ETHICAL ARBORICULTURE

Arboricultural Survey & Assessment to BS5837:2012

Abbots House, Priory Gardens, Chesterton.

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1 Introduction

This report was commissioned by Mr P Branston, of NP Branston to survey trees in connection with a planning proposal at Abbots House, Priory Gardens, Chesterton in accordance with BS5837: 2012; Trees in Relation to Construction.

Trees can offer many benefits, including:

- Providing visual amenity, softening or complementing the effect of the built environment, and adding maturity to new developments
- Displaying seasonal change and providing opportunities for wildlife in built-up areas;
- Making places more comfortable in tangible ways by contributing screening and shade, reducing wind speed and turbulence, intercepting snow and rainfall, as well as reducing glare.

Trees are also important elements of green infrastructure, contributing to urban cooling through evapotranspiration and providing micro-climatic effects that can reduce energy demands in buildings. They, therefore, represent a key resource that can significantly contribute to climate change adaption.

Existing trees are an important factor on construction sites, whether on or near the working areas, and trees are a material consideration in the UK planning system. Root systems stems and canopies, with allowance for future movement and growth, need to be taken into account in all projects, including those that do not require planning permission. The space required for any proposed new trees to become established is an important consideration.

During their lifetime, trees will be vulnerable to disturbance, injury, environmental changes, pests and diseases. Construction work often exerts pressures on existing trees, as do changes in their immediate environment following the construction. A tree that has taken many decades to reach maturity can be damaged irreparably in a few minutes by actions that might be unwitting, negligent or willful. The early provision of physical protection from damage is therefore critical.

Where tree retention or planting is proposed in conjunction with nearby construction, the objective should be to achieve a harmonious relationship between trees and structures that can be sustained in the long term.

As there are trees over 75mm diameter at 1500mm above ground level on this site, which could contribute to the character and appearance of the site, it is necessary to ascertain the quality and value of the trees and the likely impact that the proposed development could have on them. In addition, it is necessary to consider the impact retained trees could have on the development in the future.

Trees differ in their tolerance of root loss or disturbance, according to their age, species, and condition. In addition, root growth, while typically situated in the top metre of soil, can be affected by existing site features, including natural and man-made topography and structures that can restrict tree root growth in any direction. Consideration is given to all relevant factors when ascertaining the viability of root retention.

2 Site Description and Background

The application site comprises a detached two-storey dwelling with gravel driveway access from the south.

There are TPO trees to the North, South and East of the site/property, covered under The Priory, Chesterton, TPO No05/1988. The trees recorded in the group G1 and G5 are no reflective of what is on the site, with the position recorded for G1 not reflective of the tree positions within the schedule, The Horse Chestnut, Willow and a number of the Sycamores are positioned on the far side of the drainage ditch not the nearside as illustrated.
G5 no longer contains 32 sycamore, and I can find no evidence of stumps.

Given the variation in trees recorded on the TPO schedule and associated drawing Huntingdonshire District Council it may be prudent for the LPA to vary or revoke the existing TPO and replace it with a more current/accurate version to reflect the current condition, position and species of trees and to reduce the risk of confusion over which trees are protected and which aren't.

The site was inspected on 13/05/2025 on a clear bright day with a windspeed of 6mph.

We have been provided with a drawing for the proposed extension.

3 Arboricultural Impact Assessment

It should be noted that the methodology used to determine the theoretical rooting areas of trees contained within BS5837:2012 will not provide an accurate representation of a tree's rooting area and that many other factors (soil type, existing features, and tree species to name but a few) can and will determine the extent of a tree's rooting area.

Potential soil compaction issues caused by construction

As is the case on any construction site where there are trees present, there is always the potential for soil compaction to cause issues with the long-term retention of any retained trees. As such it is recommended that before any construction or stripping of the site begins, root protection barriers or ground protection mats are installed to protect the retained trees. Tree positions and their associated root protection areas are illustrated in the accompanying Tree Constraints and position plan.

Root Damage from Excavation

To avoid damage to the root plate of any retained trees, all excavation should be outside of any retained tree's root protection areas. In addition, any services should be installed outside of these illustrated areas.
As can be seen on the proposed design all excavation works required for the extension are outside of the rooting areas of retained trees.

Construction

Construction of foundations or structural supports for the proposed extension do not encroach within the Root Protection Area (RPA) of any trees to be retained. However, dependent on the soil type, species and topography, retained and removed trees may have an influence on

the soil beyond their calculated RPA, normally referred to as the Zone of Influence.

Given the proximity of the proposed construction to the trees it is recommended that a Structural Engineer is consulted to assess the implications of the trees on the soil and their influence on foundation design.

To prevent damage to tree T001 and it is recommended that a ply box be constructed around the stem, to reduce the likelihood of striking by construction traffic, with ground protection mats over the theoretical rooting area to reduce ground pressures of any machinery required to access the area for excavation purposes.

Group G001 should be protected with heras fencing installed along the existing gravelled drive boundary.

