



Heidelberg Materials

TYTHERINGTON QUARRY: 6 MILLION TONNES ADDITIONAL RESERVE

Arboricultural Impact Assessment





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Arboricultural Impact Assessment

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1. WSP has been instructed by Heidelberg Materials to provide arboricultural support for Tytherington Quarry 6mt (hereafter referred to as the 'Proposed Development') comprises of:

- Excavation for the extraction of materials,
- the on-site relocation and storage of soil, and,
- a haul road.

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, to assess the impact of the Proposed Development upon those trees and to recommend such protection 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:

- results of a BS 5837 field-based survey;
- an Arboricultural Impact Assessment (AIA); and,
- an Outline Arboricultural Method Statement (AMS).

1.2.4. BS 5837 does not provide explicit parameters for measuring the sensitivity of an arboricultural features 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. Impacts should be defined as an assessment of arboricultural removals and identification of matters to be addressed within an AMS.

1.3 LIMITATIONS

1.3.1. WSP have provided this report solely for the use of the recipient and accepts no liability to any third parties or any other party using or reviewing the report or any part thereof. WSP makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out within the scope of the contract under which it was supplied.

1.3.2. 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.

- 1.3.3. Trees are dynamic organisms which 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.
- 1.3.4. 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.
- 1.3.5. Assessment of statutory and non-statutory constraints have 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
- Forestry Act 1967

POLICY

- South Gloucestershire Local Plan – Core Strategy 2006 to 2027

GUIDANCE

- British Standards Institute. BS 3998: 2010 Tree Work – Recommendations. London: BSI
- British Standards Institute. BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations. London: BSI

1.5 ABBREVIATIONS OF TERMS USED

Table 1-1 – List of abbreviations used within this report

Acronym	Definition
ACoW	Arboricultural Clerk of Works
AIA	Arboricultural Impact Assessment
AMS	Arboricultural Method Statement
BS 5837	British Standard BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations
CEZ	Construction Exclusion Zone
RPA	Root Protection Area
TRPP	Tree Removal and Protection Plan
TPO	Tree Preservation Orders

2 METHODOLOGY

2.1 SITE AND ARBORICULTURAL STUDY AREA

- 2.1.1. The Site is located adjacent to Itchington Road, between Thornbury and Tytherington, South Gloucestershire; National Grid Reference: ST 65702 88064. The extents of the Site are shown by the redline boundary in the Tree Removal and Protection Plan (TRPP) of Appendix C.
- 2.1.2. The arboricultural study area (hereafter referred to as 'Study Area') covers the extents of the Site plus up to a further 15m. The purpose of this 15m beyond the Site extents is to ensure compliance with BS 5837 which recommends that all arboricultural features whose Root Protection Areas (RPAs) and crowns may be impacted are identified and surveyed. BS 5837 has a maximum RPA radius of 15m, hence the extent of the Study Area.
- 2.1.3. Trees located on opposite sides of adjoining roads (but within the 15m buffer) have not been included within this assessment report as they are sufficiently far away not to be impacted by the Proposed Development.

2.2 BASELINE DATA COLLECTION

- 2.2.1. 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-based survey of arboricultural features within the Study Area.

2.3 DESK STUDY

- 2.3.1. A desk study was undertaken in March 2024 to identify specific statutory and non-statutory arboricultural constraints which may apply to arboricultural features within the Study Area. The desk study, as outlined in Appendix A, was undertaken to establish the following statutory and non-statutory arboricultural constraints:
 - tree preservation orders;
 - conservation areas;
 - ancient woodland; and
 - ancient or veteran trees.

2.4 BASELINE SURVEY

- 2.4.1. A field-based survey of trees within the Study Area was undertaken on 14 March 2024. The survey was undertaken to comply with BS 5837 and details of the method used are presented in Appendix A.

2.5 PROVIDED DESIGN INFORMATION

- 2.5.1. The following information has been viewed and used to prepare this report and arboricultural assessment:
 - Ordnance Survey Mapping: *Base.dwg*
 - Red Line Boundary: *TYTH_BOUNDARIES_240214.dwg*
 - General Arrangement (6mt) *Fig 3.2 62282762-FG0036_P01.pdf*

3 ARBORICULTURAL SURVEY FINDINGS

3.1 DESK STUDY FINDINGS

- 3.1.1. The desk study found no TPOs nor conservation areas within Study Area. The desk study also found no records of ancient or veteran trees, traditional orchards, nor ancient woodland within the Study Area.

