *The Proposed Development*

2.30 The proposed development consists of a series of upgrades and expansion works to the existing infrastructure at Stranraer Marina, to accommodate more and larger vessels. The proposed works are situated both on land (terrestrial) and marine based, including:

- Revised Marina layout - inclusion of up to an additional 185 new berths, in addition to the 45 existing berths. It is considered that circa 14 of these berths will be for commercial use;
- An extension to the existing breakwater, in addition to a second breakwater (which will also serve as a berthing area for large vessels);
- Capital and maintenance dredging to accommodate new marina layout;
- Fuel Berth;
- New linkspan to new berth pontoons (also referred to as marina access bridge);
- New Workshops, as well as a vessel wash down bay;
- New floating harbour/marina facilities for users of the new berth pontoons;
- Retrofitting of the existing harbour reception building to enhance energy efficiency;
- New Fishermen's compound;
- New quay wall to replace the existing wall at Breastworks car park and that of the west quay area;
- New Coastguard and marine research building (Solway Coast and Marine Pilot Project);
- Upgrading and installation of new lighting through the project area, including navigational lighting e.g. port hand light;
- The installation of a new substation area within the Breastworks car park area;
- The upgrading of the existing slipway adjacent to Breastworks car park;
- New car parking and green open space on reclaimed land area – with a new linked revetment between the land and water providing a seating area and view point; and
- Upgrades to both Breastworks and Marine Lake car parks, including motorhome stances.

2.31 It is considered that the overall construction period of the project will be up to 24 months, with a forecast year/ year of opening to be 2028.

2.32 Inputs from the project team's ecologists in terms of timing of works for dredging and piling activities were discussed with the pre-construction contractor. This considered potential impacts on: Marine Mammals; Breeding Bird Species; and Fish species. It is therefore considered that the following calendar months will be avoided for piling and dredging, where possible:

- February;

- March;
- April;
- May; and
- June.

2.33 In relation to overwintering birds, the most sensitive periods are identified as October to March. Where the programme cannot avoid the overwintering period, tidal restrictions will be in place to avoid or minimise impacts on roosting or feeding birds.

## 3.0 Key Construction Stages/ Activities

3.1 This section describes the construction process for the proposed development.

3.2 This section provides a summary of the anticipated construction period, with details on associated plant and machinery requirements. It is important to note that there is scope for potential extension or reduction or removal of construction stage requirements as construction methods are development. The construction stage information provided has been informed by professional judgements and best estimates at the time of writing this Framework CEMP.

### *Construction Phase*

3.3 It is important to note that there is scope for potential extension or reduction or removal of construction stage requirements as construction methods are development. The construction stage information provided has been informed by professional judgements and best estimates at the time of writing this Framework CEMP.

### *Pre-construction enabling works*

3.4 The current energy supply to the site is at capacity. The requirements to upgrade this supply are being considered currently, and it is likely that this aspect of the works be accelerated to be installed prior to construction works of the marina expansion project.

### *Construction Programme and Phasing*

3.5 The various elements of the proposed development outlined above will likely be subject to a phased construction, over a predicted 24-month period.

3.6 Inputs from the project team's ecologists in terms of timing of works for dredging and piling activities were discussed with the pre-construction contractor. This considered potential impacts on: Marine Mammals; Breeding Bird Species; and Fish species.

3.7 It is therefore considered that the following calendar months will be avoided for piling and dredging, where possible:

- February;
- March;
- April;
- May; and
- June.

3.8 In relation to overwintering birds, the most sensitive periods are identified as October to March. Where the programme cannot avoid the overwintering period, tidal restrictions will be in place to avoid or minimise impacts on roosting or feeding birds.

### *Site Specific Construction Activities or elements*

3.9 Key construction related activities associated with the proposed development are likely to include, but are not limited to:

- Site establishment – this will take the form of temporary site accommodation units, installed within an agreed secure compound area within the site boundary;
- New sheet piled wall at Breastworks and the west quay – it is considered that this is likely to commence before the dredging commences;
- Install sheet piles – these will be installed using proprietary heavy-duty piling equipment with hydraulic hammer attachments driving the individual steel piles into the existing ground below;
- Concrete Cope – will be formed upon completion of piling process and pile top trimming where required. Utilising an insitu concrete forming process, transported by road;
- Dredging, Breakwater and Reclaimed Land Revetment and Reclamation – This activity will be completed by specialist contractors using marine dredging equipment, stabilisation of the dredge material using a secondary treatment process to alter the properties of the material to the desired specification. Heavy excavation equipment will be used to place and form the rock armour revetment, with subsequent heavy-duty compaction plant used to stabilise the final formation level in layers as infilling progresses to the desired finished level, likely in layers of 250mm to 300mm in depth;
- Extend Breakwater – This will be done using long reach heavy duty excavation plant to place the new rock armour material in the desired location. Materials will be transported using articulated dump trucks;
- New Marina Facility – Specialist marine floating equipment will be required to install new steel piles, with attendant work and safety boats for the duration of the activity;
- Marine plant install & Piling both on land and within the water – this is for buildings and pontoons:

  - The installation of the piles is likely to involve an aspect of vibropiling in order to help with the install of these items. This is where the pile is vibrated at high speed to assist with install into the ground material;
- Installation of new pontoons – these will form the new berthing areas;
- Installation of a new linkspan (marina access bridge) – new and refurbished linkspans (marina access bridge) are needed to allow access to the new/upgraded berthing pontoons;
- Building erection – a number of new buildings or extensions are required;
- Refurbish existing Harbourmaster Building – internal upgrade and refurbishment will be required;
- Car Parks & Hardstandings – final parking surfaces will be constructed and marked out to conform with the desired number of spaces for the expected vehicle types;
- Reclaimed Land Car Park Works – this will be new car parking capacity formed on the newly reclaimed land area;
- Marine Lake Car Park – reconfiguration of the existing car park, with the inclusion of motorhome parking spaces;
- Breastworks Car park – reconfiguration of the main car park to the south of the new marina, to accommodate linkspan (marina access bridge) access to the pontoons and marina welfare block, soft and hard landscaping and to maximise parking spaces in the marina area;
- Extended Boatyard – new hardstanding for provision of boat storage is being provided by others. However, an aspect of remedial/ fit out works are part of the scope of this project;
- Fisherman's Compound – relocated area for storage of the local fisherman's equipment; and
- Demobilise – upon completion of all construction work, all temporary accommodation will be removed, and any area of disturbed ground reinstated to the required standards.

### *Plant and Machinery*

3.10 Although not all specific details of construction activities and associated plant are available at this stage, the below list is anticipated plant, machinery and vehicles that may be in operation during the construction phase:

### *Plant and Machinery List*

- 25t all terrain mobile crane

- JCB 531/70 tele handler, 2.4t,
- Cat d6 dozer
- Cat 953 tracked loader
- Massey Fergusson 3075 (4x4) 90 hp tractor,
- Massey Fergusson 3080 (4x4) 100 hp tractor,
- 2.6t tipping trailer
- JCB 3cx wheeled excavator
- JCB 808 mini excavator (8.0t)
- JCB js130 excavator (13t)
- Cat 320 excavator (22t)
- Cat 330 excavator (33t)
- Large piling rig (50t plus) - new sheet piling
- Piling hammer - new sheet piling
- Komatsu pc800 excavator (80t)
- Cat 345 (65t) longreach exc (24m)
- Cat m318 wheeled excavator (18t)
- Labounty hdr 120 rock grapple (22-30t)
- Hydraulic hammer (20 - 22t)
- Electronic dig profile system
- Thwaites alldrive 6t dumper 4x4
- Thwaites alldrive 9t dumper 4x4,
- Articulated dump truck 25t artic dumptruck (11m3),
- 16t tipper truck,
- Wacker bpu 2540 compaction plate (140kg)
- Bomag bmp 8500 (1.6t) 650mm trench roller
- Bomag bw 135 ad roller (3.6t)
- 140cfm compressor
- Siltbuster fb50 mobile silt trap
- Diesel pressure washer (3000 psi)
- Jumbo bv hydraulic kerb lifter (150kg)
- Marine spud legged pontoon 34m 19m
- Workboat 5.2m steel c/w 40hp outboard
- Workboat 21m steel 400 bhp (including 2 crew)
- Kobleco cke 900g (100t) crane
- Lgp d6 dozer
- Simba harrow
- Mixer spreader

*Figure 3.1: Image of Rock Grapple*

### *Bulk Materials*

3.11 The below list is the anticipated bulk materials, which will be required during the construction of the proposed development:

- C6/8 concrete 20mm agg (st1 mix)
- C40/50 concrete 10mm agg
- Surplus drainage arisings (soft)
- Unprocessed excavated sand
- Type 1 sub base as cl 803
- Acceptable fill 6f2-coarse capping
- Filter media 40/20mm graded-type b
- As dug sand duct/cable bedding
- Rock armour stone - 60-300 kg
- Rock armour stone - 1-3 tonne

### *Temporary Construction Platform*

3.12 A Temporary Construction Platform is proposed to be included as part of the construction phase related to the construction of the South Quay wall. It is a non-permanent structure designed to support heavy construction equipment such as cranes, piling rigs, and tracked excavators. It will also provide safe access across soft ground sea bed conditions during construction operations. The form of construction is to use a SHW Spec Class 6A material, which is granular fill suitable for underwater placement ordinarily formed of crushed stone. It will be virgin material or reused from other project.

3.13 Refer to the Bund Piling Plan and Sections South Quay Wall Drawing (Dwg No: 161378-FRH-15-00-DG-G-000005 S4 P03) for construction detail. For Phase 1, the material will be imported to site and placed from land onto the existing bed via excavator in a controlled manner and pressed into the bed to achieve embedment. Thereafter, the stone will be built up in layers. As the material is granular, and for temporary construction only, it will be self-compacting / will compact under the normal self-weight and construction traffic. On completion of the Phase 1 section of the wall, the bund material will be re-used in Phase 2, and thereafter Phase 3 etc progressively. As the bed in this area will be dredged as part of the permanent works, all stone will be recovered for re-use / recycling. These temporary works will be in advance of main piling works, and the South Quay Wall, as a critical item will be early in the programme.

3.14 The platform will then be removed on completion of the quay wall. Once complete, it will either be re-used in the construction of the project or, as queried stone, to a design specification.

### *Hours of Working*

3.15 Construction activities have been predicted to take place between 07:00-19:00 Monday to Friday; and 07:00 to 13:00 on Saturdays. It is considered that there will be no construction works undertaken on Sundays or Bank Holidays. There will also be occasions when the contractor may have to work outside of the normal windows to hit tide times, which mainly relates to the marine tasks.

3.16 It is considered that any plant on site will be operating for the duration of the full working day for that purpose.

