TEESWORKS

LONG ACRES ENVIRONMENTAL STATEMENT

VOLUME 1: NON-TECHNICAL SUMMARY

DECEMBER 2020

Long Acres, South Tees
Volume 1: Non-Technical Summary (December 2020)

LICHFIELDS

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1.0 Introduction and Methodology

1.1 This document is a summary in non-technical language of an Environmental Statement ('ES') prepared on behalf of the South Tees Development Corporation (the applicant / 'STDC'). It sets out the findings of an Environmental Impact Assessment ('EIA') that has been submitted to Redcar and Cleveland Borough Council ('RCBC') to support an outline planning application at the site known as Long Acres, within the STDC Masterplan area (hereafter referred to as the 'Teesworks area'), Redcar.

1.2 The outline planning application seeks permission for the following development:

"Outline planning application for the development of up to 185,806 sqm (gross) of general industry (Use Class B2) and storage or distribution facilities (Use Class B8) with office accommodation (Use Class E), HGV and car parking, works to watercourses including realignment and associated infrastructure works. All matters reserved"

1.3 The proposed development falls within part 10(a) of Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) Part 10(a) relates to industrial estate development projects where the development exceeds 5ha. For such developments, EIA is required where significant environmental effects are likely by virtue of factors such as its nature, size or location. It has been agreed with RCBC that the proposed development is EIA development and the findings of the EIA are set out within an ES.

1.4 This document includes the following information:

1 **Section 1.0**: sets out background to the assessment process and the scheme;

2 **Sections 2.0 to 3.0**: describe the site and the proposed development;

3 **Sections 4.0 to 13.0**: provide a topic by topic review of the findings of the EIA;

4 **Section 14.0**: reviews whether effects are expected to arise when considered with other development projects in the area;

5 **Section 15.0**: summarises the proposed mitigation and monitoring to be secured as part of any planning permission;

6 **Section 16.0**: provides details of how to obtain a full copy of the ES; and

7 **Section 17.0**: provides a copy of the development plans.

The EIA Process

1.5 The EIA process aims to ensure that any significant effects arising from a development are systematically identified, assessed and presented to help a local planning authority, statutory consultees and other key stakeholders in their understanding of impacts arising from development. If measures are required to minimise or reduce effects then these are clearly identified.

1.6 For this development, EIA has been carried out to consider the likely significant effects that may arise during its construction and operation phase. It has been completed with regard to best practice and relevant legislation and has addressed the following matters to assess the impacts of the development:

- Transport
- Biodiversity and Ecology
- Socio-Economics
- Climate Change

- Noise and Vibration
- Air Quality
- Water Management and Flooding
- Ground Conditions and Remediation
- Below Ground Heritage
- Landscape and Visual Impact
- Waste and Materials Management

1.7 Likely effects are identified based on current knowledge and context of the site and its surroundings, desk top assessments, surveys and fieldwork information available to the EIA team. All those matters that could be reasonable required to assess the effects of the proposals are set out within the ES; this includes the effects arising from the scheme itself as well as those temporary effects arising during the construction stage of the development.

1.8 The assessment has been carried out by a team with the relevant skills and experience to undertake the assessments.

1.9 Consultation with RCBC and statutory consultees (such as Natural England ('NE') and Highways England ('HE')) has:

- Informed the scope of the EIA;
- Informed the methods by which the EIA has been carried out;
- Provided a means to seek environmental data;
- Allowed review of the effectiveness of any identified mitigation and compensation measures; and
- Kept interested bodies informed on the process.

1.10 The EIA has had regard to planning and environmental policy and legislation at a national and local level.

1.11 The EIA has been undertaken during the Covid-19 pandemic and where this is relevant to technical surveys, each chapter has outlined its implications.

Background to the Scheme

1.12 STDC was established as the public sector body for delivering area-wide, economic regeneration to augment the wider economic growth plans of the Tees Valley. It has prepared the South Tees Regeneration Master Plan to support development in the Teesworks area (see blue area on Figure 1.1 below) through the local planning and planning application process. The latest version of this Master Plan was published in November 2019.

Figure 1.1 The Teesworks Area

Source: Lichfields (November 2020)

1.13 The Master Plan sets out the vision for transforming the Teesworks area into a world-class, modern, large-scale industrial business park and delivers on STDC's vision to create a hot bed of new industry. It provides a flexible development framework where land plots can be established in a variety of sizes to meet different occupier needs in the most efficient manner possible. The Master Plan identifies five distinct development 'zones' within the STDC area. The majority of this development site is located within the 'North East Industrial Zone'. This zone is identified as having the potential for (though not restricted to) advanced manufacturing, research and development, testing and laboratory services and industrial and technology training.

1.14 The Master Plan will be supported by area wide strategies that will seek to address environmental considerations and will help facilitate the delivery of development sites. Examples of these include the emerging Environment and Biodiversity Strategy, Waste Strategy and Transport Strategy.

1.15 This outline planning application is one of five applications in the Teesworks area being submitted by STDC simultaneously. From a commercial perspective, the simultaneous submission of five applications is an important step in delivering confidence to the market and site occupiers. It is also an important step in furthering the established principle of large-scale industrial development in the Teesworks area, in accordance with STDC's Master Plan and RCBC's Local Plan. The proposed development at this site, Long Acres, includes a series of development parameters to provide flexibility as to the end and detailed design of the scheme.

1.16 With regards to the EIA process, the submission of five separate applications and ESs will allow the Council to consider the impact of each scheme separately with full awareness of the likely impacts arising cumulatively as a result of the overall proposed quantum of development. This provides a transparent approach which recognises the potential for some schemes to have cumulative effects, whilst allowing specific matters to be addressed by each application and ES.

1.17 STDC has obtained planning permission for the storage of soil in two mounds on the site, and its subsequent use in the remediation and preparation of land for development, however this permission is yet to be implemented.

2.0 Site and Surroundings

2.1 The development site is 67 ha in size. It is predominantly brownfield former industrial land and is free of active use and built development. It contains a licenced landfill site and is bisected by the Fleet watercourse as well as a road and rail line, as discussed in further detail below. It is located in an industrial area with associated infrastructure.

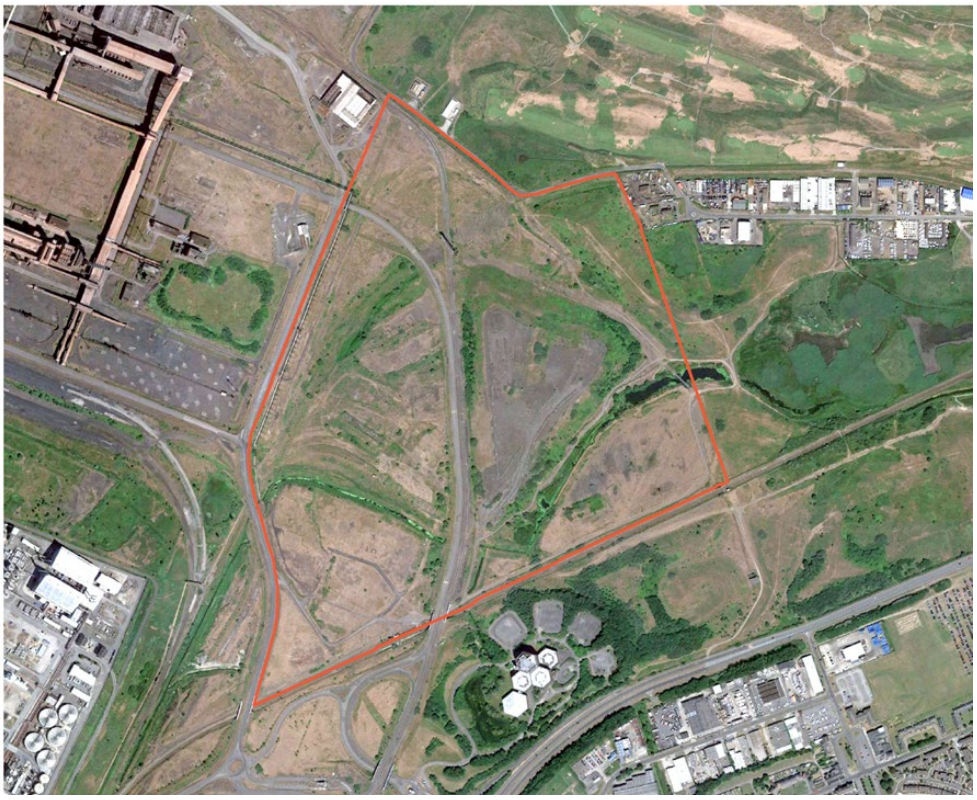
2.2 The site is located approximately 2.4km north west of Redcar town centre and 9km north east of Middlesbrough town centre. It is around 0.8km south from the coast and around 2.8km south east of the bank of the River Tees.

