

GHA Trees
5 South Drive
High Wycombe
Bucks
HP13 6JU



Glen Harding MSc (Forestry), MArborA
t: 07884 056025
e: info@ghatrees.co.uk
www.ghatrees.co.uk

BS5837:2012 TREE SURVEY AND ARBORICULTURAL IMPACT ASSESSMENT: Idlehurst, Birch Grove, Horsted Keynes

Dated: 14th April 2025

Our reference: GHA/DS/160222:25

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Arboricultural Impact Assessment

Location: Idlehurst, Birch Grove, Horsted Keynes
Our reference: GHA/DS/160222:25
Client: Gould Baxter
Dated: 14th April 2025
Prepared by: Glen Harding MICFor, MSc (Forestry), MArborA
Date of Inspection: 30th January 2025

Instructions

Issued by – Gould Baxter

TERMS OF REFERENCE – GHA Trees were instructed to survey the subject trees within and adjacent to Idlehurst, Birch Grove, Horsted Keynes, in order to assess their general condition and to provide a planning integration statement for the indicative proposed development that safeguards the long term wellbeing of the retained trees in a sustainable manner.

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Executive Summary

The proposal for the site is to undertake extensions to the existing house, the construction of a new greenhouse and some associated landscape works. The proposed scheme does not require the removal of any trees; therefore, the landscape character of the site will be unaffected by the proposal. The proposal requires new structures to be installed within the root protection areas of nearby trees; however, mitigations are proposed to ensure these structures will not adversely affect these trees. The retained trees require protection in accordance with industry best practice and BS 5837: 2012 – Trees in relation to design, demolition and construction – recommendations, in order to ensure their longevity.

Documents Supplied

The client supplied the following documents:

- Topographical survey
- Existing layout plans
- Proposed layout plans

Scope of Survey

- 1.1 The survey is concerned with the arboricultural aspects of the site only.
- 1.2 The planning status of the subject property was not investigated in detail.
- 1.3 A qualified Arboriculturist undertook the report and site visit and the contents of this report are based on this. Whilst reference may be made to built structure or soils, these are only opinions and confirmation should be obtained from a qualified expert as required.
- 1.4 Trees in third party ownership were surveyed from within the subject property, therefore a detailed assessment was not possible and some (if not all) measurements were estimated. Where the stem location of a third party tree has been estimated, this is noted on the plan.
- 1.5 Dense vegetation or climbers (such as ivy) also prohibited full inspections for some trees; this is noted where applicable.
- 1.6 No discussions took place between the surveyor and any other party.
- 1.7 The trees were inspected on the basis of the Visual Tree Assessment method expounded by Mattheck and Breleor (The body language of tree, DoE booklet Research for Amenity Trees No. 4, 1994)
- 1.8 The survey was undertaken in accord with British Standard 5837: 2012 – Trees in relation to design, demolition and construction – recommendations.
- 1.9 The client's attention is drawn to the responsibilities under the Wildlife and Countryside Act (1981).

Survey Method

- 2.1 The survey was conducted from ground level with the aid of binoculars if needed.
- 2.2 No tissue samples were taken nor was any internal investigation of the subject trees undertaken.

- 2.3 No soil samples were taken.
- 2.4 The height of each subject tree was estimated using a clinometer and recorded to the nearest half metre.
- 2.5 The stem diameter for each tree was measured in line with the requirements set out in BS 5837: 2012 – Trees in relation to design, demolition and construction – recommendations.
- 2.6 The crown spreads were measured with an electronic distometer and recorded to the nearest half metre. Where the crown radius was notably different in any direction this has been noted on the Plan (appendix A) and within the tree table (Appendix B). The crowns of those trees that are proposed for removal, or trees where the crown spread is deemed insignificant in relation to the proposed development are not always shown on the appended plan; however their stem locations are marked for reference.
- 2.7 The Root Protection Area (RPA) for each tree is included in the tree table, both as an area, and as the radius of a circle.
- 2.8 The crown clearance was measured using a clinometer and recorded to the nearest half metre. Where it is significantly lower in one direction, this is noted within the tree table at appendix B.
- 2.9 All of the trees that were inspected during the site visit are detailed on the plan at Appendix A; this plan was produced in colour and **MUST** only be scanned or reproduced in colour. The trees on this plan are categorised and shown in the following format:

COLOUR CODING AND RATING OF TREES:

Category A – Trees of high quality with an estimated remaining life expectancy of at least 40 years. Colour = light green crown outline on plan.