### *Temporary Construction Facilities*

3.17 A typical temporary site set up will consist of a series of 32ft x 10ft containerised cabins, with self-contained office and welfare facilities for the staff and workers involved in delivery of the project. These will be powered from the mains power where a suitable connection is possible or alternatively from a temporary generator, water and foul connections will also be made to mains where possible, if not possible, waste will be contained in tanks for removal at regular intervals. They are commonly double stacked to save space, contained within a secure fenced off or fully hoarded compound.

### *Access During Construction*

3.18 There will be a requirement to provide construction access across the entire Marina Expansion project area. A logistics and access plan will be developed in cooperation with and for approval by the Local Authority to ensure vehicular and pedestrian access is maintained throughout the project lifecycle. Designated access points will be created and all other construction activity will be securely fenced to ensure that any unauthorised personnel remain in the public areas.

3.19 Clear signage and directional markings will be in place to ensure clear delineation of construction activities from the normal operation of the surrounding harbour and public areas throughout. These will be maintained to the highest standards throughout the construction period and where necessary adjustments will be communicated in advance to local users.

3.20 The existing Marine Lake car park slipway access road is intended to support continued access to the Harbour area for existing users, during the construction phase.

3.21 During the construction phase, the existing shared use path that extends from Agnew Crescent, following a route around the east and north boundaries of the Marine Lake car park, to Agnew Park, will also remain open. Pedestrian and cyclist priority will also be retained over the slipway access road.

### *Contractor, Site Compound and Site Security*

3.22 At the time of writing this Framework CEMP the Applicant does not have a location fix for the site compound, however options considered include land adjacent to Agnew Park, or on land next to the East Pier. This is subject to confirmation by the Applicant in due course. Should this not be possible, an area will be clearly designated and secured from the public for the duration of the construction phase of this project.

3.23 The contractor will also likely erect hoarding around the temporary site compound, or as a minimum 2-metre-high temporary fencing (e.g. Heras).

3.24 It is considered that temporary security lighting and fencing will be required during the construction phase of the proposed development.

3.25 The contractor intends to install CCTV systems, backed up with security control room support, possibly using visiting guards.

3.26 There will also be security pods situated around the construction site, possibly around locations where the contractor can't secure plant in a main compound, to ensure these are protected by infrared beams, cameras and linked to the contractor's main security control room. The control room is operated 24 hours a day and the contractor will have access to local security and police in the area should there be any activity out of hours.

### *Construction Lighting*

3.27 Where required during construction works at periods of low light or occasional night time working, there will be a requirement for additional general and task lighting. Large items of plant will have their own permanent lighting fitted and in operation throughout for the purposes of operator and adjacent personnel visibility. Task lighting will be in the form of diesel or electric powered tower lights or smaller handheld high-power task lighting. There will also be a requirement for general lighting to illuminate any covered walkways or within the temporary office compound.

### *Site Environmental Management*

3.28 The Applicant is aware that the contractor will be required to produce and agree a final CEMP to describe how construction will be managed to avoid, minimise and mitigate any potential construction effects on the environment and existing surrounding receptors. Therefore, this Framework CEMP has been provided in support of the proposed development to help illustrate the environmental measures, which will be considered suitable during the construction phase of the project.

3.29 The Applicant is proposing to ensure that the arrangements in place are appropriate with regards to amenity of sensitive receptors, highway safety, and the surrounding environment during the construction period.

3.30 During the construction period, the Principal Contractor will employ an Environmental Clerk of Works (ECoW), to help ensure that mitigation measures identified through the EIA

process, alongside marine and planning conditions, are appropriately implemented and monitored on site during construction.

### *Construction Staffing and Education*

3.31 The number of construction staff required on site during the construction phase will fluctuate according to the different stages of works and associated specific construction activities or elements as discussed above.

3.32 As noted in the Environmental Impact Assessment (EIA) Report (EIAR), an Outline, Supply Chain, Skills and Employment Plan that ensures employment/training opportunities are offered to Stranraer residents in the first instance should be produced.

3.33 The inclusion of educational boards on the functionality of the proposed development and offering educational trips to local schools during construction should also be considered by the contractor.

### *Health and Safety*

3.34 A Construction Phase Plan will be prepared in accordance with Construction (Design and Management) (CDM) 2015 regulations by the Principal Contractor. Further method statements and risk assessments are produced to establish safe methods of work and access.

3.35 All new personnel on site will be required to attend a site induction where safety procedures and site rules will be explained and they will be required to sign to acknowledge they have been informed and understand them. This information should also be included on the noticeboards.

3.36 A Site Fire Safety Coordinator should be appointed who will be responsible for producing a Site Fire Safety Plan and assessing the risk of fire on site. The location of emergency assembly points, fire alarms and firefighting equipment will be mentioned during site induction and included on the site noticeboards.

3.37 All users will be kept up to date with developments and advised of emergency procedures.

### Navigation and Safety

3.38 In terms of navigation and safety, the continued presence of all identified existing mitigation and the implementation of all suggested additional mitigation outlined in the accompanying Environmental Impact Assessment (EIA) Report (EIAR) should be monitored throughout

the progress of the project. This should include for scheduled periodic reviews at reasonable intervals in the project programme.

3.39 The embedded mitigation in relation to navigation and safety includes:

### Construction Phase

- Competent Contract Management;
- Competent Sub Contract Management;
- Construction Phase H&S Plan;
- Construction Environmental Management Plan (CEMP);
- Environmental Clerk of Works (ECoW);
- Waste Hierarchy;
- Staffing;
- Site Induction;
- Site Fire Safety Plan;
- User Engagement;
- Compliant Marine Plans;
- Work Phased Planning; and
- Industry Standards for Marina Build.