2.3 It is located within the north eastern part of the Teesworks area and in relation to the wider Teesworks area, it lies to the south east of the 'Redcar Works Complex', to the west of 'Coatham Marsh' and to the north of the 'Redcar Steel House and surrounding area'.

2.4 The site's location is shown by Figures 2.1 and 2.2 below, and it is immediately bounded by:

- The Darlington to Saltburn Railway line to the south east;
- A private internal road and open industrial land to the north west;
- A section of the former Hot Metal Transfer railway line, open land and South Gare Road to the north; and
- The boundary wall of Marsh Farm House and adjacent industrial unit and by open land to the north east.

Figure 2.1 Site Location: Long Acres



Source: Lichfields (November 2020)

Figure 2.2 Site Surroundings

Source: Lichfields (November 2020

2.5 The development site is, by and large, triangular in shape and its boundaries are largely defined by the existing surrounding infrastructure – roads and rail line. The site was previously partially occupied by the Warrenby iron and steel works and in part has been previously used as a licenced landfill for the disposal of by-products from iron and steel making, principally slag.

Sensitive Receptors

2.6 The EIA team have reviewed the site and surroundings and have identified that the following sensitive receptors could be potentially sensitive to environmental impact and change as a result of the proposed development:

1 Users of the highway network: A1085 Trunk Road, A1053, A174, West Coatham Lane and the A1042 Kirkleatham Lane;

2 Designated sites - including Teesmouth and Cleveland Coast Special Protection Area ('SPA') and Ramsar Site and Teesmouth and Cleveland Coast Site of Special Scientific Interest ('SSSI');

3 Landscape Character Areas – including industrial, urban, intertidal estuary, coast and peninsula, Coatham Marsh, Eston Hills, Salthouse Wetlands, rural and urban green space;

4 Nearby sensitive viewpoints;

5 Surrounding built environment;

6 Nearby residential receptors, including those in South Bank, Grangetown, Old Lackenby/Eston, Newport, Middlesborough, North Ormesby. Dormanstown and Redcar and the mobile home travellers' site at King's George Terrace, mobile homes site at Redcar Beach front and Marsh Farmhouse;

7 Redcar beachfront;

8 Surface water including the River Tees estuary, the Fleet, Ash Gill Beck, Dabholm Beck, Dabholm Cut & Dabholm Gut;

9 Ground water including Mercia Mudstone, Superficial Aquifer (Made Ground/Blown Sand), Coatham Marshes;

10 Regional landfill void capacity;

11 Regional materials availability;

12 Waste Management Facilities;

13 Construction and Operational employment;

14 Construction workers;

15 Off-site Human Health Receptor;

16 Construction and Operational Economic output;

17 National and local carbon targets and greenhouse gas ('GHG') emissions;

18 Below ground heritage assets - Redcar Iron Works from late 19th Century;

19 On-site habitats including open mosaic habitats, 'other neutral grassland', 'ruderal/ephemeral', dune grassland and watercourse;

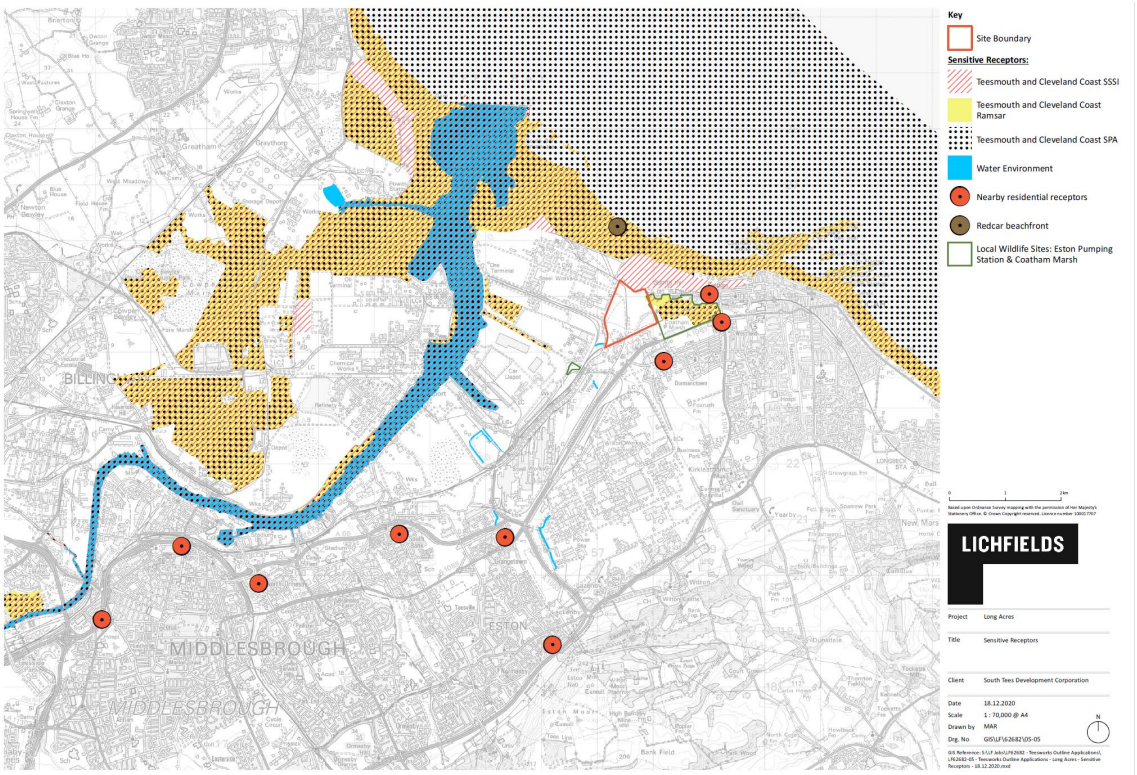
20 On-site species including bats, breeding birds, reptiles, common toad, dingy skipper butterfly, grayling butterfly, invertebrates, brown hare and European Eel;

21 Eston Pumping Station Local Wildlife Site; and

22 Coatham Marsh Local Wildlife Site.

2.7 The sensitive receptors are identified on Figure 2.3 below.

Figure 2.3 Sensitive Receptors



Source: Lichfields (November 2020)

3.0 Description of Development

3.1 At this stage, the future occupiers of the site are not known. As is usual for these circumstances, a building 'envelope' has been established which sets out the maximum extent of buildings and floorspace that will be included on the site. This is accepted as a 'worst case scenario' and, to ensure a robust approach, this has been what has been used for the purposes of assessment.

3.2 When occupiers are confirmed in the future, detailed applications will be submitted for approval which will fit within the maximum building envelope that has been defined in the ES. End users will comprise typical manufacturing and storage or distribution occupiers.

3.3 The building envelope is shown on a plan called a 'parameters plan' which is provided in Section 17.0 of this Non-Technical Summary. The key components of this plan are set out below.

Land Use and Floorspace

3.4 The development will provide up to 185,806sqm of General Industry or Storage or Distribution uses. Offices associated with these main uses may also be provided but this will not be more than 10% of the total floorspace provided on the site.

Building Height and Floor Levels

3.5 For the purpose of this EIA, the maximum building height will be 36 metres above prevailing ground level (or 43.5m 'above ordnance datum'). Floor levels will be no less than 5.2 metres 'above ordnance datum' and will be in part formed by the reuse of earth on-site.

Building Design

3.6 It is anticipated that the building design will adopt a contemporary and modern architecture and the colour palette will be sympathetic to the site's surroundings.

Access and Parking

3.7 The development will have a minimum of one access point, along with internal access road(s) and parking and servicing areas for each development plot.

3.8 ### Hours of Operation

3.9 It is assumed that future uses will be in operation 24/7, seven days a week.

Construction Methodology

3.10 For the purposes of assessment, it has been assumed that:

- Construction commences in 2022 with first floorspace delivered in 2023; and
- Construction period totals 12 years with completion anticipated in 2033.