Category B – Trees of moderate quality with an estimated remaining life expectancy of at least 20 years. Colour = mid blue crown outline on plan.

Category C – Trees of low quality with an estimated remaining life expectancy of at least 10 to 20 years, or young trees with a stem diameter below 150mm. Colour = uncoloured crown outline on plan.

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. Colour = red crown outline on plan.

All references to tree rating are made in accordance with BS 5837: 2012 – Trees in relation to design, demolition and construction – recommendations’, Table 1.

The Site

- 3.1 The site is located on Birch Grove in the village of Horsted Keynes.
- 3.2 Access to the property is currently gained via a driveway to the front of the site.

The Subject Trees

- 4.1 The details of the subject trees are set out in the Schedule at Appendix B.
- 4.2 Please be aware that ash tree(s) were identified during the survey. Many ash trees in the UK are suffering from 'ash dieback' (*Hymenoscyphus fraxineus*) which can cause the rapid decline of affected trees, often rendering them unsafe. Affected trees have been highlighted in the tree table at appendix B and the severity of the infection noted; however please ensure these trees are inspected regularly.
- 4.3 Of the twenty-seven individual trees and groups of trees surveyed, nine have been assessed as BS 5837 category A, six have been assessed as BS category B, ten have been assessed as BS category C with the remaining two trees being assessed as BS 5837 category U.

Category A	9 trees / groups
Category B	6 trees
Category C	10 trees / groups
Category U	2 trees

The Proposal

- 5.1 The proposal for the site is to undertake extensions to the existing house, the construction of a new greenhouse and some associated landscape works.
- 5.2 The proposed location of the above structures can be seen on the appended plan.

Arboricultural Impact Assessment

PROPOSED TREE REMOVAL / RETENTION:

- 6.1 The proposed site layout and all of its associated structures allows for the healthy retention of all of the trees on the site itself, and within nearby adjacent sites; therefore, the arboricultural landscape character of the site will be retained.

TREE PRUNING TO ACCOMMODATE THE PROPOSAL OR ACCESS TO THE SITE

- 6.2 The implementation of the proposal does not lead to the requirement to prune any of the retained trees.

ASSESSMENT OF RETAINED TREES ROOT PROTECTION AREAS

- 6.3 Section 4.6.3 of BS 5837: 2012 states that the Root Protection Area (RPA) of each tree should be assessed by an arboriculturalist considering the likely morphology and disposition of the roots, when known to be influenced by past or existing site conditions.
- 6.4 The assessed RPAs (excluding the RPAs of U category trees and those trees which are proposed for removal) can be seen on the appended plan where some have amended to take account of the existing structures.

ASSESSED IMPACT ON RPAS BY PROPOSED STRUCTURES & PROPOSED MITIGATIONS

- 6.5 There is a small encroachment into the RPA of T1 from the new extension (encroachment ~0.5%) and T6 for the new green house (encroachment ~2%); these are assessed to be within acceptable levels and will not cause any significant harm to these trees.
- 6.6 Where sections of the proposed landscaping are within the RPA of T1, these areas will be hand dug to minimise disturbance and any roots over 25mm will be retained and worked around under close supervision from the retained arboriculturist.
- 6.7 The proposed new structures are situated outside of the assessed RPAs of all of the other trees; therefore, these trees pose no below ground constraints on the new structures or vice versa.

