



## Riverside Phase 1, Teesworks, Redcar

Written Scheme of Investigation – Archaeological Deposit Model,  
Photogrammetric Recording and Watching Brief

Client: South Tees Development Corporation

Local Planning Authority: Redcar & Cleveland Borough Council

Planning Reference: R/2020/0684/ESM

NGR: NZ 537 228

Date of Report: November 2021

Author: Nansi Rosenberg

Report No.: LIC01.05

## Table of Contents

1.0	INTRODUCTION .....	1
2.0	SITE LOCATION AND DESCRIPTION .....	2
3.0	HISTORICAL BACKGROUND.....	2
4.0	SCOPE OF WORKS .....	2
5.0	AIMS AND OBJECTIVES .....	2
6.0	METHOD.....	3
7.0	MONITORING .....	6
8.0	POST-EXCAVATION PROCESSING .....	6
9.0	HEALTH AND SAFETY .....	8
10.0	INSURANCE.....	8
11.0	ARCHIVING .....	8
12.0	PROGRAMME & STAFFING .....	9
13.0	REFERENCES .....	9
14.0	FIGURES.....	11

## 1.0 Introduction

1.1 South Tees Development Corporation (STDC) have been granted planning permission for the redevelopment of a section of the riverside on the south bank of the River Tees for a new Quay, as part of the wider redevelopment of the former steelworks site (R/2020/0684/ESM, NGR NZ 537 228, see Figure 1).

1.2 The planning permission includes a condition for archaeological intervention as follows:

6. (a) *No development shall take place until a written scheme of investigation (WSI) for archaeological work has been submitted to and approved in writing by the local planning authority.*

*The WSI shall make provision for:*

- Before development commences, archaeological evaluation of relevant borehole and vibrocore data*
- Before development commences, and taking into account the evaluation where relevant, an agreed site monitoring strategy that provides for interpretation and recording of areas of expected archaeological sensitivity, and for any unexpected discoveries of archaeological significant deposits or structures*
- The systematic recording by photographic and photogrammetric means (including drone survey where appropriate) of structures to be demolished (including old jetties, pumping and custom houses)*
- Reasonable notification to the local planning authority of commencement and completion of archaeological work*
- Details of staff involvement in carrying out of archaeological work, and their qualifications and responsibilities*
- The timetable for completing any post-excavation assessment, archiving and report*

*(b) The development shall not without the prior written approval of the local planning authority be carried out otherwise than in accordance with the approved WSI*

*REASON: The site may contain remains of archaeological interest, which should be recorded before they are destroyed.*

*REASON FOR PRE-COMMENCEMENT: A pre-commencement condition is required to ensure that no remains are disturbed or otherwise compromised by site excavation of other ground works.*

1.3 Site investigations undertaken both prior to and during the current planning application have shown there to be deep made ground over the whole of the Site. The made ground comprises slag used to reclaim the former river edge and was found to be between 6.45 – 9.5m deep from current level, overlying the natural silts and sands of the foreshore. Discussion with Historic England and NEAR (as advisors to Redcar & Cleveland Borough Council) have concluded that the remediation

works will not impact on archaeologically significant deposits and that, subject to a deposit model being prepared, there may be no requirement to monitor dredging or remediation works. Methodologies for monitoring the remediation works are included in this document in the event the deposit model proves the need for such work. Dredging activities are covered by the archaeological protocol required for the MMO licence (Royal Haskoning DHV in preparation).

- 1.4 This Written Scheme of Investigation (WSI) has been prepared by Prospect Archaeology Ltd. It complies with the Chartered Institute for Archaeologists' (CIfA) Standard and guidance for archaeological watching briefs (CIfA 2014). Building recording work will follow the guidelines set out in the Historic England guidance note *Understanding Historic Buildings: A Guide to Good Reporting Practice* second edition (2016). It will also follow best practice set out in the *Standard and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (CIfA 2014, updated 2019).