3.2 GENERAL SITE DESCRIPTION

- 3.2.1. The Proposed Development is centred on Ordnance Survey National Grid Reference: ST 65702 88064 and is located between Thornbury and Tytherington, South Gloucestershire. The southwestern extent of the Study Area borders Itchington Road. The topography of the Study Area is varied with generally level haul roads north, a steep mound of soil centrally and a sloped bund of trees south.

3.3 BASELINE SURVEY FINDINGS

- 3.3.1. An arboricultural survey schedule detailing information about trees in the Study Area is presented at Appendix B. Table 3-1 summarises the number of trees surveyed and their tree quality categories. The locations of arboricultural features are shown on the Tree Removal and Protection Plan (TRPP) of Appendix C.

Table 3-1 – Summary of tree quality categories

BS 5837 Category	Quality	Individual Trees	Groups	Hedges	Totals
Category B	Moderate	8	0	0	8
Category C	Low	3	3	4	10
Category U	Very Low	2	0	0	2
Totals		13	3	4	20

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. The scope of assessment is to evaluate the effects of the Proposed Development on arboricultural features and where necessary recommend mitigation.
- 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, including those matters which require inclusion within an AMS.

4.2 ASSUMPTIONS AND LIMITATIONS

- 4.2.1. This AIA report has been compiled on the basis of the following assumptions:
- With the exception of vegetation removals, all construction and demolition activities will be confined to the planning application boundary of the Proposed Development.
 - With the exception of vegetation removals, all construction and demolition activities will be excluded from Construction Exclusion Zones (CEZ) identified on the TRPP.
 - Existing areas of haul road and soil storage will remain in-situ or be utilised for construction access, site compounds and material storage as specified in this AIA.
- 4.2.2. The following limitations apply to this AIA report:
- Enabling works (such as the installation or diversion of services by statutory undertakers beyond the red line boundary) have not been considered.
 - Detailed drainage proposals have not been considered.
 - Where the location of arboricultural features is not recorded in topographic surveys they have been indicatively plotted using aerial imagery relative to other Site features. The accompanying TRPP therefore has features plotted with approximate locations only which could have an error of up to 5m.

4.3 ARBORICULTURAL FEATURES TO BE REMOVED

- 4.3.1. The Proposed Development in relation to arboricultural features is shown in the TRPP of Appendix C. The Proposed Development will result in the removal of six moderate quality trees, one low quality tree group and one very low quality tree; also four low quality features have parts removed. Specific details are summarised as:
- T4, T5, T6 and T8 require removal to accommodate mineral extraction works.
 - Part of G7 requires removal to accommodate mineral extraction works.
 - T9 requires removal to accommodate the haul road.
 - Parts of H10 and H12 require removal to accommodate the haul road.
 - T16, T17 and G18 require removal to accommodate soil storage.
 - Part of G19 requires removal to accommodate soil storage.

4.4 ARBORICULTURAL FEATURES TO BE PRUNED

- 4.4.1. Tree pruning works are not anticipated for the Proposed Development, however should they be required, all tree works must comply with British Standard 3998:2010 – Tree Work Recommendations and should therefore be carried out by skilled tree surgery contractors.

4.5 IMPACTS ON RETAINED ARBORICULTURAL FEATURES

- 4.5.1. Other arboricultural impacts are activities which have the potential, if uncontrolled, to cause damage to arboricultural features which are retained. Implementation of the recommended mitigatory measures will be sufficient to ensure that arboricultural features can be retained without significant loss of value or a notable reduction in health or longevity.

ABOVE GROUND IMPACTS

- 4.5.2. During demolition and construction work there is potential for the stem and branches of retained arboricultural features to be damaged by the contractor making physical contact. Such damage can reduce vitality and cause decline in health.
- 4.5.3. To prevent above ground damage to arboricultural features a construction exclusion zone (CEZ) should be established. An AMS should cover the duration of demolition and construction with appropriate levels of arboricultural supervision where work is near trees.

