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Arboricultural and Planning Integration Report: Timbers, Northgate, Northwood, HA6 2TH

10th November 2022

Ref: GHA/DS/100260:22

CONTENTS

Arboricultural Report

Location: Timbers, Northgate, Northwood, HA6 2TH
Ref: GHA/DS/100260:22
Client: DDA
Date: 10th November 2022
Prepared by: Glen Harding MICFor, MSc (Forestry), MArborA
Date of Inspection: 28th January 2022

Instructions

Issued by – DDA

TERMS OF REFERENCE – GHA Trees were instructed to survey the subject trees within and adjacent to Timbers, Northgate, Northwood, 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 renovate and extend the existing house to the side 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 Dense vegetation or climbers (such as ivy) also prohibited full inspections for some trees; this is noted where applicable.

1.5 No discussions took place between the surveyor and any other party.

1.6 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)

1.7 The survey was undertaken in accord with British Standard 5837: 2012 – Trees in relation to design, demolition and construction – recommendations.

1.8 Underground services near to trees will need to 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).

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 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 Northgate, a residential through road located to the south of Northwood.

3.2 A good tree cover is present on the site itself as well as adjacent sites, with many semi-mature and mature trees of both native and exotic origin characterising the local area.

3.3 Access to the property is currently gained via a driveway to the front (north) 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 thirteen individual trees, and groups of trees surveyed, five have been assessed as BS 5837 category A, one has have been assessed as BS category B, with the remaining trees being assessed as BS 5837 category C.

Category A	5 trees
Category B	1 tree
Category C	7 trees

The Proposal

5.1 The proposal for the site is to renovate and extend the existing house to the side 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 ACCOMODATE 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.

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

6.6 The other RPAs have been drawn as notional circles, as there are no structures within their RPAs that have been assessed to significantly impact the root layout.

ASSESSED IMPACT ON RPAS BY PROPOSED STRUCTURES

6.7 There is an encroachment into the RPA of T12 from the new extension as shown on the appended plan; this equates to an area of ~ 2.5% and thus the use of traditional strip foundations will not be acceptable as this would cause harm to this tree.

6.8 The use of a system employing mini piles in conjunction with ground beams will instead be adopted and is now widely accepted and will ensure minimal root disturbance occurs near this tree. Localised piles will be positioned (following trial digs) to ensure that any significant roots (over 25mm) that are present in the area where the new building will sit can be retained and protected to coexist with the new structure.

6.9 In order to arrive at a suitable foundation design (which minimises root disturbance within the RPAs of nearby retained trees), site specific and specialist advice regarding footings should be sought from an Engineer, in close discussion with the projects Arboriculturalist.

6.10 There MUST be an air void beneath the new structure and rain water must be gathered from the roof and redistributed beneath the new structure to allow any root growth present to be allowed to continue to thrive.

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

PROPOSED ACCESS TO THE NEW DEVELOPMENT

6.12 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

6.13 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.

6.14 From an assessment of the subject site, undertaken in conjunction with the project architect, the existing drainage system has been assessed as suitable for re-use and it is assumed that the electric and gas cabling is also satisfactory. Therefore, there is no reason to assume that any new service installations will be required within the RPAs of any 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

This is a preliminary statement outlining tree protection measures that will be necessary to implement the scheme without adverse harm to trees to be retained. A full site-specific method statement will be required once the scheme is finalised and approved; this will be devised by GHA Trees, in conjunction with the appointed contractor and project engineer.

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.

8.3 IMPLEMENTATION OF THE NEW BUILDING ON A "RAFT STYLE" FOUNDATION WITH ASSOCIATED PILES / PADS

- **NOTE: any excavations in the RPAS 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.**

- The design of the new pile / pad layout must have sufficient flexibility that the locations of the supporting piles / pads is changeable. The location for these piles / pads will be confirmed following hand excavated, trial digs of the top 1000mm of each potential hole (this is where the majority of roots exist).

- The foundation design must also incorporate a void that will allow for water to reach the area beneath the structure and ensure that gaseous exchanges are not restricted.