3.11 Construction hours are envisaged to be undertaken 24/7 in accordance with surrounding uses and industries.

3.12 Before construction starts, the contractor will prepare and agree a document called a 'Construction Environmental Management Plan' ('CEMP') which will set out measures to ensure that any adverse impacts during the construction period will be kept to a minimum. A Framework version of the CEMP is being submitted with the planning application.

Alternatives

3.13 The EIA Regulations specify that it is good practice to consider any alternatives to the scheme that may have been studied by the applicant; along with consideration of what may happen at the site if development were not to go ahead.

3.14 If the proposed development were not to come forward, there is the possibility that the site would remain in its existing use as vacant previously industrial land and with the landfill remaining on site. In this scenario the existing environmental conditions would remain or evolve over the course of time. A no development scenario would not aid in delivering economic development on one of RCBC's protected employment areas and STDC's vision for the site and the surrounding area. This site forms part of the Teesworks area, the area of which is identified to deliver economic development, creating in the region of 20,000 direct and indirect jobs. A no development scenario is therefore considered highly unlikely.

3.15 The applicant has not considered alternative uses for the site given the development being based on the clear aspirations to bring the site forward for the uses assessed in the EIA.

4.0 Transport

4.1 A Transport Assessment ('TA') has been carried out by Arup and this has informed the ES Chapter. The topic considers the effects of the proposed development on the surrounding transport network, including the potential effects of the predicted traffic associated with the proposed development. The assessment covers severance, driver and bus user delay, pedestrian and cyclist amenity, and accidents and safety.

Existing Conditions

4.2 The baseline conditions indicate the surrounding road network serves industrial uses. The development site does not have direct connections to the public highway network. The site is accessed via STDC's internal road network. The local highway networks consists of a number of key roads, including, the A1085 Trunk Road, West Coatham Lane and Tod Point Road. Toad Point Road links to A1042 Kirkleatham Lane which runs south connecting to the A174.

4.3 Walking facilities in the vicinity of the site are limited. Teesdale Way Public Right of Way ('PROW') runs parallel to the railway to the south of the site. The nearest National Cycle Rout ('NCR') is Route 1 (NCR1) which is accessed within Redcar, approximately 2km from the east of the site.

4.4 The bus stop on West Coatham Lane provides a bus shelter and timetable information on both sides of the carriageway and is situated an approximate 20-minute walk (1.6km) from the development site. Redcar Central railway station is located approximately 4km from the site which equates to an approximate 48-minute walk. The Darlington to Saltburn Railway line is an operational passenger railway line and, the Redcar British Steel station is located on the boundary of the site, just to the south east of the intersection between the two railway lines.

Embedded Mitigation

4.5 A Framework CEMP has been prepared for the construction stage of the development and forms part of the embedded mitigation of the development (see paragraph 3.12 above). The CEMP identifies that a Construction Traffic Management Plan ('CTMP') will be implemented either at site level or for each development phase.

4.6 For the operational phase of the development, the main access to the site will be via the internal road network to the south of the site. This can be accessed from the Trunk Road / West Coatham Lane roundabout (known as the Steel House roundabout). A Framework Travel Plan ('FTP') is embedded into the scheme and this promotes sustainable modes of travel. In addition, a bus service is proposed to provide direct access into the development site. It will provide a connection to the local towns of Middlesbrough and Redcar. The bus service will be extended as additional development sites are occupied at Teesworks (including those developments also subject to planning applications being submitted by STDC at the same time as this).

4.7 The proposed development will provide a high-quality site which promotes walking and cycling through the provision of footways and secure cycle parking.

Effects during Construction and Operation of the Development

4.8 As this is an outline planning application, the specifics of construction are not known. Whilst a detailed assessment of the construction traffic has not been undertaken, professional judgement indicates that the severance or amenity effect of construction traffic is unlikely to be Significant.

4.9 Within the implementation of embedded mitigation measures and the below secondary mitigation measures, during operation, the assessment has identified no Significant effects. All effects are expected to be Not Significant. The assessment shows a Minor Adverse (and Not Significant) effect on driver and bus delay at the A174 / Greystone Road roundabout and the A1085 / A1042 Kirkleatham Lane junction. Minor Adverse (and Not Significant) effects are also anticipated on pedestrians at the A1085 Trunk Road (north and south of Steel House roundabout). All other effects are expected to be Negligible and Not Significant.

Mitigation and Monitoring

4.10 At this point in time no additional mitigation measures have been identified for the construction stage of the development.

4.11 For the operational phase of the development, and to reduce the impacts to those identified above, secondary mitigation measures are proposed. These include: occupier travel plans for each end occupier; wider travel planning measures to encourage sustainable transport (for example, ensuring footway and cycleway connections are provided, providing secure cycle parking, providing staff up to date information on public transport services and walking/cycling provisions, promotions such as National Travel Awareness day and a 'Walking Buddy' Scheme, promoting car sharing, and consolidating servicing trips and deliveries); a review of junction operation at A1085 / A1042 Kirkleatham Lane junction; and junction improvements for the A174 / Greystone Road roundabout.

4.12 Although no commitment is being made at this stage, there are also opportunities to reduce the identified impacts further through the implementation of measures in the emerging Transport Strategy for the Teesworks area. STDC is bringing forward this strategy to help provide a coordinate response amongst all sites on transport matters.

5.0 Biodiversity and Ecology

5.1 The assessment of Biodiversity and Ecology effects has been carried out by INCA.

Existing Conditions

5.2 Other than a landfill area to the east of the internal railway line, which forms a steep sided mound with a flat plateau at 19.5m AOD, the site is essentially flat but with numerous small areas where tipping has varied the topography and substrate at a micro-scale. Typically the substrates are compacted, hard material, mainly blast furnace slag with a light covering of soil but in places the substrates are loose, for example sand or mounds of tipped material.

The site is characterised by various open habitats of short vegetation that range from bare ground to grassland. In many cases these habitat blocks contain a high proportion of wild flowers in the sward and in some cases the diversity of plant species is also high. The floristic diversity and the areas of bare and loose substrate will make the site of importance for various invertebrates. The only other habitats of note on the site are the watercourses. The Fleet bisects the site in a westerly direction from Coatham Marsh and arcs round in south westerly direction. It is then culverted in a north westerly direction under the former Hot Metals Transfer Railway and internal road and emerges on the other side where it continues in a straight culvert. At the western boundary of the site, the Fleet continues in a culvert heading south until it discharges into Dabholm Gut, thereby forming a corridor between Coatham Marsh and the River Tees. The Fleet flows for just over 1km through the site. A shorter watercourse runs for approximately 100m through the site linking Steel House Lake with the Fleet.

Embedded Mitigation

5.3 Embedded mitigation will take the form of adherence to measures outlined in a Framework CEMP (see paragraph 3.12 above). The CEMP will include the following measures:

1 Mitigation will be included to prevent and mitigate against any accidents, including but not limited to, spills, storage of soils and control of construction related dust and the construction of site hoarding to reduce the impact on ecological sensitive receptors;

2 Measures will be implemented to prevent sediment, dust, surface water run-off and other substances from entering watercourses;

3 Removal of trees, scrub, wetland habitat or areas of grassland or open mosaic habitat that may support nesting birds should be undertaken outside of nesting season (March to August inclusive), unless the habitats are first checked by a suitably qualified ecologist, who confirms in writing to the LPA that no nesting birds are present; and

4 Measures will be implemented to prevent the spread of invasive non-native plant species, as listed under either Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) or the Invasive Alien Species (Enforcement and Permitting) Order 2019.

5.4 The only other embedded mitigation measures relevant to the ecology assessment is:

"Further ground investigation surveys will be undertaken in order to identify the need, or otherwise, for remediation work. This stage of work will include, if necessary, the submission of details to divert the Fleet and any associated ground remediation necessary as part the diversion."

5.5 It has been assumed that the hydrology of Coatham Marsh will not be affected by any works to the Fleet. It is expected that this will be secured by a condition on any grant of planning permission requiring a method statement for assessing any works to alter or realign the on-site watercourses to demonstrate it.

Effects during Construction and Operation of the Development

5.6 Impacts would be entirely due to the construction process and would involve the loss of all habitats within the 'Potential Development Area' of the site, other than the watercourses and consequently the loss of all species present on the site that are associated with those habitats.

5.7 The proposed development would result in a permanent, **Substantial Adverse** effect on Grayling butterfly. This is Significant.

5.8 The proposed development would result in a permanent, **Moderate Adverse** effect on; Reptiles, Dingy Skipper butterfly, Neutral Grassland, Ruderal/ Ephemeral habitats. This is Significant.

