POWERFUEL

Portland energy recovery facility

Environmental statement

NTS

Non-technical summary

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Introduction

NTS.1 Powerfuel Portland Limited is applying to Dorset Council for planning permission to develop land within Portland Port for an energy recovery facility (ERF) fuelled by refuse-derived fuel (RDF). Figure NTS.1 shows the application boundary and the location of the site in relation to Portland.

NTS.2 An environmental impact assessment (EIA) was needed because of the potential for significant environmental effects. An environmental statement (ES) has been prepared to report the findings and its key elements are summarised in this non-technical summary.

Background

NTS.3 The former Weymouth and Portland Borough Council granted planning permission in early 2010 to develop the site for an energy plant fuelled by vegetable oil, including waste oils. This planning permission was varied in 2013 to allow waste rubber crumb from end-of-life tyres to be used as an alternative fuel source.

NTS.4 The original plans were never completed and the development company that led the plans (W4B Portland Limited) no longer exists. Powerfuel Portland Limited is now bringing forward a new full planning application to develop the site for an ERF fuelled by RDF, which is a more standard and robust technology for the recovery of energy from waste.

The proposed development site

NTS.5 The 6.29-hectare[1] site lies on the north eastern coast of the Isle of Portland, within Portland Port, around 600 m east of the villages of Fortuneswell and Castletown (figure NTS.1). The site consists of two elements: the 2.14-hectare main site for the ERF buildings and 4.15 hectares of cable routes to the electricity substation off Lerret Road and to the berths at Queens Pier and Coaling Pier.

NTS.6 The main part of the site is roughly triangular in shape 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 around 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 Port complex, from Castletown, Castle Road, Lerret Road and the A354.

NTS.7 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 around 125 m AOD. HM Prison The Verne is around 430 m to the south west of the site. The eastern site boundary is formed by the shingle shoreline

[1] One hectare is 10,000 square metres – around the size of Trafalgar Square in London.

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.

NTS.8 The original naval port at Portland was constructed between 1837 and 1890 to provide a Harbour of Refuge and coaling station for the steam navy. Portland and its harbour were designated as HM Naval Base Portland in 1923 and the base played important roles in both World Wars and the Cold War. From 1958, Portland was home to Flag Officer Sea Training. During this time, the site area was dominated by a weapons research establishment building in the south east, with other buildings dedicated to mechanical repair facilities for military vehicles. The naval base and two major weapons research establishments were closed in 1995/96 and the transformation into a commercial port began.

NTS.9 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.

NTS.10 The site lies within a regionally important geological and geomorphological site, which covers the whole of the Isle of Portland. There are no national or international environmental designations within the site itself, but several nearby (figure NTS.2). 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, south west and north west of the site (figure NTS.2).

NTS.11 The Dorset and East Devon Coast World Heritage Site (WHS) wraps around most of the Isle of Portland, but excludes the area of coast near the site (figure NTS.2). Chesil Beach to the north west of the island is also locally designated as heritage coast. There are several scheduled monuments to the south west of the main site, including a military 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 around 990 m to the north west.

NTS.12 The nearest listed buildings / structures to the site are the grade II listed breakwater next to the north eastern boundary, the 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 area, including a cluster at the prison. Underhill conservation area is around 600 m to the west of the main site and contains a large number of grade II listed

buildings. 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 (AONB), 7.3 km to the north.

The proposed development

NTS.13 The proposed ERF has been designed to treat 183,000 tonnes of RDF a year, with a 10% design tolerance to treat up to 202,000 tonnes a year should this be necessary to maintain the efficiency of the plant. A maximum throughput of 202,000 tonnes a year has therefore been assumed for the purposes of the EIA.

NTS.14 With reference to figure NTS.3, which shows the proposed layout of the site, the proposed development will include two main buildings. The larger one will house the ERF plant and RDF storage area and the smaller building to the east will house office and welfare facilities. The main ERF building will be between 19 m and 47 m high, while the office building will be between 6 m and 17 m high. The 80 m high stack will be around 10 m to the north of the main building and will be painted battleship grey to minimise visibility.

NTS.15 There will also be other smaller buildings and structures on site that support the main facilities. These include a gatehouse to monitor access to and from the site, weighbridges and substation for transferring the energy generated by the facility to the local grid and to berths within the port. Figures NTS.4a-c are the architect's elevations and figures NTS.5a-b show cross sections through the proposed buildings.

NTS.16 The boiler house and the ground floor of the office building will be clad in a light grey profiled metal sheet with angled panels. These will be laid out in a series of horizontal bands of various heights and shades to reflect the appearance of the exposed limestone cliff face at the top of East Weare. The RDF store and turbine hall, which wrap across the front of the boiler house, and the first floor of the office building will be clad in a heavy duty PVC mesh, which will be printed with a high resolution image of the East Weare escarpment.

NTS.17 All vehicles will access the site through the main vehicular entrance to Portland Port, from Castletown. Access will be controlled through the Port's existing gatehouse. Vehicles will use the Port's existing road system to reach the site, along the Castletown and Dock Road one-way system and Main Road. Deliveries of RDF by ship will be normally offloaded at the berth on the Inner Breakwater to the north east of the site, unless port operational needs require an alternative berth to be used, and brought into the site by lorry.

NTS.18 Figure NTS.6 is a flow diagram that shows how the ERF process works. The RDF will be delivered by sea in the form of wrapped bales and / or by road in loose or baled form in HGVs. The RDF will be weighed (while still in the delivery vehicles or the vehicles bringing it into the site from the dock). Loose RDF will be tipped into a concrete bunker within the ERF building, while baled RDF will be stacked in a storage area inside the building. This will be removed from the wrapped bales and placed into the bunker as space becomes available.

NTS.19 A grab crane will transfer the RDF from the bunker into the combustion chamber, where the RDF will be burnt at a high temperature (850°C). Ash from the burning process, known as bottom ash, will be collected, cooled and stored ready for collection and export off site. It is intended that all of the ash will be recycled into secondary aggregates, which will be used for construction projects and road building.

NTS.20 The hot air from the ERF combustion chamber, known as the flue gases, will be drawn off and used to heat water and create steam. The steam will then be directed to a steam turbine that produces electricity. The process will generate around 18.1 megawatts of electricity, around 15.2 megawatts of which will be available for export to the local grid, with the remainder used within the plant. Cables will be provided to the berths at Queens Pier and Coaling Pier to allow the provision of power to moored ships. Up to 15 megawatts of power will be available for berthed ships, depending on requirements, although the maximum demand is only likely to be reached when a large cruise ship is docked. The proposals will also allow for the future export of heat, should a practical off-site local user be identified.

NTS.21 Before they are released to the atmosphere, the ERF flue gases will undergo a series of treatments that will clean the gas to a level that meets the strict legal standards set for the protection of both human health and the environment. The emissions from the stack will be continuously monitored and real-time data will be available to Dorset Council and the Environment Agency at all times.

NTS.22 The residue remaining from the ERF flue gas treatment process is called air pollution control residue. This will be sent off-site for treatment and used to create a lightweight, high quality, sustainable carbon negative aggregate that is used as a construction building material.

NTS.23 The ERF will normally operate 24 hours a day, seven days a week, with deliveries at any time, although there will be periods of annual maintenance when waste processing is reduced. Between 30 and 35 staff will be employed directly on site in a three-shift pattern.

NTS.24 If all the RDF was delivered by road, a total of 25 deliveries of RDF would need to occur per day, with a further 11 lorries delivering treatment chemicals and removing ash. This would result in a total of 72 lorry movements (i.e. 36 trips each way) a day. To allow for differences in the total amount of RDF needed each day, and therefore ensure a realistic worst-case assessment, the EIA has been based on a total of 40 HGV trips each way (80 HGV movements in total). All HGVs travelling to and from the site will use the A35(T), the A354, Dorset Council's HGV one-way system through Weymouth, Lerret Road and Castletown. If all the RDF was delivered by sea, a total of 81 deliveries by ship would be needed each year, which equates to fewer than two additional ships per week using the port.

NTS.25 A range of measures will be put in place at the plant to ensure that problems with dust, odour, noise, pests and litter do not arise. These include keeping doors to the waste reception area closed when not in use, careful design of the RDF bunker and RDF feed hoppers, regular dust, noise and odour checks, installing noisy plant items within the building and using noise

insulation where necessary, limiting vehicle movements at night, regular maintenance of plant, and covering or sheeting all lorries. A local liaison group will be set up, which will meet on a regular basis to discuss the operation of the ERF and any potential issues or queries from members of the local community. Members will include local residents and representatives from Portland Town Council, Dorset Council and the Environment Agency.

NTS.26 The construction of the proposed ERF is likely to take around two years (early to mid-2021 to early to mid-2023), with a further six months (late 2023) of commissioning (i.e. to test all items of plant and equipment to make sure they function as they should). A framework construction environmental management plan has been prepared setting out best practice approaches to construction and mitigation measures identified through the EIA that will be put in place during construction works. The project will be registered with the Considerate Constructors Scheme.

NTS.27 Vehicle movements will increase over the construction and commissioning period, but this will be temporary and will be managed through a construction traffic management plan. HGV construction traffic accessing and leaving the site will use the same routes discussed above for operational HGVs. The number of people employed on site at any one time will vary considerably but it is estimated that up to 300 people will be employed on site during the construction process.

NTS.28 Construction works will take place between 07:00 and 19:00 Mondays to Fridays and 08:00 to 13:00 on Saturdays. There will be no noisy working outside these hours (including Sundays and Bank Holidays), other than special works (such as concrete pours, which need to be continuous) that will be agreed beforehand with Dorset Council.

NTS.29 More detailed information on both the construction and operation of the proposed ERF can be found in chapter 2 of the ES.

Alternatives

NTS.30 The ES includes a summary of alternative options, including alternative sites, technologies and designs.

NTS.31 A comparative assessment was carried out of the application site against the 12 sites allocated in the adopted Bournemouth, Christchurch, Poole and Dorset Waste Plan 2019. Firstly, the sites were analysed against a range of operational, planning and environmental criteria and ranked according to their performance. The application site was ranked first in this assessment. A more detailed review of the ability of the sites to deliver the proposed ERF was then carried out. Five of the allocated sites are too small to accommodate the proposed development, so were not considered further. Four of the remaining allocated sites are not allocated as strategic waste management sites with the potential to accommodate an ERF, so were not considered further.

NTS.32 A more detailed review of the remaining three allocated sites was then carried out. This concluded that all three sites are subject to significant constraints. In addition to being close to European designated nature conservation sites

(all three sites), two of the sites are also constrained by aerodrome safeguarding and green belt considerations, which would prevent the development of the large scale buildings and tall stack typically associated with ERFs.

NTS.33 The remaining allocated sites are also subject to other potential constraints, such as landscape and visual (all three sites), flood risk (one site), lack of combined heat and power opportunities (all three sites), and distance to sensitive receptors (one site). They are less well located in terms of access to water transportation (all three sites) and the primary road network (two sites). The review therefore concluded that none of the allocated sites are considered to be suitable or appropriate for the construction and operation of an ERF of the type and scale proposed at Portland.

NTS.34 As discussed in paragraphs NTS.3 and NTS.4, planning permission has previously been granted on the site for an energy plant fuelled by vegetable oil and waste rubber crumb from end-of-life tyres. The use of RDF as a fuel source is a more energy efficient, robust and widely used technology for the recovery of energy from waste than the technologies proposed in the consented applications.

