



Reddam House

REDDAM SCHOOL

Arboricultural Impact Assessment





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1 INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1. WSP have been instructed by Reddam House to provide arboricultural support for upgrades to Reddam School (hereafter referred to as the 'Proposed Development').
- 1.1.2. Demolition of existing outhouses and erection of a two-storey boarding house, associated plant equipment, new landscaping and highways works and other associated works
- 1.1.3. The overall project objective is to upgrade and expand boarding and teaching facilities as well as provide formal parking spaces to the north boundary of the redline boundary
- 1.1.4. The project site plan details can be found in section 2.5 Supplied Design Information.

1.2 SCOPE OF REPORT

- 1.2.1. The purpose of this report is to identify all trees which may be affected by the Proposed Development. The information will subsequently be used to assess the impact of the Proposed Development on those trees and to recommend protection and mitigation measures as are necessary to ensure the health of retained trees.
- 1.2.2. The scope and level of detail included within this report is commensurate with that required for the consideration of arboricultural features as part of the Proposed Development.
- 1.2.3. Information provided complies with the requirements of British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations (BS 5837), and includes reference to the following:
 - A desk study identifying baseline information on arboricultural statutory and non-statutory designations.
 - results of a BS 5837 arboricultural survey;
 - an Arboricultural Impact Assessment (AIA); and
 - an Outline Arboricultural Method Statement (AMS).
- 1.2.4. Impacts are defined as an assessment of arboricultural removals and identification of matters to be addressed within an AMS.
- 1.2.5. BS 5837 does not provide explicit parameters for measuring the sensitivity of an arboricultural feature, nor does it provide a methodology for the classification of effects. However, it does provide guidance on how to assess the quality of an arboricultural feature and further recommends an evaluation of impacts, both direct and indirect.

1.3 LIMITATIONS

- 1.3.1. Provisional Tree Preservation Orders (TPOs) may be made whenever a local planning authority deems it appropriate with only those persons interested in the land served with a copy of the Order. Any reference to the presence of TPOs is only valid on the date at which the desk study search was undertaken. In instances where works unspecified in this report are to be undertaken, and which may impact trees, a further search for the presence of TPOs should be carried out prior to commencement.
- 1.3.2. Trees are dynamic organisms that are influenced by a variety of environmental variables and whose health and condition can rapidly change. Any recommendations made within this report are valid for



a period of 24 months from the date of survey, when any site conditions change or pruning or other works unspecified in the report are carried out to, or affecting, the subject trees, whichever is the sooner.

- 1.3.3. This report does not constitute a health and safety survey. Where concerns for tree health and safety exist, then necessary and appropriate tree inspections should be carried out.
- 1.3.4. Assessment of statutory and non-statutory constraints has been carried out using publicly accessible third-party information.

1.4 RELEVANT LEGISLATION, POLICY AND GUIDANCE

- 1.4.1. This report has been compiled with reference to the following legislation, policy and guidance:

LEGISLATION

- The Town and Country Planning Act 1990;
- Town and Country Planning (Tree Preservation) (England) Regulations 2012;
- Town and Country Planning (Trees) Regulations 1999;
- Forestry Act 1967; and
- The Natural Environment and Rural Communities (NERC) Act 2006.

POLICY

- National Planning Policy Framework (NPPF) (revised 20 December 2023)
- Wokingham Borough Core Strategy Development Plan Document¹ (Adopted – 29 January 2010)

GUIDANCE

- British Standards Institute. BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations. London: BSI;
- Forestry Commission and Natural England, Ancient woodland, ancient trees and veteran trees: protecting them from development (2022)²; and
- Ancient Tree Forum, Ancient and other veteran trees: further guidance on management (2013)³

¹ Wokingham Borough Core Strategy Development Plan Document (Adopted – 29 January 2010) [online]
<https://www.wokingham.gov.uk/sites/wokingham/files/2023-06/Final%20adopted%20Core%20Strategy%20inc.%20cover.pdf>

² Forestry Commission and Natural England (2023) *Ancient woodland, ancient trees and veteran trees: advice for making planning decisions*. [Online] Available at <https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions>

³ Lonsdale, D., 2013. *Ancient and other veteran trees: further guidance on management*. London: The Tree Council.

1.5 ABBREVIATIONS OF TERMS USED

Table 1-1 – List of Abbreviations Used Within the Report.

Abbreviation	Definition
ACoW	Arboricultural Clerk of Works
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
ATI	Ancient Tree Inventory
BNG	Biodiversity Net Gain
BS 5837	British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations
CA	Conservation Area
CEZ	Construction Exclusion Zone
NJUG	National Joint Utilities Group - An industry group providing best practice guidelines for utility apparatus installation by statutory undertakers. Specific to arboriculture and permitted development, the most relevant guidelines are 'Volume 4 NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.
NPPF	National Planning Policy Framework
RAVEN 2	Recognition of Ancient, Veteran & Notable Trees methodology
RPA	Root Protection Area
TPO	Tree Preservation Orders
TRPP	Tree Removal and Protection Plan
TSS	Tree Survey Schedule
WBC	Wokingham Borough Council

2 METHODOLOGY

2.1 ARBORICULTURAL STUDY AREA

- 2.1.1. The site is centred on Ordnance Survey Grid Reference SU 77723 69127 and is located within Wokingham Borough Council Planning Authority.
- 2.1.2. Extents of the arboricultural study area (hereafter referred to as 'Study Area') is based on supplied plan (0363-BDL-XX-XX-DR-L-0002-P06 Landscape Areas Plan BOUND_GM), which include the main construction area on the site.
- 2.1.3. The Study Area has been informed by the extents of the Proposed Development area, which is defined in the supplied plans, plus a further area of up to 15m. The purpose of the 15m boundary is to ensure compliance with BS 5837 which recommends that all arboricultural features whose Root Protection Areas (RPAs) may be impacted are identified and surveyed. BS 5837 has a maximum RPA radius of 15m, hence the extent of the Study Area.

2.2 BASELINE DATA COLLECTION

- 2.2.1. Baseline data collection has been undertaken with reference to BS 5837 and has been carried out using the following data sources:
 - An arboricultural desk study; and
 - a field-based survey of arboricultural features within the Study Area.

2.3 DESK STUDY

- 2.3.1. A desk study was conducted on 10 December 2024 to identify specific statutory and non-statutory arboricultural constraints that may apply to arboricultural features within the Study Area. The desk study review, as outlined in **Appendix A**, was undertaken to establish the following statutory and non-statutory arboricultural constraints.
 - Tree Preservation Orders
 - conservation areas;
 - ancient woodland;
 - ancient or veteran trees; and
 - traditional orchards.

