

Tree Report: Arboricultural Impact Assessment (AIA)

Rawcliffe Lodge
Shipton Road
York
YO30 5RX

Vincent and Browns c/o Mark Smith
November 2022



*Arboriculture
Ecology
Landscape Architecture
GIS & Mapping*

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<i>Disclaimer</i>	<p><i>The recommendations contained in this Report represent Ground Control's professional opinions, in exercising the duty of care required of an experienced Arboricultural Consultant. The information contained has been prepared and given in accordance with the author's professional institution's Code of Professional Conduct and the opinions expressed within are true professional opinions.</i></p> <p><i>The report has been prepared by Ground Control for the sole and exclusive use of the Client and for the specific purpose for which Ground Control were commissioned.</i></p> <p><i>Ground Control accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user.</i></p> <p><i>The tree survey and this report has been undertaken in accordance with BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations, which are intended to assist decision making with regard to the existing and proposed trees in the context of design, demolition and construction. This report will also assess the potential impact that the scheme may have on the surveyed trees.</i></p> <p><i>This survey is not, nor should be taken to be, a full or thorough assessment of the health and safety of trees on or adjacent to the site, and therefore it is recommended that detailed tree inspections are undertaken on a regular basis with the express purpose of complying with the land owner's duty of care and satisfying health and safety requirements.</i></p>		

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1.0 Instruction & Introduction

- 1.1 Ground Control Ltd were instructed by Lee Vincent of Vincent and Brown, on behalf of Mark Smith on 28th September 2022 to undertake an Arboricultural BS:5837 Survey and Arboricultural Impact Assessment (AIA) regarding the proposed demolition of an existing garage and the development of a new garage located at Rawcliffe Lodge, Shipton Road, Rawcliffe, York, YO30 5RX; hereafter referred to as 'the site'.
- 1.2 The BS:5837 survey and AIA have been assessed in accordance with the BS 5837: 2012 Trees in Relation to Design, Demolition and Construction.
- 1.3 The purpose of this report is to assess the likely direct or indirect impact of development proposals and produce an (AIA) detailing the impact of the development and how trees shall be protected from the proposed construction activity and include:
- Arboricultural Impact Assessment (AIA)*
Tree Constraints & Protection Plan (TCPP)
- 1.4 The tree survey has been undertaken in accordance with the BS 5837 2012 Trees in Relation to Design, Demolition and Construction and was undertaken on 7th October 2022 by Robert Wortley. Between completion of survey and reporting we have waited for design solution of the final scheme.
- 1.5 Robert Wortley has completed the Tree Survey and Reporting. Rob has over 12 years' experience within the Arboricultural industry and has the following qualifications:
- Level 3 Forest Management*
Level 4 Lantra Professional Tree Inspector
Level 5 Arboriculture and Urban Forestry
Level 6 Applied Horticulture
- 1.6 The tree survey and impact assessment reporting for the site is concerned with the tree survey extents as outlined by the red line boundary on Figure 1 below.



Figure 1: Tree Survey & Reporting Extents

- 1.7 **Site Description:** Rawcliffe Lodge contains a mixture of established mature to fully mature native tree species, located in the northern, western and southern areas of the property. The

property is surrounded by semi-mature boundary hedges including a maintained hedge to the east which is adjacent to Shipton Road (A19).

- 1.8 The site consists of a 5-bedroom detached house and garage. The proposals include the demolition of existing garage to be replaced with a new extended garage.

2.0 Tree Survey

- 2.0.1 The tree survey has been undertaken in accordance with the BS 5837: 2012 Trees in Relation to Design, Demolition and Construction and was undertaken on 7th October 2022 by Robert Wortley. Between completion of survey and reporting we have waited for design solution of the final scheme.

2.1 Inspection Methodology

- 2.1.1 A visual assessment was undertaken, from ground level only in accordance with the BS 5837:2012 Trees in Relation to Design, Demolition and Construction.
- 2.1.2 This report should not be seen as a substitute for a full Safety Survey or Management Plan which are specifically designed to minimise risk and liability associated with responsibility for trees.
- 2.1.3 A climbing Inspection has not been undertaken as part of this instruction.
- 2.1.4 Tree survey data and stems were plotted as per BS 5837:2012 guidance, enclosed within in Appendix A of this report.
- 2.1.5 A copy of the Tree Survey Schedule Key can be found in Appendix B of this report.

Survey Standards	In accordance with BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations	
	Part 4.4 – Tree Survey	
	Part 4.5 – Tree Categorization Method	
	Part 4.6 – Root Protection Area	
	Refer to Appendix A for Tree Survey Key & Cascade Chart for tree quality Assessment	
Survey Area	As outlined within Figure 1 in section 1.5	
Survey Methodology	Visual Assessment from Ground level	
Specialist Surveying Equipment <i>(other than tape/ camera/ plans)</i>		Yes/No
	Tablet Computer	Yes
	Leica Disto Laser measuring device	Yes
	Nikon Forestry Pro - Inclinometer	Yes
	Diameter at Breast Height Tape	Yes
	Endoscope (Bat Survey)	No
Have Ground Control been commissioned to Plot the tree locations	No	

2.2 Survey Limitations

- 2.2.1 Trees have been plotted as per the client provided Site Plan 22115-005-p00.pdf. Note this is dated from 2022 therefore any additional trees have been plotted on site using existing points of reference.
- 2.2.2 Where trees could not be accessed estimated dimensions are marked with # on the tree survey schedule.

2.3 Surveyed Trees

- 2.3.1 In total 20 individual trees and 5 tree groups were surveyed comprising of deciduous and non-deciduous varieties.
- 2.3.2 The site contains mature to fully mature trees (*a tree in its last third of life expectancy*) and contains one notable / Veteran tree (a tree may be regarded as a veteran due to great age; great age relative to others of the same species, existing in an ancient stage of life or due to its biological, aesthetic or cultural interest) All trees within the site have been categorised as B2 in terms of their Arboricultural, amenity and cultural values.
- 2.3.3 The trees, tree groups, hedges and/or landscape features have been surveyed in accordance with BS 5837:2012 and categorised in accordance with the 'Tree Survey Key & Cascade Chart for tree quality Assessment'(See Appendix C). Table 1 below provides an overview summary of the quality assessment breakdown across the site.

Quantities			Category	Quality & Value	
Trees	Groups (or Woodlands)	Hedges (or Landscape Features)			
0	0	0	A	High	Trees to be considered for retention
15	0	0	B	Moderate	
3	0	0	C	Low	
2	5	0	U	Those in such a condition that any existing value would be lost within 10years and which should, in the current context be removed for reasons of sound Arboricultural management.	Trees <u>unsuitable</u> for retention
20	5	0	Totals		

Table 1: Surveyed Trees Quality Assessment Summary

- 2.3.4 A full copy of the tree survey schedule outlining the recorded data, condition and category of all trees is enclosed in Appendix D.
- 2.3.5 A Tree Survey Plan has been prepared plotting the tree canopies in accordance with the branch spread details within the tree survey schedule. A copy of the Tree Survey Plan can be found in Appendix E.

2.4 Statutory Tree Protection/ Designations

- 2.4.1 The site was checked for the presence of any Tree preservation Orders, Conservation Areas, Ancient Trees & Woodlands.
- 2.4.2 The Tree surveyed fall within the Tree Protection Order 173/1991-A1. Please see below link to online mapping available from City of York Council. An extract of this is shown in Figure 2 below.

