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**Lackenby
Ecological Impact Assessment**

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1. Introduction

1.1 This document has been prepared by INCA on behalf of South Tees Development Corporation (STDC) in connection with an outline planning application for Use Classes B2 (General Industry), B8 (Storage and Distribution) and E (Office) (maximum 10% of overall floorspace) within the Lackenby portion of its Masterplan (known as the Teesworks area).

1.2 This report assesses the ecological impact of the proposed development taking into account embedded mitigation and other mitigation measures to determine residual effects. It further proposes compensatory measures to ensure no net loss of biodiversity.

1.3 This chapter has been written with reference to the Chartered Institute of Ecology and Environmental Management ('CIEEM') guidelines for Ecological Impact Assessment ('EcIA') [i].

The assessment process involves:

- i Identifying and characterising impacts;
- ii Incorporating measures to avoid and mitigate (reduce) these impacts;
- iii Assessing the significance of any residual effects after mitigation;
- iv Identifying appropriate compensation measures to offset significant residual effects; and
- v Identifying opportunities for ecological enhancement.

1.4 Impacts are actions that result in changes either positive or negative to ecological features. Effects are the outcomes for those features. Both positive and negative impacts of the proposed development are identified within this assessment and defined in terms of their effects on ecological features.

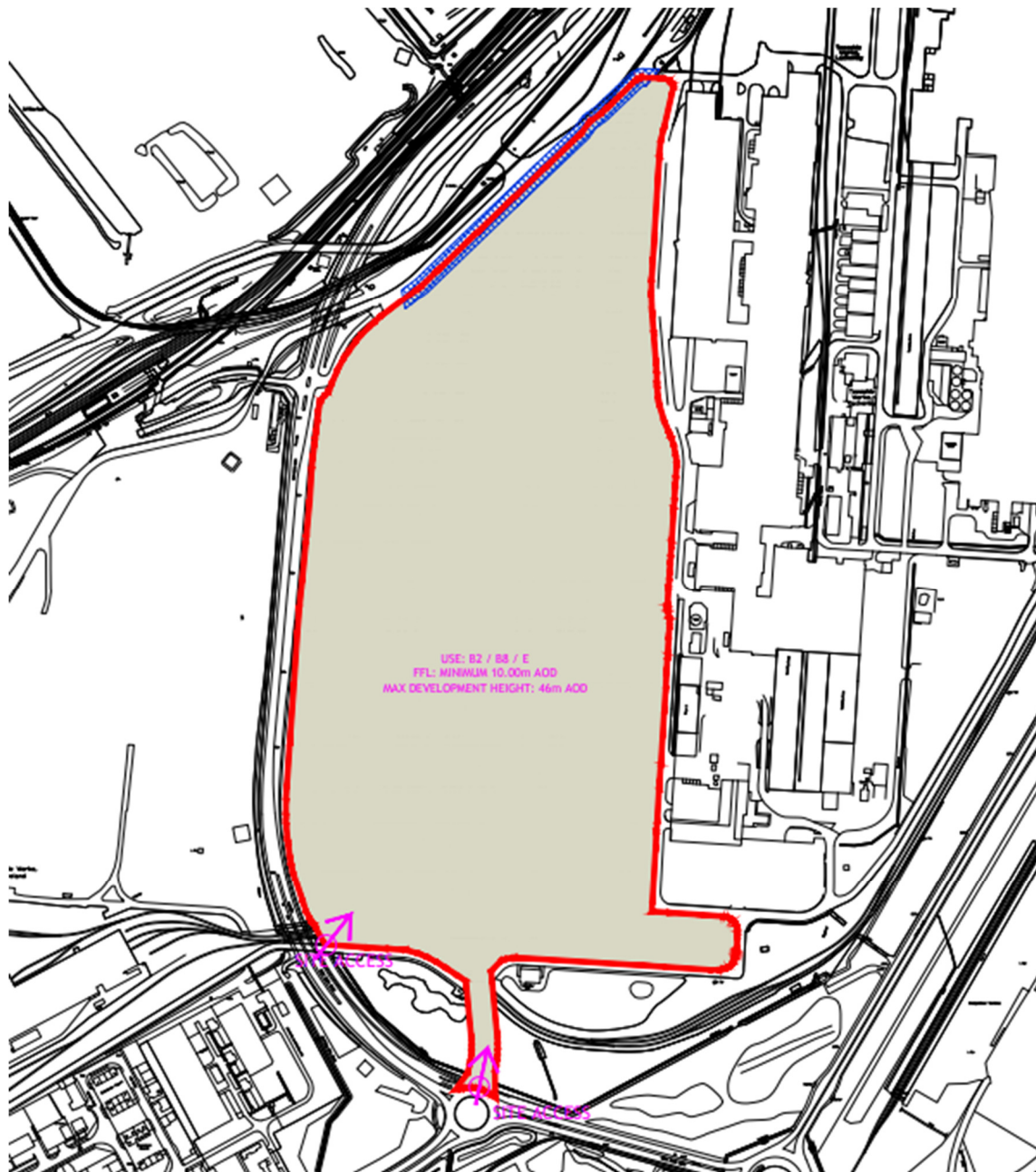
2. Project description

2.1 The draft description of the proposed development is as follows: "Outline planning application for the development of up to 92,903 sqm (gross) of general industry (Use Class B2) and storage and distribution facilities (Use Class B8) with office accommodation (Use Class E), HGV and car parking and associated works. All matters reserved." The total development site area is 35.8ha and is shown in Figure 1.

