

# South Humber Bank Energy Centre Project

Planning Inspectorate Reference: EN010107

South Marsh Road, Stallingborough, DN41 8BZ

The South Humber Bank Energy Centre Order

**Document Reference: 5.10 Indicative Landscape Strategy**

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations Regulation 5(2)(q)



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Applicant: EP Waste Management Ltd  
Date: April 2020

## DOCUMENT HISTORY

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## GLOSSARY

<b>Abbreviation</b>	<b>Description</b>
ACC	Air-cooled condenser.
AGI	Above Ground Installation.
BEIS	Department for Business, Energy and Industrial Strategy.
CCGT	Combined Cycle Gas Turbine.
DCO	Development Consent Order: provides a consent for building and operating an NSIP.
EfW	Energy from Waste: the combustion of waste material to provide electricity and/or heat.
EIA	Environmental Impact Assessment.
EPUKI	EP UK Investments Ltd.
EPWM	EP Waste Management Limited ('The Applicant')
ES	Environmental Statement.
ExA	Examining Authority: An inspector or panel of inspectors appointed to examine the application.
mAOD	Metres Above Ordnance Datum.
MW	Megawatt: the measure of power produced.
NELC	North East Lincolnshire Council.
NPS	National Policy Statement.
NSIP	Nationally Significant Infrastructure Project: for which a DCO is required.
PA 2008	Planning Act 2008.
PEIR	Preliminary Environmental Information Report - summarising the likely environmental impacts of the Proposed Development.
PINS	Planning Inspectorate.
Q1	Quarter 1.
RDF	Refuse derived fuel.
SHBEC	South Humber Bank Energy Centre.
SHBPS	South Humber Bank Power Station.
SoCC	Statement of Community Consultation: sets out how a developer will consult the local community about a proposed NSIP.
SoS	Secretary of State.

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## **1.0 EXECUTIVE SUMMARY**

- 1.1.1 This Indicative Landscape Strategy has been prepared on behalf of EP Waste Management Limited and forms part of the application for a Development Consent Order (DCO) for the construction, operation and maintenance of a proposed energy from waste plant with a gross electrical output of up to 95 MW, referred to as the South Humber Bank Energy Centre (SHBEC) (the 'Proposed Development'). The Proposed Development is located on land at the South Humber Bank Power Station (SHBPS), off South Marsh Road, Stallingborough (centred on approximate grid reference TA 230 133).
- 1.1.2 This document sets out the proposed strategy to retain and manage existing areas of tree planting in the north-west, west and south-west of the Site, to mitigate the effects of the Proposed Development on visual amenity. The findings of an arboricultural survey are referenced and management proposals set out.
- 1.1.3 Retention and management will be undertaken throughout the operational life of the Proposed Development.

## 2.0 INTRODUCTION

### 2.1 Overview

- 2.1.1 This Indicative Landscape Strategy document (Document Ref. 5.10) has been prepared on behalf of EP Waste Management Limited ('EPWM' or the 'Applicant'). It forms part of the application (the 'Application') for a Development Consent Order (a 'DCO'), that has been submitted to the Secretary of State (the 'SoS') for Business, Energy and Industrial Strategy, under section 37 of 'The Planning Act 2008' (the 'PA 2008').
- 2.1.2 EPWM is seeking development consent for the construction, operation and maintenance of an energy from waste ('EfW') power station with a gross electrical output of up to 95 megawatts (MW) including an electrical connection, a new site access, and other associated development (together 'the Proposed Development') on land at South Humber Bank Power Station ('SHBPS'), South Marsh Road, near Stallingborough in North East Lincolnshire ('the Site').
- 2.1.3 A DCO is required for the Proposed Development as it falls within the definition and thresholds for a 'Nationally Significant Infrastructure Project' (a 'NSIP') under sections 14 and 15(2) of the PA 2008.
- 2.1.4 The DCO, if made by the SoS, would be known as the 'South Humber Bank Energy Centre Order' ('the Order').
- 2.1.5 Full planning permission ('the Planning Permission') was granted by North East Lincolnshire Council ('NELC') for an EfW power station with a gross electrical output of up to 49.9 MW and associated development ('the Consented Development') on land at SHBPS ('the Consented Development Site') under the Town and Country Planning Act 1990 on 12 April 2019. Since the Planning Permission was granted, the Applicant has assessed potential opportunities to improve the efficiency of the EfW power station, notably in relation to its electrical output. As a consequence, the Proposed Development would have a higher electrical output (up to 95 MW) than the Consented Development, although it would have the same maximum building dimensions and fuel throughput (up to 753,500 tonnes per annum (tpa)).

### 2.2 The Applicant

- 2.2.1 The Applicant is a subsidiary of EP UK Investments Limited ('EPUKI'). EPUKI owns and operates a number of other power stations in the UK. These include SHBPS and Langage (Devon) Combined Cycle Gas Turbine ('CCGT') power stations, Lynemouth (Northumberland) biomass-fired power station, and power generation assets in Northern Ireland. EPUKI also owns sites with consent for new power stations in Norfolk (King's Lynn 'B' CCGT) and North Yorkshire (Eggborough CCGT).
- 2.2.2 EPUKI is a subsidiary of Energetický A Prumyslový Holding ('EPH'). EPH owns and operates energy generation assets in the Czech Republic, Slovak Republic, Germany, Italy, Hungary, Poland, Ireland, and the United Kingdom.

## 2.3 The Proposed Development Site

- 2.3.1 The Proposed Development Site (the 'Site' or the 'Order limits') is located within the boundary of the SHBPS site, east of the existing SHBPS, along with part of the carriageway within South Marsh Road. The principal access to the site is off South Marsh Road.
- 2.3.2 The Site is located on the South Humber Bank between the towns of Immingham and Grimsby; both over 3 km from the Site. The surrounding area is characterised by industrial uses dispersed between areas of agricultural land with the nearest main settlements being the villages of Stallingborough, Healing and Great Coates. The Site lies within the parish of Stallingborough although Stallingborough village lies over 2 km away.
- 2.3.3 The Site lies within the administrative area of NELC, a unitary authority. The Site is owned by EP SHB Limited, a subsidiary of EPUKI, and is therefore under the control of the Applicant, with the exception of the highway land on South Marsh Road required for the new Site access.
- 2.3.4 The existing SHBPS was constructed in two phases between 1997 and 1999 and consists of two CCGT units fired by natural gas, with a combined gross electrical capacity of approximately 1,400 MW. It is operated by EP SHB Limited.
- 2.3.5 The Site is around 23 hectares ('ha') in area and is generally flat, and typically stands at around 2.0 m Above Ordnance Datum (mAOD).
- 2.3.6 The land surrounding the Site immediately to the south, west and north-west is in agricultural use with a large polymer manufacturing site, Synthomer, and a waste management facility, NEWLINCS, both located to the north of the Site and also accessed from South Marsh Road. The estuary of the River Humber lies around 175 m to the east of the Site.
- 2.3.7 Access to the South Humber Bank is via the A180 trunk road and the A1173. The Barton railway line runs north-west to south-east between Barton-on-Humber and Cleethorpes circa 2.5 km to the south-west of the Site and a freight railway line runs north-west to south-east circa 300 m (at the closest point) to the Site.
- 2.3.8 A more detailed description of the Site is provided at Chapter 3: Description of the Proposed Development Site in the Environmental Statement ('ES') Volume I (Document Ref. 6.2).

## 2.4 The Proposed Development

- 2.4.1 The main components of the Proposed Development are summarised below:
- Work No. 1— an electricity generating station located on land at SHBPS, fuelled by refuse derived fuel ('RDF') with a gross electrical output of up to 95 MW at ISO conditions;
  - Work No. 1A— two emissions stacks and associated emissions monitoring systems;
  - Work No. 1B— administration block, including control room, workshops, stores and welfare facilities;

- Work No. 2— comprising electrical, gas, water, telecommunication, steam and other utility connections for the generating station (Work No. 1);
- Work No. 3— landscaping and biodiversity works;
- Work No. 4— a new site access on to South Marsh Road and works to an existing access on to South Marsh Road; and
- Work No. 5— temporary construction and laydown areas.

2.4.2 Various types of ancillary development further required in connection with and subsidiary to the above works are detailed in Schedule 1 of the DCO. A more detailed description of the Proposed Development is provided at Schedule 1 'Authorised Development' of the Draft DCO and Chapter 4: The Proposed Development in the ES Volume I (Document Ref. 6.2) and the areas within which each of the main components of the Proposed Development are to be built is shown by the coloured and hatched areas on the Works Plans (Document Ref. 4.3).

## 2.5 Relationship with the Consented Development

2.5.1 The Proposed Development comprises the works contained in the Consented Development, along with additional works not forming part of the Consented Development ('the Additional Works'). The Additional Works are set out below along with an explanation of their purpose.

- a larger air-cooled condenser (ACC), with an additional row of fans and heat exchangers – this will allow a higher mass flow of steam to be sent to the steam turbine whilst maintaining the exhaust pressure and thereby increasing the amount of power generated;
- a greater installed cooling capacity for the generator – additional heat exchangers will be installed to the closed-circuit cooling water system to allow the generator to operate at an increased load and generate more power;
- an increased transformer capacity – depending on the adopted grid connection arrangement the capacity will be increased through an additional generator transformer operating in parallel with the Consented Development's proposed generator transformer or a single larger generator transformer. Both arrangements would allow generation up to 95 MW; and
- ancillary works – the above works will require additional ancillary works and operations, such as new cabling or pipes, and commissioning to ensure that the apparatus has been correctly installed and will operate safely and as intended.

2.5.2 The likely construction scenario is for work on the Consented Development (pursuant to the Planning Permission) to commence in Quarter 2 ('Q2') of 2020 and to continue for around three years. Following grant of a DCO for the Proposed Development (approximately halfway through the three-year construction programme), the Applicant would initiate powers to continue development under the Order instead of the Planning Permission. The Order includes appropriate powers and notification requirements for the 'switchover' between consents, to provide clarity for the relevant planning

authority regarding the development authorised and the applicable conditions, requirements, and other obligations. Once the Order has been implemented the additional works would be constructed and the Proposed Development would be built out in full. The Proposed Development would commence operation in 2023.

- 2.5.3 Alternative construction scenarios, involving construction entirely pursuant to the Order, are also possible. Accordingly, three representative scenarios are described within Chapter 5: Construction Programme and Management in the ES Volume I (Document Ref. 6.2) and assessed in the Environmental Impact Assessment ('EIA').

## **2.6 The Purpose and Structure of this Document**

- 2.6.1 The purpose of this document is to set out the proposed strategy to mitigate the effects of the Proposed Development on landscape and visual amenity in accordance with relevant national and local planning policies.
- 2.6.2 The Proposed Development has been designed, as far as is practicable, to avoid or reduce effects on landscape and visual amenity through development design and impact avoidance. This assessment process and the impact avoidance measures to be implemented are described in Chapter 11: Landscape and Visual Amenity of ES Volume I (Document Ref. 6.2).
- 2.6.3 The condition of the trees within the Site has been determined by an arboricultural survey (see Appendix 2).
- 2.6.4 The proposals for the future maintenance and management of the trees are contained within this Strategy.
- 2.6.5 The Indicative Landscape Strategy is structured as follows:
- Section 3 summarises relevant legislation and planning policy;
  - Section 4 describes the existing landscape features and the impacts of the Proposed Development;
  - Section 5 describes the proposals for landscape management (Figure 1 shows the areas of the Site to which the different proposals will be applied); and
  - Section 6 describes the roles and responsibilities of all parties involved in the delivery of the Indicative Landscape Strategy.
- 2.6.6 The measures set out in this Indicative Landscape Strategy will be secured by DCO requirement.