2.4 ARBORICULTURAL FIELD SURVEY

- 2.4.1. An arboricultural survey of trees within the Study Area was carried out on 15 April 2024. The survey was undertaken in accordance with BS 5837 and details of the methods used are presented in **Appendix A**.
- 2.4.2. Where access to vegetation was restricted, stem diameters have been estimated as noted in the Tree Survey Schedule of **Appendix B**.

2.5 SUPPLIED DESIGN INFORMATION

- 2.5.1. The Study Area was outlined from CAD data and pdf files with proposed work and site layout plans provided by the client.
- 2.5.2. The following information has been viewed and used for this report:
- 0363-BDL-XX-XX-DR-L-0002-P06 Landscape Areas Plan BOUND_GM
 - RDH-HAP-PRO-ZZ-M3-A-00001
 - RDH-HAP-PRO-ZZ-M3-A-00001_luciaVJHP5-Sheet - 10001 - Site Plan
 - RDH-HAP-PRO-ZZ-M3-A-00001_luciaVJHP5-Sheet - 10000 - Location Plan
 - RDH-HAP-PRO-ZZ-M3-A-00001_luciaVJHP5-Sheet - 10001 - Site Plan

3 ARBORICULTURAL SURVEY FINDINGS

3.1 DESK STUDY FINDINGS

- 3.1.1. The desk study found one TPO within the Study Area. T56 has been issued TPO reference number (TPO-1979-2024) in November 2024. T56 has been given veteran status by the Ancient Tree Inventory (ATI).
- 3.1.2. One Conservation Area has been recorded within the Study Area. Sindlesham TB24 overlaps the proposed development's redline boundary and the proposed tree removals. Trees within TB24 will require prior consent from the local Tree Officer.
- 3.1.3. No records of traditional orchards, nor ancient woodland have been identified within the Study Area.

3.2 GENERAL SITE DESCRIPTION

- 3.2.1. Reddam House is situated in a semi-urban environment north of Bearwood Lake.
- 3.2.2. The Study Area is within the grounds of Reddam House, which comprise permanent buildings, connected by paved footpaths, tarmac roads, lawns, wooded areas, and clusters of trees.
- 3.2.3. Topography of the site is generally flat with paved hardstanding areas adjacent to buildings and formal pathways leading to the boarding accommodation area on the western and eastern quadrant of the site.

3.3 FIELD SURVEY FINDINGS

- 3.3.1. A Tree Survey Schedule detailing information on arboricultural features in the Study Area is presented at **Appendix B**. Table 3-2 summarises the number of arboricultural features surveyed and their quality categories. The spatial locations of arboricultural features are shown on the TRPP of **Appendix C**.
- 3.3.2. A total of 30 arboricultural features have been recorded, 23 individual trees and seven groups of trees have been identified within and adjacent to the Study Area. Of those, 7% category A, 37% category B, 33% category C, and 23% category U features have been identified within the Study Area.
- 3.3.3. T56 has veteran features such as cavities and deadwood and has an ATI veteran status.

Table 3-1 Summary of Arboricultural Features by Category

BS5837 Quality	Category	Tree	Group	Total
High	A	2	0	2
Moderate	B	10	1	11
Low	C	7	3	10
Unsuitable	U	4	3	7
	Total	23	7	30

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1 SCOPE OF ASSESSMENT

- 4.1.1. The scope of this assessment has been established with reference to BS 5837, to evaluate the effects of the Proposed Development on arboricultural features, and where necessary, recommend mitigation measures.
- 4.1.2. The assessment includes specific reference to the effects of tree loss and other potentially damaging activities which could foreseeably occur in the vicinity of retained trees. Further reference is made concerning recommendations for mitigation. An outline AMS is included in **Appendix D**.

4.2 ASSUMPTIONS AND LIMITATIONS

- 4.2.1. The following limitations apply to this AIA report:
 - Enabling works (such as the installation or diversion of services by statutory undertakers beyond the planning application boundary) have not been considered.
 - Detailed drainage proposals have not been considered.
- 4.2.2. This AIA report has been compiled with the following assumptions:
 - The AIA has been based on works proposed within the site boundary only. It is assumed that all construction and demolition activities associated with the Proposed Development would be excluded from retained tree RPAs located in the planning application boundary as presented on the TRPP.
 - Hard surfaced areas of road and footpath would remain in-situ and used for temporary works access unless specified in this AIA.
 - No adjusted RPAs (considering natural root barriers or topography) have been used for the TRPP.

4.3 ARBORICULTURAL FEATURES TO BE REMOVED

- 4.3.1. A total of 17 arboricultural features will be impacted by the proposed development. 14 individual trees and three tree groups should be removed to facilitate access and construction activities. A full list of tree removal is provided in Table D-1 in **Appendix D**.
- 4.3.2. Four category B, four category C and seven category U arboricultural features have been identified for removal. Full details are provided in the TSS in **Appendix B**.
- 4.3.3. The recorded arboricultural features are shown in relation to the Proposed Development in the TRPP, which can be found in **Appendix C**.

4.4 SPECIAL CONSTRUCTION MEASURES

- 4.4.1. Special construction measures refer to areas where it is unacceptable to dig into the ground to lay a conventional sub-base. Further information can be found in the AMS in **Appendix D**.
- 4.4.2. The Special Construction Measures will be used to minimise impacts upon trees. The use of no dig construction in several sections is designed to avoid causing harm to retained tree roots. To ensure this achieves tree protection, the phasing of installation and access through these areas needs to be carefully planned to ensure harm is not inadvertently caused.
- 4.4.3. A total of three arboricultural features will require special construction measures due to their proximity to the proposed building. Table 4-3 provides a list of all arboricultural features for which special construction measures are required.
- 4.4.4. Where excavations are necessary within the RPA, these can be controlled to reduce detrimental impact on trees. Excavating by hand or vacuum excavation could be used so that when tree roots are found they are not damaged. Exposed tree roots could be retained with the no-fines material and geosynthetic membranes used to protect them during construction.
- 4.4.5. A cellular confinement system should be used in areas where tree roots are at risk from severance and soil compaction (T56).
- 4.4.6. Non mechanical soil decompaction within the RPA of trees in Table 4-3 is recommended This can be achieved using compressed air to break up compacted soil. Air spading loosens the soil around tree roots without causing mechanical damage.

Table 4-1 Special Construction Methods

Ref.	Species	BS5837 Category	Impact
T16	Pedunculate oak	A1	Special construction measures
T21	Atlas cedar	B1, 3	Special construction measures
T56	Atlas cedar	A1, 3	Special construction measures

4.5 RESTRICTIONS RELATING TO TREE REMOVAL

- 4.5.1. The felling of trees is controlled by the Forestry Act 1967. If trees need to be felled, a felling licence may be required. There are exemptions to this requirement which should be established during the design development process. However, the number and volume of tree removal for the proposed development may exceed the threshold for a Forestry Commission felling license.

