Arboricultural Impact Assessment

Carbon Capture and Storage Project – Padeswood, North Wales

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Castle Cement Limited

c/o RSK Environment

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Contents

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This work has been undertaken in accordance with the quality management system of RSK ADAS Limited.

Version History

Version	Date	Amendment
-	April 2024	INITIAL REPORT

1 Executive Summary

RSK Environment Limited is working with Castle Cement Limited to provide environmental support on an outline planning application, with all matters reserved, for a new carbon capture and storage facility at their Padeswood Cement Works, Chester Road, Mold, CH7 4HB.

ADAS, part of the RSK Group, were instructed to provide arboricultural advice to the project, including an arboricultural survey and production of this Arboricultural Impact Assessment, all in line with British Standard 5387:2012 'Trees in relation to design, demolition and construction – Recommendations'.

The arboricultural survey recorded the presence of 210 arboricultural features within influencing distance of the Proposed Development, comprising 142 individual trees, 62 groups of trees, four hedges, and two woodlands.

These features were categorised based on their quality and value. They were assigned one of four main categories: U (unsuitable for retention), A (high quality), B (moderate quality), or C (low quality). The assessments resulted in 30 individual trees, 11 groups of trees, and two woodlands being designated as Category A; 77 individual trees and 35 groups of trees designated as Category B; 32 individual trees, 16 groups of trees, and four hedges designated as Category C; and three individual trees deemed unsuitable for retention, irrespective of any development, and designated Category U.

A search of Flintshire County Council's online Tree Preservation Order (TPO) map revealed that three TPOs affect the Site, containing three Group designations protecting 26 trees along its northern and northwestern boundary. The same search showed that the Site is not within a Conservation Area.

Based upon the masterplan proposals, the development would require the complete removal of 95 arboricultural features within the Site, comprising 70 individual trees, 23 groups of trees, and two hedges, to facilitate the construction of the proposed carbon capture and storage facility. The proposals would also require the partial removal of 12 groups of trees and a section of a hedge.

In addition to the tree removal, the indicative masterplan indicates that development operations, including constructing new hard surfaces to provide a new access road into vehicle parking and footpaths, would be required within the root protection areas of two Category B trees. These elements would need to be designed to minimise significant harm to the tree's root systems during construction.

Facilitation pruning will also be necessary for three Category A trees to ensure adequate clearance for the new access road.

2 Introduction

2.1 The Author

Robert Hickey, an ADAS Arboricultural Consultant, has prepared this document. Robert is a Professional Member of the Arboricultural Association, an Associate Member of the Institute for Chartered Foresters and holds a Foundation Degree in Arboriculture. Robert has six years of experience in the arboricultural industry, both as a Tree Surgeon and an Arboricultural Consultant.

2.2 Client Instruction

ADAS was instructed by RSK Environment Limited (RSK) in March 2023 to undertake an arboricultural survey, in line with BS5387:2012, and ultimately prepare an Arboricultural Impact Assessment relating to the Proposed Development of Castle Cement Limited's Padeswood Cement Works, Chester Road, Mold, CH7 4HB.

For the purposes of this report, reference to 'the Site' means land encompassed by the red line shown on the Site Plan contained in **Appendix 1**.

2.3 Purpose of Report

The purpose of this report is to:

- Record the current condition of the trees on the Site and categorise them using criteria outlined in BS5837:2012, "Trees in relation to design, demolition and construction—Recommendations."[1]
- Provide a Tree Constraints Plan that identifies any constraints to development presented by the trees, including root protection areas for the retained trees as described in BS5837:2012.
- Provide guidance detailing arboricultural constraints to development and factors to be considered during the construction phase of the development.
- Detail the impact that the Proposed Development shown on the indicative masterplan will have upon the Site's existing tree stock and set recommendations for the subsequent mitigation or avoidance of impact during the detailed design of the development layout.

In line with the sequence of events set out in Figure 1 of BS5837:2012, which is contained in **Appendix 2**, this report is intended as a reference to inform and contribute to the design process and does not, in itself, provide sufficient information to be used as an Arboricultural Method Statement during the development works.

[1] https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard

2.4 Site Description

The Site is at Castle Cement Limited's Padeswood Cement Works, Chester Road, Mold, CH7 4HB. It is accessed via the A5118 and can be precisely located at Ordnance Survey Grid Reference SJ 29084 62481.

The Site comprises several components, including operational cement works, Padeswood Hall Farm, a residential dwelling currently under rental arrangements, Padeswood Hall, an abandoned structure, and surrounding areas of woodland and open spaces predominantly situated in the Site's southern section.

The Site's tree cover primarily consists of well-established mature trees strategically positioned to provide screening along the perimeter and within internal areas. Additionally, there is evidence of self-set natural regeneration occurring within the wooded regions.

The Site is bordered by agricultural land on all sides, with the Shotton to Wrexham (GCR) railway line running to the east of the Site, further defining its boundaries.

2.5 Description of Proposed Development

A proposal has been put forward to submit an outline planning application, with all matters reserved, for developing a carbon capture and storage facility. The Proposed Development aims to capture up to 800,000 tons of carbon dioxide (CO2) annually from the cement works. The individual components of the development can be summarised as follows:

- A Combined Heat and Power (CHP) plant with 15 MWe (minimum) and 83MW (minimum) thermal of installed capacity, to produce electricity and heat to power the carbon capture equipment;
- A Post Combustion Carbon Capture and Compression (PCCCC) plant, to extract CO2 from waste gases and compress it for transport and storage; and
- Various temporary and permanent enabling development to support and facilitate the Proposed Development.

A full description of the main Proposed Development's components is presented in the **Environmental Statement, Volume 2, Chapter 1, Table 2.1**.

3 Assumptions and Limitations

This assessment is based on information provided by the client and information collected by ADAS during a site survey undertaken in July 2023. The documents and drawings considered are detailed in **Table 1**.

Table 1: Documentation Considered

Author	Document Title	Drawing / Document Number	Date
Heidelberg Materials UK	Topographical Survey	PADESWOOD TOPO 0118 REV 0421 OSTN15 A0 1250	April 2021
Vision Mill Architects	CCS Site Layout	2022-34-SMP AL 100	March 2024

The Tree Constraints Plan (TCP) contained in **Appendix 3** has been developed from the tree survey information and the topographical survey referenced in **Table 1**.

This report assumes that the "Illustrative Masterplan" demonstrated on the Arboricultural Impact Assessment Plan (AIAP) contained in **Appendix 4** is the final layout for the Proposed Development.

This report is only for the person(s) or company named on the front cover.

This report is not a full hazard or risk assessment of trees and should not be used as such.

Trees are living organisms and are constantly adapting to their ever-changing environment. No tree is completely safe and there is no guarantee that problems or deficiencies may not arise in the future, which have not been identified in this report. Therefore, this report is only valid for a period of 1 year from the date of the initial site inspection.

4 Methodology

4.1 Tree Survey Methodology

Robert Hickey of ADAS carried out the tree survey on the 12th – 14th July 2023, in accordance with the recommendations contained within BS5837:2012[2].

Unless otherwise stated, all trees were visually inspected from ground level, with no climbing or boring tests undertaken. The comments made on their condition are based on observable factors present at the time of inspection.

The following information, shown in **Table 2** below, was recorded as part of the tree survey:

Table 2: Tree Survey Schedule heading descriptions

Column Heading	Description
Tree Ref No.	All individual trees have been given a unique reference number. Each number is prefixed by a letter. ▪ T = Individual tree ▪ G = Groups of trees ▪ W = Woodlands
Species	The English common name has been used.
Single or Multiple stems (S or M)	▪ 'S' represents a tree with a single clear stem at least 1.5m above ground level. ▪ 'M(a)' represents a tree where the main stem divides into two to five stems below 1.5m above ground level and ▪ 'M(b)' represents a tree where the main stem divides into six or more stems below a height of 1.5m.
Height (m)	Where possible, tree heights are measured using a laser. In some instances, such as in close groups of trees, one height may be measured, and other nearby trees estimated from this height. Measurements are provided in metres.
Stem Diameter (mm)	S_n represents the stem number. For single-stemmed trees, measurements are provided in millimetres at 1.5m above ground level.
Branch Spread (m)	Measured in metres to the four cardinal compass points (N, E, S, W).
Crown Clearance	(1) Height in metres of the first significant branch and the direction of growth. (2) Height in metres of the lowest part of the crown.
Life Stage	The stage at which the tree is within its lifecycle (Y = young, SM = semi-mature, EM = early-mature, M = mature, OM = over mature)

[2] https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard

Column Heading	Description
General Observations	Any relevant observations are recorded, particularly regarding structural and/or physiological conditions.
Preliminary Management Recommendations	Recommendations are made where management work is required for reasons of health and safety or sound arboricultural management.
Estimated Remaining Contribution (years)	An estimation of how long the feature will contribute to its surroundings. This is recorded in bands of either <10 years, 10+ years, 20+ years and 40+ years.
Tree Quality Grading	The trees are graded to the categories prescribed within BS5837:2012 (U, A, B & C). Details of this grading system can be found in **Appendix 5.**
Root Protection Area	Calculated as prescribed in section 4.6 of BS5837:2012, provided as an area (m^2) and a radius from the tree's stem (m).
Note: Those measurements shown in *italics* have been estimated, usually where access has restricted it being taken.	

5 Legislation

5.1 Planning Policy

Planning Policy Wales[3] states that 'Planning authorities should consider the importance of trees and woodland, particularly native woodland and valued trees, and should have regard to local authority tree strategies or SPG and the Green Infrastructure Assessment…… Where individual or groups of trees and hedgerows are removed as part of a proposed scheme, planning authorities must first follow the step-wise approach as set out in paragraph 6.4.15. Where loss is unavoidable developers will be required to provide compensatory planting'. It also states that 'Ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees, woodlands and hedgerows are to be afforded protection from development which would result in their loss or deterioration unless very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss.'

None of the trees surveyed were considered to be of veteran status.

BS5837:2012[4], provides guidance to the consideration of trees in relationship to Proposed Development. This document is recognised as best practice when assessing trees on a site that is being considered for development.

In respect of this it can be noted that Category A, B or C trees or tree groups are those that should be a material consideration in the planning process whilst Category U trees are those which would be lost in the short term for reasons connected to their physiological or structural condition and hence, they should not be a consideration in the planning process.

5.2 Tree Preservation Orders and Conservation Areas

Local Planning Authorities (LPAs) have the power to preserve selected trees and woodlands through the making of Tree Preservation Orders (TPOs). Similarly, special provisions are provided for trees located within conservation areas (CAs) that are not TPO subjects. The LPA's powers to do this are provided by the following Act of Parliament and its associated regulations:

- Town and Country Planning Act 1990[5]
- The Town and Country Planning (Determination of Appeals by Appointed Persons) (Prescribed Classes) (Wales) Regulations 2015[6]

[3] https://www.gov.wales/sites/default/files/publications/2024-02/planning-policy-wales-edition-12_1.pdf
[4] https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard
[5] https://www.legislation.gov.uk/ukpga/1990/8/contents
[6] https://www.legislation.gov.uk/wsi/2015/1822/contents/made

- The Town and Country Planning (Trees) (Amendment) (Wales) Regulations 2017[7]

The principal effect of a TPO is to prohibit the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of trees without first obtaining the consent of the relevant Local Authority.

Where works on trees within a CA are proposed, the relevant Local Authority must first give six weeks' notification.

Unauthorised works to trees either protected by a TPO or located within a CA could result in an unlimited fine for each tree.

A review of Flintshire County Council's interactive map at the time of producing this report reveals the presence of three TPOs on the Site. These TPOs are identified as TPO 92/2007.G1, TPO 92/2007.G2, and TPO 92/2007.G3. These orders collectively encompass a total of 26 trees situated along the northwestern boundary of the Site. The individual trees surveyed by ADAS which are understood to be protected by these TPO groups are ADAS ref T84, T85, T86, T91, T92, T94, T95, T116, T117, T119, T134, and T135. Additionally, several trees within ADAS group references G120 and G137 are also understood to be safeguarded by these TPOs.

The same search of the interactive map did not indicate the presence of a Conservation Area within or adjoining the Site.

5.3 Wildlife Legislation

The following Acts and Regulations are the main pieces of legislation that protect wildlife and habitats in Wales:

- Wildlife and Countryside Act 1981 (as amended)[8]
- Conservation of Habitats and Species Regulations 2017 (as amended) [9]
- Protection of Badgers Act 1992[10]
- The Hedgerows Regulations 1997[11]
- Countryside and Rights of Way Act 2000[12]
- Natural Environment and Rural Communities Act 2006[13] & Environment (Wales) Act 2016

The Wildlife and Countryside Act 1981[14] provides statutory protection to wild birds, their nests (whether in use or being built), as well as other wild animals such as bats and their roosts. Under

[7] https://www.legislation.gov.uk/wsi/2017/548/made
[8] https://www.legislation.gov.uk/ukpga/1981/69
[9] https://www.legislation.gov.uk/uksi/2017/1012/contents/made
[10] http://www.legislation.gov.uk/ukpga/1992/51/contents
[11] http://www.legislation.gov.uk/uksi/1997/1160/contents/made
[12] http://www.legislation.gov.uk/ukpga/2000/37/contents
[13] https://www.legislation.gov.uk/ukpga/2006/16/contents
[14] https://www.legislation.gov.uk/ukpga/1981/69

the Act it is a criminal offence to intentionally destroy any wild bird, its nest or eggs, or to harm any bat, damage or block access to its roost (even if it is not occupied at the time), or to disturb a bat whilst it is occupying a roost. For some birds listed in Schedule 1 of the Act, such as barn owl, it is also an offence to disturb them while they are nesting, building a nest, in or near a nest that contains their young, or to disturb their dependent young. Other wild animals afforded full legal protection under the Act, and which may be affected by tree works include: otters and their places of shelter (often in exposed tree roots along riverbanks), hazel dormice, their breeding sites and resting places (well-structured woodland and scrub), and red squirrels and their nests (dreys).

The Conservation of Habitats and Species Regulations 2017[15] provide additional legal protection to some species, including bats (all species), otters and hazel dormice. Badgers and their setts are specifically protected under the Protection of Badgers Act 1992[16], which makes it an offence to damage or block a sett, or to disturb badgers whilst they are using a sett. Where works might result in an offence being committed, advice will be required from a suitably experienced ecologist before they can be undertaken. For example, it may be necessary to programme tree work outside of the bird nesting period, typically March to September inclusive, or for an ecologist to undertake prior visual inspections of trees for nests and / or bat roosts.

Under the Wildlife and Countryside Act 1981[17] it is also illegal to plant or otherwise cause to grow in the wild certain invasive non-native plant species, including Japanese Knotweed, Himalayan Balsam, Giant Hogweed and Rhododendron. Any works that might cause the spread of these species could therefore result in an offence being committed. This might occur as a result of the incidental transportation of soil containing seeds or live root and stem fragments on the wheels of vehicles, or on the boots of personnel.

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are strictly protected sites designated respectively under the European Council Habitats Directive[18] and the Birds Directive[19]. In England and Wales, SACs and SPAs are given legal protection by The Conservation of Habitats and Species Regulations 2017[20], which transpose the European Council Habitats Directive and Birds Directive[21] into national law. The Regulations ensure that any plan or project that may damage an SAC or SPA can only proceed if certain strict conditions are met.

Sites of Special Scientific Interest (SSSIs) are areas notified under the Wildlife and Countryside Act 1981[22] as being of special interest for nature conservation or their geology with additional

15 https://www.legislation.gov.uk/uksi/2017/1012/contents/made
16 http://www.legislation.gov.uk/ukpga/1992/51/contents
17 https://www.legislation.gov.uk/ukpga/1981/69
18 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31992L0043
19 https://eur-lex.europa.eu/eli/dir/2009/147/oj
20 https://www.legislation.gov.uk/uksi/2017/1012/contents/made
21 https://eur-lex.europa.eu/eli/dir/2009/147/oj
22 https://www.legislation.gov.uk/ukpga/1981/69

protection afforded to them by the Countryside and Rights of Way Act 2000[23]. Under the legislation Natural England (NE) or Natural Resources Wales (NRW) must be notified of any planned works or operations that could potentially damage an SSSI or its features of interest before they are able to proceed.

The Natural Environment and Rural Communities Act 2006[24] and Environment (Wales) Act 2016[25] place a statutory duty on public authorities (public bodies and utility companies) to 'seek to maintain and enhance biodiversity' so far as it is consistent with the proper exercise of their functions.

The above provides only a summary of the legislation. The original text of the relevant legislation should be consulted for the exact wording. If necessary, advice should be sought from a suitably qualified ecologist prior to any tree work being undertaken.

[23] http://www.legislation.gov.uk/ukpga/2000/37/contents
[24] https://www.legislation.gov.uk/ukpga/2006/16/contents
[25] https://www.legislation.gov.uk/anaw/2016/3/contents/enacted

6 Tree Survey Results

6.1 Tree Stock Summary

The Site's tree stock exhibits a diverse range of tree species. The higher-quality and more established specimens are primarily located along the Site's periphery. Those trees distributed across the internal compartments of the Site are likely to have been planted strategically to serve as a buffer from the cement works. Additionally, some areas feature self-set natural regeneration, particularly within the wooded regions and the decommissioned family open space area, including the land immediately adjacent to Padeswood Hall.

The age composition and distribution of the tree stock are varied, reflecting the Site's history and evolution. Approximately 26% of the surveyed trees fall into the mature age class category, while 35% are classified as early mature. The remaining 34% fall within the young to semi-mature age group. Whilst the mature trees are typically found along the Site's boundaries, the central portions of the Site are dominated by trees categorised as semi-mature to early mature.