T005 will require a mix of heras fencing and ground protection mats, with the exact position to be confirmed in a site meeting with the tree officer once foundation design has been confirmed, currently a piled foundation is being proposed, and the exact machine size and weight is known to ensure access is unimpeded and the correct specification of ground protection matting is utilised.

All materials must be stored outside of the illustrated root protection areas.

Material Storage and Site Welfare Facilities

There is adequate area to locate a storage compound and any necessary site welfare outside of the RPA's of any retained trees or other retained features on the site.

Tree Works and Removal

Resistograph testing has shown that the internal condition of T002 is severely decayed leaving a residual wall thickness of between 140mm and 160mm, depending on position on the trees four axis. Given the reduced physiological health of T002 and in turn its now reduced ability to lay down secondary growth, it is recommended that the tree be removed irrespective of whether construction proceeds.

It is recommended that a lateral reduction of approximately 1m to the northern and western elevations of T003 to facilitate unimpeded access, along with the removal of Ivy from T003 and T005 to allow for more thorough visual inspection before construction begins.

4 Root Protection Area and Zone of Influence

Ref.	Species	Retention Category	RPA	Zone of Influence
G001	Mixed species *(Mixed species)*	C1	Area: 68 sq m.	n/a
T001	Sycamore *(Acer pseudoplatanus)*	B1	Radius: 10.3m. Area: 333 sq m.	16.5
T003	Sycamore *(Acer pseudoplatanus)*	C1	Radius: 4.2m. Area: 55 sq m.	16.5
T004	Sycamore *(Acer pseudoplatanus)*	B1	Radius: 10.2m. Area: 327 sq m.	16.5
T005	Sycamore *(Acer pseudoplatanus)*	C1	Radius: 10.2m. Area: 327 sq m.	16.5
T006	Sycamore (Acer pseudoplatanus)	B1	Radius: 6.6m. Area: 137 sq m.	16.5
T008	Sycamore (Acer pseudoplatanus)	B1	Radius: 5.4m. Area: 92 sq m.	16.5

The moisture demand for the species that may have a direct influence on any proposed redevelopment is **Moderate**

Please note BS5837:2012 allows for up to a 20% encroachment into the root protection area for installation of hard surfacing, as well as manipulation of the position of the RPA to allow for topographical changes and below-ground constraints that may have influenced the rooting area of the existing trees.

5 Tree Barriers and Ground Protection Mats

As previously mentioned to prevent damage to tree T001 and it is recommended that a ply box be constructed around the stem, to reduce the likelihood of striking by construction traffic, with ground protection mats over the theoretical rooting area to reduce ground pressures of any machinery required to access the area for excavation purposes.

The mats will be installed over the existing gravelled area and will be formed by installing a system of interlocking mats such as eMat, EuroMat or Tuff Trak fixed together but not into the ground. All these systems will dissipate load and avoid localised compaction when loaded far in excess of the requirements of the plant required for excavation or removal of materials.

Group G001 should be protected with heras fencing installed along the existing gravelled drive boundary.

T005 will require a mix of heras fencing and ground protection mats, with the exact position to be confirmed in a site meeting with the tree officer once foundation design has been confirmed, currently a piled foundation is being proposed, and the exact machine size and weight is known to ensure access is unimpeded and the correct specification of ground protection matting is utilised.

The approximate position is included on the attached tree constraints/protection plan with dimensions included in section 4 Root Protection Areas and Zone of Influence, and the use can be ensured by a suitably worded planning condition.

Please note this may be subject to change based on the design proposals and any amendments dealt with in the reserved matters stage by the production of a detailed AMS and tree protection plan.

6 Soil Assessment

A desktop assessment with details taken from the BGS geology viewer has been carried out, with no superficial geology recorded. Bedrock geology is defined as Kellaways Clay Member – Mudstone.

No samples or onsite testing has been carried out to confirm this and we have not conducted any testing for desiccation.

