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Steel House, Mounds Removal Ecological Impact Assessment

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INCA
Industry Nature Conservation Association

Contents

Version	Revision	Prepared by	Checked by	Date
1.0	A	Graham Megson	Phil Roxby	12/05/2022

1. Introduction

1.1 This document has been prepared by INCA on behalf of Teesworks to support a planning application for a project entitled: Steel House, Mounds Removal and access road.

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

1.3 This report 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:

- Identifying and characterising impacts;
- Incorporating measures to avoid and mitigate (reduce) these impacts;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- 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. The impacts of the proposed development are identified within this assessment and defined in terms of their effects on ecological features.

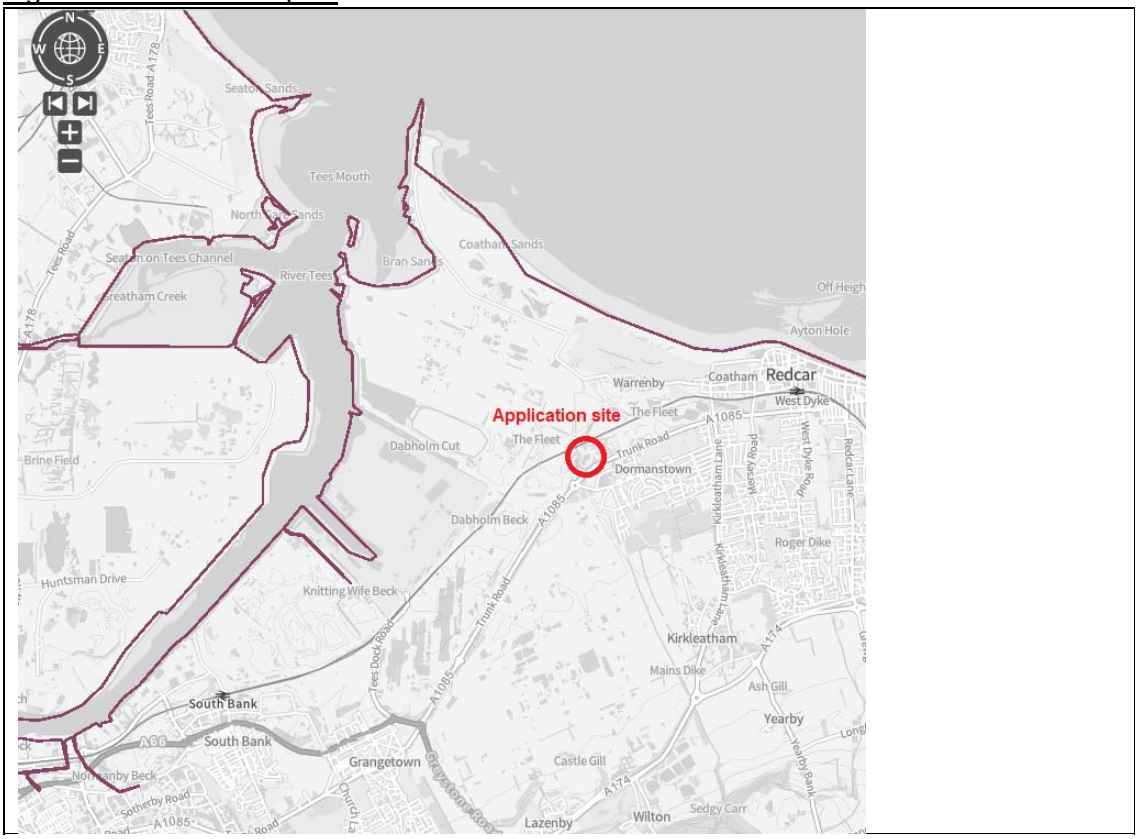
2. Project title and description

2.1 The title of this Teesmouth project is Steel House, Mounds Removal and access road.

2.2 The project involves the excavation of mounds of material from previously developed [industrial] land adjacent to the building known as Steel House. Once excavated, the mound material will be removed from the site by HGVs, leaving a flat surface in readiness for site preparation works for future development.

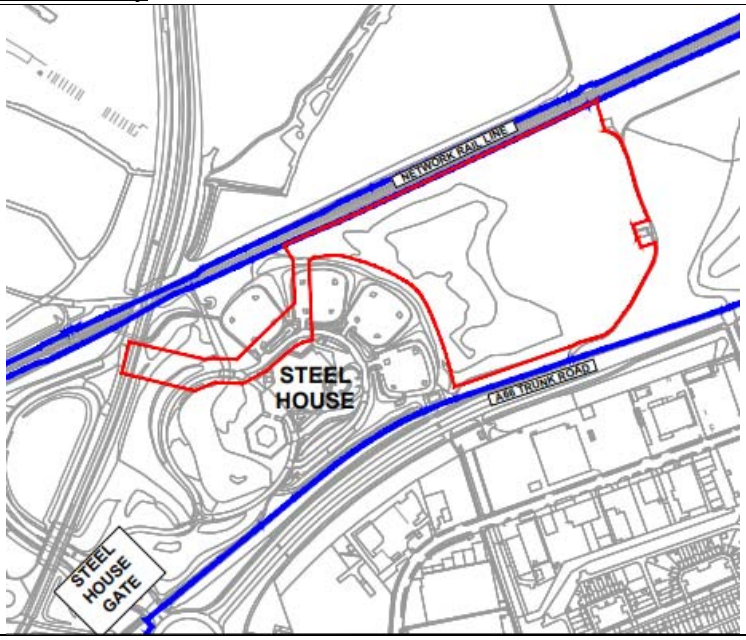
2.3 The site is in the borough of Redcar and Cleveland and is on industrial land west of Dormanstown (Figure 1), at Ordnance Survey grid reference NZ 576-241. It is part of the much larger Teesworks site, for which there is a master plan [viii]. The site covers approx. 9.2 Ha. The site lies at the south-east end of the Teesworks area with the Coatham Marsh nature reserve immediately adjacent to the east. Parts of Coatham Marsh nature reserve are included in the Teesmouth and Cleveland Coast (T&CC) Special Protection Area (SPA), Ramsar site and SSSI. The Local Planning Authority (LPA) is Redcar and Cleveland Borough Council.