The collective presence of trees along the Site's northern boundary significantly enhances their wider visibility, providing a high level of visual amenity to the Site and its immediate surroundings. While the trees located internally on the Site may not be fully visible from publicly accessible areas, they still provide a positive contribute to the canopy coverage and associated benefits across the Site.

All the trees surveyed are owned by the client, ensuring their future integration can be aligned with the project's objectives and ongoing site operation and management.

A comprehensive Tree Survey Schedule is contained in **Appendix 6** which details all the information collected for each feature surveyed.

6.2 Tree Categorisation and Quality Assessment

The tree survey identified 210 arboricultural features within the Proposed Development's influence zone. These features encompassed 142 individual trees, 62 groups of trees, four hedges, and two woodlands. To guide the development process in accordance with best practices, the existing trees on the Site were categorised based on their quality and value, following the guidelines outlined in section 4.5 and Table 1 of BS5837:2012[26].

These categories are defined and comprise of the following:

[26] https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard

Category A: These trees are of "High Quality" retention and comprise 30 individual trees, 11 groups, and two woodlands. It is strongly recommended that all Category A trees be retained, and development activities be situated outside their Root Protection Areas (RPAs).

Category B: These trees are considered of "Moderate Quality" retention and include 77 individual trees and 35 groups. Similar to Category A, retaining all Category B trees and ensuring that development activities do not encroach upon their RPAs is advisable.

Category C: These trees, classified as "Low Quality" retention, consist of 32 individual trees, 16 groups, and four hedges. Although Category C trees should be considered during the design process, it is recognised that their removal might be acceptable if they pose a significant constraint to the Proposed Development. However, if Category C trees are retained, the development plan must respect their RPAs.

Category U: This category encompasses three individual trees that have been assessed as "Unsuitable" for retention within the context of the current land use. Therefore, it is advised that these trees be removed as part of ongoing arboricultural or silvicultural management, irrespective of any potential development.

The tree survey categorisation is summarised in **Table 3** below, providing a clear overview of the categorisation for the Site's various trees and tree groups. These categorisations should be integral to any future development proposal to balance development goals and tree retention.

Table 3: Tree survey results summarising the Tree Quality Assessment Grading

	Tree Quality Assessment Category Grading				Totals
Category Description	**A**	**B**	**C**	**U**	
	Those of high quality with an estimated remaining life expectancy of at least 40 years.	**Those of moderate quality with an estimated remaining life expectancy of at least 20 years.**	**Those of low quality with an estimated remaining life expectancy of at least ten years or young trees with a stem diameter below 150mm.**	**Those in such a condition that they cannot realistically be retained as living trees for longer than ten years in the context of the current land use.**	
Individual Trees	T1, T10, T117, T119, T125, T126, T127, T134, T135, T139, T142, T174, T175, T19, T199, T21, T22, T23, T44, T45, T46, T47, T48, T57, T84, T85, T86, T90, T91, T171	T100, T101, T103, T112, T115, T116, T118, T124, T128, T130, T147, T148, T149, T15, T150, T151, T152, T155, T158, T159, T160, T161, T163, T165, T166, T17, T170, T172, T173, T178, T179, T180, T181, T183, T186, T2, T200, T24, T25, T27, T28, T29, T3, T30, T31, T33, T35, T36, T37, T38, T39, T4, T40, T5, T6, T63, T66, T68, T69, T70, T71, T72, T73, T74, T80, T82, T87, T89, T9, T92, T93, T94, T95, T96, T97, T98, T99.	T102, T108, T111, T113, T114, T129, T131, T140, T156, T157, T166, T169, T177, T182, T190, T191, T203, T205, T206, T207, T208, T209, T26, T32, T41, T62, T64, T65, T67, T75, T76, T88.	T12, T13, T109	**142**
Groups of trees	G105, G122, G123, G14, G11, G16, G195, G197, G202, G137, G43.	G104, G106, G133, G136, G18, G189, G192, G193, G194, G198, G58, G60, G164, G168, G138, G143, G144, G145, G146, G176, G185, G187, G20, G34, G49, G50, G53, G54, G55, G56, G59, G61, G7, G77, G78.	G107, G110, G120, G121, G132, G196, G201, G204, G79, G81, G154, G162, G184, G188, G210, G42.	None	**62**
Hedges	None	None	H8, H83, H141, H153	None	**4**
Woodlands	W51, W52	None	None	None	**2**
Total of each category	**43**	**112**	**52**	**4**	**210**

7 Arboricultural Impact Assessment

7.1 Overview

This section of the report summarises the direct and indirect impacts of the Proposed Development on the Site's tree stock. An Arboricultural Impact Assessment plan, identifying impacts associated with the proposed masterplan development, has been provided in **Appendix 4.**

The illustrative masterplan aims to retain trees on the Site's eastern side and those along the northern boundary, preserving some screening along these aspects. Consequently, the tree removal associated with the development is not expected to have a significant amenity impact when viewed from the surrounding environment.

7.2 Tree Removal

Based on the masterplan proposals, the development necessitates completely removing 95 arboricultural features within the Site. This comprises 70 individual trees, 23 groups of trees, and two hedges to facilitate the construction of the proposed carbon capture and storage facility. Additionally, partial removal of 12 groups of trees and a section of a hedge is required.

Specifically:

High-Quality (Category A): Trees such as T117, T119, T125, T126, T127, T142, T174, T175, and T199, along with groups G105, G122, G123, G195, G197, and G202, fall under this category and will be removed as part of the development.

Moderate Quality (Category B): Trees T63, T66, T68, T69, T70, T71, T72, T73, T74, T80, T92, T93, T96, T97, T98, T99, T100, T101, T103, T118, T124, T128, T130, T147, T148, T149, T150, T151, T152, T155, T158, T159, T160, T161, T163, T165, T166, T186, T200, and groups G77, G104, G106, G133, G146 G164, G189, G194, and G198 fall under this category and will also be removed.

Low Quality (Category C): Trees including T62, T64, T65, T67, T75, T76, T102, T108, T111, T129, T131, T156, T157, T166, T171, T203, T205, T206, T207, T208, T209, groups G79, G107, G110, G121, G132, G154, G162, G201, along with hedges H141 and H153, will require removal to facilitate the development.

Unsuitable (Category U): Tree T109 will also require removal.

Furthermore, sections of the following groups 'High Quality' G11, 'Moderate Quality' G78, G143, G144, G168, G185, G187, G192 and G193, along with 'Low Quality' G120, G188 and G196 and hedge H83, will be affected to varying degrees to accommodate the development.

Modifications in the scheme, where feasible, could be considered during the detailed design phase at the reserved matters stage to enable further retention of Category A trees and groups.

Due to the high volume of tree cover that will be removed, a detailed landscaping scheme is proposed to mitigate this tree loss and ensure the canopy cover is replaced and enhanced as quickly as possible.

7.3 Tree Pruning

Based upon the illustrative masterplan, three trees (T85, T86 and T90) will require crown lifting to allow a maximum possible height of 5.6m for suitable clearance for the new access road and to minimise the potential for branch damage to occur during the construction period.

The pruning works will be carried out in accordance with BS3998: 2012 Tree Work – Recommendations[27].

7.4 Works within RPAs

The Proposed Development, as shown on the illustrative master plan, would require various works to be completed within the RPAs of retained trees within the Site.

The potential works to be undertaken within the RPAs of retained trees are summarised in **Table 4,** along with details of recommended mitigation measures.

Table 4: Summary of potential damage to retained trees

Tree Number	Species	Potential Cause of Damage	Mitigation
G7, H8, T10, G11, G14, T15, G16, T17, G18, T19, T21, T22, T23	Various	▪ Construction of new boundary features.	▪ Boundary fences are recommended in preference to boundary walls. ▪ Retaining features within RPAs of trees must be avoided. ▪ Arboricultural supervision of boundary feature construction works within RPAs.
T5, T6, G168, T170, T172, T173, T163, T96, G106, G104, T108, G105	Various	▪ Construction of new hard surfaces to form footpaths, access routes and parking areas.	▪ Detailed design to design out any new hard surfaces within the RPAs of retained trees. ▪ Where new hard surface construction is unavoidable within the RPAs of retained trees, the surfaces should be designed to be constructed following a no-dig construction

[27] https://knowledge.bsigroup.com/products/tree-work-recommendations?version=standard

			methodology. Products such as Geosynthetics Cellweb can provide load suspension above the existing grade. ▪ Arboricultural supervision of hard surface construction works within RPAs.

Overall, it is considered that, subject to modifications in the detailed design phase, the Proposed Development has a moderate potential to cause significant harm to the root systems of retained trees. The potential harm to the trees identified as at risk from construction operations in **Table 4** can be controlled during the development's implementation stage by the adoption of preventive working practices, use of alternative construction products, and continued arboricultural involvement.

7.5 Impacts from Construction related operations

7.5.1 Site Access

During the phases of development, construction access is anticipated to be provided via the existing vehicular access point on the northern boundary of the Site. Where retained trees are present in proximity to the access points, they will require protection by the installation of tree protection barriers prior to the commencement of any phase of the development.

7.5.2 Delivery and Storage of Materials

Material deliveries to the Site will utilise the access point described in **section 7.5.1** above.

The precise location for the storage of materials will be determined during the detailed design phase, which can consider various areas within the Site where materials could be stored without impacting retained trees. Materials will only be stored in areas outside of the RPA and canopy spread of retained trees.

7.5.3 Site Compound and Welfare Facilities

The proposed location for a site compound and associated welfare facilities will be determined during the detailed design phase. As with the storage of materials, there are various locations within the Site where these elements could be accommodated outside of the RPA and canopy spread of retained trees.

7.5.4 Contractors Parking

The contractor’s parking could be accommodated within the existing site car park. This approach would avoid any potential impacts on retained trees. The precise location for the contractors parking will be determined during the detailed design phase, and a suitable location that will utilise

existing hard standing, or avoid if an alternative location is adopted, this will be outside the RPA and canopy spread of the retained trees.

7.5.5 Utilities

Details of the proposed underground services have not been confirmed at this master planning stage. The decommission of an existing service, upgrading of services, and installation of new services all have the potential to impact those trees being retained. These works should be designed out of the RPA and canopy spread of retained trees.

8 Mitigation of Harm

8.1 Replacement Planting

A separate standalone detailed landscape scheme is proposed to support the proposal which will incorporate sufficient replacement tree planting to mitigate the proposed tree losses envisaged to facilitate the development .

8.2 Factors for Further Consideration

8.2.1 Design Amendments / Detailed Design

During the detailed design of the Proposed Development, it is recommended that consideration be given to design amendments that permit the retention of the Category A and Category B trees and groups where possible.

8.2.2 Hard Surfaces

Design amendments that avoid the need to construct new hard surfaces within the RPAs of retained trees should be considered. Where the construction of new hard surfaces within the RPAs of retained trees is unavoidable, the use of a cellular confinement system or similar engineering solution is recommended.

The removal of existing hard surfaces within the RPA of trees will also need to be considered within a detailed Arboricultural Method Statement.

8.2.3 Site Setup and Logistics

The locations in which activities related to the establishment of a site compound, contractors' car parking areas, material storage areas, and associated works are to occur will need to be considered during the detailed design phase. All such areas should be located outside of the RPA and canopy spread of retained trees.

8.2.4 Underground Services

Where possible, all new underground services shall be located outside the RPA and canopy spread of retained trees. Where works to install new services within the RPA of retained trees cannot be avoided, they shall be completed so that harm to the root systems of the trees can be minimised, such as using techniques such as Horizontal Directional Drilling (ensuring the launch and receptor pits are located outside the RPAs and the run depth is below the typical rooting depth); this shall be specified within an Arboricultural Method Statement for the Proposed Development.

8.3 Construction Exclusion Zone (CEZ)

The CEZ is defined around the retained trees by the tree protection barriers shown by a brown line on the AIAP in **Appendix 4**. Where possible, the CEZ is positioned to protect both the retained trees' crowns and the RPAs. The CEZ should be considered as sacrosanct and therefore not access, storage or activities should take place within this area.

Further guidance on RPAs is contained in **Appendix 7**.

8.4 Tree Protection Barriers

The proposed location of the tree protection barriers for the development, based on the illustrative masterplan, is provided on the AIAP contained in **Appendix 4**.

In line with Section 6.2.2 of BS 5837:2012[28], which requires that tree protection barriers be fit for excluding construction activity and provide adequate protection to the trees, it is proposed that they will consist of 2m tall welded mesh panels supported on scaffold poles driven into the ground. An example of this type of barrier is contained in **Appendix 8**.

To enable site operatives to appreciate the purpose of the protective fencing and reduce the risk of operatives attempting to move them, all-weather notices should be erected on the barriers, similar to the example in **Appendix 9**.

The precise location and form of construction of the tree protection barriers will be determined in the Arboricultural Method Statement for the scheme and ultimately agreed on-site between the appointed arboricultural consultant and Flintshire County Council before any site works commence.

8.5 Tree Work Schedule

a schedule of tree work required to facilitate the Proposed Development shown on the illustrative masterplan has been provided in **Appendix 10**. All tree work should be carried out prior to the commencement of construction activities and prior to the erection of the tree protection measures.

8.6 Standard of Tree Work

All tree work and felling operations should be carried out in accordance with BS3998: 2010 'Recommendations for Tree Work'[29]; current arboricultural industry guidelines and best practices; and all relevant Health & Safety standards. Tree work is a specialist task that requires operatives to be appropriately qualified, skilled, and adequately insured. Guidance on selecting an appropriate contractor can be obtained from the Arboricultural Association, which also maintains

[28] https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard
[29] https://knowledge.bsigroup.com/products/tree-work-recommendations?version=standard

a directory of Approved Contractors. The Arboricultural Association can be contacted at 01242 522152 or via their website at http://www.trees.org.uk.

8.7 Wildlife Constraints

As **section 5.3** of this report mentions, all tree work operations must comply with The Wildlife and Countryside Act 1981[30] as amended by the Countryside and Rights of Way Act 2000[31], which provides statutory protection to birds, bats and other species, all of which could inhabit trees. Where works may constitute an offence, advice will be acquired from a suitably qualified person before works can proceed. For example, it may be necessary to programme tree work outside the main bird nesting period, typically from March to August.

8.8 Modification to Tree Work Schedule

Should the recommended work schedule require modification, for whatever reason, this will be agreed with the appointed Arboricultural Consultant (when applicable) and approved in writing by the Flintshire County Council. Under no circumstances will the appointed contractor deviate from the Tree Work Schedule contained in **Appendix 10** unless approved in writing by Flintshire County Council.

[30] https://www.legislation.gov.uk/ukpga/1981/69
[31] http://www.legislation.gov.uk/ukpga/2000/37/contents

9 Conclusions

The tree survey, conducted by Robert Hickey of ADAS on the 12th – 14th July 2023, identified 210 arboricultural features within the vicinity of the Site known as Padeswood Cement Works, Chester Road, Mold, CH7 4HB. These features include 142 individual trees, 62 groups of trees, four hedges, and two woodlands.

The purpose of this survey was to support the submission of an outline planning application for a carbon capture and storage facility, with all details reserved. An indicative masterplan option for this facility has been developed.

The assessments provided are based on this master plan and offer insights into the potential extent of tree removal and arboricultural impact that may occur if the development is built as per the proposals on the master plan. However, as the master plan represents a preliminary layout any change would require a new arboricultural assessment.

Based on the masterplan proposals, the development necessitates completely removing 95 arboricultural features within the Site. This comprises 70 individual trees, 23 groups of trees, and two hedges to facilitate the construction of the proposed carbon capture and storage facility. Additionally, partial removal of 12 groups of trees and a section of a hedge is required.

While this tree loss will impact the visual quality of the Site and the immediate area, it's expected to be low to moderate since trees along the boundary are planned for retention.

The trees proposed for removal consist of nine trees and six groups of Category A value , 39 trees and nine groups of Category B value, 21 trees, eight groups, and two hedges of Category C value and of one Category U tree.

The partial removal of one further Category A tree group, of eight Category B tree groups, and of three tree groups and one hedgerow of Category C value is also required.

It is advisable that during the detailed design phase of the Proposed Development, consideration be given to design modifications that allow for the retention of Category A and Category B trees and groups wherever feasible.

Furthermore, design alterations should be explored to avoid the necessity of constructing new hard surfaces within the RPAs of retained trees. If such construction within RPAs is unavoidable, it is recommended to consider the use of a cellular confinement system or a similar engineering solution to minimise the impact on the tree roots.

So, whilst the development will require the removal of a high number of middle-aged trees, these are largely situated within the internal compartments of the Site and the visual impact of this loss, when viewed from the wider environment, will be reduced given that the larger mature trees around the periphery of the Site are being retained.

Those trees being removed will be replaced via a detailed landscape scheme that will ultimately seek to increase and enhance the Sites canopy cover. These recommendations have therefore aimed to balance the development's needs with the preservation of the Sites most valuable trees and reduce the wider impact on the local environmental.

10 References

British Standards Institution (2012). BS 5837:2012 - Trees in relation to design, demolition and construction. Recommendations. Available at: https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard

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European Council (2009). Directive 2009/147/EC on the conservation of wild birds (Bird Directive). Official Journal of the European Union. Available at: https://eur-lex.europa.eu/eli/dir/2009/147/oj

British Standards Institution (2010). BS 3998:2010 - Tree work. Recommendations. Available at: https://knowledge.bsigroup.com/products/tree-work-recommendations?version=standard

Appendix 1: Site Location Plan

See the following page.

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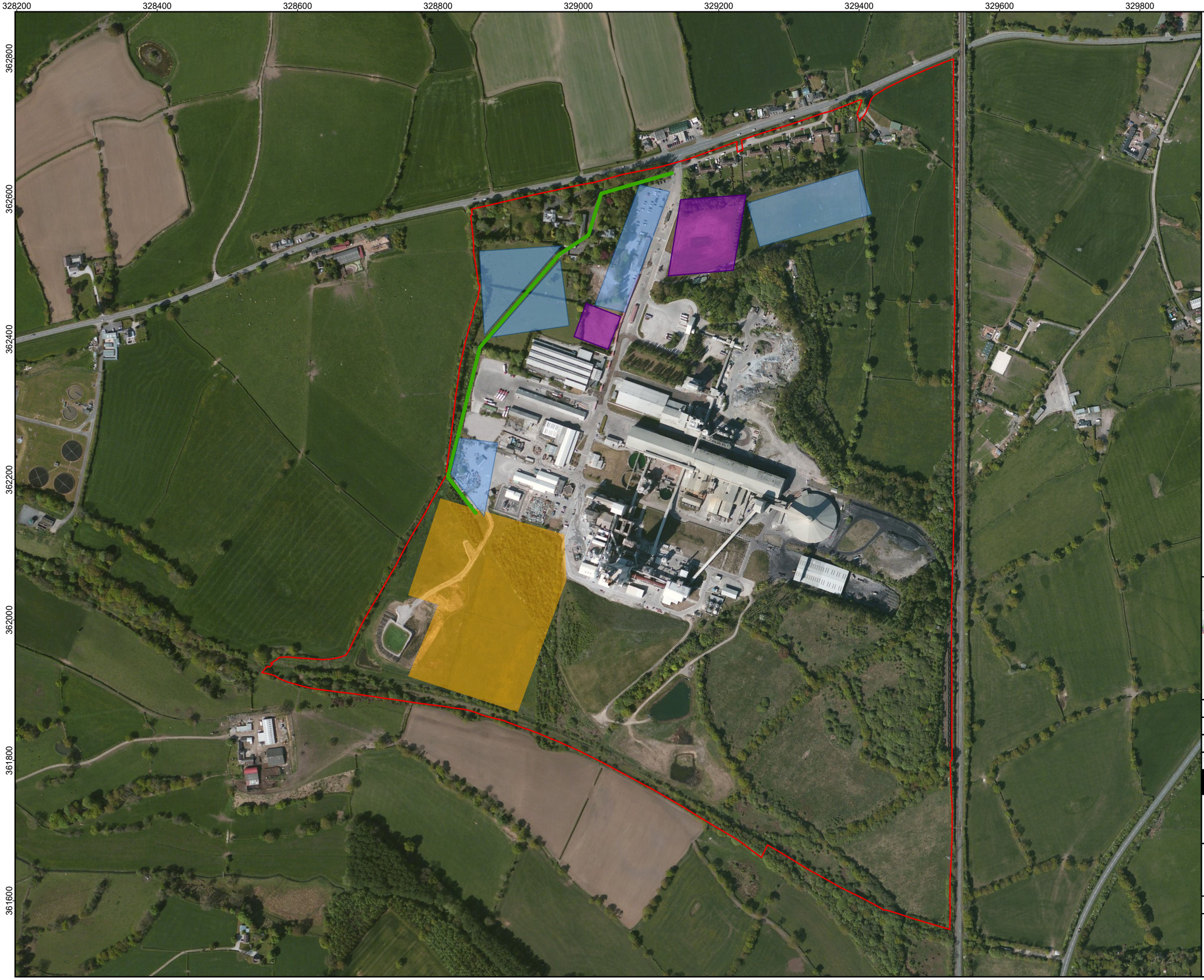
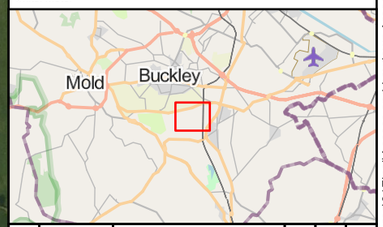


Legend:

- Planning Application Boundary
- Area of development for Combined Heat Power Plant and Post Combustion Carbon Capture and Compression Plant
- Parking
- Construction Laydown Areas
- Permanent access to the Proposed Development

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



Rev	Date	Description	Drn	Chk	App
07	04/11/2022	Title Change	TM	HC	RE
06	04/11/2022	Construction Parking Removed.	TM	HC	RE
05	04/11/2022	Laydown Areas moved Closer to Access Track. Symbology of Development Area changed. Legend Changes.	TM	HC	RE

Padeswood Carbon Capture & Storage Project

RSK

TITLE: Appendix D Project Access and Construction Laydown Plan

ID:663575 Padeswood Carbon Capture and Storage Project_Appendix D Project Access and Construction Laydown Plan

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Kilometres

Scale: 1:5,000 @ A3

N W E S

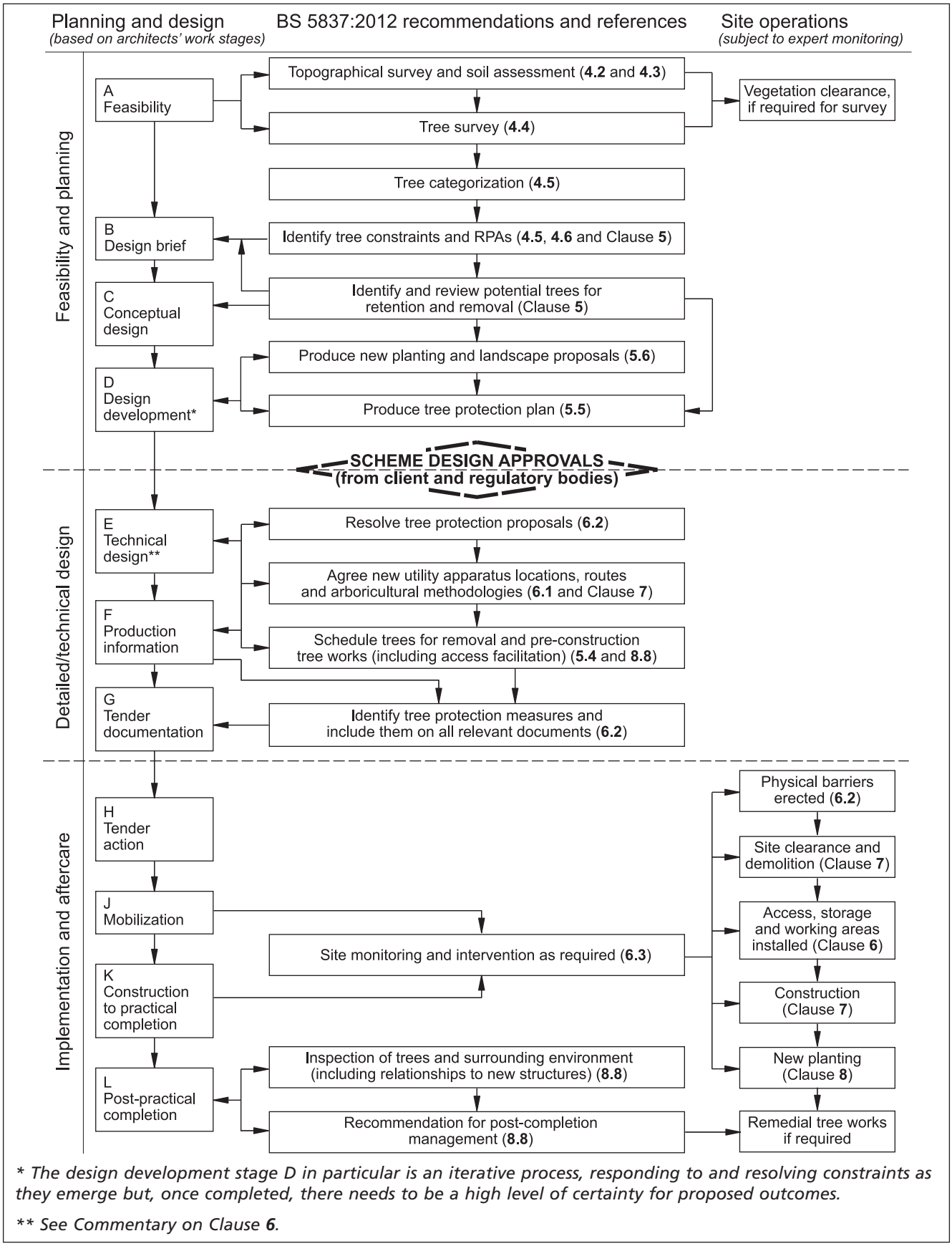
REV 07

Path: H:\660000 - EPD Projects\663575 Padeswood Routing Works\01 - GIS\03Figures\01Final\Access and Laydown Areas

Appendix 2: BS5837 Sequence of Events

See the following page.

Figure 1 **The design and construction process and tree care**



** The design development stage D in particular is an iterative process, responding to and resolving constraints as they emerge but, once completed, there needs to be a high level of certainty for proposed outcomes.*

*** See Commentary on Clause **6**.*

Appendix 3: Tree Constraints Plan

See the following page.

LEGEND

TREE CATEGORIES - NOTE: Quality class description derived from BS5837:2012

Category A
Trees / Groups of high quality: with an estimated remaining life expectancy of at least 40 years.

Category B
Trees / Groups of moderate quality: with an estimated remaining life expectancy of at least 20 years.

Category C
Trees / Groups of low quality: with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Category U
Trees / Groups: in such a condition that they cannot realistically be retained as living trees in the context of current land use for longer than 10 years.

Root Protection Area (RPA)

T#* Trees not included in original site survey and therefore positions are indicative only.

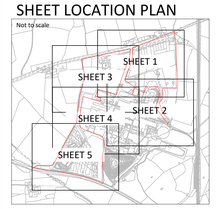
Area in abeyance - No access for survey.

Based on PADESWOOD TOPO 0118 REV 0421 OSTN15.dwg. Please see original for details.

This drawing was produced in colour; a monochrome copy should not be relied upon.

SHEET LOCATION PLAN

Not to scale



Rev.	Issue Details.	Date.
First issue	-	August 2023

Client:
Castle Cement Limited

Project:
Padeswood Cement Works

Drawing Title:
Tree Constraints Plan (Sheet 1)

Drawing No: ADAS_1052143_Hanson_Padeswood_TCP

Scale: 1:500

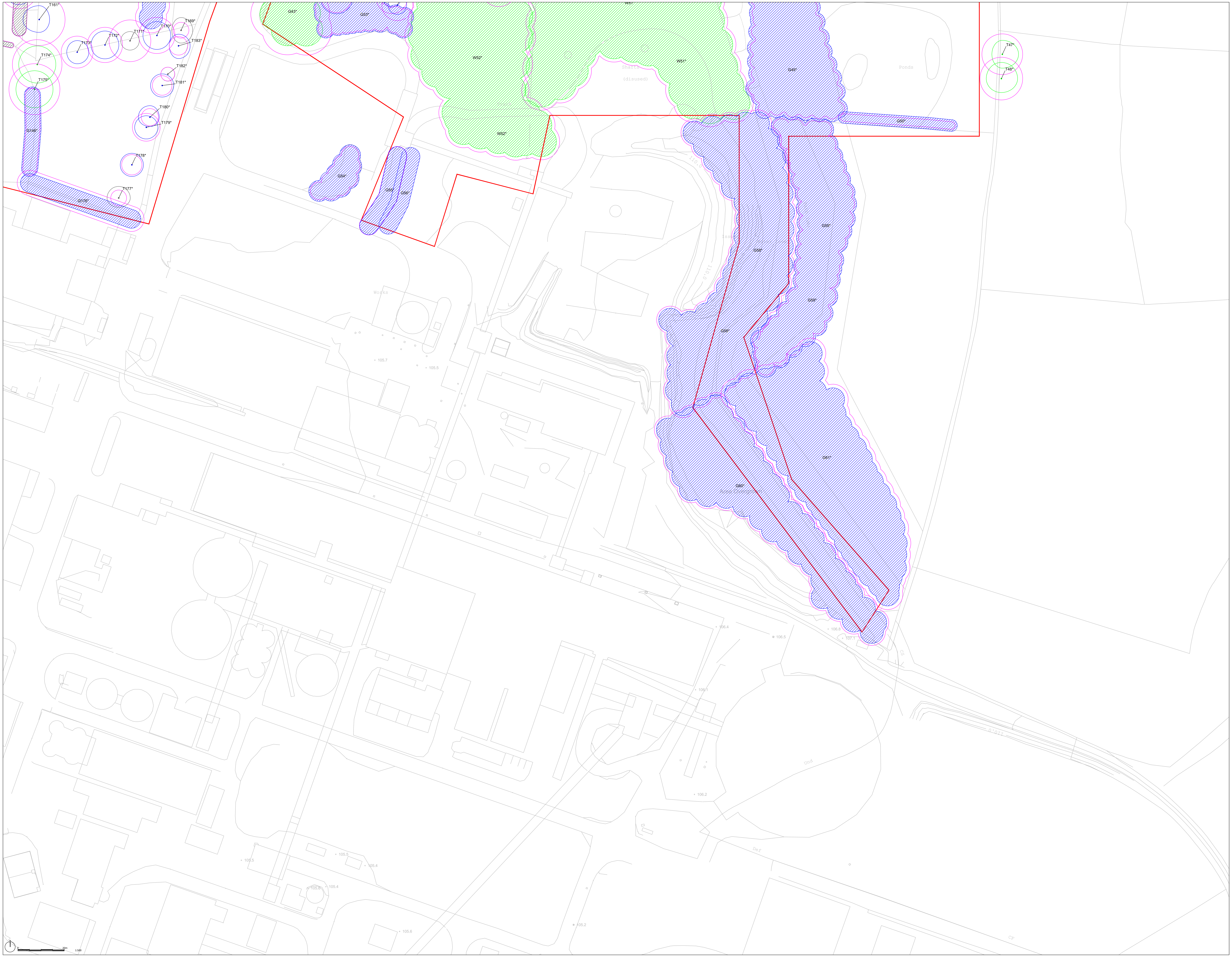
Drawn by: EL Date: 02.08.23

Checked by: IB Date: 02.08.23

ADAS, 11d Park House, Milton Park,
Milton, Abingdon, Oxford, OX14 4RS

Tel: 01235 355630

0 20m 1:500



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SHEET LOCATION PLAN

Not to scale

SHEET 1
SHEET 3
SHEET 2
SHEET 4
SHEET 5

Rev.	Issue Details.	Date.
First Issue	-	August 2023

Client:
Castle Cement Limited

Project:
Padeswood Cement Works

Drawing Title:
Tree Constraints Plan (Sheet 2)

Drawing No: ADAS_1052143_Hanson_Padeswood_TCP

Scale: 1:500

Drawn by: EL — Date: 02.08.23

Checked by: IB — Date: 02.08.23

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Milton, Abingdon, Oxford, OX14 4RS

Tel: 01235 355630

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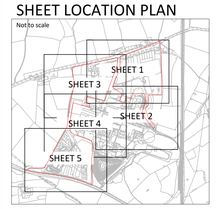

Rev.	Issue Details.	Date.
First Issue	-	August 2023

Client:
Castle Cement Limited

Project:
Padeswood Cement Works

Drawing Title:
Tree Constraints Plan (Sheet 3)

Drawing No: ADAS_1052143_Hanson_Padeswood_TCP

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Drawn by: EL Date: 02.08.23

Checked by: IB Date: 02.08.23

ADAS, 11d Park House, Milton Park,
Milton, Abingdon, Oxford, OX14 4RS

Tel: 01235 355630

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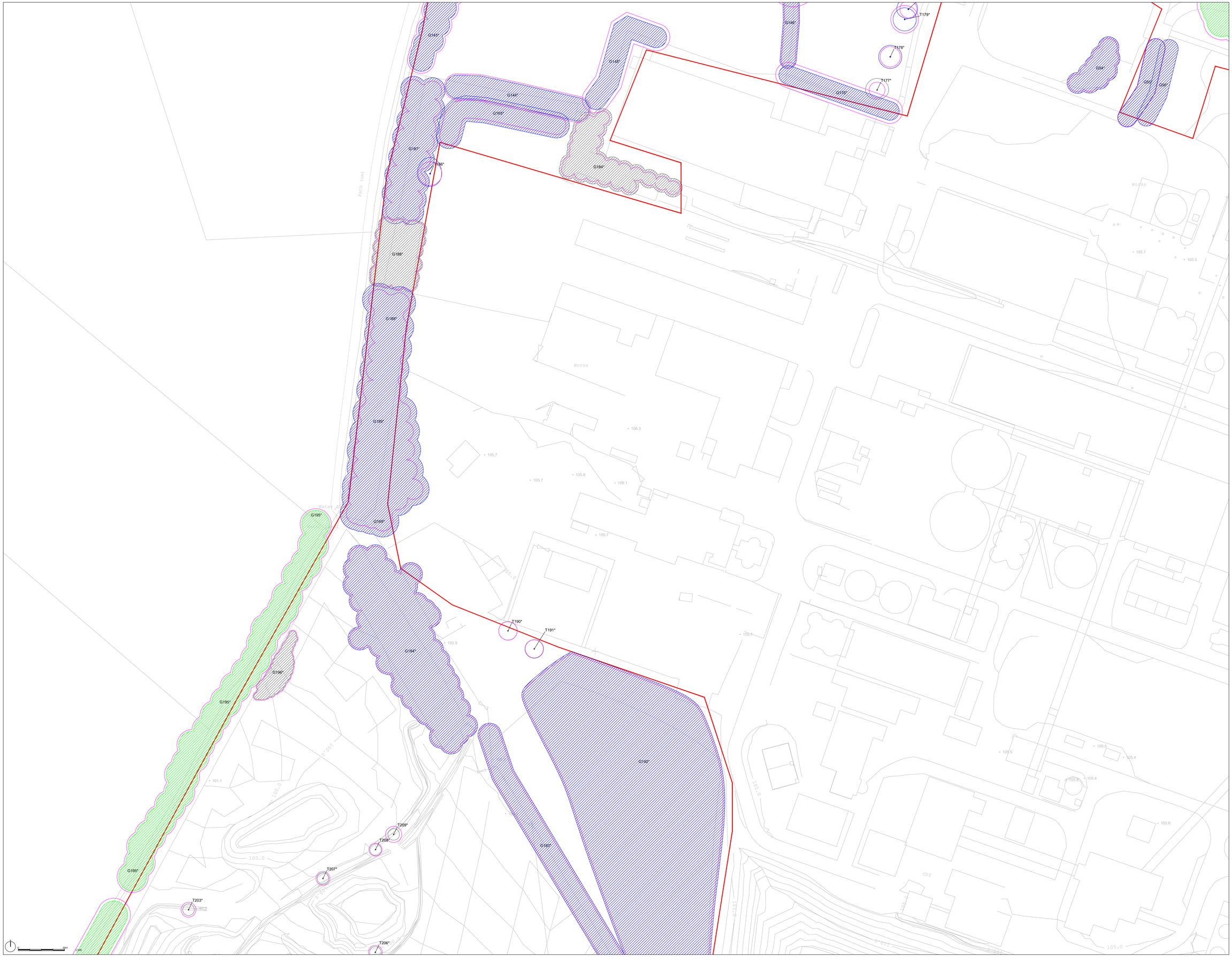

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Based on PADESWOOD TOPO 0118 REV 0421 OSTN15.dwg. Please see original for details.

