Royal HaskoningDHV
Enhancing Society Together

## Note / Memo

**HaskoningDHV UK Ltd.**
**Industry & Buildings**

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| To: | Marine Management Organisation and Redcar and Cleveland Borough Council |
| From: | Steven Rayner (Royal HaskoningDHV) |
| Date: | 15 July 2020 |
| Copy: | South Tees Development Corporation |
| Our reference: | PC1084-RHD-SB-EN-NT-EV-1106 |
| Classification: | Project related |
| Checked by | Matt Simpson (Royal HaskoningDHV) |
| **Subject:** | **South Bank port facility – Environmental Impact Assessment scoping review** |

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### 1. Introduction

South Tees Development Corporation (STDC) is proposing to construct a new port facility at South Bank wharf (Tees estuary) to support its landside proposals for general industry and storage or distribution uses within part of the South Industrial Zone (referred to as the 'proposed scheme' hereafter). The proposals have also been developed to allow for use by the offshore wind industry if the market arises. The proposed port development will require works in both the marine and terrestrial environments and will require Environmental Impact Assessment (EIA) in support of a marine licence application to the Marine Management Organisation (MMO) and a planning application to Redcar and Cleveland Borough Council (RCBC).

STDC submitted its outline planning application for the landside proposals to RCBC on 6 July 2020 and this included the following description of development:

*"Outline planning application for demolition of existing structures on site and the development of up to 418,000sqm (gross) of general industry (Use Class B2) and storage or distribution facilities (Use Class B8) with office accommodation (Use Class B1), HGV and car parking and associated infrastructure works. All matters reserved other than access"*

Although this note has been produced specifically in relation to the proposed port scheme, information regarding the landside scheme is provided for completeness. The landside application is supported by an EIA.

Two separate EIAs are being undertaken in support of the port facility and the landside application, with the works divided as follows:

- 'Marine' EIA (to be undertaken by Royal HaskoningDHV and which is the subject of this note) – the 'marine' works comprise demolition of the existing timber wharf and jetties, capital dredging (to deepen the Tees Dock turning circle and approach channel and to create a berth pocket), offshore disposal of dredged sediments and construction and operation of a new quay (to be set back into the riverbank). The findings of the EIA will be reported in an Environmental Statement (ES) which will be submitted in support of a marine licence application to the MMO and a planning application to RCBC. Drawing PC1084-RHD-SB-ZZ-DR-CM-0004 in Appendix 1 shows the preliminary dredging concept for the proposed scheme (the concept design for the proposed quay is ongoing, but its location will be immediately adjacent to the proposed berth pocket illustrated on Drawing PC1084-RHD-SB-ZZ-DR-CM-0004 in Appendix 1).

- ‘Landside’ EIA (being led by Lichfields – submitted as part of an outline planning application) – the landside works comprise construction and operation of all infrastructure on land, excluding the proposed quay (which is covered above under the ‘marine’ EIA). This comprises a number of general industrial units, hardstanding and storage areas (see Drawing SB-SD-10.1 and SB-SD-10.02 in Appendix 2). The ES for the landside works has been submitted in support of an outline planning application to RCBC, in advance of the application for the ‘marine works’.

It should be noted that although reference is made to landside works (for completeness), this document has been produced solely with regard to the ‘marine’ works, namely demolition of the existing timber wharf and jetties, capital dredging (to deepen the Tees Dock turning circle and approach channel and to create a berth pocket), offshore disposal of dredged sediments and construction and operation of a new quay (to be set back into the riverbank on land).

### 1.1. Pre-application work previously undertaken at the South Bank site

Another party was previously considering the development of a facility at the South Bank site, which comprised the construction and operation of a new port facility and landside infrastructure. The scheme which was previously proposed is very similar in nature to that currently being proposed by STDC (as detailed in Section 2). The pre-application consultation undertaken for the scheme which was previously being proposed at South Bank (detailed below), is considered to be of relevance to the current proposals.

Scoping Opinions were provided by the MMO and RCBC for the previously proposed scheme under the Marine Works (Environmental Impact Assessment) Regulations 2007 as amended, and the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 respectively. This document has been produced to inform discussions with the MMO and RCBC regarding the validity of the 2019 Scoping Opinions (which are publicly available online) with specific regard to the ‘marine’ EIA. Given the very close similarity between the marine elements of the previous proposals and the current proposals, our intention is to reach agreement with the MMO and RCBC on the approach to the EIA without requesting Scoping Opinions under the respective EIA regulations. A telephone meeting is therefore proposed to be held with the MMO and RCBC in order to introduce the proposed scheme, confirm the scope of the marine licence and planning application (in terms of licensable activities) and confirm the requirements for environmental assessment.

This document presents the following information:

- A comparison of the key marine elements of the proposed scheme with that previously proposed (Section 2).
- A commentary on the reasons that the Scoping Opinions provide adequate direction on the scope of the EIA for the proposed scheme in light of the preferred option for the berth length, alignment and structural concept for the quay structure (Section 2).
- A summary of the Scoping Opinions previously issued by the MMO and RCBC (Section 3).
- The key elements of the proposed approach to the ‘marine’ EIA for each environmental parameter (Section 4).

## 2. Comparison of the key marine elements of the proposed scheme with that previously proposed

A Scoping Opinion for the South Bank wharf was issued by the MMO in August 2019 (reference EIA/2019/00017) in response to a request for a Scoping Opinion for the previously proposed scheme. The

request was accompanied by a letter (Prism Planning, 2019) which provided details about the proposed construction site, the previously proposed scheme and listed the topics to be included within an ES.

Table 1 below provides a comparison between the features of the marine elements of the previously proposed scheme with the current proposed scheme being progressed by STDC.

**Table 1 Comparison of the marine elements of the previously proposed scheme with the current proposed scheme being progressed by STDC**

| Scheme parameter | Proposed port facility previously proposed (which was subject to scoping by the MMO and RCBC) | Proposed scheme being progressed by STDC |
|---|---|---|
| **Scheme footprint** | | |
| Location | • South Bank wharf, Tees estuary | • South Bank wharf, Tees estuary |
| **Quay** | | |
| Dimensions | • 950m long (unspecified width) | • 1,000m long |
| Location | • Set back behind the existing derelict quay at South Bank | • Set back behind the existing derelict quay at South Bank, built into the land |
| Construction | • Solid berth structure with a quay wall constructed from contiguous steel tubes or a combi-piled wall.<br>• Piles to be installed from plant operating on land.<br>• Intention to drill piles to minimise use of percussive piling. | • Solid berth structure with a quay wall constructed from piles.<br>• Piles to be installed from plant operating on land, with piles to be installed on land (i.e. no piling below mean high water spring tides). |
| **Dredging** | | |
| Volume | • 2.5 million $m^3$ | • 1.9 million $m^3$ |
| Areas | • Berth pocket<br>• Approach channel<br>• Tees Dock turning circle | • Berth pocket<br>• Approach channel (albeit a reduced area of the approach channel)<br>• Tees Dock turning circle |
| Depths | • Berth pocket – to be maintained at 12.5m bCD.<br>• Approach channel – to be maintained at 12m bCD from the Norsea Oil Terminal over approximately 3.5km (current depth ranges from 14.1m bCD to 5.7m bCD)<br>• Tees Dock turning circle – to be maintained at 12m bCD (current depth 8.8m bCD) | • Berth pocket – to be maintained at 13m bCD.<br>• Approach channel – to be maintained at 10.4m bCD over a distance of approximately 1km (current depths range from 8.5m bCD to 5.7m bCD).<br>• Tees Dock turning circle – to be maintained at 10.4m bCD (current depth 8.8m bCD). |
| Disposal location | • Offshore (Tees Bay C) | • Offshore (Tees Bay C) |

As noted above , there are differences between the scheme which was previously proposed and that which is now proposed by STDC; however, the over-riding design principles and key scheme activities are very similar in nature.