4.6 COMPENSATION PLANTING

- 4.6.1. The Proposed Development has been designed to avoid impacts on trees and vegetation where possible. There are some tree removals, and a landscape design provides compensation.
- 4.6.2. Where unavoidable, tree loss should be compensated through the implementation of a landscape design including new tree planting.
- 4.6.3. A BNG strategy is being prepared to compensate for losses whilst seeking opportunities to enhance biodiversity. A Landscape Ecological Management Plan (LEMP) should be prepared to describe the long-term management of the landscaping scheme.

4.7 OTHER ARBORICULTURAL IMPACTS

- 4.7.1. Other identified arboricultural impacts associated with the demolition and construction work for the Proposed Development are recorded in Table 4-5. These arboricultural impacts are activities which have the potential, if uncontrolled, to cause damage to the retained arboricultural features.
- 4.7.2. Table 4-5 provides details of the arboricultural features at risk of damage, the likely cause of damage and the mitigatory measures which are required. Implementation of the recommended mitigation measures would be sufficient to ensure that arboricultural features can be retained without significant loss of value or a notable reduction in health or longevity.

Table 4-2 Other Identified Arboricultural Impacts - Proposed Mitigation and Likely Effects

Features	Cause of Impact (construction of)	Potential Impact	Mitigation Measures
All retained features	General contractor spatial working requirements during demolition and construction (below ground impact).	Soil compaction and root damage for contractor spatial working requirements. Loss of vitality and decline in health. Reduction in quality of trees / potential death of trees.	Establishment of Construction Exclusion Zone (CEZ) around retained tree RPAs for duration of demolition and construction as outlined in a site-specific AMS. Mitigation to consider combined use of ground protection, no ground level changes within the RPAs of retained trees, tree protection fencing and ACoW supervision. Permitted development activities should refer to constraints information provided in the TRPP and adopt precautionary working methods in line with National Joint Utility Group (NJUG) Volume 4.
All retained features.	General contractor spatial working requirements during demolition and construction (above ground impact).	Injurious contact with above ground elements of retained trees. Loss of vitality and decline in health. Reduction in quality of trees / potential death of trees.	Establishment of CEZs around retained tree canopies for duration of demolition and construction as outlined in a site-specific AMS. Any tree works undertaken should comply with British Standard 3998:2010 – Tree Work Recommendations and should therefore be carried out by skilled tree surgery contractors. Permitted development activities should refer to constraint information provided in the TRPP and adopt precautionary working methods in line with NJUG Volume 4.

- 4.7.3. Details of the mitigation measures set out in this report are identified on the TRPP and should be viewed in conjunction with the outline AMS. Through implementing appropriate tree protection measures, all retained trees can be kept without detrimental impact affecting their future growth and development.

4.8 OUTLINE ARBORICULTURAL METHOD STATEMENT

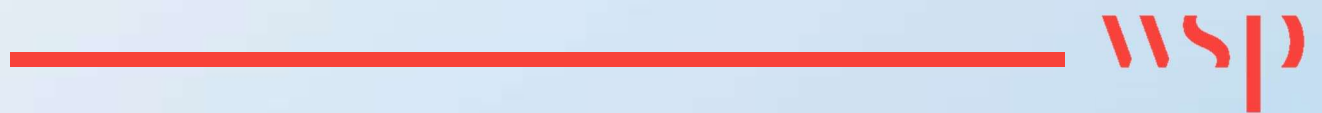
- 4.8.1. An outline AMS is included in **Appendix E**. The AMS adopts a precautionary approach to tree protection and addresses activities which have the potential to cause damage to retained trees.
- 4.8.2. The AMS addresses, in principle, the following matters which are of relevance to the Proposed Development:
- Arboricultural monitoring.
 - Tree protection fencing.
 - Ground protection.
- 4.8.3. It is recommended that this AMS be viewed as a 'living document'. It should therefore be reviewed, and if necessary updated as and when required. It is anticipated that a pre-commencement site meeting would be required with the Local Planning Authority Tree Officer to confirm tree protection measures.

5 SUMMARY AND RECOMMENDATIONS

- 5.1.1. A desk study conducted in April 2024 and updated in December 2024 established the following:
- The desk study found one TPO within the Study Area. T56 has been issued TPO () in November 2024.
 - One Conservation Area has been recorded within the Study Area. Sindlesham TB24 overlaps the proposed development's redline boundary and the proposed tree removals. Trees within TB24 will require consent from the local Tree Officer.
 - T56 also has also been identified by the Ancient Tree Inventory (ATI) as a veteran tree.
- 5.1.2. A field survey of the arboricultural features within the Study Area was undertaken on 15 April 2024 in accordance with BS 5837.
- 5.1.3. A total of 30 arboricultural features have been recorded, 23 individual trees and seven groups of trees have been identified within, and adjacent to the Study Area. Of those, 7% category A, 37% category B, 33% category C, and 23% category U features have been identified within the Study Area.
- 5.1.4. Three arboricultural features will require special construction measures to facilitate the proposed development (see section 4.6 for details).
- 5.1.5. The Proposed Development will result in the removal of 17 arboricultural features, comprising 14 individual trees and three tree groups.
- 5.1.6. The remaining arboricultural features located within the planning application boundary can be retained and protected through demolition and construction. Principles for tree protection are set out in the outline AMS (**Appendix D**) which includes the need for arboricultural monitoring, tree protection fencing and ground protection.

Appendix A

METHODOLOGY



SURVEY METHODOLOGY

METHOD OF BASELINE DATA COLLECTION

Baseline data collection has been undertaken with reference to BS 5837 and has been undertaken using the following data sources:

- An arboricultural desk study; and
- A field survey of all arboricultural features within the Study Area.

DESK STUDY

The desk study for the Proposed Development was completed on 10 Dec 2024.

The desk study reviewed existing arboricultural information available in the public domain. The desk-study has considered the following sources:

- Wokingham Borough Council Interactive Online Map;
- Ancient Tree Inventory (ATI) of the Woodland Trust; and
- Defra's Multi-Agency Geographic Information for the Countryside (MAGIC).

TPOs and Conservation Areas

WBC are responsible for implementing any legal controls imposed through TPOs within the Study Area. One TPO and one Conservation Area have been recorded within the Study Area. TPO details extracted from WBC online portal⁴.

Ancient woodland

The potential presence of ancient woodland within the Study Area was checked using the web based Multi-Agency Geographic Information for the Countryside (MAGIC) map database which was accessed on 10 Dec 2024⁵. No ancient woodland has been recorded in the Study Area.

