

Sylva Consultancy
expert arboricultural advice

ARBORICULTURAL REPORT

Great Rissington Manor
Great Rissington
Gloucestershire
GL54 2LP

October 2023

Ref: 23177

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1. INTRODUCTION

1.1 Instructions

- 1.1.1 Instructions have been received to undertake an arboricultural impact assessment on land at Great Rissington Manor, Gloucestershire (Site Location Plan Appendix 1).
- 1.1.2 This arboricultural impact assessment has been prepared to assess the likely impact and effect regarding the proposal to construct a tree house. This appraisal assesses the impact of the proposal in relation to the trees surveyed and discusses mitigation measures that may have to be adopted.

1.2 Arboricultural Survey

- 1.2.1 During September 2023 a tree survey was carried out in accordance with British Standard 5837:2012 'Trees in relation to Design, Demolition and Construction-Recommendations' and good arboricultural practice. This is a basic data collection exercise and a record of the trees condition at the time of surveying. The tree survey data can be viewed at Appendix 2, root protection area (RPA) data at Appendix 3 with the tree constraints plan provided at Appendix 4.

2. TREE PROTECTION

- 2.1 A desktop study of information posted on Cotswold District Council (CDC) interactive mapping system <https://www.cotswold.gov.uk/planning-and-building/historic-buildings-and-conservation-areas/conservation-area-maps/>) was carried out on the 30th October 2023.
- 2.2 CDC's interactive mapping system indicates that the survey area is located within Great Rissington Conservation Area. The interactive mapping system also indicates that no Tree Preservation Orders (TPO's) are present on trees located within or adjacent to the survey area.
- 2.3 Trees in a Conservation Area that are not protected by a TPO are protected by the provisions in section 211 of the Town and Country Planning Act 1990. Anyone who ***cuts down, uproots, tops, lops, wilfully destroys or wilfully damages a tree*** in a Conservation Area (if that tree is not already protected by a Tree Preservation Order), or causes or permits such work, without giving a section 211 notice (or otherwise contravenes section 211 of the Town and Country Planning Act 1990 is guilty of an offence, unless an exception applies.

3. ARBORICULTURAL SURVEY

3.1 Three trees and one hedge have been recorded within this assessment. The tree quality is assessed as follows:

U: Trees that are considered to be of such condition that any existing value would be lost within 10 years, and which should, in the current context, be removed for reasons of sound arboriculture management. However, if category 'U' trees are placed in an inaccessible location such that concerns over public safety are reduced to an acceptable level, it may be preferable or possible to defer this recommendation.

A: Trees of the highest quality and value and are considered to be of such a condition as to be able to make a substantial contribution (e.g., 40 years +).

B: Trees of moderate to high value and are considered to be of such a condition as to be able to make a significant contribution (e.g., 20 years +).

C: Trees of low quality with an estimated life expectancy of at least 10 years. Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories. Young trees with a stem diameter of less than 150mm should be considered for relocation or replacement through mitigation (e.g., 10 years).

Category A, B & C trees are further divided into the following sub-categories. These sub-categories carry equal weight and are selected for either arboricultural values, landscape values or cultural values, including conservation:

- 1: Mainly arboricultural qualities.
- 2: Mainly landscape qualities.
- 3: Mainly cultural values, including conservation.

The British Standard 5837:2012 also recommends recording hedges and shrub masses, however in the context of the standard it is not necessary to assess the quality of these or to provide a category classification.

The numbers of trees falling under each classification within the arboricultural survey are as follows:

A summary of the trees in each of the four categories is provided below:

BS 5837 (2012) Category	No. of Trees	No. of Groups	No. of Hedges	Tree Number
U	0	0	0	
A	0	0	0	
B	2	0	0	T1, T2
C	1	0	1	T3, H1

4. PRINCIPLE ARBORICULTURAL IMPLICATIONS

4.1 Introduction

- 4.1.1 Consideration is given to the significance of the trees identified in the arboricultural tree survey, the constraints that they are likely to pose to any development that may occur, post development implications (if any) and work requirements to trees for reasons of sound arboricultural management in order to facilitate the development (BS5837:2012 Section 5.4).
- 4.1.2 All tree numbers referred to in this document relate to the tree numbers annotated on the tree constraints plan and arboricultural impact assessment plan (Appendix 5).

4.2 Site Description

- 4.2.1 The survey area is located to the north of Great Rissington Manor. A swimming pool is present to the south of the survey area with a sunken tennis court located beyond the northern boundary.

4.3 Trees

- 4.3.1 Only trees considered to be within influencing distance have been surveyed for this report.
- 4.3.2 The Wildlife & Countryside Act 1981, as amended by the Countryside Rights of Way Act 2000, provides statutory protection to birds, bats and other species that inhabit trees. These have the potential to pose additional constraints on the use and timings of works that may occur to trees located at the site. These issues are beyond my expertise, and it is recommended that appropriate advice is sought prior to the implementation of any works considered within this report.

4.4 Overview

- 4.4.1 The appended arboricultural impact plan illustrates the proposals in relation to the tree stock. In addition to pre-development concerns, post development concerns such as debris and concerns of the trees' proximity and juxtaposition to the proposal have also been considered during the design process.
- 4.4.2 An assessment of the design on the tree stock reveal that no trees require removal to implement the scheme.
- 4.4.3 The scheme has undergone a careful design process to ensure an efficient use of the site, whilst safeguarding the continued contribution to the greening of the immediate landscape. On the bases of the appraisal, it is considered that the arboricultural impact of the scheme on the tree stock will not result in an adverse impact on the character and appearance of the site or wider landscape.

4.5 Impact of the proposal on the tree stock

Overview

- 4.5.1 Whilst trees in categories 'A', 'B' and 'C' are all a material consideration in the development process, the retention of category 'C' trees, being of low quality or of only limited or short-term potential, will not normally be considered necessary where they impose a significant constraint on development. Furthermore, BS 5837:2012 makes it clear that young trees, even those of good form and vitality, which have the potential to develop into quality specimens when mature "*need not necessarily be a significant constraint on the site's potential*".
- 4.5.2 The BS5837:2012 recommends that the root protection areas (RPA's) for trees should initially be plotted as a circle centered on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced.
- 4.5.3 The arboricultural survey has identified that existing site constraints have influenced the root protection areas of trees T1 & T2. As such the rooting area of these trees have been adjusted. The modified RPA's has considered the expected morphology and disposition of roots, site topography, including levels, drainage and the likely tolerance of the trees to root disturbance based on factors such as age, condition and past management (BS5837:2012 Section 4.6.3).

4.6 Proposed Development

- 4.6.1 The scheme comprises of the construction of a tree house which will span trees T1 & T2 (Norway maple x 2). No trees will be removed to implement the scheme.
- 4.6.2 The tree house foundations will be constructed using a combination of screw pile foundations (x2) and a series of wooden stilt foundations. It is acknowledged that the location of these fall within the root protection areas of trees T1 & T2 Prior to the installation of the foundations trial pits will be carried out. The design allows flexibility with the location of the screw piles and stilt posts. Where roots greater than 25mm are uncovered arboricultural advise will be sought with a view to relocated the foundations to avoid large structural woody roots. The stilt foundations which will be placed in 600mm deep pits with a gravel base with no concrete required. Please see Appendix 6 for foundation details (the hardware and foundations are drawn as black rectangles with a red center).
- 4.6.3 Once the foundations are in place the tree house will be supported with a combination of cable suspension systems and static and sliding brackets. Please refer to Appendix 7 for further information. By using these techniques it is deemed that the tree house can be constructed without causing any damage to the trees and as such the trees can be successfully retained.
- 4.6.4 No machinery is required for the installation of the tree house with the tree house being constructed with the use of climbing techniques.

4.7 Construction

- 4.7.1 Careful consideration has been given regarding the buildability of the proposals. The arboricultural impact plan illustrates that sufficient room exists to locate the site compound and contractor parking outside the RPA's of the retained trees.

- 4.7.2 Fence protection is required for tree T3, holm oak. The fencing will comprise of Heras fencing and will be based on Figure 2 'Default Specification for Protective Barrier' as recommended within the British Standard 5837:2012. Where appropriate the fencing will be braced to withstand impacts.
- 4.7.3 Ground protection measures are also required to facilitate access for the works. It is recommended that the ground protection comprises of Duradek Mats or other similar product that is fit for purpose.
- 4.7.4 Prior to the work minor pruning work to T2, will occur. It is judged that the tree can be pruned to acceptable standards in accordance with British Standard 3998:2010 'Tree Works - Recommendations'. Please see Appendix 8 for pruning guidance.
- 4.7.5 No services are required for the tree house.

5. SUMMARY

5.1 Conclusions

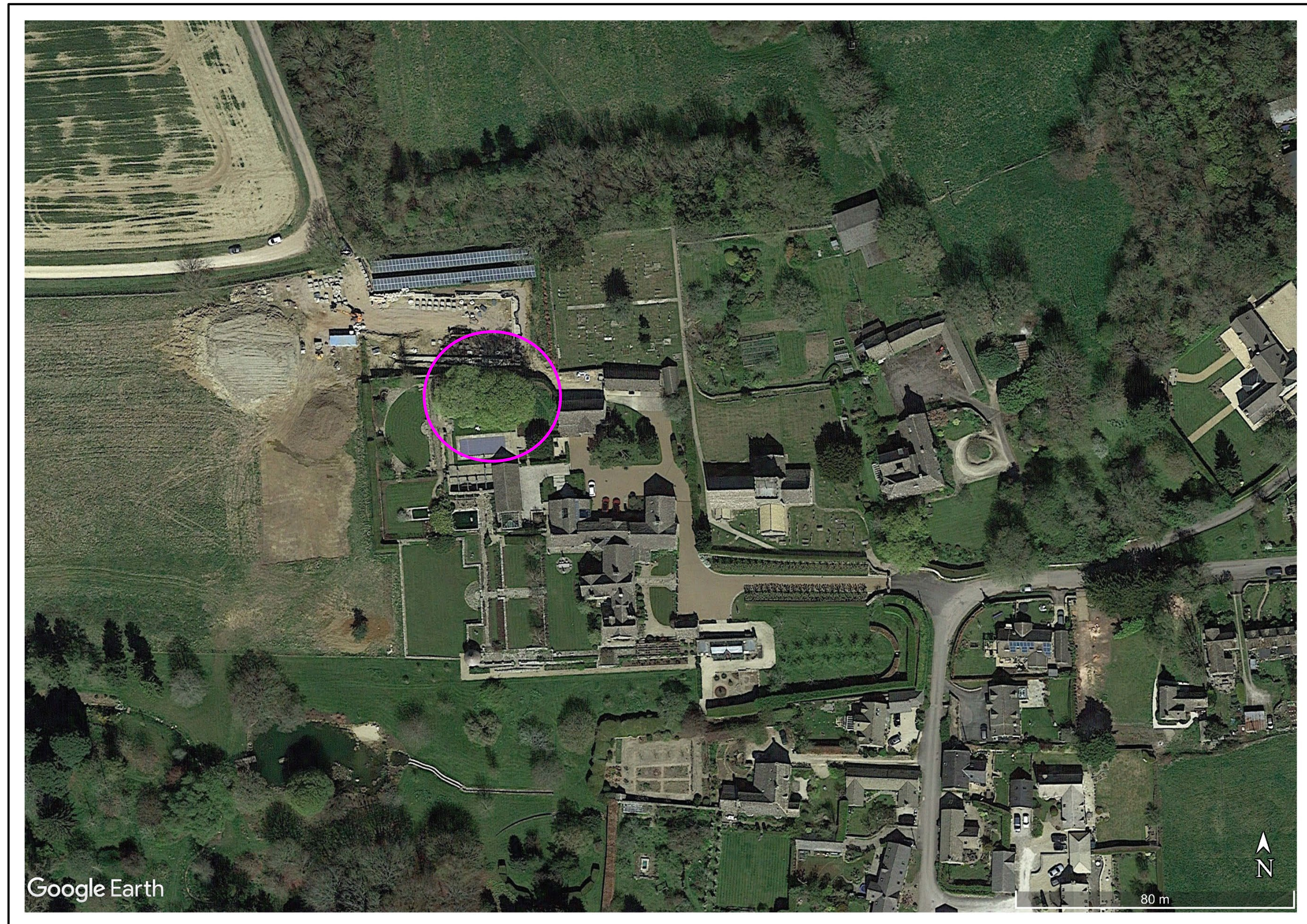
- 5.1.1 The British Standard 5837:2012 states that there is the need to avoid misplaced tree retention; for example, to attempt to retain too many unsuitable trees on a site may result in excessive pressure on the trees during the development work and subsequent demands for their removal post development. No trees will be removed to implement the scheme.
- 5.1.2 Consideration for both the direct impact and indirect impact of a development with respect to retained trees needs to be assessed. With respect to the retained tree stock, it is considered that their successful integration into the layout can be achieved.
- 5.1.3 Careful planning of site operations must be carried out to avoid any adverse impact to the retained trees. To safeguard the trees through the development it is advised that a site-specific Arboricultural Method Statement is drawn up and implemented.

5.2 Post development tree management.

- 5.2.1 Section 8.8.2 of the British Standard 5837:2012 recommends post development aftercare of trees following the completion of development works. It is recommended the following is considered with regard to post development inspection of retained trees:
1. Trees that grow on a site prior to development may, if adversely affected, be in decline over a period of several years before they die. This varies due to age, species, condition prior to development, extent of damage during development, soil conditions and climate. It is recommended that regular inspections are undertaken.
 2. Where trees are protected by planning controls, it is recommended that the Local Planning Authority is informed, and necessary agreements obtained prior to any remedial works.
 3. Following completion of a development it is recommended that the arboricultural consultant inspects the trees for signs of intolerance to the change of conditions and the effect of the development. There may be a need for additional tree works to those originally specified.

APPENDIX 1

SITE LOCATION PLAN



APPENDIX 2

TREE SURVEY DATA

KEY TO TREE SCHEDULE

Tree No: Relates to individual trees, groups, hedges and woodlands as identified within the Tree Survey Schedule and Tree Constraints Plan

'T' prefixes have been used to identify individual trees.
'G' prefixes have been used to identify groups of trees.
'H' prefixes have been used to identify hedgerows.
'W' prefixes have been used to identify woodlands.

Species: Common name

Height: Estimated height expressed in meters

ST: Stem diameter of the main trunk taken at 1.5m above ground level or in accordance with Annex C BS5837:2012.

Height in M of Canopy: Information of the first significant branch and direction of growth in order to inform on ground clearance.

Abbreviations: #: Estimated
Ave: Average
A.G.L: Above ground level
SULE: Safe Useful Life Expectancy

Branch Spread: Estimated crown radius expressed in meters, taken for each cardinal compass point.

Age Class: Y Young - Less than one third of natural life expectancy
MM Middle aged - One to two thirds of natural life expectancy
M Mature - More than two thirds of natural life expectancy
OM Over mature
NP Newly Planted

Physiological Condition: G Good
F Fair
P Poor
D Dead

Notes:

Root Protection Area: This is a layout tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as a priority (detailed in paragraph 3.7 British Standard 5837:2012 'Trees in relation to Construction-Recommendations').

Young trees with a stem diameter of less than 150mm: Whilst the presence of young trees of good form and vitality is generally desirable (i.e those which have the potential to develop into quality mature specimens), they need not necessarily be a significant constraint on the site's potential (detailed in paragraph 4.5.10 British Standard 5837:2012 'Trees in relation to Construction-Recommendations').

CASCADE CHART FOR TREE QUALITY ASSESSMENT

Category and definition Criteria (including subcategories where appropriate) Identification on plan

Trees unsuitable for retention (see Note)

<p>Category U</p> <p>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</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><i>NOTE</i> Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>	<p>Dark Red</p>
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1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation
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Trees to be considered for retention

<p>Category A</p> <p>Trees of high quality with an estimated remaining life expectancy of at least 40 years</p>	<p>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)</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</p>	<p>Light Green</p>
<p>Category B</p> <p>Trees of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	<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</p>	<p>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</p>	<p>Trees with material conservation or other cultural value</p>	<p>Mid Blue</p>
<p>Category C</p> <p>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</p>	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories</p>	<p>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</p>	<p>Trees with no material conservation or other cultural value</p>	<p>Grey</p>

TREE NO.	SPECIES	Height in (M)	CALCULATED STEM DIA (MM)	BRANCH SPREAD				HEIGHT IN M OF CANOPY	AGE CLASS	PHYS. COND	COMMENTS	LIFE EXPECTANCY (EST YEARS)	BS5837:2012 CATEGORY GRADING
	(Latin)			N	E	S	W						
T1	Norway Maple <i>Acer platanoides</i>	17	790	7	4.5	8.5	8.5	3.5	M	F	<p>Preliminary Recommendations</p> <p>One of 2 mature Norway maple trees growing to the north of the outdoor swimming pool. Swimming pool and retaining gabion wall will be a constraint to root growth. Broad spreading specimen. Small diameter deadwood. ivy on main stem and in lower canopy.</p> <p>Sever Ivy</p>	20 to 40	B2
T2	Norway Maple <i>Acer platanoides</i>	18	860	8	9.5	8	5	2s	M	F	<p>One of 2 mature Norway maple trees growing to the north of the outdoor swimming pool. Swimming pool and retaining gabion wall will be a constraint to root growth. Broad spreading specimen. X2 limbs on east side becoming over extended.</p> <p>No Work</p>	20 to 40	B2
T3	Holm Oak <i>Quercus ilex</i>	8.5	505	3.5	5	4.5	3.5	3	MM	F	<p>Multi stem specimen at 300mm agl growin to the east of the outdoor swimming pool. Long term not regarded as a significant constraint.</p> <p>No Work</p>	10 to 20	C2
H1	Yew <i>Taxus baccata</i>	Ave 2	Ave 75	0.5	0.5	0.5	0.5	GL	Y	G	<p>Regularly maintained boundary hedge surrounding the swimming pool enclosure. Average dimensions recorded.</p> <p>No Work</p>	10 to 20	C2

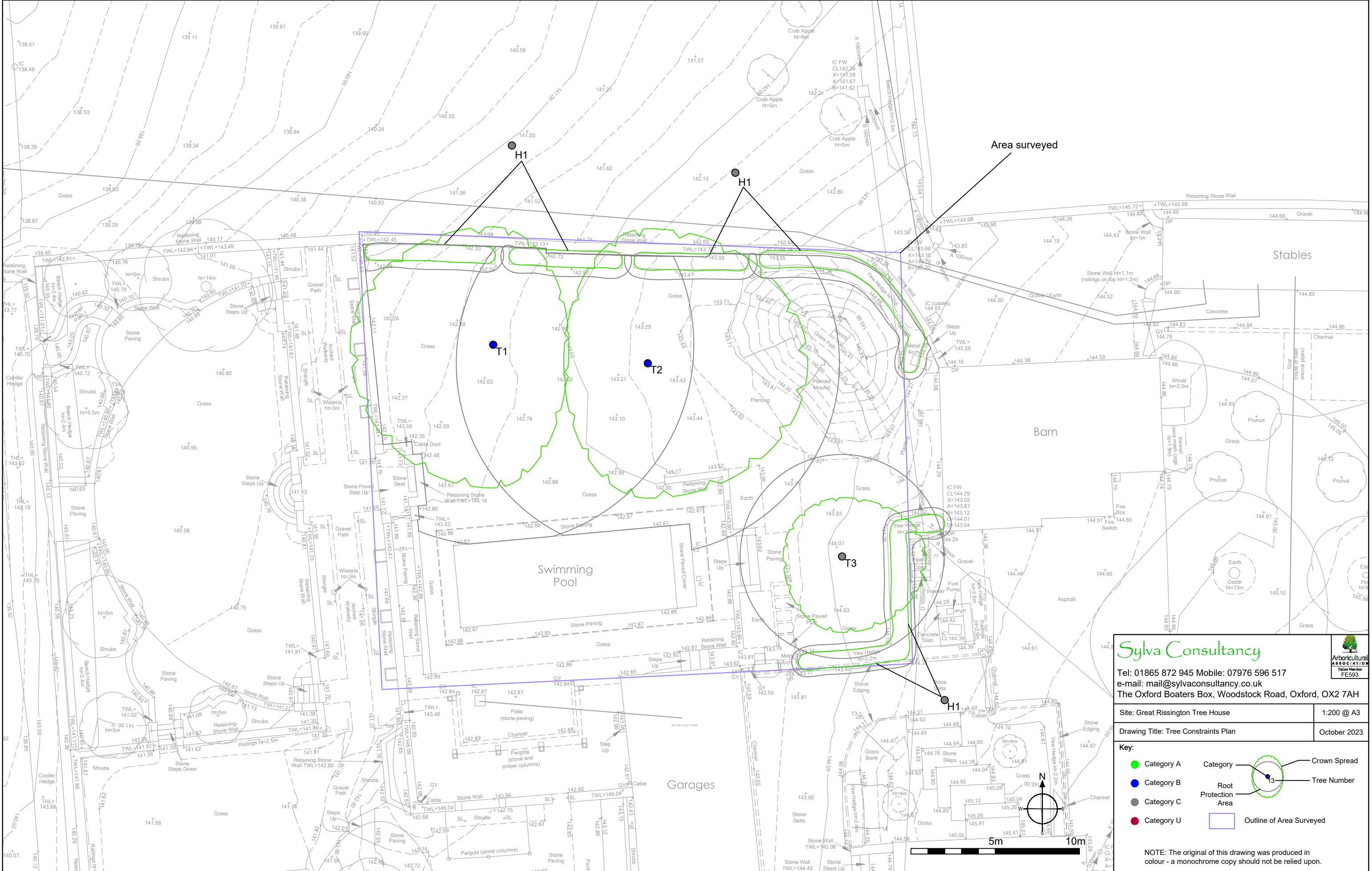
APPENDIX 3

ROOT PROTECTION AREA

ROOT PROTECTION AREA

TREE NO.	SPECIES	NO. OF STEMS	SINGLE STEM DIA (mm)	2-5 STEMS					> 5 STEMS	ROOT PROTECTION AREA - RPA (RADIUS IN M)	RPA (M ²)	LIFE EXPECTANCY (EST YEARS)	BS5837:2012 CATEGORY
				STEM 1 (mm)	STEM 2 (mm)	STEM 3 (mm)	STEM 4 (mm)	STEM 5 (mm)	MEAN STEM DIA (mm)				
T1	Norway Maple	1	790							9.48	282	20 to 40	B2
T2	Norway Maple	1	860							10.32	335	20 to 40	B2
T3	Holm Oak	1	505							6.06	115	10 to 20	C2
H1	Yew	1	75							0.90	3	10 to 20	C2

TREE CONSTRAINTS PLAN



Area surveyed

H1

H1

T1

T2

T3

H1

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 The Oxford Boaters Box, Woodstock Road, Oxford, OX2 7AH



Site: Great Rissington Tree House 1:200 @ A3
 Drawing Title: Tree Constraints Plan October 2023

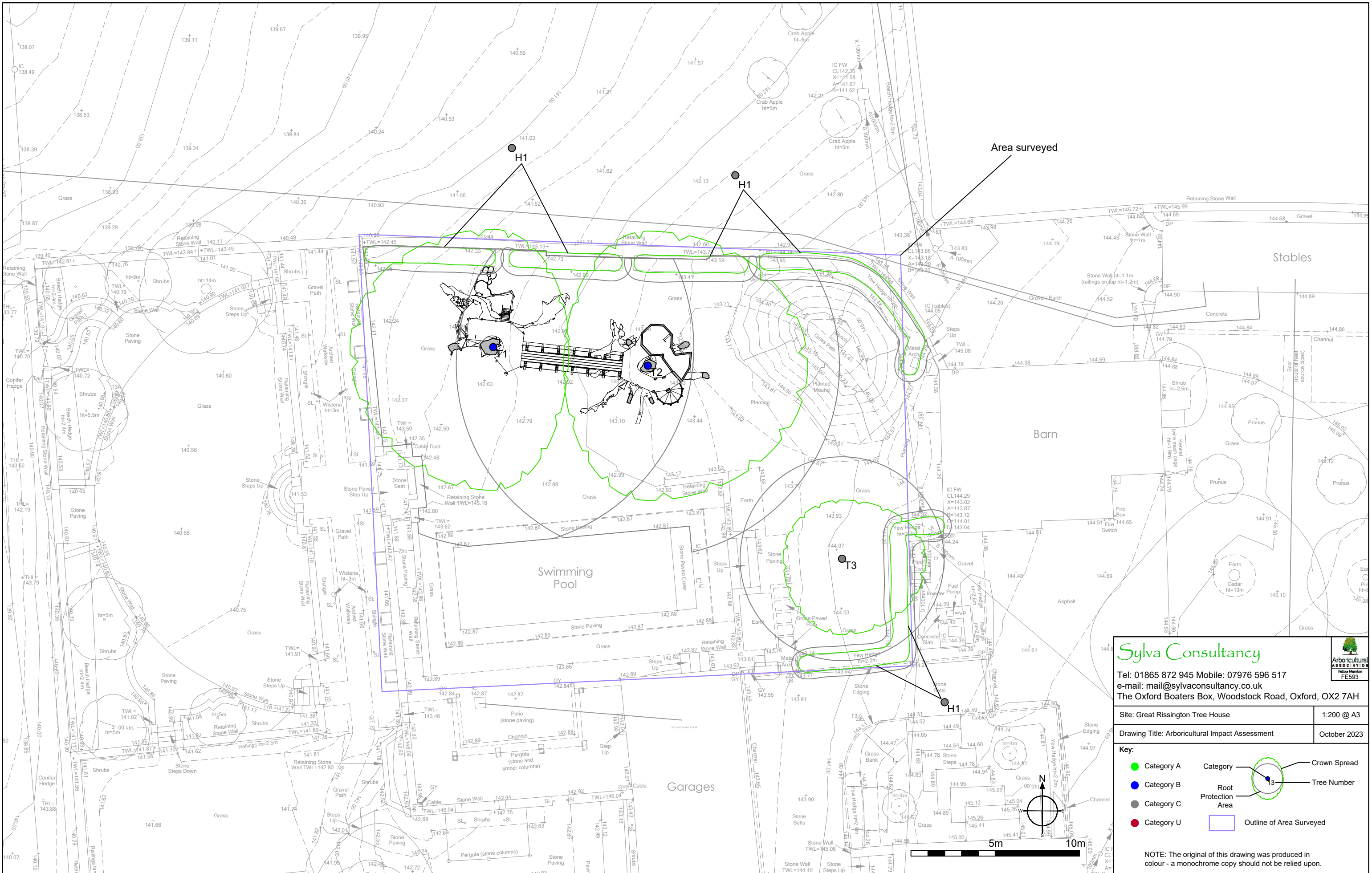
Key:

- Category A
- Category B
- Category C
- Category U

13 Crown Spread
13 Tree Number
 Root Protection Area
 Outline of Area Surveyed

NOTE: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

ARBORICULTURAL IMPACT ASSESSMENT PLAN



Area surveyed

Stables

Barn

Swimming Pool

Garages

Sylva Consultancy
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 e-mail: mail@sylvaconsultancy.co.uk
 The Oxford Boaters Box, Woodstock Road, Oxford, OX2 7AH

Site: Great Rissington Tree House	1:200 @ A3
Drawing Title: Arboricultural Impact Assessment	October 2023

Key:

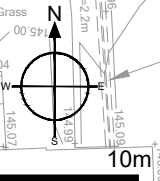
- Category A
- Category B
- Category C
- Category U

Category Crown Spread

Root Protection Area Tree Number

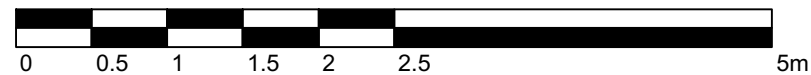
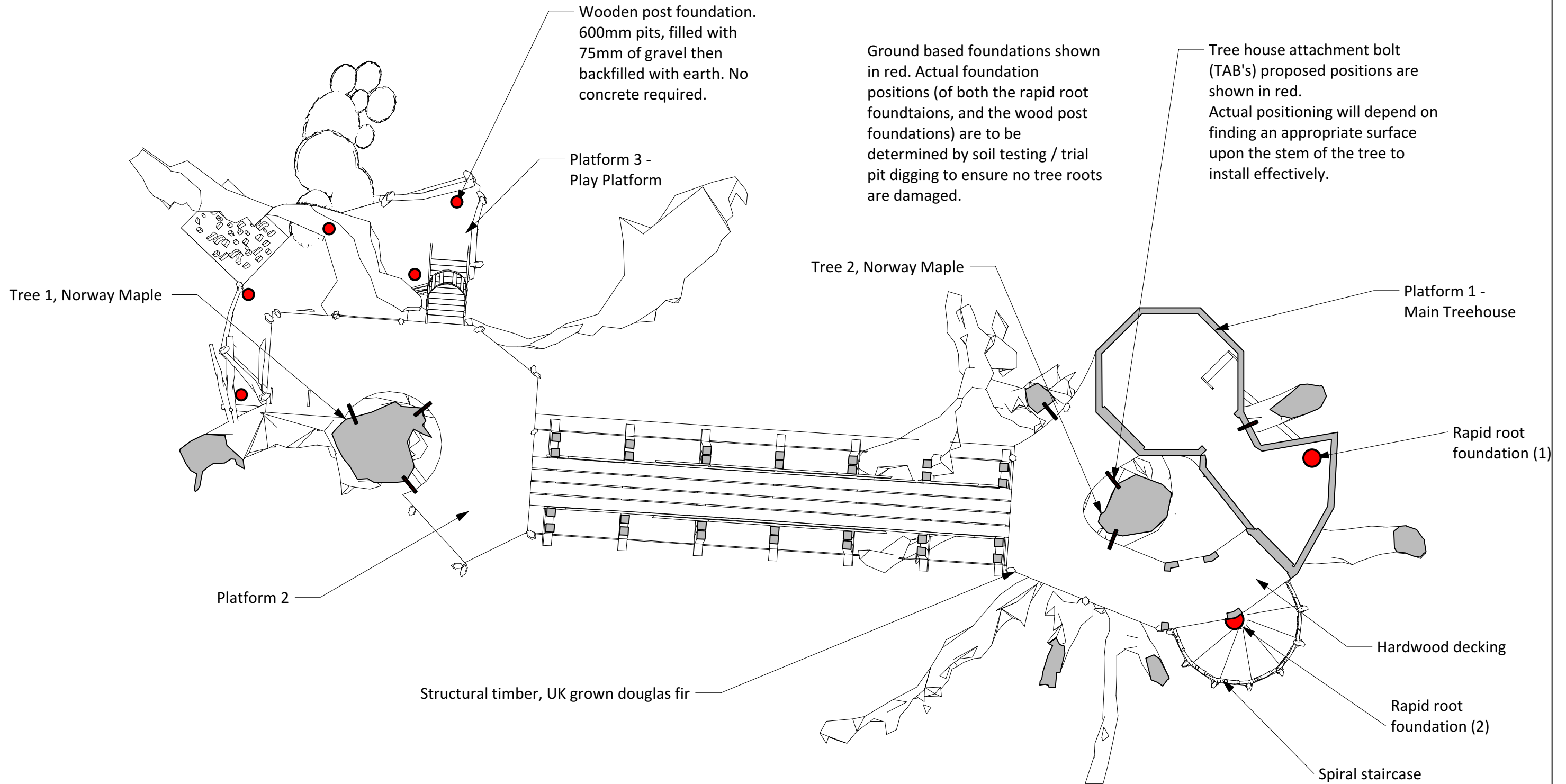
Outline of Area Surveyed

NOTE: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.



FOUNDATION & HARDWARE DETAIL

Floor Plan



Title: Proposed Floor Plan		Drawing no. 02
Project: Rissington Treehouse	Revision A	
Scale: 1 : 50	Date: 24.08.23	<i>Tree Top Co</i>



TREE HOUSE CONSTRUCTION TECHNIQUES

Techniques for Ecologically Sound Treehouse Construction



How do you securely fasten a treehouse to a tree without damaging the tree? In this document, we show the best fastening techniques for tree house construction and for heavy-duty ariel installations.

Contents:

1. Treehouse attachment bolts (TABs).
2. Cable suspension techniques
3. Cuffs and clamping
4. Ground support - posts and piles
5. Conclusion

The tree is the foundation for a treehouse but above all, it is a living organism that should not and does not need to be harmed during treehouse construction. A well-designed and carefully built treehouse will allow the tree to continue to grow with no hindrance and remain strong and healthy for its entire lifespan.

A curated summary of research from leading treehouse builders. Photos are from Treetop Co's treehouse construction projects.

1. Treehouse attachment bolts (TABs).

The first “tree screws” or implants, were introduced to the market about 30 years ago under the names “Garnier Limb” and “Treehouse Attachment Bolt” – this is how the success story of modern treehouse construction began. The TAB is now the international standard for high-end treehouse construction.

The idea of the TAB is to imitate a natural branch. A TAB is inserted by drilling a small hole in the tree. This hole removes a small area of living material (3 inches in diameter), which causes minimal impact on the tree. The TAB’s strength comes from the implant being embedded in the interior wood of the tree which does not contain living cells. The tree reacts to the drilled hole in a similar way that it does to that of a branch break, i.e. it seals the wound, stores fungus-inhibiting substances, and forms a stronger reaction wood. The “artificial branch” continues to grow year after year, and over time the screw becomes a permanent part of the tree.

Onto the TAB a variety of brackets can be used to receive the load-bearing components of the tree house, usually the main beams and diagonal struts. There are two main types of brackets. One is the static bracket which is used at a point which will produce zero or negligible movement due to the size of the trunk or limb at that point. Second is the ‘floating bracket’ which allows 360 degrees of



Image of a TAB and double knee brace system.



Image of TAB and a static bracket.

movement so that when the branch moves in the wind the bracket does not translate movement into the structure and vice versa. When an appropriate system of TABs is installed the tree can move independently of the structure and continue to grow without any hindrance for its lifespan.



Images showing TABs being used with a knee bracket.



Image showing TAB being used with a floating bracket.



Image showing 2 floating brackets installed on an Oak tree (left tree), allowing 360 degree movement of the tree.

As we are creating a wound when installing a TAB the tree should have a good wound response. The most suitable trees for treehouse construction will have; high wood strength, good wound sealing (when drilling holes), quick cultivation of reaction wood, high average life span, large expected trunk diameter (minimum

required for a TAB is 300mm) and robust bark (important for cable suspension). See the table below for the suitability of tree species for treehouse construction.

Suitability of european tree species for treehouse building

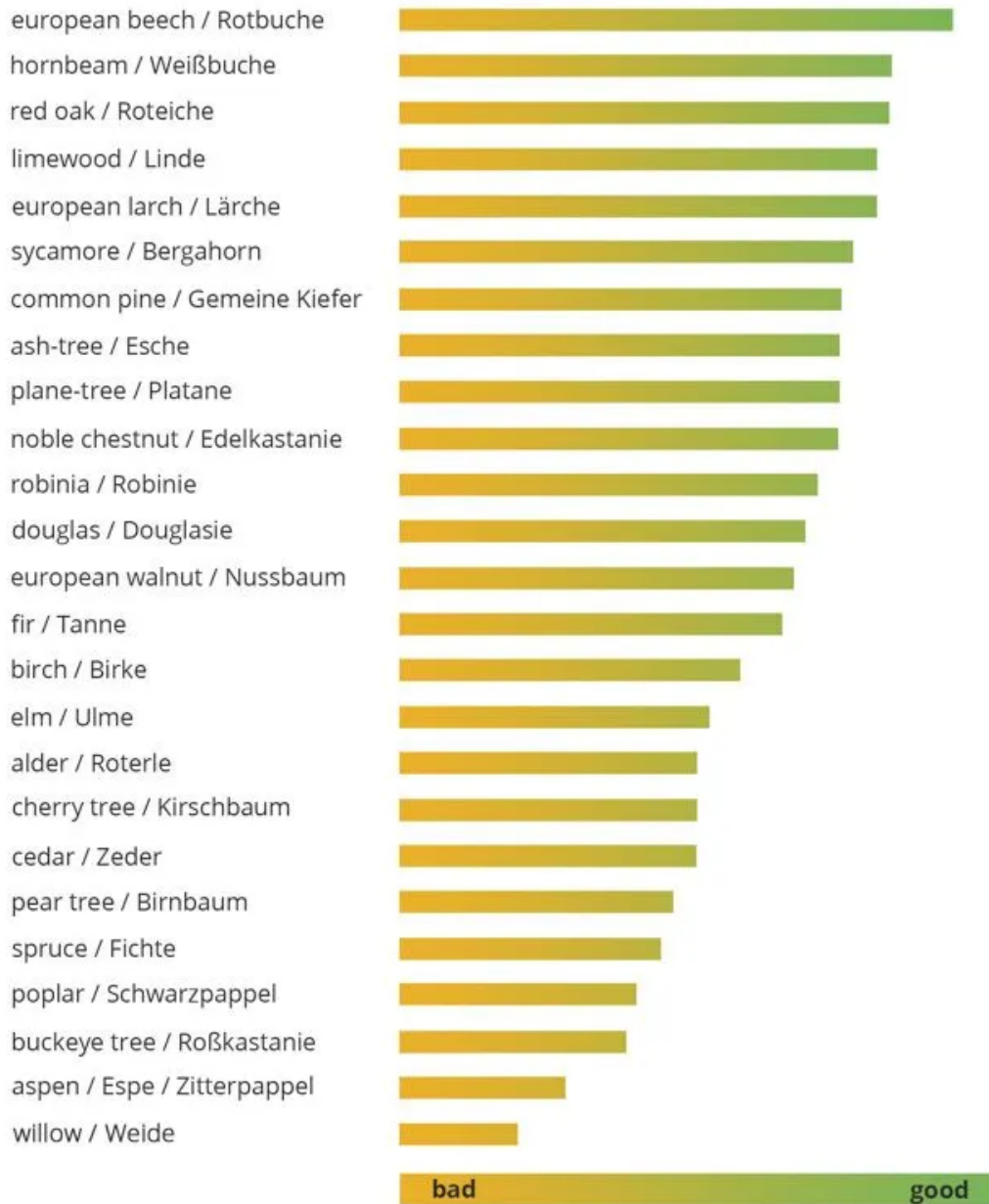


Image from treehouseshop.com

Studies on treehouses and climbing forests have shown that bolting methods cause less damage to the tree in the long run than suspension or clamping methods (rope & clamping technique detailed in sections 2 and 3).

Advantages of TAB

- Well-proven & field-tested fastening technology;
- The tree can grow freely – no crushing and constriction;
- High load-bearing capacity – loads are introduced directly into the trunk;
- Low to no maintenance;
- Many screw accessories and installation options;
- Independent of tree growth – large variety of platform designs.

Disadvantages of TAB

- Require expertise and specialist equipment to install;
- Only suitable for certain species of tree.