<https://www.york.gov.uk/TreesInConservationAreas>

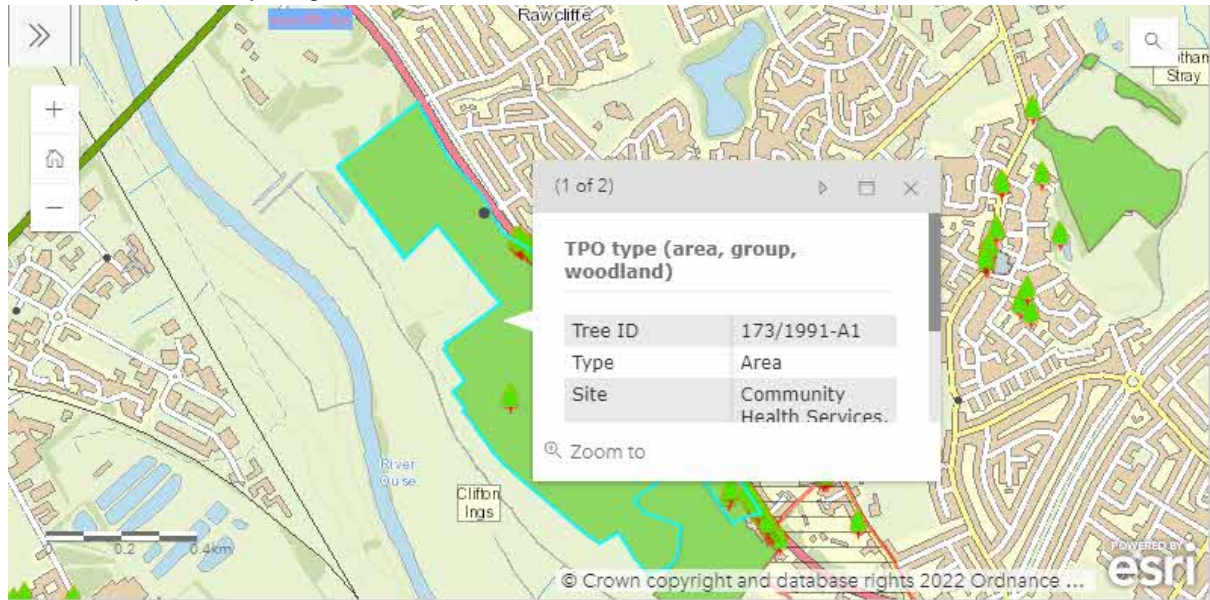


Figure 2: Extract of TPO and Conservation Area Search from City of York Council interactive mapping facility.

3.0 Development Proposals & Root Protection Areas

3.1 Development Proposals

- 3.1.1 The development proposals will see the demolition of existing garage situated to the south of Rawcliffe Lodge and construction of a new garage with enlarged floor space in the same location.
- 3.1.2 No detailed proposal has been given with regards to access/storage for machinery/plant and site facilities to facilitate the construction of the development. However, all the above must remain outside of the root protection zones to prevent soil compaction and damages to root systems. Storage area and facilities will be arranged with the main contractor appointed for the project.

3.2 Design Advice & Guidance

- 3.2.1 Ground Control has not offered any advice or guidance to Client and/or design team during the layout design. The following assessment is based on the provided details only.

3.3 Root Protection Areas

- 3.3.1 The root protection areas (RPA's) have been calculated in accordance Table D1 in BS 5837:2012 guidelines, a copy of which can be found in Appendix F.

- 3.3.2 The RPA's of the surveyed trees are contained within the tree survey schedule and diagrammatically on the Tree Constraints & Protection Plan for the site which can be found in Appendix G.
- 3.3.3 Due to the nature and constraints of the existing site, the RPA might have been offset/ adapted to suit envisaged root growth area.

4.0 Arboricultural Impact Assessment

- 4.0.1 The impact of the proposed development on the existing trees and tree groups is outlined under the following headings;

Trees Unsuitable for Retention
Limited/ No Impact
Some impact.
Direct Loss

4.1 Trees Unsuitable for Retention:

- 4.1.1 Two surveyed trees T6 and T7 have been categorised as Cat 'U' as part of this survey.

4.2 Limited/ No Impact

- 4.2.1 The proposed development will have no/ limited direct impact on T3, T5, T8, T9, T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, G1, G2, G3, G4, G5.
- 4.2.2 Tree protection fencing in accordance with BS 5837:2012 should be erected and a Construction Exclusion Zone (CEZ) put in place. This is indicated on the Tree Constraints and Protection Plan (Appendix G) and is to be retained in place throughout the entire duration of the construction period. Refer to Appendix H for tree protection fencing details.

4.3 Some Impact

The development will have a limited impact on the following surveyed trees as protection measures will be in place as long as all the below recommendations are adhered to.

Subject Trees: T4

Proposed Works	Demolition of existing garage and construction of a new garage with enlarged floor space.
Potential Impacts	<i>Moderate likelihood of causing severe damage through;</i> <i>Root Severance</i> <i>Root Disturbance</i> <i>Damage to the canopy</i> <i>Change of water flow and drainage patterns to root system</i> <i>Reduction in gaseous exchange to the roots.</i> <i>Reduced photosynthesis</i>
	<i>Unlikely premature loss of tree</i>
	<i>Root severance whilst digging foundations</i>

Significance of Impacts	<i>It is my opinion that the proposed works will not be negatively detrimental for the long-term health of the retained trees as long as all the below recommendations are adhered to.</i>
Recommended Protection Measures	<i>Tree protection fencing in accordance with BS 5837:2012 and the opportunity to create a 'Construction Exclusion Zone' (CEZ) should be erected prior to any works commencing as shown on the (TCPP) Appendix G and is to be retained in place throughout the entire duration of the construction period. Refer to Appendix H for detail.</i>
	<i>An Arboricultural Method Statement is created and adhere to, in relation to the proposed construction of the new garage. As it is within the Root Protection Zone of T4.</i>

4.4 Direct Loss

Subject Trees: T1 and T2

- 4.4.1 The development proposals and proposed site layout will result in the loss of 2 individual trees which are category B classification.
- 4.4.2 Through design reviews in relation to all the trees on site it is thought that any practicable re-design would not facilitate their retention.
- 4.4.3 Impact will be the limited loss of amenity value of T1 and T2. These trees have average amenity value and are limited in their views from outside of the property. To facilitate the construction and future function of the site it is felt their loss is unavoidable.
- 4.4.4 Impact will be the limited loss of wildlife value of T1 and T2.

4.5 Construction process of the proposed development

- 4.5.1 On the basis of the above assessment, we recommend the following construction sequencing and measures are adopted.
 - 4.5.1.1 *Pre-construction phase*
 - 4.5.1.2 *Undertake Tree removals to T1, T2, T6 and T7.*
 - 4.5.1.3 *Erection of temporary tree protection fencing in accordance with BS 5837:2012 and establishment of as Construction Exclusion Zone (CEZ) as indicated on TCPP to protect RPA's of the retained trees. This is to take place before main construction phase*
 - 4.5.1.4 *Main construction phase*
 - 4.5.1.5 *Landscaping*
 - 4.5.1.6 *Project snagging*
 - 4.5.1.7 *Dismantle and removal of tree protection fencing.*
 - 4.5.1.8 *Ongoing site monitoring of retained trees*

4.6 Proximity of trees to structures

- 4.6.1 The impact of trees on buildings and vice versa and allowance for future growth has all been considered in the positioning of the development. Tree size, future growth, light/shading, leaf and fruit nuisance have received due attention and are not considered to be an issue. This is due to the species present and the distance of the retained trees from the proposed building.
- 4.6.2 No below ground activity is to take place within the RPA of any retained tree without consent from the Local Planning Authority on which an Arboricultural Method Statement may be required. It is likely that only a small number of minor roots of less than 25mm in diameter will be encountered during the main foundations and construction. Any severance of a small number of minor roots found at this distance from any tree stem would have an insignificant effect on the future growth and health of the retained trees.
- 4.6.3 The position of the main development is relatively constrained within the site with any repositioning limited. However, it will see the retention of those trees outside of the site boundary and therefore conforms to the recommendations of BS 5837: 2012.
- 4.6.4 The site of the proposed development adjacent to the retained trees does not, in my opinion, significantly increase the existing safety risk due to the current size and fair condition of the trees. It would be prudent to re-inspect the trees on an annual basis. Firstly, in the form of a post development inspection to monitor the health of the trees and check for signs of decline and offer any recommendations for tree works and then as a general visual tree assessment to cover duty of care.
- 4.6.5 The design does not place any future pressure on the retained trees for excessive maintenance.
- 4.6.6 Conditions for the retained trees will not be affected due to their positioning off site.
- 4.6.7 There are minor opportunities to replant within the car park and other proposed landscaped areas. Planting should be done in accordance with the landscape plan to be approved by the local planning authority.

4.7 Recommended Tree Works

- 4.7.1 No facilitation pruning/recommended pruning has been identified as part of this report.
- 4.7.2 Trees are subject to Tree Preservation orders and the site is not within a conservation area.
- 4.7.3 No tree works are to commence without written approval from the Local Planning Authority. This site being the City of York Council.
- 4.7.4 Any tree works are to be carried out outside of the bird nesting season (March to September inclusive) unless works are overseen with the presence of a suitably trained Ecologist if within this period. Refer to Appendix J for detail.
- 4.7.5 It is advised that written permission to carry out tree works to 3rd party owned trees is sought, except those branches that apply to common law and overhanging branches without access to them.
- 4.7.6 Tree works must be completed by fully trained, qualified operatives, preferably Arboricultural Association Approved Contractors.

