

Portland
energy recovery
facility

Environmental statement
Technical appendices



Framework construction
environmental management
plan

Powerfuel Portland

**Portland Energy Recovery Facility
(ERF)**

**Outline Construction Environment
Management Plan (CEMP)**

267701/CEMP

Final | 28 August 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 267701-35

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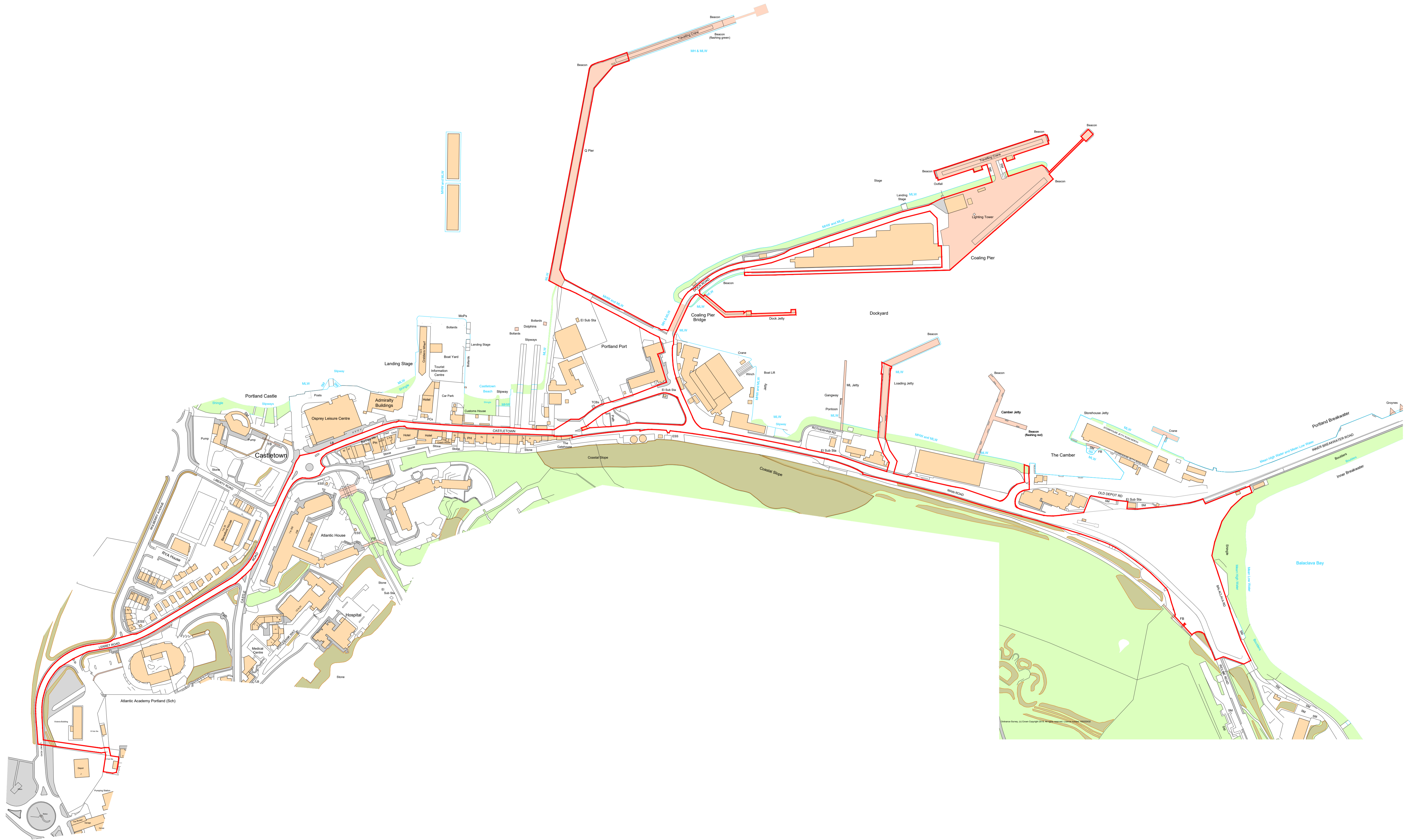
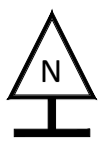
1 Outline Construction Environmental Management Plan

1.1 Introduction

1. This document comprises the Outline Construction Environmental Management Plan (CEMP) which has been prepared on behalf of Powerfuel Portland Limited to support proposals for an energy recovery facility (ERF) fuelled by refuse-derived fuel (RDF) on the north eastern coast of the Isle of Portland.

