

**The Hawthornes, Manchester Road,
Thurlstone**

Phase 2 Pre-development Arboricultural Report

Prepared at the request of Clay Architectural Designs

On behalf of P. Buckley and A Cutts

13 August 2018

By

Ian Kennedy

Wharncliffe Trees and Woodland Consultancy

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Summary

I have been instructed by James Clay of Clay Architectural Designs to carry out a pre-development tree survey of one significant tree at The Hawthornes, Manchester Road, Thurlstone where a garage and storage room are proposed.

The location and spread of one individual tree on the northern boundary of the property is recorded on Plan 1 that shows the existing layout. Table 1 records details of the tree's species, dimensions, age, life expectancy, categorisation and root protection area. This information was collected, interpreted and recorded in accordance with BS5837:2012 *Trees in relation to design, demolition and construction – Recommendations*.

The tree is a mature lime in good health and structural condition with no significant defects. In accordance with the retention categories of BS5837: 2012 the tree has been included in retention category B because of its favourable health and good future prospects. This is the second highest category.

The tree is growing on top of a 1m high retaining wall at the top of a steep bank that falls steeply to the south and toward the house. This is within what is regarded as the root protection area (RPA) making this an unconventional root protection area.

Development is proposed within the RPA but no changes are proposed to the existing soil level. Instead the development will be constructed on a pile and beam foundation set above the existing ground levels.

A driveway to the proposed garage from the existing gate will be within the RPA of Tree 1 and the mature trees to the north on neighbouring land. The trees on neighbouring land have not been surveyed because it is clear that their RPAs are definitely within the footprint of the driveway. It is therefore important that driveway is constructed using a no dig design. I have been informed that the driveway will be constructed on top of the existing ground levels using a raft system.

Plan 2 shows the proposed layout and Plan 3 provides details of how the development will be constructed within the root protection area without detriment to the tree.

Based on the proposed construction methods I believe that this development can be achieved without detriment to the trees.

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1.0 Introduction

1.1 Instruction

I have been instructed by Clay Architectural Design to carry out a pre-development tree survey of one tree growing on the northern boundary of The Hawthornes, Manchester Road, Thurlstone in proximity to a proposed garage, storage area and driveway.

The tree survey is intended to provide a structured, impartial assessment of the tree population within the proposed development area.

The survey is intended to be informative to all stages of the development process and was carried out in accordance with *BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations*.

1.2 Documents and Information Provided

I was provided with the following documents:

A pdf plan of the existing layout Ref 27/4

A pdf plan of the proposed ground floor plan Ref 27/5A

A pdf plan of the proposed first floor plan Ref 27/6A

A pdf plan of the proposed elevations Ref 27/7A

A pdf plan of the proposed layout Ref 27/8A

1.3 Limitations

This report is concerned only with assessing the condition of the trees, their importance in the local landscape and any cultural and conservation values.

It takes no account of the affects the trees may have on the soil, such as heave where trees are removed or shrinkage where trees are retained.

Trees are dynamic organisms influenced by weather, pests and diseases. Therefore, this report can only remain valid for a period of 24 months.

Any works around the trees such as trenching, pruning, storage of materials and trafficking that has not first been approved by a suitably qualified arboriculturalist will invalidate this report.

No decay detection equipment was used to gather information on the condition of the trees.

All survey and inspection was completed at ground level.

2.0 Site Visit and Observations

2.1 Site Visit

The site visit took place on 10 July 2018. All dimensions were taken using recognised methodology and arboricultural measuring equipment, unless otherwise stated.

The weather at the time of inspection was sunny. Visibility was good and winds were light throughout.

2.2 Brief Site Description

The site is located on the south side of Manchester Road in the village of Thurlstone at grid reference SE 22818 03329.

The property is a domestic dwelling with generous gardens to the east of the house that is accessed from a gate off a shared drive at that point. The land falls steeply from the northern boundary down to the dwelling. There are small trees and large shrubs around most of the boundaries but the only significant tree in the grounds is the lime tree on the northern boundary. This is growing at the top of a 1m high retaining wall.

There are trees on the neighbouring land immediately to the north of the property.

2.3 Development Proposals

The development proposes a garage on the northern side of the dwelling at first floor level. The area below the garage at ground floor level would be used as storage. A driveway would serve the garage from the existing access point on the northern boundary. The development has been designed to accommodate the site topography.

2.4 Tree Observations

Information on the size, condition and retention category of the tree on the application site is included in Table 1 below.

2.5 Locations of the Trees

The position of the tree was included on the drawings of the existing and proposed layouts that were provided to me.

Table 1. The Tree Survey

Tree number	Species	Height (M)	Stem diameter (DBH in MM)	Branch spread (M)	Ht first branch above GL* (M)	Ht of canopy above GL (M)	Life stage	Vitality	General observations on the tree's condition	Estimated life in years	Category	RPA (m ²) if retained
1	Lime	17.0	800#	North-6.0# South- 5.5 East - 6.0 West -5.0	6.0 (from the ground level on the northern boundary)	6.0 (from the ground level on the northern boundary)	Mature	Normal	A large, mature tree in good health with good structural form. Epicormic growth to the main stem is limiting inspection of parts of the stem but there appeared to be no significant defects. There is some very minor dead wood in the upper crown. These are small, light weight lateral branches. The tree is growing at the top of a 1m high retaining wall. The land falls steeply away from the bottom of the retaining wall. Within the root protection area (RPA) there is a difference in existing levels of approximately 2.5m. This makes this a very unconventional RPA.	20+	B (2)	289.6

- Estimated * GL - Ground Level

3.0 Interpretation of Information and References

My interpretation and appraisal of information gathered from the survey is based on experience of tree species, visual risk hazard assessment and the guidance set out in BS5837:2012 *Trees in Relation to Design, Demolition, Construction – Recommendations*. My qualifications and experience in arboriculture are included in appendix 1.

3.1 BS5837:2012 Tree Retention Categories

The tree has been assessed and assigned a retention category in accordance with Table 1 of the standard. A copy of Table 1 is included as Appendix 2. This categorisation is intended to rank trees according to their importance in terms of quality, health, life expectancy, amenity and landscape value, together with wildlife and cultural importance. This ranking assists in determining the suitability and appropriateness of trees for retention in any development. Categories A to C are those considered for retention, 'A' being highest. Category 'U' trees are those not suitable for retention because of impaired condition.

Generally category A and B trees should be given more consideration in layouts than category C trees as these are considered more valuable because of their condition, landscape value, future life expectancy or, on occasions because of their more favourable habitat value.

3.2 Below Ground Constraints; Root Protection Areas (RPAs)

The root protection area is the area of land considered necessary for trees should they be retained as part of any development. This is calculated using the stem diameter measured at 1.5 metres from ground level. This protection area is usually shown diagrammatically as a circle centred on the base of the tree where it is expected that rooting has not been impeded in any one direction and where disturbance has not taken place. See Plan 1. Where rooting has been impeded or disturbance taken place then the shape and size of the root protection area is modified according to an assessment of where rooting is likely to take place.

Where trees are to be retained, it is optimal to locate structures and services outside the RPA. However, where incursion becomes necessary, technical solutions may be possible to limit damage, areas lost can be compensated elsewhere, or the soil environment can be improved. In these circumstances an arboricultural method statement will be necessary to ensure that works are undertaken sympathetically and do not damage the below ground parts of the trees.

3.3 Above Ground Constraints; Crown Spreads

Ideally, working areas and construction will be out with the crown spreads of trees to be retained. However where access by high sided vehicles and machinery for construction or erection of scaffolding is necessary within the crown spreads of trees to facilitate development an arboricultural method statement will be necessary to ensure pruning works are carried out sympathetically prior to construction works commencing.

Any permanent development within the canopy spread of a tree will also require a method statement. However, the effects of shade and other perceived inconveniences of trees this close to property should also be considered, together with the future growth potential of the trees and the maintenance obligation this will bring.

3.4 Conception and Design

The constraints imposed by trees should assist with site design and layout, together with the other competing needs of development. Generally the trees in the higher categories (A and B) should be given greater consideration in any layout than the lowest retention category (C).

As well as the footprint of buildings, the provisions of services, infrastructure layout and the access space required for construction itself should be considered.

4.0 Arboricultural Impact Assessment and Method Statement

4.1 Arboricultural Impact Assessment

Tree 1

The RPA of this tree cannot be described or shown in the conventional way with a circle centred on the stem of the tree. This is because the tree is growing on top of a 1m high retaining wall with the land falling steeply below the wall with a series of steps. The wall and steps appear to have co-existed with the tree for many years.

Roots will normally find the path of least resistance to root into and it is possible that a lot of the tree's roots will be to the north, east and west of the tree. Whilst the conditions to the south are less than favourable for rooting it cannot be assumed that there are no roots to the south.

The proposed garage

A foundation design that avoids excavations around the tree is important. If major roots were severed this could have serious implications for water uptake and stability of the tree.