BELOW GROUND IMPACTS

- 4.5.4. During demolition and construction work there is potential for soil compaction and root damage caused by contractors. This could cause loss of vitality and decline in health with a reduction in quality of tree and potential instability or death of trees.
- 4.5.5. To prevent below ground damage to arboricultural features a CEZ should be established within an AMS for the duration of demolition and construction which is demarcated by a tree protection fence. Where access only is required then temporary ground protection measures could be installed to prevent soil compaction and root damage.
- 4.5.6. The indicative RPAs are based on a symmetrical circle and are shown in the TRPP. For groups of trees the RPA is based on a distance from the plotted group extent which represents tree stem locations. These RPAs are indicative, and the shape can be adjusted by an arboriculturist to ensure that sufficient area, and therefore soil volume, is protected.
- 4.5.7. Tree protection fencing is required to protect retained parts of arboricultural features during the relocation of the soil store. The recommended positions for protection fencing are illustrated on the TRPP of Appendix C.

4.6 COMPENSTATION PLANTING

- 4.6.1. Tree loss should be mitigated through the implementation of a landscape design including new tree planting.
- 4.6.2. The South Gloucestershire Local Plan – Core Strategy 2006 to 2027, doesn't state a specific tree replacement policy; however, there is repeated mention for the improvement of biodiversity, climate change mitigation and green spaces in relation to wellbeing.

- 4.6.3. A Landscaping Scheme should be prepared to mitigate and 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 ARBORICULTURAL METHOD STATEMENT

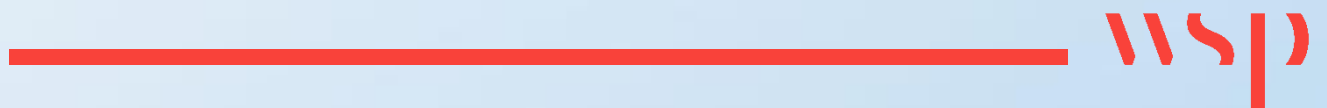
- 4.7.1. An outline AMS is included in Appendix D. The AMS adopts a precautionary approach to tree protection and addresses activities which have the potential to cause damage to retained trees.
- 4.7.2. The AMS addresses, in principle, the following matters which are of relevance to the Proposed Development:
- arboricultural site supervision;
 - tree works;
 - tree protection fencing; and,
 - additional precautions outside the CEZ.
- 4.7.3. It is recommended that this AMS be viewed as a 'living document'. It should therefore be reviewed, and if necessary, updated at the following stages of design:
- Detailed design and discharge of conditions or reserved matters;
 - Contractor engagement;
 - Pre-commencement; and,
 - Prior to any instance where the site clearance or construction methodology is amended.
- 4.7.4. 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 CONCLUSIONS

- 5.1.1. An arboricultural field-based survey of the Study Area was undertaken on 14 March 2024. The arboricultural survey was undertaken in accordance with BS 5837 and arboricultural features were plotted using aerial imagery.
- 5.1.2. The desk study found no record of TPOs, conservation areas, ancient/veteran trees, traditional orchards nor ancient woodland within the arboricultural Study Area.
- 5.1.3. A total of 20 arboricultural features, consisting of 13 individual trees, three tree groups and four hedges. Eight arboricultural features are assessed to be moderate quality, 10 features are low quality and two features are very low quality.
- 5.1.4. The Proposed Development would result in the removal of six moderate quality trees, one low quality tree groups, one very low quality tree and four low quality features require parts to be removed. Tree pruning work is not anticipated. The extent of potential tree loss is indicated on the Tree Removal and Protection Plan of Appendix C.
- 5.1.5. All other arboricultural features can be retained and protected through demolition and construction. Principles for tree protection are set out in an outline AMS at Appendix D which includes the need for arboricultural supervision and tree protection fencing.

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-based survey of all arboricultural features within the study area.

DESK STUDY

The desk study for the Proposed Development was undertaken on 7 March 2024 and was completed on 26 March 2024.

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

TPOs

South Gloucestershire Council is responsible for implementing any legal controls imposed through TPOs within the study area. Information on the location of TPOs is not accessible on their website¹ so their office was contacted on 26 March 2024 by email at trees@southglos.gov.uk and the reply was received on that date.