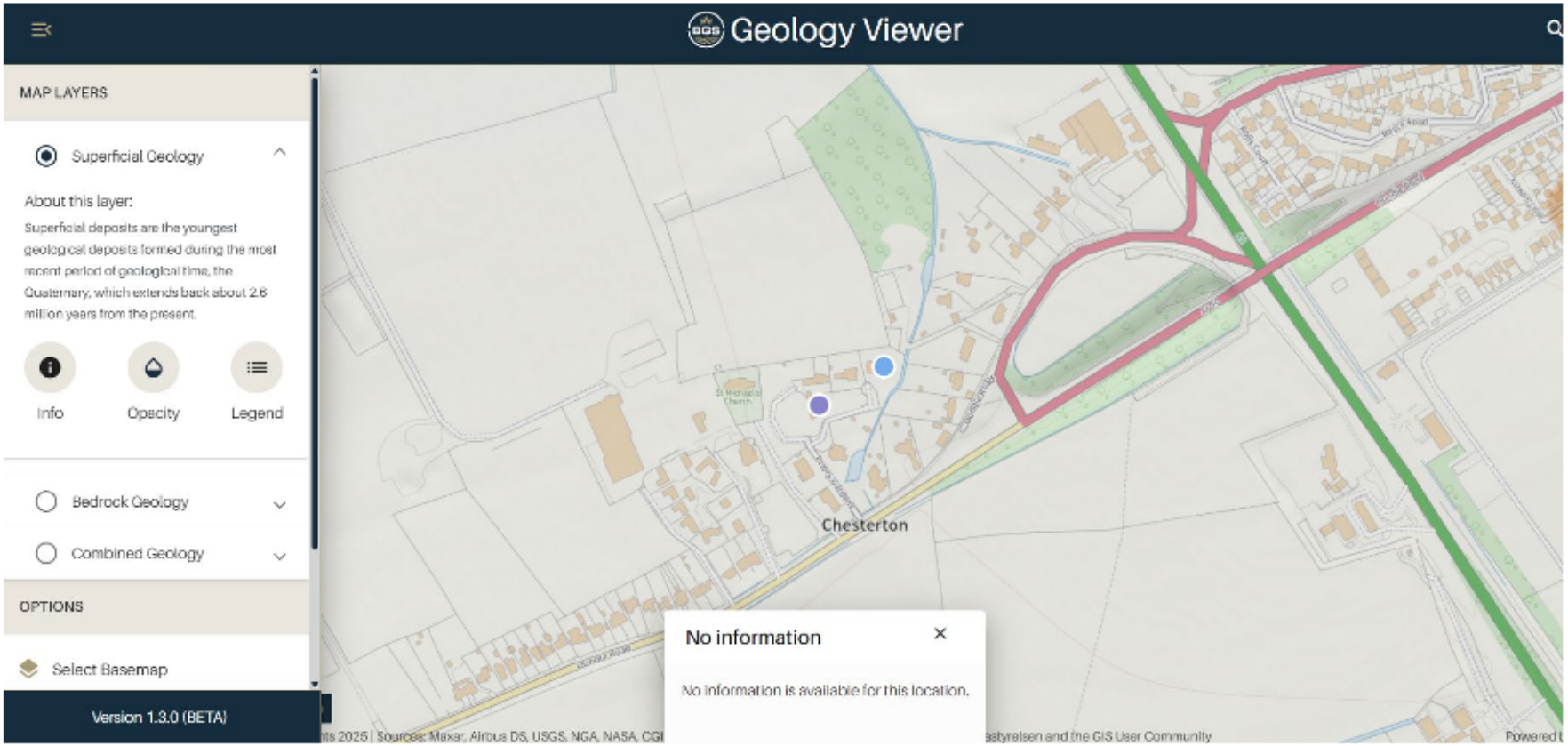
7 Site Monitoring

Although we have not yet seen a detailed foundation design, as long as the tree protection is installed before construction starts, I can see no legitimate reason for long term Arboricultural monitoring.

