Arboricultural Impact Assessment, Tree Protection Plan, Method Statement
Site at land to the rear of The Old Rectory, Banningham

C. J. Yardley, Landscape Survey, Design and Management.

Thorpe Cloud, Creake Road, Burnham Thorpe, Kings Lynn.

cj.yardley@tiscali.co.uk
07931 434162

February 2021

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1. Introduction

1.1. This report is intended to assess the implications for existing trees and hedging on and adjacent to an area of garden to the rear (west) of The Old Rectory, Colby Road, Banningham. The development concerns the conversion of an existing outbuilding to annex accommodation, garden and parking, together with the formation of highways compliant access from Back Lane. The development proposals are as indicated on the plans 4311/01/Rev B with arboricultural information added February 2021 and developed from plans by The Rural Architect. The report and plans are intended to provide sufficient information to address the required submission of arboricultural impact details for a proposed Planning Application for the new development. This report assesses the impacts of the proposed development (as set out in the plans accompanying this document) on the trees / hedging on, and where relevant, adjacent to the site, and uses this information to provide details of any proposed tree protection and construction methodology in relation to trees that may be recommended. The report was commissioned by Mrs R Woollian.

N. B. This survey is not intended to be a tree condition survey and should not be used to identify tree hazard/risk or provide information for risk indemnity purposes. The survey was carried out at a time of year when some pathogens / faults may be visible but it should be recognised that such pathogens (fungal fruiting bodies / issues with leafing etc) are transitory and seasonal and that they may not be present when the survey was carried out. A full inspection for Health and Safety purposes would identify faults / make relevant recommendations on appropriate seasonal inspections for faults that may not be presenting at the time of the survey.

1.2. How to Use this Document

1.2.1. The document is divided into four main sections

1 - Introduction and Executive Summary of Findings

2 - Table of Trees (and Hedging if relevant) covered by the survey

3 - Assessment of Arboricultural Impacts of the proposed development

4 - Tree Protection Plan and Method Statement

1.2.2. The Executive Summary sets out the main points to consider in relation to this report and is intended to assist the Planning Officer / applicant in knowing what impacts the development will have and the general scope of tree protection and mitigation measures which we consider are necessary to employ to protect trees which are to be retained after development

1.2.3. The Impact Assessment considers the detail of what impacts we consider the development will have on the trees on the site (both in terms of trees / hedging removed and the impacts on the trees to be retained). This section provides the basis on which we then devise the Tree Protection Plan and Method Statement and is a justification for the elements which we have included in this section.

1.2.4. The Tree Protection Plan and Method Statement are the 'important / actionable' part of the document which should be presented to ALL persons who are to work on the site. It is of great importance that this part of the document AND the Tree Protection Plan which accompanies it (and which due to size may be a separate sheet) is held by the architect, the engineers (if present) and the site manager. The document should be available for inspection by all persons working on the site and held in the Site Office or on site in a suitable place. A toolbox talk should be held between the Site Manager and ALL those working on the site (as and when needed but certainly at the commencement of development and certainly at the commencement of any works which are in areas which are clearly indicated to be specially worked upon in this report) to identify working practices as recommended in this document and make sure that all those working on the site know exactly what they are doing and why. If there are any doubts over the actions to be taken please refer IMMEDIATELY to the arborist who can either attend the site / and or provide advice.

NOTE; If this document is part of a Planning Application/ or deals with works near to or within TPO/ Conservation Areas, it is likely to form a legally binding part of any Planning Permission/Tree Works Application, and failure to adhere to the recommendations in the document can either lead to prosecution (in the case of trees covered by a TPO / Conservation Area) or invalidate the Planning Permission. If in any doubt about anything related to development and trees - contact the Arboricultural Consultant…

1.2.5. This report is based upon the recommended procedure outlined in the revised version of the British Standard (5837:2012). The procedure requires that a survey of all the trees on the site is conducted which includes consideration of the following:

- The location, species, height, crown spread, condition, likely future development and projected lifespan (where appropriate) of all the trees on or adjacent to (and thereby potentially impacted on by any proposed development) the proposal site.

1.2.6. This data is then used to produce plans and document showing;

1. The Root Protection Area (RPA) for each tree based upon a formula (Diameter of trunk at 1.5m height in mm x 12 shown as a radiused circle from the base of the tree with or as a formula based on trunk diameter x number of trunks in the case of multiple trunked trees. The RPA may be offset or altered only for certain existing physiological issues within the growth area of the tree. The area of the rooting zone will not be less than that calculated.

2. The Tree Constraints Plan (TCP) - showing the RPA + any relevant other information such as tree shading issues / future growth potential of the trees.

3. The factors contained in the TCP are intended to inform the layout of the development proposals. The TCP is not a development exclusion zone, but imposes certain constraints and restrictions (in order to achieve the BS) on what can and cannot be constructed within the zones.

4. From the TCP and any submitted development layout, the arboriculturalist is intended to produce an Arboricultural Implications Assessment. This document uses the data produced to assess the risk of damage to the trees both during construction and into the future. Liveability issues should also be considered within this survey.

5. A Tree Protection Plan (TPP) will then be drawn up to show the finalised layout of the site development plan together with the location of all the trees to be removed / retained and the location and nature of any protective fencing. This will be in plan form and will constitute part of any future Arboricultural Method Statement.

6. Finally an Arboricultural Method Statement (AMS) may be required to be produced to say how any works which may impact on tree health will be undertaken to ensure that they minimise damage and comply with the standards set in the BS.

The survey was carried out on 15th April 2019 by C.J Yardley and represents a consideration of the condition of the site and trees at that time.

1.3. Executive Summary

The application will have the following impacts on trees and requires the following tree protection measures;

1. The proposed development requires the removal of 4no Hawthorn bushes which form a loose hedge feature along the western boundary of the site with Back Lane - this is to form the new access into the site. It is proposed to remove a further 8 plants so that an entirely new and cohesive / well formed hedge can be provided along this frontage - forming a better long term feature to the lane. A new mixed native species hedge will be planted to the inside of the new vision splay to the property to replace those plants lost (in accordance with the requirements of the Natural Environment and Rural Communities Act 2006)

2. The proposed development does not require any alterations to existing canopies of trees.

3. The works to form the new annex will not involve works within the root protection areas of any trees excepting an insignificant degree of surfacing for the periphery of the patio (below assessable impact levels)

4. It is assumed (though no information on services is provided) that services can be run in locations which are outside the root protection areas (RPA) of trees and that they will connect to existing services which are located to the existing main house nearby. If services are to be located within or close to the RPA of trees, this will require the prior written agreement with the District Council in order to vary the findings of this report

5. The development of the new proposed annex will require the use of ground protection measures / protective fencing to effect a safe entrance / working area for the development in relation to tree protection areas.