## 3. Summary of the Scoping Opinions

The scoping letter and request which was submitted to both the MMO and RCBC in May 2019 with regard to the previously proposed scheme detailed that the EIA would address the following topic areas:

- Landscape and visual impact assessment.
- Traffic and transport.
- Ecology, including marine ecology.
- Hydrodynamic and sedimentary regime.
- Noise and vibration.
- Air quality.
- Hydrology and hydrogeology.
- Socio-economics.
- Cumulative impacts.

There was no detail provided within the scoping letter on the specific issues to be assessed within each topic or the surveys or studies to be undertaken as part of the EIA.

In their Scoping Opinions, the MMO and RCBC provided detail regarding the key issues for various topics that need to be assessed within the EIA. Detail of relevance to the 'marine' EIA to be undertaken on behalf of STDC is presented in the following sections.

### 3.1. Summary of relevant information contained in the Scoping Opinions from the MMO and RCBC with regard to the 'marine' EIA

RCBC confirmed in June 2019 that the list of topics and parameters proposed for the EIA to be undertaken for the previously proposed scheme at South Bank (and listed above) appeared to be comprehensive and would provide sufficient scope for the proposed ES. However, the MMO supplemented the list in August 2019 with the following topics/parameters which it considered should be included in the ES:

- Habitats Directive / Wild Birds Directive.
- Other nature conservation.
- Benthic ecology.
- Coastal processes.
- Seascape / landscape.
- Fish ecology and fisheries.
- Shellfish.
- Archaeology / cultural heritage.
- Navigation / other users of the sea.
- Air quality and climate.
- Water quality.
- Underwater noise.
- Seabed / land / soil quality.
- Population and human health.
- Cumulative impacts and in-combination impacts.
- Risk of major accidents and disasters relevant to the project (including those caused by climate change)
- Mitigation.

Table 2 below provides a summary of relevant information from the Scoping Opinions issued by the MMO and RCBC with regard to the previously proposed development from 2019. This information has been used to inform the proposed scope of environmental assessment for the 'marine' EIA for the current proposed scheme. It should be noted that the scoping letter issued to the MMO and RCBC in 2019 for the previously proposed scheme presented the scheme as a whole (i.e. the landside and the 'marine' development); some of the information detailed within Table 2 is therefore not considered to be strictly applicable to the 'marine' EIA in isolation.

**Table 2 Relevant information from MMO and RCBC Scoping Opinions (which are publicly available online)**

| Topic | Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme |
|---|---|
| **MMO Scoping Opinion** | |
| Habitats Directive / Wild Birds Directive | Incorrect reference to the Tees and Hartlepool Foreshore and Wetlands Site of Special Scientific Interest (SSSI), as this site has been subsumed into the newly designated Teesmouth and Cleveland Coast SSSI.<br>The ES should include a full assessment of the direct and indirect effects of the project on the features of special interest within the Teesmouth and Cleveland Coast SPA, Ramsar site and SSSI, and should identify mitigation measures as required. This should include impacts on tern prey, intertidal foraging habitat loss, barriers to species movement, visual and noise (airborne and underwater) disturbance. |
| | There should be particular interest in the vicinity of intertidal mudflat opposite the proposal site. Birds feeding here are particularly sensitive to noisy activities, particularly during winter months and consideration should be given to suitable mitigation. The river channel is also important for foraging common tern from the Saltholme colony. |
| | The environmental impacts of noise generated during construction should be carefully considered, especially in relation to the impact of noise on birds, fish and marine mammals. Noise modelling at sensitive locations should be included in the ES, for both construction and operation. |
| | The visual disturbance caused by the project (on site staff, vessels and equipment (including cranes)), must be considered for sensitive bird species. This should also include the impact of lighting during construction and operation. |
| Benthic ecology | It is advised that a habitat survey should occur within the dredge footprint to identify any important benthic habitats or species. |
| Coastal processes | The ES needs to be based on the physical characteristics of the site, which should include a description of the proposed works; geography of the site; seabed properties, and; tidal/estuarine dynamics (tidal range and currents). The type of data used and detail required will depend on the sensitivity of each receptor (identified by the applicant) to these physical factors and the evidence the applicant requires to present their case. The use of in-situ and/or modelled data may be necessary to demonstrate a point.<br>The MMO is unable to provide further comment on what should and should not be included in the assessment without further information. The applicant should conduct their own scoping assessment based on the physical characteristics of the site as described above. |
| Archaeology / cultural heritage | The Tees has been subject to dredging in the recent past meaning the potential for archaeologically significant deposits or features to be impacted in likely to be negligible and therefore not necessary to be assessed.<br>The development could have an impact on a number of designated heritage assets and their settings around the site. The MMO expects that the following designated heritage assets should be assessed in the ES:<br>• HA1139267 Transport Bridge<br>• HA1160408 Baptist Church<br>• HA1139622 Church of St Peter |

| Topic | Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme |
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| | • HA1160378 War Memorial Circa 5 metres South West of Church of St Peter<br>• HA1310598 1 Milbank Street<br>• HA1329634 War Memorial<br>• HA1329635 Church of St John the Evangelist<br>Views of the Grade II* Transporter Bridge should be assessed in the 'Landscape and Visual Impact Assessment' to determine the likely impact of the crane and other tall features in the proposal.<br>The ES should also consider the potential impacts on non-designated heritage assets since these can be of national importance. The Local Authority's Historic Environment Record (HER) should be consulted for baseline data in this regard. |
| Navigation / other users of the sea | The proposed works fall within the Statutory Harbour Authority area for PD Teesport, who have declared compliance with the Port Marine Safety Code for 2019. The MMO would therefore advise that PD Ports are fully consulted during the consenting process so that impacts on the safety of navigation within their jurisdiction can be considered in line with their Safety Management System (SMS).<br>There is a British Standards Institution publication on Road Lighting, BS5489. Part 8 relates to a code of practice for lighting which may affect the safe use of aerodromes, railways, harbours and navigable Inland waterways.<br>The MMO will be able to provide further comment on any marking requirements, and any impact to recreational boating interests once a formal application is made. |
| Water environment | The proposal has the potential to impact on the water environment in respect to:<br>• Permanent loss of intertidal priority habitat designated as SSSI and SPA in an already heavily modified waterbody;<br>• Impact to intertidal priority habitat designated as SSSI and pSPA not directly associated with the development;<br>• Dredging of the River Tees;<br>• Construction and operation;<br>• Accidental releases;<br>• Drainage within made ground.<br>The ES should include an assessment of these impacts and specifically:<br>• The requirements of the Water Framework Directive (WFD) by way of a WFD Assessment.<br>• The Environment Agency's tidal encroachment policy for use in all estuaries.<br>• How the development will achieve a biodiversity net gain. |
| WFD | The applicant should identify measures to comply with the requirements of the WFD through carrying out a WFD assessment of the proposal. The design process for the wharf should look to include an assessment of incorporating bio-engineered designs such as Estuary Edges, to mitigate on site impacts. Where on site design cannot adequately mitigate impacts and achieve a biodiversity net gain, the Tees Estuary Partnership (TEP) has developed a Tees Estuary Habitat Vision that aims to deliver WFD mitigation measure objectives. |
| Dredging and disposal | The applicant should consider the methodology to be used, the disposal of dredged material, and the timing of works. Decisions should be underpinned by the fundamental scientific principles of hydraulics and geomorphology and take account of the multiple functions and services that a channel delivers. |