## 2.0 Site Location and Description

- 2.1 The site is a roughly rectangular parcel of land measuring c. 8.85ha to the south of the Tees Estuary. It is centred on NGR NZ 537228, lying between Tees Dock Road to the east and John Boyle Road / Eston Road to the west. The site includes extant jetties and dolphins extending into the river.

## 3.0 Historical Background

- 3.1 Beacons and have been present in this part of the Tees since at least the mid-19<sup>th</sup> century although the riverbank was only formalised in this position in the early 20<sup>th</sup> century. Although not recorded on Ordnance Survey mapping until the 1930s, the riverbank was developed as a submarine base during the First World War with jetties for submarines located in the northern part of the Site. To the southern end, a jetty and dolphin are recorded in the 1930s. Expansion of Teesport in the later 20<sup>th</sup> century saw the old jetties go out of use and new ones constructed, with oil storage tanks located slightly inland.

## 4.0 Scope of Works

- 4.1 As per the requirements of the condition, the following elements are required:
- Evaluation of borehole and vibrocore data
  - Photographic recording of existing structures that are to be demolished
  - Watching brief during remediation / demolition / construction works

## 5.0 Aims and Objectives

- 5.1 The programme of works is designed to identify and record the historical development of the riverside area, including both potential prehistoric activity that might be evidenced in boreholes and deep excavations, and 19<sup>th</sup> – 20<sup>th</sup> century uses of the site related to the submarine base, the steelworks and Teesport.

5.2 Specific relevant research priorities contained within the North-East Regional Research Framework (NERF) include:

Mi. Understanding coastal environmental change, in particular the drowning of the North-Sea basin and its links with patterns of early human settlement.

MOi. Industry (20<sup>th</sup> century)

MOvi. Military and defence (20<sup>th</sup> century), in particular focusing on Research Agenda MO1 World War I military remains

## 6.0 Method

6.1 Fieldwork will be undertaken by a team from Pre-Construct Archaeology (PCA). Assessment of borehole data will be reviewed by an archaeologist with experience of geoarchaeology.

6.2 Photogrammetric recording will be undertaken by an archaeologist with experience of similar survey techniques.

6.3 Groundworks will be supervised by an appropriately experienced archaeologist and all recording work required will be carried out by one or more archaeologists as required by the archaeology present.

### Deposit Model

6.4 A deposit model will be constructed using the results of the borehole and test pit data supplied by Arcadis and existing British Geological Survey records. A HER search will be made to obtain reports with relevant geoarchaeological data.

6.5 The modelling will follow procedures set out within the Historic England Guidance for Deposit Modelling and Archaeology (2020). The data will be entered into a Rockworks database in order to generate 3-D fence diagrams and cross-sections. In addition, surfaces will be created to aid visualisation using ArcGis which may include digital terrain or thickness models.

6.6 The data will be archived in an excel spreadsheet and submitted to the ADS in due course.

### Photographic recording

6.7 The UAS photogrammetric and orthographic survey will be undertaken on site using a DJI Mavic 2 Pro and a minimum of five ground control points with locations recorded using a GPS rover unit with RTK differential correction, giving three-dimensional accuracy of 20mm or better. Image data will be collected in both high resolution (20mp) JPEGs and archivable RAW files. For processing, all images will be imported into WEBODM and Agisoft Metashape to create the high-resolution photogrammetric model and orthographic map, and exported as an .OBJ and GeoTiff.