5.0 Summary

5.1 Effects of development on amenity value on or near the site

- 5.1.1 The current layout proposals will see the retention of only 16 individual trees and five tree groups.
- 5.1.2 The proposed development will only have a minimal impact on the long-term health of the retained trees and amenity value of the site providing mitigation measures outlined in this report are adhered to.
- 5.1.3 The proposed landscaping scheme for the site should incorporate the planting of new trees to the soft landscaping area to offset and contribute to the long-term amenity value of the site.
- 5.1.4 The new development will have a limited effect on the amenity value represented by the retained trees. The development of the site is unlikely to enhance the value of the retained trees as they won't become more visible to the public.
- 5.1.5 thought that the impact of the works on the retained site trees is negligible and along with planting opportunities, they will continue to provide screening, wildlife, Arboricultural and amenity value to the site and surrounding area.

5.2 Issues to be addressed by the Arboricultural Method Statement (AMS)

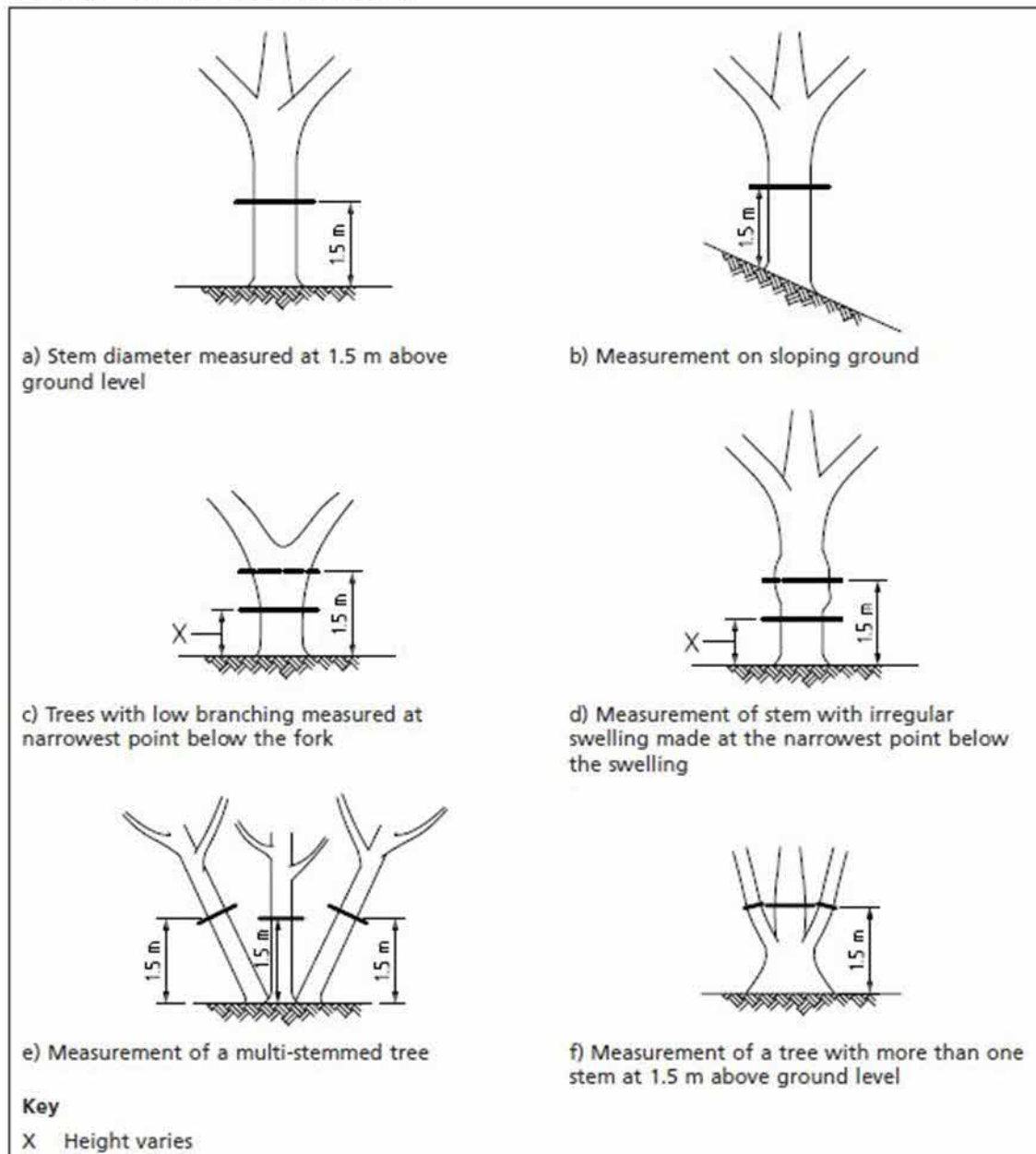
- 5.2.1 The following items are to be taken forward and addressed within the Arboricultural Method Statement for the site.
 - *Removal of T1&T2, due to development purposes*
 - *Removal of T6 and T7 due to Arboricultural issues*
 - *Tree protection fencing in accordance with BS 5737:2012, erected prior to any works commencing.*
 - *Installation of services outside of retained RPA's.*
 - *Demolition of existing garage and the construction of a new garage with enlarged foot space.*
 - *Site facilities and storage locations are to be placed to the eastern side of the site away from retained RPA's.*

Annex C
(normative) **Measurement of tree stems**

Diameters of single stem trees on level ground should be measured in accordance with Figure C.1a). Diameters of other commonly encountered tree stems should be measured in accordance with Figures C.1b) to C.1f).

NOTE The thick black line indicates where the measurement is taken.

Figure C.1 Measurement of tree stems



Appendix B: Tree Survey Key

Tree Survey Key

Tree Reference Number:	As recorded on tree survey plan.
Species:	Species listed by common name, key provided to scientific names.
Height:	overall height of the tree from ground level (in meters).
Stem Diameter:	In millimeters at 1.5m above adjacent ground level or immediately above the root flare for multi-stemmed trees.
Branch Spread:	In meters taken at four cardinal points (North, East, South, and West) to derive an accurate representation of the crown as recorded in the Tree Survey Plan.
Existing height (in meters) above ground level of:	1) first significant branch and direction of growth 2) canopy (crown clearance) to inform on ground clearance, crown/stem ratio and shading.
Life Stage:	Young(Y), Middle Aged (MA), Mature(M), Over Mature(OM), Veteran(V)
General observations:	particularly of structural and/or physiological condition (e.g. the presence of any decay and physical defect), and/or preliminary management recommendations;
Estimated remaining contribution:	in years (<10, 10+, 20+, 40+)
Category Grading:	Categories U or A to C grading, to be recorded on the tree survey plan in accordance with Cascade Chart for tree quality assessment on following page.
RPA:	Root Protection Area calculated from BS5837:2012 "Trees in Relation to Design, Demolition and Construction – Recommendations" in sqm. Where indicated, dimensions of radius of RPA circle based around center point of trunk calculated for design purposes.

Appendix C: Cascade Chart for Tree Quality Assessment

BS 5837:2012 Table 1 – Cascade chart for tree quality assessment

Category and Definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention		
<p>Category U Trees 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.</p>	<ul style="list-style-type: none"> 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 <p>NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve.</p>	DARK RED
	<p>1. Mainly arboricultural values</p>	<p>2. Mainly landscape values</p>
		<p>3. Mainly cultural values, including conservation</p>
Trees to be considered for retention		
<p>Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups, or of 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)
		LIGHT GREEN
<p>Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	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
		MID BLUE
<p>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 150mm</p>	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 landscape value; and/or trees offering low or only temporary/transient landscape benefits
		Trees with no material conservation or other cultural value
		GREY