Figure 1. Site location plan



2.4 The red line boundary for the development site covers a roughly rectangular area of mounds and an access route through the former Steel House car park and along the northern side of the Steel House lake (Figure 2).

Figure 2. Red line boundary



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 are considered would be much greater than that of widespread habitats and species. For the purposes of this assessment, the following ZOIs have been used:

- internationally designated sites - 10km from the closest site perimeter;
- nationally designated sites – 5km from the closest site perimeter;
- locally designated sites and Priority Habitats – 2km from the closest site perimeter;
- 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
- widespread species and habitats – site only.

3.3 This assessment has assumed a worst-case scenario that all the habitats on the site will be removed as part of the development.

4. Legislative and Planning context

<u>Legislation</u>

4.1 The following legislation applies:

- The Conservation of Habitats and Species Regulations 2017 [ii] ((as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and hereafter referred to as 'Habitats Regulations');
- Wildlife and Countryside Act (WCA) 1981 (as amended) [iii];
- Natural Environment and Rural Communities (NERC) Act 2006 [iv] and;
- The Environment Act 2021 [v]

4.2 The Environment Act 2021 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 a minimum of 10% BNG. This will be demonstrated using a Biodiversity Metric 3.1 developed by Defra with BNG expected to become mandatory in 2023 [xiii].

4.3 A Teesworks Environment and Biodiversity Strategy has been developed by Teesworks to demonstrate their commitment to delivering habitat and biodiversity enhancements which aligns with the national approach to biodiversity, including the Environment Act 2021. The Strategy has identified habitat creation and enhancement schemes within and beyond the Teesworks area that can contribute towards BNG and provide a means of compensating habitat loss occurring from the development.

4.4 Until the Environment Act is 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:

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

5. Desk study results

5.1 The desk study is based principally on data collected by INCA, which has carried out ecological surveys across almost all the industrial land in the wider South Tees area over 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.

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 two internationally designated sites within a 10km radius of the site; the T&CC SPA and the T&CC Ramsar site. SPAs are designated under the EU Wild Birds 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 T&CC Ramsar site shares the same boundary as the T&CC SPA except where the SPA includes a marine component. The intertidal element of the T&CC SPA is also classed as a European Marine Site and shares its interest features with the SPA. The closest part of the T&CC SPA/ Ramsar to the site is located at Coatham Marsh, which is 125m from the nearest part of the site. Coatham Marsh is important for its wetland habitats supporting non-breeding waterbirds.

Teesmouth and Cleveland Coast SPA

5.4 The T&CC SPA was first classified in 1995 for its numbers of European importance of breeding little tern *Sternula 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.

5.5 In 2020 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 Dene-mouth 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 RSPB Saltholme colony.

Teesmouth and Cleveland Coast Ramsar

5.7 The existing T&CC 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, Macroplea mutica, Philonthus dimidiatipennis* and *Trichohydnobius suturalis.*

Nationally Designated Sites

5.8 There are two nationally designated sites within a 5km radius of the proposed development site; T&CC 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.

5.9 The T&CC 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 T&CC SPA and Ramsar and includes some additional, areas that are outside of the SPA as well as adding new interest features. The T&CC 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 1.

Table 1. Interest features of the T&CC SSSI

Qualifying feature	**Principal locations with respect to Steel House**	**Distance to Steel House (km)**
Jurassic Geology	Redcar Rocks	2.4 NE
Quaternary Geology	Seaton Carew	9.2 NW
Saltmarsh	Confined almost entirely to the Greatham Creek area north of the Tees. There is a very small amount at Bran Sands	7.4W Greatham Creek 3.7 W Bran Sands
Sand Dunes	Coatham – South Gare to Coatham Common, Seaton Dunes in Hartlepool.	150m ENE Coatham Dunes 5.2 NW Seaton Dunes
Harbour Seal	Present in the estuary and river. Hauls out on Seal Sands and Greatham Creek. There are no haul out locations south of the Tees	5.2 W Haul-out
Breeding Birds	Present on all areas of suitable wetland habitat. South of the Tees, Coatham Marsh and South Gare are the key areas.	150m ENE Coatham Marsh 2.8 NW South Gare
Non -breeding Birds	Present on intertidal, freshwater and marine areas. Coatham Marsh is the closest site holding significant numbers.	150m ENE
Invertebrate Assemblage	Coatham Dunes is of particular importance	150m ENE

5.10 The T&CC 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

5.11 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

5.12 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 palaeo-environmental 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

5.13 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

5.14 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

5.15 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

5.16 The SSSI supports nationally important numbers of three breeding species: pied avocet, little tern and common tern. Pied 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

5.17 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, red knot *Calidris canutus*, ruff, sanderling *Calidris alba*, purple sandpiper *Calidris maritima*, common redshank, Sandwich tern) 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, red knot, sanderling, purple sandpiper and sandwich tern mostly use the open coast. Common 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 red knot.

