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BS5837:2012 TREE SURVEY AND ARBORICULTURAL IMPACT ASSESSMENT:

White House, Northwood Road, Hillingdon

Dated: 29th November 2024

Our reference: GHA/DS/169990:24

CONTENTS

Arboricultural Impact Assessment

Location: White House, Northwood Road, Hillingdon
Our reference: GHA/DS/169990:24
Client: MSC Planning
Dated: 29th November 2024
Prepared by: Glen Harding MICFor, MSc (Forestry), MArborA
Date of Inspection: 27th April 2022

Instructions

Issued by – MSC Planning

TERMS OF REFERENCE – GHA Trees were instructed to survey the subject trees within and adjacent to White House, Northwood Road, Hillingdon, 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.

Executive Summary

The proposal for the site is to construct a new dwelling to replace the existing building. The proposed scheme requires the removal of a small number of relatively insignificant (C and U category) trees and shrubs, which will not significantly impact the local or wider landscape. 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 Tree works will be required to be in accord with British Standard 3998 – 2010 (Tree Work - Recommendations).

1.10 Underground services near to trees will need to be installed in accord with the guidance given in BS5837.

1.11 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 realisitically 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 Northwood Road, a residential through road located to the east of Harefield.

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 Of the fourteen individual trees, and groups of trees surveyed, eight have been assessed as BS category B, four have been assessed as BS category C with the remaining two trees being assessed as BS 5837 category U.

Category B	8 trees / groups
Category C	4 trees / groups
Category U	2 trees

The Proposal

5.1 The proposal for the site is to construct a new dwelling to replace the existing building.

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 following trees are proposed for removal as part of the new development, as these specimens could not be effectively retained as they are located within the outline of the new structures, or located too close to make their retention feasible / sustainable.

G10 and G11

6.2 All of the trees to be removed have been given a C category grading in accordance with BS 5837. It is therefore felt that these trees should not act as a limitation on the effective use of the site, or impose any significant constraints on the layout (see table 1 BS5837).

6.3 The assessed grading (as per BS5837 table 1) of each of the trees to be removed, as well as any relevant comments on their condition can be seen in the tree table at appendix B.

TREE PRUNING TO ACCOMODATE THE PROPOSAL OR ACCESS TO THE SITE

6.4 The implementation of the proposal does not lead to the requirement to prune any of the retained trees, or shrubs.

6.5 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.

6.6 Satisfactory clearances from T5, G6 and G9 also exist over the driveway accessing the site and therefore no facilitation pruning is required.

ASSESSMENT OF RETAINED TREES ROOT PROTECTION AREAS

6.7 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.

6.8 The RPAs of several trees have been amended to take account of the existing road; these adjustments can be seen on the appended plan.

ASSESSED IMPACT ON RPAS BY PROPOSED STRUCTURES

6.9 The proposed new structure is situated outside of the assessed RPAs of all of the trees proposed for retention, therefore these trees pose no below ground constraints on the new structure or vice versa.

PROPOSED ACCESS TO THE NEW DEVELOPMENT

6.10 Where sections of the new / upgraded driveway are within the RPAs of retained trees, an "up and over" style construction will be necessary, to ensure that all existing ground levels are retained in their current form, as well as ensuring that satisfactory moisture and oxygen can be obtained from the underlying soil by any tree roots in this area. A design for this proposed access route must be drawn up by a structural engineer, in close co-ordination with the retained arboriculturalist. A preliminary method statement has been included at section 8 of this document.

INSTALLATION OF SERVICES

6.11 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 building 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:

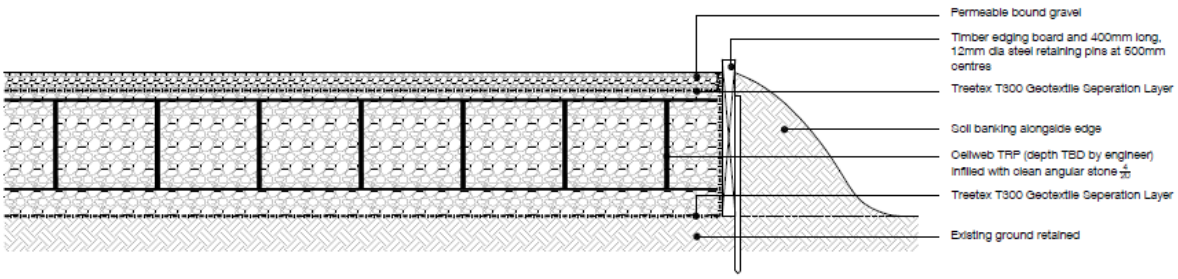
"Construction Exclusion Zone – No Access"