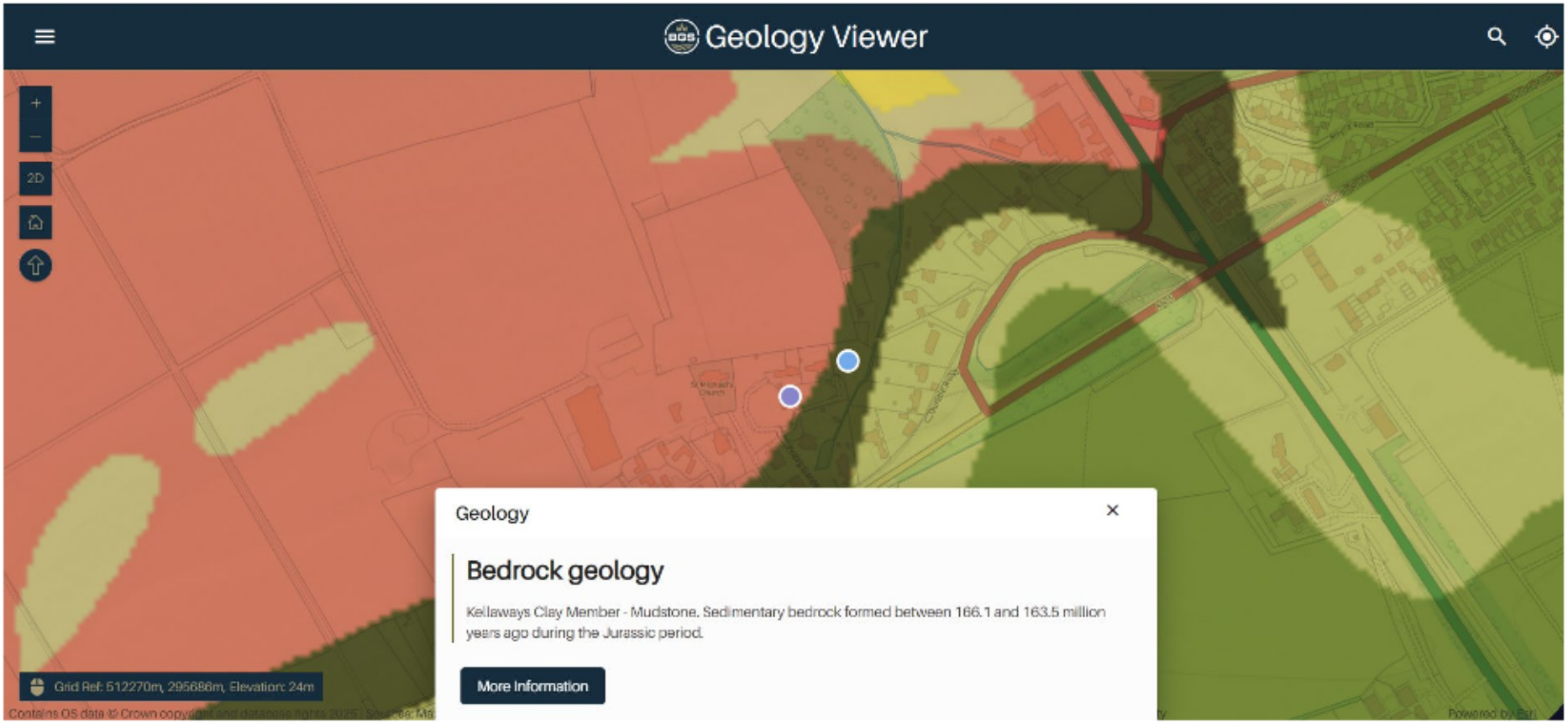
BS5837 Survey Data

Ref.	Species	Measurements	General Observations	Category	Recommendations
G001	Mixed species (Mixed species)	1 stems Rem. Contrib.: 20+ Years	Mix of 1 mature Ash, immature sycamore, 2 mature/semi-mature sycamore, 7 cypress (hybrids) and purple leaf plum Excessive ivy on the sycamores and ash Given the positions, I would assume the 2 mature Sycamore and the single Ash form part Group G1 under the TPO The Priory, Chesterton Tree Preservation Order No5 1988.	C1 RPA Area: 68 sq m.	
T001	Sycamore (Acer pseudoplatanus)	Height (m): 20 Stem Diam(mm): 860 Spread (m): 6.5N, 5E, 7S, 7W Crown Clearance (m): 5 Life Stage: Mature Rem. Contrib.: 40+ Years	Historical ivy removal Suspected included bark but union appears good Gravelled access encompasses rooting area	B1 RPA Radius: 10.3m. Area: 333 sq m.	During construction: Tree protection box to protect trunk from striking damage. Ground protection for construction traffic.
T002	Sycamore (Acer pseudoplatanus)	Height (m): 20 Stem Diam(mm): 780 Spread (m): 5N, 4.5E, 5.5S, 6W Crown Clearance (m): 5 Life Stage: Mature Rem. Contrib.: 20+ Years	Ivy has been ringed to facilitate inspection Extensive internal decay, has been confirmed with resistograph which can be provided if requested. Visible fruiting body, See attached images 25 20% of root plate under gravelled surface (estimated) Believed to be part of G1, The Priory, Chesterton, Tree Preservation Order No5 1988. Fungus: Cerioporus squamosus (Dryad's saddle)	C1 RPA Radius: 9.4m. Area: 278 sq m.	Remove tree.

Ref.	Species	Measurements	General Observations	Category	Recommendations
T003	Sycamore (Acer pseudoplatanus)	Height (m): 10 Stem Diam(mm): 350 Spread (m): 5N, 2E, 5S, 6W Crown Clearance (m): 3.5 Life Stage: Semi Mature Rem. Contrib.: 20+ Years	Excessive ivy Root plate under existing gravel access road Wall to the east	C1 RPA Radius: 4.2m. Area: 55 sq m.	Remove ivy to allow for inspection Canopy lift/reduction on the western and northern elevation to prevent canopy and vehicle striking damage from construction traffic.
T004	Sycamore (Acer pseudoplatanus)	Height (m): 18 Stem Diam(mm): 850 Life Stage: Mature Rem. Contrib.: 40+ Years	Extensive ivy limits inspection Diameter is estimated as Ivy limits inspection and ability to measure stem diameter	B1 RPA Radius: 10.2m. Area: 327 sq m.	
T005	Sycamore (Acer pseudoplatanus)	Height (m): 16 Stem Diam(mm): 850 Spread (m): 5.5N, 5.5E, 2S, 5.5W Crown Clearance (m): 5	Excessive ivy limits inspection Deadwood in canopy Given it's position in relation to the TPO maps I do not believe that this tree is covered by either G1 or G5 under The Priory, Chesterton, Tree Preservation Order No5 1988.	C1 RPA Radius: 10.2m. Area: 327 sq m.	Pre construction: Remove ivy to allow for re-inspection During construction: Protect trees with protective barriers - as shown on plans. Ground protection for operated plant.
T006	Not identified (Not identified)	Height (m): 14 Stem Diam(mm): 550	Outside the area of proposed construction. Part of Group G5	NotRecorded RPA Radius: 6.6m. Area: 137 sq m.	During construction: Protect trees with protective barriers - as shown on plans.
T008	Not identified (Not identified)	Height (m): 14 Stem Diam(mm): 450	Outside the area of proposed construction. Part of Group G5	B1 RPA Radius: 5.4m. Area: 92 sq m.	During construction: Protect trees with protective barriers - as shown on plans.

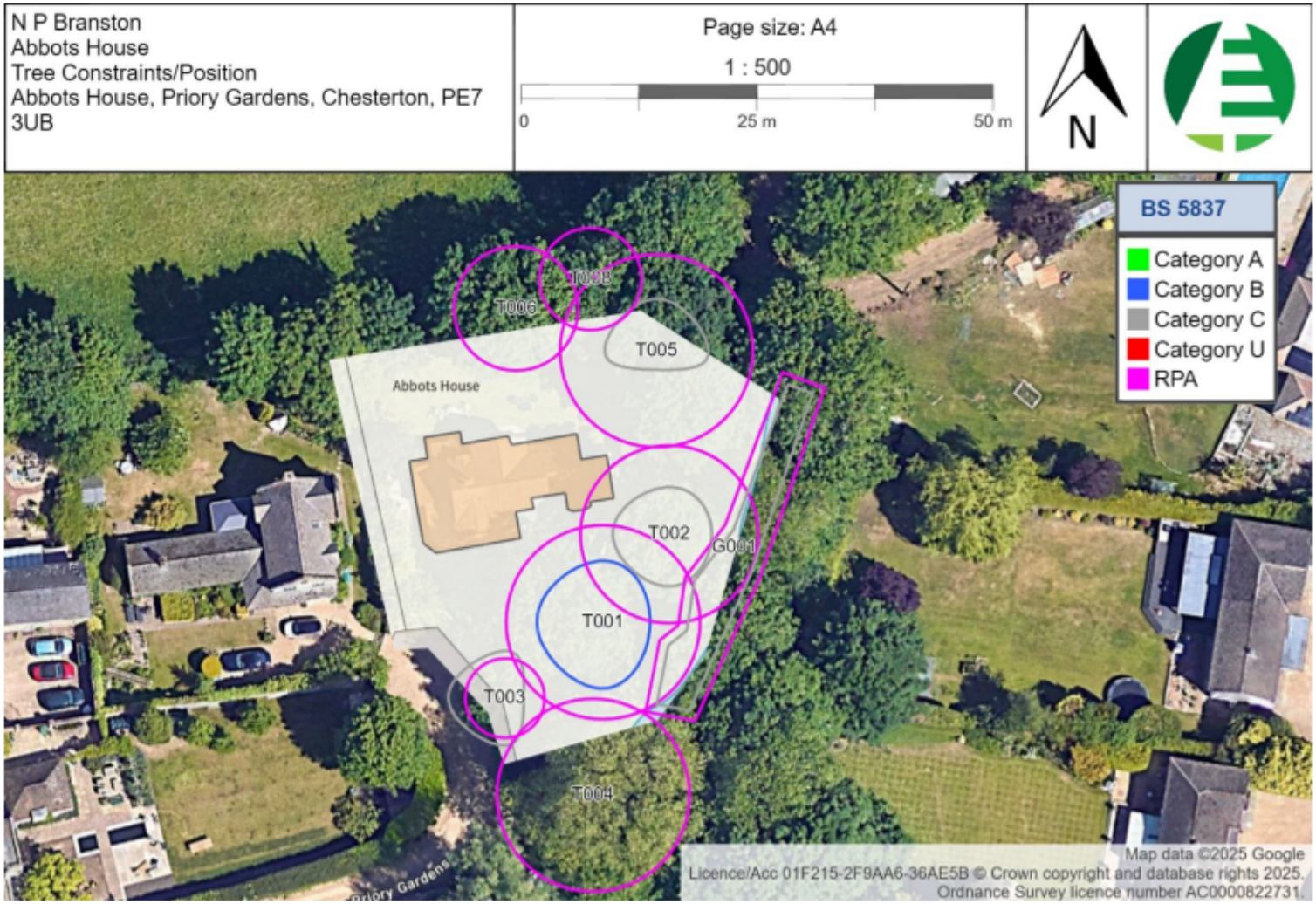


Superficial Geology



Bedrock Geology

Tree Constraints Drawing



9 Preliminary Arboricultural Method Statement

Tree Works Necessary for Construction

A proposed 0.5m-0.75m lateral reduction to the western canopy is to be carried out before any tree protection measures are installed on site. No cut is to exceed 50mm in diameter, and all work is to be carried out by suitably qualified contractors working to BS3998:2010 standards.

If required a short list of suitable qualified and experienced contractors can be provided.