### Operational Phase

- Enabling Legislation;
- Harbour Order;
- Aids to Navigation;
- Code of Practice;
- Assessment of Navigational Risk;
- Marine Safety Management System (MSMS);
- Operating Manuals & Procedures;
- Charts & Bathymetric Programme and Data;
- Notices and Signage;
- Emergency Plans;
- Mooring Equipment;
- Permits;
- Competent Staffing;
- Incident Reporting;
- Audit and Reporting;

- Marine Safety Plan;
- Harbour User Consultation;
- Navigational Safety Policy;
- Marine Conservancy Policy;
- Enforcement Policy; and
- Industry Standards for Marina Build.

### Major Accidents and Disasters

3.40 As noted in Chapter 9 (Major Accidents and Disasters) of the EIAR, a number of health and safety related mitigation measures, management or regulatory controls have been noted, to help alleviate potential effects, including:

- In the event of an accident, the establishment will have an emergency response plan registered with the Health and Safety Executive (HSE);
- Health and safety measures, guidelines, and standards will be adhered to in relation to the movement and operation of cranes;
- Cranes will not be operated where orange or red wind or flood risk weather warnings are in place affecting Stranraer;
- The fall-zone for the crane will be mapped and actions identified to ensure any occupied properties within the fall zone can be alerted. Emergency measures to manage access to roads, towpaths etc. within the impact zone during high-risk weather conditions would also be established;
- To minimise impact on groundwater and surface water from material spillage, all oils, solvents, paints and other potential contaminants used during construction will be stored within suitably designed bunded areas in accordance with CIRIA Report 163 – Construction of Bunds for Oil Storage Tanks, and Scottish Environment Protection Agency (SEPA) best practice outlined in the final CEMP;
- All chemical and fuel filling locations will be contained within bunded areas;
- On-site facilities including surface and foul water collection will be designed and provided at both site compounds to manage surface water and foul water arising from the compounds and tinkering for removal off-site;
- Where groundwater is encountered, it will be dealt with separately to rainfall and captured before it becomes contaminated with sediment. Methods will be utilised as necessary, such as slope drains and pump-out to tankers for removal off-site;
- Proactive communications and engagement with adjacent landowners, regarding phasing, timing and duration of works will be an important aspect of the construction works;
- Mitigation by avoidance will be the primary mitigation measure implemented during the construction and operational phase of the proposed development. This will be applied to

avoidance of utilities such as underground services and pipelines. Consultation will be made with utility providers to determine the location of services prior to commencement of works;

- Mitigation by avoidance will be the primary mitigation measure implemented during the construction and operational phase of the proposed development. This will be applied to avoidance of utilities such as underground services and pipelines. Consultation will be made with utility providers to determine the location of services prior to commencement of works;
- Due to the movement of construction traffic, a speed limit will be implemented on site for health and safety reasons;
- Promulgation of information and warnings through Notice to Mariners and other appropriate Maritime Safety Information (MSI) dissemination methods;
- Project to undertake vessel traffic monitoring for all Project-related vessels throughout all phases of the Project;
- Safety zones and rolling advisory clearance distances to be implemented during construction, decommissioning and major maintenance activities;
- Marker buoys and other aids to navigation;
- Development of Emergency Response Cooperation Plan;
- The construction phase of the proposed development will be carried out in accordance with good practice construction methodologies, all relevant health and safety guidance and legislation, as well as the provisions of the final CEMP;
- An emergency response plan for the construction phase to minimise the consequences should the risk occur – will be set out in the final CEMP and will be adopted by the appointed contractor;
- The construction phase of the proposed development will be carried out in accordance with good practice construction methodologies, all relevant health and safety guidance and legislation, as well as the provisions of the final CEMP.

## 4.0 Noise Management

4.1 The Applicant and the appointed Contractor shall take reasonable steps to minimise any noise disruption during the construction phase.

4.2 The following measures will be incorporated into the final CEMP, which will include a Noise and Vibration Management Plan (NVMP), and applied by the pre-construction Contractor (Balfour Beatty Civil Engineering Limited (BBCEL)) to control noise and vibration as far as practicable:

- Noise and vibration monitoring is undertaken throughout the works, with appropriate trigger levels set to ensure threshold values within BS 5228 are not exceeded. These are to be agreed with DGC;
- All vehicles, plant and equipment working within the site shall be fitted with efficient silencers. Position plant as far away from sensitive receptors as possible;
- Intermittently operating plant will be shut down in the intervening periods between operations. Start-up plant and vehicles sequentially rather than simultaneously. Avoid unnecessary revving of engines;
- Where possible low noise and vibration emitting plant would be selected;
- Were reasonably practicable, low vibration working methods should be employed. Isolate equipment using resilient mountings if vibration levels are deemed high;
- New plant would be used where practical and regular maintenance undertaken, including maintenance related to noise emissions;
- Consideration should be given to use of the most suitable plant, reasonable hours of working for operations which might give rise to perceptible noise and vibrations, and economy and speed of operations;
- Care will be taken when erecting or striking Heras fencing to avoid impact noise from banging steel. All operatives undertaking such activities will be instructed on the importance of handling the fencing to reduce noise to a minimum;
- Use rubber linings in, for example, chutes and dumpers to reduce impact noise;
- Reduce drop heights of materials. Load and unload as far away from sensitive receptors as possible;
- Wherever possible, the use of hydraulic attachments or other means of crushing concrete and hard materials will be used in preference to pneumatic breakers;
- Regular liaison with local residents to inform them of operations on site, including periods of temporary operations when noise levels would exceed those normally defined for the site; and

- Where vehicle reversing alarms are required, they should be designed to cause the lowest practical environmental impact; preferably they should be directional broadband noise emitters or automatically adjusted to ambient noise levels.