Ancient and Veteran Trees

The potential presence of ancient and veteran trees within the Study Area was checked using the Woodland Trust's Ancient Tree Inventory⁶. One veteran tree has been recorded within the Study Area.

⁴ Wokingham Borough Council Online interactive Map – (Accessed 10 Dec 2024)
<https://experience.arcgis.com/experience/c0ad4ce95f8e46cfb28bb8cb126eae0>

⁵ Magic (DEFRA), *Multi Agency Geographic Information for the Countryside* [online] Available at:
<<https://magic.defra.gov.uk/MagicMap.aspx>> [Accessed 10 Dec 2024].

⁶ Ancient Tree Inventory, 2024. *Ancient Tree Inventory* [online] Available at: < [Tree Search - Ancient Tree Inventory](#)> [Accessed 10 Dec 2024].

FIELD SURVEY

A field survey was undertaken 15 April 2024. The field survey was conducted with aerial imagery and a topographical survey layer as base mapping to record the location of arboricultural features.

The field survey was undertaken in accordance with the following criteria:

- Arboricultural features have been recorded as groups where this has been deemed appropriate. Groups have been recorded on the basis that they form distinct arboricultural features or wooded groups either aerodynamically, visually or because they contain trees of similar cultural and biodiversity value.
- The trees have been visually inspected from ground level only.
- No tissue samples were taken nor was any internal investigation of the subject trees undertaken.
- Tree heights and crown spreads have been estimated to the nearest 1m.
- Notes have been recorded where they relate to the quality of the arboricultural feature.
- Management recommendations have been provided where work is necessary for the abatement of a hazard which presents a high level of risk to persons or property. Such management recommendations have been communicated to the tree owner/manager separately from this report.
- Stem diameters have been measured in accordance with Annex C of BS 5837.
- Diameters of single stem trees on level ground have been measured at 1.5m above ground level. The diameters of other commonly encountered stems have been measured as per the guidance. The combined stem diameters for multi-stemmed trees have been calculated in accordance with BS 5837 paragraph 4.6.1.; and
- By default, RPAs are calculated as an area equivalent to a circle with a radius 12 times the stem diameter and are capped at a distance of 15 metres.

QUALITY ASSESSMENT

The quality of arboricultural features has been determined in accordance with BS 5837 Table 1, a copy of which is provided in **Figure A-1**. The purpose of the quality assessment is to enable informed decisions to be made regarding the removal and retention of arboricultural features in the context of development. For an arboricultural feature to be included within a particular quality category it should accord with the description provided.

The quality of each arboricultural feature is defined based on its sub-category. Sub-categories carry equal weight, do not influence retention priority, and are simply included to indicate the primary value associated with each surveyed item. Sub-categories 1, 2 and 3 are intended to reflect arboricultural, landscape and cultural values, respectively.

The quality and sub-category assigned to each arboricultural feature are identified within the Tree Survey Schedule included in **Appendix B** of this report.

Figure A-1 - BS 5837 Table 1 - Cascade Chart for Tree Quality Assessment

Table 1 Cascade chart for tree quality assessment

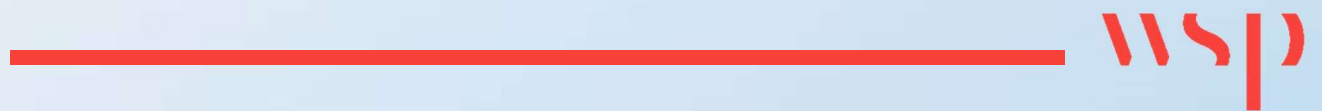
Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>	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

NOTES AND LIMITATIONS

- Arboricultural survey data is of a preliminary nature and has been collected based on a field survey.
- Only attributes visible from the ground have been noted and each arboricultural feature may not have been inspected closely due to access difficulties, the presence of dense ivy, other vegetation, or safety constraints. Safety related features have not been recorded on the basis that the arboricultural features will be subject to a normal programme of tree hazard assessment and only those features which materially affect the quality of the feature or pose a real and immediate safety concern have been recorded.
- Arboricultural survey data is typically valid for a period of two years unless otherwise stated. Significant environmental events (such as extreme weather conditions) or changes to the Site may render it invalid within a shorter timescale.
- Records held on the Ancient Tree Inventory are collected on a voluntary basis, therefore the absence of records does not demonstrate the absence of ancient or veteran trees but may simply indicate a gap in recording coverage.
- Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may be more or less evident at different times of the year. This is especially true of certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the early stages of root decay may not result in other identifiable symptoms. Field survey data is therefore based upon observations made at the time of the site visit and may be subject to change should further or more detailed inspections be undertaken.
- The survey has only been undertaken from land within the client's ownership, from public land or from areas where formal access has been arranged.

Appendix B

TREE SURVEY SCHEDULE



SURVEY SCHEDULE EXPLANATORY NOTES

REFERENCE ABBREVIATIONS

- T – Tree
- G – Group

MEASUREMENTS

- Height is estimated to provide a relative indication of tree size.
- Stem Diameters are measured in accordance with BS 5837 paragraph 4.6.1, Annex C. Stem diameter for groups is the largest size within the group.
- Crown spread for trees was estimated in the four cardinal points.
- Crown spread for groups is recorded as an average for the group.
- LCH – lowest canopy height. It is an estimate of the lowest point of foliage above ground level of the tree indicating the clearance below the tree.
- LBH – lowest branch height. It is the height above ground level of the first branch union with the main stem of the tree.

ASSESSMENTS

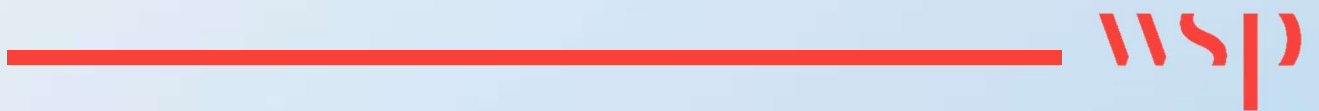
- Life stage: Y – Young, SM – Semi-mature, EM – Early Mature, M – Mature, V – Veteran
- Physiological condition: G – Good, F – Fair, P – Poor, D – Dead
- Structural condition: G – Good, F – Fair, M – Mixed, P – Poor
- ERC - Estimated remaining contribution: <10 years, 10+ years, 20+ years or 40+ years.
- BS 5837 Category: A, B, C or U with sub-category recorded as 1, 2 or 3.
- RPA Radius is the radius of a circular Root Protection Area associated with the tree as measured from the centre of the stem. For arboricultural features, where more than one stem diameter is recorded the RPA radius is calculated using the largest dimension. Unless otherwise noted the RPA for groups is based on the equivalent RPA for the largest tree in that group.