Appendix D: Tree Survey Schedule

Tree ID	Common Name	Scientific Name	Life Stage	Tree Height [m]	Stem Diameter [mm]	(N) Branch Spread [m]	(E) Branch Spread [m]	(S) Branch Spread [m]	(W) Branch Spread [m]	Height of Canopy Above Ground Level [m]	Height of First Significant Branch [m]	Direction of First Significant Branch	Physiological Condition	Structural Condition	Comments	Recommendations	Estimated Remaining Contribution	Quality Category	Quality Sub-Category	RPA Radius [m]	Date Added	User
1	Scots pine	Pinus sylvestris	Over-mature	17	690	3.5	7	6	6		7	S	Good	Good	Tree has been previously pruned. Tree has outgrown its surroundings and is within falling distances of property	No recommendations on Arboricultural grounds	Medium (20 to 40 years)	B	1	8.28	07/10/2022	RobW
2	Scots pine	Pinus sylvestris	Over-mature	16	540	4	7	5	3	10	10	S	Good	Good	Tree has minor lean at base towards property. Tree is within falling distances of property and has outgrown its surroundings.	No works on Arboricultural grounds.	Medium (20 to 40 years)	B	1	6.48	07/10/2022	RobW
3	Pedunculate oak	Quercus robur	Over-mature	19	740	4.5	7	8	5	2	3	W	Good	Good	Tree has mineral dead branches within the canopy but outside the falling distances of target zones. Leave for wildlife benefits. Limb facing east approx. 6 meters in height has cavity with secondary wood.	No Arboricultural works required.	Long (>40 years)	B	1	8.88	07/10/2022	RobW
4	Small-leaved lime	Tilia cordata	Over-mature	22	760	6	5	6	5	7	4	W	Good	Good	Tree has signs of previously poorly pruned limbs. There is several dead branches within the canopy. Although outside falling distances of target zones. Leaves are changing colour due to seasonal changes. Tree is within falling distances of property.	No works on Arboricultural grounds.	Medium (20 to 40 years)	B	1	9.12	07/10/2022	RobW
5	Nonway spruce	Picea abies	Semi-mature	7	120	1.1	0.9	1.3	1	1.5	2	S	Good	Good	Tree is situated under the canopy of adjacent oak tree which will result in an annuated crown structure in the future. Tree has exposed roots which appear to have Strummer or mower damage	No works on Arboricultural grounds.	Short (10 to 20 years)	B	1	1.44	07/10/2022	RobW
6	Pedunculate oak	Quercus robur	Mature	17	570	4	7	8	1	6	8	E	Fair	Poor	Tree has beef steak fungus at the base. Hammer test revealed bark and sap wood necrosis. Tree does not sound hollow. Tree has epicormic growth on main stem with leaves appear to have powdery mildew. Leaves are changing colour due to seasonal changes. Tree is within falling distances of building. Structural integrity unknown.	It is recommended that the tree is to felled on Arboricultural grounds.	Very Short (<10 years)	U	1	6.84	07/10/2022	RobW
7	Pedunculate oak	Quercus robur	Mature	17	490	6	4	2.5	4	7	7	E	Good	Poor	Tree has decay at the base with bark necrosis approx. 2 meters in length in a vertical strip. Secondary wood has formed although structural integrity unknown. Leaves are changing colour due to seasonal changes. Tree is within falling distances of building. Tree also has pruning wounds from previous Arboricultural work. Hammer test was conducted, slight hollowing sound although further inspections would be required to determine accurate results.	Tree is recommended to be removed on Arboricultural grounds.	Very Short (<10 years)	U	1	5.88	07/10/2022	RobW

8	Scots pine	Pinus sylvestris	Over-mature	19	480	2	2	2	7	9	9	W	Good	Good	Tree has annuated crown structure majority of canopy growth is west facing. This is due proximity of neighbouring trees and competing for space and light. Tree has a minor lean at base towards the property however, it is outside falling distances of it.	No works required on Arboricultural grounds.	Medium (20 to 40 years)	B	1	5.76	07/10/2022	RobW
9	Pedunculate oak	Quercus robur	Veteran	22	1130	10	9	6	10	3	6	N	Good	Good	Veteran oak tree. Canopy has areas of dead wood and has been previously poorly pruned in areas. Base of tree has a cavity although secondary wood has formed. Hen of the Woods (<i>Griboia frondosa</i>) fungal lobes visible at base (south facing) There is a large rip wound from a previously failed limb in the upper canopy. Veteran Mangement Plan Reccomeneded.	No works required on Arboricultural grounds.	Medium (20 to 40 years)	B	1	13.56	07/10/2022	RobW
10	Scots pine	Pinus sylvestris	Over-mature	19	410	2.2	3.5	3.2	2.5	15	15	N	Good	Good	Tree has minor lean towards property and is within falling distance.	No works on Arboricultural grounds.	Short (10 to 20 years)	B	1	4.92	07/10/2022	RobW
11	Scots pine	Pinus sylvestris	Over-mature	19	430	2	1	1.8	3	18	18	N	Good	Good	Tree has annuated crown structure with majority of crown growth North west facing due to competition for light and space with adjacent trees. Tree has minor lean towards property and is within falling distance.	No works on Arboricultural grounds.	Short (10 to 20 years)	B	1	5.16	07/10/2022	RobW
12	Scots pine	Pinus sylvestris	Over-mature	19	530	3.1	3.2	3.5	2.2	17	17	S	Good	Good	Tree has minor lean at the base towards property and is within falling distance. Soil level around the base appears to be slightly higher than the surrounding landscape. Possible root plate shift further inspection required. Tree has bacterial burr protruding at the base of the stem.	No works on Arboricultural grounds.	Short (10 to 20 years)	B	1	6.36	07/10/2022	RobW
13	Small-leaved lime	Tilia cordata	Mature	18	430	4.2	4.3	4.3	2.5	5	7	SE	Good	Good	Tree has closed and open pruning wounds on main stem and areas of poor pruning. Tree has minor lean although outside falling of property. Tree leaves are changing colour due to seasonal changes.	No works on Arboricultural grounds.	Medium (20 to 40 years)	B	1	5.16	07/10/2022	RobW
14	Scots pine	Pinus sylvestris	Over-mature	18	520	3.9	2.2	3.8	4.5	16	16	W	Good	Good	Tree has had ivy growing up the main stem although this has been severed and left to die off. No significant faults observed.	No works on Arboricultural grounds.	Short (10 to 20 years)	B	1	6.24	07/10/2022	RobW
15	Small-leaved lime	Tilia cordata	Mature	18	410	2.8	4.1	2	1.4	4	6	SE	Good	Good	Base of tree is on raised landscape although does not appear to a root plate shift. Leaves are changing colour due to seasonal changes.	No works on Arboricultural grounds required.	Medium (20 to 40 years)	B	1	4.92	07/10/2022	RobW

16	Common beech	Fagus sylvatica	Over-mature	19	800	8.6	4.2	4.1	7	4	6	W	Good	Good	Tree is situated on raised landscape. Although appears to not be a root plate shift. No significant faults observed. Tree appears to be healthy and in good condition.	No works required on Arboricultural grounds.	Medium (20 to 40 years)	B	1	9.6	07/10/2022	RobW
17	Pedunculate oak	Quercus robur	Mature	19	440	3.8	3.1	2.5	6.2	6.5	7	SE	Good	Good	Tree has annuated crown structure with majority of canopy growth facing south. This is due to proximity of neighbouring trees and competition for space and light. There is dead wood within the canopy.	Remove dead wood.	Medium (20 to 40 years)	C	1	5.28	07/10/2022	RobW
18	Small-leaved lime	Tilia cordata	Mature	18	420	2.5	2.1	2.8	2	5	7	S	Good	Good	Tree is situated on raised landscape although it appears to not be a root plate shift. No significant faults observed.	No works on Arboricultural grounds required.	Medium (20 to 40 years)	B	1	5.04	07/10/2022	RobW
19	Pedunculate oak	Quercus robur	Mature	16	450	7	5.5	8	2.2	5	7	E	Good	Good	Tree has annuated crown structure due to proximity of neighbouring tree competing for space and light. Tree is now growing towards public footpath and road.	Monitor the health and condition of the tree. Legal duty.	Medium (20 to 40 years)	C	1	5.4	07/10/2022	RobW
20	Lawson cypress	Chamaecyparis lawsoniana	Semi-mature	7	150	1.1	1.4	1	1.2	0.5	0.5	W	Good	Good	No significant faults observed	No works on Arboricultural grounds.	Long (>40 years)	C	1	1.8	07/10/2022	RobW

Appendix D: Group Survey Schedule





Group ID	Common Name	Scientific Name	Life Stage	Number of Trees	Tree Height (bands)	Lower Height Range [m]	Upper Height Range [m]	Height of Canopy Above Ground [m]	Number of Stems	Stem Diameter (bands)	Lower Stem Diameter [mm]	Upper Stem Diameter [mm]	Physiological Condition	Structural Condition	Comments	Recommendations	Estimated Remaining Contribution	Quality Category	Quality Sub-Category	Date Added	User
1	Wild privet	Ligustrum vulgare	Semi-mature	20+		2.5	2.5	0.5	100		20	20	Good	Good	Boundary hedge that's maintained. No significant faults observed.	No works on Arboricultural grounds required.	Medium (20 to 40 years)	C	1	07/10/2022	RobW
2	Leyland cypress	Cupressus x leylandii	Semi-mature			3	3	0.5	38		100	150	Good	Good	Boundary hedge that's maintained. No significant faults observed.	No works required on Arboricultural grounds.	Medium (20 to 40 years)	C	1	07/10/2022	RobW
3	Leyland cypress	Cupressus x leylandii	Semi-mature			7	8	1	39		100	150	Good	Good	Boundary hedge that's maintained. No significant faults observed.	No works required on Arboricultural grounds.	Medium (20 to 40 years)	C	1	07/10/2022	RobW
4	Leylandii	Cupressocyparis	Semi-mature			7	8	1	91		60	200	Good	Good	Boundary screen. Several trees have dead foliage (brown) possible aphid damage although no visible signs.	Apply pesticide to prevent spreading of aphids, then remove dead or declining trees.	Medium (20 to 40 years)	C	1	07/10/2022	RobW
5	Lawson cypress, Leylandii	Chamaecyparis lawsoniana, Cupressocyparis	Semi-mature	6	5-10m	5	7.5	1.5	6		100	160	Good	Good	Group of trees contain one dead tree. Apart from this no significant faults observed	Dead tree to be removed on Arboricultural grounds.	Medium (20 to 40 years)	C	1	10/10/2022	RobW

Appendix E: Tree Survey Plan

J221106-GC-A-DR-3-001-TSP



LEGEND:

-  **CATEGORY 'B' TREES:** Those of moderate quality and value; in such a condition as to make significant contribution (a minimum of 20 years is suggested)
-   **CATEGORY 'C' TREES & TREE GROUPS:** Those of low quality and value; currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150 mm
-  **CATEGORY 'U' TREES:** Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management

NOTES:

1. Tree survey carried out on behalf of Vincent and Brown Architects for the proposed development.
2. Tree survey was carried out on 7th of October 2022 by Mr Robert Wortley Ground Control's Arboricultural Consultant.
3. Tree survey based on Existing Site Plan 22115_Xsiteplan.
4. Tree survey has been carried out in accordance with BS:5837:2012 'Trees in relation to design, demolition and construction - Recommendations' part 4.4. Please refer to these sections for further details.
5. Tree canopies outlines as shown on the plan are in accordance with the branch spread details within the tree schedule.

Rev. Changes Date Dr:by Ap:by



Ground Control
Professional Services

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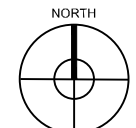
Project (Address)
**Rawcliffe Lodge
Shipton Road, Rawcliffe, York
YO30 5RX**

Drawing title
Tree Survey Plan

Date	Drawn by	Checked by	Scale
November 2022	IH	RW	1:250 @ A2
Drawing No.	Rev	Sheet count	
J221106-GC-A-DR-3-001	--	Planning	

Notes:
1. * ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN METERS UNLESS OTHERWISE STATED.
2. Do not scale off this drawing. All written dimensions are to be checked on site prior to commencing works.
3. All discrepancies, errors or omissions are to be reported for clarification before proceeding.

Tree Survey Plan SCALE: 1:250 @ A2



Appendix F: Root Protection Area Schedule

Root protection Area - Measurements taken from BS5837: 2012 Table D1

In respect of all trees surveyed the RPA has been calculated and is given in the Tree Survey Schedule. The figures given represents both the radial distance and in sqm from the trees trunk, at which the barriers should be erected and the entire area which should be encompassed by the barriers.

BS 5837:2012

BRITISH STANDARD

Annex D
(normative)

Root protection area

The RPAs given in Table D.1 should be used for single stem trees and the equivalent resultant combined stem diameter for multi-stemmed trees.

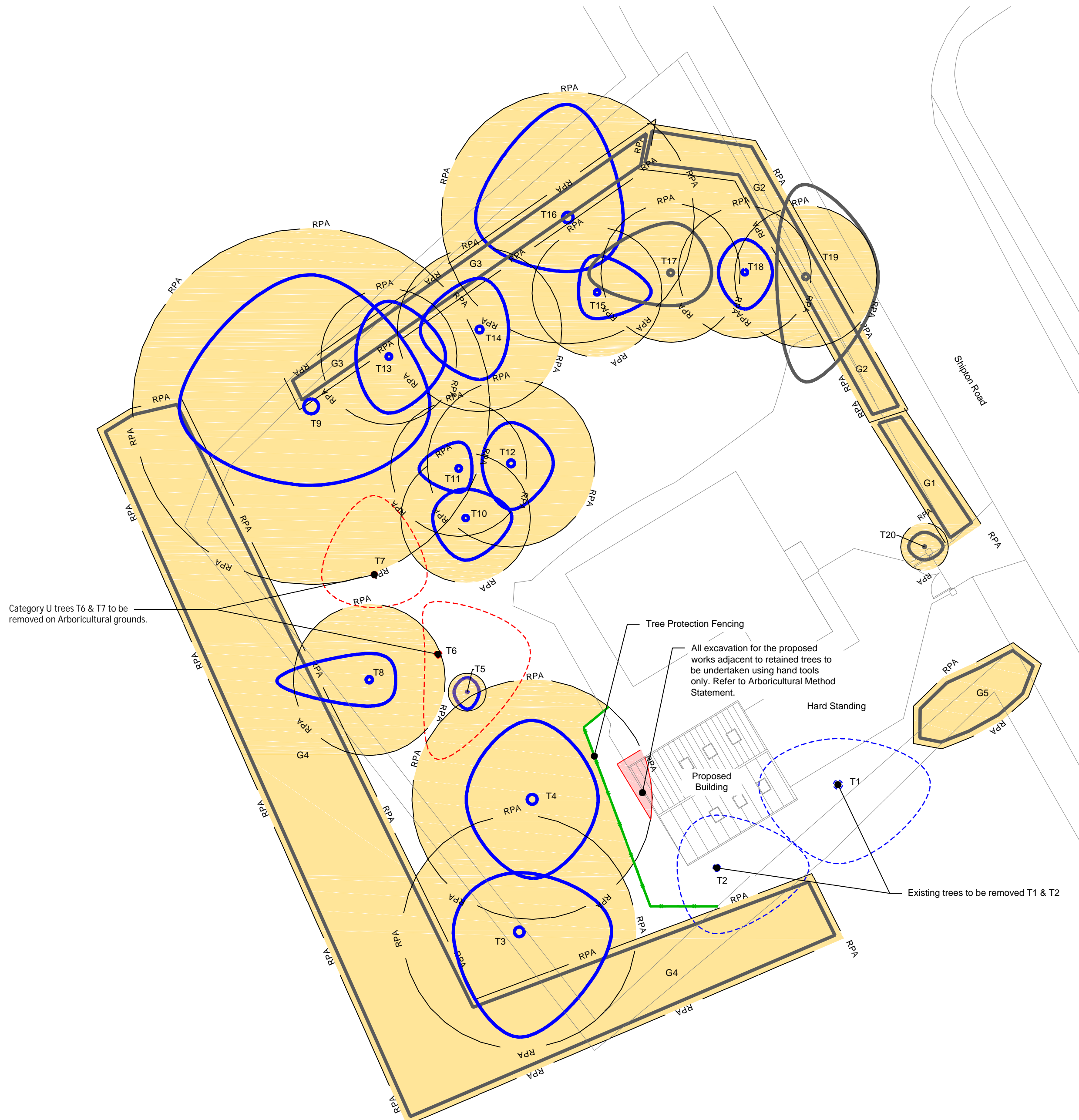
Table D.1 Root protection areas

Single stem diameter mm	Radius of nominal circle m	RPA m ²	Single stem diameter mm	Radius of nominal circle m	RPA m ²
75	0.90	3	675	8.10	206
100	1.20	5	700	8.40	222
125	1.50	7	725	8.70	238
150	1.80	10	750	9.00	255
175	2.10	14	775	9.30	272
200	2.40	18	800	9.60	290
225	2.70	23	825	9.90	308
250	3.00	28	850	10.20	327
275	3.30	34	875	10.50	346
300	3.60	41	900	10.80	366
325	3.90	48	925	11.10	387
350	4.20	55	950	11.40	408
375	4.50	64	975	11.70	430
400	4.80	72	1 000	12.00	452
425	5.10	81	1 025	12.30	475
450	5.40	92	1 050	12.60	499
475	5.70	102	1 075	12.90	519
500	6.00	113	1 100	13.20	547
525	6.30	124	1 125	13.50	573
550	6.60	137	1 150	13.80	598
575	6.90	150	1 175	14.10	625
600	7.20	163	1 200	14.40	652
625	7.50	177	1 225	14.70	679
650	7.80	191	1 250+	15.00	707

NOTE These figures are derived from the calculations described in 4.6.