| Topic | Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme |
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| | The disposal site must be specified, ensuring that it has taken capital dredge material before, and can accept the total proposed amount of dredge material. As part of the marine licence application, the applicant will need to provide sediment sample analysis results to ensure the material is suitable for disposal to sea (and to inform the impact assessment). Any material to be dredged and disposed of within licenced disposal areas at-sea must not exceed the Cefas Action Level 2 guidelines for contaminated sediment. This can be determined after sediment samples have been tested. |
| Habitat enhancement / beneficial use | The MMO would support the consideration of using the dredged material for beneficial use. This could include recharge of intertidal areas elsewhere in the estuary or the creation of bird islands. The MMO would advise the applicant to explore opportunities for habitat enhancement, in particular for the Quay combi-wall frontage. Ecological enhancement would support environment net gain. |
| Underwater noise | In order to assess the potential impacts, detailed knowledge is required of the spatial and temporal distribution of species and their seasonal sensitivities (e.g. known spawning and nursery grounds or migratory routes) in the area/River Tees (e.g. an appropriate baseline assessment).<br>It will also be necessary to identify significant noise sources from the project (i.e. the noise generating activities) that may cause harm to aquatic fauna. Specific information on the dredging and piling activities will be required, including the duration of works and anticipated working hours, the likely noise levels expected, the number of piles and the installation method.<br>The MMO would expect key marine invertebrate, fish and marine mammal species to be scoped into the ES. Given that the works will be undertaken within the River Tees, it will be important to consider migratory fish species.<br>Depending on the outcome of the assessment, and the risk of significant impact, the MMO would expect to see measures in place for minimising the potential impacts of underwater noise should be outlined. Measures may include temporal restrictions to avoid undertaking work during sensitive times of the day or year. |
| Cumulative and in-combination impacts | The proposed works overlap with the Northern Gateway Terminal project. The applicant has estimated that the works will require a capital dredge of 2.5 million cubic metres ($m^3$) of material. The applicant has stated that this will be reduced to 1.6 million $m^3$ of capital dredge material if the works are carried out alongside the Northern Gateway project (capital dredge of 4.5 million $m^3$).<br>The exact details of the Northern Gateway project have not been provided. This information would be required, including any spatial and temporal overlap should the projects be considered together. |
| **RCBC Scoping Opinion** | |
| General | RCBC confirmed that the proposed list of topics to be included in the EIA appears comprehensive and would provide sufficient scope for the Environmental Statement (ES). RCBC confirmed that the ES, as well as plans and drawings, a Planning Statement, Transport Statement, Flood Risk Assessment and Contaminated Land Assessment are likely to cover the requirements of a future planning application. Comments from consultees were also detailed in the Scoping Opinion and these are summarised below. |
| Environment Agency | As per the comments detailed within the MMO's Scoping Opinion with regard to water environment, WFD and habitat enhancement. The Environment Agency also confirmed that normally, any works within 16 metres of the Tees will require an Environmental Permit, under the Environment Permit Regulations 2016. That said, the proposed works such as the combi-wall and quayside construction will require a marine licence and the Agency would waiver its permitting requirements. |
| HSE | Regulation 4(4) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 requires the assessment of significant effects to include, where relevant, the expected significant effects arising from the proposed development's vulnerability to major accidents. The HSE assumed that the applicant had consulted the HSE as the proposed development is vulnerable to a major accident as it sits within a consultation zone around a |

| Topic | Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme |
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| | major accident hazard site or pipeline. The HSE suggested submitting a pre-application enquiry to them to seek early reassurance that the development would meet the HSE's land use planning advice criteria in regard to public protection. |
| Highways England and RCBC Development Engineers | Highway's England's main concern is the impact on operation and safety of the Strategic Road Network (SRN). In order to approve granting planning permission, Highways England requires information that enables it to assess the impact of the development undertaken via drafting a Transport Assessment or Statement as part of the planning application. Ahead of this, it welcomed involvement in preapplication discussions |
| MMO | Any works within the marine area require a licence from the MMO; it is down to the applicant themselves to take the necessary steps to ascertain whether their works will fall below the level of mean high water springs. |
| Ministry of Defence (MOD) | The MOD confirmed that the application relates to a site outside of MOD statutory safeguarding areas and therefore confirmed it had no objection. There would be a requirement for amendments to aeronautical charts and mapping records due to the proposed height of the development, however. Such amendments must be undertaken prior to commencement of development. |
| NATS Safeguarding | The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal. |
| Natural England | Case law and guidance has stressed the need for a full set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant planning permission. Information regarding changes to designated sites was provided. |
| Northumbrian Water (NWL) | Following the transfer of private drains and sewers in 2011, there may be assets that are the responsibility of Northumbrian Water that are not yet included on its records. Care should therefore be taken prior and during any construction work with consideration to the presence of sewers on site. Should you require further information, please visit https://www.nwl.co.uk/developers.aspx. The application does not provide sufficient information with regard to the management of foul and surface water from the development for Northumbrian Water to assess its capacity to treat the flows from the development. NWL recommended that the developer contact Northumbrian Water to agree allowable discharge rates and points into the public sewer network. This can be done by submitting a preplanning enquiry. |
| Network Rail | Network Rail require that any application produced in respect of this scheme assesses the impact of the development on the operational railway, in particular the Transport Assessment must include analysis of any haulage routes where they cross railway assets such as over or under railway bridges or over level crossings. |
| Redcar and Cleveland Council Strategic Planning Policy | Detail was provided on applicable planning policies. |
| RCBC Public Rights of Way officer | There are no public rights of way within the site so there are no specific PROW objections. However, the site lies across the route of the proposed Dockside Road Extension so would impact on the opening up of the whole of the south Tees site for traffic and cycle route access. The development of the site must allow for the opening up of the land for the implementation of the STDC Master Plan. |
| RCBC Natural Heritage Manager | Any future EIA should be comprehensive, covering all appropriate and specific environmental/ecological areas given the adjacent land designations |

| Topic | Key issue identified in Scoping Opinion issued by the MMO and RCBC in 2019 for the previously proposed scheme |
|---|---|
| RCBC Environmental Protection | The applicant should contact this department to discuss and agree methodology for air quality and noise and vibration assessments. |
| RCBC lead local flood authority | An application should be supported by a site-specific Flood Risk Assessment and Drainage Strategy. The supporting information should demonstrate compliance with R&C Local Plan Policy SD7 (Flood and Water Management.) |
| RCBC archaeology consultant | The cultural heritage chapter of the relevant EA should be required to consider (a) both the direct and indirect archaeological impacts to all designated heritage assets and their settings; and (b) the direct and indirect effects on non-designate heritage assets and their settings. A sufficiently large zone of archaeological interest should be considered for the assessment of both designated and non-designated assets. This zone is likely to be of a minimum 2km radius from the application site, and in relation to impacts on setting is likely to be considerably larger. |

## 4. Environmental assessment requirements in support of a marine licence and planning application for the 'marine' elements of the proposed scheme

Based on the information detailed above, it is concluded that the Scoping Opinions issued by the MMO and RCBC in 2019 for the previously proposed scheme are sufficient to inform the scope of the 'marine' EIA for the current scheme being progressed by STDC. The proposed scope is detailed below.

### 4.1. Hydrodynamic and sedimentary regime

The potential effects of the proposed scheme on the hydrodynamic and sedimentary regime will be assessed using computer modelling. Royal HaskoningDHV's 2D North East Regional Tidal Model will be used to provide boundary conditions for the 3D Tees Estuary Tidal Model. The 3D Tees Estuary Tidal Model will be updated with new bathymetry and its mesh will be refined around the site of the proposed scheme. The model will be re-calibrated and verified by the local Acoustic Doppler Current Profiler (ADCP) data collected as part of a MetOcean survey. The re-calibrated 3D model will then be used to characterise baseline conditions and predict potential local and estuary-wide changes in water level, current speed and bed shear stress caused by the proposed scheme. The model will be run for three different fluvial flow conditions (e.g. mean daily flow, 1 in 1 year and 1 in 100 year flow).

The site of the proposed scheme is well-sheltered from North Sea waves and so locally generated wind waves would be of more significance. To understand wave conditions, the established North East Coast Wave Models will be used to transform extreme offshore waves (1 in 1 year and 1 in 100 year) to the site. Extreme value analysis for extreme wind conditions in the Tees Estuary will be carried out. Time series recorded wind data collected by PD Teesport will be used; locally generated waves by extreme winds will be hindcast using our Tees Estuary Wave Model.

The re-calibrated 3D Tees Estuary Tidal Model will be used to predict movement of suspended sediment from the proposed dredging and disposal activity by coupling a sediment plume model built in MIKE21-MT software. Sediment release rates will be estimated based on seabed and river conditions. The model will be run for the entire dredging period under astronomic tidal and daily mean fluvial flow conditions.

### 4.2. Marine water and sediment quality

The findings from the sediment quality survey (to be undertaken in accordance with a sampling plan agreed with the MMO (reference SAM/2020/00026)) will be used alongside the findings of the hydrodynamic and sedimentary regime assessment to determine the implications of the proposed scheme on water quality (in particular the effect of resuspension and dispersion of sediment during dredging and disposal activities). Contaminant concentrations from the survey will be compared to those recently obtained within the estuary. Assuming that the concentrations of contaminants in sediment will be similar to those previously identified, a quantitative water quality assessment will not be required. However, specific consideration will be given to tributyltin (TBT) concentrations within sediments as the current water quality classification for the estuary indicates poor chemical status for this parameter. The potential impact on water quality will inform other areas of the EIA (e.g. marine ecology, fisheries).

### 4.3. Marine ecology and marine mammals

A desk-based assessment will be undertaken to source information regarding marine mammal usage of the area. This will include consultation with the Industry Nature Conservation Association (INCA) which monitors seal populations in the Tees.

It is currently proposed that all piling works for the quay will be undertaken on land. It is therefore not considered necessary to carry out underwater noise modelling, as the only source of underwater noise disturbance would be from dredging and vessel transits which are a regular occurrence in the Tees. Maintenance dredging is undertaken on a very regular throughout the Tees estuary and therefore significant underwater noise disturbance effects are not anticipated due to the proposed capital dredge.

The findings of the benthic ecological survey (the scope of which has been agreed with Natural England) will be used to inform the ES.

We envisage that works will be required to offset the loss of intertidal within the footprint of the proposed berth pocket. As detailed below, a biodiversity net gain Strategy is being developed by STDC for the wider site; this Strategy will take account of the intertidal to be lost by the proposed scheme and therefore a separate intertidal net gain study is not proposed in support of the marine licence and planning applications (rather, we will defer to the Strategy within our applications).

### 4.4. Terrestrial ecology

An assessment of potential impact to terrestrial ecology due to construction of the quay will be undertaken. This will be informed by the findings of an Extended Phase 1 habitat survey which has been undertaken by INCA in July 2020.

A terrestrial ecological net gain study will be required in support of the planning application. Because the location of the proposed quay forms part of the wider STDC site and is closely linked to the planning application for the landside development, it is proposed that any terrestrial net gain requirement related to the construction of the quay will be addressed in the same manner as for the landside planning application. It is understood that the approach to net gain for the landside planning application is currently under discussion with RCBC and Natural England.

### 4.5. Fish and fisheries

Consultation with both the North Eastern Inshore Fisheries and Conservation Authority (NEIFCA), the MMO and the Environment Agency will be undertaken to source information on fisheries use within the area, as well as reviewing UK spawning and nursery grounds maps publicly available online.

The findings from the sediment and water quality assessments and marine ecology assessments will be utilised to inform the assessment of significance of potential impacts to fish and fisheries. As noted in Section 4.3, underwater noise modelling is not proposed given that all piling works for construction of the quay will be undertaken on land. Assessment of underwater noise disturbance to fish and fisheries will be undertaken qualitatively.

### 4.6. Marine and coastal ornithology

The proposed scheme footprint is located within and adjacent to sensitive areas for waterbirds and seabirds (i.e. the site is within the Teesmouth and Cleveland Coast Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI), and adjacent to the Teesmouth and Cleveland Coast Ramsar site).

The waterbird usage of the area will be discussed with Natural England (including any survey data that Natural England has used to inform the SPA classification) and will be informed by the findings of ornithological surveys to be undertaken by INCA (the scope of which has been agreed with Natural England).

The most recent low tide count data will be purchased from the British Trust for Ornithology (BTO) for the North Tees Mudflat sector (2012/13) as well as core count data from the Tees Estuary opposite Smith's Dock and Hargreaves Quarry sector.

The assessment of potential effects on waterbirds and seabirds will be informed by the findings of the hydrodynamic and sedimentary regime assessment (particularly the plume dispersion modelling to determine impacts on feeding terns which are an interest feature of the SPA), the sediment quality survey, marine ecology, air quality assessment and the noise assessment (see below).

### 4.7. Marine and terrestrial archaeology

An archaeological desk-based assessment will be undertaken to establish the nature and extent of known and potential archaeological resource within the marine environment (submerged prehistory, maritime and aviation archaeology). This will draw from the findings of the studies undertaken as part of the landside EIA, as well as information from publicly available studies previously undertaken for consented schemes in the Tees. The findings of an archaeological review of vibrocore / borehole logs will inform the assessment.

A settings assessment will be undertaken to determine any impacts to heritage receptors as a result of the proposed quay infrastructure, drawing from the findings of the landscape and visual impact assessment (LVIA) (detailed in Section 4.13).

