

# WASTE RECOVERY PLAN

Reclamation of the former British Sugar Facility, York

PREPARED FOR BRITISH SUGAR PLC

SEPTEMBER 2022



## CONTACTS

**CHRIS PIDDINGTON**  
Technical Director

dd +44 (0) 292 0926 700  
m +44 (0) 7833 288 146  
e [chris.piddington@arcadis.com](mailto:chris.piddington@arcadis.com)

Arcadis.

Arcadis Cymru House,  
St Mellon's Business  
Park, Cardiff, CF3 0EY

---

**IAN EVANS**  
Senior Technical Director

m +44 (0) 7584 538 955  
e [ian.evans2@arcadis.com](mailto:ian.evans2@arcadis.com)

Arcadis.

16<sup>th</sup> Floor  
103 Colmore Row  
Birmingham  
B3 3AG

---

Arcadis

Author Jake Hurst

Checker Ian Evans

Approver

Ian Evans



Report No 10024487-AUK-XX-XX-RP-GE-0034-P6-Waste Recovery Plan

Date SEPTEMBER 2022

This report dated 01 September 2022 has been prepared for British Sugar Plc(the “Client”) in accordance with the terms and conditions of appointment (the “Appointment”) between the Client and **Arcadis (UK) Limited** (“Arcadis”) for the purposes specified in the Appointment. For avoidance of doubt, no other person(s) may use or rely upon this report or its contents, and Arcadis accepts no responsibility for any such use or reliance thereon by any other third party.

Arcadis (UK) Limited is a private limited company registered in England registration number: 1093549. Registered office, 80 Fenchurch street, London EC3M 4BY. Part of the Arcadis Group of Companies along with other entities in the UK. Regulated by RICS.

Copyright © 2018 Arcadis. All rights reserved. [arcadis.com](http://arcadis.com)

# CONTENTS

<b>NON-TECHNICAL SUMMARY .....</b>	<b>1</b>
<b>1 INTRODUCTION .....</b>	<b>3</b>
<b>1.1 Background to Waste Recovery and Remediation .....</b>	<b>3</b>
1.1.1 Previous Phases of Work.....	3
1.1.2 Remediation and Reclamation Strategy .....	4
<b>1.2 Regulatory Regime and Applicable Guidance.....</b>	<b>4</b>
1.2.1 Proposed Environmental Permit Variations .....	4
1.2.2 Deposit for Recovery Permitting Guidance.....	5
1.2.3 Legal Overview .....	6
1.2.4 The Planning Regime.....	7
1.2.5 Active Planning Permissions Relating to the Site .....	8
1.2.6 Remediation & Reclamation Strategy Guidance.....	9
1.2.7 Complimentary Environmental Permits & Reuse Approaches .....	9
<b>1.3 Regulatory Liaison .....</b>	<b>10</b>
<b>2 SITE LOCATION AND DESCRIPTION .....</b>	<b>11</b>
<b>2.1 Location .....</b>	<b>11</b>
<b>2.2 Description .....</b>	<b>11</b>
<b>3 SITE ASSESSMENT AND REMEDIATION.....</b>	<b>12</b>
<b>3.1 Characteristics of the waste to be recovered .....</b>	<b>12</b>
3.1.1 Sources of Wastes .....	12
3.1.2 Types of Waste .....	12
3.1.3 Thickness of Waste Deposits.....	13
3.1.4 Volumes and Tonnage of Waste.....	14
3.1.5 Descriptions of Waste within the EP Boundary.....	14
3.1.6 Contaminants .....	15
<b>3.2 Remediation &amp; Reclamation Strategy.....</b>	<b>15</b>
3.2.1 Remediation & Reclamation Objectives.....	16
3.2.2 Remediation & Reclamation Works .....	16
3.2.3 Remediation & Reclamation Compliance Criteria.....	17
3.2.4 Earthworks Performance Criteria .....	19

3.2.5	Environmental Monitoring .....	19
3.2.6	Flood Risk Assessment.....	21
<b>4</b>	<b>WASTE RECOVERY PLAN .....</b>	<b>22</b>
<b>4.1</b>	<b>Purpose of the Work – Meeting a Genuine Need.....</b>	<b>22</b>
<b>4.2</b>	<b>Quantity of Waste Used .....</b>	<b>24</b>
4.2.1	Minimum amount of waste to be used to achieve benefit.....	24
4.2.2	Use of the waste as a substitute for non-waste material .....	25
4.2.3	Considerations of Alternatives Using Lower Waste Volumes.....	26
<b>4.3</b>	<b>Evidence of Waste Suitability – Meeting Quality Standards .....</b>	<b>27</b>
4.3.1	Evidence of Suitability for Specific Waste Types.....	27
<b>4.4</b>	<b>Waste Recovery Activities .....</b>	<b>28</b>
4.4.1	Financial Assessment .....	29
4.4.2	Sustainable and Environmentally Sound Use of Waste .....	30
4.4.3	Wider Benefits of the Proposed Waste Recovery Activity .....	32
<b>5</b>	<b>REFERENCES AND CREDENTIALS .....</b>	<b>33</b>
<b>5.1</b>	<b>Regulatory guidance .....</b>	<b>33</b>
<b>5.2</b>	<b>Existing reports on investigation, monitoring, assessment, remediation and reclamation proposals: .....</b>	<b>33</b>
<b>5.3</b>	<b>Author Credentials .....</b>	<b>34</b>

## FIGURES

- Figure 1**      **Site Location Plan**
- Figure 2**      **Site Layout and Environmental Permit Boundary**
- Figure 3**      **Thickness of Waste within the EP Boundary (p13)**

## APPENDICES

### APPENDIX A

#### Planning Permissions Approved Plans

### APPENDIX B

#### Financial Assessment

## Non-Technical Summary

The purpose of this document is to present a plan for the recovery and permanent placement of recovered waste derived from and placed entirely within the Former British Sugar Facility, Millfield Lane, York, YO26 6AY (the 'site') in order to add a bespoke 'Deposit for Recovery' waste operation and expand the Environmental Permit (EP) boundary to enable placement of recovered waste. The purpose of the recovery works is to support beneficial re-use of the derelict brownfield site, rendering it suitable for residential development, including affordable housing and public open space (POS).

The calculated volume of waste to be recovered from within the EP boundary is 746,800m<sup>3</sup> (1,493,600 tonnes), the bulk of which comprises agricultural soils removed from the sugar beet as part of the factory operation (which ceased in 2007).

All work undertaken in relation to the proposed development at the site, the remediation strategy and the waste recovery plan has been undertaken in compliance with applicable guidance including Land Contamination Risk Management (LCRM) guidance (April 2021), Environmental Permitting Guidance: Core Guidance (April 2020), Waste Recovery Plans and Deposit for Recovery Permits guidance (April 2021), the National Planning Policy Framework (NPPF) (July 2021) and requirements of the City of York Local Planning Authority (LPA).

The proposed waste recovery activities are to be undertaken in accordance with the Remediation and Reclamation Strategy (RRS, URS, 2015) and the RRS Addendum (Arcadis, 2020) which have been reviewed and accepted by the Environment Agency (EA) linked to the approved full planning permission granted at the site (15/00524/OUTM, City of York LPA). The overall objective of the RRS is to excavate the deposited waste material and to undertake remediation such that potential risks to future site users and the water environment from contaminants in soil, soil pore water and soil gas are mitigated to an acceptable level for the intended end use.

The purpose of the works is to create the necessary development platform that accords with the approved planning permissions (15/00524/OUTM & 20/00774/FUL) and thereby enable the delivery of new homes on the site. There is a genuine need to undertake the proposed waste recovery operation to facilitate this.

The proposed development platform in this respect benefits from its own planning permission (20/00774/FUL). This consent was informed by an extensive evidence base, as relating to a range of environmental and other technical matters. Specifically, these included the need to decontaminate and reuse existing material in a manner to create acceptable levels across the site in the context of the surrounding environment. It is noted, in this regard, that the EA has confirmed that the purpose of these works is to create the necessary development platform that accords with the approved permission, and achieved the levels set out in the approved plans (as confirmed by Rachel Mills in her email of 22.07.21). On this basis there is a 'genuine need' for material to meet the requirements of the planning permission.

Should a Deposit for Recovery Permit be awarded, a derelict brownfield site will be brought back into beneficial use by creating the necessary development platform in accordance with approved planning permission for a proposed residential development, including affordable housing, and associated public open space. These factors were attached 'significant weight' by the Secretary of State during the approval of the outline planning permission. There is a desire by British Sugar to sustainably re-use materials as part of the redevelopment in accordance with the waste hierarchy and principles within the Waste Framework Directive.

Alternatives to the proposed waste recovery have been reviewed and are unsatisfactory in a number of respects. Particularly, they are shown to be unsustainable, provide significantly reduced environmental benefits (compared with the proposed remediation strategy), present an unacceptable impact on neighbouring communities and/or result in unattractive housing on a permitted landfill leading to a significant risk that the site would not meet the genuine need for residential development in this area.

The proposed development platform provides for sustainable urban drainage (eliminating the need for a pumped system) by ensuring self-cleansing flow at connection points with surrounding drainage. Areas of

---

public amenity have been designed with suitable and appropriate gradients and levels taking into account usage, visual impact and environmental requirements.

The WRP demonstrates that only the minimum volume of waste is proposed to be re-used to create the development platform, in accordance with the approved planning permission (15/00524/OUTM). This is demonstrated through a detailed assessment and modelling of waste volumes and waste types required to support regeneration of the site. The volume of material required to regenerate the site has been directly calculated based on modelling informed by the site's current levels, accepted finished levels and detailed subsurface characterisation. It is noted that the levels approved in the planning permission were informed and established taking into consideration a number of site specific constraints and opportunities. These were fully identified and set out in the approved planning 'Design and Access Statement' and included interaction and integration with surrounding levels and neighbouring properties, consideration of impact on existing views and retention of existing views from the site, maximising natural light and solar gain at the development, the use of practical and sustainable drainage and water management systems at the site and the need to integrate the development with existing environmental constraints, such as the Bee Bank, a site of importance for nature conservation (SINC) where any new development had to incorporate a stand-off and height restrictions due to this SINC.

The approach to waste recovery and remediation is defined within the RRS (URS, 2015) and the RRSA (Arcadis, 2020), which includes the verification requirements to show how the operation recovers the wastes in a manner rendering the site suitable for its intended end use.

This WRP demonstrates through a robust Financial Assessment (calculating total sales minus total costs) that, were the waste not available, there would still be a financial gain to British Sugar by using non-wastes to create the required development platform.

Overall, the use of non-waste is not an **environmentally sustainable or sound** approach. The recovery of waste to create the required development platform represents the **best environmental outcome** with respect to the waste hierarchy as waste will be recovered on-site, rather than disposed to an off-site facility, and thus accounts for principles of sustainability and protection of resources. It is noted that under the EP Regulations 2016, the EA must exercise its functions in determining an application for the granting or variation of an environmental permit for the purposes of ensuring that the waste hierarchy is applied.

## 1 Introduction

The purpose of this document is to present a plan for the recovery and permanent placement of recovered waste derived from, and placed entirely within, the Former British Sugar Facility, Millfield Lane, York, YO26 6AY (the 'site') in order to add a bespoke 'Deposit for Recovery' waste operation and expand the Environmental Permit (EP) boundary to enable placement of recovered waste.

A site location plan is present as Figure 1. The site layout and current EP boundary is shown on Figure 2.

### 1.1 Background to Waste Recovery and Remediation

#### 1.1.1 Previous Phases of Work

A number of detailed site investigations and assessments have been undertaken at the site between 2006 and 2021 informing site conceptualisation, risk assessment, permit management and Remediation and Reclamation Strategy development including the following works undertaken by Arcadis:

- Remediation and Reclamation Strategy - 2020 Addendum, 10024487-AUK-XX-XX-RP-GE-0049-P1, Arcadis, April 2020;
- Additional Ground Investigation Factual Report, 10024487-AUK-XX-XX-RP-GE-0032-01, Arcadis, March 2020;
- Updated Hydrogeological Risk Assessment Report, 10024487-AUK-XX-XX-RP-GE-0020-01, Arcadis, January 2020; and
- Ground Investigation Factual Report, 10024487-AUK-XX-XX-RP-GE-0015-01, Arcadis, August 2019.

In addition, the following third party reports and additional information were used to inform the proposed remediation approach and waste recovery works.

- British Sugar Stabilisation Trials, Laboratory Bench Scale Mix Design Study, CE Geochem, Report A190504, November 2019;
- Quarter 2 2019 Gas and Groundwater Permit Monitoring Factual Report, Golder Associates (UK) Ltd, 2019;
- EP Annual Monitoring Reports, Golder Associates, 2015 to 2019;
- Outline Construction Environment Management Plan (Version 1.1), June 2017;
- Remediation and Reclamation Strategy – Final, URS (AECOM) February 2015;
- Surrender Pre-Application Advice Letter (EAWML68681), EA, 28<sup>th</sup> August 2015;
- Notice of Variation and Consolidation Document (EPR/QP3593NF/V002), 14<sup>th</sup> October 2015;
- Environmental Permit Variation: Working Plan (47068825), URS, August 2015;
- URS (2013) Summary Report for Ground Gas and Groundwater Data, 2006 – 2012, British Sugar Former Factory Site, York for ABF;
- Factual Report on Ground Investigation: Ian Farmer Associates Limited (2010) Associated British Foods – British Sugar York Site – August 2010: Contract No:W10/40642;
- British Sugar Factory York: Factual Vendor Due Diligence Report: Golder Associates (UK) Ltd, April 2010: Ref. 09514540114.500/A.0;
- Definitive Closure Management Plan – Annual Reports, Golder Associates, 2010 to 2014;
- Phase II Geotechnical and Geo-environmental Assessment report (Scott Wilson, 2010);
- Phase III Geoenvironmental Remediation Options Appraisal, Scott Wilson, December 2010;
- Geotechnical and Geo-environmental Audit of Available Site Information: Scott Wilson Ltd, August 2009;



- Definitive Closure Report for Waste Management Licence NYCC/028, Golder Associates, July 2009;
- Preliminary Geotechnical Considerations Non-Technical Summary: Golder Associates (UK) Ltd , December 2008: Ref.08514540111.504/B.1;
- Preliminary Report on Intrusive Site Investigation of Northern and Southern Waste Water Treatment Plant Areas: British sugar Factory, York: Golder Associates (UK) Ltd, October 2008: Ref. 08514540111.500;
- York Sugar Factory: SPMP Reporting: Assessment of Groundwater and Gas Reference Data – Final: Enviro Consulting Ltd, March 2008;
- Further Assessment of Potential Risks Posed by Soil Gas to Residential Properties on the Western Boundary of the York Sugar Factory: Enviro Consulting Ltd, October 2007; and
- York Sugar Factory: SPMP First Phase Reporting: Assessment of Reference Data: Enviro Consulting Ltd, August 2006.

### 1.1.2 Remediation and Reclamation Strategy

The waste recovery activities proposed within this WRP are to be undertaken in accordance with the Remediation and Reclamation Strategy (RRS) (URS, February 2015) which has been reviewed and accepted by the EA Groundwater and Land Contamination (GWCL) Team and approved under the full planning permission granted in relation to the construction of the development platform (see Section 1.2.4). An addendum to the 2015 RRS has been produced by Arcadis to incorporate the latest site data (Remediation and Reclamation Strategy Addendum (RRSA), 2020) which has also been accepted by the EA as a consultee in support of the planned development.

The scope of works within the RRS (URS, 2015) and RRSA (Arcadis, 2020) which is relevant to the waste deposited within the EP boundary is summarised in this WRP.

The objective of the RRS (URS, 2015) and RRSA (Arcadis, 2020) is to excavate the deposited waste material and to undertake remediation such that potential risks to future site users and the environment from contaminants in soil, soil pore water and soil gas are mitigated to an acceptable level. Recovered waste will be deposited within the current EP boundary as well as across the broader site within the expanded, new EP boundary.

## 1.2 Regulatory Regime and Applicable Guidance

### 1.2.1 Proposed Environmental Permit Variations

The primary guidance considered in relation to the proposed EP variation is the Environmental Permitting Guidance: Core Guidance (EA, April 2020) and associated guidance.

Part of the site is currently subject to an EP (EPR/QP3593NF) which was in a state of Definitive Closure from October 2009 until EP variation consolidation in October 2015, when the period of aftercare monitoring and maintenance commenced. On-going management has included monitoring of groundwater, ground gas and slope stability on a monthly basis under periods of definitive closure monitoring (2009 to 2015) and aftercare monitoring (2015-present).

The site layout and current EP boundary is shown on Figure 2.

The EP (EPR/QP3593NF) previously permitted the activity of (D1) depositing aqueous solutions of soil and sludge in lagoons for precipitation and dewatering and other controlled wastes, with deposited soils originating from agricultural land supplying sugar beet to the site. Settled soils from the lagoons were principally sold commercially as topsoil. The EP variation (EPR/QP3593NF/V002, October 2015) removed the condition allowing deposit of waste and added R3, R5 and R13 recovery and storage activities to facilitate remediation and reclamation.

British Sugar wish to vary the EP in order to fully enable waste recovery and remediation activities required to create a development platform for a residential development for which planning permission has been granted.

A summary of the proposed EP variation is provided below.

**Adding land** to the current EP by extending (and including) the current EP boundary.

**Addition of a Bespoke Waste Operation** – specifically a Deposit for Recovery (DfR) waste operation to enable recovery of waste material present within the current EP boundary followed by reuse / deposit of recovered waste across the proposed extended EP boundary as fill to create the development platform.

**Adding an R11 recovery code** activity to the permit to allow the ‘use of wastes obtained from any of the operations numbered R1 to R10’, in this case as fill to create the development platform.

**Changing the Operating Techniques (Table S1.2)** such that aspects of the EP Working Plan (URS, 2015) that were previously excluded and not agreed by the EA (covering monitoring and permit surrender) are superseded by the testing, monitoring, verification and remediation criteria associated with the waste recovery operation (remediation)..

The current EP is not a Standard Rules Permit and, in accordance current guidance (EA/DEFRA, 2020), as the proposed waste recovery operation involves the recovery and deposit of >60,000m<sup>3</sup> of waste, the proposed variation to the EP will be via a **bespoke** waste operation permit application.

## 1.2.2 Deposit for Recovery Permitting Guidance

The primary guidance followed in this document is the EA ‘Waste recovery plans and deposit for recovery permits (EA, April 2021) guidance as well as the linked ‘landfill and deposit for recovery: aftercare and permit surrender’ guidance (EA, March 2022), provided online. The guidance sets out the EA approach to determining whether an activity involving permanent deposit of waste on land is recovery or waste disposal and describes the requirements for WRPs.

It is noted that the EA ‘Regulatory Guidance note (RGN); Environmental Permitting’ collection was withdrawn (1 February 2016) and that RGN 13: Defining Waste Recovery – Permanent Deposit of Waste on Land’ was withdrawn and reclassified as internal guidance following a Smarter Guidance review.

### 1.2.2.1 Permit Surrender

The EA guidance ‘landfill and deposit for recovery: aftercare and permit surrender’ (March 2022) and the Regulatory Guidance Note (RGN) 9 provides guidance on the regulatory requirements for holders of permits considering applications to surrender an environmental permit.

While the EA RGN; Environmental Permitting’ collection was withdrawn, RGN 9 ‘Surrender’ (May 2013) is stated as remaining current and was referred to in drawing up this document. RGN 9 provides guidance on how land and groundwater should be protected at permitted facilities over the lifetime of a facility through to permit surrender.

In the case of a waste recovery operation, Section 5 of RGN9 indicates that for this site, which holds a bespoke permit, the EA will require a report at the conclusion of the recovery process which confirms that the recovered and deposited waste is in a satisfactory state; i.e. it will not cause an unacceptable risk of pollution or harm to human health or the environment. Section 5.3b of RGN9 provides for a report which confirms that the recovered waste meets risk-based completion criteria developed for the site.

In accordance with the recent EA guidance (March 2022), for the EA to accept an application to surrender an environmental permit, they must be satisfied that the necessary (passive control) measures have been taken in order to:

- avoid the risk of pollution from the activity; and

- return the site to a **satisfactory state**.

The EA will accept that the risk of pollution has been avoided where either:

- it can be shown that the waste is not a source of pollution; or
- the risk is acceptable without any necessary measures.

The EA surrender decision will assume that the waste mass will remain undisturbed. Therefore, the surrender report will consider the risk of:

- disturbance of the waste where the planning authority has approved development at the site;
- potential damage caused by animal burrowing;
- a change in the course of a stream or river in the foreseeable future causing erosion of the necessary measures;
- collapse of a culvert through or below the waste; and
- damage to the necessary measures due to coastal erosion in the foreseeable future.

### 1.2.2.2 Demonstrating Criteria for Surrender

In accordance with section 5 of RGN9 and EA guidance (March 2022), a completion and validation (surrender) report will be provided in line with the requirements of the reclamation strategy and guidance given in Land Contamination: Risk Management guidance (EA 2019), to confirm that risk-based compliance criteria have been achieved for the recovered and deposited waste. The report will aim to satisfy the EA that necessary measures have been taken to avoid a pollution risk and return the site to a satisfactory state, and will include clearly reference supporting evidence including monitoring data relied on as evidence of acceptable emissions.

### 1.2.3 Legal Overview

The EP Regulations 2016 incorporate the key provisions of the Waste Framework Directive, including the waste hierarchy, which prioritizes recovery over deposit of waste and encourages the use of waste as a resource. It is, therefore, the primary consideration in determining what constitutes a recovery operation. Regulatory guidance (such as the 'Waste Recovery Plans and Deposit for Recovery Permits' guidance published by the EA, 21 April 2021), though having interpretive value, is not legally binding.

The appropriate legal framework is as follows:

- (i) the definition of "recovery" is provided by the Waste Framework Directive (WFD) 2008/98/EC as amended by Directive 2018/851/EC (Article 3(15)), whereby "recovery" means any operation the principal result of which is **"waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II sets out a non-exhaustive list of recovery operations"**;
- (ii) the amended WFD includes a new definition of "backfilling" at Article 3(17A), which states that waste used for backfilling **"means any recovery operation where suitable non-hazardous waste is used for purposes of reclamation in excavated areas or for engineering purposes in landscaping. Waste used for backfilling must substitute non-waste materials, be suitable for the aforementioned purposes, and be limited to the amount strictly necessary to achieve those purposes"**;
- (iii) the amended WFD requires that **"waste policy should also aim at reducing the use of resources and favour the practical application of the waste hierarchy"**. The waste hierarchy generally sets out, by order of priority, what constitutes the best overall environmental option. The following waste hierarchy shall apply (with recovery clearly preceding disposal):
  - (a) prevention;
  - (b) preparing for re-use;
  - (c) recycling;

(d) other recovery, e.g. energy recovery; and  
(e) disposal.

- (iv) Furthermore, the WFD states “**Member States shall take into account the general environmental protection principles of precaution and sustainability, technical feasibility and economic viability, protection of resources as well as the overall environmental, human health, economic and social impacts, in accordance with Articles 1 and 13**”.
- (v) under the Environmental Permitting Regulations 2016 (EP Regulations), the definition of “recovery” (reg. 2 and Schedule 9, Part 1, para.2) is the same as in the Waste Framework Directive;
- (vi) the waste hierarchy provisions of the Waste Framework Directive are incorporated into the EP Regulations requiring the regulator to ensure that the waste hierarchy (referred to in Article 4 of the Waste Framework Directive) is applied to the generation of waste by a waste operation. Under the EP Regulations 2016, the EA must exercise its functions in determining an application for the grant or variation of an environmental permit for the purposes of ensuring the waste hierarchy is applied.

In addition,

- (vii) The UK government’s Circular Economy Package (CEP) Policy (Defra, Daera, 2020) which aims at **keeping resources in use as long as possible, extracting maximum value from them, minimizing waste and promoting resource efficiency**. The CEP policy approach is a means of not only **reducing impacts on our natural environment and reducing greenhouse gas emissions, from disposal and embodied emissions** related to our consumption, but also in terms of competitiveness, resilience and growth;
- (viii) Assessment of the whole life cycle carbon impacts, as recommended by the UK Green Building Council (UKGBC) (Advancing Net Zero campaign) alongside UK government efforts to deliver UK net zero and the transition to a net zero carbon built environment, as set out in new Building Regulations, Department of Levelling Up, Housing and Communities, February 2022.

#### 1.2.4 The Planning Regime

Development of the site is controlled under the Planning Regime. Planning guidance relating to the development of land potentially affected by contamination is detailed in the National Planning Policy Framework (NPPF), updated July 2021 and constitutes guidance for Local Planning Authorities (LPA). In this case the LPA is City of York (CoY) Council. CoY Council provides guidance for contaminated land and planning applications, drawing from the NPPF. In addition, they refer to the Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG) Development on Land Affected by Contamination Technical Guidance for Developers, Landowners and Consultants

The NPPF sets out the Government’s planning policies for England and how these should be applied. Under the NPPF the planning process aims to ensure that land is suitable for its proposed future use, in particular:

*‘Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.’*

The NPPF also states that:

- Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or ‘brownfield’ land.
- Give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land.

Therefore, planning policies and decisions should ensure that:

- A site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation).
- After remediation, as a minimum, land should be capable of not being determined as contaminated land under Part IIA of the Environmental Protection Act 1990.
- Adequate site investigation information, prepared by a competent person, is available to inform these assessments.
- The planning system should contribute to and enhance the natural and local environment by:
  - preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.
- Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

The statutory definition of contaminated land is given under Part 2A of the Environmental Protection Act (EPA) 1990 (Part 2A). This does not include land that is already regulated through other means, such as Waste Management Legislation or the Environmental Permitting Regulations 2010.

### 1.2.5 Active Planning Permissions Relating to the Site

Three planning permissions have been granted to enable development of the site, by City of York (CoY) Council, as summarised below

- Construction of development platform, engineering works and remediation and reclamation of site, Application Reference No: 20/00774/FUL granted on 24th July 2020;
  - Variation of conditions 2, 3, 4, 5, and 8 of the previous permitted application (14/02798/FULM) to alter the Remediation and Reclamation Strategy and proposed ground levels due to further site investigation, Application Reference No. 20/00869/FUL granted on 20 May 2020.
- Construction of 2 no. access roads onto Boroughbridge Road and Millfield Lane and a link road across the former Manor School Site in association with the redevelopment of the former British Sugar site, with associated demolition of former school buildings, Application Reference No: 17/01072/FUL, granted 12th September 2017.
- Outline application for the development of the site comprising up to 1,100 residential units, community uses (D1/D2) and new public open space with details of access (to include new access points at Millfield Lane and Boroughbridge Road and a new link road, crossing the Former Manor School Site) and demolition of the Former Manor School buildings. Application Reference No: 15/00524/OUTM, granted on appeal 28th September 2018.

The full planning permissions granted in relation to the construction of the development platform (20/00774/FUL and 20/00869/FUL) requires the development to be carried out in accordance with a number of Approved Plans with those pertinent to the WRP listed below and provided in Appendix A.

- Existing Contours – DR GE 00600 rev P3
- Proposed Layout Levels - DR-CE-00602 P6
- Interpolated Base of Excavation Plan DR-CE-00601 P3
- Cross Section 1 of 3 DR-CE-00605 P5
- Cross Section 2 of 3 DR-CE-00103 P0
- Cross Section 3 of 3 DR-CE-00104 P0
- Details of Noise Barrier - DR-CE-00611 P6, 00612 P5, 00613 P6, 00614 P5
- Landscaping Plans - 60531863 BS LS 009 - Landscaping proposed around Tangerine Factory

The 15/00524/OUTM & 20/00774/FUL permissions also requires site remediation to be implemented in accordance with the agreed RRS (URS, February 2015), RRSA (Arcadis, 2020) and the Construction Environmental Management Plan (CEMP) version 1.2 (URS, September 2017) as well as requiring foul and surface water drainage plans to be developed with the inclusion of Sustainable Urban Drainage (SuDS) features.

The full planning permission granted in relation to the construction of access roads (17/01072/FUL) also requires the development to be carried out in accordance with a number of Approved Plans with those pertinent to the WRP listed below and also provided in Appendix A.

- 17424-37-DIMS REV I - Boroughbridge Road Access Dimensions
- 17424-40-DIMS REV C - Millfield Lane Access Dimensions
- 60531863\_BS\_LS\_004 - REV D - Main Entrance Soft Landscape Design
- 60531863\_BS\_LS\_005 - REV B - Main Entrance Soft Landscape Design

The implications of these planning permissions and associated Approved Plans, in terms of the volumes of waste material required to be recovered, are described in Section 5.

### 1.2.6 Remediation & Reclamation Strategy Guidance

The Environment Agency – DEFRA “Model Procedures for the Management of Land Contamination [CLR11]” was followed in the investigation and assessment of land contamination and the design, specification and compliance validation of the remediation and reclamation works. While CLR11 has now been replaced by the Land Contamination: Risk Management (LCRM) guidance (Environment Agency, 2020) the new guidance is based on CLR11 and the scope, framework and overall intent remain the same. As such we consider the report to be in-line with the requirements of LCRM.

The published guidance provided by NHBC (National House Builders Council – EA – CIEH (Chartered Institute for Environmental Health) “Guidance for the Safe Development of Housing on Land Affected by Contamination (2008)” aligns with the Land Contamination: Risk Management guidance and will be taken into account. Hazards and related environmental risks associated with ground gas have been and will continue to be investigated, monitored, assessed and mitigated in line with CIRIA (Construction Industry Research and Information Association) C665 “Assessing Risks posed by hazardous ground gases to buildings”, the NHBC document “Guidance on the Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are Present (2007)”, as well as the BSI Standards Publication “Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings”, BS 8485:2015+A1:2019

### 1.2.7 Complimentary Environmental Permits & Reuse Approaches

As part of the site wide works any soils excavated and remediated that are currently located outside the EP boundary are anticipated to be reused in accordance the Contaminated Land Applications in Real Environments (CL:AIRE) Definition of Waste Code of Practice (DoWCoP) (CL:AIRE, March 2011) with soils demonstrated to be suitable for reuse in accordance with the Remedial Target Values (RTV) defined within the Remediation and Reclamation Strategy (URS, February 2015).

Delineation or zoning of recovered waste and reused soils within specific site areas to facilitate any future regulatory oversight or enforcement will be undertaken as far as practicable and will be detailed as part of the permit application.

Mobile treatment plant EP(s) will be required in connection with carrying out remediation and reclamation activities and would be deployed to cover the entire site footprint (both within and outside of the current EP boundary) and facilitate both the waste recovery activities proposed within the WRP and the reuse of soil under the CL:AIRE DoWCoP. Application for operation of the requisite mobile treatment plant EP(s) will be made in accordance with applicable legislative requirements.

## 1.3 Regulatory Liaison

Throughout the development of the waste recovery strategy British Sugar and their consultants have proactively engaged with the EA local & national teams to enable an appropriate route for sustainable development of the site to be agreed.

This WRP has been prepared following liaison with the EA Yorkshire Area Landfill Team including meetings held on 23<sup>rd</sup> July 2019 and 29<sup>th</sup> October 2019 which provided direction that reuse of material within the EP boundary would not be accepted via a CL:AIRE DoWCoP (September 2008) approach, and that a WRP route is preferred. Further liaison with the EA was undertaken on 3<sup>rd</sup> August and 15<sup>th</sup> October 2020 with additional correspondence from the EA Waste Permitting Team received on 17<sup>th</sup> September 2020 and 21<sup>st</sup> January 2021 regarding financial gain calculations and example evidence requirements.

---

## 2 Site Location and Description

### 2.1 Location

The site of the former British Sugar facility is located approximately 2.5 km north-west of York City Centre, centred at approximate national grid reference 457625 E, 452910 N. The former facility as a whole covers an area of 39.7 hectares with the EP Boundary area covering an area of 15.7 hectares, which are both shown on Figure 2. Only the central and northern portion of the site holds an EP, as shown on this drawing.

### 2.2 Description

From a number of preceding investigations and studies the site as a whole can be split into four key areas on the basis of information relating primarily to previous historical activities at the site and as follows:

- The former Northern Waste Water Treatment Plant (NWWTP) area including the LimeX storage area and the Soil Conditioning Area (SCA).
- The Central Tank Farm area.
- The Main Factory area.
- The former Southern Waste Water Treatment Plant (SWWTP) area; including the southern demolition area of the site.

Additional areas of the site include the sports field, the former Manor School site and the access area to the NWWTP which includes a surface water pond.

The former NWWTP, LimeX storage area, SCA and central tank farm areas are located within the boundary of the EP. The former main factory area, SWWTP and Additional Areas are located outside of the permitted area.

The above-ground structures have now been demolished with the majority of the foundations and floor slabs broken out and removed across the whole site, with the exception of the main perimeter access roads into the site and the building housing the security and site management staff, located next to the former weighbridges.



## 3 Site Assessment and Remediation

### 3.1 Characteristics of the waste to be recovered

#### 3.1.1 Sources of Wastes

Desk-based studies and investigations indicate that the bulk of the waste is primarily soils brought to the facility as farmland soils adhered to the sugar beet. Consequently, the materials are predominantly mixtures of natural clays, silts, sands and gravels with varying proportions of organic matter. The organic matter derives from both the original soil and also from the processing of the beet whereby the vegetation and fibre are separated from the sugar beet.

Also entrained in the waste is “spent lime” in the form of re-precipitated calcium carbonate. Limestone aggregate, comprised essentially of calcium carbonate in mineral form, was brought to the facility and burnt in a kiln to produce calcium oxide (burnt lime) and carbon dioxide gas. The burnt lime was then slurried in combination with the raw beet juice in solution to balance pH and to clarify the juice. The carbon dioxide gas was then re-combined with the juice so that calcium carbonate re-precipitated out of the mixture along with unwanted impurities. The precipitate was then settled out and filtered from the juice, forming a useful friable particulate by-product known as Sugar Factory Lime (SFL) and marketed as LimeX. The bulk of the SFL was sold as a soil improver. Surplus SFL was also used in combination with soils in landscaping and bund construction on the site. Some of the exploratory hole records from the permitted area indicate that the waste contains “lime” but the material is generally considered to be SFL residue.

Other frequently observed secondary constituents of the waste include fragments of ash, coke / clinker, lime, masonry, sandstone, limestone, concrete, brick, ceramics, wood fragments and metal.

Further details of the characteristics of the wastes have been established from a succession of intrusive ground investigations and associated monitoring of ground gases and groundwater.

To date the investigations have comprised:

- Ground Investigation by Enviro Consulting, 2006;
- Ground Investigation by Golder Associates, 2008;
- Ground Investigation by Ian Farmer Associates under the direction of URS-Scott Wilson, 2010 and associated Phase II interpretative geo-environmental and geotechnical report dated October 2010,
- Definitive Closure Monitoring Reports by Golder Associates: annual reports from 2009 to 2015, Environmental Permit annual reports 2015 to 2018; and
- Ground Investigation by Arcadis, August 2019.

#### 3.1.2 Types of Waste

The types of waste deposited within the EP boundary identified during previous site investigations and to be recovered during the reclamation works are listed in the table below which provides a general soil description used within the RRS, the List of Wastes (LOW) / European Waste Catalogue (EWC) waste code and the EWC description (Guidance on the Classification and Assessment of Waste (1st edition 2015) Technical Guidance WM3'). All wastes listed below are generated entirely from site operations.

General Description	EWC Waste Code	EWC Description	Comments
Granular Made Ground	17 05 (03 / 04)	Soil and stones	Asbestos has been identified in 3 samples in EP boundary
Cohesive Made Ground			

Organic Rich Material	02 04 01	Soil from cleaning and washing beet	Includes current and historic lagoon sediments. Plant remains observed historically in some locations.
Sugar Factory Lime Material	02 04 02	Off-specification calcium carbonate	
Oversized Material	17 01 07	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics	
Recovered Material	19 13 02	solid wastes from soil remediation	soils subject to a remediation process, meeting risk-based criteria and then suitable for re-use in the works, and generated entirely from within the site

It is noted that 02 04 02, 17 05 03 and 19 13 02 are not contained within the Standard Rules (SR) 2015 No.39 permit. However, the application to vary the current EP will seek to add a bespoke ‘Deposit for Recovery’ waste operation (considering >60,000m3 of waste are proposed to be recovered) and the suitability of all recovered wastes will be determined in accordance with the remediation and earthworks compliance criteria detailed in Sections 3.2.3 and 3.2.4.

### 3.1.3 Thickness of Waste Deposits

The thickness of the waste located within the EP boundary has been modelled using Geographic Information System (GIS) software based on the 2019 topographical survey and the required base of excavation, which is defined within approved cross section plans associated with planning permissions (15/00524/OUTM & 20/00774/FUL), and also using data taken from exploratory logs collected previous site investigations. This model is displayed in Figure 3.

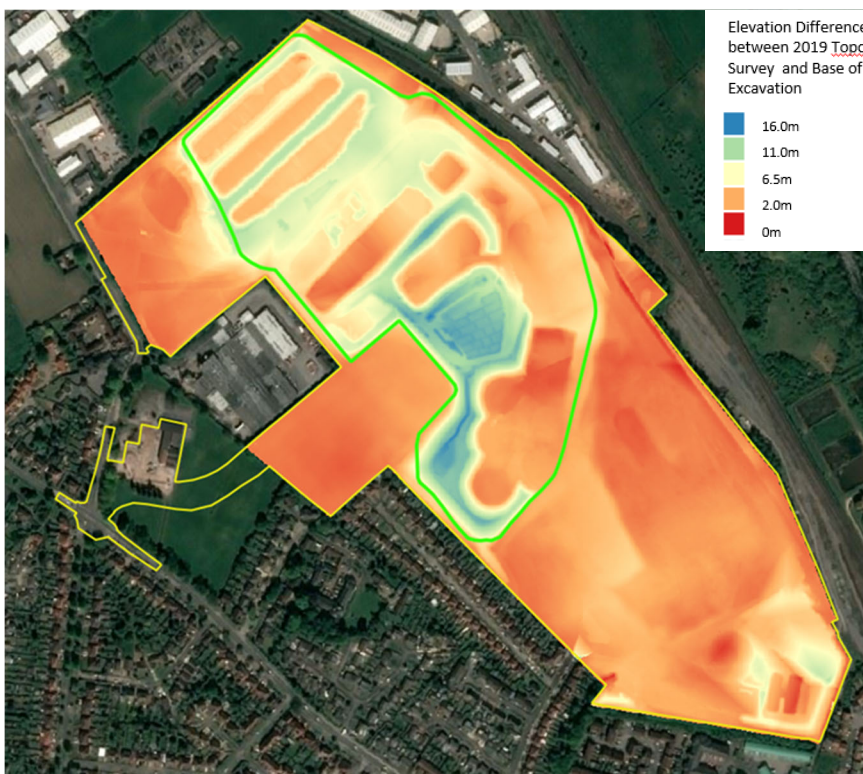


Figure 3: Thickness of Waste within the EP Boundary

The waste has been shown to be present to a maximum thickness of 14.7m across the EP boundary, but is typically approximately 2.0m thick throughout the site.

As can be seen from Figure 3, the greatest thicknesses of waste are present within the EP boundary area associated with the SCA, earth bunds associated with the central tank farm and LimeX pond and the NWWTP settlement lagoon bund.

### 3.1.4 Volumes and Tonnage of Waste

The total quantity of the waste located within the EP boundary requiring excavation and recovery has been modelled and calculated using Geographic Information System (GIS) software based on the 2019 topographical survey and previous site investigation data. This volume is estimated at **746,800m<sup>3</sup>** based on the excavation to the base of the Made Ground (i.e. excavation of the entire thickness of waste).

The bulk density of the waste in situ, i.e. including entrained moisture, is variable broadly ranging from about 1.7 – 2.1 tonnes per cubic metre. Using an average of 2.0 tonnes per cubic metre gives an estimated total tonnage of 1,493,600 tonnes.

GIS modelling software has also been used to determine the volume of material required to construction the development platform within the EP Boundary and across the entire site using the elevations and contours defined within 'Proposed Contours -DR-CE-00602 P5' Approved Plan, presented in Appendix A). The volume of material required to construct the development platform within the EP boundary is estimated to be 513,500m<sup>3</sup> with 446,100m<sup>3</sup> required to construct the development platform outside the EP boundary.

Therefore, in order to construct the required development platform across the site, it is proposed to permanently deposit **513,500m<sup>3</sup>** of recovered waste within the EP boundary with the remaining **233,300m<sup>3</sup>** of recovered waste proposed to be permanently deposited on site outside the EP boundary. Made Ground soils originating from outside the EP boundary are proposed to be reused under the CL:AIRE DoWCOP framework to make up the remaining volume of required construction fill outside the EP boundary (212,800m<sup>3</sup>).

### 3.1.5 Descriptions of Waste within the EP Boundary

Made Ground in the former NWWTP generally comprises clayey/silty gravelly sand and (occasionally clayey sandy) gravel (with occasional cobbles), with occasional soft to firm (locally very soft) silty, sandy and gravelly horizons of silt and clay. Deposited waste of this description was primarily associated with lagoon bund material and other raised areas across the NWWTP.

Notable variations are evident in the boreholes and trial pits undertaken in the SCA and bases of the existing and historical ponds where Made Ground generally comprises of very soft and soft (occasionally firm) dark brown and black clayey/silty, sandy, occasionally gravelly, organic rich clay or silt with infrequent clayey/silty sand and gravel bands. Plant remains and rootlets have been observed in these areas. This organic rich material is a significant focus for the remediation strategy.

Discrete horizons of SFL residue described as “creamy white chalky silt” or “weathered chalk/silt” were also identified within the SCA and other localised areas of bund material across the NWWTP.

Made Ground in the central tank farm generally comprises of grey and brown (locally black, orange, red, yellow/white/cream), (occasionally clayey/silty gravelly) sand and (occasionally clayey/silty sandy) gravel (with occasional cobbles and boulders), with occasional very soft and soft (locally stiff, firm and very stiff) silty, sandy and gravelly clay (locally silt) horizons.

### 3.1.6 Contaminants

The assessment of the nature, extent and depth of contaminant hazards and their associated risks to the proposed residential development have been addressed in the reports listed in Section 3.1.1 and summarised within the RRS (URS, 2015) and RRSA (Arcadis, 2020)

The following Source Pathway Receptor (SPR) contaminant linkages are considered active in relation to the site and, therefore, require management (e.g. via active remediation or other controls during earthworks) to address potential risks:

- Polycyclic aromatic hydrocarbons (PAHs) in Made Ground identified in localised hotspots across the Main Factory area and Southern WWTP and the potential human health risks to future on-site residents associated with exposure by direct contact and/or plant uptake;
- Total petroleum hydrocarbons (TPH) in Made Ground identified in localised hotspots across the Main Factory area and Southern WWTP and the potential human health risks to future on-site residents associated with exposure by inhalation, direction contact and/or plant uptake;
- Asbestos present as ACM (asbestos containing material) or free fibres in soil located in localised areas across the site and potential human health risks to future residents and/or construction workers due to inhalation of dust and/or free asbestos fibres;
- The degradation of organic rich material within Made Ground located primarily within the Northern and Southern WWTP areas have the potential to generate ground gas (carbon dioxide and methane) representing a potential risk to future on-site residents and residential dwellings via inhalation and explosion;

The following SPR contaminant linkage is also proposed to be addressed as part of the remediation works

- Ammoniacal nitrogen, representative of ammonia and ammonium, associated with organic rich material in the Made Ground leaching from Made Ground to groundwater and subsequent migration within the Secondary (A) aquifer (superficial deposits) to the River Ouse.

The previous Tier 3 risk assessment and sensitivity analysis undertaken by AECOM as part of the 2015 RRS, as well as the updated Hydrogeological Risk Assessment (HRA) undertaken by Arcadis (Report Ref: 10024487-AUK-XX-XX-RP-GE-0020-01, January 2020), both included detailed assessment of the potential environmental risks posed by ammoniacal nitrogen. The updated HRA concluded that measured concentrations of ammoniacal nitrogen in groundwater were not identified in excess of the updated Site Specific Assessment Criteria (SSAC) derived for the protection of the Secondary A Aquifer or the River Ouse. As such, measured concentrations of ammoniacal nitrogen are not considered to represent an unacceptable risk to water resources.

Therefore, while active remediation works will be undertaken with respect to Made Ground soils in order to reduce the concentrations and leachability of ammoniacal nitrogen this will be for the purposes of 'Source Reduction' and no active remediation of groundwater is considered necessary.

The engineering competence of the Made Ground is low when considered in the context of providing the proposed residential development platform. This factor is considered alongside those associated with contamination in establishing remediation and reclamation objectives.

## 3.2 Remediation & Reclamation Strategy

The waste recovery activities proposed within this WRP are to be undertaken in accordance with the RRS (URS, 2015) which has been reviewed and accepted by the EA GWCL Team and is an Approved Plan within the full planning permission granted in relation to the construction of the development platform (see Section 1.4). An addendum to the RRS (RRSA, Arcadis, 2020) has been produced to incorporate recent site data

which has also now been accepted in support of the planned development. The following sections provide a summary of the accepted remediation strategy.

### 3.2.1 Remediation & Reclamation Objectives

The overall objective of the RRS (URS, 2015) and the RRSA (Arcadis, 2020) is to excavate the deposited waste material and to undertake remediation such that potential risks to future site users and the water environment from contaminants in soil, soil pore water and soil gas are mitigated to an acceptable level.

The objectives of the remediation and reclamation are:

- To reduce the concentrations of hydrocarbon substances in the Made Ground to acceptable levels that do not present an unacceptable risk to the receptors listed above; in particular to mitigate the risks associated with inhalation, ingestion, direct contact, plant uptake and ground gas generation.
- To reduce the concentrations of ammoniacal nitrogen, representative of the substances ammonia and ammonium, in the Made Ground pore water; in particular to reduce the contaminant source and mitigate and minimise any potential migration into groundwater of solutes containing ammonia and ammonium.
- To reduce ground gas concentrations and flow to a level compliant with the Amber 1 level of the NHBC traffic light system, with the proviso that conditions following remediation and reclamation will be no greater than Amber 2.
- To reduce the concentrations of organic matter in the Made Ground such that future generation of the ground gases carbon dioxide and methane from the engineered Made Ground is within acceptable levels.
- To improve the engineering competence (strength and stiffness / compressibility) of materials comprising the Made Ground so as to allow it to be used to form the development platform suitable for building roads, houses and related engineered structures and facilities such as drainage.
- To engineer and use the remediated Made Ground on the site as material for the proposed development platform.

Remediation of diffuse metal contamination in the Made Ground is not an objective of the RRSA as the concentrations of metals in the Made Ground are below the levels at which remediation is considered necessary. However, as a secondary benefit of the remediation and reclamation, immobilisation of diffuse metal contamination in the Made Ground is anticipated. This will limit further any potential for the generation and migration into groundwater of leachable metals in Made Ground soil pore waters.

A further requirement is that of protecting the surrounding environment from the potential transient short term adverse effects of the remediation and reclamation works in respect of noise, dust and vapour emission, odour, ground vibration and migration of substances in the Made Ground to surface waters and groundwater.

### 3.2.2 Remediation & Reclamation Works

The following key elements will be undertaken as part of the site wide remediation and reclamation works;

- Baseline monitoring of the environment prior to commencement of the works to establish benchmarks against which to monitor and control the risk of short-term adverse effects on the surrounding environment. This to be followed by ongoing monitoring throughout and for a period following the completion of the works.
- Laboratory bench scale trials of the proposed remediation processes to confirm the applicability of the processes for remediating Made Ground soils. The completed laboratory bench scale trials have confirmed that the proposed methods of remediation are suitable for the objectives set out.
- Where applicable site based pilot trials of the proposed remediation processes to confirm their suitability at site scale.
- Drainage of the existing ponds / lagoons.

- Excavation, crushing and screening of hard materials such as concrete and brick and set aside for use in the development platform.
- Bulk excavation of the whole of the Made Ground (both within and outside the EP boundary) to allow further inspection, testing, classification and selection, as necessary, for one or more of the chosen remediation processes.
- Collection, treatment as necessary and discharge of any perched water from the Made Ground in order to protect the surrounding environment from the potential effects of short term migration during the works.
- Selection and remediation of soils contaminated by volatile hydrocarbons (as defined by the 2015 RRS) and organic rich material present within Historic Pond 7 by means of aerobic bioremediation. This to be achieved by static biopiles or turned windrows;
- Selection and remediation of soils contaminated by non volatile hydrocarbons (as defined by the 2015 RRS) by means of placement below the top 1m of the development platform to break direct contact and plant uptake exposure pathways.
- Selection and remediation of soils contaminated by ammoniacal nitrogen (representative of ammonia and ammonium) by means of stabilisation to reduce contaminant leachability.
- Selection and remediation of soils showing low engineering competence (high moisture content, relatively low strength and relatively high compressibility), by means of stabilisation using the chosen stabilisation mixture. The chosen design mixture has been informed from laboratory testing and is envisaged to be confirmed by site pilot trials. It is likely to contain a mixture of cement and lime with possible other stabilising additives. A secondary benefit of stabilisation is anticipated to be achieved in that diffuse metal contamination in soil pore water will be immobilised, although diffuse metal contamination is at levels not considered to warrant remediation.
- Reinstatement of remediated materials and validated soils that have achieved the appropriate compliance / reuse criteria into the development platform.
- Compaction of the remediated soils and other site won soils in engineered layers using conventional earthworks plant.
- Monitoring of ground gas in the development platform and of groundwater as the level of the development platform is raised to confirm that risk-based compliance criteria are being met.
- Monitoring of the compacted material to establish that its competence has been improved and that it will not be subject to undue settlement.
- Validation testing of the soils in the remediated and reclaimed land to confirm that compliance criteria have been met.

### 3.2.3 Remediation & Reclamation Compliance Criteria

#### 3.2.3.1 Soil and Soil Pore Water Compliance Criteria

A set of compliance criteria, known as Remedial Target Values (RTV), for remediated Made Ground soils and soil pore water, have been established by means of risk assessment. The criteria for the protection of human health are based on relatively cautious assumptions as to the plausibility of the exposure pathways set out in the contaminant linkages above, and as to the duration and frequency of exposure of users of the site to contaminants in soils. The criteria are therefore protective of human health based on a residential end use scenario with plant uptake. The RTV defined within the 2015 RRS have also been adopted within the RRSA 2020 addendum.

The criteria for the protection of the water environment, specifically the protection of the River Ouse, are based upon the acceptable concentration of solute substances in the pore water of the Made Ground soils. These being appropriate in the context of potential migration of soil solutes towards the river; and for the status of the river as a surface water receptor with importance for abstraction and treatment for potable use.

A review of the RTV calculated for ammoniacal nitrogen in soil pore water (URS 2015) was undertaken by Arcadis within the updated HRA ((Report Ref: 10024487-AUK-XX-XX-RP-GE-0020-01, January 2020) which

confirmed that the RTV were protective of groundwater and supported the Site Specific Assessment Criteria (SSACs) derived (see Section 3.2.3.3.)

### 3.2.3.2 Ground Gas Compliance Criteria

The compliance criterion in respect of ground gas for the built residential properties complies with the requirements of the NHBC and related published UK guidance. The objective of the remediation and reclamation works will be to reduce ground gas concentrations and flow to a level compliant with the Amber 1 level of the NHBC traffic light system, with the proviso that conditions following remediation and reclamation will be no greater than Amber 2.

At the objective level of Amber 1 and a level no greater than Amber 2 as measured by post-remediation ground gas monitoring, standard protective measures can be adopted for use, as necessary, in the built structures.

In addition, ground gas monitoring following remediation works will also be used to demonstrate that where flammable gas (methane) and carbon dioxide concentrations exceed 1.5%v/v and 5%v/v respectively (Scenario 1, EPR 5.02, EA Guidance) hazardous gas flow rates (Qhgs) will be calculated in line with Scenario 2 (EPR 5.02) in accordance with the required permit surrender Completion Criteria provided by the EA in Pre-Advice Letter (EAWML68681, EA, 28th August 2015);

### 3.2.3.3 Groundwater Compliance Criteria

The previous Tier 3 risk assessment and sensitivity analysis undertaken by AECOM as part of the 2015 RRS as well as the updated Hydrogeological Risk Assessment (HRA) undertaken by Arcadis (Report Ref: 10024487-AUK-XX-XX-RP-GE-0020-01, January 2020) both included detailed assessment of the potential environmental risks posed by ammoniacal nitrogen in Made Ground soils. The updated HRA concluded that measured concentrations of ammoniacal nitrogen in groundwater were not identified in excess of the updated SSAC derived for the protection of the Secondary A Aquifer or the River Ouse and, therefore, that measured concentrations of ammoniacal nitrogen in Made Ground soils are not considered to represent a significant risk to water resources. On this basis, the strategy does not propose to remediate groundwater in the natural superficial deposits; rather the remediation and waste recovery efforts are to be focused on reducing the leaching of ammoniacal nitrogen from Made Ground soils.

Ground water assessment criteria may include assessment of trends or statistics, in combination with comparison with set values, and are as follows:

- **Post remediation** – to assess groundwater quality trends within replacement monitoring wells to demonstrate there are no significant sustained increases in concentrations of ammoniacal nitrogen and metal or metalloids contaminants listed in the EP Variation. Assessment of trends may include statistical analysis where appropriate, or comparison with simple descriptive statistics.
  - For replacement monitoring wells which are direct replacements for existing monitoring wells (listed within the EP Variation working Plan (URS, February 2015)) and for which representative data is likely available for pre remediation conditions, then reference will also be made to these pre remediation concentrations (including Control Levels) to demonstrate there is no significant deterioration in groundwater quality following remediation.
  - For replacement monitoring wells which are not direct replacements for existing monitoring wells and for which representative data is not likely available for pre remediation conditions then, if sustained increasing trend is observed, reference will also be made to the updated Site Specific Assessment Criteria (SSAC) (Updated HRA, Arcadis, 2020) provided these replacement wells are associated with identified Sources (Updated HRA, Arcadis, 2020). Where these wells are not associated with a Source, then further risk assessment may be undertaken if deemed required, including reference to EQS and/or DWS standards, if relevant.

### 3.2.4 Earthworks Performance Criteria

The proposed performance criteria are summarised as follows.

- Materials placed as compacted fill should comply with the properties of Class 2A/B/C and / or Class 1A/B/C as defined in the Specification for Highways Works Series 600 *Earthworks*.
- It is intended that the density for compacted material should be a specified minimum of 95% of the maximum dry density (4.5 kg Procter compaction test); and should be a specified maximum of 5% air voids where the particle density has been measured. Extraneous non-mineral materials such as fragments of plastic, wood and textile fragments and the like should be removed from the material before compaction as far as practicable. Durable materials including brick, concrete and masonry may be retained within the fill provided their largest particle dimension is no greater than two-thirds of the layer thickness being compacted and in any case no greater than 200 mm. Particles larger than 200 mm will be segregated, crushed and used in the fill. Plate bearing tests on the completed formation using the 600mm diameter plate should be considered acceptable where settlement under a sustained load equivalent to 100 kN/m<sup>2</sup> is less than 25 mm.
- Hand shear vane tests shall be undertaken at formation level and at the bases of excavations in cohesive materials. The specified minimum hand vane strength in cohesive materials shall be 60 kN/m<sup>2</sup>.

### 3.2.5 Environmental Monitoring

Ground gases and groundwater quality will be monitored systematically during and after the reclamation and waste recovery operation. Such monitoring will align as far as possible with the current Environmental Permit (EP) monitoring requirements (as defined in tables S3.1 to S3.6 of the EP), Pre-Application Advice received from the EA in relation to EP surrender (EAWML68681, August 2015) and recent discussions with the EA Yorkshire Area Landfill Team.

Environmental monitoring will be carried out using comparable methods and analyses as detailed within the EP and will be undertaken from an array of in-ground / in-waste standpipes. The scope of the monitoring is summarized in the tables below with further detail provided in the RRS (URS, 2015) and the RRSA (Arcadis, 2020) as well as within the Monitoring Plan to be provided as part of the full waste recovery application.

Scope of Monitoring	Test	Frequency of Testing
<b><u>GROUND GAS MONITORING</u></b>		
<p>Ground gas monitoring shall be undertaken prior to the works, during the remediation and reclamation and for 24* months after completion of works.</p>	<p>Including peak and field stable measurements of carbon dioxide and methane concentrations, total gas flow, atmospheric pressure and conditions during monitoring.</p>	<p>From Standpipes installations located around the site to the sampled prior to the works, then at monthly intervals during the works, then at monthly intervals post works completion for a period of 24* months.</p> <p>*Should 12 consecutive monthly monitoring visits indicate ground gas compliance criteria have been met then it is understood that this will be accepted by the EA (Pre-application Advice, August 2015) and no further monitoring required.</p>



To facilitate this, gas monitoring wells which are part of the current network will be used. In addition, further monitoring wells shall be installed following the works. Thirty (30) new wells will be installed to replace the current monitoring wells which are anticipated to be damaged during the works.

Scope of Monitoring	Test	Frequency of Testing
<b><u>GROUNDWATER MONITORING</u></b>		
<p>Groundwater monitoring (sampling and laboratory testing) shall be undertaken prior to the works, during the works and for 24* months after completion of the works.</p>	<p>Representative samples of groundwater submitted for laboratory analysis of contaminants and parameters required by the EP.</p>	<p>From standpipes installations located around the site to be sampled on 3 occasions prior to the works, then at monthly intervals during the works, then at post completion for a period of 24* months.</p> <p>*Should 12 consecutive monthly monitoring visits indicate ground monitoring compliance criteria have been met then it is proposed that this will be accepted by the EA and no further monitoring required.</p>
<b><u>SURFACE WATER MONITORING</u></b>		
<p>Surface water monitoring (sampling and laboratory testing) shall be undertaken from the River Ouse prior to the works, during the works and for 12 months after completion of the works</p>	<p>Representative samples of surface water submitted for laboratory analysis of contaminants and parameters detailed within the Monitoring Plan.</p>	<p>Samples to be obtained on 1 occasion prior to the works, then at monthly intervals during the works, then at monthly intervals during the works, then at monthly intervals post completion for a period of 12-months</p>
<b><u>ANY HOLDING TANK/ LAGOON FOR INCIDENTAL ARISING OF WATER (PRE &amp; POST TREATMENT)</u></b>		
<p>Holding tank/ lagoon water (where incidental water has been collected prior to treatment and discharge</p>	<p>Detailed within the Monitoring Plan</p>	<p>Samples to be taken before and post treatment on a monthly basis during the works or at the frequency required in the WDA-EP/ trade effluent consent.</p>

To facilitate the programme of groundwater monitoring, monitoring wells which are part of the current network shall be used, as well as twenty (20) further monitoring wells (of which 14 are located within the EP boundary) which shall be installed following the remediation and reclamation works to replace the current monitoring wells which are anticipated to be damaged during the works.

Surface water monitoring of the River Ouse shall be carried out prior to commencement of the remediation and reclamation works, during the works and post completion at the frequencies given in the table above. Sampling of the River Ouse will include at a minimum, upstream and downstream locations, and one intermediate location along the length of the River opposite the site.

It is not the intention of this RRS to remediate surface water or groundwater, other than to capture, test and, if necessary, pre-treat soil pore water and / or perched water encountered in the excavations and in the existing lagoons prior to discharge. The Tier 1 assessment criteria are to be applied whenever captured and treated water is to be discharged to surface waters. If exceedances of the Tier 1 Assessment Criteria are identified then further treatment will be undertaken.

---

The reference to Tier 1 Assessment criteria will also be made when assessing monitoring data, in order to determine whether the results are indicative of the prevailing groundwater and surface water conditions or whether the remediation and reclamation works have impacted the groundwater / surface water regime as a result of mobilisation of contamination.

Should this assessment conclude that the results are potentially indicative of a mobilisation of contaminants then the frequency of monitoring will be increased and a repeat monitoring round shall be undertaken to determine whether the elevated results relate to a one-off “pulse” of mobilised contaminants. Where the results consistently indicate elevated concentrations of determinands then additional mitigation measures may be required to limit the potential risks to groundwater and surface water arising from the works.

Any proposed additional mitigation measures will be submitted to the relevant authority for approval prior to implementation.

### **3.2.6 Flood Risk Assessment**

A Flood Risk Assessment and Drainage Strategy Report (Report Ref: 60470111(47068101), AECOM, January 2017) was produced to support planning permissions listed in Section 1.4. The residential area of the site is within Flood Zone 1 – Low Risk and the type of development was considered appropriate for the site. Only areas of public open space will fall within the small area of Flood Zone 2 – Medium Risk on the site, and the type of development was considered appropriate in these areas. Modelling of the watercourse demonstrates that the additional discharge from the development will have an insignificant impact on the risk of flooding to properties off site. Therefore, it was considered the proposed rate and discharge location is appropriate for the development.

## 4 Waste Recovery Plan

EA 'Waste recovery plans and deposit for recovery permits' (April 2021) guidance sets out the criteria used to establish the validity of a waste recovery activity. They are addressed as follows:

### 4.1 Purpose of the Work – Meeting a Genuine Need

The purpose of the works is to create the necessary development platform (as consented under permission ref 20/00774/FUL) that will enable and accord with the approved planning permission (15/00524/OUTM) and thereby facilitate the delivery of new homes and associated community facilities.. There is a genuine need to undertake the proposed waste recovery operation to facilitate this and bring back this brownfield site into beneficial use.

The waste material will be used to create this development platform and to achieve the levels set out in the approved plans, these plans are included as Appendix A for reference. The proposed development platform in this respect benefits from its own planning permission (20/00774/FUL). This consent was informed by an extensive evidence base, as relating to a range of environmental and other technical matters. Specifically, these included the need to decontaminate and reuse existing material in a manner to create acceptable levels across the site in the context of the surrounding environment. It is noted, in this regard, that the EA has confirmed that the purpose of these works is to create the necessary development platform that accords with the approved permission, and achieved the levels set out in the approved plans (as confirmed by Rachel Mills in her email of 22 July 2021).

The proposed residential development comprises up to 1,100 residential units, and the associated public open space (landscaping and recreational spaces) for the use of the residents (as per planning permission (15/00524/OUTM). Since the approval of the outline permission, British Sugar has been working to progress the necessary technical consents that will enable progress to be made on site and, ultimately, allow the provision of new homes for the City of York, to assist in meeting the identified housing need.

The development is needed in order to regenerate and re-use derelict brownfield land associated with the former sugar facility which would also provide considerable environmental benefits, including enhanced management of residual contamination in the soil. The reclamation / recovery process requires bulk earthworks operations entirely contained within the curtilage of the former facility and therefore the quantity of waste recovered is proportionate to the regeneration and development benefits gained at the site.

When approving the above planning permission, the following statements were made by the Secretary of State for the Ministry of Housing, Communities and Local Government (now the Department for Levelling Up, Housing and Communities) with respect to the genuine need for and benefits of the proposed works:

*“The Secretary of State agrees with the Inspector at IR196 that the scheme would deliver much needed housing, including affordable housing, to which the Secretary of State attaches substantial weight”*

*“The Secretary of State agrees with the Inspector at IR197 that the development would enable the positive and beneficial reuse of a previously developed brownfield, but currently unused, site, to which the Secretary of State attaches substantial weight.”*

Since the approval of the above planning permission by the Secretary of State, the Levelling Up and Regeneration Bill has been published (May 2022) by the Department of Levelling Up, Housing and Communities. The Bill followed the Levelling Up White Paper (Feb 2022), which unveiled an ambitious programme to reduce inequality and close the gap – in productivity, health, incomes and opportunity – between much of the southeast and the rest of the country. In line with this Levelling Up agenda, the City of York Local Plan seeks to enable York to realise its economic growth ambitions as set out in the York Economic Strategy, contributing to a vibrant economy. The Local Plan seeks to deliver an annual provision of around 650 new jobs for current and future residents. However as has been made clear by the Council in the Local Plan examination currently underway, this economic growth can only be achieved in a sustainable manner where the provision of homes, and specifically the right type of homes in the right locations, can also be provided. In this respect,

the development of the British Sugar site will provide new family housing, including affordable housing, in a sustainable location, with good quality public transport connections to existing and new job opportunities in the City. Therefore, the development of the site provides worthwhile benefits in terms of supporting the economic growth of the City, as promoted by the Council's draft Local Plan, and supported by the Government's Levelling Up agenda.

It is identified that a key challenge for the Local Plan is to deliver sufficient housing across the Plan period to meet the City's needs. The Council's Development Principles identify that this will be achieved, in significant part, through development in urban locations, as far as possible, recognising the brownfield first approach.

As part of this draft Local Plan, the British Sugar site is therefore specifically identified as Site ST1 (British Sugar / Manor School) and is covered by draft Policy SS6. This site allocation and accompanying site specific policy identify that the site, together with the Manor School site, is needed to deliver 1,200 homes over the plan period in order to ensure that identified housing need in the City can be met.

The preparation of the Local Plan has already been subject to significant delay. As a result, applications for housing development on greenfield and greenbelt sites (see Land at Boroughbridge Road – appeal ref 3227359 as one example) have been submitted, approved, and are now being commenced, all in the time that the Local Plan has been delayed in its draft stages, and whilst the implementation of works at the British Sugar site (one of only two major brownfield draft housing allocations in York) has been 'stalled' due to the waste recovery proceedings.

The Council's Updated Housing Land Supply Paper (May 2021) produced for the Local Plan Examination process which is currently underway specifically identifies the British Sugar site as providing 1,100 new homes in the Council's Housing Trajectory. Moreover, housing completions to be achieved on the site form part of the Council's Five-Year Housing Land supply, which the Council is required to demonstrate in order to ensure that the Local Plan is deliverable in accordance with the National Planning Policy Framework. Without this contribution to the Housing Trajectory from the development of the British Sugar site, the draft Local Plan could be found unsound, which would mean it could not be adopted. Therefore, there is a clear worthwhile benefit to the delivery of homes on the British Sugar site in that it forms a key part of the Council's Spatial Development Strategy which underpins their draft Local Plan.

Further delays in the Local Plan process, and / or further delays in the delivery of new homes on brownfield sites which benefit from permission, such as the British Sugar site, are therefore likely to result in a greater number of applications being submitted for new homes on unallocated greenfield and greenbelt sites in York, with the Council being in a weak position to defend against these given the need to meet housing delivery requirements. Such an outcome will be contrary to the Council's emerging planning policies.

In addition to the provision of new family homes, including affordable homes, and the underpinning of the Council's employment growth strategy, all meeting identified needs, the development of the site will deliver significant wider social benefits. These include:

- On site provision of nursery educational facilities to serve the needs of new residents and the wider community,
- Significant contributions, in terms of finance and land, towards enabling the provision of an on site one form entry primary school which will serve the needs of the new residents and the wider community,
- A new community sports hall on site which will also serve the needs of the wider community,
- New public open space available for both new residents of the proposed homes, and the wider existing community.
- Significant contributions towards local public transport infrastructure, enabling improved bus services in the locality which will benefit new residents and the wider community.

There are significant worthwhile benefits that will be delivered by the proposed development. These include meeting recognised housing needs, underpinning the employment growth strategy, providing for the proper

planning of the local area (through the delivery of a strategic allocation), and assisting the principles of the levelling up agenda. All these benefits will be delivered in a sustainable manner, having regard to the location of the site and its brownfield status. It is therefore demonstrated that the development of the site will deliver worthwhile social, economic and environmental benefits.

The scope of the proposed reclamation works outlining how the works will achieve the need detailed above is provided in Section 3.2. The need for recovery for the quantities of waste proposed are detailed in the following section.

## 4.2 Quantity of Waste Used

### 4.2.1 Minimum amount of waste to be used to achieve benefit

The planning permissions granted in relation to reclamation and site redevelopment and the associated Approved Plans (listed in Section 1.4) permit the construction of a development platform (including the associated engineering and reclamation works) (15/00524/OUTM & 20/00774/FUL) and two access roads (17/01072/FUL) according to defined elevations and contours.

The Approved Plan named 'Proposed Contours -DR-CE-00602 P5' and associated cross sections (provided in Appendix A) defines the elevations associated with the proposed development platform (ground level) as well as the base of the excavation and therefore defines the volumes of fill material required to construct the development platform.

As described in Section 3.1.4, the estimated total volume of waste within the EP boundary to be recovered has been modelled and calculated using GIS software to be 746,800m<sup>3</sup> (1,493,600 tonnes) based on the 2019 topographic survey and excavation of the entire Made Ground waste deposit. The volume of material required to construct the development platform to the approved planning levels within the current EP boundary is estimated to be 513,500m<sup>3</sup> with 446,100m<sup>3</sup> required to construct the development platform outside the EP boundary.

As described, in Section 1.5, this WRP is submitted to the EA to support an application to vary the existing EP in order to add a bespoke 'Deposit for Recovery' waste operation as well expand the EP boundary such that recovered waste is deposited within the new EP boundary.

Therefore, in order to construct the approved development platform across the site, it is proposed to permanently deposit **746,800m<sup>3</sup>** of recovered waste within the new expanded EP boundary. Made Ground soils originating from outside the EP boundary are proposed to be reused under the CL:AIRE DoWCOP framework to make up the remaining volume of required construction fill outside the expanded EP boundary.

The base of the excavation is defined within the approved cross section plans (Section 1.2.5) and is based on the excavation of the waste material across the EP boundary. This depth of excavation is required in order to enable geotechnical improvement of the waste via a combination of segregation, screening, stabilisation and compaction, as summarised in Section 3.2.2, and thus meet the required geotechnical standards defined within Section 3.2.4. The proposed geotechnical improvement to waste material included within the RRSA to create the required development platform enables shallow foundations rather than piled foundations across the majority of the site and therefore significantly reduces the materials and costs associated with future residential dwelling construction.

The required development platform (shown on the 'Proposed Contours -DR-CE-00602 P5' Approved Plan presented in Appendix A) provides a suitable elevation and gradient for sustainable urban drainage and gravity drained surface water drainage network rather than a continually pumped drainage system, thereby reducing materials, cost and long term energy use.

The surrounding land is low lying along the periphery of the River Ouse floodplain, with very flat gradients. The throughput of site drainage including storm and foul drainage must link to existing outfalls to the south east. For foul drainage, the design criteria for adoptable sewers is to achieve a self-cleansing velocity, the minimum flow velocity should be 0.75 m/s at one third design flow. The 450 mm diameter foul sewer connection beyond the southern boundary of the site is at a depth of 3m below the existing ground level within the adjoining Ouse Acres site. The proposed surface level of the development at the south eastern boundary of the site is at a level of about 13.5m aOD, which is 0.5m below the general existing ground level at that part of the site. The invert level of the 450 foul sewer would be at approximately 10.5m aOD, and the invert level of the connecting 300 mm diameter pipe from the development would be 10.65m aOD. Based upon the indicative pipe sizes already identified as part of the proposed site drainage strategy, the pipe sizes and minimum pipe gradients are anticipated to be 150, 225 and 300 mm diameter. The critical level on the site is the northwest corner nearest to Millfield Lane, where the level will need to be about 300mm above existing levels in order for the drainage to function properly on the basis of the indicative pipe sizes, i.e. at a level of about 18.5 – 19m aOD. The current proposed model for the finished development platform levels takes this constraint into account and thus requires that development platform levels rise from south east to north west.

The areas of public amenity have been designed to suitable and appropriate gradients and levels taking into account usage, visual impact and environmental requirements. Specifically, excavation of the entire waste deposit will enable more contaminated material to be segregated and subjected to remediation thus providing greater risk reduction to human health and environmental receptors. Therefore, the proposed volumes of waste excavated, recovered, re-deposited and re-used within the site are consistent with sustainability and urban regeneration principles.

Consideration of alternatives to use a lower quantity of waste is provided below in Section 4.2.3.

It is noted that in the RvD Advice Form received on 18 June 2020, the EA stated, following review of the initial Waste Recovery Plan submitted for the site: “This shows the minimum amount of waste will be used to deliver the required function”.

#### **4.2.2 Use of the waste as a substitute for non-waste material**

Within the Waste Framework Directive the principle of a recovery operation is where waste is serving a useful purpose by replacing other materials (non-wastes) which would otherwise have been used to fulfil a particular function. In this development there will be various uses of the recovered waste which would otherwise have been needed to be achieved by substitution of the recovered waste with non-waste materials. In addition, the remediation and reclamation objectives described in section 3.2.1 of this Waste Recovery Plan ensure that the recovered waste can be used in such a way that all waste-related risks are fully mitigated. There will be various uses of the recovered waste which would otherwise have been achieved using non-waste materials:

4.2.2.1 There is a need to provide bulk fill materials to form the development platform and landscaping topography, and to provide cross-falls and gradients on the site for the purpose of efficient and correctly functioning surface drainage. The bulk waste materials found on site can be re-used as bulk fill subject to the processes set out in 3.2. If there was no site-won recovery of waste the bulk fill material would have to be imported from a non-waste source.

4.2.2.2 There is a requirement for durable granular aggregate for use in the development, for example the founding layer for roads and hard standings. The waste on site contains extensive areas of concrete, masonry and stone which will be segregated, crushed and screened to form suitable aggregate for such uses. If there was no site – won recovery of this material, there would be a need to import all of the durable aggregate from a non-waste source. It is estimated (RRSA, Arcadis 2020) that there is approximately 456,550m<sup>3</sup> of granular and cohesive made ground within the EP boundary which will be separated and segregated following excavation to produce a Granular Made Ground material which will generate a suitable, durable aggregate for this purpose.

4.2.2.3 There is a requirement for substantial volumes of topsoil and subsoil in the development to be used in residential gardens and landscaping. There are substantial volumes of material in the waste on site suitable for forming topsoil and subsoil materials. If there was no site-won recovery of waste then all of the topsoil and subsoil for the development would have to be imported from a non-waste source. It is noted that, prior to closure of the facility, British Sugar processed [conditioned] materials from the same on-site sources for sale as exported topsoil. The topsoil conditioning areas remain within the currently permitted boundary.

### 4.2.3 Considerations of Alternatives Using Lower Waste Volumes

In order to achieve the required development platform as defined within planning permissions granted in relation to the site bulk fill materials are required. The scope of works detailed within this WRP enables waste materials currently deposited on site to be recovered for beneficial reuse as bulk fill.

Alternatives to waste recovery include export of material for off site uses. This would entail off site transport of material to be used in other activities such as landspreading, off site treatment or landfilling and would involve significant transportation of material and the importation of a corresponding quantity of non-waste for use as bulk fill, granular aggregate and also topsoil and subsoil.

This approach would lead to unacceptable impacts on the environment and the local community and is not considered to be in line with best practice or sustainability principles.

A number of approaches, including excavation and disposal, were considered within the Scott Wilson Phase III Geo-Environmental Remediation Options Appraisal (December 2010) which also concluded off site transport of waste was not a sustainable or viable approach. This conclusion was based on detailed analyses and semi quantitative scoring against sixteen core objectives in order to assess Best Available Technology (BAT) for which excavation and disposal scored poorly due to, in part, the following issues:

- Access/Amenity – the number of vehicle movements required to take the material to landfill and bring virgin replacement material to site (if necessary) is likely to have a significant adverse effect on local access/amenity issues. Dust, noise and visual impact also likely to have a detrimental effect relative to other remediation methods.
- Sustainability - condemning potentially reusable material to landfill and importing virgin aggregates (if necessary) to replace excavated material is the least sustainable option. The number of vehicle movements required to take the material to landfill and bring virgin replacement material to site (if necessary) also results in the low sustainability score.
- Raw Materials/Water – this method scores equal lowest on this core objective.

The Scott Wilson appraisal considered only soil material contaminated with hydrocarbons or presenting a significant risk to human health via ground gas or to underlying groundwater from leachate generation. Therefore, as there are significant quantities of waste currently within the permit boundary which do not present a potential risk to the environment or human health, it would even more unsustainable to address this waste by off-site transport and disposal / treatment.

Recovery of a lower volume of waste (i.e. not excavating the entire depth of waste) would leave a permanent deposit of waste within the existing EP requiring management and surrender simultaneously with the WRP which may cause issues with demonstrating adherence to and regulatory compliance under both permit regimes. This approach would also reduce the magnitude of contaminant source reduction, which is an objective of the remediation works, and increase the risks to the environmental and human health receptors such that EP surrender may take an extended period of time or may not be achievable. Waste currently deposited within the EP permit boundary generates ground gases (principally carbon dioxide and methane) and leachate (comprising hydrocarbons, heavy metals and ammonia) which, while managed by monitoring in accordance with the EP variation (EPR/QP3593NF/V002, October 2015), represent an ongoing source of contamination to the environment. Alternative approaches which leave part or all of this contamination in place would likely result in increased emissions of contaminants to the environment as well as increase the degree of risk to any human health receptors that may in future visit, work or reside on the site.

In addition, recovery of lower waste volumes would not enable geotechnical improvement works to be undertaken ensuring the development platform was suitable for the proposed residential development. In this scenario, piled foundations could be required for the majority of dwellings which would entail excessive cost and materials. This would include, for example, use of large, expensive and noisy piling machinery to install several hundred concrete piled foundations through the waste into the underlying bedrock involving increased use of concrete, steel and aggregate to form the foundations with all these materials have environmental, economic and social impacts associated with production and transport to site.

Furthermore, permanent deposit of material without treatment in a lined landfill on site would also not provide a reduction in contaminant sources and entail excessive costs associated with piled foundations. In addition, a newly created landfill would necessitate a new EP to be created, alongside surrender of the existing permit, with ongoing monitoring and management of leachate. The suitability and desirability of residential development on a permitted landfill is considered to be significantly reduced, leading to a significant risk that the site might not be developed and, therefore, would not meet the genuine need for residential development in this area.

### 4.3 Evidence of Waste Suitability – Meeting Quality Standards

The characteristics of the waste have been investigated and monitored and geo-environmental risk assessments carried out to determine suitability / re-use criteria which are protective of human health and the environment and provide a geotechnically suitable development platform. These are detailed within RRS (URS, 2015), the RRSA (Arcadis, 2020) and are summarised in Section 3.2.3 and 3.2.4. The design and specification of the recovery and reclamation will comply with the guidance outlined in 1.3.1 including LCRM (EA, 2019), BS 8485:2015+A1:2019, CIRIA C665, and with NHBC guidance

The chosen remediation and reclamation methods and processes are specified to ensure as far as is practicable the suitability of the waste for the intended uses in a residential development platform and in open space / landscaping. The strategy has been developed such that following remediation and reclamation works the land will be in a condition to satisfy the following criteria:

- Users of the proposed residential development, and the property and land upon which the development will be built, will be protected from the risks associated with soil contamination and ground gas to an acceptable level, based upon a conservative set of compliance criteria as set out above;
- Risk to the water environment associated with the potential migration of soil pore water solutes to the groundwater, and via the groundwater pathway to the River Ouse will be negligible;
- The development platform will a) provide a competent formation for built development including roads, foundations and hard standings, b) will provide a suitable gradient for sustainable urban drainage and c) will provide an appropriate formation for areas of landscaping and green space.

It is noted that in the RvD Advice Form received on 18 June 2020, the EA stated, following review of the initial Waste Recovery Plan submitted for the site: “There is no reason to believe that the work will not be completed to an appropriate standard”.

#### 4.3.1 Evidence of Suitability for Specific Waste Types

As described in Section 3.1, the bulk of the waste is primarily soil brought to the facility as farmland soils adhered to the sugar beet. Consequently, the materials are predominantly mixtures of natural clays, silts, sands and gravels with varying proportions of organic matter. This waste is considered readily amenable to recovery and, following remediation, suitable for reuse as backfill in creating the development platform.

This soil waste is represented by the EWC waste codes 02 04 01 (soil from cleaning and washing beet) and 17 05 04 (soil and stones) which are both listed within the EA guidance (‘check if your waste is suitable for deposit for recovery’, April 2021) with ‘landscaping associated with construction work...and general fill material’ stated as acceptable uses. It is noted that based on the volumes of material requiring excavation, deposit and remediation estimated from qGIS modelling undertaken as part of the RRSA (Arcadis, 2020) (Section 3.1.4),



the volume of material represented by the 02 04 01 and 17 05 04 codes are estimated to be 710,000m<sup>3</sup> out of a total of 746,800m<sup>3</sup>, therefore, representing approximately 95% of the waste.

The remaining waste volume includes an estimated 23,300m<sup>3</sup> (approximately 3% of the total waste volume) of 02 04 02 (off-specification calcium carbonate) the source of which is described in Section 3.1.1. As stated, this by-product was known as Sugar Factory Lime (SFL) and marketed as LimeX. The bulk of the SFL was sold as a soil improver. Surplus SFL was also used in combination with soils in landscaping and bund construction on the site. This waste type has been specifically assessed within the laboratory treatability study undertaken and reported as part of the RRSA (Arcadis, 2020) which assessed moisture contents and lime stabilisation requirements to ensure all material types were remediated to be optimum for compaction and suitable to achieve the required geotechnical suitability (defined in the RRSA, Arcadis 2020). The results of the laboratory testing demonstrated this material to be already at optimum moisture for compaction and to exhibit suitable geotechnical strength without lime stabilisation. The detailed laboratory assessment of this waste type, as well as its widespread use as a soil improver, demonstrate it is suitable for recovery and use as general fill within the proposed development.

A further waste type potentially present includes soil and stones which contain hazardous substances, represented by the EWC code 17 05 03. It is noted that the concentration of hazardous substances may not be sufficient to classify the waste (according to the Waste Classification Technical Guidance, WM3, EA updated 2021) as hazardous and, therefore, this waste (or a proportion of this waste) may actually be 17 05 04 (non hazardous). The RRSA (Arcadis, 2020) estimates that approximately 5,900m<sup>3</sup> contained hydrocarbon contamination which has the potential to contain hazardous substances. This represents <1% of the total waste volume.

As described in Section 3.2.3, a set of compliance criteria, known as Remedial Target Values (RTV), for remediated soils, have been established by means of risk assessment and accepted as part of the full planning permission granted for the proposed redevelopment (20/00774/FUL accepted in May 2020). As described within the RRSA (Arcadis, 2020), potential risks from hazardous hydrocarbon contaminants will be managed by placement at depth for non-volatile hydrocarbons (breaking direct contact exposure pathways) and ex situ bioremediation for volatile hydrocarbons in order to reduce contaminant concentrations such they no longer present a potential risk and are suitable for reuse. Remediation to address potential risks from hazardous hydrocarbon contaminants in soils and stones (17 05 03) is common placed across the brownfield regeneration and remediation industries. For example, ex situ bioremediation is included within the Standard Rules Permit (SN2008No27) (mobile plant for the treatment of soils and contaminated material, substances or products) which includes a section on hazardous waste treatment.

As outlined in the Section 3.2, the potential risk of any waste type reused within the development (including recovered material, 19 13 02) being contaminated (or remaining contaminated) will be effectively managed through the robust site assessment and risk assessments undertaken, laboratory treatability studies on specific waste types, materials management, tracking and testing procedures, soil, groundwater and ground gas monitoring, appropriate remediation and verification testing. The remediation strategy (RRS 20156 and RRSA 2020) detailing this approach has been accepted as part of the planning application.

Furthermore, in accordance with the 2015 RRS, materials displaying characteristics that render them unsuitable for use in the development platform shall be segregated and sentenced for off-site disposal. It is envisaged that the volume of such material will be relatively small and all excavated material will be recovered / remediated and reused on site wherever possible.

## 4.4 Waste Recovery Activities

In accordance with the 'Waste recovery plans and deposit for recovery permits' (EA, April 2021) guidance, the WRP must provide evidence that the permit holder "could and would have carried out the works using non-waste material". The guidance highlights 3 main ways you can show evidence that you're using waste in place of non-waste. However, it is stated that "**the EA will consider all relevant, available information and take a view based on all the circumstances**".

- 1. Financial gain by using non-waste materials:** evidencing that if you carried out the work with non-waste you would benefit from a meaningful financial gain or other worthwhile benefit.

2. **Funding to use non waste:** evidencing any funding secured to cover the cost of the work using non waste, or, detailing the expected costs.
3. **Obligations to do Work:** evidencing that there is an obligation to carry out the work.

There are no sources of funding that are required to support use of a non-waste at the site, given the net financial gain obtained through use of non-waste material, as evidenced below.

As set out in Section 5.1 of this WRP report, there is a genuine need to redevelop the site to provide new housing to meet the identified needs of the City of York over their Plan Period. The purpose of the works assessment has been assessed as satisfied by the EA in their written correspondence on 22 July 2021. Therefore, it is accepted that the approved planning permissions must be implemented in order to meet this genuine need.

Furthermore, the approved planning permissions and associated conditions, in particular conditions 14 of outline permission ref 15/00524 and condition 2 and 7 of full permission ref 20/00774/FUL required that the development, and in particular the remediation and reclamation of the site and the creation of the development platforms which are necessary to enable the housebuilding on site, are undertaken in accordance with the Remediation and Reclamation Strategy 2015 and associated Remediation and Reclamation Strategy Addendum April 2020.

In this respect there are existing planning conditions in place which require the carrying out of the scheme in accordance with the approved RRS documents. The Local Authority was extensively involved in the details of the RRS during its consideration and approval at the planning application stage, with the Council's Senior Contaminated Land Officer, Lucie Hankinson, taking an active role in the design of the remediation and reclamation scheme, and the wording of the relevant remediation conditions attached to the grant of planning permissions.

In this respect, it is demonstrated that there is a genuine need for the development of the site to provide new homes and wider social benefits, and this has been accepted by the EA. The planning permissions which enable this genuine need to be met include conditions which require the undertaking of the approved Remediation and Reclamation strategy. This Strategy was informed by extensive local authority involvement at the time of its consideration at the planning application stage, and prior to its approval. Accordingly, in order to meet the genuine need by implementing the approved planning permissions, there is an obligation that the Reclamation and Remediation Strategy as approved is undertaken. Consequently, when assessed in line with the EA Guidance April 2021, it is evidenced that there is an obligation to undertake the scheme as approved.

Notwithstanding these considerations, this WRP nonetheless demonstrates that the applicant would benefit from a meaningful financial gain or benefit if non-waste materials were to be used.

#### 4.4.1 Financial Assessment

This WRP demonstrates the proposed waste operation is a recovery activity, as opposed to disposal. The key element is that that the waste will serve a useful purpose by replacing the non-waste materials which would otherwise be needed. It is clear that if the work were to be carried out with non-waste, there would be a net financial gain. A Financial Assessment has been prepared by Rapleys (Report Ref: JRM/20-01690, August 2022) with support from Arcadis and Gleeds which details this assessment and the supporting evidence, and is provided as Appendix B. The report was prepared in accordance with an exemplar report provided by the EA (17<sup>th</sup> September 2020). Key aspects are summarised below.

- The volumes of waste assessed were informed by and in accordance with Section 3.1.4.
- The costs of remediation and reclamation of material outside the current EP (required to enable the proposed development) were calculated and evidenced via a detailed cost plan prepared by Gleeds.
- The costs of primary infrastructure and associated ancillary costs were also calculated and evidenced via a detailed cost plan prepared by Gleeds.

- The value that would be realised when the land is sold in the open market for residential development was evidenced by Rapleys Market Summary and Residential Land Values development strategy document, prepared by a chartered surveyor.
- The reclamation and remediation of the area covered by the EP enables the full value of the serviced land to be realised, including those areas outside of the current EP.

By calculating total sales minus total costs, it is clearly demonstrated that British Sugar would benefit from financial gain by using non-wastes to create the required development platform. This is summarised in the table below and demonstrates that, even allowing for the costs of importation and use of non-waste material, the development will still benefit from a £26.15 million net financial gain. Further details and breakdown of the costs are provided within the Financial Assessment (Appendix B).

Description	Cost	Value	Net Financial Gain
Cost of Land	£755,000		
Import Non-Waste Material	£28,128,000		
Residual Remediation/Reclamation Costs	£9,119,000		
Infrastructure Costs	£25,264,000		
Total Costs (B)	£66,266,000		
Sales Value (A)		£88,984,000	
Net Financial Gain (A – B)			£25,718,000

In addition, and as fully detailed within the Financial Assessment, even when the costs associated with the excavation and disposal of the existing waste material are taken into account and included within the Financial Assessment, the development can still be seen to benefit from a significant financial gain of £5,227,000. As such, should the Deposit for Recovery operation be refused, British Sugar intend proceed with the construction of the proposed development platform using non-waste materials.

#### 4.4.2 Sustainable and Environmentally Sound Use of Waste

The reclamation works and WRP employ a sustainable approach to creating the development platform needed to enable residential redevelopment at the required planning levels. This approach involves undertaking remediation / waste recovery on site, without transfer of waste to an off-site treatment facility or landfill, provides for a clear benefit in terms of sustainability considering economic, environmental and social factors.

The remediation of soils (constituting waste recovery) would provide a reduced risk to environmental receptors by reducing the leaching of residual contaminants within the waste to the underlying aquifer as well as manage risks to human health by addressing sources of ground gas. This improved outcome would not occur without the waste recovery associated with redevelopment despite the aftercare requirements currently applying to the site.

On site remediation would eliminate a significant number of traffic movements associated with waste haulage as well as the importation of a corresponding quantity of non-waste to construct the development platform in accordance with the planning requirements. On site recovery and reuse would therefore eliminate the greenhouse gas emissions, accident risk, dust and noise impacts and traffic congestion associated with those traffic movements.

Larger haulage vehicles (e.g. articulated lorries) are not standard for bulk soil movements and are considered unlikely to be available in sufficient number (regionally) to reduce the overall number of traffic movements with

site roads / turning circles unlikely to support access from such vehicles. In terms of HGVs, the use of such vehicles to transport material away from and to sites will necessarily be restricted by the immediate highway environment and sensitive land uses in the locality and on the routes to be traversed. This is applicable to the British Sugar site and to the sites that theoretically could be utilised to source and / or receive material.

Specifically in relation to the road network around the British Sugar site, Millfield Lane is crossed by a network rail level crossing, and accommodates the Manor School Academy educational facility. Low Poppleton Lane is a restricted entry junction controlled by ANPR technology, and Plantation Drive is a low-density residential street with residential properties and domestic parking on both sides. Therefore, sensitivity has to be applied in the consideration of construction movements to and from the site.

In the theoretical scenario (of transporting material to and from the British Sugar site) it should be recognised that – aside from unnecessary construction traffic movements, and potential for increased traffic congestion – there are the increased risks and likelihood of further negative impacts on (i) local air quality and associated greenhouse gas emissions arising from the dust from the transported material, as well as through the excavation of the contaminated and clean material (notwithstanding any environmental management plan that might be in place), and from the traffic emissions of the HGVs themselves, (ii) the baseline noise environment arising from more HGVs on the road network, and (iii) the potential for increased accidents to occur somewhere along the construction traffic routes.

The use of 1,493,600 tonnes of clean, imported bulk fill, granular aggregate as well as topsoil and subsoil clearly represents significant avoidable resource use which is not in accordance with the UK government's Circular Economy Package (CEP) Policy (Defra, Daera, 2020) which aims at keeping resources in use as long as possible, extracting maximum value from them, minimizing waste and promoting resource efficiency. The CEP policy approach is a means of not only reducing impacts on our natural environment and reducing greenhouse gas emissions, from disposal and embodied emissions related to our consumption, but also in terms of competitiveness, resilience and growth.

Article 4 of the Waste Framework Directive provides that, when applying the waste hierarchy, options that deliver the best environmental outcomes should be encouraged, and that the general principles of sustainability, economic viability and protection of resources, and the overall environmental, economic and social impacts, must be taken into account.

It is also noted that the waste hierarchy outlined in the Waste Framework Directive (which is incorporated into the Environmental Permitting (England and Wales) Regulations 2016) prioritises preparing waste for re-use, then recycling (e.g., via remediation), then other recovery such as energy recovery, and last of all disposal (for example, landfill). In re-using the waste on the site and avoiding its disposal, the proposed activities are therefore aligned with the waste hierarchy, as well as providing the Best Practicable Environmental Option (BPEO) (Twelfth Report, FEB 1988, Cm 310). Under the EP Regulations 2016 the EA is required to ensure these objectives are met when exercising its functions in determining an application for the grant or variation of an environmental permit.

The direct and embodied CO<sub>2</sub> emissions associated with construction of the development platform from imported, non-wastes (including quarrying, processing and transport) would be significant and could make achievement of any net zero carbon target unachievable for the development when assessing the whole life cycle carbon impacts, as recommended by the UK Green Building Council (UKGBC) (Advancing Net Zero campaign). Such CO<sub>2</sub> emissions would also not be in accordance with government efforts to deliver UK net zero and the transition to a net zero carbon built environment, as set out in new Building Regulations, Department of Levelling Up, Housing and Communities, February 2022.

Alternatives to on-site recovery and reuse (Section 4.2.3), such as use of non-wastes, would represent an unacceptable impact on the local community, the supply chain and the wider environment which is not considered to be in line with best practice or sustainability principals.

---

The further alternative of complete excavation of waste and replacement within a lined landfill on site is considered to be disproportionate in terms of environmental and human health risks and commercially non-viable due to increased costs of foundation design, landfill construction and long term management and the low desirability of constructing homes on an active, permitted landfill. This approach would also entail significant movements of materials onto site to create a landfill liner and a corresponding volume of waste would not be required to achieve development levels and so require off-site disposal.

### **4.4.3 Wider Benefits of the Proposed Waste Recovery Activity**

The CoY Council has consistently identified the site as a key brownfield site for residential development within the council's planning policy framework and the council is committed to enabling redevelopment to deliver a significant amount of housing which is necessary to meet their housing need, as calculated by government methodology. British Sugar have therefore provided the site for residential development, including much needed family homes, and have obtained viable planning permissions to enable this (Section 1.4). In approving the outline planning permission (15/00524/OUTM), the Secretary of State attached significant weight the fact the proposed scheme would deliver much needed housing and enable the positive and beneficial reuse of a previously developed brownfield, which is currently unused.

It is considered that in this context, the planning permissions create a clear benefit in delivering this residential development, recovering waste to construct the required development platform and rehabilitating a redundant brownfield asset, enabling the development of this key strategic site to meet housing needs as identified within CoY's emerging Local Plan.

It is emphasised that, in any event (and notwithstanding the additional benefits described in this section), the amount of waste to be recovered and reused is the minimum amount of waste necessary to achieve the required function as a development platform (see Section 4.2.1).

## 5 References and Credentials

### 5.1 Regulatory guidance

- Environment Agency 'Waste Recovery Plans and Permits' (EA, October 2016)
- Environment agency RGN9: Surrender.
- Land Contamination: Risk Management (LCRM) guidance (Environment Agency, 2020)
- Environment Agency RGN4: Setting standards for environmental protection
- CL:AIRE Definition of Waste Code of Practice (DoWCoP)
- BSI Standards Publication "Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings", BS 8485:2015+A1:2019
- CIRIA C665: Assessing Risks posed by hazardous ground gases to buildings.
- NHBC-EA-CIEH: Guidance for the Safe Development of Housing on Land Affected by Contamination.
- NHBC: Guidance on the Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are Present
- NHBC Technical Extra, Issue April 2016.

### 5.2 Existing reports on investigation, monitoring, assessment, remediation and reclamation proposals:

- Annual Definitive Closure Monitoring reports by Golder Associates for British Sugar, each based on monthly rounds of monitoring: 2009, 2010, 2011, and 2012
- Enviro Consulting Ltd: York Sugar Factory: SPMP First Phase Reporting: Assessment of Reference Data: August 2006;
- Enviro Consulting Ltd: Further Assessment of Potential Risks Posed by Soil Gas to Residential Properties on the Western Boundary of the York Sugar Factory: October 2007;
- Enviro Consulting Ltd: York Sugar Factory: SPMP Reporting: Assessment of Groundwater and Gas Reference Data - Final: March 2008;
- Golder Associates (UK) Ltd: Preliminary Report on Intrusive Site Investigation of Northern and Southern Waste Water Treatment Plant Areas: British sugar Factory, York: October 2008: Ref. 08514540111.500;
- Golder Associates (UK) Ltd: Report on Definitive Closure Report for Waste Management License NYCC/028 British Sugar York: July 2009: Ref. 08514540248.501/A.0;
- Scott Wilson Ltd: British Sugar, York Geotechnical and Geo-environmental Audit of Available Site Information: August 2009;
- Ian Farmer Associates Limited: Associated British Foods - British Sugar York Site – Factual Report on Ground Investigation: August 2010: Contract No: W10/40642
- Scott Wilson, August 2009: Geotechnical and Geo-environmental Audit of available site information [including the previous investigations by Enviro and Golder Associates];
- Scott Wilson, August 2010: Phase II Geotechnical and Geo-environmental Assessment [following further ground investigations by Scott Wilson];
- Scott Wilson, December 2010: Phase III Geo environmental Remediation Options Appraisal;
- URS-Scott Wilson, April 2011: Reclamation Strategy Document.
- Golders 2010, 2011, 2012, 2013 and 2014, Definitive Closure Management Plan – Annual Monitoring Reports;
- URS 2015: Remediation and Reclamation Strategy;
- Golders 2015, 2016, 2017 and 2018 annual Permit Monitoring Reports;

- 
- Golders, Quarter 1 and 2, 2019, Gas and Groundwater Permit Monitoring Factual Report.
  - Arcadis, 2019, Ground Investigation Factual Report.
  - Arcadis, 2020, Updated Hydrogeological Risk Assessment; and
  - Arcadis 2020, Remediation and Reclamation Strategy – 2020 Addendum.

### 5.3 Author Credentials

This report has been prepared by Jake Hurst, Dr Chris Piddington and Ian Evans. Credentials for each author are presented below:

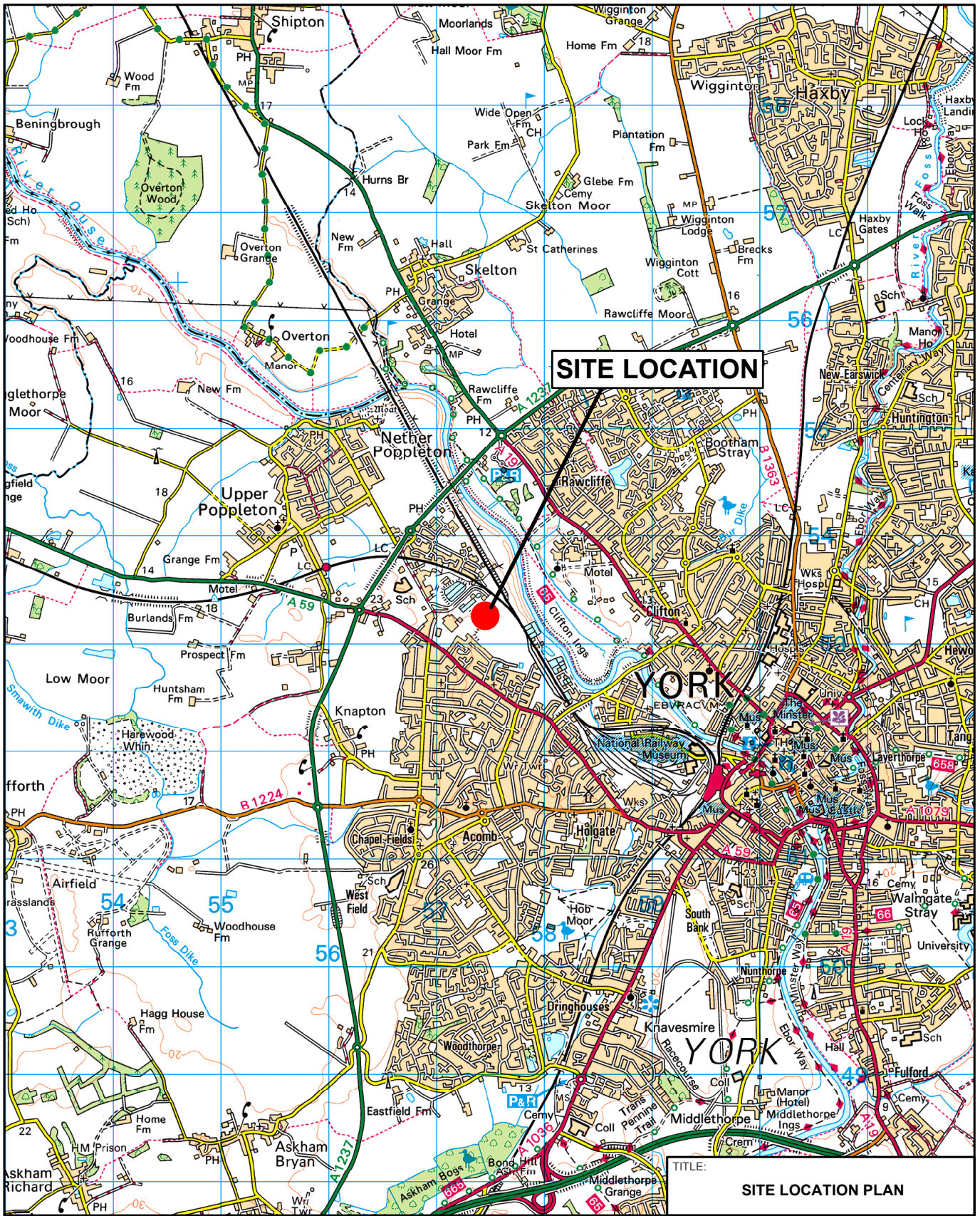
**Jake Hurst**, Associate Technical Director at Arcadis. Jake has over 15 years' experience in the environmental analysis and consultancy industry and is a remediation technical expert identifying and implementing innovative and pragmatic solutions to complex contaminated land projects. Jake leads Arcadis' UK remediation technical community, specialising in innovative remediation optioneering, technical design and regulatory liaison. Jake has worked on a range of large, complex remediation projects with a focus on robust, process driven appraisal and design.

**Dr Chris Piddington**, Technical Director at Arcadis. Chris has over 20 years of experience in delivering bespoke contaminated land solutions on projects across the UK, with a focus on delivering large scale and complex brownfield regeneration solutions for his clients. He has expert knowledge and experience in the design and application of a wide range of commercially viable remediation techniques and has an established track record of returning brownfield land to beneficial use in a cost effective and sustainable manner and as part of a fully integrated multi-disciplinary solution.


**Ian Evans**, Senior Technical Director at Arcadis. Ian has over 33 years' experience in delivering large scale and complex brownfield regeneration solutions for clients throughout the UK. He specialises in leading multidisciplinary technical teams driving regeneration of complex sites and schemes. As Deputy Chair of the SiLC Board, which oversees SiLC and SQP/NQMS, Ian is recognised as a highly accredited brownfield land and land contamination specialist. Ian is experienced in working with a broad range of public and private sector clients across multiple sectors, delivering innovative, robust, sustainable and cost-effective solutions. Ian is particularly specialist in supporting complex brownfield land transactions through appraisal, development and sale.

**FIGURES**




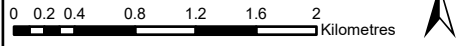


ORDNANCE SURVEY © CROWN COPYRIGHT 2019. ALL RIGHTS RESERVED. LICENSE NUMBER 100050351.  
CONTACT ARCADIS UK IN CASE ANY QUERY


LEGEND	
	SITE LOCATION

NOTES
SYMBOLS FOR BOREHOLES, TRIAL PITS AND OTHER SPECIFIC FEATURES ARE REPRESENTATIONS OF LOCATION ONLY AND UNLESS OTHERWISE SPECIFIED, DO NOT REPRESENT THE TRUE SIZE OF THE FEATURE.