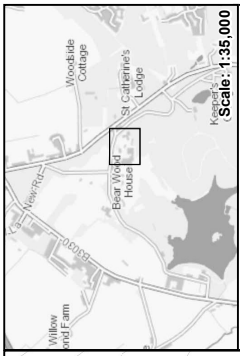
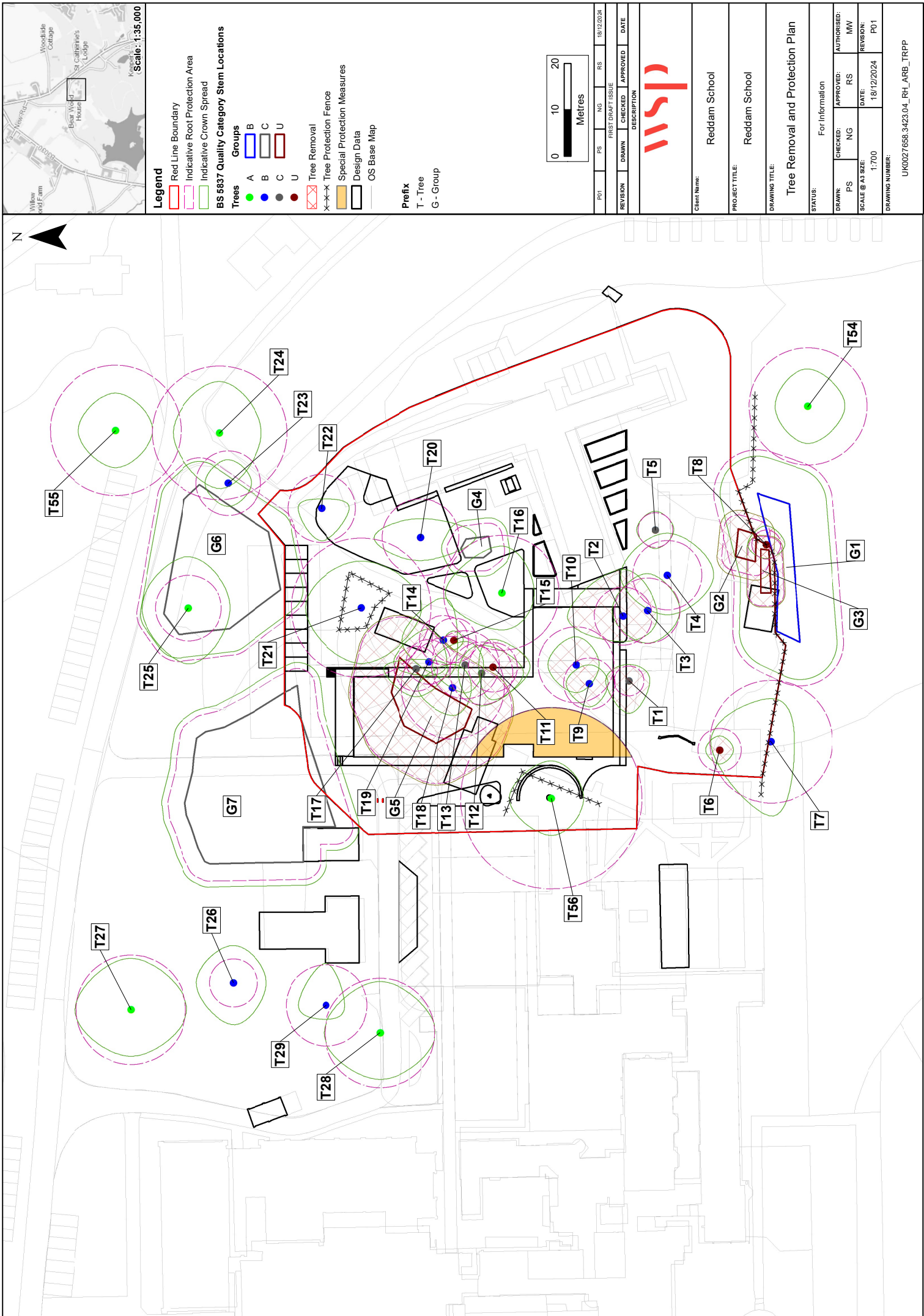
Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N - E - S - W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Contribution	BS5837 Category	Impact
T1	Turkey oak	9	270	5 - 4 - 4 - 7	2.5	0.8	EM	G	F	2.2m from asphalt and 8.2m from adjacent building. Asymmetrical growth with minor deadwood in lower canopy.	3.2	40+	C1	Remove
T2	Pedunculate oak	16	520	12 - 7 - 7 - 6	2.5	0.8	M	F	F	Adventitious growth on stem, partially exposed root system with evidence of mechanical damage to buttress.	6.2	40+	B1	Remove
T3	Pedunculate oak	18	590	8 - 8 - 7 - 7	1.1	3	M	G	G	Minor deadwood in mid-upper canopy. Overhangs building and may conflict with proposed development, otherwise will require protection from planned demolition.	7.0	40+	B1	No impact
T4	Pedunculate oak	19	620	10 - 9 - 10 - 8	2	2.2	M	G	G	Spreading branches overhang approximately 50% of adjacent building. Potential conflict with proposed development.	7.4	40+	B1, 3	No impact
T5	Bird cherry	5	310	4 - 4 - 4 - 4	2	1.6	M	G	F	Multiple overlapping branches at 2m above ground forming compressive unions. Large reactive buttress growth with partial root exposure with evidence of mechanical damage.	3.7	20+	C1	No impact
T6	Rhododendron	4	390	3 - 3 - 3 - 3	2	2.5	M	D	P	Standing dead Rhododendron with several cavities at 50cm above ground.	4.6	<10	U	Remove
T7	Red oak	23	1100	13 - 9 - 5 - 12	3	2.2	M	G	F	Codominant stems forming an acute angle on main union. Located 15m from building with an asymmetrical growth.	13.2	40+	B1	No impact
T8	Goat willow	7	260	4 - 4 - 4 - 3	2	2.8	SM	F	P	Self sown with basal damage. No significant features.	3.1	<10	U	Remove
T9	Red oak	20	460	5 - 4 - 4 - 5	0.8	2.3	SM	G	G	Upright branching structure. No significant features.	5.5	40+	B1	Remove
T10	Scots pine	25	680	6 - 6 - 5 - 6	5	9	M	G	F	No significant features.	8.2	40+	B1	Remove
T11	Sweet chestnut	15	440	3 - 6 - 8 - 7	4	5	M	D	P	Almost dead with only basal adventitious growth remaining and a 20cm wide cavity at ground level. Partial root exposure with evidence of mechanical damage.	5.3	<10	U	Remove
T12	Common beech	22	560	5 - 6 - 9 - 7	3	6	M	F	F	Crowded growing condition between alder and chestnut. Declining canopy.	6.7	40+	C1	Remove
T13	Grey alder	25	610	7 - 5 - 4 - 6	6	3	M	F	P	Declining with significant reactive growth on base of stem and cavity at ground level with evidence of internal decay.	7.3	10+	C2	Remove
T14	Pedunculate oak	19	440	9 - 9 - 3 - 8	2.5	6	EM	G	G	2m from maintenance building, compacted soil condition in root zone. Minor deadwood on lower canopy.	5.3	40+	B1	Remove