We understand that built heritage was scoped out of the landside EIA and therefore we propose to liaise with RCBC planning department to confirm if the same approach can be undertaken for the landside parts of the marine EIA.

Consultation with Historic England and RCBC will be undertaken to confirm that the potential for harm to the significance of heritage assets is appropriately assessed and that mitigation recommendations are both appropriate and proportionate to the level of potential impact.

### 4.8. Commercial and recreational navigation

Consultation with the Harbour Master will be undertaken to understand the existing levels of vessel traffic within and around the location of the proposed scheme and to understand the control measures adopted to minimise conflicts to vessel traffic. A formal navigation risk assessment will be undertaken following liaison with PDT's Harbour Master in June 2020. The findings from the risk assessment will be used to inform the EIA.

### 4.9. Noise and vibration

A baseline noise survey is proposed, the detail of which will be confirmed through liaison with Natural England and RCBC. We have allowed for taking noise measurements during the daytime and night-time at representative locations.

The noise modelling software package SoundPLAN will be used to model the noise sources during the construction and operational phases; outputs from the modelling will inform the impact assessment (for both ecological and human receptors).

A vibration survey or assessment of vibration impacts is not considered necessary given the separation distance between the site and the nearest sensitive receptor.

### 4.10. Air quality

A risk-based construction phase dust assessment will be undertaken for quay construction works, considering both human and ecological receptors. Screening of construction and operational phase vessel movements will be carried out to determine whether further detailed assessment is necessary.

### 4.11. Traffic and transport

It is anticipated that the number of construction movements associated with the construction of the quay would not be significant in the context of background traffic flows and the wider development and, therefore, it is proposed that a Transport Statement (TS) will be prepared (rather than a full Transport Assessment).

A detailed cumulative impact assessment with the wider onshore development (or other planned or consented schemes in the area) is not considered necessary as it is envisaged that the impacts of constructing the quay would not lead to significant traffic and transport impacts (and therefore significant cumulative impacts are not predicted).

### 4.12. Flood risk and coastal defence

The findings of the hydrodynamic and sedimentary regime assessment will inform consideration as to whether the proposed scheme may impact on flood risk or coastal defence, and the susceptibility of the proposed scheme to climate change. A flood risk assessment will be undertaken focussing on the proposed quay.

### 4.13. Landscape and visual

A Landscape and Visual Impact Assessment (LVIA) will be undertaken as part of the EIA. This will involve a desk-based study, a site assessment, zone of theoretical visibility modelling using a minimum of 5m resolution digital terrain mapping data and georeferenced Ordnance Survey data to a 2km radius. The assessment of landscape and visual impacts will be based on the Guidelines for Landscape and Visual Impact Assessment, 3rd edition.

A maximum of six viewpoint locations is assumed to be appropriate and the study area has been assumed to a maximum of 2km from the proposed scheme. Three daytime photomontages will be developed to illustrate the proposed scheme during the operational phase.

The scope and methodology for the LVIA will be confirmed through liaison with RCBC.

### 4.14. Geology, hydrogeology, hydrology, land quality and waste

A land quality desk study and Preliminary Risk Assessment (PRA) Report will inform the EIA chapter. No sampling or laboratory analysis works is proposed as part of the assessment..

The EIA will include consideration of potential effects associated with the generation of waste and how waste and the use of natural resources could be managed / controlled.

### 4.15. Socio-economics

A desk based socio-economic assessment will be undertaken as part of the EIA to understand the impacts of the proposed scheme on the socio-economics of the area.

### 4.16. Climate change (greenhouse gas assessment)

A greenhouse gas assessment will be undertaken which will quantify the main sources of greenhouse gas emissions released from construction and operational phase activities. The assessment will be carried out in accordance with internationally accepted practice, namely the Greenhouse Gas Protocol and Institute of Environmental Management and Assessment (IEMA) guidance.

### 4.17. Human health risk assessment

The findings from the air quality, noise and land quality assessments will be used to inform an assessment of potential impacts to human health as a result of the proposed scheme. A formal human health risk assessment is not considered necessary.

### 4.18. Disaster risk

It is considered that disaster risks (e.g. earthquakes) are not applicable to the proposed scheme.

There is a series of pipe tunnels that cross under the Tees estuary and therefore any impact on these tunnels as a result of the proposed scheme could result in significant environmental and economic impacts. However, the pipe tunnels are located downstream of the proposed scheme footprint and therefore no impact on these tunnels is expected.

Given the coastal setting, the main disaster risk associated with the scheme would likely be linked to coastal flooding. The findings from the flood risk and coastal defence section would effectively cover this risk, and therefore no further assessment of disaster risk is proposed.

### 4.19. Offshore disposal of dredged material

A benthic ecological survey of the Tees Bay C offshore disposal site was undertaken in 2019 as part of the programme of survey works undertaken to inform the EIA for the proposed Northern Gateway Container Terminal (NGCT). This existing data will be used to describe the baseline environmental conditions within the offshore disposal site.

The potential impact of offshore disposal on bathymetry, benthic ecology, water and sediment quality and fisheries will be assessed, but given that no significant impact is envisaged (on the basis that the disposal site is a licenced site), this assessment will be at a high level with no surveys required. The findings of sediment plume modelling will, however, be used to inform impacts to water quality as a result of the offshore disposal of dredged material.

The potential impact of the disposal of dredged material will be assessed in the context of Cefas records of the tonnage of material disposal at the offshore disposal site and the cumulative impact with disposal of dredged material from other consented projects.

### 4.20. Cumulative impact assessment

A cumulative impact assessment will be undertaken, taking into account any relevant consented - but as yet undeveloped - plans and projects which could interact with the proposed scheme. Such projects will include:

- The landside elements of the South Bank development.
- NGCT.
- Anglo American (Sirius Minerals) Harbour Facilities.
- Anglo American (Sirius Minerals) Materials Handling Facility at Wilton and Storage Facility at Bran Sands.
- Tees GasPort.
- Dogger Bank Teesside A and Dogger Bank B.
- Hartlepool approach channel.

Further liaison will be undertaken with RCBC to determine whether any other projects require assessment as part of the CIA.

### 4.21. Water Framework Directive

A Water Framework Directive (WFD) compliance assessment will be undertaken in accordance with the Environment Agency's *Clearing the Waters for All* guidance. The methodology will be modified to enable assessment of impacts to the Tees Mercia Mudstone & Redcar Mudstone groundwater body as well as the Tees transitional waterbody. The findings from the hydrodynamic and sedimentary regime assessment, water and sediment quality assessment and marine ecology assessment will feed into the WFD compliance assessment.