5.9 The proposed development would result in a permanent Minor Adverse effect on; Bats, Breeding Birds, Brown Hare, Common Toad; an assemblage of invertebrates; European Eel; Open Mosaic Habitats; Dune Grassland. This is Not Significant.

5.10 The proposed development would result in a temporary Minor Adverse effect on the Fleet watercourse. This is Not Significant.

Mitigation and Compensation Measures

5.11 A reptile mitigation strategy will be submitted for approval and implemented in accordance with the phasing therein, to prevent harm to reptiles during construction and to maintain the population of reptiles ex-situ.

5.12 It is assumed that all habitats and species will be lost as a result of construction therefore, other than for reptiles, no mitigation is possible other than that described under Embedded Mitigation.

5.13 Compensatory measures that will be taken forward through the forthcoming South Tees Regeneration Master Plan Environment and Biodiversity Strategy to offset any habitat lost through development of the Teesworks area, including through the proposed development, will ensure no net loss of biodiversity.

5.14 Specific compensatory measures will be undertaken for any ecological receptors assessed as being Significant in EIA terms and for habitats which are classed as being of high distinctiveness, which for this site are; Grayling butterfly, Dingy Skipper butterfly, Open Mosaic Habitat, Ruderal/ Ephemeral habitats, Neutral Grassland, Dune Grassland, to ensure no net loss of those ecological receptors.

6.0 Noise and Vibration

6.1 An assessment has been undertaken by Arup to understand the potential noise and vibration effects of the proposed development during construction and operation.

Existing Conditions

6.2 Noise from road traffic and rail traffic is considered to be the main contributor to the existing environment at residential and non-residential noise sensitive receptors, with potentially some contribution also from existing industrial sources. As it has not been possible to carry out a survey, the baseline sound level climate has been informed by noise prediction modelling of noise from road and rail.

6.3 The nearest noise sensitive receptors include residential receptors on Broadway West, housing south of Todd Point Road and Marsh Farmhouse to the south and east of the site and non-residential receptors to the south and north of the site: Steel House offices, Redcar beach front and the mobile homes on the beach front. Noise Important Areas ('NIA'), identified by DEFRA, include Noise Important Area ID 10090 and 10091 along the A1085 Corporation Road and Trunk Road.

Embedded Mitigation

6.4 The assessment assumes the implementation of the principles set out in the Framework CEMP (see paragraph 3.12 above) which will be embedded into the design of the scheme. Best practise measures will be applied during construction activities to minimise noise (including vibration) at neighbouring residential and commercial properties.

6.5 There are no embedded mitigation measures proposed for the operation of the proposed development.

Effects during Construction and Operation of the Development

6.6 Predicted construction activity noise levels at residential and non-residential properties as a result of the proposed development (including impact piling, which has been assumed as a reasonable worst-case scenario) show an exceedance of the construction threshold levels at a residential receptor located on the east of the site, Marsh Farmhouse, during night-time. This is identified as a temporary construction **Significant Adverse** effect, which can be mitigated as described below such that no residual significant adverse effect would occur. All other effects are considered to be Not Significant.

6.7 During operation, the main sources of noise from the proposed development are industrial activities, building services and road traffic. At this stage, the future occupiers are unknown but based on a reasonable worst-case scenario of the proposed use, the operational service plant

noise emission at the residential receptor Marsh Farmhouse shows an exceedance of the existing noise levels during day and night-time. This is identified as an operational **Significant Adverse** effect which can be mitigated as described below such that no residual significant adverse effect would occur. All other effects are considered to be Not Significant.

Mitigation and Monitoring

6.8 A temporary Significant effect has been identified at Long Acres 5 (Marsh Farmhouse). The stakeholder communication plan included within the CEMP will help alleviate fears of noise. This is embedded into the development.

6.9 To reduce the Significant effect identified at Marsh Farmhouse to Not Significant and to ensure noise associated with the construction phase is kept to a minimum, a risk assessment identifying the probability of noise and vibration from any piling or compaction activities should be carried out prior to the commencement of construction once the detailed construction details are known (including phasing, activities and methods). This will also determine the need for any periodic or continuous construction noise or vibration monitoring.

6.10 To ensure there the effects are Not Significant (including at Marsh Farmhouse) at all receptors during the operation of the proposed development and to ensure that noise is kept to a minimum, measures such as the location of noisy plant and equipment, plant maintenance and an approved speed limit will be implemented. Noise emission from building services plant and industrial activities will be considered during detailed design to ensure that operational noise does not adversely affect the noise sensitive receptors, especially at Marsh Farmhouse.

7.0 Air Quality

7.1 This topic considers the effects of the proposed development on local air quality, including the potential effects of the predicted traffic associated with the proposed development. The assessment covers construction dust and operational traffic effects on human and ecological sensitive receptors.

Existing Conditions

7.2 The baseline covers local air quality conditions in the vicinity of the proposed development. Monitored concentrations in the vicinity of the site are well below the respective national air quality objectives. As a result, the local council has not declared any Air Quality Management Areas ('AQMAs').

7.3 There are no industrial processes with releases to air listed on the Environment Agency ('EA') website within 1km of the site.

7.4 Sensitive air quality receptors include local residential uses within the South Bank and Grangetown areas. Ecological receptors include the Teesmouth and Cleveland Coast Site of Special Scientific Interest ('SSSI') and the Special Protection Area ('SPA') / Ramsar site Teesmouth and Cleveland Coast.

Embedded Mitigation

7.5 Construction dust mitigation measures have been included in the Framework CEMP. These measures will mitigate the effects on sensitive receptors during the construction phase and should be accompanied by a Dust Management Plan ('DMP').

7.6 There are no embedded mitigation measures proposed as a result of air quality for the operational phase of the development.

Effects during Construction and Operation of the Development

7.7 The effects of construction traffic will be assessed once full details are known. Assuming the successful implementation of best practice mitigation measures for construction dust that are embedded in the Framework CEMP, the effects of construction dust are expected to be Not Significant.

7.8 The operational phase of the development has been considered by carrying out dispersion modelling using industry standard software. This assessment used traffic data provided by the project transport team and relevant meteorological data from the closest relevant site: Teesside International Airport. The air quality impacts have been assessed at identified residential and ecological receptors. The impact of the potential changes in pollutant concentrations calculated through the modelling process is predicted to be Negligible at all receptors. The overall effect of the operation of the proposed development on local air quality is therefore considered to be Not Significant.

Mitigation and Monitoring

7.9 Beyond the embedded mitigation measures, no further mitigation is required for the construction of the proposed development at this time.

7.10 As the overall effect of the operation of the proposed development on local air quality is considered to be Not Significant, no mitigation measures are required.

Water Management and Flooding

7.11 This Chapter of ES has been prepared by JBA on behalf of the applicant. It assesses the proposed development described in Chapter B, describes the existing environment in relation to hydrology and hydrogeology and assesses the potential impacts of the construction and operation of the proposed development on hydrology (surface water quality, levels and flows) and hydrogeology (groundwater quality and levels). It therefore closely relates to and references details included in the Ground Conditions and Remediation and Biodiversity and Ecology sections of this NTS (see Sections 5.0 and 8.0).

7.12 The chapter comprises a desk-based assessment of water management and flooding, incorporating the elements required for a Flood Risk Assessment (FRA) (see Appendix G2 of the ES) as well as examining drainage and hydrogeology. Data gathered for the assessment originates from three main sources: publicly available websites, data from the Environment Agency (EA), and previous reports and site investigations.

Existing Conditions

7.13 The site lies within the catchment of the River Tees located west of the site, and within three sub catchments of the Tees; Dabholm Beck, Dabholm Gut and the Fleet. The Fleet dissects the site in an east to west direction. The Fleet enters the site in a westerly direction from Coatham Marsh. The Fleet is culverted to the northwest under the former Hot Metals Transfer Railway and an unclassified road. Downstream of the site (approximately 0.6km) The Fleet flows into the Dabholm Beck. Joining with The Fleet, the Dabholm Beck flows from north east to north west. Dabholm Beck discharges into the River Tees Estuary via the tidal Dabholm Gut. The site is located within Flood Zone 1.

7.14 The site is underlain by strata which are classified by the EA as a Secondary B bedrock aquifer and as Secondary (A and undifferentiated) superficial aquifers. Groundwater vulnerability beneath the site is medium-high and the site does not lie within a defined groundwater Source Protection Zone (SPZ). There are no abstractions or discharges near the site which are deemed to be potentially impacted by the proposed development. The degree to which Coatham Marshes and Coatham Dunes (part of the Teesside and Cleveland Coastal SSSI/SPA/Ramsar), to the east of the site, are supported by groundwater from the superficial aquifers is not known.