Invertebrate assemblage

5.18 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

5.19 Local Wildlife Sites are designated by each local authority but are selected by a working group of the Tees Valley Local Nature Partnership, using version 7 of the site selection guidelines [xiv]. There are two Local Wildlife Sites (LWS) within 2km of the site boundaries:

- Coatham Marsh LWS is 150m to the east-north-east. The boundaries of the LWS are more extensive than those of the SPA and SSSI designations at Coatham Marsh as they extend south to the A1085 trunk road and are 150m from the applicaton site. In addition to the interest features which it shares with the SPA and SSSI, the LWS is also designated for Urban Grassland, Reedbeds and Vascular Plants. Although it has not been included in the citation of Coatham Marsh LWS, Harvest Mouse is also present, which is a further qualifying feature.

- Eston Pumping Station LWS is 1km west of the closest part of the site. Eston Pumping Station is designated for its mosaic of habitats including Urban Grassland, a form of brownfield habitat.

Protected species

Great Crested Newt *Triturus cristatus* (GCN)

5.20 There is possible breeding habitat for GCN immediately adjacent to the site in the form of Steel House Lake (however this contains fish rendering breeding unlikely). There is suitable terrestrial habitats within the site itself. GCN is absent in the surrounding area - INCA carried out GCN surveys of all of the waterbodies on the Teesworks area in 2007 and four ponds at Teesport in 2005. All proved to be negative for GCN. More recently, INCA has undertaken environmental DNA surveys for GCN at Long Acres and The Foundry on the Teesworks area, in 2019 and 2021 respectively, and at various waterbodies at the nearby Wilton Industrial Complex and Lazenby village over the period 2018-2020. All these eDNA surveys have proved negative for GCN. There is an unconfirmed record of GCN from a pond on the golf course at Coatham, approximately800m to the north of the site. This record was from 1988 and the pond where it was recorded no longer exists. The negative eDNA result from 2019 was from a pond within 200m of the unconfirmed 1988 record so it is unlikely on that basis that a population exists in this area.

5.21 The closest current records of GCN to the site are from Errington Woods and Lovell Hill Ponds which are both approximately 6km away to the south-east and south respectively. 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

5.22 There have been no bat surveys of the site itself. Three species of bat, Common Pipistrelle *Pipistrellus pipistrellus*, Daubenton's bat *Myotis daubentonii* and Noctule *Nyctalus noctula,* are known to forage over the adjacent Coatham Marsh. There is suitable foraging habitat for Common Pipistrelle on the site itself and for Daubenton's bat over Steel House Lake, so both would be expected to be present in those locations.

Reptiles

5.23 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 [x]. A number of these lizards were translocated to a part of Coatham Marsh,

approximately 300m east of the site in 2021. In 2021, INCA carried out a reptile survey of the site which proved negative.

Otter

5.24 Otter *Lutra lutra* is present on most suitable waterbodies and watercourses in the Teesside area. It has been recorded from Coatham Marsh and Lock Park and is known to have bred on Coatham Marsh. A juvenile Otter was found as a road casualty on the A1085, outside of Steel House in 2020. There is suitable habitat for Otter on Steel House Lake and the species is considered likely to be present there as part of a much wider territory.

Water Vole

5.25 There is potentially suitable habitat for Water Vole *Arvicola amphibius* at Steel House Lake however the species is no longer thought to be present in the Redcar area. It was formerly present on Coatham Marsh but there have been no records for over a decade. INCA has carried out Water Vole surveys of various water courses on the former Steelworks and Wilton sites over the past decade, all of which have proved negative. The closest record of the species within the past decade has been of occasional presence on Spencer Beck at Normanby, approximately 6km south-west of the site.

Breeding Birds

5.26 No breeding bird surveys have been carried out however Steel House lake and its marginal vegetation support part of the same assemblage of breeding birds of wetlands that form an interest feature of the SSSI. Little Grebe *Tachybaptus ruficollis*, has been recorded as breeding there in 2019. Mute Swan *Cygnus olor*, is present and likely breeds. When breeding, this latter species is part of the waterbird assemblage interest feature of the Ramsar site, however there is no suitable habitat to support any of the breeding bird interest features of the SPA.

5.27 The site will support a suite of widespread species and the Red Listed bird species Dunnock *Prunella modularis* and Willow Warbler *Phylloscopus trochilus* breed on the site. Other Red Listed species such as Grasshopper Warbler *Locustella naevia*, Skylark *Alauda arvensis* and Song Thrush *Turdus philomelas*, may breed on the site.

Whitethroat *Sylvia communis*, blackcap *Sylvia atricapilla*, willow warbler and chiffchaff *Phylloscopus collybita* Blackbird *Turdus merula* and Wren *Troglodytes troglodytes* breed on the site.

Non-breeding birds

Steel House Lake has the potential to support significant numbers of waterfowl. More than 60 Gadwall *Mareca strepera,* along with small numbers of other duck species were counted during a site visit in September 2020.

A communal roost of Jackdaws *Corvus monedula*, numbering approximately 1000 birds has been recorded in the woodland around Steel House. Both the waterfowl associated with the lake and the Jackdaw roost are of Local importance.

Priority and other notable species

European Hedgehog *Erinaceous europaeus*

5.28 European hedgehog has been recorded within the site itself.

Brown hare *Lepus europaeus*
5.29 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 has been recorded on the site.

Harvest Mouse *Micromys minutus*
5.30 Harvest Mouse occurs on the adjacent Coatham Marsh. There is some suitable habitat for the species on the site in the form of rank grassland.

Common toad *Bufo bufo*
5.31 Common toad has been recorded as breeding in most ponds in the Teesworks area and is likely to breed in Steel House lake and use the surrounding terrestrial areas.

Dingy skipper butterfly *Erynnis tages*
5.32 Dingy Skipper is present on the site, having been recorded in May 2021.

Other butterflies and moths
5.33 Grayling butterfly *(Hipparchia Semele)*, wall butterfly *Lasiommata megera*, small heath butterfly *Coenonympha pamphilus* and cinnabar moth *Tyria jacobaeae* all occur across much of the Teesworks site, South Gare, Coatham Dunes and Coatham Marsh.

European Eel *Anguilla anguilla*
5.34 Eels are present in Coatham Marsh, which they will access via The Fleet watercourse. As the watercourse on the site connects The Fleet to Steel House Lake then Eels are also likely to use that watercourse.

Invasive Non-Native Species (INNS)
5.35 Nuttall's Waterweed *Elodea nuttallii*, is present in abundance in Steel House lake and Floating Pennywort *Hydrocotyle ranunculoides* covers much of The Fleet. There have been no INNS surveys of the watercourse on the site but as it joins both waterbodies then it is likely that one or both species are present.

No terrestrial INNS have been recorded on the site, though various *Cotoneaster* species are present as isolated specimens across the Teesworks site.

6. Habitat survey

Survey details
6.1 Habitat surveys have been undertaken by INCA in May 2019 and again in June 2020, using the Joint Nature Conservancy Council Phase 1 Habitats Survey Handbook and guidance [xi] in addition to a suite of criteria devised by INCA to categorise the condition of the various types of habitat. The purpose of those surveys 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. In addition, the part of the site to the east of Steel House was visited on several occasions in spring 2021 to carry out a reptile survey and it was noted that this part of the site remained in the same condition as in 2019 and 2020. The surveys were carried out by Ian Bond, who is an Ecologist with INCA with over 20 years' experience of working in an ecological discipline on Teesside.

6.2 A further survey was carried out of the route of the haul road section of the site in May 2022 (Mark Morris, INCA). The purpose of this survey was to check that the habitats remained as surveyed in 2020 and to gather the required information to apply the Defra Biodiversity Metric 3.1 to the habitats on that part of the site (NB the part of the site east of

Steel House was assessed using an earlier version of the Defra metric to inform an earlier planning application (Ref: R2020/0823/ESM).

6.3 All surveys were carried out at a suitable time of year to assess the habitats on site, and it was possible to access all areas of the site. Therefore, it is considered that there were no significant limitations on the accuracy of the habitat survey.

7. Habitat survey results

7.1 Each habitat compartment is defined below and assigned a UK Habitats Classification [xii] category (Figure 3).

Habitat 1. UK Habitats Classification w1g Other Woodland, Broadleaved
The block of woodland to the east of Steel House and the other areas of trees between the car park bays has been planted as amenity planting and is now approaching maturity. Approximately 75% of the canopy is native broad-leaved trees with most of the remaining amenity trees species being White Poplar *Populus alba* or Poplar hybrids. As it is plantation woodland its structure is even aged and there is no shrub layer other than amenity shrub planting on the perimeters. There are no significant woodland indicator plants on the ground floor and there is minimal deadwood habitat. There is some natural regeneration, but this is in the form of certain trees species spreading beyond the limits of the original plantation, which provides something of an ecotone with the adjacent grassland.

Habitat 2. UK Habitat Classification (g3c5) Arrhenatherum neutral grassland
The bulk of the site consists of rank, species poor grassland growing across three large mounds. The nature of the vegetation would suggest that the mounds have been capped with clay or other topsoil. Young trees (notably whitebeam *Sorbus aria*) and scrub are starting to establish.

Habitat 3. UK Habitat Classification (s) Sparsely vegetated land
This is a narrow strip of land running parallel to the railway line. It is presumably on well drained substrate as the survey in May 2019 found that all the grass had already died back at that time of year, with the vegetation confined to a few species which can cope with drier conditions. Of such Hare's-foot Clover *Trifolium arvense,* was abundant and Bird's-foot Trefoil *Lotus corniculatus*, and Storksbill *Erodium cicutarium*, were frequent. Nevertheless, the plant species diversity overall was low. Dingy skippers were recorded in this compartment in 2021.

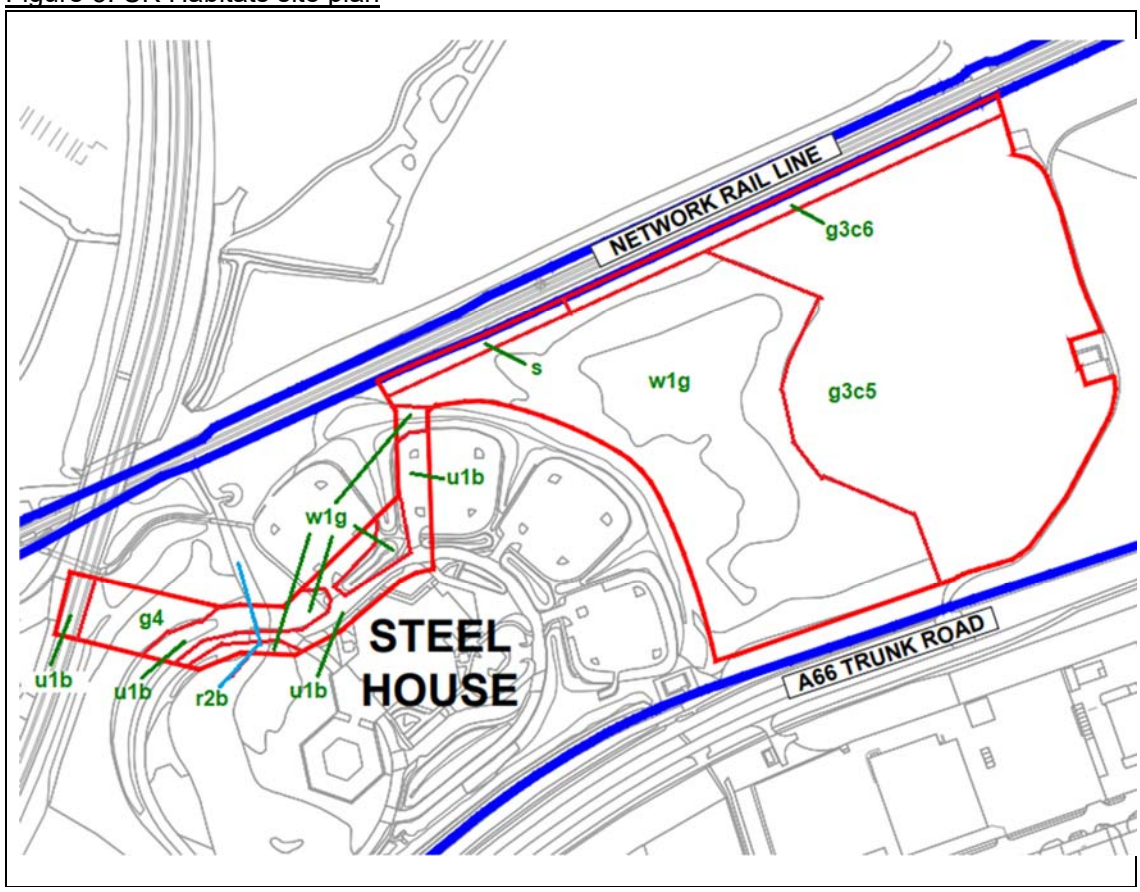
Habitat 4. UK Habitat Classification (r2b) Other rivers and streams
A narrow, slow-flowing, eutrophic watercourse crosses the narrow section of the application site. This supports several emergent plant species such as Reedmace *Typha latifolia.* The bed is silty and the banks well vegetated.

Habitat 5. UK Habitat Classification (g3c6) Lolium-Cynosurus grassland
Along the northern perimeter, abutting the railway line, is a section of rank grassland which contains a high proportion (*ca*: 50%) of robust herb species including Wild Carrot *Daucus carota*, Black Knapweed *Centaurea nigra*, and Tufted Vetch *Vicia cracca* (all frequent). Bird's-foot Trefoil; Red Clover *Trifolium pratense* and Restharrow *Ononis repens* are occasional. A small area has a more open sward consisting predominantly of Red Fescue *Festuca rubra*. This section is very herb-rich, *ca:* 75% coverage, but not very species-rich.

Habitat 6. UK Habitat Classification (g4) Modified Grassland
This is the amenity grassland between Steel House and the road. Wild Carrot, Bird's-foot Trefoil and Black Medick *Lupulina medicago* are frequent and Yarrow *Achillea millefolium* is occasional, but otherwise there are few herb species. Part or all this area is regularly mown.

Habitat 7. UK Habitat Classification (u1b) Developed land; sealed surface
An area of access road and car park is a sealed surface.

Figure 3. UK Habitats site plan



8. Assessment of baseline ecology

Each VER assessed as likely to be adversely affected is screened in and must be mitigated or compensated for (section 9).

Nationally designated sites
8.1 European designated Sites are screened in. A Habitats Regulations Assessment (HRA) has been completed for the proposed development, as set out under Regulation 63 of the Habitats Regulations 2017.

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

- Watercourse pollution from mobilised pollutants disturbed during earthworks and subsequently flowing into the SPA, either at Coatham Marsh or via the Coatham Sands coast.
- Dust from earthworks and construction activities.
- Nutrient deposition into the River Tees catchment via watercourses. Natural England issued initial guidance in 2022 on this issue, which is referred to as 'Nutrient Neutrality'.

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. Reference should be made to the HRA.

8.4 The T&CC SSSI underpins the SPA/ Ramsar and is screened in.

8.5 The SSSI includes some interest features and areas that are in addition to those of the SPA/ Ramsar. Those additional biological interest features that are within the 5km ZOI are; saltmarsh, sand dunes, the assemblage of breeding birds associated with wetlands and the invertebrate assemblage associated with sand dunes. The habitats could be impacted by dust and pollution and are screened in.

8.6 Emissions to air have been identified by Natural England as having the potential for an adverse effect on the T&CC SSSI. This is in terms of an increase in Nitrous Oxides (NOx) which would lead to eutrophication of certain habitats leading to increased vegetation growth. The principal emissions to air from the proposed development would be dust and particulates generated by ground works with no significant increase in NOx.

8.7 The closest breeding bird assemblage utilises the wetlands on Coatham Marsh which are within 150m of the site. Breeding birds are assessed as unlikely to be adversely affected (see HRA stage 1).

Locally Designated Sites

8.8 No pathways have been identified between the site and the interest features of the Eston Pumping Station LWS and there will be no adverse impacts on it.

Coatham Marsh LWS is assessed as likely to be impacted by the same indirect issues as the T&CC HRA, Ramsar and SSSI, which are:

- Watercourse pollution from mobilised pollutants disturbed during earthworks and subsequently flowing into the SPA at Coatham Marsh.
- Dust from earthworks and construction activities.
- Nutrient deposition into the River Tees catchment via watercourses. Natural England issued initial guidance in 2022 on this issue, which is referred to as 'Nutrient Neutrality'.

One locally designated site (Coatham Marsh) is screened in.

Species

Great Crested Newt

8.9 GCN is assessed as absent from the surrounding area, following extensive survey effort, and it is therefore considered to be absent from the site, with no realistic potential for it to colonise. GCN is screened out.

Bats
8.10 The development would result in the loss of some foraging habitat for Common Pipistrelles bats. The amount of habitat suitable for bats on the site is small compared to the area of suitable habitat across Steel House Lake, Coatham Marsh and the surrounding area. The small adverse impact on impact on the local bat population is assessed as acceptable. The trees to be removed are young mature with few cavities and no artificial boxes in them. It is assessed that there is minimal likelihood of these trees supporting roosting bats. Bats are screened out.

Reptiles
8.11 A survey in 2021 found no evidence of reptiles, therefore they are assessed as absent from the site. Reptiles are screened out.

Otter
8.12 Otter could occur in the Steel House Lake, however, as this is to be retained, it is assessed that this species will not be affected. Otter is screened out.

Water Vole
8.13 Water vole could occur in the Steel House Lake, however, as this species has not been recorded on the wider site or Coatham Marsh for several years, and as the lake is to be retained, it is assessed that this species will not be affected. Water vole is screened out.

Breeding birds
8.14 The development would result in the loss of a several breeding bird territories including some Red Listed and Amber Listed birds of conservation concern (BoCC). Breeding birds are screened in.

Non-breeding birds
8.15 It is assessed that these will not be affected, and non-breeding birds are screened out.

European hedgehog
8.16 The population is assessed as likely to be adversely impacted. European hedgehog is screened in.

Brown hare
8.17 The population of is assessed as likely to be adversely impacted. Brown hare is screened in.

Harvest Mouse
8.18 This species is assessed as unlikely to occur and is screened out.

Common toad
8.19 The population is assessed as likely to be adversely impacted. Common toad is screened in.

Dingy skipper butterfly
8.20 The population is assessed as likely to be adversely impacted. Dingy skipper is screened in.

Other butterflies and moths
8.21 The populations of Grayling butterfly, Wall butterfly, Small Heath butterfly and Cinnabar Moth are likely to be adversely affected. These species are screened in.

European Eel

8.22 It is assessed that this species will not be affected. European Eel is screened out.

Invasive Non-Native Species (INNS)
8.23 INNS are assessed as not being an issue and are screened out.

Habitats
8.24 As referred to above, the value of the onsite habitats on the majority of the site were calculated using the Defra Biodiversity Metric 2.0 for planning application R2020/0823/ESM. The calculation comprises the value of the habitats in the shaded area on Figure 4 below, and the results of the calculation are shown in Table 2.

Figure 4: Area included in biodiversity baseline value for planning application R2020/0823/ESM

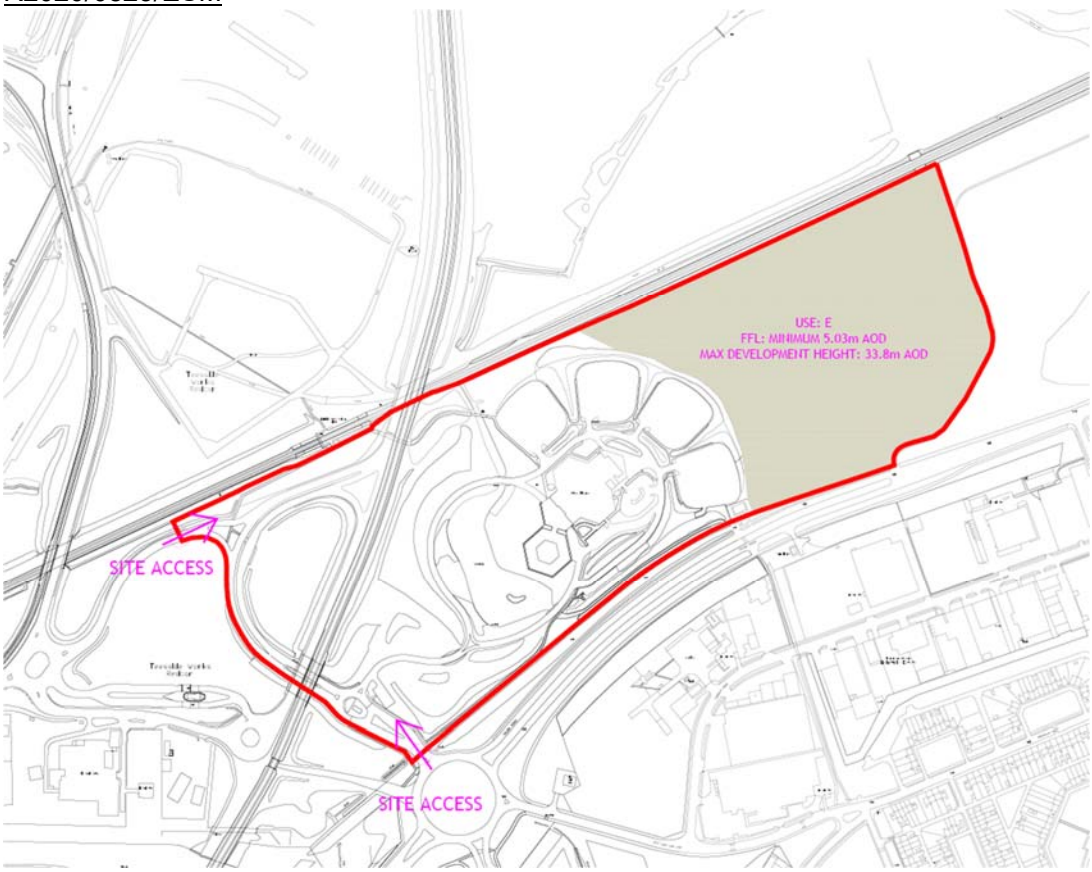


Table 2 Habitat losses identified through Planning Application R/2020/0823/ESM

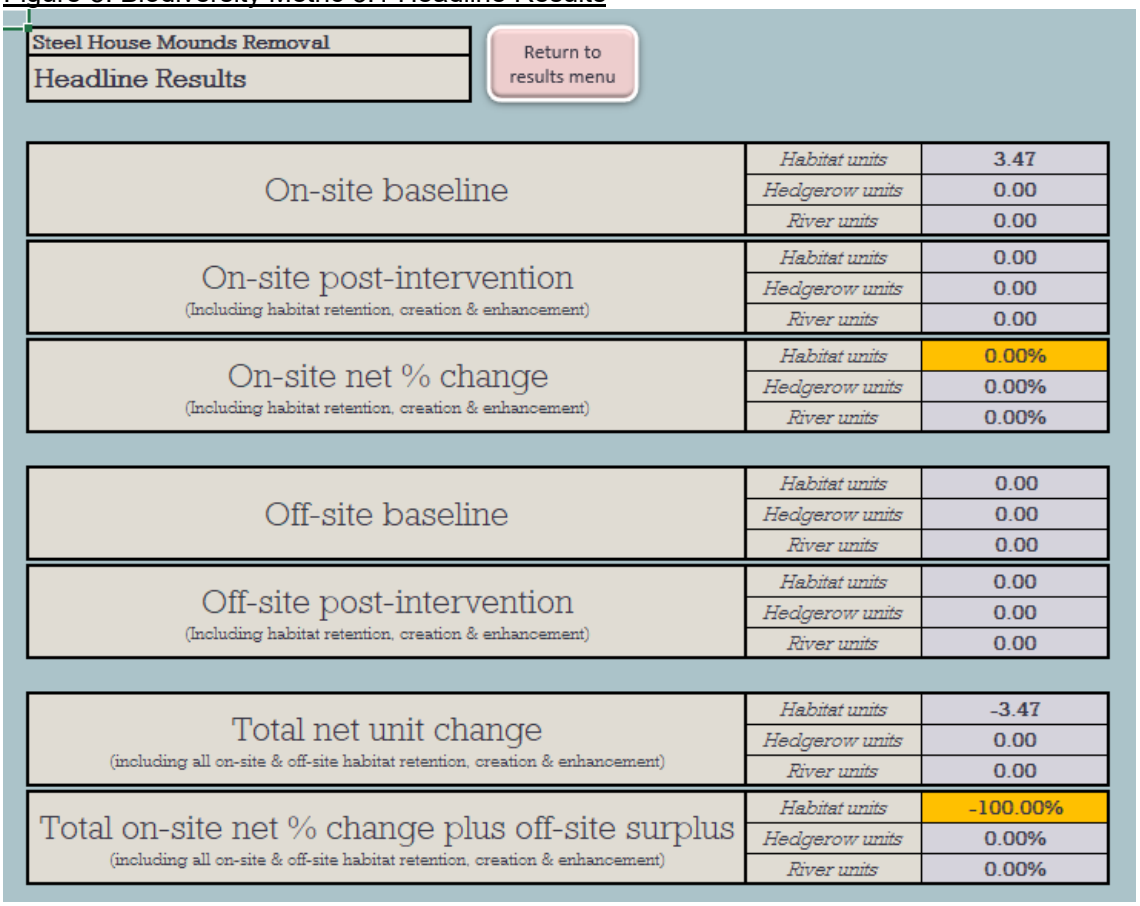
Habitat type	Area (Ha)	Biodiversity Units
Other Neutral Grassland	4.73	18.92
Ruderal/ Ephemeral	0.60	2.90
Other Woodland Broadleaved	2.83	22.64
Total	**8.16**	**44.64**

8.25 The Defra Biodiversity Metric 3.1 has been applied to the habitats on the application site that were not included in the calculation undertaken for planning application R2020/0823/ESM. Two types of habitat will be lost (Table 3 and Figure 5). Habitats are screened in.