### 4.22. Habitats Regulations Assessment

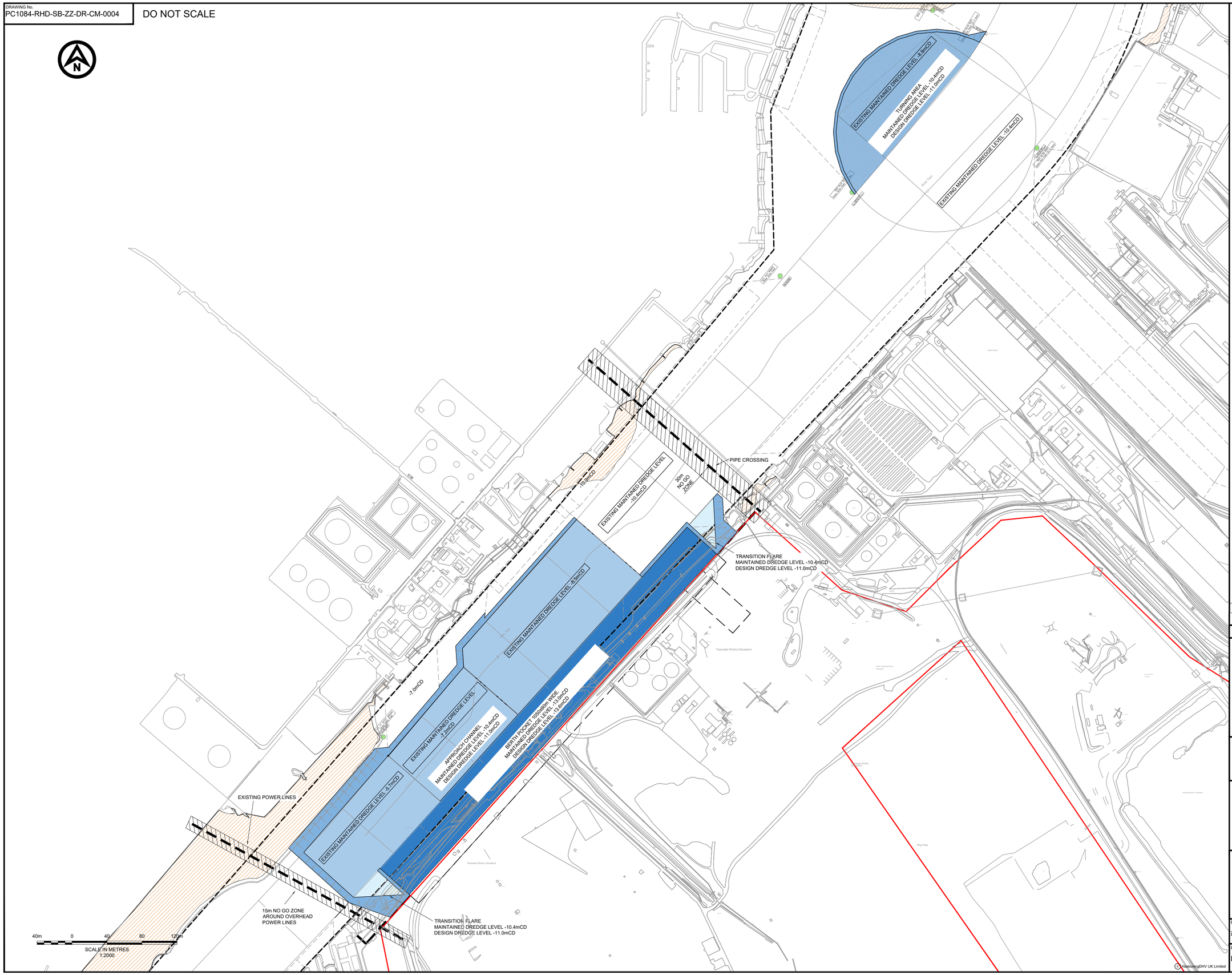
A Habitats Regulations Assessment will be undertaken to consider the implications of the proposed scheme (alone and in-combination with other plans and projects) on the integrity of the Teesmouth and Cleveland Coast SPA and Ramsar site.

The first stage will be to determine whether or not a likely significant effect would occur (either alone or in-combination with other plans or projects) on the SPA and Ramsar site and, therefore, whether Appropriate Assessment is required. Based on initial consultation with Natural England, we have assumed that information to allow an Appropriate Assessment to be undertaken for the proposed scheme will be required.

Appendix 1 Preliminary dredging concept for the current scheme being progressed by STDC (Drawing PC1084-RHD-SB-ZZ-DR-CM-0004). **Note that the concept design for the proposed quay is ongoing, but its location will be immediately adjacent to the proposed berth pocket illustrated on Drawing PC1084-RHD-SB-ZZ-DR-CM-0004.**

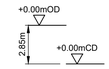
DRAWING No.
PC1084-RHD-SB-ZZ-DR-CM-0004

DO NOT SCALE




## NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN (mOD). FOR RELATIONSHIP BETWEEN ORDNANCE DATUM AND CHART DATUM REFER TO DIAGRAM BELOW




3. ALL DREDGE SLOPES ARE ASSUMED TO BE 1:3. TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
4. SEDIMENTATION/SILTATION ALLOWANCE OF 0.6m ASSUMED AND IS TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
5. NO GO ZONES AROUND OVERHEAD POWER LINES & SUB-RIVER PIPE CROSSING ARE TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
6. BLADES STORED TRANSVERSELY ON VESSELS WILL ENCROACH ON THE APPROACH CHANNEL. ACCEPTABILITY TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.
7. PROPOSED SCHEME AVOIDS DREDGING OVER THE SUB-RIVER PIPE CROSSINGS AND RESULTS IN A CHANNEL AVAILABILITY OF 100% FOR 7m DRAFT VESSELS AND 88% FOR 11m DRAFT VESSELS.
8. IF A ROCK BLANKET IS REQUIRED TO MITIGATE THE JACK-UP OF VESSELS AT THE BERTH THEN THE DESIGN DREDGE DEPTH WILL NEED TO INCREASE BY THE THICKNESS OF THE ROCK BLANKET. REQUIREMENT TO BE CONFIRMED DURING FUTURE DEVELOPMENT PHASES OF THE PROJECT.

| REV | DATE | DESCRIPTION | BY | CHK | APP |
|---|---|---|---|---|---|
| P01 | 23.03.20 | FOR INFORMATION | BM | CF | TJR |