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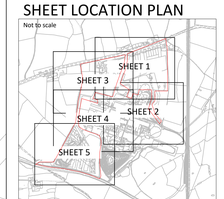

Rev.	Issue Details.	Date.
First Issue	-	August 2023

Client:
Castle Cement Limited

Project:
Padeswood Cement Works

Drawing Title:
Tree Constraints Plan (Sheet 4)

Drawing No: ADAS_1052143_Hanson_Padeswood_TCP

Scale: 1:500

Drawn by: EL Date: 02.08.23

Checked by: IB Date: 02.08.23

ADAS, 11d Park House, Milton Park,
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Tel: 01235 355630

LEGEND

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○ **Root Protection Area** (RPA)

T#* Trees not included in original site survey and therefore positions are indicative only.

▨ Area in abeyance - No access for survey.

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SHEET LOCATION PLAN

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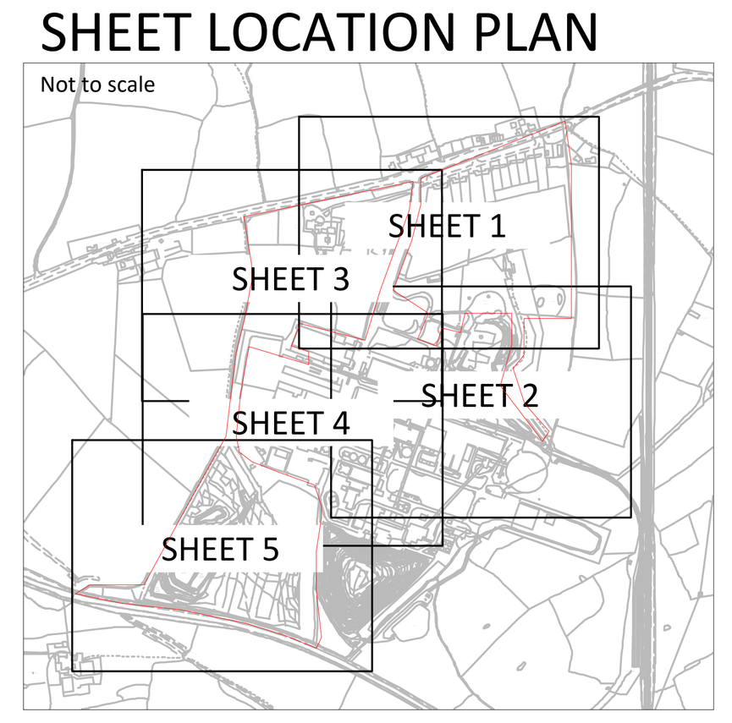


Rev.	Issue Details.	Date.
First Issue	-	August 2023

Client:
Castle Cement Limited

Project:
Padeswood Cement Works

Drawing Title:
Tree Constraints Plan (Sheet 5)

Drawing No: ADAS_1052143_Hanson_Padeswood_TCP

Scale: 1:500

Drawn by: EL Date: 02.08.23

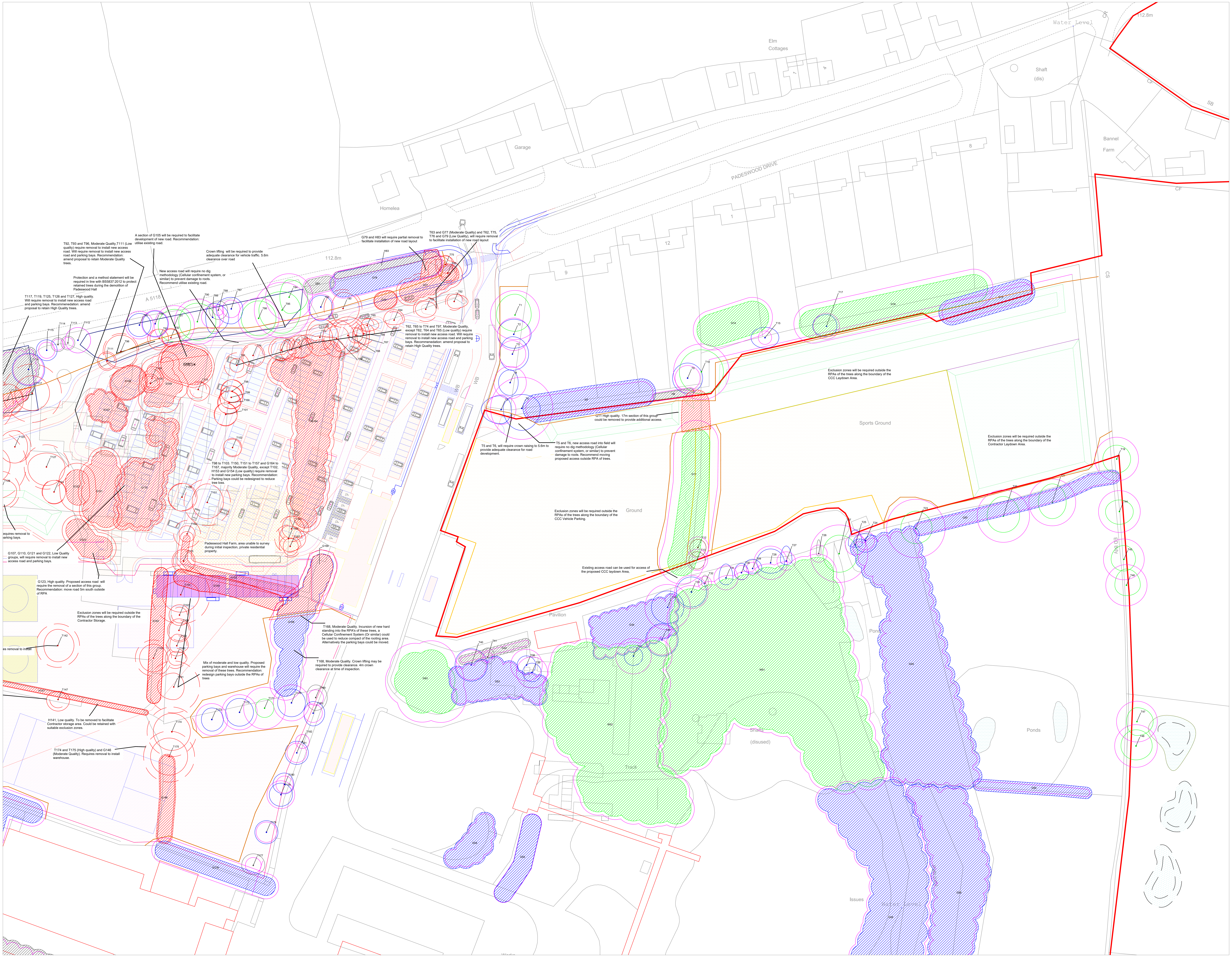
Checked by: IB Date: 02.08.23

ADAS, 11d Park House, Milton Park,
Milton, Abingdon, Oxford, OX14 4RS

Tel: 01235 355630

Appendix 4: Arboricultural Impact Assessment Plan

See the following page.


Elm Cottages
Water Level
Shaft (dis)
Bannel Farm
Garage
Homelea
PADESWOOD DRIVE
A 5118
112.8m
Sports Ground
Ground
Pavilion
Ponds
T92, T93 and T96, Moderate Quality,T111 (Low quality) require removal to install new access road. Will require removal to install new access road and parking bays. Recommendation: amend proposal to retain Moderate Quality trees.
A section of G105 will be required to facilitate development of new road. Recommendation: utilise existing road.
Crown lifting will be required to provide adequate clearance for vehicle traffic. 5.6m clearance over road
New access road will require no dig methodology (Cellular confinement system, or similar) to prevent damage to roots. Recommend utilise existing road.
Protection and a method statement will be required in line with BS5837:2012 to protect retained trees during the demolition of Padeswood Hall
T117, T119, T125, T126 and T127, High quality. Will require removal to install new access road and parking bays. Recommenedation: amend proposal to retain High Quality trees.
G79 and H83 will require partial removal to facilitate installation of new road layout
T63 and G77 (Moderate Quality) and T62, T75, T76 and G79 (Low Quality), will require removal to facilitate installation of new road layout
T62, T65 to T74 and T97, Moderate Quality, except T62, T64 and T65 (Low quality) require removal to install new access road. Will require removal to install new access road and parking bays. Recommenedation: amend proposal to retain High Quality trees.
T98 to T103. T150, T151 to T157 and G164 to T167, majority Moderate Quality, except T102, H153 and G154 (Low quality) require removal to install new parking bays. Recommendation: Parking bays could be redesigned to reduce tree loss.
Padeswood Hall Farm, area unable to survey during initial inspection, private residential property.
G107, G110, G121 and G122, Low Quality groups, will require removal to install new access road and parking bays.
G123, High quality. Proposed access road will require the removal of a section of this group. Recommendation: move road 5m south outside of RPA
Exclusion zones will be required outside the RPAs of the trees along the boundary of the Contractor Storage.
Mix of moderate and low quality. Proposed parking bays and warehouse will require the removal of these trees. Recommendation: redesign parking bays outside the RPAs of trees
H141, Low quality. To be removed to facilitate Contractor storage area. Could be retained with suitable exclusion zones.
T174 and T175 (High quality) and G146 (Moderate Quality). Requires removal to install warehouse.
T168, Moderate Quality. Incursion of new hard standing into the RPA's of these trees, a Cellular Confinement System (Or similar) could be used to reduce compact of the rooting area. Alternatively the parking bays could be moved.
T168, Moderate Quality. Crown lifting may be required to provide clearance. 4m crown clearance at time of inspection.
G11 High quality. 17m section of this group could be removed to provide additional access.
T5 and T6, will require crown raising to 5.6m to provide adequate clearance for road development.
T5 and T6, new access road into field will require no dig methodology (Cellular confinement system, or similar) to prevent damage to roots. Recommend moving proposed access outside RPA of trees.
Exclusion zones will be required outside the RPAs of the trees along the boundary of the CCC Laydown Area.
Exclusion zones will be required outside the RPAs of the trees along the boundary of the Contractor Laydown Area.
Exclusion zones will be required outside the RPAs of the trees along the boundary of the CCC Vehicle Parking.
Existing access road can be used for access of the proposed CCC laydown Area,

LEGEND

TREE CATEGORIES - **NOTE: Quality class description derived from BS5837:2012**

Category A
Trees / Groups of high quality: with an estimated remaining life expectancy of at least 40 years.

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Category U
Trees / Groups: in such a condition that they cannot realistically be retained as living trees in the context of current land use for longer than 10 years.

Root Protection Area (RPA)

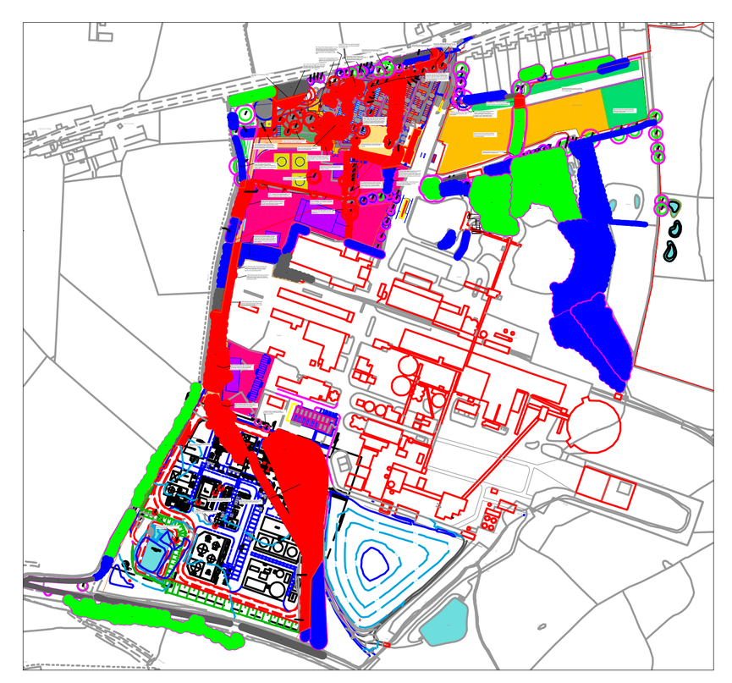
T#* Trees not included in original site survey and therefore positions are indicative only.

Trees To Be Removed
Trees / Groups: which are to be removed

Area in abeyance - No access for survey.

Based on Vision Mill Architects) drawing 'Construction Management Masterplan' number '2022-34-A:SK01'. Please see original for details.

This drawing was produced in colour; a monochrome copy should not be relied upon.



LEGEND

TREE CATEGORIES - NOTE: Quality class description derived from BS5837:2012

Category A
Trees / Groups of high quality: with an estimated remaining life expectancy of at least 40 years.

Category B
Trees / Groups of moderate quality: with an estimated remaining life expectancy of at least 20 years.

Category C
Trees / Groups of low quality: with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Category U
Trees / Groups: in such a condition that they cannot realistically be retained as living trees in the context of current land use for longer than 10 years.

Root Protection Area (RPA)

T#* Trees not included in original site survey and therefore positions are indicative only.

Trees To Be Removed
Trees / Groups: which are to be removed

Area in abeyance - No access for survey.

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ADAS

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A section of G105 will be required to facilitate development of new road. Recommendation: utilise existing road.

T92, T93 and T96, Moderate Quality,T111 (Low quality) require removal to install new access road and parking bays. Recommendation: amend proposal to retain Moderate Quality trees.

Protection and a method statement will be required in line with BS5837:2012 to protect retained trees during the demolition of Padeswood Hall

T117, T119, T125, T126 and T127, High quality. Will require removal to install new access road and parking bays. Recommendation: amend proposal to retain High Quality trees.

T117 and T119, Protected by TPO 92 (2007) G2

New access road will require no dig methodology (Cellular confinement system, or similar) to prevent damage to roots. Recommend utilise existing road.

Crown lifting will be required to provide adequate clearance for vehicle traffic. 5.6m clearance over road

G79 and H83 will require partial removal to facilitate installation of new road layout

T63 and G77 (Moderate Quality) and T62, T75, T76 and G79 (Low Quality), will require removal to facilitate installation of new road layout

T62, T65 to T74 and T97, Moderate Quality, except T62, T64 and T65 (Low quality) require removal to install new access road. Will require removal to install new access road and parking bays. Recommendation: amend proposal to retain High Quality trees.

T5 and T6, will require crown raising to 5.6m to provide adequate clearance for road development.

T5 and T6, new acces require no dig methodc confinement system, o damage to roots. Reco proposed access outsi

T98 to T103, T150, T151 to T157 and G164 to T167, majority Moderate Quality, except T102, H153 and G154 (Low quality) require removal to install new parking bays. Recommendation: Parking bays could be redesigned to reduce tree loss.

Padeswood Hall Farm, area unable to survey during initial inspection, private residential property.

T129 to G132, low quality. Requires removal to facilitate installation of new parking bays.

G133, Moderate quality. Currently limited removal required to install proposed parking bays. Recommendation: could reduce the number of parking bays to reduce incursions.

G107, G110, G121 and G122, Low Quality groups, will require removal to install new access road and parking bays.

G123, High quality. Proposed access road will require the removal of a section of this group. Recommendation: move road 5m south outside of RPA

T139, High quality. Proposed access road will require no dig methodology (Cellular Confinment System, or similar) to prevent root damage. Recommendation: move road 6m east outside of RPA.

Exclusion zones will be required outside the RPAs of the trees along the boundary of the Contractor Storage.

T142, High quality. Requires removal to install Absorber fabrication area.

T147, T148 and T149, Moderate quality. To be removed to facilate Contractor storage area. Could be retained with suitable exclusion zones.