## 3.0 LEGISLATION AND PLANNING POLICY

### 3.1 Legislation and Planning Policy Context

3.1.1 The Indicative Landscape Strategy takes account of guidance and policy relevant to landscape and visual amenity, including the European Landscape Convention.

### 3.2 National Policy Statements

3.2.1 The Overarching National Policy Statement (NPS) for Energy EN-1 (Department for Energy and Climate Change (DECC), 2011) includes a number of statements pertinent to the potential landscape, including GI, and visual impacts of energy infrastructure in general.

3.2.2 Section 5.9 of NPS EN-1 sets out the requirements for assessing and mitigating landscape and visual impacts of proposed nationally significant energy infrastructure projects. The scope of the assessment should include construction phase effects as well as the effects of the completed facility and its operation on landscape components, landscape character and views and visual amenity.

3.2.3 In terms of mitigation, EN-1 encourages the reduction in scale of the buildings taking into consideration function, appropriate siting, design including colours and materials, and landscape schemes to mitigate adverse landscape and visual impacts.

3.2.4 Paragraph 5.9.15 to 5.9.16 states:

*“The scale of such projects means that they will often be visible within many miles of the site of the proposed infrastructure. The IPC [now Secretary of State] should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project.*

*In reaching a judgment, the IPC should consider whether any adverse impact is temporary, such as during construction, and/ or whether any adverse impact on the landscape will be capable of being reversed in a timescale that the IPC considers reasonable.”*

3.2.5 Paragraph 5.9.18 states *“All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites. The IPC will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project.”*

3.2.6 Paragraph 5.9.22 states *“Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration.”*

3.2.7 Section 5.10 of EN-1 establishes the requirements for identifying and mitigating impacts of energy infrastructure projects on open space (including GI).

3.2.8 An energy infrastructure project will have direct effects on the existing use of the proposed site and may have indirect effects on the use, or planned use, of land in the vicinity for other types of development. Given the likely locations of energy infrastructure projects there may be particular effects on open space including GI.

3.2.9 Where GI is affected, the Planning Inspectorate should consider imposing requirements to ensure the connectivity of the GI network is maintained in the vicinity of the development and that any necessary works are undertaken, where possible, to mitigate any adverse impact.

### **3.3 The National Planning Policy Framework 2019**

3.3.1 The Ministry of Housing, Communities and Local Government published a revised National Planning Policy Framework (NPPF) in 2019. The NPPF includes policies that ensure developments are *“sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change.”*

3.3.2 Policy 15: Conserving and enhancing the natural environment recognises that the environment should be enhanced by:

*“protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*

*recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*

*maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*

*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*

*preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*

*remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate”.*

### **3.4 Local Planning Policy**

3.4.1 The North East Lincolnshire Local Plan 2013 to 2032 (NELC, adopted March 2018) has been considered as part of the landscape and visual impact assessment process. The following policies from the Local Plan are relevant to the landscape setting of the Proposed Development:

- SO6 – Built, historic and natural environment;

- SO9 – Design;
- Policy 40 - Developing a green infrastructure network; and
- Policy 42 – Landscape.

## 4.0 EXISTING LANDSCAPE FEATURES AND DEVELOPMENT IMPACTS

- 4.1.1 Vegetation within both the Main Development Area to the east of SHBPS (Work No. 1 on the Works Plan (Document Ref. 4.3)) and undeveloped areas of the Site situated to the north-west, west and south-west of SHBPS (included within Work Nos. 2, 3 and 5 on the Works Plan), are described in Chapter 10: Ecology of the ES Volume I (Document Ref. 6.2).
- 4.1.2 Work No. 4 comprises existing roads.
- 4.1.3 Vegetation within the Main Development Area comprises rough grassland with sparse scrub. It is assumed that all vegetation within the Main Development Area will be lost due to the construction of the Proposed Development.
- 4.1.4 Areas of plantation tree planting are present to the north-west, west and south of SHBPS with a mixture of rough and more heavily maintained grassland. This vegetation will be retained (or reinstated in the case of the grassland within the construction laydown area) and areas to the west of SHBPS will be subject to biodiversity mitigation enhancement measures (see the Biodiversity Strategy, Document Ref. 5.11).
- 4.1.5 The Proposed Development will result in no loss of woodland or other elements of landscape value. Six tree groups and five hedges, which are considered to be of low value, will be removed as a result of the Proposed Development.
- 4.1.6 The existing areas of trees and shrubs are in good condition (see Arboricultural Report in Appendix 2) and the trees currently present are predicted to have an average remaining life span of 20 plus years.
- 4.1.7 The plantation tree planting in the north-west of the Site consists of wild cherry, field maple, ash and poplar as the main canopy species with sporadic goat willow, yew and elder. The hedgerow around the group consists of blackthorn and hawthorn with a particularly large area of silverberry towards the southern section of the group. The trees are an average height of 6 m with some poplar trees approximately 10-12 m in height.
- 4.1.8 The plantation tree planting in the west and south-west of the Site consists of willow, field maple, poplar, hazel and ash. The trees are an average height of 6-10 m in height with some poplar trees approximately 15 m in height.
- 4.1.9 Understorey planting is concentrated around the edges of the groups. The understorey planting provides a dense canopy which provides a high level of screening.
- 4.1.10 The central area within the north-west plantation consists mainly of single stemmed and upright trees. This has been managed in the recent past with large piles of logs and brush resulting from mostly felled poplar and some ash. This has opened up some areas internally.
- 4.1.11 The landscape and visual impact assessment concluded that the Proposed Development will result in no significant effects on landscape character.

4.1.12 As a result, no mitigation measures specifically responding to effects on landscape character are proposed. However, the existing plantation within the Site to the north-west of SHBPS will be retained and will benefit from future maintenance and management to retain its existing screening (and ecological) function. Plantations within the Site to the west and south-west of SHBPS will also be retained, maintained and managed in accordance with the Biodiversity Strategy (Document Ref. 5.11).

## 5.0 LANDSCAPE MAINTENANCE AND MANAGEMENT

### 5.1 Overall Approach

- 5.1.1 The existing SHBPS already benefits from boundary tree plantations. These provide an important screening function to existing built structures at SHBPS and to the Proposed Development. The retained screening function of the north-west plantation is required to mitigate the visual effects of the Proposed Development.
- 5.1.2 Where trees in poor structural or physiological condition have been identified (see Arboricultural Report in Appendix 2), replacement planting proposals will be put forward to the local planning authority for agreement under the relevant requirement in the DCO (or if sought in advance of the DCO being granted, then under the relevant planning condition) to pre-empt gaps occurring and thus provide continued canopy cover and screening benefit.

### 5.2 Existing Woody Vegetation Management

- 5.2.1 Infill tree planting will be undertaken where there are existing suitable gaps in the plantation woodland, and where trees subsequently fail and gaps are created. An existing area of clearing will be planted during the first available planting season from the commencement of construction operations. The requirement for infill planting will be reviewed on a biannual basis.
- 5.2.2 The proposed species composition will consist of a range of native tree species based upon the species prevalent locally, as follows:

#### Infill Tree Planting Species

- field maple (*Acer campestre*);
- hazel (*Corylus avellana*);
- silver birch (*Betula pendula*);
- small leaved lime (*Tilia cordata*);
- common oak (*Quercus robur*); and
- yew (*Taxus baccata*).

#### Replacement Shrub Species

- blackthorn (*Prunus spinosa*);
- field maple (*Acer campestre*);
- hawthorn (*Crataegus monogyna*);
- holly (*Ilex aquifolium*); and
- yew (*Taxus baccata*).

- 5.2.3 All new trees will be notch planted at 2 m centres with a random distribution into cultivated ground. All planting will also be supported by an appropriate timber stake and tree shelter and will be fitted as per manufacturer's recommendations.

5.2.4 All scrub planting is to be notch planted into cultivated ground at 1.5 m and 2.5 m and supported by an appropriate timber stake and shrub shelter (all fitted as per manufacturer's recommendations).

### **5.3 Vegetation Management Principles**

5.3.1 Where new native planting is undertaken the following principles will apply:

- native trees and shrubs will be sourced from a supplier which follows the Forestry Commission's Voluntary Identification Scheme for British Native Trees and Shrubs; and
- terms of supply will include a condition that no part of the order shall be substituted with stock of alternative species or origin and that any change must be mutually agreed.

5.3.2 The above requirements will be incorporated into contractor specifications and contracts as appropriate to deliver genuinely native plantings.

5.3.3 Tree protection will either be through the use of a standard tree or shrub shelter (750 mm tall by 150 mm) or through the erection of appropriate post and wire fencing with additional rabbit proof netting, dependent upon the final size and shape of the tree planting.

### **5.4 Maintenance of Infill Tree Planting and Replacement Shrub Planting**

5.4.1 The retained trees and infill tree planting will be subject to the indicative management and maintenance regime set out in Appendix 1 of this document. Where replacements are identified in the course of implementing this regime, these would be agreed beforehand with NELC.

5.4.2 All tree planting will be inspected every five years throughout the operational phase of the Proposed Development and replacement planting with the same specimen will be agreed with NELC under the relevant DCO requirement and implemented during the next available planting season, to replace failing or failed specimens. This is secured via a suitable requirement in Schedule 2 of the DCO (Document Ref. 2.1).

## 6.0 ROLES AND RESPONSIBILITIES

6.1.1 EPWM and/ or the appointed Engineering, Procurement and Construction (EPC) contractor will be responsible for:

- correct instruction of all parties contributing to delivery of the final Landscape Strategy (including but not restricted to EPWM staff, landscape architects, landscape contractors, construction contractors and management organisations);
- compliance with the final Landscape Strategy and relevant legislation, including obtaining approval pursuant to the requirements in the DCO (e.g. where replacement of trees is identified as necessary);
- keeping the appointed landscape architect/ arboriculturalist informed of work activities that require support and supervision, so that it is clear when attendance at site is required;
- enacting/ enforcing recommendations made by the landscape architect/ arboriculturalist, or otherwise agreeing an appropriate alternative course of action if it is subsequently determined that previous advice is not practicable or is out of date; and
- keeping a record of measures taken to deliver the requirements of the final Landscape Strategy to provide an auditable record of compliance.