Conservation Areas

South Gloucestershire Council is responsible for implementing any legal controls imposed through conservation areas within the study area. The location of conservation areas is information publicly accessible on South Gloucestershire Council's website² which was accessed on 7 March 2024.

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 database³ which was access on 7 March 2024.

¹ South Gloucestershire Council, Tree Preservation Orders, <<https://beta.southglos.gov.uk/tree-preservation-orders/#find-out-if-a-tree-is-protected>> [Accessed 26 March 2024].

² South Gloucestershire Council, Conservation Areas <<https://map.n-somerset.gov.uk/southglos.html>> [Accessed 7 March 2024].

³ Magic (DEFRA), Multi Agency Geographic Information for the Countryside [online] Available at: <<https://magic.defra.gov.uk/MagicMap.aspx>> [Accessed 7 March 2024].

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 Inventory⁴ which was accessed on 7 March 2024.

BASELINE SURVEY

A field-based survey was undertaken on 14 March 2024. The survey was conducted using aerial imagery and topographic survey data as base mapping.

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

- Arboricultural features have been recorded as tree groups or linear areas where this has been deemed appropriate. Tree groups have been recorded on the basis that they form distinct arboricultural features either aerodynamically, visually or because they contain trees of similar cultural and biodiversity value. Wooded areas are recorded where larger expanses of trees exist and included features which may otherwise be referred to as copses, spinneys or shelterbelts. Linear groups are specifically tree groups which are formed of a single line of trees;
- Hedges have been recorded where they form substantial internal or boundary features or where they contribute meaningfully to the landscape character of the local area;
- 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 4.6.1.⁵
- By default, Root Protection Areas (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

⁴ Ancient Tree Inventory, 2024. *Ancient Tree Inventory* [online] Available at: < <https://ati.woodlandtrust.org.uk> > [Accessed 7 March 2024].

⁵ British Standards Institute. *BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations*. London: BSI, page 10-11 available at: <https://beta.bathnes.gov.uk/sites/default/files/2020-01/BS5837%202012%20Trees.pdf> [last accessed September 2022].

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 Arboricultural Survey Schedule included in Appendix C 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-based survey.

Only defects visible from the ground have been noted and each individual 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.

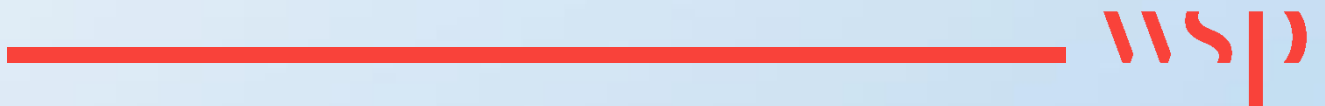
Whilst arboricultural surveys are not seasonally limited it is the case that certain pests and diseases may be more or less evident at different times of the year. This is especially true of certain wood decaying fungi such as the Giant Polypore (*Meripilus giganteus*) where fruiting bodies are short-lived, and the early stages of root decay may not result in other identifiable symptoms. Field-based 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.

In the absence of tree positions on the topographical survey, the position of arboricultural features has been estimated using aerial photography. The position and extent of these features should be regarded as approximate only.

Appendix B

ARBORICULTURAL SURVEY SCHEDULE



SURVEY SCHEDULE EXPLANATORY NOTES

REFERENCE ABBREVIATIONS

- T – Tree
- G – Group
- H – Hedge

MEASUREMENTS

Height is estimated to provide a relative indication of tree size.

Stem Diameter are in accordance with BS 5837 paragraph 4.6.1, Annex C. Abbreviations used:

- av. – mean average
- e – estimated

Crown spread for individual 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, P – Poor, U – Unstable

ERC - Estimated remaining contribution: <10 years, 10+ years, 20+ years or 40+ years.

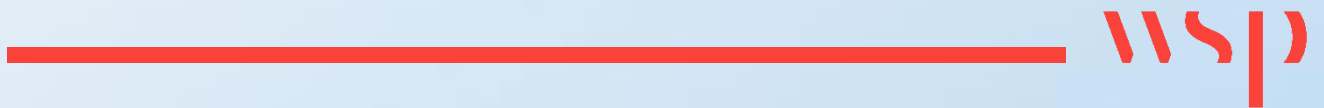
BS 5837 Category: A, B, C or U with sub-category recorded as 1, 2 or 3.

