Earthworks Specification

Net Zero Teesside Plot, Redcar

For South Tees Development Corporation

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Appendices

1 General

1.1 Background Information

The former Redcar Steelworks (Teesworks) is an area that occupies almost 4,500acres between Middlesbrough and Redcar, North Yorkshire located in the northeast of England immediately south of the River Tees and west of the North Sea.

The Net Zero Teesside (NZT) plot is a land parcel situated within the wider Teesworks area located across the Redcar, Lackenby, Grangetown and South Bank conurbations of the Borough of Redcar & Cleveland, set in the industrial area generally known as 'South Tees'.

Figure 1 below indicates the location of the wider Teesworks site (red line) and the NZT plot (blue line) within Teesworks.

Figure 1 - Site Location

The South Tees Regeneration Masterplan has been developed detailing the industrial-led regeneration of Teesworks into a world class employment-generating zone and economic growth enabler for the Tees Valley.

The NZT plot has been identified as an area that is to be developed by South Tees Development Corporation (STDC) and their proposed tenant BP Plc (BP), into a carbon capture, utilisation and storage facility.

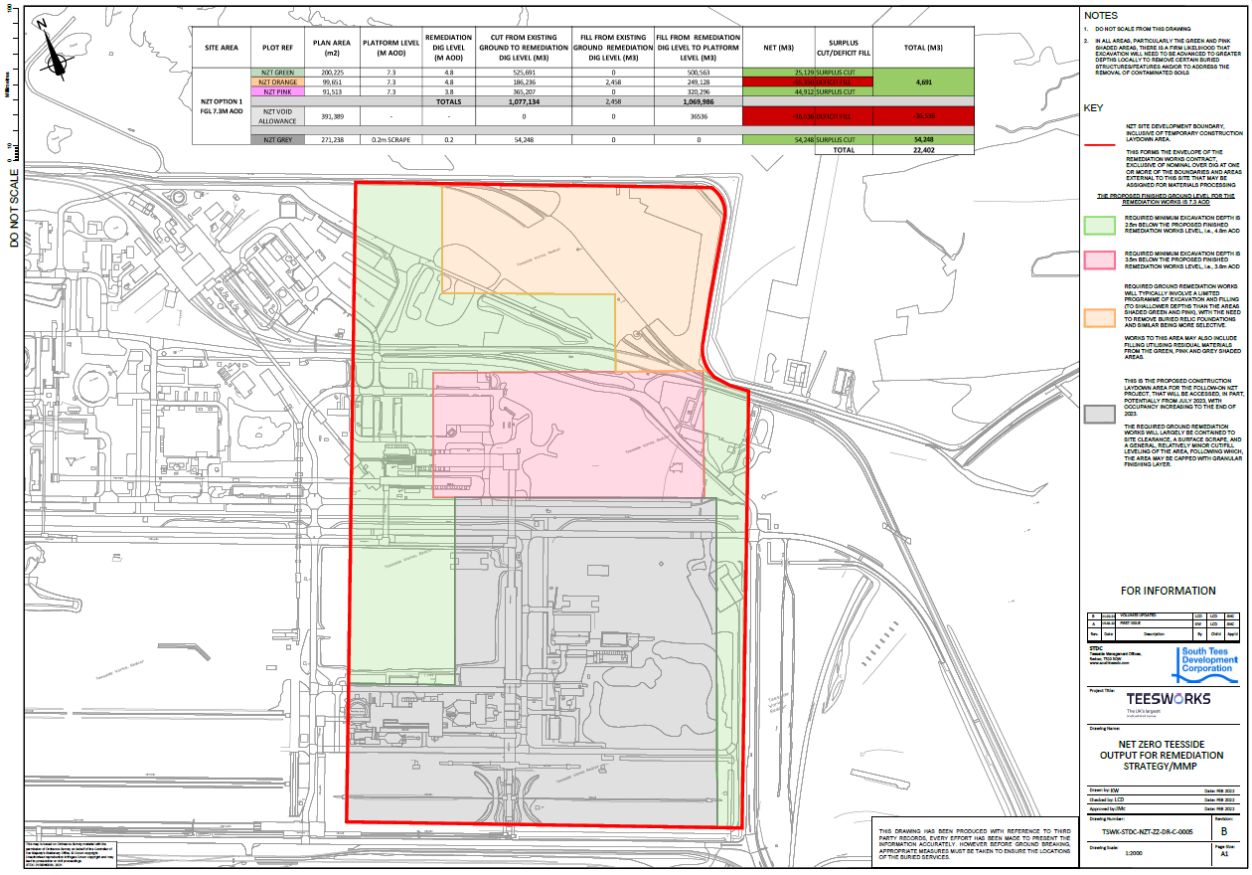
Arcadis (UK) Ltd. (Arcadis) was commissioned by STDC to prepare an earthworks specification (this document) for the NZT Plot.

Arcadis have also been commissioned to prepare an Enabling Works and Remediation Strategy (Ref 10035117-AUK-XX-XX-RP-ZZ-0417-01-Rem_Strat_Net Zero, November 2021) which should be referred to for site specific details of ground conditions etc.

1.2 Proposed Works

STDC propose to carry out enabling works to develop a serviced site formed to agreed levels to facilitate subsequent commercial development of the site. The finished level will be constructed to 7.30mAOD. The Site area and expected excavation levels, as provided by BP / STDC, is outlined in Figure 2 below and included in Appendix A.

Figure 2 – NZT Plot Area



SITE AREA	PLOT REF	PLAN AREA (m2)	PLATFORM LEVEL (M AOD)	REMEDIATION DIG LEVEL (M AOD)	CUT FROM EXISTING GROUND TO REMEDIATION DIG LEVEL (M3)	FILL FROM EXISTING GROUND REMEDIATION DIG LEVEL (M3)	FILL FROM REMEDIATION DIG LEVEL TO PLATFORM LEVEL (M3)	NET (M3)	SURPLUS CUT/DEFICIT FILL	TOTAL (M3)
NZT OPTION 1 FGL 7.3M AOD	NZT GREEN	200,225	7.3	4.8	525,691	0	500,563	25,129	SURPLUS CUT	4,691
	NZT ORANGE	99,651	7.3	4.8	186,236	2,458	249,128	-65,350	DEFICIT FILL	
	NZT PINK	91,513	7.3	3.8	365,207	0	320,296	44,912	SURPLUS CUT	
				TOTALS	1,077,134	2,458	1,069,986			
	NZT VOID ALLOWANCE	391,389	-	-	0	0	36536	-36,536	DEFICIT FILL	-36,536
	NZT GREY	271,238	0.2m SCRAPE	0.2	54,248	0	0	54,248	SURPLUS CUT	54,248
									TOTAL	22,402

In order to construct the development platform and achieve the objectives of the remedial strategy (as set out in Section 4 of the Arcadis Remedial Strategy), Made Ground will be turned over to varying levels to remove obstructions and unsuitable materials to a depth of up to 3.5m Below Finished Level (bfl) depending on location as shown on Figure 2.