NTS.35 The design of the proposed ERF changed over time following consultation with Dorset Council and other stakeholders and the findings of the baseline environmental studies. The main aspects of the design where alternatives were considered are as follows:

- Approach to building design: the option of a landmark building with stepped louvres to create a 'sail-like' appearance when viewed from the harbour was rejected because it would affect views from the coastal path through the AONB
- Building layouts and massing: a series of options were rejected that did not reflect the surrounding landscape, left plant items highly visible, did not allow access to the fuel pipeline to the east of the site and did not allow separation between the stack and the buildings needed to ensure suitable dispersion of the gases from the stack. The selected design addresses these issues and also provides improved separation of vehicles and pedestrians and easier access for deliveries
- Stack height, location and colour: detailed emissions modelling was carried out to determine the proposed stack height and location to ensure that emissions will disperse sufficiently and there will be no significant adverse effects on human health or sensitive ecological receptors. The colour of the stack was also reviewed to determine whether changes in colour could help to reduce its visibility. The chosen battleship grey colour was the least visible solution
- Façade materials: the proposed cladding has been designed to help the building blend with the landscape behind when viewed from the AONB and WHS. A series of options were rejected that would have increased the visible extent of the port when viewed across Weymouth and Balaclava Bay, have greater visibility from the AONB and WHS and affect air flow across the building. The chosen design addresses these issues and was found to provide the best camouflage from long distance views

- Roof treatment: the potential for a green roof was rejected because it would not reduce visibility from most viewpoints and could create operational issues for the proposed building and wider port. The chosen option will assist better in reducing visibility and will not have the same operational issues

Assessment methodology

NTS.36 The first stage of the EIA was to produce a scoping report, which set out the potential environmental issues to be considered during the EIA process. This was sent to a range of relevant organisations for comment and a number of additional issues were identified.

NTS.37 The various specialist assessments, discussed in more detail below, followed generally similar methods. Desk and / or field studies were carried out to establish the existing situation (the baseline). The effects of the proposed development were examined using a method that combines the sensitivity and importance of receptors[2] with the likely size of the change from the baseline situation to establish the degree of the effects. If the degree of effect is moderate or above (including slight to moderate effects), then the effect is considered to be significant. Slight or negligible effects are not considered to be significant.

NTS.38 The degree of an effect determines the resources that should be put in place to avoid or reduce (mitigate) an adverse effect and identifies the actual value of a beneficial effect.

NTS.39 The potential for cumulative effects with other developments in the area that are consented, proposed or committed was also examined. The following developments were included in the cumulative effects assessment (figure NTS.7), as agreed with Dorset Council:

- Ocean Views, Hardy Complex, Castle Road, Portland (phase 2): redevelopment of former naval accommodation block into 157 apartments, together with the development of 191 new build homes, with associated car parking
- Royal Manor Arts College, Weston Road, Portland: demolition of existing buildings and construction of 98 dwellings
- Verne Common Road and Ventnor Road, Portland: development of vacant land by the demolition of a garage and construction of 25 dwellings
- Southwell Primary School, Sweethill Lane, Portland: demolition of existing buildings and construction of up to 58 dwellings
- Ferrybridge Inn, Portland Road, Weymouth: demolition of existing public house and construction of up to 22 dwellings
- Disused Quarry Works Stockyard, Bottom Coombe, Park Road, Portland: development of around 62 dwellings
- Redundant buildings at Bumpers Lane, Portland: demolition of existing redundant industrial buildings and construction of around 64 dwellings

[2] A receptor is a part of the natural or man-made environment, such as a river, a woodland, a person or a building, that is affected by an impact.

- Plot X, Mulberry Avenue, Portland: construction of two blocks of two storey business units (three office units and six warehouse units, with a total floorspace of 766 square metres) with associated parking and landscaping
- Plot M1B, Hamm Beach Road, Portland: construction of three industrial and commercial buildings (total floorspace 2,879 square metres) and associated external works
- Remaining development (and associated planning permissions) permitted under the 1997 Portland Harbour Revision Order, as follows:
  - Project Osprey: construction of two animal feed storage and distribution warehouses and an office building, which are currently under construction
  - Project Inner Breakwater and Camber Area Alterations: development of operational land for the purposes of shipping
  - Open storage of waste products, including waste wood and metal, on the Parade Ground area of the Rifle Range
  - High Speed Ferries: a cross-Channel passenger / car high speed ferry service
  - Development of employment uses on several undeveloped areas of land at the Port
  - Landside aquaculture: construction of a warehouse building for fish farming
- Development (and associated planning permissions) permitted under the 2010 Portland Harbour Revision Order, including new berthing faces and operational land, floating linkspans, mooring structures and a dry-dock

Environmental effects

Air quality

NTS.40 The emissions of gases from the proposed stack was the main focus of the air quality assessment, although traffic emissions (both during and post-construction) and shipping emissions were also addressed.

NTS.41 Existing air quality around the site was established from measurements made by the former Weymouth & Portland Borough Council, as well as modelled and monitored background data provided by a number of organisations, including Defra. This information was used in the air quality modelling. There are no air quality management areas on Portland and air quality around the site is generally good. However, concentrations of nitrogen dioxide in the Rodwell Road / Boot Hill (A354) area of Weymouth are close to breaching national objectives.

NTS.42 The modelling carried out to predict emissions related to construction traffic showed that there will be no significant increase in the levels of traffic-related pollutants as a result of the proposed development. To ensure the potential worst-case scenarios were examined, the post-construction assessment examined the potential effects for 100% of RDF, residues and raw materials being transport by road and 100% by ship. No significant effects were predicted on either sensitive residential receptors or designated nature conservation sites.

NTS.43 The operational assessment modelled concentrations of a range of pollutants that will be emitted from the proposed ERF. As discussed in paragraph NTS.21, the flue gases will undergo a series of treatments that will clean the gases to a safe level before they are released to the atmosphere. The modelling showed that there will be no significant effects on air quality as a result of emissions from the proposed development, either at sensitive residential receptors or designated nature conservation sites. The post-construction assessment also considered the potential for effects from all emissions sources combined (flue gases from the ERF, road traffic and shipping) and concluded that there will be no significant effects.

NTS.44 None of the other developments in the area will generate process emissions, so there is no potential for significant cumulative operational air quality effects. Traffic flows associated with the other developments were included in the traffic modelling, so the potential cumulative effects from vehicle emissions were included in the modelling results and no significant cumulative effects are predicted.

Carbon balance and greenhouse gas emissions

NTS.45 A carbon balance assessment was carried out to determine the impact of the proposed development on greenhouse gas emissions. The calculation of the total emissions produced by the proposed development took account of emissions generated by burning the RDF, burning fuel in auxiliary burners during start-up and shut-down, and transporting RDF, residues and raw materials. It also considered the emissions that would be offset by exporting electricity, heat and shore power from the proposed ERF, as these would replace power and heat generated by burning other fuels, such as natural gas and diesel.

NTS.46 In the first instance, the assessment compared the proposed development's emissions with the alternative of sending the same amount of waste to landfill because this is the main alternative treatment route available for residual waste. This is because the UK does not have enough ERF capacity to treat all residual waste, so considerable amounts still go to landfill. If a new ERF is built in the UK, this means that less waste overall will be sent to landfill at a national level.

NTS.47 It is acknowledged that not all of Dorset's residual waste is sent to landfill, so the assessment also compared to the proposed development to sending the waste to an ERF on other sites in Dorset allocated in the adopted waste plan, to other ERFs in the UK and Europe, and to the existing residual waste management arrangements in Dorset. However, it should be noted that these comparisons do not take account of the fact that any ERF that is currently processing residual waste from Dorset would then need to secure waste from elsewhere and it is likely that this replacement waste is currently being sent to landfill.

NTS.48 The assessment found that, compared to sending the waste to landfill, the proposed development would lead to an estimated minimum net carbon

benefit of 21,912 tonnes of carbon dioxide equivalent[3] a year, increasing to 27,485 tonnes a year with shore power provision and 30,206 tonnes a year with shore power and heat provision. This will be a significant beneficial effect. As the carbon assessment is based on a range of assumptions, Powerfuel Portland Limited suggests that a methodology for carrying out an annual greenhouse gas assessment should be agreed with the planning authority. If the results of this show that the plant has released more greenhouse gas emissions than have been displaced through export of electricity and heat and avoidance of landfill, then Powerfuel Portland Limited is committed to using verified carbon offsets to ensure that the process operations are 'net zero' over the lifetime of the plant. This will further increase the net benefit of the proposed ERF.

NTS.49 The assessments of other scenarios found that the small potential carbon savings associated with sending the waste to other nearby ERFs would be more than outweighed by the carbon savings associated with providing shore power to ships at Portland Port, which the other ERFs cannot do. Sending the waste to other ERFs in Europe could have a carbon benefit over sending it to a UK plant because European ERFs export more heat. However, this option would not contribute to diverting waste from landfill overall.

NTS.50 There would be slightly greater carbon emissions associated with transporting the waste to the proposed ERF at Portland than to a plant at one of the sites allocated in the waste plan. However, this would be more than outweighed by the potential for district heating and shore power provision, as well as the potential to reduce road transport emissions by delivering waste by ship. The proposed ERF will have a benefit over the current residual waste management approaches for Dorset's waste of approximately 7,200 tonnes of carbon dioxide equivalent a year, even without taking into account the potential benefits associated with the provision of shore power. This is largely as a result of diverting waste from landfill.

NTS.51 All of the other developments in the area will generate greenhouse gas emissions during and post-construction. However, as the proposed ERF will give rise to significant net carbon benefits, there is no potential for significant adverse cumulative effects.

Community, health and economic effects

NTS.52 The community, health and economic effects assessment examined the effects of the proposals on the host community, including the health and wellbeing of the existing population, local businesses and the economy. It also examined issues associated with the public perception of ERFs. Public concern regarding ERFs relates to a number of issues, including emissions, health impacts, transport issues, conflict with recycling, disposal of residues, local amenity issues, management and operational concerns, and property values.

[3] This is a measure used to compare the emissions from various greenhouse gases on the basis of their global warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

NTS.53 Emissions from ERFs are tightly regulated and, as discussed above, no significant adverse air quality effects are predicted as a result of the proposed development. Health is addressed in more detail below. The traffic and transport assessment discussed below and the stand alone noise assessment submitted in support of the planning application did not predict any significant effects as a result of the transport of RDF and raw materials to the plant or the removal of residues.

NTS.54 Examination of recycling levels in Dorset showed that recycling and composting are well established in the county, while RDF produced in Dorset is currently sent to Europe. Processing this RDF at the proposed development instead would therefore not reduce recycling or composting. All of the residues from the ERF will also be recycled.

NTS.55 In relation to amenity issues, a number of measures have been incorporated into the building design and operational procedures to minimise effects from dust, odour releases and noise, as discussed in paragraph NTS.25. The ERF will be operated to stringent standards and no significant amenity or management and operational issues are envisaged. Studies of property values before and after the construction of ERFs have not shown evidence of any significant adverse effects. As a result, the proposed development is not predicted to lead to significant effects on house prices.

NTS.56 A detailed human health risk assessment was carried out to model the potential for adverse effects on human health as a result of breathing or ingesting substances emitted by the proposed ERF. It examined the potential for health effects as a result of increased emissions of nitrogen dioxide, sulphur dioxide and particulate matter. The modelling found that the proposed development will not lead to a single additional case of any of the relevant health conditions examined, including heart disease, heart failure and stroke. The assessment also modelled the potential lifetime health risks associated with substances that can build up in the environment, including dioxins and metals. All the risks were found to be substantially below the thresholds at which a significant health effect could occur. The assessment therefore concluded that there will be no significant adverse health effects at sensitive receptors as a result of the proposed development.

NTS.57 A health impact assessment was carried out to consider how a range of socio-economic, physical, mental and community health outcomes might be affected by the proposed development. It identified that the temporary increase in employment and spending during construction could lead to associated health and wellbeing benefits through raised income and living standards for local people. There will not be any construction camps, so there will be no effects associated with the fear of crime and decreased health that can arise with such camps. The assessment concluded that there will be no significant adverse health effects as a result of increased pollution, traffic or noise during construction.

NTS.58 Post-construction, there is the potential for income and employment from the proposed development to improve health and wellbeing in the area. There will be no significant increases in air pollution, traffic or noise as a result of the proposed development. While there will be localised changes to a small

number of views, overall no significant adverse health and wellbeing effects are predicted.

NTS.59 The economic assessment considered three main geographical levels: the former borough of Weymouth and Portland; Dorset, Bournemouth, Christchurch and Poole; and the rest of the UK. During construction, the proposed development will increase employment and spending. It was not possible to accurately model these effects at the former borough level, but slight beneficial effects that will not be significant are predicted as a result of increased employment and spending in Dorset as a whole. At the national level, the effects will be negligible and not significant.