1.2 The site

2. The 6.29 ha site lies on the north eastern coast of the Isle of Portland, within Portland Port. The site is approximately 600 m east of the villages of Fortuneswell and Castletown (Figure 1) which are the nearest settlements.
3. The 6.29 ha site comprises two distinct areas:
 - The 2.14 ha main site for the ERF building. The main part of the site is roughly triangular and is largely covered with hardstanding. It has been vacant for several years, although there is a weighbridge towards the western point and vehicles are sometimes parked on parts of the land. It is relatively flat and approximately 5 m above ordnance datum (AOD). As the site lies within the port, it is not currently publicly accessible. Vehicular access is from the west, through the main Portland harbour complex, via Castletown, Castle Road, Lerret Road and the A354.
 - The 4.15 ha of cable routes to the electricity substation off Lerret Road and to the berths at Queens Pier and Coaling Pier.
4. The site was used as a naval base, for weapons research and for the repair of military vehicles during the 1900s. The naval base and weapons research facilities were closed in 1995/96 and Portland Port Ltd began to transform the harbour into a commercial port.
5. After privatisation, the buildings on site were progressively demolished to create cargo storage space when they were not used by tenants. The last vacated buildings, used by UMC, Portland Shellfish and Permavent, were demolished in 2014 and 2017. In 2016/17, the main road leading to Incline Hill was realigned along the base of the hill / scree, creating the open development area on site. The last of the demolition rubble was cleared from the site in 2018.



Drawing not to scale,
For information purposes only.
Not for construction.

Notes:

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01	Initial Issue	25/06/2019
02	Drawing revised	23/07/2019
03	Area updated	19/03/2020
04	Title details revised	21/07/2020

Key:
Application Boundary (6.29 Hectares)



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Project Name:
Powerfuel Portland ERF
Figure 1:
Site Location Plan

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Produced: RC Checked: ## Date: 26/06/2019

1.3 The proposed Scheme

6. The proposed development is an ERF with ancillary buildings and works including administrative facilities, gatehouse and weighbridge, parking and circulation areas, cable routes to ship berths and existing off-site electrical sub-station, with site access through Portland Port from Castletown.
7. The ERF is designed to treat 183,000 tonnes of RDF per year, with a 10% design tolerance to treat up to 202,000 tonnes should this be necessary. The ERF will have the capacity to export 15.2 MW of electricity to the local grid. The main ERF building will be 200m long and 51m wide at its widest point. The plant consists of the following elements
 - a waste reception area, for the delivery of baled and loose RDF by sea and HGV;
 - a fuel delivery area;
 - a boiler, consisting of a grate, furnace, auxiliary burners and a high temperature secondary combustion zone;
 - a flue gas treatment plant;
 - a flue stack, 80 m in height and 2m in diameter, with an external access ladder and platforms for sampling points for manual measurement and connections for continuous emissions monitoring equipment;
 - residue handling systems;
 - a steam turbine that generates approximately 18.1 MW of electricity, of which 15.2 MW will be available for export;
 - heat take-off for district heating;
 - a primary substation;
 - ancillary equipment;
 - a two-storey office building comprising of a reception area, general office space, management offices, meeting rooms, plant room, stores and welfare facilities;
 - a transformer compound, containing the transformer, switch rooms and battery/control room;
 - vehicular access and traffic management measures;
 - 28 car parking spaces in the north east and north west of the site for use by employees and maintenance contractors. Ten percent of these will be fitted with electric charging points. An additional eight spaces located adjacent to the existing weighbridge will provide occasional parking for contractors or shift changeovers. Storage for eight bicycles will be provided in the northern wing of the proposed office building;
 - infrastructure for surface water runoff collection and drainage;
 - a foul water drainage network;

- security measures, including boundary fencing, electrically operated vehicle and pedestrian access and egress points and CCTV;
 - appropriate lighting provision; and
 - small areas of landscaping.
8. Further details can be found in Chapter 2: Site description and development proposals of the ES.

1.4 The purpose and structure of this document

9. This document presents an outline for the CEMP, which is a document designed to highlight the key environmental constraints and receptors and the measures that will be implemented throughout the construction phase to protect those receptors and minimise environmental impacts. The detailed CEMP will be produced for the proposed Scheme following approval of the application and the appointment of the contractor(s).
10. Potential environmental impacts during the construction of the proposed Scheme have been identified through the environmental impact assessment (EIA) process. These potential impacts are reported in the ES and a range of ‘standard’ or best practice mitigation and construction management measures are recommended in the technical chapters (Chapters 4-13) to avoid or minimise any potential impacts as far as possible. This Outline CEMP demonstrates how these commitments in the ES will be implemented during the construction phase. It also sets out the monitoring and auditing activities that should be undertaken to demonstrate that such mitigation measures are carried out and that they are effective.
11. This document provides a suggested structure for the CEMP, some preliminary information relevant to the CEMP, and indicates what additional information might be included under each sub-section within the detailed CEMP, which will be produced by the contractor(s) selected to deliver the proposed Scheme. The detailed CEMP will be produced in line with this outline document and would be agreed with the Local Authority in advance of starting the enabling works on the Site.
12. The key elements of the CEMP include
- an overview of the proposed Scheme and associated programme,
 - prior assessment of environmental impacts (through the EIA),
 - reduction of potential adverse impacts through design and other mitigation measures,
 - monitoring of the effectiveness of mitigation measures,
 - corrective action procedure, and
 - links to other complementary plans and procedures.
13. In summary, the CEMP will identify how commitments made in the ES will be translated into actions on the Site and includes a schedule form implementing the actions through allocation of key roles and responsibilities.