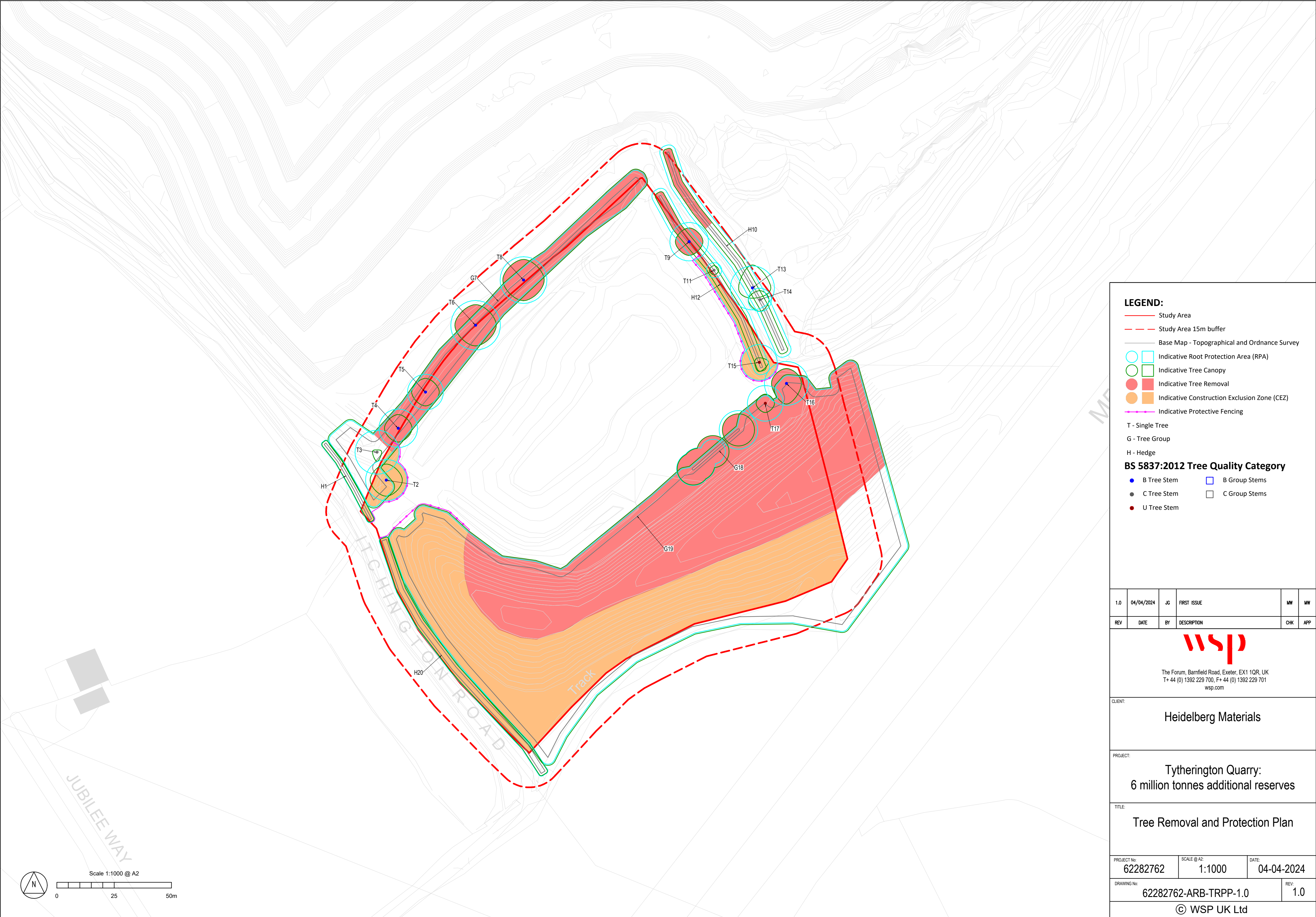
RPA Radius is the radius of a circular Root Protection Area associated with the tree as measured from the centre of the stem. For arboricultural features, where more than one stem diameter is recorded the RPA radius is calculated using the largest dimension. Unless otherwise noted the RPA for groups is based on the equivalent RPA for the largest tree in that group.