Tree Protection

All measures provided for the safeguarding of trees will be erected prior to any demolition or development commencing on the site, therefore ensuring the maximum protection.

Where footpaths, access drives, or parking bays are constructed within the RPA of retained trees, careful attention will be paid to the type of surface treatment used in these areas, details of which are given in item 5.8, below. If possible, these should be installed as a final phase of the project, thereby protecting the RPA throughout the major construction phase of the proposed development.

As fencing is impractical/unworkable on this site, above ground tree structure protection is to be used and consists of a combination of timber boxes to secure the stems and a temporary load-bearing surface to shield the ground. The exact position of these measures will be confirmed on the dimensioned tree protection plan within the full AMS.

Location of Site Office, Compound and Parking

The position of the office, compound and parking will be agreed in writing with the Local Planning Authority prior to commencement of any permitted development works. Any proposed re-location of these items through the various phases of development will be agreed prior to re-siting with the Local Planning Authority.

On Site Storage of Spoil and Building Materials

Prior to and during all construction works on site, no spoil or construction materials will be stored within the RPA of any tree on, or adjacent to the site, even if the proposed development is to be within the RPA. This is to reduce to a minimum the compaction of the roots of the trees.

Any facilities for the storage of oils, fuels or chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The volume of the bund compound shall be at least equivalent to the capacity of the tank plus 10%. If there is a multiple tankage, the compound shall be at least equivalent to the capacity of the largest tank, or the combined capacity of interconnected tanks, plus 10%. All filling points, vents, gauges and sight glasses shall be located within the bund. The drainage system of the bund shall be sealed with no discharge to any watercourse, land or underground strata. Associated pipe-work shall be located above ground and protected from accidental damage. All filling points and tank overflow pipe outlets shall be detailed to discharge downwards into the bund.

Services

At the time of writing this report, no drawings for proposed services were available. However, it has been verbally confirmed that the service runs will be placed within the existing runs. Where it is not possible to do this, the proposed length infringing the RPA will be hand dug 'broken trenches' (NJUG 4 paragraph 4) to ensure the maximum protection of the trees' roots. The trenches may also be excavated using an air spade, or trenchless technology can be employed if this methodology is considered appropriate by

the relevant service company (thus allowing services to pass below and through the roots without the need for traditional excavation). If it is necessary to cut any small roots as part of any of these processes, they should be severed in such a way as to ensure that the final wound is as small as possible and free from ragged, torn ends.

Hard Surface Types & Construction within the Root Protection Area

Where it is necessary to construct footpaths, driveways, non-adoptable roads, and other hard surfaces within the RPA as calculated in accordance with BS 5837:2012 (item 4.6.1), it is proposed that the design will comply with the 'no-dig' principles of the Arboricultural Advisory Information Services (AAIS) Practice Note 12 "*Through the Trees to Development*" - the only difference being that instead of a geo-grid, a geo-textile base is provided, and the no-fines road stone is incorporated in and retained by a geo-web cellular confinement system. Given the individual requirements of each site, it is essential that a specialist engineer is consulted to specify the construction detail. Where it is necessary to remove any existing hard surface, or lower the ground level within the RPA, this may expose roots. This operation must be undertaken using hand tools or an air spade. Any roots found should be treated with the greatest care and surrounded by sharp sand to provide a level base. Please note that 'no-dig' surfaces are not always considered acceptable for adoption

Where it is shown that the construction of a boundary wall or dwelling encroaches within the RPA of a retained tree, the foundations of the wall or dwelling will be designed in such a manner so as to minimise the detrimental effect of the construction on the tree's roots. In these situations, any excavations within the RPA of an affected tree will only be undertaken following exploration of the existing root system with an air spade (or by hand digging if soil conditions preclude) and the necessary root pruning undertaken to allow excavation without unnecessary pulling and tearing of the roots to be retained. This will ensure minimal damage to tree roots where pad and beam or cantilever foundations are considered appropriate. Should a piling rig be required to create piles, any access facilitation pruning or felling necessary to allow access must be undertaken before the commencement of works and only with prior consent of the Local Planning Authority.

If boundary fencing is to be erected within the RPA of retained trees, it is proposed that the fence posts will be secured by the use of "Met-Posts" or similar design in order to keep the disturbance and damage of the roots of the trees to a minimum.

10 Terms and Definitions

For the purposes of this report, the following terms and definitions apply.

10.1 access facilitation pruning

One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.

10.2 arboricultural method statement

Methodology for the implementation of any aspect of development that is within the root protection area (**2.7**), or has the potential to result in loss of or damage to a tree to be retained.

10.3 arboriculturist

Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

10.4 competent person

Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.

10.5 construction

Site-based operations with the potential to affect existing trees.

10.6 construction exclusion zone

Area based on the root protection area (**2.7**) from which access is prohibited for the duration of the project.

10.7 root protection area (RPA)

Layout design 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.

10.8 service

Any above or below-ground structure or apparatus required for utility provision.