14. The contractor(s) will be responsible for working in accordance with the environmental controls documented in the CEMP. The overall responsibility for implementation of the CEMP will lie with the Applicant. The CEMP will be designed with the objective of compliance with the relevant environmental legislation and the mitigation measures set out within the ES (both the embedded mitigation assumed within the assessments, and project specific mitigation required as a result of anticipated impacts. It should be read alongside any Construction Method Statements (which are to be produced by the appointed contractor(s)) and the ES.

2 Construction of the Proposed Scheme

2.1 Overview of the proposed scheme

15. The site and proposed Scheme are summarised above in Section 1.2 and Section 1.3, respectively. The proposed Scheme, which is located on the Isle of Portland, will deliver an energy recovery facility capable of providing 15.2 MW to the grid. More detail is provided in Chapter 2: Site description and development proposals of the ES.
16. Any additional construction licenses, permits or approvals that are required will be listed in the detailed CEMP, including any environmental information submitted in respect to them.

2.2 Construction programme

17. The total site preparation and construction programme is expected to last for approximately 30 months from early to mid-2021 to late 2023, with 24 months of construction and six months for cold and hot commissioning.
18. The 24-month construction period will consist of
 - site preparation, including set-up of contractor's compound;
 - preparing lay-down areas and site security;
 - civil works including site levelling, foundations, drainage and underground utilities and services;
 - delivery and installation of large plant items including boiler, steam turbine and air-cooled condensers;
 - construction of building structure;
 - installation of plant and equipment;
 - building fabric construction; and
 - external and soft hard finishes.
19. The six-month commissioning period will include testing and commissioning of systems (cold testing), setting to work and commissioning of complete process (hot testing) and a plant proving test.
20. Construction work hours will typically be Monday to Friday 07:00 to 19:00 and Saturday 08:00 to 14:00. There will be no noisy working outside these hours (including Sunday and Bank Holidays), other than special works (such as concrete pours, which need to be continuous), which will be subject to prior agreement with Dorset Council. Any residents that may be affected by the out of hours works will be notified in advance.

2.3 Site context

21. This section will set the context of the receptors surrounding and within the Site. The information in the ES is set out below, however, it will need to be updated prior to construction commencement. Key receptors will be highlighted here to ensure the construction site staff are fully aware of any environmental constraints.

2.3.1 Surrounding area

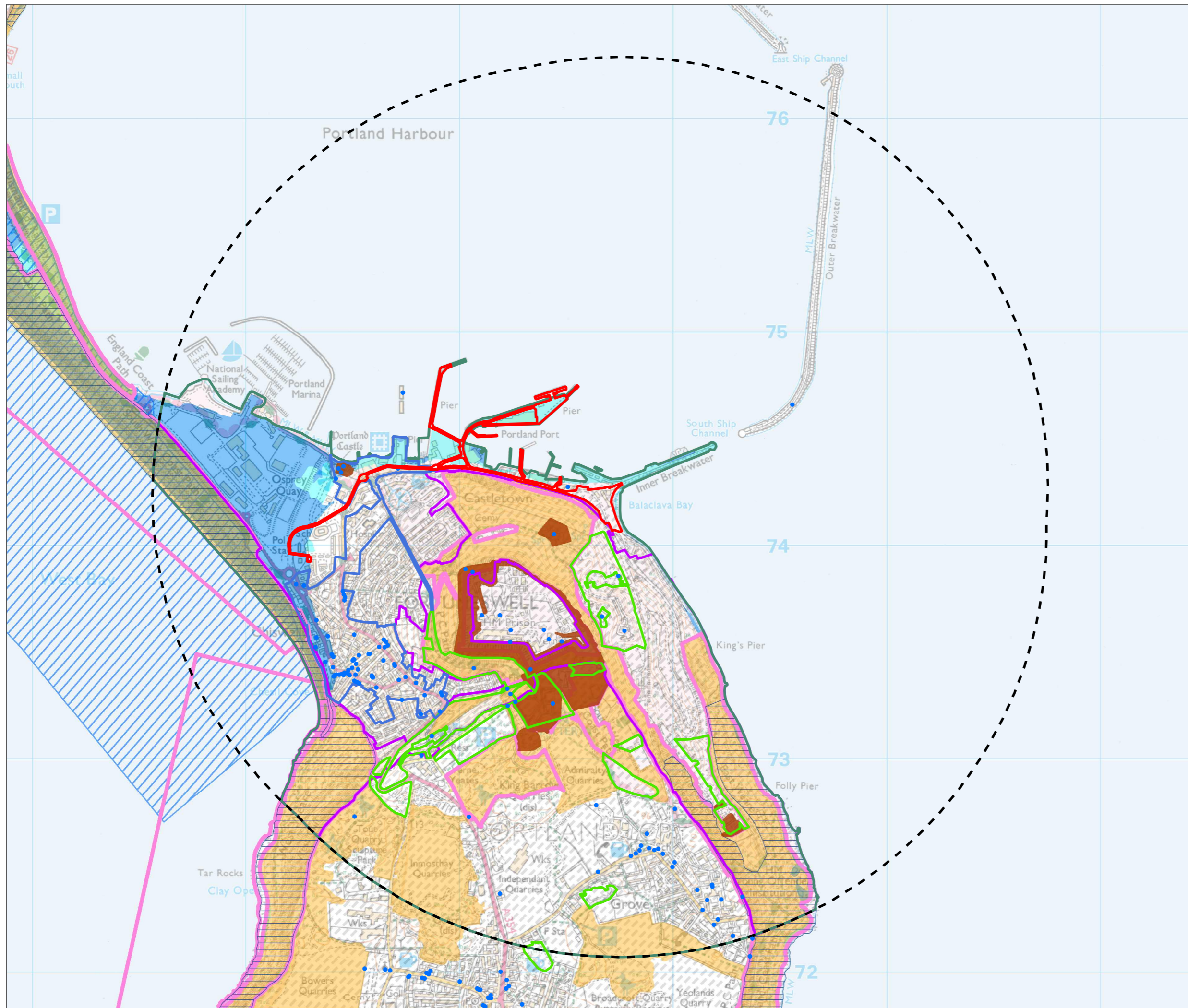
22. The site lies on the north eastern coast of the Isle of Portland, within Portland Port, approximately 600 m east of the villages of Fortuneswell and Castletown.
23. The main part of the site is bordered to the south west by Incline Road, which is a private road within the port that is actively used by port traffic, and a former railway embankment. Cliffs supporting grassland, scrub and woodland habitats lie to the south west of the embankment and rise steeply to approximately 125 m above ordnance datum (AOD). HM Prison The Verne is approximately 430 m to the south west of the site. The eastern site boundary is formed by the shingle shoreline and overland fuel pipes from Portland Bunkers, which are fuel bunkers in the nearby cliffs used for marine bunker fuel supply. Beyond these lies Balaclava Bay. Existing operational port development lies to the north and north west of the site.
24. The remainder of the Isle of Portland, which is approximately 6 km long by 2.7 km wide, comprises several villages separated by areas of open land, farmland and several quarries. The island is joined to the mainland by Chesil Beach and the A354 passes down the Portland end of the beach and then over the Fleet Lagoon by bridge to the mainland. The resort town of Weymouth is approximately 8 km to the north of Portland.

2.3.2 Nearby sensitive receptors

25. Key environmental designations are shown in Figure 2.
26. The site lies within a regionally important geological and geomorphological site (RIGGS), which covers the whole of the Isle of Portland. There are no national or international environmental designations within the site itself, but several in close proximity. The cliffs to the immediate south west of the site form part of the Isle of Portland to Studland Cliffs Special Area of Conservation (SAC) and Isle of Portland Site of Special Scientific Interest (SSSI) and there are several other designated nature conservation sites within 2 km of the site. These include the Nicodemus Heights SSSI 590 m to the south, Chesil and The Fleet SAC and SSSI and Chesil Beach and Stennis Ledges Marine Conservation Zone (MCZ) 1.3 km to the west, and Studland to Portland SAC 1.5 km to the south west. There are also several locally designated sites of nature conservation interest (SNCI) to the south and south west of the site.
27. The Dorset and East Devon Coast World Heritage Site (WHS) wraps around most of the Isle of Portland, but excludes the area of coast in the vicinity of the site. Chesil Beach to the north west of the island is also locally designated as heritage coast. There are several scheduled monuments in the vicinity of the site to the

south west, including a battery 135 m away, The Verne Citadel 340 m away, RAF Portland Rotor early warning radar station 570 m away and a heavy anti-aircraft battery 930 m away. Portland Castle scheduled monument is approximately 990 m to the north west.

28. The nearest listed buildings / structures to the site are the grade II listed breakwater to the north eastern boundary, Dockyard Offices to the north west, East Weare batteries to the south west and other batteries to the south. There are several other listed buildings / structures in the vicinity, including a cluster at the prison. Underhill conservation area is approximately 600 m to the west of the site and contains a large number of grade II listed buildings.
29. The cliffs to the west and south of the site are designated as land of local landscape importance. The nearest nationally designated landscape is the Dorset Area of Outstanding Natural Beauty, 7.3 km to the north.



- Site boundary
- 2km study area
- Listed buildings
- Scheduled monuments
- World Heritage site
- Special Area of Conservation
- Site of Special Scientific Interest
- Heritage coast
- Flood Zone 2
- Flood Zone 3
- Area of archaeological potential
- Land of local landscape importance
- Sites of county/local importance for nature conservation
- Regionally important geological and geomorphological sites
- Conservation areas

Portland ERF
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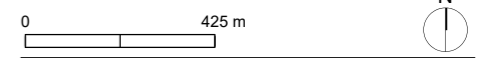


Figure 2: Designations

Dwg no/2627014/02	Revision		
Status	24 July 2020		
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2.4 Construction staff and compounds

30. The number of people employed on site at any one time will vary considerably but, based on experience of similar projects elsewhere, it is estimated that up to 300 people will be employed on site during the construction process.
31. Travel arrangements and parking for construction staff will be set out in a Construction Travel Plan submitted alongside the detailed CEMP. The detailed CEMP will also include a description of any laydown areas or construction compounds, including welfare facilities.