### Watching brief

- 6.8 There will be no watching brief maintained where excavation is entirely within recent made ground (slag).
- 6.9 Where excavation is expected to extend beyond the depth of modern made ground, an archaeologist will be present during excavation to monitor for the presence of archaeological deposits. The archaeologist should view the area as it is being dug and any trench sections after excavation has been completed. Where archaeology is judged to be present, the excavated area should be rapidly cleaned and the need for further work assessed. Should areas of archaeological interest be identified, the consultant should be informed in the first instance to allow discussions with NEAR to take place and a strategy for mitigation be rapidly developed.
- 6.10 All features/deposits of archaeological interest should be accurately located on a site plan and recorded by photographs, scale drawings and written descriptions sufficient to permit the preparation of a report. Section drawings (at a minimum scale of 1:20) must include heights O.D. Plans (at a minimum scale of 1:50) must include O.D. spot heights for all principal strata and any features. Where initial assessment is that remains of archaeological interest are present, a sufficient sample of archaeological features and deposits will be hand excavated in an archaeologically controlled manner in order to establish their extent, nature, function, condition, date and relationship to other features where possible.
- 6.11 The actual areas of monitored ground disturbance (even if no archaeological remains are present) should be recorded on a suitable base map/development plan and the stratigraphic sequence and the depth of the excavations will be briefly recorded. If archaeological remains are identified, their location is to be accurately tied into the National Grid and located on an up-to-date 1:1250 O.S. map base.
- 6.12 All features will be recorded using a Total Station instrument (GPS).
- 6.13 Excavated soil should be searched as practicable for finds. Retention of finds will depend on their nature and size. Large industrial deposits that cannot be easily collected and transported by hand / vehicle should be recorded in situ and then removed and inspected / recorded as appropriate. Decisions regarding recording of larger finds should be based on their ability to answer research questions. The advice of an archaeometallurgist may be useful in making decisions regarding such finds.

### **Unexpected Discoveries**

- 6.14 If significant archaeological features or deposits are uncovered, which could not reasonably have been expected, the scope of the WSI will be reviewed to determine the most appropriate recording and sampling strategy for those remains. Should this be required, the locations and extent of additional archaeological investigation will be agreed by all parties on site.

## Recording

- 6.15 Archaeological recording will be carried out by means of unique numeric based context records and will be written, drawn and photographic (and any other appropriate means). All archaeological exposures (layers, cuts, fills, structures) will be recorded using pro-forma recording sheets. Harris Matrix stratification diagrams will be used to record stratigraphic relationships and these records will be compiled and fully checked during the course of the recording work.
- 6.16 The areas of investigation will be located by appropriate means to ensure its accurate location relative to the Ordnance Survey National Grid.
- 6.17 A drawn record will be maintained, comprising a site plan showing the locations of the areas of monitoring within the Site, feature plans, elevations and section drawings as appropriate. These will be produced at appropriate scales, normally 1:100, 1:50, 1:20 and/or 1:10, as the complexity of the drawing requires. Detailed plans will be made of key features and section or elevation drawings provided of cut features and upstanding structures as appropriate. All drawings will be referenced to the overall site plan. OD spot heights for all principal strata should be included on plans.
- 6.18 A photographic record of the project and of each feature / structure / deposit will be made and photographs illustrating the relationships between groups of features and general progress will also be taken. Archival record shots will be colour digital shots; procedures will follow the guidance offered in The Historic England (2015) 'Digital Image Capture and File Storage: Guidelines for Best Practice' document (<https://historicengland.org.uk/images-books/publications/digital-imagecapture-and-file-storage/>). All photographs will be in sharp focus with an appropriate depth of field. All photographs will be adequately exposed in good natural light or, where necessary, will be sufficiently well lit by artificial means. All photographs will be taken with DSLR camera of no less than 10 megapixels resolution. For maximum quality the preferred option is that the RAW (camera specific) setting is used. RAW images will be converted to TIFF before they are deposited with Kirkleatham Museum,
- 6.19 All context, drawing and photographic registers will be cross-referenced.
- 6.20 Finds will be bagged and labelled according to their context of origin. All finds will be treated in accordance with the recommendations contained in First Aid for Finds (Watkinson & Neale 1998).

## Soil Sampling

- 6.21 The recording work is targeting early 20th century industrial structures. Therefore, environmental soil sampling is unlikely to be required. Soil samples will only be taken from deposits that can be securely dated and/or placed in the Site's stratigraphic sequence. Samples will be collected in accordance with a strategy which recognises the aims and objectives of the project and provision will be made for on-site advice from a relevant specialist. The strategy will take note of the

industrial nature of the site and as part of the strategy, sampling will be undertaken of industrial residues for examination, in accordance with the advice and the guidance offered in Historic England guidance documents: English Heritage 2011, Historic England 2015 and Historic England 2018a. Samples for environmental purposes will be no less than 40 litres (where possible). If samples are required from discrete features that are not proposed for 100% excavation, they will be taken from the unexcavated 50%. Sampling of stake-holes or small features will require the excavation of 100% of the feature.