NOTE examples include drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.

10.9 stem

Principal above-ground structural component(s) of a tree that supports its branches.

10.10 structure

Manufactured object, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.

10.11 tree protection plan

Scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures.

10.12 veteran tree

tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

NOTE these characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem. (BS3998:2010)

11 Report Limitations

All the trees have been inspected from ground level with the aid of binoculars using visual observation methods and a sounding mallet where required. Should a more detailed report be required then this will be outlined within the recommendations.

Tree and canopy heights have been defined with the use of a laser range finder and clinometers, with diameter being obtained via the use of girth tape. Crown diameters are measured using both a laser range finder and tape measure where practical.

Tree positions have been recorded using GPS/GNSS with a claimed accuracy of 0.1m on OS basemaps, please note that OS basemaps have an accuracy of +/- 3m depending on the features of the sites and where possible, additional measurements against fixed points and use of other map overlays are used to assist with accuracy.

Trees are living organisms whose health and condition can change rapidly. The health, condition and safety of the trees therefore should be checked on a regular basis, preferably once a year. The conclusions and recommendations in this report are only valid for a period of one year. The period of validity maybe reduced in the case of any change in site conditions or to arboricultural works being carried out on the tree or trees in question.

12 General Information

The enclosed report gives you information on the tree's at the property, which were assessed as needing to be covered and shows the type of tree, its height and the trunk diameter, so that a root protection area, RPA, can be worked out and plotted on the tree constraints plan, TCP.

12.1 Root Protection Areas/Construction Exclusion Zones

The root protection area is a layout design tool to indicate the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree and is calculated using a theoretical circle.

The RPA is calculated as an area equivalent to a circle with a radius 12 times the diameter of the trunk measured 1.50 metres above the ground. For trees with more than one stem, one of the two calculation methods below should be used

A : square root of (stem diameter1)2 + (stem diameter)2 + ...(stem diameter)2

B:square root of (mean stem diameter)2 x number of stems

This is illustrated on the tree survey schedule with the use of an S for single stemmed trees or a M for multi stemmed trees. However in many cases it is not expedient or practical to use a circular RPA and as such BS5837 recognises this and allows the shape of the RPA to be changed but not reduced in area, see British Standards 5837:2012 Tree's in relation to construction – recommendations, page 8, table 2, which shows the RPA in square metres.

The RPA of each tree in category A, B, and C is capped at 707 square metres which is equivalent to a circle with a radius of fifteen metres, however the shape may be changed depending on the following factors whilst still providing adequate protection for the root system:

a) The morphology and disposition of the roots when influenced by past or existing site conditions (e.g. the presence of roads, structures and existing underground apparatus);
b) Topography and drainage;
c) The soil type and structure;
d) The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

This area or areas are also known as the Constructor Exclusion Zone and need to be fenced off with as per figure two- Protective barrier, as shown on Page 13 of British Standards BS5837:2012, to ensure the long term retention of a tree.

12.2 Tree Survey

The tree survey should include all trees included in the topographical survey as well as any that might have been missed (e.g. on shrinkable soils, additional off-site trees that could have an effect on foundation design). The trees should be sequentially numbered and, where appropriate, tagged, with the tags being placed as high as is convenient on the stem of each tree.

Individual trees, groups or woodland should be indentified and assessed as such where the arboriculturist determines that this is appropriate. However, an assessment of individuals

within any group should still be undertaken if there is a need to differentiate between them, e.g. in order to highlight significant variation in attributes (including physiological or structural condition).

The categorization of a group or woodland can reflect a future potential that is contingent on appropriate management being undertaken to promote the development of the better specimens, based upon established arboricultural and silvicultural principles. Such management requirements should be noted under “general observations” within the schedule and included in the post-development management plan.

A schedule to the survey should list all the trees or groups of trees. The following information should be recorded.

a) Sequential referencing number (to be recorded on the tree survey plan).
b) Species listed by common name, with a key provided to scientific names.
c) Height
d) Stem diameter
e) Branch spread, taken as a minimum at the four cardinal points, to derive an accurate representation of the crown (to be plotted on the tree survey plan)
f) Existing height above ground level of
    1. First significant branch and direction of growth
    2. Canopy
g) Life stage (e.g. young, semi-mature, early mature, mature, over mature)
h) General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay and physical defect), and/or preliminary management recommendations.
i) Estimated remaining contribution, in years (<10, 10+, 20+, 40+);
j) Category U or A to C grading (see 4.5) to be recorded on the survey plan.

Relevant details of shrub masses, hedges, hedgerows and stumps are expected to have been recorded during the topographical survey but should be checked by the arboriculturist for inclusion in the tree survey. In the case of regularly maintained domestic hedges and the majority of shrub masses, it will normally be sufficient to record the height and species on the tree survey plan or note these in the schedule.

12.3 Tree Categorization Method

The purpose of the tree categorization method, which should be applied an arboriculturist, is to identify the quality and value (in a non-fiscal sense) of the existing tree stock, allowing informed decisions to be made concerning which trees should be removed or retained in the event of development occurring.