7.15 The surface water receptors assessed in this chapter are: The River Tees Estuary (Tees Water Framework Directive (WFD) transitional water body), The Fleet, Ash Gill Beck, Dabholm Beck, Dabholm Cut, and Dabholm Gut and Coatham Marsh. The groundwater receptors are the mudstone bedrock aquifers, superficial aquifers, Coatham Dunes and Coatham Marshes.

Embedded Mitigation

7.16 A Framework CEMP, which sets out key measures and principles that will be adhered to, forms part of the embedded mitigation for the proposed development during the construction phase (see paragraph 3.12 above). The measures in the Framework CEMP will be taken forward in detailed CEMPs for each phase of construction.

7.17 Other embedded mitigation measures relevant to water management and flooding are:

1 Further site and ground investigation surveys will be undertaken in order to identify the need, or otherwise, for additional remediation work. This stage of work will include, if necessary, the submission of details to divert any watercourses and any associated ground remediation necessary as part of the diversion;

2 The hydrology of Coatham Marsh will not be affected by any works to The Fleet. A method statement for assessing works to alter or realign the on-site watercourses demonstrating this shall be submitted and approved by the Local Planning Authority prior to the approval of any detailed scheme of works to the watercourses;

3 Regarding movement of materials across the site, site activities should be undertaken to avoid the creation of contaminant/groundwater migration pathways. It is noted that the site will be cut-and-fill neutral, and movement of materials would be covered within the CEMP by a CTMP; and

4 For any piling works, a piling risk assessment will be undertaken.

Effects during Construction and Operation of the Development

7.18 Surface water flows could be impacted during the construction phase of development because of increased run off. Other impacts could include the potential for pollutants to enter local watercourses and through surface water run-off. With regards to groundwater, effects could result from reduced infiltration, spillages and activation of contaminant migration pathways. Through the implementation of the embedded mitigation measures described above, the effects on Coatham Dunes and Coatham Marshes, which may be connected to groundwater in the superficial aquifers below the site, are considered to be **Moderate Adverse** and Significant. For surface water, the effects on Dabholm Cut and Gut are considered to be **Moderate Adverse** without further mitigation and the effect on Coatham Marsh is considered to be Neutral. The effects on the remaining surface water and groundwater receptors, are considered to be Negligible Adverse and therefore Not Significant.

7.19 During operation, there is the potential for the proposed development to affect surface water flows and quality through increased run off and pollution caused by spillages and leakages. These impacts are considered to be Negligible to Minor Adverse and Not Significant for surface

water receptors with the exception of Dabholm Cut and Gut and Coatham Marsh where the effect is considered to be **Moderate Adverse** and Significant without further mitigation. There is also the potential for the proposed development to affect groundwater receptors through reduced infiltration (Negligible Adverse impacts) and pollution from spillages and a reduction in contamination of groundwater arising from existing Made Ground (Negligible Beneficial effects) which are considered to be Not Significant. However, for Coatham Dunes and Coatham Marshes, these effects are **Moderate Beneficial** and Significant.

Mitigation and Monitoring

7.20 The proposed development at Long Acres will be a phased development starting in 2022 and with an anticipated completion in 2033. Whilst a high level FRA has been prepared to supplement this assessment (within Appendix G2 of the ES), the documents set out below shall be prepared for each phase of development and submitted to the Council for approval when the detailed design of each phase of the scheme is known, to mitigate significant adverse impacts:

- A detailed FRA and Drainage Impact Assessment (DIA) with drainage strategy (for both foul and surface water);
- A Surface Water Management Plan (SWMP); and
- A WFD Assessment.

7.21 In addition, groundwater monitoring will be carried out, to determine whether the potential for reduced infiltration or mobilisation of contaminants is likely, and whether groundwater flow could be affected, prior to groundworks activities such as excavation. The details of the groundwater monitoring required would be derived from the findings of ground investigation surveys which support the development of the remediation strategy. The monitoring would inform a construction phase Groundwater Management Plan (GWMP) to be submitted to RCBC.

7.22 Secondary mitigation will include further items to manage water at the site: preparation of the design in line with industry and Local Authority guidance documents; requirement for hydraulic modelling to inform drainage design and overland and exceedance flow paths; finished floor levels to be set to a minimum of the 1 in 200 year coastal flood risk and sea level rise allowance to the 2100 design scenario; protection of any harvested rainwater for re-use; avoidance of infiltration SuDS; WFD Assessment and a design, construction and operation of drainage that is sympathetic to the Teesmouth and Cleveland SSSI / SPA / Ramsar designation.

Summary

7.23 The implementation of the mitigation measures described above would result in the following impacts: for Coatham Dunes and Coatham Marshes in terms of groundwater, the effects would be Negligible Adverse to Neutral and Not Significant. For other groundwater receptors, the impacts on flows would remain Negligible Adverse and the impacts on groundwater quality are considered to be Minor Beneficial, both of which would be Not Significant.

7.24 For surface water, the impacts on flows and quality are considered to be Negligible Beneficial which would be Not Significant, with the exception of Coatham Marsh where the effects would be Neutral and Not Significant.

8.0 Ground Conditions and Remediation

8.1 An assessment of the Ground Conditions and Remediation has been undertaken by Arcadis (UK) Ltd. It considers the effects of the proposed development on the site's ground conditions and the need for remediation. It is based on a desk-based survey and a review of existing

surveys and reports that have been undertaken for the site and the surrounding Teesworks area. The operational phase of the assessment has been scoped out as no significant effects are likely.

Existing Conditions

8.2 The site and surrounding areas largely comprise mudflat and marshland reclaimed by deposit of iron and steel slag and by-products. The main historic land uses were dominated by extensive iron and steel works together with auxiliary industries, infrastructure, and distribution, together with waste management.

8.3 Long Acres development site is approximately triangular in shape and is largely defined by the existing surrounding infrastructure. The site was previously partially occupied by the Warrenby iron and steel works and in part has been previously used as a licensed landfill for the disposal of byproducts from iron and steel making, principally slag. Warrenby 3A Landfill (or CLE31) covers an area of some 7Ha and holds around one million cubic metres of waste material. It is predominantly steelmaking slag with small amounts of paper and canteen wastes from the works. A second area of the site (Warrenby 3B) was prepared to receive similar types of waste, but was never utilised. The site is currently free from built structures but there are a number of permanent roads and a rail line that traverse the site.

8.4 A large area of the site was reclaimed from mudflat and marshland and by 1894 large areas of the site were subject to over tipping (land raising) as a result of the development of the Redcar Iron Works. Ground investigations indicate Made Ground thickness ranging from 1.8m to 18.8m, the latter is within the Warrenby 3A / CLE 31 landfill. In the Warrenby 3B area, Made Ground is approximately 3m thick comprising of slag rich deposits, in the south of the site thicknesses of 2.1m to >4.5m were identified. In the north of the site, Made Ground thicknesses ranged from 1.8 to 7m and comprised a mixture of slag rich deposits and granular made ground with demolition materials.

8.5 Underlying natural deposits comprise Tidal Flat Deposits, predominantly consisting of sands and silts with varying amounts of clay. These deposits are underlain by Glaciolacustrine Deposits of laminated clays and a gravelly clay comprising Glacial Till. The solid geology beneath the majority of the site consists of mudstone of the Redcar Mudstone Formation, part of the Lias Group.

8.6 The significant thickness of Made Ground present beneath the site and normally consolidated tidal flat deposits, indicates the potential requirement for piled foundations or ground improvement works in relation to structures sensitive to movement. It is understood however that the majority of the land raise material within the Warrenby 3A landfill will be removed and reused as engineering fill as part of the redevelopment works.

8.7 Water receptors on the site at risk of contamination include the Fleet watercourse, which cuts through the site in an approximate east-west direction and groundwater, including a Secondary Undifferentiated aquifer (bedrock) and Secondary A aquifers (superficial deposits). The sensitivity of identified surface water and groundwater receptors is considered medium reflecting water features of low value.

8.8 On-site and off-site sources of contamination have been identified and data from previous intrusive site investigations identify contamination risks from iron and steel works, Made Ground, CLE31 landfill and railway lines and sidings.

8.9 Potential human and environmental receptors include construction workers, residents and workers in the local area beyond the site boundaries, surface water and groundwater and the built environment.

Embedded Mitigation

8.10 Embedded mitigation measures include the implementation of the Framework CEMP and health and safety standards, further ground investigations (soil and groundwater analysis and gas monitoring as required to resolve any current data gaps), piling risk assessment and hazardous and non-hazardous waste to be sent to the Highfield landfill site.

8.11 The proposed minimum finished floor level will be 5.2m above ordinance datum (AOD). The development is anticipated to result in surplus soil arisings. Excavated materials will be assessed and processed as necessary before being reused as engineering fill material both on site and within the wider Teesworks site.

Effects during Construction and Operation of the Development

8.12 During construction, the use of heavy equipment and earthworks activities such as excavation, backfilling, and compaction may disturb the soil and result in dust generation and the potential for direct contact and inhalation of contaminants. With mitigation (described below) and embedded mitigation, this is expected to result in a residual Minor Adverse impact on construction workers and a Negligible effect on off site human health receptors. These are considered Not Significant.

8.13 A Negligible and Not Significant effect on surface water and groundwater is considered likely with the implementation of a ground remediation strategy (see details below) and embedded mitigation. Where hazardous waste needs to be removed from site it is expected to go to the Highfield Landfill site and this is considered to have a Negligible and Not Significant effect on waste management facilities.

8.14 No significant operational effects are anticipated and as noted above operational effects were scoped out of the assessment.

Mitigation Measures

8.15 Mitigation measures, in addition to the embedded mitigation outlined above, are required to reduce the environmental impact associated with the proposed development. In the event that unanticipated contamination is encountered during construction works, an investigation and risk assessment will be undertaken and where remediation is considered necessary additional mitigation will be agreed with the relevant authorities.

8.16 Prior to the construction of buildings, further gas monitoring and associated gas risk assessment should be undertaken, and the site and buildings should be designed with adequate mitigation measures (if necessary).

8.17 The detailed design for each of the development plots will determine the detailed remediation approach based on the intended layout and form of development and further investigation and assessment. The Remediation Option Appraisal, which has already been prepared for the site, would provide a basis for this and will be developed into a Detailed Remediation Strategy for each phase of development.

8.18 To enable material from the Warrenby 3a landfill to be reused as engineering fill, a Deposit for Recovery permit will be obtained for the re-use of this material. This approach would be considered when the detailed remediation strategy for the site is prepared.

8.19 As noted above, the implementation of these measures will result in Minor Adverse or Negligible (and Not Significant) effects at all receptors.

9.0 Socio-Economic

9.1 The assessment of Socio-Economic effects has been carried out by Lichfields.

Existing Conditions

9.2 The assessment establishes the baseline position in terms of Socio-Economic conditions. It has drawn upon a combination of data sources, including nationally published data from the Office for National Statistics (ONS), as well as local authority statistics and other data including that from the 2011 Census, Experian datasets and other publicly available national statistics. The Area of Impact (AOI) considered is defined as the local authorities of Redcar and Cleveland, Middlesbrough and Stockton-on-Tees.

Embedded Mitigation

9.3 No design measures have been embedded into the proposed development in relation to Socio-Economic matters.

Effects during Construction and Operation of the Development

9.4 The assessment has considered the potential Socio-Economic effects of the proposed development and their significance.

9.5 The assessment concludes that the proposed development will have a temporary, long-term and **Moderate Beneficial** effect on the local economy by creating new construction (and supply chain) jobs and a temporary, long-term and **Moderate Beneficial** effect in relation to economic output (as measured by Gross Value Added) during the construction period. These effects are considered to be Significant.

9.6 Once fully operational, the employment generated by the proposed development is anticipated to have a permanent and **Substantial Beneficial** effect. The associated economic output (as measured by Gross Value Added) is anticipated to have permanent and **Substantial Beneficial** effect. Both assessments have had regard to the scale of employment (and Gross Value Added) uplift and the existing local conditions which are characterised by low employment density (jobs per 16-64 population) and high levels of unemployment and deprivation. The assessment also considered the scale of change within the context of both local and sub-regional objectives to deliver transformative employment growth across the Teesworks area. These effects are considered Significant.

Mitigation Measures

9.7 As the proposed development is anticipated to give rise to Beneficial effects in the context of Socio-Economics no mitigation measures are proposed in this regard.

10.0 Climate Change

The chapter, prepared by Arup, describes the likely impacts on climate from the construction of the proposed development and from its operation.

Existing Conditions

10.1 Construction is expected to occur within the following phases as shown at Table 10.1.

Table 10.1 Long Acres phased development area (sqm), percentage of total and percentage cumulation of build

Year	Area Build (sqm)	Proportion %	Cumulative %
2022	0	0%	0%
2023	18,581	10%	10%
2024	34,374	18%	29%
2025	0	0%	29%
2026	0	0%	29%
2027	69,677	37%	66%
2028	0	0%	66%
2029	0	0%	66%
2030	0	0%	66%
2031	8,361	4%	70%
2032	46,452	25%	96%
2033	8,361	4%	100%
Total	185,806		

10.2 The sources of greenhouse gas (GHG) emissions that have been assessed are:

- The extraction, processing and manufacturing of construction materials;
- Transport of construction materials from the manufacturer to the proposed development;
- The construction process, including the use of construction equipment and the transport of construction workers to/from site;
- The operational use of electricity and gas within buildings; and
- Operational transport movements within the RCBC area, including employee commuting and service vehicles.

10.3 The end users of the site are not known at this stage, and so GHG emissions arising from unregulated energy use on site have not been assessed. Once further information is available then the impact of these emissions on the assessment conclusions should be examined.

10.4 Due to the long-term environmental impact of GHG emissions, all emissions can be considered significant. However, the UK Government sets five-yearly carbon budgets to ensure progress towards the long-term national target is achieved.

Embedded Mitigation

10.5 Due to the current outline nature of the proposed development, this assessment does not consider potential primary embedded mitigation measures that relate to climate change and greenhouse gases.

10.6 Many of the design decisions that provide an efficient development process will as a by-product provide a reduction in carbon emissions and act as primary mitigation measures. These include efficient use of space, recycling and reuse of materials, and minimised transportation. These have not been identified at this stage, but the range of opportunities is set out in the mitigation section. As the detailed scheme design progresses these will be taken into account and, where relevant and possible, can be embedded into the scheme at the detailed design stage.

10.7 Tertiary measures are described in the Framework CEMP and are outlined as follows:

"Measures will be included such as the sourcing of materials locally, the use of lower emissions vehicles and planning to minimise the number of journeys required to and from the site. It will also include climate change aims including the use of electrical plans, where practical and feasible".

10.8 As detailed CEMP measures are not yet available, it is therefore difficult to accurately quantify how the combination of measures, and scale of their implementation, will be applied to the proposed development in order to determine the assessment of effects in relation to greenhouse gases. Due to this potential flexibility in the tertiary measures, and to assess a worse-case scenario, this assessment has not considered the potential embedded mitigation they would provide in relation to climate change and greenhouse gases.

Effects during Construction and Operation of the Development

The annual emissions from construction have been estimated for an average year within each budget period (for those periods where construction takes place):

- Within budget period 2023-27 the maximum construction emissions are 0.08 MtCO2e which equates to 0.02% of the average annual carbon budget for that period; and
- Within budget period 2028-32 the maximum construction emissions are 0.05 MtCO2e which equates to 0.02% of the average annual carbon budget for that period.

10.9 The construction of the proposed development is therefore not expected to compromise the ability of the UK to meet its national targets. The development is assessed as Minor Adverse and Not Significant for the construction stage.

10.10 The operational annual emissions (arising within the Redcar and Cleveland Borough Council area) have been estimated for 2034. This is the year in which the site will be fully developed and operational. For this site these emissions are estimated as 12,182 tCO2e.

10.11 As the UK economy is expected to decarbonise towards the 2050 net zero target then emissions are likely to be highest in earlier years of operation. To put the emissions for this site in context, these represent 0.47% of the Redcar and Cleveland local authority area emissions as reported in 2018.

10.12 The operational emissions from the site are relatively small compared to the overall scale of local authority emissions, although represent a larger proportion of local authority transport emissions than for other sectors. These emissions estimates are, however, based on a conservative of assumptions and represent a reasonable worst case 'before mitigation' scenario. The emerging wider South Tees Regeneration Master Plan Transport Strategy is expected to significantly reduce vehicle movements and increase the use of lower carbon transport modes. Additionally, once the end users for the site are confirmed, a detailed energy strategy to utilise low and zero carbon energy supply options will be developed along with a site-specific travel plan. On this basis it is considered unlikely that the proposed development will compromise national or local GHG emissions targets after mitigation. The development is therefore assessed as Minor Adverse and Not Significant for operational stage.