6.1.2 The appointed landscape architect/ arboriculturalist will be responsible for:

- providing specialist site supervision in the form of walk over assessments relating to relevant landscape areas. This will be to assess landscape components and their condition and identify the need for landscape enhancement as instructed and in accordance with the agreed scope of work and contractual obligations, once the proposed scheme has been completed;
- monitoring and assessing the landscape related elements of the final Landscape Strategy for their effectiveness on an annual basis for the first five years following the completion of the development;
- ensuring that the landscape related elements of the final Landscape Strategy are reviewed every 5 years beyond the initial monitoring and assessment stage. The Landscape Strategy shall be amended accordingly to suit any changing landscape conditions and ultimately inform the maintenance operations associated with the development throughout the operational life of the Proposed Development; and
- ensuring that any reviews associated with landscape related elements of the approved Strategy clearly identifies any changes to site conditions and circumstances, whether the aims and objectives of the final Landscape Strategy are being met, and where identified changes are needed to existing management practices and timeframes.



## 7.0 REFERENCES

Department for Energy and Climate Change (2011) Overarching National Policy Statement for Energy EN-1 (July 2011).

Ministry of Housing, Communities and Local Government (2019) *National Planning Policy Framework*.

North East Lincolnshire Council (2018) North East Lincolnshire Local Plan 2013 to 2033 (Adopted 2018)

## FIGURE 1: INDICATIVE LANDSCAPE MANAGEMENT PLAN

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

- LEGEND**
- Order Limits
  - Main Development Area
  - Plantation to be Managed



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Purpose of Issue  
**SHBEC INDICATIVE  
 LANDSCAPE STRATEGY**

Client  
**EP WASTE MANAGEMENT LTD**

Project Title  
**SOUTH HUMBER BANK  
 ENERGY CENTRE DCO**

Application Document Ref  
**INDICATIVE LANDSCAPE  
 MANAGEMENT PLAN**

Drawn LC	Checked RC	Approved LK	Date 20/03/2020
AECOM Internal Project No. 60580855		Scale @ A3 1:3,000	

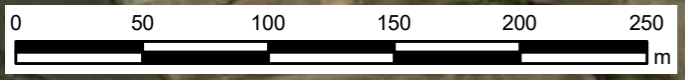
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Drawing Ref  
**FIGURE 1**

File Name: \\ukls2pfsrv001\LE\_P\Projects\Newproj\60580855 - Project Kcalia aka SHBEC\CAD\_C\GIS\Workspace\Landscape Strategy\1\_Landscape\_Management\_Plan.mxd



## **APPENDIX 1: INDICATIVE MANAGEMENT AND MAINTENANCE SCHEDULE**

LANDSCAPE ELEMENT TYPE	MAINTENANCE YEAR 1												MAINTENANCE YEARS 2, 3 & 4												MAINTENANCE YEAR 5 AND ONGOING THROUGHOUT OPERATION												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	
<b>WOODLAND, WOODLAND EDGE, SCRUB &amp; SCRUB EDGE</b>																																					
Spot-treat undesirable species																																					
Hand-pulling of ragwort (if required)																																					
Re-firm plants																																					
Inspect and adjust stakes, guards and ties																																					
Pruning																																					
Apply herbicide																																					
Control unwanted emerging scrub within plots																																					
Watering (timing as required)																																					
Thinning and coppicing																																					
Remove litter, rubbish and debris																																					
Replacement of failed/ failing plants																																					
Remove stakes and guards																																					
<b>MONITORING AND INSPECTION</b>																																					
Monthly weed control inspection																																					
Annual inspection of all planted areas to record failed or defective plants																																					
Monitoring of landscaped areas to access species diversity and establishment																																					

## **APPENDIX 2: ARBORICULTURAL REPORT**

# South Humber Bank Energy Centre Project

Planning Inspectorate Reference: EN010107

South Marsh Road, Stallingborough, DN41 8BZ

The South Humber Bank Energy Centre Order

**Document Reference: 5.10 Appendix 2 Arboricultural Survey**

The Infrastructure Planning (Applications: Prescribed Forms and Procedure)  
Regulations Regulation 5(2)(q)

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Applicant: EP Waste Management Ltd  
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## GLOSSARY

<b>Abbreviation</b>	<b>Description</b>
ACC	Air-cooled condenser.
AGI	Above Ground Installation.
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
BS	British Standard
CCGT	Combined Cycle Gas Turbine.
DCO	Development Consent Order: provides a consent for building and operating an NSIP.
EfW	Energy from Waste: the combustion of waste material to provide electricity and/or heat.
EIA	Environmental Impact Assessment.
EPUKI	EP UK Investments Ltd.
EPWM	EP Waste Management Limited ('The Applicant').
ES	Environmental Statement.
ExA	Examining Authority: An inspector or panel of inspectors appointed to examine the application.
LPA	Local planning authority.
mAOD	Metres Above Ordnance Datum.
MW	Megawatt: the measure of power produced.
NELC	North East Lincolnshire Council.
NJUG	National Joint Utilities Group.
NPPF	National Planning Policy Framework
NPS	National Policy Statement.
NSIP	Nationally Significant Infrastructure Project: for which a DCO is required.
PA 2008	Planning Act 2008.
PINS	Planning Inspectorate.
Q2	Quarter 2.
RDF	Refuse derived fuel.
RPA	Root Protection Area.
SHBEC	South Humber Bank Energy Centre.
SHBPS	South Humber Bank Power Station.
SoS	Secretary of State.
TCP	Tree Constraints Plan.
TPP	Tree Protection Plan.



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## 1.0 EXECUTIVE SUMMARY

- 1.1.1 This Arboricultural Survey Report has been prepared on behalf of EP Waste Management Limited to inform the application for a Development Consent Order (DCO) for the construction, operation and maintenance of a proposed energy from waste plant with a gross electrical output capacity of up to 95 MW, referred to as the South Humber Bank Energy Centre (SHBEC) (the 'Proposed Development').
- 1.1.2 A tree survey identifies the condition of trees and hedges and the likely impacts of developments on them. The main purpose of this tree survey was to establish the condition of the trees and hedges within the Site that are to be retained, to ensure that their ongoing landscape and visual screening functions could continue to be relied upon, and to inform proposals for their ongoing protection, management and maintenance during the construction and operation of the Proposed Development.
- 1.1.3 The Proposed Development will result in the removal of six tree groups and five hedges. These tree groups and hedges comprise blackthorn, hawthorn, holly and gorse and are all classified as low quality (Category C).
- 1.1.4 All other trees within the Site will be retained, managed and maintained throughout the construction and operation of the Proposed Development to maintain their landscape and visual screening function. The Proposed Development is not anticipated to have any impacts on the Root Protection Areas of any retained tree features.

## **2.0 INTRODUCTION**

### **2.1 Overview**

2.1.1 This Arboricultural Survey Report forms Appendix 2 to the Indicative Landscape Strategy (Document Ref. 5.10), to inform the application for a Development Consent Order (DCO) for the construction, operation and maintenance of a proposed energy from waste plant with a gross electrical output capacity of up to 95 MW, referred to as the South Humber Bank Energy Centre (SHBEC) (the 'Proposed Development')..

### **2.2 The Purpose and Structure of this Document**

2.2.1 The purpose of a tree survey is to identify the condition of trees and hedges and the likely impacts of development on them. With regards to the Proposed Development, the blackthorn, hawthorn, holly and gorse within the Main Development Area of the Site will be removed and the remainder of the trees and hedges in the wider Site will not be directly affected by the Proposed Development. The main purpose of this tree survey was therefore to establish the condition of the trees and hedges that are to be retained within the Site to be retained, to ensure that their ongoing landscape and visual screening functions can continue to be relied upon, and to inform their ongoing protection, management and maintenance during the construction and operation of the Proposed Development (see the Indicative Landscape Strategy (Document Ref. 5.10)).

2.2.2 The Arboricultural Survey Report is structured as follows:

- Section 3 summarises relevant planning policy and guidance, and the arboricultural survey methodology;
- Section 4 describes general arboricultural principles;
- Section 5 summarises the findings of the arboricultural survey;
- Section 6 comprises the arboricultural impact assessment; and
- Section 7 provides the conclusions of the report.

## 3.0 BACKGROUND

### 3.1 Trees and the Planning Process

- 3.1.1 The National Planning Policy Framework (NPPF) seeks to ensure that new development is sustainable and underlines the importance of Green Infrastructure, of which trees form an integral part. This encompasses recognition of the importance of trees in relation to the management of air, soil and water quality along with other associated ecosystem services and climate change adaptation. The NPPF also seeks to achieve the protection and enhancement of landscapes. Finally it specifically identifies veteran and ancient trees and woodland as a highly valuable and irreplaceable habitat.
- 3.1.2 British Standard (BS) 5837:2012 Trees in relation to design demolition and construction – Recommendations (BS5837) (British Standards Institution, 2012) provides a framework which sets out how trees should be considered in this context and also explicitly applies to development where planning consent is not required.
- 3.1.3 BS5837 recommends that a tree survey is undertaken to identify the quality and benefits of trees and the spatial constraints associated with them. This is then used to produce a Tree Constraints Plan showing the above and below ground constraints associated with trees. This drawing is used to inform the design process and to allow the retention of good quality trees where appropriate.
- 3.1.4 An Arboricultural Impact Assessment (AIA) may then be developed to identify the likely direct and indirect impacts of the development, and a Tree Protection Plan may be prepared to identify trees to be removed or retained and to illustrate how retained trees are to be protected. An Arboricultural Method Statement (AMS) may be required to detail how sensitive operations are to be achieved in close proximity to retained trees.

#### Local Policy Context

- 3.1.5 The planning policy document of relevance is the Local Plan 2013 – 2032 (NELC, 2018a). This document sets out the spatial planning framework for the district and incorporates policies specifically relating to trees as well as other policies in which trees are considered. The most significant policy is Policy 42 Landscape which states:

*“Landscape character should be given due consideration in the nature, location, design and implementation of development proposals. Developers should: ... D. retain and protect trees and hedgerows which offer value for amenity, biodiversity and landscape; and...”*

- 3.1.6 The justification for this policy is stated as follows:

*“The Council will seek to protect trees and hedgerows that offer value for amenity and biodiversity. The Council has extensive powers through Tree Preservation Orders to protect trees whether they are individual specimens, groups or trees of entire woodlands. Protection can also be provided for important hedgerows which meet certain criteria under the Hedgerow Regulations (1997). In addition to these powers the Council will seek, through conditions to safeguard important landscape assets,*

*this will include measures to ensure they are integrated in landscaping schemes to safeguard them through the construction period to avoid damage due to proximity of vehicle and plant manoeuvres, material storage or provision of services”.*

- 3.1.7 The above extracts demonstrate the importance of tree retention, protection and where this is not feasible, mitigation for tree loss to NELC. Further planning guidance relating to trees and development can be found on the NELC website (NELC, 2018b).

### **3.2 Methodology**

- 3.2.1 The tree survey has been based on the topographical survey plan for the Site (ref: 0220-AEC-7358 SHB POWER STATION 3D FINAL by Avoin Maa Surveys).
- 3.2.2 The tree survey was conducted in accordance with the requirements of BS5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS5837) (BSI, 2012).
- 3.2.3 The initial fieldwork was undertaken on 27<sup>th</sup> February 2020, during which dimensional data and observational information were collected. A diameter tape measure was used to measure stem diameters where feasible.
- 3.2.4 The fieldwork comprised a preliminary, non-intrusive, visual survey undertaken from ground level with the specific intention of evaluating the quality and benefits of trees on Site.
- 3.2.5 Average dimensions or dimensional ranges have occasionally been used, where appropriate, to best describe features.
- 3.2.6 A Tree Constraints Plan (TCP) showing the position of trees and the spatial constraints associated with them is included as Annex A of this report, which corresponds with the Tree Survey Schedule presented in Annex B.
- 3.2.7 The tree categorisation process recommended by BS5837:2012 is summarised in Table 3.1 below and corresponds with the tree canopy outline shown on the TCP and the information in the Tree Survey Schedule included as Annex B.