8.2 NO DIG SURFACING CONSTRUCTION METHOD IN ACCORDANCE ARBORICULTURAL PRACTICE NOTE 12 AND BS: 5837

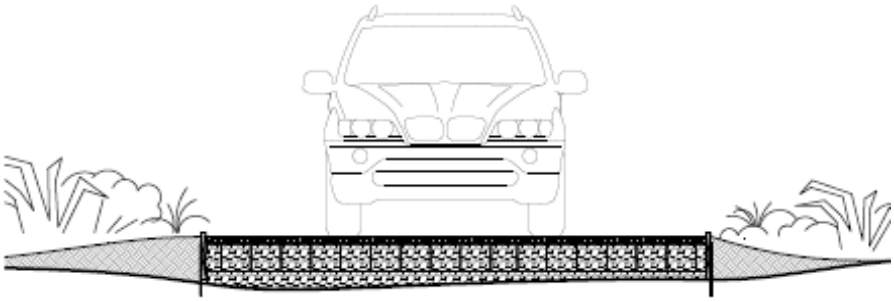
The sections of the new / upgraded driveway that are within the RPA's of the retained trees **MUST** be constructed as follows.

Below is a diagram detailing the makeup of the new drive and also a typical cross the installation methodology is included below this diagram.

No dig drive makeup



Typical section:



METHODOLOGY:

- Eradication of all existing ground vegetation **MUST** be undertaken using a translocated herbicide. Any product used for this purpose **MUST** be selected to ensure that it will not have an adverse affect on the health of the retained trees, and carried out by a suitably trained operative.

- Any major protrusions within the soil **MUST** be removed, such as large rocks or existing tree stumps. Any holes **MUST** be filled with sharp sand.

- Lay a geotextile membrane over the entire area(s) to be protected, ensuring a one 1m overlap where necessary. All new surfacing **MUST** be positioned at least 500mm from tree stems or buttress roots.

- Construction of the edging of the area is to be implemented with the use of vertical steel pegs driven into the ground at intervals of 500mm with side supports firmly attached. **CHECK FOR UNDERGROUND SERVICES PRIOR TO THE COMMENCEMENT OF SUCH WORK.**

- The three dimensional cellular confinement system (e.g cellweb or similar) must be cut to size and placed within the pre-prepared area. This area **MUST** now be filled with a no-fines aggregate infill. This **MUST** then be compacted to avoid the possibility of future "rutting".

- Lay a final layer of the geotextile membrane on top of this surface.

- A porous material can now be placed on top to complete the construction.

- Graded top soil will be used to bring the adjacent grassed areas to the same level as the new driveway.

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 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).

8.6 ON SITE SUPERVISION

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

The key personnel relating to this project are:

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

8.7 OTHER TREE PROTECTION PRECAUTIONS

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

8.8 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 No significant or important trees will be lost to facilitate the proposed scheme.

9.3 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.