Mix of moderate and low quality. Proposed parking bays and warehouse will require the removal of these trees. Recommendation: redesign parking bays outside the RPAs of trees

T168, Moderate Quality. Incursion of new hard standing into the RPA's of these trees, a Cellular Confinement System (Or similar) could be used to reduce compact of the rooting area. Alternatively the parking bays could be moved.

T168, Moderate Quality. Crown lifting may be required to provide clearance. 4m crown clearance at time of inspection.

G143, Moderate quality. Proposed access road installation will require the removal of a section of G143. Recommendation: move the access road 6m to the east outside the RPA.

H141, Low quality. To be removed to facilitate Contractor storage area. Could be retained with suitable exclusion zones.

T174 and T175 (High quality) and G146 (Moderate Quality). Requires removal to install warehouse.

G144 and G185, Moderate quality. Currently limited removal required to install proposed access road, if the access road is moved 6m to the east a larger section of these groups will required removal, but majority of groups could still be retained.

G187, Moderate quality. Proposed access road installation will require the removal of a section of G187. Recommendation: move the access road 6m to the east outside the RPA.

T186, Moderate quality. Will require removal to install new proposed access road. Could be retained if the access road is moved 6m to the east outside the RPA.

G188, Moderate quality. Will require sectional removal to install new proposed access road. Could be retained if the access road is moved 6m to the east outside the RPA.

Exclusion zones will be RPAs of the trees along CCC Vehicle Parking.

Oak Tree Farm

Water Tower

Path (um)

Pavilion

Works

Works

ADAS

G144 and G185, Moderate quality. Currently limited removal required to install proposed access road, if the access road is moved 6m to the east a larger section of these groups will required removal, but majority of groups could still be retained.

G187, Moderate quality. Proposed access road installation will require the removal of a section of G187. Recommendation: move the access road 6m to the east outside the RPA.

T186, Moderate quality. Will require removal to install new proposed access road. Could be retained if the access road is moved 6m to the east outside the RPA.

G188, Moderate quality. Will require sectional removal to install new proposed access road. Could be retained if the access road is moved 6m to the east outside the RPA.

G189, Moderate quality. Will most likely require entire group removal to install new proposed access road. Could be mostly retained if the access road is moved 6m to the east.

G195, Moderate quality. Will require entire group removal to install new proposed access road. Compound zone and sub-station.

T190 and T191, Low quality. Currently proposed for retention will require protective fencing around RPAs.

G196 low quality. Requires removal to facilitate installation of access road.

T208 and T209 low quality. Requires removal to facilitate installation of Compressor Building.

G192 and G193. Moderate quality. Will require majority removal to install new proposed Compound zones.

T206 and T207 low quality. Requires remova as part of ground works.

T203 and T205 low quality. Requires removal as part of ground works.

Path (um)

Works

Water Level

Chy

LEGEND

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Category C
Trees / Groups of low quality: with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Category U
Trees / Groups: in such a condition that they cannot realistically be retained as living trees in the context of current land use for longer than 10 years.

Root Protection Area (RPA)

T#* Trees not included in original site survey and therefore positions are indicative only.

Trees To Be Removed
Trees / Groups: which are to be removed

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Appendix 5: Cascade Chart for Tree Quality Assessment

See the following page.

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Appendix 6: Tree Survey Schedule

See the following page.

Column Heading	Description
Tree Ref No.	All individual trees and groups of trees have been given a unique reference number. Each number is prefixed by a letter. ▪ T = Individual tree ▪ G = Group of trees ▪ H = Hedgerow * W = Woodland
Species	The English common name has been used.
Single or Multiple stem (S or M)	* 'S' represents a tree which has a single clear stem to at least 1.5m above ground level. * 'M(a)' represents a tree where the main stem divides into two to five stems below 1.5m above ground level, and * 'M(b)' represents a tree where the main stem divides into 6 or more stems below a height of 1.5m.
Height (m)	Where possible tree heights are measured using a laser. In some instances such as in close groups of trees, one height may be measured and other nearby trees estimated from this height. Measurements are provided in metres.
Stem Diameter (mm)	S_n represents the stem number. Measurements are provided in millimetres at 1.5m above ground level for single stemmed trees.
Very Large Girth (y/n)	Girth is very large for species inaccordance with Fig 1.3 of publication 'Ancient and other veteran trees: further guidance on management' Acient Tree Forum 2013. RAVEN - Step 1
Ancient (A), Veteran (V) or Notable (N)	Result of the RAVEN assessment © Julian Forbes-Laird 2018 www.flac.uk.com; provided on separate ADAS Sheet 2. (RAVEN = Recognition of Ancient, Veteran & Notable Trees)
Branch Spread (m)	Measured in metres to the four cardinal compass points (N, E, S, W).
Crown Clearance Life Stage	(1) Height in metres of the first significant branch, and the direction of growth. (2) Height in metres of lowest part of crown. The stage at which the tree is within its lifecycle (Y = young, SM = semi-mature, EM = early-mature, M = mature, OM = over mature, V = veteran)
General Observations	Any relevant observations are recorded, with particular reference to structural and/or physiological condition.
Preliminary Management Recommendations	Recommendations are made where management work is required for reasons of health and safety or sound arboricultural management.
Estimated Remaining Contribution (years)	An estimation of how long the feature will contribute to its surroundings. This is recorded in bands of either <10 years, 10+ years, 20+ years and 40+ years.
Tree Quality Grading	The trees are graded to the categories prescribed within BS5837:2012 (U, A, B & C).
Root Protection Area	Calculated as prescribed in section 4.6 of BS5837:2012, provided as an area (m^2) and a radius from the tree's stem (m).
Note: Those measurements shown in *italics* have been estimated, usually where access has restricted it being taken.	

Tree Ref No.	Species	Single or Multiple Stem (S or M)	Height (m)	Stem Diameter (mm) S1	S2	S3	S4	S5	Very Large Girth (Y / N)	Ancient, Veteran or Notable (A, V or N)	Branch Spread (m) N	E	S	W	Crown Clearance (m) (1)	(2)	Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area (m^2)	(radius in m)
T1	Horse chestnut	S	16	880					N		9	7	7	8	2.5-W	1	M	Multiple stemmed at 2m, dense ivy present, multiple poor quality pruning wounds noted.	No action required.	40+	A1	350.4	10.6
T2	Horse chestnut	S	16	580					N		6.5	7.5	6	7	2.5-W	1	M	Multiple poor quality pruning wounds noted, dried exudate noted on bark wound, multiple stemmed at 2.5m, cracking bark noted on all stems.	No action required.	40+	B1	152.2	7.0
T3	Horse chestnut	S	16	480					N		7.5	7	7	5.5	3.0-S	0.5	M	Stem bifurcates at 2.5m, crossing branches noted.	No action required.	40+	B1	104.2	5.8
T4	Black Poplar	M(a)	23	360	460				N		5.5	3.5	5.5	5	6.0-S	0	EM	Stem bifurcates at 1m. surface rooting present with mechanical damage, has been crown raised in the past to 7m, canopy touching utility light.	No action required.	40+	B1	154.4	7.0
T5	Black Poplar	S	24	530					N		6	4.5	6	8.5	5.5-W	2	EM	Stubs present due to past pruning, deadwood noted, ivy on stem.	No action required.	40+	B1	127.1	6.4
T6	Black Poplar	M(a)	28	700	680	550			N		6	8	9.5	8	5.5-S	2	M	Dense ivy prevents a detailed inspection, stem trifurcates at base, minor diameter deadwood noted.	No action required.	20+	B1	567.8	13.4
G7	Black Poplar	S	23	400					N		6	6	6	6	3.0-N	2	EM	Linear row of trees growing along boundary, provides a good screening, currently not within falling distance of any significant target.	No action required.	40+	B2	72.4	4.8
H8	Beech	S	4	150					N		1.5	1.5	1.5	1.5	0-E	0	SM	A boundary hedge, appears to have seen no recent management, dense canopy provides a good screening.	No action required.	40+	C2	10.2	1.8
T9	Black Poplar	S	21	450					N		6.5	6.5	6.5	6.5	3.0-E	4.5	EM	Apical deadwood noted, possibly early signs of decline.	No action required.	20+	B1	91.6	5.4
T10	Black Poplar	S	30	1000					N		9.5	9.5	9.5	9.5	10.0-S	9.5	M	Limited access prevents a detailed inspection, no major visible defects.	No action required.	40+	A1	452.4	12.0
G11	Lombardy Poplar	S	31	800					N		6	6	6	6	1.0-S	1	M	Linear row of trees, occasional hanging deadwood noted, dense ivy present on majority of trees within group, not within falling distance of any significant target, understory of Hawthorn.	No action required.	40+	A12	289.6	9.6
T12	Black Poplar	S	14	380					N		3.5	3.5	4	3.5	3.5-S	2.5	EM	Dense Ivy prevents a detailed inspection, tree is in decline deadwood makes up 50% of canopy.	No action required.	<10	U	65.3	4.6
T13	Black Poplar	S	14	380					N		3.5	3.5	4	3.5	3.5-S	3.5	EM	Dense Ivy prevents a detailed inspection, tree is in decline deadwood makes up 50% of canopy.	No action required.	<10	U	65.3	4.6
G14	Black Poplar	S	27	720					N		7	7	7	7	5.0-E	5	M	Limited access prevents a detailed inspection, no major visible defects.	No action required.	40+	A1	234.5	8.6
T15	Eucalyptus	S	13	240					N		4.5	6	4.5	6	5.5-W	6	SM	Limited access prevents a detailed inspection, minor diameter deadwood noted.	No action required.	40+	B1	26.1	2.9
G16	Black Poplar	S	27	690					N		6	6	6	6	1.0-S	1	M	Linear row of trees, occasional hanging deadwood noted, dense ivy present on majority of trees within group, not within falling distance of any significant target, understory of Hawthorn.	No action required.	40+	A12	215.4	8.3
T17	Pedunculate Oak	S	13	470					N		5	4.5	4.5	6	2.5-W	1.5	EM	Dense ivy on stem, minor diameter deadwood noted, lateral branch resting on fence.	No action required.	40+	B1	99.9	5.6
G18	Wild Cherry	S	12	340					N		5.5	5.5	5.5	5.5	1.5-E	1	SM	Five trees within group, no major visible defects, slightly shaded by adjacent trees.	No action required.	40+	B1	52.3	4.1
T19	Sycamore	S	16	780					N		6	6	6	6	2.5-E	2	M	Ivy present on stem, no major visible defects.	No action required.	40+	A1	275.3	9.4
G20	Hawthorn	S	8	200					N		3	3	3	3	0-S	0	EM	Linear row, probably historic boundary hedge which has been left unmanaged, occasional elder within group.	No action required.	40+	B2	18.1	2.4
T21	Pedunculate Oak	S	17	840					N		8	6	7	6	3.5-S	1.5	EM	Dense ivy on stem, tree is growing within group, minor diameter deadwood noted.	No action required.	40+	A1	319.2	10.1

Tree Ref No.	Species	Single or Multiple Stem (S or M)	Height (m)	Stem Diameter (mm) S1	S2	S3	S4	S5	Very Large Girth (Y / N)	Ancient, Veteran or Notable (A, V or N)	Branch Spread (m) N	E	S	W	Crown Clearance (m) (1)	(2)	Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area (m^2)	(radius in m)
T22	Sycamore	S	17	940					N		8.5	7	7	7	4.0-S	0.5	M	Dense ivy on stem, tree is growing within group, minor diameter deadwood noted.	No action required.	40+	A1	399.8	11.3
T23	Pedunculate Oak	S	16	1050					N		7.5	7	6.5	6.5	4.0-E	1	M	Dense ivy on stem, tree is growing within group, minor diameter deadwood noted.	No action required.	40+	A1	498.8	12.6
T24	Black Poplar	S	16	330					N		3	5	5	5	5.0-S	4	SM	Pruning wounds due to crown lifting, no major visible defects.	No action required.	40+	B1	49.3	4.0
T25	Black Poplar	S	17	370					N		6.5	3	1	3	6.0-S	1.5	SM	Pruning wounds due to crown lifting, no major visible defects.	No action required.	40+	B1	61.9	4.4
T26	Black Poplar	S	14	310					N		6	1	1	1	4.5-N	3.5	SM	Pruning wounds due to crown lifting, tear wounds noted due to branch loss.	No action required.	20+	C1	43.5	3.7
T27	Black Poplar	S	15	330					N		6.5	2.5	1.5	2.5	4.5-N	1	SM	Pruning wounds due to crown lifting, no major visible defects.	No action required.	40+	B1	49.3	4.0
T28	Black Poplar	S	28	600					N		6	6	4.5	6	6.0-S	0.5	M	Pruning wounds due to crown lifting, no major visible defects.	No action required.	40+	B1	162.9	7.2
T29	Black Poplar	S	15	230					N		4	4	2	4	3.0-N	0.5	SM	Dense ivy present, canopy has been pruned away from road.	No action required.	40+	B1	23.9	2.8
T30	Black Poplar	S	16	260					N		4	3	3	3	4.0-N	1.5	SM	Dense ivy present, canopy has been pruned away from road.	No action required.	40+	B1	30.6	3.1
T31	Black Poplar	S	24	430					N		6	3	3	3	4.0-N	1	EM	Dense ivy present, canopy has been pruned away from road.	No action required.	40+	B1	83.7	5.2
T32	Black Poplar	S	15	240					N		3.5	1.5	1.5	1.5	2.5-W	3	SM	Same as T29, apical deadwood noted, suppressed by adjacent tree.	No action required.	10+	C1	26.1	2.9
T33	Black Poplar	S	26	600					N		6.5	6.5	6.5	6.5	7.0-E	5	M	Dense ivy present, canopy has been pruned away from road.	No action required.	40+	B1	162.9	7.2
G34	Goat Willow and sycamore	S	9.5	250					N		3.5	3.5	3.5	3.5	2.5-E	1.5	SM	Ivy present on several trees, dense canopy provides a good screening. has been pruned back away from road.	No action required.	40+	B2	28.3	3.0
T35	Pedunculate Oak	S	17	820					N		7	7	7	7	5.5-E	4	EM	Dense ivy present, no major visible defects.	No action required.	40+	B1	304.2	9.8
T36	Pedunculate Oak	S	16	540					N		7	7	7	7	5.5-E	4	EM	Dense ivy present, no major visible defects. Deadwood noted throughout canopy.	No action required.	40+	B1	131.9	6.5
T37	Lombardy Poplar	S	26	640					N		4	4	4	4	1.0-S	1.5	M	Dense ivy present, no major visible defects. Deadwood noted throughout canopy.	No action required.	40+	B1	185.3	7.7
T38	Lombardy Poplar	M(a)	26	450	340				N		4	4	4	4	1.0-S	1.5	M	Dense ivy present, no major visible defects. Deadwood noted throughout canopy.	No action required.	40+	B1	143.9	6.8
T39	Lombardy Poplar	M(a)	26	420	370				N		4	4	4	4	1.0-S	1.5	M	Dense ivy present, no major visible defects. Deadwood noted throughout canopy.	No action required.	40+	B1	141.8	6.7
T40	Lombardy Poplar	S	16	540					N		7	7	7	7	5.5-E	4	EM	Dense ivy present, no major visible defects. Deadwood noted throughout canopy. Incremental root growth appears to be damaging road.	No action required.	40+	B1	131.9	6.5
T41	Ash	S	12	180					N		4	3	3	3	2.5-N	2	SM	Growing within group, no visible defects.	No action required.	20+	C1	14.7	2.2
G42	Hawthorn	S	3	100					N		2	2	2	2	0-N	0	SM	Group growing along boundary, has been pruned back from road.	No action required.	40+	C2	4.5	1.2
G43	Black Poplar	S	28	910					N		7	7	7	7	3.0-E	0.5	M	Eleven trees growing within group, ivy present on two trees within group, stubs present due to past branch loss, hanging deadwood noted overhanging grassed area.	No action required.	40+	A2	374.7	10.9