2.2 The development site is approximately rectangular in shape and is defined by existing surrounding road infrastructure. The site is largely occupied by buildings and structures associated with the former SSI BOS and CONCAST steelmaking facilities and former Tata Steel's vacant coil plate mill. Prior to its use for steelmaking the site had not been used for industry and was open fields up to the mid-1950s. While most of the site is covered by buildings, structures or hardstanding, there is some scrub vegetation in the south-eastern part of the site and in the northern corner. The buildings on the site are mostly large industrial structures, although there are also a few smaller brick-built installations. Other structures on the site include tanks, chimneys, industrial pipework and conveyors. To the south of the central cluster of industrial sheds, the ground cover includes several mounds of material associated with former uses on the site. A redundant railway line is also present on the south-western and northern parts of the site. The internal STDC road network also traverses the site. A perimeter road runs in a north-south direction along the western boundary of the site, and various spurs into the site connect to the former industrial buildings and infrastructure.

2.3 The Boundary Beck runs in a north-south direction across the eastern side of the site via an underground culvert. A cross connector, which links the Boundary Beck to the Kinkerdale Beck also via an underground culvert, is present at the northern limit of the site. Water infrastructure present comprises: potable water supply pipes skirting the north-western edge of the site and crossing the northern part of the site in an east-west direction; industrial water mains beneath the southern, western and north-western boundaries of the site and extending southwards under the eastern part of the site; and an NWL water main present under the western edge of the site running in a north-south direction.

Figure 1. Plan of Lackenby, showing red line boundary and potential development area (shaded)



3. Scope of the assessment

3.1 This assessment covers all Valued Ecological Receptors (VERs) that are found in the wider Teesside area and which have the potential to be present on the site or else be affected by the development.

3.2 In assessing the impacts of a proposal the geographical extent over which those impacts on VERs might potentially be significant needs to be considered; this is referred to as the Zone of Influence ('ZOI'). The ZOI for the proposed development will vary depending on specific factors such as the ecology of the receptor, the sensitivity of the receptor to the potential impacts of the proposed development and potential pathways to the receptor. The conservation importance of the receptor also influences the extent of the ZOI, for example, the ZOI over which potential impacts on internationally designated sites would be much greater than that of widespread habitats and species. For the purposes of this assessment, the following ZOIs have been used.

- vi internationally - 10km from the closest site perimeter;
- vii nationally designated sites – 5km from the closest site perimeter;
- viii locally designated sites and Priority Habitats – 2km from the closest site perimeter;
- ix protected species and Priority Species – The ZOI is dependent in part on the dispersal ability of the species, i.e. its potential to reach the site from its closest breeding population, therefore the ZOI is considered individually for each species in terms of its proximity to the site; and
- x widespread species and habitats – site only.

4. Legislative and Planning context

Legislation

4.1 The following legislation is relevant to this chapter:

The Conservation of Habitats and Species Regulations 2017 [ii] (hereafter referred to as ‘Habitats Regulations’);

Wildlife and Countryside Act (WCA) 1981 (as amended) [iii]; and

Natural Environment and Rural Communities (NERC) Act 2006 [iv].

4.2 The Environment Bill 2019-2021 [v] is currently going through Parliament. The Bill as it stands includes a provision that Biodiversity Net Gain (‘BNG’) should be made a condition of the grant of planning permission. This will require developers to provide evidence of BNG, likely to be of a minimum 10%. It is understood that this will be demonstrated by the use of a Biodiversity Metric (‘BM’) developed by Defra. Once the Bill has received Royal Assent, there will be a two year transition before BNG is required to be implemented.

4.3 BNG is not yet, therefore, mandated through adoption of the Environment Bill and is expected to become mandatory in early 2023. It is the intention that the Environment & Biodiversity Strategy being developed by STDC will identify habitat enhancement schemes within and beyond the Teesworks area that can contribute towards BNG in future and provide a means of compensating habitat loss occurring from development schemes that proceed ahead of its finalisation.

4.4 Until the Environment Bill is enacted and reflected in national policy, full weight should be given to the policies of the Redcar and Cleveland Local Plan, 2018 [vi].

Planning Policy

4.5 The following planning policies are relevant to this assessment:

- i. Redcar and Cleveland Borough Council (‘RCBC’) Local Plan (statutory policy) [vi];
- ii. National Planning Policy Framework (‘NPPF’) [vii]; and
- iii. South Tees Area Supplementary Planning Document (‘SPD’) 2018 (non-statutory policy/material planning consideration) [viii];

5. Desk study

5.1 The desk study is based principally on data collected by INCA, which has carried out ecological surveys across almost all of the industrial land in the wider South Tees area over more than a 20 year period, including the entirety of the Teesworks area. INCA has been the main organisation collecting ecological data across the Teesworks area, accumulating a significant number of species records relevant to the site and the surrounding area. Therefore, it was considered more appropriate to use INCA data for this report than to consult the Environmental Records Information Centre North East.

5.2 Additional information on wildlife that is relevant to this assessment and is in the public domain has also been utilised.

Internationally designated sites

5.3 There are four internationally designated sites within a 10km radius of the site; the Teesmouth and Cleveland Coast Special Protection Area ('SPA') and the Teesmouth and Cleveland Coast Ramsar site; the North York Moor SPA and the North York Moors Special Area of Conservation ('SAC'). SPAs are designated under the EU Wild Birds Directive and SACs under the EU Habitats Directive. Ramsar sites are wetlands of international importance designated under the Ramsar Convention on Wetlands but which are afforded the same level of protection in policy terms in respect of new development as European sites. The Teesmouth and Cleveland Coast Ramsar site shares the same boundary as the Teesmouth and Cleveland Coast SPA except where the SPA includes a marine component. The intertidal element of the Teesmouth and Cleveland Coast SPA is also classed as a European Marine Site and shares its interest features with the SPA. The location, distance from the site, main interest features and size for each internationally designated site is given in Table 1.