Appendix G: Tree Constraints and Protection Plan

J221106-GC-A-DR-3-003-TCPP



NOTES

- 1.0 DRAWING INFORMATION**
 1.1 Drawing based on
 - Proposed Site Plan 22115_SitePlan.
 1.2 Drawing to be read in conjunction with the following Ground Control Professional Services Documents:
 - Tree Survey Plan J221106-GC-A-DR-3-001
 - ARB Report J221106-GC-A-RP-3-003
- 2.0 TREE PROTECTION FENCING.**
 2.1 All trees requiring protection (as highlighted) to be protected for the duration of the contract in accordance with British Standard BS5837:2012, entitled 'Trees in relation to design, demolition and construction - Recommendations'. Refer to Arboricultural Report for details.
- 3.0 MANUAL EXCAVATION**
 3.1 Within root protection areas the depths of any excavations, whether for proposed foundations, hard surfacing, planting or underground services shall be undertaken by hand under arboricultural supervision. The soil will be loosened with a pick or fork, and then will be cleared from roots with a compressed air soil pick. All roots will be cut cleanly with a saw or secateurs. The edge of the excavation closest to the trees will be covered with Hessian sacking to prevent drying out, if necessary be shuttered with an appropriate material to prevent soil collapse. Where appropriate, the soil beneath this depth may be sheet piled; and deeper excavation may be undertaken by a machine provided it works from outside the root protection areas.
- 4.0 ARBORICULTURAL SUPERVISION**
 4.1 The arboricultural consultant will be directly supervising all construction works that have to be undertaken within root protection areas. These include:
 4.1.1 Location of protective fencing.
 4.1.2 Lifting/excavation of existing hard surfaces.
 4.1.3 Construction of proposed hard surfaces.
 4.1.4 All other excavations, whether for proposed foundations, or underground services
- 5.0 GENERAL SITE OPERATIONS**
 5.1 The following should be avoided. (BS5837:2012 sec 7 and 8)
 5.1.1 Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10m of the tree stem.
 5.2.2 Fires should not be lit in a position where their flames can extend to within 5 m of foliage, branches of trunk. This will depend on the size of the fire and the wind direction.
 5.3.3 Notice boards, telephone cables or other services should not be attached to any part of the tree.
- 6.0 GROUND PROTECTION**
 6.1 The default position should remain as any existing hard surfacing within the RPA should remain in place and act as ground protection throughout duration of works.
 6.2 Where the retention of existing surfacing is not possible and ground is left exposed temporary ground protection should be installed in accordance with BS5837:2012 and the specification below and illustrative details on drawing:
 6.2.1 For Pedestrian Movements;
Single thickness of scaffold boards placed on top of a driven scaffold frame to form a suspended walkway or on top of a compression resistant layer such as 100mm depth wood chip laid onto a geo-textile membrane.
 6.2.2 Pedestrian Operated Plant up to 2 ton;
Proprietary interlinked ground protection board placed on top of compression resistant layer such as 150mm depth of wood chip laid onto a geo-textile membrane.
 6.2.3 Wheeled or Tracked Construction Traffic exceeding 2 ton gross weight;
An alternative system such as a proprietary systems or pre cast reinforced concrete slabs to an engineering specification designed in conjunction with arboricultural advice.
- 7.0 CANOPY PROTECTION**
 7.1 At all times, canopies should be protected from accidental damage by vehicle or machinery movement.
 7.2 The use of any machinery directly underneath any tree canopy should be avoided, unless authorised by the on site supervising project arboricultural consultant, taking into account the dimensions of the machinery/ equipment and the height of lower canopy branches.
 7.3 Any tree specific canopy protection measures to be determined and put in place by on site supervising arborist at commencement of works.

LEGEND:

- Existing category 'B' Trees to be retained
- Existing category 'C' Trees, Tree Groups to be retained
- Existing category 'U' Trees to be retained
- Existing category 'B' Trees to be removed
- Existing category 'U' Trees to be removed
- Root Protection Area (RPA) of Tree or Tree Group with Construction exclusion zone (CEZ) de-marked with yellow hatch.
- Manual excavation area in accordance of section 7.2 of BS 5837:2012 (see drawing annotation and Arboricultural Method Statement for detailed information).
- Proposed tree protection in accordance with BS 5837:2012 (see drawing annotation and arboricultural report for detailed information).

Rev. Changes Date Dr. by Ap. by

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Client
Vincent and Brown Architects

Project (Address)
**Rawcliffe Lodge
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Drawing title
Tree Constraints and Protection Plan

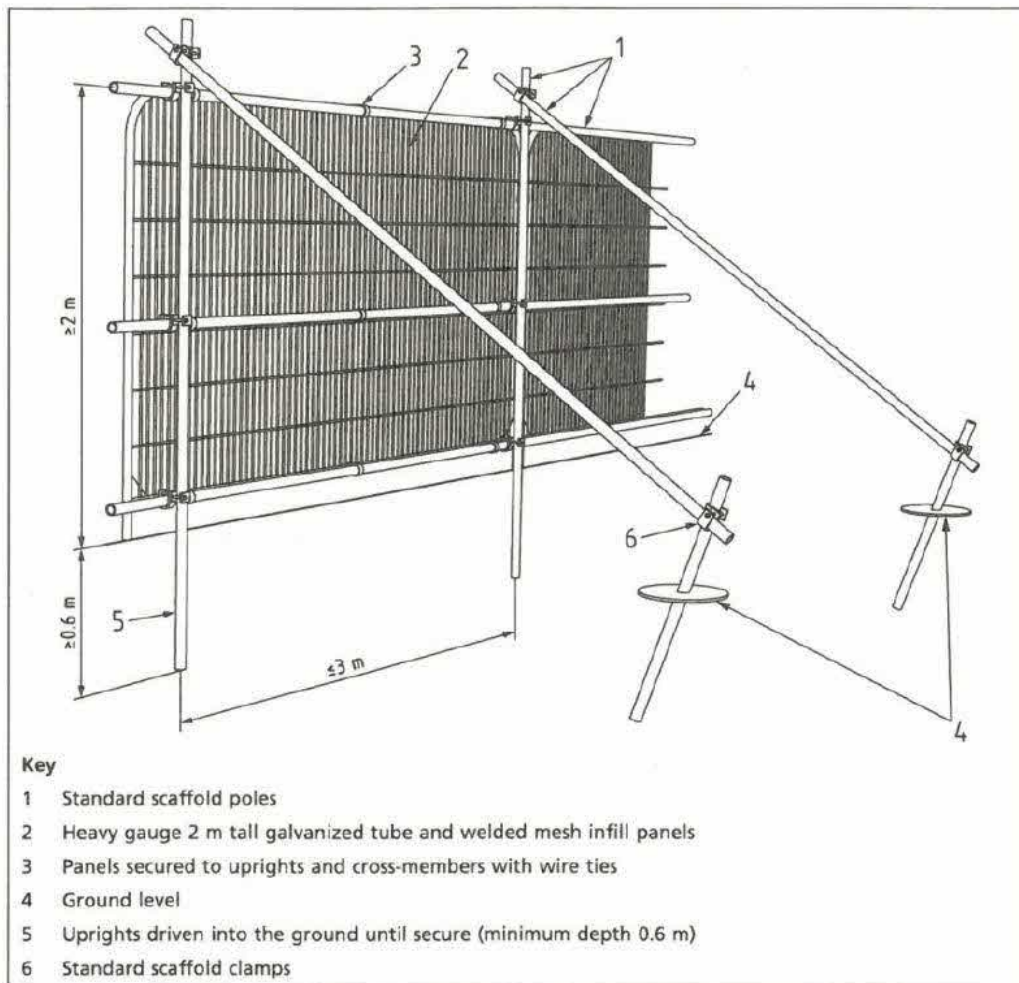
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November 2022	IH	RW	1:250 @ A2
Drawing No.	Rev	Issue Status	
J221106-GC-A-DR-3-002	--	Planning	

Notes:
 1. * ALL WORK SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE COMPANY'S POLICY AND PROCEDURES.
 2. Do not scale off this drawing. All written dimensions are to be checked on site prior to commencing works.
 3. All discrepancies, errors or omissions are to be reported for clarification before proceeding.