NTS.60 Post-construction, the proposed development will also lead to increased spending as a result of maintenance activities, transport and the payment of business rates to Dorset Council. This will lead to a slight beneficial effect in Dorset as a whole, which will not be significant, and a negligible effect nationally. As well as the direct jobs created at the plant, additional jobs will be created through spending in the supply chain. It is also anticipated that two apprenticeship positions will be available and Powerfuel Portland Limited is working with Weymouth College to develop an apprenticeship programme for local young people. Overall, a moderate, significant beneficial effect is predicted on the Weymouth and Portland area and a slight beneficial effect on the wider Dorset area that will not be significant.

NTS.61 The provision of power and heat by the proposed development will also lead to economic benefits. Portland's electricity supply is provided by SSE through a primary substation on the island, fed from a bulk supply point at Chickerell on the mainland that also serves nine other substations. Capacity at the bulk supply point is limited, which constrains the electricity supply to the port for shore power. The proposed ERF will provide 15.2 megawatts of power on the island that would not otherwise be available without major investment and costs. This will be a moderate, significant beneficial effect. The proposed ERF will also have the capability to supply district heating to local properties, subject to demand, which will be a slight beneficial effect that will not be significant.

NTS.62 The proposed development will provide shore power to Portland Port to enable ships moored in the port to switch off their generators. The provision of shore power is likely to become increasingly important in future as a result of national and international environmental concerns. If this were not provided, cruise ships may gradually stop using the port over time. The provision of shore power by the proposed development will enable Portland Port to retain and grow its cruise business, which will also benefit suppliers. This will be a moderate, significant beneficial effect. The provision of shore power will also safeguard cruise-related spending and associated jobs in the Weymouth and Portland and wider Dorset areas. This will be a slight beneficial effect that will not be significant.

NTS.63 As discussed in the waste section below, some of Dorset's residual waste is currently sent to landfill, which has an associated cost in landfill tax. If the waste was sent to the proposed ERF instead, it is estimated that the council could save around £2.5 million per year. This would be a moderate, significant beneficial effect. The proposed development will bring a vacant,

previously developed site back into active use, which has the potential to increase business confidence in the area. This is predicted to be a slight beneficial effect that will not be significant.

NTS.64 As discussed in the carbon balance and greenhouse gas emissions section above, the proposed development will lead to a reduction in carbon emissions. Carbon emissions have associated costs related to mitigating the effects associated with climate change. Reducing emissions therefore has an associated economic benefit. This has been assessed as being a substantial, significant beneficial effect at the Weymouth and Portland level, a moderate significant beneficial effect at the Dorset level and a negligible beneficial effect at the national level.

NTS.65 The construction and operation of the other proposed and consented developments in the area will provide employment opportunities for new and existing residents, and business opportunities for existing or incoming businesses, while the proposed ERF will contribute to the supporting infrastructure needed for commercial and residential development. Overall, a slight to moderate, significant, beneficial cumulative effect is predicted.

NTS.66 No potentially significant cumulative air quality, noise, landscape and visual or traffic and transport effects have been identified in the assessments, so there is no potential for significant cumulative community and health effects.

Cultural heritage

NTS.67 A desk study was carried out to investigate the historic environment within a 1 km study area of the site, including scheduled monuments, historic buildings and conservation areas. The Dorset and East Devon Coast WHS was considered separately, as requested by The Jurassic Coast Trust, and this is discussed later in this NTS. The site is previously developed and site investigations recorded made ground extending to between 5 m and 8 m below the site. This means that any archaeological remains are likely to have already been destroyed and no significant effects are predicted as a result of the proposed development.

NTS.68 The closest listed buildings and structures to the site are the grade II listed inner and outer breakwater and associated buildings and former dockyard offices, immediately to the north and north east. The proposed development will not lead to any changes to the fabric of these buildings and structures, but will be within their setting. The new buildings, while large, will not be uncharacteristic of an operational port, although the stack will appear as a new landmark on the edge of the port. There will be a small change to the setting of the listed buildings and structures, resulting in a moderate, significant adverse effect.

NTS.69 There are several former military batteries on the cliffs to the south west of the site, which are part of an extended group of military sites that illustrate the strategic importance of Portland Harbour over a long period. The closest of these to the site are on East Weare, which are grade II listed and a scheduled monument. The roof and stack of the proposed ERF will be visible in a very small part of the views from these batteries across the harbour. This will lead to a slight to moderate, significant adverse change to their setting. The other

batteries around the cliffs are further from the site and can only be seen from the cliffs above. A slight adverse effect is predicted on their settings as a result of the proposed development, which will not be significant.

NTS.70 The Verne Citadel, 340 m to the south west of the main site, is grade II* listed and a scheduled monument. Several of its internal buildings are also grade II* listed. It was formerly an artillery fort and is now used as a prison, meaning its character is enclosed and inaccessible. The proposed development will be a localised addition to the citadel's extensive setting and will not change the citadel's dominance in the landscape. Overall, a slight to moderate, significant adverse effect is predicted.

NTS.71 The later military sites in the area, including WWII anti-aircraft batteries, underground bunkers and the Cold War RAF Portland early warning radar station, which are scheduled monuments, have little connection to the site. The site is not part of their settings and the proposed development will not be visible, so no effects are predicted.

NTS.72 The grade I listed Portland Castle, 990 m to the north west of the main site, is also a scheduled monument and was built as part of a line of 30 coastal fortifications in the 16th century. The proposed development will not be visible from any of the spaces around the castle, including the gardens, shoreline and grade II* listed Captain's House in the grounds. It will appear as part of the wider developed setting of the castle, set low on the shore. Overall, a slight to moderate, significant adverse effect is predicted on the setting of the castle and associated house.

NTS.73 Most of the other listed buildings near the site are within Underhill conservation area to the west, which is physically and visually separated from the site. The proposed development will not be visible across this part of the conservation area and will not appear in important views across the town to Chesil and the coastline to the north. There will be very minor changes to views in the more distant approach on the A354 Portland Beach Road. The proposed development will be visible from the Castletown part of the conservation area as part of the mixed groups of buildings and security features at the port entrance. It will be experienced in the context of the large scale marine uses in the area and will not affect views north towards the sea. Overall, a slight adverse effect that will not be significant is predicted on the conservation area and its listed buildings.

NTS.74 There are two grade II listed Phoenix caissons, concrete elements of the floating artificial harbours designed to support the Allied invasion of Normandy in 1944, moored off the pier at Portland Castle. They are separated from the site by multiple piers across the port and marina. The proposed development will be visible from these heritage assets in the context of the port activities and vessels using the piers and will not change the relationship of the listed structures to their setting within the former naval base and present-day port. No effects are predicted as a result of the proposed development.

NTS.75 The potential for cumulative effects with other developments in the area was also considered. Project Inner Breakwater and Camber Area Alterations will increase activity around the inner breakwater, leading to a moderate,

significant adverse cumulative effect. The other development permitted under the 1997 Harbour Revision Order will form part of the settings of the batteries at East Weare and The Verne Citadel, leading to a slight to moderate, significant adverse cumulative effect. A slight to moderate, significant adverse cumulative effect is also predicted on the setting of The Verne Citadel as a result of the Verne Common Road and Ventnor Road development.

NTS.76 The Plot X, Mulberry Avenue development will occupy an area of open land next to Portland Castle and will lead to a slight to moderate, significant adverse cumulative effect on the castle's setting. The proposed conversion of the derelict former naval accommodation block as part of the Ocean Views development will be a positive change to a feature that sits in the setting of a number of heritage assets and the conservation area. In combination with the proposed development, a slight to moderate, significant adverse cumulative effect is predicted. The other developments in the area are not predicted to lead to any significant cumulative cultural heritage effects.

Ground conditions

NTS.77 A desk study, which included a review of previous site investigations, was carried out to establish the potential for existing contamination at the site. While the site is now vacant, it has been used for a range of port-related and industrial uses for over 150 years, many of which had the potential to cause contamination. These included railway lines, a slaughter house, a timber yard, a weapons research establishment and mechanical repair facilities for military vehicles.

NTS.78 The past site investigations recorded some contamination on site, including hydrocarbons and slightly raised levels of ground gases (methane and carbon dioxide). There is also the potential for asbestos to be present and further testing will be carried out before construction works begin. Initial investigations have shown that there is a moderate risk of unexploded bombs being present on the site, largely as a result of activity during World War II.

NTS.79 A range of mitigation measures will be put in place to ensure there will be no significant adverse effects on human health or the water environment as a result of contamination, either during or post-construction. A strategy will be developed, based on the findings of further investigations and testing, to clean up or remove contamination as necessary. All construction workers will be required to wear protective equipment, such as gloves, masks and overalls, when necessary and to undergo appropriate training. Excavated materials will be checked by appropriately trained and qualified staff to identify suspected asbestos and measures will be put in place to manage material as necessary. All excavations will be supervised by an explosive ordnance clearance engineer and surveys will be carried out to ensure that no unexploded bombs are present. If needed, measures will be incorporated into the proposed buildings to protect them from ground gases.

NTS.80 Provided that good management practices are followed and the mitigation measures are carried out as necessary, it is considered that there is no potential for significant cumulative ground conditions effects with other projects in the area.

Water quality

NTS.81 The water quality assessment considered the potential for effects on groundwater and coastal water quality as a result of the proposed development. Potential effects from flooding were examined separately in the stand alone flood risk assessment submitted in support of the planning application.

NTS.82 A range of mitigation measures will be put in place during construction to ensure that there will be no significant effects on groundwater or coastal water quality. These include the use of temporary drainage facilities to provide treatment of surface water discharges, management of stockpiles to minimise runoff, storage of fuels, oils and chemicals in accordance with regulatory requirements, use of emergency spillage response procedures and spill kits, and regular inspection throughout construction.

NTS.83 The proposed drainage strategy incorporates measures to minimise pollution levels in runoff, including a swale and oil interceptors, which will ensure that there will be no significant adverse effects on water quality post-construction from surface water runoff. A number of measures will be put in place to safeguard water quality during plant operations, including spill procedures and spill kits, bunded storage areas and covering or sheeting of vehicles. Deliveries by ship will comply with relevant standards and protocols, including the Maritime and Coastguard Agency's guidance. As a result, no significant effects are predicted on groundwater or coastal water quality post-construction.

NTS.84 It is likely that the other developments in the vicinity of the site will be required to put in place similar good practice measures to protect the water environment during construction as those discussed above. All the other schemes will also be required to put drainage systems in place to manage runoff and control water quality post-construction. Given this, and the fact that no significant effects are predicted as a result of the proposed development, there is no potential for significant cumulative effects on water quality.

Landscape, seascape and visual effects

NTS.85 Desk and field studies were carried out to evaluate the landscape in and around the site and identify potential sensitive views of the site. Several were selected to provide representative viewpoints from various locations, in consultation with Dorset Council and Dorset AONB Partnership.

NTS.86 The key characteristics and landscape elements for the site include hardstanding, patches of low growing vegetation and scrub, a lack of trees, steep cliffs to the south west and a location within a busy port environment. Landscape character assessments have been carried out by the former Dorset County Council, Weymouth & Portland Borough Council and West Dorset District Council and the Dorset AONB Partnership. The Neighbourhood Plan for Portland 2017-2031 Referendum Version January 2020 also subdivides Portland into character areas. Landscape character areas with the potential to be affected by the proposed development include the South Dorset Escarpment; Harbour / Wetland / Lagoon; Open Chalk

Downland; Ridge and Vale; Lower Wey and Lorton Valley; Man-made Harbour; Fortuneswell, Chesil Beach and Osprey Quay; and The Grove and The Verne.

NTS.87 The Dorset AONB lies 7.3 km to the north of the site and covers a large area of diverse and unique landscape. It is recognised for its landscape, wildlife, significant historical record and cultural connections and is of national importance. The Dorset and East Devon Coast WHS runs along the whole extent of Dorset's southern coastal edge, excluding Weymouth. It wraps around most of the Isle of Portland, but excludes the area of coast near the site. The WHS contains internationally important historic geological features dating back around 185 million years. A large area of the Dorset coastline is also designated as heritage coast, recognising its natural beauty, heritage features and coastal plant and animal communities. This area includes Chesil Beach, to the west of the site, but not the area immediately around the site.