Tree Ref No.	Species	Single or Multiple Stem (S or M)	Height (m)	Stem Diameter (mm) S1	S2	S3	S4	S5	Very Large Girth (Y / N)	Ancient, Veteran or Notable (A, V or N)	Branch Spread (m) N	E	S	W	Crown Clearance (m) (1)	(2)	Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area (m^2)	(radius in m)
T44	Sycamore	S	16	750					N		5	6	5.5	6	2.5-E	2	M	Ivy present on stem, no major visible defects.	No action required.	40+	A1	254.5	9.0
T45	Sycamore	S	16	730					N		6	5	5	5.5	2.5-S	2	M	Ivy present on stem, no major visible defects.	No action required.	40+	A1	241.1	8.8
T46	Pedunculate Oak	S	16	740					N		7	6	4.5	5	2.0-W	1.5	M	Ivy present on stem, no major visible defects.	No action required.	40+	A1	247.8	8.9
T47	Sycamore	S	16	730					N		6	7	6	4.5	2.5-S	1.5	M	Ivy present on stem, no major visible defects.	No action required.	40+	A1	241.1	8.8
T48	Horse chestnut	S	16	770					N		7	7	6	6.5	2.0-N	1.5	M	Ivy present on stem, no major visible defects.	No action required.	40+	A1	268.3	9.2
G49	Rowan, Field Maple, Fir, Pine, Willow	S	16	230					N		4	4	4	4	3.0-E	2	SM	A relatively young mixed species woodland, several younger planted specimens noted throughout.	No action required.	40+	B2	23.9	2.8
G50	Hawthorn	S	4	130					N		2.5	2.5	2.5	2.5	1.0-E	0.5	SM	A scattered row of Hawthorn growing along boundary, ivy present on stems, understory of elder in places.	No action required.	40+	B2	7.6	1.6
W51	Black Poplar, Sycamore, Pine	S	27	700					N		7	7	7	7	3.0-S	3.5	M	Was planted as a screen from factory, now has matured, poplar will soon start to reach end of life, ivy present on stems.	No action required.	40+	A2	221.7	8.4
W52	Black Poplar, Sycamore, Pine, Hawthorn and Elder	S	26	660					N		6.5	6.5	6.5	6.5	1.5-N	2.5	M	Same as w51, several mature trees have collapsed, remaining trees pose a tolerable risk due to current site usage.	No action required.	40+	A2	197.1	7.9
G53	Hawthorn and Black Poplar	S	8	280					N		4	4	4	4	2.5-E	2.5	EM	Group of Hawthorn with Black Poplar spaced around periphery, dense ivy present on ground and several trees.	No action required.	40+	B2	35.5	3.4
G54	Goat Willow, Alder and Elm	S	11	320					N		4.5	4.5	4.5	4.5	2.5-E	0.5	SM	A densely growing group, deadwood noted on occasional trees, overhanging vegetation.	No action required.	40+	B2	46.3	3.8
G55	Sycamore and cherry	S	7.5	340					N		4	4	4	4	1.0-E	1	SM	Canopies of several trees encroaching building, canopies have been pruned back away from road.	No action required.	40+	B2	52.3	4.1
G56	Lombardy Poplar	S	27						N		4	4	4	4	1.0-S	0.5	M	Twelve trees growing within group, originally planted as a screening, minor diameter deadwood noted.	No action required.	40+	B2	0.0	0.0
T57	Black Poplar	S	29	1030					N		8	8	8	7	3.0-W	2	M	Ivy has been severed at base, minor diameter deadwood noted, stem bifurcates at 9m.	No action required.	40+	A1	480.0	12.4
G58	Black Poplar	S	22	490					N		5	5	5	5	6.0-W	5.5	EM	Group growing along river embankment, minor diameter deadwood noted, understory of hawthorn.	No action required.	40+	B1	108.6	5.9
G59	Sycamore, Hawthorn, Cherry.	S	15	300					N		4.5	4.5	4.5	4.5	2.5-N	2	EM	Group growing adjacent footpath, occasional tear wounds noted.	No action required.	40+	B2	40.7	3.6
G60	Black Poplar and Sycamore	S	22	490					N		5	5	5	5	6.0-W	5.5	EM	Group growing along river embankment, minor diameter deadwood noted, understory of hawthorn.	No action required.	40+	B1	108.6	5.9
G61	Black Poplar, Lombardy Poplar and lime	S	22	550					N		5	5	5	5	3.0-S	2	EM	A row of trees growing adjacent footpath, Ivy present on majority of trees, deadwood noted throughout group,	No action required.	40+	B2	136.9	6.6
T62	Wild Cherry	S	6	320					N		3	6	3	3	3.0-N	0.5	SM	Basal bark wound noted, crown appears to be dying back on western side, deadwood noted, stem is twisting.	No action required.	10+	C1	46.3	3.8
T63	Laburnum	S	6	440					N		3.5	4.5	3.5	4.5	2.0-N	2	M	Multiple stemmed at 2m, minor diameter deadwood noted, area of dead bark noted.	No action required.	20+	B1	87.6	5.3
T64	Rowan	S	6	310					N		4.5	4.5	2	4.5	1.5-N	1	SM	Minor diameter deadwood noted, pruning wounds on stem.	No action required.	20+	C1	43.5	3.7
T65	Malus	S	6	240					N		3	5	2.5	2.5	3.0-E	2	SM	Stem bifurcates at 1.6m, minor diameter deadwood noted.	No action required.	20+	C1	26.1	2.9

Tree Ref No.	Species	Single or Multiple Stem (S or M)	Height (m)	Stem Diameter (mm) S1	S2	S3	S4	S5	Very Large Girth (Y / N)	Ancient, Veteran or Notable (A, V or N)	Branch Spread (m) N	E	S	W	Crown Clearance (m) (1)	(2)	Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area (m^2)	(radius in m)
T66	Silver Birch	S	16	380					N		4	2.5	7	3	5.0-W	1.5	EM	Small amount of fibre buckling noted at 1.5m on stem, occasional pruning wounds noted.	No action required.	40+	B1	65.3	4.6
T67	Silver Birch	S	16	280					N		3	3	3	1.5	4.5-E	2.5	SM	Slight lean on stem due to adjacent tree, minor diameter deadwood noted.	No action required.	20+	C1	35.5	3.4
T68	Sycamore	S	16	560					N		8	8	8	8	4.0-W	2	EM	Pruning wounds noted on stem. deadwood noted overhanging verge.	No action required.	40+	B1	141.9	6.7
T69	Black Poplar	S	23	460					N		8	8	8	6	8.5-N	6.5	EM	Minor diameter deadwood noted, appears to have been crown raised in past.	No action required.	40+	B1	95.7	5.5
T70	Black Poplar	S	23	460					N		8	8	8	6	8.5-N	6.5	EM	Minor diameter deadwood noted, appears to have been crown raised in past. Dense Ivy present.	No action required.	40+	B1	95.7	5.5
T71	Sycamore	S	17	370					N		5.5	5.5	4.5	5.5	6.5-N	2	EM	Dense ivy on stem, no major visible defects.	No action required.	40+	B1	61.9	4.4
T72	Pedunculate Oak	S	17	340					N		5	1.5	5	5	8.5-W	2	SM	Asymmetrical crown due to adjacent tree, minor diameter deadwood noted.	No action required.	40+	B1	52.3	4.1
T73	Sycamore	S	17	370					N		5.5	5.5	4.5	5.5	6.5-N	2	EM	Dense ivy on stem, no major visible defects. Deadwood noted.	No action required.	40+	B1	61.9	4.4
T74	Sitka Spruce	S	15	370					N		5	5	5	5	3.5-S	4	EM	Growing in hedge, dense ivy present causing tree to decline in places.	remove ivy.	20+	B1	61.9	4.4
T75	Sitka Spruce	S	7.5	310					N		4	3	5.5	4.5	3.0-E	2	SM	Minor diameter deadwood noted, slightly shaded by adjacent trees.	No action required.	20+	C1	43.5	3.7
T76	Sweet Chestnut	M(a)	7	220	150				N		4	4	4	4	1.5-N	0.5	Y	A young planted specimen, no major visible defects.	No action required.	40+	C1	32.1	3.2
G77	Lombardy Poplar	S	22	450					N		4.5	4.5	4.5	4.5	1.5-W	0.5	EM	A group of trees planted for screening, no major visible defects.	No action required.	40+	B2	91.6	5.4
G78	Black Poplar	S	23	500					N		5.5	5.5	5.5	5.5	3.5-E	2	EM	A group of trees planted for screening, several dead and hanging branches noted. ivy present on several trees.	No action required.	40+	B2	113.1	6.0
G79	Lombardy Poplar	S	22	310					N		4	4	4	4	4.5-E	2	SM	Two trees planted for screening, apical decline noted.	No action required.	20+	C1	43.5	3.7
T80	Black Poplar	S	23	680					N		7	7	7	5	4.0-S	3	M	Deadwood noted on stem, ivy present at base,	No action required.	40+	B1	209.2	8.2
G81	Lombardy Poplar	S	21	300					N		3	3	3	3	4.5-W	7	EM	A group of trees planted for screening, no major visible defects. Slightly suppressed by adjacent trees.	No action required.	20+	C1	40.7	3.6
T82	Beech	M(a)	17	350	310				N		5	5	6	5	3.0-W	1	EM	Stem bifurcates at 0.5m, canopy overhanging road, no major visible defects.	No action required.	40+	B1	98.9	5.6
H83	Hawthorn	S	3	130					N		1.5	1.5	1.5	1.5	0-E	0	SM	A boundary hedge, has been maintained along road, dense ivy present.	No action required.	40+	C2	7.6	1.6
T84	Turkey Oak	S	18	840					N		7.5	8	7	4	7.0-W	1.5	M	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted,	No action required.	40+	A1	319.2	10.1
T85	Turkey Oak	S	20	1000					N		8	8	10	10	7.5-S	6	M	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted,	No action required.	40+	A1	452.4	12.0
T86	Beech	S	15	730					N		7.5	7.5	7.5	7.5	3.0-N	1	M	Minor diameter deadwood noted, pruning wounds noted mostly occluded.	No action required.	40+	A1	241.1	8.8
T87	Horse chestnut	S	9	320					N		5	5	6.5	6.5	2.0-N	0.5	SM	Minor diameter deadwood noted, appears to have been crown raised in past.	No action required.	40+	B1	46.3	3.8

Tree Ref No.	Species	Single or Multiple Stem	Height	Stem Diameter (mm)					Very Large Girth	Ancient, Veteran or Notable	Branch Spread (m)				Crown Clearance (m)		Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution	Tree Quality Grading	Root Protection Area	
		(S or M)	(m)	S1	S2	S3	S4	S5	(Y / N)	(A, V or N)	N	E	S	W	(1)	(2)				(years)		(m^2)	(radius in m)
T88	Horse chestnut	S	7.5	190					N		4	4	4	4	2.5-E	1	SM	Minor diameter deadwood noted, appears to have been crown raised in past, slight shaded by adjacent tree.	No action required.	20+	C1	16.3	2.3
T89	Sycamore	S	13	400					N		6	7	7	3	5.5-E	2	EM	Slightly suppressed by adjacent tree, cankers forming on stem.	No action required.	40+	B1	72.4	4.8
T90	Beech	S	17	820					N		8	8	8	8	4.0-E	0.5	M	Ivy present on stem, no major visible defects.	No action required.	40+	A1	304.2	9.8
T91	Lime	S	17	720					N		7	7	7	7	4.0-N	0.5	M	Ivy present on stem, no major visible defects.	No action required.	40+	A1	234.5	8.6
T92	Turkey Oak	S	17	310					N		4	4	4	4	2.5-S	1	SM	No major visible defects.	No action required.	40+	B1	43.5	3.7
T93	Sycamore	S	12	330					N		4	4	5	5	4.0-S	1	SM	Stem trifurcates at 1.6m, ivy present on stem.	No action required.	40+	B1	49.3	4.0
T94	Horse chestnut	S	15	480					N		5.5	5.5	5.5	5.5	4.5-N	0.5	EM	Ivy present on stem, no major visible defects.	No action required.	40+	B1	104.2	5.8
T95	Sycamore	S	17	500					N		5	5	5	5	3.0-E	1	EM	Ivy present on stem, no major visible defects, limited access prevents a detailed inspection.	No action required.	40+	B1	113.1	6.0
T96	Wild Cherry	S	15	640					N		7	7	7	7	5.0-S	1.5	M	Ivy present on stem, no major visible defects, limited access prevents a detailed inspection.	No action required.	40+	B1	185.3	7.7
T97	Lombardy Poplar	S	24	450					N		3	3	3	3	4.5-S	5	EM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality.	No action required.	40+	B1	91.6	5.4
T98	White Willow	S	15	400					N		5	5	5	5	8.0-E	7	EM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality, tree has been previously topped.	No action required.	20+	B1	72.4	4.8
T99	White Willow	S	15	400					N		5	5	5	5	8.0-E	1.5	EM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality, tree has been previously topped.	No action required.	20+	B1	72.4	4.8
T100	White Willow	S	15	400					N		5	5	5	5	8.0-E	1.5	EM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality, tree has been previously topped.	No action required.	20+	B1	72.4	4.8
T101	White Willow	S	15	400					N		5	5	5	5	8.0-E	1.5	EM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality, tree has been previously topped.	No action required.	20+	B1	72.4	4.8
T102	Goat Willow	S	12	300					N		4	4	4	4	2.5-W	2	SM	No major visible defects, typical form and structure.	No action required.	40+	C1	40.7	3.6
T103	Sitka Spruce	S	13	300					N		3	5	5	5	2.5-E	1	SM	No major visible defects, small bleed noted on stem.	No action required.	40+	B1	40.7	3.6
G104	Lombardy Poplar	S	22	450					N		3	3	3	3	2.5-E	0.5	EM	Nine trees within group, ivy present on several trees, no major visible defects.	No action required.	40+	B1	91.6	5.4
G105	Black Poplar	S	24	750					N		8	8	8	8	3.0-W	1	M	Dense Ivy present on stems, minor diameter deadwood noted.	No action required.	40+	A1	254.5	9.0
G106	Lawson Cypress	S	18	550					N		7	7	7	7	0.5-W	0.5	M	Two trees within group, multiple compression forks forming, poses no significant risk due to current land use, incremental root growth appears to be damaging road.	No action required.	40+	B1	136.9	6.6
G107	Cherry Laurel, Hawthorn, Goat Willow and Sycamore	S	7.5	210					N		3	3	3	3	0-W	0	SM	A densely growing group, deadwood noted on occasional trees, has seen no recent management.	No action required.	40+	C1	20.0	2.5
T108	Sycamore	S	13	330					N		5	5	5	3	3.5-S	3.5	SM	Stem bifurcates at 2m with some included bark, ivy present on stem, minor diameter deadwood noted.	No action required.	40+	C1	49.3	4.0
T109	Wych Elm	S	10	260					N		4	4	4	4	1.0-N	2	SM	Deadwood makes up 80% of canopy, tree is in decline, dense ivy on stem.	No action required.	<10	U	30.6	3.1

Tree Ref No.	Species	Single or Multiple Stem	Height	Stem Diameter (mm)					Very Large Girth	Ancient, Veteran or Notable	Branch Spread (m)				Crown Clearance (m)		Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area	
		(S or M)	(m)	S1	S2	S3	S4	S5	(Y / N)	(A, V or N)	N	E	S	W	(1)	(2)						(m^2)	(radius in m)
G110	Goat Willow	S	10	200					N		4	4	4	4	1.0-S	1.5	Y	A densely growing self set group, limited access prevents a detailed inspection.	No action required.	40+	C1	18.1	2.4
T111	Purple Beech	S	13	280					N		4	4	4	4	3.0-E	1.5	SM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality.	No action required.	40+	C1	35.5	3.4
T112	Lime	S	15	460					N		5.5	5.5	5.5	5.5	3.0-S	1	M	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality.	No action required.	40+	B1	95.7	5.5
T113	Horse chestnut	S	12	200					N		3	3	3	3	3.0-E	1.5	SM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality.	No action required.	40+	C1	18.1	2.4
T114	Horse chestnut	S	12	200					N		3	3	3	3	3.0-N	1.5	SM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality.	No action required.	40+	C1	18.1	2.4
T115	Horse chestnut	S	12	290					N		4.5	4.5	4.5	4.5	3.5-E	0.5	SM	Growing in hedge prevents a detailed inspection, canopy appears to be in good quality.	No action required.	40+	B1	38.1	3.5
T116	Sycamore	S	16	550					N		7	7	7	7	5.5-W	2	EM	Growing in hedge prevents a detailed inspection, dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality.	No action required.	40+	B1	136.9	6.6
T117	Pedunculate Oak	S	18	1050					N		7.5	7.5	7.5	7.5	6.0-E	2	M	Growing in hedge prevents a detailed inspection, dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality, tear wounds noted in lateral branches.	No action required.	40+	A1	498.8	12.6
T118	Lawson Cypress	S	18	550					N		7	7	7	7	5.5-W	2	EM	Growing in hedge prevents a detailed inspection, dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality.	No action required.	40+	B1	136.9	6.6
T119	Pedunculate Oak	S	18	1050					N		7.5	7.5	7.5	7.5	6.0-E	2	M	Growing in hedge prevents a detailed inspection, dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality, tear wounds noted in lateral branches.	No action required.	40+	A1	498.8	12.6
G120	Sycamore, Yew, Willow	S	4	130					N		2.5	2.5	2.5	2.5	0-S	0	Y	A densely growing group, shaded by larger trees, understory of hawthorn and snowberry, poses no significant risk.	No action required.	40+	C1	7.6	1.6
G121	Goat Willow	S	15	260					N		5.5	5.5	5.5	5.5	1.0-S	1.5	Y	A densely growing self set group, limited access prevents a detailed inspection.	No action required.	40+	C1	30.6	3.1
G122	Golden Leyland Cypress	S	19	650					N		5	5	5	5	1.0-S	0	M	Two trees within group, dense canopies prevents a detailed inspection,	No action required.	40+	A1	191.2	7.8
G123	Lawson Cypress	S	19	550					N		5	5	5	5	1.5-N	0	M	Limited access and a dense canopy prevents a detailed inspection, no major visible defects, has been pruned back to boundary in places.	No action required.	40+	A1	136.9	6.6
T124	Silver Birch	S	15	430					N		5	5	5	5	2.0-W	1	EM	Ivy present on stem, no major visible defects.	No action required.	40+	B1	83.7	5.2
T125	Sycamore	S	16	580					N		7	5.5	7	7	6.0-S	5	M	Dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality.	No action required.	40+	A1	152.2	7.0
T126	Pedunculate Oak	S	22	1300					N		8	8	8	8	2.0-W	2	M	Dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality, tear wounds noted in lateral branches.	No action required.	40+	A1	707.0	15.0
T127	Pedunculate Oak	S	17	800					N		6	8	8	8	4.0-N	2	M	Ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality, tear wounds noted in lateral branches.	No action required.	40+	A1	289.6	9.6
T128	Pedunculate Oak	S	17	700					N		5	7	7	6.5	2.0-S	2	M	Ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality, tear wounds noted in lateral branches.	No action required.	40+	B1	221.7	8.4
T129	Sycamore	S	9	300					N		4	4	4	4	1.5-E	1	SM	Ivy present on stem, stem bifurcates at 2m.	No action required.	40+	C1	40.7	3.6