- Hand tool excavations will only be undertaken by fully briefed site personnel. This operation will be done slowly and carefully to ensure the retention and protection of any roots that are discovered that are in excess of 25mm. These roots **MUST** then be covered and protected using damp hessian whilst further excavation commences; hessian must be left in situ until backfilling commences and re-wetted if needed to avoid root desiccation. **NOTE: OPERATIVES MUST CHECK FOR THE PRESENCE OF ANY EXISTING UNDERGROUND SERVICES PRIOR TO THE COMMENCEMENT OF SUCH WORK.**

- Any roots discovered in these trial pits in excess of 25mm diameter will immediately signal the requirement for a change of pit location.

- These trial digs will be attended by the retained arboriculturalist and site manager who will agree the final locations of the piles / pads.

- **Ground protection as that detailed above / A piling mat of appropriate thickness / loading capability MUST** be placed over the working area whilst the deeper piling / excavation of the final locations commences, with the use of a lightweight rig and / or hand tools. This will alleviate the possibility of excessive compaction or erosion within the RPA's.

- Once the trial holes are excavated to the correct depth, care must then be taken to ensure the new piles / pads are installed so as to avoid any roots

present. **Any roots that require pruning (those less than 25mm diameter) should be cut using sharp tools to leave a 'clean' cut, in order to minimise the risk of infection by decay pathogens.**

- Once the piles / pads are installed, the excavated holes **MUST** then be backfilled and the soil compacted using hand tools only, to ensure not air pockets are left as these can be damaging to tree roots.

The retained arboriculturalist will closely supervise this section of the work.

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

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

8.5 MIXING OF CONCRETE

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

8.6 INCOMING SERVICES, DRAINAGE AND SOAKAWAYS

From an assessment of the subject site, undertaken in conjunction with the project architect, the existing drainage system has been assessed as suitable for re-use, and it is assumed that the electric and gas cabling is also satisfactory.

8.7 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

8.8 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.

8.9 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.

9.3 There will be no appreciable post development pressure, and certainly none that would oblige the council to give consent to inappropriate tree works.

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.