29th 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

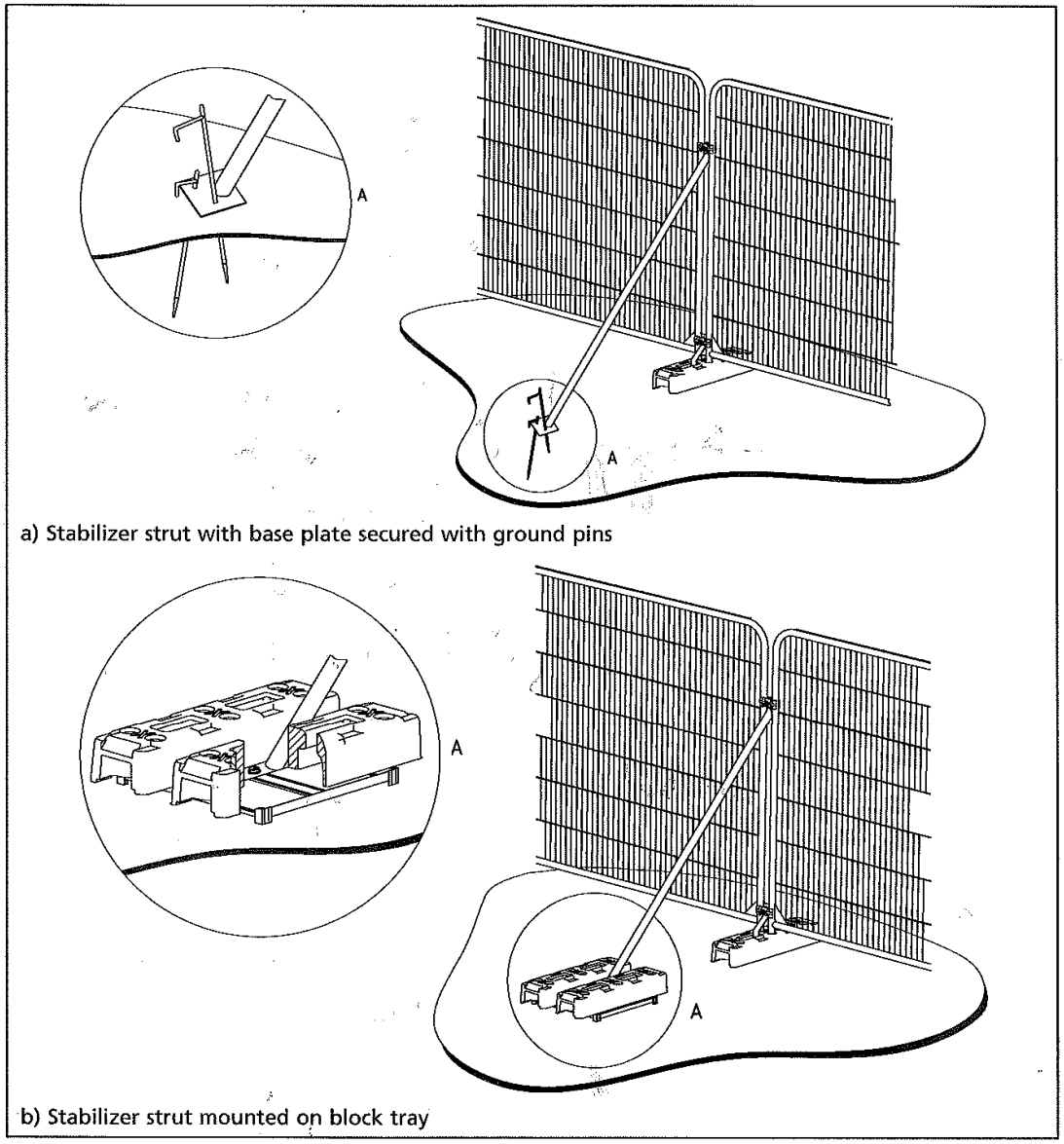
Tree Number	Tree Name (species)	Ht (m)	Calculated Stem Diameter (mm)	Number of Stems	Root Protection Area (Radius, m)	N (m)	E (m)	S (m)	W (m)	Age Class	Clearance (m)	Estimated life expectancy	BS Category	Comments / Recommendations
T1	Oak	14	650	1	7.80	4	4	4	4	M	7 over site	20-40	B2	Ivy prevented full inspection. Tree previously crown reduced.
T2	Oak	6	360	1	4.32	2	0	2	2	M	5 over site	20-40	B2	Ivy prevented full inspection. Tree previously crown reduced. Suppressed by T1.
T3	Oak	13	700	1	8.40	2	3.5	3.5	3	M	4 over site	20-40	B2	Ivy prevented full inspection. Tree previously crown reduced.
T4	Oak	10	700	1	8.40	1.5	4	3	2.5	M	4 over site	20-40	B2	Ivy prevented full inspection. Tree previously crown reduced.
T5	Oak	13	750	1	9.00	3	2	4	3	M	5 over site	20-40	B2	Ivy prevented full inspection. Tree previously crown reduced.
G6	Oak	17	420	1	5.04	5	6.5	6	7	M	5 over site	20-40	B2	Ivy prevented full inspection.
T7	Ash	12	200	1	2.40	1	2	2	3	M	6	Less than 10	U	Advanced signs of ash dieback.
T8	Poplar	13	390	1	4.68	7	5	5	7	M	4	10-20	C1	Self set tree of little value.
G9	Oak	16	460	1	5.52	6	3	6	7	M	4 north, 6 east and south	20-40	B2	Ivy prevented full 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
G10	Sycamore	15	420	1	5.04	4	4	4	4	M	7 north	10-20	C2	Self set trees. Recommend: to be removed.
G11	Sycamore, oak, holly	6 to 10	100	1	1.20	2	1	3	3	M	3	10-20	C2	Self set trees. Recommend: to be removed.
T12	Oak	11	400	1	4.80	6	6	6	6	M	2	20-40	B1	Off site - full inspection not possible. Some measurements estimated.
T13	Scots pine	9	320	1	3.84	4	5	0	0	OM	4 east	Less than 10	U	Major limb loss in past. 90% of crown has been lost to storms.
T14	Scots pine	15	500	1	6.00	4	2	3	5	OM	5	10-20	C1	Tree has low vitality.

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**



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray