South Industrial Zone

Environmental Statement

July 2020

Volume 2

Chapter M - Below Ground Heritage

Contents

M1.0 Introduction

M1.1 This Chapter of the Environmental Statement ('ES') has been prepared by Prospect Archaeology on behalf of the applicant, South Tees Development Corporation ('STDC'). It assesses the proposed development described in Chapter B and it considers the effects of the proposed development on below ground heritage assets.

M1.2 The baseline situation is considered before the likely environmental effects of the development are identified, both during construction and operational phases of the development. Mitigation measures to reduce any negative environmental effects are identified as appropriate, before the residual environmental effects are assessed.

M1.3 This Chapter is supported by the following technical appendices: -

1 Appendix M1: South Bank, Redcar Desk-Based Heritage Assessment; and

2 Appendix M2: Consultation Responses.

About the Author

M1.4 Nansi Rosenberg BA (Hons), MA, MCIfA is the primary author of this report. As Managing Director and Principal Consultant of Prospect Archaeology since 2010, and working as a heritage professional since 1991, Nansi has extensive knowledge and experience of archaeological and built heritage issues across the United Kingdom. Nansi holds a BA(Hons) in Archaeology from the University of Durham and an MA (Distinction) in Archaeology and Heritage from the University of Leicester. She is a full Member of the Chartered Institute for Archaeologists with specialist competence in Project Management.

M2.0 Policy Context

Ancient Monuments and Archaeological Areas Act 1979 (AMAAA)

M2.1 The Act is the primary legislation protecting archaeological remains within the United Kingdom. It identifies as a duty of the Secretary of State the need to compile and maintain a schedule of ancient monuments of national importance, to allow for their preservation, so far as possible, in their current (at the time of scheduling) state.

M2.2 A statement setting out current Government policy on the identification, protection, conservation and investigation of nationally important (both scheduled and nationally important non-scheduled) ancient monuments was published in October 2013 (DCMS 2013).

M2.3 Where works to scheduled monuments are proposed for development-related purposes, the Secretary of State has particular regard to the following principles:

- Only in wholly exceptional cases will consent be granted for works could result in substantial harm to, or loss of, the significance of a Scheduled Monument; and
- In cases that would lead to less than substantial harm to the significance of a Scheduled Monument the harm will be weighed against the public benefits of the proposal (DCMS 2013, para 20).

M2.4 This legislative position is directly reflected in the National Planning Policy Framework (NPPF, 2019) which states that "Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss…" (NPPF, para 195), and *"Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use"* (NPPF, para 196).

M2.5 Where consent is granted for works that could result in harm to, or loss of, the significance of a Scheduled Monument, conditions are expected to be imposed that provide for recording of information that adds to our understanding of the significance of that monument. Those conditions are likely to be designed to ensure that:

- the project design seeks to further the objectives of relevant international or national research frameworks;
- use is made of appropriately skilled teams with the resources to fully implement the project design to relevant professional standards (such as those published by the Institute for Archaeologists);
- the project design provides for the full analysis, publication and dissemination of the results, including the deposition of reports in the relevant Historic Environment Record (HER), to a set timetable; and
- provision is made in the project design for the conservation and deposition of the site archive with a local museum or other public depository willing to receive it (DCMS 2013, para 21).

Planning (Listed Buildings and Conservation Areas) Act 1990

M2.6 Section 66 of the Planning (Listed Buildings and Conservation Areas) Act (1990) highlights the importance of built heritage and Listed Buildings within the planning system. With regard to the

Local Planning Authority's (LPA) duty regarding listed buildings in the planning process, it states that:

"In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses".

M2.7 In addition, Section 72 of the Act emphasises the value of Conservation Areas in built heritage planning. In relation to the duties and powers of the LPA, it provides that:

"With respect to any buildings or other land in a conservation area, special attention shall be paid to the desirability of preserving or enhancing the character or appearance of that area".

The National Planning Policy Framework (NPPF) 2019

M2.8 This replaces all previous Planning Policy Guidance notes (PPGs) and Planning Policy Statements (PPSs) and revises the NPPF 2012.

M2.9 Section 16 provides policy on 'Conserving and enhancing the historic environment'. Planning decisions have to be made from a position of knowledge and understanding with respect to the historic environment. Paragraph 189 states:

"In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impacts of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation".

M2.10 In paragraph 192, it is made clear that a balance must be sought, on the one hand sustaining and enhancing the significance of heritage assets and the positive contribution that they can make to communities, and on the other in considering the positive contribution that a new development could make to local character and distinctiveness.

M2.11 The impact on a heritage asset should be assessed in terms of the significance of that asset; the greater the significance, the greater weight should be given in that assessment. Any harm to, or loss of, the significance of a designated asset should require clear and convincing justification. Where substantial harm or loss is predicted, approval should be given only in exceptional circumstances for Grade II listed buildings, parks or gardens. For heritage assets of higher importance (Grade II* & I listed buildings and parks & gardens, scheduled monuments, protected wreck sites, battlefields and World Heritage Sites) approval for proposed developments that cause substantial harm should be *'wholly exceptional' (para 194).* In all cases the harm must be weighed against the public benefit (para 195).

M2.12 As a footnote to para 194 the NPPF states that:

"Non-designated heritage assets of archaeological interest, which are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets."

M2.13 As is reflected in the DCMS 2013 statement on Government policy, it is made clear that undesignated heritage assets of national importance should be afforded the same consideration as designated assets of equivalent significance:

"The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset" (para 197);"

M2.14 In addition, para 187 states that:

"Local planning authorities should maintain or have access to a historic environment record. This should contain up-to-date evidence about the historic environment in their area and be used to:

a) assess the significance of heritage assets and the contribution they make to their environment; and

b) predict the likelihood that currently unidentified heritage assets, particularly sites of historic and archaeological interest, will be discovered in the future. This replaces all previous Planning Policy Guidance notes (PPGs) and Planning Policy Statements (PPSs)."

M2.15 Among the core planning principles, provision is made to *"conserve heritage assets in a manner appropriate to their significance, so that they can enjoyed for their contribution to the quality of life of this and future generations"* (CLG 2012, para 17).

M2.16 Section 12 provides policy on 'Conserving and enhancing the historic environment'. Planning decisions have to be made from a position of knowledge and understanding with respect to the historic environment. Paragraph 128 states: *"In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impacts of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation".*

M2.17 In paragraph 131, it is made clear that a balance must be sought, on the one hand sustaining and enhancing the significance of heritage assets and the positive contribution that they can make to communities, and on the other in considering the positive contribution that a new development could make to local character and distinctiveness.

M2.18 The impact on a heritage asset should be assessed in terms of the significance of that asset; the greater the significance, the greater weight should be given in that assessment. A distinction is made between 'substantial' and 'less than substantial' harm. Where substantial harm or loss to is predicted, approval should be given only in exceptional circumstances for Grade II listed buildings, parks or gardens. For heritage assets of higher importance (Grade II* & I listed buildings and parks & gardens, scheduled monuments, protected wreck sites, battlefields and World Heritage Sites) approval for proposed developments that cause substantial harm should be '*wholly exceptional*' (para 132). In all cases the harm must be weighed against the public benefit (paras 133 & 134).

M2.19 As is reflected in the DCMS 2013 statement on Government policy, it is made clear that undesignated heritage assets of national importance should be afforded the same consideration as designated assets of equivalent significance:

"The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset" (para 135);

"Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets" (para 139).

National Planning Practice Guidance (2014)

M2.20 The National Planning Practice Guidance (NPPG) was published by the Department for Communities and Local Government in March 2014 and provides guidance for planners and communities which will help deliver high quality development and sustainable growth in England. In terms of heritage, guidance entitled 'Conserving and enhancing the historic environment' sets out information with respect to the following:

- the recognition of the appropriate conservation of heritage assets forming one of the 'Core Planning Principles' that underpin the planning system;
- what the main legislative framework for planning and the historic environment is (Planning (Listed Buildings and Conservation Areas) Act 1990; Ancient Monuments and Archaeological Areas Act 1979; and Protection of Wrecks Act 1973);
- a definition of 'significance';
- why significance is important in decision-taking;
- the considerations of designated and non-designated assets;
- the identification of non-designated heritage assets; and
- the considerations for when applications for planning permission are required to consult or notify English Heritage.

Non-Statutory Guidance

M2.21 English Heritage Conservation Principles Policies and Guidance (EH 2008) defines the setting of historic assets as: -

"…the surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape…"

M2.22 EH draws a distinction between 'setting' and 'context' (paragraphs 76 and 77) and the document makes it clear that whereas 'setting' involves a localised area, 'context' is a wider concept involving "any relationship between a place and other places, relevant to the values of that place".

- Heritage values are considered under four main headings
- Evidential Value derives from the potential for a place to yield evidence about past human activity
- Historical Value derives from the ways in which past, people and events can be connected through a place to the present

- Aesthetic value derives from the ways in which people draw sensory and intellectual stimulation from a place.
- Communal value derives from the meanings of a place for the people who relate to it.

Local Policy Guidance

M2.23 The Redcar & Cleveland Local Plan (Adopted 2018) contains policies relating to the Historic Environment. There are no Conservation Areas or Designated Heritage Assets that would be affected by this proposal. Policy HE3 'Archaeological Sites and Monuments' is relevant, however. It states:

Development that would adversely affect archaeological sites or monuments that are designated heritage assts or their settings, or archaeological sites of equivalent significance will only be approved in the most exceptional circumstances and in accordance with this policy and other heritage policies in this plan.

Development that may affect a known or possible archaeological site, whether designated or non-designated, will require the results of a desk-based assessment to be submitted as part of the planning application. An archaeological evaluation may also be required to identify the most appropriate course of action.

Development that affects a site where archaeology exists or where there is evidence that archaeological remains may exist will only be permitted if:

a *The harm or loss of significance is necessary to achieve public benefits that outweigh that harm or loss. Harm or loss may be avoided by preservation in situ or refusal: or*

b *Where in situ preservation is not required, appropriate satisfactory provision is in place for archaeological investigation, recording and reporting to take place before, or where necessary during, development. Where archaeological investigation, recording and reporting has taken place it will be necessary to publish the findings within an agreed timetable.*

M3.0 Assessment Methodology & Significance Criteria

Assessment Methodology

M3.1 Built heritage has been scoped out of this Environmental Assessment.

M3.2 Buried heritage (archaeology) has been considered through desk-based assessment and a site visit. A full list of referenced sources is provided, and references are given. Staff at Redcar & Cleveland Council gave advice and information about known archaeological sites of interest in the vicinity of the study area, and where relevant, these were further investigated. It was not possible to view original archive material due to the Covid-19 health and safety restrictions. Additional sources consulted included:

- information available on a variety of internet sites including, The National Archives (http://discovery.nationalarchives.gov.uk/) and the Archaeology Data Service (http://ads.ahds.ac.uk/); the Heritage Gateway (www.heritagegateway.org.uk); and data from Pastscape (www.pastscape.org.uk) as well as the National Archives Discovery Catalogue. A full list of sites accessed can be found in the Bibliography section;
- cartographic sources held by the Ordnance Survey and Promap (www.promap.co.uk);
- A site visit was undertaken by Nansi Rosenberg.

M3.3 The historical development of the site has been established through reference to these sources and is described in the Baseline Conditions section of this report.

Significance Criteria

M3.4 Each area of archaeological potential has been assessed for its archaeological significance in geographical terms (i.e. the archaeological receptors value/sensitivity), although it should be noted that there is no statutory definition for these classifications:

Table M3.1 Archaeological Significance (Sensitivity)

Archaeological Significance	Factors for assessing value of archaeological assets
International (Very High)	World Heritage Sites (including nominated sites). Assets of acknowledged international importance. Assets that can contribute significantly to acknowledged international research objectives.
National (High)	Scheduled Monuments (including proposed sites), Listed Buildings Grade I and II*(some Grade II) Undesignated assets of schedulable quality and importance. Assets that can contribute significantly to acknowledged national research objectives.
Regional (Medium)	Designated or undesignated assets that contribute to regional research objectives.
Local (Low)	Designated and undesignated assets of local importance. Assets compromised by poor preservation and/or poor survival of contextual associations. Assets of limited value, but with potential to contribute to local research objectives.
Negligible	Assets with very little or no surviving archaeological interest.

Archaeological Significance	Factors for assessing value of archaeological assets
Unknown	The importance of the resource has not been ascertained.

Impact Assessment

M3.5 This assessment uses the baseline data to describe the survival and extent of archaeological receptors that may be affected by the development proposals. The assessment has paid careful attention to the attribution of levels of significance to both potential archaeological receptors and to potential effects arising from the development.