Table 3. Additional habit losses

Habitat type	Area (Ha)	Biodiversity Units
Other woodland, broadleaved	0.392	3.14
Modified grassland	0.166	0.33
Total		**3.47**

Figure 5. Biodiversity Metric 3.1 Headline Results



Steel House Mounds Removal

Headline Results

Return to results menu

On-site baseline	*Habitat units*	3.47
	Hedgerow units	0.00
	River units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
On-site net % change (Including habitat retention, creation & enhancement)	*Habitat units*	0.00%
	Hedgerow units	0.00%
	River units	0.00%
Off-site baseline	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-3.47
	Hedgerow units	0.00
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	-100.00%
	Hedgerow units	0.00%
	River units	0.00%

Constraints

8.2 Several Valued Ecological Receptors are screened in and adverse effects on them require mitigating (Table 4).

Table 4. Constraints needing action

Constraint	Section giving mitigation measure
T&CC SPA and Ramsar site	9.3
T&CC SSSI	9.3
Coatham Marsh	9.3
Breeding birds	9.4 and 9.9
European hedgehog	9.9
Brown hare	9.9
Common toad	9.9
Dingy skipper butterfly	9.9
Grayling butterfly, Wall butterfly, Small Heath butterfly and Cinnabar Moth	9.9
3.47 Habitat Biodiversity Units	9.7

9. Recommendations

9.1 Constraints must be dealt with. To mitigate against the identified constraints, measures which follow wildlife legislation and planning guidance are recommended, based on the planning mitigation hierarchy of avoidance, mitigation and compensation. These measures should be conditioned in the planning approval. Measures are in green font.

Avoidance
9.2 No avoidance measures are needed.

Mitigation
9.3 The requirement to adhere to a Construction and Environment Management Plan (CEMP) that has been agreed by the Local Planning Authority will be secured by way of an appropriately worded planning condition attached to any grant of consent. With regards to biodiversity and ecology the CEMP will include the following measures:

- Mitigation to prevent pollution entering the watercourse
- Mitigation to control construction related dust

The HRA Stage 2 Appropriate Assessment concludes that, 'the proposed development will not cause adverse effects to the integrity of the T&CC SPA and Ramsar site, either alone or in combination with other plans or projects, provided that mitigation measures are delivered'.

9.4 Removal of trees, scrub, wetland habitat or grassland that could 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. This is a legal requirement and the nesting birds requirement should be in any planning approval as a condition or an Informative.

Compensation
9.5 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.

9.6 As set out above, Teesworks has prepared 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 Strategy is an iterative process which quantifies all of the BDUs which will be lost as a result of development across the entire Teesworks area. It then calculates the number of BDUs that can be created in the Teesworks area including on land outside of any areas proposed for development. The strategy also identifies 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. The Environment and Biodiversity Strategy provides options and opportunities for Teesworks, and those developing within the Teesworks area, to meet any biodiversity value deficit arising from development.

9.7 A total of up to 44.64 (BM 2.0) and 3.47 (BM 3.0) Biodiversity Units will be lost from the development of the site. The loss of Biodiversity Units arising from the proposed development will be compensated for through an appropriately worded planning condition requiring the submission of details confirming the feasibility of providing habitat mitigation and compensatory habitat equivalent to the Biodiversity Units anticipated to be lost. It is anticipated that this condition will be satisfied through submission of an update to the Environment and Biodiversity Strategy. The planning condition should also require, that once

mitigation and/or compensatory measures are agreed, they shall be delivered within a specified period.

9.8 Priority species will be compensated through post-development habitat creation on- or off-site. The proposed development will create conditions for the site to be prepared for a future use. It is anticipated that any future proposals will optimise any opportunities for onsite biodiversity enhancement through landscaping. This will be reflected through updates to the Environment and Biodiversity Strategy at the appropriate time.

9.9 Some of the appropriate measures will include the following, as part of the wider strategic approach:

- Native species-rich flower areas;
- Areas of stony ground, (calcareous material such as slag or limestone chippings) which will attract a sparse ground flora ideal for species such as Dingy Skipper butterfly;
- Native, broad-leaved species copse and tree landscaping; and
- Wildlife ponds.

Biodiversity enhancement

9.10 Biodiversity 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').

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

9.12 The Defra Biodiversity 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

9.13 Monitoring will be required to ensure that identified compensatory and, where relevant, enhancement measures have been achieved across an agreed timescale. It will need to be in place for the duration of time that it is necessary to ensure that compensatory measures have achieved their objectives.

9.14 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.

9.15 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 form the focus of the monitoring, with the monitoring schedule provided as part of the management plan.

Residual effects

9.16 With the mitigation and compensation measures conditioned, there will be no residual effects.

10. Conclusion

10.1 With the recommended measures detailed above, the proposed development can be delivered with no overall significant harm to designated sites, Priority habitats and Priority species; with no biodiversity loss on the application site, and with some on-site biodiversity enhancement.

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11. 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/uksi/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 Act 2021, available: https://www.legislation.gov.uk/ukpga/2021/30/contents/enacted

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