## Human Remains

- 6.22 Should human remains be encountered they must initially be left in situ, covered and protected. The consultant, curator and coroner should be informed immediately. Removal of human remains will only take place in accordance with a Ministry of Justice licence (which may be required under the 1857 Burials Act) and in accordance with the guidance referenced in Historic England 2017 and the guidance issued by the Advisory Panel on the Archaeology of Burials in England (<https://apabe.archaeologyuk.org/>).

## Treasure

- 6.23 The possibility of encountering items of treasure, as defined in the Treasure Act (1996) as amended, is noted and provision will be made for informing the necessary authorities, and providing appropriate security measures, should the need arise.

## 7.0 Monitoring

- 7.1 NEAR will be informed of the proposed start date and will be kept informed of progress throughout the field and post-excavation work. A member of Prospect Archaeology staff will monitor the excavation and post-excavation work on behalf of the client. Site monitoring visits will be coordinated by Prospect Archaeology.

## 8.0 Post-excavation processing

- 8.1 Finds and records will be returned to the contracted unit for processing. Records will be checked and entered into a computerised database. All finds will be treated in accordance with current HE best practice, including 'Investigative Conservation'. Finds will be cleaned (where appropriate) and marked and boxed for transfer to the relevant specialists according to accepted principles and in line with appropriate period/ material guidelines. Environmental samples will be washed and assessed by an environmental archaeologist.
- 8.2 Where material suitable for scientific dating is recovered, sufficient dating will be undertaken to meet the aims of the project.
- 8.3 For all categories of material recovered, including finds, palaeo-environmental, industrial and other specialist samples, an assessment by an appropriately experienced specialist will be undertaken.



- 8.4 Environmental samples will be processed and sorted, and any artefacts recovered provided to the appropriate specialist(s) to be considered alongside the hand-recovered material. Basic stratigraphic information will be supplied to the project specialists.
- 8.5 Where assessment has identified the need for further analysis and no further mitigation work has been secured within 12 months of the completion of the evaluation reporting (or as agreed with the local planning authority as advised by NEAR), this will be completed drawing upon the contingency allowed, representing 10% of post-excavation costs.
- 8.6 All retained ferrous objects and a selection of non-ferrous objects (including all coins), will be x-radiographed in accordance with the guidance offered in Historic England 2006.

## Reporting

- 8.7 A report will be produced within 4 weeks of the completion of the initial recording fieldwork and provided digitally (pdf format) to Prospect Archaeology for distribution. The report will be prepared in accordance with the Chartered Institute for Archaeologists' guidelines.
- 8.8 Prospect Archaeology will distribute copies of the report to appropriate organisations and individuals. The whole document should be provided as a complete text and image file in pdf format. Prospect Archaeology shall ensure that a full digital copy of the report (on CD or otherwise) is supplied to the Redcar & Cleveland HER within three months of being completed.
- 8.9 The report will contain the following sections:
- A non-technical summary of the findings
  - Description of the methodology employed and explanation of any agreed variations to the brief and justification for any analyses not undertaken
  - Aims and objectives, including specific research objectives
  - A stratigraphic descriptive account of the results from each area / structure investigated
  - Discussion of the results and their significance in relation to local, regional and national sites, as appropriate
  - Conclusions
  - A catalogue and brief post-excavation analysis of each category of artefacts recovered during excavation, including the potential for further analysis
  - An index to the project archive, including details of its location
  - Illustrations and plates as appropriate. Illustrations to be included are: a detailed location map, a detailed site plan showing all trenches, all trench plans and sections and detailed plans and sections of features, select artefact images; an overall site plan showing all (phased) archaeological features will also be included.
  - References and bibliography of all sources used; and
  - An appendix containing a list and summary descriptions of all contexts recorded.