Table 1. Internationally designated sites in relation to Lackenby

	Approx. Distance (km)	Map Ref	Site	Area (ha)
Teesmouth and Cleveland Coast SPA	0.8 N	various	Wintering and passage waterbirds, breeding populations of Avocet, Common Tern, Little Tern	12226.28
Teesmouth and Cleveland Coast Ramsar	2.3 W	various	Waterbirds, breeding populations of Avocet, Common Tern, Little Tern	2094.02
North York Moors SPA	9.0 km S	NZ591126	Breeding Golden Plover and Merlin	44094.98
North York Moors SAC	9.0 km S	NZ591126	Wet Heath; Dry Heath; Blanket Bog	44053.29

Teesmouth and Cleveland Coast SPA

5.4 The Teesmouth and Cleveland Coast SPA was first classified in 1995 for its numbers of European importance of breeding little tern *Sterna albifrons*, passage Sandwich tern *Thalasseus sandvicensis*, wintering red knot *Calidris canutus* and passage common redshank *Tringa totanus*, as well as an assemblage of over 20,000 waterbirds. The SPA was updated in 2000 to include additional areas of coastal and wetland habitats important for waterbirds.

5.5 As of the commencement of a formal consultation in 2019, the SPA was further extended to include at sea foraging areas for breeding little tern and breeding and foraging areas for common tern *Sterna hirundo*, the latter being proposed as a new qualifying feature in the light of recent increases in the size of the breeding population within the site. The extension includes additional areas of terrestrial habitats such as wet grassland, saltmarsh, deep and shallow pools and intertidal areas important for other foraging and roosting waterbirds which were existing features of the SPA. Non-breeding Ruff *Calidris pugnax* and breeding pied avocet *Recurvirostra avosetta* have also been added as new qualifying features of the SPA.

5.6 The boundary of the SPA extension covers an area from Castle Eden Denemouth in the north to Marske-by-the-Sea in the south and includes the River Tees up to the Tees Barrage resulting in a revised SPA area of 12,226.28 ha. This increases the area of the existing SPA (1,251.50 ha) by 10,974.78 ha. The seaward boundary has been drawn to include waters out to around 3.5km from Crimdon Dene, to include the areas of greatest importance to the little terns at that colony, and out to around 6km offshore further south to include the areas of greatest importance to the common terns at the Saltholme colony.

Teesmouth and Cleveland Coast Ramsar

5.7 The existing Teesmouth and Cleveland Coast Ramsar boundary has also been extended, as with the SPA, to include the additional terrestrial wet grassland, saltmarsh, deep and shallow pools and intertidal areas for breeding and non-breeding waterbirds. Historically the Teesmouth SPA and Ramsar have effectively shared the same boundary and interest features however the Ramsar

extension will only cover those terrestrial extension areas of the SPA down to Mean Low Water and will not extend outside of the SPA extension. Although not a qualifying feature the Ramsar site citation recognises that the site supports a rich assemblage of invertebrates, including the following seven Red Data Book species: *Pherbellia grisescens*, *Thereva valida*, *Longitarsus nigerrimus*, *Dryops nitidulus*, *Macrolea mutica*, *Philonthus dimidiatipennis* and *Trichohydriobius suturalis*.

5.8 The qualifying features for the Teesmouth and Cleveland Coast SPA/Ramsar are given in Table D4.1. The number of birds in the Ramsar assemblage is greater than for the SPA as it includes mute swan *Cygnus olor* and greylag goose *Anser anser*, both of which are resident all year; the SPA only including migratory and wintering waterbirds.

North York Moors SPA

5.9 The North York Moors site qualifies by supporting breeding populations of European importance of the following species listed on Annex I of the Directive:

- Golden Plover *Pluvialis apricaria*, 526 pairs representing at least 2.3% of the breeding population in Great Britain
- Merlin *Falco columbarius*, 40 pairs representing at least 3.1% of the breeding population in Great Britain.

North York Moors SAC

5.10 The Annex 1 habitats that are a primary reason for selection of this site are Northern Atlantic wet heaths with *Erica tetralix* and European Dry Heaths. Blanket bog is another qualifying feature although not a primary reason for selection. The site is the largest continuous tract of upland heather moorland in England with the wet heath predominantly on the eastern and northern moors where the soil is less free-draining.

Nationally Designated Sites

5.11 There are two nationally designated sites within a 5km radius of the proposed development site; Teesmouth & Cleveland Coast Site of Special Scientific Interest ('SSSI') and Teesmouth National Nature Reserve ('NNR'). The NNR is a sub-set of the SSSI and comprises two parts; the intertidal mudflats at Seal Sands and the dunes and grazing marshes around North Gare. As it is a part of the SSSI with the same interest features then it is not described or assessed separately in this chapter.

5.12 The Teesmouth and Cleveland Coast SSSI is an amalgamation and rationalisation of the seven SSSIs which were formerly present in the Teesmouth area. It extends the original SSSIs geographically to underpin the non-marine elements of the extension to the Teesmouth and Cleveland Coast SPA and Ramsar (the SPA) and includes some additional, areas that are outside of the SPA as well as adding new interest features. The Teesmouth and Cleveland Coast SSSI was confirmed by Natural England in January 2019. The interest features of the SSSI and their relation to the site are shown in Table 2.

Table 2. Interest features of the Teesmouth and Cleveland Coast SSSI in relation to Lackenby

Qualifying feature	Principal locations with respect to Lackenby	Distance to Lackenby (km)
Jurassic Geology	Redcar Rocks	5.7 NE
Quaternary Geology	Seaton Carew	9.7 NW
Saltmarsh	Confined almost entirely to the Greatham Creek area north of the Tees. There is a very small amount at Bran Sands	5.5 NW Greatham Creek 4.0 N Bran Sands
Sand Dunes	Coatham – South Gare to Coatham Common, Seaton Dunes in Hartlepool.	4.1 N Coatham Dunes 5.4 N Seaton Dunes
Harbour Seal	Present in the estuary and river. Hauls out on Seal Sands and Greatham Creek.	4.8 NW Haul-out

	There are no haul out locations south of the Tees	
Breeding Birds	Present on all areas of suitable wetland habitat. South of the Tees, Coatham Marsh and South Gare are the key areas.	3.7 NE Coatham Marsh 4.1 N South Gare
Non -breeding Birds	Present on intertidal, freshwater and marine areas. North Tees Mudflats is the closest site holding significant numbers.	2.3 W
Invertebrate Assemblage	Coatham Dunes is of particular importance	4.1 N

5.13 The Teesmouth and Cleveland Coast SSSI is an extensive mosaic of coastal and freshwater habitats centred on the Tees Estuary, including sand dunes, saltmarsh, mudflats, rocky and sandy shore, saline lagoons, grazing marshes, reedbeds and freshwater wetlands. These habitats support rich assemblages of invertebrates, breeding seals and large numbers of breeding and non-breeding seabirds and waterbirds. The site is of special interest for the following nationally important features that occur within and are supported by the wider habitat mosaic:

Jurassic geology

5.14 The foreshore between Redcar Rocks and Coatham Rocks provides exposures of parts of the Lower Jurassic succession that are otherwise unexposed in the Cleveland Basin. These complement the younger Lower Jurassic successions exposed further south in Robin Hood's Bay and are sedimentologically distinct from rocks of the same age to the south of the Market Weighton Axis. The sequence of ammonite assemblages that occur here indicates that the succession is very complete and may provide a key for the comparison of other Hettangian and Sinemurian successions in the Northwest European Province.

Quaternary geology

5.15 Tees Bay includes a feature known as the 'submerged forest' which has been well studied on the foreshore at Hartlepool between Carr House Sands and just north of Newburn Bridge but which is also exposed south of Teesmouth on the foreshore at Redcar. On the Hartlepool foreshore there is complex of peats, estuarine and marine sediments deposited during the Holocene, which overlie glacial deposits from the last Ice Age. Within the peats there are tree stumps and branches. This sequence is also rich in fossils and contains archaeological evidence from the Mesolithic to the Romano-British periods. The palaeoenvironmental records at Hartlepool indicate changes in sedimentation due to fluctuations in relative sea level during the mid-Holocene, from approximately 7,000 to 3,000 years BP. The location of Hartlepool on the fulcrum between areas of crustal uplift to the north and subsidence to the south makes these sediments crucial in interpreting Holocene sea level change.

Saltmarsh

5.16 The Tees Estuary supports the largest area of saltmarsh between Lindisfarne and the Humber Estuary. Its saltmarshes show a succession of vegetation types, from pioneer marshes of glasswort *Salicornia* species and annual sea-blite *Suaeda maritima*, through common saltmarsh-grass *Puccinellia maritima* communities, to stands dominated by common couch *Elytrigia repens* and its hybrid with sea couch *Elytrigia atherica*, *Elytrigia x drucei*, at the limit of tidal influence. The common saltmarsh-grass communities are diverse and sea aster *Aster tripolium*, common sea-lavender *Limonium vulgare* and thrift *Armeria maritima* provide a colourful late summer display.

Sand dunes

5.17 The SSSI supports an extensive complex of dunes flanking both side of the Tees Estuary. It is the largest dune complex between Druridge Bay (Northumberland) and Spurn Point (East Yorkshire). There are two main dune systems: Seaton Dunes to the north of the Tees, and Coatham Dunes to the south. The dunes support a large area of semi-natural vegetation including the typical succession from strandline vegetation, occasionally including sea sandwort *Honckenya peploides* and sea rocket *Cakile maritima*, through foredunes of sand couch *Elytrigia juncea* and mobile dunes dominated by both marram *Ammophila arenaria* and lyme-grass *Leymus arenarius*, to fixed dune grassland with diverse swards, where herbs such as common bird's-foot trefoil *Lotus corniculatus*, lady's bedstraw *Galium verum*, fairy flax *Linum catharticum* and common restharrow *Ononis repens* form a prominent

component. The fixed dunes also support a number of scarce and threatened species, including purple milkvetch *Astragalus danicus*. There are a number of damp depressions in both dunes ('slacks'), which support a range of wetter vegetation types. A particularly prominent feature of some of the slacks are large and colourful stands of marsh orchids *Dactylorhiza* species and their hybrids. Some of the slacks show affinities with saltmarsh vegetation, with salt-tolerant species such as saltmarsh rush *Juncus gerardii*, sea plantain *Plantago maritima* and sea milkwort *Glaux maritima*. More consistently wet slacks support swamp communities. The dunes also show transitions to wetter habitats and saltmarsh.

Harbour seal

5.18 Harbour seals *Phoca vitulina* (also known as common seal) have lived at the mouth of the River Tees for hundreds of years but were lost from the estuary for much of the 20th Century, principally due to pollution. They recolonised the estuary in the 1980s and have subsequently established a regular breeding colony which is the only pupping site in north-east England. Harbour seals are present in the estuary and the tidal Tees throughout the year, with regular haul outs at Greatham Creek and Seal Sands. Pupping tends to occur in June and July on the intertidal mud of Seal Sands.

Breeding birds

5.19 The SSSI supports nationally important numbers of three breeding species: pied avocet *Recurvirostra avosetta*, little tern *Sternula albifrons* and common tern *Sterna hirundo*. Avocets and common terns both nest within the SSSI. Little terns from a large nearby colony at Crimdon (in the adjacent Durham Coast SSSI) use the SSSI for foraging and pre- and post-breeding gatherings, with only occasional recent nesting attempts. The extensive sand dunes, saltmarshes and wetlands across the site support a diverse assemblage of breeding birds. This includes a number of scarce and declining species, such as shoveler *Spatula clypeata*, pochard *Aythya ferina*, ringed plover *Charadrius hiaticula* and little ringed plover *Charadrius dubius*.