Mitigation Measures

10.13 At this stage in the project, full construction design and logistics are yet to be confirmed. However, a range of construction and procurement strategies can be investigated to provide mitigation measures to reduce the GHG emissions associated with the proposed development, across the full life cycle. For the construction stage, this includes reducing the quantity of materials, use of recycled and locally sourced materials and the use of electrical plant over fossil

fuelled construction plant. For the operational stage this could include implementing an energy strategy which includes the installation of low and zero carbon technologies and encouraging the use of transport measures to encourage active and low carbon transport choices.

11.0 Landscape and Visual Assessment

11.1 A Landscape and Visual Impact Assessment has been undertaken by BDP to assess the landscape and visual effects of the proposed development.

Existing Conditions

11.2 The site located within the northeastern part of the Teesworks area and is the area identified as the 'Teardrop site and CLE31' in the STDC Master Plan, in the North East Industrial Zone. In relation to the wider Teesworks area, it lies to the south-east of the 'Redcar Works Complex', to the west of 'Coatham Marsh', and to the north of the 'Redcar Steel House and surrounding area'.

11.3 The site is immediately bounded by the Darlington to Saltburn Railway line to the south-east; a private internal road and open industrial land to the north-west; a section of the former Hot Metal Transfer railway line, open land, and South Gare Road to the north; and the boundary wall of Marsh Farm House and adjacent industrial unit and by open land to the northeast.

11.4 The site was previously partially occupied by the Warranby iron and steelworks and in part has been previously used as a licensed landfill for the disposal of byproducts from iron and steel making, principally slag.

Embedded Mitigation

11.5 The embedded mitigation measures relevant to LVIA are the fixing of development parameters via the Outline Planning Application. The LVIA also assumes the implementation of construction best practice including the installation of suitable site hoarding, careful siting and management of materials stockpiles and the sensitive siting of site welfare and other temporary structures as set out in the Framework CEMP.

Effects during Construction and Operation

11.6 During construction there will be a Negligible and Not Significant impact upon all Landscape Character Zones. There will be a **Moderate Adverse (Significant)** impact upon Viewpoints 1, 4, 10 and 11 during construction. All other Viewpoints will be subject to a Negligible impact during construction, which is Not Significant.

11.7 During operation, there will be no significant impacts upon all Landscape Character Zones, with effects ranging from Negligible to Minor Adverse/Minor Beneficial. There will be a **Moderate Adverse (Significant**) effect on Viewpoint 1, Viewpoint 6, Viewpoint 10 and Viewpoint 11 (Views from the Coastal Path). The impact upon all other Viewpoints are considered to be Not Significant, with effects ranging from Negligible to Minor Adverse.

Mitigation and Monitoring

11.8 A number of mitigation measures have been proposed to minimise or manage identified potential significant landscape and visual effects. Until more details are known on the design of the scheme, these proposals are likely to have a positive influence on the effects but are unlikely to reduce the overall significance noted above.

11.9 The following mitigation measures are proposed during the construction phase of the development:

1 Implementation of construction best practice;

2 Installation of suitable site hoarding, for example a 2.4, timber site hoarding with a plastic wrap incorporating appropriate graphics;

3 Careful siting and management of materials stockpiles to reduce prominence on site by limiting the height and volume of material stored on site; and

4 Sensitive siting of site welfare and other temporary structures within the site compound.

11.10 Mitigation for the operational phase of development will comprise:

1 Buildings to be articulated in a way which reduces visual scale and massing. Buildings to be stepped down to site boundaries to reduce the perception of massing in local and mid-range views and site layouts to present legible blocks of development with appropriate breaks to reduce visual impact; and

2 Building colour and cladding to be appropriate, and help break up the visual massing, avoiding overly reflective materials. Use of colour gradation in the largest buildings to reduce the perception of height and massing in mid and long-range views. Buildings on individual plots to have a sensitive and complementary palette of materials and cladding to enable the development to be read as separate blocks in mid to long-range views.

12.0 Below Ground Heritage

12.1 Prospect has undertaken a heritage assessment for the proposed development. It provides an assessment of the effects of the construction and operational phases of the proposed development on below ground heritage assets.

Existing Conditions

12.2 The southern part of the site was used for salt production during the medieval period and the remains of this industrial process may be present within the site (salterns). A medieval chapel and cemetery are recorded immediately to the north of the site. A 19th century duck decoy was present in the eastern part of the site, although out of use by 1887 and could have been abandoned when the railway was constructed in 1850. The Coatham Iron Works was established within the site in 1873 and the Redcar Iron Works in 1874, with their respective infrastructure. Between them they initially had six blast furnaces. Over the course of the following fifty years, the rail network expanded dramatically around and between them and, following their establishment as a single entity, additional extensive facilities were added in the early 20th century. By the late 20th century, both sets of blast furnaces had been removed. During the 1940s, numerous anti-tank defences were installed, including ditches, rails and blocks. The majority have been removed although it is possible remains of the ditch will survive. No other below-ground heritage assets are anticipated, and it is recognised there will have been significant truncation or removal of below ground heritage deposits as a result of late 20th century use of the site.

Embedded Mitigation

12.3 There is no embedded mitigation relating to below-ground heritage.

Effects during Construction and Operation

12.4 It is assumed that all archaeological remains would be removed through remediation and/or creation of development platforms during the construction phase. Potential effects would range between **Moderate** and **Substantial Adverse (Significant).**

12.5 With mitigation (described below), this is expected to result in a Minor Adverse effect on the Coatham Iron Works blast furnace bases, Redcar Iron Works blast furnace bases and the Medieval salterns. It is expected that there will be a Negligible effect on the Duck Decoy, World War II defensive structures and Other elements of the 19th century iron works. Neither of these effects are significant in EIA terms.

12.6 No further effects would occur during the operational stage.

Mitigation and Monitoring

12.7 As there is no potential for preservation in situ, the only mitigation possible is preservation by record. As the full extent of surviving archaeology is as yet unknown the mitigation measures proposed comprise a programme of evaluation to identify any remains of medieval salt working, the duck decoy, World War II defensive structures, the blast furnaces and associated infrastructure, and to identify and record any evidence of the anti-tank defences. This should initially involve monitoring of site investigations test pits and potentially be followed by archaeological evaluation in the form of trial trenches or monitoring of the remediation works proposed in this area. Should medieval salterns, the duck decoy or remains of the blast furnaces be found to survive on site, a programme of excavation and recording would ensure preservation by record of the site type. The anti-tank features could be adequately recorded in an evaluation without the need for further excavation.

12.8 Archaeological investigation and recording will be undertaken prior to and during remediation and site preparation works. A written scheme of investigation ('WSI') will be prepared for approval by NEAR as advisors to RCBC.

13.0 Waste and Materials Management

13.1 Atkins has undertaken a waste and materials management assessment for the proposed development. It provides an assessment of the effects of the construction and operational phases of the proposed development on waste and materials management.

Existing Conditions

13.2 Made ground is present at the surface across the site and is several meters thick. It largely consists of slag arising from historic iron and steel works. The made ground is underlain by superficial deposits consisting of tidal and glacial deposits.

13.3 The total remaining landfill capacity for the North East of England region is estimated to be 19,451,401 m3 (based on data from 2018) or 23,341,681 tonnes.

13.4 The Highfield landfill site is the preferred site for any hazardous waste which arises during the construction phase of the proposed development. Its remaining approximate hazardous merchant landfill capacity is 2,025,194 cubic metres as of 2019.

13.5 Landfill capacity within the region is considered to be sufficient in comparison to typical quantities of waste arising from construction projects in the UK.

13.6 Primary aggregate availability in the North East region is estimated at 7 million tonnes. This is based on primary aggregate sales by region.

13.7 Ready-mixed concrete availability is estimated at 0.7 million cubic metres (0.84 million tonnes).

13.8 Asphalt availability for the region is estimated at 0.8 million tonnes.

13.9 Materials availability within the region is considered to be sufficient compared with the typical volumes of material used within construction projects in the UK.

13.10 Both materials availability and landfill capacity within the region is considered to be a low sensitivity receptor.

Embedded Mitigation

13.11 Embedded mitigation relevant to the waste assessment includes:

1 The proposed development will aim to be cut and fill neutral, ensuring the reuse of suitable excavated materials generated on site is maximised;

2 Waste will be designed out in the early design phases to ensure the volume of waste generated is minimised;

3 Actions will be taken in the early design phases to ensure the use of recycled/ reclaimed materials are maximised in line with the Waste Hierarchy; and

4 Utilisation of existing waste management facilities (such as Highfield landfill sites) within the Teesworks area will be prioritised, in accordance with the proximity principle whereby waste should be treated/ disposed of as close as possible from the point of generation.

Effects during Construction and Operation of the Development

13.12 The construction phase (which includes excavation) of the development will generate predominantly inert and non-hazardous waste such as concrete, steel, plastic, glass and mixed waste. This will be associated with the construction process itself, rather than earthworks and as a result the impact is expected to be Negligible and Not Significant on remaining regional landfill capacity. At the point of this submission, it has not been possible to assess the impact of construction building materials to the full extent, however based on the known requirement for hardstanding areas it is anticipated that this will also have a Negligible impact on the availability of materials in the north east of England. This is Not Significant.

13.13 The operational phase of development is expected to generate largely municipal waste with some commercial and industrial waste. Waste generation has been calculated based on the proposed development parameters and data published by the British Standards and it is anticipated that the impacts are expected to be Negligible and Not Significant.

Mitigation Measures

13.14 No mitigation measures are required to reduce the impacts of the proposed development. However, it is proposed that a Construction Waste Management Plan ('CWMP') will be prepared to include best practice measures, including, but not limited to: a commitment to achieve a high recycling and recovery rate; having clearly defined and separate skips on site; and reviewing the opportunity to source materials from the local area. The use of secondary aggregates and recycled materials should be sought out where possible with a target of 30% of construction materials required for the proposed development for each phase to be recycled and/or secondary. During operation, a waste management system will be put in place to consider the process of storage, collection, waste, transport and treatment.

14.0 Cumulative and Synergistic Assessment

14.1 Consideration has been given to the inter-relationship between the direct effects arising from the proposed development. This assessment (referred to as a synergistic assessment), seeks to identify where the accumulation of effects on particular receptors, and the relationship between those effects, may give rise to a need for additional mitigation not identified previously. No Significant synergistic effects were identified and therefore no further mitigation required in this regard.

14.2 An assessment has been carried out to identify whether any additional environmental effects would be likely to arise if the development is considered alongside other developments in the area. Overall, twenty five developments have been identified which include the other four applications submitted by STDC in the Teesworks area (including Dorman Point, the Foundry, Lackenby and Steel House), other developments in the Teesworks area, large scale residential developments in the immediate surrounding area and industrial and infrastructure schemes.

14.3 The assessment has been undertaken in two-stages; the first considers whether additional effects would arise from the five STDC applications in the Teesworks together without other schemes, compared with the effects of the development in isolation. The second stage considers whether there are any additional effects when the five applications are considered alongside the other identified schemes.

Stage 1 Assessment

14.4 Based on the information available, the first stage of the cumulative assessment shows that there are likely to be additional **Significant Adverse** effects arising from the five STDC developments together, in relation to Biodiversity and Ecology, Noise and Vibration and Green House Gas Emissions and Landscape and Visual Impact. Additional **Significant Beneficial** effects are predicted in relation to socio-economics.

14.5 The potential effects in relation to Biodiversity and Ecology is based on the net loss of habitats and species on multiple sites. As set out at above, STDC is in the process of publishing its Environment and Biodiversity Strategy and this is intended to co-ordinate the off-site compensation approach for most developments in the Teesworks area, including the five applications considered in the assessment. The potential noise impacts can be controlled to a level considered to be non-significant through the implementation of best practice measures included within the Framework CEMP. The potential impacts on Green House Gas emissions arise during operation of the five developments, and are highly dependent on the scale of transport emissions associated with the end users. It is expected that once end users are known, a site wide energy strategy will be developed to limit impacts. There are ongoing discussions regarding other potential transport mitigation measures.

Stage 2 Assessment

14.6 Based on the information available, the second stage of the cumulative assessment shows that there are likely to be further additional Significant Adverse effects arising from the additional developments identified. In addition to those identified during the stage 1 assessment, additional likely significant adverse effects are identified in relation to Transport, Noise and Vibration and Greenhouse Gas Emissions.

14.7 The potential impacts in relation to transport arise during operation of the developments, and whilst measures to reduce the scale of the effects have not been proposed, it is expected that such measures will be discussed throughout the determination of the planning application. The

potential noise impacts can be controlled to a level considered to be non-significant through the implementation of Framework CEMP measures and site specific measures for three of the STDC development sites, including Long Acres, the Foundry and Steel House. The potential impacts on Green House Gas emissions also arise during operation of the developments, and are highly dependent on the scale of transport emissions associated with the end users. It is expected that once end users are known, a site wide energy strategy will be developed to limit impacts.

15.0 Mitigation and Monitoring

15.1 The EIA process has identified the need for the preparation and agreement of a number of documents should permission be granted for the development that will ensure the conclusions of the ES can be secured and that the effects are negligible or can be kept to an absolute minimum. The documents identified include:

1 During the construction period: Risk Assessment Method Statements, A Construction Traffic Management Plan, a Construction Logistics Plan, a Dust Management Plan, a Health and Safety Plan and a Construction Stage Surface Water Management Plan as requirements of the Framework CEMP (see paragraph 3.11); and a Method Statement for works to the onsite watercourse(s), a Reptile Mitigation Strategy, Site Waste Management Plan, a Piling Risk Assessment, a risk assessment to determine likelihood of noise and vibration impacts from piling, a Drainage Strategy, a Construction Phase Groundwater Management Plan, a detailed Remediation Strategy, a Materials Management Plan, a UXO Risk Assessment and a Construction Waste Management Plan; and

2 During the operation period: a Framework Travel Plan, Occupier Travel Plans (for each occupier), a detailed Flood Risk Assessment, Drainage Impact Assessment with drainage strategy, a Surface Water Management Plan, a Ground Water Management Plan, a Water Framework Directive Assessment, a Remediation and Phasing Plan (re realignment of watercourse(s)), an Operational Energy Strategy and an Operational Waste Management Plan.

15.2 These documents, and a range of other important mitigation measures, will be secured by way of an appropriately worded planning condition on the decision notice for the application, should the application be granted.

16.0 Availability of the Environmental Statement

16.1 A paper or electronic copy of the ES and Non-Technical Summary ('NTS') can be obtained from Lichfields (www.lichfields.uk). Reasonable copying charges will apply for a hard paper copy of the full ES.

16.2 Information on the planning application and ES can be viewed at https://www.redcar-cleveland.gov.uk. All comments on the planning application and ES should be submitted to RCBC.

17.0 Key Scheme Plans

17.1 [see overleaf]

Long Acres - Development Parameters

Development Parameter	Amount / Use
Use Class	B2 (General Industry) B8 (Storage or Distribution) E (Office)(maximum of 10% of overall floorspace)
Maximum Floorspace	185,806 m^2 / 1999,999 sqf
Maximum Building Height	36m
Finished Floor Level	Minimum 5.2m AOD
Maximum Development Height	43.5m AOD
Access	Access is reserved and details will be submitted at the Reserved Matter stage of the planning process. An indicative location is shown on the Parameters Plan

REV	BY	DATE	NOTE
A	LC	19/11/20	ACCESS ADDED, NOTES AMENDED
B	LC	03/12/20	HATCH UPDATED

N

USE: B2 / B8 / E
FFL: MINIMUM 5.2m AOD
MAX DEVELOPMENT HEIGHT: 43.5m AOD

SITE ACCESS

KEY

- Total Site Area: 67.05 ha / 165.68 acres
- Potential Development Area
- Potential Access Area

0 100 200 300 400 500m

pod

TOFFEE FACTORY | NEWCASTLE-UPON-TYNE | NE1 2DF | 0191 495 7700 | INFO@PODNEWCASTLE.CO.UK

PROJECT:
SOUTH TEES, REDCAR
LONG ACRES

DRAWING TITLE:
PROPOSED PARAMETER PLAN

CLIENT:	STATUS:				
STDC	PLANNING				
SCALE:	SHEET SIZE:	DATE:	DWN BY:	CHECKED BY:	
1:2500	A1	11:20	LC	MEC	
PROJECT NO:	DRAWING NO:			REVISION:	
1401-TM	LA-SD-10.01			B	