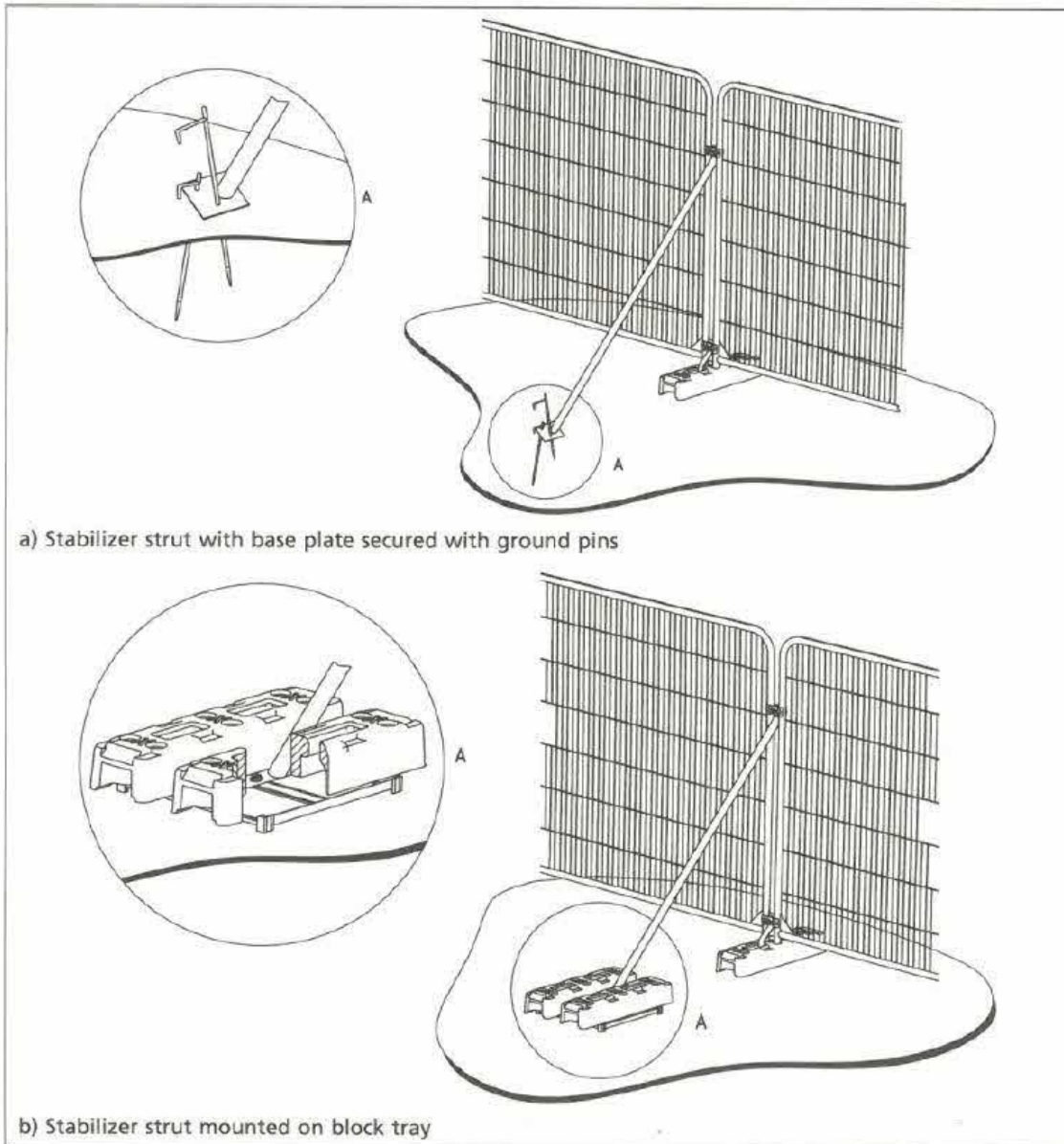
Tree Constraints and Protection Plan SCALE: 1:250 @ A2



Default specification for protective barrier



Examples of above ground stabilizing systems



Appendix I: Tree Survey Photos



Photo 1: Beef Stake fungus – *Fistulina hepatica* Located at the base of T6 facing northeast



Photo 2: Basal decay showing compromised structural integrity of T7 facing south.

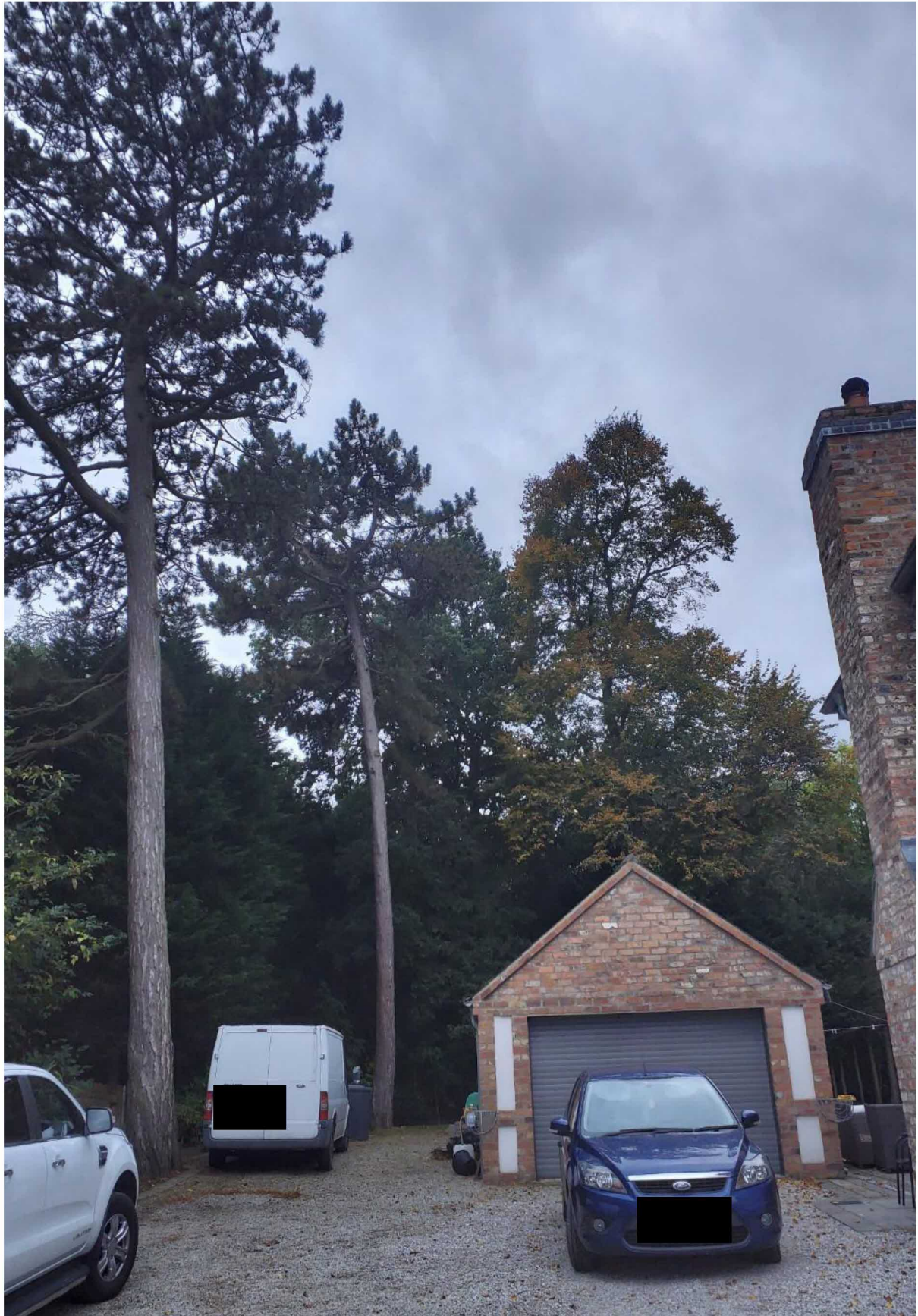


Photo 3: T1 and T2 requiring removal on development grounds.