Magnitude of Change

M3.6 The determination of magnitude of change is based on the level of impact and the current state of survival/condition of the asset, as shown in Tables M3.2 and M3.4 below.

Table M3.2 Factors in the Assessment of the Magnitude of Impact – Heritage

Magnitude	Assessment criteria
Substantial	Change to most or all key archaeological materials, such that the resource is totally altered. Comprehensive changes to setting.
Moderate	Changes to many key archaeological materials, such that the resource is clearly modified. Considerable changes to setting that affect the character of the asset.
Minor	Changes to key archaeological materials, such that the asset is slightly altered. Slight changes to setting.
Negligible	Very minor changes to archaeological materials or setting.
Neutral	No change.

M3.7 There are a number of variables in determining magnitude of change. These include the sensitivity or vulnerability of a site to change (for example, depth of alluvium, or the presence of made-ground), the nature of past development or management effects, and the differing nature of proposed development processes such as piling and topsoil stripping.

Significance of Effects

M3.8 This section sets out the method used in the EIA for assessing the potential significance of environmental effects for each receptor. The significance of potential environmental effects is determined by two variables:

- The value and/or sensitivity of the receptor (Archaeological Significance); and
- The magnitude of change.

Table M3.3 Significance of Effects Matrix

Magnitude of Change **Magnitude of Change**		**No Change**	**Negligible**	**Minor**	**Moderate**	**Substantial**	**No Change**
Archaeological Significance	Very High	Neutral	Moderate	**Substantial**	**Substantial**	**Substantial**	Very High
	High	Neutral	Minor	**Moderate**	**Substantial**	**Substantial**	High
	Medium	Neutral	Negligible	Minor	**Moderate**	**Substantial**	Medium
	Low	Neutral	Negligible	Negligible	Minor	**Moderate**	Low
	Negligible	Neutral	Negligible	Negligible	Negligible	Minor	Negligible

M3.9 The significance of the environmental effect is assessed using the matrix shown in Table M3.3 The Significance of the archaeological resource/receptor is correlated against the magnitude of the change on that resource/receptor in order to determine whether the overall significance of the effect on the receptor will be Neutral, Negligible, Minor, Moderate or Substantial.

M3.10 Depending on the nature of the change, the significance of the effect on the environment can range from Adverse to Beneficial and be of a defined duration. For instance, the loss of archaeological remains is always classed as Adverse, while the interpretation of an extant archaeological feature might be seen as Beneficial. Tables M3.3 and M3.5 provides a general guideline as to how the significance of environmental effect is defined.

M3.11 The assessment is then repeated once the proposals to mitigate the change have been put in place.

M3.12 Those impacts assessed as Moderate Adverse or above are considered significant in EIA terms.

Table M3.4 Significance of Impact

Impact Assessment	**Definition**
Substantial Adverse	The development fails to satisfy the subject environmental objective and results in a major deterioration of the environmental context
Moderate Adverse	The development partly satisfies the subject environmental objective but fails to contribute to the environmental context
Minor Adverse	The development partly satisfies the subject environmental objective but fails to fully contribute to the environmental context
Negligible/neutral	The development satisfies the subject environmental objective but neither contributes to nor detracts from the environmental context
Minor Beneficial	The development satisfies the subject environmental objective and contributes to the environmental context
Moderate Beneficial	The development satisfies the subject environmental objective and contributes to the environmental context

Consultation

M3.13 The Redcar & Cleveland Planning Officer has been consulted on the potential impacts and proposed mitigation and discussions regarding the scope of mitigation works are ongoing. Additional consultees have been identified (the Redcar & Cleveland Council retained archaeological advisor and two local history groups) following the initial consultation with the Planning Officer. Requests for consultation have been made to these parties and their response is awaited. Further assessment of the potential for archaeological survival may be necessary once these consultation responses are received.

Assumptions and Limitations

M3.14 No area of the site where there is the potential for archaeology would not be affected by the groundworks and demolition works associated with the construction phase of the development. This means all archaeological remains would suffer a negative impact from development, but this can be mitigated through excavation / recording as necessary.

M3.15 This assumption is based on the development parameters set out within Chapter B of this ES and on the Parameters Plan submitted at Appendix B4. This assumption assesses the 'worst case' scenario.

M4.0 Baseline Conditions

Existing Conditions

M4.1 The assessment of existing conditions has been based on a 'study area' extending 1000m from the boundary of the proposed development. This enables the significance of existing and potential archaeological features to be considered in their local, regional and national contexts.

M4.2 The source of the monuments (Figure M2; Tables M4.1 & M4.2) noted in the following text are from the Redcar & Cleveland Historic Environment Record (HER) and the National Heritage List for England (NHLE) and have the prefixes HER and NHL respectively. Additional information on the historic development of the Site and surrounding area has been collated from historic mapping, online resources, and the personal library of the author. Known and suspected archaeological remains are summarised and discussed in the following sections.

Designated Heritage Assets

M4.3 There are 6 designations within the study area (see Table M4.1), though none within the site itself. All six assets lie within the settlement of South Bank and date to the 19th and 20th centuries. None would be directly affected by the proposed development and the Site does not contribute to a significant setting for any of the buildings.

Table M4.1 Designated heritage assets within 1km of the Site

NHL ref no.	Name / description	Designation	Distance and Direction from Site
1139622	Church of St Peter	LB II	555m SW
1160378	War Memorial circa 5m southwest of Church of St Peter	LB II	550m SW
1160408	Baptist Church	LB II*	570m S
1310598	1 Milbank Street	LB II	504m SW
1329634	War Memorial	LB II	558m S
1329635	Church of St John the Evangelist	LB II	640m S

Undesignated Heritage Assets

Pre-Industrial Periods (10,000BC – 1750AD)

M4.4 There are no assets within the study area relating to the pre-Industrial period. The Site itself was a part of the mud flats on the River Tees until reclamation commenced in the 19th century. No further assessment of the pre-Industrial period is made in this report.

Table M4.2 Undesignated Heritage Assets within or bordering the site

HER no.	Name / description	Date / Period	Distance and Direction from Site	Significance
4358	Eston Junction Railway Station	19th century	Adjacent S	Local
4360	Eston Grange (Grangetown) Railway Station	19th century	Adjacent S	Local
4782	Grangetown Signal Box	20th century	Within site	Local

HER no.	Name / description	Date / Period	Distance and Direction from Site	Significance
5608	Clay Lane Jetty	19th century	Within site	Local
5612	Eston Jetty	19th century	Within site	Local
5620	Clay Lane Iron Works Tramway	19th century	Within site	Local
5624	Antonien Works (Phosphate Manure)	19th century	Within site	Local
5625	South Bank Iron Works	19th century	Partly within site	Regional
5632	Spoil Ground	19th century	Partly within site	Local
N/A	WWI Submarine base with accommodation	20th century	Partly within site	Regional
N/A	WWII HAA battery and associated facilities	20th century	Within site	Regional
N/A	Riverside Pumping House	20th century	Within site	Local
N/A	Custom House	20th century	Within site	Local

Industrial – Modern Periods (1750 – present)

M4.5 The first detailed mapping of the Site, the Ordnance Survey 1st edition map of 1857, shows clearly how the site is entirely within Tees Estuary. The only features shown within the Site is 'Light No 5 (Red)', one of the marker buoys guiding ships down the channel, away from the banks where they could founder. The majority of these beacons are shown further into the South Channel, simply labelled 'beacon' or 'buoy' although others have names, such as 'Jack-in-the-Box' or specific details, such as 'Look-out Beacon (No 6)'. These beacons and buoys are recorded in the HER (numbers 6047-6065). The edge of the dry land is delineated by the Middlesbrough and Redcar Railway with Eston Junction Station (HER 4358) and Lackenby Station (HER 4360) already present.

M4.6 Industrial works are present by the mid-19th century, Eston Iron Works (HER 5631) and Tees Tilery (HER 5615) being located immediately south of the Site. Workers housing was provided in Furnace Row (HER 5627). Eston Iron Works was established by Henry Bolckow and John Vaughan in 1851, initially comprising 3 blast furnaces, 54 feet high. The partnership already owned an iron and engineering works on the Tees at Middlesbrough, blast furnaces at Witton Park, and they were mining ironstone near Middlesbrough (https://www.gracesguide.co.uk/Bolckow,_Vaughan_and_Co).

M4.7 Over the course of the following forty years, reclamation of the Tees estuary and the expansion of industrial processing transformed the area. Bernhard Samuelson and John Vaughan built the South Bank Iron Works (HER 5652) within the southern boundary of the Site prior to 1863 when it was sold to Major Elwon. Elwon, Malcolm & Co had already built the Clay Lane Iron Works (HER 5619) in 1858, and Lackenby Iron Works (HER 5659) was constructed in 1871 (Rowe & Green 2007). The Engineer Magazine recorded that in 1876 Bolckow, Vaughan & Co were close to completing their new Reversing Engines works at the New Cleveland Steel Works. The 1895 second edition Ordnance Survey map shows the Cleveland Iron Works (HER 5629) which replaced the earlier, tiny by comparison, Eston Iron Works. Bolckow, Vaughan & Co Ltd acquired the Southbank Steelworks in 1879.

M4.8 Approximately one third of the Site had been reclaimed by 1895 with internal railways taking waste to create spoil grounds (HER 5632 & 5652). The South Bank Iron Works was the dominant industry within the Site, but other industrial processing facilities were also present. The Antonien Works (Phosphate Manure) on the 25" 1895 map (not illustrated) was later shown

as 'Basic Slag Works' (HER 5624). Slag from the various ironworks was processed here and at other locations (e.g. Clay Lane Slag Works HER 5618) to be used in the construction of reclamation walls and also for making 'Scoria Blocks' which were used in paving roads and alleyways (Rowe & Green 2007). A Salt Works was located adjacent to the west of the South Bank Iron Works, with associated brine tank and wells to the north.

M4.9 Jetties were constructed through the mud in the north-western part of the Site from the newly reclaimed land to carry rail lines to wharves on the Tees bank. Eston Jetty (HER 5612) and Clay Lane Jetty (HER 5608) terminated at Eston Wharf (HER 5610) and Clay Lane Wharf (HER 5609) respectively with a Custom House (HER 5611) between them. A Mooring Stage was also located nearby to the north, accessed via the Eston Jetty (HER 5613) by rail lines. The jetties and wharves had gone by 1915 when reclamation had extended the dry land to its current boundary. Reclamation walls (HERs 5604 and 6046) are shown north and south along the riverbank from Eston and Clay Lane Wharves. A new Custom House built further northeast along the riverbank. The Riverside Pumping Station was also constructed during this period and two large reservoirs were located within the reclaimed land in the northwest of the Site. 'Dolphins' shown along the riverbank were free-standing structures that could have provided additional mooring or berths for ships or may have been designed to protect moored vessels from accidental damage from ships travelling along the Tees or supported advisory signs such as speed limits.

M4.10 Towards the end of the 19th century, numerous additional brick and tile works were established in the area. North Eastern Brickworks (HER 3632), Imperial Brickworks (HER 3633), and Tees Brick & Tile Works (HER 3634) were all established prior to the end of the 19th century. A further un-named brick yard was also present north-east of Lackenby Station on the 1895 Ordnance Survey map. In the early years of the 20th century, two further brickworks were added - South Bank (HER 3635) and Branch (Central (HER 3536).

M4.11 Workers' settlements developed in the immediate vicinity with South Bank (HER 6304) and Grangetown both present by the publication of the 1895 map. These settlements comprised housing, shops, and, increasingly, supporting facilities such as pubs (HERs 6295, 6299, 6301 & 6302), churches (HERs 879, 1253, 5630 & 6298), a police station (HER 6294), a political club (HER 6293), a school (HER 6292), and a working men's institute (HER 6300).

M4.12 In the early 20th century, a concrete works was constructed in the south-east corner of the Site, associated with the adjacent South Bank Iron Works. Both were also linked by rail to the Eston Sheet & Galvanising Works located on the Tees just outside the north-western corner of the Site. Bolckow, Vaughan & Co Ltd acquired the Clay Lane works in 1900, becoming the largest producers of steel in Great Britain.

M4.13 To the immediate north of the Site, the area that went on to become Teesport was used as a submarine base during the First World War. The base included submarine jetties, torpedo storage bays, workshops, accommodation and a hut for technicians and other staff. It is understood that six E-class submarines were originally stationed there, mainly involved in mine-laying. They were joined, or possibly replaced, by the Tenth Flotilla in 1916, comprising a depot ship, the Lucia, two E-class submarines and six G-class submarines. The port was accessed via a track which ran through the Site to Grangetown. Some of the buildings also fell within the Site in an area only recently reclaimed.