A foundation has been designed that involves construction of the garage on a pile and beam system. The closest excavation to the tree would be 5m from the stem for the construction of a retaining wall. The excavations will be towards the bottom of the slope and I do not believe that this will have a detrimental impact on the tree.

Some crown lifting of the lower branches may be necessary to provide adequate clearance from the proposed extension. The branches that could be affected are all epicormic growths on the lower and mid stem. These can be removed up to the point of the main crown without any detriment to the tree.

The proposed driveway

The RPAs of Tree 1 and the trees immediately to the north on neighbouring land are within the proposed driveway that would connect the access gate to the garage.

The trees on the neighbouring land have not been surveyed. It is not necessary to carry out a survey of these trees to establish that the RPAs will extend into the proposed driveway area.

The land that the driveway would be constructed on falls quite steeply to the south away from the trees. The driveway will therefore need to be constructed on top of existing levels. This will avoid the need for any excavations within the root protection areas.

I have been informed that the driveway will be constructed on a raft system above the existing ground levels. This will avoid severing roots or compacting to the soils.

Furthermore, it is important that water should be allowed to percolate through to the soil below.

4.2 Protection of the tree during development

I would recommend that some form of barrier is erected on top of the retaining wall around the stem to prevent damage to the stem of the tree during the works. This will not need to be the robust fencing that is often recommended to resist impact from vehicles as the position of the tree on top of the wall will help provide protection. The fencing is proposed to prevent storage of materials around the tree.

4.3 Relevant Industry Standards and Codes of Practice

The main arboricultural industry standards and codes of best practice relevant to the planning and execution of this project are:

- BS 5837 (2012) – Trees in relation to construction – Recommendations;
- BS 3998 (2010) – Tree Work – Recommendations; and
- National Joint Utilities Guidelines, Volume 4 – NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) (www.njug.org.uk)

4.3 General Precautions

The following general precautions should ensure the health and longevity of the retained tree. They should be enforced during the construction phase within the RPAs of the retained tree and under its canopy.

- All work will be carried out in accordance with a current risk assessment.
- All proprietary materials will be installed in accordance with their manufacturer's instructions and a current risk assessment.
- All equipment and tools will be used in accordance with their manufacturer's instructions and a current risk assessment.
- No storage of materials or fuel.
- No bonfires within 10m of the outer edge of the crown or RPA of a tree.
- No refuelling of mechanical equipment.
- No mixing of cement.

- No washing of cement mixers.
- No raising the soil level without the agreement of the Local Planning Authority (LPA).
- No excavations without the agreement of the LPA.
- Only operate or park vehicles and plant if the soil is suitably protected, as agreed by the LPA.
- The guidance contained within the National Joint Utilities Group Volume 4 (Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2, 2007); <http://www.njug.org.uk/>) will be followed when installing underground services within the rooting areas of retained trees. To minimise potential damage to tree roots excavations will be carried out by a pneumatic excavation lance.
- No materials will be dumped or stored within the RPA of a tree or under its canopy, whether in a skip or directly on the ground, unless the ground is suitably protected against contamination and compaction.

5.0 Conclusions

- The mature lime on the northern boundary has been included in retention category B because of its size, maturity and favourable health and structural condition.
- The tree is growing on top of a 1m high retaining wall. The land falls steeply to the south below the wall making this a very unconventional root protection area.
- The trees on the other side of the northern boundary were not surveyed. Their RPAs are undoubtedly within the proposed construction area of the new drive.
- Part of the RPA of Tree 1 is also within the area of the proposed driveway.
- The proposed construction method for the garage would use pile and beam methods avoiding the need to excavate within the RPA of Tree 1.
- The proposed driveway would use a raft design to build the driveway on top of the existing levels avoiding excavation or compaction within the RPA of Tree 1 or the neighbouring trees to the north.
- Based on the proposed construction methods for the garage and drive I conclude that the proposals will not have a detrimental impact on the existing trees.

6.0 Legal Considerations

Protected trees

No checks have been made with the Local Planning Authority for Tree Preservation Orders, other planning conditions or inclusion of the site in a Conservation Area. However, if any of the trees subject to this report are protected it will be necessary to apply to the local planning authority (LPA) for permission before any work, other than certain exempted operations, can be carried out.