4.3 At times when the trigger level is being approached, the activity taking place will be reviewed and additional control measures will be implemented as above. When the trigger level has been exceeded, work on site will cease and the activity taking place will be reviewed. Control measures in place will be reviewed and works will be amended as necessary, to ensure noise and vibration levels are below the set trigger level.

4.4 A procedure for complaints will also be included within the final CEMP:

- The site manager (or equivalent) will record the details of the complaint, in a log held at the site office;
- Any noise or vibration complaint will be immediately investigated, and where necessary, measures will be implemented by the site manager to reduce noise or vibration levels associated with the construction activities responsible for the complaint;
- In the event of a noise or vibration complaint, consideration will be given to the nature of the operations which were taking place at the time. As necessary, the relevant operational procedures which caused the complaint will be reviewed and improvements implemented by the site manager. In addition, the wind speed and direction at the time of the complaint will be noted, as this might have contributed to the level of noise received by the complainant;
- Complaints will be dealt with immediately, and the timeframe for resolving noise or vibration issues will be 24 hours. Works will be ceased where suitable controls cannot be implemented within 24 hours;
- Within 48 hours of receiving the complaint, the complainant will be informed by the Site Manager of the results of the investigation and of what remedial actions have been taken;
- Details of all noise or vibration complaints, and any actions undertaken as a result of investigations, will be recorded by the site manager in the log; and
- If justified noise or vibration complaints persist, the site manager will arrange for independent noise or vibration monitoring to be carried out at the location of the complainant to determine the scale and nature of noise or vibration levels received. The results of the noise or vibration monitoring will be independently evaluated to determine if permitted noise or vibration limits have been breached. Based on the findings of the noise or vibration monitoring results, appropriate actions will be taken by the site manager to reduce noise or vibration emissions as appropriate.

## 5.0 Dust Management

5.1 Various dust emitting activities caused by construction work activities, can be controlled by certain control measures, helping to alleviate potential environmental effects. The final CEMP will be produced to control potential air quality impacts during the construction phase.

5.2 The IAQM dust guidance lists mitigation measures for low, medium and high dust risks.

5.3 The predicted Dust Impact Risk is classified as medium for construction, earthworks and trackout. The general site measures described as 'highly recommended' for medium risks are listed below. There are no 'highly recommended' measures for medium risk earthworks.

### Communications

- Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.
- Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.
- Display the head or regional office contact information

### Dust Management Plan

- Develop and implement a Dust Management Plan (DMP) (which may include measures to control other emissions), approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust.

### Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.

### Monitoring

- Carry out regular dust soiling checks of surfaces such as street furniture, cars and window-sills within 100 m of site boundary.
- Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

- Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. A shorter monitoring period or concurrent upwind and downwind monitoring may be agreed by the local authority. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction[11] .

### Preparing and Maintaining the Site

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. Use screening intelligently where possible – e.g. locating site offices between potentially dusty activities and the receptors.
- Erect solid screens or barriers around the site boundary.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extended period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean.
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
- Depending on the duration that stockpiles will be present and their size - cover, seed, fence or water to prevent wind whipping.

### Operating Vehicle/machinery and Sustainable Travel

- Ensure all vehicles switch off engines when stationary – no idling vehicles.
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.

### Operations

- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
- Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible.
- Use enclosed chutes, conveyors and covered skips, where practicable.
- Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.

[11] IAQM, 2012, Air Quality Monitoring in the Vicinity of Demolition and Construction Sites

- Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.

### Waste Management

- Avoid bonfires and burning of waste materials.

### Medium Risk Measures Specific to Construction

- Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

### Medium Risk Measures Specific to Trackout

- Use water-assisted dust sweeper(s) on the access and local roads, to remove, as soon as practicable any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
- Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as practicable.
- Record all inspections of haul routes and any subsequent action in a site log book.
- Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.
- Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site).
- Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
- Access gates to be located at least 10 m from receptors where possible.

5.4 It is considered that Non-Road Mobile Machinery (NRMM) emissions on local air quality would likely be ‘insignificant’ on the basis that the following measures are adopted:

- Ensure all equipment complies with appropriate NRMM standards;
- Where feasible, ensure further abatement plant is installed on NRMM equipment, e.g. Diesel Particulate Filters;
- Ensure all vehicles switch off engines when stationary – no idling vehicles;
- Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where possible; and

- Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).

## 6.0 Water Management

6.1 The final CEMP must include details on appropriate measures to manage and mitigate risk to Loch Ryan, including but not limited to:

- Construction site runoff and sedimentation;
- Oil /fuel leaks and spillages;
- Chemical storage, handling and reuse; and
- Concrete, cement and grout handling and use.

6.2 Construction works and operation of machinery must be undertaken in accordance with standard good practice measures, including good pre-construction planning, site practices and adherence to relevant guidance for pollution prevention. This will include, but is not limited to, adherence to the following:

- C532: Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors;
- GPP 5: Works and maintenance in or near water;
- GPP 6: Working at construction and demolition sites; and
- GPP 21: Pollution incident response planning.