**Table 3.1: BS5837:2012 Tree Categorisation process**

<b>CATEGORY</b>	<b>DEFINITION</b>
A	High quality, minimum of 40+ years remaining contribution
B	Moderate quality, minimum of 20+ years remaining contribution
C	Low quality, minimum of 10+ years remaining contribution
U	Unsuitable for retention, <10 years remaining contribution
1	Arboricultural value
2	Landscape value
3	Conservation or cultural value

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## 4.0 GENERAL ARBORICULTURAL PRINCIPLES

### 4.1 General Principles

- 4.1.1 Trees are dynamic living organisms which provide essential benefits to society and the wider environment. Any proposed development with the potential to impact on trees must take into consideration the value of trees on site; the impact of any proposed activity along with any potential future conflicts on the site.
- 4.1.2 Tree branches and roots frequently grow across site boundaries and off-site trees can pose a significant constraint which should be carefully considered when assessing the developable space within a site.
- 4.1.3 The general principles described in this section are provided for background information. However, it should be noted that low quality trees and hedges within the Main Development Area are to be removed (so will not pose a constraint to the Proposed Development), and retained trees are located away from construction working areas and will be suitably protected.

### 4.2 Below Ground Constraints

- 4.2.1 Below ground tree roots and the soil environment in which they grow need to be protected if the tree is to be retained. Trees grow in association with fungi and other soil organisms which are of key importance to tree health. Roots are essential for anchorage, the uptake of water and nutrients, and the storage of energy (carbohydrates) for the future growth and function of the tree.
- 4.2.2 Roots can be damaged by physical severance or wounding (e.g. following excavation of the soil) which can lead to the development of decay and a decline in vitality and/ or instability. Raising the soil level can bury tree roots at a depth where suitable conditions for growth are less available. Toxic materials discharged into the soil (such as cement based aggregates, fuel and chemicals) can lead to root death and dysfunction. Soils can be compacted to levels inhospitable to tree growth with even a single pass of machinery, regular pedestrian traffic or the storage of plant and materials. Relieving compaction can be problematic and may require costly remedial works. Changes in drainage/ water levels can also have significant long-term impacts for tree health.
- 4.2.3 The effects of these incursions may take many years to manifest, with a resulting decline in amenity value and potentially the death or failure of the tree. It should be noted that older trees are particularly sensitive to damage and changes in conditions.
- 4.2.4 The Root Protection Area (RPA) is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. This area is deemed to be particularly important for tree stability, growth, function and health. However, roots may extend far greater distances, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water and nutrients). It is generally accepted that tree roots are predominantly located in the upper 1,000 mm of soil; however, roots may develop at deeper levels where conditions allow.



- 4.2.5 RPAs are calculated as per BS5837: 2012 Annexe C, D and Section 4.6 (BSI, 2012).
- 4.2.6 The RPA of the existing tree stock is an important material consideration when considering site constraints and planning development activities. The RPAs of significant trees on Site are shown on the TCP included as Annex A.
- 4.2.7 The default position must be that all development, including any associated services will occur outside the RPAs of retained trees. Where this is unavoidable, it may be appropriate to use special measures to install structures, services or surfacing within RPAs which allow the protection of roots and soil structure which are essential for tree growth and keep any incursion to a minimum.
- 4.2.8 Further steps to improve or increase the useable rooting area available to the tree may also be required.
- 4.2.9 The relevance of this guidance to the Proposed Development is discussed in Section 6.

### **4.3 Soils**

- 4.3.1 On shrinkable clay soil, tree growth can lead to the differential movement of structures as moisture is removed from the soil during the growing season. National House Building Council (NHBC) Standards Chapter 4.2: Building Near Trees (2018) provides guidance on the avoidance of damage to trees during the construction of foundations and the avoidance of ground heave.
- 4.3.2 As the tree features within the Main Development Area will be removed and all other trees to be retained are located away from the Main Development Area to the north-west, west and south-west of SHBPS, such considerations are not considered to be relevant to the Proposed Development.

### **4.4 Above Ground Constraints**

- 4.4.1 Tree stems and branches can restrict available space on a site. Damage or wounding (including excessive pruning) can significantly reduce the amenity contribution of the tree and may lead to the development of dysfunction and decay, with significant long-term implications for tree health. The future impact of existing trees should be carefully considered, including individual species characteristics (such as potential future size, fruit fall, shade etc.) and how the tree will interact with any proposed development and future land use. Annual tree growth can lead to direct damage if stems/ branches (or roots) come into physical contact with structures and this must also be taken into consideration.
- 4.4.2 The existing trees within the Site to the north-west, west and south-west of SHBPS are located away from the Main Development Area, and are to be retained, protected, managed and maintained as part of the Proposed Development, to retain their landscape and visual screening function.

### **4.5 Trees and Risk in the Context of Development**

- 4.5.1 Tree owners/ managers have a common law legal duty to prevent foreseeable harm. It is generally accepted that this duty can be fulfilled by undertaking proactive inspections of significant trees to identify obvious

defects and by taking appropriate remedial action or gaining further advice as appropriate. Further guidance is available from the National Tree Safety Group (NTSG, 2011).

- 4.5.2 The tree survey carried out as the basis of this report is primarily for planning purposes, focusing on the quality and benefits of the trees and is not specifically designed to assess the safety of trees on Site. However, no obvious safety issues have been identified in the Tree Survey Schedule.
- 4.5.3 The Construction (Design and Management) Regulations (2015) states that developers and contractors have responsibilities for health and safety as a result of their actions. Should trees be left in an unstable or hazardous condition the Health and Safety Executive (HSE) could seek to prosecute those responsible along with the potential for further Civil claims for damages.

#### **4.6 Trees and Wildlife**

- 4.6.1 Full consideration must be given to the presence of species protected under the Wildlife and Countryside Act (1981 - as amended), the Countryside Rights of Way Act (2000) and the Conservation of Habitats and Species Regulations (2017), in particular the presence of bats and/ or nesting birds (see ES Volume I Chapter 10: Ecology (Document Ref. 6.2) for further information). Ecological surveys have not identified the presence of bats using the Site but it is recommended that wherever possible, significant tree/ hedge works take place outside of the typical bird nesting season of March to September.

#### **4.7 Tree Works**

- 4.7.1 The limited tree surgery recommendations contained within this report (see Annex B) are to be undertaken in accordance with BS3998: 2010 Tree work – Recommendations (BS3998) by suitably qualified and insured contractors. Significant pruning works are best undertaken when trees are dormant or outside periods of high functional activity to reduce the overall impact on energy available to the tree for growth and processes. In general, the optimum period for works is between November to February and July to August (subject to the presence of protected species) when the tree is less active and better placed to respond to wounding and a reduction in leaf area.

## 5.0 FIELD WORK OBSERVATIONS

### 5.1 The Site

- 5.1.1 Vegetation within both the Main Development Area to the east of SHBPS (Work No. 1 on the Works Plan (Document Ref. 4.3)) and undeveloped areas of the Site situated to the north-west, west and south of SHBPS (included within Work Nos. 2, 3 and 5 on the Works Plan), are described in the Chapter 10: Ecology of the ES Volume I (Document Ref. 6.2).
- 5.1.2 Work No. 4 comprises existing roads.
- 5.1.3 At the time of writing, vegetation within the Main Development Area comprises rough grassland with sparse scrub. All vegetation within the Main Development Area will be lost due to the construction of the Proposed Development.
- 5.1.4 Areas of plantation tree planting are present to the north-west, west and south-west of SHBPS with a mixture of rough and more heavily maintained grassland. This vegetation will be retained (or reinstated in the case of the grassland within the construction laydown area) and areas to the west of SHBPS will be subject to biodiversity mitigation and enhancement measures (see the Biodiversity Strategy, Document Ref. 5.11).
- 5.1.5 The Site boundary is shown on the TCP in Annex A.

### 5.2 The Trees

- 5.2.1 The tree survey identified 20 features (as detailed in Annex B and shown on the TCP at Annex C) consisting of 11 groups, eight hedges and one tree. The majority of features are considered to be semi-mature. No tree features have been categorised as Category A, one group has been categorised as Category B, one individual tree has been identified as Category U and the remaining tree features including ten groups and eight hedges are Category C.
- 5.2.2 The tree population on Site consists of a mixture of species with the most frequently occurring as blackthorn (*Prunus spinosa*). Other species identified include willow (*Salix sp.*), holly (*Ilex aquifolium*), field maple (*Acer campestre*), rowan (*Sorbus aucuparia*), wild cherry (*Prunus avium*), aspen (*Populus tremula*), apple (*Malus sp.*), pear (*Pyrus sp.*), plum (*Prunus sp.*), damson (*Prunus domestica*), hazel (*Corylus avellana*), goat willow (*Salix caprea*), common oak (*Quercus robur*), alder (*Alnus glutinosa*), yew (*Taxus baccata*), gorse (*Ulex europaeus*), hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), ash (*Fraxinus excelsior*) and silverberry (*Eleagnus sp.*).
- 5.2.3 Collectively the surveyed trees have a moderate amenity value as they provide a good amount of screening to the Site and the existing SHBPS.
- 5.2.4 The most significant groups that provide screening are G4, G7 and G8. These groups are located on the north-west, west and south-west of the Site and provide a good level of screening of the Site.
- 5.2.5 One tree was found to be unsuitable for retention. T6 was found to be in poor condition due to a snapped-out leader and other damaged branches. It is unlikely to survive in the long-term and can be removed.

5.2.6 The Tree Survey Schedule within Annex B and photographs within Annex C provide further details of the trees surveyed.

### **5.3 Statutory and Non Statutory Designations**

5.3.1 AECOM contacted NELC via email on 17<sup>th</sup> February 2020. A response was received from an assistant town planner on 18<sup>th</sup> February 2020 who confirmed there are currently no Tree Preservation Orders or Conservation Area designations identified which could affect trees within or immediately adjacent to the Site.

5.3.2 Following a review of the Department for the Environment, Food and Rural Affairs (Defra)'s online Magic Map application (<https://magic.defra.gov.uk/MagicMap.aspx>), no tree specific designations, including ancient woodland or sites identified as Priority Habitats within the Biodiversity Action Plan (BAP) were identified within or immediately adjacent to the Site.

5.3.3 A felling licence is required by the Forestry Commission to fell more than 5 m<sup>3</sup> of timber in any calendar quarter (subject to relevant exemptions including tree safety works, tree works for a statutory undertaking and tree works in gardens, churchyards and designated public open space). This does not apply to the trees shown to be removed for the Proposed Development.

5.3.4 The Hedgerow Regulations 1997 protect agricultural or countryside hedgerows which meet the requirements of an 'important hedgerow'. There are no important hedgerows within the Site.

## **6.0 ARBORICULTURAL IMPACT ASSESSMENT**

### **6.1 Purpose**

- 6.1.1 This impact assessment sets out the likely principal direct and indirect impacts of the Proposed Development on the trees on or immediately adjacent to the Site and suitable mitigation measures to allow for the successful retention of significant trees or to compensate for trees to be removed, where appropriate.
- 6.1.2 The full extent of the Main Development Area (Work No. 1) and construction laydown area (Work No. 5) are shown on the TPP included as Annex E.
- 6.1.3 A brief summary of trees to be removed, tree works and incursions related to the Proposed Development are detailed in Table 6.1 below.

**Table 6.1: Summary of Removals, Incursions and Pruning to Facilitate the Proposed Development**

<b>IMPACT</b>	<b>CATEGORY A</b>	<b>CATEGORY B</b>	<b>CATEGORY C</b>	<b>CATEGORY U</b>
Trees to be removed to facilitate the Proposed Development	0	0	G10, G11, H12, H13, G14, G15, G16, G17, H18, H19, H20	0 (but note T6 requires removal regardless of Proposed Development)
<b>TOTAL</b>	0	0	6 groups and 5 hedges	0
Trees which may require some incursion into their Construction Exclusion Zone to allow the Proposed Development	0	0	0	0
<b>TOTAL</b>	0	0	0	0
Trees to be pruned to facilitate the Proposed Development	0	0 (but note G5 requires pruning regardless of Proposed Development)	0	0
<b>TOTAL</b>	0	0	0	0

## **6.2 Trees to be Removed**

- 6.2.1 Six groups and five hedges are located within the Main Development Area and are to be removed to facilitate the Proposed Development. These are all classified as low quality (Category C) and comprise blackthorn, hawthorn, holly and gorse.
- 6.2.2 The loss of these features is necessary to achieve the construction of the Proposed Development. The removal of these features will have a limited impact to the tree population because they represent a small portion of the total tree cover when compared to other groups on Site. All the features to be removed present low value to the Site and can be easily replaced.
- 6.2.3 In addition, one tree, T6, a Category U tree of very low quality is also recommended for removal. This tree is not suitable for long term retention and its removal is justified regardless of the Proposed Development.
- 6.2.4 All of the remaining recorded trees will be retained and protected.

## **6.3 Tree Works**

- 6.3.1 Within G5 (a recently planted orchard within the Site) there are several trees that have snapped or damaged branches and it is recommended that these be pruned back (regardless of the Proposed Development) to avoid affecting the trees' health. This level of pruning will not have a negative effect on the health of amenity features of these trees.
- 6.3.2 No additional works to retained trees are likely to be required.
- 6.3.3 All tree work is to follow the principles of BS3998: 2010 Treework – Recommendations and must be carried out by suitably qualified and insured contractors. The Arboricultural Association provides a list of contractors who meet these requirements which can be found at [www.trees.org.uk](http://www.trees.org.uk).

## **6.4 Incursions within the RPA or Canopy Spread**

- 6.4.1 It is anticipated that the Proposed Development will not have an impact on the RPA of any retained tree features. The construction laydown area (Work No. 5) has been defined with reference to the RPA and canopy spread of nearby trees (see Section 6.6 below), and it is expected that all new services can be routed to avoid tree RPAs and canopy spread (see Section 6.8 below).

## **6.5 The Future Impact of Retained Trees**

- 6.5.1 The future impact of retained trees in conjunction with the Proposed Development and future use of the Site has been considered.
- 6.5.2 All the retained trees on Site are located on the western area of the Site away from the Main Development Area, but the plantation in the south-west of the Site will be adjacent to the construction laydown area (Work No. 5) so protection measures will be implemented in this area (see Section 6.6 below).
- 6.5.3 Retained trees will require periodic inspection to assess their structural condition and safety. This is specified in the Indicative Landscape Strategy (Document Ref. 5.10).

6.5.4 The majority of trees on the Site are broadleaved and will drop leaves and fruits in autumn and will produce flowers in the spring. As these trees are located in the western part of the Site, away from the Main Development Area, this is not expected to introduce any additional maintenance burden compared to the existing maintenance required for SHBPS.

## **6.6 Tree Protection**

6.6.1 Retained trees are vulnerable to damage from construction activities which can include physical damage to stems and branches following impacts with plant/ machinery, root severance following trenching, root death or dysfunction following damage to soil structure (caused by the movement of people or machinery on unsurfaced ground) or via the spillage of materials toxic to tree health.

6.6.2 The default position is that the RPA and canopy spread of trees to be retained will form an effective Construction Exclusion Zone, secured with robust fencing where no access will be permitted. Where access with construction plant or machinery is necessary within this area (for example if service routing cannot avoid the Construction Exclusion Zone) special measures such as the use of ground protection and arboricultural supervision are generally required.

## **6.7 Site Organisation, Storage and Use of Materials, Plant and Machinery**

6.7.1 All construction site facilities including site huts, staff and contractor parking and areas for storage will be located outside of the RPA or canopy spread of retained trees. The Construction Exclusion Zones identified on the TPP will be fully respected and their location and significance will be highlighted to all site staff and contractors during the formal site briefing.

## **6.8 Services**

6.8.1 Excavation to install services has the potential to result in unacceptable root severance which could result in instability, dysfunction or the death of trees. Repeated incursions are particularly damaging and will be avoided by bundling services wherever possible.

6.8.2 The default position will therefore be that all services be routed outside of the RPA of retained trees. The following general principles would apply where any services must be routed within the RPA of a retained tree:

- any works to install services within the RPA of a retained tree will take place as specified in a method statement;
- the principles of the National Joint Utilities Group (NJUG) Volume 4 guidance must be adhered to;
- all services will be bundled as far as possible and, where within RPAs of retained trees, installed using hand/ compressed air excavation (e.g. for shallow service runs) or trenchless techniques such as impact moling (thrust boring) with all access pits and inspection chambers being located outside of the RPA;
- the route will run as far from the main stem of a retained tree as possible and must be at a minimum depth so that the upper 1 m of the soil profile is



undisturbed. The depth of the run may need to be adjusted to account for soil type and species variation and this must be determined subject to the advice of an arboriculturist; and

- any water pipes will be constructed so as to be resistant to ingress by tree roots (both existing trees, and newly planted trees) which could include the use of root barriers where appropriate.

## **7.0 CONCLUSIONS**

- 7.1.1 The majority of the tree population within the Site is considered to be semi mature and collectively the tree population has a moderate amenity value due to the screening the trees provide for the Site.
- 7.1.2 The Proposed Development requires the removal of six groups and five hedges, all classified as low quality (Category C), from the Main Development Area. These trees do not provide screening and so do not contribute to the collective amenity value of the Site's tree population.
- 7.1.3 In addition, one tree, T6, is classified as very low quality and is unsuitable for retention regardless of the Proposed Development. This tree was found to have significant damage to the stem and is unlikely to survive, so it will be removed.
- 7.1.4 The management of the trees to be retained is set out in the Indicative Landscape Strategy (Document Ref. 5.10), which includes replacement tree planting and management of existing tree groups.

## 8.0 REFERENCES

British Standards Institution (2010) *BS3998:2010. Tree work – Recommendations.*

British Standards Institution (2012) *BS5837:2012. Trees in relation to design, demolition and construction – Recommendations.*

British Standards Institution (2014) *BS8545: 2014 Trees: from the nursery to independence in the landscape - Recommendations*

Ministry of Housing, Communities and Local Government (2019) *National Planning Policy Framework (NPPF).*

National House Building Council (2018) *NHBC Standards Chapter 4.2: Building Near Trees*

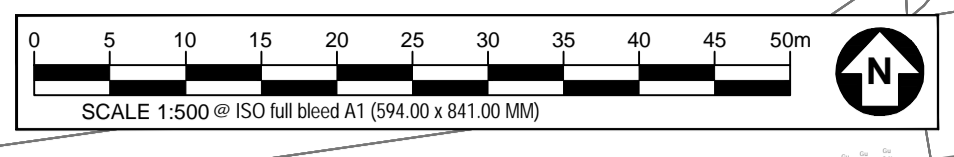
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## **ANNEX A: TREE CONSTRAINTS PLAN**

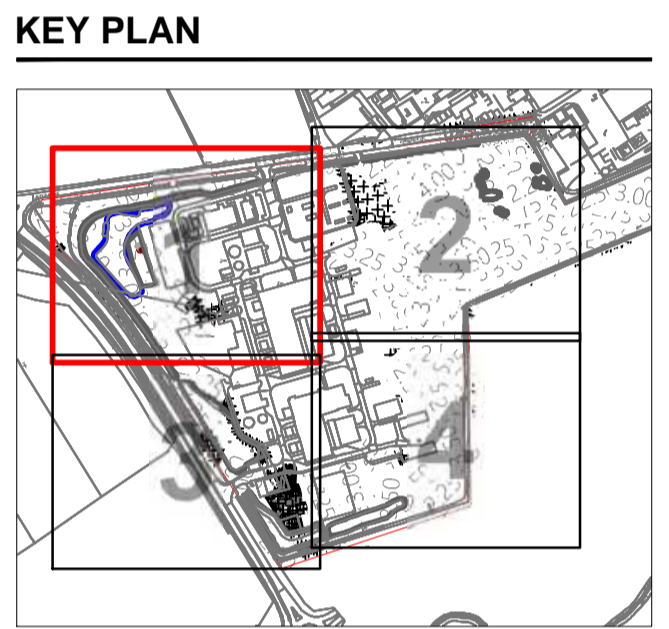


**PROJECT**  
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 Energy Centre Project

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- GENERAL NOTES**
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  - \* INDICATES A TREE / GROUP WHOSE POSITION IS APPROXIMATE AS BASED UPON AERIAL PHOTOGRAPHY AND ON SITE OBSERVATIONS.
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- KEY**
- A - CATEGORY TREES (HIGH QUALITY & VALUE)
  - B - CATEGORY TREES (MODERATE QUALITY & VALUE)
  - C - CATEGORY TREES (LOW QUALITY & VALUE)
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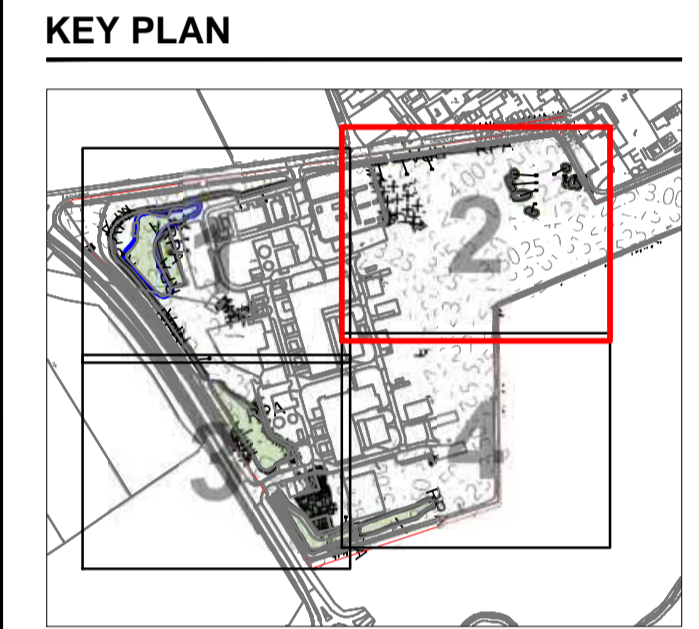
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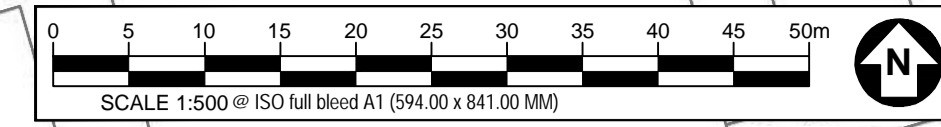
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**KEY PLAN**



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**SHEET TITLE**

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SHEET 003 -

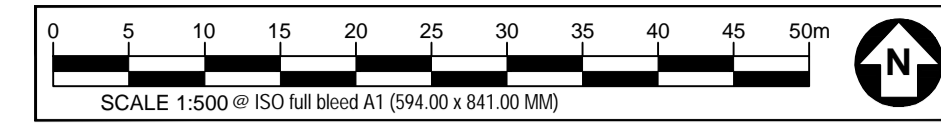
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**ANNEX B: TREE SURVEY SCHEDULE**

REF. NO	SPECIES COMMON NAME (SCIENTIFIC NAME)	ESTIMATED HEIGHT (M)	STEM DIAMETER (MM)	CANOPY SPREAD (M)				FIRST SIGNIFICANT BRANCH & DIRECTION (M)	CANOPY CLEARANCE HEIGHT (M)	PHYSIOLOGICAL CONDITION	LIFE STAGE	STRUCTURAL CONDITION	OBSERVATIONS	PRELIMINARY MANAGEMENT RECOMMENDATIONS	WORKS TO FACILITATE THE DEVELOPMENT	ESTIMATED REMAINING CONTRIBUTION (YRS)	CATEGORY	RPA (M <sup>2</sup> )	RPA RADIUS (M)
				N	S	E	W												
H1	Blackthorn ( <i>Prunus spinosa</i> ), holly ( <i>Ilex aquifolium</i> )	2 Avg, <3	80 Avg	See Plan				n/a	0+	Good	SM	Fair	Well maintained screening hedge. Predominantly blackthorn with some holly.	None	None	20+	C2	2.90	0.96
H2	Blackthorn ( <i>Prunus spinosa</i> )	2	80 Avg	See Plan				n/a	0+	Good	SM	Fair	Small hedge visually separate from the others. Well maintained. No major visible defects.	None	None	20+	C2	2.90	0.96
H3	Blackthorn ( <i>Prunus spinosa</i> ), holly ( <i>Ilex aquifolium</i> ), field maple ( <i>Acer campestre</i> )	2 Avg, <7.5	80 Avg	See Plan				n/a	0+	Good	SM	Fair	Well maintained screening hedge. Predominantly blackthorn with some holly. 7.5 m field maple within. Some climbing plants near maple. No major visible defects.	None	None	20+	C2	2.90	0.96
G4	Field maple ( <i>Acer campestre</i> ), blackthorn ( <i>Prunus spinosa</i> ), rowan ( <i>Sorbus aucuparia</i> ), wild cherry ( <i>Prunus avium</i> ), aspen ( <i>Populus tremula</i> ), ash ( <i>Fraxinus excelsior</i> ), hazel ( <i>Corylus avellana</i> ), yew ( <i>Taxus baccata</i> ), elder ( <i>Sambucus nigra</i> ), goat willow ( <i>Salix caprea</i> ), Silverberry	10 Avg, <15	180 Avg	See Plan				n/a	2 Avg	Good	SM	Fair	Screening group. Dense around edges with a clearing in the centre. Previous management evident. Some dead trees left as standing sticks. Minor deadwood and stubs. No major visible defects.	None	None	20+	B2	14.66	2.16

REF. NO	SPECIES COMMON NAME (SCIENTIFIC NAME)	ESTIMATED HEIGHT (M)	STEM DIAMETER (MM)	CANOPY SPREAD (M)				FIRST SIGNIFICANT BRANCH & DIRECTION (M)	CANOPY CLEARANCE HEIGHT (M)	PHYSIOLOGICAL CONDITION	LIFE STAGE	STRUCTURAL CONDITION	OBSERVATIONS	PRELIMINARY MANAGEMENT RECOMMENDATIONS	WORKS TO FACILITATE THE DEVELOPMENT	ESTIMATED REMAINING CONTRIBUTION (YRS)	CATEGORY	RPA (M <sup>2</sup> )	RPA RADIUS (M)
				N	S	E	W												
	( <i>Eleagnus sp.</i> )																		
G5	Apple ( <i>Malus sp.</i> ), pear ( <i>Pyrus sp.</i> ), plum ( <i>Prunus sp.</i> ), damson ( <i>Prunus domestica</i> )	5 Avg, <7	160 Avg	See Plan				n/a	2 Avg	Good	SM	Fair	Planted orchard with regular spacing throughout. Each with a description plate. Pruning wounds on most trees. Some snapped branches. Epicormic growth on some. No major visible defects.	Prune snapped branches	None	20+	B2	11.58	1.92
T6	Apple ( <i>Malus sp.</i> )	6	180	2	2	2	2	2/S	2	Poor	SM	Poor	Significant damage to base of stem. Original leader snapped at 2 m. Split stem at 2 m with woundwood development. Several snapped out branches. Unlikely to survive.	Remove	None	<10	U		
G7	Goat willow ( <i>Salix caprea</i> ), field maple ( <i>Acer campestre</i> ), aspen ( <i>Populus tremula</i> ), hazel ( <i>Corylus avellana</i> ), blackthorn ( <i>Prunus spinosa</i> ), holly ( <i>Ilex aquifolium</i> ), silverberry ( <i>Eleagnus sp.</i> ), ash ( <i>Fraxinus excelsior</i> ), willow ( <i>Willow sp.</i> ), Gorse ( <i>Ulex europaeus</i> )	6 Avg, <10	100 Avg	See Plan				n/a	0+	Good	SM	Fair	Screening group with dense undergrowth. Minor deadwood and stubs. No major visible defects.	None	None	20+	C2	4.52	1.20

REF. NO	SPECIES COMMON NAME (SCIENTIFIC NAME)	ESTIMATED HEIGHT (M)	STEM DIAMETER (MM)	CANOPY SPREAD (M)				FIRST SIGNIFICANT BRANCH & DIRECTION (M)	CANOPY CLEARANCE HEIGHT (M)	PHYSIOLOGICAL CONDITION	LIFE STAGE	STRUCTURAL CONDITION	OBSERVATIONS	PRELIMINARY MANAGEMENT RECOMMENDATIONS	WORKS TO FACILITATE THE DEVELOPMENT	ESTIMATED REMAINING CONTRIBUTION (YRS)	CATEGORY	RPA (M <sup>2</sup> )	RPA RADIUS (M)
				N	S	E	W												
G8	Goat willow ( <i>Salix caprea</i> ), field maple ( <i>Acer campestre</i> ), aspen ( <i>Populus tremula</i> ), blackthorn ( <i>Prunus spinosa</i> ), holly ( <i>Ilex aquifolium</i> ), lime ( <i>Tilia sp.</i> ), common oak ( <i>Quercus robur</i> )	5 Avg, <11	90 Avg	See Plan				n/a	0+	Good	SM	Fair	Screening group with dense undergrowth. Minor deadwood and stubs. Some with stem wounds from clearance works. Good reaction growth on wounds.	None	None	20+	C2	3.66	1.08
G9	Goat willow ( <i>Salix caprea</i> ), field maple ( <i>Acer campestre</i> ), alder ( <i>Alnus glutinosa</i> ), blackthorn ( <i>Prunus spinosa</i> ), yew ( <i>Taxus baccata</i> ),	4 Avg, <12	80 Avg	See Plan				n/a	0+	Good	SM	Fair	Screening group with dense undergrowth. Blackthorn thickets spreading into Site with dense bramble ground cover. Minor deadwood and stubs. No major visible defects.	None	None	20+	C2	2.90	0.96
G10	Blackthorn ( <i>Prunus spinosa</i> )	<5	100 Avg	See Plan				n/a	0+	Good	SM	Fair	All multi stemmed from base. Previous maintenance. No major visible defects.	None	Remove	20+	C2	4.52	1.20
G11	Blackthorn ( <i>Prunus spinosa</i> ), gorse ( <i>Ulex europaeus</i> )	3	100 Avg	See Plan				n/a	0+	Good	SM	Fair	Dense blackthorn hedge with some gorse. Previously maintained. Of limited value.	None	Remove	20+	C2	4.52	1.20
H12	Hawthorn ( <i>Crataegus monogyna</i> )	3	100 Avg	See Plan				n/a	0+	Good	SM	Fair	Dense blackthorn hedge. Previously maintained. Of limited value.	None	Remove	20+	C2	4.52	1.20

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				N	S	E	W												
H13	Hawthorn ( <i>Crataegus monogyna</i> )	3	100 Avg	See Plan				n/a	0+	Good	SM	Fair	Dense blackthorn hedge. Previously maintained. Of limited value.	None	Remove	20+	C2	4.52	1.20
G14	Blackthorn ( <i>Prunus spinosa</i> )	<3	70 Avg	See Plan				n/a	0+	Good	SM	Fair	All multi stemmed from base. Previous maintenance. No major visible defects. Of limited value.	None	Remove	20+	C2	2.22	0.84
G15	Blackthorn ( <i>Prunus spinosa</i> )	<5	90 Avg	See Plan				n/a	0+	Good	SM	Fair	All multi stemmed from base. Well maintained. No major visible defects. Of limited value.	None	Remove	20+	C2	3.66	1.08
G16	Blackthorn ( <i>Prunus spinosa</i> )	5	90 Avg	See Plan				n/a	0+	Good	SM	Fair	All multi stemmed from base. Well maintained. No major visible defects. Of limited value.	None	Remove	20+	C2	3.66	1.08
G17	Blackthorn ( <i>Prunus spinosa</i> )	<5	90 Avg	See Plan				n/a	0+	Good	SM	Fair	All multi stemmed from base. Well maintained. No major visible defects. Of limited value.	None	Remove	20+	C2	3.66	1.08
H18	Blackthorn ( <i>Prunus spinosa</i> )	2	80 Avg	See Plan				n/a	0+	Good	SM	Fair	A well-maintained boundary hedge.	None	Remove	20+	C2	2.90	0.96
H19	Blackthorn ( <i>Prunus spinosa</i> )	2	80 Avg	See Plan				n/a	0+	Good	SM	Fair	A well-maintained boundary hedge. Some bramble intertwined in hedge.	None	Remove	20+	C2	2.90	0.96

REF. NO	SPECIES COMMON NAME (SCIENTIFIC NAME)	ESTIMATED HEIGHT (M)	STEM DIAMETER (MM)	CANOPY SPREAD (M)				FIRST SIGNIFICANT BRANCH & DIRECTION (M)	CANOPY CLEARANCE HEIGHT (M)	PHYSIOLOGICAL CONDITION	LIFE STAGE	STRUCTURAL CONDITION	OBSERVATIONS	PRELIMINARY MANAGEMENT RECOMMENDATIONS	WORKS TO FACILITATE THE DEVELOPMENT	ESTIMATED REMAINING CONTRIBUTION (YRS)	CATEGORY	RPA (M <sup>2</sup> )	RPA RADIUS (M)
				N	S	E	W												
H20	Blackthorn ( <i>Prunus spinosa</i> ), hawthorn ( <i>Crataegus monogyna</i> ), holly ( <i>Ilex aquifolium</i> )	2	80 Avg	See Plan				n/a	0+	Good	SM	Fair	A well-maintained boundary hedge. Multiple species present in this hedge.	None	Remove	20+	C2	2.90	0.96

## ANNEX C: KEY TO ABBREVIATIONS USED IN THE SURVEY

Ref No	Specific identification number given to each tree or group. T=Tree/H=Hedge/G=Group.	
Species	Common name followed by botanical name shown in <i>italics</i>	
RPA	Root Protection Area (As defined by BS5837)	
Stem diameter	Diameter of main stem, measured in millimetres at 1.5 m above ground level. (MS = Multi-stem tree measured in accordance with BS5837 Annex C)	Av / Average:  indicates an average representative measured dimension for the group or feature
Spread	The width and breadth of the crown. Estimated on the four compass points in metres.	
Crown clearance	The estimated height (in metres) above ground level of the lowest significant branch attachments.	
#	Estimated dimensions	
*	Indicates estimated position of tree (not indicated on topographical survey).	
Category	Categorisation of the quality and benefits of trees on Site as per Table 1 and 2 of BS5837:2012. 1=Arboricultural quality/value 2=Landscape quality/value 3=Cultural quality/value (including conservation)	
	A=High quality/value 40yrs+ (light green). B=Moderate quality/value 20yrs+ (mid blue) C=Low quality/value min 10yrs/stem diameter less than 150mm (grey). U=Unsuitable for retention (dark red).	
Life stage	<p><b>Young (Y):</b> Newly planted tree 0-10 years.</p> <p><b>Semi-Mature (SM):</b> Tree in the first third of its normal life expectancy for the species (significant potential for future growth in size).</p> <p><b>Early Mature (EM):</b> Tree in the second third of its normal life expectancy for the species (some potential for future growth in size)</p> <p><b>Mature (M):</b> Tree in the final third of its normal life expectancy for the species (having typically reached its approximate ultimate size).</p> <p><b>Over Mature (OM):</b> Tree beyond the normal life expectancy for the species.</p> <p><b>Veteran (V):</b> Tree which is of interest biologically, aesthetically or culturally because of its condition, size or age.</p>	
Structural condition	<p><b>Good:</b> No significant structural defects</p> <p><b>Fair:</b> Structural defects which can be resolved via remedial works.</p> <p><b>Poor:</b> Structural defects which cannot be resolved via</p>	

	remedial works. <b>Dead:</b> Dead.
Physiological condition	<b>Good:</b> Normal vitality including leaf size, bud growth, density of crown and wound wood development. <b>Fair:</b> Lower than normal vitality, reduced bud development, reduced crown density, reduced response to wounds. <b>Poor:</b> Low vitality, low development and distribution of buds, discoloured leaves, low crown density, little extension growth for the species. <b>Dead:</b> Dead <b>Fair/Good</b> = Indicates an intermediate condition <b>Fair – Good</b> = Indicates a range of conditions (e.g. within a group)
Preliminary management recommendations	Works identified during the tree survey as part of sound arboricultural management, based on the current context of the Site (where relevant reference has been made to tree management based on the potential future context of the site).
Works to facilitate the development	Tree works identified as necessary to facilitate the Proposed Development following a desk top analysis of the proposals in relation to tree constraints.

## ANNEX D: PHOTOGRAPHS



**Photograph 1: Showing H2 in the centre, H1 to the right and H3 to the left.**



**Photograph 2: Showing H3 with a field maple growing within.**





**Photograph 3: The significant damage to the stem of T6.**



**Photograph 4: The split in the stem of T6.**



**Photograph 5: Showing H3 along the western boundary of the Site.**

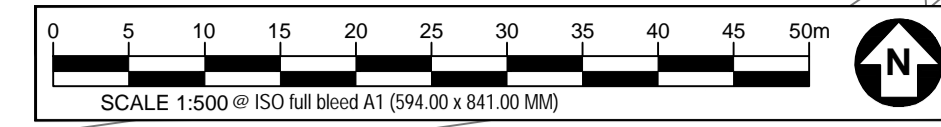
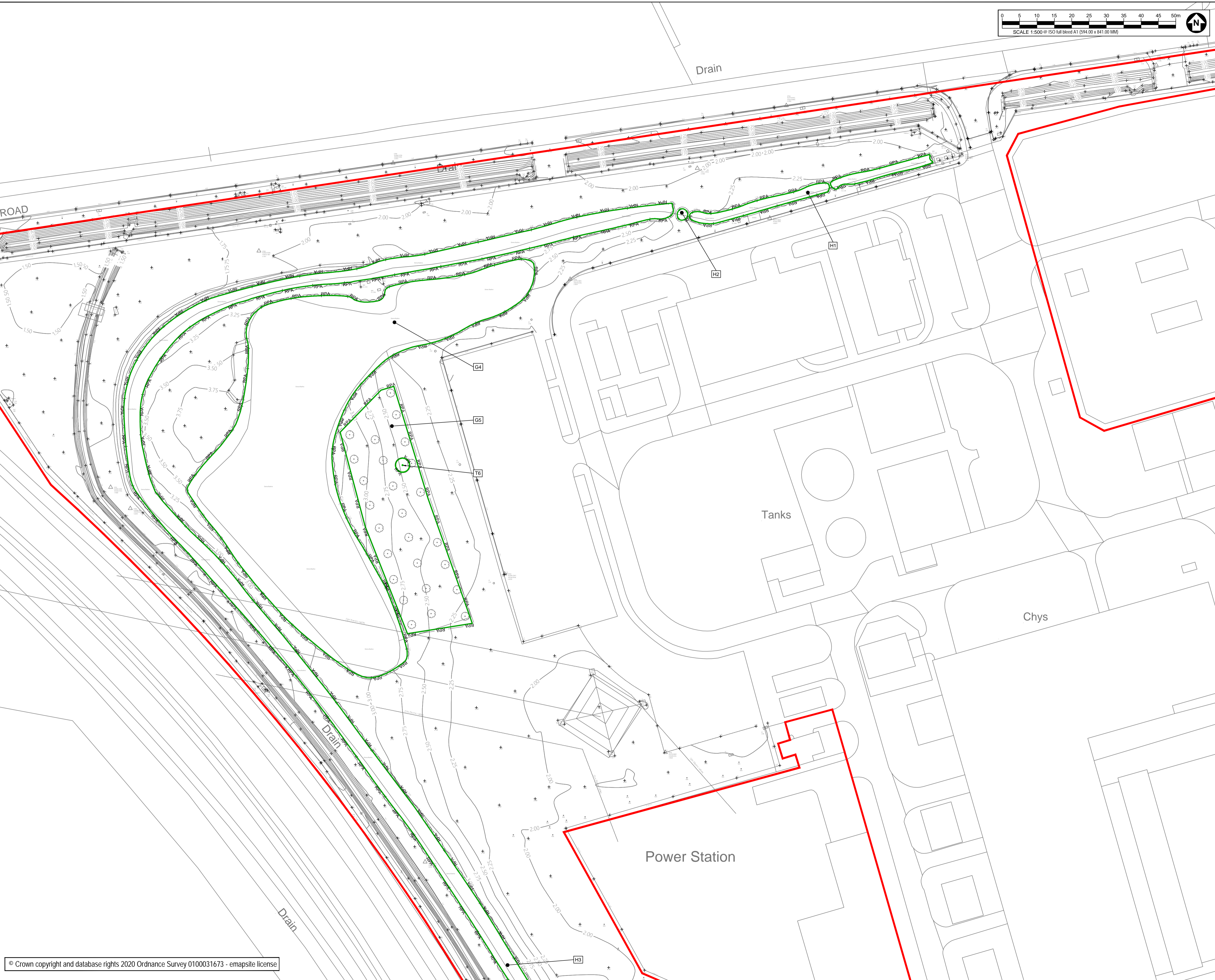


**Photograph 6: Showing the Main Development Area of the Site with G10 – G17 in the background.**



**Photograph 7: A typical representation of the groups found in the Main Development Area.**

## **ANNEX E: TREE PROTECTION PLAN**



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05 BASE-XREF.zip.dwg  
52522-0610-0005-R10 A01 DCO Works Plan Combined (1).dwg

**KEY PLAN**



**KEY**

- EXISTING RETAINED TREE, GROUP OR HEDGE
- EXISTING TREE, GROUP OR HEDGE TO BE REMOVED
- ROOT PROTECTION AREAS (RPA) OF RETAINED TREES (AS DEFINED BY BS 5837:2012)
- TREE PROTECTION FENCING
- CONSTRUCTION EXCLUSION ZONE (TRACKING OF PLANT, MATERIALS STORAGE, EXCAVATION AND ALL OTHER CONSTRUCTION ACTIVITIES ARE EXCLUDED WITHIN THESE AREAS FOR THE PURPOSES OF PROTECTING TREE HEALTH)
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- SITE BOUNDARY