Ref.	Species	Height (m)	Stem Dia. (mm)	Crown Spread N - E - S - W	LCH (m)	LBH (m)	Life Stage	Physiological Condition	Structural Condition	Tree Condition Notes & Observations	RPA Rad. (m)	Estimated Remaining Contribution	BS5837 Category	Impact
T15	English elm	10	400	2 - 2 - 2 - 2	4	1	EM	D	P	Advanced decline with basal cavities and stem lesions. Potential conflict with existing maintenance building.	4.8	<10	U	Remove
T16	Pedunculate oak	23	1030	10 - 9 - 12 - 11	3	6	M	G	G	3 upright codominant stems at 3m above ground. Partial root exposure. 3m from tarmac pathways.	12.4	40+	A1	Special construction measures
T17	Pedunculate oak	12	400	7 - 2 - 7 - 6	2	6	EM	F	F	Sparse canopy with no significant features.	4.8	40+	C1	Remove
T18	Sweet chestnut	10	930	7 - 5 - 4 - 6	3	5	M	F	F	Codominant stems with compressive union at 1.5m above ground and adventitious basal growth. Topped and showing signs of advanced decline.	11.1	40+	B1	Remove
T19	Pedunculate oak	12	400	8 - 7 - 4 - 3	2.5	8	EM	F	G	Asymmetrical growth and minor deadwood throughout upper canopy.	4.8	40+	C1	Remove
T20	Weeping willow	10	690	10 - 4 - 12 - 5	0.5	3	M	P	P	Declining with evidence of stem decay and deadwood throughout canopy.	8.3	20+	C2	Construction Exclusion Zone (CEZ)
T21	Atlas cedar	34	1570	12 - 10 - 13 - 12	7	7	M	F	P	Evidence of poor wound occlusion throughout with stem decay in upper-mid canopy and deadwood throughout. Partial root exposure with signs of mechanical damage.	18.8	40+	B1, 3	Special construction measures
T22	Pedunculate oak	13	610	5 - 2 - 6 - 7	1.8	3	EM	F	F	Asymmetrical with ivy clad to mid canopy and basal adventitious growth.	7.3	40+	B1	Construction Exclusion Zone (CEZ)
T56	Atlas cedar	22	1300	9 - 8 - 7 - 8	10	9	V	G	G	Outside survey area but within 15m buffer zone.	15.6	40+	A1, 3	Special construction measures
G1	Red oak, Beech	22	780	8 - 8 - 8 - 8	2	0	M	F	G	Comprising 8 Oaks and 2 Beech understory trees. Located directly behind hard standing.	9.4	40+	B1, 3	Construction Exclusion Zone (CEZ)
G2	Silver birch	19	250	4 - 4 - 4 - 4	3	0	SM	F	P	Mechanical damage to main stem.	3.0	<10	U	Remove
G3	Silver birch	12	230	3 - 3 - 3 - 3	3	0	SM	P	P	2 windblown and 1 has burn damage on lower stem. Adjacent to storage area with evidence of chemical spill near root zone.	2.8	<10	U	Remove
G4	Pedunculate oak, English elm	11	240	4 - 4 - 4 - 4	1.3	0	SM	F	F	No significant features.	2.9	40+	C1	Construction Exclusion Zone (CEZ)
G5	Sweet chestnut, Common beech, Scots pine, Holm oak, English elm	23	720	9 - 9 - 9 - 9	3	0	EM	F	F	A mixed cluster of evergreen and broadleaf with basal reactive growth and minor deadwood throughout.	8.6	20+	U	Remove
G6	Field maple, Sycamore, Cherry laurel, Pedunculate oak, Crack willow	19	480	5 - 5 - 5 - 5	0.8	0	EM	F	G	Dominant Cherry laurel understory with windblown willow and standing deadwood throughout.	5.8	40+	C1	No impact
G7	Silver birch, Sycamore, Goat willow	13	310	5 - 5 - 5 - 5	0.7	0	SM	F	F	Approximately 36 trees varying size and age class. Predominantly Silver birch.	3.7	40+	C1	No impact

Appendix C

TREE REMOVAL AND PROTECTION PLAN





Legend

- Red Line Boundary
- Indicative Root Protection Area
- Indicative Crown Spread
- BS 5837 Quality Category Stem Locations
- Trees Groups: A (blue), B (green), C (red), U (black)
- Tree Removal (X)
- Tree Protection Fence (X-X-X)
- Special Protection Measures (orange)
- Design Data (black outline)
- OS Base Map (grey)

Prefix

- T - Tree
- G - Group

Scale

0 10 20 Metres

Client Name: Reddam School

Project Title: Reddam School

Drawing Title: Tree Removal and Protection Plan

Status: For Information

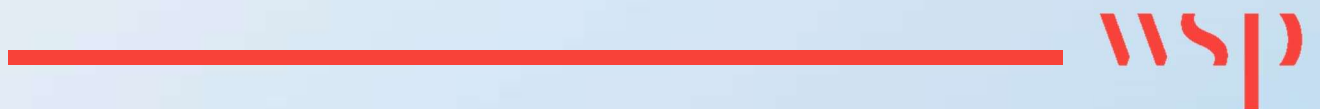
Drawn: PS **Checked:** NG **Approved:** RS **Authorised:** MW

Scale @ A3 Size: 1:700 **Date:** 18/12/2024 **Revision:** P01

Drawing Number: UK0027668.3423.04_RH_ARB_TRPP

Appendix D

OUTLINE ARBORICULTURAL METHOD STATEMENT



INTRODUCTION

This, heads of terms, outline AMS describes arboricultural protection measures to protect retained trees as part of the Proposed Development. An AMS is a dynamic document that shall be reviewed prior to the issuing of any tender documentation. It shall be revised to accommodate any design amendments or known construction methodologies and must be read in conjunction with the TRPP included within **Appendix C** of this report.

ARBORICULTURAL SITE SUPERVISION

Effective tree protection can only be achieved by adherence to a logical sequence of works combined with effective arboricultural supervision. The purpose of arboricultural monitoring is to ensure that all tree protection measures are fit for purpose, are implemented in accordance with any approved details and as a means of enabling any previously unforeseen arboricultural issues to be promptly identified and suitably addressed.

An Arboricultural Clerk of Works (ACoW) shall be appointed to oversee the tree protection during the demolition and construction phase.

The role of the ACoW is to:

- Advise the client and principal contractor on tree protection issues;
- Attend site as required to advise on variations;
- Supervise works undertaken within construction exclusion zones (CEZ); and
- Inspect and report on the status of tree protection measures in place during the construction phase.

The ACoW shall attend site:

- Prior to commencement of works to ensure tree protection fencing is in place; and
- Periodically during the construction phase.

TREE WORKS

A schedule of currently identified tree works is provided for the planning application below:

Table D-1 – Tree Removal Schedule

Ref.	Species	BS5837 Category	Impact
T1	Turkey oak	C1	Remove
T2	Pedunculate oak	B1	Remove
T6	Rhododendron	U	Remove
T8	Goat willow	U	Remove
T9	Red oak	B1	Remove
T10	Scots pine	B1	Remove
T11	Sweet chestnut	U	Remove
T12	Common beech	C1	Remove

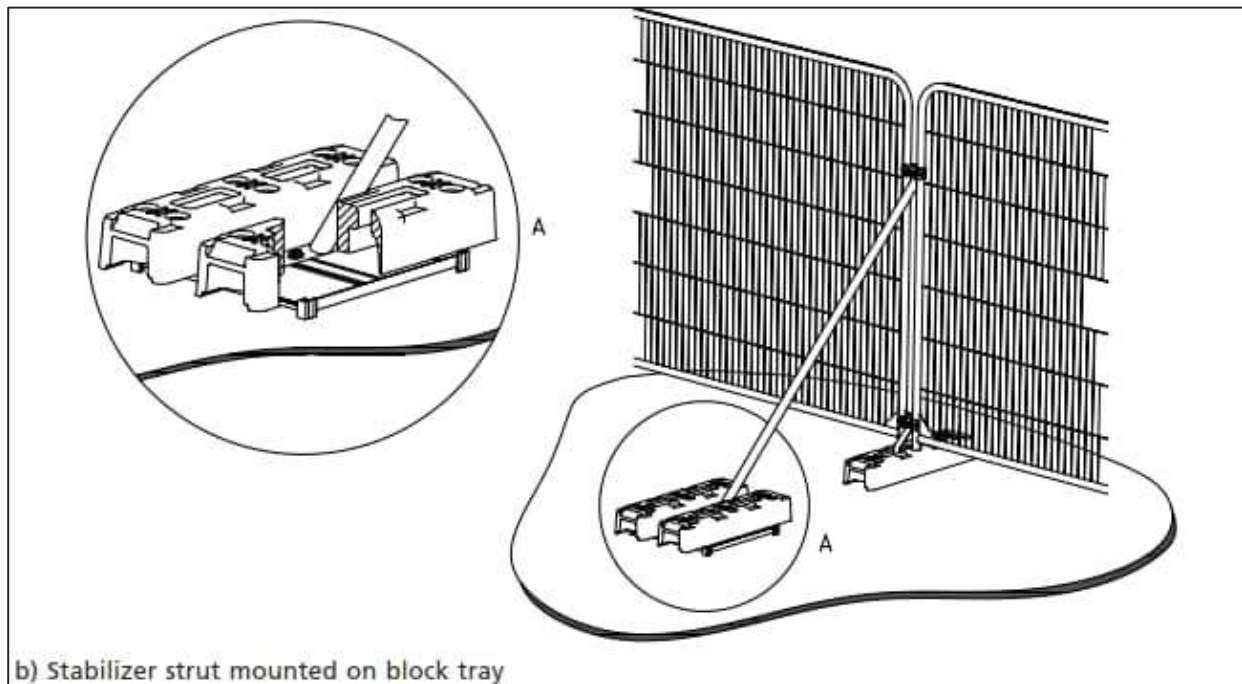
T13	Grey alder	C2	Remove
T14	Pedunculate oak	B1	Remove
T15	English elm	U	Remove
T17	Pedunculate oak	C1	Remove
T18	Sweet chestnut	B1	Remove
T19	Pedunculate oak	C1	Remove
G2	Silver birch	U	Remove
G3	Silver birch	U	Remove
G5	Sweet chestnut, Common beech, Scots pine, Holm oak, English elm	U	Remove

- All tree works shall adhere to British Standard BS 3998:2010 *Tree work – Recommendations*;
 - All operations shall be carefully carried out to avoid damage to the trees being retained; and
 - No trees to be retained shall be used for anchorage or winching purposes.
- Should the requirement for a tree felling or pruning arise which is additional to that identified above then the following process shall be applied:
- Any specification shall be technically approved by the ACoW; and
 - Written approval shall be obtained from the Local Planning Authority prior to implementation of the work.

TREE PROTECTION FENCING

Tree protection fencing shall be fit for the purpose of excluding construction activity and appropriate for the degree and proximity of work taking place. An example of the type of tree protection fencing which may be required is included in **Figure E-1**.

Figure D-1 - Example of appropriate tree protection fencing. (Extracts taken from Figure 3(b) of BS 5837:2012)



Tree protection fencing will be used to prevent access to the root protection areas (RPAs) of retained trees and this will form the CEZ. In all instances the following shall be adhered to:

- Tree protection fencing shall be erected prior to any works onsite including site clearance, groundwork or the importation of plant and materials;
- Tree protection fencing shall be erected in accordance with the layout shown on the TRPP of **Appendix C**;
- All weather notices will be attached (at eye level) to the tree protection fencing at suitable intervals and shall include suitably sized informative text stating “Tree Protection Fencing, Construction Exclusion Zone – No Access”;
- Once erected tree protection fencing shall remain in-situ until construction activities are complete;
- No construction activities, storage of materials or pedestrian or vehicular access shall take place within the CEZ; and
- Regular daily checks will be carried out by an appointed person to ensure that all tree protection fencing is still in place and functioning; any damage will be rectified without delay.

GROUND PROTECTION

Ground protection shall be used within any area where construction access is required within the RPAs of any retained tree. Its suitability shall be reviewed by the ACoW prior to implementation onsite and shall adhere to:

- Ground protection shall be sufficiently robust to prevent damage or disturbance of the underlying soil and adhere to section 6.2.3 of British Standard BS5837:2012;
- It shall be in-situ prior to any works onsite including site clearance, groundwork or the importation of plant and materials;
- Ground protection shall remain in-situ until all construction activities are complete; and
- Regular daily checks will be carried out by an appointed person to ensure that ground protection is still in place and functioning; any damage will be rectified without delay.

REMOVAL OF FOUNDATIONS, FOOTPATHS, HARD SURFACING WITHIN THE CEZ

Temporary pedestrian access shall be allowed within the CEZ to carry out these operations. A suitable gap in the fencing shall be created just wide enough to allow pedestrian and wheelbarrow access only. On completion of the works the breach shall be closed to prevent further access.

The foundations of the demolished buildings and any hard surfacing to be removed from within the RPA should be broken up using low impact pneumatic tools only not breakers attached to JCBs, unless absolutely necessary due to the nature of the materials. If this is the only option then this must first be agreed with the arboriculturist.

Work to remove the existing hard surfacing should begin at the furthest point from the edge of the CEZ and continue back towards the protective fencing. Removal of the existing hard surfacing should be carried out in 2m strips working from the undisturbed surface. This will allow any exposed roots to be suitably covered to prevent desiccation in a timely manner. The exposed surface can then be made good as the work proceeds to avoid unnecessary travel over the newly uncovered ground. The existing hard surfacing prior to its removal should be used as the working platform. Sections of existing path/foundation shall be broken out separately and debris carefully lifted clear and exported outside the protective fencing using wheelbarrows.

As each section of existing surfacing is removed it shall immediately be replaced with topsoil. The topsoil shall be imported using wheelbarrows and loose tipped. Grading shall be undertaken using hand tools only to avoid compaction.

No reduction of levels of the underlying soil surface shall be carried out.

Topsoil shall conform to *BS3882:2007 Specification for Topsoil and Requirements for Use* and shall be stored in convenient piles adjacent to the working area just outside the CEZ.

CONSTRUCTION OF NEW FOOTPATHS WITHIN THE CEZ

The construction of any new footpaths within the RPAs must be installed using a 'no dig' construction method as follows:

- Re-align the tree protection fencing (see Tree Protection) to allow access to the immediate working area only.
- Remove all existing vegetation from the surface using hand tools only. Arisings should be removed from the RPA using wheelbarrows only. No further excavations in this area are to take place. Any voids or depressions within the ground surface are to be made good using sharp sand (not builder's sand) to maintain levels.
- Install standard 150 x 50mm concrete kerb edging for lateral support held in place with a minimum amount of concrete haunching and carefully secured to the ground with an appropriate method between the kerb edge and haunching at 900mm centres.
- Lay down a permeable geotextile separation membrane over the existing ground. Install a cellular confinement mat (e.g. Cellweb) of 100mm thickness on top of this membrane. Expand the mat to its full length and trim to the desired length and width. Carefully peg down the matting with proprietary staking pins to keep the cells open. Fill all the cells with a 20-40mm no fines angular granular stone working from the area furthest from the tree first. Continue filling all the cells using the filled cells as a working platform.
- Put down a second layer of permeable geotextile membrane before installing a permeable wearing course of 20mm porous tarmac over a 40mm base.
- Topsoil is to be graded down from the top of the kerb edge to the existing ground level to avoid creating trip hazards.

ADDITIONAL PRECAUTIONS OUTSIDE THE CEZ

A precautionary approach to working near retained trees shall be adopted with site huts, welfare facilities, parking, material / spoil storage, mixing and vehicle cleaning facilities being located outside of RPAs.

Care should be taken when planning site operations to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure that adequate clearance from trees is maintained at all times.

Notice boards, telephone cables or any other services shall not be attached to any part of a retained tree.

INSTALLATION OF UNDERGROUND APPARATUS AND SERVICE RUNS

Wherever possible any underground services (cabling and pipes) shall be located outside the RPA of any retained tree. Soakaways must not be located within RPA.

Wherever possible services shall be grouped together utilising common ducts and have all inspection chambers located outside of the RPA.

In situations where services must pass through the RPAs of a retained tree then trenchless techniques shall be used wherever possible with launch and receptor pits being located outside the RPAs.

Guidance within Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2:16 November 2007) shall be followed.

SOFT LANDSCAPING WITHIN THE CEZ

For all soft landscape works, excavations and ground preparation within these areas is to be carried out using hand tools only in a sensitive manner to ensure root damage is kept to a minimum. At no time shall a rotavator be used within any of the protected areas to prepare the soil.

Removal of existing vegetation and turf will be carried out by hand only. Any herbicide used during the development works shall be appropriate for the type of vegetation to be killed and all instructions, warnings and other relevant information from manufacturers should be strictly observed and followed. Care should be taken to avoid any damaging effects upon existing plants and trees to be retained.

Care should be taken to avoid changes in ground levels within the RPAs and no changes in ground levels shall occur within 1m of the trunks of all retained trees.

No works shall be carried out within the RPAs if the soil moisture levels are high enough to allow compaction to occur. If compaction of the ground has occurred then decompaction measures should be undertaken, these may include forking, spiking, soil augering and tilled radial trenching.

Final grading to marry in new levels with existing ground will be achieved by importing good quality topsoil and spreading it using hand tools only. Areas of proposed grass shall then be raked to a fine tilth and will be grass seeded or turfed as necessary by hand.

All new tree planting should be undertaken in accordance with *BS8545:2014 Trees: from nursery to independence in the landscape. Recommendations*. Planting pits for shrubs or trees must be hand excavated taking care to avoid damage to existing tree roots. If substantial roots are discovered then the planting pit should be relocated if possible in order to retain them. Hedging plants if bare root shall be notch planted and no trench planting shall take place within the RPAs. If fertiliser is to be incorporated into the planting pits it should be a slow release type such as 'Enmag' or other similar approved and should be applied in accordance with the manufacturer's recommendations.

Roots shall be retained and carefully worked around, wherever practicable. No root greater than 25mm diameter shall be cut without confirmation from the project ACoW. If damage does occur to a root greater than 25mm diameter, then advice must be sought from the project ACoW. Where it is essential to sever roots they shall be cleanly cut, using an appropriate, sharp bladed hand-tool.



If in the course of operations, roots, that are to be retained, are unearthed, they shall not be left unduly exposed, but shall be covered with hessian, or similar, to protect from desiccation. Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded with sharp sand, or other loose granular fill before soil or other material is replaced.

Where materials or plants are to be brought into or removed from the RPAs they should be transported in wheelbarrows and must be moved across existing hard surfacing or temporary ground protection in accordance with BS5837 in a way that prevents compaction of the soil.

Mulch should be applied to open soils and shrub planting areas to inhibit weed growth, reduce groundwater evaporation, resist and mitigate soil compaction and reduce maintenance requirements. Material that may be used shall include well composted wood chip, pulverised bark, leaf mould or green waste conforming to PAS 100. The depth of mulch should not exceed 100mm, taking particular care not to lay excessive mulch around new plants and should be avoided in areas of established tree growth.



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