2.5 Construction traffic/site access

32. This section of the detailed CEMP should set out the designated route for delivery of construction and plant material.

All HGVs travelling to and from the site will use the A35(T), the A354 Weymouth Relief Road, the A354 Weymouth Way, the A354 Portland Road, the A354 Portland Beach Road, Lerret Road and Castletown. Dorset Council has implemented a one-way system through Weymouth for HGVs, which runs between the A354 Weymouth Way / B3157 Granby Way and the A354 Buxton Road / A354 Portland Road / B3156 Portland Road (Foord's Corner) roundabouts. This means that HGVs travelling south towards the site will continue along the A354 Weymouth Way, which becomes the A354 Westwey Road and then the A354 Buxton Road until they reach the Foord's Corner Roundabout and join the A354 Portland Road. HGVs travelling north away from the site will continue north from Foord's Corner Roundabout on the B3156 Portland Road and will then travel along Chickerell Road, the Chickerell Link Road, Hampshire Road and the B3157 Granby Way until they reach the roundabout with the A354 Weymouth Way.

Based on experience of similar projects elsewhere and the construction activities discussed above, it is predicted that 74 two-way HGV movements a day will be required to the site during construction.

33. Plant items such as the main boiler, stack or flue gas treatment plant may require abnormal load delivery due to their size, so the potential for delivery of these large items to the port by ship will be investigated. Materials delivered by ship will be unloaded and stored within the port until required, in accordance with the port's existing procedures.
34. The location and size of parking provisions on site, loading and unloading areas for plant and materials, storage areas, wheel washing facilities and construction traffic management measures will be set out in a Construction Traffic Management Plan submitted alongside the detailed CEMP.

2.6 Lighting and Security

35. This section of the detailed CEMP should include details of lighting and security.

36. Temporary site lighting is proposed during the winter months in the early and late parts of the day to enable safe working. Plant and equipment will also have safety lighting during dark working hours. Temporary lighting will be arranged so that glare is minimised outside the construction site.
37. Security lighting will also be required during the works. Site security is managed by a dedicated police force. Access to the site is managed through a secure access point. There is an alternative access point where dog walkers can enter the site. The site is covered by CCTV and patrolled by police vehicles.
38. Timber hoarding will be erected around the perimeter of the site and will be 2.4 m in height. A hoarding plan will be submitted with the detailed CEMP. In addition, dust mesh will be erected to 5m height to protect designated plant species.

2.7 Material Management

39. Arrangements for spoil will be included in the detailed CEMP. For the purposes of the ES, it has been assumed that spoil could be stockpiled anywhere within the planning application boundary. If any material is to be re-used on site, the contractor will prepare a Materials Management Plan in accordance with CL:AIRE Definition of Waste Code of Practice. Off site disposal of surplus spoil will be in accordance with waste regulatory requirements and the Site Waste Management Plan.

2.8 Site Waste Management Plan

40. In order to control the waste generated on the Site during preparation and the construction phase, the contractor will separate the main waste streams on the Site, prior to them being taken to a waste facility for disposal.
41. All waste to be removed from the Site will be undertaken by fully licensed waste carriers and taken to licensed waste facilities.
42. A draft site waste management plan has been submitted in support of the planning application, which sets out procedures for the storage, handling and management of construction waste. The principal contractor will introduce good on-site practice to ensure waste is managed effectively. Reduction of waste will be the highest priority and waste produced will be segregated to facilitate re-use and recycling. The waste stream colour-coding developed by the Institute of Civil Engineers to raise waste awareness will be considered.
43. The principal contractor will nominate a designated waste champion at all stages of development and will provide general information on waste, and specific information relating to the site waste management plan, in site inductions and toolbox talks. This training will include information on the segregation strategy and recovery targets in place at the site. Agreements will be established with sub-contractors for the management of waste. Monitoring and measurement of waste will be undertaken on a regular basis by the principal contractor and the results will be included in regular site meetings.

3 Management Mitigation Plan

44. This section of the outline CEMP sets out the mitigation and management measures to be included as a minimum in the CEMP(s). It also illustrates how the monitoring survey will be set out and the responsible party identified for each mitigation/enhancement measures or monitoring requirement.

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
Air quality	Construction dust	<p>General</p> <ul style="list-style-type: none"> • Develop and implement a stakeholder communications plan that includes community engagement before works commence 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 (if applicable). • Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the local authority. <p>Site Management</p> <ul style="list-style-type: none"> • 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 offsite, and the action taken to resolve the situation in the logbook. <p>Monitoring</p> <ul style="list-style-type: none"> • Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked. • 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 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<p>produce dust are being carried out and during prolonged dry or windy conditions.</p> <ul style="list-style-type: none"> ● Consider whether dust deposition, dust flux, or real-time particulate matter (PM, up to PM₁₀) continuous monitoring is required and agree with the local authority. Where possible commence baseline monitoring at least three months before work commences on-site or, if it is a large site, before work on a phase commences. Further guidance is provided by the Institute of Air Quality Management (IAQM) on monitoring during demolition, earthworks and construction. <p>Preparing and Maintaining the Site</p> <ul style="list-style-type: none"> ● Plan site layout so that machinery and dust causing activities are located away from receptors, as far as possible. ● Erect solid screens or barriers around dusty activities or the Site boundary that are at least as high as any stockpiles on-site. ● Consider fully enclosed site or specific operations where there is a high potential for dust production and the Site is active for an extensive period. ● Avoid site runoff of water or mud. ● Keep site fencing, barriers and scaffolding clean using wet methods. ● 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. ● Cover, seed or fence stockpiles to prevent wind whipping. <p>Operating Vehicle/Machinery and Sustainable Travel</p> <ul style="list-style-type: none"> ● 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. 		

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> ● Impose and signpost a maximum-speed-limit of 15 miles per hour (mph) on surfaces and 10 mph 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). ● Implement a Construction Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking and car sharing). <p>Operations</p> <ul style="list-style-type: none"> ● 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 and appropriate. ● Ensure equipment is readily available on site to clean and dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. ● Use enclosed chutes and conveyors and covered skips. ● Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment where appropriate. <p>Waste Management</p> <ul style="list-style-type: none"> ● Avoid bonfires and burning of waste materials. <p>Measures Specific to Earthworks</p>		

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> ● Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. ● Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. ● Only remove the cover in small areas during work and not all at once. <p>Measures Specific to Trackout</p> <ul style="list-style-type: none"> ● Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, 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 (if applicable) 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 reasonably practicable. ● Record all inspections of haul routes and any subsequent action in a site logbook. ● 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 where reasonably practicable). ● 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. 		

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> • Access gates to be located at least 10m from receptors where possible. <p>Measures Specific to Construction</p> <ul style="list-style-type: none"> • 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. 		
Noise and Vibration	Noise pollution due to construction activities	<p>Construction noise</p> <p>Use of best practicable means (BPM) as required by the Control of Pollution Act (CoPA) 1974 is assumed as incorporated mitigation to control construction noise in the form of low noise emission plant and processes.</p> <p>Section 8 of BS5228-1 describes methods for control of noise and Section 8.2 describes opportunities for control at source. These include:</p> <ul style="list-style-type: none"> • avoid unnecessary revving of engines and switch off equipment when not required; • keep internal haul routes well maintained; • use rubber linings in, for example, chutes and dumpers to reduce impact noise; • minimize drop height of materials; • start up plant and vehicles sequentially rather than all together; • use of broadband reversing alarms rather than conventional beepers; • specification and substitution: ensuring that the quietest practicable plant is used; • enclosing significant sources of noise where practicable; • using plant only in accordance with the manufacturer’s instructions; 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> • siting equipment away from noise sensitive areas; and • carrying out regular and effective maintenance. <p>Good relations with people living and working in the vicinity of site operations are of paramount importance. Early establishment and maintenance of these relations throughout the duration of the site operations will be beneficial in allaying concerns of those exposed to the works.</p> <p>Construction vibration</p> <ul style="list-style-type: none"> • Consideration of non-vibratory compaction techniques will be required if vibratory compaction should cause disturbance at commercial buildings in the port. • Connection works in the highways may require plant similar to that used during routine utilities repairs and maintenance. Vibration effects could be mitigated, should this be necessary, by the use of non-vibratory plant. <p>Construction traffic noise</p> <p>No significant adverse effect from construction traffic noise has been predicted and therefore no additional mitigation is proposed. As for all the construction works, public concerns can be minimised by ensuring local people are kept informed before and throughout the works.</p> <p>Standard measures</p> <ul style="list-style-type: none"> • Hours of working to be planned, taking into account the nature of land use in the areas concerned and duration of the work. • Working hours limited to Monday to Friday: 07:00 – 19:00; Saturday: 08:00-14:00; and on Sunday and Bank Holiday no noisy working (other than special works subject to prior agreement with the local authority). • Haulage vehicles should not access the Site outside of daytime periods. 		

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
Community, social and economic effects	Potential impact on communities and health	<p>The following mitigation is required to minimise adverse community and health effects:</p> <ul style="list-style-type: none"> • a community complaints procedure, • a community meetings/project website to communicate information regarding construction activities throughout the construction period, and • the implementation of a construction traffic management plan to minimise the potential for road traffic accidents during construction. 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP
Cultural heritage	Potential impact on adjacent listed structures through accidental damage	<p>The following mitigation is required:</p> <ul style="list-style-type: none"> • Timber hoarding around the site perimeter should be constructed, with the potential for temporarily boxing in the commemorative datestone at the end of the upper level of the breakwater if required. 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP
Ecology and biodiversity	Potential impact on bats	<ul style="list-style-type: none"> • Sensitive (directional) lighting must be used in the new development, to avoid lighting of currently-dark areas, and prevent disturbance of foraging/commuting bats. The lighting solutions must in line with recent guidance from the BCT and Institution of Lighting Professionals (BCT & ILP, 2018). 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP
	Potential impact on other mammals	<ul style="list-style-type: none"> • Care should be taken when clearing vegetation, debris, stockpiles and other stored material during the development process, as hedgehogs may seek refuge in such a location. • An ecologist must be present during site clearance, to check for hedgehogs at regular intervals. 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP
	Spread of invasive plant species	<ul style="list-style-type: none"> • A Biosecurity Plan must be operated throughout the entire development process, to prevent accidental import or spread of damaging invasive plants 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<p>such as Japanese knotweed (<i>Fallopia japonica</i>) and Himalayan balsam (<i>Impatiens glandulifera</i>), but also cotoneasters and other invasive garden shrubs on the Wildlife and Countryside Act 1981 (WCA) (as amended) Schedule 9 (i.e. species that are illegal to plant or allow to spread to the wild).</p> <ul style="list-style-type: none"> • No non-native shrubs should be planted as enhancements, and WCA Schedule 9 invasive garden shrubs must be avoided. • The Biosecurity Plan must be prominently posted on site, on fencing and on any site cabins. • Toolbox talks must be given to all contractors and site visitors, and posters of invasive plant identification must be posted and circulated. • Procurement systems must involve vetting of contractors and suppliers, to check for awareness of invasive species risks, and to ensure that equipment and materials come from invasive-free sites. 		
Ground conditions	Potential impact to human health	<p>Guidelines will be adhered to during construction to mitigate against potential impacts to the environment:</p> <ul style="list-style-type: none"> • Dust suppression measures are presented in the outline CEMP. Use of appropriate site controls, abatement measures and monitoring will mitigate against potential risks. • Asbestos containing materials (ACMs) may be present in site soils. It is likely that the greatest potential risks will be during excavation and processing of the infill materials, when they are disturbed and may allow fibres to be released into ambient air. Therefore, works will need to be carried out by a suitably qualified experienced contractor and employ methods to control risks to on-site workers and adjacent site users. • Contractors working on the Site will require appropriate Health and Safety briefings on the types of contaminants known to exist on-site and the possibility of unexpected contamination. 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> Procedures should be in place in the event that unexpected contamination is encountered. Contractors should be provided with personal protective equipment (PPE) appropriate for the contamination expected. 		
	Potential impact to environment	<p>Guidelines will be adhered to during construction to mitigate against potential impacts to the environment:</p> <ul style="list-style-type: none"> To mitigate against leaching of stockpiled soils and infiltration into groundwater appropriate bunding and drainage will be required, stockpiles should be positioned to limit any impact of surface runoff in event of extreme rainfall, and surface water discharges to controlled water will require EA consent. To mitigate against soil exposure and increased potential for infiltration and leaching into groundwater earthworks should be sequenced to minimise the amount of soil exposed at one time. To mitigate accidental release of pollutants from storage tanks or vehicles during construction appropriate consents for the storage and use of controlled substances will need to be obtained, e.g. Oil Storage Regulations, Environmental Permitting Regulations, emergency spillage responses should be developed and incorporated into the CEMP, and spill kits should be kept on-site appropriate to types of materials being stored. 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP
Landscape and visual effects		No mitigation measures identified.	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP
Traffic and transport		<p>Construction traffic management plan</p> <ul style="list-style-type: none"> a neighbourhood coordinator will be appointed by the contractor so that residents have a known point of contact with whom to raise any particular issues, such as deliveries or specific access requirements. 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> • the contractor will be required to implement a construction traffic management plan, which will include details of the following: <ul style="list-style-type: none"> ○ access arrangements for workers and HGVs ○ routeing restrictions and delivery arrangements ○ vehicle sizes required and schedule of use ○ traffic management ○ parking and loading arrangements ○ proposed working hours. • construction delivery trips will be spread throughout the day, occurring at times allocated through a project delivery management procedure. This will provide adequate controls, sometimes contractually, to enable the site manager to effectively schedule deliveries to the site to minimise the impact on the local and wider road networks. • the project will be registered with the Considerate Constructors Scheme, which will continuously monitor the impact of the development on its neighbours and allow refinements and improvements to be made throughout the construction period. • all loads defined as abnormal by the Department for Transport will be transported by a competent haulier with experience of transporting large or dangerous loads. Normal operating procedures for dealing with large loads will be followed. Prior notice will be given to all police forces operating within the area the load will pass through. In addition, all abnormal loads will be accompanied by at least one escort vehicle with a trained driver. 		
Water environment	Surface water and groundwater quality	<p>Measures intended to prevent impacts upon surface water or groundwater quality during construction include</p> <ul style="list-style-type: none"> • temporary drainage facilities to control discharge water from the site, ensuring the suitable treatment of surface water discharges from the site during the construction phase; 	To be confirmed in the detailed CEMP	To be confirmed in the detailed CEMP

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> • management of water and sediment across the site and provisions to minimise the likelihood of run-off, for example the use of SediMats™ or check-dams to offer filtration; • providing containment of spillage to capture or treat wastewaters where necessary; • detailing the management of earthworks and stockpiles to prevent releases of run-off and appropriate measures for dealing with any unexpected contamination encountered; and • a commitment for regular inspection throughout the construction programme and following completion as agreed with Dorset Council. <p>Industry standard practice working methods and mitigation measures set out in the Environment Agency’s (EAs) Pollution Prevention Guidelines (PPGs) (withdrawn) and Guidance for Pollution Prevention (GPPs) will be adhered to. Mitigation measures of the management of surface water and groundwater are listed below:</p> <ul style="list-style-type: none"> • Best practicable measures will be used (e.g. through the use of silt traps and the re-use of water in wheel washers) where appropriate. • Where required, the Contractor will obtain appropriate approval for works from the relevant regulatory body or statutory undertaker, which could affect any surface water or groundwater resource. • Precautions will also be taken to prevent damage to services and to avoid pollution during ground penetration, excavation and service diversions. • The Contractor will be responsible for confirming the full extent of underground services prior to commencing works and undertaking surveys where necessary. 		

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> • The Contractor will adhere to the measures outlined in <ul style="list-style-type: none"> – Control of Water Pollution from Construction sites – Guide to Good Practice (SP156); – CIRIA Guidance 532 Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors; – Environmental good practice on-site (C692); and – Groundwater control: design and practice (second edition) (C750). • Where appropriate, develop and implement procedures for monitoring groundwater levels and quality at abstraction boreholes. • All water abstracted for dewatering will be returned to the water environment and not used for other purposes. If it is required for other purposes, then a full abstraction licence will be sought and complied with. • Storage of potentially polluting materials, plant and equipment will be more than ten metres from any water body, including drains. • Fuel stores will be located away from surface water resources and drainage and will be contained within suitably sized bunds with sealed bases. • Refuelling will always be undertaken remote from drainage and surface water features and using automatic shut-off fuel delivery systems. • Pumps, generators and small plant will have drip trays to collect any fuel or oil spills. • Where wheel washes are installed adjacent to site accesses or egresses, these will be self-contained, will recycle wash water as much as possible and will not directly discharge to the environment. • Where practicable and appropriate, topsoil will be replaced to prevent scouring and increased run-off. 		

Topic	Potential Impact	Site Specific Mitigation	Monitoring Requirements	Responsibility
		<ul style="list-style-type: none"> • A suitable construction site drainage system will be provided including cut-off valves, ditches or drains and sustainable drainage systems, or equivalent, with suitably sized treatment facilities such as settlement or detention basins. • Emergency response procedures will be developed and implemented that cover any incidents that might lead to release of pollutants to the aquatic environment. • A site drainage plan will be developed and implemented. • Spill kits will be available in the event of a fuel spillage and personnel will be trained in their use. <p>The Contractor will also comply with BS 6031 Code of Practice for Earthworks, regarding the general control of site drainage including, for example, all washings, dewatering, abstractions and surface water run-off, unless otherwise agreed by the Applicant, and, where appropriate, the relevant regulator. Any monitoring stations or boreholes will be protected from physical damage. If boreholes are decommissioned the Contractors will follow EA Good Practice for Decommissioning Redundant Boreholes and Wells.</p> <p>For excavation of made ground a full management plan will be prepared by the Contractor to comply with all relevant handling and disposal legislation (including dewatering discharge). Prior to commencing earthworks that could disturb contaminated land, site investigations will be carried out so that appropriate mitigation can be developed and implemented.</p>		

4 The Opening and Operational Phase

The detailed CEMP will include an organogram showing team roles, names and responsibilities, training requirements, communication methods, document control and environmental emergency procedures.

4.1 Checking and Corrective Action

4.1.1 Monitoring

To meet the requirement of the CEMP, environmental monitoring of the proposed Scheme and its impacts will be undertaken throughout the construction phase.

As part of the monitoring process the contractor will allocate a designated Environmental Site Officer (ESO), who will be present on the Site throughout the construction process and when new activities are commencing. The ESO will observe the Site activities and report any deviations from the CEMP in a logbook, along with the action taken and general conditions at the time. The Applicant will be informed of any deviations from the CEMP as soon as possible following identification of such issues. The ESO would also act as day-to-day contact with Local Authority and other regulatory agencies such as the EA.

During construction, the ESO will conduct daily walkover surveys to ensure all requirements of the CEMP are being met. Action from these surveys will be documented on an Environmental Action Schedule, discussed with the Site Foreman for programming requirements and issued weekly for actioning.

The Environmental Manager/ Project Manager will arrange regular formal inspections to ensure the requirements of the CEMP are being met. After completion of the works, the ESO will conduct a final review.

4.1.2 Records

The Environmental Manager/ Project Manager will retain records of environmental monitoring and implementation of the CEMP. This will allow provision of evidence that the CEMP is being implemented effectively. Their records will include:

- Environmental Action Schedule;
- licenses and approvals;
- results of inspections by Environmental Manager/ Project Manager;
- other environmental surveys and investigations; and
- environmental equipment test records.

The CEMP will be updated as necessary, with a full review as required throughout the construction period.