REVISIONS

CLIENT

South Tees Development Corporation

PROJECT

TEES STUDY

TITLE

SOUTH BANK
PRELIMINARY DREDGING
CONCEPT


Royal HaskoningDHV
Enhancing Society Together
Marborough House, Marborough Crescent
Newcastle upon Tyne, NE1 4EE
Tel +44 (0)191 211 1300
Email info@newcastle.royalhaskoning.com
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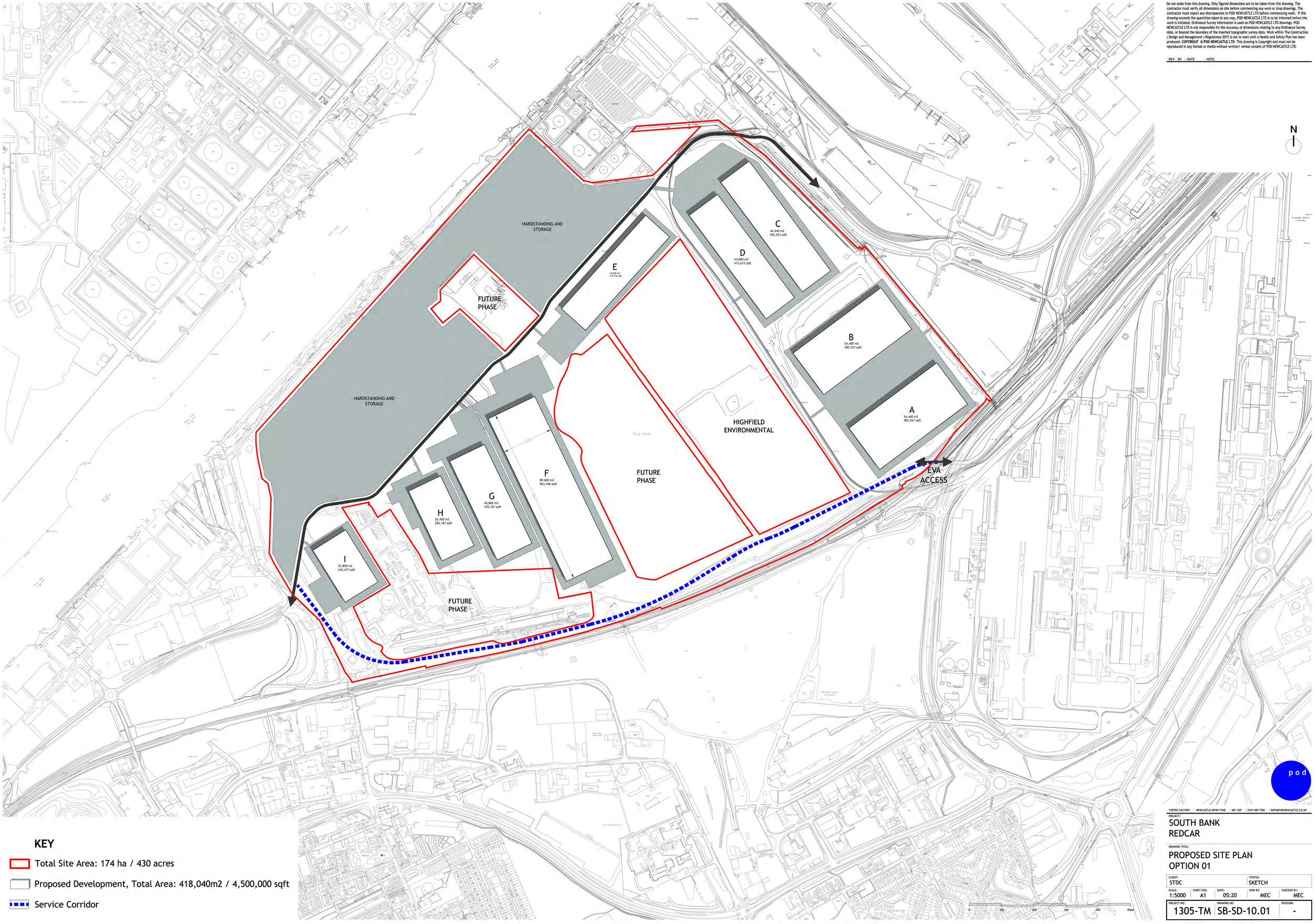
| DRAWN | CHECKED | APPROVED |
|---|---|---|
| BM | CF | TJR |
| DATE 24.03.20 | SCALE 1:4000 | REF. |

| DRAWING No. | SUITABILITY | REVISION |
|---|---|---|
| PC1084-RHD-SB-ZZ-DR-CM-0004 | S3 | P01 |

Appendix 2 Proposed landside site plans for the scheme being progressed by STDC (Drawings SB-SD-10.01 ad SB-SD-10.2) (**note that we are not consulting here on the works detailed in this Appendix; these drawings are provided for completeness and information purposes only**)






| REV | BY | DATE | NOTE |
|---|---|---|---|

## KEY

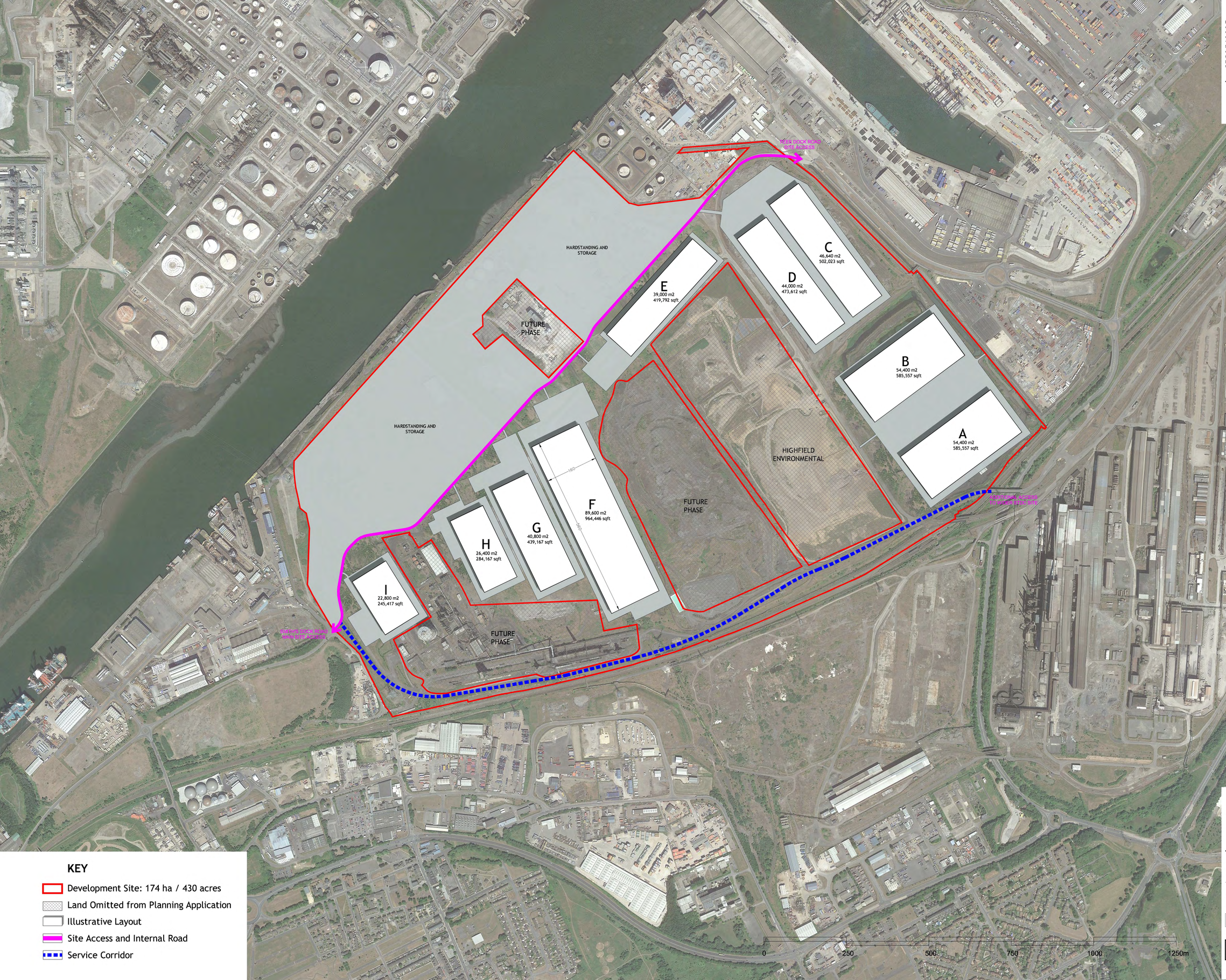
- Total Site Area: 174 ha / 430 acres
- Proposed Development, Total Area: 418,040m2 / 4,500,000 sqft
- Service Corridor