6. Shading and overbearing factors will be present caused by the proximity of the converted building to existing trees. The shading factors are considered to be Minor and the overbearing issues to be Moderate.

7. Construction access, storage of materials, provision of tree protection fencing and ground protection measures for access and construction will all form part of the Tree Protection Plan and Method Statement

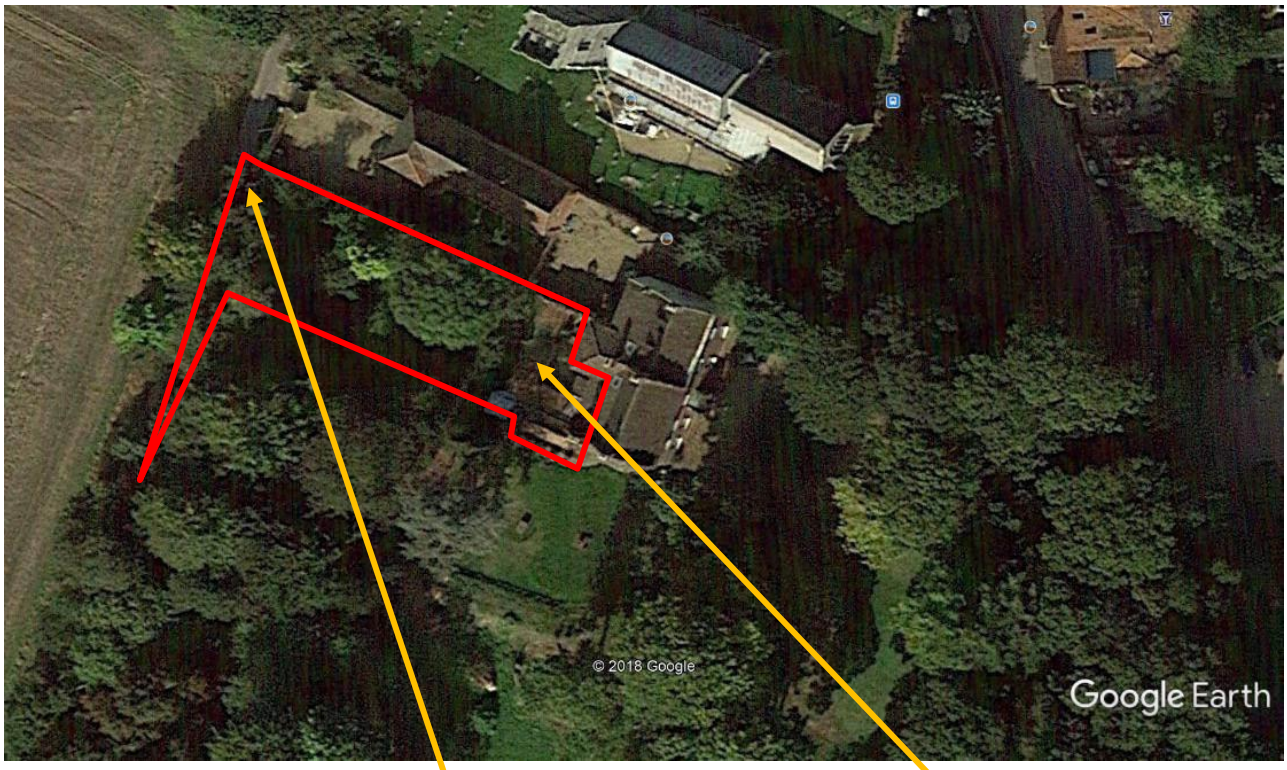
8. Landscaping on completion of the development will also need to take special account of the trees on the site as the area has clearly not been in cultivation for many years (decades?) and therefore near surface roots are likely to be present in great numbers and damage can easily be done to them from inappropriate cultivation means (rotorvating)

1. 4. Site Description.

1.4.1. The site comprises an area of existing garden land to the western side of the main house of the Old Rectory. This area of land appears to have originally contained a number of service buildings (some of which have been converted to residential use) and closer to the main house, a set of outbuildings (which are the subject of the proposal to convert to annex accommodation). The rear garden area consists of areas which are now laid to gravel and enclosed near to the (converted) outbuildings on the northern boundary but which were probably originally a combination of hard standing for stables and a kitchen garden area. The kitchen garden area may have extended to the southern part of the garden (in part) against the stables wall or this may have been more formal garden area. It is now part of the informal amenity garden for the main house and is mostly laid to grass with beds against the walls on the northern side. The western half of this area is proposed to be used for parking and turning area in association with the new vehicle access to the site.

2.2. The southern part of the site is a continuation of the informal wooded / mature tree'd garden - typical of older Rectory sized properties. To the northern side of the site the land adjoins the Churchyard of Banningham Church. To the western side of the site, the property adjoins the small lane of Back Lane which runs alongside the garden and separates it from open arable land to the west. The main house is located to the eastern side of the site and is separated from the proposed annex / outbuilding by an area of hard standing. The main access to the Old Rectory is off Colby Road to the north east

The site is shown on the Google Earth image overleaf dating from 2017



The location of the proposed entrance feature and proposed converted outbuilding is arrowed

1.5. Development Proposal for Site

1.5.1. The development concerns the construction of a detached annex building to be converted from existing outbuildings with linking extension together with the provision of parking and a new access from Back lane. These are all shown on the development plans 4311/01/Rev B which are a development of the plans by The Rural Architect, and which combine the existing site features with the proposed features.

1.5.2. We are uncertain where existing services to the existing main house (and other converted Stables building to the north side are located, but we have assumed in the absence of any other information on services that it will be likely that the new annex will be able to link directly to the existing services to these nearby dwellings. If for any reason this is not possible and services will need to run within the RPA of trees, written description of the route and method for installation will need to be submitted and approved by the District Council as it will vary the findings of this report

1.6. Current Ground Cover and Boundary Treatments

1.6.1. The existing site is comprises areas of existing grassed zones together with areas of cleared beds and more tree'd / wooded areas of the garden. The land to the north of the proposed new access / amenity garden for the annex is laid to gravel.