Scots pine Tree ID #1

Tree Details

Scientific Name:	Pinus sylvestris
Physiological Condition:	Good
Stem Diameter [mm]:	690
Stem Diameter [cm]:	69
User:	RobW
Primary ID:	24469

Photos



Scots pine Tree ID #2

Tree Details

Scientific Name:	Pinus sylvestris
Physiological Condition:	Good
Stem Diameter [mm]:	540
Stem Diameter [cm]:	54
User:	RobW
Primary ID:	24470

Photos

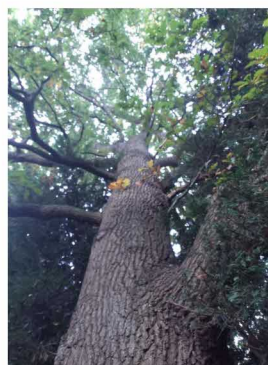


Pedunculate oak Tree ID #3

Tree Details

Scientific Name:	Quercus robur
Physiological Condition:	Good
Stem Diameter [mm]:	740
Stem Diameter [cm]:	74
User:	RobW
Primary ID:	24472

Photos



Small-leaved lime Tree ID #4

Tree Details

Scientific Name: *Tilia cordata*

Physiological Condition: Good

Stem Diameter [mm]: 760

Stem Diameter [cm]: 76

User: RobW

Primary ID: 24473

Photos



Norway spruce Tree ID #5

Tree Details

Scientific Name: *Picea abies*

Physiological Condition: Good

Stem Diameter [mm]: 120

Stem Diameter [cm]: 12

User: RobW

Primary ID: 24474

Photos



Pedunculate oak Tree ID #6

Tree Details

Scientific Name: *Quercus robur*

Physiological Condition: Fair

Stem Diameter [mm]: 570

Stem Diameter [cm]: 57

User: RobW

Primary ID: 24475

Photos



Pedunculate oak Tree ID #7

Tree Details

Scientific Name:	Quercus robur
Physiological Condition:	Good
Stem Diameter [mm]:	490
Stem Diameter [cm]:	49
User:	RobW
Primary ID:	24478

Photos

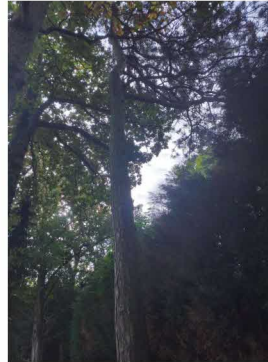


Scots pine Tree ID #8

Tree Details

Scientific Name:	Pinus sylvestris
Physiological Condition:	Good
Stem Diameter [mm]:	480
Stem Diameter [cm]:	48
User:	RobW
Primary ID:	24479

Photos



Pedunculate oak Tree ID #9

Tree Details

Scientific Name:	Quercus robur
Physiological Condition:	Good
Stem Diameter [mm]:	1130
Stem Diameter [cm]:	113
User:	RobW
Primary ID:	24480

Photos



Scots pine Tree ID #10

Tree Details

Scientific Name:	Pinus sylvestris
Physiological Condition:	Good
Stem Diameter [mm]:	410
Stem Diameter [cm]:	41
User:	RobW
Primary ID:	24481

Photos



Scots pine Tree ID #11

Tree Details

Scientific Name:	Pinus sylvestris
Physiological Condition:	Good
Stem Diameter [mm]:	430
Stem Diameter [cm]:	43
User:	RobW
Primary ID:	24482

Photos



Scots pine Tree ID #12

Tree Details

Scientific Name:	Pinus sylvestris
Physiological Condition:	Good
Stem Diameter [mm]:	530
Stem Diameter [cm]:	53
User:	RobW
Primary ID:	24483

Photos



Small-leaved lime Tree ID #13

Tree Details

Scientific Name:	<i>Tilia cordata</i>
Physiological Condition:	Good
Stem Diameter [mm]:	430
Stem Diameter [cm]:	43
User:	RobW
Primary ID:	24484

Photos



Scots pine Tree ID #14

Tree Details

Scientific Name:	<i>Pinus sylvestris</i>
Physiological Condition:	Good
Stem Diameter [mm]:	520
Stem Diameter [cm]:	52
User:	RobW
Primary ID:	24485

Photos



Small-leaved lime Tree ID #15

Tree Details

Scientific Name:	<i>Tilia cordata</i>
Physiological Condition:	Good
Stem Diameter [mm]:	410
Stem Diameter [cm]:	41
User:	RobW
Primary ID:	24486

Photos



Common beech Tree ID #16

Tree Details

Scientific Name:	Fagus sylvatica
Physiological Condition:	Good
Stem Diameter [mm]:	800
Stem Diameter [cm]:	80
User:	RobW
Primary ID:	24488

Photos



Pedunculate oak Tree ID #17

Tree Details

Scientific Name:	Quercus robur
Physiological Condition:	Good
Stem Diameter [mm]:	440
Stem Diameter [cm]:	44
User:	RobW
Primary ID:	24489

Photos



Small-leaved lime Tree ID #18

Tree Details

Scientific Name:	Tilia cordata
Physiological Condition:	Good
Stem Diameter [mm]:	420
Stem Diameter [cm]:	42
User:	RobW
Primary ID:	24490

Photos



Pedunculate oak Tree ID #19

Tree Details

Scientific Name: Quercus robur

Physiological Condition: Good

Stem Diameter [mm]: 450

Stem Diameter [cm]: 45

User: RobW

Primary ID: 24491

Photos



Lawson cypress Tree ID #20

Tree Details

Scientific Name: Chamaecyparis lawsoniana

Physiological Condition: Good

Stem Diameter [mm]: 150

Stem Diameter [cm]: 15

User: RobW

Primary ID: 24492

Photos



Appendix J: Tree work during Bird Nesting Season

During the bird nesting season, the procedure leading up to tree works should involve;

Work within dense vegetation should be avoided.

Generally, trees and shrubs being worked upon should be single individuals that can be observed in full, or completion of coppice work where clear views through and into beds to be coppiced can be obtained.

Those undertaking the work need to look for presence of nests and for birds flying in and out of the tree returning with food or bedding material. Slowly circle the tree/shrub, again inspecting the tree/shrub for indications of nesting.

Move closer (or underneath) the tree/shrub, again slowly circle the tree/shrub looking for nesting and also nesting opportunities such as holes.

If at any time, an active nest or a nest that is being built is observed, the tree/shrub must not be worked upon.

If a nest is observed that it is quite clearly an old or abandoned nest (not maintained/falling apart or clearly not being used – time of year will be a consideration), the tree/shrub may be felled.

If the selected tree/shrub is part of a group or immediately adjacent to tree/shrubs, these too should also be inspected for nests. For example, felling one tree could expose a nest to a change in micro-climates or predators.

Regarding larger mature trees it should be our aim to work on these trees out of the regular nesting season. However, if for health and safety reasons or perhaps responding to wind damage, work should continue with caution. The tree should be continually observed for nests and bird activities.

Holes in the trunk/branches should be viewed with suspicion and use of endoscopes (by a trained ecologist) should be employed to investigate such features further. If a tree is found in a dangerous condition that contains a nest, where possible the work should continue without disturbance to the nest and within the shortest possible time. Where there is possibility that the nest may be physically disturbed, advice should be taken from an ecologist.

When working in areas that might be deemed sensitive (working in mature trees) or larger scale jobs (i.e. removing groups of singular trees) using photographs or written documentation is recommended.

References

Building Research Establishment, (2011), BR 209, Site layout planning for daylight and sunlight: a guide to good practice.

British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations.' BSI

British Standard 3998:2010 'Recommendations for Tree Work'. BSI

DCLG (2000) 'Tree Preservation Orders – A Guide to the Law and Good Practice'.

International Society of Arboriculture's Best Management Practices for Tree Risk Assessment

Lonsdale D., (1999), Principles of Tree Hazard Assessment and Management, DETR

Mattheck, C. Breloer H., (1994) The Body Language of Trees, Forestry Commission.

Mattheck, C. (2007), Updated Field Guide for Visual Tree Assessment

National Joint Utilities Group publication # 10 (1995), Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees. Downloadable at www.njug.demon.co.uk/pdf/NJUG%20Publication10.pdf

Strouts R. G., Winter T. G. (1994), Diagnosis of Ill Health in Trees, 2nd Ed., DETR

Tree Roots in the Built Environment (2006) J Roberts, N Jackson, M Smith

British Standards

BS 5837: 2012. Trees in Relation to Design, Demolition and Construction-Recommendations.

BS 3998: 2010. Recommendations for Tree Work.

BS 3936: 1992. Nursery Stock. Part 1: Specification for Trees and Shrubs.

BS 3936: 1992. Nursery Stock. Part 10: Specification for Groundcover Plants.

BS 4043: 1989. Transplanting Root-balled Trees.

BS 8004: 1986. Foundations.

BS 8103: 1995. Structural design of Low-Rise Buildings.

BS 8206: 1992. Lighting for Buildings.

BS 3882: 2007. Topsoil.

BS 4428: 1989. General Landscaping Operations (excluding hard surfaces).



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Landscape Construction
Landscape Architecture
Winter Maintenance
Asset Management
Pest Control & Auditing
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