- 8.10 Prospect Archaeology will require regular updating on the results of the watching brief, with no less than weekly progress reports to be submitted. This is to allow rapid decisions on the need for further / extended recording work in different parts of the Site.

## **Publication**

- 8.11 Formal publication will be included in a single volume covering all archaeological recording for the wider site, incorporating all parts of the former Teesside Steel Works currently owned by South Tees Development Corporation (STDC). The scope of this publication will be determined in discussion with NEAR and will be completed within a reasonable time following the completion of the final piece of fieldwork.

## **9.0 Health and Safety**

- 9.1 All Site work will be carried out in accordance with the relevant current Health and Safety legislation (including relevant provision for Covid-19 specific measures) and, more specifically, the H&S procedures of the groundworks contractor undertaking the remediation works. A copy of the Health and Safety Document is available on request and a Risk Assessment will be prepared prior to commencement of work on Site. The health and safety of the workforce should be considered over and above archaeological requirements.

## **10.0 Insurance**

- 10.1 PA and its sub-contractors are fully covered by Employers and Public Liability and Professional Indemnity insurances, copies of which are available for inspection on request.

## **11.0 Archiving**

- 11.1 The Site archive will be prepared in accordance with the UKIC's document Guidelines for the Preparation of Excavation Archives for Long Term Storage and the ClfA's Standard and Guidance for the creation, compilation, transfer and deposition of archaeological archives 2014.
- 11.2 Ultimately the ordered and checked archive, along with artefacts, ecofacts and relevant documents will be combined with the final site archive and deposited with the Kirkleatham Museum. The museum will be contacted prior to the commencement of fieldwork. Thereafter the museum will be involved in discussions with regard to selection and retention of archive material prior to archive deposition, through completion and submission of appropriate forms. This excludes finds that are subject to the Treasure Act 1996 (and later amendments), the deposition of which will be determined separately. A budget to cover the museum's deposition charge will be allowed for in the project costs to the client. The Museum will be contacted for an accession number by the contractor at the appropriate time. On completion, confirmation of deposition will be supplied to NEAR.
- 11.3 An electronic copy of the archive will be deposited with ADS

## 12.0 Programme & Staffing

- 12.1 Fieldwork will be undertaken by a team from Pre-Construct Archaeology. A full list of specialists to be used will be provided prior to fieldwork commencing, for discussion and agreement with Prospect Archaeology and the local planning authority as advised by NEAR. Other specialists found to be necessary during the life of the project will be discussed and agreed on a case-by-case basis.
- 12.2 The name of the responsible archaeologist on site and his / her CV / biography (indicating where relevant experience of working on sites of a similar nature) shall be communicated to NEAR at least five days before any works to which this WSI relates are first commenced on site.
- 12.3 The archaeologist(s) appointed to carry out the work specified will by commencing work be deemed to be working according to the requirements of this WSI, unless the archaeologist(s) in question first agree a variation of this WSI with the local planning authority as advised by NEAR.

## 13.0 References

Chartered Institute for Archaeologists (2014a). *Standard and guidance for an archaeological watching brief.*

Chartered Institute for Archaeologists (2014b). *Standard and guidance for the collection, documentation, conservation and research of archaeological materials.*

Chartered Institute for Archaeologists (2014c). *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives.*

Chartered Institute for Archaeologists (2014d). *Code of Conduct.*

English Heritage, 2011 (second edition) *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation.* Centre for Archaeology Guidelines

Historic England, 2015 *Archaeometallurgy: Guidelines for Best Practice.*

Historic England (2015b) *The Management of Research Projects in the Historic Environment* (MoRPHE).