The finished level for the site is set at 7.3mAOD and the turnover of the Made Ground is to be conducted down to the depths (bfl) indicated in Figure 2, including removal and crushing of relic structures and obstructions, removal and treatment of environmental contamination as required and reinstatement with acceptable material to formation levels for development. Within this document, the “formation” refers to the final surface layer i.e. 7.3mAOD.

In some areas of the site large relic structures are anticipated to be present and environmental contamination may be found during excavation to the base of the respective dig depths (as defined by Figure 2 to the 7.3mAOD development level). Any requirement for deeper excavation works will be assessed on a case specific basis following consultation and approval with stakeholders i.e., STDC. The historical site layout (1950s) and construction areas are shown on the below Figure 3 and included within Appendix A.

Figure 3 – Construction Areas & 1950s Historical Layout

All works and materials are to comply with the latest edition (at the date of the tender) of the Department of Transport Manual of Contract Documents for Highway Works, Volume 1, Specification for Highway Works Series 600 (SHW 600 Series) unless noted otherwise hereafter; reference should be made to this document for SHW 600 Clauses and Tables. This document sets out the contract specific appendices to the SHW 600 Series specification to define the requirements for materials to be used in the earthworks.

Following excavation only Acceptable Material will be reused as bulk fill in the works. Processing of excavated material will be undertaken as required to ensure that it can be used as Acceptable Fill in accordance with this specification. To achieve the finished levels, it is possible that imported material will be required, however, at the time of writing the material sources had not been confirmed and the aim is to achieve a neutral cut/fill balance. Importation of materials will be carried out under a Materials Management Plan being prepared by Atkins (at time of writing, the MMP had not been issued).

This specification applies to bulk earthworks operations and is not designed to provide specific performance criterion for any future loading. Future foundations for structures may need to transfer loads to below the level of the bulk earthworks which shall be designed by others.

When a British Standard is quoted in this specification, it shall be understood to mean the latest edition of that Standard including all amendments in force at the date of the tender documents.

This earthworks specification is a method specification. As stated in Volume 2 notes for guidance of SHW 600 Series, Clause NG 612 states *…Table 6/4 compaction should produce a minimum state of compaction equal to 10% air voids at an mc at the dry limit for acceptability*. For clarity while it is anticipated that the use of the proposed method compaction will aim to attain this level of compaction it is not an absolute requirement or performance objective to achieve it. It is noted that although there will be control testing undertaken (such as Sand Replacement Testing and Plate Load Testing), the results of these are informative only and does not equate to an end product specification.

1.3 Roles and Responsibilities

These works will fall under the Construction (Design and Management) Regulations 2015 and therefore the Principal Contractor will need to plan, manage, monitor and co-ordinate the construction phase of the project so that health and safety risks are controlled. The Principal Contractor will prepare the Construction Phase (Health and Safety) Plan (CPP).

The following roles and responsibilities shall be involved in the earthwork operations:

Table 1 – Roles & Responsibilities

Project Role	Organisation	Earthworks Responsibilities
Overseeing organisation	STDC	• Together with the Contractor arrange for acceptable material to be sourced and imported as required. • Produce a Landlord Specification
Contractor undertaking earthworks	(TBC)	• Excavate existing Made Ground; • Process Made Ground, where necessary, to produce acceptable material; • Place acceptable material; • Manage unacceptable material; • Procure and manage relevant laboratories to undertake relevant *in-situ* control testing and test sampled materials (scheduling to be undertaken by the Engineer); • Together with the Overseeing Organisation, arrange for acceptable material to be sourced and imported as required.
Engineer / Overseeing Organisations technical advisor / validation of earthworks	Arcadis	• Undertake sampling and schedule the testing of suitable materials (suitable material for use to be identified by the Contractor) to classify materials are acceptable for use; • Provide on-site oversight to validate materials are being placed in accordance with SHW 600 series and this specification; • Produce validation & verification report of the earthworks
Overseeing Organisations technical advisor Production of MMP	Atkins	• Production of the Material Management Plan (MMP) for the NZT area. • MMP Validation report.

1.4 Unexploded Ordnance (UXO)

Desk based UXO assessments have indicated that the NZT plot is an area of high UXO risk. A site specific UXO report has been provided by BP (*Onshore Unexploded Ordnance Threat & Risk Assessment with Risk Mitigation Strategy: Net Zero Teesside ref. NS051-CV-REP-000-00001 dated Feb 2020*). The proposed earthworks, which would be considered to represent “open” construction works, has been indicated as high risk.

The Contractor will need to ensure that their works have suitably mitigated the UXO risks as part of the earthworks operation.

2 Contract Specific Appendices

The table below indicates which contract specific appendices from SHW 600 Series are presented within this specification document.

Table 2 – List of Contract Specific Appendices

Appendix No.	Title	Used / Not Used
1/5	Testing to be carried out	Used
App 6/1	Requirements for Acceptability and Testing	Used
App 6/2	Requirements for Dealing with Class U1B and Class U2	Used
App 6/3	Requirements for Excavation, Deposition, Compaction	Used
App 6/4	Requirements for Class 3 Material	Not used
App 6/5	Geotextiles Used to Separate Earthworks Materials	Not used
App 6/6	Fill to Structures and Fill Above Structural Foundations	Not used
App 6/7	Sub-formation and Capping and Preparation and Surface Treatment of Formation	Used
App 6/8	Topsoiling	Not used
App 6/9	Earthwork Environmental Bunds, Landscape Areas, strengthened Embankments	Not used
App 6/10	Ground Anchorages, Crib Walling and Gabions	Not used
App 6/11	Swallow Holes and Other Naturally Occurring Cavities and Disused Mine Workings	Not used
App 6/12	Instrumentation and Monitoring	Not used
App 6/13	Ground Improvement	Not used
App 6/14	Limiting Values for Pollution of Controlled Waters	Used
App 6/15	Limiting Values for Harm to Human Health and the Environment	Used

Appendix 1/5 – Testing to be carried out

The following schedules outlined below detail the testing that is required to be carried out. The Contractor will excavate and process, where necessary, site won material (and/or sourcing and importing material if necessary) to produce acceptable materials for placement as fill. In addition, the Contractor will procure and manage relevant laboratories to undertake *in-situ* and laboratory testing. The Contractor shall direct the relevant laboratory where to undertake *in-situ* testing and provide GPS co-ordinates (to Ordnance Survey GB) of each test location.

For clarity *in-situ* testing relates to testing that is undertaken at the area the sample is located and does not relate to subsequent testing undertaken within a laboratory i.e., *laboratory testing*. Placed materials will be sampled at the point of placement, however, not tested at that location.

The Engineer will undertake the sampling and schedule the laboratory testing. A handheld GPS system (to relative Ordnance Survey GB) will be used to record the location of sample points taken from placed material (or central point for composite samples).