INSTALLATION OF SERVICES

- 6.8 The full details of existing and proposed new services have not been made available at the time of writing.
- 6.9 The installation of underground apparatus and drainage systems with the use of mechanical excavators will undoubtedly sever any roots that may be present and can change the hydrology and structure of the nearby soil in a way that will adversely affect the health of any nearby trees. Particular care should therefore be taken when assessing the layout of new services and consideration must be given to the methods of installation of all underground apparatus.

Post Development Pressure

FUTURE TREE AND STRUCTURE RELATIONSHIPS

- 7.1 The retained trees are at a satisfactory distance from the proposed new buildings and highly unlikely to give rise to any inconvenience.
- 7.2 Regular inspections of the retained trees by a suitably qualified Arboriculturalist and subsequent remedial works will ensure that the trees are maintained in a suitable manner, to exist in harmony with the new structures and its occupants for many years to come.

Tree Protection Measures and Preliminary Method Statement for Development Works

8.1 TREE PROTECTION BARRIERS

It is essential for the future health of the trees to be retained on site, that all development activity is undertaken outside the root protection zone of these trees. The position of the fence **MUST** be marked out with biodegradable marker paint on site and agreed with appropriate representatives from the LPA and contractor. The fencing **MUST** be erected **prior** to any works in the vicinity of the trees and removed only when all development activity is complete. The protective fencing **MUST** be as that shown in BS 5837 (see Appendix C). The herras panels **MUST** be joined together using a minimum of two anti-tamper couplers which **MUST** be installed so they can only be removed from the inside of the fence. The panels **MUST** supported by stabilizer struts, which **MUST** be installed on the inside and secured to the ground using pins or appropriate weights.

The Fence must be marked with a clear sign reading:

“Construction Exclusion Zone – No Access”

8.2 GROUND PROTECTION – LIGHTWEIGHT ACCESS ONLY

Where any additional ground protection is required, these areas **MUST** be covered with a permeable membrane, with 150mm layer of compressible woodchip overlaying it; an 18mm marine ply boards will then be secured on top of the woodchip to allow a 1.5tonne mini-digger to access the area without causing major compaction or soil erosion.



Above: ground protection make-up

8.3 SITE HUTS, WELFARE FACILITIES AND STORAGE OF EQUIPMENT, MATERIALS AND CHEMICALS

All site huts **MUST** be positioned outside of the retained trees RPAs.

8.4 MIXING OF CONCRETE

All mixing of cement / concrete **MUST** be undertaken outside of the RPA of all of the retained trees.

8.5 USE CRANES, RIGS AND BOOMS

Precautionary measures **MUST** be observed to avoid contact of any retained trees when manoeuvring cranes rigs or booms into position.

8.6 INCOMING SERVICES, DRAINAGE AND SOAKAWAYS

Any new underground services which are to be located within (any portion of) the RPAs of any trees which are to be retained **MUST** be installed in accord with the guidance given in BS5837 together with the National Joint Utilities Group Booklet 4: 2007 Guidelines for the planning, installation and maintenance of utility services in proximity to trees (NJUG4). Service installation layouts **MUST** be planned to keep apparatus together in common ducts, in order to minimise the need for excavations. Service trench excavation within the RPAs **MUST NOT** be undertaken with the use of any mechanised machinery (minidiggers, JCBs or alike).

8.7 ON SITE SUPERVISION

Regular site supervision is essential to ensure all potentially damaging activities near to trees are properly supervised. A pre start site meeting **MUST** occur to ensure all parties are aware of their responsibilities relating to tree protection on site; this **MUST** include a site induction for key personnel.

Key personnel:

Name	Position	Contact number / email:
Glen Harding	Retained arboriculturalist	07884 056 025 Or info@ghatrees.co.uk
TBC	Local authority Arboricultural Officer	TBC
TBC	Site manager	TBC

After this pre start meeting, day-to-day responsibility for tree protection will be devolved to the site manager who will make contact with the retained arboriculturalist as needed.