Tree Ref No.	Species	Single or Multiple Stem (S or M)	Height (m)	Stem Diameter (mm) S1	S2	S3	S4	S5	Very Large Girth (Y / N)	Ancient, Veteran or Notable (A, V or N)	Branch Spread (m) N	E	S	W	Crown Clearance (m) (1)	(2)	Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area (m^2)	(radius in m)
T130	Weeping Willow	S	11	410					N		4	4	7	4	5.0-W	0.5	SM	Ivy present on stem, deadwood noted on stem.	No action required.	40+	B1	76.1	4.9
T131	Sycamore	S	9	300					N		4	4	4	4	1.5-E	1	SM	Ivy present on stem, stem bifurcates at 2m.	No action required.	40+	C1	40.7	3.6
G132	Privet and Sycamore	S	7.5	150					N		2	2	2	2	0-S	0	SM	A unmanaged linear group of trees, possibly a former boundary hedge.	No action required.	40+	C1	10.2	1.8
G133	Lombardy Poplar and Silver Birch	S	23	600					N		5	5	5	5	1.0-S	1	M	Linear row of trees, occasional hanging deadwood noted, dense ivy present on majority of trees within group, not within falling distance of any significant target, understory of Hawthorn.	No action required.	40+	B1	162.9	7.2
T134	Sycamore	S	16	580					N		7	5.5	5.5	5.5	6.0-S	2.5	M	Dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality.	No action required.	40+	A1	152.2	7.0
T135	Horse chestnut	S	20	1100					Y	N	8	8	8	8	2.0-W	2	M	Dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality, tear wounds noted in lateral branches, decay cavity forming on stem, showing good signs of occlusion.	No action required.	40+	A1	547.5	13.2
G136	Ash and Sycamore	S	16	470					N		6	6	6	6	1.5-E	1.5	EM	Four trees withing group, dense ivy present, minor diameter deadwood noted.	No action required.	40+	B1	99.9	5.6
G137	Oak, Sycamore and Ash	S	20	500					N		6.5	6.5	6.5	6.5	3.5-N	1.5	EM	Potentially planted as a screen, dense ivy present on several trees withing group, deadwood noted throughout group, dense understory of snowberry prevents a detailed inspection.	No action required.	40+	A2	113.1	6.0
G138	Ash, Field Maple and Cherry	S	8	200					N		3.5	3.5	3.5	3.5	2.0-W	1.5	SM	Canopy has been pruned back to boundary in places, minor diameter deadwood noted, no major visible defects.	No action required.	40+	B2	18.1	2.4
T139	Pedunculate Oak	S	16	1050					N		7.5	7.5	7.5	7.5	4.0-E	2	M	Growing in hedge prevents a detailed inspection, dense ivy present on stem, minor diameter deadwood noted, canopy appears to be in good quality.	No action required.	40+	A1	498.8	12.6
T140	Beech	S	16	850					N		7	7	7	7	6.0-W	4	M	Tree is in decline, deadwood makes up approx. 50% of canopy, stem occluding barb wire fence, not within falling distance of any significant target.	No action required.	10+	C1	326.9	10.2
H141	Hawthorn	S	2	100					N		1	1	1	1	0-N	0	EM	A boundary hedge, that has been maintained at a height of 2m.	No action required.	40+	C2	4.5	1.2
T142	Pedunculate Oak	S	16	780					N		7	7	7	6	3.5-S	1	M	Tree growing in agricultural land, apical deadwood noted, basal bark wounds noted.	No action required.	40+	A1	275.3	9.4
G143	Ash, Sycamore, Oak	S	16	490					N		5	5	5	5	3.0-N	1	EM	Mixed species group growing along boundary of site, lowest 4m of canopy has been pruned back to site boundary, minor diameter deadwood noted.	No action required.	40+	B2	108.6	5.9
G144	Hawthorn, Pine, Sycamore, Oak, Goat Willow	S	15	470					N		5	5	5	5	3.0-N	1	EM	Mixed species group growing along boundary of site, lowest 4m of canopy has been pruned back to site boundary, minor diameter deadwood noted, three dead specimens noted within group, poses no significant risk due to current land use.	No action required.	40+	B2	99.9	5.6
G145	Lawson Cypress	S	12	490					N		4.5	4.5	4.5	4.5	3.0-N	1	EM	Mixed species group growing along boundary of site, lowest 4m of canopy has been pruned back to site boundary, minor diameter deadwood noted.	No action required.	40+	B2	108.6	5.9
G146	Hawthorn	S	8	250					N		3.5	3.5	3.5	3.5	3.0-N	1	EM	Group growing along boundary of site, lowest 4m of canopy has been pruned back to site boundary, minor diameter deadwood noted.	No action required.	40+	B2	28.3	3.0

Tree Ref No.	Species	Single or Multiple Stem	Height	Stem Diameter (mm)					Very Large Girth	Ancient, Veteran or Notable	Branch Spread (m)				Crown Clearance (m)		Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area	
		(S or M)	(m)	S1	S2	S3	S4	S5	(Y / N)	(A, V or N)	N	E	S	W	(1)	(2)						(m^2)	(radius in m)
T147	Wild Cherry	S	8	300					N		3.5	5	5	5	2.5-E	2	SM	A planted specimen, no major visible defects.	No action required.	40+	B1	40.7	3.6
T148	Pedunculate Oak	S	4.5	200					N		2	2	2	2	2.5-E	2	SM	A planted specimen, no major visible defects, bark wounds noted.	No action required.	20+	B1	18.1	2.4
T149	Wild Cherry	S	8.5	310					N		4.5	6	6	6	2.0-W	1.5	SM	A planted specimen, no major visible defects, stem bifurcates at 2m.	No action required.	40+	B1	43.5	3.7
T150	Sycamore	S	16	480					N		6	6.5	6	6	3.0-S	4	EM	Stem bifurcates at 2m, pruning wounds noted, some showing signs of occlusion, minor diameter deadwood noted.	No action required.	40+	B1	104.2	5.8
T151	White Willow	M(a)	16	450	470	520			N		8	7	7	6.5	3.5-W	0.5	M	Dense ivy on stems prevents a detailed inspection.	No action required.	20+	B1	313.9	10.0
T152	Laburnum	S	7	480					N		3.5	3.5	3.5	3.5	2.0-S	1.5	EM	Multiple stemmed at 2m, minor diameter deadwood noted.	No action required.	40+	B1	104.2	5.8
H153	Beech	S	4	250					N		1.5	1.5	1.5	1.5	0.5-N	1.5	SM	A boundary hedge, poses no risk.	No action required.	40+	C2	28.3	3.0
G154	Goat Willow	S	7.5	300					N		3.5	3.5	3.5	3.5	1.0-W	0.5	SM	A self set group, provides a good screening.	No action required.	40+	C2	40.7	3.6
T155	Sycamore	S	11	370					N		5	5	5	5	2.0-E	0.5	EM	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted.	No action required.	40+	B1	61.9	4.4
T156	Pedunculate Oak	S	16	1050					N		6	8	7.5	8	5.5-N	5	OM	Dense ivy present, tree is in decline, deadwood noted through tree.	No action required.	10+	C1	498.8	12.6
T157	Goat Willow	S	11	280					N		4.5	4.5	4.5	4.5	2.0-E	0.5	EM	Ivy present on stem, minor diameter deadwood.	No action required.	40+	C1	35.5	3.4
T158	Sycamore	S	11	370					N		5	5	5	5	2.0-E	0.5	EM	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted, stubs present due to past pruning, stem bifurcates at 2.5m	No action required.	40+	B1	61.9	4.4
T159	Sycamore	S	11	370					N		5	5	3	3	2.0-E	0.5	EM	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted.	No action required.	40+	B1	61.9	4.4
T160	Sycamore	S	11	370					N		3	5	3	3	2.0-E	0.5	EM	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted.	No action required.	40+	B1	61.9	4.4
T161	Pedunculate Oak	S	13	930					N		6	4.5	5.5	7	1.5-N	0.5	M	Dense ivy prevents a detailed inspection, deadwood noted throughout canopy, apical deadwood noted.	No action required.	20+	B1	391.3	11.2
G162	Sycamore and Hawthorn	S	8.5	260					N		3	3	3	3	1.5-N	1.5	SM	A linear boundary group, ivy present on several trees, no major visible defects.	No action required.	40+	C2	30.6	3.1
T163	Beech	S	13	650					N		6	6	6	6	3.5-N	3	EM	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted, bark wounds noted on lateral branch.	No action required.	40+	B1	191.2	7.8
G164	Black Poplar	S	23	560					N		5	5	5	5	5.5-W	4	M	Row of trees planted as a screening, several trees within group have been topped now with epicormic regrowth, dense Ivy present on stems of all trees within group.	No action required.	40+	B12	141.9	6.7
T165	Sycamore	S	16	460					N		5.5	7.5	4	4	1.0-W	1	EM	Dense Ivy on stem, minor diameter deadwood noted, disused utility cable in canopy.	No action required.	40+	B1	95.7	5.5
T166	Sycamore	S	16	490					N		5.5	7.5	5.5	4	2.5-E	2	EM	Dense Ivy on stem, minor diameter deadwood noted, disused utility cable in canopy.	No action required.	40+	B1	108.6	5.9
T167	Sycamore	S	13	390					N		3.5	3.5	4	3	2.5-S	2	EM	Dense Ivy on stem, minor diameter deadwood noted, disused utility cable in canopy, tree appears to be in decline.	No action required.	10+	C1	68.8	4.7

Tree Ref No.	Species	Single or Multiple Stem	Height	Stem Diameter (mm)					Very Large Girth	Ancient, Veteran or Notable	Branch Spread (m)				Crown Clearance (m)		Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area	
		(S or M)	(m)	S1	S2	S3	S4	S5	(Y / N)	(A, V or N)	N	E	S	W	(1)	(2)						(m^2)	(radius in m)
G168	Black Poplar	S	21	560					N		5	5	5	5	5.5-W	4	M	Row of trees planted as a screening, several trees within group have been topped now with epicormic regrowth, dense Ivy present on several trees within group.	No action required.	40+	B12	141.9	6.7
T169	Ash	S	10	280					N		5.5	5	5.5	4	3.0-E	2	SM	Dense Ivy on stem, minor diameter deadwood noted, canopy encroaching utility light.	No action required.	10+	C1	35.5	3.4
T170	Elm	S	15	650					N		6	6	6	6	3.5-N	3	EM	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted, bark wounds noted on lateral branch.	No action required.	40+	B1	191.2	7.8
T171	Hawthorn	S	12	*750*					Y	N	4	4	4	4	0.5-W	0.5	OM	Dense ivy prevents a detailed inspection, tree appears to be in decline, not within falling distance of any significant target. Noatable status based upon estimated stem diamater. Removal of Ivy to permit measurement of stem may result in tree not being very large girth for species.	No action required.	10+	C1	254.5	9.0
T172	Beech	S	15	630					N		6	6	6	6	3.5-N	3	EM	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted, small tear wounds on lateral branches noted.	No action required.	40+	B1	179.6	7.6
T173	Sycamore	M(a)	15	360	340	290			N		5	5	5	4.5	2.0-W	0	EM	Dense ivy on stem prevents a detailed inspection, minor diameter deadwood noted, small tear wounds on lateral branches noted, epicormic growth present as base.	No action required.	40+	B1	149.0	6.9
T174	Sycamore	S	17	890					N		8	8	8	8	3.5-N	0.5	M	Minor diameter deadwood noted, bark wounds noted on lateral branches, decay pockets forming in old pruning wounds, epicormic growth present at base.	No action required.	40+	A1	358.4	10.7
T175	Sycamore	S	17	920					N		8	8	8	8	2.5-S	0	M	Deadwood noted on stem, bark wounds noted on lateral branches, decay pockets forming in old pruning wounds, epicormic growth present at base, dense Ivy present on stem	No action required.	40+	A1	383.0	11.0
G176	Monterey Cypress	S	12	450					N		4	4	4	4	3.0-N	1	EM	Group growing along fence line, lowest 3m of canopy has been pruned back to boundary, minor diameter deadwood noted, ivy present on stems.	No action required.	40+	B2	91.6	5.4
T177	Silver Birch	S	9.5	280					N		5	5	4	5	3.5-W	1	SM	Stem bifurcates at 2m, minor diameter deadwood noted, bark wound noted occluding well.	No action required.	40+	C1	35.5	3.4
T178	Common Alder	S	9.5	370					N		5	5	5	5	2.5-W	1	SM	Stem trifurcates at 2m, minor diameter deadwood noted, epicormic growth at base.	No action required.	40+	B1	61.9	4.4
T179	Italian Alder	M(a)	9.5	320	270	280			N		5	5	5	5	2.5-W	1	SM	Stem trifurcates at 2m with some included bark, minor diameter deadwood noted, epicormic growth at base, bark wounds noted, occluding well.	No action required.	40+	B1	114.8	6.0
T180	Silver Birch	S	9.5	310					N		5	4	4	5	7.0-W	1	SM	Stem bifurcates at 2.5m, minor diameter deadwood noted, bark wound noted occluding well.	No action required.	40+	B1	43.5	3.7
T181	Common Alder	S	9.5	350					N		5	5	5	5	2.5-W	1	SM	Minor diameter deadwood noted, epicormic growth at base, pruning wounds noted, almost completely occluded. Basal bark wound noted.	No action required.	40+	B1	55.4	4.2
T182	Silver Birch	S	9.5	250					N		3	3	3	3	3.5-W	1	SM	Stem has a northern lean. Minor diameter deadwood noted. Stem bifurcates at 2m, with some included bark. bark wound noted.	No action required.	40+	C1	28.3	3.0
T183	Common Alder	S	10	330					N		5	5	5.5	4	4.0-N	1.5	SM	Stem trifurcates at 4m, minor diameter deadwood noted, epicormic growth on stem has been severed. Pruning wounds noted in stem. Bark wounds noted on buttress roots.	No action required.	40+	B1	49.3	4.0
G184	Hawthorn, Goat Willow and Sycamore.	S	7	250					N		4	4	4	4	1.5-N	0.5	SM	A self set group, growing along fence line. Vehicles appear to keep canopy pruned. No major visible defects.	No action required.	40+	C2	28.3	3.0
G185	Goat Willow	S	11	330					N		5.5	5.5	5.5	5.5	1.5-N	0.5	EM	A self set group, growing along fence line. No evidence of recent management. No major visible defects. deadwood noted within group.	No action required.	40+	B2	49.3	4.0

Tree Ref No.	Species	Single or Multiple Stem (S or M)	Height (m)	Stem Diameter (mm) S1	S2	S3	S4	S5	Very Large Girth (Y / N)	Ancient, Veteran or Notable (A, V or N)	Branch Spread (m) N	E	S	W	Crown Clearance (m) (1)	(2)	Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area (m^2)	(radius in m)
T186	Goat Willow	M(a)	8	370	130	170			N		7	5	5.5	5.5	2.0-E	2.5	EM	Multiple stemmed at base. Stubs present due to past pruning. Minor diameter deadwood noted. Cracking bark noted, due to incremental growth.	No action required.	40+	B1	82.7	5.1
G187	Goat Willow	S	11	330					N		5.5	5.5	5.5	5.5	1.5-N	0.5	EM	A self set group, growing along fence line. No evidence of recent management. No major visible defects. deadwood noted within group. Occasional self set Norway Maple noted along periphery of group.	No action required.	40+	B2	49.3	4.0
G188	Hawthorn, silver Birch and Monterey Cypress	S	7.5	250					N		3.5	3.5	3.5	3.5	1.5-E	0.5	SM	Appears to be a mix of self set and planted specimens. growing along boundary of site. No major visible defects.	No action required.	40+	C2	28.3	3.0
G189	Goat Willow and Larch	S	8.5	370					N		7	5	5.5	5.5	2.0-E	2.5	SM	A self set group, growing along fence line. No evidence of recent management. No major visible defects. deadwood noted within group, dense canopies prevents a detailed inspection.	No action required.	40+	B1	61.9	4.4
T190	Goat Willow	M(a)	6.5	150	180	170	160		N		4	4	4	4	1.5-N	1	SM	Multiple stemmed at base. No major visible defects. Surrounding nettles prevents a detailed inspection.	No action required.	40+	C1	49.5	4.0
T191	Goat Willow	M(a)	6.5	140	170	180	160		N		4	4	4	4	1.0-S	0.5	SM	Multiple stemmed at base. No major visible defects. Surrounding nettles prevents a detailed inspection.	No action required.	40+	C1	48.2	3.9
G192	Silver Birch, Larch, Pine, Cherry, Field Maple	S	12	360					N		5	5	5	5	2.0-W	1	SM	Appears to be part of a planted woodland. Excavator tracks noted within soil. Bark wounds noted on several trees, probably by vehicle damage. Minor diameter deadwood noted within group. Understory of Hazel.	No action required.	40+	B1	58.6	4.3
G193	Larch, Pine, Oak	S	12	360					N		5	5	5	5	2.0-W	1	SM	Appears to be part of a planted woodland. Excavator tracks noted within soil. Bark wounds noted on several trees, probably by vehicle damage. Minor diameter deadwood noted within group. Understory of Hazel.	No action required.	40+	B1	58.6	4.3
G194	Larch, Pine, Oak, Cheery	S	12	360					N		5	5	5	5	2.0-W	1	SM	Growing as part of a Planted screening. Minor diameter deadwood noted within group. Understory of Hazel.	No action required.	40+	B1	58.6	4.3
G195	Ash, Oak	S	13	560					N		6	6	6	6	2.5-S	1.5	EM	Growing along boundary of site. Minor diameter deadwood noted. Provides a good screening. Understory of Hawthorn	No action required.	40+	A12	141.9	6.7
G196	Blackthorn	S	4	150					N		1.5	1.5	1.5	1.5	0-E	0.5	SM	A densely growing group. Poses no risk.	No action required.	40+	C1	10.2	1.8
G197	Ash, Oak, Silver Birch	S	13	600					N		6	6	6	6	2.5-S	1.5	EM	Growing along boundary of site. Minor diameter deadwood noted. Provides a good screening. Understory of Hawthorn.	No action required.	40+	A12	162.9	7.2
G198	Hazel	S	6	150					N		4	4	4	4	2.5-W	2	EM	Growing along boundary. No major visible defects.	No action required.	40+	B1	10.2	1.8
T199	Pedunculate Oak	S	16	540					N		5	7.5	5.5	7	5.0-W	1.5	M	Ivy present on stem. Deadwood noted on stem.	No action required.	40+	A1	131.9	6.5
T200	Ash	S	13	400					N		5	5	5	5	2.5-W	1.5	EM	Surrounding brambles prevents a detailed inspection. Deadwood noted on stem.	No action required.	20+	B1	72.4	4.8
G201	Hazel, Hawthorn, Oak	S	6	200					N		2	2	2	2	0.5-W	0.5	SM	A self set group, growing along boundary. No major visible defects.	No action required.	40+	C1	18.1	2.4
G202	Ash, Hawthorn, Oak, Silver Birch	S	13	600					N		6	6	6	6	2.5-S	1.5	EM	Growing along boundary of site. Minor diameter deadwood noted. Provides a good screening. Understory of Hawthorn.	No action required.	40+	A12	162.9	7.2
T203	Goat Willow	M(a)	5	100	170	100	110	110	N		2.5	2.5	2.5	2.5	0.5-E	0.5	SM	Multiple stemmed at base. Minor diameter deadwood noted. Poses no significant risk.	No action required.	40+	C1	33.1	3.2
G204	Goat Willow	S	8	240					N		3	3	3	3	0.5-E	0.5	SM	A small cluster of trees, growing adjacent pond.. Minor diameter deadwood noted. Poses no significant risk.	No action required.	40+	C1	26.1	2.9