6.3 As the impact from accidental spills or leaks of oils and/or chemicals has the potential to be substantial, appropriate procedures are critical to manage this risk and must consider the following:

- Water Environment (Controlled Activities) (Scotland) Regulations 2011 General Binding Rule (GBR) 28 and GPP 2 on Above Ground Oil Storage should be implemented to ensure safe storage of fuel, oils and chemicals. Storage should be sited on an impervious base within a bund and secured. The base and bund walls should be impermeable to the material stored and of adequate capacity. Storage facilities should also incorporate flood resilience measures in consideration of potential extreme sea water levels and/or waves during the construction period;
- Appropriate safety precautions must be followed during refuelling activities to minimise the risk of an oil spill;
- An Oil Spill Contingency Plan should be provided, which details actions required to stop or minimise a spill and to mitigate its effects. In line with this, emergency spill kits and oil spill containment equipment should be located at strategic locations adjacent to the works.

6.4 Dredging works and disposal of dredge arising must be consistent with the following:

- Utilise the most suitable dredging equipment in order to minimise the suspension of any fine sediments and contaminants at the dredge site;
- Undertake in a manner that limits, as far as practically possible, the disturbance and dispersion of sediments from the dredger and barges, during dredging operations and transport;
- Incorporate appropriate distribution of dredge materials at the disposal site; and
- Appropriate timing of operation to avoid or minimise disturbance to marine habitats.

6.5 Monitoring will be undertaken to support the dredging plan which has been developed for the proposed development whereby maintenance dredging will be undertaken to maintain access channels and berths at their designed depths by removal of accumulated sediments such as mud, sand and gravel.

6.6 During the construction period, the Principal Contractor must employ an Environmental Clerk of Works (ECoW), to help ensure that mitigation measures identified through the EIA process, alongside marine and planning conditions, are appropriately implemented and monitored during construction.

## 7.0 Waste Management

7.1 The Applicant is committed to promoting the minimisation of waste and encouraging beneficial re-use and recycling. All construction waste will be segregated at point of disposal into various waste streams (timber/ metal/ plastic/ glass etc.), and all other office wastes will be removed to a recycling plant to achieve maximum recycling of all waste. The contractor will use a specialist waste broker to manage waste on their behalf.

7.2 A suitably qualified person will be appointed to fulfil the Site Waste Management role (i.e. site manager) and will be responsible for overall waste management issues arising from the project.

7.3 All materials will be responsibly sourced, and waste generated will be kept to a minimum and recycled where possible.

7.4 Sources of potential waste generation within the construction process are:

- Packaging, for example plastics, pallets, expanded foams etc.;
- Construction Waste, for example concrete and spoil;
- Waste materials generated from inaccurate ordering, poor usage, badly stored materials, poor handling, spillage etc.; and
- Dirty water.

7.5 All relevant contractors involved throughout the construction process will be required to investigate opportunities to minimise the arising of waste at source, and where waste generation is unavoidable, to maximise the recycling and re-use the potential of construction materials where possible. There will also be no burning of waste materials on site and waste will be removed as soon as practicable rather than being stockpiled.

7.6 All waste materials will be managed following the principles of the waste hierarchy as set by the European Waste Framework Directive (Directive 2008/98/EC12). Throughout the construction phase of the proposed development, the Applicant and the appointed contractor are to fully implement the below Waste Hierarchy to prioritise the prevention, reuse and recycling of waste:

- Prevention – prevent waste generation;
- Preparing for reuse – reusing materials;

[12] Directive 2008/98/EC of the European Parliament and of the Council

- Recycling – turning waste into new products;
- Other recovery- for example energy recovery; and
- Disposal – landfill and no energy recovery.

## 8.0 Ecology and Biodiversity

8.1 Standard mitigation measures include those which are usually followed on construction sites and most often included in a CEMP. As documented in the accompanying Environmental Impact Assessment (EIA) Report (EIAR), the following mitigation measures, aims and considerations should feature in the final CEMP:

- Soft-start measures for piling operations with reference to fish and shellfish populations;

- The adoption of a soft start to impact piling operations will reduce any potential impacts on fish in the vicinity of Stranraer Marina. The application of this protocol allows for the gradual increasing of piling power, enabling fish to move from the affected area prior to any injuries being sustained. It is suggested that the Joint Nature Conservation Committee (JNCC) guidelines on minimising the risk of injury to marine mammals are followed; the protocol is designed with marine mammals in mind, though the adoption of a soft start prior to impact piling will also have the effect of helping to minimise the impact of underwater sound on fish;

- It is suggested that piling operations are timed to avoid peak fish spawning, likely to occur within Loch Ryan for the relevant receptors (including Priority Marine Features species) between February and June. Avoidance of underwater noise generation will further help to minimise any detrimental effects on populations;

- Soft start methods will be applied to all over water piling operations. This method will allow a progressive response and for Fauna to move away from the source of noise over a period of time this will include marine mammals and relevant prey species (fish);

- Soft start methods will allow a progressive response and for fauna to move away from the source of noise over a period of time this will include bird species and prey items (fish species);

- The implementation of soft start methods over a 15-minute period will reduce the most significant impacts on Marine Mammals to a zone of influence of <250m. This zone of influence can be monitored by a Marine Mammal Observer (MMO) and where marine mammals within a 500m study area works will be paused until such features have left the study area;

- A Marine Mammal Observer (MMO) will be appointed to monitor compliance with the requirements of the EIA and the final CEMP;

- The construction phase of works will entail extensive over water work involving a range of marine plant. The final CEMP should define parameters for biosecurity, pollution spill prevention, spill containment and emergency response;

- An ECoW will be appointed to monitor compliance with the requirements of the EIA and the final CEMP developed for the construction phase. The ECoW will monitor faunal use of the study area and any reactions to construction operations to monitor the effectiveness of construction stage mitigation. The ECoW will also monitor bird usage of the area and any reactions to construction operations to monitor the effectiveness of construction stage mitigation;

- Where possible, significant works such as dredging or piling will avoid the over wintering period October – March inclusive. Where this period cannot be avoided, works will avoid the periods 2 hours either side of high tide to minimise potential effects on high tide roosting;

- To protect spawning Fish no piling or dredging should take place during the late winter period (February – March).

- Piling and dredging operations will avoid the period April – June inclusive:

    - The effect of any sediment plumes on feeding associated with breeding efforts during this period will be minimised;
    - This will avoid key periods when breeding species are tied in to breeding sites surrounding the marina;
    - This will avoid the main breeding period for Black Guillemot which breed in cavities of existing structures; and

- Preconstruction surveys for protected or notable species will be required and are recommended 3 months in advance of planned construction work notably in relation to otter. If required, an otter licence and associated mitigation plan will be implemented to mitigate any effects on otter should they be present occupying the study area at the time of works.

## 9.0 Visual Impacts

9.1 Measures that would reduce the influence of temporary construction impacts on landscape and views will be considered where possible during the construction phase e.g. siting the construction compounds out of direct views from visual receptors where feasible.

## 10.0 Ground Conditions

10.1 As discussed in Chapter 21 (Soils, Geology and Contamination) of the EIAR, the construction phase mitigation measures, will be documents in the final CEMP, to be produced by the Contractor. These measures should include:

- Construction workers should use appropriate personal protection equipment (PPE) and those relevant personnel should follow guidance on the safe redevelopment of contaminated sites as provided in the Health and Safety Executive (HSE) publication HS (G) 66, 1991, Protection of workers and the general public during the development of contaminated land;

- A safe system of work will be developed for the construction works/ construction workers alongside the appropriate use of PPE, including personal gas alarms to break any complete ground gas linkage to construction workers;

- A final CEMP, including pollution prevention measures and construction method statements will be in place during the construction phase. The CEMP will detail mitigation measures to be in place to prevent or minimise negative effects relating to ground conditions, hydrogeology and soils. Pollution prevention measures will include the control of surface water run-off or shallow groundwater / perched water run-off during the works;

- The works on the Site will follow SEPA guidance provided in the applicable pollution prevention guidance notes:

    - GGP1 ‘Understanding your environmental responsibilities;
    - GPP5 ‘Works and maintenance in or near water;
    - GPP6 ‘Working at construction and demolition Sites’;
    - GPP8 ‘Safe storage and disposal of oils’;
    - GPP22 ‘Dealing with spills’ ;

- Measures will also be in accordance with any requirements under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 due to the immediate proximity of the Loch Ryan. These requirements will cover any discharges or abstractions that may be required as well as specific engineering works, with particular attention to silt control and controlling run-off;

- To reduce the impact of spills, spill kits will be available for all plant and operatives will be briefed on what to do in the event of a spill. Fuels will be stored in appropriate containment, such as bunds;

- Best practice guidance will be followed during the construction of the Site. Mitigation measures would include the use of; silt traps, dust mitigation (dampening down), wheel washing, designated fuelling areas, etc.;

- Given the recorded localised lead exceedance is located in an area of proposed hardstanding, it is considered the pollutant linkage to site end users will be broken and no formal remedial measures are required. However, should the development plan be updated and soft landscaping proposed in this area, an imported environmental capping layer, with a minimum thickness of 450mm clean material, should be installed;

- Due to the risk to future plant life, a suitable growing medium will require to be introduced to all future areas of soft landscaping. Whilst not strictly applicable to the proposed end use, reference was made to the NHBC guidance, which recommends a minimum thickness of 300mm thick for growing mediums, comprising of a combination of topsoil and subsoil. The soils to be utilised as a growing medium should be purchased as a product from an approved supplier. Increased capping thicknesses will be required in areas of shrub/tree planting. The thickness and proposed make up to be confirmed with the Landscape Architect going forward. All materials used should satisfy the criteria of BS 3882 and should be tested to confirm it is free from contamination and suitable for use;

- Site specific ground gas protection measures are required to be installed within the proposed development. A combination of the following three types of protection measures are typically used:

    - Structural barrier of the floor slab, or of the basement slab and walls if basement is present;
    - Ventilation measures;
    - Gas resistant membrane;

- Based on the recorded soil sulphate concentrations and pH levels, a concrete class of DS-4/AC-3s is derived20 is considered appropriate for buried concrete across the site; and

- Based on the indicative UKWIR assessment, barrier pipe, wrapped steel and wrapped ductile iron materials may be suitable, however, this will be subject to the results of specific

UKWIR testing undertaken on samples retrieved from the formation level of the proposed route of the water supply pipes, once this is known.

## 11.0 Highways and Traffic Management

11.1 To maintain the safety of the surrounding highway network, the Applicant is aware that during the construction phase, it is essential to have appropriate measures in place regarding vehicle and road cleaning facilities.