Non-breeding birds

5.20 The extensive areas of open water, grazing marsh and intertidal habitats within the site provide safe feeding and roosting opportunities for large numbers of waterbirds throughout the year. The SSSI is of special interest for its non-breeding populations of ten species (shelduck *Tadorna tadorna*, shoveler, gadwall *Mareca strepera*, ringed plover, knot *Calidris canutus*, ruff *Calidris pugnax*, sanderling *Calidris alba*, purple sandpiper *Calidris maritima*, redshank *Tringa totanus*, Sandwich tern *Thalasseus sandvicensis*) and an assemblage of over 20,000 non-breeding waterbirds. The assemblage comprises a wide variety of waterbirds, including (in addition to the aforementioned species that are reasons for notification in their own right), large numbers of wigeon *Mareca penelope*, lapwing *Vanellus vanellus*, black-headed gull *Chroicocephalus ridibundus* and herring gull *Larus argentatus*. Shoveler, gadwall and ruff are predominantly associated with the extensive freshwater wetlands of the site, while ringed plover, knot, sanderling, purple sandpiper and Sandwich tern mostly use the open coast. Redshank are widespread across the site, but the greatest foraging concentrations occur, along with the largest numbers of shelduck, on the intertidal mud of Seal Sands and Greatham Creek. Seal Sands and Bran Sands are also regularly used by ringed plover and knot.

Invertebrate assemblage

5.21 The extensive complex of sand dunes within the SSSI supports a nationally important invertebrate assemblage, including at least 14 threatened species. The assemblage is diverse and makes use of a wide range of niches, with a strong dependency on open but consolidated sand exposures within which to nest and hunt, as well as on flower-rich swards for nectar and pollen gathering. The assemblage does not include a high number of rarities but is a good example of its type in the north of its range. As such, species such as the tephritid fly *Acanthiophilus helianthi*, whose larvae feed within the capitula of carline thistle, occur towards the northern edge of their British range. The grayling butterfly *Hipparchia semele* is found here and remains a scarce species on this north-eastern coastal strip.

Locally designated sites

5.22 There is one locally designated site within 2km of the site, Eston Pumping Station Local Wildlife Site. Eston Pumping Station Local Wildlife Site is 1.9km north of the site and is designated for its mosaic of habitats, including “Urban Grassland”, a form of brownfield habitat.

Protected species

Great Crested Newt *Triturus cristatus* (GCN)

5.23 INCA carried out GCN surveys of all of the waterbodies on the Teesworks area in 2007 and of four ponds at Teesport in 2005. All proved to be negative for GCN. More recently INCA has undertaken environmental DNA surveys for GCN at Dorman Point and Long Acres on the Teesworks area in 2018 and 2019 respectively and at various waterbodies at the nearby Wilton Industrial Complex and Lazenby village over the period 2018-2020. All of these eDNA surveys have proved negative for GCN. There is an unconfirmed record of GCN from a pond on the golf course at Coatham, almost 5km to the north east of the site. This record was from 1988 and the pond where it was recorded no longer exists.

5.24 The closest current records of GCN to the site are at Lovell Hill Ponds which is approximately 5km away to the south east. There are records from the 1980s from Wilton Lake however this was surveyed in 2013 along with a further nine water bodies between Marske and the Wilton Industrial Complex for the Forewind Dogger Bank wind turbine proposal, all of which proved negative for GCN (Peak Ecology, 2013)[ix].

Bats

5.25 There are no records of bats over the site. INCA has recorded Common Pipistrelle *Pipistrellus pipistrellus* foraging in small numbers across various parts of the nearby industrial areas. Common Pipistrelle is more of a generalist in terms of its use of habitats than any other British bat species and in the North East is the only species that has been found to roost in urban areas (Jackson, 2012 [x]). No other species of bat have been reliably recorded as resident in the surrounding industrial areas although Noctule bat *Nyctalus noctula*, has been recorded by INCA as commuting over the Wilton area.

Reptiles

5.26 The only native reptile species which is found in the surrounding areas is Common Lizard *Zootoca vivipara*. It is confined to the coastal dune areas from South Gare to Coatham Common from where small numbers have spread into the northern end of the Teesworks area. Surveys by INCA have found small numbers of Common Lizards at various points on the Long Acres site, including a small population just north of The Fleet watercourse. The closest record of Common Lizard to the site is over 2.5km to the north and was of a single individual from Eston Pumping Station in 2009. All of the Common Lizard records are north of Dabholm Gut and separated from the site by watercourses and large areas of unsuitable habitat, making further spread unlikely.

Breeding Birds

5.27 The Teesworks area supports a wide diversity of breeding birds, including a variety of ground-nesting birds associated with the flat, open areas as well as bird species that are associated with the wetland features. Of particular relevance to the proposed development site, given that it mainly comprises large, disused buildings, is that several pairs of Barn Owl *Tyto alba* and Peregrine *Falco peregrinus*, breed on the Teesworks area.

Water Vole *Arvicola amphibius*

5.28 The most recent record of Water Vole on the Teesworks area is from an unspecified location on the former Corus site in 2007. Water Vole has been recorded from Coatham Marsh in the past though not within the past decade. INCA has carried out Water Vole surveys on Dabholm Beck, Kettle Beck and Kinkerdale Beck in the intervening period with negative results. The closest known recent location for Water Voles is on Spencer Beck approximately 3km to the south west of the site, though Water Voles are not regularly present on Spencer Beck.

Priority and other notable species

European Hedgehog *Erinaceus europaeus*

5.29 Hedgehog distribution and relative abundance is most easily deduced by their occurrence as road casualties. They are rarely encountered as road casualties on the A1085 trunk road, which is probably a reflection of the small and isolated nature of areas of suitable habitat for them in this area.

Brown Hare *Lepus europaeus*

5.30 The industrial sites on Teesside are thought to support some of the largest populations of Brown Hare in north east England due to the combination of extensive grassland areas and lack of disturbance. Brown Hare is common across the Teesworks area.

Common Toad *Bufo bufo*

5.31 Common Toad has been recorded as breeding in most ponds in the Teesworks area including on the "Millenium Pond", which is immediately adjacent to the site.

Dingy Skipper butterfly *Erynnis tages*

5.32 There have not been any targeted surveys for butterflies on the site however Dingy Skipper is known to be present in regionally significant numbers when assessed across the entire Teesworks area.

Grayling butterfly *Hipparchia semele*

5.33 There have not been any targeted surveys for butterflies on the site however Grayling is known to be present in regionally significant numbers when assessed across the entire Teesworks area.

Other invertebrates

5.34 There have been no targeted surveys for moths or other invertebrates on the site. Certain parts of the Teesworks area are important for some groups of invertebrates but those are associated with specialist habitats such as Open Mosaic Habitats or waterbodies.

Invasive Non-Native Species (INNS)

5.35 No INNS have been recorded on the site however it is known that some terrestrial species are scattered across the Teesworks area, namely Japanese Knotweed *Fallopia japonica*, Japanese Rose *Rosa rugosa*, and various *Cotoneaster* species.

6. Field survey methodology

6.1 The site was visited in May 2019. Weather conditions at the time of the survey were sunny, with a gentle breeze.

6.2 The purpose of the survey was to define the nature of the habitats present and to assess the condition of each habitat so that a biodiversity metric could be applied. Only the vegetated parts of the site were visited.

6.3 In addition to classifying the habitats according to JNCC Phase 1 categories [xi], notes were taken on the topography, substrate and key plant indicator species for each habitat. No targeted surveys were undertaken for any taxa however notes were made of any notable species seen and of the potential for notable species to be present. Notwithstanding that no species surveys were undertaken, the time of year and the weather conditions were suitable for many species to be evident if present.

6.4 The site visit was undertaken by Ian Bond CEnv MCIEEM, who is an ecologist with INCA. He has over 20 years' experience of working in an ecological role on Teesside, which includes 12 years as a local authority ecologist. He is an experienced surveyor for vascular plants, all terrestrial vertebrates, Lepidoptera and Odonata.

7. Field survey results

Habitats

7.1 The semi-natural vegetation on the site is confined to the southern boundary.

7.2 The majority of the vegetation, approximately 2ha, would fit with the Phase 1 category (J1.3) Ephemeral/ short perennial. The substrate in this habitat is blast-furnace slag, which is flat and had previously been laid down as hard standing. The vegetation is somewhat sparse with significant areas of bare ground and very little grass. Both Bird's-foot Trefoil *Lotus corniculatus*, and Hawksbeard *Crepis sp.*, were frequent though overall the diversity of plant species characteristic of that type of habitat was moderate. A small amount of scattered scrub is colonising this area.

7.3 Adjacent to the Ephemeral/ short perennial habitat there approximately 0.1ha of young, self-sown mixed scrub.

7.4 The proposed development site includes a short road link. The road link would cut through 0.1ha of what appears to have originally been amenity grassland, though it is no longer managed as such. The road link would also involve the removal or approximately 0.1ha of broad-leaved woodland. The woodland is of plantation origin so is of even age and structure. It comprises a mixture of native broad-leaved trees and is approaching maturity.

7.5 The proposed road route runs immediately adjacent to the pond known as "Millenium Pond" but does not intrude on the pond itself.

Species

7.6 Single examples of each of Dingy Skipper butterfly and Brown Hare were seen on the site. No other protected, priority or otherwise notable species were seen.

7.7 No INNS were recorded.

7.8 Other than some limited potential for breeding birds and for the terrestrial phase of amphibians associated with adjacent pond, there appeared to be no suitable habitat for other protected, priority or otherwise notable species.

8. Assessment of baseline ecological conditions

Internationally designated sites

8.1 A Habitats Regulations Assessment ('HRA') has been completed for the proposed development, as set out under Regulation 63 of the Habitats Regulations.

8.2 Stage 1 of a HRA involves screening to identify the potential for impacts to have likely significant effects. The following impacts were identified at Stage 1 as having the potential to have a likely significant effect:

- i. Loss of supporting habitat caused by the proposed development;
- ii. Changes to flightlines or sightlines for waterbirds occasioned by the proposed development;
- iii. Disturbance caused to waterbirds caused by the proposed development;
- iv. Discharges to water caused by the proposed development; and
- v. Emissions to air caused by the proposed development.

8.3 The HRA Stage 2 assessment (Appropriate Assessment) considers those potential impacts identified at Stage 1 and assesses whether there would be a likely significant effect from each. This assessment takes into consideration the embedded mitigation measures. The Stage 2 Appropriate Assessment concluded that, "the proposed development will not cause adverse effects to the integrity of the Teesmouth and Cleveland Coast SPA and Ramsar site, either alone or in combination with other

plans or projects, provided that the embedded mitigation measures specified in the application are satisfactorily delivered.”

8.4 As no additional mitigation is required beyond the embedded mitigation measures to mitigate the potential impacts identified in the HRA, the potential impact to these designated sites and their qualifying features will not be further assessed in this EcIA and reference should, instead, be made to the HRA.

Teesmouth & Cleveland Coast SSSI

8.5 The Teesmouth & Cleveland Coast SSSI underpins the SPA/Ramsar. Therefore it can be concluded on the basis of the HRA that there would be no adverse effect on those interest features of the SSSI that it shares with the SPA/Ramsar.