M4.14 Following decommissioning in 1920 the buildings were converted into a small community by Bolckow, Vaughan & Co Ltd as a worker's village. Each one of the men's dormitories was converted into a pair of three- or four-bedroom semi-detached houses. There were 38 houses in total and all but two were occupied in 1930. By 1937 there was only one house occupied

although some of the houses survived to be photographed in 1947 and some were reoccupied in 1950, perhaps in response to the post-WWII housing shortage.

M4.15 In 1929, Bolckow, Vaughan & Co Ltd were forced into a takeover by Dorman Long as a result of being effectively bankrupt.

M4.16 By 1931 two storage tanks were constructed next to the Riverside Pumping Station and numerous travelling cranes were installed between the foreshore and different parts of the South Bank Iron Works facilities.

M4.17 During the Second World War, the Teesport properties are understood to have been used as accommodation and administrative buildings for the Heavy Anti-Aircraft Gun Battery constructed close to the south, within the Site. An account of life on the battery by Joyce Stott was published by the BBC in 2005. Towards the end of the war when Joyce was stationed there, she recalled that conditions were primitive: they had electricity, but the fuse was a 6" nail, flush toilets were only provided for the women, and there was no N.A.A.F.I., just a 'Sally Ann' van that brought tea and buns in the morning. The guns were 3.7s with 4-5" barrels and manual fuse setters so were slow firers, but the Radar was more up-to-date being a Canadian-built Mark 3 (Joyce Stott WW2 People's War). Aerial photographs dating to 1953 show the layout of the battery and associated buildings, including the foundations of the Teesport houses. The first two storage tanks of Teesport Oil Depot and the Tees Dock Road had been constructed by this time.

M4.18 The South Bank Steel Works was demolished, and the site was later used for Coke Ovens. The 'B Power Station' was located partly within the Site and appears to be the continued use of the original boiler house.

M4.19 Between 1955 and 1980, a substantial increase in the number of tanks present at Teesport and adjacent to the west, within the site, a small, unnamed industrial works and, further west again, further storage tanks. New rail lines were added on the western side of the Site between 1955 and 1975. Management of the spoil grounds continued with changes to railways and the construction of conveyors. Settling ponds and drains are shown around the sorting area in the southeast part of the Site. The Custom House was removed by 1980 and a number of other buildings are shown this the western part of the site including, by 1980, four electricity sub-stations.

M4.20 With the nationalisation of the steel industry in 1967, Dorman Long was absorbed into the newly created British Steel Corporation. Privatisation in 1988 saw the company rebranded as British Steel plc. The last two surviving Bessemer blast furnaces at Teesside Steelworks (HER 1831) were No. 5, constructed in 1937 and closed in 1986, and No. 4, built in 1991 and closed in 1993. Merger with Koninkljke Hoogovens in 1999 saw the works under the ownership of Corus which was then bought by Tata Steel in 2007. Corus closed the Teesside blast furnace in 2009 but it was then bought by Sahaviriya Steel Industries (SSI) in 2011, reopening in 2012, but by 2015 SSI UK had gone into liquidation and the plant finally closed.

LiDAR and Satellite Imagery

M4.21 A site visit was made on 10th June 2020. There are few significant features surviving above ground and the potential for below ground survival was not easy to establish due to the continued use of the Site for spoil management. The changing arrangement of spoil grounds and other activity is discernible in comparison of the 2017 and 2019 LiDAR imagery. Whilst the DSM of 2017 shows buildings and the DTM of 2019 removes these, the changes in the shapes and arrangements of spoil heaps across the site has clearly changed as Site clearance progresses. Whilst this is most obvious in the spoil grounds excluded from the redline, it can be seen that

over the two years separating the two images, a spoil heap has been created in the north central area, north of the main spoil ground, and one to the east of that has reduced in size and, in fact, appears lower than the surrounding land. To the west of the main spoil heaps, north of the South Bank Steel Works main structures, there have been adjustments to the distribution of spoil.

M4.22 Satellite imagery shows a similar pattern of movement and adjustment of spoil grounds as well as the changing positions and numbers of buildings on the Site from 2000 to 2018 (Google Earth, historical imagery)

Future Baseline

M4.23 If the development proposals were not to come forward, no alterations to the baseline conditions relating to below ground heritage are anticipated.

M5.0 Potential Effects

Embedded Mitigation

M5.1 No embedded mitigation measures are included within the development parameters for the scheme that relate to below ground heritage.

During Construction

M5.2 During construction, it is assumed that all archaeological remains would be removed through the site preparation works, demolition and the creation of development flatforms. On this basis, all of the identified sensitive receptors would be subject to potential effects that would be Moderate - Substantial Adverse and therefore significant in EIA terms. This conclusion is based on an understanding of archaeological sensitivity and the magnitude of change.

Table M5.1

Heritage Asset	Significance	Magnitude of change	Unmitigated Impact
Foundations of South Bank Iron Works boiler house	Low - Medium	Substantial	Moderate – Substantial Adverse
Foundations of Antonien Works	Low	Substantial	Moderate Adverse
Foundations of World War I submarine base accommodation	Medium	Substantial	Substantial Adverse
Foundations of World War II HAA battery and associated facilities	Medium	Substantial	Substantial Adverse
20th century Riverside Pumping House	Low	Substantial	Moderate Adverse
20th century Custom House	Low	Substantial	Moderate Adverse

During Operation

M5.3 As the below ground heritage assets would have been removed during the construction phase of the development no further effects would occur.

M6.0 Mitigation and Monitoring

M6.1 Within the development proposals there is no potential for preservation in situ. Therefore, the only mitigation possible is preservation by record.

During Construction

M6.2 Areas of archaeological potential should be subject to monitoring during remediation works to determine the presence / absence of archaeology. Should significant archaeological remains survive, an appropriate level of excavation and recording would be undertaken to ensure their preservation by record.

M6.3 The 20th century Riverside Pumping and Custom House should be recorded using photogrammetric / measured survey techniques.

During Operation

M6.4 No mitigation or monitoring is required during the operational phase of the development.

M7.0 Residual Effects

During Construction

M7.1 All archaeological remains would be preserved by record. Whilst the loss of the heritage asset is considered an adverse impact, the addition to historical and archaeological understanding offsets the negative effect to, in most cases, have a residual effect that is negligible or neutral. The table below looks at the sensitive receptors in detail. There are expected to be no significant impacts in EIA terms following mitigation.

During Operation

M7.2 As the below ground heritage assets would have been removed during the construction stage of the development (and appropriately mitigated) there are no residual effects associated with the operational phase of the development.

Table M7.1

Heritage Asset	Significance	Magnitude of change	Mitigated Impact
Foundations of South Bank Iron Works boiler house	Low – Medium	Substantial	Negligible / Neutral
Foundations of Antonien Works	Low	Substantial	Negligible / Neutral
Foundations of World War I submarine base accommodation	Medium	Substantial	Minor Adverse
Foundations of World War II HAA battery and associated facilities	Medium	Substantial	Minor Adverse
20th century Riverside Pumping House	Low	Substantial	Negligible / Neutral
20th century Custom House	Low	Substantial	Negligible / Neutral

M8.0 Summary & Conclusions

M8.1 Four areas of (below ground) archaeological potential have been identified. These comprise the foundations and sub-structures of the following: South Bank Iron Works boiler house, Antonien Works, World War I submarine base accommodation, World War II HAA battery and associated facilities.

M8.2 In each case, the potential survival of significant archaeology should be established through monitoring and review of site investigations and, where necessary, archaeological evaluation.

M8.3 Twi 20th century structures of Local significance have been identified. These would be recorded prior to demolition.

M8.4 Development would remove all elements of the archaeological record.

M8.5 Mitigation measures comprising the excavation and recording of archaeological features and deposits, and the recording of buildings would ensure impacts are no greater than Minor Adverse. This is not significant in EIA terms.

M9.0 Abbreviations & Definitions

1 DSM – Digital surface model

2 DTM – Digital terrain model

3 HAA Battery – Heavy Anti-Aircraft Battery (World War II defensive gun emplacements)

4 HER – Redcar & Cleveland Historic Environment Record

5 LiDAR – Light Detection and Ranging (remote sensing method using light in the form of a pulsed laser to measure variable distances to the Earth)

6 NHL – National Heritage List of England

7 Industrial period – 1750 – 1850 AD

8 Modern period – 1850 – present day

M10.0 References

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