Ref.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m) N - E - S - W	LBH (m) Dir.	LCH (m)	Age Class	Physiological Condition	Structural Condition	Comments and Recommendations	RPA Radius (m)	ERC (yrs.)	BS 5837 Category
H1	Common hazel, Common hawthorn, Common ash, Pedunculate oak	2 to 3	up to 100	1 - 1 - 1 - 1	-	0	SM	Good	Fair		1.2	20+	C2
T2	Pedunculate oak	13	750e	7 - 7 - 7 - 7	5 S	4	M	Fair	Fair	Tree not accessible at time of survey.	9.0	40+	B2
T3	Pedunculate oak	8	800e	1 - 2 - 4 - 2	4 S	4	M	Poor	Poor	Somewhat delapidated tree with thick ivy and hollow stem. Small live crown south. Tree not accessible at time of survey.	9.6	20+	C2
T4	Pedunculate oak	12	700e	6 - 6 - 6 - 6	4 NE	3	M	Fair	Fair	Main stem and primary branches heavily obscured by ivy.	8.4	40+	B2
T5	Pedunculate oak	11	650e	6 - 6 - 6 - 6	4 SW	3	M	Fair	Fair	Main stem and primary branches heavily obscured by ivy.	7.8	40+	B2
T6	Pedunculate oak	12	900e	9 - 9 - 9 - 9	4 NE	3	M	Fair	Fair	Ivy on main stem and primary branches.	10.8	40+	B2
G7	Common hazel, Common hawthorn, Common ash	5 to 13	100 to 400 250av.	3.5 - 3.5 - 3.5 - 3.5	-	0	SM	Fair	Fair		3.0	20+	C2
T8	Pedunculate oak	11	850e	9 - 9 - 9 - 9	4 N	3	M	Fair	Fair		10.2	40+	B2
T9	Common ash	15	700e	6 - 6 - 6 - 6	2 S	2.5	M	Fair	Fair	Stem and primary branches heavily obscured by ivy. Minor deadwood throughout crown.	8.4	20+	B2
H10	Common hazel, Common hawthorn, Common holly	3 to 5	50 to 250	1.5 - 1.5 - 1.5 - 1.5	-	0	SM	Fair	Fair		3.0	20+	C2
T11	Common holly	8	275e	2 - 2 - 2 - 2	0 NE	0	EM	Fair	Fair		3.3	20+	C2
H12	Common hazel, Common hawthorn, Common holly	4 to 6	100 to 250	1.5 - 1.5 - 1.5 - 1.5	-	0	SM	Fair	Good		3.0	20+	C2
T13	Pedunculate oak	12	800e	10 - 8 - 4.5 - 6	5 W	5	M	Fair	Fair	Ivy covered stem and primary branches. Minor deadwood.	9.6	40+	B2
T14	Common ash	10	8x 150av.	4 - 4 - 5 - 5	0 SW	0	M	Fair	Poor		5.1	20+	C2
T15	Common ash	15	650e	2 - 4 - 4 - 2	5 NW	6	M	Poor	Poor	Major deadwood, cavities and ivy on stem. Small crown with very little foliage.	7.8	<10	U
T16	Pedunculate oak	14	800e	6.5 - 6.5 - 9 - 6.5	2 N	1.5	M	Fair	Fair		9.6	40+	B2
T17	Pedunculate oak	13	650e	4 - 4 - 4 - 4	2.5 NW	5	M	Dead	Fair		7.8	<10	U
G18	Common ash	14 to 15	450 to 700	7 - 7 - 7 - 7	-	1	M	Fair	Fair	Main stem and primary branches heavily obscured by ivy. Eastern-most tree is 2-stemmed (combined stem diameter approximately 700mm)	5.4 to 8.4	20+	C2
G19	Sycamore, Silver birch, Common hazel, Common hawthorn, Common ash, Pedunculate oak	8 to 10	75 to 250	3.5 - 3.5 - 3.5 - 3.5	-	1	SM	Good	Fair	Planted within the last few years. Most tress have burst their stem sheaths.	3.0	20+	C2
H20	Field maple, Common dogwood, Common hazel, Common hawthorn, Pedunculate oak	2 to 2.5	up to 100	1 - 1 - 1 - 1	-	0	SM	Good	Fair		1.2	20+	C2