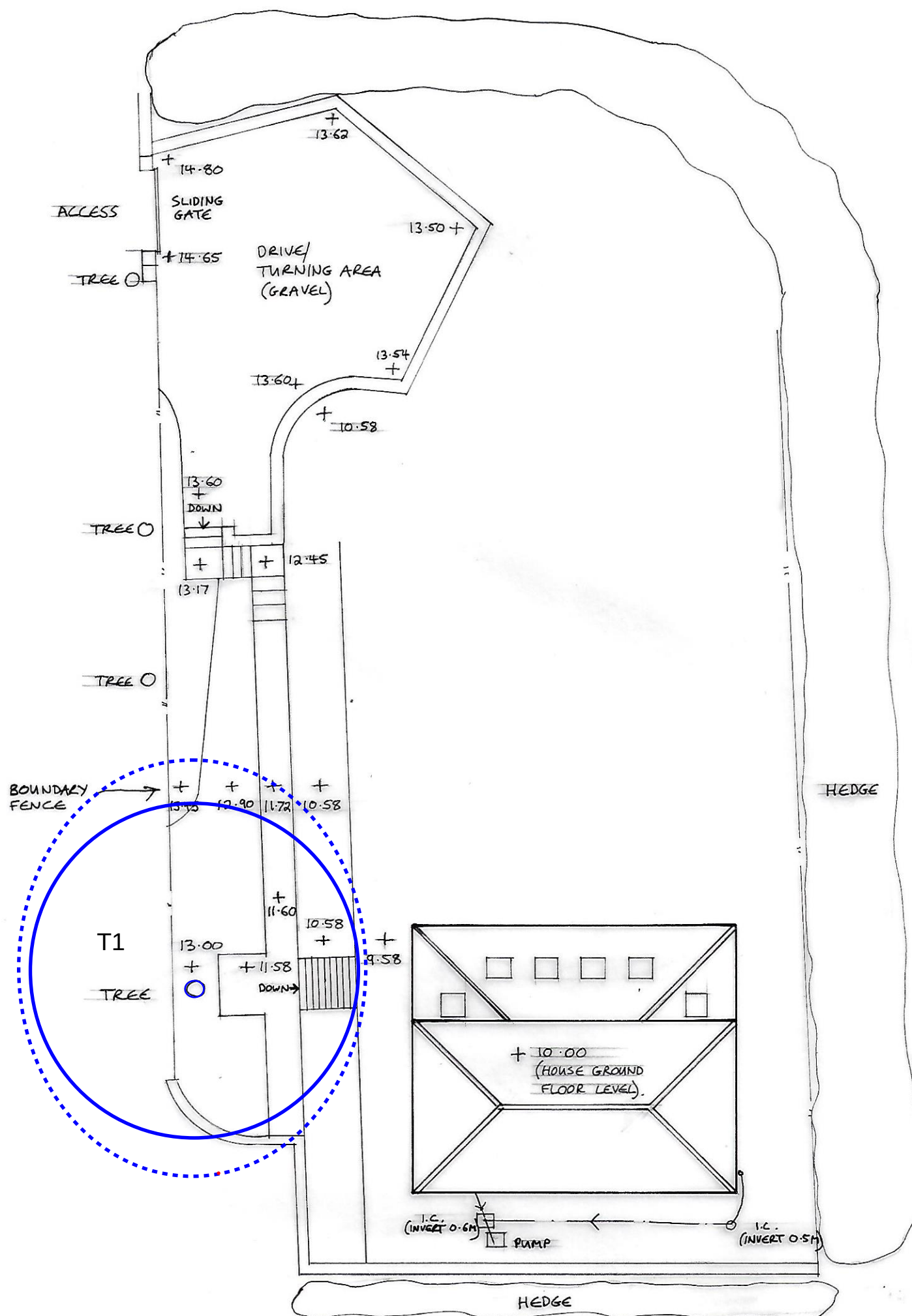
Wildlife conservation legislation

Breeding birds are protected, together with bats and their roosts, whether their roosts are in use or not.

Some of the larger trees may have some features useful to bats for roosting, particularly summer roosts such as loose bark and small cavities in structural branches.

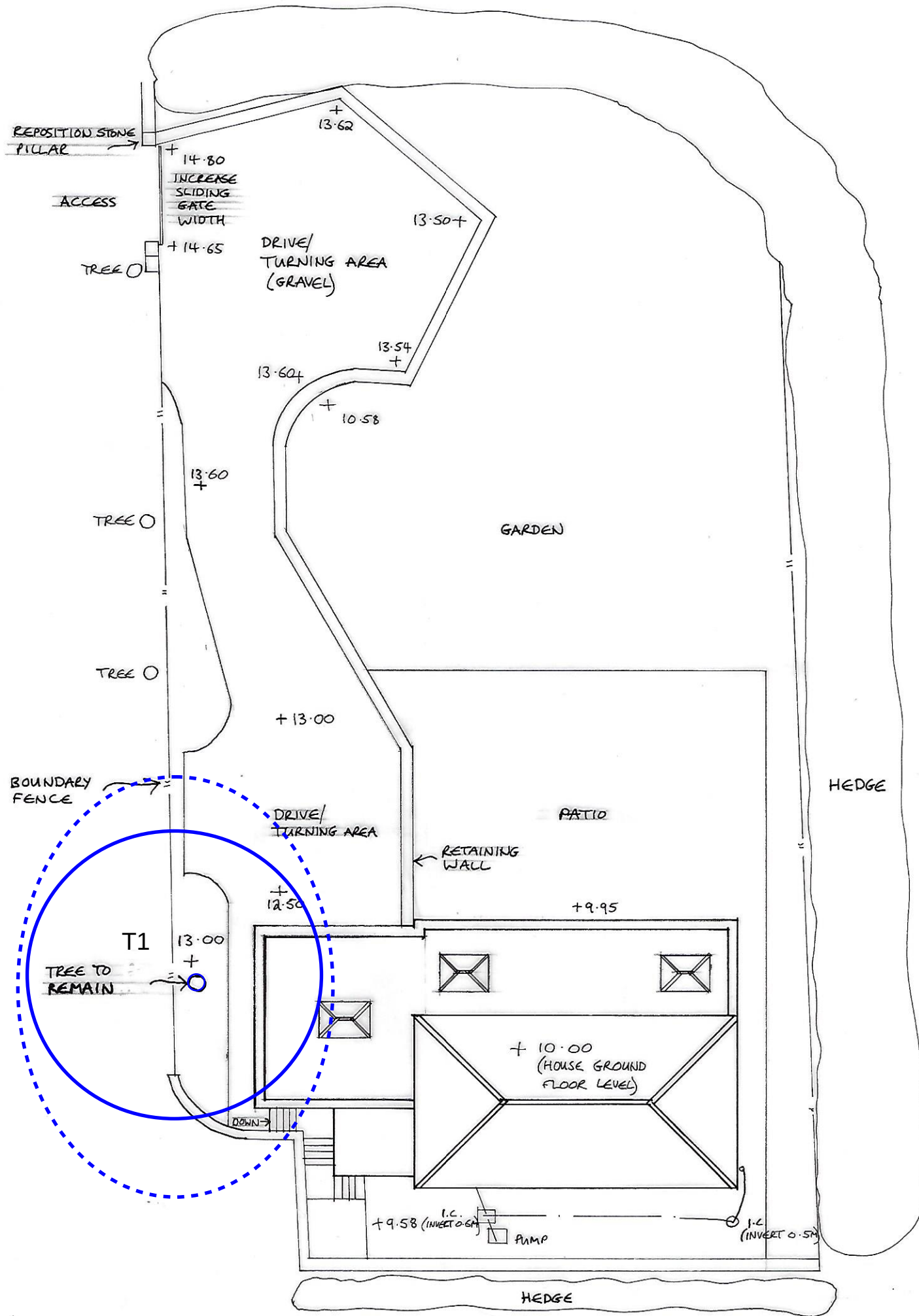
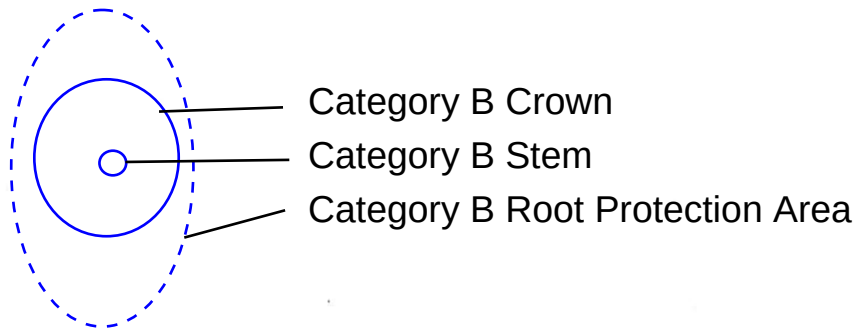
Consideration should be given to the presence of protected species prior to any proposed tree removal or maintenance. This will include breeding birds, principally between March and August, and bats at any time of year.

Tree surgeons should also be aware of their duties under legislation to protect wildlife and carry out their site assessment and work accordingly.



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13 August 2018

Plan 2 Tree Constraints Plan showing the proposed layout

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A: TREE TO REMAIN (8.8.18)

**PROPOSED SITE LAYOUT PLAN AT
THE HAWTHORNES, MANCHESTER ROAD,
PLUMPTON, THURLESTONE, S36 9QW**

CLIENT: MR P. BUCKLEY + MS A. CUTTS

Dr N°: 27/8A DATE: 15.6.18 SCALE: 1:200 @A3

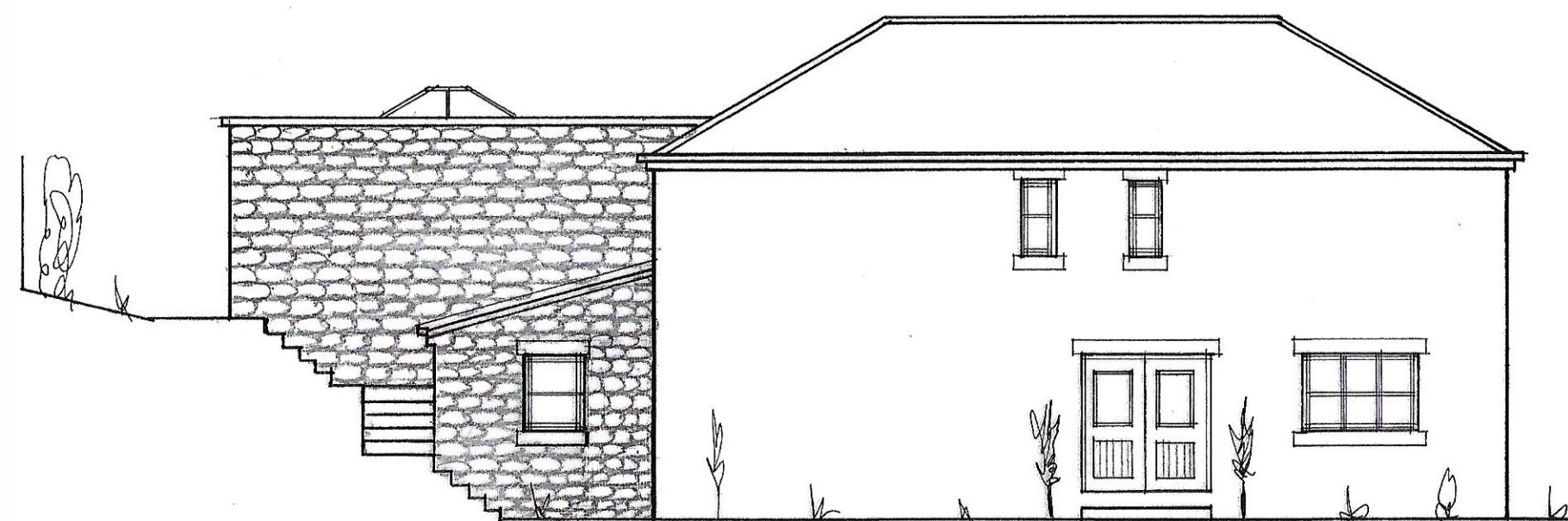


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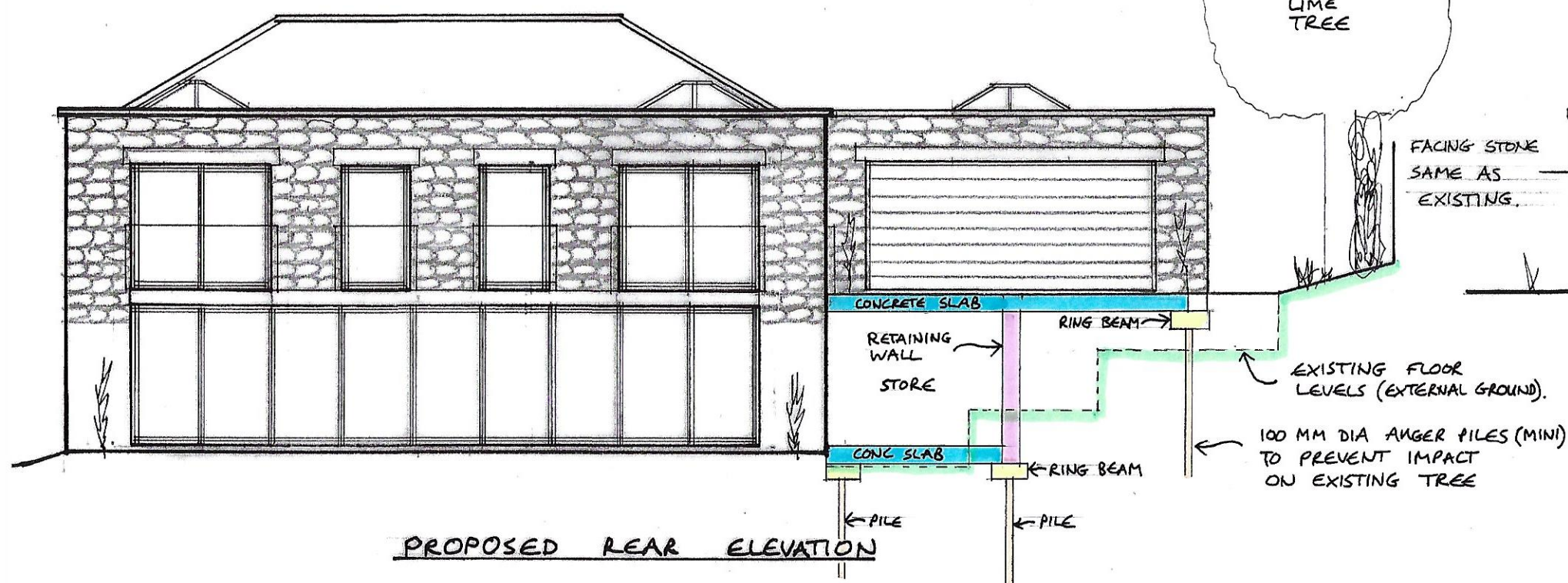
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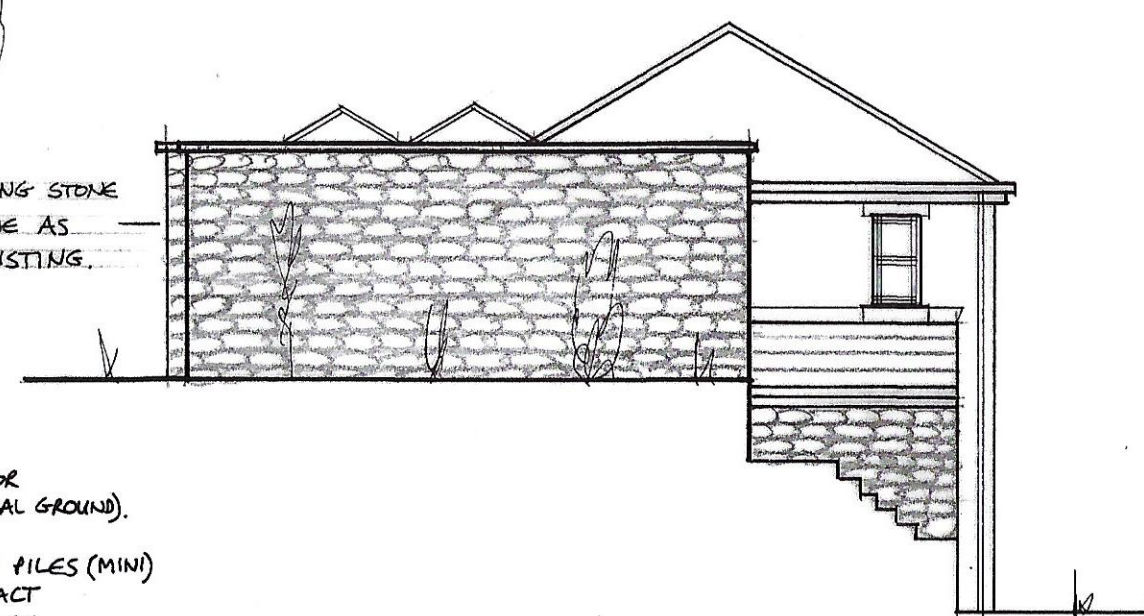
PROPOSED FRONT ELEVATION



PROPOSED SIDE ELEVATION



PROPOSED REAR ELEVATION



PROPOSED SIDE ELEVATION

Plan 3 Tree Constraints Plan showing foundation design

A: FOUNDATION DETAILS / EXISTING GROUND LEVELS
(9.8.18)

PROPOSED ELEVATIONS AT
THE HAWTHORNES, MANCHESTER ROAD,
PLUMPTON, THURLSTONE, S36 9QW

CLIENT: MR P. BUCKLEY + MS A. CUTTS

DR N°: 27/ 7A DATE: 14.6.18 SCALE 1:100 @ A3



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Appendix 1. Qualifications and Experience of Ian Kennedy

1. Qualifications

Ian graduated from the Scottish Agricultural College in August 1995 with a Higher National Diploma in Horticulture (HND) with Distinction.

In 1998 Ian graduated from the University of Aberdeen with a BSc (Hons) Upper second class in Forestry with Arboriculture and Amenity Forestry.

He passed the LANTRA Professional Tree Inspection examination in 2006.

In 2009 his application to become a professional member of the Arboricultural Association was assessed to fulfil all the necessary requirements and he became a professional member of the Association that year.

In 2011 he passed the final examination of the Institute of Chartered Foresters and became a member of that institute in January 2012.

2. Practical experience

Presently Ian is working in private practice as an independent arboricultural and woodland management consultant undertaking tree conditions surveys, pre-development tree surveys to the BS5837:2012 standard, mortgage reports and woodland management planning works. Clients range from home owners and farmers to architects, building companies, local authorities, schools and larger development companies.

Prior to private practice Ian held a number of positions in local government. Firstly he was the arboriculturalist within a planning office in Essex. Ian gained considerable experience regarding trees in relation to development, in particular BS 5837.

Development work formed the core of his duties and applications ranged from small back garden developments to major schemes such as the redevelopment of Ministry of Defence land for private residential development. Ian also undertook all functions associated with

Tree Preservation Orders (TPOs), including the making of new TPOs, assessing suitability of applications to work on protected trees and trees in conservation areas.

Ian went on to managed a 500 hectare woodland estate for a local authority in South Yorkshire that included a mix of urban and rural woodlands. This included preparation and implementation of detailed management plans for multiply use woodlands. He undertook all aspects of silvicultural management from marking to contract tendering and monitoring. He also managed the access, conservation, landscape and archaeological requirements of the estate. Ian was directly involved in the estate achieving Forest Stewardship Council certification in 2003 and personally ensured continued certification.

Ian has worked extensively with Forestry Commission to obtain the necessary licences for management works and ensured the estate benefited fully from the full range of grants available.

Latterly at the same authority Ian went on to manage the trees and woodlands unit, having overall responsibility for management of the authority's tree and woodland stock and associated staff, together with delivery of other tree related services such as those associated with the Town and Country Planning Acts.

3. Continuing professional development

Ian regularly attends meetings, seminars and training events hosted by The Arboricultural Association. Institute of Chartered Foresters, Royal Forestry Society and Forestry Commission and benefits from the respective journals, briefings and newsletters available to members of the first three of the organisations listed.

4. Relevant experience

Ian Kennedy has spent 18 years working with trees, including as the arboricultural advisor to planning officers for a Local Planning Authority and manager of a trees and woodlands unit for another local authority with overall responsibility for trees, including in relation to the Town and Country Planning Acts.

Appendix 2. Tree Retention Categories

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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			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

Appendix 3.Explanatory notes for terms used in this report

- **Compass Bearing:** N = north; S = south; E = east; W = west;
- **Age Class:** Assessed as either:
 - Young = a size which could be easily transplanted;
 - Semi-mature = prior to seed bearing age and could be transplanted with care;
 - Young Mature = early maturity, not fully grown but of seed bearing age and may have achieved mature height;
 - Mature = fully grown, annual growth is much reduced;
 - Old Mature = old for the species, possibly starting to decline;
- **Trunk Diameter:** These figures relate to the diameter of the trunk at a given distance above ground level and are recorded in centimetres measured with a diameter tape.
- **Estimated size: #**
- **Health:**
 - Normal Vitality = normal growth and twig extension;
 - Moderate Vitality = reduced twig extension but other than that few signs of ill-health;
 - Early Decline = reduced twig extension and some dead twigs in the outer canopy;
 - Mid-decline = small internodes, the canopy may be thinning and contain dead twigs and/or branches in the outer canopy, older branch wounds that haven't occluded may be decaying and forming cavities;
 - Severe Decline = sparse crown, numerous dead twigs and branches in the outer canopy, older branch wounds likely to be decaying and forming cavities;
 - Dead.
- **Structural Condition**
 - Acute stem union = a weak union between two or more stems at the main forking point caused by the formation of reaction wood. Mechanical pressure at the forking point increases as secondary thickening occurs increasing the risk of failure at that point.
 - Acute branch union = the same principle as acute stem unions but between a stem and a branch or two branches rather than 2 main stems.

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