Historic England 2017 *Guidance for Best Practice for the Treatment of Human Remains Excavated from Christian Burial Grounds in England second edition*

Rosenberg, N 2020 *South Bank, Redcar Desk-Based Heritage Assessment.* Unpublished report LIC01-01

Watkinson, D, & Neale, V, 1998 *First Aid for Finds: Practical Guide for Archaeologists*, 3rd edition

<https://historicengland.org.uk/images-books/publications/digital-imagecapture-and-file-storage/>

<https://apabe.archaeologyuk.org/>

## 14.0 Figures

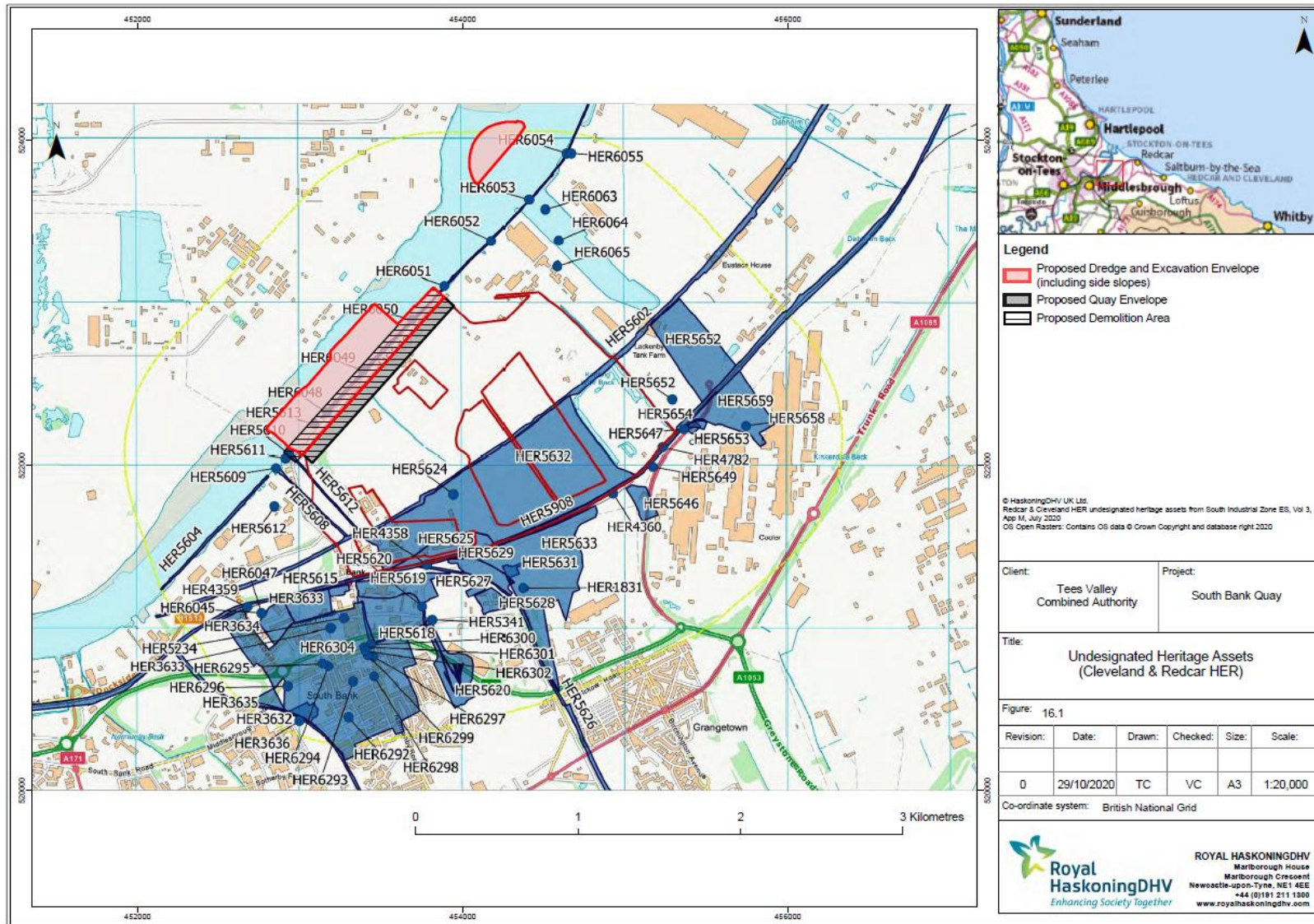


Figure 1: Site Location and known heritage assets (from ES Chapter 2021)

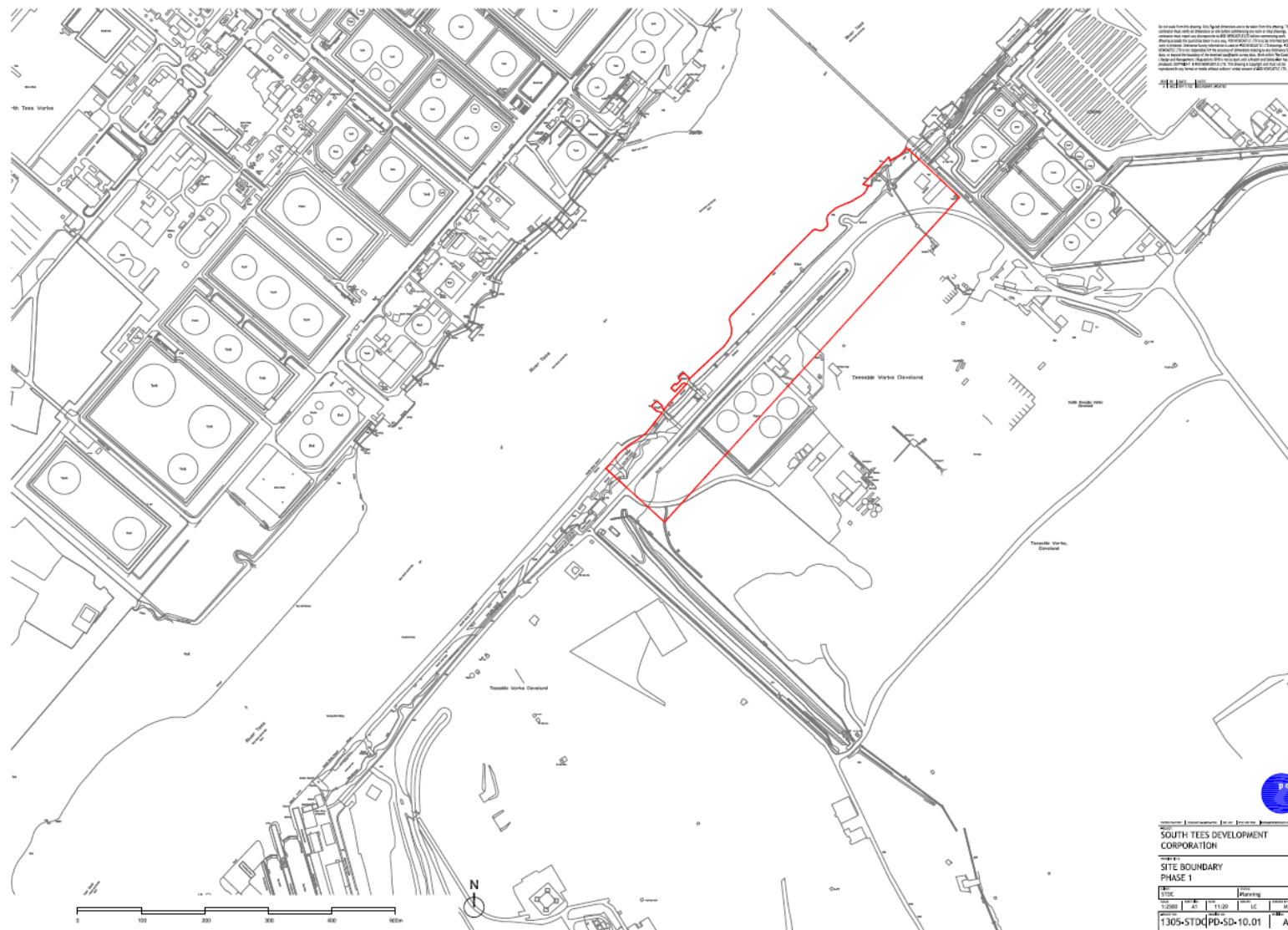


Figure 2: Extent of building recording