For a tree to qualify under any given category, it should fall within the scope of that categories definintion (U, A, B, C) and, for trees in categories A to C, it should qualify under one or more of the sub-categories (1, 2, 3). Sub-categories 1, 2 and 3 are intended to reflect the arboricultural and landscape qualities, and cultural values, respectively.

When categorizing a tree, the presence of any serious disease or tree-related hazards should be taken into account. If disease is likely to be fatal or irremediable, or likely to require sanitation for the protection of other trees, it might be appropriate for the trees concerned to be categorised U, even if the otherwise have considerable value. If structural defects are remediable, including the effect that this might have on the trees remaining value, will influence whether the tree be assigned to the category that it would otherwise merit.

Particular care is needed when evaluating young trees, especially where they occur as individual specimens. Where these are less than 150mm stem diameter at 1.5m above adjacent ground level, it might be acceptable and relatively straight forward to mitigate their loss, if necessary, with similar new tree planting. Alternatively, it might be practicable to relocate such trees within the site (e.g. using a tree spade). Whilst the presence of young trees of good form and vitality is generally desirable (i.e. those trees which have the potential to develop into quality mature specimens), they need not necessarily be a significant constraint on the site's potential.

NOTE It is sometimes possible to relocate mature trees. However as this is a costly and complex operation with a variable chance of success, it is a viable option only in exceptional cases.

The tree survey might identify the presence of veteran trees on the site. The implications of their presence on the use of the surrounding land should be taken in the design process. Where such trees are to be retained, particular care should be taken in the design to accommodate them in a setting that aids their long term retention.

NOTE Whilst veteran trees typically a range of niche habitats, they are especially valuable if ancient, due to their scarcity and high habitat values for associated species of fungi, lichens and saproxylic invertebrates, including some which are rare or endangered and occur only where such trees have been continuously present for centuries. These trees will therefore almost always be included in the A3 category.

12.4 Soil Assessment

A soil assessment should be undertaken by a competent person to inform any decisions relating to:

- The root protection area RPA;
- Tree protection;
- New planting design; and
- Foundation design to take account of retained, removed and new trees.

The assessment should determine whether the soil is shrinkable. If it is, trees and other vegetation have the potential to cause indirect damage to structures. In such cases, desiccation assessments should be carried out at a specialist laboratory to check the extent to which existing vegetation has dehydrated the soil.

Soil structure, composition and pH should be included in the assessment for the purpose of designing new planting and landscape proposals.

12.5 Tree Protection Plan

The tree protection plan should be superimposed on a layout plan, based on the topographical survey and showing all hard surfacing and other existing structure within the RPA.

The plan should clearly indicate the precise location of the protective barriers to be erected to form a construction exclusion zone around the retained trees. It should also show the extent and type of ground protection, and any additional physical measures such as tree protection boxes, that will need to be installed to safeguard vulnerable sections of the trees and their RPAs where construction activity cannot be fully or permanently excluded.

These details should be incorporated into relevant subsequent drawings issued for use on the site, to ensure that all interested parties are fully aware of the areas in which access and works may or may not take place.

This document would normally be produced at the reserved matter/planning conditions stage.

12.6 Arboricultural Impact Assessment

This assessment should take account of the effects of any tree loss required to implement the design, and any potentially damaging activities proposed in the vicinity of retained trees. Such activities might include the removal of existing structures and hard surfacing, the installation of new hard surfacing, the installation of services, and the location and dimensions of all proposed excavations or changes in ground level, including any that might arise from the implementation of the recommended mitigation measures. In addition to the impact of the permanent works, account should be taken of the buildability of the scheme in terms of access, adequate working space and provision for the storage of materials, including topsoil.

As well as an evaluation of the extent of the impact on existing trees, the arboricultural impact assessment should include:

a) The tree survey;
b) Trees selected for retention, clearly identified (e.g. by number) and marked on a plan with a continuous outline;
c) Trees to be removed, also clearly identified (e.g. by number) and marked on a plan with a dashed outline or similar;
d) Trees to be pruned, including any access facilitation pruning, also clearly identified and labelled or listed as appropriate;
e) Areas designated for structural landscaping that need to be protected from construction operations in order to prevent the soil structure being damaged;
f) Evaluation of impact of proposed tree losses;
g) Evaluation of tree constraints and draft tree protection plan
h) Issues to be addressed by an arboricultural method statement where necessary in conjunction with input from other specialists.

References

BS5837:2012 Trees in relation to design, demolition and construction

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Diagnosis of ill-health in trees. R.G Strouts and T.G. Winter

Trees in Towns 2. Mark Johnson & Chris Bratt

Trees in Britain. R Phillips

Tree Root Damage to buildings Vol1 & 2. PG Biddle

Tree roots in the Built Environment. J Roberts, N Jackson & M Smith

NHBC Standards Chapter 4.2 Building near trees.