Tree Ref No.	Species	Single or Multiple Stem (S or M)	Height (m)	Stem Diameter (mm) S1	S2	S3	S4	S5	Very Large Girth (Y / N)	Ancient, Veteran or Notable (A, V or N)	Branch Spread (m) N	E	S	W	Crown Clearance (m) (1)	(2)	Life Stage	General Observations (structural / physiological condition)	Preliminary Management Recommendations	Estimated Remaining Contribution (years)	Tree Quality Grading	Root Protection Area (m^2)	(radius in m)
T205	Goat Willow	M(a)	5	100	170	100	110	110	N		2.5	2.5	2.5	2.5	0.5-E	0.5	SM	Multiple stemmed at base. Minor diameter deadwood noted. Poses no significant risk.	No action required.	40+	C1	33.1	3.2
T206	Goat Willow	M(a)	5	100	140	100	110	110	N		2.5	2.5	2.5	2.5	0.5-E	0.5	SM	Multiple stemmed at base. Minor diameter deadwood noted. Poses no significant risk.	No action required.	40+	C1	28.9	3.0
T207	Goat Willow	M(a)	5	100	140	100	110	110	N		2.5	2.5	2.5	2.5	0.5-E	0.5	SM	Multiple stemmed at base. Minor diameter deadwood noted. Poses no significant risk.	No action required.	40+	C1	28.9	3.0
T208	Goat Willow	M(a)	5	100	110	100	110	110	N		2.5	2.5	2.5	2.5	0.5-E	0.5	SM	Multiple stemmed at base. Minor diameter deadwood noted. Poses no significant risk.	No action required.	40+	C1	25.5	2.8
T209	Goat Willow	M(a)	5	120	170	120	110	130	N		2.5	2.5	2.5	2.5	0.5-E	0.5	SM	Multiple stemmed at base. Minor diameter deadwood noted. Poses no significant risk.	No action required.	40+	C1	39.2	3.5
G210	Goat Willow, Hawthorn, Silver Birch.	S	8.5	250					N		4	4	4	4	1.0-W	1	EM	Group of trees growing adjacent site boundary. Poses no significant risk.	No action required.	40+	C2	28.3	3.0

	Step 2 -Additional Primary Features (y/n)				Step 3 - Secondary Features (y/n)									Step 4
Tree No.	Extensive Decay, esp. brown rot or exposed heartwood	Extensive hollowing	Crown senescence	Retrenchment	Large quantity of deadwood, esp. large-sized	Major Storm Damage/ breakout wounds	Habitat Spaces: decay holes and/ or crevices/ branch splits sheltered from direct rainfall	Aerial rooting	Sap run/ slime flux	Water Pool	Bark loss inc. due to lightning strike	Fungi	Other epiphytic plants, inc. significant presence of lichens	Status (A, V, N)
T135	n	n	n	n	n	y	y	n	n	n	n	n	n	N
T171	n	n	n	n	n	n	n	n	n	n	n	n	n	N

Notes:

Step 1 - Size Assessment (on survey sheet): Very large girth for species (if not stop assessment here)

Step 2 - Additional Primary Features: At least one should be present or refer to Step 3

Step 3 - Secondary Features: If no additional Primary Feature is present, tree should have at least four Secondary Features

Step 4: Identification Guide:

Ancient (A) - Veteran tree with extremely large girth: age likely >50% of estimated species maximum (*e.g. pedunculate oak, 2m stem dia. average site: ca. 460 years old, ca. 50% of species max.*)

Veteran (V) - Very large girth for species and qualifies under either Step 2 or Step 3

Notable (N) - Very large girth for species but does not qualify under either Step 2 or Step 3

Appendix 7: RPA Guidance

The Root Protection Area (RPA) is calculated from the tree's stem diameter in accordance with the guidance contained in section 4.6 of BS 5837:2012[32].

These areas are normally sacrosanct and should not be entered by traffic or foot during construction or used to store materials, fuel or chemicals.

Protective fencing should be erected along the edge of the RPA before construction begins and should not be moved until after all construction has finished and the Site has been vacated. The type of fencing used should be fit for purpose, ordinarily conform to the recommendations given in section 6.2.2 of BS 5837:2012[33], and be erected similarly to the example shown in Figure 2 of the same standard.

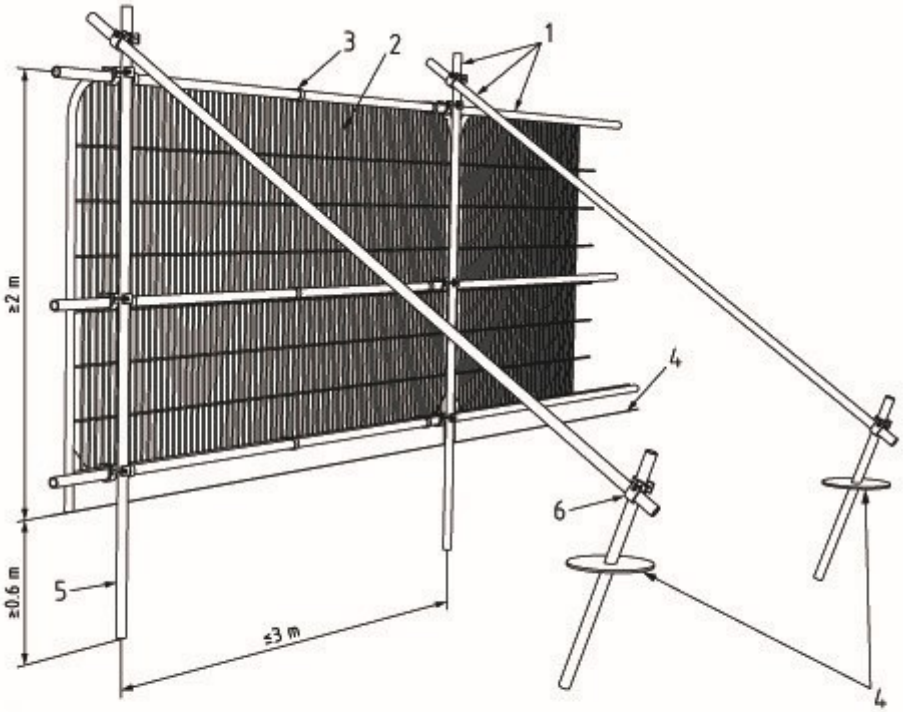
Where underground services cannot be routed outside the RPA, these should be installed by trenchless technology, such as a directional drill. Where this technology is used, the underground channel created should be no less than 600mm below average ground level or the base of the tree. Also, the starting and receiving excavations should not be within the RPA. Drill channel lubricant should be avoided, other than water, unless precautions are taken to prevent contamination of soil and possibly water. Hand digging may be an alternative to trenchless excavation, but this is less desirable and not always practical.

When determining the workable space around the RPA of a tree or trees, it is also important to maintain a working zone of one metre (which is usually sufficient) between the edge of the construction and the protective fencing.

[32] https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard
[33] https://knowledge.bsigroup.com/products/trees-in-relation-to-design-demolition-and-construction-recommendations?version=standard

Appendix 8: Example Tree Protection Barrier

See the following page.



Key

1 Standard scaffold poles

2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels

3 Panels secured to uprights and cross-members with wire ties

4 Ground level

5 Uprights driven into the ground until secure (minimum depth 0.6 m)

6 Standard scaffold clamps

Appendix 9: Example Tree Protection Barrier Sign

Appendix 10: Tree Work Schedule

Tree No:	Species	Recommended Management Work
G11	Lombardy Poplar	Remove a section as detailed in the AIA Plan.
G58	Black Poplar	Remove a section as detailed in the AIA Plan.
T62	Wild Cherry	Fell to ground level and remove roots.
T63	Laburnum	Fell to ground level and remove roots.
T64	Rowan	Fell to ground level and remove roots.
T65	Malus	Fell to ground level and remove roots.
T66	Silver Birch	Fell to ground level and remove roots.
T67	Silver Birch	Fell to ground level and remove roots.
T68	Sycamore	Fell to ground level and remove roots.
T69	Black Poplar	Fell to ground level and remove roots.
T70	Black Poplar	Fell to ground level and remove roots.
T71	Sycamore	Fell to ground level and remove roots.
T72	Pedunculate Oak	Fell to ground level and remove roots.
T73	Sycamore	Fell to ground level and remove roots.
T74	Sitka Spruce	Fell to ground level and remove roots.
T75	Sitka Spruce	Fell to ground level and remove roots.
T76	Sweet Chestnut	Fell to ground level and remove roots.
G77	Lombardy Poplar	Fell to ground level and remove roots.
G78	Black Poplar	Remove a section as detailed in the AIA Plan.
G79	Lombardy Poplar	Fell to ground level and remove roots.
T80	Black Poplar	Fell to ground level and remove roots.
H83	Hawthorn	Remove a section as detailed in the AIA Plan.
T92	Turkey Oak	Fell to ground level and remove roots.

Tree No:	Species	Recommended Management Work
T93	Sycamore	Fell to ground level and remove roots.
T96	Wild Cherry	Fell to ground level and remove roots.
T97	Lombardy Poplar	Fell to ground level and remove roots.
T98	White Willow	Fell to ground level and remove roots.
T99	White Willow	Fell to ground level and remove roots.
T100	White Willow	Fell to ground level and remove roots.
T101	White Willow	Fell to ground level and remove roots.
T102	Goat Willow	Fell to ground level and remove roots.
T103	Sitka Spruce	Fell to ground level and remove roots.
G104	Lombardy Poplar	Fell to ground level and remove roots.
G105	Black Poplar	Fell to ground level and remove roots.
G106	Lawson Cypress	Fell to ground level and remove roots.
G107	Cherry Laurel, Hawthorn, Goat Willow and Sycamore	Fell to ground level and remove roots.
T108	Sycamore	Fell to ground level and remove roots.
T109	Wych Elm	Fell to ground level and remove roots.
G110	Goat Willow	Fell to ground level and remove roots.
T111	Purple Beech	Fell to ground level and remove roots.
T117	Pedunculate Oak	Fell to ground level and remove roots.
T118	Lawson Cypress	Fell to ground level and remove roots.
T119	Pedunculate Oak	Fell to ground level and remove roots.
G120	Sycamore, Yew, Willow	Remove a section as detailed in the AIA Plan.
G121	Goat Willow	Fell to ground level and remove roots.

Tree No:	Species	Recommended Management Work
G122	Golden Leyland Cypress	Fell to ground level and remove roots.
G123	Lawson Cypress	Remove a section as detailed in the AIA Plan.
T124	Silver Birch	Fell to ground level and remove roots.
T125	Sycamore	Fell to ground level and remove roots.
T126	Pedunculate Oak	Fell to ground level and remove roots.
T127	Pedunculate Oak	Fell to ground level and remove roots.
T128	Pedunculate Oak	Fell to ground level and remove roots.
T129	Sycamore	Fell to ground level and remove roots.
T130	Weeping Willow	Fell to ground level and remove roots.
T131	Sycamore	Fell to ground level and remove roots.
G132	Privet and Sycamore	Fell to ground level and remove roots.
G133	Lombardy Poplar and Silver Birch	Fell to ground level and remove roots.
H141	Hawthorn	Fell to ground level and remove roots.
T142	Pedunculate Oak	Fell to ground level and remove roots.
H143	Ash, Sycamore, Oak	Remove a section as detailed in the AIA Plan.
G144	Hawthorn, Pine, Sycamore, Oak, Goat Willow	Remove a section as detailed in the AIA Plan.
G146	Hawthorn	Fell to ground level and remove roots.
T147	Wild Cherry	Fell to ground level and remove roots.
T148	Pedunculate Oak	Fell to ground level and remove roots.
T149	Wild Cherry	Fell to ground level and remove roots.
T150	Sycamore	Fell to ground level and remove roots.
T151	White Willow	Fell to ground level and remove roots.

Tree No:	Species	Recommended Management Work
T152	Laburnum	Fell to ground level and remove roots.
H153	Beech	Fell to ground level and remove roots.
G154	Goat Willow	Fell to ground level and remove roots.
T155	Sycamore	Fell to ground level and remove roots.
T156	Pedunculate Oak	Fell to ground level and remove roots.
T157	Goat Willow	Fell to ground level and remove roots.
T158	Sycamore	Fell to ground level and remove roots.
T159	Sycamore	Fell to ground level and remove roots.
T160	Sycamore	Fell to ground level and remove roots.
T161	Pedunculate Oak	Fell to ground level and remove roots.
G162	Sycamore and Hawthorn	Fell to ground level and remove roots.
T163	Beech	Fell to ground level and remove roots.
G164	Black Poplar	Fell to ground level and remove roots.
T165	Sycamore	Fell to ground level and remove roots.
T166	Sycamore	Fell to ground level and remove roots.
T167	Sycamore	Fell to ground level and remove roots.
G168	Black Poplar	Remove a section as detailed in the AIA Plan.
T171	Hawthorn	Fell to ground level and remove roots.
T174	Sycamore	Fell to ground level and remove roots.
T175	Sycamore	Fell to ground level and remove roots.
G185	Goat Willow	Remove a section as detailed in the AIA Plan.
T186	Goat Willow	Fell to ground level and remove roots.
G187	Goat Willow	Remove a section as detailed in the AIA Plan.

Tree No:	Species	Recommended Management Work
G188	Hawthorn, Silver Birch, and	Remove a section as detailed in the AIA Plan.
G189	Goat Willow and Larch	Fell to ground level and remove roots.
G192	Silver Birch, Larch, Pine, Cherry, Field Maple	Remove a section as detailed in the AIA Plan.
G193	Larch, Pine, Oak	Remove a section as detailed in the AIA Plan.
G194	Larch, Pine, Oak, Cheery	Fell to ground level and remove roots.
G195	Ash, Oak	Fell to ground level and remove roots.
G196	Blackthorn	Remove a section as detailed in the AIA Plan.
G197	Ash, Oak, Silver Birch	Fell to ground level and remove roots.
G198	Hazel	Fell to ground level and remove roots.
T199	Pedunculate Oak	Fell to ground level and remove roots.
T200	Ash	Fell to ground level and remove roots.
G201	Hazel, Hawthorn, Oak	Fell to ground level and remove roots.
G202	Ash, Hawthorn, Oak, Silver Birch	Fell to ground level and remove roots.
T206	Goat Willow	Fell to ground level and remove roots.
T207	Goat Willow	Fell to ground level and remove roots.
T208	Goat Willow	Fell to ground level and remove roots.
T209	Goat Willow	Fell to ground level and remove roots.

Accompanying Notes:

- All tree work and felling are to be carried out in accordance with BS3998: 2010 'Recommendations for Tree Work'[34], current industry guidelines and best practices, and all relevant Health & Safety standards.
- All operatives must be appropriately qualified, skilled, and adequately insured for their task.
- All tree work and felling must comply with The Wildlife and Countryside Act 1981 as amended[35] by the Countryside and Rights of Way Act 2000.[36]
- Modification to, or deviation from, the above schedule must first gain approval from Flintshire County Council.

[34] https://knowledge.bsigroup.com/products/tree-work-recommendations?version=standard
[35] https://www.legislation.gov.uk/ukpga/1981/69
[36] http://www.legislation.gov.uk/ukpga/2000/37/contents