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BS5837:2012 TREE SURVEY AND ARBORICULTURAL IMPACT ASSESSMENT: 3 Byeways Close, Knowl Hill, RG10 9YL

Dated: 11th November 2024

Our reference: GHA/DS/122160:24

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Arboricultural Impact Assessment

Location: 3 Byeways Close, Knowl Hill, RG10 9YL
Our reference: GHA/DS/122160:24
Client: Twenty-20 Architecture
Dated: 11th November 2024
Prepared by: Glen Harding MICFor, MSc (Forestry), MArborA
Date of Inspection: 7th August 2024

Instructions

Issued by – Twenty-20 Architecture

TERMS OF REFERENCE – GHA Trees were instructed to survey the subject trees within and adjacent to 3 Byeways Close, Knowl Hill, 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 renovate the existing house, work that will include extensions to the sides and rear. The proposed scheme does not require the removal or pruning of any of the trees on site, or of trees within nearby adjacent sites; therefore, the landscape character of the site will be unaffected by the proposal. 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 Byeways Close to the south west of Knowl Hill.
- 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 eleven individual trees and groups of trees surveyed, three have been assessed as BS category B, seven have been assessed as BS category C with the remaining tree being assessed as BS 5837 category U.

Category B	3 trees / groups
Category C	7 trees / groups
Category U	1 tree

The Proposal

- 5.1 The proposal for the site is to renovate the existing house, work that will include extensions to the sides and rear.
- 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, or shrubs.
- 6.3 There is no part of the new structure which will have tree canopies (from trees to be retained) overhanging it and the building works can progress safely without the need for any facilitation pruning.

ASSESSMENT OF RETAINED TREES ROOT PROTECTION AREAS

- 6.4 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. The assessed RPAs can be seen on the appended plan.

ASSESSED IMPACT ON RPAS BY PROPOSED STRUCTURES & PROPOSED MITIGATIONS

- 6.5 The proposed new structures are situated outside of the assessed RPAs of all of the trees; therefore, these trees pose no below ground constraints on the new structures or vice versa.

PROPOSED ACCESS TO THE NEW DEVELOPMENT

- 6.6 The existing driveway and parking areas will be retained and there are no plans to upgrade or extend these areas as part of the proposed site works.

INSTALLATION OF SERVICES

- 6.7 The full details of existing and proposed new services have not been made available at the time of writing.
- 6.8 New services must be routed to avoid all RPAs of retained trees on site and within nearby sites. From an assessment of the subject site, undertaken in conjunction with the project architect, there is no reason to assume this isn't possible. Inspection chambers must also be sited outside the RPAs of any nearby trees.

Post Development Pressure

FUTURE TREE AND STRUCTURE RELATIONSHIPS

- 7.1 The retained trees are at a satisfactory distance from the proposed new building outline 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

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 BOUNDARY TREATMENTS

Boundary fencing installation / upgrades **MUST** be undertaken as part of the soft landscaping phase and **MUST** be installed **ONLY** when all machinery that is on site for the main build has permanently left the site (NB. If needed, boundary fencing can also be installed prior to the commencement of site works, i.e.. before any machinery has been bought onto the site). Where sections of new / upgraded fencing are located within the RPA of ANY tree that is to be retained, this work **MUST** be undertaken by hand using hand tools only. The locations of the new fence upright posts will be finalised following trial digs to confirm there are no major (over 25mm) roots present; if any such roots are found, the location must be altered. If any smaller roots are found, these can be cut using sharp hand sharp tools to leave a ‘clean’ cut, in order to minimise the risk of infection by decay pathogens. The post holes within the RPAs should then be lined with plastic sheeting before any concrete or cement is placed into the hole, in order that there is no risk of leaching into the nearby soil as the mixture dries.

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

All site huts **MUST** be positioned outside of the retained trees RPA’s.

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

New services **MUST** be routed to avoid all RPAs of retained trees on site and within nearby sites. From an assessment of the subject site, undertaken in conjunction with the project architect, there is no reason to assume this isn’t possible. Inspection chambers **MUST** be sited outside the RPA.

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.

11th November 2024

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	Leyland cypress	18	400	1	4.80	2	5	4	3	M	1.5	10-20	C1	Part of lapsed hedge on boundary.
G2	Leyland cypress	8	200	1	2.40	2.5	2.5	2.5	2.5	M	1.5	10-20	C1	Part of lapsed hedge on boundary.
T3	Lawson cypress	12	200	1	2.40	3	3	2	1	M	1	10-20	C1	Part of lapsed hedge on boundary.
T4	Yew	8	240	1	2.88	4.5	4.5	4.5	4.5	M	2	20-40	B1	Future potential to form reasonable tree.
T5	Sycamore	16	500	1	6.00	5	3	1	5	M	8	20-40	Prov B1	Ivy prevented full inspection. Recommend: remove ivy and reinspect.
G6	Ash	16	280	1	3.36	3	1	3	3	M	7	10-20	C2	Early signs of Ash dieback noted. Minor crown dieback observed from ground level.
T7	Sycamore	16	570	1	6.84	1	5	3	1	M	6	10-20	C1	Topped at 6m in past. Ivy prevented full inspection. Recommend: remove ivy and reinspect.
G8	Sycamore	16	597	2	7.16	3	3	3	6	M	7	20-40	Prov B2	Ivy prevented full inspection. Recommend: remove ivy and reinspect.
T9	Ash	20	850	1	10.20	0	5	4	4	OM	6	Less than 10	U	Lost top at 4m north side in past - major decay visible with frass present on floor near base of tree.

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	Sycamore	16	470	1	5.64	3	2	1	3	M	6	10-20	C1	Topped at 6m in past. Dryadds saddle and decay visible at old topping point. Ivy prevented full inspection. Recommend: remove ivy and reinspect.
G11	Hawthorn and hazel	8	250	1	3.00	4	4	4	4	M	2	10-20	C2	Scrub growth.

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