1.6.2. The relevant boundaries of the site are as follows;

1. The northern boundary is formed by a 1.8m high older brick wall surrounding the former stables.
2. The western boundary is formed by a 1m high hedge bank (from the roadway level) with spaced hawthorn bushes forming a high but sparse hedge of around 4 - 5m high
3. The southern boundary is not delineated but a continuation of the garden
4. The eastern boundary is not delineated but a continuation of the garden

1.7. Levels

1.7.1. The site rises from the roadway level to around 1m high for a hedge back before dropping back to a level of approx. 400mm above the road level within the main area of the site thereafter.

1.8. Soil Type

1.8.1. The soil type across the site is a combination boulder clay /sandy loams (from site investigation to a depth of no more than 400mm) below this are likely to be (from British Geological Survey) boulder clays and gravels which may locally form a shrinkable geology. - Detailed investigation of the soil structure on the site should inform construction of surfacing and buildings as appropriate

1.9. Trees on/adjacent to the Site

1.9.1. There are 15 individual trees and one hedge, on and adjacent to the site which are included in this survey, some of which are proposed to be protected by suitable protective fencing or ground protection over their rooting area during the construction process to the requirements of BS5837:2012.

1.9.2. As far as we are aware, the site is not within a Tree Preservation Order (at present). The site is not within a Conservation Area and is not subject to the Conservation Area Regulations as affecting trees. **Trees on the site may be subject to residual Planning Condition/s affecting the retention and management of trees and contained on a previous Planning Permission**. These factors are not fixed and may be liable to change, and **it is therefore recommended that prior to any works commencing on trees on the site above or below ground (including excavating trenching for services or installing surfacing) that reference is made to the Council to ascertain if consents are required**.

1.9.4. There are no hedges on or adjacent to the site which might be subject to the Hedgerow Regulations 1997.

Local Policies

1.9.5. The District Council has planning policies in place to protect important trees as part of the planning process (by the serving of Tree Preservation Orders or placing of Planning Conditions on Permissions) as part of planning policy within the emerging Local Plan (formerly LDF) Development Control policy structure.

1.9.6. Normally accepted scope of inclusion of trees to 15m from the site boundaries have been included in this survey unless otherwise agreed due to relevance.

2. Tabulated Assessment of the Trees on the Site - Tree Constraints Details

2.1. The trees on the site have been assessed in relation to the provisions in the BS and the information is presented in tabular format. The tables include all the relevant data required to asses the constraints (in construction terms) that the trees present and this data has been used to develop the Tree Protection Plan which accompanies this document. Details of the features included in the data collection and assessment are set out below in the Notes.

Notes on Tables

- All measurements are given in metres.
- 'DBH' is the diameter of the trunk/s at breast height (1.5m)
- Crown Spread is the limit of the crown of the tree at its maximum and is recorded as a diameter. On the plans the crown spread is shown in its actual form i.e. frequently asymmetrical.
- Age Class is assessed and described as set out in BS 5837 Table 1, where; Young Trees are aged less than 1/4 life expectancy; semi-Mature Trees are between ¼ and ½ life expectancy; Early Mature Trees are over ½ life expectancy, Mature trees are over 2/3ds life expectancy and Over Mature are effectively in decline.
- Tree Vigour is assessed as being either Good, Fair, Poor or Dead as set out in BS 5837
- Root Protection Distance (as shown as a dashed and dotted line on accompanying plans) is assessed based on the BS 5837 section 4.6 based on the diameter of the trunk at 1.5m height in mm x 12 and shown as an area based on the premise that the distance - diameter x 12 = radius of circle of RPA area. Trees with more than one stem are calculated differently. Trees with 2 - 5 stems are calculated as the square root of the combined (added) stem diameters all of which are individually squared. For more than five stems, the result is the square root of the mean stem diameter squared which has been multiplied by the number of stems.
- Canopy Spread is shown at the four cardinal points and is also shown as a constraint (continuous or repeated line on accompanying plans).
- Shading issues (as described in Section 5.3.1) are shown on accompanying plans as a 'segment with its centre at the centre of the tree and radiating outwards as straight lines to the North West and east with the area between them radiused with a dashed line.
- The Useful Life Expectancy of the tree is shown in periods ranging between <10 yrs, 10+, 20+, 40+yrs (in accordance with Section 4.4.2)
- Where any work that may, in the opinion of the surveyor, be required to the tree in order to enable the proposed development to take place, or where changes to the

use of the land (i.e. to garden) may change the risk posed by the tree/s, such work is indicated in the Comments section of the table. All work recommended will accord to BS 3998:2010, and be based on the principle that the tree takes primacy over the proposed development (unless it is adjudged to be of poor amenity value), and works will only be recommended that accord with the retention of the tree in good health.

- Tree Retention Category this is the product of the surveyor's opinion of the importance of the tree in terms of its individual features. The assessment is made on the basis of the criteria set out in BS5837:2012 and is described in the Table 1 summarised from the British Standard on the following page;

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
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	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Table 2 -

How to read the tree table -

The tree table below is split into sections which detail the height, spread and form of the tree together with other important information relating to the diameter of the trunk - DBH - (which provides the data for determining the root protection area (RPA)), age class of the tree (what stage of its development it has reached); its condition and the amenity contribution that it makes together with its formally assessed 'retention category' or amenity rating (see table 1) as assessed using the BS criteria. These factors are used to provide the data which is transposed onto the development plan and which provides the 'Tree Constraints' on this plan. The data is then used to help determine our assessment of the impacts of development, the location of any tree protection and any remedial measures which will help to protect and ensure the health and retention of those trees which are shown to be retained after the development is completed

Tree No. The number given to each tree on the plan	**Species** Given as the common name unless the Latin name only is known	**Height Metres** The height of the tree	**Crown Spread metres** The spread of the tree either as a radius from the centre (to each cardinal point N, S, E or W) or as a diameter where this is acceptable	**DBH mm /Radius RPA m** The 'diameter of the trunk at breast height' - this is used to work out the radius of the root protection area (in metres)	**Vigour / Age Class** The vigour is either low or normal. The age class varies from Young to Over Mature in five more or less equal sections relating to the five 'stages' of development of the tree - varies with the species as to how many years this may be.	**Condition / amenity contribution / under crown clearance** A broad guide to the condition of the tree from a superficial ground level inspection. The condition rating is not to be used for health and safety purposes and is not a substitute for a detailed tree condition survey but will indicate the approximate condition of the tree and highlight any major faults if clearly visible. Where these are not visible (ivy obscuring the trunk) this may be highlighted. It is always advisable to have a formal tree condition survey for indemnity purposes. Amenity contribution highlights any special amenity value that the tree/s may present Under crown clearance is intended to provide a guide to allow assessment of whether or not crown lifting would be needed to gain access beneath the tree for development or other purposes	**Retention category** The formal British standard amenity classification which ranges from 'A to U' see Table 1

Table 2 - Trees in the survey - note that yellow highlighted trees require works within 1 month for safety reasons

	Tree No.	Species	Height metres	Crown Spread metres	DBH/RPA in mm	Vigour / Age Class and remaining years	Comments:	First main branches (N, S, E, W) and minor bough outer canopy clearance.
T	1	Beech	18	9N 8W 7E 6S	650	N/M	Reasonable.	W @ 3.5 (300) rising N @ 4.5 (100) droops E @ 4.5 (120) Lat Crown clearance <30 3M W 2m NE 3.5m W A2
T	2	Beech	18	5W 5N 7E 7S	900	N/M	Fair – Large area of decay/minor bleeding flux to North West lower trunk. Massive trunk at this point probably resulting from decay within the tree and forming compensatory external growth. A large cavity is present to the southern side of the tree from ground level to approx. 1.5m with extensive decay formed within the main trunk area (hollowing to around 200mm of the outer wall of the tree in places and possibly breaking through where the bleeding flux / trunk decay is present to the north west of the trunk. Overall the tree structure is compromised but the tree has a high ecological and visual / historical value and its projected failure route will be south east - Recommend thinning the canopy to remove 30% of all secondary boughs <50mm throughout the canopy (particularly above 10m) would fall South East if anywhere. Low target (old garden).	B3
G	3.	5 Hawthorn	4	2 – 3	150	N/M	Fair – a line of 12 plants set at even intervals on a 1m hedge bank. Approx.	Crown clearance 4m B2
T	4.	Sycamore	7	3	170	N/Y	Fair – on 1m bank. Note O/H electricity wires along road through canopy.	Crown clearance 4m 47/2.3 C2
T	5	Sycamore	10	5	220	N/SM	Fair – approx 600 higher than road.	Crown clearance 5+m 52/3.2 B2

	Tree No.	Species	Height metres	Crown Spread metres	DBH/RPA in mm	Vigour / Age Class and remaining years	Comments:	First main branches (N, S, E, W) and minor bough outer canopy clearance.
T	6	WP	8		150		Dead. Remove	58/2.1 U
T	7	Field Maple	9	4N 3W 1E 0S	270	L/M	Fair.	Crown clearance 4.5 60/2 B2 just
T	8	Sycamore	15	5N 6S 5W 4E	550 + 300	L/M	Fair /Poor – A prominent tree but with significant decay to West base of buttress between the extended tension union for the 300 SDL on West side. Thin canopy by removal of 25% of secondary boughs	Crown clearance 4.5m 62/2 B2
T	9	Elder	4	2	Multi		Dead.	U
T	10	Holly	3	2	2 x 80	N/SM	Fair - <200 off wall.	Crown clearance 1.2m C1
T	11	Sycamore	5	2	100 + 60	N/Y	Fair – 600m off wall.	Crown clearance 2m W C1
T	12	Beech	14	8S 5W 6E 6N	2 x 400	N/M	Fair – Tight comp fork + inc bark @ 1.3m.	Crown clearance 5m S B2
T	13.	Elm	14	5E 5S 5W 2N	400 + 250	L/M	Fair/Poor – Moderate dieback to canopy.	Crown clearance 5m E 2/7m U
T	14.	Sycamore	14	5E 5W 4S 5N	9 x 200	N/M	Fair.	Crown clearance 4m -4/7 B2
T	15	Walnut	14	6.3S 7.5E 6W 6N			Removed under previous consent	

Condition Key (Vigour / Maturity)

Vigour:	L	Low
	N	Normal
Maturity:	Y	Young
	EM	Early Mature
	SM	Semi Mature
	M	Mature
	OM	Over Mature

- Good condition – no obvious faults which would reduce the life expectancy of the tree, a good form with a full canopy.
- Reasonable condition. Some minor to moderate faults which will reduce the life expectancy of the tree or a tree with some degree of decline but which has good form and reasonable canopy density for the species.
- Fair condition. A tree with significant faults which will reduce the life expectancy. Probably with faults that require surgery and which will reduce the amenity of the tree. A tree with poor form and thin canopy.
- Poor condition. A tree near the end of its life or one with sever faults which may be correctable with surgery or may not but which will probably leave the tree in a form which is poorly structured.

3. Arboricultural Implications Assessment of trees on the site from the details contained in Table 2 above

3.0.1. The trees contained in this survey are located throughout the site (Mainly to the western boundary) and on property beyond the site to the North West. The trees comprise a mix of species and types which range from;

- The site contains a mixture of mature trees - mainly associated with an older typical 'parkland garden' type layout associated with a C19th Rectory type planting design. There are two larger old Beech trees which form the main prominent features to the site boundary area (T1 and T2) together with a large Walnut (T15) and a number of other smaller trees located on or close to the boundaries of the Back Lane and not part of the original landscaping of the Rectory. A mature but now somewhat fragmented and thin (but tall) hawthorn hedge forms the boundary to the Lane on the western side

3.0.2. The assessment below has been carried out to the recommendations contained in the British standard BS 5837:2012. Where necessary, and due to the specific nature of the trees and constraints / development imposed, interpretation within the Guidance has been made.

3.0.3. Development proposals contained on the plans 4311/01/Rev B developed from plans by the applicant's agent with arboricultural information added February 2021 shows the layout of the proposed surfacing and access etc and indicates the relationship between the trees and the proposed structures. The principle arboricultural issues concern to following main features

1. The proposed development requires the removal of 4no Hawthorn bushes which form a loose hedge feature along the western boundary of the site with Back Lane - this is to form the new access into the site. It is proposed to remove a further 8 plants so that an entirely new and cohesive / well formed hedge can be provided along this frontage - forming a better long term feature to the lane. A new mixed native species hedge will be planted to the inside of the new vision splay to the property to replace those plants lost (in accordance with the requirements of the Natural Environment and Rural Communities Act 2006)

2. The proposed development does not require any alterations to existing canopies of trees.

3. The works to form the new annex will not involve works within the root protection areas of any trees except a small amount of surfacing for a patio which is assessed as NEGLIGIBLE

4. It is assumed (though no information on services is provided) that services can be run in locations which are outside the root protection areas (RPA) of trees and that they will connect to existing services which are located to the existing main house nearby. If services are to be located within or close to the RPA of trees, this will require the prior written agreement with the District Council in order to vary the findings of this report

5. The development of the new proposed annex will require the use of ground protection measures / protective fencing to effect a safe entrance / working area for the development in relation to tree protection areas.

6. Shading and overbearing factors will be present caused by the proximity of the converted building to existing trees. The shading factors are considered to be Minor and the overbearing issues to be Moderate.

7. Construction access, storage of materials, provision of tree protection fencing and ground protection measures for access and construction will all form part of the Tree Protection Plan and Method Statement

8. Landscaping on completion of the development will also need to take special account of the trees on the site as the area has clearly not been in cultivation for many years (decades?) and therefore near surface roots are likely to be present in great numbers and damage can easily be done to them from inappropriate cultivation means (rotorvating)

3.0.3. These features have all been considered in detail in the following assessment process and have been used to develop protection and mitigation strategies which are included in the final chapter of the report 'Tree Protection Plan and Method Statement'

3.0.4. The plan 4311/01/Rev B developed from plans by The Rural Architect with arboricultural information added February 2021 indicates the location and extent of proposed development of the site. The location and canopy spread of the trees is also indicated together with the Root Protection Area. Additional information is added in the form of the location of protective fencing around the trees and special measures areas (for certain construction processes). This additional information forms the elements of the Tree Constraints Plan and Method Statement.

3.1. Overall Conclusions of the Amenity Value of the Trees on the Site/ Tree Constraints

3.1.1. Some indication of the relative amenity value of the trees on and adjacent to the site has been discussed above, this section provides additional detailed assessment of the site and the area.

3.1.2. The individual British Standard amenity classification value of the trees is appended to each tree in Table 2. The classification ranges from trees of High amenity value (as members of groups and as individuals) - A2 / A1 respectively, Moderate amenity value (B1/ B2), Low amenity value (C1/ C2). There is one unclassified (poor condition) U tree.

3.1.3. The principle trees on and adjacent to the site are T1 - a large mature Beech tree and T15, a large mature Walnut. The Beech is classified as high amenity value and the Walnut is classified as Moderate amenity value (as it is set further back into the site and has less public presence but is at the highest end of the classification). The other large Beech tree T2 is classified as B3 (moderate amenity value for ecological / cultural reasons) but has been downgraded from A (although of very similar size and presence

to T1) due to significant and extensive decay in the base which renders it necessary to reduce the canopy significantly (by thinning)

3.1.4. Other trees on the western and north western side are variously classified as B (moderate amenity value) where they have a size and presence which actively contributes to the amenity and appearance of the Lane and where this is not the case - due to the size or form of the trees being largely insignificant, they are classified as C or low amenity value.

Impact of the Proposed Development on Trees

3.2. Future Development of the Trees.

3.2.1. This assessment has only considered those trees which in the opinion of the surveyor may be impacted upon by the proposed development (constrained).

3.2.2. The walnut T15 is mature but has some growth potential due to the appearance of vigour in the form and canopy structure. We estimate that it will enlarge by around 1 - 2m in radius spread over the next 30 years and around 2m in height. At this level of growth, there will be some perceived conflict (although the canopy would effectively over sail the new annex) with the residential usage of the building (in essence people are concerned to have the canopy of a tree over the roof of a building - not really for any justifiable structural or safety reason but more from a perceived 'hazard' perspective). This will be likely to result in a desire / applications if required - to reduce the canopy back to approx. its current or slightly smaller canopy size (as the canopy is within 2m of the building at present). The works could be undertaken within the scope of BS3998:2010 but will have a MINOR ADVERSE impact on the tree over time as it is repeated every 10 or so years.

3.2.3. No other trees will be affected in their future growth potential by this application

3.3. Tree / hedge Removals and Replacements

3.3.1. It is proposed to remove and replace the hedge (G3) on the western boundary of the site and incorporate two boundary trees to give an entrance feature to the new entrance off Back Lane to the property / replace hedge features which cannot be completely replaced due to the presence of the driveway.

3.3.2. The new hedge will comprise a mixed native species hedge set as a double staggered row and set back a minimum of 1m behind the vision splay as indicated on the plans. The species mix will comprise;

Hawthorn - 50%
Wild Plum - 10%
Holly - 10%
Field Maple - 10%
Dogwood - 10%
Hazel - 10%

3.3.3. All plants will be 60 - 90cm high bare rooted whips at time of planting and will be supplied with a clear spiral guard / cane and dressed with 75mm of bark mulch to provide a weed / grass suppressant layer

3.3.4. Two new trees will be planted either side of the entrance as indicated and will be 2no Hornbeam - 120/150cm high bare rooted whips provided with a ½ height stake and clear spiral guard/bark mulch weed suppressant.

3.3.5. The hedge and all other landscaping – including replacement tree for T15 (consented under separate application) will be planted in the next available planting season following the commencement of development. If any plant should fail within the first 5 years after planting it will be replaced with another plant of the same type and dimensions in the next available planting season.

3.4. Canopy Spread and Canopy Clearance Issues

3.4.1. No works are proposed to lift or alter the canopy spread of the trees on or adjacent to the site in order to facilitate the proposed development. The impact of development is therefore NEUTRAL on this factor.

3.5. Root Protection Area

3.5.1. The root protection area of trees is shown as a dotted and dashed circle around trees on the plan. The British Standard default recommendation suggests that no development should be undertaken within the root protection area of trees unless it is unavoidable or unless the tree/s concerned are of low amenity value. The BS does however allow for some works to be undertaken within the RPA of trees subject to the assessment of a suitably qualified arboricultural surveyor but generally assumes that these will be minimal, peripheral and localised, and that the area of the RPA will be part of an exclusion zone (construction exclusion zone CEZ) around the trees which will be fenced off from all access during construction. Therefore, usually such an area will be closed off from works until any which are deemed acceptable (such as driveway constructions) actually need to take place and preferably at the conclusion of other developments on the site.

3.5.2. The works to install the proposed new development of the annex, new access, parking and installation of services do not raise significant issues in relation to Root Protection Areas of trees (RPA). However there are minor issues and these are indicated on the Tree Protection Plan and the text below describes the potential impacts and outlines measures to address the impacts - these are further expanded upon in Section 4 (Method Statement).

Creation of Access Vision Splay

3.5.3. The formation of the new access vision splay along Back Lane will require the lowering of part of the hedge bank beside T1, T2, T4 and T5 from around 1m to no more than 500mm (to allow for 100mm of grass). This will only occur for part of the bank width within the RPA of the trees affected and the works should not have significant impacts on or encounter significant roots from trees. The works will need to be done with care to avoid ‘over levelling’ and impacting on tree roots and this is set out in Section 4

Conversion / construction works associated with Annex

3.5.4. The construction of the new annex should not raise issues in relation to the root protection areas of trees (principally T15) adjacent to it as the footings and associated

ancillary works such as service installations should be able to be located outside the RPA of the tree. Also note that the size and form of the patio stops just on the edge of the RPA of T15 and therefore should not be larger than shown unless measures are put in place to install this feature by a no-dig system.

Overall

3.5.5. The overall impact resulting from the development of the site on tree rooting areas - and assessed in relation to cumulative impacts is set out below;

Service routes - should be located outside the RPA of trees - unless agreed in writing with the District Council - Impact is assessed as Negligible with current assessment / no routing within RPAs

Access vision splay - impact is assessed as Negligible with method as set out in Section 4

Construction of annex and patio - impact is assessed as Negligible.

Tree Protection and Method Statement mitigation (where possible) provision in relation to the issues identified above are addressed in the Method Statement Section 4 below

3.6. Shading Issues

3.6.1. The issue of liveability - particularly shading and perceived tree hazard - to occupants' resident within the properties should be considered carefully. Whist these are not physical constraints to development of the properties, they should inform the nature of the development. The BRE have produced a considerable amount of guidance upon shading related issues which is distilled in two booklets (Environmental Site Layout Planning – Littlefair P. J. et al 2000; and Site Layout Planning for Daylight and Sunlight – a guide to good practice; Littlefair P. J 1991 revised 2011. The BS 5837:2012 makes reference to seeking guidance from these sources. However it remains as 'guidance' and does not confer rules even to the same degree as that for root protection areas, nevertheless they are good starting points for considering the relationship between housing, gardens and peoples reaction to trees within their proximity.

3.6.2. The main issues that tend to present with liveability of trees in relation to property are;

- Shading – direct and indirect light obstruction by trees.
- Overbearing and the 'fear' of trees falling or being 'close'

Shading

3.6.3. The front (west) of the new annex will be partially shaded by the canopy extent of T15 (which has a canopy clearance all round of about 4 - 5m and will therefore present a significantly lower shading element than for a lower canopy. The degree of shading / loss of sky lighting is assessed as MINOR as the tree is somewhat to the north west of

the building and therefore presents a lower shade issue (as shown by the shade quadrant).

Overbearing

3.6.5. The proximity of the fairly large tree T15 to the front of the annex may result in residents feeling apprehensive about trees / branches falling onto the dwelling / cars etc. Perceived risk will be increased by having residents close to the tree, quantified risk will be increased to a moderate degree (due to the current proximity of the tree to the existing Stables property to the north and the car parking / garden area around the tree). The increase in the sense of ‘overbearing’ that the tree will present to living accommodation is assessed as Moderate.

4. Method Statement and Tree Protection Plan

4.0. The tree protection plan details set out below provide information on how to protect and avoid damage to trees on and adjacent to the site during and after the development of the proposed development to construct the development. Damage to trees occurs in several main ways from this type of development and these are set out below.

- Tracking of vehicles over root protection areas
- Excavating within root protection areas
- Storage of materials within root protection areas
- Leakage of toxic chemicals within root protection areas - or near to them
- Physical damage to above ground parts of the trees by collision with vehicles or equipment

4.0.1. The tree protection plan therefore sets out to provide information which can be followed to avoid the risk of damage occurring, and / or where damage is inevitable (such as where vehicles have to cross over a root protection area of a tree) minimise the amount of damage occurring.

4.0.2. The tree protection operations below relate to specific items on the site in specific locations and this should therefore be read with the plans, as each area within the site is unique and presents different tree protection requirements.

4.0.3. These physical constraints have been taken into account as far as practicable, the relevant sections of the Tree Protection / Method Statement recommendations below. To a large extent, the constraints actively militate to assist in protecting trees by restricting the size and type of vehicle and construction process that can be used. The development requires a number of specific procedures and these have been considered in relation to the tree protection issues discussed in Section 3 above. The main points are set out in the summary below with each point being expanded upon in the following text;

4.1. Summary of Construction Method Processes in relation to Trees on and Adjacent to the Site

1. Prior to any other development commencing on the site, including any works to remove existing features / structures, store materials, access the site with vehicles, scrape surface vegetation from the site or undertake site level changes, protective fencing and or ground protection will be erected around the trees and hedging to be retained as indicated by the HATCHED YELLOW line on the plans for ground protection and SOLID YELLOW line indicates where existing or Herras type fencing must be retained or installed to prevent access into areas within the RPA of trees which do not have ground protection measures. This will ensure that the trees are protected adequately from accidental damage. The construction of the ground protection and fencing is detailed below.

2. The new services to and from the property features are unknown but are assumed to connect to existing services to the main house to the north east of the annex building and as such outside the RPA of trees on or adjacent to the site. Other locations and routes may be possible without entering the RPA of trees. If however it is unavoidable that services should be installed through the RPA of trees, this will require amendment to the findings and recommendations of this report and must be agreed in writing with the District Council prior to installation

3. Finally landscaping will be carried out as described below

4.2. Protective Fencing/ Construction Exclusion Zone site Access; Demolition and construction phases

4.2.1. Prior to the commencement of any development on the site including further site clearance, access by vehicles, storage of materials or demolition, ground protection and or temporary protective fencing (as shown on the plans by the YELLOW HATCHED / YELLOW LINE areas respectively) will be installed where shown. The ground protection should be adequate for the type of traffic it will be expected to accommodate. **The access to the site will be via the new driveway to the property off Back Lane or via the existing driveway to The Old Rectory and the existing hard surfaced access around the northern side of the main house, unless otherwise agreed in writing with the District Council.**

4.2.2. Where new temporary protective fencing is required to provide an exclusion zone around the Root Protection Areas of trees, this is shown as a SOLID YELLOW line on the plans. Only at the completion of the main works to construct the development (or where it is necessary to remove existing features within CEZs such as surfacing as discussed in the section below) and where it is necessary to remove the fencing in order to construct specific features within the CEZ (e.g. garden works/fencing – see Boundary Features and Landscaping Sections below) the fencing can be moved or dismantled ONLY after all other construction works on the site have been largely completed.

4.2.3. Ground protection will be provided which is adequate for the type of usage to which it will be subjected.

- For pedestrian access and vehicles up to approx. 3.5 tons, either scaffold boards or plywood sheeting approx. 20mm thick will be laid over an impermeable plastic membrane (DPM sheeting is adequate) and layer of wood chippings or washed aggregate to level the ground and ensure that the pressure of traffic is evenly distributed over the ground.

- For larger vehicles a proprietary system such as Rola Trac, Ground Guards or similar (including steel sheeting of min 8mm thick) can be used - again over a bedding layer of aggregate or wood chippings to ensure that the pressure is evenly distributed over the area of the panels

NOTE - it is not acceptable to erect fencing only and leave ground protection measures until the commencement of the development of the specific feature nearby. IF ground protection is NOT provided then the temp protective fencing MUST be located at the outer edge of where the ground protection WOULD have been provided until such time as the ground protection is installed.

4.2.4. No materials, chemicals, machinery or access shall be stored or gained within this fenced off area during the entire period of the subsequent development of the site.

4.2.5. This fencing shall be either the existing boundary fencing type or to a specification as indicated in BS 5837:2012 and shall comprise weldmesh (Herras type) fencing attached to the ground by posts driven into it to hold the fence rigidly and semi-permanently during construction. Notices shall be attached to the fencing stating that no access, machinery, equipment or materials will be allowed within the fenced off area during the construction period.

4.2.6. All chemicals including cement, together with the mixing of cement, must be located at least 3m beyond the root protection areas (dotted and dashed circles around trees) (this is to prevent spillages / leeching of chemicals into the soil).

4.3. Installation of new Services

4.3.1. New services to and from the annex will be located outside the root protection areas of any trees and hedging. If any works to open services (existing) or install new services are proposed within the RPA of trees, this must be agreed in writing with the District Council prior to commencement.

4.3.3. For installation of services near trees the works will conform to the guidance set out below. These conform to the National Joint Utilities Group NJUG Publication No. 4 'Guidelines for the Planning and Installation and Maintenance of Utility Services in Proximity to Trees' a summary of which is contained below and a copy of which is contained in the Appendix.

- All works within RPAs will be carried out by a suitably qualified persons experienced using hand excavation processes. (Where works may require longer runs within more important tree root protection areas rather than as in this instance, close to them, an air spade will be used by suitably qualified Arboricultural Contractors to undertake the excavation works).

- Where possible, all roots over 10mm to be retained. No root over 20mm to be removed unless absolutely unavoidable. Where roots have to be removed, they shall be cut back flush with the sides of the trench. Where roots are retained and the trench to be left open for more than 7 hours, the roots shall be wrapped in either wet sacking or polythene to reduce moisture loss. The trench shall be infilled as soon as possible thereafter with the removed topsoil or a WASHED aggregate with no fines.

4.4. Post Construction Landscaping Procedures

4.4.1. No details of additional surfacing or boundary treatments are presented as part of this planning application and it is assumed that the existing boundary treatments together with the surfacing type for the driveway only (gravel) - and small patio (slabs) as shown on the submitted plans, will be retained and reinstated after development. If any other landscaping is undertaken to the areas near or within the rooting areas of trees after development, then this should conform to the specification below. Other features such as surfacing and or fencing etc may also require special installation methods or may be unsuitable for installation within the root protection area of trees - we would recommend strongly that you consult either the Council tree officer or an arborist if there are such proposals which are not part of this planning application process.

4.4.2. Following the completion of the construction of the development, when landscaping to the site is undertaken, special procedures will be carried out where these might conflict with trees. Where landscaping impinges within the Root Protection Area of trees to be retained, the following procedures will be adopted;

4.4.2. Only glyphosate based weed killers will be used on any surface vegetation. All use of weed killers will be restricted to pre-physical clearance of the area within the RPAs of trees to be retained in order to prevent spray contacting exposed tree roots.

4.4.3. All removals of existing landscaping, hedging etc will be carried out by hand operated machinery and tools only. The use of backactors etc to remove items will not be used. No excavation beyond that absolutely necessary to remove existing plants and structures (fence posts etc) will be used.

4.4.4. Following removals of existing landscaping, **no use of rotorvators will be undertaken within the RPA of trees, all levelling and tilthing will be carried out by hand to a maximum depth of 100mm.** Any importation of topsoil will be restricted to a maximum of 150mm above previous ground levels. No topsoil to be made up within 500mm radius of the base of any tree (to prevent ‘rotting off’)

Appendix

Inc;

Photographs of site trees

Schematic of protective fencing to BS 5837:2012 Type 1 and 2 versions as necessary

NJUG Guidance Note 4 - Installation of Services near trees

Arboricultural Impact Assessment Plan / Tree Protection Plan / Development Plan shown superimposed on plan 4311/01/Rev B with arboricultural information added February 2021 Developed from plans by The Rural Architect

Photographs of Trees

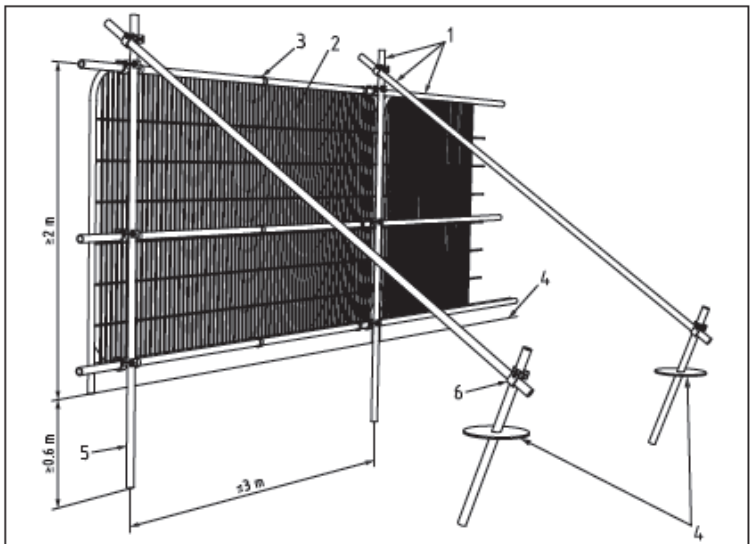
Figure 1 - T1 and T2 - looking south

Figure 2 - G3 - a line of 12 Hawthorn plants to be removed

Figure 3 - T4 - T8 to be retained and the bank slightly lowered where necessary to below 500mm

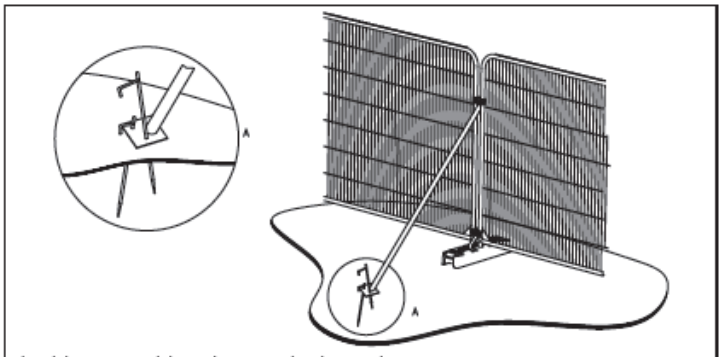
Tree Protection Barriers - Type 1 designs

The standard design which BS5837:2012 now requires as the ‘default’ design is shown below. In certain circumstances (where there is hard surfacing or other physical features which prevent the use of this type)

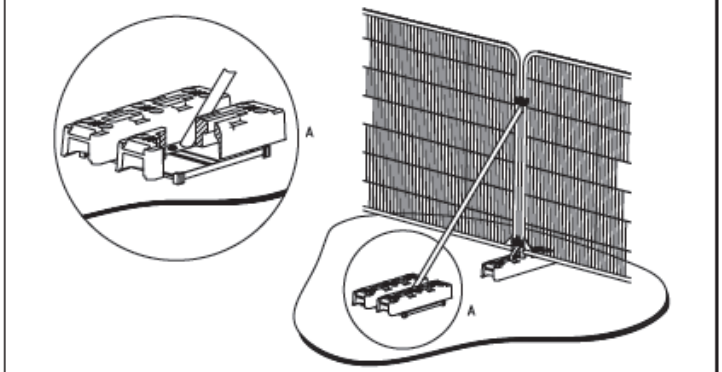


Key

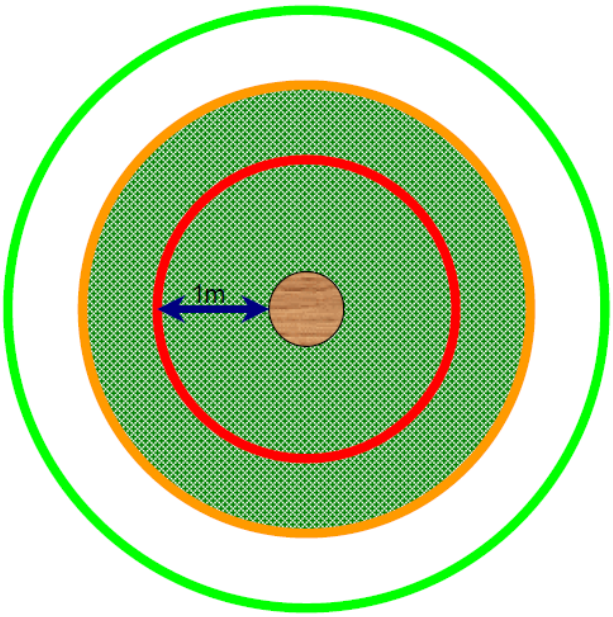
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray



TREE PROTECTION ZONE

Key to Diagram

Trunk of Tree

Spread of canopy or branches

PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with Local Authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.

PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with Local Authority Tree Officer if in any doubt.

PERMITTED ZONE – outside of precautionary zone. Excavation works may be undertaken within this zone however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

DAMAGE TO TREES

Tree roots keep a tree healthy and upright. Most roots are found in the top 600mm of soil and often grow out further than the tree's height. The majority of these roots are very fine; even close to a tree few will be thicker than a pencil. Most street tree roots grow under the footway but may also extend under the carriageway. If roots are damaged the tree may suffer irreversible harm and eventually die.

PROTECTING ROOTS - DO'S and DON'TS

There are three designated zones around a tree each of which has its own criteria for working practices.

THE PROHIBITED ZONE

Don't excavate within this zone.

Don't use any form of mechanical plant within this zone

Don't store materials, plant or equipment within this zone.

Don't move plant or vehicles within this zone.

Don't lean materials against, or chain plant to, the trunk.

Do contact the local authority tree officer or owner of the tree if excavation within this zone is unavoidable.

Do protect any exposed roots uncovered within this zone with dry sacking.

Do backfill with a suitable inert granular and top soil material mix as soon as possible on completion of works.

Do notify the local authority tree officer or the tree's owner of any damage.

THE PRECAUTIONARY ZONE

Don't excavate with machinery. Where excavation is unavoidable within this zone excavate only by hand or use trenchless techniques.

Don't cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.

Don't repeatedly move / use heavy mechanical plant except on hard standing.

Don't store spoil or building material, including chemicals and fuels, within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do backfill the trench with an inert granular material and top soil mix. Compact the backfill with care around the retained roots. On non highway sites backfill only with excavated soil.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the local authority tree officer or the tree's owner of any damage.

THE PERMITTED ZONE

Don't cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.

Do use caution if it is absolutely necessary to operate mechanical plant within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the local authority tree officer or the tree's owner of any damage.

The Coach House

G3 hedge to be removed (approx 12 plants) and roadside bank reduced to no higher than 600mm within vision splay area. New replacement mixed native species hedge to be planted to inside of vision splay and outside of any other boundary treatment for full length of boundary. Two Hornbeam trees to be planted to either side of the site entrance set back from the hedge line. Works to be completed in the next available planting season following commencement of development

Hedge species to be

Hawthorn - 50%
Wild Plum - 10%
Holly - 10%
Field Maple - 10%
Dogwood - 10%
Hazel - 10%

T13 T9 T10 T11

G3

HORNBEAM

G3

T4 T1

EH/UH

T3 T2

The Old Rectory

0 10

Trees retained trees to be removed

Trees coloured to indicate Tree Retention Category as recommended by BS 5837:2012

Category A - Trees of high quality and value (shown green on the plan)

Category B - Trees of moderate quality or value (shown blue on the plan)

Category C - Trees of low quality or value (shown grey on the plan)

Category U - Trees in very poor condition or which would be lost within 10 years

Shading (by the tree) (in accordance with BS 5837:2012) shown as a factor of height - indicated within the area shown as a segment with two solid lines running East and North West from the centre of the tree and a dashed line marking the circumference. Height of tree shown as sides of segment with existing height (EH) solid line and ultimate projected growth height (UH) as broken line

Shade EH UH

Root Protection Area shown as line

Line of protective fencing shown

Line of Ground support

Line of special excavation area for vision splay

Job Title
The Old Rectory Banningham, Tree Protection Plan; to be read with Arboricultural Impact Assessment document.

Plan No.
4311/01 rev B - from plans by The Rural Architect
Scale 1:200 at A3

Date – 19th February 2021

C J Yardley. Creake Road, Burnham Thorpe PE31 8HW, 07931 434162