Appendix C

TREE REMOVAL AND PROTECTION PLAN





LEGEND:

- Study Area
- Study Area 15m buffer
- Base Map - Topographical and Ordnance Survey
- Indicative Root Protection Area (RPA)
- Indicative Tree Canopy
- Indicative Tree Removal
- Indicative Construction Exclusion Zone (CEZ)
- Indicative Protective Fencing
- T - Single Tree
- G - Tree Group
- H - Hedge

BS 5837:2012 Tree Quality Category

- B Tree Stem
- C Tree Stem
- U Tree Stem
- B Group Stems
- C Group Stems

1.0	04/04/2024	JG	FIRST ISSUE	MW	MW
REV	DATE	BY	DESCRIPTION	CHK	APP



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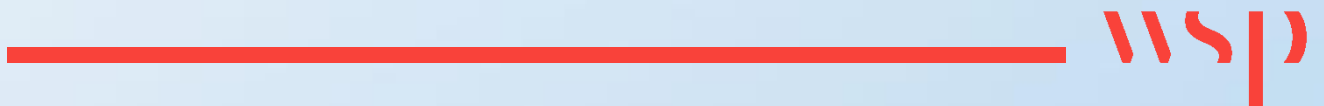
TITLE:

Tree Removal and Protection Plan

PROJECT No:	62282762	SCALE @ A2:	1:1000	DATE:	04-04-2024
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Appendix D

OUTLINE ARBORICULTURAL METHOD STATEMENT



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 Tree Removal and Protection Plan 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 below:

Table D-1 - Current schedule of identified tree work

Tree Reference	Tree Work
T4, T5, T6, T8, T9, T16, T17 and G18	Complete removal of features.
G7	Removal of approximately 75% of group by canopy (~1700m ²)
H10	Removal of approximately 35% of hedge by canopy (~150m ²)
H12	Removal of approximately 35% of hedge by canopy (~120m ²)
G19	Removal of approximately 50% of group by canopy (~8100m ²)

- 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.

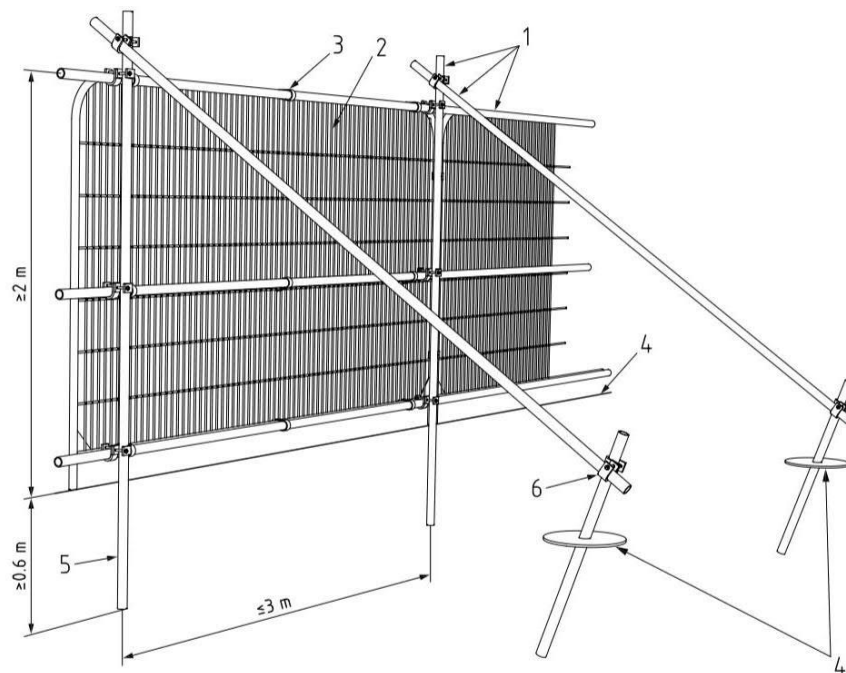
Should the requirement for a tree felling or pruning arise which is additional to that identified above then the following process shall be applied:

- 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 AMS-1.

Figure AMS-1 - Example of appropriate tree protection fencing



Key:

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanised 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 0.6m)
6. Standard scaffold clamps

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 Tree Removal and Protection Plan at 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.

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.



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