11.2 The construction stage will be managed by the appointed Principal Contractor, who will through the development and implementation of a Construction Traffic Management Plan (CTMP) reduce construction traffic impacts. The CTMP will ensure movement of Heavy Goods Vehicle (HGV) construction traffic will not occur during the opening, closing and lunchtime periods associated with Primary Schools accessed via the A77 and A717.

11.3 The CTMP will be agreed with the DGC prior to the commencement of construction and will ultimately include details on the following:

- Daily and weekly working hours;
- Agreed haul routes for incoming materials;
- Licensed hauliers to be used;
- Disposal sites, if necessary;
- Travel arrangements for construction personnel;
- Appropriate on-site parking arrangements for construction personnel to prevent overspill parking on the local road network;
- Temporary construction entrances to be provided;
- Wheel wash facilities if required;
- Road cleaning and sweeping measures to be put in place if required;
- Temporary construction signage to be put in place and maintained; and
- Any proposed traffic management measures such as temporary traffic lights and signage on any public roads.

11.4 The Construction Programme in conjunction with the CTMP will specifically consider impacts associated with the occupation/closure of required sections of the Coastal Path, to facilitate construction activities within the site. Specific additional mitigation measures will be agreed with the Applicant and Local Planning Authority (LPA) and may include:

- a protected route through the construction area, although this would require crossing points to allow for construction activities and vehicles. Physical space is unlikely to be available, particularly to accommodate shared pedestrian / cyclist use along the harbour wall; or
- for the Core Paths to be closed during the construction phase and an appropriate temporary diversion route with suitable signage be established through agreement with the planning authority and in discussion with DGC Harbours Service, DGC Environment Team (re. core

paths), DGC Roads (re. TTRO for closures and diversions), Stranraer Water Sports Association (SWSA) and harbourmaster.

11.5 Measures are required to support the continued pedestrian access to the harbourmaster facility and routes from the Marine Lake Car Park. Interaction with the HM Coastguard / Solway Coast and Marine Pilot Project (SCAMPP) building construction would be considered. The solutions should be detailed in the CEMP and CTMP.

11.6 During temporary closures of Core Paths, temporary diversion routes should make use of the Market Street footways for pedestrians, which are considered adequate provision to support the transfer trips.

11.7 To the west of the site, pedestrians can either use the existing footways on Agnew Crescent, leading to Foreland Place to reconnect with the Core Path. Alternatively, access could be provided through Agnew Park.

11.8 Traffic flow increases could be minimised within Stranraer by encouraging trips by sustainable means such as walking, cycling and public transport.

11.9 Existing bus and rail services are accessible from Market Street / Harbour Street / Port Rodie and at Stranraer Railway Station, respectively. The local bus stops are located within 800 metre walking distance from the site, whilst rail services can be accessed within approximately 1.2km walking distance from the Marina Access.

11.10 A site-specific Employee Travel Plan will be implemented at the site which sets out a series of measures to facilitate and encourage a positive modal shift towards more sustainable modes of transport. These measures will be refined based on travel surveys conducted at the occupied development.

## 12.0 Cultural Heritage

19.1 The 19th century quay wall will be hidden by the proposed sheet pile wall. It is proposed that this be offset through a photographic record. The record will be undertaken in accordance with a Written Scheme of Investigation (WSI) agreed with the DGC Planning Archaeologist.

19.2 Detailed sensitive design of the substation and compound will ensure that its appearance is in keeping with the Conservation Area.

19.3 A reporting protocol or PAD will be developed and agreed with the DGC Planning Archaeologist to allow for the reporting and thereby appropriate recovery and recording of any cultural material encountered during the construction phase below the high-water mark, i.e. marine archaeology.

19.4 Accidental damage to heritage assets, in particular the Harbour Office, during construction will be prevented by measures such as fencing where necessary. These measures will be detailed in the final CEMP.

## 13.0 Summary and Conclusions

13.1 Fairhurst have been appointed by Dumfries and Galloway Council ("The Applicant") to prepare a Framework Construction Environmental Management Plan (CEMP) relating to a project for the expansion and redevelopment of Stranraer Marina, including dredging ("hereafter referred to as the proposed development"). Fairhurst's appointment is by Balfour Beatty Civil Engineering Limited (BBCEL) who in turn are appointed by Dumfries and Galloway Council (DGC) ('the Applicant').

13.2 The Applicant is aware that the contractor will be required to produce and agree a final CEMP to describe how construction will be managed to avoid, minimise and mitigate any potential construction effects on the environment and existing surrounding communities. Consequently, this Framework CEMP has been provided initially to help illustrate to the Consenting Authorities the environmental measures, which will be considered during the construction phase of the proposed development.

13.3 The final CEMP document will be a live document and will be reviewed in light of learnings from construction activity and any complaints or incidents. When this document is revised the up-to-date document will be made available to the Local Planning Authority or other interested parties on request.

13.4 The final CEMP will effectively allow for the construction of the proposed development whilst having regard to highway safety, amenity, and mitigating impacts on the surrounding environment.

CIVIL ENGINEERING • STRUCTURAL ENGINEERING • TRANSPORTATION • ROADS & BRIDGES
PORTS & HARBOURS • GEOTECHNICAL & ENVIRONMENTAL ENGINEERING • PLANNING &
DEVELOPMENT • WATER SERVICES • CDM COORDINATOR SERVICES

**www.fairhurst.co.uk**

Aberdeen
Bristol
Dundee
Edinburgh
Elgin
Glasgow
Inverness
Leeds
London
Manchester
Newcastle upon Tyne
Sheffield
Watford
Wellesbourne

FAIRHURST