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

PROJECT:
SOUTH BANK
REDCAR

DRAWING TITLE:
PROPOSED SITE PLAN
OPTION 01

| CLIENT: | | STATUS: | | |
|---|---|---|---|---|
| STDC | | SKETCH | | |
| SCALE: 1:5000 | SHEET SIZE: A1 | DATE: 05:20 | DWN BY: MEC | CHECKED BY: MEC |
| PROJECT NO: 1305-TM | | DRAWING NO: SB-SD-10.01 | | REVISION: - |




Do not scale from this drawing. Only figured dimensions are to be taken from this drawing. The contractor must verify all dimensions on site before commencing any work or shop drawings. The contractor must report any discrepancies to POD NEWCASTLE LTD before commencing work. If this drawing exceeds the quantities taken in any way, POD NEWCASTLE LTD is to be informed before the work is initiated. Ordinance Survey information is used on POD NEWCASTLE LTD drawings. POD NEWCASTLE LTD is not responsible for the accuracy of dimensions relating to any Ordinance Survey data, or beyond the boundary of the inserted topographic survey data. Work within The Construction ( Design and Management ) Regulations 2015 is not to start until a Health and Safety Plan has been produced. 

| REV | BY | DATE | NOTE |
|---|---|---|---|

## KEY

- Development Site: 174 ha / 430 acres
- Land Omitted from Planning Application
- Illustrative Layout
- Site Access and Internal Road
- Service Corridor

pod

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

PROJECT:
SOUTH BANK
REDCAR

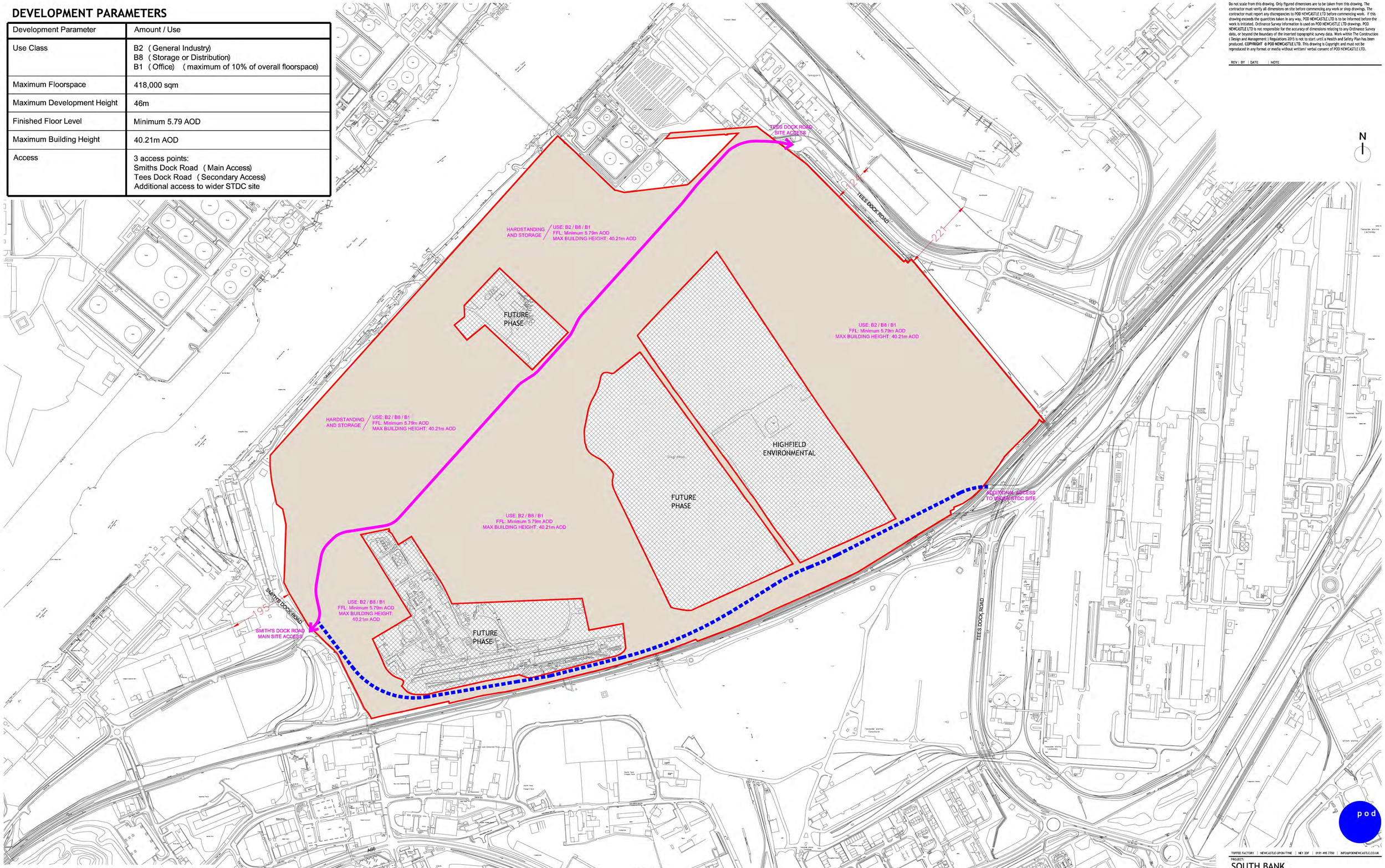
DRAWING TITLE:
PROPOSED SITE PLAN
ILLUSTRATIVE AERIAL

| CLIENT: | | | STATUS: | |
|---|---|---|---|---|
| STDC | | | PLANNING | |
| SCALE: | SHEET SIZE: | DATE: | DRN BY: | CHECKED BY: |
| 1:5000 | A1 | 07:20 | MEC | MEC |

| PROJECT NO: | DRAWING NO: | REVISION: |
|---|---|---|
| 1355-TM | SB-SD-10.02 | - |

## DEVELOPMENT PARAMETERS

| Development Parameter | Amount / Use |
|---|---|
| Use Class | B2 ( General Industry)<br>B8 ( Storage or Distribution)<br>B1 ( Office) ( maximum of 10% of overall floorspace) |
| Maximum Floorspace | 418,000 sqm |
| Maximum Development Height | 46m |
| Finished Floor Level | Minimum 5.79 AOD |
| Maximum Building Height | 40.21m AOD |
| Access | 3 access points:<br>Smiths Dock Road ( Main Access)<br>Tees Dock Road ( Secondary Access)<br>Additional access to wider STDC site |




## KEY

- Development Site: 174 ha / 430 acres
- Proposed Development Area
- Land Omitted from Planning Application
- Site Access and Internal Road
- Service Corridor

0 250 500 750 1000 1250m



| REV | BY | DATE | NOTE |
|---|---|---|---|

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

PROJECT:
SOUTH BANK
REDCAR

DRAWING TITLE:
PROPOSED PARAMETER PLAN

| CLIENT: | STATUS: | | | |
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| STDC | PLANNING | | | |
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