8.6 The SSSI includes some interest features and areas that are in addition to those of the SPA/Ramsar. Those additional features that are within the 5km ZOI are; saltmarsh, sand dunes, Harbour Seal, the assemblage of breeding birds associated with wetlands and the invertebrate assemblage associated with sand dunes. Of these the closest is the breeding bird assemblage at Coatham Marsh, 3.7km NE of the site. Given the distances involved and the lack of pathways given the embedded mitigation in the application, it is concluded that there would be no effects on Teesmouth and Cleveland Coast SSSI.

Locally Designated Sites

8.7 No pathways have been identified between the site and the interest features of the Eston Pumping Station LWS therefore it is concluded that there would be no adverse effects on Locally Designated Sites.

Species

Great Crested Newt (GCN)

8.8 As GCN appears to be absent from the surrounding South Tees area, despite extensive survey effort, it is therefore considered to be absent from the site with no realistic potential for it to colonise.

Bats

8.9 There is a negligible amount of suitable habitat for bats on the proposed development site though small numbers would be expected to forage over the Millennium Pond and the strip of woodland plantation that borders Tees Dock Road and the A1085 trunk road.

8.10 The buildings on the site are of negligible roosting potential for bats as they are either metal or else single skin brickwork with a concrete roof, neither of which provide any suitable crevices for bats to roost in. Nevertheless as no detailed inspections of buildings have been carried out for bat roosting potential it cannot be ruled out at this stage that there may be cladding or fascias on certain of the buildings that could support roosting Common Pipistrelle. However even if this were the case then it is likely to be a roost of low importance as the habitats in the surrounding area would be quite limited in terms of providing foraging areas for bats.

Reptiles

8.11 The habitat on the site is of low suitability for reptiles. Given that reptiles have only been recorded in the north of the Teesworks area and the limited opportunity for dispersal from there then reptiles are considered to be absent from the development site.

Breeding Birds

8.12 There is potential for very limited numbers of breeding birds associated with the small area of scrub and woodland on the site. It is possible that a pair of ground nesting birds could breed in the area of Ephemerall/ short perennial habitat. There would appear to be potential for both Peregrine and Barn Owl to nest in certain of the buildings on the site. Both of these species are listed under

Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) which provides additional protection whereby it is an offence to intentionally or recklessly disturb adults and their young at, on or near an active nest.

Water Vole

8.13 There is no suitable habitat for Water Vole on the site itself however there is a small amount of potentially suitable habitat, enough to support only a few individuals, on the adjacent Millennium Pond and the daylighted section of Boundary Beck. The intervening area between the nearest recent record of Water Vole at Spencer Beck and the Teesworks area does not appear conducive to Water Vole dispersal so it is unlikely that the species could colonise the Teesworks area and is therefore considered to be absent.

Hedgehog

8.14 The amount of suitable habitat for Hedgehog on the site is negligible therefore Hedgehog is considered to be effectively absent.

Brown Hare

8.15 Although a single Brown Hare was observed on the site, the site in itself is too small to support the species so its presence is assessed as being transient and part of a wider territory.

Common Toad

8.16 It is possible that a proportion of the Common Toad population associated with the adjacent Millennium Pond would use the terrestrial habitat on the site. However, it is considered that the woodland and grassland habitats along Tees Dock Road and the A1085 Trunk Road would provide better terrestrial habitat, so the site is considered to be of low importance for Common Toad.

Dingy Skipper

8.17 The Ephemeral/ short perennial habitat on the site is ideal for Dingy Skipper, as there is an abundance of Birds-foot Trefoil, it's larval food plant, combined with bare ground for basking. As this habitat covers 2ha it is assumed that it could support a population of Dingy Skipper large enough to meet the relevant criterion for designation as a Local Wildlife Site (Tees Valley Local Nature Partnership, 2010) [xii]

Grayling

8.18 The scarcity of grass in the Ephemeral/ short perennial habitat makes it of low suitability for Grayling therefore the site is assessed as being of negligible importance for this species.

Other Invertebrates

8.19 The compacted substrate and low habitat diversity would render the site of low suitability for other invertebrates of conservation importance.

Invasive Non-Native Species (INNS)

8.20 Although no INNS were seen on the site visit, it is feasible that scattered examples of certain Cotoneaster species that are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) could be present among the built up part of the site.

Habitats

8.21 The Ephemeral/ short perennial habitat does not have sufficient plant species diversity to meet the relevant criterion for designation as a Local Wildlife Site. It does however contribute to the overall resource of this habitat locally so is assessed as being of local, ie Borough, importance.

8.22 The small areas of mixed scrub, amenity grassland and plantation broad-leaved woodland are each assessed as being of negligible importance.

8.23 The Defra Biodiversity Metric 2.0 [xiii] has been applied to the habitats on the site to calculate the total number of biodiversity units (BDUs) associated with the site. Across all habitats on the site there would be a total of **11.3** BDUs, of which 9.9 BDUs are associated with the Ephemeral/ short perennial habitat.

8.24 The Millenium Pond, while not within the proposed development site, is immediately adjacent to the proposed access road. As such it could be affected by spills, dust, surface water run-off etc, from the proposed development. The pond, being outside of the proposed development area, has not been surveyed but it appears to be of at most moderate condition due to turbidity and bank erosion caused by waterfowl. However as a large waterbody, ca 0.75ha, it is important at a Local scale.

9. Assessment of the impacts of the proposal

9.1 It is assumed that all habitats on the site would be lost as a result of the construction phase of the proposed development. Therefore the populations of species on the site would be lost as a result of the loss of habitats.

9.2 The proposed development does not include the demolition of buildings or structures on the site, therefore there would be no effects on any species associated with the buildings as a result of the proposed development.

Mitigation

9.3 Adherence to measures outlined in a Framework Construction Environment Management Plan (CEMP) will form part of the embedded mitigation for the proposed development during the construction phase. With regards to biodiversity and ecology the CEMP will include the following measures:

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

9.4 As it is assumed that all habitats will be lost during the construction process, no other on-site mitigation is possible.

9.5 Mitigation measures identified in the CEMP to prevent substances from entering watercourses will be applied to the Millenium Pond.

Residual effects.

9.5 With the embedded mitigation in place the residual effects that are of greater than negligible significance are:

- i. The loss of a population of Dingy Skipper butterfly that is potentially of County importance;
- ii The loss of an area of 1.96ha of Ephemeral/ short perennial habitat of local importance; and
- iii The loss of habitats totalling 11.3 Biodiversity Units.

10. Recommendations

Compensation

10.1 Compensation refers to the process by which any residual effects after mitigation will be addressed. Compensation measures should be such that there will be no significant harm to biodiversity resulting from net loss of biodiversity in terms of the overall number of BDUs or to individual valued ecological receptors which would be considered significant in EIA terms or else of high distinctiveness.

10.2 Teesworks is currently preparing an Environment and Biodiversity Strategy that will guide future decisions by Teesworks as to the delivery of habitat enhancement schemes to off-set biodiversity loss resulting from its development and regeneration activities. This will quantify all of the BDUs which will be lost as a result of development across the entire Teesworks area. It will also calculate the number of BDUs that can be created in the Teesworks area including on land outside of the any areas proposed for development. The strategy will also identify any local, off-site habitat creation and enhancement measures that could be implemented, focusing primarily on the Tees estuary but potentially within the wider Tees catchment area if necessary. It is the intention that the Environment and Biodiversity Strategy will provide options and opportunities for Teesworks, and those developing within the Teesworks area, to meet any biodiversity value deficit arising from development.

10.3 As set out in section 9.5, there will be a net loss of 11.3 BDUs as a result of the proposed development which will be compensated for through the implementation of the Environment and Biodiversity Strategy.

10.4 As well as needing to compensate for the loss of the overall number of BDUs like-for-like compensation will be required for the population of Dingy Skipper butterfly.

Enhancement

10.5 Enhancement refers to any measures that are taken which increase biodiversity value above the baseline conditions, either of the overall biodiversity value or for specific VERs. In ecological terms it is known as Biodiversity Net Gain ('BNG').

10.6 In planning terms, BNG is currently aspirational rather than mandatory. Nevertheless opportunities will be sought to provide enhancements through the Environment and Biodiversity Strategy.

10.7 The Defra BM2.0 metric makes quantitative comparisons between habitats however there is scope to make significant qualitative enhancements for biodiversity that go beyond the habitat comparisons. In particular, the opportunity to take a strategic approach to habitat creation and enhancement across the entire Teesworks area can provide a level of ecological connectivity and functionality for species which is greater than the current situation whereby species have colonised the Teesworks area in an opportunistic and often disconnected way.

Monitoring

10.8 Monitoring will be required to ensure that identified compensatory and, where relevant, enhancement measures, have been achieved across an agreed timescale. This will include but not necessarily be limited to all compensatory measures set out in this section.

10.9 Monitoring will need to be in place for the duration of time that it is necessary to ensure that compensatory measures have achieved their objectives.

10.10 Monitoring will identify any measures that have not achieved, or are failing to achieve, their objectives and in such cases will provide remedial measures to address any shortfall.

10.11 The Environment and Biodiversity Strategy will include a management plan to provide the required compensation and, where possible, enhancement measures. The actions of the management plan will therefore form the focus of the monitoring, with the monitoring schedule provided as part of the management plan.

11. Conclusion

11.1 The proposed development site is of low biodiversity value overall.

11.2 In total, across all habitats on the site, the number of BDUs has been calculated as 11.3.

11.3 The only Valued Ecological Receptor which would be classed as significant and requiring specific compensatory measures is the population of Dingy Skipper butterfly.

11.4 The development and implementation of an Environment and Biodiversity Strategy will ensure that compensatory measures are provided such that there is no net loss of biodiversity arising from the proposed development.

12. References

- i. CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal (2nd edn). CIEEM, Winchester.
- ii. The National Archives: The Conservation of Habitats and Species Regulations 2017 <http://www.legislation.gov.uk/ukxi/2017/1012/contents/made>.
- iii. The National Archives: Wildlife & Countryside Act 1981 <http://www.legislation.gov.uk/ukpga/1981/69>.
- iv. National Archives: Natural Environment and Rural Communities Act 2006. <http://www.legislation.gov.uk/ukpga/2006/16/contents>.
- v. Environment Bill, available: https://publications.parliament.uk/pa/bills/cbill/2019-2019/0003/cbill_2019-20200003_en_1.htm.
- vi. Redcar & Cleveland Borough Council [RCBC] (May 2018) Local Plan Adopted May 2018. <https://www.redcar-cleveland.gov.uk/resident/planning-and-building/strategic%20planning/Documents/Local%20Plan%20Adopted%20May%202018.pdf> .
- vii. Department for Communities and Local Government (2019) National Planning Policy Framework. <https://www.gov.uk/government/publications/national-planning-policy-framework--2> .
- viii. RCBC (2018) South Tees Area SPD. <https://www.redcar-cleveland.gov.uk/resident/planning-and-building/local-plan/Pages/South-Tees-Area-SPD.aspx> .
- ix. Peak Ecology (2013) Ecological Impact Assessment: Technical Report Dogger Bank Teesside A & B
- x. Jackson N., in Bond I., (2012). *Mammals, Amphibians and Reptiles of the North East*. Natural History Society of Northumbria. Newcastle.
- xi. Joint Nature Conservation Committee [JNCC] (2010) 'Handbook for Phase 1 Habitat Survey. A technique for environmental audit'. Revised re-print. JNCC, Peterborough.
- xii. Tees Valley Local Nature Partnership (2010) Guidelines for the selection of Local Wildlife Sites in the Tees Valley – version 7
- xiii. Natural England (2019) The Biodiversity Metric 2.0: Auditing and accounting for biodiversity value. Technical Guide