2. Cable suspension techniques

A very elegant & low-injury method is to suspend the platform with steel ropes. The system consists of three parts: A tree sling or (TAB implant with a cable attachment), a cable & turnbuckle for tensioning, and an eyelet hoop on the structure at platform level.



Images showing how a suspension attachment is made with a cargo belt.

The tree sling is placed around a branch, preferably a fork to negate any slipping. The rope is tensioned by means of a turnbuckle.

The anchor point should be located as centrally as possible on the main trunk, so that the loads are introduced directly into it, and the construction does not begin to sway in the wind. Avoid large lever arms and ensure that the rope course is as vertical as possible.

Well-suited trees are those with thick, robust bark, e.g. oaks and chestnuts. Beech trees are less suitable for a sling because their thin bark offers little protection against abrasion (in this instance a TAB with a cable attachment point would be preferable).



Cable suspension in conjunction with a TAB on the main beam, provides additional strength to the TAB.

Advantages of cable suspension technique:

No open wound;

Low cost;

Very high load capacity with direct introduction into the trunk (4 – 8 tons);

The tree can move freely;

Subsequent height adjustment via turnbuckle is possible;

A good alternative to tree screws for very soft woods (e.g. willow);

3. Ground Support - posts and piles

Stilts are used when there are concerns about the load-bearing capacity or health of the tree. To avoid overloading the tree, a combination of stilts and other fixing methods is often the only sensible thing to do. Depending on the dimensions of the stilts, high loads can be supported.

Advantages:

Simple assembly

Load capacity virtually unlimited, heavy construction possible

Tree trunk is not injured

Statically easy to calculate and very safe

Less objections from nature conservationists

Disadvantages:

Not a real treehouse

Supports and stiffeners disturb aesthetics and feel of the structure

Root damage due to earthworks & concrete foundations is a risk. Root injuries are at least as bad as sawing off branches. Root damage should be avoided above all in the immediate vicinity of the trunk via digging of trial pits. Root-sensitive piling options (rapid root) can be implemented instead of digging posts into the ground or using concrete.

4. Conclusion

There is no “perfect fastening technique” in treehouse construction – each technique has its advantages and disadvantages. We use our experience to determine a solution that ensures that the tree’s health has not been compromised. Although clamping and wrapping methods at first glance appear gentler on the tree because no material is removed, they risk large-scale constriction of the living cells of the tree in the long term. If the technique is not monitored and readjusted, the tree will suffer serious damage after 10–20 years and the treehouse may become unsafe.

Installing treehouse attachment bolts/implants is a more sustainable and safer technique. Although a small amount of material is removed, trees have developed

strategies over millions of years to deal with such wounds. The great advantage is that the tree firmly integrates the steel screw into its living situation and is able to move freely when it sways in the wind and as it grows over its lifespan. In addition, the wound is directly sealed with the implant.

TABs have established themselves in professional treehouse construction worldwide. They are considered to be permanently safe, gentle on trees and low-maintenance.



Image of our 'Gracious Treehouse'

5. Further reading

Information on TABs and how they are installed:

<https://nelsontreehouse.com/blog/hardware-highlight-tab/>

Are implants harmful to the tree?

<https://thetreehouse.shop/how-to-attach-tree-house/fastening-the-treehouse-correctly-are-screws-harmful-to-the-tree/?lang=en>

Specific hardware Treetop Co uses

<https://www.treehousesupplies.com/collections/tab>

PRUNING GUIDANCE FOR T2

PRUNING GUIDANCE FOR T2



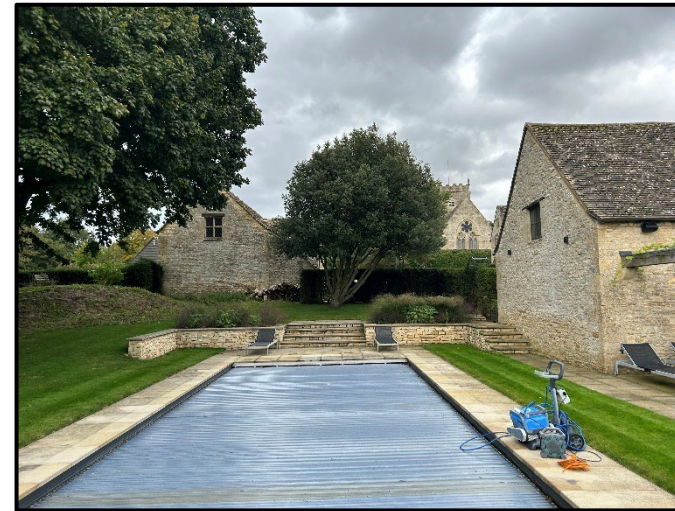
APPENDIX 9

PHOTOGRAPHS



Photograph 1

View of trees T1 (left hand side of image) & T2 (right hand side of image).



Photograph 2

View of tree T3



Photograph 3

View of T1 & T2 from the sunken tennis court area.



Photograph 4

Long distance views of the trees from the main courtyard.

APPENDIX 10

QUALIFICATIONS

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Fiona Bradshaw

MicFor; RFS Dip Arb;F. Arbor.A; Tech Cert (Arbor.A)

I have over 24 years' experience of arboriculture and I am the principal consultant at Sylva Consultancy. I hold the Royal Forestry Society's Professional Diploma in Arboriculture and the Arboricultural Associations Technicians Certificate. I am a Fellow member of the Arboricultural Association and a professional member of the Institute of Chartered Foresters, of which I am also a registered Consultant.

I have the benefit of both a local authority and private practice background and I am frequently instructed to provide advice and assistance relating to trees and the planning process. I am also experienced at compiling expert reports, providing evidence and also appearing as an expert witness at Public Inquiries.

I am committed to my continued professional development which is reflected in my regular attendance of seminars and workshops.