NTS.88 The potential for effects on the area's landscape and seascape resources and visual receptors was an important consideration in the design of the proposed development. The orientation of the buildings, location of the stack and building massing have been carefully considered to reduce visual impacts, respond to the port setting and avoid conflict with the backdrop of the Portland cliffs. The colour and materials of the buildings were chosen to echo the local context, ensuring the buildings are not reflective and will merge with the backdrop of Portland when viewed from the AONB.

NTS.89 The character of the site will be changed by the introduction of the ERF, which will enhance a currently derelict site within the industrial port. While the building is large-scale, its design has been carefully considered and a high quality building is proposed that will contribute positively to the port. A slight beneficial effect that will not be significant is therefore predicted on the landscape character of the site.

NTS.90 The introduction of new buildings and a stack onto the site also has the potential to affect surrounding landscape character areas through changes to views. However, these changes will be very localised and only affect very small parts of the overall landscape character areas. This means that no significant effects are predicted on the character of any of the surrounding landscapes, including those that lie within the AONB, WHS and heritage coastline.

NTS.91 The introduction of the ERF buildings and stack will change views of the site from the surrounding area. Visibility of the proposed development will be largely contained by the surrounding landscape and relatively few residential areas are predicted to see the development, which will mainly be visible from the immediate surrounding area, the sea and beaches, and elevated areas of the countryside. As a result, moderate, significant adverse effects are predicted on views from Portland Port, marina and harbour, public rights of way along the cliffs to the south and south west of the site, and Sandsfoot Castle, park and garden. A moderate to slight, significant adverse effect is predicted on views from Nothe Fort.

NTS.92 Slight effects that will not be significant are predicted on views from residential areas in Weymouth, the South West Coast Path, the South Dorset

Ridgeway and Osmington White Horse, Weymouth beachfront, public rights of way south of Littlemoor, public rights of way in the Ringstead Bay area, the Dorset AONB, the West Dorset heritage coastline, and the Dorset and East Devon Coast WHS. Negligible effects that will not be significant are predicted on views from the A354, the A353, and the B3155.

NTS.93 The potential for cumulative landscape, seascape and visual effect with other developments in the area was also considered. A combination of distance and intervening landform, vegetation and buildings mean that the Royal Manor Arts College, disused quarry works stockyard, redundant buildings at Bumpers Lane, Verne Common Road and Ventnor Road, and Southwell Primary School will not be seen together with the proposed development. There is no potential for significant cumulative effects with these schemes.

NTS.94 The redevelopment of the derelict multi-storey former naval accommodation as part of the Ocean Views scheme is likely to improve the visual amenity of the area and there will be no significant adverse cumulative effects with the proposed development. The Ferrybridge Inn redevelopment will be seen in the context of the existing urban edge of Weymouth. It is visually separated from the proposed ERF by the causeway and no significant cumulative effects are predicted. Plot X, Mulberry Avenue, and Plot B, Hamm Beach Road, lie within the Osprey Quay employment area. Development of these industrial units will be consistent with the surrounding area and no significant cumulative effects are predicted.

NTS.95 All the consented works at the port are appropriate infrastructure and buildings that will be characteristic of the existing facilities and will therefore not affect landscape character. They are likely to be visible together with the ERF from the harbour and Balaclava Bay, as well as from some of the public rights of way that look down on the port. While there will be changes to the views, they will be in the context of the existing port development and no significant adverse cumulative effects are predicted.

Natural heritage

NTS.96 There are several internationally designated nature conservation sites near the site, including the Isle of Portland to Studland SAC to the immediate south west, Studland to Portland SAC 1.5 km to the south west, Chesil and The Fleet SAC 1.3 km to the west and Chesil Beach and The Fleet Special Protection Area (SPA) and Ramsar site 2.8 km to the north west.

NTS.97 Nationally designated nature conservation sites nearby include the neighbouring Isle of Portland SSSI, Nicodemus Heights SSSI 590 m to the south, Chesil and The Fleet SSSI 1.3 km to the west, and Portland Harbour Shore SSSI 2.0 km to the north west. In addition, Radipole Lake SSSI 5.2 km to the north west and Lorton SSSI 7.9 km to the north west lie close to the road network that will be used to transport materials to and from the site. There are also nationally designated marine conservation areas near the site, including Chesil Beach and Stennis Ledges MCZ 1.3 km to the west, South of Portland MCZ 6.6 km to the south west and Purbeck Coast MCZ 6.7 km to the east.

NTS.98 Locally designated nature conservation sites within 2 km of the site include East Weare Camp SNCI, East Weare Rifle Range SNCI, Verne to Grove SNCI, and Grove Quarry SNCI to the south, Portland Heights SNCI, Verne Yeates SNCI and Local Nature Reserve (LNR), and the Dorset Wildlife Trust reserves of King Barrow Quarries and Tout Quarries to the south west, and Osprey Quay Bunds SNCI to the north west.

NTS.99 Measures will be put in place through a framework construction environmental management plan to ensure that there will be no significant effects on designated sites as a result of pollution, noise or dust during construction. These include solid barriers around the site, water and sediment management, covering stockpiles and measures to prevent and contain spillages. As discussed in the air quality section above, emissions modelling has shown that there will be no significant effects on designated sites as a result of vehicle emissions during construction.

NTS.100 The proposed drainage strategy and operational management measures discussed in the water environment section above will ensure that there is no potential for significant effects on designated sites from water pollution post-construction. As set out in the air quality section above, no significant effects are predicted on designated sites as a result of emissions from the proposed ERF or as a result of transport of RDF, residues and raw materials by road or by sea. Operational noise modelling has shown that noise levels will be below those that could lead to the disturbance of bird populations in the designated sites, and no significant effects are predicted.

NTS.101 The habitats on the site include hardstanding and rubble that has been colonised by weed and scrub species, and very small areas of grassland and scrub. These are common habitats of low ecological value. The site is not suitable for badgers, dormice or great crested newts and no reptiles were found on site during surveys. There are no bat roosts on the site, but bats are likely to travel and feed along Incline Road and the scrub in the west of the site. A range of common and widespread bird species was recorded during surveys. The site also supports common and widespread species of invertebrates, as well as some with specific habitat requirements typical of the site's coastal location.

NTS.102 The proposed development will lead to the loss of all the habitats on the site. These will be replaced with areas of bare sand / shingle / pebble / boulder habitat that will be planted with coastal and maritime species. Mosaic habitats will be created with material from the site, which will be oversown and planted with a seed mix of existing site species and Dorset notables. Gabion walls will be planted with species found on site and drought-tolerant native species in exposed areas. These habitats will be suitable for the birds and invertebrates currently found on the site. In addition, bat boxes, bird boxes, hedgehog hibernation boxes and bug hotels will be installed on the site. In order to ensure biodiversity net gain, a payment will be made through the Dorset Biodiversity Compensation Framework towards off-site habitat creation and management. These measures will ensure that there will be no significant adverse effects as a result of habitat loss.

NTS.103 Vegetation on site will either be removed outside the bird breeding season or following a check by a suitably experienced ecologist. This will ensure there

will be no significant adverse effects on breeding birds during construction. The lighting scheme has been designed to minimise light spill into surrounding habitats and no significant effects are predicted on bats as a result of the proposed development.

NTS.104 As discussed in the air quality section, none of the other developments in the area will generate process emissions and the traffic modelling included flows associated with the other schemes. No significant cumulative effects are therefore predicted on designated sites. The habitat creation and off-site contributions discussed above mean that there is no potential for significant cumulative effects on local biodiversity.

Traffic and transport

NTS.105 The traffic and transport assessment dealt with the effect of the increased traffic associated with the proposed ERF on traffic flows on the local road network and on people using and living alongside these roads. It focused on the community as a sensitive receptor and addressed the traffic and transport effects in terms of changes to pedestrian severance (for example, being unable to cross the road), pedestrian delay and amenity, driver delay, and accidents and safety.

NTS.106 Construction traffic will include the movement of workers and delivery vehicles. The maximum number of daily deliveries during the peak construction period was estimated at 37, based on experience of similar projects elsewhere and the main construction activities. To ensure a worst-case, the assessment was based on 40 daily HGV trips each way (80 HGV movements in total). Most of the construction staff will be transported to the site in minibuses or crew vans, which will reduce the number of staff trips needed to the site. Construction staff will be travelling on the local road network outside the peak hours of 08:00 to 09:00 and 17:00 to 18:00 and deliveries will also be scheduled to avoid these times. This will be controlled through a project delivery management procedure and construction traffic management plan.

NTS.107 The construction traffic modelling showed that the largest increase in flows on the local road network will be just over 2%. Increases in traffic flows of less than 10% are generally considered to be insignificant in environmental terms, as daily background traffic flows can vary by this amount. As a result, no significant effects are predicted on pedestrian severance, pedestrian delay and amenity, driver delay, or accidents and safety during construction.

NTS.108 As set out in paragraph NTS.24, the post-construction assessment assumed a worst-case of all deliveries being made by road and was based on a total of 40 HGV trips each way (80 HGV movements in total). 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 stay on the A354. 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 until they reach the roundabout with the A354 Weymouth Way.

NTS.109 The traffic modelling showed that both total vehicle flows and HGV numbers will increase by less than 2.5% as a result of the proposed development on all road links, even in the worst-case scenario of 100% of deliveries to the site being made by road, which is well below the 10% threshold discussed above. No significant effects are therefore predicted on pedestrian severance, pedestrian delay and amenity, driver delay, or accidents and safety as a result of the proposed development.

NTS.110 Traffic flows associated with the other developments in the area were incorporated within the traffic modelling. There will therefore be no significant cumulative traffic and transport effects.

Waste

NTS.111 The waste assessment focused on the potential increase in Dorset's (including Bournemouth and Poole) non-hazardous residual waste management capacity as a result of the proposed development. The potential increase in the wider regional non-hazardous waste management capacity was also examined. The generation of waste as a result of the construction and operation of the proposed development was scoped out of the assessment. While most of the assessments in the ES were carried out based on the 202,000-tonne maximum throughput of the proposed ERF, the waste assessment was based on the 183,000-tonne design capacity because this represents the worst case in terms of waste management capacity.

NTS.112 While Dorset has achieved a relatively high recycling rate, around 46% of its local authority collected waste is not recycled and a large volume (over 160,000 tonnes a year) of residual waste remains that needs treatment. Some of this is processed at a mechanical biological treatment plant in Poole, which uses it to produce RDF. However, all this RDF (89,000 tonnes) is currently exported to ERFs in Europe. There are no operational landfill sites or ERFs in Dorset, which means that most of the rest of the residual waste is being exported out of the county to landfill in neighbouring local authorities and ERFs in Hampshire and Slough. In addition, over 19,000 tonnes of commercial and industrial waste were sent out of the county for treatment and disposal and over 80,000 tonnes were sent to landfill in Dorset in 2015/16. As the landfill sites in Dorset have now closed, it is assumed that this was is also now sent out of the county for disposal. Overall, over 260,000 tonnes of residual waste from Dorset is currently not managed within the county.

NTS.113 The South West region as a whole is the best performing region in the country in terms of recycling rates. However, it also sends the highest proportion of waste to landfill out of all the English regions, because a much lower proportion of its waste is set to ERFs. Nearly half a million tonnes of the South West's local authority collected waste were landfilled in 2018/19. Around 345,000 tonnes of RDF were produced in the South West in 2018,

281,000 tonnes of which were exported outside the UK for management. Only 9,200 tonnes were managed within the South West region.

NTS.114 As the proposed development will be a merchant plant[4], it is not pre-contracted to manage a specific waste authority's arisings. This means that it is not being built specifically to manage residual waste from Dorset and / or the wider South West, although it will be in a good position to do so. The assessment examined the potential increases in local and regional waste management capacity under the scenarios that the plant only manages waste from Dorset or the wider South West. However, it should be noted that it is possible that some of the plant's capacity could be used to manage waste from other areas in the event that local or regional waste authorities do not choose to use the proposed ERF.

NTS.115 Even allowing for a reduction in the available weight as a result of processing untreated elements of the residual waste into RDF, the fact that over 260,000 tonnes of residual waste is currently sent out of Dorset suggests that all of the proposed ERF's capacity could be used to treat Dorset's waste if the councils choose to award the contracts to the proposed development. A 183,000 tonnes increase in the county's residual waste management capacity represents around 70% of the residual waste currently sent out of the county for management and disposal. This would be a substantial, significant beneficial effect.