**ISSUE/REVISION**

I/R	DATE	DESCRIPTION
A	2020.03.18	First Issue

**DRAWING STATUS**

ISSUE

**PROJECT NUMBER**

60580855

**SHEET TITLE**

TREE PROTECTION PLAN  
SHEET 001 -

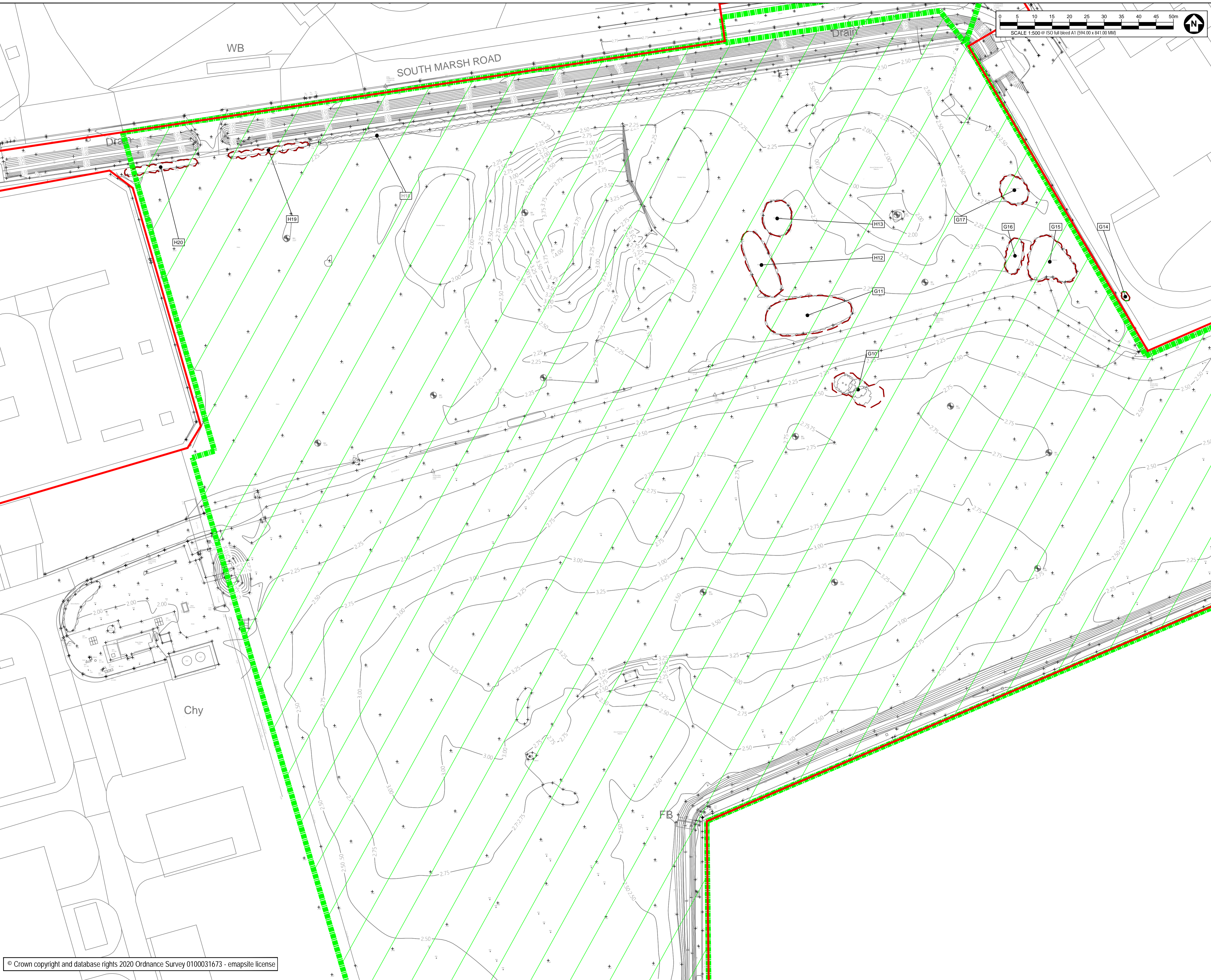
**SHEET NUMBER**

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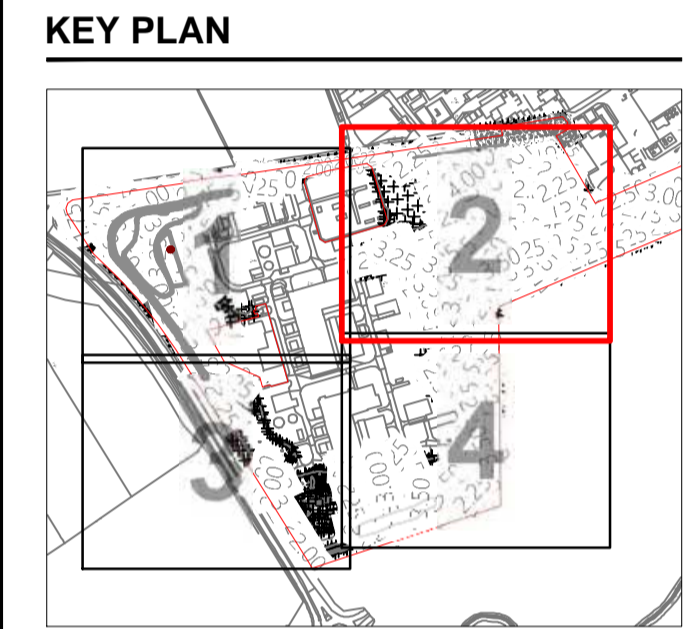


**PROJECT**  
 South Humber Bank  
 Energy Centre Project

**CLIENT**  
 EP Waste Management Ltd

**CONSULTANT**  
 AECOM  
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 Basingstoke, Hants,  
 RG21 7PP  
 Tel +44 (0) 1256 310 200  
 www.aecom.com

- GENERAL NOTES**
- TREE CATEGORIES AS DEFINED BY BS 5837:2012
  - TREE LOCATIONS ARE BASED ON THE TOPOGRAPHICAL SURVEY AND GPS COORDINATES FROM ON SITE WALKOVER
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  - DRAWING REFERENCES:  
 0220-AEC-7358 SHB POWER STATION 3D FINAL.dwg  
 OS BASE-XREF.zip.dwg  
 S2522-0610-0005-R10 AD1 DCO Works Plan Combined (1).dwg



- KEY**
- EXISTING RETAINED TREE, GROUP OR HEDGE
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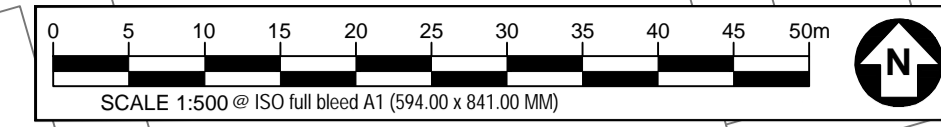
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 ISSUE

**PROJECT NUMBER**  
 60580855

**SHEET TITLE**  
 TREE PROTECTION PLAN  
 SHEET 002 -

**SHEET NUMBER**      **REV.**  
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**KEY PLAN**



**KEY**

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**SHEET TITLE**

TREE PROTECTION PLAN  
SHEET 003 -

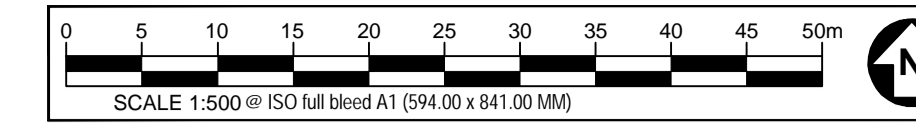
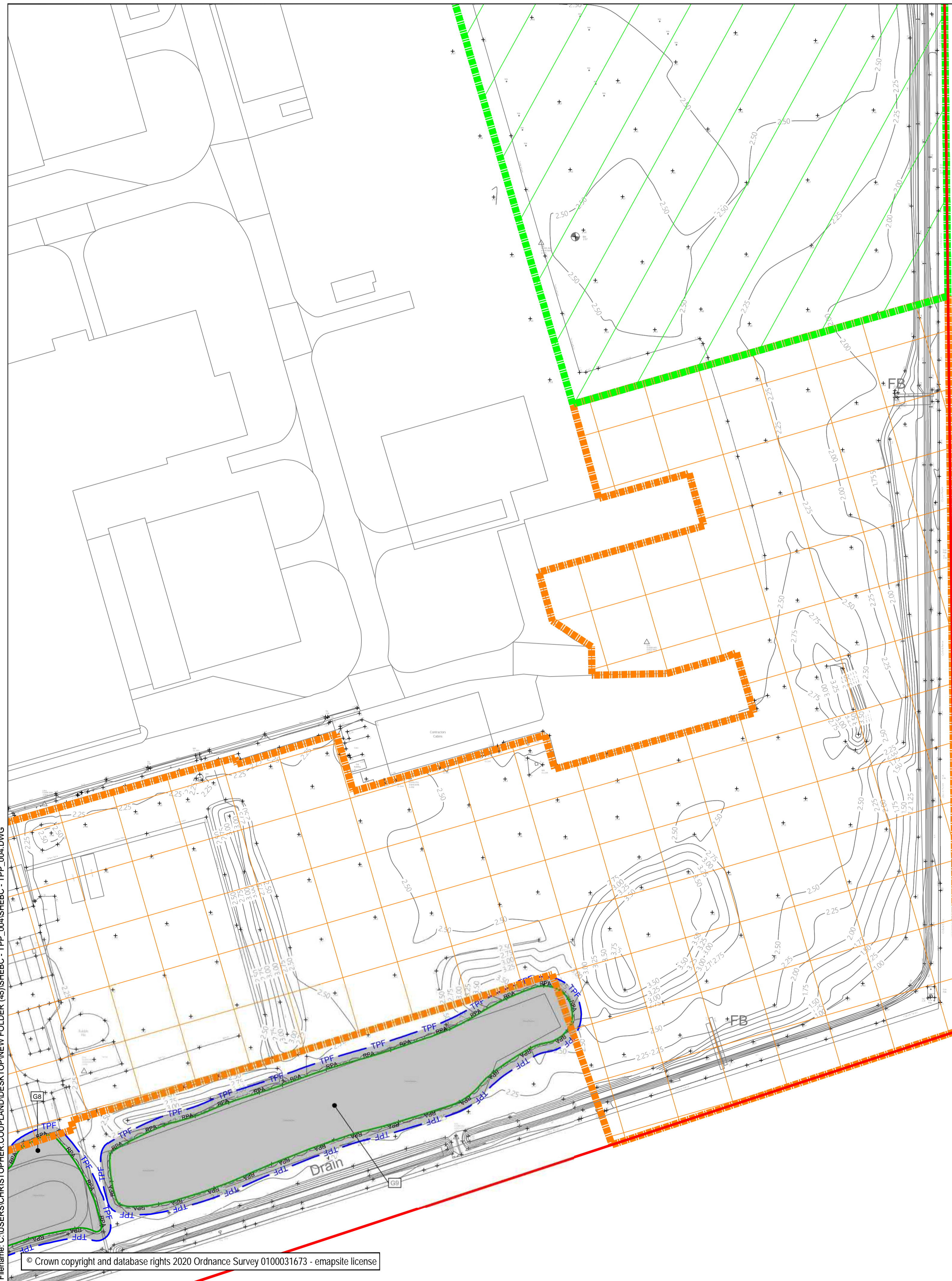
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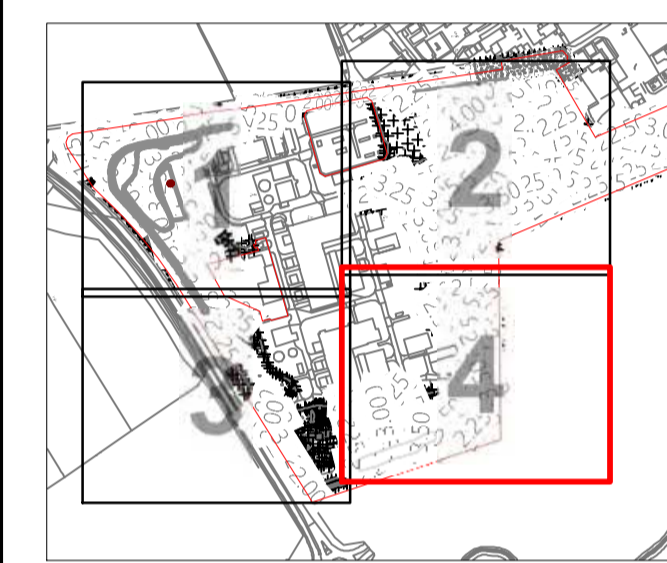
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52522-0610-0005-R10 A01 DCO Works Plan Combined (1).dwg

**KEY PLAN**



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**SHEET TITLE**

TREE PROTECTION PLAN  
SHEET 004 -

**SHEET NUMBER**

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