8.8 OTHER TREE PROTECTION PRECAUTIONS

- **NO** fires lit on site within 20 metres of any tree to be retained.
- **NO** fuels, oils or substances which will be damaging to the tree shall be spilled or poured on site.
- **NO** storage of any materials within the root protection zone.

8.9 HARD / SOFT LANDSCAPING NEAR RETAINED TREES

All new pathways and hard landscaping areas within the Root Protection Areas (RPAs) of the retained trees **MUST** be designed using no-dig, up and over

construction techniques, and be specified in close co-ordination with the retained Arboriculturalist. Porous materials **MUST** also be used when surfacing near the trees. No machinery will be used for this work, which **MUST** all be done by hand.

8.10 DISMANTLING PROTECTIVE BARRIERS

Protective barriers must only be completely removed when all machinery, and equipment has left site.

Conclusion

- 9.1 In conclusion, the principal arboricultural features within the site can be retained and adequately protected during development activities.
- 9.2 Subject to precautionary measures as detailed above, the proposal will not be injurious to trees to be retained.

Recommendations

- 10.1 Site supervision – An individual e.g. the Site Agent, must be nominated to be responsible for all arboricultural matters on site. This person must:
 - a. Be present on the site the majority of the time.
 - b. Be aware of the arboricultural responsibilities.
 - c. Have the authority to stop any work that is, or has the potential to cause harm to any tree.
 - d. Be responsible for ensuring that all site personnel are aware of their responsibilities towards trees on site and the consequences of the failure to observe those responsibilities.
 - e. Make immediate contact with the local authority and / or retained arboriculturalist in the event of any related tree problems occurring whether actual or potential.
- 10.2 It is recommended, that to ensure a commitment from all parties to the healthy retention of the trees, that details are passed by the architect or agent to any contractors working on site, so that the practical aspects of the above precautions are included in their method statements, and financial provision made for these.

14th April 2025

Signed:



Glen Harding MICFor, MSc (Forestry), MArborA
For and on behalf of GHA Trees

Appendix A
TREE PLAN
(see separate PDF)

Appendix B

TREE TABLE

Tree Number	Tree Name (species)	Ht (m)	Calculated Stem Diameter (mm)	Number of Stems	Root Protection Area (Radius, m)	N (m)	E (m)	S (m)	W (m)	Age Class	Clearance (m)	Estimated life expectancy	BS Category	Comments / Recommendations
T1	Beech	18	850	1	10.20	9	10	10	9.5	M	4	40+	A1	No significant / notable defects observed during inspection.
T2	Acer ssp	4	130	2	1.56	2.5	0.5	2	3	M	2 west	10-20	C1	Small tree of limited value in the wider landscape.
T3	Gingkho	13	432	2	5.18	2	2	0.5	2	M	4	10-20	C1	Poor / included fork at 1m. Unremarkable tree of modest quality and of limited value in the wider landscape.
T4	Birch	11	366	2	4.39	4.5	4.5	4	3	M	3	20-40	B1	No significant / notable defects observed during inspection.
T5	Pear	3.5	130	1	1.56	1	1	1	1	M	1	10-20	C1	Small tree of limited value in the wider landscape.
T6	Yew	15	700	1	8.40	7	7	7	7	M	2 east, 7 south	40+	A1	Off site - full inspection not possible. Some measurements estimated.
T7	Oak	21	1250	1	15.00	6	8	8	6.5	M	6 plus epicormic	40+	A1	Previously crown reduced.
T8	Cherry	3.5	240	1	2.88	2.5	2	3	3	OM	2	Less than 10	U	Major decay on main stem south side - 0 to 1m.
T9	Oak	15	552	2	6.62	5	4	6	5	M	4	20-40	B1	No significant / notable defects observed during inspection.