NTS.116 If the full capacity of the proposed development is not used to manage waste from within Dorset, there is the potential for it to accept waste from within the wider South West region. As discussed above, 281,000 tonnes of RDF were sent outside the UK for management in 2018 from the South West. A 183,000 tonnes increase in the region's RDF management capacity represents around 65% of the RDF currently exported outside the UK from the South West. This would be a substantial, significant beneficial effect.

NTS.117 None of the consented or proposed developments in the area will provide additional residual waste treatment capacity. There is therefore no potential for significant cumulative effects.

Dorset and East Devon Coast World Heritage Site

NTS.118 The Dorset and East Devon Coast WHS (the Jurassic Coast) was designated in 2001 and is England's only natural WHS. It covers 2,550 hectares, stretching from Orcombe Point near Exmouth to Studland Bay. The limestone peninsula of Portland represents a significant proportion of the WHS. The designation only covers undeveloped sections of the coastline, so excludes urban areas and Portland Port. The closest sections of the WHS to the site are at Chesil Beach, around 1.5 km to the west, and East Weare, around 1.1 km to the south.

NTS.119 The assessment examined the potential for the proposed development to affect the Outstanding Universal Value[5] (OUV) of the WHS because of

[4] A merchant plant is a facility that is not tied to a specific contract and will secure its waste through the market.

[5] Defined as cultural and / or natural significance that is so exceptional as to go beyond national boundaries and to be of common importance for present and future generations of all humanity.

changes to the value of the setting. This is defined in terms of the landscape, heritage assets and views that contribute to the way people experience the exposed coasts and beaches of the WHS and of how the geological processes can be seen in the landscape.

NTS.120 During construction, works activity and machinery will be visible from a number of places in and around the WHS, including the cliffs at East Weare, the South West Coast Path, Sandsfoot Castle and Nothe Fort. The views from within the WHS itself will mostly be from a long distance and seen within the context of the port activities. Overall, there will be a negligible to small change to the OUV because of changes to the value of part of the setting of the WHS, which is predicted to lead to a slight to moderate, significant adverse effect.

NTS.121 Post-construction, the proposed buildings and stack will also be visible from several locations in and around the WHS. The views from within the WHS itself will be localised and generally at a long distance. The development will be seen in the context of the port, against the steep cliff backdrop. Overall, there will be a small change to the OUV because of changes to the value of part of the setting of the WHS, which is predicted to lead to a moderate, significant adverse effect.

NTS.122 The cultural heritage assessment above predicted significant cumulative effects on the listed structures next to the site, The Verne Citadel and Portland Castle as a result of the proposed development and consented schemes. No significant cumulative landscape, seascape and visual effects were predicted. Overall, taking into account changes to landscapes, heritage assets and views, no significant cumulative effects are predicted on the OUV of the WHS in combination with the other developments in the area.

Conclusion

NTS.123 This non-technical summary has outlined the findings of the EIA of the proposed Portland ERF, contained within the ES that accompanies the planning application. The proposed development will lead to a number of changes to the local environment, but a range of measures will be put in place to minimise potential significant adverse effects and enhance beneficial effects. The proposed mitigation measures and the significant effects of the proposals that are predicted to remain after mitigation are summarised in more detail in chapter 14 of the ES.

NTS.124 Copies of the full ES and its technical appendices have been sent to Dorset Council and the statutory consultees. The full documents may be available for public inspection (subject to COVID-19 restrictions) during the consultation period at the council's offices at the address below:

Dorset Council
County Hall
Colliton Park
Dorchester
Dorset
DT1 1XJ

NTS.125 The application documents will also be available to view on the council's website: https://planning.dorset.gov.uk/public-access/.

NTS.126 Copies of the ES on CD can be purchased from Terence O'Rourke Ltd at a price that reflects the time and production costs. Paper copies may also be available (at printing cost) from Terence O'Rourke Ltd at the following address:

Terence O'Rourke Ltd
Everdene House
Deansleigh Road
Bournemouth
BH7 7DU

Tel: 020 3664 6755
Email: maildesk@torltd.co.uk

Site boundary

0 250 m

N

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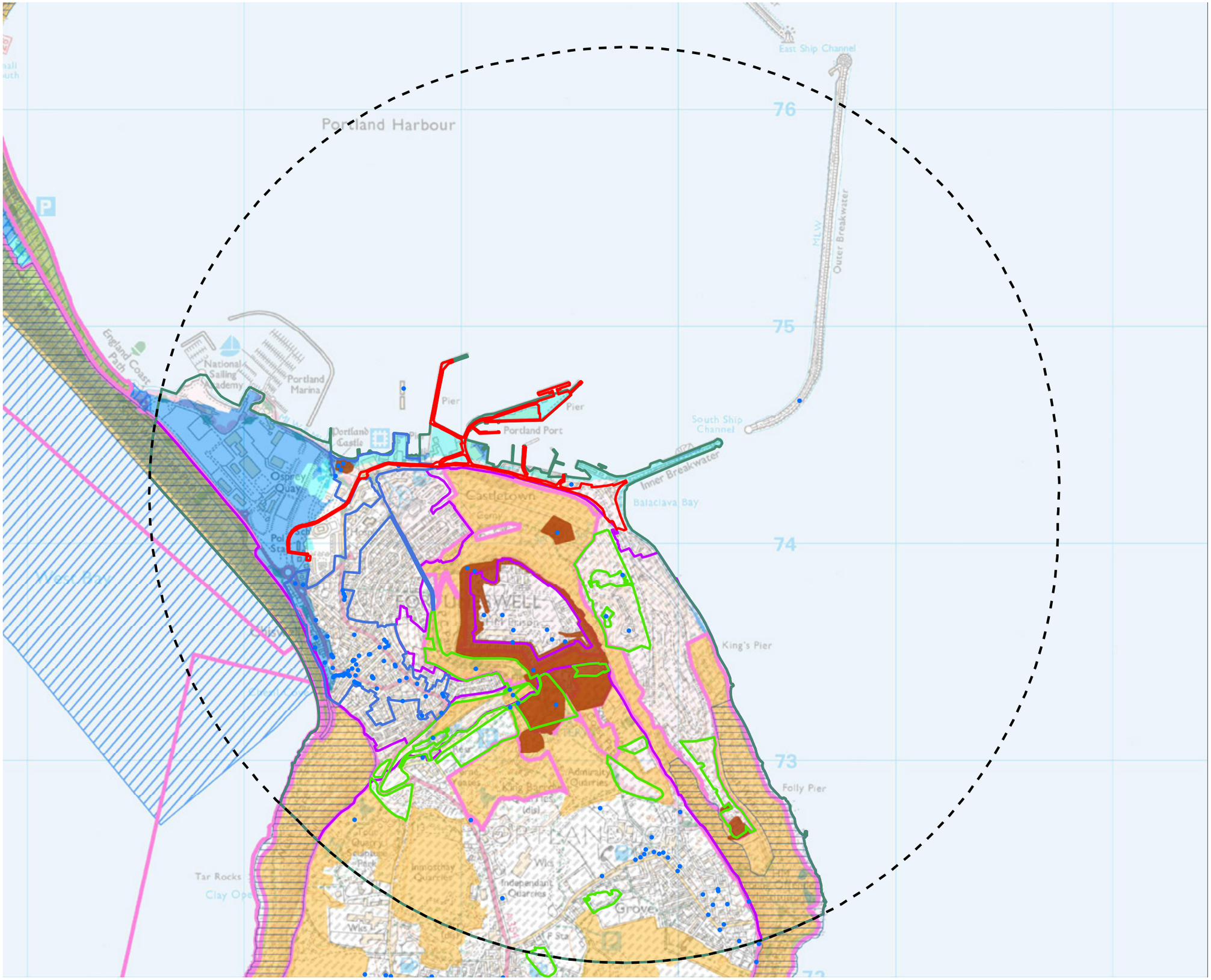
Figure NTS1
Site location and application boundary

POWERFUEL



- 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

0 425 m

N

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Figure NTS2
Sensitive receptors in the vicinity of the site

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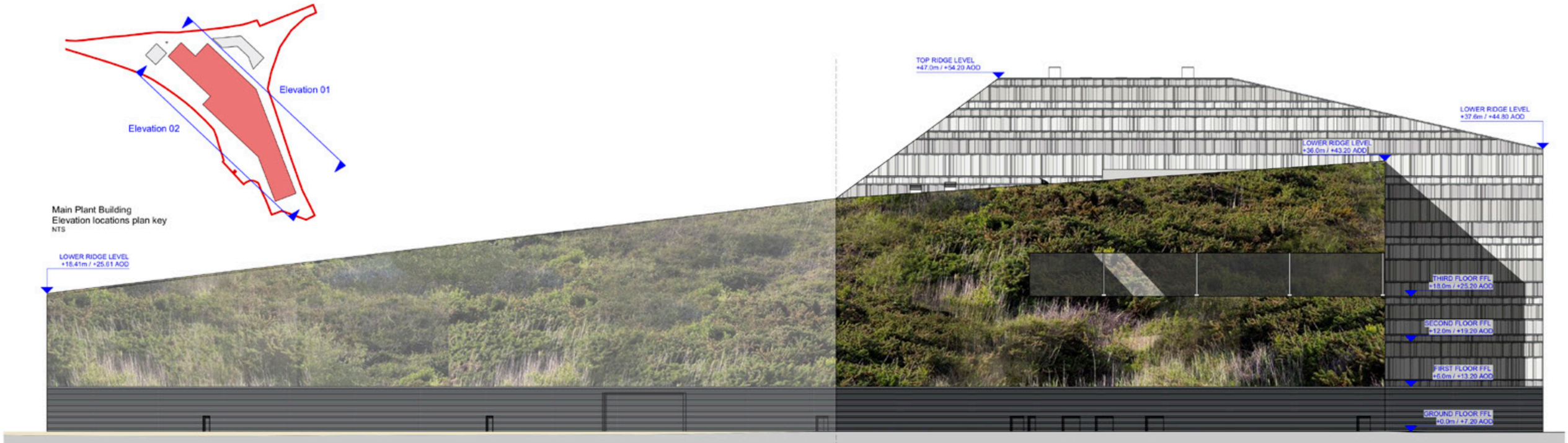
0 10 20 30 40 50 M

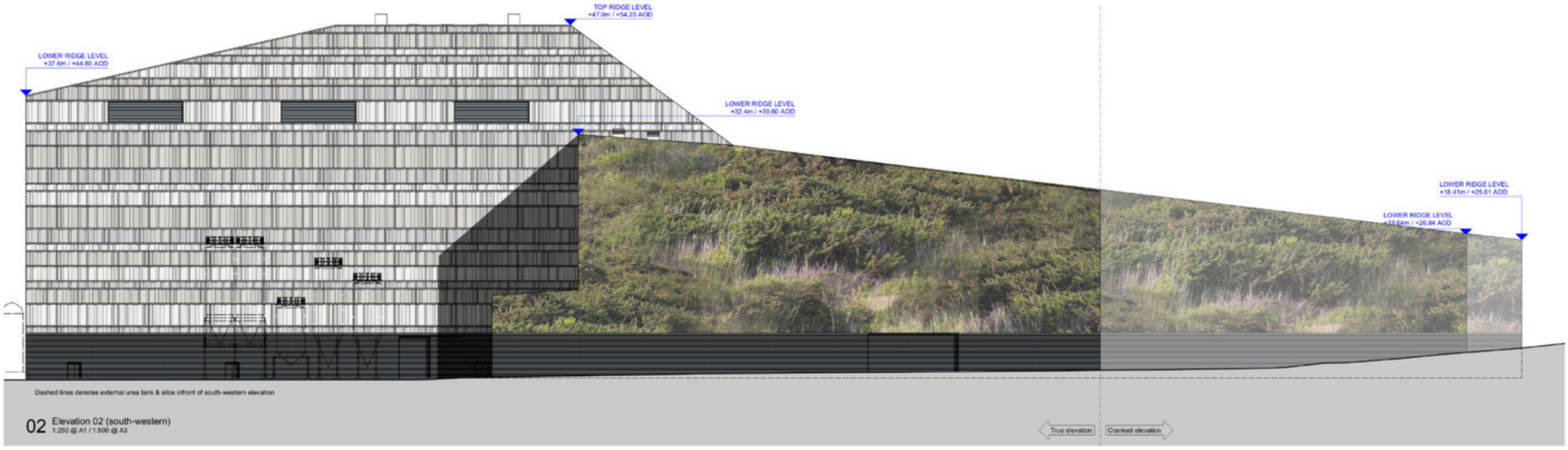
Scale to be used for planning purposes only

Figure NTS3
Proposed site plan

POWERFUEL



01 Elevation 01 (north-eastern)
1:250 @ A1 / 1:500 @ A3



02 Elevation 02 (south-western)
1:250 @ A1 / 1:500 @ A3

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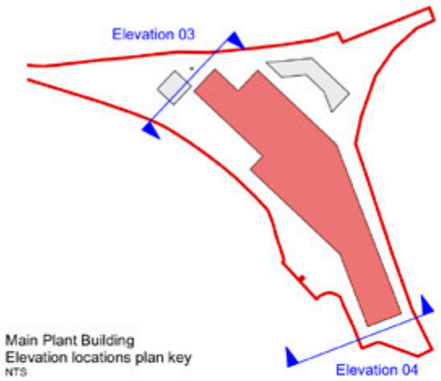
0 5 10 15 20 25 M

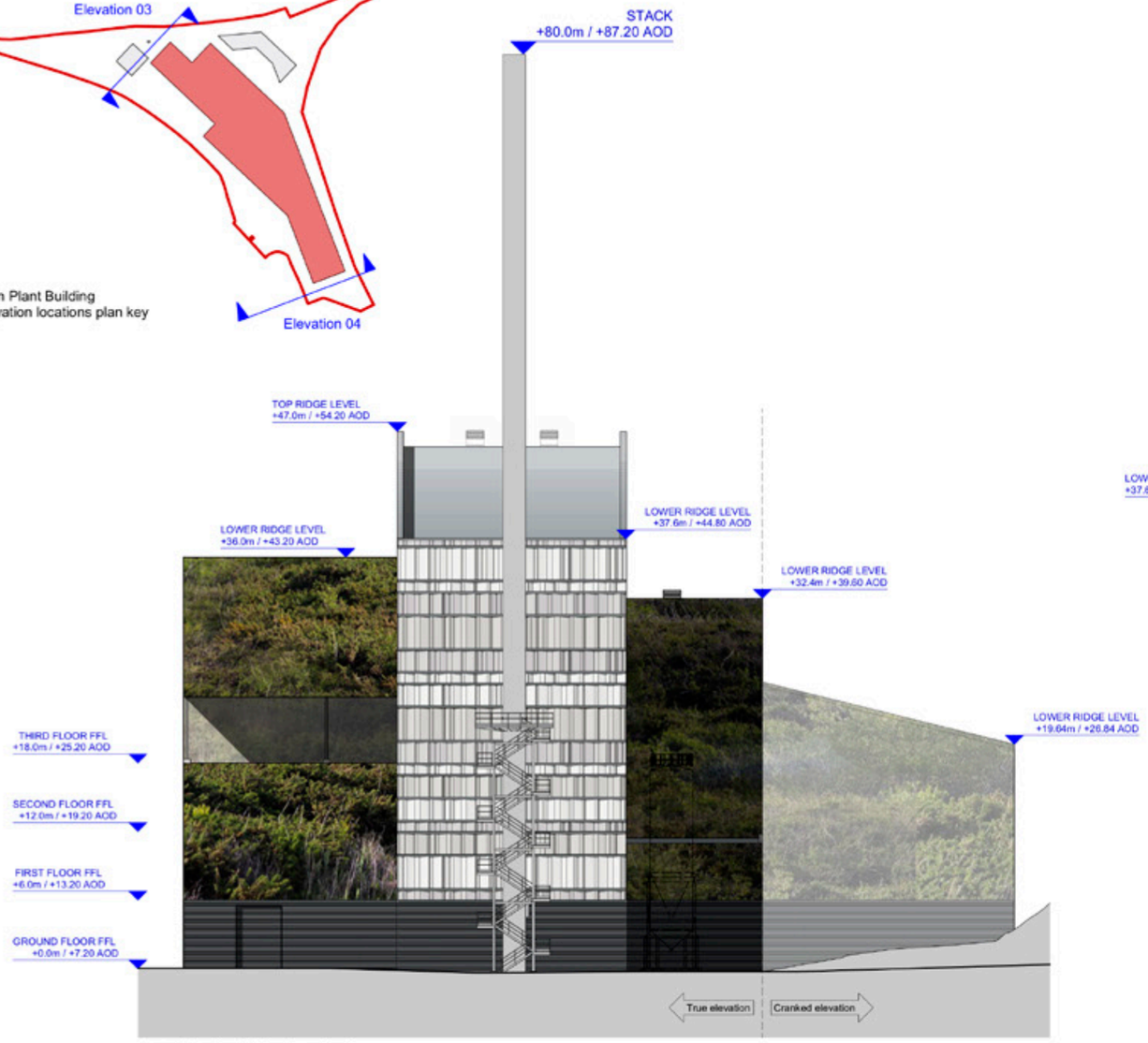
Scale to be used for planning purposes only

Figure NTS4a
Proposed elevations: ERF building north eastern and south western

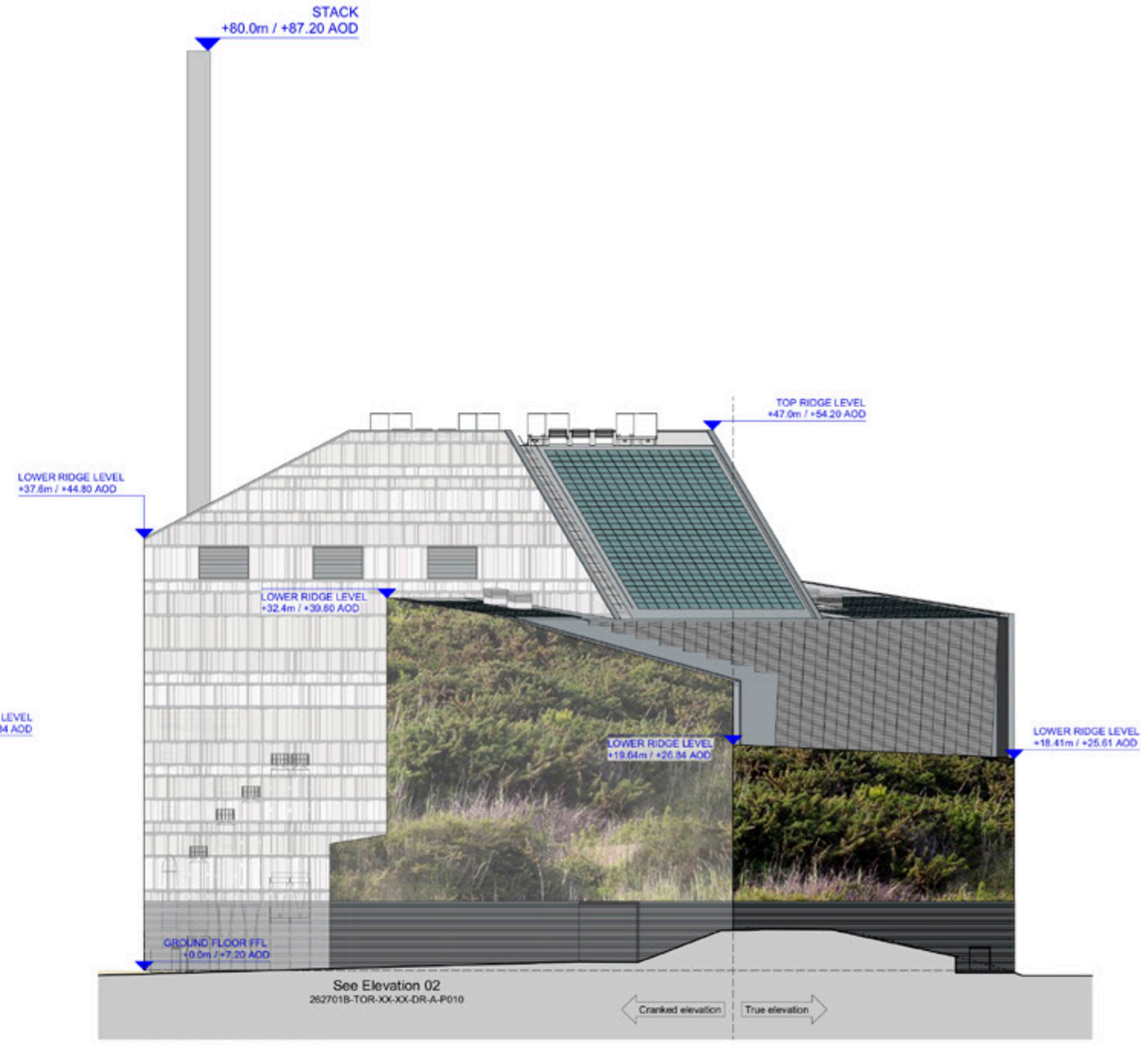
POWERFUEL



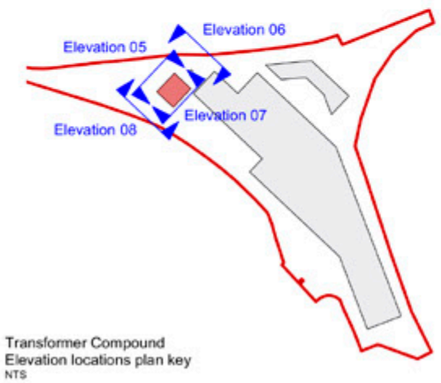
Main Plant Building
Elevation locations plan key
NTS



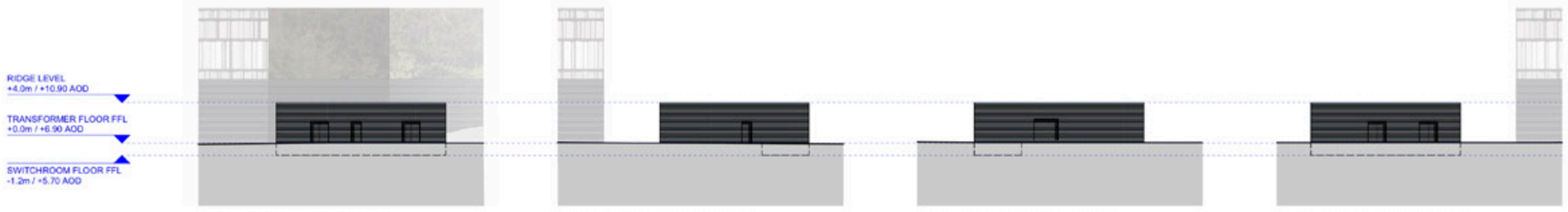
03 Elevation 03 (north-western)
1:250 @ A1 / 1:500 @ A3



04 Elevation 04 (south-eastern)
1:250 @ A1 / 1:500 @ A3



Transformer Compound
Elevation locations plan key
NTS



05 Elevation 05 (north-western)
1:250 @ A1 / 1:500 @ A3

06 Elevation 06 (north-eastern)
1:250 @ A1 / 1:500 @ A3

07 Elevation 07 (south-eastern)
1:250 @ A1 / 1:500 @ A3

08 Elevation 08 (south-western)
1:250 @ A1 / 1:500 @ A3

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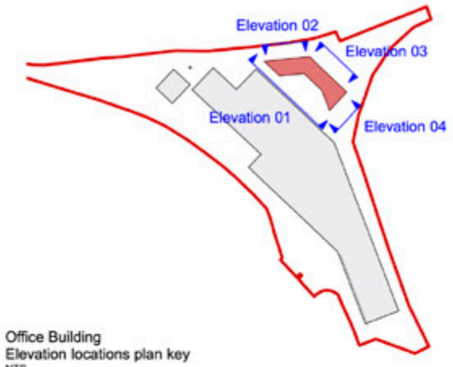
0 5 10 15 20 25 M

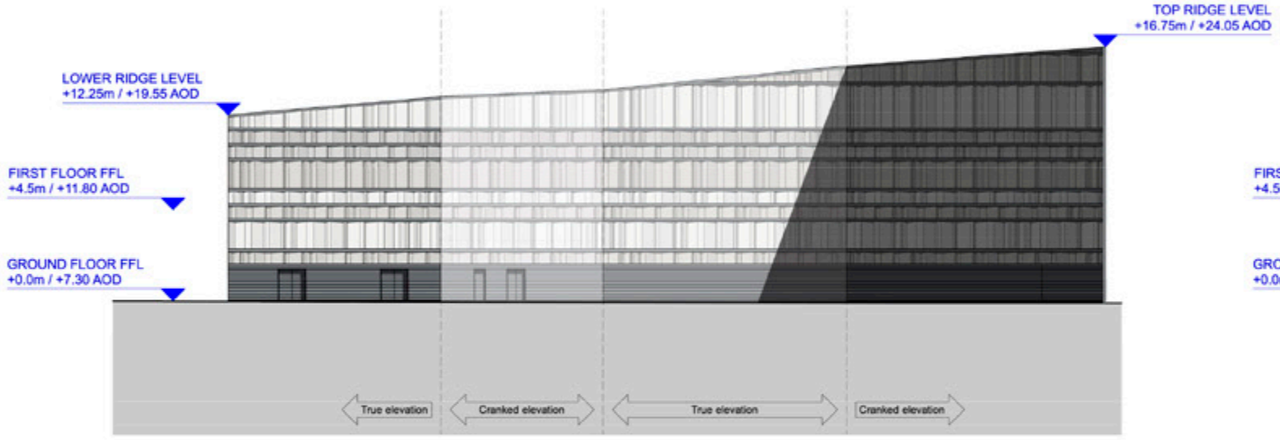
Scale to be used for planning purposes only

Figure NTS4b Proposed elevations: ERF building north western and south eastern and transformer compound

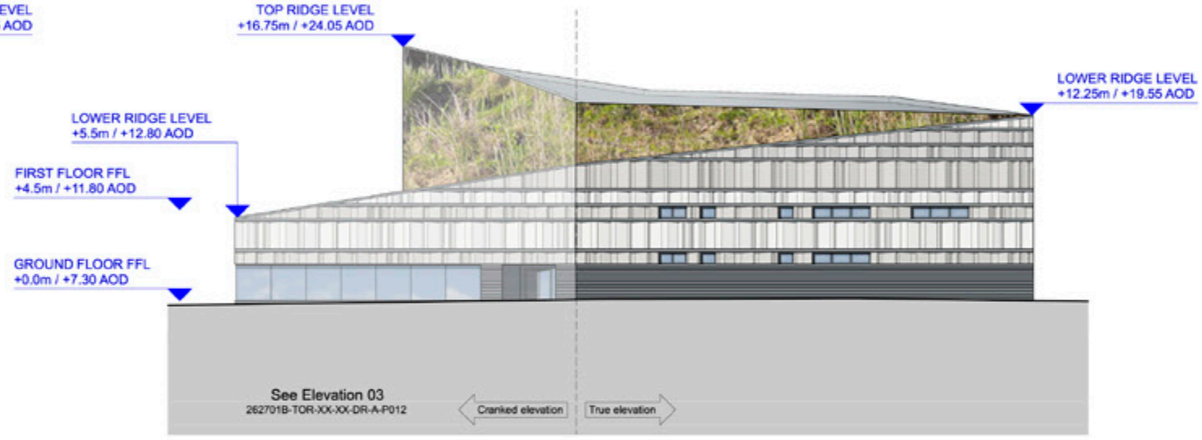
POWERFUEL



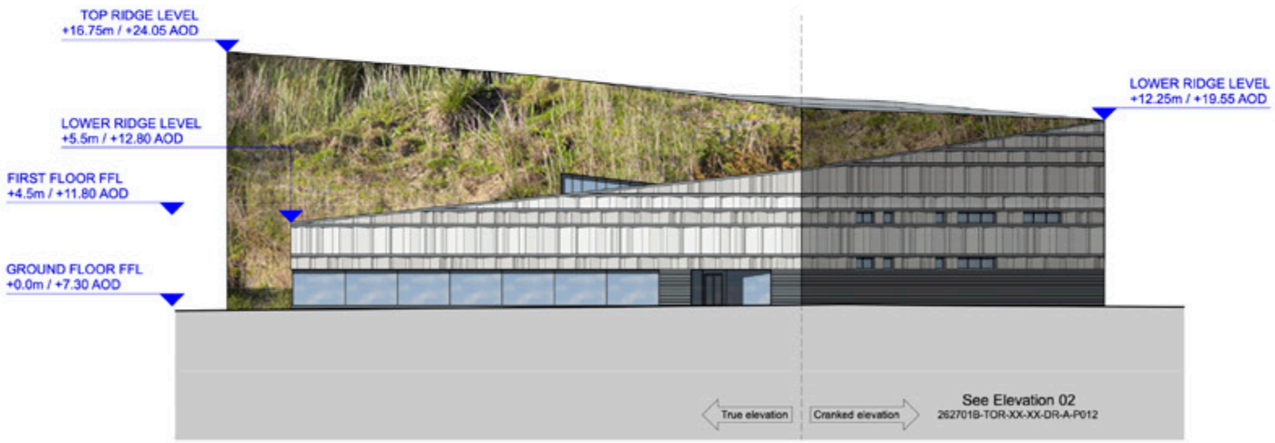
Office Building
Elevation locations plan key
NTS



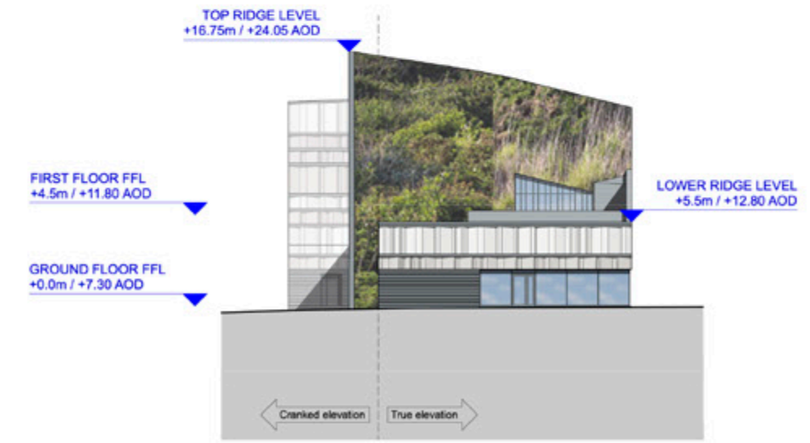
01 Elevation 01 (south-western)
1:200 @ A1 / 1:400 @ A3



02 Elevation 02 (northerm)
1:200 @ A1 / 1:400 @ A3



03 Elevation 03 (north-eastern)
1:200 @ A1 / 1:400 @ A3



04 Elevation 04 (south-eastern)
1:200 @ A1 / 1:400 @ A3

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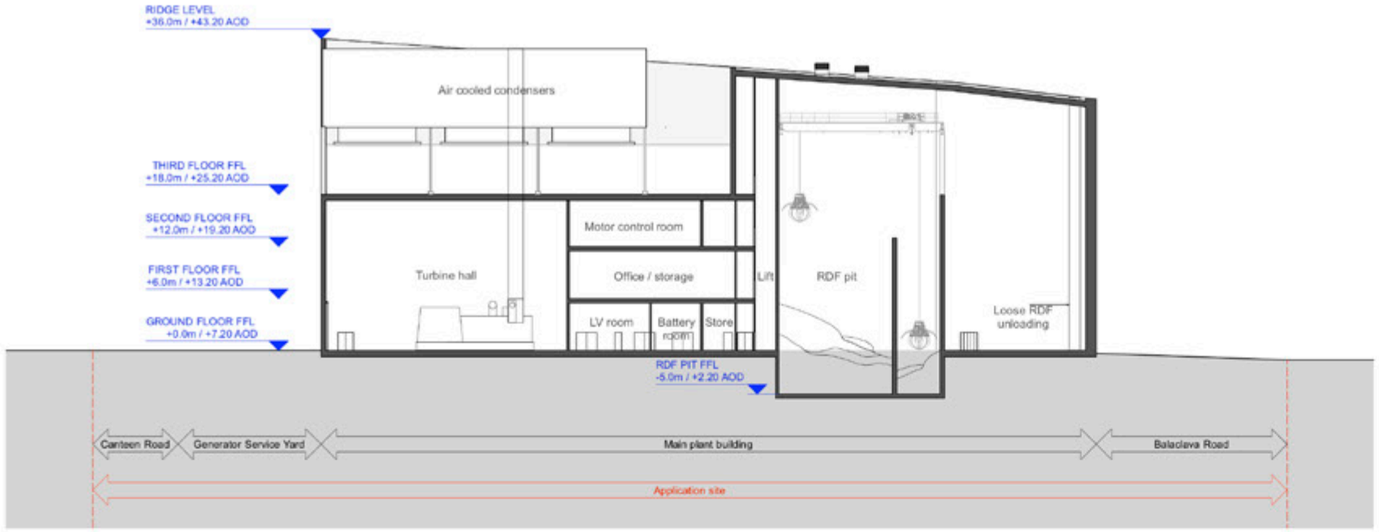
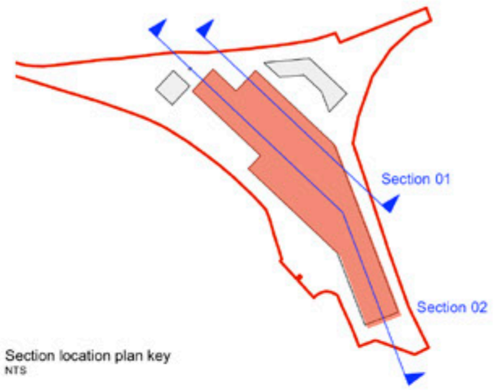
0 5 10 15 20 M
Scale to be used for planning purposes only

Figure NTS4c
Proposed elevations: office building

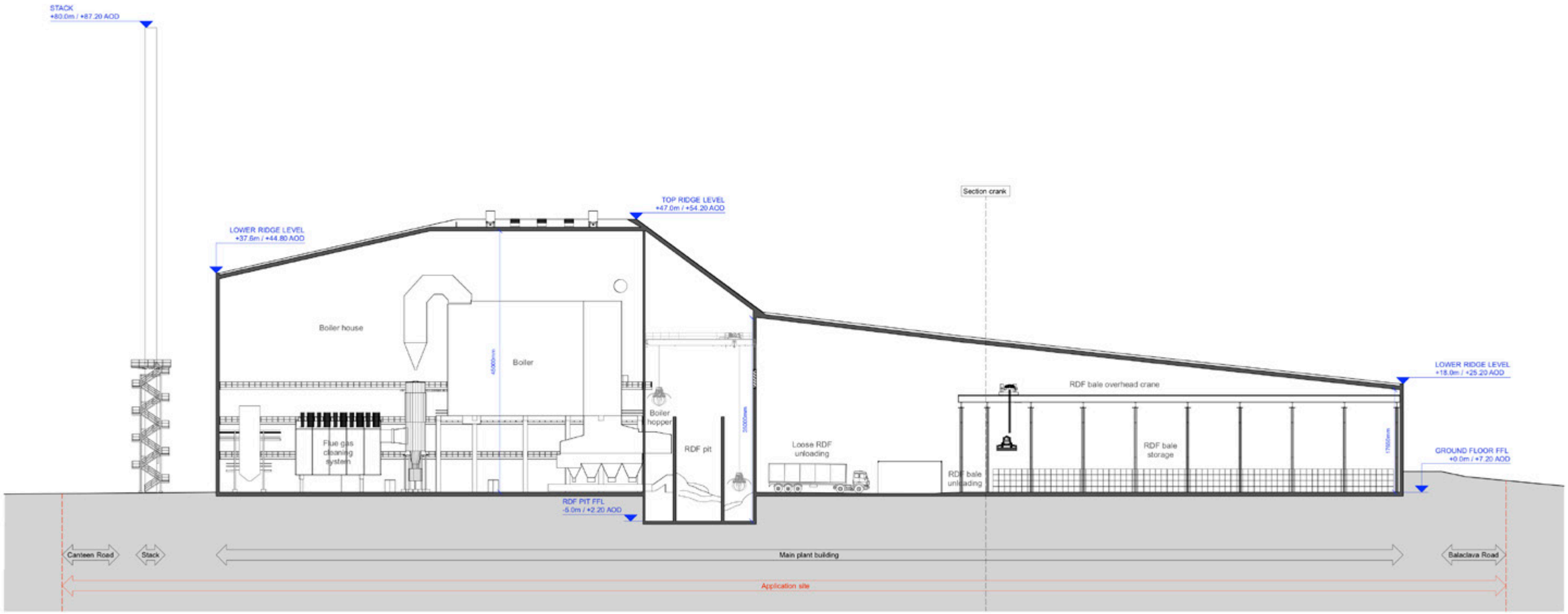
POWERFUEL



01 Section 01 (Long section through turbine hall and RDF pit)
1:350 @ A1 / 1:700 @ A3



Section location plan key
NTS



02 Section 02 (Long section through boiler house, RDF pit and RDF store)
1:350 @ A1 / 1:700 @ A3

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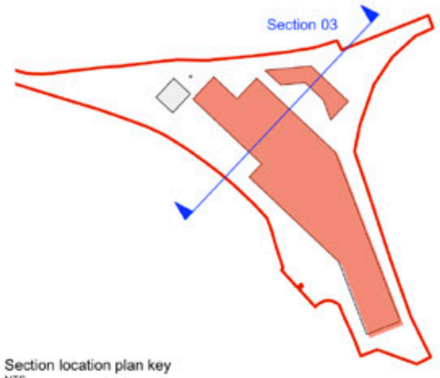
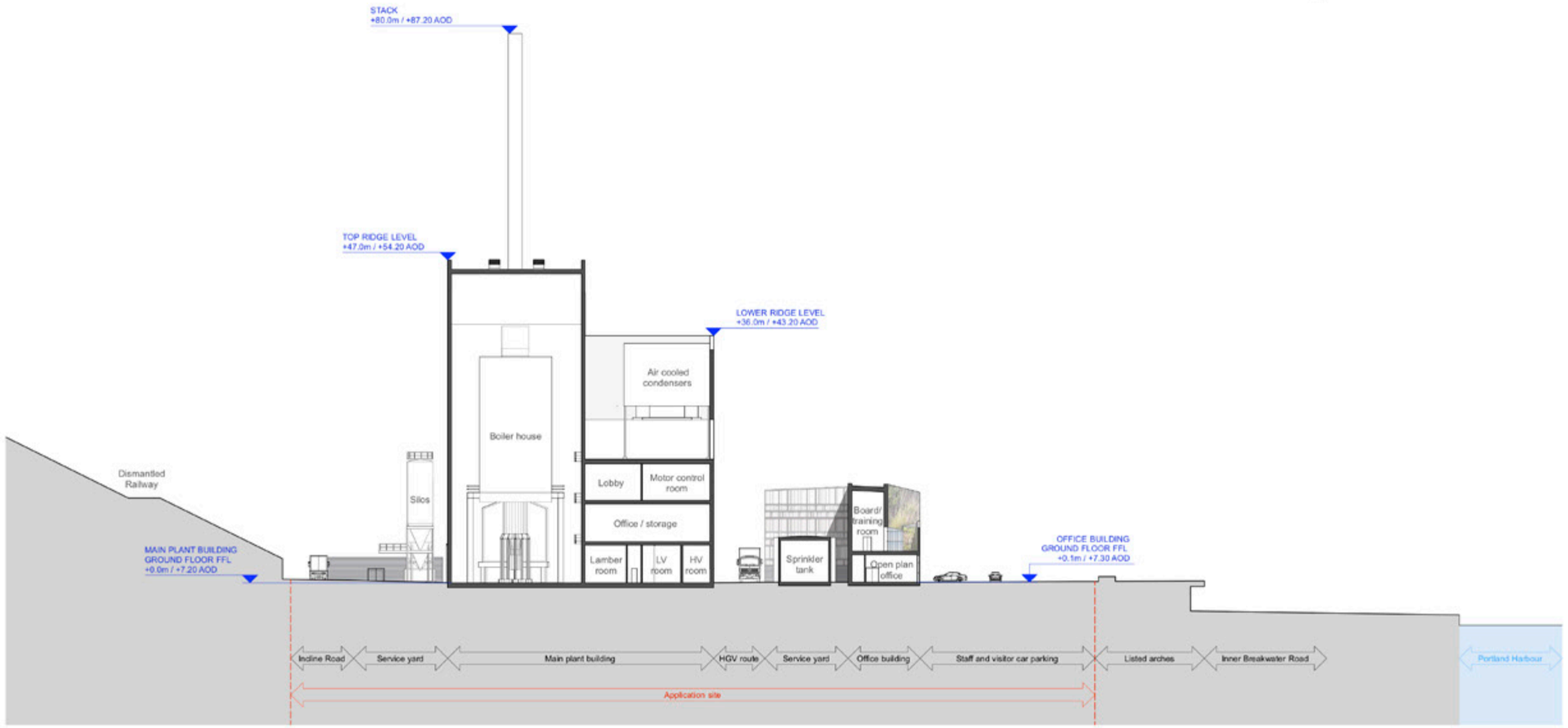
0 10 20 30 M
Scale to be used for planning purposes only

Figure NTS5a Proposed sections through the turbine hall and RDF storage and through the boiler house and RDF storage

POWERFUEL



Section location plan key
NTS



03 Section 03 (Cross section through Main Plant and Office Building)
1:250 @ A1 / 1:500 @ A3

0 10 20 30 M

Scale to be used for planning purposes only

Figure NTS5b
Proposed sections through the main plant and office building

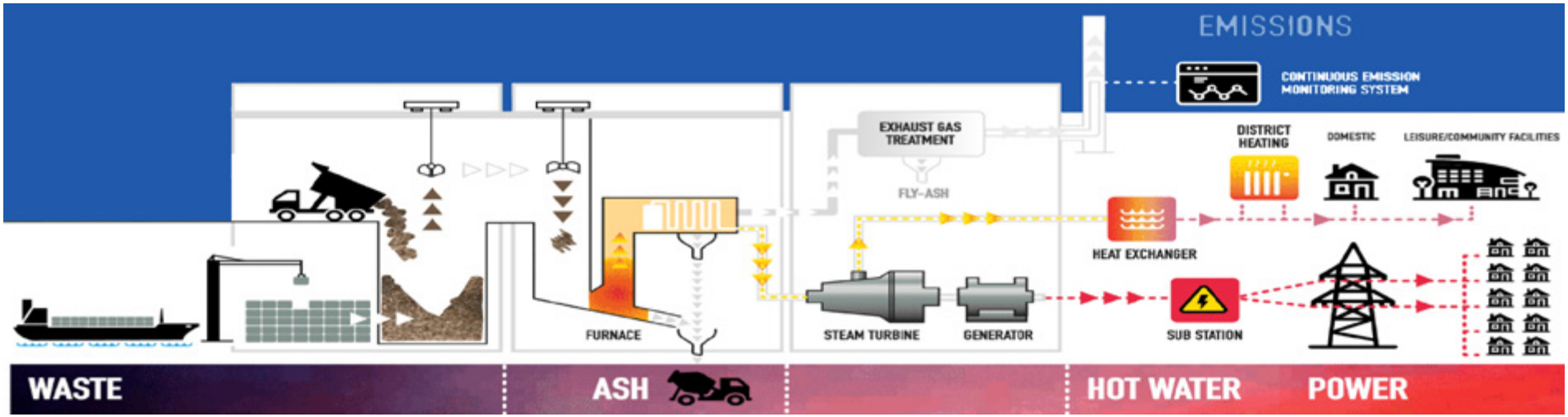
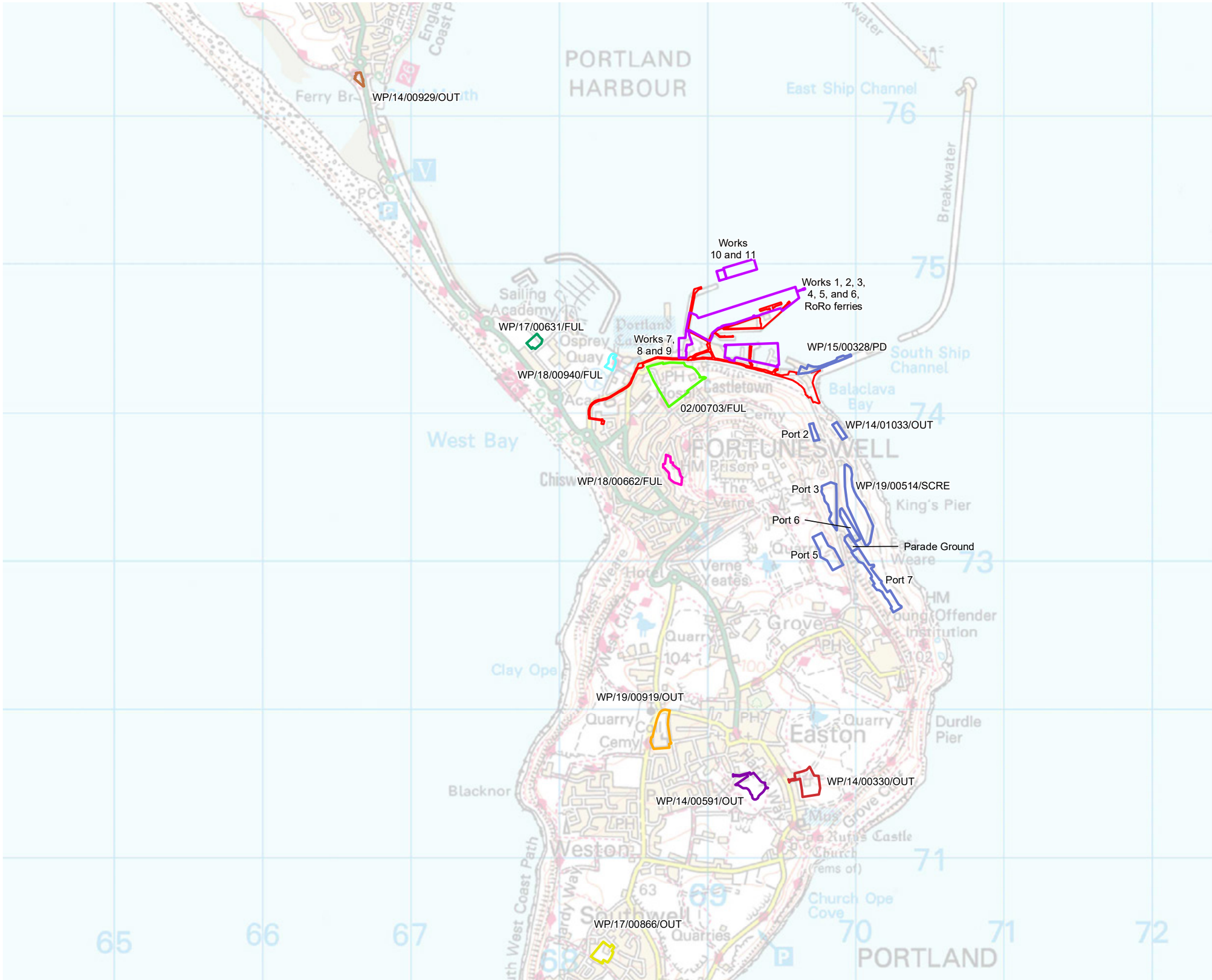


Figure NTS6
ERF process flow diagram



- Site boundary
- Redundant Buildings at Bumpers Lane
- Disused Quarry Works Stockyard, Bottom Coombe, Park Road
- Ferrybridge Inn, Portland Road
- Plot M1B, Hamm Beach Road
- Plot X, Mulberry Avenue
- Southwell Primary School, Sweethill Lane
- Verne Common Road and Ventnor Road
- 1997 HRO works
- 2010 HRO works
- Ocean Views, Hardy Complex, Castle Road
- Royal Manor Arts College

0 625 m

N

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Figure NTS7
Locations of developments considered in the cumulative effects assessment

POWERFUEL