Laboratory test results shall be presented in accordance with the relevant testing standard and shall, *inter alia*, incorporate the following information:

- Specimen reference;
- Brief material description;
- Location of material in the works;
- Date sampled;
- Date(s) tested;
- Results of all tests.

Table 1/5 Testing to be carried out

Clause	Acceptable Material		Test	Frequency of Testing for validation of earthworks*	Frequency of testing to provide additional data to tenant	Test Certificate	Comments
	Class	General Description					
601 631 to 637 640	All materials		Calorific Value	1 per 10,000 m^3 (1 per 1,000 m^3 if contains ash)		Required	
			Water Soluble Sulphate (BS EN 1744-1)	1 per 10,000 m^3		Required	
			Total Sulphur (BS EN 1744-1)	1 per 10,000 m^3		Required	
			As per contaminants within Table 6/1B and Appendix 6/15			Required	
	Slag Materials		Expansion	1 per 5,000 m^3 (*Samples to be taken per placed layer, per 50m grid square. Selected samples to be scheduled for testing by the Engineer)*	1 per 2,500m^3	Required	Expansion to be <3% in green / pink areas as defined on Figure 2
			Petrology		1 per 5,000m^3	Required	Informative
	1A	General Granular Fill	Moisture Content	1 per 5,000 m^3	1 per 2,500m^3	Required	
			Particle Size Distribution (PSD)	1 per 5,000 m^3	1 per 2,500m^3	Required	
			Dry Density / Moisture Content Relationship (DD/MC)	1 per 10,000 m^3	1 per 5,000m^3	Required	4.5kg / Vibrating hammer method
	1C		Los Angeles Coefficient (LA) (BS EN 1097-2)	As directed by the Engineer, min. 1 per source if reasonably practicable to sample		Required	

Clause	Acceptable Material		Test	Frequency of Testing for validation of earthworks*	Frequency of testing to provide additional data to tenant	Test Certificate	Comments
	Class	General Description					
	2A, 2B, 2C	General Cohesive Fill	Moisture Content	1 per 1,000 m^3		Required	
			Particle Size Distribution (PSD)	1 per 2,000 m^3		Required	
			Plasticity Indices	1 per 1,000 m^3		Required	
			DD/MC	1 per 10,000 m^3	1 per 5,000m^3	Required	4.5kg method
			Undrained shear strength or remoulded material	3 per source		Required	Remoulded to OMC. Compacted with 2.5kg rammer. Confining pressure as directed by Engineer.
			Shear Strength (hand vane)	1 set of three results per grid square (2,500m^2) per layer		Not required	Testing on completed layers
	4	Landscape Fill	PSD / MC	1 per 5,000 m^3		Required	Informative
	6B 6F	Selected Granular Fill	MC	1 per 1,000 m^3		Required	
			PSD	1 per 5,000 m^3	1 per 2,500m^3	Required	
			Plasticity Indices	1 per 10,000 m^3		Required	
			DD/MC	1 per 10,000 m^3	1 per 5,000m^3	Required	Vibrating hammer method
			LA	As directed, min. 1 per source if reasonably practicable to sample		Required	

Clause	Acceptable Material		Test	Frequency of Testing for validation of earthworks*	Frequency of testing to provide additional data to tenant	Test Certificate	Comments
	Class	General Description					
612	Method Compaction		Plate Bearing Test	1 per 50m grid square (2,500m^2) per layer		Required	Loading to at least 250kN/m^2 Pressure at 1.25mm penetration >50kN/m^2 Informative
			Sand Replacement Test (SRT)			Required	Requirement may be removed, with agreement from Engineer, if material/ site conditions not suitable for testing. Informative
Notes:	*Unless stated otherwise, testing frequency of laboratory samples will be at least 3 samples per source.						

Appendix 6/1 – Requirements for Acceptability and Testing

General Requirements

Acceptable and unacceptable materials shall be classified as per Clause 601 of SHW 600 Series, and the contract specific requirements set out in this document. The table below provides indication to likely nature and fate of materials that will be encountered during the earthworks on NZT.

Table 3 – Summary of likely material classifications

General Classification	Likely materials	Comment
Acceptable material	Made ground (incl. slag rich made ground)	Unlikely to be present in its "as dug" state.
	Natural ground – granular	Significant quantities of natural material are not anticipated to be generated. However, some acceptable material may be generated as Class 1A fill.
Unacceptable material (U1A)	Made ground (incl. slag rich made ground)	Much (possibly all) of the excavated made ground material will be processed through a screen or a crusher to process material into acceptable material as defined by Table 6/1 (as per SHW 600 series), Table 6/1A and Table 1/5.
	Natural ground – granular	Significant quantities of natural material are not anticipated to be generated. Some granular material may not align with proposed use on site (such as a Class 1B material) and so would be mixed with other material to create an acceptable "hybrid" material.
	Natural ground – cohesive	Natural cohesive material is likely to be significantly above the OMC in its natural state and will need treatment (likely through drying out using windrows / turning material) to generate an acceptable material.
	Structures (concrete / brick)	Concrete and masonry structures will be crushed and processed into acceptable material.
Unacceptable material (U1B)	Contaminated materials	It is anticipated that much of U1B material will be related to presence of non-aqueous phase liquid (NAPL). Refer to Appendix 6/2 for details, however, expected that materials would be treated on-site to generate an acceptable mateiral.
Unacceptable material (U2)	Hazardous waste	Not expected to be present in significant quantities. Refer to Appendix 6/2.

The Contractor shall be responsible for the selection, management and use of all earthworks materials. The Engineer shall be responsible for sampling of materials and scheduling of relevant testing.

Acceptable materials will require field compaction trial tests to be undertaken to ensure the correct placement and compaction procedures are being applied. Site compaction trials should be undertaken by the Contractor in order to demonstrate that the specific equipment and method employed achieves a maximum 10% air voids / minimum 90% of the maximum dry density (4.5kg test). Details and specification of the compaction of trial shall be agreed between the Contractor and the Engineer.

Following placement and compaction of acceptable materials, *in-situ* control testing as detailed in Table 1/5 shall be undertaken, the results of which will be reviewed by the Engineer who may require remedial works (such as re-rolling an area or excavation, replacement and compaction of acceptable materials) to be undertaken. Further geotechnical testing as detailed in Appendix 1/5 shall be used to further assess the quality and suitability of the imported earthworks materials.

Permanent groundwater is not anticipated to be encountered within the anticipated excavations. Where perched water is encountered, no placement of acceptable material is permitted into it and the Contractor shall determine any requirements for groundwater lowering and / or treatment. Any groundwater lowering proposed shall be agreed with the Engineer.

The rapid assessment of moisture content and NAPL may be permitted with the approval of the Engineer. Rapid moisture content testing shall be validated with UKAS accredited / BS methods using drying ovens (10% of samples).

All test results to be provided electronically in error free AGS(4.0), PDF and XLS formats. Environmental chemical data shall also be provided in Esdat (EDD format).

The Contractor laboratories shall be approved by the Engineer and must be UKAS and Mcerts accredited for the tests required and be compliant with ISO/IEC 17025:2005, 'General requirements for the competence of testing and calibration laboratories.

Imported Materials

Source approval testing is required for all materials. To obtain source approval, the Contractor shall notify the Engineer of the location, extraction method, supplier (for imported materials), material type, volume of material and carry out a full range of tests at the frequency detailed in Appendix 1/5 to demonstrate compliance to the acceptability criteria for a Class of fill given in Tables 6/1 and Table 6/1A and Appendix 6/15.

The Contractor shall provide the Engineer with the acceptability criteria and all appropriate test data prior to commencing haulage of materials to site. Material cannot be deposited into the works without the Engineer's approval. The Overseeing Organisation and/or the Engineer may additionally request a site visit to the source of the material prior to providing approval. All imported materials shall be tested at the source for contaminants in accordance with Table 1/5 and 6/15.

If in the opinion of the Engineer the material at source has altered its classification during the course of the Contract for whatever reason, the Engineer may require additional classification and suitability testing is undertaken prior to the material being placed.

The Contractor shall be responsible for gaining all appropriate Waste Management Licences (or exemptions) from the statutory authorities and ensure material movements are in accordance with the NTZ site MMP and that the MMP consultant (Atkins) is consulted prior to any haulage taking place. The Contractor shall provide the Engineer with a copy of each licence received.

Unacceptable Materials

Unacceptable materials shall not be used as fill at any location or part of the site.

Class U1A materials may be processed to remove oversized or deleterious materials, however, it must be re-classified to confirm it has been processed/treated to become an acceptable material.

Class U1B materials may be treated and processed. Following treatment, it must be demonstrated that the material can be classified as an acceptable material in accordance with Tables 6/1, Table 6/1A and Appendix 6/15.

Table 6/1A Classification and Compaction Requirements

Acceptable limits for the fill materials are set out in Table 6/1 in the SHW 600 Series with the table below providing contract specific amendments.

Class	General Description of Material	Typical Use	Permitted Constituents	Material Properties Required for Acceptability				Compaction Requirements
				Property	Defined and tested in accordance with:	Acceptable Limits: Lower	Acceptable Limits: Upper	
1A	Well Graded Granular Fill	General Fill	Any material, or combination of materials, other than material designated as Class 3. Recycled aggregate. Where material is imported onto site which is not 'as dug' it shall be aggregate conforming to BS EN 13242 from one or more of the following source codes, see Notes 2, 3 and 4: P A	MC	BS1377 Part 2	-2% OMC**	+2% OMC**	Tab 6/4 Method 2
				Uniformity coefficient Grading	As Tab 6/1			
				MCV	Not required			
1C	Coarse Granular Fill	General Fill		Uniformity coefficient Grading LA Coefficient	As Tab 6/1			Tab 6/4 Method 5

Class	General Description of Material	Typical Use	Permitted Constituents	Material Properties Required for Acceptability				Compaction Requirements
				Property	Defined and tested in accordance with:	Acceptable Limits: Lower	Acceptable Limits: Upper	
2A	Wet Cohesive Fill	General Fill	Any material, or combination of materials, other than chalk	MC	BS1377 Part 2	PL -4%	-	Tab 6/4 Method 1*
						-2% OMC	+1% OMC	
				Grading	As Tab 6/2			
				Undrained shear strength of remoulded material	Clause 633	60 kN/m^2	200 kN/m^2	
2B	Dry Cohesive Fill	General Fill		MC	BS1377 Part 2	-	PL -4%	Tab 6/4 Method 2
						-2% OMC	+1% OMC	
				Grading	As Tab 6/2			
				Undrained shear strength of remoulded material	Clause 633	60 kN/m^2	200 kN/m^2	
2C	Stony Cohesive Fill	General Fill		MC	BS1377 Part 2	-2% OMC	+1% OMC	Tab 6/4 Method 2
				Grading	As Tab 6/2			
				Undrained shear strength of remoulded material	Clause 633	60 kN/m^2	200 kN/m^2	

Class	General Description of Material	Typical Use	Permitted Constituents	Material Properties Required for Acceptability				Compaction Requirements
				Property	Defined and tested in accordance with:	Acceptable Limits: Lower	Acceptable Limits: Upper	
6B	Selected Coarse Granular Fill	Starter layer	Natural gravel, natural sand, crushed gravel, crushed rock, crushed concrete, chalk, well burnt colliery spoil, slag or any combination thereof. (PI / LA coefficient shall not apply to chalk.) Recycled aggregate Where material is imported onto site which is not 'as dug' it shall be aggregate conforming to BS EN 13242 from one or more of the following source codes: P (except shale, siltstone or slate) A D2 D3 D4 G1 G3	Grading Plasticity Indices LA Coefficient	As Tab 6/1			Tab 6/4 Method 5
				MC	BS 1377: Part 2	-	20%	

Class	General Description of Material	Typical Use	Permitted Constituents	Material Properties Required for Acceptability				Compaction Requirements
				Property	Defined and tested in accordance with:	Acceptable Limits: Lower	Acceptable Limits: Upper	
6F2	Selected Granular Fill (Coarse grading)	Capping	Any material, or combination of materials – including recycled aggregates with not more than 50% by mass of recycled bituminous planings and granulated asphalt, but excluding materials contaminated with tar and tarbitumen binders, unburnt colliery spoil and argillaceous rock. Grading shall not apply to chalk. Bitumen content shall not apply if the Class Ra (asphalt) content of any recycled aggregate is 20% or less. Where material in this Class is imported onto site it shall be classified as Class 6F5 and comply with the requirements for that material.	Grading OMC MC LA Coefficient Class Ra (asphalt) content Bitumen Content	As Tab 6/1			Tab 6/4 Method 6

Class	General Description of Material	Typical Use	Permitted Constituents	Material Properties Required for Acceptability				Compaction Requirements
				Property	Defined and tested in accordance with:	Acceptable Limits: Lower	Acceptable Limits: Upper	
6F5	Selected Granular Fill (coarse) – imported	Capping	Unbound mixture complying with BS EN 13285 containing aggregate conforming to BS EN 13242 from one or more of the following source codes, see Notes 2, 3 and 4: P (natural aggregates – except chalk, shale, siltstone or slate) A2 (crushed concrete) A3 (crushed bricks, masonry) A4 (mixed recycled aggregate) Aggregates from source code A4 shall contain not more than 50% of constituents in Class Ra (bituminous materials). Property (x) in the next column shall not apply if the Class Ra (asphalt) content of any recycled aggregate is 20% or less.	Size designation and overall grading category	BS EN 13285 – 0/80 and G_E	As Tab 6/5		Tab 6/4 Method 6
				Maximum fines and oversize categories	BS EN 13285 – UF_{12} and OC_{75}	As Tab 6/5		
				Los Angeles coefficient	BS EN 13242 – LA_{50}	-	50	
				Other aggregate requirements	BS EN 13242 – Category NR (no requirement)	-	-	
				Dry density and optimum water content	BS EN 13285, Clause 5.3 Declared values	-	-	
				Water content	BS EN 1097-5	-2% OMC	+1% OMC	
				Class Ra (asphalt) content	Clause 710	-	50%	
				Bitumen content	BS EN 12697-1 or BS EN 12697-39	-	2%	

Class	General Description of Material	Typical Use	Permitted Constituents	Material Properties Required for Acceptability				Compaction Requirements
				Property	Defined and tested in accordance with:	Acceptable Limits: Lower	Acceptable Limits: Upper	

Notes:

* Method 1 except for materials with liquid limit greater than 50, determined by BS 1377: Part 2, only deadweight tamping or vibratory tamping rollers or grid rollers shall be used.

**OMC value and appropriate ranges of Class 1A mateiral to be assessed and potentially refined throughout works on instruction of the Engineer.

1 The limiting values for Class U1B material are given in Appendix 6/15.

2 Where material source codes are referenced these are as listed in Table 6/7.

3 Where materials are required to be aggregates conforming to BS EN 13242 materials certificated as being compliant with BS EN 13285 are acceptable for use provided that they meet all the specification requirements and the Declaration of Performance for constituent parts to BS EN 13242 are provided to the Overseeing Organisation.

4 Materials shall comply with the current Environmental Regulations at the time of use. Reference shall be made to Annex ZA (informative) of BS EN 13242

Table 6/1B Environmental Validation Testing

<table>
<tr><th colspan="3">Testing Required</th><th>Frequency of Testing for validation of earthworks</th><th>Frequency of testing to provide additional data to tenant</th><th>Compliance Criteria</th></tr>
<tr><td colspan="3">Asbestos Screen
Where asbestos presence is confirmed, asbestos quantification is also required</td><td rowspan="2">• One sample per 50 linear metres of excavation; and,
• One sample per stratum or at 1.0m vertical intervals (whichever is the greater)
• One sample per 100x100m extent of excavation base

• One sample per 2,000m3 of stockpiled slag rich deposits
• One sample per 1,000m^3 of stockpiled other made ground
• One sample per 250m^3 of material following treatment within permitted treatment area
OR
• One sample per 2,000m^3 of import material</td><td rowspan="2">• One sample per 50 linear metres of excavation; and,
• One sample per stratum or at 1.0m vertical intervals (whichever is the greater)
• One sample per 100x100m extent of excavation base

• One sample per 500m^3 of stockpiled excavated material
• One sample per 100m^3 of material following treatment within permitted treatment area
OR
• One sample per 2,000m^3 of import material</td><td rowspan="2">See App 6/15</td></tr>
<tr><td>Organics
• Speciated PAH
• TPH CWG</td><td>Metals/metalloids
• Arsenic
• Boron (w sol)
• Cadmium
• Chromium III
• Chromium VI
• Copper
• Lead
• Mercury (inorganic)
• Nickel
• Vanadium
• Zinc</td><td>Inorganics/other
• Cyanide (Total and Free)
• Thiocyanate
• pH
• Sulphur
• Total sulphate
• Water soluble sulphate
• Organic matter
• Phenol – monohydric</td></tr>
<tr><td colspan="3">NAPL Excavation Areas (not expected)</td><td colspan="2">NAPL dye test kits
• One sample per 50m linear metres of excavation; and,
• One sample per 625m^2 of excavation base</td><td>Negative test result, see below for TPH analysis.</td></tr>
<tr><td colspan="3">Other
• VOC/SVOC
• PCB
• Calorific value</td><td colspan="2">As Directed on oily/impacted soils</td><td>See App 6/15</td></tr>
</table>

Appendix 6/2 – Requirements for Dealing with Class U1B and Class U2

The NZT area has been subject to several previous investigations that have identified a number of contaminants across the area that are likely to be encountered, that may be classified as either Class U1B (contaminated materials) or Class U2 (hazardous waste)

Arcadis has produced an Enabling Earthworks and Remediation Strategy (ref. 10035117-AUK-XX-XX-RP-ZZ-0417-01-Rem_Strat_Net Zero, November 2021) that details the management of likely unsuitable materials (set out in Section 4 of that document). Unsuitable materials also to be managed in accordance with the Atkins Material Management Plan (MMP) on NZT (ref. XXX).

Appendix 6/3 – Requirements for Excavation, Deposition, Compaction

General

Excavation, deposition and compaction of acceptable materials are to be undertaken in accordance with SHW 600 Series.

Fill material shall consist of general granular material with a grading that satisfies the SHW 600 Series requirements as defined in Table 6/2 and be classified in accordance with Table 6/1 and Table 6/1A. General cohesive fill or selected granular fill may be used with approval from the Engineer and in accordance with Table 6/1 and Table 6/1A.

The mixing of distinct fill types within layers shall not be permitted unless agreed with the Overseeing Organisation and/or Engineer. The mixing of distinct fill types in order to form a further, distinct fill type shall not be permitted unless the relevant properties of the 'hybrid' fill material have been determined by laboratory testing and found to be acceptable.

Where the excavation reveals a combination of suitable and unsuitable materials the Contractor is advised to carry out the excavation in such a manner that the suitable materials are excavated separately for use in the works without contamination by the unsuitable materials.

Potential acceptable materials must not be allowed to deteriorate prior to their use as General fill, either while *in-situ* or in their excavated state. In particular, where necessary, all fill materials must be protected from the ingress of water, either from within the ground, from active or abandoned drains and other service ducts, and from precipitation.

No acceptable material shall be placed and left uncompacted at the end of a working day.

Compaction plant and compaction method shall be selected having regard to the proximity of existing trenches, excavations, retaining walls or other structures and all work shall be performed in such a way as to ensure that their existing stability is not impaired.

Acceptable materials shall be placed and compacted in near horizontal layers of the thickness required to achieve the specified method compaction and shall, as far as practicable, be brought up at a uniform rate so that all parts of the site reach finished (formation) level at the same time.

No material shall be laid on any surface that is frozen or covered with ice or snow.

Acceptable material, once compacted, shall be protected from damage from whatever source. Any damaged sections shall be cut out and made good to the full specification.

If the results of control tests indicate that the acceptable material is being placed and compacted in such a way that the desired level of compaction is not being achieved, the Contractor shall further compact or, if necessary, shall excavate the affected work and replace with new acceptable material, compacted to meet the specification requirements.

If the results of control tests indicate that inclement weather conditions (such as frost or heavy rain) have caused deterioration of finished work such that the work no longer meets specification, the Contractor shall take such steps as are necessary to bring the fill to specification requirements.

Preparation of Site Surface

Prior to the commencement of filling operations, the areas to be filled shall be proof rolled with two passes of an 8-tonne roller, or other roller approved by the Engineer, to identify any soft/loose spots. These should be excavated and replaced with suitable granular fill and compacted in line with this specification.

Soft and compressible materials can only be used in locations agreed by the Overseeing Organisation and/or Engineer. Where agreement is reached that soft and compressible materials can be used, they must be placed

in thin layers and compacted in accordance with the SHW 600 Series. Modification of the material, using lime or similar, to alter the moisture content can be used with agreement of the Engineer.

Any large areas of soft or loose materials should be reported to the Engineer.

Where unsuitable material has been excavated, the underlying natural ground shall be compacted to the same specification as that adopted for subsequent compaction works.

Blasting

The Contractor shall not use explosives without the written permission of the Overseeing Organisation.

Benching

Surfaces of excavations with a gradient greater than 1 in 5 which are to receive filling shall have horizontal benches cut to match the depths of compacted layers of filling.

Reuse of Made Ground

Made Ground will be reused under an MMP, and the material will need to be reused with careful adherence to the agreed approach. However, the general principle is that Made Ground will be screened and processed and used in appropriate areas of the site. Where necessary existing hardstanding or oversize material will be processed by screening and crushing for use as a secondary aggregate.

Contaminated Material

Where Made Ground or natural ground are suspected of being contaminated, this material will be excavated and segregated from the main stockpile of acceptable material. This suspect material will then be subject to further environmental testing to confirm the need for and extent of any remedial treatment prior to re-use or disposal as waste.

Following segregation, the material will be reused or treated as directed.

In some areas of the site environmental contamination may be found to extend below the dig depth defined by Figure 1. Any requirement for deeper excavation works will be assessed on a case specific basis following approval by the Overseeing Organisation and the Tenant.

Following removal of all visibly contaminated material the excavation void shall be surveyed and validation samples of the soils remaining *in-situ* collected and analysed as per Table 6/1B and Table 6/15. Unless agreed otherwise with the Overseeing Organisation and the Engineer, the void will not be backfilled until the results of the validation testing have been received.

Relict Structures

Where relict structures (slabs, basements, walls etc.) are encountered, these will be broken out and material recycled as secondary aggregate.

Where relict structures extend below the dig depth defined by Figure 1, the Overseeing Organisation and the Tenant shall approve if these are to remain or be removed on a case specific situation. Where structures are to be left *in-situ*, their position will be recorded. Where practicable to do so, and with consultation with the Engineer and approval from the Overseeing Organisation, slabs or sumps capable of impounding water shall be perforated prior to backfilling.

It is not the Overseeing Organisation's intention to remove piles to depths below those defined by Figure 1.

Records

A 25m grid will be generated by the Engineer and co-ordinates (Ordnance Survey GB) provided to the Contractor for them to reference to. Sample locations and *in-situ* testing shall be recorded by the relevant party (i.e., Contractor or Engineer) at the required frequency as set out in this document using GPS and referenced to the sampling grid.

The Contractor shall complete a report detailing the works carried out including but not limited to the following items.

- Topographic survey of site prior to works (in line with *Measured surveys of land, buildings and utilities,* accuracy band F or better).
- Topographic survey of base of excavation (in line with *Measured surveys of land, buildings and utilities,* accuracy band F or better).
- Tracking records for all materials reused within the permanent works.
- Photographic record of the works.
- Volumes of material excavated, recycled, reused, treated or disposed.
- Waste transfer documentation.
- Records of unexpected contamination.
- Records of any material imported to site.
- Records of any structures/piles etc. left *in-situ*.
- Details of all geotechnical control testing undertaken.
- Records of measures taken to rectify areas not meeting agreed compliance criteria.

Appendix 6/7 – Sub-formation and Capping and Preparation and Surface Treatment of Formation

The final surface layer (to act as a clean cover system) shall be placed in line with the SHW 600 Series and this specification.

The final surface layer shall be 200mm in thickness and have *in-situ* testing undertaken as set out in Table 1/5.

Appendix 6/14 – Limiting Values for Pollution of Controlled Waters

The risks to controlled waters as a result of the Earthworks and Remediation Strategy on the NZT area have been undertaken as part of the recent Arcadis DQRA (ref. 10035117-AUK-XX-XX-RP-ZZ-0428-01-Net_Zero_DQRA, Dated January 2022), which concluded that the risks are low. As such, no remedial targets have been set in relation to controlled waters as part of the earthworks.

Appendix 6/15 – Limiting Values for Harm to Human Health and the Environment

Testing and frequency rates set in Table 1/5 and Table 6/1B. The limiting values are presented in Table 6/15 below.

Materials with concentrations exceeding the limiting values set out below, shall be classified as unacceptable.

Table 6/15 – Human Health Limiting Values

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source
Metals / Inorganics				
Arsenic	0.2	mg/kg	640	S4UL
Boron, Water Soluble	0.2	mg/kg	240,000	S4UL
Cadmium	0.1	mg/kg	190	S4UL
Chromium	0.15	mg/kg	8,600	S4UL
Chromium, Hexavalent	1	mg/kg	33	S4UL
Copper	0.2	mg/kg	68,000	S4UL
Lead	0.3	mg/kg	2,300	C4SL
Mercury	0.05	mg/kg	*58**	S4UL
Nickel	1	mg/kg	980	S4UL
Vanadium	0.8	mg/kg	9,000	S4UL
Zinc	1	mg/kg	730,000	S4UL
Cyanide, Free	0.1	mg/kg	66	DQRA
Thiocyanate	0.6	mg/kg	230	USEPA
Phenols				
Phenol - Monohydric	0.3	mg/kg	760	S4UL
Petroleum Hydrocarbons				
Aliphatic C5-C6	0.01	mg/kg	*3,200***	S4UL
Aliphatic C6-C8	0.01	mg/kg	*7,800***	S4UL
Aliphatic C8-C10	0.01	mg/kg	*2,000***	S4UL
Aliphatic C10-C12	1.5	mg/kg	*9,700***	S4UL
Aliphatic C12-C16	1.2	mg/kg	*59,000***	S4UL
Aliphatic C16-C35	1.5	mg/kg	1,600,000	S4UL
Aliphatic C35-C44	3.4	mg/kg	1,600,000	S4UL
Aromatic C5-C7	0.01	mg/kg	*26,000***	S4UL
Aromatic C7-C8	0.01	mg/kg	*56,000***	S4UL
Aromatic C8-C10	0.01	mg/kg	*3,500***	S4UL
Aromatic C10-C12	0.9	mg/kg	*16,000***	S4UL
Aromatic C12-C16	0.5	mg/kg	*36,000***	S4UL
Aromatic C16-C21	0.6	mg/kg	28,000	S4UL
Aromatic C21-C35	1.4	mg/kg	28,000	S4UL
PAHs				
Naphthalene	0.03	mg/kg	*190*	S4UL
Acenaphthylene	0.03	mg/kg	*83,000***	S4UL
Acenaphthene	0.03	mg/kg	*84,000***	S4UL
Fluorene	0.03	mg/kg	*63,000***	S4UL
Phenanthrene	0.03	mg/kg	22,000	S4UL
Anthracene	0.03	mg/kg	520,000	S4UL
Fluoranthene	0.03	mg/kg	23,000	S4UL
Pyrene	0.03	mg/kg	54,000	S4UL
Benzo(a)anthracene	0.03	mg/kg	170	S4UL
Chrysene	0.03	mg/kg	350	S4UL
Benzo(b)fluoranthene	0.03	mg/kg	44	S4UL
Benzo(k)fluoranthene	0.03	mg/kg	1,200	S4UL
Benzo(a)pyrene	0.03	mg/kg	77	Wood
Indeno(1,2,3-c,d)pyrene	0.03	mg/kg	500	S4UL
Dibenzo(a,h)anthracene	0.03	mg/kg	3.5	S4UL
Benzo(g,h,i)perylene	0.03	mg/kg	3,900	S4UL

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source
Asbestos				
Asbestos	0.001	% w/w	0.001	Arcadis
VOC				
MTBE	0.01	mg/kg	210	USEPA
Benzene	0.01	mg/kg	27	S4UL
Toluene	0.01	mg/kg	56,000	S4UL
Ethylbenzene	0.01	mg/kg	5,700	S4UL
m+p-Xylene	0.01	mg/kg	5,900	S4UL
o-Xylene	0.01	mg/kg	6,600	S4UL
Vinyl Chloride	0.01	mg/kg	0.059	S4UL
1,1 Dichloroethylene	0.01	mg/kg	1,000	USEPA
Trans-1,2-dichloroethylene	0.01	mg/kg	23,000	USEPA
1,1-dichloroethane	0.01	mg/kg	16	USEPA
Cis-1,2-dichloroethylene	0.01	mg/kg	2,300	USEPA
Bromochloromethane	0.01	mg/kg	630	USEPA
Chloroform	0.01	mg/kg	99	S4UL
1,1,1-trichloroethane	0.01	mg/kg	660	S4UL
Carbon tetrachloride	0.01	mg/kg	2.9	S4UL
1,2-dichloroethane	0.01	mg/kg	0.67	S4UL
Trichloroethylene	0.01	mg/kg	1.2	S4UL
1,2-dichloropropane	0.01	mg/kg	11	USEPA
Dibromomethane	0.01	mg/kg	99	USEPA
Bromodichloromethane	0.01	mg/kg	1.3	USEPA
cis-1,3-dichloropropene	0.01	mg/kg	8.2	USEPA
trans-1,3-dichloropropene	0.01	mg/kg	8.2	USEPA
1,1,2-trichloroethane	0.01	mg/kg	5	USEPA
Tetrachloroethylene	0.01	mg/kg	19	S4UL
1,3-dichloropropane	0.01	mg/kg	23,000	USEPA
Dibromochloromethane	0.01	mg/kg	39	USEPA
1,2-dibromoethane	0.01	mg/kg	0.16	USEPA
Chlorobenzene	0.01	mg/kg	56	S4UL
1,1,1,2-tetrachloroethane	0.01	mg/kg	110	S4UL
Styrene	0.01	mg/kg	35,000	USEPA
Bromoform	0.01	mg/kg	86	USEPA
Bromobenzene	0.01	mg/kg	1,800	USEPA
1,1,2,2-tetrachloroethane	0.01	mg/kg	270	S4UL
1,2,3-trichloropropane	0.01	mg/kg	0.11	USEPA
2-chlorotoluene	0.01	mg/kg	23,000	USEPA
4-chlorotoluene	0.01	mg/kg	23,000	USEPA
1,3,5-trimethylbenzene	0.01	mg/kg	1,500	USEPA
Tert-butylbenzene	0.01	mg/kg	120,000	USEPA
1,2,4-trimethylbenzene	0.01	mg/kg	1,800	USEPA
sec-butylbenzene	0.01	mg/kg	120,000	USEPA
1,3-dichlorobenzene	0.01	mg/kg	30	S4UL
1,4-dichlorobenzene	0.01	mg/kg	4,400	S4UL
1,2-dichlorobenzene	0.01	mg/kg	2,000	S4UL
n-butylbenzene	0.01	mg/kg	58,000	USEPA
1,2-dibromo-3-chloropropane	0.01	mg/kg	0.064	USEPA
1,2,4-trichlorobenzene	0.01	mg/kg	220	S4UL

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source
Hexachlorobutadiene	0.01	mg/kg	31	S4UL
1,2,3-trichlorobenzene	0.01	mg/kg	102	S4UL
SVOC				
Phenol	0.3	mg/kg	760	S4UL
1,3-Dichlorobenzene	0.1	mg/kg	30	S4UL
1,4-Dichlorobenzene	0.1	mg/kg	4,400 (224)^{vap}	S4UL
1,2-Dichlorobenzene	0.1	mg/kg	2,000 (571)^{sol}	S4UL
3&4-Methylphenol	0.1	mg/kg	82,000	USEPA
2,4-Dimethylphenol	0.1	mg/kg	16,000	USEPA
2,4-Dichlorophenol	0.1	mg/kg	2,500	USEPA
1,2,4-Trichlorobenzene	0.1	mg/kg	110	USEPA
4-Chloro-3-methylphenol	0.1	mg/kg	82,000	USEPA
2-Methylnaphthalene	0.1	mg/kg	3,000	USEPA
Hexachlorocyclopentadiene	0.1	mg/kg	7.5	USEPA
2,4,6-Trichlorophenol	0.1	mg/kg	210	USEPA
2,4,5-Trichlorophenol	0.1	mg/kg	82,000	USEPA
2-Chloronaphthalene	0.1	mg/kg	60,000	USEPA
2-Nitroaniline	0.1	mg/kg	8,000	USEPA
2,6-Dinitrotoluene	0.1	mg/kg	2.5	USEPA
2,4-Dinitrotoluene	0.1	mg/kg	7.4	USEPA
Dibenzofuran	0.1	mg/kg	1,000	USEPA
Diethylphthalate	0.1	mg/kg	660,000	USEPA
4-Nitroaniline	0.1	mg/kg	110	USEPA
Azobenzene	0.1	mg/kg	26	USEPA
Hexachlorobenzene	0.1	mg/kg	110	S4UL
Pentachlorophenol	0.1	mg/kg	400	S4UL
Butylbenzylphthalate	0.1	mg/kg	1,200	USEPA
Bis(2-ethylhexyl)phthalate	0.1	mg/kg	160	USEPA
Di-n-octylphthalate	0.1	mg/kg	8,200	USEPA

Notes

The following GACs have been used in order of availability:

S4UL: (Commercial End Use, 1% SOM)	"LQM / CIEH (2015) The LQM / CIEH S4ULs for Human Health Risk Assessment. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3223. All rights reserved.
C4SL: (Commercial End Use)	Department for Environment, Food and Rural Affairs (DEFRA) (2014) SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document, December 2014
Arcadis	Where published criteria above are not available, Arcadis has derived GAC based on EA guidance and assumptions in line with current industry standards and standard CLEA inputs for a commercial land use.
USEPA	GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels (RSL). Available at https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables
GAC	Generic Assessment Criteria
*123**	S4UL exceeds the vapour saturation limit
*123***	S4UL exceeds the solubility saturation limit
	Where exceedances of the above criteria are identified. The significance of the exceedance considering the exposure pathway will be assessed to define if remedial action is necessary.

Appendix A

Figures

SITE AREA	PLOT REF	PLAN AREA (m2)	PLATFORM LEVEL (M AOD)	REMEDIATION DIG LEVEL (M AOD)	CUT FROM EXISTING GROUND TO REMEDIATION DIG LEVEL (M3)	FILL FROM EXISTING GROUND REMEDIATION DIG LEVEL (M3)	FILL FROM REMEDIATION DIG LEVEL TO PLATFORM LEVEL (M3)	NET (M3)	SURPLUS CUT/DEFICIT FILL	TOTAL (M3)
NZT OPTION 1 FGL 7.3M AOD	NZT GREEN	200,225	7.3	4.8	525,691	0	500,563	25,129	SURPLUS CUT	**4,691**
	NZT ORANGE	99,651	7.3	4.8	186,236	2,458	249,128	-65,350	DEFICIT FILL	
	NZT PINK	91,513	7.3	3.8	365,207	0	320,296	44,912	SURPLUS CUT	
				TOTALS	**1,077,134**	2,458	**1,069,986**			
	NZT VOID ALLOWANCE	391,389	-	-	0	0	36536	-36,536	DEFICIT FILL	-36,536
	NZT GREY	271,238	0.2m SCRAPE	0.2	54,248	0	0	54,248	SURPLUS CUT	**54,248**
									TOTAL	**22,402**

Millimetres 100 10 0

DO NOT SCALE

NOTES

1. DO NOT SCALE FROM THIS DRAWING
2. IN ALL AREAS, PARTICULARLY THE GREEN AND PINK SHADED AREAS, THERE IS A FIRM LIKELIHOOD THAT EXCAVATION WILL NEED TO BE ADVANCED TO GREATER DEPTHS LOCALLY TO REMOVE CERTAIN BURIED STRUCTURES/FEATURES AND/OR TO ADDRESS THE REMOVAL OF CONTAMINATED SOILS

KEY

NZT SITE DEVELOPMENT BOUNDARY, INCLUSIVE OF TEMPORARY CONSTRUCTION LAYDOWN AREA.

THIS FORMS THE ENVELOPE OF THE REMEDIATION WORKS CONTRACT, EXCLUSIVE OF NOMINAL OVER DIG AT ONE OR MORE OF THE BOUNDARIES AND AREAS EXTERNAL TO THIS SITE THAT MAY BE ASSIGNED FOR MATERIALS PROCESSING

THE PROPOSED FINISHED GROUND LEVEL FOR THE REMEDIATION WORKS IS 7.3 AOD

REQUIRED MINIMUM EXCAVATION DEPTH IS 2.5m BELOW THE PROPOSED FINISHED REMEDIATION WORKS LEVEL, i.e., 4.8m AOD

REQUIRED MINIMUM EXCAVATION DEPTH IS 3.5m BELOW THE PROPOSED FINISHED REMEDIATION WORKS LEVEL, i.e., 3.8m AOD

REQUIRED GROUND REMEDIATION WORKS WILL TYPICALLY INVOLVE A LIMITED PROGRAMME OF EXCAVATION AND FILLING (TO SHALLOWER DEPTHS THAN THE AREAS SHADED GREEN AND PINK), WITH THE NEED TO REMOVE BURIED RELIC FOUNDATIONS AND SIMILAR BEING MORE SELECTIVE.

WORKS TO THIS AREA MAY ALSO INCLUDE FILLING UTILISING RESIDUAL MATERIALS FROM THE GREEN, PINK AND GREY SHADED AREAS.

THIS IS THE PROPOSED CONSTRUCTION LAYDOWN AREA FOR THE FOLLOW-ON NZT PROJECT, THAT WILL BE ACCESSED, IN PART, POTENTIALLY FROM JULY 2023, WITH OCCUPANCY INCREASING TO THE END OF 2023.

THE REQUIRED GROUND REMEDIATION WORKS WILL LARGELY BE CONTAINED TO SITE CLEARANCE, A SURFACE SCRAPE, AND A GENERAL, RELATIVELY MINOR CUT/FILL LEVELING OF THE AREA, FOLLOWING WHICH, THE AREA MAY BE CAPPED WITH GRANULAR FINISHING LAYER.

THIS DRAWING HAS BEEN PRODUCED WITH REFERENCE TO THIRD PARTY RECORDS, EVERY EFFORT HAS BEEN MADE TO PRESENT THE INFORMATION ACCURATELY. HOWEVER BEFORE GROUND BREAKING, APPROPRIATE MEASURES MUST BE TAKEN TO ENSURE THE LOCATIONS OF THE BURIED SERVICES.

FOR INFORMATION

Rev.	Date	Description	By	Chk'd	App'd
B	21.02.22	VOLUMES UPDATED	LCD	LCD	JMC
A	15.02.22	FIRST ISSUE	KW	LCD	JMC

STDC
Teesside Management Offices,
Redcar, TS10 5QW
www.southteesdc.com

South Tees Development Corporation

Project Title:

TEESWORKS
The UK's largest industrial zone

Drawing Name:

NET ZERO TEESSIDE OUTPUT FOR REMEDIATION STRATEGY/MMP

Drawn by: KW	Date: FEB 2022
Checked by: LCD	Date: FEB 2022
Approved by: JMc	Date: FEB 2022
Drawing Number: TSWK-STDC-NZT-ZZ-DR-C-0005	Revision: B
Drawing Scale: 1:2000	Page Size: A1

Legend

Drawings

Bing

STDC_Remediation_Boundary

BP Defined Layout_Construction_Areas

- Green Areas – Remediation to 2.5m below FGL
- Grey Area - Remediation for Construction Laydown Only
- Pink Area - Remediation to 3.5m below FGL

Notes:

CONTACT ARCADIS IN CASE OF ANY QUERIES.

Based on shapefile data provided by BP.

Historic mapping overlay should be considered as indicative

N

Title: Net Zero 1950's Layout

Site: Teesworks - Net Zero Site

Client:
South Tees Developement Corporation

Project:
37774100

Figure

Date: 15/02/2022
Drawn By: JALM
DRG No: 10035117-AUK-XX-XX-DR-ZZ-0483-01-Hist_Structure

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