Tree Number	Tree Name (species)	Ht (m)	Calculated Stem Diameter (mm)	Number of Stems	Root Protection Area (Radius, m)	N (m)	E (m)	S (m)	W (m)	Age Class	Clearance (m)	Estimated life expectancy	BS Category	Comments / Recommendations
T10	Acer ssp	10	400	1	4.80	4.5	4.5	4.5	4.5	M	4	20-40	B1	No significant / notable defects observed during inspection.
T11	Willow	12	339	2	4.07	5	4.5	1	4	M	2	10-20	C1	Poor / included union at ground level. Suppressed by T12. Unremarkable tree of modest quality and of limited value in the wider landscape.
T12	Oak	17	550	1	6.60	6	5	7	7	M	4	40+	A1	No significant / notable defects observed during inspection.
T13	Oak	17	700	1	8.40	5	4	5	7	M	6	40+	A1	No significant / notable defects observed during inspection.
G14	Apple	2	141	2	1.70	1.5	1.5	1.5	1.5	M	1	10-20	C2	Small trees of limited value in the wider landscape.
T15	Beech	24	900	1	10.80	8	8	8	8	M	4 over site	40+	A1	Off site - full inspection not possible. Some measurements estimated.
T16	Oak	15	700	1	8.40	3	7	7	8	M	4	40+	A1	Off site - full inspection not possible. Some measurements estimated.

Tree Number	Tree Name (species)	Ht (m)	Calculated Stem Diameter (mm)	Number of Stems	Root Protection Area (Radius, m)	N (m)	E (m)	S (m)	W (m)	Age Class	Clearance (m)	Estimated life expectancy	BS Category	Comments / Recommendations
T17	Spruce	9	230	1	2.76	2	2	3	3	M	2 west	10-20	C1	Off site - full inspection not possible. Some measurements estimated.
T18	Ash	15	700	1	8.40	6	7	7	8	OM	6	Less than 10	U	Advanced signs of ash dieback. Significant crown dieback observed from ground level.
T19	Spruce	23	740	1	8.88	5	5	4	5	M	2 west	20-40	B1	No significant / notable defects observed during inspection.
T20	Beech	21	440	1	5.28	3	3	3	5	M	4 west	20-40	B1	Off site - full inspection not possible. Some measurements estimated.
T21	Oak	20	450	1	5.40	5	7	9	0	M	8	10-20	C1	Off site - full inspection not possible. Some measurements estimated.
T22	Oak	20	600	1	7.20	1	4	9	7	M	8	20-40	B1	Off site - full inspection not possible. Some measurements estimated.
T23	Oak	19	1230	1	14.76	9	9	9	9	M	4	40+	A1	Off site - full inspection not possible. Some measurements estimated.

Tree Number	Tree Name (species)	Ht (m)	Calculated Stem Diameter (mm)	Number of Stems	Root Protection Area (Radius, m)	N (m)	E (m)	S (m)	W (m)	Age Class	Clearance (m)	Estimated life expectancy	BS Category	Comments / Recommendations
T24	Hazel	6	144	23	1.73	3	3	3	3	M	1	10-20	C1	Small tree of limited value in the wider landscape.
T25	Willow	10	360	1	4.32	1	6	5	0	M	2	10-20	C1	Heavy lean to east. Unremarkable tree of modest quality and of limited value in the wider landscape.
T26	Ash	14	406	3	4.87	5	5	5	5	M	3	10-20	C1	Regrowth from old stum. Early signs of Ash dieback noted. Minor crown dieback observed from ground level.
G27	Oak	19	790	1	9.48	9	9	7	5	M	5	40+	A2	No significant / notable defects observed during inspection.

KEY :

Tree No: (T= individual tree, G= group of trees, W= woodland)
Age class: Young (Y), Middle aged (MA), Mature (M), Over mature (OM),
Veteran (V)
Height (Ht): Measured in metres +/- 1m

Appendix C
TREE FENCING DETAIL

Figure 3 Examples of above-ground stabilizing systems