TITLE: <b>SITE LOCATION PLAN</b>	
SITE: <b>BRITISH SUGAR YORK</b>	
CLIENT: <b>BRITISH SUGAR</b>	
PROJECT: <b>10024487</b>	<b>FIGURE 1</b>
DATE: 30/07/19	DRAWN BY: AP
DRG No. : 10024487-AUK-XX-XX-DR-ZZ-0002-P1.GIS	
SCALE: 1: 50,000	PRINT: A4
 Design & Consultancy for natural and built assets	





 Environmental Permit Boundary

**Notes:**

Symbols for boreholes, trial pits, and other specific features are representations of location only and unless otherwise specified, do not represent the true size of the feature.

Infrastructure and building footprint lines and polygons are approximate only and unless otherwise specified, do not represent the true size of the feature.

Microsoft product screen shot reprinted with permission from Microsoft Corporation. Road Map © 2018 Bing Maps.

Contact Arcadis with any queries.

**Title:** Site Layout and Environmental Permit Boundary Plan

**Site:**  
British Sugar, York

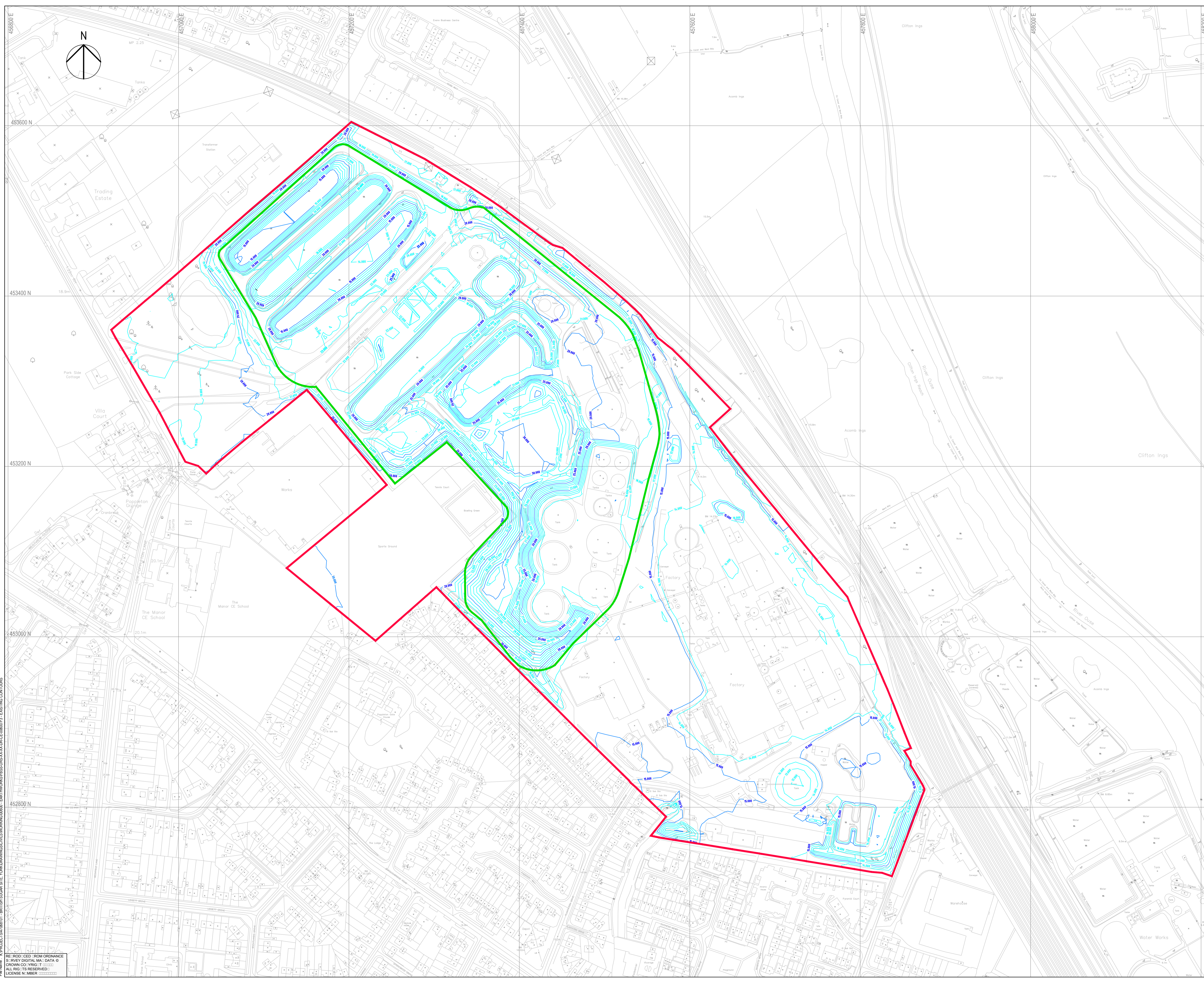
**Client:** British Sugar Ltd

**Project:**  
10024487

**Figure 2**

**Drawing Number**

**Planning Permissions Approved Plans**



IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.  
 THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

**NOTES**

1. OS DATA BASED ON AECOM DRAWING 60265288-01006 REV A - DRAFT CONCEPT MASTERPLAN, DATED 04/12/12.
2. ENVIRONMENTAL PERMIT BOUNDARY BASED ON GOLDER ASSOCIATES DRAWING 09514540125/584485 DATED 31/01/11.
3. FOR BASE OF EXCAVATION CONTOURS, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-601.
4. FOR PROPOSED CONTOURS REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00602.
5. FOR CROSS SECTIONS REFER TO DRAWINGS FBSS-URS-XX-XX-DR-CE-00605 & FBSS-URS-XX-XX-DR-CE-00606 & FBSS-URS-XX-XX-DR-CE-00607.

**KEY**

- SITE BOUNDARY
- ENVIRONMENTAL PERMIT BOUNDARY (SEE NOTE 2)
- EXISTING CONTOURS 1m & 5m

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

FINAL PLANNING ISSUE	By	Date	Suffix
	TB	24.11.14	P3
UPDATED FOR PLANNING	By	Date	Suffix
	TB	14.11.14	P2
Revision Details		By	Date
		Check	Check
Purpose of issue			

**DETAILED APPLICATION PLANNING DRAWING**

Client

**BRITISH SUGAR**

Project Title  
**FORMER BRITISH SUGAR SITE, YORK**

Drawing Title  
**EXISTING CONTOURS**

Designed	Drawn	Checked	Approved	Date
LW	JB	TB	DJC	NOV-13
URS Internal Project No.			Subsidiary	
47068101			Zone / Mileage	
Scale @ A1				
1:2000				

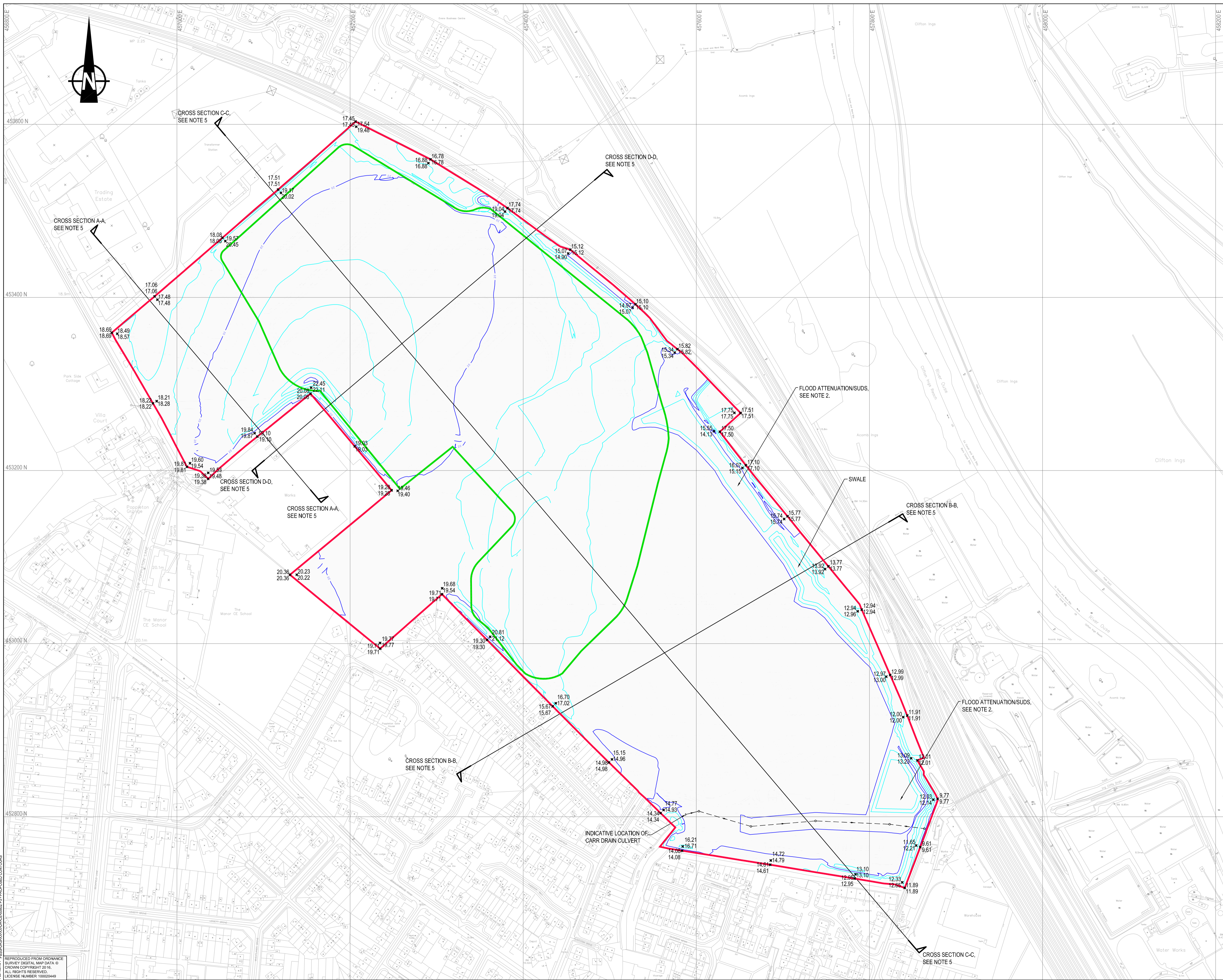
This document has been prepared in accordance with the scope of URS' appointment with its client and is subject to the terms of that appointment. URS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided. Only written dimensions shall be used.  
 © URS Infrastructure & Environment UK Limited

URS Infrastructure & Environment UK Limited  
 Royal Court  
 Basil Close, Chesterfield  
 Derbyshire, S41 7SL  
 Telephone (01246) 209221  
 Fax (01246) 209229  
 www.ursglobal.com



Drawing Number	Rev
<b>FBSS-URS-XX-XX-DR-CE-00600</b>	<b>P3</b>

File Path: \\s01\p01\131134  
 RE: ROAD CDD FROM ORDINANCE  
 S: RYVY DIGITAL MA: DATA ©  
 CROWN CO: YR01  
 ALL RIGHTS RESERVED  
 LICENSE NUMBER:



IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

NOTES

- OS DATA BASED ON AECOM DRAWING 60265288-01006 REV L - DRAFT CONCEPT MASTERPLAN, DATED 22/07/14.
- EXTENT AND LOCATION OF SUDS AND FLOOD ATTENUATION SUBJECT TO DETAILED DESIGN.
- FOR EXISTING GROUND CONTOURS REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00600.
- FOR BASE OF EXCAVATION CONTOURS, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-601.
- FOR CROSS SECTIONS REFER TO DRAWINGS FBSS-URS-XX-XX-DR-CE-00605 TO FBSS-URS-XX-XX-DR-CE-00607
- ENVIRONMENTAL PERMIT BOUNDARY BASED ON GOLDER ASSOCIATES DRAWING 09514540125/584485 DATED 31/01/11.

- KEY
- SITE BOUNDARY
  - PROPOSED FINISHED GROUND CONTOURS 1m & 5m
  - INDICATIVE LOCATION OF CARR DRAIN CULVERT
  - ENVIRONMENTAL PERMIT BOUNDARY (SEE NOTE 6)
  - EXISTING AND PROPOSED SPOT LEVELS ON BOUNDARY, AND 5m IN FROM BOUNDARY; PROPOSED LEVELS SHOWN IN RED; EXISTING LEVELS SHOWN IN BLACK

LAYOUT REVISED TO SHOW NEW CONTOURS	JW	TEB	24/11/16	P5
BOUNDARY LEVELS ADDED	JB	TB	07.04.15	P4
FINAL PLANNING ISSUE	JB	TB	24.11.14	P3
UPDATED TO REVISED MASTERPLAN	TEB	TB	14.11.14	P2
Revision Details	By	Check	Date	Suffix

Purpose of Issue  
**DETAILED APPLICATION PLANNING DRAWING**

Client  
**BRITISH SUGAR**

Project Title  
**FORMER BRITISH SUGAR SITE, YORK**

Drawing Title  
**DETAILED APPLICATION PROPOSED LAYOUT LEVELS**

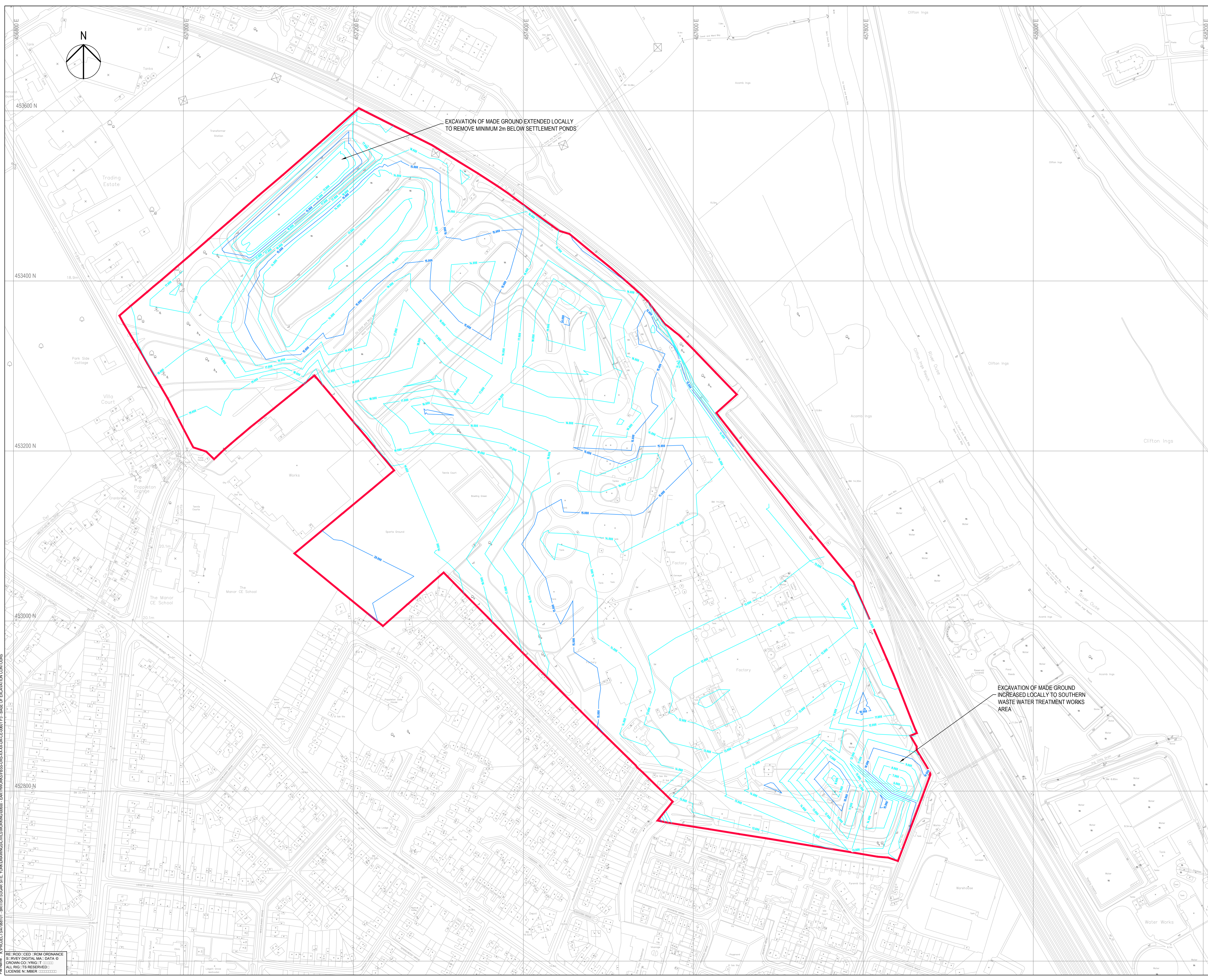
Designed TEB	Drawn JW	Checked TEB	Approved DJC	Date NOV-13
AECOM Internal Project No. 47068101		Suitability -		
Scale @ A1 1:1000		Zone -		

THIS DRAWING HAS BEEN PREPARED FOR THE USE OF AECOM'S CLIENT. IT MAY NOT BE USED, MODIFIED, REPRODUCED OR RELIED UPON BY THIRD PARTIES. EXCEPT AS AGREED BY AECOM OR AS REQUIRED BY LAW, AECOM ACCEPTS NO RESPONSIBILITY, AND DENIES ANY LIABILITY WHATSOEVER, TO ANY PARTY THAT USES OR RELIES ON THIS DRAWING WITHOUT AECOM'S EXPRESS WRITTEN CONSENT. DO NOT SCALE THIS DOCUMENT. ALL MEASUREMENTS MUST BE OBTAINED FROM THE STATED DIMENSIONS.

AECOM Infrastructure & Environment UK Limited  
 Royal Court  
 Beal Close, Chesterfield  
 Derbyshire, S41 7SE  
 Tel: +44 (0)1246 209 221  
 Fax: +44 (0)1246 209 229  
[www.aecom.com](http://www.aecom.com)

Drawing Number FBSS-URS-XX-XX-DR-CE-00602	Rev P5
--	-----------

File Name: FBSS-URS-XX-XX-DR-CE-00602.P5 - PROPOSED CONTOURS  
 Plot Date: 11/05/2016 11:09 AM  
 REPRODUCED FROM ORNANCE SURVEY DIGITAL MAP DATA © CROWN COPYRIGHT 2016. ALL RIGHTS RESERVED.  
 LICENSE NUMBER 100220449





EXCAVATION OF MADE GROUND EXTENDED LOCALLY TO REMOVE MINIMUM 2m BELOW SETTLEMENT PONDS

EXCAVATION OF MADE GROUND INCREASED LOCALLY TO SOUTHERN WASTE WATER TREATMENT WORKS AREA

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.  
THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

- NOTES**
- OS DATA BASED ON AECOM DRAWING 60265288-01006 REV A - DRAFT CONCEPT MASTERPLAN, DATED 04/12/12.
  - FOR EXISTING GROUND CONTOURS REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00600.
  - FOR CROSS SECTIONS REFER TO DRAWINGS FBSS-URS-XX-XX-DR-CE-00605 & FBSS-URS-XX-XX-DR-CE-00606 & FBSS-URS-XX-XX-DR-CE-00607.
  - CONTOURS BASED ON EXISTING SITE INVESTIGATION BOREHOLE RECORDS (ENVIROS CONSULTING Ltd DATED JUNE 2006) & (GOLDER ASSOCIATES DATED FEBRUARY 2009).

**KEY**

-  SITE BOUNDARY
-  BASE OF EXCAVATION CONTOURS 1m & 5m

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

FINAL PLANNING ISSUE	JB	24.11.14	P3
UPDATED FOR PLANNING	TB	14.11.14	P2
Revision Details	By	Date	Suffix
	Check		

Purpose of issue  
**DETAILED APPLICATION PLANNING DRAWING**

Client  
**BRITISH SUGAR**

Project Title  
**FORMER BRITISH SUGAR SITE, YORK**

Drawing Title  
**INTERPOLATED BASE OF EXCAVATION CONTOURS**

Designed	Drawn	Checked	Approved	Date
LW	JB	TB	DJC	NOV-13
URS Internal Project No. 47068101			Subsidiary	
Scale @ A1 1:2000			Zone / Mileage	

This document has been prepared in accordance with the scope of URS' appointment with its client and is subject to the terms of that appointment. URS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided. Only written dimensions shall be used.  
© URS Infrastructure & Environment UK Limited

URS Infrastructure & Environment UK Limited  
Royal Court  
Basil Close, Chesterfield  
Derbyshire, S41 7SL  
Telephone (01246) 209221  
Fax (01246) 209229  
www.ursglobal.com

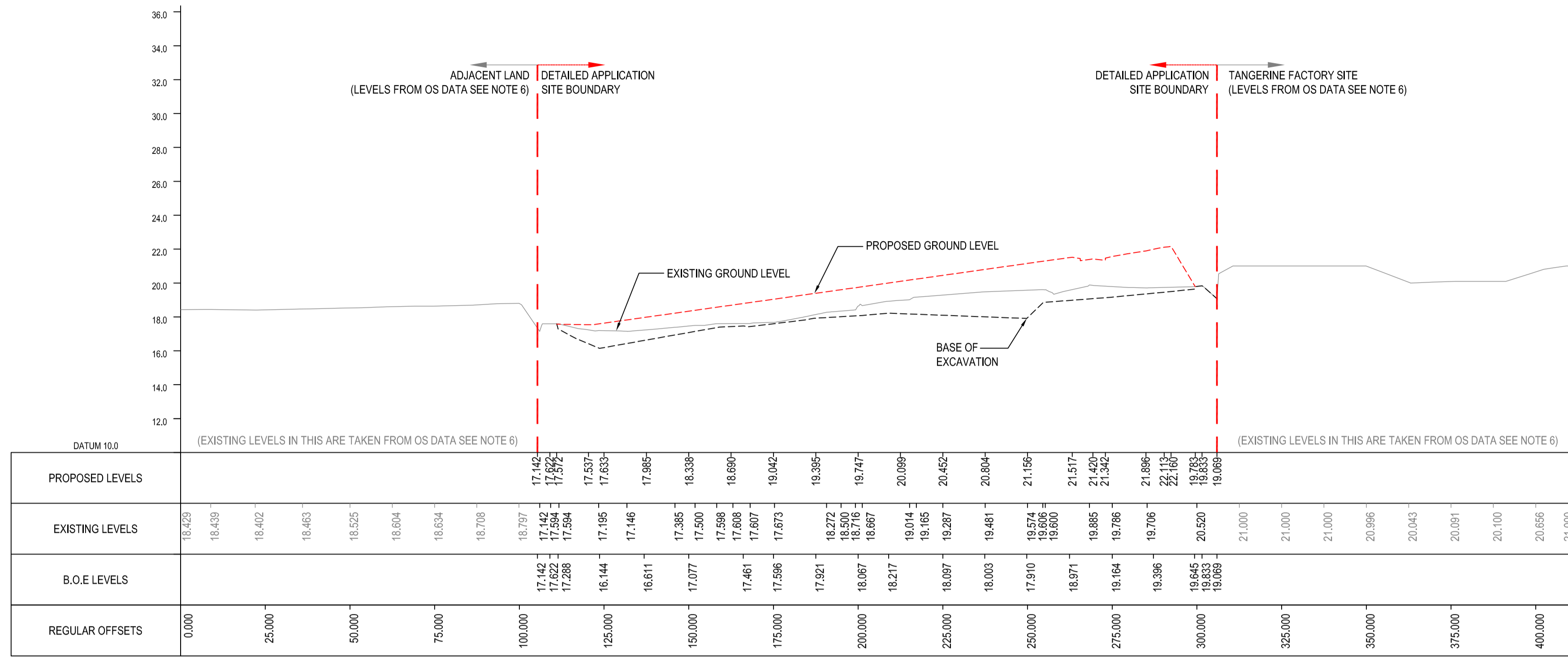


Drawing Number	Rev
FBSS-URS-XX-XX-DR-CE-00601	P3

File Path: \\s11011\13151  
 RE:ROD-CED FROM ORDINANCE  
 S:RVEY DIGITAL.MA:DATA ©  
 CROWN CO. YRS:17  
 ALL RIGHTS RESERVED.  
 LICENSE NUMBER:

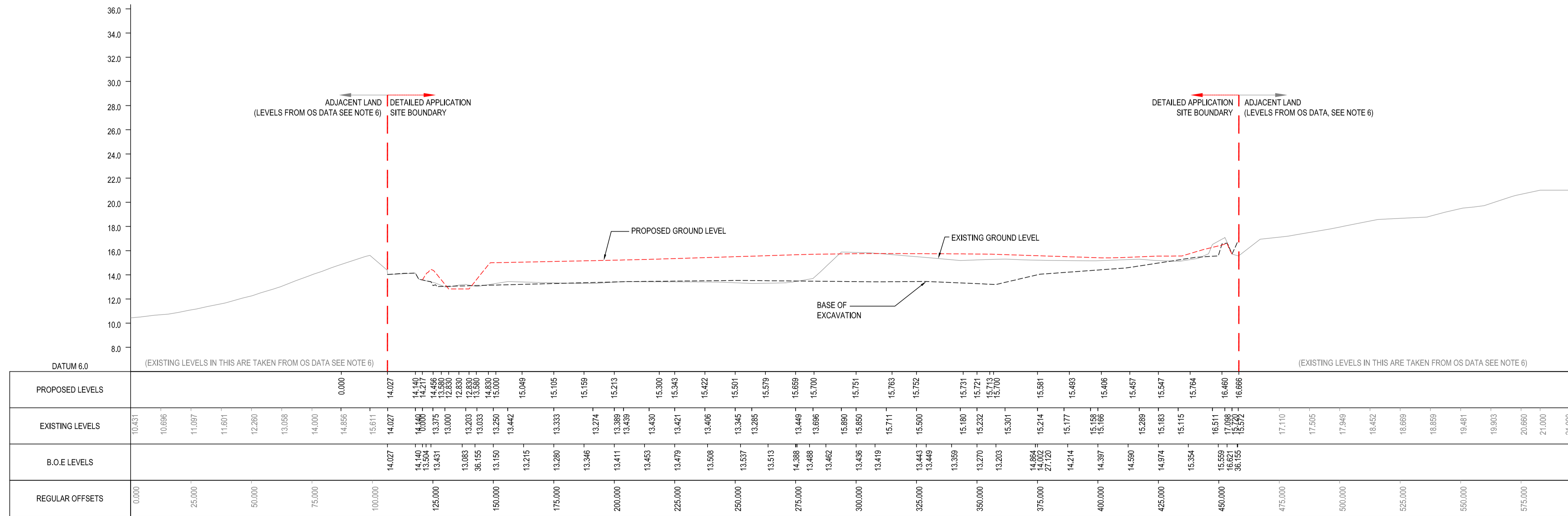
NOTES

- FOR EXISTING CONTOURS, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00600.
- FOR BASE OF EXCAVATION CONTOURS, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00601.
- FOR PROPOSED CONTOURS, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00602.
- FOR SECTION LOCATION PLANS REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00602.
- EXISTING GROUND INFORMATION WITHIN DETAILED APPLICATION SITE BOUNDARY TAKEN FROM DOSSOR GROUP TOPOGRAPHICAL SURVEY 2008/1112 (112 DATED FEB 2010; AECOM SURVEY 60282023 DATED 07/11/2013).
- EXISTING GROUND INFORMATION OUTSIDE DETAILED APPLICATION SITE BOUNDARY TAKEN FROM ORDNANCE SURVEY DATA 10m DIGITAL TERRAIN MODEL. ARE THEREFORE OF REDUCED ACCURACY AND SHOULD BE TREATED AS INDICATIVE ONLY. LEVELS SHOWN MAY ACTUALLY BE TOP OF BUILDING LEVELS.
- PROFILES SHOWN ARE AT AN EXAGGERATED VERTICAL SCALE.



SECTION A-A

(SCALE: H 1:1000,V 1:200)



SECTION B-B

(SCALE: H 1:1000,V 1:200)

SECTIONS UPDATED TO SHOW REVISED PROPOSED LEVELS	JW	TEB	24.11.16	P5
PLANNING BOUNDARY CHANGED TO DETAILED APPLICATION SITE BOUNDARY	JB	TB	27.11.14	P4
FINAL PLANNING ISSUE	JB	TB	24.11.14	P3
UPDATED TO REVISED MASTERPLAN	TB	TB	14.11.14	P2
Revision Details	By	Check	Date	Suffix

DETAILED APPLICATION PLANNING BOUNDARY

Client  
**BRITISH SUGAR**

Project Title  
**FORMER BRITISH SUGAR SITE, YORK**

Drawing Title  
**DETAILED APPLICATION CROSS SECTIONS SHEET 1 OF 3**

Designed	Drawn	Checked	Approved	Date
TEB	JW	TEB	DJC	NOV-13
AECOM Internal Project No. 47068101		Subsidiary		
Scale @ A1		Zone		
AS-SHOWN		-		

THIS DRAWING HAS BEEN PREPARED FOR THE USE OF AECOM'S CLIENT. IT MAY NOT BE USED, MODIFIED, REPRODUCED OR RELIED UPON BY THIRD PARTIES, EXCEPT AS AGREED BY AECOM OR AS REQUIRED BY LAW. AECOM ACCEPTS NO RESPONSIBILITY, AND DENIES ANY LIABILITY WHATSOEVER, TO ANY PARTY THAT USES OR RELIES ON THIS DRAWING WITHOUT AECOM'S EXPRESS WRITTEN CONSENT. DO NOT SCALE THIS DOCUMENT. ALL MEASUREMENTS MUST BE OBTAINED FROM THE STATED DIMENSIONS.

AECOM Infrastructure & Environment UK Limited  
Royal Court  
Beaf Close, Chesterfield  
Derbyshire, S41 7S  
Tel+44 (0)1246 209 221  
Fax+44 (0)1246 209 220  
www.aecom.com

Drawing Number	Rev
FBSS-URS-XX-XX-DR-CE-00605	P5

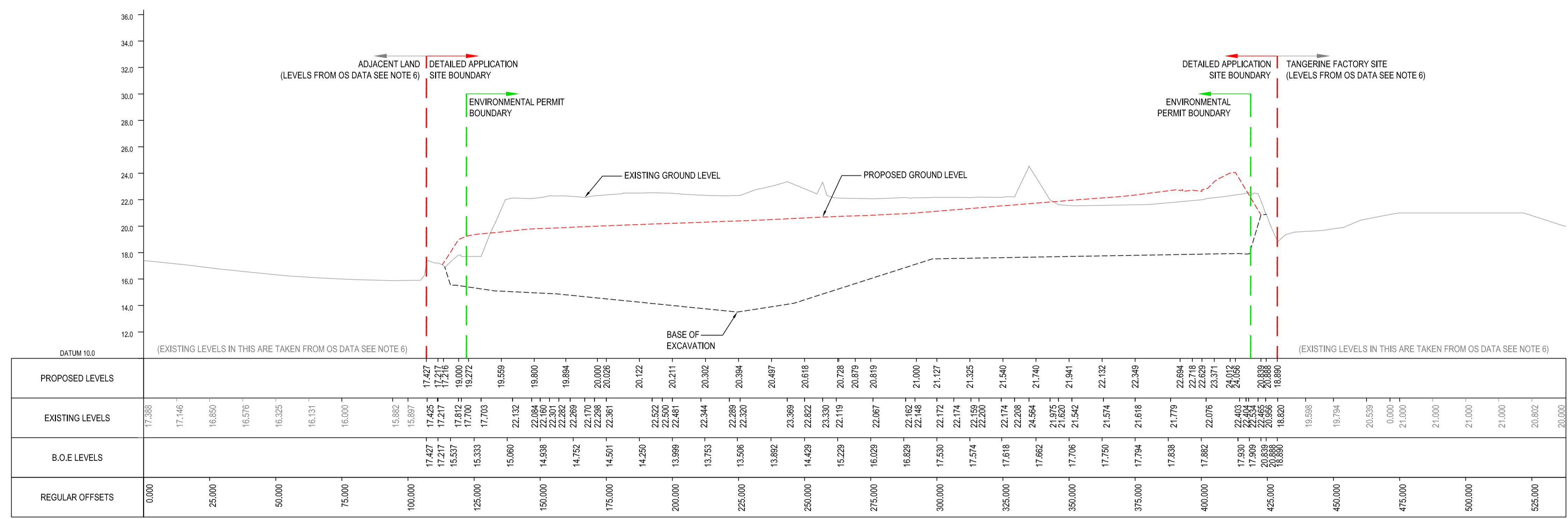




IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

- NOTES
- FOR EXISTING CONTOURS, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00600.
  - FOR BASE OF EXCAVATION CONTOURS, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00601.
  - FOR PROPOSED CONTOURS, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00602.
  - FOR SECTION LOCATION PLANS REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00602.
  - EXISTING GROUND INFORMATION WITHIN DETAILED APPLICATION SITE BOUNDARY TAKEN FROM ORDNANCE SURVEY DATA 10m DIGITAL TERRAIN MODEL, ARE THEREFORE OF REDUCED ACCURACY AND SHOULD BE TREATED AS INDICATIVE ONLY. LEVELS SHOWN MAY ACTUALLY BE TOP OF BUILDING LEVELS.
  - EXISTING GROUND INFORMATION OUTSIDE DETAILED APPLICATION SITE BOUNDARY TAKEN FROM ORDNANCE SURVEY DATA 10m DIGITAL TERRAIN MODEL, ARE THEREFORE OF REDUCED ACCURACY AND SHOULD BE TREATED AS INDICATIVE ONLY. LEVELS SHOWN MAY ACTUALLY BE TOP OF BUILDING LEVELS.



SECTION D-D  
(SCALE: H 1:1000, V 1:200)

SECTIONS UPDATED TO SHOW REVISED PROPOSED LEVELS	JW	TEB	24.11.16	P5
PLANNING BOUNDARY CHANGED TO DETAILED APPLICATION SITE BOUNDARY	JB	TB	27.11.14	P4
FINAL PLANNING ISSUE	JB	TB	24.11.14	P3
UPDATED TO REVISED MASTERPLAN	TB	TB	14.11.14	P2

Purpose of Issue  
**DETAILED APPLICATION PLANNING BOUNDARY**

Client  
**BRITISH SUGAR**

Project Title  
**FORMER BRITISH SUGAR SITE, YORK**

Drawing Title  
**DETAILED APPLICATION CROSS SECTION SHEET 3 OF 3**

Designed TEB	Drawn JW	Checked TEB	Approved DJC	Date NOV-13
AECOM Internal Project No. 47068101		Suitability -		
Scale @ A1		Zone -		
AS-SHOWN				

THIS DRAWING HAS BEEN PREPARED FOR THE USE OF AECOM'S CLIENT. IT MAY NOT BE USED, REPRODUCED, REPRODUCED OR RELIED UPON BY THIRD PARTIES, EXCEPT AS AGREED BY AECOM OR AS REQUIRED BY LAW. AECOM ACCEPTS NO RESPONSIBILITY, AND DENIES ANY LIABILITY WHATSOEVER, TO ANY PARTY THAT USES OR RELIES ON THIS DRAWING WITHOUT AECOM'S EXPRESS WRITTEN CONSENT. DO NOT SCALE THIS DOCUMENT. ALL MEASUREMENTS MUST BE OBTAINED FROM THE STATED DIMENSIONS.

AECOM Infrastructure & Environment UK Limited  
Royal Court  
Beal Close, Chesterfield  
Derbyshire, S41 7SL  
Tel+44 (0)1246 209 221  
Fax+44 (0)1246 209 220  
www.aecom.com

Drawing Number  
**FBSS-URS-XX-XX-DR-CE-00607**

Rev  
**P5**

KEY TO LOCATION PLAN

- SITE BOUNDARY
- HIGHWAY
- NOISE BARRIER
- PROPOSED GATE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

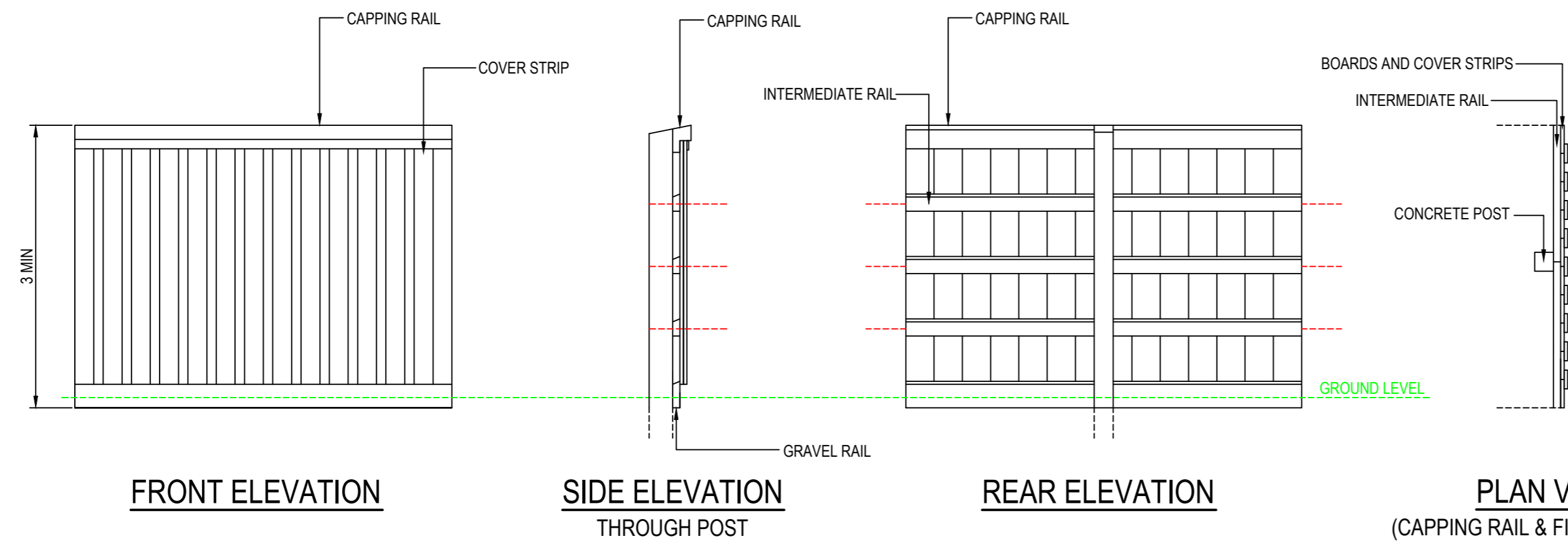
IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

- NOTES
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
  - DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
  - ALL DIMENSIONS ARE IN METRES UNLESS DEFINED OTHERWISE.
  - OS DATA BASED ON AECOM DRAWING 60265288-01006 REV C - DRAFT CONCEPT MASTERPLAN, DATED 06/01/14.
  - PROPOSED LAYOUT BASED ON AECOM DRAFT CONCEPT MASTERPLAN DRAWING 60265288-04002 REV K, ISSUED 22/10/14.
  - NOISE BARRIER MINIMUM SOUND REDUCTION INDEX (Rw) OF 29dB, DETERMINED IN ACCORDANCE WITH BS EN ISO 717-1:2013.
  - THE ARRANGEMENT SHOWN IS SUBJECT TO DESIGN BY A SUITABLY QUALIFIED PERSON.

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

Revision Details	By	Check	Date	Suffix
MAINTENANCE GATES ADDED	JW	TEB	21.03.17	P6
ROAD REMOVED AND BOUNDARY UPDATED	JW	TEB	07.12.16	P5
UPDATED TO SHOW REVISED SITE LAYOUT	JW	TEB	06.12.16	P4
BORDER CHANGED TO AECOM	JB	TB	15.10.15	P3
POST CHANGED TO CONCRETE	JB	TB	10.02.15	P2



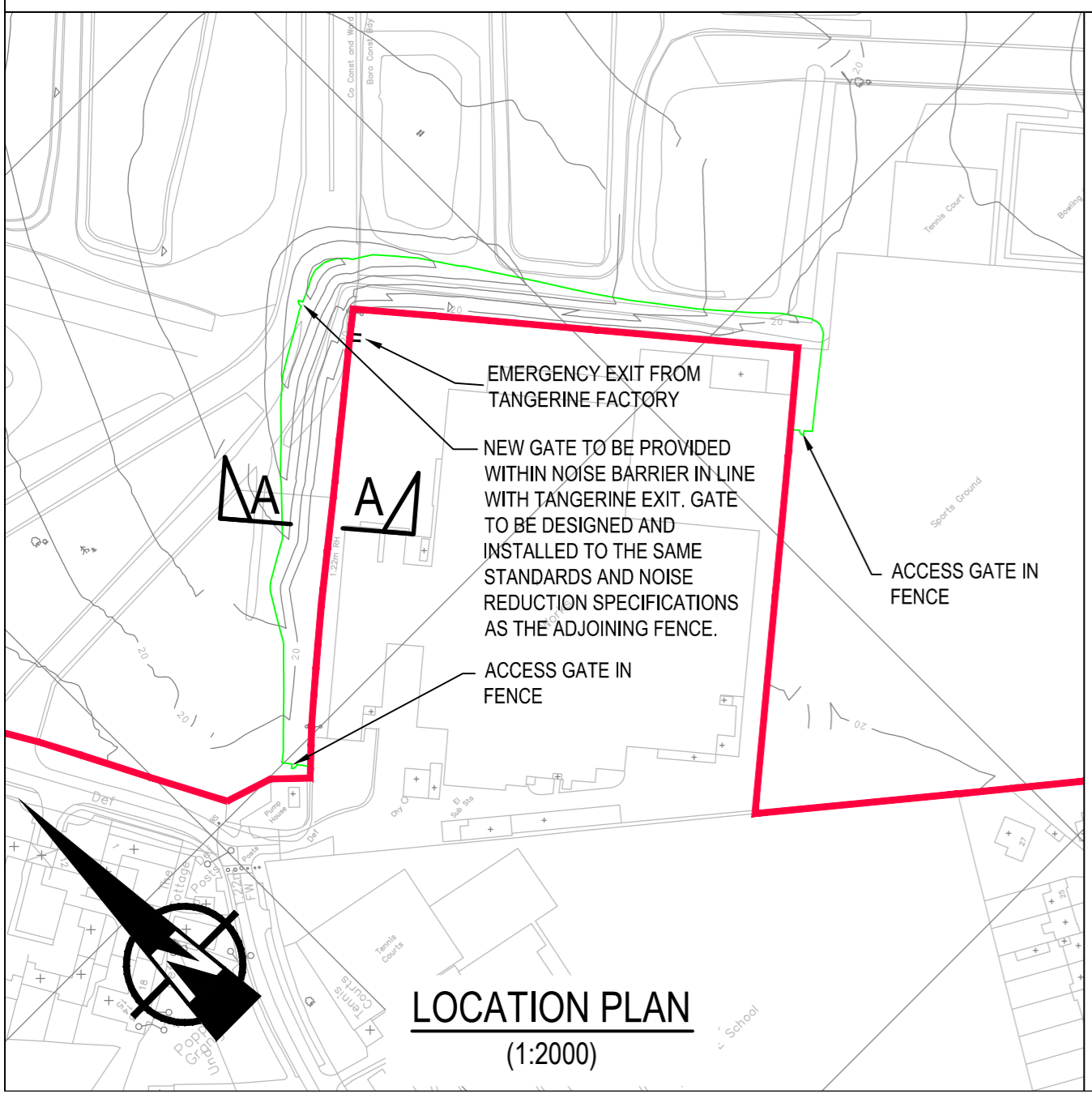
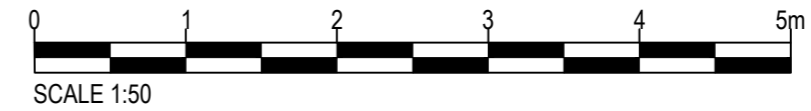
FRONT ELEVATION

SIDE ELEVATION THROUGH POST

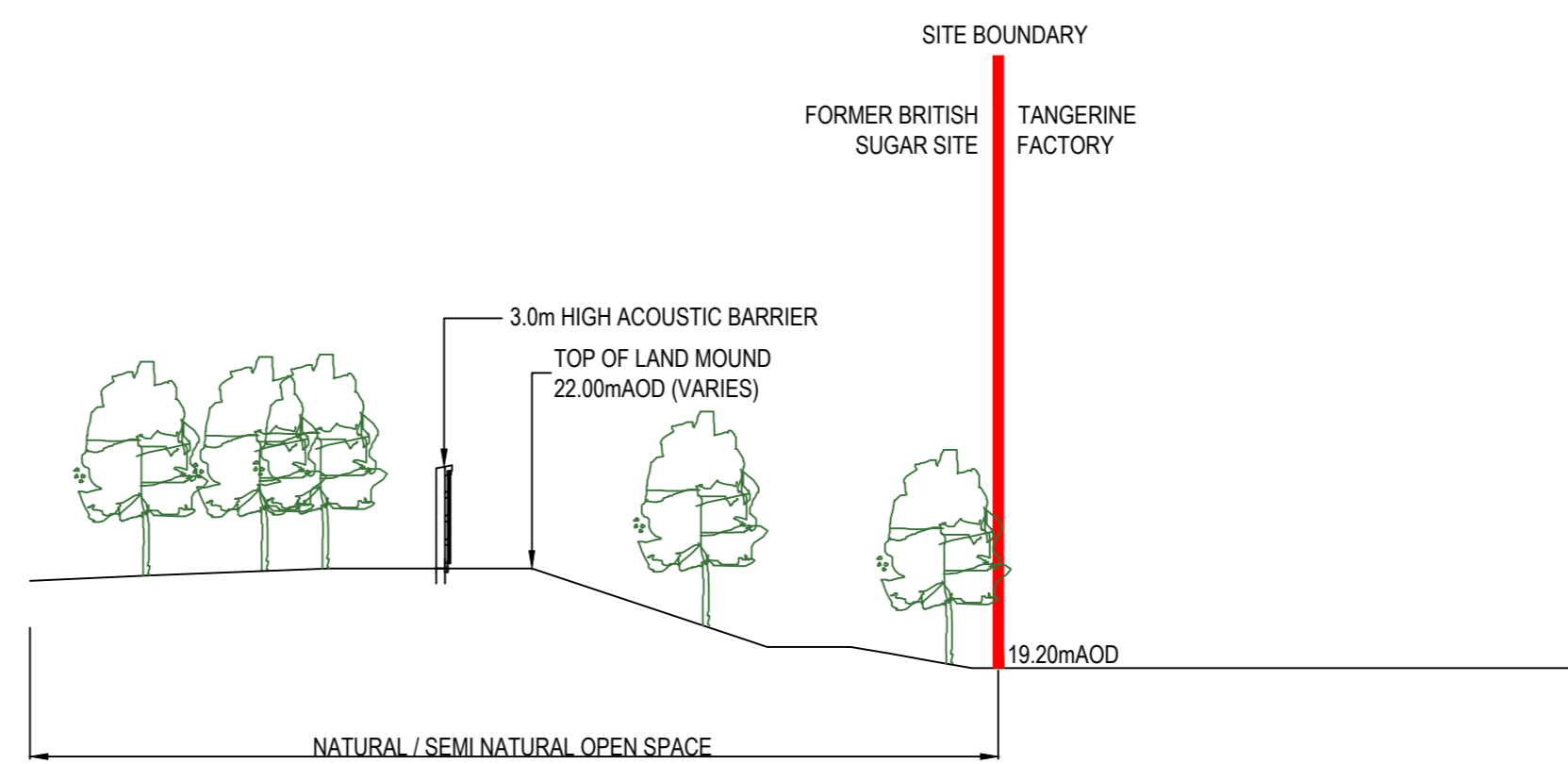
REAR ELEVATION

PLAN VIEW (CAPPING RAIL & FINISHING STRIP OMITTED FOR CLARITY)

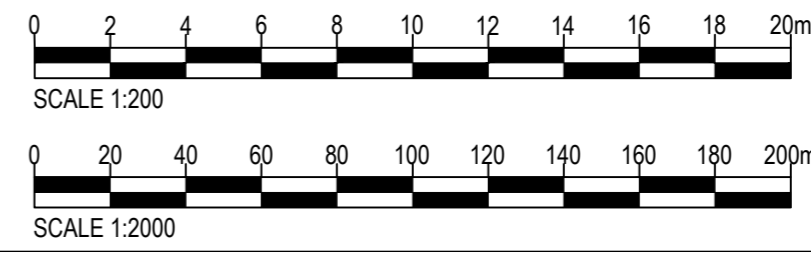
NOISE BARRIER DETAIL (1:50)



LOCATION PLAN (1:2000)



SECTION A-A (1:200)



Purpose of issue

**FOR PLANNING**

Client

**BRITISH SUGAR**

Project Title

**FORMER BRITISH SUGAR SITE, YORK**

Drawing Title

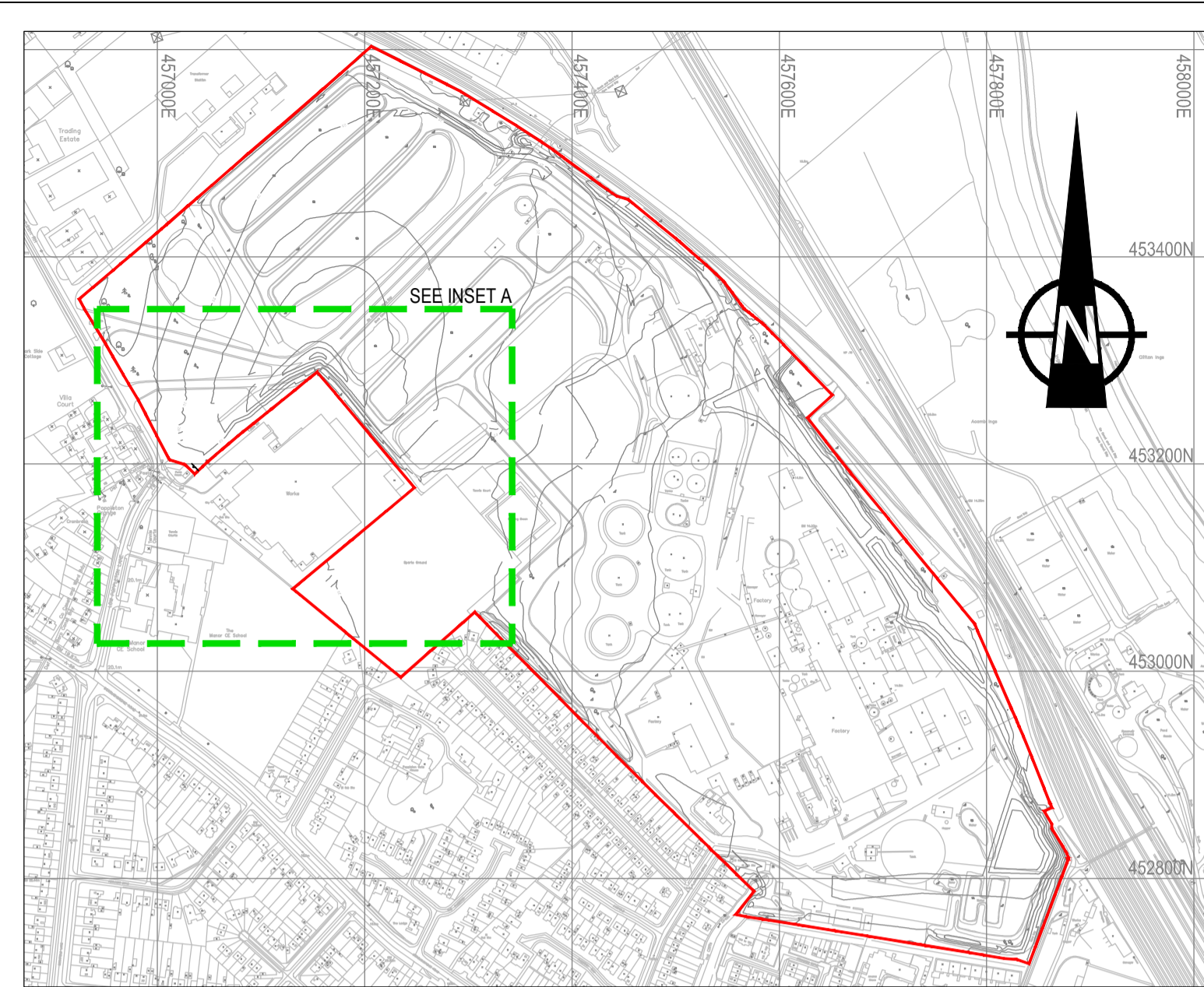
**NOISE BARRIER**

Designed JB	Drawn HD	Checked TEB	Approved TEB	Date Nov 2014
AECOM Internal Project No. 47068101		Suitability -		
Scale @ A2 AS SHOWN		Zone -		

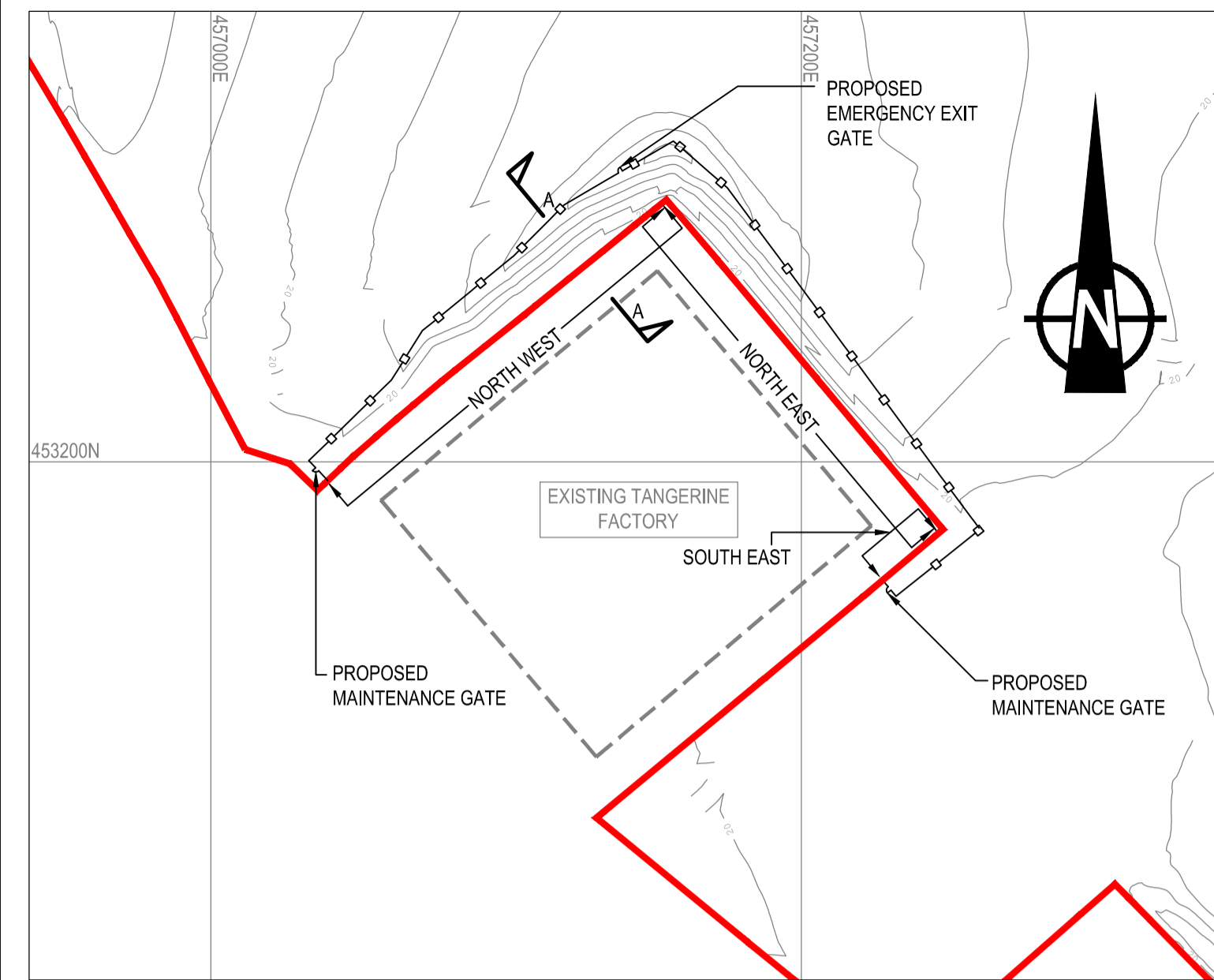
THIS DRAWING HAS BEEN PREPARED FOR THE USE OF AECOM'S CLIENT. IT MAY NOT BE USED, MODIFIED, REPRODUCED OR RELIED UPON BY THIRD PARTIES, EXCEPT AS AGREED BY AECOM OR AS REQUIRED BY LAW. AECOM ACCEPTS NO RESPONSIBILITY, AND DENIES ANY LIABILITY WHATSOEVER, TO ANY PARTY THAT USES OR RELIES ON THIS DRAWING WITHOUT AECOM'S EXPRESS WRITTEN CONSENT. DO NOT SCALE THIS DOCUMENT. ALL MEASUREMENTS MUST BE OBTAINED FROM THE STATED DIMENSIONS.

AECOM Infrastructure & Environment UK Limited  
Royal Court  
Basil Close, Chesterfield  
Derbyshire, S41 7SL  
Tel: +44 (0)1246 209 221  
Fax: +44 (0)1246 209 229  
www.aecom.com

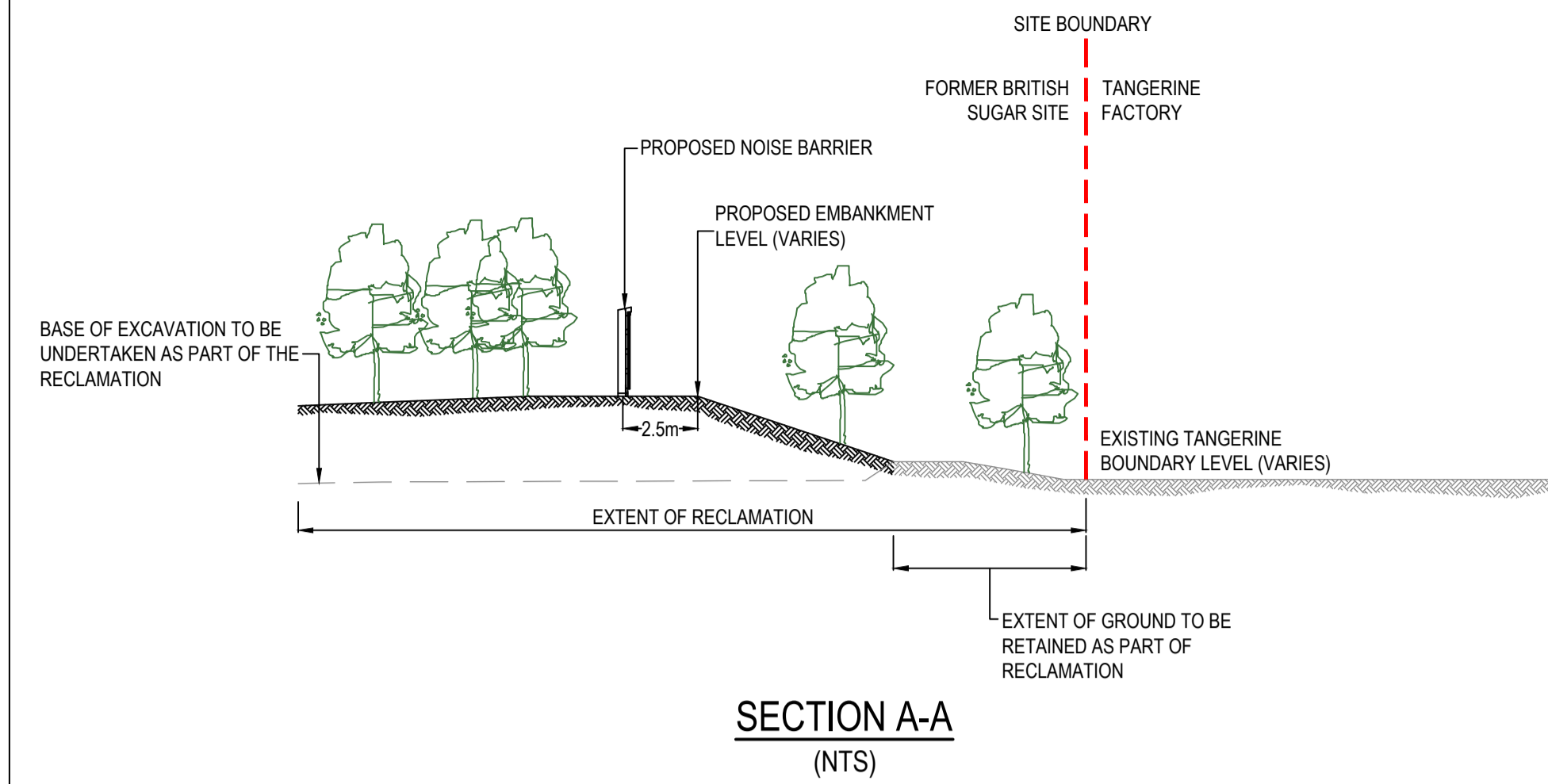
Drawing Number	Rev
<b>FBSS-AEC-XX-XX-DR-CE-00611</b>	<b>P6</b>



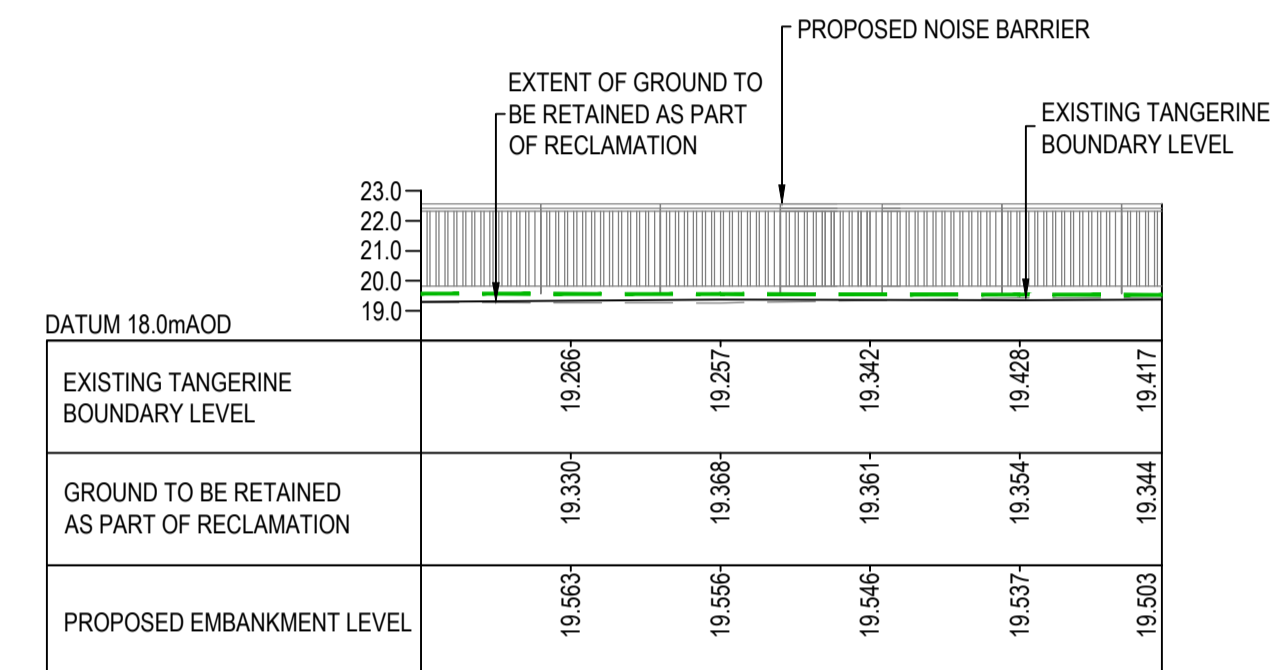
LOCATION PLAN  
(NTS)



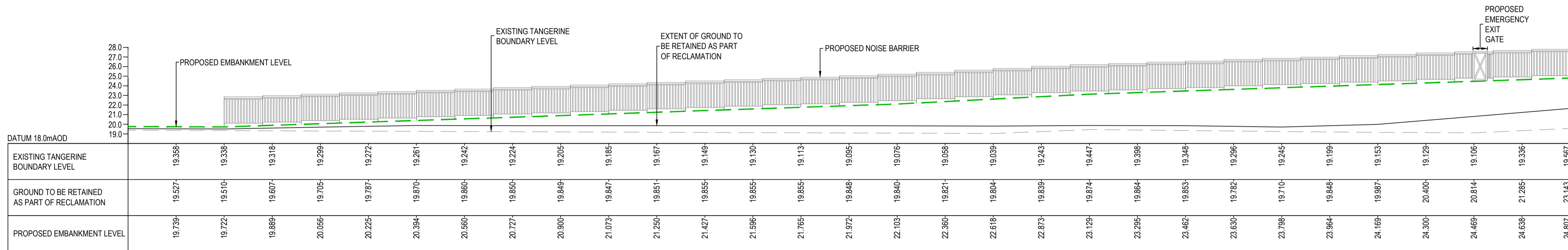
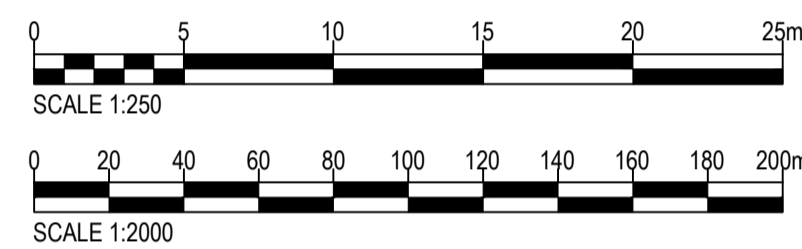
INSET A  
(1:2000)



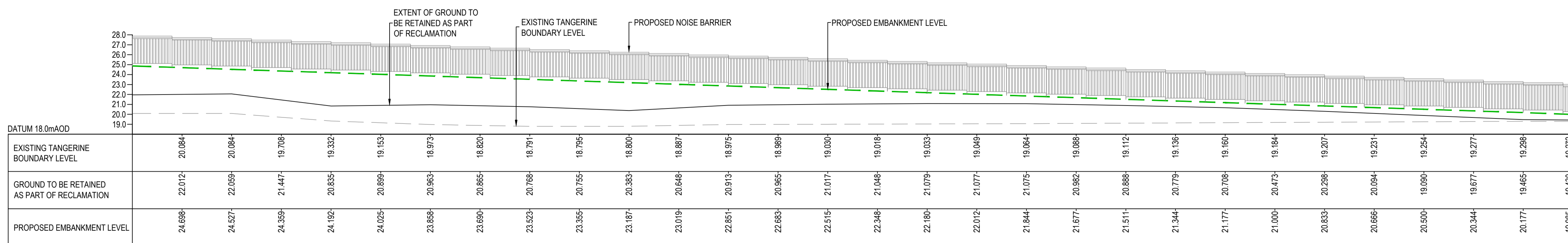
SECTION A-A  
(NTS)



SOUTH EAST ELEVATION  
(1:250V & 1:250H)



NORTH WEST ELEVATION  
(1:250V & 1:250H)



NORTH EAST ELEVATION  
(1:250V & 1:250H)

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

- NOTES
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
  - DO NOT SCALE FROM THIS DRAWING. USE ONLY PRINTED DIMENSIONS.
  - ALL DIMENSIONS ARE IN METRES UNLESS DEFINED OTHERWISE.
  - PROPOSED LAYOUT BASED ON AECOM DRAFT CONCEPT MASTERPLAN DRAWING 60265288-04002 REV K.
  - FOR PROPOSED NOISE BARRIER DETAILS AND SECTION, REFER TO DRAWING FBSS-URS-XX-XX-DR-CE-00611.

- KEY
- PROPOSED SITE BOUNDARY
  - PROPOSED NOISE BARRIER
  - PROPOSED GATE LOCATION

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

Revision Details			
By	Check	Date	Suffix
JW	TEB	21.03.17	P5
JW	TEB	07.12.16	P4
JW	TEB	06.12.16	P3
JB	TB	15.10.15	P2

FOR PLANNING

Client  
**BRITISH SUGAR**

Project Title  
**FORMER BRITISH SUGAR SITE YORK**

Drawing Title  
**TANGERINE FACTORY NOISE BARRIER ELEVATIONS**

Designed TB	Drawn LW	Checked TB	Approved GH	Date 17.09.15
----------------	-------------	---------------	----------------	------------------

AECOM Internal Project No.  
47068101

Scale @ A1  
AS SHOWN

Subsidiary  
Zone

THIS DRAWING HAS BEEN PREPARED FOR THE USE OF AECOM'S CLIENT. IT MAY NOT BE USED, MODIFIED, REPRODUCED OR RELIED UPON BY THIRD PARTIES, EXCEPT AS AGREED BY AECOM OR AS REQUIRED BY LAW. AECOM ACCEPTS NO RESPONSIBILITY, AND DENIES ANY LIABILITY WHATSOEVER, TO ANY PARTY THAT USES OR RELIES ON THIS DRAWING WITHOUT AECOM'S EXPRESS WRITTEN CONSENT. DO NOT SCALE THIS DOCUMENT. ALL MEASUREMENTS MUST BE OBTAINED FROM THE STATED DIMENSIONS.

AECOM Infrastructure & Environment UK Limited  
Royal Court  
Basil Close, Chesterfield  
Derbyshire S41 7SL  
Tel: +44 (0)1246 239 221  
Fax: +44 (0)1246 239 229  
www.aecom.com



Drawing Number  
**FBSS-AEC-XX-XX-DR-CE-00612**

Rev  
**P5**





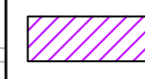

NEW GATE TO BE PROVIDED WITHIN NOISE BARRIER IN LINE WITH TANGERINE EXIT. GATE TO BE DESIGNED AND INSTALLED TO THE SAME STANDARDS AND NOISE REDUCTION SPECIFICATIONS AS THE ADJOINING FENCE.

TEMPORARY EMERGENCY ROUTE ON BRITISH SUGAR SIDE

NEW EMERGENCY EXIT FROM TANGERINE FACTORY WITH PERMANENT STEPS TO NOISE BARRIER

**BARRIER AND BUND LAYOUT PLAN**  
(1:1000)

KEY TO LOCATION PLAN

-  SITE BOUNDARY
-  HIGHWAY
-  NOISE BARRIER
-  EXTENT OF EARTHWORKS BUFFER ZONE FOR TREE RETENTION / EXCAVATION WORKING WIDTH
-  2m BERM FOR DRAINAGE AND ACCESS
-  TANGERINE SIDE OF NOISE BUND

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
2. DO NOT SCALE FROM THIS DRAWING, USE ONLY PRINTED DIMENSIONS.
3. ALL DIMENSIONS ARE IN METRES UNLESS DEFINED OTHERWISE.
4. OS DATA BASED ON AECOM DRAWING 60265288-01006 REV C - DRAFT CONCEPT MASTERPLAN, DATED 06/01/14.
5. PROPOSED LAYOUT BASED ON AECOM DRAFT CONCEPT MASTERPLAN DRAWING 60265288-04002 REV K, ISSUED 22/10/14.
6. NOISE BARRIER MINIMUM SOUND REDUCTION INDEX (Rw) OF 29dB, DETERMINED IN ACCORDANCE WITH BS EN ISO 717-1:2013.

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

ROAD REMOVED AND BOUNDARY UPDATED	JW	TEB	07.12.16	P6
UPDATED TO SHOW REVISED SITE LAYOUT	JW	TEB	06.12.16	P5
TREES REMOVED	JB	RG	08.04.16	P4
Revision Details	By	Check	Date	Suffix

Purpose of issue  
**FOR PLANNING**

Client  
**BRITISH SUGAR**

Project Title  
**FORMER BRITISH SUGAR SITE, YORK**

Drawing Title  
**NOISE BARRIER AND BUND LAYOUT**

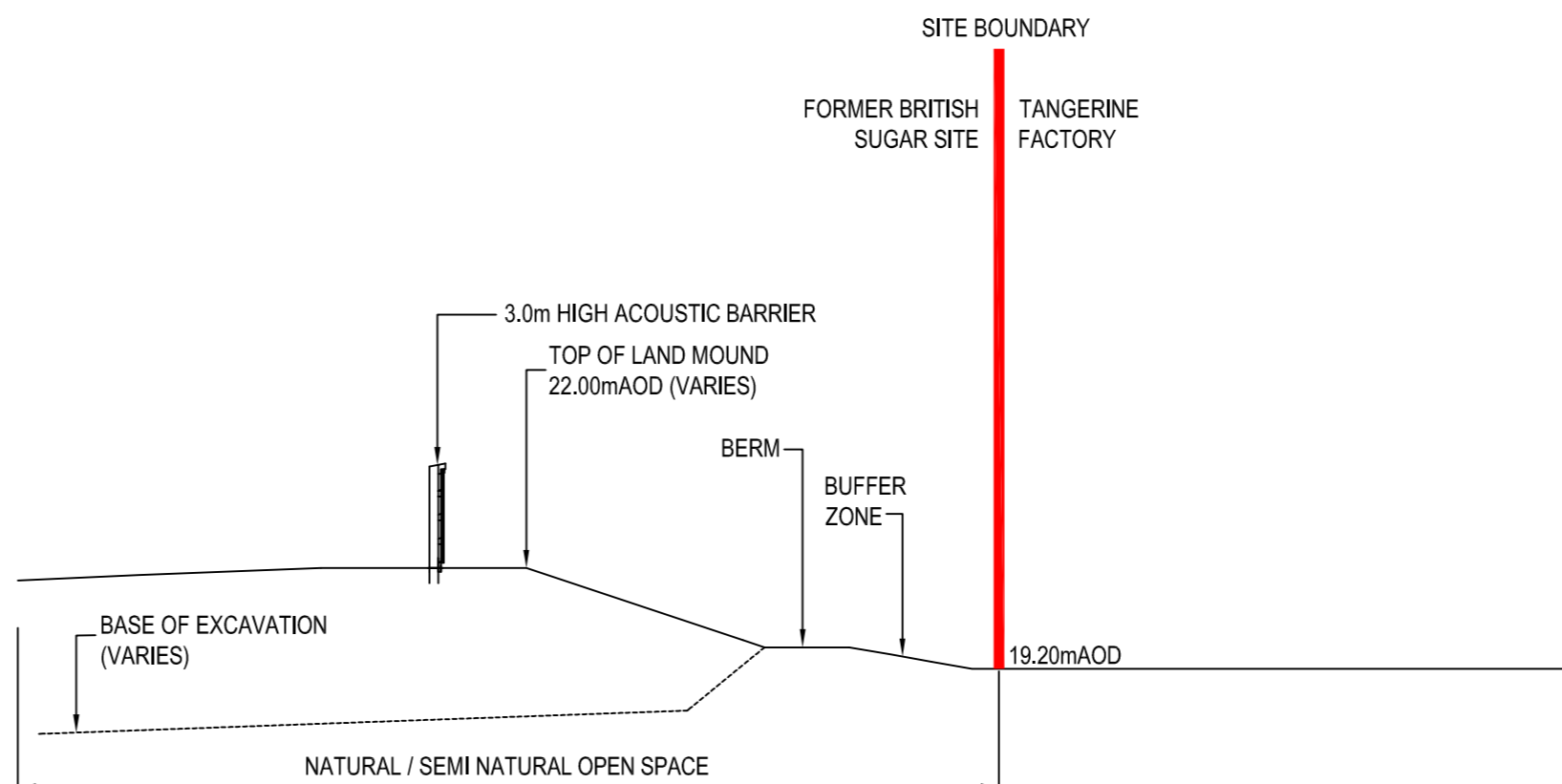
Designed	Drawn	Checked	Approved	Date
TEB	TEB	TEB	DJC	Mar 2016

AECOM Internal Project No.	Suitability
47068101	-
Scale @ A2	Zone
AS SHOWN	-

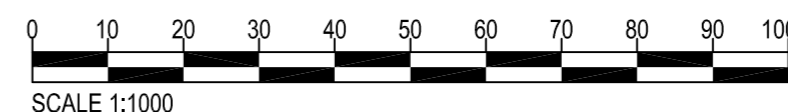
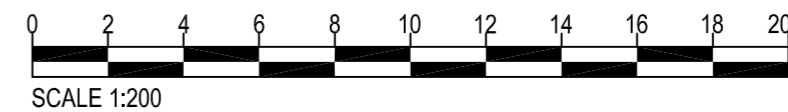
THIS DRAWING HAS BEEN PREPARED FOR THE USE OF AECOM'S CLIENT. IT MAY NOT BE USED, MODIFIED, REPRODUCED OR RELIED UPON BY THIRD PARTIES, EXCEPT AS AGREED BY AECOM OR AS REQUIRED BY LAW. AECOM ACCEPTS NO RESPONSIBILITY, AND DENIES ANY LIABILITY WHATSOEVER, TO ANY PARTY THAT USES OR RELIES ON THIS DRAWING WITHOUT AECOM'S EXPRESS WRITTEN CONSENT. DO NOT SCALE THIS DOCUMENT. ALL MEASUREMENTS MUST BE OBTAINED FROM THE STATED DIMENSIONS.

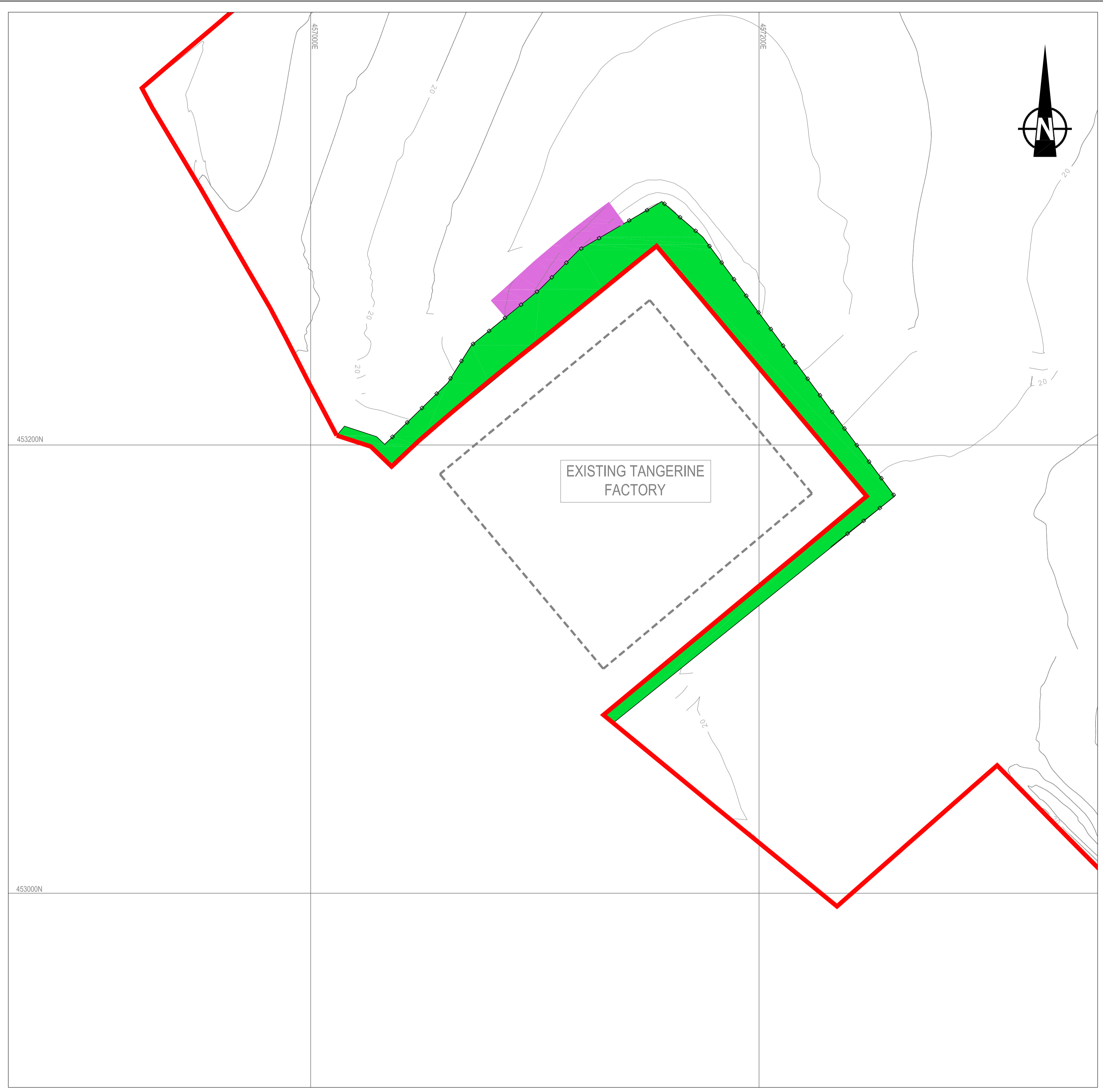
AECOM Infrastructure & Environment UK Limited  
Royal Court  
Basil Close, Chesterfield  
Derbyshire, S41 7SL  
Tel: +44 (0)1246 209 221  
Fax: +44 (0)1246 209 229  
www.aecom.com

Drawing Number	Rev
FBSS-AEC-XX-XX-DR-CE-00613	P6

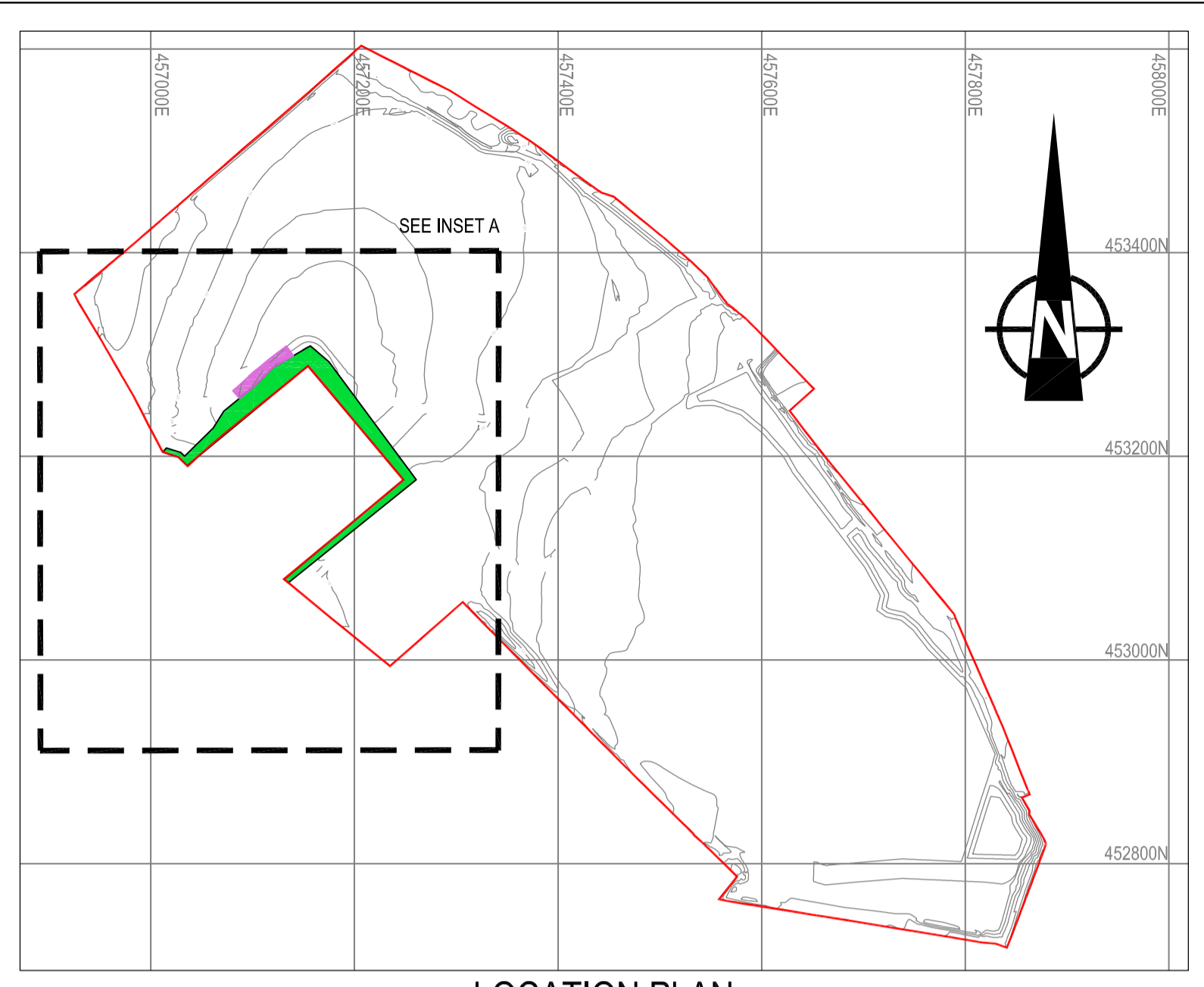


**SECTION A-A**  
(1:200)

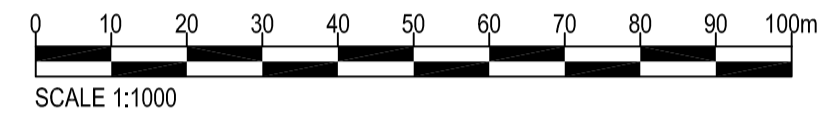




**INSET A**  
(1:1000)



**LOCATION PLAN**  
(NTS)



IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROPRIATE METHOD STATEMENT.

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT.

**NOTES**

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DOCUMENTATION.
2. PROPOSED LAYOUT BASED ON AECOM DRAFT CONCEPT MASTERPLAN DRAWING 60265288-04002 REV K.
3. FOR PROPOSED NOISE BARRIER DETAILS AND SECTION, REFER TO DRAWING FBSS-AEC-XX-XX-DR-CE-00611.

**KEY**

- PROPOSED SITE BOUNDARY
- PROPOSED NOISE BARRIER
- THE BUND
- BUND LAND WHICH DOES NOT INCLUDE THE BUND

This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

Revision Details	By	Check	Date	Suffix
ROAD REMOVED AND BOUNDARY UPDATED	JW	TEB	07.12.16	P5
UPDATED TO SHOW REVISED SITE LAYOUT	JW	TEB	06.12.16	P4
EMERGENCY ASSEMBLY ZONE ADDED	JB	TB	31.05.16	P3
AREAS OVER WHICH TANGERINE ARE TO BE GRANTED A RIGHT OF ESCAPE ADDED	TB	GH	24.05.16	P2

Purpose of Issue

**FOR PLANNING**

Client

**BRITISH SUGAR**

Project Title

**FORMER BRITISH SUGAR SITE YORK**

Drawing Title

**BUND LAND**

Designed	Drawn	Checked	Approved	Date
TB	LG	TB	GH	19.04.16

AECOM Internal Project No. 47068101

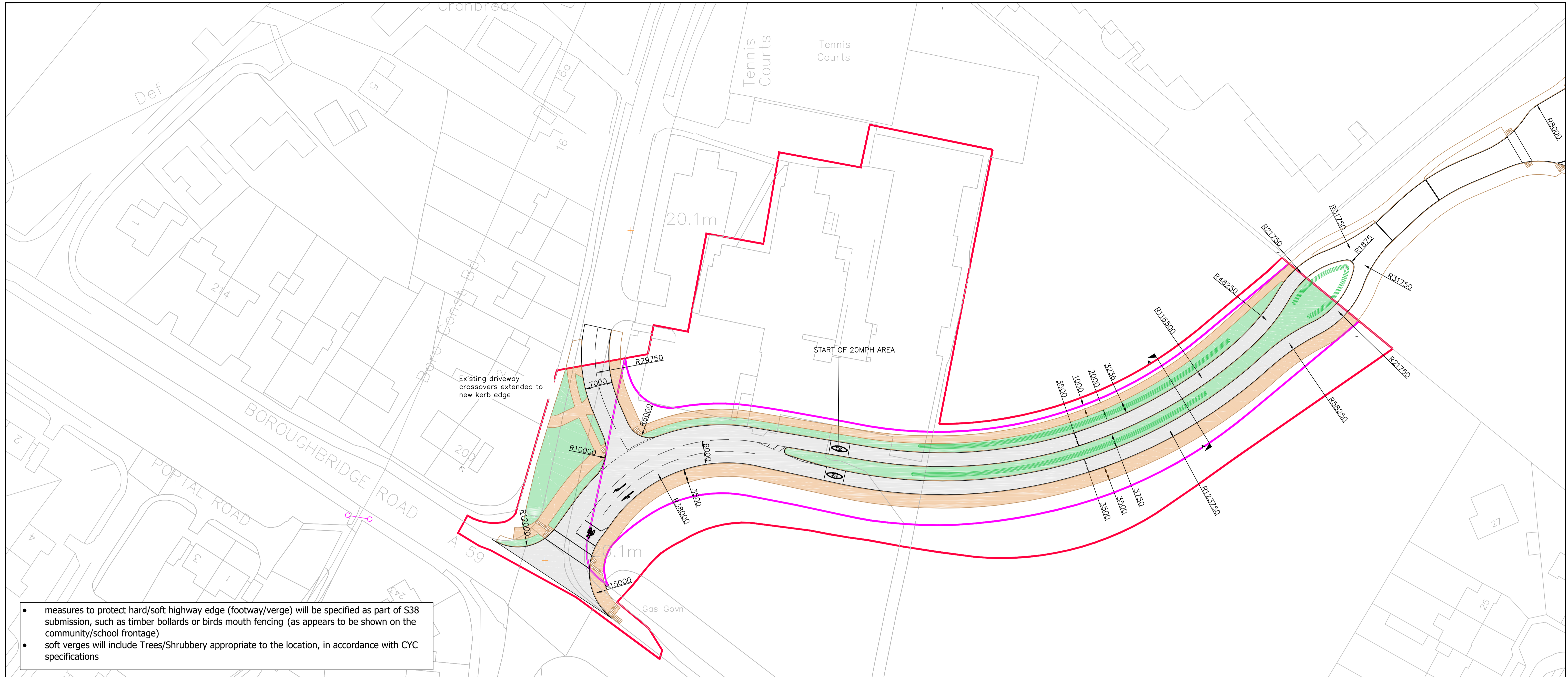
Scale @ A1 AS SHOWN

THIS DRAWING HAS BEEN PREPARED FOR THE USE OF AECOM'S CLIENT. IT MAY NOT BE USED, MODIFIED, REPRODUCED OR RELIED UPON BY THIRD PARTIES, EXCEPT AS AGREED BY AECOM OR AS REQUIRED BY LAW. AECOM ACCEPTS NO RESPONSIBILITY, AND DENIES ANY LIABILITY WHATSOEVER, TO ANY PARTY THAT USES OR RELIES ON THIS DRAWING WITHOUT AECOM'S EXPRESS WRITTEN CONSENT.

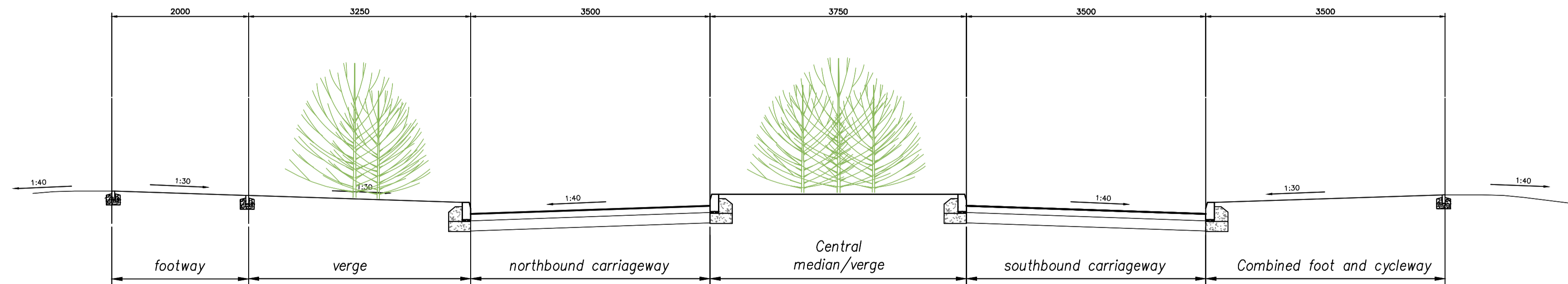
AECOM Infrastructure & Environment UK Limited  
Royal Court  
Basil Close, Chesterfield  
Derbyshire S41 7SL  
Tel+44 (0)1246 209 221  
Fax+44 (0)1246 209 229  
www.aecom.com

Drawing Number **FBSS-AEC-XX-XX-DR-CE-00614** Rev **P5**





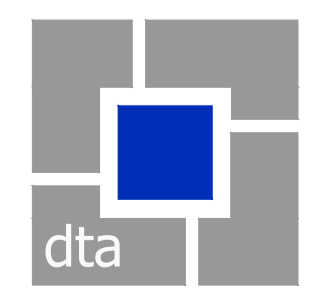
- measures to protect hard/soft highway edge (footway/verge) will be specified as part of S38 submission, such as timber bollards or birds mouth fencing (as appears to be shown on the community/school frontage)
- soft verges will include Trees/Shrubbery appropriate to the location, in accordance with CYC specifications



Typical Access Road Section A-A 1:50

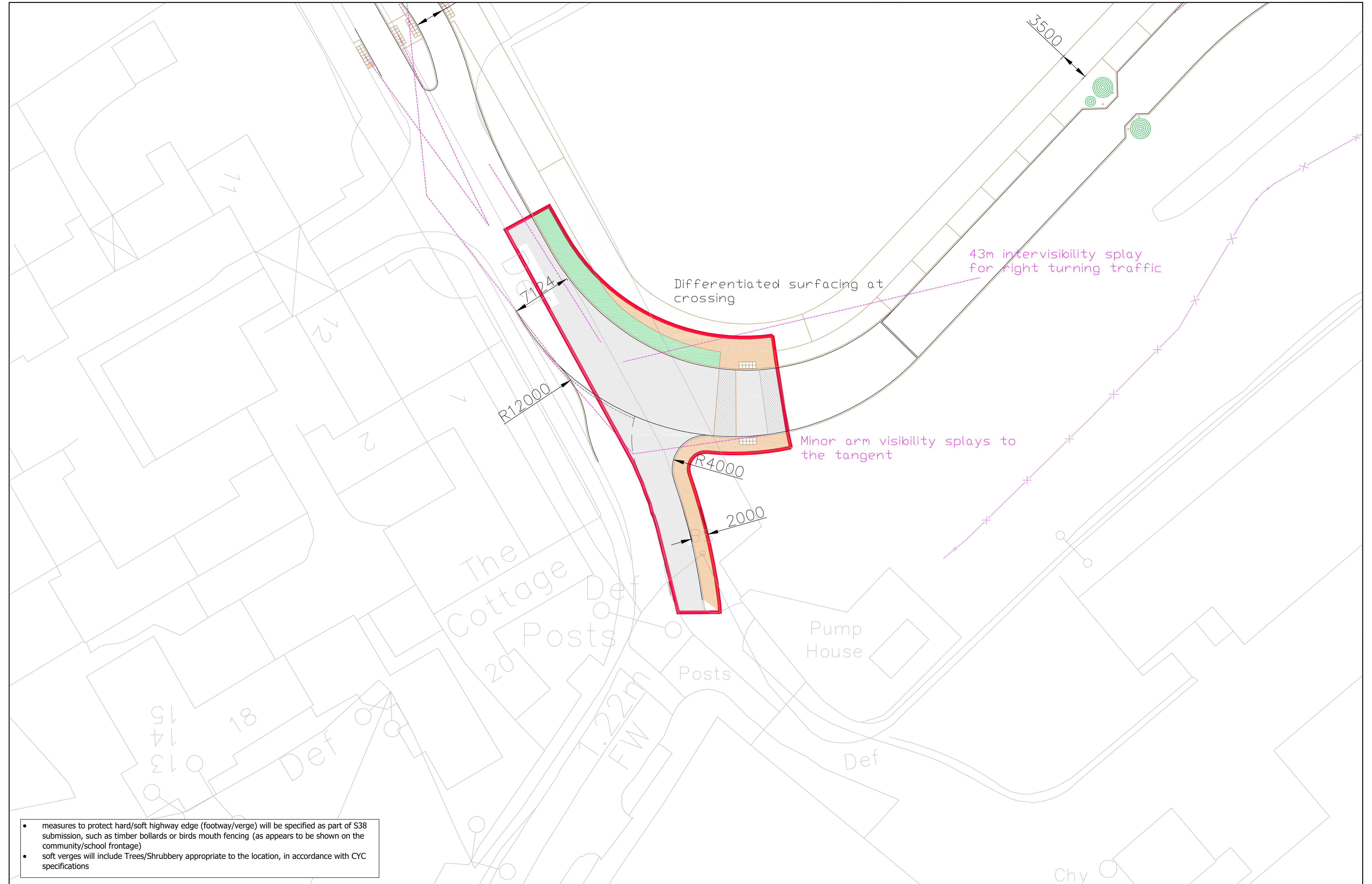
Based upon the ORDNANCE SURVEY MAPS with the permission of THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE, © Crown Copyright AL 100030412  
 © David Tucker Associates

REV	DESCRIPTION	DRAWN	INITIALS	DATE	DRAWING STATUS	CHECKED BY	DATE



**david tucker associates**  
 transport planning consultants  
 Forester House, Doctors Lane  
 Henley-in-Arden  
 Warwickshire B95 5AW  
 Tel: +44(0)1564 793598  
 Fax: +44(0)1564 793983  
 www.dtatransportation.co.uk

JOB TITLE FORMER BRITISH SUGAR SITE		CLIENT BRITISH SUGAR	
DRAWING TITLE BOROUGHBRIDGE ROAD ACCESS DIMENSIONS			
SCALE 1:500@A1	DRAWN BY RJM	DATE 28/07/17	DRAWING No 17424-37-DIMS
REVISION 1			

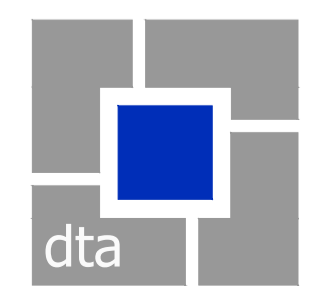


- measures to protect hard/soft highway edge (footway/verge) will be specified as part of S38 submission, such as timber bollards or birds mouth fencing (as appears to be shown on the community/school frontage)
- soft verges will include Trees/Shrubbery appropriate to the location, in accordance with CYC specifications

Based upon the ORDNANCE SURVEY MAPS with the permission of THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE, © Crown Copyright AL 100030412

© David Tucker Associates

REV	DESCRIPTION	DRAWN	INITIALS	DATE	DRAWING STATUS	CHECKED BY	DATE



**david tucker associates**  
 transport planning consultants  
 Forester House, Doctors Lane  
 Henley-in-Arden  
 Warwickshire B95 5AW  
 Tel: +44(0)1564 793598  
 Fax: +44(0)1564 793983  
 www.dtatransportation.co.uk

JOB TITLE FORMER BRITISH SUGAR SITE		CLIENT BRITISH SUGAR	
DRAWING TITLE MILLFIELD LANE ACCESS DIMENSIONS			
SCALE 1:200@A1	DRAWN BY RJM	DATE 28/07/17	DRAWING No 17424-40-DIMS
			REVISION C



**KEY**

□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□
□	□	□	□	□	□	□	□	□	□

□ planning application boundary

□ EE

**NOTES**

Refer to Sheet 2 for Specification notes

Refer to Arboricultural Survey (I. Keen Ltd) for proposed tree works

All tree locations to be subject to position of utilities

**ISSUE/REVISION**

NO	DATE	DESCRIPTION
D		
C		
B		
A		

**KEY PLAN**

**PROJECT NUMBER**

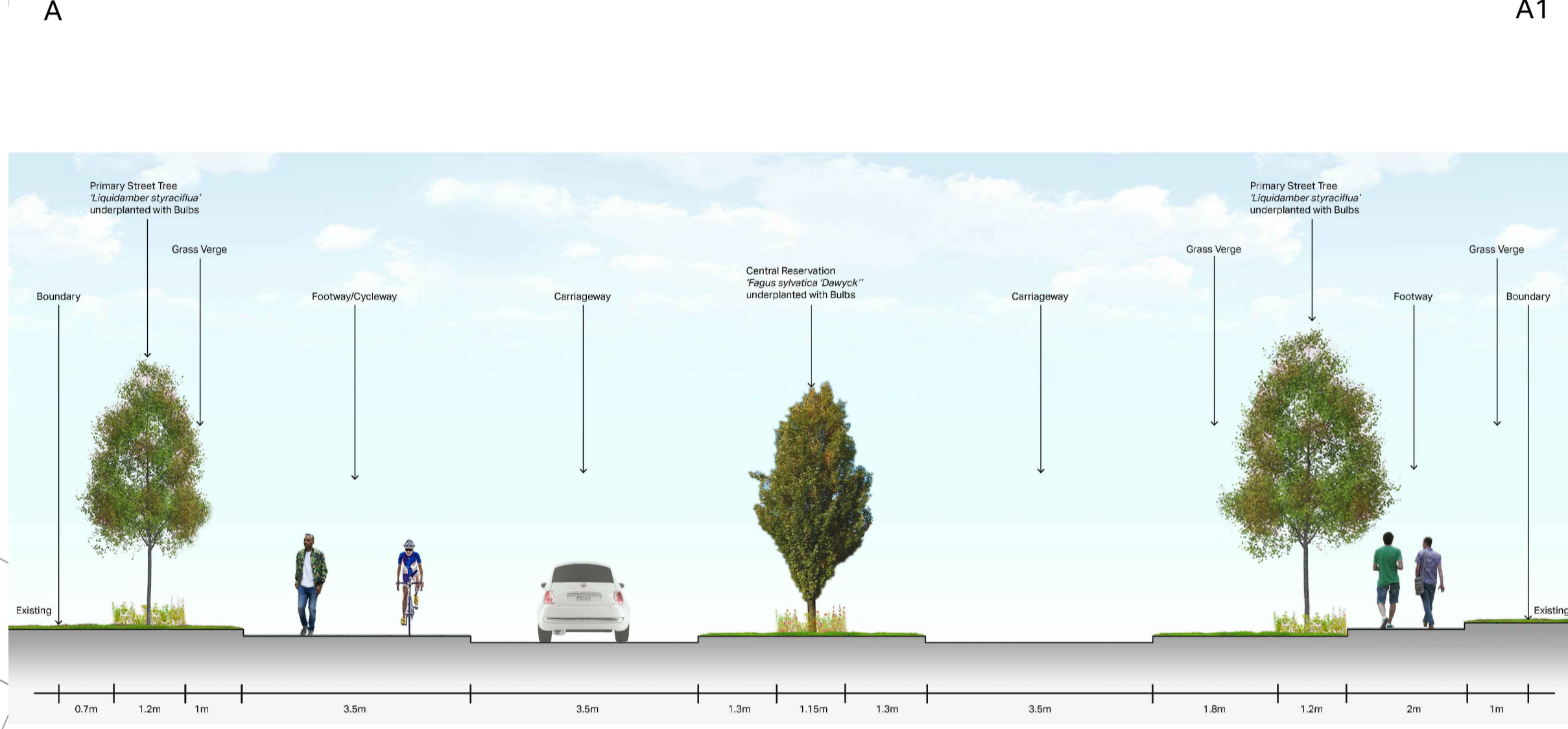
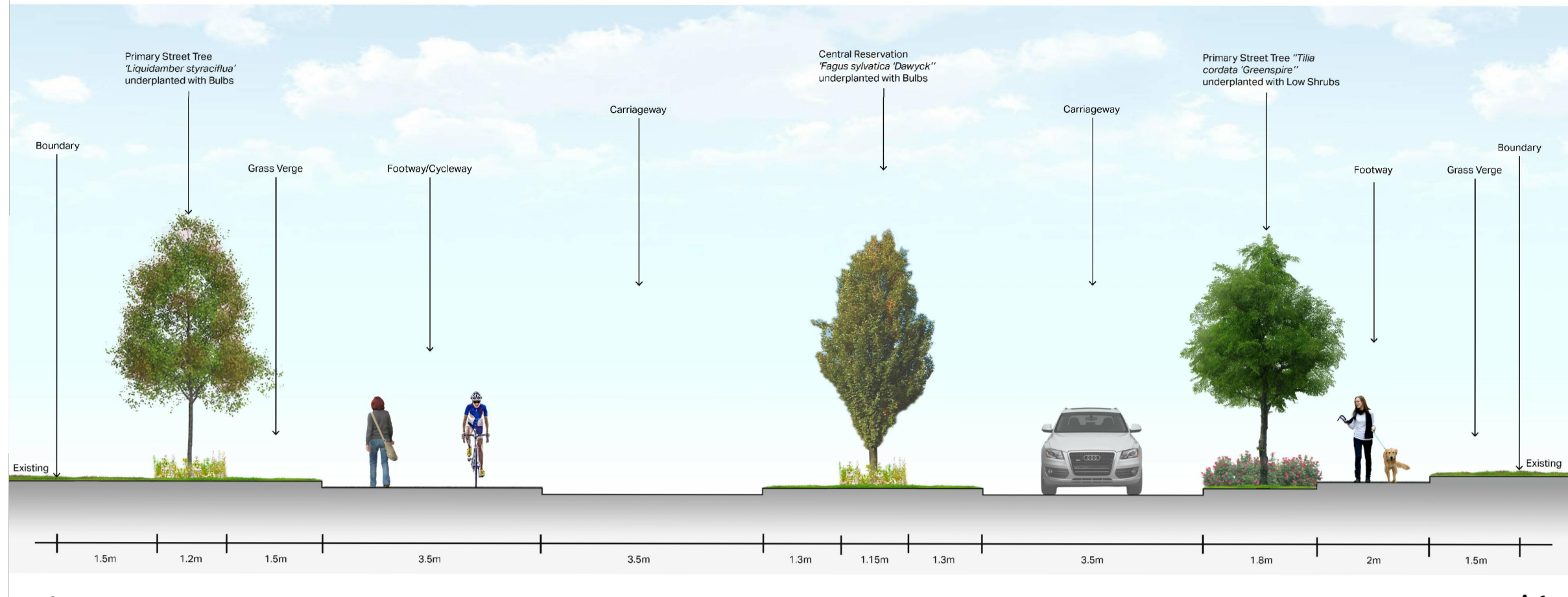
**SHEET TITLE**

BRITIS S GAR MAIN ENTRANCE  
 SO T LANDSCAPE DESIGN

**SHEET NUMBER**

BS LS

**Typical Cross Sections**



**Planting Design Principles:**

- To provide a strong planting design to the entrance to the site and along main street through use of semi mature street trees under planted with blocks of shrubs and ground cover and turf with bulb planting that will provide seasonal interest on a scale appropriate for road users, pedestrians and cyclists.
- The plants will be tolerant of salt used on the highways.
- The existing trees at the junction of Boroughbridge Road and Low Poppleton Lane will be retained subject to utilities and practicalities of construction.

**Notes:**

- Planting has been designed to constrain forward visibility to 60m.

**TREES**

Label	Species	Common Name	Girth (cm)	Height (m)	Root	Location	Number
FdD	Fagus sylvatica 'Dawyck'	Dawyck Beech	30-35	4.5-5	Rootballed	5m centres	32
Ls	Liquidambar styraciflua	Sweet Gum	30-35	4.5-5	Rootballed	10m centres	15
TcG	Tilia cordata 'Greenspire'	Lime	30-35	4.5-5	Rootballed	10m centres	12

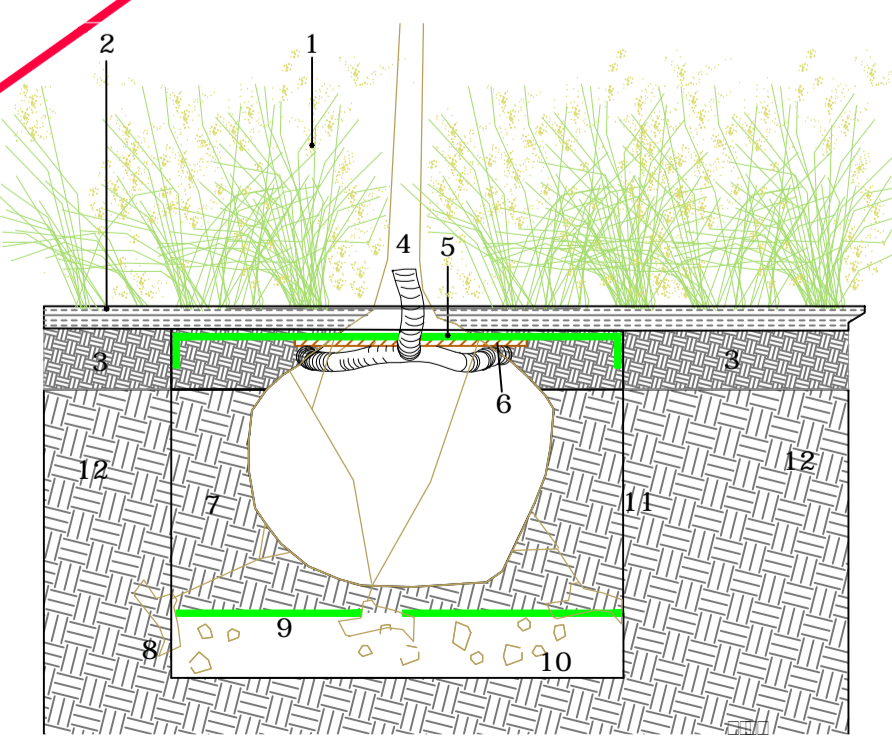
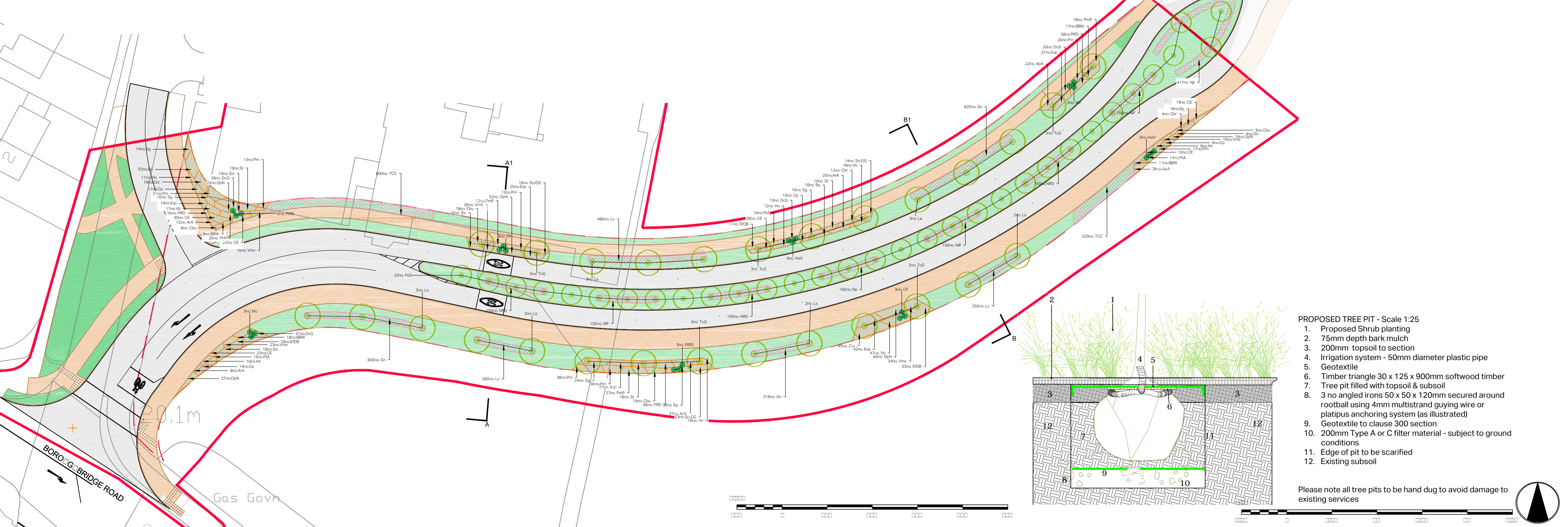
**SHRUBS**

Label	Species	Common Name	Habit	Height/Spread (cm)	Container (litres)	Density (#/m²)	Number
AI	Alcea rosea 'Purple Purple'	Dark Purple Buzle	Full Pot		1L	8	77
ApA	Alpeyus pratensis 'Aureovariegatus'	Meadow Foxtail	Full Pot		1L	5	48
BBW	Bergenia Strasseriana White	Elephant's Ears	Full Pot		3L	5	54
Clr	Calamagrostis brachytricha	Korean Feather Reed Grass	Full Pot		1L	4	88
Csu	Carex flacca	Leathertail Sedge			2L	5	49
Cp	Chimonanthus praecox	Winter sweet	Branched, 2 breaks		3L	5	36
CF	Cotinus Flame	Smoke tree	Branched, 5 breaks	60-80	10L	As Shown	6
CE	Crocus Embellitus	Mandrill	Full Pot		1L	8	130
DCG	Deschampsia cespitosa 'Dakota'	Tufted Hair Grass	Full Pot		1L	6	103
Ep	Epimedium x pinnatifidum	Barnwort	Full Pot		1L	8	123
EDB	Eucalyptus fortunei 'Daria'	Spruce	Bushy, 5 breaks	20-30	3L	5	62
Exp	Euphorbia x palustris	Spurge			2L	6	135
HaV	Hamelis x intermedia	Chinese Witch Hazel	Branched, 5 breaks	60-80	10L	As Shown	6
Hn	Helianthus riger	Christmas Rose	Full Pot		3L	6	58
Mc	Molinia caerulea	Purple Moor Grass	Full Pot		3L	5	6
OpN	Ophiopogon planiscapus 'Nipponense'	Black Mondo	Full Pot		1L	8	83
Pm	Pennisetum macrocurvum	African Feather Grass	Full Pot		1L	6	130
PRD	Panicum 'Red Dragon'	Knottweed	Full Pot		1L	8	139
PRS	Phlox paniculata 'Rainbow Sunrise'	New Zealand Flax	Full Pot	60-80	10L	As Shown	6
PKA	Phlox tuberosa 'Amazon'	Sage-Leaf Mullen	Full Pot		3L	7	68
Ppf	Pisum sativum	Dwarf Mountain Pine	Bushy	20-30	3L	5	57
ScDG	Sarcococca ruscifolia var. chinensis 'Dragon Gate'	Sweet Box	Bushy, 4 breaks	20-30	2L	5	53
Sic	Stephanandra incispa 'Crisp'	Lace Shrub	Branched, 5 breaks		3L	4	48
Sg	Stipa gigantea	Golden Oats	Full Pot		3L	4	58
St	Stipa pennsylvanica	Mexican Feather Grass	Full Pot		3L	4	47
Vb	Verbena bonariensis	Argentinian Verbain	Full Pot		2L	6	82
Vmv	Vincetoxicum 'Vanegata'	Variegated Greater Periwinkle	Several shoots, 3 breaks		2L	8	113

**BULBS**

Label	Species	Common Name	Grade	Density (#/m²)	Number
Gn	Galanthus nivalis	Common Snowdrop	Grade 5 / 6	25	1543
Lv	Leucogam vernalis	Spring Snowflake	Size 1	20	990
NF	Narcissus 'Ice Follies'	Daffodil 'Ice Follies'	Grade 5 / 6	12	450
Np	Narcissus pseudonarcissus	Wild Daffodil	Grade 5 / 6	12	432
NRD	Narcissus 'Red Devon'	Daffodil 'Red Devon'	Grade 5 / 6	12	450
TCC	Tulipa 'Couteur Cardinal'	Triumph Tulip	Grade 9 / 10	12	920

Topsoli: to be 200mm thick over a presumed pre-existing sub base. Any shortfall shall be made up from the on-site storage.



- Please note all tree pits to be hand dug to avoid damage to existing services
-



**Financial Assessment**



Financial Assessment Report  
British Sugar PLC

**BOROUGHBRIDGE ROAD  
YORK**

**August 2022**

**Our Ref: JRM/20-01690**

---

## Contents

1	EXECUTIVE SUMMARY .....	1
2	INTRODUCTION .....	2
3	FINANCIAL ASSESSMENT.....	3
4	FINANCIAL GAIN USING NON-WASTE MATERIALS .....	5
5	AVAILABILITY OF SUITABLE MATERIALS.....	6
6	COST OF SUITABLE NON-WASTE MATERIALS .....	6
7	RESIDUAL REMEDIATION/RECLAMATION COSTS.....	6
8	INFRASTRUCTURE COSTS .....	7
9	TOTAL COST OF FORMING SERVICED LAND PARCELS FOR DEVELOPMENT	8
10	CONCLUSION.....	8
11	SIGNATURE .....	8

## Appendices

Appendix A	Site Layout & Boundary Plan
Appendix B	Green Infrastructure Parameter Plan
Appendix C	Landfill & Re-instatement Volume Calculations
Appendix D	Market Evidence of Non-Waste Donor Sites (and associated costs).
Appendix E	Gleeds Cost Plan (including import of non-waste material).
Appendix F	Cost of Land Evidence
Appendix G	Market Land Value Evidence
Appendix H	VAT Elections

---

## 1 EXECUTIVE SUMMARY

- 1.1 Rapleys and Gleeds have been employed by British Sugar PLC (the Client) to provide support with the regeneration of the decommissioned sugar manufacturing site at York to allow residential development and associated uses.
- 1.2 The task which Rapleys/Gleeds have been instructed to undertake is an assessment of the financial impact to the project of utilising non-waste materials to create the development platform in place of existing soils. In undertaking this task, regard has been given to the Environment Agency guidance as relevant to the application for a Deposit for Recovery permit.
- 1.3 The Client is proposing to re-develop the site for a principally residential end use and associated infrastructure for which it has planning permission. The Client will be the Master Developer and in doing so prepare the development platform and procure the primary infrastructure to create a number of serviced land parcels. These serviced land parcels will then be marketed for sale to residential and commercial developers who will build the houses and associated development. As discussed further in section 3 below, the development of the site will deliver worthwhile social, economic and environmental benefits.
- 1.4 The volume of non-waste material required is equal to the total volume required to raise the site to the new development platform levels in accordance with the planning permission (ref 14/02798/FULM).Based on this work the total quantity of non-waste material required is estimated at 746,800m<sup>3</sup>.
- 1.5 As part of our analysis we have contacted several key earthworks contractors to determine the availability of non-waste materials and opportunities for potential donor sites together with the associated costs.
- 1.6 Gleeds have prepared a detailed cost estimate of the works involved in forming the development platform and the primary infrastructure.
- 1.7 We have undertaken an assessment of the value of the serviced land once the remediation and infrastructure works are completed. This is the value that would be realised when the land is sold in the open market for residential development. An extract from a Rapleys report on development strategy is included at Appendix G including a Market Summary and Residential Land Values in support of this assessment. This report was prepared by Angus Irvine (MRICS) of Rapleys who has since also undertaken an updated review of the market value of serviced land in York.
- 1.8 Of the 98.2 acres of the total area of the development, 63.56 acres of net developable land will be marketed for sale. Based on the updated market assessment of service land referred to in section 3 of this report, we have adopted a land value of £1.4m per developable acre for serviced land for residential development. This is reasonable and supported by analysis undertaken by Angus Irvine of Rapleys in July 2022 as described immediately above. Accordingly, this provides a total land receipt of £88.98m.
- 1.9 This Report demonstrates that the Client would benefit from a net financial gain if the site were to be restored using non-waste materials.
- 1.10 Even if we include the costs associated with the excavation and disposal of the existing waste there is still a financial gain.

---

## 2 INTRODUCTION

- 2.1 Rapleys/Gleeds has been employed by British Sugar PLC (the Client) to provide support with the regeneration of the decommissioned sugar manufacturing site at York to allow residential development and associated uses. A part of the site is covered by an Environmental Permit EPR/QP3593NF (the EP) which covers the post landfill aftercare phase of the site and allows for remediation via a separate authorisation. The deposit of waste (predominantly washed soils from sugar beet brought to site) was permitted under a Waste Management Licence NYCC/028. It is proposed to undertake the remediation/reclamation works under a bespoke waste recovery permit to allow re-use of certain recovered wastes to create the development platform. This Report demonstrates that the Client would benefit from a net financial gain if the site were to be restored using non-waste materials.
- 2.2 The site was assembled approximately 100 years ago prior to the factory opening in 1926. Whilst the site has planning permission for residential development and associated uses, these cannot be developed without the remediation and infrastructure costs described in the following sections of this report.
- 2.3 Failure to remediate this site would also compromise the ability to build the proposed new housing and associated development. The site is currently closed for the receipt of waste and is in the aftercare phase.
- 2.4 The task which Rapleys/Gleeds have been instructed to undertake is an assessment of the financial impact to the project of utilising non-waste materials to create the development platform in place of existing soils. This is to address Environment Agency guidance forming part of the application for a Waste Recovery Plan. The approach we have adopted as set out in the report is to:
- 2.4.1 Assess the total volume of waste required to create the development platform;
  - 2.4.2 To determine the availability and cost of non-waste materials to create the development platform;
  - 2.4.3 Consider the residual costs including remediation/reclamation, infrastructure, adoption costs, fees etc necessary to create serviced land parcels for residential development by others;
  - 2.4.4 Assess the market value of the serviced land parcels on completion of the works for sale to residential developers.
- 2.5 This report is accompanied by a number of appendices which are:
- 2.5.1 Appendix A - A site layout and boundary plan for context.
  - 2.5.2 Appendix B - The green infrastructure parameter plan showing the illustrative layout of the development.
  - 2.5.3 Appendix C - Volumetric calculations showing the volume of soils required to create the development platform.
  - 2.5.4 Appendix D - Market evidence from national earthworks contractors demonstrating the availability and cost of the donor sites and materials for import of non-waste.
  - 2.5.5 Appendix E - Gleeds cost plan including all costs for the import of non-waste material and residual remediation/reclamation and infrastructure costs to create the development platform and thus serviced land parcels.
  - 2.5.6 Appendix F - Evidence from the Client of the cost of the land as at 1980.

- 
- 2.5.7 Appendix G - A report on the market value of serviced land parcels for similar projects in the north west of England.
  - 2.5.8 Appendix H - Client VAT elections.
  - 2.6 As part of our analysis we have contacted several key earthworks contractors to determine the availability of materials and opportunities for potential donor sites together with the associated costs. Given the time sensitivity of the availability and cost of such materials no contractual arrangements have been made as conclusion of the permit variation would be required in order for it to be possible to confirm arrangements and timescales with contractors. Further negotiation with these contractors would also be required should the Client proceed to purchase the materials.
  - 2.7 All costs included in this report are shown nett of VAT. The Client is VAT registered and is therefore able to recover the VAT on the construction costs. VAT elections are included in Appendix H.

### **3 FINANCIAL ASSESSMENT**

- 3.1 British Sugar have confirmed the cost of the land at last account at £755,000 (dating back to 1980). See evidence of this from the Group Property Director of British Sugar at Appendix F.
- 3.2 The costs associated with import of non-waste materials, residual remediation/reclamation and infrastructure are presented in sections 6 to 9 of this report. Gleeds cost plan presents the costs associated with these works which can be found at Appendix E.
- 3.3 The reclamation and remediation of the area covered by the EP enables the full value of the serviced land to be realised, including those areas outside of the current EP.
- 3.4 We have undertaken an assessment of the value of the serviced land once the remediation and infrastructure works are completed. This is the value that would be realised when the land is sold in the open market for residential development. An extract from a Rapleys report on development strategy is included at Appendix G including a Market Summary and Residential Land Values in support of this assessment. This report was prepared by Angus Irvine (MRICS) of Rapleys who has since also undertaken an updated review of the market value of serviced land in York and a supplementary letter is now also included in Appendix G.
- 3.5 Of the 98.2 acres of the total area of the development, 63.56 acres of net developable land will be marketed for sale. Based on the updated market assessment of service land referred to in section 3.4 above, we have adopted a land value of £1.4m per developable acre for serviced land for residential development. This is reasonable and supported by analysis undertaken by Angus Irvine of Rapleys in July 2022 as described immediately above. Accordingly, this provides a total land receipt of £88.98m.



3.6 By calculating total sales value minus total costs, it can be clearly demonstrated that the Client would benefit from financial gain by using non-wastes to create the development platform. This is summarised in Table 1 below:

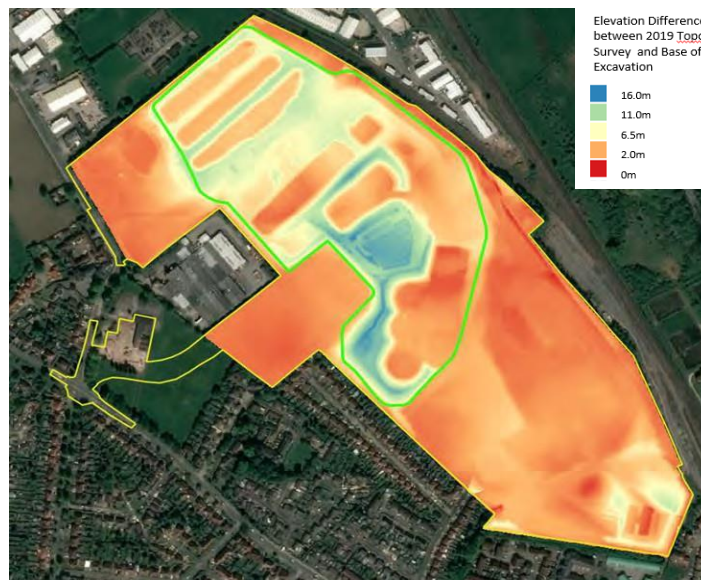
Table 1

Description	Cost	Value	Net Financial Gain	Report Reference
Cost of Land	£755,000			Cl. 3.1 and App. F
Import Non-Waste Material	£28,128,000			Cl. 6.1 (Table 2)
Residual Remediation/Reclamation Costs	£9,119,000			Cl. 7.3 (Table 3)
Infrastructure Costs	£25,264,000			Cl. 8.3 (Table 4)
Total Costs (B)	£63,266,000			
Sales Value (A)		£88,984,000		Cl. 3.5 and App. G
<b>Net Financial Gain (A - B)</b>			<b>£25,718,000</b>	

- 3.7 Even if we include the costs associated with the excavation and disposal of the existing waste, there is still a financial gain.
- 3.8 The scope of the works for the excavation and disposal of the existing waste is based on the Project Team's (including Arcadis and Gleeds) extensive experience of the local and national earthmoving market.
- 3.9 The scope of works for the excavation and disposal of the existing waste includes the following:
- 3.9.1 Pre-treatment of 8,000m<sup>3</sup> of contaminated soils.
  - 3.9.2 Excavation and stockpiling of 746,800m<sup>3</sup> of waste soils.
  - 3.9.3 Loading and haulage of 400,000m<sup>3</sup> of soils to a British Sugar facility in Newark.
  - 3.9.4 Through discussions with several national earthworks contractors we have identified several sites that have the potential to receive large volumes of soils for development;
    - 3.9.4.1 Therefore, from this research we have identified 4 receiver sites (nominally referred to as sites A to D) and allowed for the costs of loading and transport of 50% of the remaining 346,800m<sup>3</sup> of the soils. The costs for loading and transport of the remaining 50% of the soils being paid for by the receivers of the material.
    - 3.9.4.2 This reflects discussions with the national earthworks contractors and forms the basis of the market testing undertaken by Gleeds in Appendix E.
- 3.10 The outcome of the market testing for the aforementioned scope of works is a cost estimate of £20,491,000 (including contingency).
- 3.11 Therefore, even if this sum were to be included in the overall cost of this assessment the total costs would increase to £83,757,000. Set against a sales value for serviced land of £88,984,000 the financial gain is £5,227,000.

## 4 FINANCIAL GAIN USING NON-WASTE MATERIALS

- 4.1 For the non-waste scenario, it will be necessary to import suitable materials to re-instate the site to the agreed planning levels.
- 4.2 The volume of non-waste material required is equal to the total volume required to raise the site to the new development platform levels in accordance with the planning permission (ref 14/02798/FULM). The total quantity of the waste located within the EP boundary has been modelled using Geographic Information System (GIS) software based on the 2019 topographical survey and the required base of excavation, which is defined within approved cross section plans associated with planning permission (14/02798/FULM), and also using data taken from exploratory logs collected during previous site investigations. This model is displayed in the figure below.



- 4.3 Based on this work the total quantity of non-waste material required is estimated at 746,800m<sup>3</sup>.
- 4.4 GIS modelling software has also been used to determine the volume of material required to construct the development platform within the EP Boundary and across the entire site using the elevations and contours defined within 'Proposed Contours -DR-CE-00602 P5' Approved Plan 14/02798/FULM, presented in Appendix C.
- 4.5 The qGIS modelling software used by Arcadis together with AutoCAD Civil 3D to undertake this volumetric calculation is a standard industry assessment utilised across many similar developments.
- 4.6 As confirmed through enquiries with national earthworks contractors (as discussed immediately below), appropriate non-waste materials could either be primary quarried aggregate, secondary (quality protocol) aggregate, surplus soils from local construction activities or, a combination of all three.

## 5 AVAILABILITY OF SUITABLE MATERIALS

- 5.1 Through the team’s research and discussions with national earthworks contractors, quality protocol aggregates are available and at sufficient quantities to meet the requirements of this project.
- 5.2 As confirmed through enquiries with with national earthworks contractors (as discussed immediately above), surplus soils from other construction activities are widely available and could assist in meeting the needs of this project together with quality protocol aggregates.

## 6 COST OF SUITABLE NON-WASTE MATERIALS

- 6.1 For the purpose of this exercise we have allowed for the imported material to be quality protocol aggregate. This is based on the Project Team’s (including Arcadis and Gleeds) extensive experience of the local and national earthmoving market. Table 2 below shows the proposed blend of imported materials and the cost of the import, placing, laying and compacting these materials by proportion of the overall volume required. The placement costs for each material include the plant to place and compact the materials and verification costs to confirm the materials are chemically and geotechnically suitable.

Table 2

Material Class	Description	Volume	Unit Rate	Cost to import, place, lay and compact	Gleeds Cost Plan Ref. (App E)
Class 6F4/5	As described.	373,400m <sup>3</sup>	£31.56	£11,784,504	C1.1,1.2 & 1.3 (pg. 14)
Class 1C	As described.	373,400m <sup>3</sup>	£31.56	£11,784,504	C1.1,1.2 & 1.3 (pg. 14)
Main contractors preliminaries and OH&P				£2,018,450	C2 / C3 (pg. 13)
Construction Risk / Contingency				£2,540,327	C7 (pg. 13)
	<b>TOTAL</b>	<b>746,800m<sup>3</sup></b>		<b>£28,127,785</b>	Pg. 5 (See also pg.s 13-14)

## 7 RESIDUAL REMEDIATION/RECLAMATION COSTS

- 7.1 In addition to the costs presented in section 6 of this report there are residual costs associated with the remediation and reclamation of the material outside of the current Environmental Permit boundary.
- 7.2 These remediation costs are over and above any remediation that is associated with the aftercare under the existing EP.

7.3 These costs are summarised in table 3 below:

Table 3

Description	Cost	Gleeds Cost Plan Ref. (App E)
Site preparation and fencing	£500,000	A1 (pg. 6 & 7)
Earthworks and remediation	£5,450,761	A2 (pg. 6. Also see pg.'s 8-10).
Main contractor preliminaries and OH&P	£1,859,613	A3 & A4 (pg. 6)
Construction Risk / Contingency	£715,412	A8 (pg. 6)
Remediation monitoring	£593,000	B1 (pg. 11)
<b>TOTAL</b>	<b>£9,118,786</b>	A + B (pg. 5)

## 8 INFRASTRUCTURE COSTS

- 8.1 In order to prepare the site for residential development by others it will be necessary to build the primary highway, drainage, utility and structural landscaping infrastructure (i.e. the primary infrastructure).
- 8.2 The provision of the primary infrastructure will create serviced parcels of land that can be marketed for sale to developers/house builders for residential development.
- 8.3 In addition to the nett cost of the infrastructure works, in order to realise the value of the serviced land for sale to the market we need to allow for ancillary costs including adoption costs by the relevant authority, commuted sums, professional fees and other associated development costs. These are summarised in table 4 below.

Table 4

Description	Cost	Gleeds Cost Plan Ref (App E)
Primary Infrastructure (main contractors prelims and OH&P included)	£18,294,005	Works cost estimate - pg. 15
Construction Risk / Contingency	£1,379,116	D13 (works cost estimate - pg. 15)
Adoption Costs/Committed Sums	£2,588,367	F (pg. 5. See also pg.'s 66-68).
Professional Fees	£1,646,711	G (pg. 5)
Other Development Costs	£1,355,000	H (pg. 5)
<b>TOTAL</b>	<b>£25,263,199</b>	

## 9 TOTAL COST OF FORMING SERVICED LAND PARCELS FOR DEVELOPMENT

9.1 Sections 6 to 8 inclusive inform part of the costs necessary to form serviced parcels of land for sale to the market for residential development. The total cost of delivering these serviced land parcels can therefore be summarised as follows:

Table 5

Description	Cost	Gleeds Cost Plan Ref (App E)
Import Suitable Non-Waste Material	£28,127,785	C (pg. 5. See also pg.s 13-14)
Residual Remediation/Reclamation costs	£9,118,786	A + B (pg. 5)
Infrastructure Costs	£25,263,199	D, F, G & H (pg. 5)
<b>TOTAL</b>	<b>£62,509,770</b>	Pg. 5

## 10 CONCLUSION

10.1 This report has considered the financial assessment of using an imported non-waste material to create the development platform.

10.2 With reference to Table 1 in section 3 of this report, by calculating the total sales values minus the total costs, it can be clearly demonstrated that the Client would benefit from financial gain by using non-waste materials to create the development platform.

10.3 Even if the costs associated with the excavation and disposal of the existing waste are included in the financial assessment there is still a financial gain.

10.4 The purpose of these works is to create the necessary development platform that will enable and accord with the approved planning permission and thereby facilitate the delivery of new homes and associated community facilities. All these benefits will be delivered in a sustainable manner, having regard to the location of the site and its brownfield status.

10.5 The development of the site will deliver worthwhile social, economical and environmental benefits.



## 11 SIGNATURE

11.1 This report has been prepared by Jason Mound of Rapleys LLP with key input from Matt Perry and Bill Swan of Gleeds. Credentials for each author are presented below:

11.1.1 Jason Mound MCIQB, Partner at Rapleys LLP leads our Land Development Project Management Team and has over 30 years of experience in the Development sector. Jason has previously worked for national regeneration specialist, St Modwen Developments Limited and Atkins Limited and has extensive experience working on brownfield land. Jason's key experience is in infrastructure planning and delivery, managing multi-disciplinary design teams and helping Clients to de-risk their land assets, thus enabling land for development.

- 11.1.2 Matt Perry BSc (Hons) MRICS NECReg, Director at Gleeds Cost Management Ltd, is an accomplished Cost Management Director with over 32 years' experience working in the construction industry on Residential, Infrastructure, Public Sector, Education and Retail projects providing the full range of pre and post contract Cost Management services to both public and private sector clients. Matt is responsible for account management and delivery of projects for residential, mixed use and retail clients together with infrastructure and services projects for residential consortium developers and local authorities. Matt also has extensive experience providing Cost Management, Procurement Advice, Value Engineering, Employer's Agent and Contract Administration services on projects and programmes of work for various clients.
- 11.1.3 Bill Swan BSc, Dip Proj Man, LLM, M Res, MRICS, is a Director of Gleeds Advisory Ltd, and has 28 years post qualification experience in providing cost management services to clients in most construction industry sectors. Of relevance to the project, Bill has provided cost management master planning services as part of a developer/ landowner led steering group involved in developing the masterplan for 2,500 homes and significant commercial development land and also when acting for a landowner in cost planning the master planning of a 1,300 homes development.
- 11.2 We confirm that the undersigned is an appropriately qualified and experienced Chartered Project Manager experienced in the Land Development sector.

This report has been prepared within the quality system operated at Rapleys LLP according to British Standard ISO 9001:2015

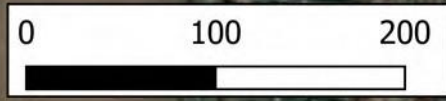
<b>Created by:</b>	[Jason Mound MCIQB] [jason.mound@rapleys.com]
<b>Signature:</b>	
<b>Checked by:</b>	[Jack Downing MICE] [jack.downing@rapleys.com]
<b>Signature:</b>	

FOR AND ON BEHALF OF RAPLEYS LLP

12 August 2022

Appendix A

# SITE LAYOUT & BOUNDARY PLAN



**Legend**

- D Former Water Treatment Area
- D Former Factory Area
- D Historic Ponds and Soil Conditioning Area
- C Site Boundary
- C Current Ponds on Site
- t::] Permit Boundary
- Sitewide Topo Contours

**A**

Issued for Information			
Desis,1	S.Sohni	5-11-2020	
Drawn	S.Sohni	6-6-2020	
Checked	J.Hurst	5-6-2020	
Approved	C.Piddington	6-6-2020	
Scale	1:4000	Datum	AOO
Original Size	A3	Grid	OS
Suitability Code		Project Number	10024487

Client - British Sugar Pie
<b>BritishSugar</b>
Rgure 2

PROJECT	British Sugar, York
TITLE	Site Layout Plan

**ARCADIS** Design & Consultancy for natural and built assets

Registered office: Arcadis House, 34 York Way, London N1 9AB

Co-Ordinating office: 1 Whitehall Riverside, Leeds LS1 4BN, United Kingdom, T: +44 (0)113 284 5300

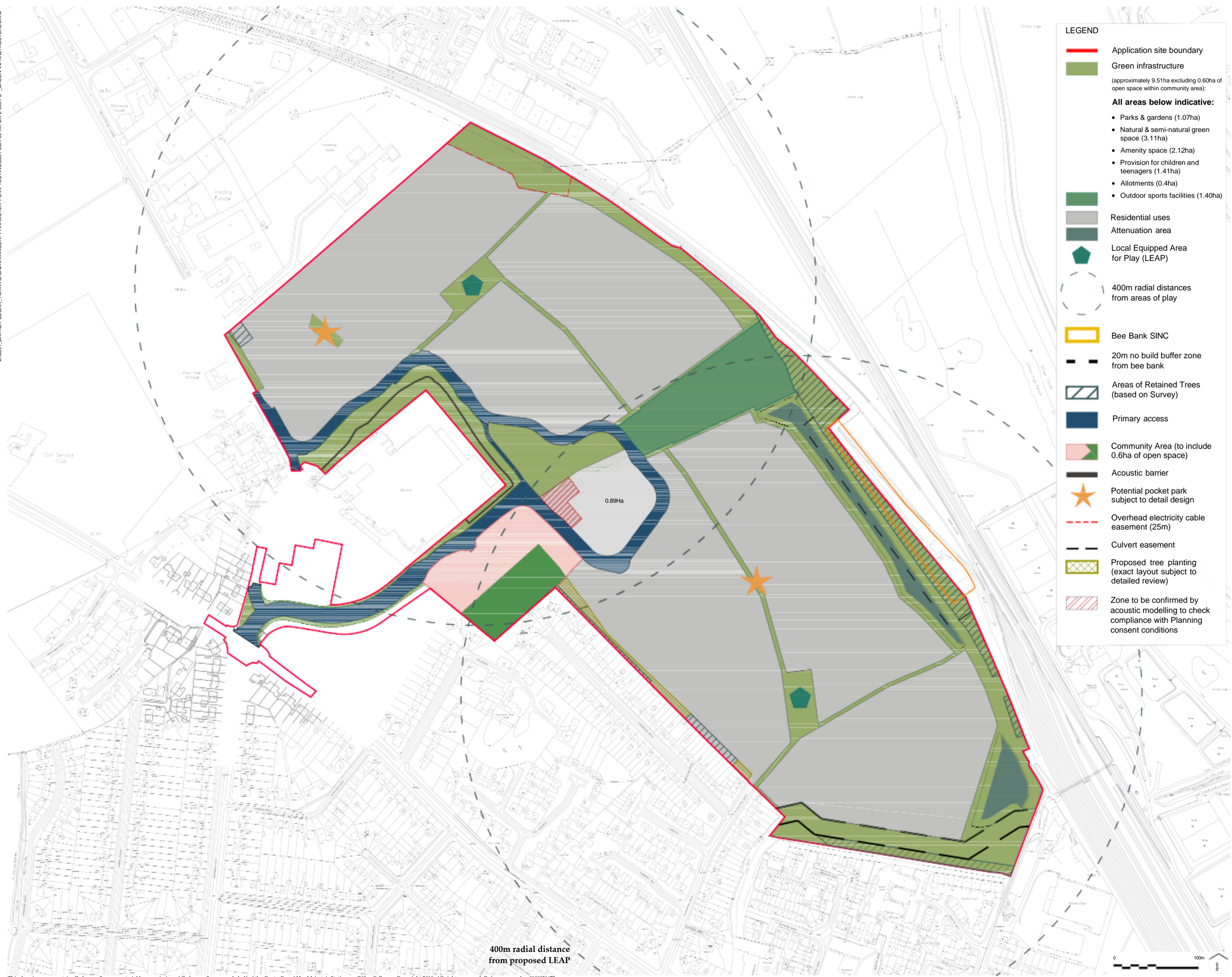
OrawingNumber: 10024487-AUK-XX-XX-DR-ZZ-0047-P1-site layout Plan



Appendix B

# GREEN INFRASTRUCTURE PARAMETER PLAN

Z:\6891\_BRITISH\_SUGAR\_YORK\7CAD\DRAWINGS\4\_PARAMETER PLAN TESTING\6891-LDA-00-XX-DR-L-0001-E\_GREEN INFRASTRUCTURE.DWG



**LEGEND**

- Application site boundary
- Green infrastructure  
(approximately 9.51ha excluding 0.60ha of open space within community area):
- All areas below indicative:**
  - Parks & gardens (1.07ha)
  - Natural & semi-natural green space (3.11ha)
  - Amenity space (2.12ha)
  - Provision for children and teenagers (1.41ha)
  - Allotments (0.4ha)
  - Outdoor sports facilities (1.40ha)
- Residential uses
- Attenuation area
- Local Equipped Area for Play (LEAP)
- 400m radial distances from areas of play
- Bee Bank SINC
- 20m no build buffer zone from bee bank
- Areas of Retained Trees (based on Survey)
- Primary access
- Community Area (to include 0.6ha of open space)
- Acoustic barrier
- Potential pocket park subject to detail design
- Overhead electricity cable easement (25m)
- Culvert easement
- Proposed tree planting (exact layout subject to detailed review)
- Zone to be confirmed by acoustic modelling to check compliance with Planning consent conditions

400m radial distance from proposed LEAP

E	VG Development refined	GM	14.11.19
D	Consented primary road inc. Resi options tabled. Carr Drain re-aligned to avoid Cat A tree removal.	GM	04.11.19
C	SuDS Option 4A incorporated GI green corridors reduced in width Roundabout & drop-off added	GM	15.10.19
B	GI refined	GM	10.10.19
REV.	DESCRIPTION		APP. DATE

### LDA DESIGN

PROJECT TITLE  
BRITISH SUGAR\_YORK

DRAWING TITLE  
Green Infrastructure  
Parameter Plan

ISSUED BY	Glasgow	T: 0141 222 9780
DATE	Oct 19	DRAWN GMe
SCALE@A1	1:2,000	CHECKED RW
STATUS	Draft	APPROVED KT

DWG. NO 6891-LDA-00-XX-DR-L-0001

No dimensions are to be scaled from this drawing.  
All dimensions are to be checked on site.  
Area measurements for indicative purposes only.  
© LDA Design Consulting Ltd. Quality Assured to BS EN ISO 9001:2015  
Sources: Ordnance Survey

Appendix C

# LANDFILL & RE-INSTATEMENT VOLUME CALCULATIONS

# MATERIAL VOLUME CALCULATIONS

British Sugar, York

AUGUST 2022



## 1.1 Earthworks

### 1.1.1 Ground Model – Cut and Fill Balance

A GIS model was developed in qGIS by Arcadis to assist Site conceptualisation, contamination distribution assessment and the calculation of volumes of material requiring excavation, permanent deposit and remediation. The qGIS model was developed alongside an AutoCAD Civil 3D model developed to support the infrastructure and landscape elements of the proposed development. A cut and fill balance was determined using both models with the qGIS model assessing individual site areas as well as across the entire site boundary. Model outputs were cross checked to confirm accuracy.

Material volume estimates within the qGIS model were calculated by creating multiple 2D elevation surfaces between which the volume of material can be calculated, both over the entire Site boundary and for specific Site areas. The following elevation surfaces were created within the model:

- **Surface of the Vale of York bedrock formation** - which represents the base of the Made Ground and the base of the proposed excavation. This layer was created based on encountered geological conditions recorded within all available historic and recent exploratory logs. This required the digitisation and quality control checks of a large number of historic records as well as interpretation of soil descriptions and further ground investigation to inform and confirm the layer parameters. The elevation at ground surface of all current and historic boreholes were also required to ensure geological boundary elevations were accurate.
- **Current Site Topography** – created based on the most recent topographical survey undertaken in April 2019 by Greenhatch Ltd and mapping the entire Site area to a resolution of 0.5m and taking spot levels at 20m centres. It is noted that the Former Manor School was not included within this survey as it was not part of the Site boundary at this time.
- **Proposed Development Surface** – based on the Arcadis Proposed Ground Model (BRS-AUK-XX-XXX-SK-102, February 2020). It is noted that the Former Manor School was not included within this development surface as it was not part of the Site boundary at this time.

In addition to these layers, the Site was divided into several areas reflecting the use of the area during active Site operations, the type of Made Ground present and whether the area is within the EP boundary. These areas were also aligned with the topographic surface. These Site areas are shown on the Site Layout Plan.

The volume of Made Ground requiring excavation was determined through calculation within qGIS of the volume between the surface of the Vale of York formation (base of excavation) and the current site topography. The volume of fill (comprising remediated soils and recovered waste) was determined by calculating the volume between the surface of the Vale of York formation and the proposed development surface.

The cut and fill balance is determined by using the site topography to calculate the volume of material currently above the proposed development surface (cut - given a negative value) and the volume currently below the proposed development surface (fill - given a positive value). The difference between these two values provides the cut and fill balance. This balance does not include reference to the Vale of York formation or the actual volumes of material to be excavated or deposited.

All volumetric calculations were performed based on a 1m<sup>2</sup> resolution grid.

While the Former Manor School area is not included within the cut and fill balance estimations it is anticipated that there will be no significant alterations to ground surface elevations within this area and no requirement for remediation in this area has been identified.

Table 1 shows the volumes of Made Ground material to be excavated and deposited as well as the cut and fill balance across the Site and within individual Site areas.

	Location	Area (m <sup>2</sup> )	Made Ground Excavated Volume (m <sup>3</sup> )	Made Ground Fill Volume (m <sup>3</sup> )	Fill (m <sup>3</sup> )	Cut (m <sup>3</sup> )	Cut and Fill Balance (m <sup>3</sup> )
<b>Outside EP Boundary</b>	Former Manor School	15,800	-	-	-	-	-
	NWWTP / Beet	25,300	17,900	44,000	26,400	-900	25,500
	Main Factory Area	121,700	164,700	308,200	164,600	-2,800	161,800
	Playing Field Area	29,200	20,400	23,200	5,700	-4,300	1,500
	SWWTP	17,500	79,300	70,700	3,000	-13,000	-10,000
	<b>Outside EP Boundary Total</b>	<b>209,500</b>	<b>282,300</b>	<b>446,100</b>	<b>199,700</b>	<b>-21,000</b>	<b>178,700</b>
<b>EP Boundary</b>	Central Tank Bund	16,500	16,800	32,100	13,600	-100	13,600
	NWWTP Lagoon Bunds	56,200	140,550	184,700	56,300	-47,200	9,100
	Limex Pond	4,200	5,800	11,200	3,700	0	3,700
	Historic Pond 7	1,200	6,200	6,600	0	-1,300	-1,300
	Historic Pond 4	6,100	39,300	37,700	1,300	-4,500	-3,200
	Historic Pond 5	10,100	46,500	43,000	3,500	-8,700	-5,200
	Limex Pond Bund	11,800	85,400	37,600	500	-50,200	-49,800
	Weigh Bridge Area	8,500	74,900	29,900	2,400	-52,200	-49,900
	Soil Conditioning Area	18,100	188,600	28,600	100	-150,000	-149,900
	Tank Farm Bund	16,400	100,400	8,400	200	-100,300	-100,100
	Ponds and Lagoons	20,900	42,350	93,700	84,900	-100	84,800
	<b>Inside EP Boundary Total</b>	<b>170,000</b>	<b>746,800</b>	<b>513,500</b>	<b>166,500</b>	<b>-414,600</b>	<b>-248,200</b>
<b>Site Boundary</b>	<b>Entire Site Boundary</b>	<b>397,500</b>	<b>1,029,100</b>	<b>959,600</b>	<b>366,200</b>	<b>-435,600</b>	<b>-69,500</b>
	Construction Arisings	-	-	-	-	-17,800	-
	Green Infrastructure	66,400	216,100	130,200	35,200	-102,000	25,000

Table 1 Cut and Fill Balance and Material Volumes for Site Areas

As detailed in Table 1 it is currently estimated that there will be a net surplus of material amounting to 69,500 m<sup>3</sup> on completion of the remediation and earthworks. However, it should be noted that there are a number of factors not included in the above calculations that will reduce and mitigate some or all of this projected surplus.

The calculations in Table 1 do not make any allowance for any reduction in the actual volume of material due to the compactive efforts applied during reinstatement. When a material is compacted at its OMC there is typically a reduction in its overall volume of between 3-5% i.e. a void of 100m<sup>3</sup> would actually require 103-105 m<sup>3</sup> of compacted material to fill it. The actual level of volume reduction observed will vary dependant on material type and ground conditions. It should also be noted that any deleterious material (wood, metal, glass etc) encountered within the made ground will be segregated and not reused in the formation; this will reduce the amount of material available for fill operations by a corresponding amount. The recent topographical survey was used to inform the earthworks model but it should be noted that the Ponds and Lagoons area contains a volume of water that would have been recorded as the top surface in this area during the survey but which will be removed during the remediation and earthworks. In addition, and as previously noted, the underlying sediments have an elevated water content and they will require dewatering to allow them to be re-used on site. The removal of the excess water from the top of the lagoons and dewatering of the underlying sediments is estimated to reduce the volume of material in this area of the site by approximately 30,000-35,000 m<sup>3</sup>.

So in consideration of all the above factors it is anticipated that the site will achieve a cut and fill balance with no projected significant surplus or deficit of material.

## 1.1.2 Materials Management

The approximate volumes of other key material types present on site were estimated and are shown in Table 2 below.

	Location	Total Excavated Volume (m <sup>3</sup> )	Organic Rich Material (ORM) (m <sup>3</sup> )	Ammoniacal Nitrogen Contaminated Material (m <sup>3</sup> )	Overlap Between ORM & Ammoniacal Nitrogen Contaminated Material* (m <sup>3</sup> )	Potential Topsoil Type Material (m <sup>3</sup> )	Sugar Factory Lime (SFL) (m <sup>3</sup> )	Granular and Cohesive Made Ground (m <sup>3</sup> )	Sediment (m <sup>3</sup> )	Total Petroleum Hydrocarbon (TPH) Contaminated Material (m <sup>3</sup> )
Outside EP Boundary	Former Manor School	-	-	-	-	-	-	-	-	-
	NWWTP / Beet	17,900	2,900	-	-	600	-	14,300	-	-
	Main Factory Area	164,700	-	4,200	-	-	12,200	146,200	-	2,100
	Playing Field Area	20,400	-	-	-	8,800	800	10,800	-	-
	SWWTP	79,300	4,400	6,200	-	300	1,100	64,900	2,400	-
	<b>Outside EP Boundary Total</b>	<b>282,300</b>	<b>7,300</b>	<b>10,400</b>	<b>-</b>	<b>9,700</b>	<b>14,100</b>	<b>236,200</b>	<b>2,400</b>	<b>2,100</b>
EP Boundary	Central Tank Bund	16,800	-	-	-	-	-	10,900	-	5,900
	NWWTP Lagoon Bunds	140,550	6,500	18,300	-	900	2,100	109,650	3,000	-
	Limex Pond	5,800	-	-	-	-	-	1,500	4,300	-
	Historic Pond 7	6,200	1,400	3,100	1,300	-	-	2,800	300	-
	Historic Pond 4	39,300	5,400	3,300	1,100	200	100	31,200	100	-
	Historic Pond 5	46,500	7,000	7,500	3,100	300	400	34,200	200	-
	Limex Pond Bund	85,400	5,400	17,100	-	0	100	62,500	-	-
	Weigh Bridge Area	74,900	5,000	10,700	900	100	100	59,800	100	-
	Soil Conditioning Area	188,600	53,800	45,800	21,800	3,500	13,400	94,000	-	-
	Tank Farm Bund	100,400	28,600	24,400	11,600	1,800	7,100	50,000	-	-
	Ponds and Lagoons	42,350	-	-	-	-	-	-	35,250	-
	<b>Inside EP Boundary Total</b>	<b>746,800</b>	<b>113,100</b>	<b>130,200</b>	<b>39,800</b>	<b>6,800</b>	<b>23,300</b>	<b>456,550</b>	<b>43,250</b>	<b>5,900</b>
Site Boundary	Entire Site Boundary	1,029,100	120,400	140,600	39,800	16,500	37,400	692,750	45,650	8,000

\*While a significant volume of Organic Rich Material is contaminated with ammoniacal nitrogen this is not the case in all locations and the degree of overlap is presented to avoid double counting of ORM and ammoniacal nitrogen contaminated material.

Table 2 Calculated Approximate Volumes of Material Types in Site Areas

The management plan for materials outlined in Section 10 of the 2015 RRS is considered to be appropriate with the following superseding updates.

### Materials Classification (Section 10.2, 2015 RRS)

All excavated material will be segregated based on visual assessment and classified into the following material types detailed in the table below.

Material Type	Classification	Anticipated Final Destination of Material
Granular Made Ground	GMG (W)	Use as general fill (in accordance with acceptability criteria)
Cohesive Made Ground	CMG (W)	Use as general fill (in accordance with acceptability criteria)
Organic Rich Material	ORM (W)	Use primarily within green infrastructure and Public Open Space (POS). Additional stabilisation required if used as general fill
Sugar Factory Lime (SFL)	SFL (W)	Use as general fill (in accordance with acceptability criteria)
Lagoon Sediment	LS (W)	Use as general fill (in accordance with acceptability criteria)
Cohesive Natural Ground	CNG (W)	Use as general fill (in accordance with acceptability criteria)
Plant Growth Media	PGM (W)	Use primarily within green infrastructure and Public Open Space (POS). Limited imported topsoil may be required.
Concrete & Aggregate	CA (W)	Use primarily as secondary aggregate in e.g. founding layer for roads and hard standings and as general fill (in accordance with acceptability criteria).

Table 3 Materials Management – Material Types and Classification

These material types have been selected to support appropriate materials processing, remediation, soil stabilisation and end use.

Excavated waste from within the EP boundary will be further classified denoted by (W) as shown in Table 3 above and segregated from soils excavated from outside the EP boundary throughout the entire material handling process. Remediated soils originating outside the EP boundary will be reused and placed within the DoWCoP Zone. Recovered waste will be permanently deposited across the remaining development footprint, outside the DoWCoP Zone.

**Materials Tracking and Storage (Section 10.3, 2015 RRS)**

A Materials Management Plan (MMP) will be produced to detail provisions outlined in Section 10 of the 2015 RRS including materials segregation and data management as well as provide lines of evidence regarding material quantities, suitability and certainty of use to support soils reuse under the DoWCoP framework.

Any areas of the site where soils containing asbestos have been permanently placed should have this clearly indicated on the soil audit and also be included on a marked up Site plan indicating location, depth and extent of any asbestos containing soils.



Arcadis (UK) Limited

1 Whitehall Riverside  
Leeds  
LS1 4BN  
United Kingdom  
T: +44 (0)113 284 5300

[arcadis.com](https://www.arcadis.com)



Appendix D

# MARKET EVIDENCE OF WASTE RECEPTOR AND DONOR SITES (AND ASSOCIATED COSTS

## Technical Note – Former British Sugar Site

### 1. Introduction

Keltbray understand that the Environment Agency, have requested that British Sugar (site owner) and their consultants (Gleeds, Arcadis & Rapleys LLP), provide evidence in the form a costing scenario that demonstrates that the project at the Former British Sugar Factory, Millfield Ln, Upper Poppleton, York, YO26 6PD (the “site”) would be financially feasible, even in the absence of receiving a waste recovery plan.

Deposit for Recovery Permits have played a key part in delivering Keltbray’s mission statement “to redefine the way sustainable development is delivered” for the following key reasons;

- I. Promotes the use of materials in accordance with the waste hierarchy;
  - a. waste soils and aggregates are recovered and reused; and
  - b. less waste will be sent to landfill;
- II. Plays a key role in bringing non-greenfield sites, including the development of sites with blight issues associated with legacy materials (wastes) and voids back in to beneficial use, thereby preserving greenfield land;
- III. Natural resource consumption will be less, e.g. quarried product and fuel;
- IV. Reduces vehicle movements (e.g. less congestion, air quality and disturbance) and associated vehicle emissions and contribution to carbon foot print of the development process are reduced; and
- V. Continue to significantly contribute to the diversion of 99% of Keltbray’s construction and demolition waste materials from landfill.

Keltbray have been engaged to provide specialist pre-construction support, having successfully applied for, operated and surrendered a number of deposit for recovery permits. Selected examples of current and previous Deposit for Recovery permits operated by Keltbray include;

**a. Confidential, Undisclosed Site.**

*Status: Application Stage*

Keltbray are currently in the application process for a bespoke Deposit for Recovery permit after the local Environment Agency compelled the re-use of stockpiled material down a recovery permit route (rather than agreeing to the re-use of material through the Definition of Waste Code of Practice, DoWCoP). The site is considered to be in an environmental sensitive setting due to the adjacent SSSI and tidal creek. Due to the high tidally influenced water table deposited materials will undergo stabilisation prior to placement.

**b. Westerham Golf Course, Kent.**

*Status: Active (post recovery monitoring ongoing)*

Keltbray imported and placed 333,200 tonnes of suitable soils to create an academy course at the Westerham Golf Club. Keltbray are currently engaged in discussions with the EA in relation to the permit surrender. The complexity of the permit application and surrender process was significantly increased due to the presence of the historic gassing non-permitted waste deposits.

**c. Ageas Bowl (formerly Rose Bowl), Southampton.**

*Status: Surrendered*

Keltbray imported and placed >1,000,000 tonnes of suitable soils across the 68 hectare site between 2011 and 2015. The site was ecologically sensitive with protected fauna and flora requiring identification and protection from the outset of the project. Keltbray were required to work alongside Natural England to protect the local Dormouse population in particular.

The site owner's consultants have then engaged with Keltbray, a specialist remediation contractor, to provide a costing scenario in which all the proposed material (750,000 m<sup>3</sup>) that would be recovered under the waste recovery plan is disposed off-site and replaced with imported material.

Therefore, Keltbray have subdivided the exercise into two key elements:

- 1: Disposal of the material;
- 2: The importation of material.

For the purposes of this exercise, the following assumptions have been made:

- I. The site would be neutrally balanced in terms of the export/import requirements of the 750,000 m<sup>3</sup>;
- II. British Sugar own an additional site which both requires and has the capacity to receive circa 400,000 m<sup>3</sup> of material free of charge (with the exception of transport costs);
- III. Haulage loads would be completed using articulated haulage vehicles (13.5m<sup>3</sup> or 30 tonne per load), rather than eight wheelers (9m<sup>3</sup> or 20 tonne per load), as these have a greater capacity circa and therefore would reduce the overall number of vehicle movements to and from the site.

Further to the above and in support of the Environment Agency waste recovery test we have looked to both dispose of the materials at an appropriately licensed facility and import a material product. Please note that the costs stated in this document are based on a limited understanding of the site and have been produced only to provide high-level cost based on a hypothetical strategy to support the clients permit application.

## 2. Disposal

As stated in the above, the British Sugar site in York would require the off-site disposal of 750,000 m<sup>3</sup> of material (approximately 55,555 loads based on 13.5m<sup>3</sup> per load). Over 50% (400,000 m<sup>3</sup>) of this volume would be able to be disposed of at another British Sugar site near Newark (located 80 miles from the site), as advised by the client's consultants. The cost of disposing of 400,000m<sup>3</sup> of materials to Newark is £10,370,370 (based on 29,630 loads @£350 p/load).

It is proposed that third party receiving sites/facilities would load and transport the remaining 350,000m<sup>3</sup> as an alternative to importing quarried or other imported materials. With the only the costs of the excavation and stockpiling of materials borne by British Sugar.

Based on the current understanding of site infrastructure and local roads, Keltbray consider an optimal disposal programme would be approximately 2 years. This assessment is based on achieving an average loading / disposal rate of 110 loads a day. Note: the number of vehicle movements and site arrangements of site logistics should not be underestimated, additional considerations such as the capacity / capabilities of the receiving facilities, weather, vehicle restrictions under planning and availability of local wagons has not been considered at this time.

### 2.1. Local Infrastructure Projects

Keltbray were unable to identify any suitable infrastructure structure schemes during the production of this note.

## 3. Importation

The second part of the costing scenario focuses on replacing the volume of material that has been exported from the site in the previous section. The site will require 750,000 m<sup>3</sup> of material (approximately 55,555 loads based on 13.5m<sup>3</sup> per load or 83,333 loads based on 9m<sup>3</sup> per load). Note: the costs outlined below do not included for the testing and review of testing results that will be required to demonstrate the materials are suitable for use as these would be required for both wastes and non-wastes.

The cost of General Fill 'Class 1C Materials was taken from local industry suppliers' price lists in October, 2021, we were unable to get an updated quote in May 2022. The cost of General Fill 'Class 1C Materials is £225/load (20 tonne load).

$$83,333 \text{ loads} \times \text{£}225 \text{ per truck} = \text{£}18,750,000$$

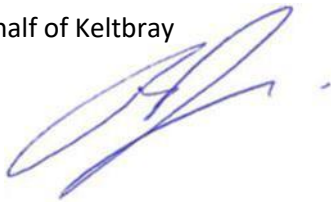
Based on the current understanding of site infrastructure, local roads speaking to local suppliers, Keltbray consider an optimal import programme would be approximately 3 and half years. This assessment is based on achieving an average loading / disposal rate of 100 loads a day. Note: the number of vehicle movements and site arrangements of site logistics should not be underestimated, additional considerations such as the capacity / capabilities of the receiving facilities, weather, vehicle restrictions under planning and availability of local wagons has not been considered at this time.

#### 4. Closing Statement

The cost to manage the materials onsite (i.e. excavate, stockpile, haul and prelims) has been excluded from this assessment as the costs would be incurred irrespective of the mechanism used to manage the materials. Please note that these rates will be highly influence by the site logistics and programme.

I trust that the above is sufficient for now, but should you have any further question or queries, then please do not hesitate to contact me.

On behalf of Keltbray

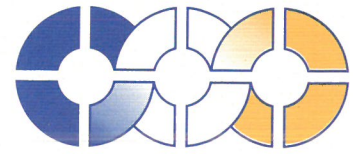


**Tom Simpson**

*Technical Manager*

Mob: 07801 576432

[Email: tom.simpson@keltbray.com](mailto:tom.simpson@keltbray.com)



**FAO: Mr Jason Mound**

RAPLEYS LLP

126 Colmore Row

Birmingham

B3 3AP

20 June 2022

Dear Jason,

**RE: British Sugar, York - WRP Submission**

Below our responses to your questions in red text

*Can you please review the below updated brief and provide a response to support each of the items below for inclusion in the Financial Assessment (previously referred to as the Financial Gain Test). We appreciate your continued support and hope that this next submission will satisfy the EA.*

*The key elements that we need correspondence from yourselves to include are as follows: -*

- *Supporting the principle of receiving materials from brownfield sites as an economic benefit to importing quarried materials. There are huge economic and environmental benefits to receiving materials from brownfield sites as opposed to importing quarried aggregates. Income from disposal of material would pay for the construction of the development platforms. Following the principle of receiving materials from brownfield sites minimises the volumes of materials sent to landfill from brownfield sites and potentially allows the receiving site to create a range of fill materials and secondary recycled aggregates for use in the scheme or sale externally. The economic benefit is significant and you could see savings in the order of £15 to £20 per meter cube. Importantly also complying with the principle of waste minimisation. There are some other intangible benefits regards reducing environmental impacts in respect of transport and quarrying and preserving mineral for future use. There are other social and economic benefits in the form of jobs, education and training that can be derived from such a scheme and utilising local SMEs to deliver the project.*
- *Reference to large infrastructure projects (where possible) or the proximity of potential sites to York that have a need (hypothetically) for imported material. Please be as specific as you can to identify sites that can meet this need/have an ongoing requirement and for what duration. York Central is a development on former railway land to the west of York railway station in York. The 45-hectare (110-acre) site is one of the largest brownfield developments in England. It will deliver 2500 new homes and 900,000 sq ft of commercial and 190,000 sq. ft of retail and leisure space*

- *Can you evidence Mone Bros experience (and a specific project(s)) where these principles have been adopted. A similar system to this has been adopted by Northern Gas Networks. A regulated business they are required to demonstrate capital efficiencies. Historically they backfilled redundant tanks with primary aggregate, now they have contracted Mone Bros to undertake this work on their behalf. We are sourcing excavated materials to infill these tanks providing Northern Gas with an infilled tank at zero cost to themselves.*
- *Reference to the potential scale of the need i.e. the potential to require materials ranging in volume from several thousand to several hundred thousand cubic metres. Given the location of the site, you may need to make the receiving rate more attractive than other local landfill sites. That would assist in attracting the required volumes. 100,000m<sup>3</sup> a year could be achieved comfortably*
- *Recognising that as the receivers of this material you would need to assess it for its suitability for use at the receiver site. We have geotechnical experience in assessing inert, non-hazardous and hazardous waste and providing landfill solutions for our clients. As owners of several landfill and waste transfer stations we have a continuous need for geotechnical assessment*
- *Acknowledging that you would have to apply for and put in place a Deposit for Recovery permit for receipt of the material. We have Environmental and local council permits on all our sites, we are experienced in dealing with the EA and providing information timely so that they can make their decisions. If the EA are receptive to the project the Deposit for Recovery permit will be required before work commences, we can obtain this. We operate ISO 9001 and 14001 and our procedures are tailor-made to manage environmental matters including demonstrating good environmental and sustainability compliance.*
- *Stating your commercial position in agreeing to take materials (whereby you would pay for the loading and transport costs) and the justification for doing so. Obviously, it depends on the commercial arrangement. But we are taking in materials under Cl:Aire (Contaminated Land: Applications in Real Environments) for Northern Gas Networks and using the material to infill their redundant gas holders. It's essentially a cost neutral contract to them, we take the risk on sourcing, testing and verifying the materials providing the plant and equipment to undertake the infilling operation within the programme. NGN get their tanks filled for free, previously they were spending hundreds of thousands paying contractors to fill them in with primary and recycled aggregates.*

*In terms of specific comments on your correspondence dated 06/05/21: -*

- *Disposal Costs from BS York:*
  - o *Can you please provide outline costs/rates for the collection of spoil broken down into excavation, stockpiling, loading and transport from BS York to the following sites:*
    - *BS Newark – 80 miles, 400,000m<sup>3</sup> – assume excavation/stockpile, load/transport all paid by BS*
    - *Notional Site A – 15 miles, 25,000m<sup>3</sup> – assume excavation/stockpile by BS, assume load/transport paid by receiver site*

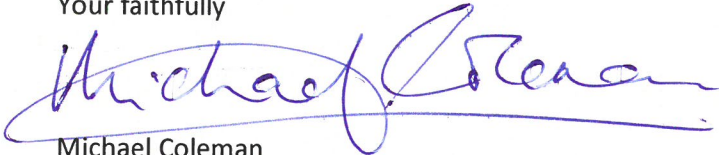
- Notional Site b – 40 miles, 120,000m<sup>3</sup> – assume excavation/stockpile by BS, assume load/transport paid by receiver site
  - Notional Site C – 70 miles, 120,000m<sup>3</sup> – assume excavation/stockpile by BS, assume load/transport paid by receiver site
  - Notional Site D – 75 miles, 81,800m<sup>3</sup> – assume excavation/stockpile by BS, assume load/transport paid by receiver site
- Can you evidence haulage costs for the transport element? Currently the cost of an 8-wheel tipper is £550/day – we have a fleet of our own and we hire in at that rate every day. Articulated trucks are around £750 per day – I have crossed checked this rate.
- Can you please provide advice on the optimum programme for this disposal operation, noting there could be many influencing factors. The disposal programme will depend on the availability of transport and planning restrictions, the spread sheet allows you to manipulate the data. Planning conditions may restrict the number of vehicle movements from the site thus increasing the programme
- Importation of Material to York:
  - Can you provide rates for replacing the volume of material exported from BS York with a mixture of suitable materials, including identify the proposed source of the various materials: - see attached spreadsheet, rates are indicative only and you can alter them.
    - Quality Protocol 6F4 – Assume 20% of total volume – see spreadsheet – assumed recycled aggregate rates
    - Quality Protocol 6F5 – Assume 20% of total volume – see spreadsheet, assumed recycled aggregate rates
    - Quarried Aggregate Type 1C – Assume 40% of total volume – see spreadsheet
    - Free Issue Suitable Materials, eg Clay/Sub Soils – Assume 20% of total volume – see spreadsheet, if these are being tipped you can recover a gate fee.
  - Are you able to provide any commentary/evidence to support of the availability of free issue material? Yes – we had an enquiry today for the disposal of 20,190m<sup>3</sup> of soils form Clifton Ings Barrier Bank, York, YO30 5XF. We've also recently had enquiries to move 10,000m<sup>3</sup> from Lakeside Way, York and 9000m<sup>3</sup> from Full Sutton. As an established local business, we get many enquiries for bulk excavation projects across the region.
  - Can you please include a narrative regarding the conversion factor of 1m<sup>3</sup> = ?? tonnes for each type of proposed fill material? For this particular exercise we kept is very simple 1m<sup>3</sup> = 2 tonnes. Depending on the density of the material it can vary, you can apply a tolerance to the spreadsheet to assess this if necessary
  - Can you please provide advice on the optimum programme for this material import, noting there could be many influencing factors. For now, I would go with 100,000m<sup>3</sup> per annum for the import. That would require 23,529 wagon movements (8-wheel



tippers, in and out of the site) per year, which is almost 100 per day. In terms of volume this equates to just over 2000m3 per week – which should be achievable, subject to planning conditions. We would be happy to work with you to achieve greater productivity, but noise, dust the local environment and general disruption to local residents needs to be considered.

We trust the above is sufficient for your present requirements, but should you require additional information, please don't hesitate to contact me.

Your faithfully

A handwritten signature in blue ink that reads "Michael Coleman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael Coleman  
Managing Director  
Mone Bros Group Ltd

Appendix E

# GLEEDS COST PLAN (INCLUDING IMPORT OF NON-WASTE MATERIAL)



Preliminary Cost Estimate  
*for*

British Sugar - York Project

---

Gleeds Cost Management

NTCM-3763

---

**Date:**

26 July 2022

## Document control

<b>Project name</b>	York Infrastructure Scheme	<b>Project number</b>	NTCM-3763
<b>Date of Issue</b>	26 July 2022		
<b>Reason for issue</b>	WRP & FA Report		

<b>Document author</b>	Matt Perry	<b>Grade</b>	Director
------------------------	------------	--------------	----------

**Signature**



<b>Contributors</b>	Bill Swan
---------------------	-----------

<b>Approved by</b>	Phil Wright	<b>Grade</b>	Director
--------------------	-------------	--------------	----------

**Signature**



<b>Security classification</b>	Confidential
--------------------------------	--------------

<b>Distribution to</b>	-
------------------------	---

<b>Related project documents</b>	-
----------------------------------	---

### Introduction

Gleeds has been appointed to prepare a cost estimate for the ground works and associated works needed to form the development platforms described in the planning approval (ref 14/02798/FULM) for the British Sugar site in York.

To inform our cost estimate we have used the information listed below:

### Earthworks

BS York Site volumes email - issued by CP 30-09-2019 (ARCADIS)

Material Volumes Spreadsheet Nov 19 - issued by CP 18-11-2019 (ARCADIS)

British Sugar York - Cost Plan RFI email - issued by CP 18-11-2019 (ARCADIS)

### Green Infrastructure

British Sugar York - Cost Plan RFI email - issued by GM 19-11-2019 (LDA)

6891\_GI Area Budget Cost Analysis\_High Level - issued by GM (LDA)

MAIN ENTRANCE SOFT LANDSCAPE DESIGN-60531863-BS-LS-004-REV J

AECOM dwg - issued by GM 19-11-2019 (LDA)

CARRIAGEWAY 1 SOFT LANDSCAPE DESIGN 60531863-BS-LS-006-REV E

AECOM dwg - issued by GM 19-11-2019 (LDA)

CARRIAGEWAY 2 SOFT LANDSCAPE DESIGN 60531863-BS-LS-007-REV D

AECOM dwg - issued by GM 19-11-2019 (LDA)

CARRIAGEWAY 3 SOFT LANDSCAPE DESIGN 60531863-BS-LS-008-REV F

AECOM dwg - issued by GM 19-11-2019 (LDA)

LANDSCAPING AROUND TANGERINE FACTORY 60531863-BS-LS-009-REV O

AECOM dwg - issued by GM 19-11-2019 (LDA)

LANDSCAPING FOR BUND AROUND TANGERINE FACTORY 60531863-BS-LS-009-REV O

AECOM dwg - issued by GM 19-11-2019 (LDA)

### Infrastructure

BRS-AUK-XX-XX-CE-0100 - Drainage General Layout Surface Water

ARCADIS dwg - issued by MD 22-11-2019 (ARCADIS)

BRS-AUK-X-XXX-CE-0110 - Drainage General Layout Foul Sewer

ARCADIS dwg - issued by MD 22-11-2019 (ARCADIS)

BRS-AUK-XX-XX-CE-0120 - Manhole & Pipe Schedule Surface Water

ARCADIS dwg - issued by MD 22-11-2019 (ARCADIS)

BRS-AUK-XX-XX-CE-0121 - Manhole & Pipe Schedule Foul Water

ARCADIS dwg - issued by MD 22-11-2019 (ARCADIS)

BRS-AUK-X-XXX-SK-0106 Option 4A Pond With Gabion Walls - No On Plot Storage Provided P2

Carr Drain IL - ARCADIS dwg - issued by MD 22-11-2019 (ARCADIS)

Construction Arisings Estimate ARCADIS document - issued by MD 22-11-2019 (ARCADIS)

RE\_ British Sugar York - Cost Plan RFI email - issued by MD 22-11-2019 (LDA)

BRS-AUK-XX-071-SK-CE-0010 - Proposed Highway Alignment

ARCADIS dwg - issued by MD 22-11-2019 (ARCADIS)

MAIN STREET ALIGNMENT 1 OF 3 17424-41-REV I

David tucker associates dwg - issued by MD 22-11-2019 (ARCADIS)

MAIN STREET ALIGNMENT 3 OF 3 17424-41-REV H

David tucker associates dwg - issued by MD 22-11-2019 (ARCADIS)

RE\_ British Sugar York - Cost Plan RFI email - issued by MD 19-11-2019 (LDA)

### Utilities

17-12-05 Order of CE 4 - Infrastructure Only document - issued by MD 22-11-2019 (ARCADIS)

Our cost estimate is informed by a number of assumptions and there are also a number of exclusions where costs have not been included in the Cost Estimate. These assumptions and exclusions are listed below.

### Assumptions

- 1 The quantities for earthworks and remediation have been calculated and provided by Arcadis
- 2 Grey drop of areas shown on the drawings have been costed as asphalt pavement construction instead of gravel as noted on drawings
- 3 Half bullnose kerbs have been costed where footpaths or landscaping meets asphalt or Yorkstone.
- 4 Pin kerbs costed where footpath does not meet any other surfacing
- 5 Drop kerbs costed where asphalt meets Yorkstone and to crossing areas and edging where footpath meets landscaping
- 6 Feeder pillars costed at both entrances to the development with draw pits to each streetlight
- 7 Multi-purpose service trench has been costed which follows the footpath around the spine road with stubs located at each bellmouth for future statutory services works by others. Costs include draw pits at 100 metre centres within the service trench route.
- 8 Adoption costs and/ or commuted sums included as advised by British Sugar based on the Planning Approval
- 9 Pavements, shared surfaces, and footpaths have been costed based on the specification listed below as provided by Arcadis.
  - Asphalt Carriageways (as per York STD 1.1, with Type 1 sub-base thickness based on Figure 3.2 of IAN 73/06 Rev 1, and CBR Value = 2.5%)
    - Surface Course 45mm
    - Binder Course 55mm
    - Base Course 90mm
    - Type 1 Sub-Base 350mm
    - Capping Layer 200mm
  - Shared Surfaces (as per York STD 1.8, with Type 1 sub-base thickness based on Figure 3.2 of IAN 73/06 Rev 1, and CBR Value = 2.5%)
    - Surface Pavements 80mm
    - Bedding Course 30mm
    - Base Course 90mm
    - Type 1 Sub-Base 350mm
    - Capping Layer 200mm
  - Bituminous Footways (as per York STD 1.2)
    - Surface Course 20mm
    - Binder Course 50mm
    - Type 1 Sub-Base 150mm
- 10 Lean mix concrete costed for grouting up the existing Carr drain
- 11 The Monitoring costs have been included based on costs advised by British Sugar
- 12 Contingency has been included based on a component-by-component allocation to reflect the risk in the various parts of the intended works.
- 13 A figure for Other ABF Costs advised by British Sugar has been included to cover the FMS Option (excluding Indexation) and Tangerine Noise Mitigation Agreement (Including Indexation)

## Preliminary Cost Estimate

- 14 Site Preparation and Remediation and Infrastructure Works have been costed as two separate packages of work. Flood measures are based on the drainage strategy proposals outlined on the drawings and captured within the
- 15 Infrastructure costs  
No allowance has been included in the Cost Estimate for the removal of existing waste. It is assumed that the third-
- 16 party receiver sites will pay for excavation, loading, transporting and any landfill tax and other taxes associated with the excavated materials.  
The rates used for imported material have been priced based on a blend of granular material including placing and
- 17 compacting. The blend of materials assumed is 50% Type 1C and 50% Type 6F4/5 and it is assumed that re-cycled materials would be suitable rather than using quarried material

**Exclusions**

- 18 VAT.
- 19 Land acquisition costs.
- 20 Building and property acquisition costs
- 21 Finance, funding, and interest costs.
- 22 Tender and price inflation beyond the date of this report
- 23 Landfill tax.  
Treatment and removal of contaminated material including invasive species that exceed the allowances included in
- 24 the Cost Estimate.
- 25 Further Section 106 and Commuted Sum costs that exceed the allowances included in the Cost Estimate.  
Section 38/ 278/ 104 and 106 fees, charges and associated bond costs that exceed the allowances included in the
- 26 Cost Estimate.
- 27 Client supervision, maintenance, and management costs beyond contractual defects period.
- 28 Consequences of archaeological investigations.
- 29 Works associated with below ground mine workings, shafts, and cappings.
- 30 Below ground gas and any requirements for gas protection measures.
- 31 Off-site Highway works and Utility reinforcement works.
- 32 Disconnection of existing utilities and services and the provision of fibre optic network installations.
- 33 Ground water monitoring that exceeds the allowance included in the Cost Estimate.
- 34 Ecological works that exceed the allowances included in the Cost Estimate.
- 35 Water and/ or sewage treatment process that exceed the allowances included in the Cost Estimate.
- 36 Water course diversions that exceed the allowances included in the Cost Estimate.
- 37 Works associated with public rights of way.

**General Notes**

This cost estimate reflects prices based on current market costs. Wherever possible, live project data, specialist contractor advice or market tested rates have been used.

The pricing basis of this preliminary budget estimate is current market conditions and should be reviewed at regular intervals of no longer than 3 months.

This preliminary budget estimate has been prepared from the aforementioned information supplied. We strongly advise that once further detailed design is achieved the Cost Estimate should be reviewed and amended to allow the client to have a full financially compliant view of the scheme.

Gleeds' construction cost forecasts are based upon the latest information available from the supply chain. We would, however, note that the construction industry is experiencing unprecedented volatility in costs, supply shortages and increased project durations. Many factors contribute to the disruption, including the COVID-19 pandemic, which restricted production and the subsequent spike in global demand as economies reopened, and Brexit, which has exacerbated labour issues and impacted materials availability. The Russia-Ukraine war is adding further pressure with additional energy price escalation impacting upon the production and pricing of materials and disrupting international trade. Overall, the impact on the construction industry is significant. As such, we highlight that Gleeds' advice is current at the date of issue but, by necessity, is subject to alteration due to ever-changing circumstances and disruptors within the industry.

Projects with potential pitfalls, inappropriate risk transfer and none standard contract conditions may result in tendering opportunities being declined or they may attract a pricing premium.

It is therefore essential that all aspects of the project profile are fully considered by the client and project team in light of this current volatility. This should help ensure that project procurement is appropriate, project documentation is comprehensive and risk is effectively addressed.



## Preliminary Cost Estimate

	Item		Comments
	<b><i>Executive Summary</i></b>		
A	<b><u>Site Preparation / Remediation</u></b>	£ 8,526,000	
B	<b><u>Remediation Monitoring</u></b>	£ 593,000	
C	<b><u>Imported Fill Exercise</u></b>	£ 28,128,000	
D	<b><u>Infrastructure</u></b>	£ 19,674,000	
	<b>Construction Total</b>	<b>£ 56,921,000</b>	
E	<b><u>Provisional Sums</u></b>	£ -	
F	<b><u>Adoption Costs &amp; Commuted Sums</u></b>	£ 2,588,000	As advised by British Sugar
	<b>Works Total</b>	<b>£ 59,509,000</b>	
G	<b><u>Professional Fees</u></b>	£ 1,647,000	As advised by British Sugar
H	<b><u>Other ABF Costs</u></b>	£ 1,355,000	As advised by British Sugar
	<b>Whole Scheme Costs</b>	<b>£ 62,511,000</b>	
	<b><u>Appendix A</u></b>		
I	Excavation & Disposal (Excluded from Cost Plan Total)	£ 18,628,000	
	<i>Contingency</i>	£ 1,863,000	
	<b>Total</b>	<b>£ 20,491,000</b>	

## Preliminary Cost Estimate

	Item		Total	Comments
<b>A</b>	<b><u>Site Preparation / Remediation</u></b>			
<b>A1</b>	<b><u>S200 and S300 : Site Preparation and Fencing</u></b>		£ 500,000	
<b>A2</b>	<b><u>S600 : Earthworks and Remediation</u></b>		£ 5,450,761	
	<b><i>BUILDING WORK ESTIMATE</i></b>		£ 5,950,761	
<b>A3</b>	Main Contractors Preliminaries	25%	£ 1,487,690	
	<b><i>Sub-total</i></b>		£ 7,438,451	
<b>A4</b>	Main Contractors OH&P	5%	£ 371,923	
	<b><i>WORKS COST ESTIMATE</i></b>		£ 7,810,373	
<b>A5</b>	Professional Fees		Excluded	
<b>A6</b>	Surveys and the like		Excluded	
	<b><i>BASE COST ESTIMATE</i></b>		£ 7,810,373	
<b>A7</b>	Design Development		Included	
<b>A8</b>	Construction Risk / Contingency		£ 715,412	
	<b><i>COST LIMIT (Excluding Inflation)</i></b>		£ 8,525,786	
<b>A9</b>	Tender Inflation Estimate		£ -	This Cost Estimate excludes for inflation beyond the date of the issue of this report
	<b><i>COST LIMIT (INCLUDING INFLATION)</i></b>		£ 8,526,000	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
A1	<b><u>S200 and S300 : Site Preparation and Fencing</u></b>					
	<u>202 : (05/01) Existing Trees, Bushes and Hedges</u>					
	<i>Site clearance</i>					
A1.1	Site clearance, trees, vegetation etc	1	Sum		-	Works completed in March 2020, therefore not part of future scope of works
	<u>204 Hazardous Materials</u>					
	Allowance for dewatering ponds/lagoons and pumping out during earthworks operations					
A1.2	General allowance	1	Sum	500,000	500,000	This is an arbitrary allowance pending specific design information becoming available
	<u>303 Temporary Fencing</u>					
	<i>Fencing, Gates and Stiles</i>					
A1.3	Tree protection works as specification	1	Sum		-	Works completed in March 2020, therefore not part of future scope of works
<b>TOTAL TO COLLECTION</b>				£	<b>500,000</b>	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
A2	<b><u>S600 : Earthworks and Remediation</u></b>					
A2.1						This assumes that the entire volume of permitted waste (746,800m3) is re-used under a DfR permit and associated WRP. This material would be placed both inside and outside the current EP boundary. In Figure 3 attached to this email all of the site, apart from the coloured DoWCOP zone would have recovered waste placed across it. So in this scenario the financial test needs to account for the import of 746,800 m3 of material to replace the waste that would otherwise be used.
	<u>602 : Earthworks Generally</u>					
	<i>Excavation</i>					
A2.2	Made Ground within EP Boundary Requiring Excavation Cutting and other excavation; exceeding 6m	-	m <sup>3</sup>	2.00	-	Excluded from cost plan in line with assumption stated above
A2.3	Made Ground Outside Permit Boundary Requiring Excavation Cutting and other excavation; exceeding 6m	298,300	m <sup>3</sup>	2.00	596,600	
	<i>Excavation in Hard Material</i>					
A2.4	Extra over excavation for excavation in Hard Material Structural foundations; Assumed at 5% of Made Ground across Former Factory Area	7,300	m <sup>3</sup>	13.00	94,900	
A2.5	From Subsurface Obstructions (relic foundations / basements etc)	5,100	m <sup>3</sup>	13.00	66,300	
	<i>Processing of Unacceptable Material</i>					
A2.6	Structural foundations; Assumed at 5% of Made Ground across Former Factory Area Crushing for re-use on site; depositing in spoil heaps	7,300	m <sup>3</sup>	20.00	146,000	
A2.7	From Subsurface Obstructions (relic foundations / basements etc) Crushing for re-use on site; depositing in spoil heaps	5,100	m <sup>3</sup>	20.00	102,000	
				carried over	1,005,800	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	1,005,800	
	<i>Deposition of Fill</i>					
A2.8	Made Ground within EP Boundary Requiring Excavation Arising from excavations	-	m <sup>3</sup>		-	Excluded from cost plan in line with assumption stated above
A2.9	<i>Item not used</i>					
A2.10	Excavated material to form plateau's Outside Permit Boundary Arising from excavations	298,300	m <sup>3</sup>	2.50	745,750	
	<i>Disposal of Material</i>					
	Unacceptable material; Non-hazardous					
A2.11	Organic Rich Material	14,900	m <sup>3</sup>		Inc in Risk Register	Potential cost saving to be realised with disposal off site and remediate topsoil and limex instead
A2.12	Existing Topsoil Type Material	16,700	m <sup>3</sup>		Inc in Risk Register	Potential cost saving to be realised with disposal off site and remediate topsoil and limex instead
A2.13	Limex	37,700	m <sup>3</sup>		Inc in Risk Register	Potential cost saving to be realised with disposal off site and remediate topsoil and limex instead
	<i>Compaction of Fill</i>					
A2.14	Compaction of non-remediated material In plateau's	63,631	m <sup>3</sup>	2.50	159,078	
A2.15	Final trim and grade of development platforms' generally	378,332	m <sup>2</sup>	0.25	94,583	
	<u>614 : Cement Stabilisation &amp; 615 : Lime Stabilisation</u>					28.5% of original remedition calculated as still being required. 746,800 m <sup>3</sup> material / 1,045,100m <sup>3</sup> onsite originally = 28.5% still on site to be treated
	<i>Soil Stabilisation with Cement, Soil Stabilisation with Lime</i>					
A2.16	Granular Made Ground Assumed 50% Granular MG Stabilisation with Lime at 1.5 - 2%	63,584	m <sup>3</sup>	8.50	540,460	
				carried over	2,545,670	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,545,670	
A2.17	Cohesive Made Ground Stabilisation with Lime at 3 - 4%	96,729	m <sup>3</sup>	10.50	1,015,655	
A2.18	Organic Rich Material (Deposited within Open Space) Drying on Site then Stabilisation with Lime at 10%	39,131	m <sup>3</sup>	19.50	763,045	
A2.19	Organic Rich Material (Deposited Outside Playing Fields) Drying on Site, Stabilisation with Lime at 10% then Stabilisation with Cement at 3%	22,002	m <sup>3</sup>	40.00	880,080	Potential cost saving to be realised with disposal off site and remediate topsoil and limex instead
A2.20	Lagoon Sediments (Volume After Drying) Drying on Site then Stabilisation with Cement at 3%	6,755	m <sup>3</sup>	20.00	135,090	
A2.21	Historic Lagoon Sediments Stabilisation with Lime at 3 - 4%	3,677	m <sup>3</sup>	10.50	38,603	
	<u>630 Ground Improvement</u>					
A2.22	Aeobic Bioremediation Volume of TPH Impacted Soils	2,280	m <sup>3</sup>	26.00	59,280	
A2.23	Organic Rich Material (ORM) within Historic Pond 7 Area	513	m <sup>3</sup>	26.00	13,338	
<b>TOTAL TO COLLECTION</b>				<b>£</b>	<b>5,450,761</b>	

	Item	Total	Comments
B	<b><u>Remediation Monitoring</u></b>		
	<b><u>S600 : Earthworks</u></b>		
B1	629 : Instrumentation and Monitoring	£ 592,480	
	<b>BUILDING WORK ESTIMATE</b>	£ 592,480	
B2	Main Contractors Preliminaries	N/A	
	<b>Sub-total</b>	£ 592,480	
B3	Main Contractors OH&P	N/A	
	<b>WORKS COST ESTIMATE</b>	£ 592,480	
B4	Professional Fees	N/A	
B5	Surveys and the like	N/A	
	<b>BASE COST ESTIMATE</b>	£ 592,480	
B6	Design Development	Excluded	
B7	Construction Risk / Contingency	Excluded	
	<b>COST LIMIT (Excluding Inflation)</b>	£ 592,480	
B8	Tender Inflation Estimate	£ -	This Cost Estimate excludes for inflation beyond the date of the issue of this report
	<b>COST LIMIT (INCLUDING INFLATION)</b>	£ 593,000	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
B1	<p><b><u>\$600 : Earthworks</u></b></p> <p>629 : Instrumentation and Monitoring</p> <p>The items for monitoring equipment shall include for:</p> <p>(a) installing, commissioning, calibrating and maintaining monitoring equipment in instrument hut or cabinet;</p> <p>(b) installing, commissioning, calibrating and maintaining monitoring equipment in vehicles for the Overseeing Organisation;</p> <p>(c) copies of reports and results and supplying to the Overseeing Organisation;</p> <p>(d) instructing the Overseeing Organisation's staff in the operation and maintenance of the instrumentation;</p> <p>(e) attendance during measurement carried out by the Overseeing Organisation;</p> <p>(f) removing on completion.</p>					
B1.1	Monitoring	1	Sum	592,480.00	592,480	As advised by British Sugar
<b>TOTAL TO COLLECTION</b>				£	<b>592,480</b>	-



	Item		Total	Comments
C	<b><u>Imported Fill Exercise</u></b>			
	<b>602 : Earthworks Generally</b>			
C1	<u>Imported Fill</u>		£ 23,569,008	
	<b>BUILDING WORK ESTIMATE</b>		£ 23,569,008	
C2	Main Contractors Preliminaries		£ 800,000	<i>Import exercise deemed additional works to existing site presence for the scheme already costed as thus would be implemented under existing contractors prelim costs already included for under Remediation and Infrastructure packages. Allowance included for additional Site management due to protracted programme</i>
	<b>Sub-total</b>		£ 24,369,008	
C3	Main Contractors OH&P	5%	£ 1,218,450	
	<b>WORKS COST ESTIMATE</b>		£ 25,587,458	
C4	Professional Fees		N/A	
C5	Surveys and the like		N/A	
	<b>BASE COST ESTIMATE</b>		£ 25,587,458	
C6	Design Development		Included	
C7	Construction Risk / Contingency		£ 2,540,327	
	<b>COST LIMIT (Excluding Inflation)</b>		£ 28,127,785	
C8	Tender Inflation Estimate		£ -	This Cost Estimate excludes for inflation beyond the date of the issue of this report
	<b>COST LIMIT (INCLUDING INFLATION)</b>		£ 28,128,000	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
C1	<b><u>Imported Fill Exercise</u></b>					
	<u>602 : Earthworks Generally</u>					
	<i>Imported Fill</i>					
	Imported Material Type; inclusive of import/place/lay/compact					
C1.1	Type 1C, 6F4, or 6F5 Quality Protocol Aggregates, import cost only, based on 50% Type 1C and 50% 6F4/5, assumed recycled or non-quarried materials	746,800	m <sup>3</sup>	26.56	19,835,008	
C1.2	Place & lay	746,800	m <sup>3</sup>	2.50	1,867,000	
C1.3	Compacting in layers	746,800	m <sup>3</sup>	2.50	1,867,000	
<b>TOTAL TO COLLECTION</b>				£	<b>23,569,008</b>	

## Preliminary Cost Estimate

	Item		Total	Comments
D	<b><u>Infrastructure</u></b>			
D1	<b><u>S500 : Drainage and Service Ducts</u></b>		£ 4,262,322	
D2	<b><u>S600/700/1100/1300 - Spine Road</u></b>		£ 1,594,194	
D3	<b><u>S600/700/1100/1300 - Section 278 Works</u></b>		£ 1,275,364	
D4	<b><u>S2500 - Special Structures</u></b>		£ 887,805	
D5	<b><u>S3000 Landscaping &amp; S1100 Kerbs, Footways and Paved Areas - Main Scheme</u></b>		£ 964,393	
D6	<b><u>S3000 Landscaping &amp; S1100 Kerbs, Footways and Paved Areas - Development Scheme</u></b>		£ 3,269,569	
D7	<b><u>S5000 - Statutory Utilities</u></b>		£ 2,339,631	
	<b>BUILDING WORK ESTIMATE</b>		£ 14,593,277	
D8	Main Contractors Preliminaries		£ 2,829,581	
	<b>Sub-total</b>		£ 17,422,858	
D9	Main Contractors OH&P	5%	£ 871,143	
	<b>WORKS COST ESTIMATE</b>		£ 18,294,001	
D10	Professional Fees		Excluded	
D11	Surveys and the like		Excluded	
	<b>BASE COST ESTIMATE</b>		£ 18,294,001	
D12	Design Development		Included	
D13	Construction Risk / Contingency		£ 1,379,116	
	<b>COST LIMIT (Excluding Inflation)</b>		£ 19,673,117	
D14	Tender Inflation Estimate		£ -	This Cost Estimate excludes for inflation beyond the date of the issue of this report
	<b>COST LIMIT (INCLUDING INFLATION)</b>		<b>£ 19,674,000</b>	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
D1	<p><b><u>Surface Water Drainage Foul Drainage and Attenuation</u></b></p> <p><b><u>\$500 : Drainage and Service Ducts</u></b></p> <p><i><u>Drains and Service Ducts (Excluding Filter Drains, Narrow Filter Drains and Fin Drains)</u></i></p> <p><i><u>Surface Water</u></i></p> <p><i>Drains; inclusive of excavation, bed and surround, pipe and all necessary connecting pieces, all associated trench boxes or suitable working space protection</i></p>					
D1.1	225 mm carrier drain, xxxx; depth to invert n.e. 2 metres; Construction in trench. Ave. depth 1.50 (4.000)	21	m	110.00	2,310	
D1.2	225 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.25 (2.000)	54	m	120.00	6,480	
D1.3	300 mm carrier drain, xxxx; depth to invert n.e. 2 metres; Construction in trench. Ave. depth 1.50 (5.000)	25	m	140.00	3,500	
D1.4	Ave. depth 1.75 (4.001)	23	m	150.00	3,450	
D1.5	300 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.25 (4.002)	41	m	135.00	5,535	
D1.6	Ave. depth 3.25 (2.000)	22	m	150.00	3,300	
D1.7	375 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 3.25 (4.003,4.004,4.005,4.006)	112	m	225.00	25,200	
D1.8	450 mm carrier drain, xxxx; depth to invert n.e. 2 metres; Construction in trench. Ave. depth 1.50 (10.002)	19	m	135.00	2,565	
D1.9	450 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.50 (4.007,4.008,4.009,4,010)	95	m	165.00	15,675	
D1.10	Ave. depth 3.00 (6.002)	31	m	180.00	5,580	
D1.11	525 mm carrier drain, xxxx; depth to invert n.e. 2 metres; Construction in trench. Ave. depth 2.00 (11.006)	13	m	250.00	3,250	
				carried over	76,845	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	76,845	
D1.12	525 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.25 (4.011)	38	m	270.00	10,260	
D1.13	Ave. depth 2.50 (4.012,4.013,4.014,4.015)	89	m	280.00	24,920	
D1.14	600 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 3.00 (1.001)	36	m	360.00	12,960	
D1.15	675 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.25 (3.009,4.019)	47	m	335.00	15,745	
D1.16	Ave. depth 2.50 (4.018)	20	m	340.00	6,800	
D1.17	Ave. depth 3.25 (4.016,4.017)	49	m	360.00	17,640	
D1.18	Ave. depth 3.75 (1.002)	22	m	385.00	8,470	
D1.19	Ave. depth 4.50 (1.003)	45	m	440.00	19,800	
D1.20	750 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.25 (4.020,4.021,4.022)	81	m	360.00	29,160	
D1.21	Ave. depth 2.50 (4.023)	17	m	400.00	6,800	
D1.22	Ave. depth 2.75 (1.011)	47	m	430.00	20,210	
D1.23	Ave. depth 3.00 (1.010,1.012)	40	m	450.00	18,000	
D1.24	Ave. depth 3.25 (1.009,1.013,4.024)	102	m	470.00	47,940	
D1.25	Ave. depth 4.00 (1.008)	44	m	520.00	22,880	
D1.26	750 mm carrier drain, xxxx; depth to invert between 4 - 6 metres; Construction in trench. Ave. depth 4.75 (1.007)	24	m	580.00	13,920	
D1.27	Ave. depth 5.00 (1.004,1.006)	84	m	630.00	52,920	
D1.28	Ave. depth 5.25 (1.005)	21	m	680.00	14,280	
D1.29	900 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.00 (7.015)	28	m	495.00	13,860	
D1.30	Ave. depth 2.25 (7.016)	18	m	545.00	9,810	
D1.31	Ave. depth 2.75 (7.014)	50	m	590.00	29,500	
D1.32	1050 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.25 (1.017,1.018,1.019)	219	m	690.00	151,110	
D1.33	Ave. depth 2.50 (1.020)	61	m	700.00	42,700	
D1.34	Ave. depth 3.00 (1.016)	71	m	765.00	54,315	
D1.35	Ave. depth 4.00 (1.014)	13	m	825.00	10,725	
				carried over	731,570	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	731,570	
D1.36	1050 mm carrier drain, xxxx; depth to invert between 4 - 6 metres; Construction in trench. Ave. depth 4.25 (1.015)	61	m	850.00	51,850	
D1.37	1125 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 2.75 (1.021,1.022)	111	m	740.00	82,140	
D1.38	Ave. depth 3.00 (1.023,1.024)	116	m	770.00	89,320	
D1.39	1200 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench. Ave. depth 3.00 (12.016)	8	m	850.00	6,800	
D1.40	Ave. depth 3.25 (1.022)	90	m	880.00	79,200	
	<i>Chambers and Gullies</i>					
	Chambers; including all benching, bedding and backfill, step irons/landing where necessary, all covers and the like					
	1200mm dia; assume PCC Ring construction					
D1.41	Depths exceeding 1 metre but not exceeding 2 metres	4	Nr	2,100.00	8,400	
D1.42	Depths exceeding 2 metre but not exceeding 3 metres	1	Nr	2,500.00	2,500	
	1350mm dia; assume PCC Ring construction					
D1.43	Depths exceeding 1 metre but not exceeding 2 metres	3	Nr	2,200.00	6,600	
D1.44	Depths exceeding 2 metre but not exceeding 3 metres	8	Nr	2,500.00	20,000	
	1500mm dia; assume PCC Ring construction					
D1.45	Depths exceeding 1 metre but not exceeding 2 metres	2	Nr	2,500.00	5,000	
D1.46	Depths exceeding 2 metre but not exceeding 3 metres	9	Nr	2,750.00	24,750	
D1.47	Depths exceeding 3 metre but not exceeding 4 metres	2	Nr	3,500.00	7,000	
D1.48	Depths exceeding 4 metre but not exceeding 5 metres	1	Nr	5,000.00	5,000	
	1800mm dia; assume PCC Ring construction					
D1.49	Depths exceeding 1 metre but not exceeding 2 metres	1	Nr	4,100.00	4,100	
				carried over	1,124,230	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	1,124,230	
D1.50	Depths exceeding 2 metre but not exceeding 3 metres	9	Nr	4,700.00	42,300	
D1.51	Depths exceeding 3 metre but not exceeding 4 metres	3	Nr	5,000.00	15,000	
D1.52	Depths exceeding 4 metre but not exceeding 5 metres	3	Nr	5,200.00	15,600	
D1.53	Depths exceeding 5 metre but not exceeding 6 metres	2	Nr	5,800.00	11,600	
	1950mm dia; assume PCC Ring construction					
D1.54	Depths exceeding 1 metre but not exceeding 2 metres	1	Nr	3,700.00	3,700	
D1.55	Depths exceeding 2 metre but not exceeding 3 metres	3	Nr	4,100.00	12,300	
D1.56	Depths exceeding 3 metre but not exceeding 4 metres	2	Nr	4,700.00	9,400	
D1.57	Depths exceeding 4 metre but not exceeding 5 metres	1	Nr	5,300.00	5,300	
	2025mm dia; assume PCC Ring construction					
D1.58	Depths exceeding 2 metre but not exceeding 3 metres	4	Nr	6,600.00	26,400	
	2100mm dia; assume PCC Ring construction					
D1.59	Depths exceeding 2 metre but not exceeding 3 metres	3	Nr	7,200.00	21,600	
	<i>Attenuation</i>					
	Hydrobreaks within chambers including all fittings and the like	6	Nr	12,000.00	72,000	Assumption - general allowance made
	Cellular storage					
D1.61	Attenuation 'Stormbloc' System; including tarram wrap and stone surround	3,900	m <sup>3</sup>	350.00	1,365,000	Earthworks and back filled cover measured elsewhere
	<i>Connections</i>					
D1.62	Connection into existing drain allow for breaking into existing network; depth to be confirmed	1	Nr	25,000.00	25,000	Works at Boroughbridge Road
D1.63	allow for breaking into existing network; depth to be confirmed	1	Nr	15,000.00	15,000	Works at Carr Drain
				carried over	2,764,430	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,764,430	
	<u>Foul Water</u>					
	<i>Drains; inclusive of excavation, bed and surround, pipe and all necessary connecting pieces, all associated trench boxes or suitable working space protection</i>					
	150 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench.					
D1.64	Ave. depth 2.50 (4.010,5.003)	134	m	110.00	14,740	
D1.65	Ave. depth 2.75 (4.006,4.007,4.009)	81	m	120.00	9,720	
D1.66	Ave. depth 3.00 (4.008,4.011,4.016,4.017,4.018,5.004)	255	m	130.00	33,150	
D1.67	Ave. depth 3.25 (4.012,4.013,4.014,4.015,4.019,4.020)	188	m	165.00	31,020	
D1.68	Ave. depth 3.50 (6.002)	14	m	190.00	2,660	
D1.69	Ave. depth 3.75 (6.001)	27	m	220.00	5,940	
	150 mm carrier drain, xxxx; depth to invert between 4 - 6 metres; Construction in trench.					
D1.70	Ave. depth 4.00 (7.000)	21	m	275.00	5,775	
D1.71	Ave. depth 4.50 (6.000,7.001)	45	m	330.00	14,850	
	225 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench.					
D1.72	Ave. depth 3.50 (4.021)	48	m	190.00	9,120	
D1.73	Ave. depth 3.75 (4.022)	49	m	215.00	10,535	
D1.74	Ave. depth 4.00 (4.023)	69	m	225.00	15,525	
	300 mm carrier drain, xxxx; depth to invert between 2 - 4 metres; Construction in trench.					
D1.75	Ave. depth 3.75 (4.027,4.028,4.029)	51	m	215.00	10,965	
	300 mm carrier drain, xxxx; depth to invert between 4 - 6 metres; Construction in trench.					
D1.76	Ave. depth 4.25 (4.024)	56	m	275.00	15,400	
D1.77	Ave. depth 4.50 (4.025,4.026)	76	m	325.00	24,700	
	<i>Chambers and Gullies</i>					
	Chambers; including all benching, bedding and backfill, step irons/landing where necessary, all covers and the like					
	1200mm dia; assume PCC Ring construction					
D1.78	Depths exceeding 1 metre but not exceeding 2 metres	11	Nr	2,300.00	25,300	
				carried over	2,993,830	



## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,993,830	
D1.79	Depths exceeding 2 metre but not exceeding 3 metres	16	Nr	2,750.00	44,000	
D1.80	Depths exceeding 3 metre but not exceeding 4 metres	4	Nr	2,900.00	11,600	
D1.81	Depths exceeding 4 metre but not exceeding 5 metres	1	Nr	3,300.00	3,300	
	<i>Connections</i>					
D1.82	Connection into existing drain allow for breaking into existing network; depth to be confirmed	1	Nr	25,000.00	25,000	Works assumed for connection into foul sewer at Pyramid Court
	<b><u>S600 : Earthworks</u></b>					
	<u>602 : Earthworks Generally</u>					
	<i>Excavation</i>					
D1.83	Remediated material to reduced levels for attenuation and SuDs features	9,011	m <sup>3</sup>	5.00	45,053	
D1.84	Remediated material Gabion walling and mattresses	1,944	m <sup>3</sup>	5.00	9,720	
	<i>Deposition of Fill</i>					
D1.85	Remediated material forming bunds	12,995	m <sup>3</sup>	12.00	155,934	
D1.86	Remediated material backfill to drainage	6,119	m <sup>3</sup>	12.00	73,428	
	<i>Completion of Formation and Sub-formation</i>					
D1.87	Completion of formation to attenuation tank	3,425	m <sup>2</sup>	1.00	3,425	
D1.88	Completion of formation to gabion footings	959	m <sup>2</sup>	1.00	959	
	<i>Lining of Watercourses</i>					
D1.89	Lining of new watercourse To inverts	6,173	m <sup>2</sup>	2.00	12,346	
D1.90	To side slopes.	7,675	m <sup>2</sup>	5.00	38,375	
				carried over	3,416,970	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	3,416,970	
	<i>Gabion Walling and Mattresses</i>					
D1.91	Gabion walling Gabion baskets with stone fill	2,048	m <sup>3</sup>	290.00	593,775	
D1.92	E/O the above Concrete footing; assume 1.5mx1m	579	m <sup>3</sup>	220.00	127,380	
D1.93	Formwork	386	m <sup>2</sup>	70.00	27,020	
D1.94	Reinforcement; assume 75kg/m <sup>2</sup>	43	t	1,500.00	65,138	
D1.95	Timber post and rail; assume 1.5m high	712	m	45.00	32,040	
<b>TOTAL TO COLLECTION</b>				£	<b>4,262,322</b>	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
D2	<b><u>S600/700/1100/1300 - Spine Road</u></b>					
	<b><u>S600 : Earthworks</u></b>					
	<u>S601 Excavation</u>					
	<i>Acceptable Material excluding Class 5A</i>					
D2.1	Cutting and other excavation 0-3 metres in depth	5,064	m <sup>3</sup>	5.00	25,319	
	<u>S6033 : Deposition of fill</u>					
	<i>Deposition</i>					
D2.2	Acceptable Material Embankments and other areas of fill; assume 50% deposited on site	2,532	m <sup>3</sup>	12.00	30,383	
	<u>S6038 : Disposal of material</u>					
	<i>Disposal</i>					
D2.3	Acceptable Material excluding Class 5A on site	2,532	m <sup>3</sup>	5.00	12,660	
	<u>S6044 : Imported fill</u>					
	<i>Imported acceptable material</i>					
D2.4	Acceptable Material; Capping layer	1,098	m <sup>3</sup>	26.56	29,158	
	<u>S6051 : Compaction of fill</u>					
	<i>Compaction</i>					
D2.5	Acceptable Material; Capping layer	5,489	m <sup>2</sup>	2.00	10,978	
	<u>S6059 : Geotextiles</u>					
	<i>Geotextile</i>					
D2.6	Type tbc Grade tbc	8,746	m <sup>2</sup>	2.50	21,865	
	<b><u>S700 : Pavement</u></b>					
	<u>S701 : Sub-base</u>					
	<i>Type 1 Sub base</i>					
D2.7	In carriageway, hardshoulder and hardstrip.	2,410	m <sup>3</sup>	45.00	108,437	
				carried over	238,799	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	238,799	
	<u>S708 : Pavement</u>					
	<i>Pavement</i>					
	Base course					
D2.8	Asphalt carriageway; 90mm; In carriageway, hardshoulder and hardstrip.	3,293	m <sup>2</sup>	40.00	131,720	
D2.9	Yellow yorkstone paving; 90mm; In carriageway, hardshoulder and hardstrip.	2,196	m <sup>2</sup>	40.00	87,840	
	Binder Course					
D2.10	Asphalt carriageway; 55mm; In carriageway, hardshoulder and hardstrip.	3,293	m <sup>2</sup>	15.00	49,395	
D2.11	Bituminous footway; 50mm; In carriageway, hardshoulder and hardstrip.	3,257	m <sup>2</sup>	15.00	48,855	
	Bedding Course					
D2.12	Yellow Yorkstone Paving; 30mm; In carriageway, hardshoulder and hardstrip.	2,196	m <sup>2</sup>	7.50	16,470	
	Surface Course					
D2.13	Asphalt carriageway; 45mm; In carriageway, hardshoulder and hardstrip.	3,293	m <sup>2</sup>	15.00	49,395	
	<b><u>S1100 : Kerbs, Footways and Paved areas</u></b>					
	<u>S1103 : Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks and Linear Drainage Channel Systems</u>					
	<i>Kerbs</i>					
D2.14	Half batter-HB2 Straight or curved exceeding 12 metres radius.	1,484	m	35.00	51,940	
D2.15	Pin kerbs Straight or curved exceeding 12 metres radius.	1,261	m	35.00	44,135	
D.2.16	Drop Kerbs Straight or curved exceeding 12 metres radius.	258	m	40.00	10,320	
	<i>Edgings</i>					
D2.17	Edgings Straight or curved exceeding 12 metres radius.	508	m	20.00	10,160	
				carried over	739,029	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	739,029	
	<u>S11020 : Footways and paved areas</u>					
	<i>Footways</i>					
D2.18	Bituminous Footways 20mm; Surface course; Surfaces sloping at 10° or less to the horizontal.	3,257	m <sup>2</sup>	15.00	48,855	
	<i>Paved Areas</i>					
D2.19	Yellow Yorkstone paving Surface stone paviments; 50mm thick on 25mm mortar bedding, Surfaces sloping at 10° or less to the horizontal.	2,196	m <sup>2</sup>	175.00	384,300	
	<b><u>S1200 : Traffic signs and Road Markings</u></b>					
	<u>S12016 : Road markings</u>					
	<i>Road Markings</i>					
D2.20	Intermittent lines; Thermoplastic; 100mm wide; 1500mm long mark and 3000mm long gap	63	m	5.00	315	
D2.21	Solid lines; Thermoplastic; 100mm wide;	304	m	5.00	1,520	
	<b><u>S1300 : Road Lighting Columns</u></b>					
	<u>S1303 : Road lighting columns</u>					
	<i>Road lighting columns and brackets.</i>					
D2.22	Height tbc (assume 8m), generally	27	nr	3,500.00	94,500	
	<u>S1307 : Trench for cable or duct</u>					
	<i>Trench for duct</i>					
D2.23	450mm Trench depth not exceeding 1.5 metres; In carriageways, footways and paved areas	1,393	m	20.00	27,860	
D2.24	650mm Trench depth not exceeding 1.5 metres; In verges and central reserves	883	m	30.00	26,490	
				carried over	1,322,869	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
	<u>S13012 : Cable and Duct</u>			brought forward	1,322,869	
	<i>Duct</i>					
	Assume 150mm					
D2.25	Ducting for Street lighting; 1nr of ducts in trench; In trench depth not exceeding 1.5 metres	1,393	m	55.00	76,615	
	Assume 150mm					
D2.26	Ducting for Multi-purpose trench; 4nr of ducts in trench; In trench depth not exceeding 1.5 metres	883	m	170.00	150,110	
	<u>S13028 : Chambers</u>					
	<i>Chambers</i>					
	Draw pits					
D2.27	Depths not exceeding 1 metre; Lighting	27	nr	600.00	16,200	
D2.28	Depths not exceeding 1 metre; Services	14	nr	600.00	8,400	
D2.29	extra over the above; service stubs to vacant plots	4	nr	5,000.00	20,000	
<b>TOTAL TO COLLECTION</b>				£	<b>1,594,194</b>	-

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
D3	<b><u>S600/700/1100/1300 - Section 278 Works</u></b> <b><u>Boroughbridge Road Connection</u></b> <b><u>S600 : Earthworks</u></b> <u>S601 Excavation</u> <i>Acceptable Material excluding Class 5A</i>					
D3.1	Cutting and other excavation 0-3 metres in depth	2,126	m <sup>3</sup>	5.00	10,632	
D3.2	<u>S6033 : Deposition of fill</u> <i>Deposition</i> Acceptable Material Embankments and other areas of fill; assume 50% deposited on site	1,063	m <sup>3</sup>	12.00	12,758	
D3.3	<u>S6038 : Disposal of material</u> <i>Disposal</i> Acceptable Material excluding Class 5A on site	1,063	m <sup>3</sup>	5.00	5,316	
D3.4	<u>S6044 : Imported fill</u> <i>Imported acceptable material</i> Acceptable Material; Capping layer	481	m <sup>3</sup>	26.56	12,770	
D3.5	<u>S6051 : Compaction of fill</u> <i>Compaction</i> Acceptable Material; Capping layer	2,404	m <sup>2</sup>	2.00	4,808	
D3.6	<u>S6059 : Geotextiles</u> <i>Geotextile</i> Type tbc Grade tbc	3,983	m <sup>2</sup>	2.50	9,958	
				carried over	56,241	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	56,241	
	<b><u>S700 : Pavement</u></b>					
	<u>S701 : Sub-base</u>					
	<i>Type 1 Sub base</i>					
D3.7	In carriageway, hardshoulder and hardstrip.	1,078	m <sup>3</sup>	45.00	48,521	
	<u>S708 : Pavement</u>					
	<i>Pavement</i>					
	Base course					
D3.8	Asphalt carriageway; 90mm; In carriageway, hardshoulder and hardstrip.	2,404	m <sup>2</sup>	40.00	96,160	
	Binder Course					
D3.9	Asphalt carriageway; 55mm; In carriageway, hardshoulder and hardstrip.	2,404	m <sup>2</sup>	15.00	36,060	
D3.10	Bituminous footway; 50mm; In carriageway, hardshoulder and hardstrip.	1,579	m <sup>2</sup>	15.00	23,685	
	Surface Course					
D3.11	Asphalt carriageway; 45mm; In carriageway, hardshoulder and hardstrip.	2,404	m <sup>2</sup>	15.00	36,060	
	<b><u>S1100 : Kerbs, Footways and Paved areas</u></b>					
	<u>S1103 : Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks and Linear Drainage Channel Systems</u>					
	<i>Kerbs</i>					
	Half batter-HB2					
D3.12	Straight or curved exceeding 12 metres radius.	897	m	35.00	31,395	
	Pin kerbs					
D3.13	Straight or curved exceeding 12 metres radius.	503	m	35.00	17,605	
	Drop Kerbs					
D3.14	Straight or curved exceeding 12 metres radius.	14	m	40.00	560	
	<i>Edgings</i>					
	Edgings					
D3.15	Straight or curved exceeding 12 metres radius.	323	m	20.00	6,460	
				carried over	352,747	



## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	352,747	
	<u>S11020 : Footways and paved areas</u>					
	<i>Footways</i>					
D3.16	Bituminous Footways 20mm; Surface course; Surfaces sloping at 10o or less to the horizontal.	1,579	m <sup>2</sup>	15.00	23,685	
	<b><u>S1200 : Traffic signs and Road Markings</u></b>					
	<u>S12016 : Road markings</u>					
	<i>Road Markings</i>					
D3.17	Intermittent lines; Thermoplastic; 100mm wide; 1500mm long mark and 3000mm long gap	189	m	5.00	945	
D3.18	Solid lines; Thermoplastic; 100mm wide;	44	m	5.00	220	
	<b><u>S1300 : Road Lighting Columns</u></b>					
	<u>S1303 : Road lighting columns</u>					
	<i>Road lighting columns and brackets.</i>					
D3.19	Height tbc (assume 8m), generally	22	nr	3,500.00	77,000	
	<u>S1307 : Trench for cable or duct</u>					
	<i>Trench for duct</i>					
D3.20	450mm Trench depth not exceeding 1.5 metres; In carriageways, footways and paved areas	581	m	20.00	11,620	
D3.21	650mm Trench depth not exceeding 1.5 metres; In verges and central reserves	341	m	30.00	10,230	
	<u>S13012 : Cable and Duct</u>					
	<i>Duct</i>					
D3.22	Assume 150mm Ducting for Street lighting; 1nr of ducts in trench; In trench depth not exceeding 1.5 metres	581	m	15.00	8,715	
D3.23	Assume 150mm Ducting for Multi-purpose; 4nr of ducts in trench; In trench depth not exceeding 1.5 metres	341	m	175.00	59,675	
				carried over	544,837	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	544,837	
	<u>S13021 : Feeder Pillars</u>					
	<i>Type of feeder pillar tbc</i>					
D3.24	Supplied by overseeing organisation	1	nr	5,500.00	5,500	
	<u>S13028 : Chambers</u>					
	<i>Chambers</i>					
	Draw pits					
D3.25	Depths not exceeding 1 metre; Lighting	22	nr	600.00	13,200	
D3.26	Depths not exceeding 1 metre; Multi-purpose	4	nr	600.00	2,400	
D3.27	extra over the above; service stubs to vacant plots	1	nr	5,000.00	5,000	
	<b><u>Millfield Lane Connection</u></b>					
	<b><u>S600 : Earthworks</u></b>					
	<u>S601 Excavation</u>					
	<i>Acceptable Material excluding Class 5A</i>					
D3.28	Cutting and other excavation 0-3 metres in depth	2,713	m <sup>3</sup>	5.00	13,567	
	<u>S6033 : Deposition of fill</u>					
	<i>Deposition</i>					
	Acceptable Material					
D3.29	Embankments and other areas of fill; assume 50%	1,357	m <sup>3</sup>	12.00	16,280	
	<u>S6038 : Disposal of material</u>					
	<i>Disposal</i>					
D3.30	Acceptable Material excluding Class 5A on site	1,357	m <sup>3</sup>	5.00	6,783	
	<u>S6044 : Imported fill</u>					
	<i>Imported acceptable material</i>					
D3.31	Capping layer	629	m <sup>3</sup>	26.56	16,701	
				carried over	624,269	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	624,269	
	<u>S6051 : Compaction of fill</u>					
	<i>Compaction</i>					
D3.32	Acceptable Material; Capping layer	3,144	m <sup>2</sup>	2.00	6,288	
	<u>S6059 : Geotextiles</u>					
	<i>Geotextile</i>					
D3.33	Type Grade	3,144	m <sup>2</sup>	2.50	7,860	
	<b><u>S700 : Pavement</u></b>					
	<u>S701 : Sub-base</u>					
	<i>Type 1 Sub base</i>					
D3.34	In carriageway, hardshoulder and hardstrip.	1,363	m <sup>3</sup>	45.00	61,317	
	<u>S708 : Pavement</u>					
	<i>Pavement</i>					
	Base course					
D3.35	Asphalt carriageway; 90mm; In carriageway, hardshoulder and hardstrip.	2,920	m <sup>2</sup>	40.00	116,800	
D3.36	Grey table tops; 90mm; In carriageway, hardshoulder and hardstrip.	224	m <sup>2</sup>	40.00	8,960	
	Binder Course					
D3.37	Asphalt carriageway; 55mm; In carriageway, hardshoulder and hardstrip.	2,920	m <sup>2</sup>	15.00	43,800	
D3.38	Bituminous footway; 50mm; In carriageway, hardshoulder and hardstrip.	1,748	m <sup>2</sup>	15.00	26,220	
	Bedding Course					
D3.39	Grey table tops; 30mm; In carriageway, hardshoulder and hardstrip.	224	m <sup>2</sup>	7.50	1,680	
	Surface Course					
D3.40	Asphalt carriageway; 45mm; In carriageway, hardshoulder and hardstrip.	2,920	m <sup>2</sup>	15.00	43,800	
D3.41	Grey table tops; 80mm; In carriageway, hardshoulder and hardstrip.	224	m <sup>2</sup>	100.00	22,400	
				carried over	963,394	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	963,394	
	<b><u>S1100 : Kerbs, Footways and Paved areas</u></b>					
	<u>S1103 : Kerbs, Channels, Edgings, Combined Drainage and Kerb Blocks and Linear Drainage Channel Systems</u>					
	<i>Kerbs</i>					
D3.42	Half batter-HB2 Straight or curved exceeding 12 metres radius.	925	m	35.00	32,375	
D3.43	Pin kerbs Straight or curved exceeding 12 metres radius.	588	m	35.00	20,580	
D3.44	Drop Kerbs Straight or curved exceeding 12 metres radius.	138	m	40.00	5,520	
	<i>Edgings</i>					
D3.45	Edgings Straight or curved exceeding 12 metres radius.	286	m	20.00	5,720	
	<u>S11020 : Footways and paved areas</u>					
	<i>Footways</i>					
D3.46	Bituminous Footways 20mm; Surface course; Surfaces sloping at 10o or less to the horizontal.	1,748	m <sup>2</sup>	15.00	26,220	
	<i>Paved Areas</i>					
D3.47	Grey Table tops Surface stone pavioours; 80mm; Surfaces sloping at 10o or less to the horizontal.	224	m <sup>2</sup>	100.00	22,400	
	S1200 : Traffic signs and Road Markings					
	<u>S12016 : Road markings</u>					
	<i>Road Markings</i>					
D3.48	Intermittent lines; Thermoplastic; 100mm wide; 1500mm long mark and 3000mm long gap	31	m	5.00	155	
D3.49	Solid lines; Thermoplastic; 100mm wide;	53	m	5.00	265	
				carried over	1,076,629	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	1,076,629	
	<b><u>S1300 : Road Lighting Columns</u></b>					
	<u>S1303 : Road lighting columns</u>					
	<i>Road lighting columns and brackets.</i>					
D3.50	Height tbc (assume 8m), generally	14	nr	3,500.00	49,000	
	<u>S1307 : Trench for cable or duct</u>					
	<i>Trench for duct</i>					
D3.51	450mm Trench depth not exceeding 1.5 metres; In carriageways, footways and paved areas	622	m	20.00	12,440	
D3.52	650mm Trench depth not exceeding 1.5 metres; In carriageways, footways and paved areas	493	m	30.00	14,790	
	<u>S13012 : Cable and Duct</u>					
	<i>Duct</i>					
D3.53	Assume 150mm Ducting for Street lighting; 1nr of ducts in trench; In trench depth not exceeding 1.5 metres	622	m	15.00	9,330	
D3.54	Assume 150mm Ducting for Multi-purpose trench; 4nr of ducts in trench; In trench depth not exceeding 1.5 metres	493	m	175.00	86,275	
	<u>S13021 : Feeder Pillars</u>					
	<i>Type of feeder pillar tbc</i>					
D3.55	Supplied by overseeing organisation	1	nr	5,500.00	5,500	
	<u>S13028 : Chambers</u>					
	<i>Chambers</i>					
D3.56	Draw pits Depths not exceeding 1 metre; Lighting	14	nr	600.00	8,400	
D3.57	Depths not exceeding 1 metre; Multi-purpose	5	nr	600.00	3,000	
D3.58	extra over the above; service stubs to vacant plots	2	nr	5,000.00	10,000	
<b>TOTAL TO COLLECTION</b>				£	<b>1,275,364</b>	-

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
D4	<b><u>S2500 - Special Structures</u></b>					
	<i>Special structure: CARR DRAIN</i>					
	Piped culverts 1800mm diameter concrete pipe; bed and surround; backfilled with arisings Ave. depth 4.50	322	m	1,750.00	563,500	
	<b><u>S600 : Earthworks</u></b>					
	<i>602 : Earthworks Generally</i>					
	<i>Excavation</i>					
D4.2	Remediated material to reduced levels for Carr Drain installation	13,100	m <sup>3</sup>	5.00	65,500	
	<i>Excavation in Hard Material</i>					
	Extra over excavation for excavation in Hard Material					
D4.3	Cutting and other excavation	1,310	m <sup>3</sup>	13.00	17,030	Assumption - general allowance made of 10% excavation
	<i>Deposition of Fill</i>					
	Remediated material In temporary spoil heaps for re-use in Carr Drain works	13,100	m <sup>3</sup>	2.50	32,750	
D4.5	take from spoil heaps and fill above piped culvert	11,550	m <sup>3</sup>	2.50	28,875	
D4.6	forming bunds	1,550	m <sup>3</sup>	12.00	18,600	
	<i>Compaction of Fill</i>					
D4.7	Compaction; Remediated material; in layers fill above piped culvert	11,550	m <sup>3</sup>	1.00	11,550	
	<i>Disused Sewers, Drains, Cables, Ducts, Pipelines and the Like Occurring at Formation or Sub- formation Level; Disused Basements, Cellars and the Like and Gullies</i>					
D4.8	Grouting works allow for lean mix concrete fill to existing Carr drain	750	m <sup>3</sup>	200.00	150,000	
<b>TOTAL TO COLLECTION</b>				<b>£</b>	<b>887,805</b>	<b>-</b>

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
D5	<p><b><u>S3000 Landscaping &amp; S1100 Kerbs, Footways and Paved Areas - Main Scheme</u></b></p> <p><i>Soft Landscaping, Ecology and Open Spaces - Main Scheme</i></p> <p><b>Landscape associated with Primary Road</b></p> <p><u>S3000 Landscaping - Development Scheme</u></p> <p><u>3001 General</u></p> <p><i>Mulching</i></p> <p>50mm deep Surfaces sloping at 10° or less to the horizontal</p>					British Sugar deliverable prior to (or first planting season thereafter) road completion.
D5.1	<p><i>Top soiling</i></p> <p>150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal</p>	7,698	m <sup>2</sup>	4.00	30,792	
D5.2	<p>350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal</p>	6,725	m <sup>2</sup>	6.75	45,394	
D5.3	<p><u>3004 Ground Preparation</u></p> <p><i>Final preparation of soils</i></p> <p>Surfaces sloping at 10° or less to the horizontal</p>	973	m <sup>2</sup>	15.75	15,325	
D5.4	<p><u>3005 Grass Seeding and Wildflower Seeding</u></p> <p><i>Grass seeding.</i></p> <p>Amenity grass seed Surfaces sloping at 10° or less to the horizontal.</p>	6,725	m <sup>2</sup>	3.00	20,175	
D5.5	<p>Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.</p>	5,178	m <sup>2</sup>	0.50	2,589	
D5.6		1,547	m <sup>2</sup>	2.00	3,094	
				carried over	117,369	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	117,369	
	<u>3006 Planting</u>					
	<i>Trees.</i>					
D5.7	Species to be confirmed in detailed design In pits. General allowance for trees	106	Nr	500.00	53,000	
	<i>Shrubs</i>					
D5.8	In beds. 2L pots 6 x m2	973	m <sup>2</sup>	20.00	19,460	Assumption - general allowance made
	<i>Bulbs</i>					
D5.9	Mix of the following as per AECOM 60531863_BS_LS_009 :-  Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas. Surfaces sloping at 10° or less to the horizontal.	999	m <sup>2</sup>	1.75	1,748	
	<b>Landscape associated with Tangerine Bund</b>					British Sugar in first planting season following remediation verification report.
	<u>S3000 Landscaping - Development Scheme</u>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D5.10	50mm deep Surfaces sloping at 10° or less to the horizontal	5,333	m <sup>2</sup>	4.00	21,332	
				carried over	212,909	



Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	212,909	
D5.11	<p><i>Top soiling</i></p> <p>150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal</p> <p><u>3004 Ground Preparation</u></p> <p><i>Final preparation of soils</i></p>	5,333	m <sup>2</sup>	6.75	35,998	
D5.12	<p>Surfaces sloping at 10° or less to the horizontal</p> <p><u>3005 Grass Seeding &amp; Wildflower Seeding</u></p> <p><i>Grass seeding.</i></p>	5,333	m <sup>2</sup>	3.00	15,999	
D5.13	<p>Amenity grass seed Surfaces sloping at 10° or less to the horizontal.</p>	276	m <sup>2</sup>	0.50	138	
D5.14	<p>Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.</p> <p><u>3006 Planting</u></p> <p><i>Trees.</i></p> <p>In grassed areas; Rootballed; including 1m<sup>3</sup> mulching</p>	5,057	m <sup>2</sup>	2.00	10,114	
D5.15	Acer campestre Field Maple; 8-10cm girth, 2.5-3m height	9	Nr	500.00	4,500	
D5.16	Acer cappadocicum 'Rubrum' Red Cappadocian; 8-10cm girth, 2.5-3m height	11	Nr	500.00	5,500	
D5.17	Amelanchiar lamarckii Juneberry; 8-10cm girth, 2.5-3m height	4	Nr	500.00	2,000	
D5.18	Betula pendula Common Silver Birch; 8-10cm girth, 2.5-3m height	14	Nr	450.00	6,300	
D5.19	Liquidambar styraciflua Sweet Gum; 8-10cm girth, 2.5-3m height	3	Nr	500.00	1,500	
D5.20	Pinus sylvestris Scotts Pine; 8-10cm girth, 2.5-3m height	6	Nr	500.00	3,000	
D5.21	Prunus avium Wild Cherry; 10-12cm girth, 3-3.5m height	6	Nr	550.00	3,300	
D5.22	Quercus robur Common Oak; 8-10cm girth, 2.5-3m height	8	Nr	550.00	4,400	
				carried over	305,658	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	305,658	
D5.23	Quercus robur Red Oak; 10-12cm girth, 3-3.5m height	4	Nr	550.00	2,200	
D5.24	Tilia cordata 'Greenspire' Lime; 10-12cm girth, 3-3.5m height	7	Nr	550.00	3,850	
D5.25	Quercus robur Common Oak; 8-12cm girth, 2.5-3m height	8	Nr	600.00	4,800	
	<i>Bulbs</i>					
	Mix of the following as per AECOM 60531863_BS_LS_009 :-					
	Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas.					
D5.26	Surfaces sloping at 10° or less to the horizontal.	710	m <sup>2</sup>	1.75	1,243	
	<u>306 (05/01) Permanent Fencing</u>					
	<i>Fencing, Gates and Stiles</i>					
	<i>Tangerine Perimeter Treatment</i>					
D5.27	Acoustic fence, 3m high, adjacent to Tangerine Factory boundary	478	m	400	191,200	
D5.28	Allowance for pest mitigation measures and monitoring in association with the Tangerine Factory	1	Item	25,000	25,000	
D5.29	Allowance for rodent barrier to 3 sides of Tangerine site, 1.2m x 3m x 3mm galvanised sheets	478	m	40	19,120	
D5.30	Low maintenance treatment to rear of acoustic fence: Geocell and gravel laid on membrane	6,012	m <sup>2</sup>	30	180,360	
D5.31	600mm x 600mm PCC slabs; laid on sand:cement blinding layer	308	m <sup>2</sup>	60.00	18,480	
				carried over	751,910	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	751,910	
	<b>Boundary Planting (Plantation Drive)</b>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D5.32	50mm deep Surfaces sloping at 10° or less to the horizontal	1,818	m <sup>2</sup>	4.00	7,272	
	<i>Top soiling</i>					
D5.33	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	2,321	m <sup>2</sup>	6.75	15,663	
D5.34	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	410	m <sup>2</sup>	15.75	6,450	
D5.35	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	180	m <sup>2</sup>	15.75	2,835	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D5.36	Surfaces sloping at 10° or less to the horizontal	2,730	m <sup>2</sup>	3.00	8,190	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D5.37	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	1,092	m <sup>2</sup>	0.50	546	Assumption - general allowance made
D5.38	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	819	m <sup>2</sup>	2.00	1,638	Assumption - general allowance made
				carried over	794,504	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	794,504	
D5.39	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.	410	m <sup>2</sup>	3.00	1,229	Assumption - general allowance made
	<u>3006 Planting</u>					
	<i>Trees.</i>					
D5.40	Species to be confirmed in detailed design In pits. General allowance for trees	100	Nr	500.00	50,000	Assumption - general allowance made
	<i>Hedges</i>					
D5.41	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.	300	m	40.00	12,000	Assumption - general allowance made
	<i>Shrubs</i>					
D5.42	In beds. 2L pots 6 x m2	410	m <sup>2</sup>	20.00	8,190	Assumption - general allowance made
	<i>Bulbs</i>					
	Mix of the following as per AECOM 60531863_BS_LS_009 :-					
D5.43	Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas. Surfaces sloping at 10° or less to the horizontal.	164	m <sup>2</sup>	1.75	287	Assumption - general allowance made
				carried over	866,209	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	866,209	
	<b>Boundary Planting (Millfield Lane)</b>					British Sugar prior to (or first planting season thereafter) remediation / earthworks completion.
	<u>3001 General</u>					
	<i>Mulching</i>					
D5.44	50mm deep Surfaces sloping at 10° or less to the horizontal	497	m <sup>2</sup>	4.00	1,987	
	<i>Top soiling</i>					
D5.45	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	619	m <sup>2</sup>	6.75	4,177	
D5.46	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	109	m <sup>2</sup>	15.75	1,720	
D5.47	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	60	m <sup>2</sup>	15.75	945	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D5.48	Surfaces sloping at 10° or less to the horizontal	728	m <sup>2</sup>	3.00	2,184	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D5.49	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	291	m <sup>2</sup>	0.50	146	Assumption - general allowance made
D5.50	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	218	m <sup>2</sup>	2.00	437	Assumption - general allowance made
				carried over	877,805	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	877,805	
D5.51	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.  <u>3006 Planting</u>  <i>Trees.</i>  Species to be confirmed in detailed design In pits.	109	m <sup>2</sup>	3.00	328	Assumption - general allowance made
D5.52	General allowance for trees  <i>Hedges</i>	10	Nr	500.00	5,000	Assumption - general allowance made
D5.53	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.  <i>Shrubs</i>	100	m	40.00	4,000	Assumption - general allowance made
D5.54	In beds. 2L pots 6 x m2  <i>Bulbs</i>	109	m <sup>2</sup>	20.00	2,184	Assumption - general allowance made
D5.55	Mix of the following as per AECOM 60531863_BS_LS_009 :-  Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas. Surfaces sloping at 10° or less to the horizontal.	44	m <sup>2</sup>	1.75	76	Assumption - general allowance made
D5.56	<b>General Sitewide Allowances</b>  Signage/wayfinding	1	Sum	75,000.00	75,000	
<b>TOTAL TO COLLECTION</b>				<b>£</b>	<b>964,393</b>	<b>-</b>

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
D6	<b><u>S3000 Landscaping &amp; S1100 Kerbs, Footways and Paved Areas - Development Scheme</u></b>					
	<i>Soft Landscaping, Ecology and Open Spaces - Development Scheme</i>					
	<b>Village Green</b>					British Sugar prior to occupation of the first dwelling.
	<i>S3000 Landscaping - Development Scheme</i>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D6.1	50mm deep Surfaces sloping at 10° or less to the horizontal	4,279	m <sup>2</sup>	4.00	17,117	
	<i>Top soiling</i>					
D6.2	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	5,807	m <sup>2</sup>	6.75	39,199	
D6.3	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	1,025	m <sup>2</sup>	15.75	16,141	
D6.4	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	180	m <sup>2</sup>	15.75	2,835	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D6.5	Surfaces sloping at 10° or less to the horizontal	6,832	m <sup>2</sup>	3.00	20,496	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D6.6	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	2,733	m <sup>2</sup>	0.50	1,366	Assumption - general allowance made
				carried over	97,153	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	97,153	
D6.7	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	2,050	m <sup>2</sup>	2.00	4,099	Assumption - general allowance made
D6.8	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.	1,025	m <sup>2</sup>	3.00	3,074	Assumption - general allowance made
	<u>3006 Planting</u>					
	<i>Trees.</i>					
	In grassed areas; Rootballed; including 1m <sup>3</sup> mulching					
D6.9	Acer campestre Field Maple; 20-25cm girth, 2.5-3m height	4	Nr	500.00	2,000	Assumption - general allowance made
D6.10	Acer cappadocicum 'Rubrum' Red Cappadocian; 20-25cm girth, 2.5-3m height	4	Nr	500.00	2,000	Assumption - general allowance made
D6.11	Amelanchiar lamarckii Juneberry; 20-25cm girth, 2.5-3m height	4	Nr	500.00	2,000	Assumption - general allowance made
D6.12	Betula pendula Common Silver Birch; 20-25cm girth, 2.5-3m height	4	Nr	450.00	1,800	Assumption - general allowance made
D6.13	Liquidambar styraciflua Sweet Gum; 20-25cm girth, 2.5-3m height	4	Nr	500.00	2,000	Assumption - general allowance made
D6.14	Pinus sylvestris Scotts Pine; 20-25cm girth, 2.5-3m height	4	Nr	500.00	2,000	Assumption - general allowance made
D6.15	Prunus avium Wild Cherry; 25-30cm girth, 3-3.5m height	4	Nr	550.00	2,200	Assumption - general allowance made
D6.16	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height	4	Nr	550.00	2,200	Assumption - general allowance made
D6.17	Quercus robur Red Oak; 25-30cm girth, 3-3.5m height	4	Nr	550.00	2,200	Assumption - general allowance made
D6.18	Tilia cordata 'Greenspire' Lime; 25-30cm girth, 3-3.5m height	4	Nr	550.00	2,200	Assumption - general allowance made
D6.19	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height		Nr	600.00	-	
	<i>Trees.</i>					
	Species to be confirmed in detailed design In pits.					
D6.20	General allowance for trees	20	Nr	1,500.00	30,000	Assumption - general allowance made
	<i>Hedges</i>					
D6.21	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.	300	m	40.00	12,000	Assumption - general allowance made
				carried over	166,927	



## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	166,927	
D6.22	<p><i>Shrubs</i></p> <p>In beds. 2L pots 6 x m2</p>	1,025	m <sup>2</sup>	20.00	20,496	Assumption - general allowance made
D6.23	<p><i>Bulbs</i></p> <p>Mix of the following as per AECOM 60531863_BS_LS_009 :-</p> <p>Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas. Surfaces sloping at 10° or less to the horizontal.</p>	1,025	m <sup>2</sup>	1.75	20,496	Assumption - general allowance made
D6.24	<p><u>\$1100 Kerbs, Footways and Paved Areas - Development Scheme</u></p> <p>Natural stone flag paving to footpath/plaza &amp; edging</p>	900	m <sup>2</sup>	175.00	157,500	
D6.25	Bituminous Footways (as per York STD 1.2)	250	m <sup>2</sup>	75.00	18,750	
				carried over	384,169	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	384,169	
	<b>Community Park</b>					British Sugar prior to occupation of the first dwelling.
	<u>S3000 Landscaping - Development Scheme</u>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D6.26	50mm deep Surfaces sloping at 10° or less to the horizontal	1,057	m <sup>2</sup>	4.00	4,229	
	<i>Top soiling</i>					
D6.27	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	8,386	m <sup>2</sup>	6.75	56,607	
D6.28	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	152	m <sup>2</sup>	15.75	2,391	
D6.29	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	450	m <sup>2</sup>	15.75	7,088	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D6.30	Surfaces sloping at 10° or less to the horizontal	1,012	m <sup>2</sup>	3.00	3,036	
	<i>Final preparation of soils for sports pitches</i>					
D6.31	Surfaces sloping at 10° or less to the horizontal	7,526	m <sup>2</sup>	3.00	22,578	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D6.32	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	7,931	m <sup>2</sup>	0.50	3,965	Assumption - general allowance made
				carried over	484,062	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	484,062	
D6.33	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	304	m <sup>2</sup>	2.00	607	Assumption - general allowance made
D6.34	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.	152	m <sup>2</sup>	3.00	455	Assumption - general allowance made
	<u>3006 Planting</u>					
	<i>Trees.</i>					
	In grassed areas; Rootballed; including 1m <sup>3</sup> mulching					
D6.35	Acer campestre Field Maple; 20-25cm girth, 2.5-3m height	10	Nr	500.00	5,000	Assumption - general allowance made
D6.36	Acer cappadocicum 'Rubrum' Red Cappadocian; 20-25cm girth, 2.5-3m height	10	Nr	500.00	5,000	Assumption - general allowance made
D6.37	Amelanchiar lamarckii Juneberry; 20-25cm girth, 2.5-3m height	10	Nr	500.00	5,000	Assumption - general allowance made
D6.38	Betula pendula Common Silver Birch; 20-25cm girth, 2.5-3m height	10	Nr	450.00	4,500	Assumption - general allowance made
D6.39	Liquidambar styraciflua Sweet Gum; 20-25cm girth, 2.5-3m height	10	Nr	500.00	5,000	Assumption - general allowance made
D6.40	Pinus sylvestris Scotts Pine; 20-25cm girth, 2.5-3m height	10	Nr	500.00	5,000	Assumption - general allowance made
D6.41	Prunus avium Wild Cherry; 25-30cm girth, 3-3.5m height	10	Nr	550.00	5,500	Assumption - general allowance made
D6.42	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height	10	Nr	550.00	5,500	Assumption - general allowance made
D6.43	Quercus robur Red Oak; 25-30cm girth, 3-3.5m height	10	Nr	550.00	5,500	Assumption - general allowance made
D6.44	Tilia cordata 'Greenspire' Lime; 25-30cm girth, 3-3.5m height	10	Nr	550.00	5,500	Assumption - general allowance made
D6.45	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height		Nr	600.00	-	
	<i>Hedges</i>					
D6.46	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.	750	m	40.00	30,000	Assumption - general allowance made
	<i>Shrubs</i>					
	In beds.					
D6.47	2L pots 6 x m2	152	m <sup>2</sup>	20.00	3,036	Assumption - general allowance made
				carried over	569,661	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	569,661	
	<i>Bulbs</i>					
	Mix of the following as per AECOM 60531863_BS_LS_009 :-					
	Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas.					
D6.48	Surfaces sloping at 10° or less to the horizontal.	152	m <sup>2</sup>	1.75	266	Assumption - general allowance made
	<u>S1100 Kerbs, Footways and Paved Areas - Development Scheme</u>					
D6.49	Natural stone flag paving to footpath/plaza & edging	1,500	m <sup>2</sup>	175.00	262,500	
D6.50	Bituminous Footways (as per York STD 1.2)	2,000	m <sup>2</sup>	75.00	150,000	
				carried over	982,427	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	982,427	
	<b>Network Rail Boundary (from community park east)</b>					British Sugar prior to occupation of the first dwelling.
	<u>S3000 Landscaping - Development Scheme</u>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D6.51	50mm deep Surfaces sloping at 10° or less to the horizontal	18,158	m <sup>2</sup>	4.00	72,634	
	<i>Top soiling</i>					
D6.52	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	25,299	m <sup>2</sup>	6.75	170,771	
D6.53	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	4,465	m <sup>2</sup>	15.75	70,317	
D6.54	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	300	m <sup>2</sup>	15.75	4,725	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D6.55	Surfaces sloping at 10° or less to the horizontal	29,764	m <sup>2</sup>	3.00	89,292	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D6.56	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	11,906	m <sup>2</sup>	0.50	5,953	Assumption - general allowance made
D6.57	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	8,929	m <sup>2</sup>	2.00	17,858	Assumption - general allowance made
D6.58	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.	4,465	m <sup>2</sup>	3.00	13,394	Assumption - general allowance made
				carried over	1,427,371	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	1,427,371	
	<u>3006 Planting</u>					
	<i>Trees.</i>					
	In grassed areas; Rootballed; including 1m <sup>3</sup> mulching					
D6.59	Acer campestre Field Maple; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.60	Acer cappadocicum 'Rubrum' Red Cappadocian; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.61	Amelanchiar lamarckii Juneberry; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.62	Betula pendula Common Silver Birch; 20-25cm girth, 2.5-3m height	2	Nr	450.00	900	Assumption - general allowance made
D6.63	Liquidambar styraciflua Sweet Gum; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.64	Pinus sylvestris Scotts Pine; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.65	Prunus avium Wild Cherry; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.66	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.67	Quercus robur Red Oak; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.68	Tilia cordata 'Greenspire' Lime; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.69	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height		Nr	600.00	-	
	<i>Hedges</i>					
D6.70	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.	500	m	40.00	20,000	Assumption - general allowance made
	<i>Shrubs</i>					
	In beds.					
D6.71	2L pots 6 x m2	4,465	m <sup>2</sup>	20.00	89,292	Assumption - general allowance made
				carried over	1,546,963	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	1,546,963	
	<i>Bulbs</i>					
	Mix of the following as per AECOM 60531863_BS_LS_009 :-					
	Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas.					
D6.72	Surfaces sloping at 10° or less to the horizontal.	4,465	m <sup>2</sup>	1.75	7,813	Assumption - general allowance made
	<u>S1100 Kerbs, Footways and Paved Areas - Development Scheme</u>					
D6.73	PCC block paving to footpath & edging	500	m <sup>2</sup>	85.00	42,500	
D6.74	Bituminous Footways (as per York STD 1.2)	1,500	m <sup>2</sup>	75.00	112,500	
D6.75	Timber boardwalk to SuDS	600	m <sup>2</sup>	175.00	105,000	
				carried over	1,814,776	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	1,814,776	
	<b>Network Rail Boundary (from community park west)</b>					British Sugar prior to occupation of adjacent housing areas.
	<u>S3000 Landscaping - Development Scheme</u>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D6.76	50mm deep Surfaces sloping at 10° or less to the horizontal	5,689	m <sup>2</sup>	4.00	22,757	
	<i>Top soiling</i>					
D6.77	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	7,847	m <sup>2</sup>	6.75	52,969	
D6.78	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	1,385	m <sup>2</sup>	15.75	21,811	
D6.79	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	150	m <sup>2</sup>	15.75	2,363	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D6.80	Surfaces sloping at 10° or less to the horizontal	9,232	m <sup>2</sup>	3.00	27,696	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D6.81	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	3,693	m <sup>2</sup>	0.50	1,846	Assumption - general allowance made
D6.82	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	2,770	m <sup>2</sup>	2.00	5,539	Assumption - general allowance made
D6.83	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.	1,385	m <sup>2</sup>	3.00	4,154	Assumption - general allowance made
				carried over	1,953,910	



## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	1,953,910	
	<u>3006 Planting</u>					
	<i>Trees.</i>					
	In grassed areas; Rootballed; including 1m <sup>3</sup> mulching					
D6.84	Acer campestre Field Maple; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.85	Acer cappadocicum 'Rubrum' Red Cappadocian; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.86	Amelanchiar lamarckii Juneberry; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.87	Betula pendula Common Silver Birch; 20-25cm girth, 2.5-3m height	2	Nr	450.00	900	Assumption - general allowance made
D6.88	Liquidambar styraciflua Sweet Gum; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.89	Pinus sylvestris Scotts Pine; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.90	Prunus avium Wild Cherry; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.91	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.92	Quercus robur Red Oak; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.93	Tilia cordata 'Greenspire' Lime; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.94	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height		Nr	600.00	-	
	<i>Hedges</i>					
D6.95	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.	250	m	40.00	10,000	Assumption - general allowance made
	<i>Shrubs</i>					
D6.96	In beds. 2L pots 6 x m2	1,385	m <sup>2</sup>	20.00	27,696	Assumption - general allowance made
				carried over	2,001,906	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,001,906	
	<i>Bulbs</i>					
	Mix of the following as per AECOM 60531863_BS_LS_009 :-					
	Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas.					
D6.97	Surfaces sloping at 10° or less to the horizontal.	1,385	m <sup>2</sup>	1.75	2,423	Assumption - general allowance made
	<u>S1100 Kerbs, Footways and Paved Areas - Development Scheme</u>					
D6.98	Bituminous Footways (as per York STD 1.2)	1,500	m <sup>2</sup>	75.00	112,500	
				carried over	2,116,830	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,116,830	
	<b>Carr Drain</b>					British Sugar prior to occupation of the first dwelling.
	<u>S3000 Landscaping - Development Scheme</u>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D6.99	50mm deep Surfaces sloping at 10° or less to the horizontal	6,824	m <sup>2</sup>	4.00	27,295	
	<i>Top soiling</i>					
D6.100	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	9,455	m <sup>2</sup>	6.75	63,818	
D6.101	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	1,668	m <sup>2</sup>	15.75	26,278	
D6.102	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	150	m <sup>2</sup>	15.75	2,363	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D6.103	Surfaces sloping at 10° or less to the horizontal	11,123	m <sup>2</sup>	3.00	33,369	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D6.104	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	4,449	m <sup>2</sup>	0.50	2,225	Assumption - general allowance made
D6.105	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	3,337	m <sup>2</sup>	2.00	6,674	Assumption - general allowance made
D6.106	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.	1,668	m <sup>2</sup>	3.00	5,005	Assumption - general allowance made
				carried over	2,283,856	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,283,856	
	<u>3006 Planting</u>					
	<i>Trees.</i>					
	In grassed areas; Rootballed; including 1m <sup>3</sup> mulching					
D6.107	Acer campestre Field Maple; 20-25cm girth, 2.5-3m height	1	Nr	500.00	500	Assumption - general allowance made
D6.108	Acer cappadocicum 'Rubrum' Red Cappadocian; 20-25cm girth, 2.5-3m height	1	Nr	500.00	500	Assumption - general allowance made
D6.109	Amelanchiar lamarckii Juneberry; 20-25cm girth, 2.5-3m height	1	Nr	500.00	500	Assumption - general allowance made
D6.110	Betula pendula Common Silver Birch; 20-25cm girth, 2.5-3m height	1	Nr	450.00	450	Assumption - general allowance made
D6.111	Liquidambar styraciflua Sweet Gum; 20-25cm girth, 2.5-3m height	1	Nr	500.00	500	Assumption - general allowance made
D6.112	Pinus sylvestris Scotts Pine; 20-25cm girth, 2.5-3m height	1	Nr	500.00	500	Assumption - general allowance made
D6.113	Prunus avium Wild Cherry; 25-30cm girth, 3-3.5m height	1	Nr	550.00	550	Assumption - general allowance made
D6.114	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height	1	Nr	550.00	550	Assumption - general allowance made
D6.115	Quercus robur Red Oak; 25-30cm girth, 3-3.5m height	1	Nr	550.00	550	Assumption - general allowance made
D6.116	Tilia cordata 'Greenspire' Lime; 25-30cm girth, 3-3.5m height	1	Nr	550.00	550	Assumption - general allowance made
D6.117	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height		Nr	600.00	-	
	<i>Hedges</i>					
D6.118	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.	250	m	40.00	10,000	Assumption - general allowance made
	<i>Shrubs</i>					
	In beds.					
D6.119	2L pots 6 x m2	1,668	m <sup>2</sup>	20.00	33,369	Assumption - general allowance made
				carried over	2,332,375	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,332,375	
	<i>Bulbs</i>					
	Mix of the following as per AECOM 60531863_BS_LS_009 :-					
	Galanthus nivalis Common Snowdrop					
	Leucojum vernum Spring Snowflake					
	Narcissus 'Ice Follies' Daffodil 'Ice Follies'					
	Narcissus pseudonarcissus Wild Daffodil					
	Narcissus 'Red Devon' Daffodil 'Red Devon'					
	Tulipa 'Couleur Cardinal' Triumph Tulip					
	In grassed areas.					
D6.120	Surfaces sloping at 10° or less to the horizontal.	1,668	m <sup>2</sup>	1.75	2,920	Assumption - general allowance made
	<u>S1100 Kerbs, Footways and Paved Areas - Development Scheme</u>					
D6.121	PCC block paving to footpath & edging	500	m <sup>2</sup>	85.00	42,500	
D6.122	Bituminous Footways (as per York STD 1.2)	1,500	m <sup>2</sup>	75.00	112,500	
				carried over	2,490,295	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,490,295	
	<b>GI Corridor (Community Park to Plantation Drive inc 1no pocket park)</b>					British Sugar prior to occupation of the first dwelling.
	<u>S3000 Landscaping - Development Scheme</u>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D6.123	50mm deep Surfaces sloping at 10° or less to the horizontal	1,550	m <sup>2</sup>	4.00	6,202	
	<i>Top soiling</i>					
D6.124	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	1,941	m <sup>2</sup>	6.75	13,104	
D6.125	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	343	m <sup>2</sup>	15.75	5,396	
D6.126	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	180	m <sup>2</sup>	15.75	2,835	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D6.127	Surfaces sloping at 10° or less to the horizontal	2,284	m <sup>2</sup>	3.00	6,852	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D6.128	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	914	m <sup>2</sup>	0.50	457	Assumption - general allowance made
D6.129	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	685	m <sup>2</sup>	2.00	1,370	Assumption - general allowance made
D6.130	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.	343	m <sup>2</sup>	3.00	1,028	Assumption - general allowance made
				carried over	2,527,539	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,527,539	
	<u>3006 Planting</u>					
	<i>Trees.</i>					
	In grassed areas; Rootballed; including 1m <sup>3</sup> mulching					
D6.131	Acer campestre Field Maple; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.132	Acer cappadocicum 'Rubrum' Red Cappadocian; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.133	Amelanchiar lamarckii Juneberry; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.134	Betula pendula Common Silver Birch; 20-25cm girth, 2.5-3m height	2	Nr	450.00	900	Assumption - general allowance made
D6.135	Liquidambar styraciflua Sweet Gum; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.136	Pinus sylvestris Scotts Pine; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.137	Prunus avium Wild Cherry; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.138	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.139	Quercus robur Red Oak; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.140	Tilia cordata 'Greenspire' Lime; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.141	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height		Nr	600.00	-	
	<i>Hedges</i>					
D6.142	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.	300	m	40.00	12,000	Assumption - general allowance made
	<i>Shrubs</i>					
	In beds.					
D6.143	2L pots 6 x m2	343	m <sup>2</sup>	5.00	1,713	Assumption - general allowance made
				carried over	2,551,552	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,551,552	
	<i>Bulbs</i>					
	Mix of the following as per AECOM 60531863_BS_LS_009 :-					
	Galanthus nivalis Common Snowdrop					
	Leucojum vernum Spring Snowflake					
	Narcissus 'Ice Follies' Daffodil 'Ice Follies'					
	Narcissus pseudonarcissus Wild Daffodil					
	Narcissus 'Red Devon' Daffodil 'Red Devon'					
	Tulipa 'Couleur Cardinal' Triumph Tulip					
	In grassed areas.					
D6.144	Surfaces sloping at 10° or less to the horizontal.	343	m <sup>2</sup>	1.75	600	Assumption - general allowance made
	<u>S1100 Kerbs, Footways and Paved Areas - Development Scheme</u>					
D6.145	PCC block paving to footpath & edging	300	m <sup>2</sup>	85.00	25,500	
D6.146	Bituminous Footways (as per York STD 1.2)	1,400	m <sup>2</sup>	75.00	105,000	
				carried over	2,682,652	



## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,682,652	
	<b>GI Corridors (inc LEAP play areas &amp; 1no pocket park)</b>					By developers through reserved matters.
	<u>S3000 Landscaping - Development Scheme</u>					
	<u>3001 General</u>					
	<i>Mulching</i>					
D6.147	50mm deep Surfaces sloping at 10° or less to the horizontal	5,104	m <sup>2</sup>	4.00	20,414	
	<i>Top soiling</i>					
D6.148	150mm deep to seeding areas Surfaces sloping at 10° or less to the horizontal	6,720	m <sup>2</sup>	6.75	45,361	
D6.149	350mm deep to shrub planting Surfaces sloping at 10° or less to the horizontal	1,186	m <sup>2</sup>	15.75	18,678	
D6.150	350mm deep to hedge areas Surfaces sloping at 10° or less to the horizontal	360	m <sup>2</sup>	15.75	5,670	
	<u>3004 Ground Preparation</u>					
	<i>Final preparation of soils</i>					
D6.151	Surfaces sloping at 10° or less to the horizontal	7,906	m <sup>2</sup>	3.00	23,718	
	<u>3005 Grass Seeding &amp; Wildflower Seeding</u>					
	<i>Grass seeding.</i>					
D6.152	Amenity grass seed Surfaces sloping at 10° or less to the horizontal.	3,162	m <sup>2</sup>	0.50	1,581	Assumption - general allowance made
D6.153	Wildflower seed mix Surfaces sloping at 10° or less to the horizontal.	2,372	m <sup>2</sup>	2.00	4,744	Assumption - general allowance made
D6.154	Woodland edge mix Surfaces sloping at 10° or less to the horizontal.	1,186	m <sup>2</sup>	3.00	3,558	Assumption - general allowance made
				carried over	2,806,375	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,806,375	
	<u>3006 Planting</u>					
	<i>Trees.</i>					
	In grassed areas; Rootballed; including 1m <sup>3</sup> mulching					
D6.155	Acer campestre Field Maple; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.156	Acer cappadocicum 'Rubrum' Red Cappadocian; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.157	Amelanchiar lamarckii Juneberry; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.158	Betula pendula Common Silver Birch; 20-25cm girth, 2.5-3m height	2	Nr	450.00	900	Assumption - general allowance made
D6.159	Liquidambar styraciflua Sweet Gum; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.160	Pinus sylvestris Scotts Pine; 20-25cm girth, 2.5-3m height	2	Nr	500.00	1,000	Assumption - general allowance made
D6.161	Prunus avium Wild Cherry; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.162	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.163	Quercus robur Red Oak; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.164	Tilia cordata 'Greenspire' Lime; 25-30cm girth, 3-3.5m height	2	Nr	550.00	1,100	Assumption - general allowance made
D6.165	Quercus robur Common Oak; 25-30cm girth, 2.5-3m height		Nr	600.00	-	
	<i>Hedges</i>					
D6.166	5l pots 6 x L/m with supporting fence Surfaces sloping at 10° or less to the horizontal.	600	m	40.00	24,000	Assumption - general allowance made
	<i>Shrubs</i>					
	In beds.					
D6.167	2L pots 6 x m2	1,186	m <sup>2</sup>	20.00	23,718	Assumption - general allowance made
				carried over	2,864,393	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
				brought forward	2,864,393	
	<i>Bulbs</i>					
	Mix of the following as per AECOM 60531863_BS_LS_009 :-					
	Galanthus nivalis Common Snowdrop Leucojum vernum Spring Snowflake Narcissus 'Ice Follies' Daffodil 'Ice Follies' Narcissus pseudonarcissus Wild Daffodil Narcissus 'Red Devon' Daffodil 'Red Devon' Tulipa 'Couleur Cardinal' Triumph Tulip In grassed areas.					
D6.168	Surfaces sloping at 10° or less to the horizontal.	1,186	m <sup>2</sup>	1.75	2,075	Assumption - general allowance made
	<u>S1100 Kerbs, Footways and Paved Areas - Development Scheme</u>					
D6.169	PCC block paving to footpath & edging	650	m <sup>2</sup>	85.00	55,250	
D6.170	Bituminous Footways (as per York STD 1.2)	2,638	m <sup>2</sup>	75.00	197,850	
	<u>General Allowances</u>					
	<b>General Sitewide Allowances</b>					
D6.171	Signage/wayfinding	1	Sum	150,000.00	150,000	
<b>TOTAL TO COLLECTION</b>				£	<b>3,269,569</b>	-

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
<b>D7</b>	<b><u>S5000 - Statutory Utilities</u></b>					
D7.1	Electric	1	Sum	646,628.32	646,628	Based on UKPS quote obtained from ARCADIS, for Electric and Gas
D7.2	Gas	1	Sum		-	Included in Electric quote; also includes £704,000 rebate (UKPS will pay back £640 per connection to client)
D7.3	Potable Water	1	Sum	234,000.00	234,000	As original quote whilst awaiting re-quote
D7.4	Telecoms	1	Sum	229,501.32	229,501	As original quote whilst awaiting re-quote
D7.5	Virgin Media	1	Sum	229,501.32	229,501	As original quote whilst awaiting re-quote
	<b><u>PROVISIONAL ALLOWANCES</u></b>					
D7.6	Provisional Allowance for 278 Stats diversion works deemed not included in the above	1	Sum	500,000.00	500,000	
D7.7	Provisional allowance for 'Off Site Reinforcements' deemed not included in the above	1	Sum	500,000.00	500,000	
<b>TOTAL TO COLLECTION</b>				<b>£</b>	<b>2,339,631</b>	<b>-</b>

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
E	<p><u>Provisional Sums</u></p> <p><i>Not used</i></p>					
<b>TOTAL TO COLLECTION</b>				£	-	-

## Preliminary Cost Estimate

	Item	Total	Comments
<b>F</b>	<b><u>Adoption Costs &amp; Commuted Sums</u></b>		
<b>F1</b>	<b><u>Adoption Costs</u></b>	£ 1,980,469	
<b>F2</b>	<b><u>Commuted Sums</u></b>	£ 607,898	
	<b><i>BUILDING WORK ESTIMATE</i></b>	£ 2,588,367	
<b>F3</b>	Main Contractors Preliminaries	N/A	
	<b><i>Sub-total</i></b>	£ 2,588,367	
<b>F4</b>	Main Contractors OH&P	N/A	
	<b><i>WORKS COST ESTIMATE</i></b>	£ 2,588,367	
<b>F5</b>	Professional Fees	N/A	
<b>F6</b>	Surveys and the like	N/A	
	<b><i>BASE COST ESTIMATE</i></b>	£ 2,588,367	
<b>F7</b>	Design Development	N/A	
<b>F8</b>	Construction Risk / Contingency	N/A	
	<b><i>COST LIMIT (Excluding Inflation)</i></b>	£ 2,588,367	
<b>F9</b>	Tender Inflation Estimate	£ -	This Cost Estimate excludes for inflation beyond the date of the issue of this report
	<b><i>COST LIMIT (INCLUDING INFLATION)</i></b>	£ 2,588,000	

Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
<b>F1</b>	<b><u>Adoption Costs</u></b>					
F1.1	Open Space & Landscaping - Adoption / Maintenance	1	Sum	781,438	781,438.00	As per AECOM cost plan dated Jan 2018
F1.2	SUD's adoption costs - drainage infrastructure (ponds and swales)	1	Sum	661,090	661,090.00	As per AECOM cost plan dated Jan 2018
F1.3	Allowance for Yorkshire Water adoption costs	1	Sum	137,140	137,140.00	As advised by British Sugar based on Outline Planning Permission
F1.4	Allowance for 3rd Party adoption of new Carr Drain culvert (280m at 1.5m diameter, ave 6-8m deep)	1	Sum	84,185	84,185.00	As advised by British Sugar based on Outline Planning Permission
F1.5	Allowance for CYC adoption costs for highways	1	Sum	316,616	316,616.00	As advised by British Sugar based on Outline Planning Permission
<b>TOTAL TO COLLECTION</b>				<b>£</b>	<b>1,980,469</b>	

## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Rate	Total	Comments
F2	<b><u>Commuted Sums</u></b>					
F2.1	Open Space & Landscaping - Adoption / Maintenance	1	Sum	134,173	134,173.00	As advised by British Sugar based on Outline Planning Permission
F2.2	SUD's adoption costs	1	Sum		Excluded	As advised by British Sugar based on Outline Planning Permission
F2.3	Allowance for Yorkshire Water adoption costs	1	Sum	206,529	206,529.00	As advised by British Sugar based on Outline Planning Permission
F2.4	Allowance for CYC adoption costs for highways	1	Sum	267,196	267,196.00	As advised by British Sugar based on Outline Planning Permission
<b>TOTAL TO COLLECTION</b>				<b>£</b>	<b>607,898</b>	<b>-</b>



## Preliminary Cost Estimate

Ref	Description	Qty	Unit	Lowest Market Test Rate	Lowest Market Test Total	Comments
I	<b><u>Appendix A - Excavation &amp; Disposal</u></b> <b><u>(Excluded from Cost Plan Total)</u></b>					
	<u>602 : Earthworks Generally</u>					
	<i>Pre-Treatment</i>					
I.1	Pre-treatment of TPH Contaminated Materials	8,000	m <sup>3</sup>	26.00	208,000	
	Excavation & Stockpile					
I.2	Excavation	746,800	m <sup>3</sup>	0.90	672,120	
I.3	Stockpile	746,800	m <sup>3</sup>	1.60	1,194,880	
	Load & Transport					
I.4	Load for Newark plus 50% of Sites A-D	573,400	m <sup>3</sup>	2.00	1,146,800	
I.5	Transport to Newark - 80 miles	400,000	m <sup>3</sup>	28.85	11,540,000	
I.6	Transport to Site A - 16 miles - Transport by BS	12,500	m <sup>3</sup>	7.21	90,125	
I.7	Transport to Site A - 16 miles - Transport by Receiver	12,500	m <sup>3</sup>	7.21	Excluded	£ 90,125
I.8	Transport to Site B - 40 miles - Transport by BS	60,000	m <sup>3</sup>	14.42	865,200	
I.9	Transport to Site B - 40 miles - Transport by Receiver	60,000	m <sup>3</sup>	14.42	Excluded	£ 865,200
I.10	Transport to Site C - 70 miles - Transport by BS	60,000	m <sup>3</sup>	28.85	1,731,000	
I.11	Transport to Site C - 70 miles - Transport by Receiver	60,000	m <sup>3</sup>	28.85	Excluded	£ 1,731,000
I.12	Transport to Site D - 75 miles - Transport by BS	40,900	m <sup>3</sup>	28.85	1,179,965	
I.13	Transport to Site D - 75 miles - Transport by Receiver	40,900	m <sup>3</sup>	28.85	Excluded	£ 1,179,965
						Cost of Load & Transport to Sites A-D by Others £ 3,866,290
<b>COST LIMIT (Excluding Inflation)</b>				£	<b>18,628,090</b>	
I.14	Tender Inflation Estimate				-	This Cost Estimate excludes for inflation beyond the date of the issue of this report
<b>COST LIMIT (INCLUDING INFLATION)</b>				£	<b>18,628,000</b>	

Appendix F

# COST OF LAND EVIDENCE

## Jane Nichols

---

**From:** Mills, David <David.Mills@abfoods.com>  
**Sent:** 21 April 2021 11:59  
**To:** Jason Mound  
**Subject:** FW: York land [ABF-ABFPROP.FID6940]

Jason

In respect of the cost of the land at Boroughbridge Road, York to which the Environmental Permit and the wider area relate, the Net Book Value for the land (dating back to 1980) is £755,000. Below is the email from the British Sugar confirming this amount. Please let me know if require any further information.

Regards

David

**David Mills**

Head of Group Property

**Associated  
British Foods  
plc**

Group Property Department

50-51 Russell Square

London WC1B 4JA

M +44 (0)7912 669 011

D +44 (0)20 7299 3635

E [david.mills@abfoods.com](mailto:david.mills@abfoods.com)

**From:** Moore, Jonathan <Jonathan.Moore@britishsugar.com>

**Sent:** 19 April 2021 17:00

**To:** Mills, David <David.Mills@abfoods.com>

**Subject:** York land

Hi David,

York land NBV is £755k.

Thanks,

Jon.

**Jonathan Moore**

Financial Controller, British Sugar

Landline: +44 (0) 1733 422505 | Mobile: +44 (0) 7912 795770



[www.britishsugar.com](http://www.britishsugar.com)

---

\*\*\*\*\*

The views expressed in this e-mail are the views of the individual and may not reflect the views of the organisation. Associated British Foods accepts no liability for any losses or damage arising from reliance on the information contained in this e-mail.

The information contained in this e-mail is confidential, may be legally privileged and is intended solely for use by the individual or organisation to whom it is addressed. E-mail information is subject to copyright and must

not be used, disseminated, copied or disclosed to third parties without the written consent of Associated British Foods. If you are not the intended recipient you should delete this e-mail, destroy all copies and inform the administrator at [admin@abfoods.com](mailto:admin@abfoods.com).

Copyright Associated British Foods plc

All Rights Reserved

Registered Office: Weston Centre, 10 Grosvenor Street,  
London W1K 4QY.

A limited company registered in England number 293262

**MARKET LAND VALUE EVIDENCE -**  
The following includes an extract from a Rapleys report on development strategy including a Market Summary and Residential Land Values in support of this assessment. This report was prepared by Angus Irvine (MRICS) of Rapleys



### 3 MARKET COMMENTRY

3.1 We have considered current residential market conditions in York generally and specifically appertaining to the British Sugar site. We have considered the level of demand from housebuilders/developers, current residential schemes that are under construction or recently consented, as well as anticipated residential land and outturn sales values.

#### DEMAND FROM RESIDENTIAL HOUSEBUILDERS

3.2 We have approached several housebuilders active within York and the surrounding area to ascertain demand for new residential schemes in this location. Housebuilders approached included Linden Homes, Bellway Homes, David Wilson Homes and Miller Homes.

3.3 Following discussions with these parties, we can confirm that there is a high level of demand for residential development opportunities in York, particularly as there is currently a shortfall in readily available consented land for family housing. This is driven not only by macro economic demand, but a lack of available sites in light of the long-term issues relative to the local Plan not be adopted.

3.4 However, regarding future supply of residential sites, we understand that majority of the national housebuilders have numerous sites under option around York in preparation for the emerging Local Plan being adopted and the Greenbelt Review being completed. We anticipate this process will be concluded within the next two years.

3.5 One concern is that the subject site could be brought forward at a similar time to when the other sites that are being promoted are released, possibly resulting in a lower level of demand than experienced currently.

3.6 However, in terms of the Sugar sites desirability, it is viewed as one of the most important family Housing opportunities in York due to its proximity to the city centre and catchment of Manor School.

#### RESIDENTIAL DEVELOPMENTS UNDER CONSTRUCTION

3.7 We have researched current development sites that are under construction (or recently completed).

#### Current Family Housing Schemes

Site Address	Developer	Units	Distance from Subject Site	Sales Values
Fairfield Croft, Shipton Road, YO30 1XW	David Wilson Homes	78 houses	2 miles north of subject site	3 bed - £285k - £350k 4 bed - £375k - £475k
Germany Beck, Bishopsdale Way Fulford, YO19 4AE	Charles Church/ Persimmon Homes	579 houses + 76 flats	4.5 miles to the south east of the subject site	3 bed - £300k - £350k 4 bed - £375k - £425k 5 bed - £460k
York Grain Stores Water Lane, YO30 6PQ	Redrow Homes	207 houses + 8 flats	2 miles east of the subject site	Sold out - Completed in 2019

Metacalfe Lane Derwenthorpe, YO10 3BF	David Wilson Homes & Joseph Rowntree Housing Trust	530 houses	4.5 miles east of subject site	Sold out - Completed in 2019
---	--	------------	-----------------------------------	---------------------------------

### RESIDENTIAL CONSENTED SCHEMES

3.8 Please find in the table below several residential schemes which have been recently consented but are not yet under development:

Site Address	Developer/ Landowner	Units	Distance from subject site
Land off Boroughbridge Road YO26 6PG	Miller Homes/M.F. Strategic Land Limited	266 units	200 metres to the west of subject site
York Barbican, Paragon Street YO10 4NT	Persimmon Homes	187 units	3 miles to the south east of subject site
Arabesque House Monks Cross Drive, Huntington YO32 9GW	Unknown	56 units	5 miles to the north east of subject site
Former Lowfield School Dijon Avenue, YO24 3WZ	City of York Council	140 units	2 miles to the south of subject site
Nestle Site, Land at Cocoa Wes Wigginton Street, YO31 8FY	York 456 Ltd & Newby Developments	683 units	3.5 miles to the east of the subject site

3.9 One scheme to highlight this the land off Boroughbridge Road where Miller Homes have recently achieved planning consent, via appeal, for 266 residential units. As you are aware this is in very close proximity to the subject site and will represent a good comparable for land values and eventual residential sales values. We have been in discussions with Miller who, at the time of writing, are unable to disclose the price paid for the site due to a confidentiality agreement but will do so as soon as this lapses, we understand this is imminent.

3.10 In summary, there is currently generally a limited amount of new build family housing schemes currently under construction in York. However, there are a number of schemes which have recently obtained planning permission. We expect these sites to come forward in the next 6-12 months.



## RESIDENTIAL LAND COMPARABLES

3.11 We have undertaken research regarding comparable land sales which have transacted over the last two years, some of these can be seen in the table below:

Site Address	Size (acres)	Planning	Price	Sale Date	Price per acre
Fairfield Croft Shipton Road YO30 1XW	5.66	Outline planning consent for 77 houses approved in July 2018 (14/01478/OUTM) and reserved matters achieved in April 2019 (18/01558/REMM)	£6.9m	April 2018	£1.2M
Heworth Green Heworth, YO31 7SD	7.12	Outline application for mixed-use scheme including 625 apartments is currently awaiting a decision.	£10m	January 2018	£1.4M
The Cocoa Works, Haxby Road, YO31 8HE	16.75	Planning consent for 425 houses.	TBC	December 2017	TBC

3.12 Please note, the Cocoa Works scheme was sold subject to planning and has now obtained planning consent, subject to a Section 106 agreement. The proposed purchase price is currently undisclosed due to a confidentiality agreement but should be publicly available in the coming weeks once the Section 106 is signed. Again, we will be in a position to disclose this in due course similar to the Miller Homes transaction.

3.13 In summary having spoken at length with the active residential developers in York and the surrounding area, the consensus is that the Sugar site represents one of the best family housing sites of substance within the vicinity of York City Centre. Assuming Housebuilders were offered land parcels of circa 150 to 250 units, clean, clear and serviced in which they would construct the estate roads and green space within the phase together with low affordable housing, then they would pay in the region of £1,200,000 to £1,350,000 per developable acre. All housebuilders agreed that in the event of successful place making branding and community management the land values will demand a premium particularly in the latter phases.

## HOUSE SALES VALUES

3.14 Residential sales values in this location are as follows:

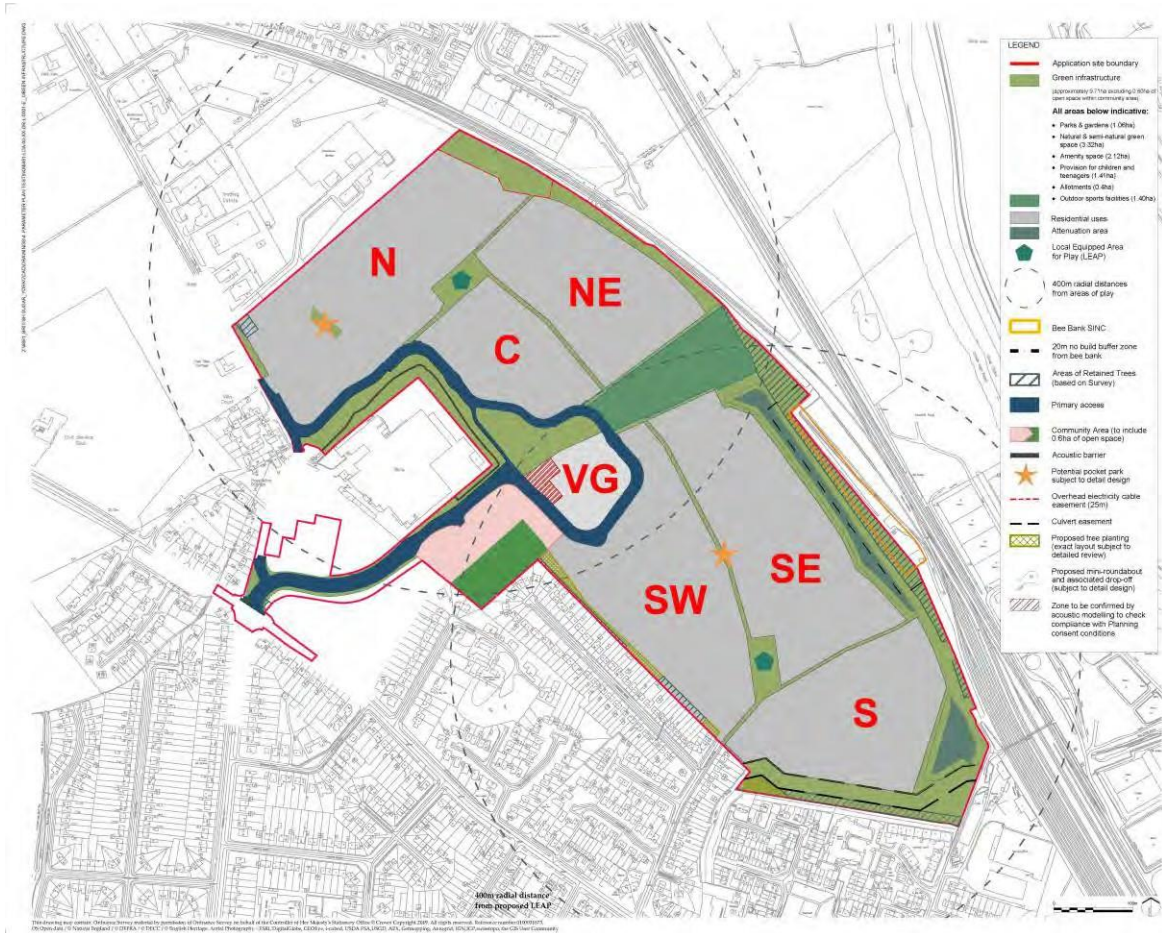
Property Type	Avg Current Value	Avg £psf	Avg beds	Avg £paid (last 12m)
Detached	£482,672	£302	3.8	£421,954
Semi-detached	£274,721	£273	3.1	£266,929
Terraced	£207,975	£266	2.6	£207,364
Flats	£240,678	£331	1.8	£188,195

3.15 In our view for new build family housing, residential sales values are between £300 - £350 psf.

## 4 GROSS RESIDENTIAL LAND VALUES

4.1 As agreed, we have only considered the potential gross residential land values of each development phase rather than the residual land value after the deduction of enabling costs and finance. The areas are taken from the revised masterplan Schedule E dated November 2019 which assumes total site area of 98.2 acres (39.74 hectares) and a residential development area of 63.55 acres (25.72 hectares). The phaseology of the scheme has changed since the consented Masterplan in 2017. The change of phasing is primarily as a consequence of the various drainage solutions and amendments to green open space. This phasing may change again during the s73 application, however, the latest phaseology is set out on the plan and in the table below.

4.2 It should be noted that we have assumed the plots are built sequentially, however, as the phasing strategy develops, we anticipate some plots may be bought forward at the same time. Whilst this will not affect the overall gross residential land value, it will reduce the time in receiving capital receipts and improve cashflow and therefore improve the Internal Rate Return.



Residential Site	Zone	Area (Ha)	Area (Acres)	Sales Rate (£ per Acre)			
				£1,000,000	£1,250,000	£1,500,000	Stepped Rates* c. £1,343,266
A	S	3.71	9.17	£9,170,000	£11,462,500	£13,755,000	£11,462,500
B							
C	SW	4.87	12.03	£12,030,000	£15,037,500	£18,045,000	£15,037,500
D	SE	5.00	12.36	£12,360,000	£15,450,000	£18,540,000	£15,450,000
E	VG	0.98	2.42	£2,420,000	£3,025,000	£3,630,000	£3,146,000
F	Central	2.20	5.44	£5,440,000	£6,800,000	£8,160,000	£7,072,000
G	NE	3.55	8.77	£8,770,000	£10,962,500	£13,155,000	£13,155,000
H							
I	N	5.41	13.37	£13,370,000	£16,712,500	£20,055,000	£20,055,000
<b>Total</b>		<b>25.72</b>	<b>63.56</b>	<b>£63,560,000</b>	<b>£79,450,000</b>	<b>£95,340,000</b>	<b>£85,378,000</b>

\*based on phases A&B, C and D at £1.25m, E and F at £1.3m and G&H and I at £1.5m - Equivalent to an avg. sales rate of £1.343m per acre.

- 4.3 It should be noted that the planning consent is subject to an affordable housing re-calculation mechanism. In essence, in the event there are cost savings and/or increases in land value then the relevant profit will contribute to additional affordable provision.
- 4.4 Overall, there is a minimum of 3% affordable within each reserved matters application (i.e each phase of residential development). In the event of the review calculation triggering additional affordable housing this will be subject to a maximum of 35% in each phase.
- 4.5 However, there is a provision that the whole development provides no greater than 20% affordable housing in total. There are further provisions which allow the additional affordable to be commuted rather than provided on the site to ensure an appropriate mix of housing on the site.
- 4.6 At this point we are unable to anticipate all of the future inputs that will be required for each reserved matters application review. Viability reviews may have an impact on the price paid for the land but, at this stage, we believe the indicative land values set out in 3.13 provide a suitable basis to consider the options set out in Section 5.

ABI/19-02623

4 July 2022

C Piddington Esq  
Arcadis LLP  
1<sup>st</sup> Floor Cornerblock  
2 Cornwall Street  
Birmingham  
B3 2DX

66 St James's Street  
St James's  
London  
SW1A 1NE

0370 777 6292  
info@rapleys.com  
rapleys.com

LONDON  
BIRMINGHAM  
BRISTOL  
CAMBRIDGE  
EDINBURGH  
HUNTINGDON  
MANCHESTER

Dear Chris

**Re: Land Values - Boroughbridge Road, York YO26 6XF**

Following your request for me to update my advice in respect of residual land values as set out in my letter dated 25<sup>th</sup> of October 2021, I can confirm there is little new evidence of relevant comparable land transactions since that date.

However, we have again spoken to active residential developers in York and the surrounding areas. The consensus is that since my last correspondence, developers would pay potentially in excess of £1,400,000 per developable acre for a medium density, serviced and clean site in this area. This represents a firming of values October 2021.

I hope this is sufficient for your update however if you have any questions, please do not hesitate to contact me.

Yours sincerely,

**Angus Irvine**  
PGDip MSc MRICS  
Partner - Development Services Group  
angus.irvine@rapleys.com  
07767 463884

Encl.

Appendix H

# VAT ELECTIONS



HM Revenue  
& Customs

J31B1Q009QEMAA0000003417001001352000

British Sugar Pie  
British Sugar Pie  
1 Samson Place  
London Road  
PETERBOROUGH  
PE7 8QJ



Business, Tax and Customs  
Option to Tax National Unit  
123 St Vincent Street  
GLASGOW  
G25EA

**Phone** 03002003700  
Monday-Thursday 09:00 to 17:00  
Friday 09:00 to 16:30

**Fax** 03000 516 251

**Email** optiontotaxnationalunit@  
hmrc.gov.uk

**Web** www.gov.uk

**Date** 26 January 2021  
**Our Ref** OTT/R/20/22244/CH-AO

**VAT number** 289 7298 79  
Dear Ms Rosalyn Sharon Schofield

### Acknowledgement of Option to Tax

I acknowledge your notification received **19 November 2020**, regarding your option to tax, under **paragraph 20, Schedule 10 of the VAT Act 1994**, on the following land/property:

#### Address of land/property

British Sugar site off Low Poppleton Lane  
York  
(outlined in red on the attached plan)  
Land Registry title number: YK1267

#### Effective date of option

1 November 2020

This option to tax covers all principles outlined in Public Notice 742A - Opting to tax land and buildings-paragraph 2.4. Please note an option to tax on a building includes the land on which the building stands (see Public Notice 742A paragraph 2.1 for full details).

Please note the following points:

- If your interest is restricted to one floor then only this floor will be affected by it. However, should you later acquire an interest in another floor it too will be covered by this option.
- Please check your records and VAT Notice 742A before making a supply of land/property to ensure the correct VAT liability is applied.
- **Input tax:** if your option to tax is restricted or made ineffective, your entitlement to recover input tax could be severely affected.

---

Information is available In large print, audio and Braille formats.

**Text** Relay service prefix number- 18001

- Your option to tax may not make taxable a grant of the land/property which is, or is expected to become, a capital item as per **Regulations 112 to 116 of the VAT Regulations 1995**.
- If either you, a person funding your acquisition of the land/property, or a person connected to either of you intends to or expects to occupy the land/property for anything other than mainly taxable business purposes, you should be aware of **paragraphs 12 to 16 and 34, Schedule 10 of the VAT Act 1994**, which may disapply your option to tax.
- Your option to tax will not have an effect on all land/property, for example, property intended for use as a dwelling or for relevant residential or charitable purposes. Please refer to Public Notice 742A, Section 3 for further details.
- **Regulation 31(1) of the Value Added Tax Act Regulations 1995** stipulates that all VAT registered persons are required to keep pertinent business records for a period of 6 years. However, as options to tax are valid for at least 20 years, as per **paragraph 25, Schedule 10 of the VAT Act 1994**, we recommend that all records pertaining to an election should be retained for no less than 20 years from the effective date given. HMRC would also suggest that you keep an electronic ledger of all opted land/property that should be consulted prior to any supply of that land/property.

#### **Important Information:**

Please note that if the person who signed the relevant form or declaration is not an authorised signatory of the apter then any option to tax so notified to HMRC will be invalid and the supplies being made will remain exempt from VAT. You may also be liable for the repayment of any Input tax that has in such circumstances been incorrectly claimed by you. Please refer to section 7 of VAT Notice 742A - Opting to tax which explains who is responsible for making the decision and notifying the option to tax.

If you identify an issue you should contact this department in writing at the address shown above within 30 days of the date of this letter.

#### **Do you require further help?**

If you have any general queries relating to option to tax please refer to VAT Notice 742A a copy of which can be viewed on our web site: [www.gov.uk](http://www.gov.uk)

**Where possible, please submit future correspondence to the Option to Tax National Unit via email. Our email address is [opttontotaxnationalunit@hmrc.gov.uk](mailto:opttontotaxnationalunit@hmrc.gov.uk)**

Yours sincerely

#### **Cleo Hamilton**

Officer of HM Revenue & Customs

If you need extra support, go to [www.gov.uk/dealing-hmrc-additional-needs](http://www.gov.uk/dealing-hmrc-additional-needs) For example if you have a disability, a mental health issue, or do not speak English/Welsh.

## **Stockham, Jane**

---

**From:** optiontotaxnationalunit@hmrc.gov.uk  
**Sent:** 07 August 2020 16:00  
**To:** Stockham, Jane  
**Subject:** [External] Automatic reply: Option to Tax Notification - Associated British Foods plc (VRN 385 8176 07)

Thank you for your email enquiry.

**Please see the GOV.UK website for Option to Tax COVID-19 changes regarding notifications and electronic signatures.**

**All responses issued by the Option to Tax Unit are sent by post.**

Please be advised for an option to tax to be valid you must normally make your notification within 30 days of your decision. For the majority of other enquiries and options submitted within 30 days of the decision, a reply will be normally issued within **15 working days**.

You can ask HMRC to accept a notification made more than 30 days after your decision but we will not do so unless we are satisfied that you made your decision to opt at the relevant time. If you would like us to consider accepting a belated notification please see **VAT Notice 742A section 4.2** for further information and also view our Option to Tax webinar on <https://www.gov.uk/guidance/help-and-support-for-agents>. A reply for belated notification will normally be issued within **40 working days**. We ask that you only contact us again if it is to provide additional information to an existing enquiry.

Please only send one copy of your request to Option to Tax Unit as any duplicate correspondence has a negative impact on our ability to provide a response.

### **Agents**

The Option to Tax National Unit will be unable to respond directly to you unless your client has already submitted a 64-8 'Authorising your agent' form which allows HMRC to disclose information pertaining to their instructed 3rd party.

Please note that a 64-8 'Authorising your Agent' form **does not allow** a 3rd party to sign an option to tax notification on behalf of their client.

Should your client wish for you to be authorised to act on their behalf, a letter of authority from an authorised signatory of the legal entity must be submitted to HMRC specifically stating the person authorised to notify the option to tax.

If you have attached a scanned copy or a photocopy of an original 64-8 to your e-mail correspondence, can you please ensure the original 64-8 is sent to the following address:

HMRC  
CAAT Post Team  
Benton Park View  
Longbenton  
Newcastle upon Tyne  
NE98 1ZZ

We appreciate your patience at this time

The information in this e-mail and any attachments is confidential and may be subject to legal professional privilege. Unless you are the intended recipient or his/her representative you are not authorised to, and must not, read, copy,



distribute, use or retain this message or any part of it. If you are not the intended recipient, please notify the sender immediately.

HM Revenue & Customs computer systems will be monitored and communications carried on them recorded, to secure the effective operation of the system and for lawful purposes.

The Commissioners for HM Revenue and Customs are not liable for any personal views of the sender.

This e-mail may have been intercepted and its information altered.

# HM Revenue & Customs

Option to Tax National Unit  
Centralised VAT  
Ground Floor  
Cotton House  
7 Cochrane Street  
Glasgow  
G11 6GY

British Sugar plc  
FAO Mr Alan Dean  
Group Finance Department  
Sugar Way  
Peterborough  
PE29 6AY

Tel 0141 285 4174/4175  
Monday - Thursday 09:00 to 17:00  
Friday 09:00 to 16:30

Fax 0141 285 4454

[www.hmrc.gov.uk](http://www.hmrc.gov.uk)

Date 18 February 2011  
Our Ref OTT/R/10/22566/WH  
Your Ref  
VAT Number:

Email [optiontotaxnationalunit@hmrc.gsi.gov.uk](mailto:optiontotaxnationalunit@hmrc.gsi.gov.uk)

Dear Mr Dean

## Acknowledgement of Option to Tax Group VAT Number: 289 7298 79

I acknowledge your notification dated 21 December 2010, regarding your option to tax, under **paragraph 2, Schedule 10 of the VAT Act 1994**, on the following land/property:

### Address of land/property

### Effective date of option

**Sugar Factory**  
**Boroughbridge Road**  
**York**  
**Land Registry Title No: NYK301389**

12 December 2010

I should like to apologise for the delay in responding to your correspondence.

This option to tax covers all principles outlined in Public Notice 742A - Opting to tax land and buildings -- paragraph 2.4. Please note an option to tax on a building includes the land on which the building stands (see Public Notice 742A paragraph 2.1 for full details) Please note the following points.

- o If your interest is restricted to one floor then only this floor will be affected by it. However, should you later acquire an interest in another floor it too will be covered by the option.
- o **Input tax:** if your option to tax is restricted or made ineffective, your entitlement to recover input tax could be severely affected.

Information is available in large print, audio and Braille formats.  
Type Talk service prefix number - 18001

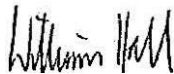


R.22666

- Your option to tax may not make taxable a grant of the land/property which is, or is expected to become, a capital item as per Regulations 112 to 116 of the VAT Regulations 1995.
- If either you, a person funding your acquisition of the land/property, or a person connected to either of you intends to or expects to occupy the land/property for anything other than mainly taxable business purposes, you should be aware of paragraphs 12 to 16 and 34, Schedule 10 of the VAT Act 1994, which may disapply your option to tax.
- Your option to tax will not have an effect on all land/property, for example, property intended for use as a dwelling or for relevant residential or charitable purposes. Please refer to Public Notice 742A, Section 3 for further details.
- **Regulation 31(1) of the Value Added Tax Act Regulations 1995** stipulates that all VAT registered persons are required to keep pertinent business records for a period of 6 years. However, as options to tax are valid for at least 20 years, as per **paragraph 25, Schedule 10 of the VAT Act 1994**, we recommend that records pertaining to an election should be retained for no less than 20 years from the effective date given.

If you have any queries please do not hesitate to contact this office.

Yours sincerely



William H II  
Assistant Officer of HM Revenue & Customs

## Details of opter

This should be in the name of the **legal entity opting to tax** and will be the name of the relevant company, sole proprietor, partnership etc.

Name of opter \* B-r-i-t-i-s-h-S-u-g-a-r-p-l-c-----

Are you based in the UK?  No  
 Yes

Address line 1 1 Samson Place

Address line 2 London Road

Address line 3 Peterborough

Postcode PE7 8QJ

Daytime telephone number \* 1 07805068993

Fax number \_\_\_\_\_

Are you submitting this form as an electronic attachment with your online application for VAT registration?  No  
 Yes

Are you registered for VAT?  No  
 Yes

VAT Registration Number 

2	8	9	7	2	9	8	7	9
---	---	---	---	---	---	---	---	---

## Previous exempt supplies

Have you made any exempt supplies of the land or buildings you want to opt within the period of 10 years, ending with the date from which you want your option to be effective? For example, you may have granted an interest in the land or building such as a lease.

Have you made exempt supplies of any land or buildings which you're looking to opt to tax?  No  
 Yes

## About the land and/or building(s)

If it is bare land, please provide its specific location in the address fields below, along with the Land Registry title number and/or a plan showing the extent of the bare land to be opted. If you're submitting this form as part of an online application for VAT registration you'll be able to attach an electronic copy of the plan in PDF format.

To add details of more than one parcel of land and/or building to be opted please click the 'Add another item' button below and the 'Delete this item' button to remove any unwanted ones.

---

## Land and/or building 1

Land and/or buildings to be opted address

Address line 1 British Sugar site off Low Poppleton Lane

Address line 2 York

Address line 3 (outlined in red on the attached plan)

Postcode \_\_\_\_\_

Do you have a Land Registry title number?  No  
 Yes

Land Registry title number YK1267

Are you submitting a plan for this item with your application?  No  
 Yes

Effective date of this option to tax *eg dd mm YWY*

0	1	1	1	2	0	2	0
---	---	---	---	---	---	---	---

## Declaration

You must complete the declaration.

In normal circumstances an option to tax can't be revoked for at least 20 years from the effective date. We recommend you keep records relating to your option to tax for the period that the option is effective.

Please note that if the person signing the declaration is an unauthorised signatory then any option to tax notified will be invalid and the supplies being made will remain exempt from VAT. You may also be liable for the repayment of any input tax that in such circumstances been incorrectly claimed by you. Please refer to section 7 of [VAT Notice 742A: opting to tax land and buildings](#) for more information about authorised signatories.

Declaration

12] I declare that the information provided on this form is true and complete to the best of my knowledge and belief.

Full name of the person completing this form

j Rosalyn Sharon Schofield

Signature



Capacity of the person completing this form in relation to the apter

Company secretary

Date eg *dd mm yyyy*

2	0	1	1	2	0	2	0
---	---	---	---	---	---	---	---

## What to do now

- print the form and any copies you need
- sign the declaration
- send this form to the address shown below

HM Revenue and Customs

Option to Tax Unit

Ground Floor

Portcullis House

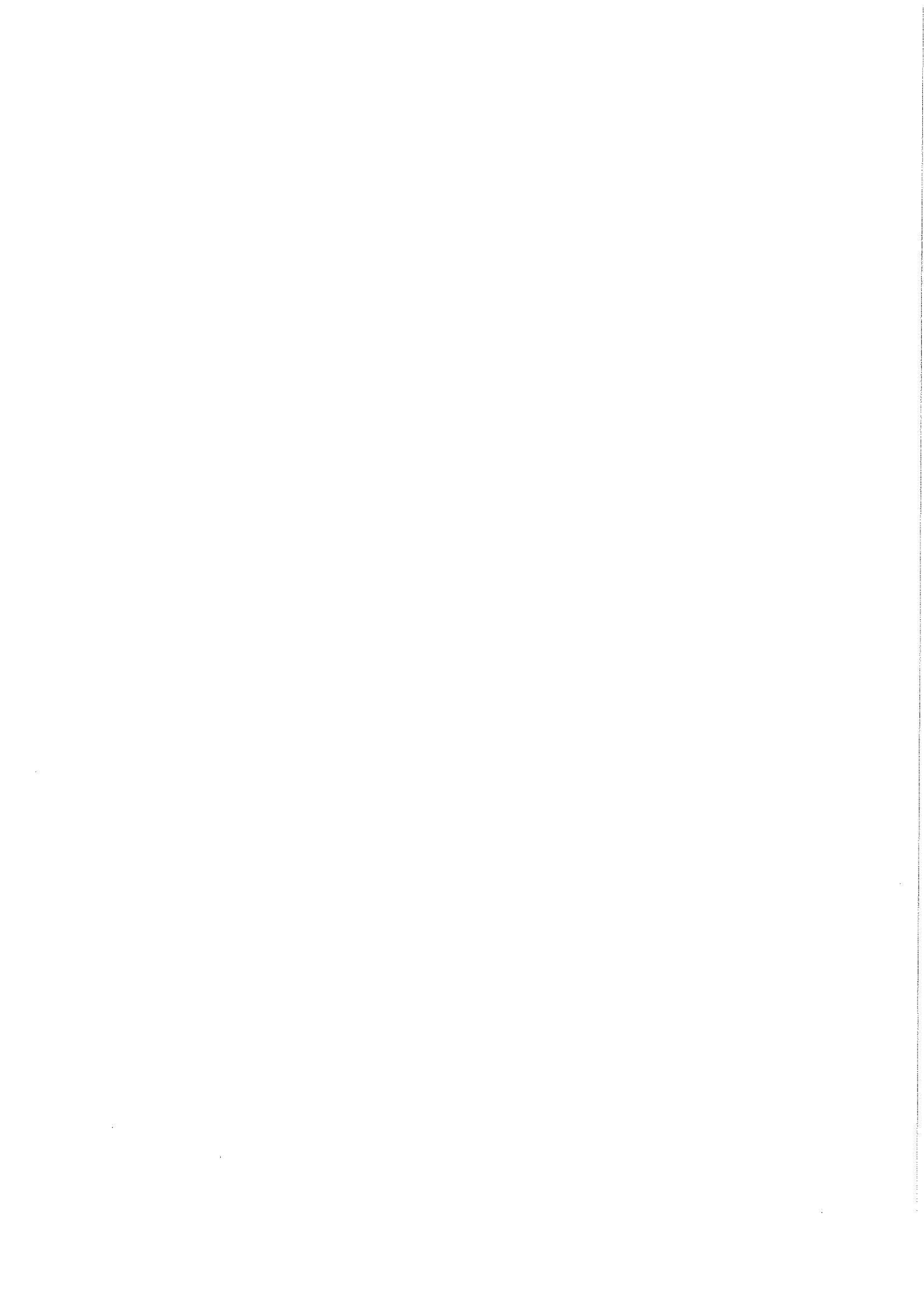
21 India Street

Glasgow

G2 4PZ

OTT helpline      **03000 530 005** (from outside the UK **+44 3000 530 005**)

Fax                      **03000 529 807** (from outside the UK **+44 3000 529 807**)



These are the notes referred to on the following official copy

The electronic official copy of the title plan follows this message.

Please note that this is the only official copy we will issue. We will not issue a paper official copy.

This official copy was delivered electronically and when printed will not be to scale. You can obtain a paper official copy by ordering one from Land Registry.

Additional references, which are not referred to in the register of title, may appear on the title plan in respect of any pending applications.

This official copy issued on 22 December 2011 shows the state of this title plan on 22 December 2011 at 09:24:55. It is admissible in evidence to the same extent as the original (s.67 Land Registration Act 2002). This title plan shows the general position, not the exact line, of the boundaries. It may be subject to distortions in scale. Measurements scaled from this plan may not match measurements between the same points on the ground. See Land Registry Public Guide 7 - *Title Plans*.

This title is dealt with by the Land Registry, Durham Office.

© Crown copyright. Produced by Land Registry. Reproduction in whole or in part is prohibited without the prior written permission of Ordnance Survey. Licence Number 100026316.



M.B. 25

M.L. EGIS'rkf' <>

# Filed Plan of Title No K 1267

O.S. Sheet YORKS. CLXXIV. I

Crown Copyright Reserved

1-307

THIS PLAN IS THE PROPERTY OF THE SURVEYOR GENERAL  
AND IS NOT TO BE REPRODUCED OR COPIED IN ANY MANNER  
WITHOUT THE WRITTEN PERMISSION OF THE SURVEYOR GENERAL  
SUBJECT TO REVISION OR SURVEY.

3  
11-505

836  
8-944

268  
7-148

270  
8-164

269  
1-632

CLXXIV. I  
CLXXIV. II 268  
051

269  
3-804

## F a r r F i e l d

cy, 271 cy,  
11-091

275  
3-233

Acomb Park

Popl  
Sugar B

Tennis Court

296  
2-823

294  
3-050

293  
976

276  
677

**Details of apter**

This should be in the name of the legal entity opting to tax and will be the name of the relevant company, sole proprietor, partnership etc.

Name of opter A s s o-c i-a-t e d B r i-t i-s h F o o d s p l c-----

Are you based in the UK?  No  
 Yes

Address line 1 Weston Centre

Address line 2 10 Grosvenor Street

Address line 3 London

Postcode W1K4QY

Daytime telephone number \* 107805068993

Fax number \_\_\_\_\_

Are you submitting this form as an electronic attachment with your online application for VAT registration?  Yes  
 No

Are you registered for VAT?  No  
 Yes

VAT Registration Number 

3	8	5	8	1	7	6	0	7
---	---	---	---	---	---	---	---	---

**Previous exempt supplies**

Have you made any exempt supplies of the land or buildings you want to opt within the period of 10 years, ending with the date from which you want your option to be effective? For example, you may have granted an interest in the land or building such as a lease.

Have you made exempt supplies of any land or buildings which you're looking to opt to tax?  No  
 Yes

**About the land and/or building(s)**

If it is bare land, please provide its specific location in the address fields below, along with the Land Registry title number and/or a plan showing the extent of the bare land to be opted. If you're submitting this form as part of an online application for VAT registration you'll be able to attach an electronic copy of the plan in PDF format.

To add details of more than one parcel of land and/or building to be opted please click the 'Add another item' button below and the 'Delete this item' button to remove any unwanted ones.

---

## Land and/or building 1

Land and/or buildings to be opted address

Address line 1 British Sugar site off Low Poppleton Lane

Address line 2 Y=or=k

Address line 3 (outlined in red on the attached plan)

Postcode \_\_\_\_\_

Do you have a Land Registry title number?  No  
 Yes

Land Registry title number YK1267

Are you submitting a plan for this item with your application?  No  
 Yes

Effective date of this option to tax *eg dd mm yyyy*

---

## Land and/or building 2

Land and/or buildings to be opted address

Address line 1 British Sugar site off Low Poppleton Lane

Address line 2 York

Address line 3 (outlined in red on the attached plan)

Postcode \_\_\_\_\_

Do you have a Land Registry title number?  No  
 Yes

Land Registry title number NYK301389

Are you submitting a plan for this item with your application?  No  
 Yes

Effective date of this option to tax *eg dd mm yyyy*

## Declaration

You must complete the declaration.

In normal circumstances an option to tax can't be revoked for at least 20 years from the effective date. We recommend you keep records relating to your option to tax for the period that the option is effective.

Please note that if the person signing the declaration is an unauthorised signatory then any option to tax notified will be invalid and the supplies being made will remain exempt from VAT. You may also be liable for the repayment of any input tax that in such circumstances been incorrectly claimed by you. Please refer to section 7 of [VAT Notice 742A: opting to tax land and buildings](#) for more information about authorised signatories.

Declaration

I declare that the information provided on this form is true and complete to the best of my knowledge and belief.

Full name of the person completing this form

Paul Lister

Signature



Capacity of the person completing this form in relation to the opter

Company secretary

Date eg dd mm yyyy

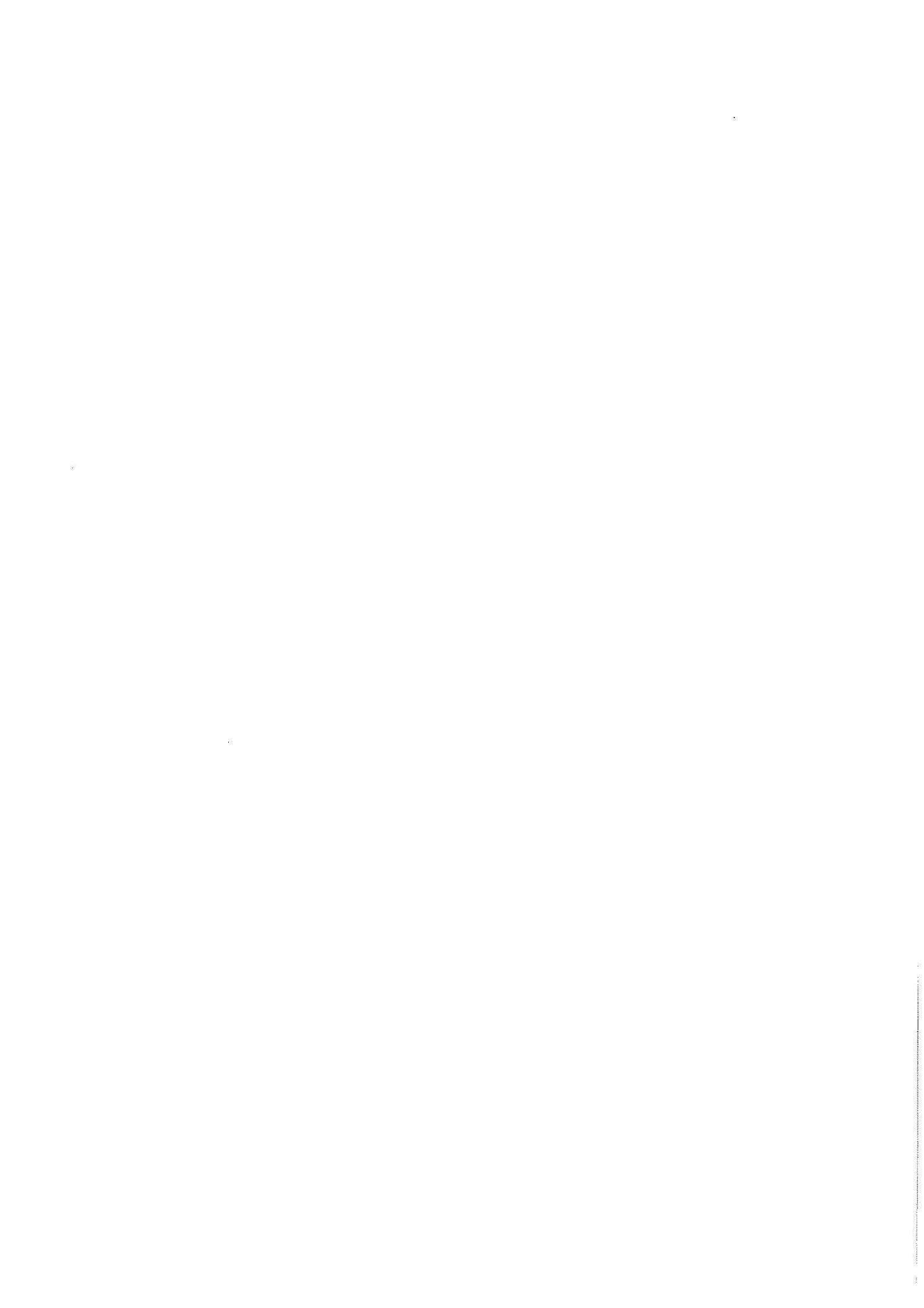
06 08 2020

## What to do now

- print the form and any copies you need
- sign the declaration
- send this form to the address shown below

HM Revenue and Customs  
Option to Tax Unit  
Ground Floor  
Portcullis House  
21 India Street  
Glasgow  
G24PZ

OTT helpline **03000 530 005** (from outside the UK **+44 3000 530 005**)  
Fax **03000 529 807** (from outside the UK **+44 3000 529 807**)



Arcadis (UK) Limited

1 Whitehall Riverside  
Leeds  
LS1 4BN  
United Kingdom  
T: +44 (0)113 284 5300

[arcadis.com](https://www.arcadis.com)