10th November 2022
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

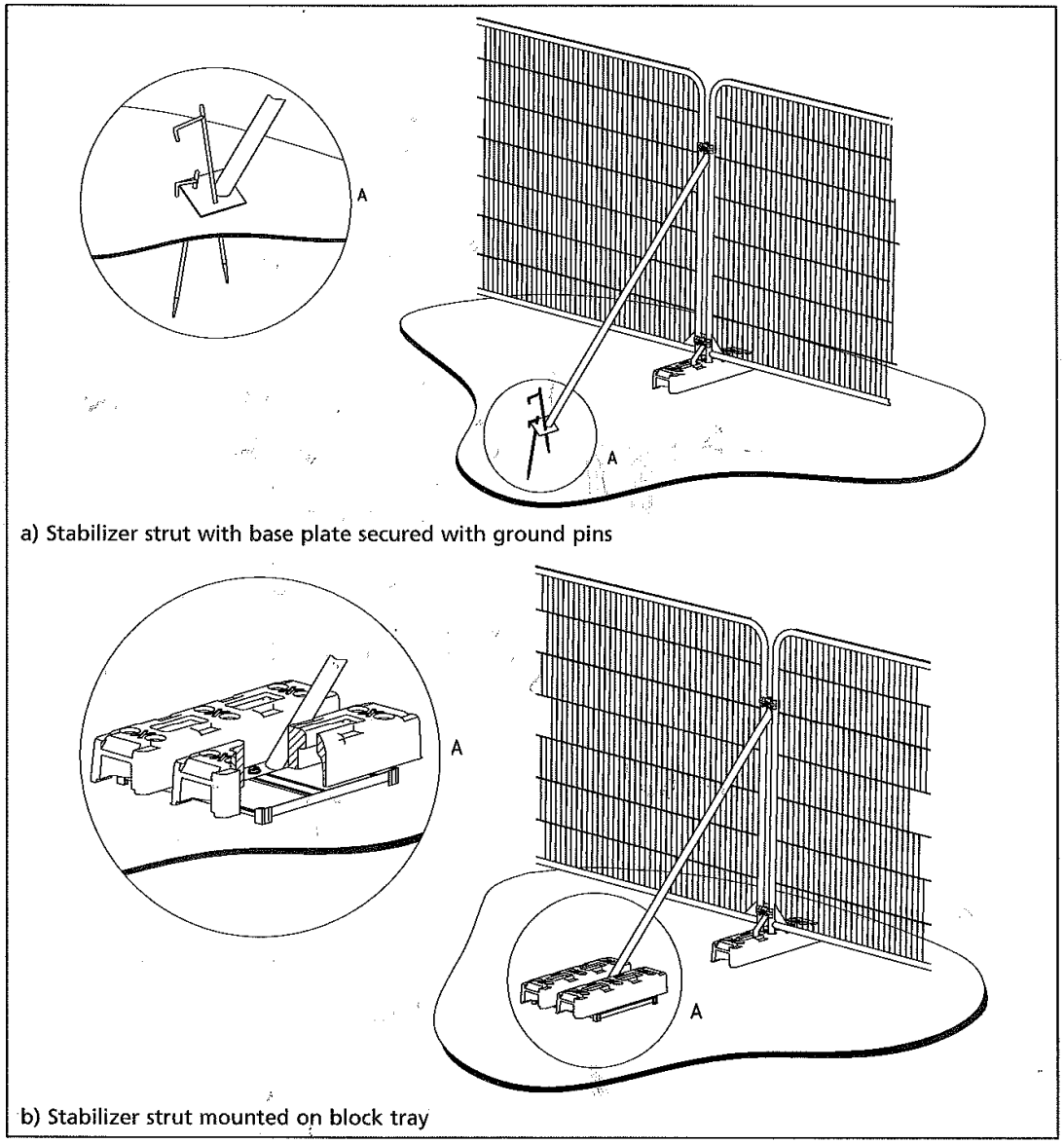
Tree Number	Tree Name (species)	Ht (m)	Calculated Stem Diameter (mm)	Number of Stems	Root Protection Area (Radius, m)	N (m)	E (m)	S (m)	W (m)	Age Class	Clearance (m)	Estimated life expectancy	BS Category	Comments / Recommendations
T1	Lawson cypress	9	210	1	2.52	1.8	1.8	1.8	1.8	M	0	10-20	C1	Small tree of limited value in the wider landscape.
T2	Lawson cypress	3	120	1	1.44	1.2	1.2	1.2	1.2	M	0	10-20	C1	Small tree of limited value in the wider landscape.
T3	Oak	19	750	1	9.00	4	2	5	6.5	M	9 south, plus epicormic	40+	A2	Previously crown reduced.
T4	Oak	21	670	1	8.04	6	6	7.5	5	M	9 south, plus epicormic	40+	A2	No notable defects recorded during inspection.
T5	Hornbeam	6	140	1	1.68	1.5	1.5	1.5	1.5	M	2	10-20	C1	Small tree of limited value in the wider landscape.
T6	Oak	20	810	1	9.72	6.5	7.5	7	5.5	M	9 west plus epicormic	40+	A2	No notable defects recorded during inspection.
T7	Lawson cypress	8	180	1	2.16	1.5	1.5	1.5	1.5	M	0	10-20	C1	Small tree of limited value in the wider landscape.
T8	Lawson cypress	20	495	2	5.94	3	3	3	3	M	0, 2 over road	10-20	C1	Small tree of limited value in the wider landscape.
T9	Yew	6	313	5	3.76	3.5	3.5	3.5	1	M	0, 3 over road	10-20	C1	Small tree of limited value in the wider landscape.
T10	Oak	15	560	1	6.72	4	4.5	6	2	M	8 west plus epicormic	20-40	B1	Slighty sparse crown. Ivy prevented full inspection. Recommend: remove ivy and reinspect.

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
T11	Apple	5	280	4	3.36	2	2	4	4	M	1.5	10-20	C1	Small tree of limited value in the wider landscape.
T12	Oak	17	710	1	8.52	4.5	5	6.5	4.5	M	9 north plus epicormic	40+	A1	Ivy prevented full inspection. Recommend: remove ivy and reinspect.
T13	Oak	17	740	1	8.88	6	7	6	8	M	10 plus epicormic	40+	A1	No notable defects recorded 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**



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray