

# ARBORICULTURAL IMPACT ASSESSMENT AND METHOD STATEMENT

50 Lewes Road Ditchling East Sussex BN6 8TU

Client: Mr R. Beacroft

January 2024

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Ref: 3135 AIA AMS Lewes Road Rev 1



### **Executive Summary**

This report provides an arboricultural impact assessment and method statement for a FUL planning application for a replacement dwelling at 50 Lewes Road, Ditchling, East Sussex BN6 8TU.

This report complies with the planning policies of Lewes District Council and the South Downs National Park Authority with the recommendations of British Standard BS 5837: 2012, *Trees in relation to design, demolition and construction – Recommendations*. This report provides an impact assessment and an arboricultural method statement including a tree removals plan and a tree protection plan.

The site is accessed via a driveway between Nos. 48 and 52 Lewes Road, leading to two properties to the rear. No. 50 Lewes Road is the western most of these two properties. To the north the boundary abuts the rear boundary of No. 48 Lewes Road, to the south and west the boundaries abut open fields and to the east the site abuts the boundary with No. 50A Lewes Road.

The site comprises a detached garage and a detached bungalow, with large front and rear gardens laid to lawn with well-established boundary hedging. The site is outside of the Ditchling Conservation Area and within the South Downs National Park.

The trees on and adjacent to the site were surveyed on 7<sup>th</sup> August 2023 by Abi St Aubyn. Information about the survey methodology and the tree data recorded can be found at **Appendix 1**. The root protection areas (RPAs) table and the tree constraints plan can be found at **Appendix 2** & **Appendix 3**.

The proposals are for demolition of the existing dwelling and detached garage and construction of a replacement dwelling and garage. The tree removals plan can be found at **Appendix 4** and the tree protection plan at **Appendix 5**. The proposals will require the removal of a total of 6 individual trees and a small section of a single hedge. Of these all are category 'C' apart from White Willow T9 and Box Elder T18, which are category 'B' trees. The White Willow (T9) is 11.5m in height, and the Box Elder (T18) is 6m in height, both are too close to the proposed footprint of the dwelling to retain. Mitigation tree planting is indicated on the tree protection plan to include a Field Maple, a Walnut and a Mountain Ash.

Subject to the generic and specific tree protection measures recommended within the arboricultural method statement at section 4 of this report being adhered to, I consider that the proposals represent a minor impact on the amenity of locality in so far as it is contributed to by trees. However, following implementation of a high-quality landscaping scheme, as the new planting establishes it will progressively make a positive contribution to the age and species diversity, the extent of canopy cover and the amenity of the locality.

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### 1. Introduction

#### 1.1. Scope of report

- 1.1.1 This report provides an arboricultural impact assessment and method statement for a FUL planning application for a replacement dwelling at 50 Lewes Road, Ditchling, East Sussex BN6 8TU.
- 1.1.2 This report complies with the planning policies of Lewes District Council and the South Downs National Park Authority with the recommendations of British Standard BS 5837: 2012, *Trees in relation to design, demolition and construction Recommendations* (the British Standard).
- 1.1.3 This report provides an impact assessment and an arboricultural method statement including a tree removals plan and a tree protection plan.

#### 1.2. Site description

- 1.2.1 The site is accessed via a driveway between Nos. 48 and 52 Lewes Road, leading to two properties to the rear. No. 50 Lewes Road is the western most of these two properties. To the north the boundary abuts the rear boundary of No. 48 Lewes Road, to the south and west the boundaries abut open fields and to the east the site abuts the boundary with No. 50A Lewes Road.
- 1.2.2 The site comprises a detached garage and a detached bungalow, with large front and rear gardens laid to lawn with well-established boundary hedging.
- 1.2.3 A check of an online soil information resource<sup>1</sup> revealed the soils to be slowly permeable seasonally wet, slightly acid but base-rich loamy and clayey soils.

#### 1.3. Information provided

- 1.3.1 The following plans by Sandy Rendel Architects used to aid the preparation of this report:
  - Design & Access Statement ref: 268/16C/231214
  - Proposed Site Plan ref: 275/PL/150A
  - Proposed Ground Floor Plan ref: 275/PL/200A
  - Proposed South-West Axo and North-West Axo ref: 275/PL/322A &233A
  - Proposed Outbuilding Ground Floor & Roof Plans ref: 275/PL/221
  - Proposed Outbuilding Elevations ref:275/PL/222
  - Proposed Cross Sections AA & BB ref: 275/PL/220A
  - Proposed East & South Elevations ref: 275/PL/211
  - Proposed North & West Elevations ref: 275/PL/210
  - Proposed Roof Plan ref: 275/PL/201A



<sup>&</sup>lt;sup>1</sup>CRANFIELD SOIL AND AGRIFOOD INSTITUTE. (2021) Soil descriptions. [Online] Available from: www.landis.org.uk/soilscapes/ [Accessed: 6<sup>th</sup> August 2023]

#### 1.4. Limitations

1.4.1 This arboricultural impact assessment and method statement have been prepared for the proposals stated above, using the information available at the time of writing. Any subsequent amendments to the design or to the construction methods proposed, will need to be reviewed by the project arboricultural consultant to assess whether these changes might create additional or fewer arboricultural impacts and to see if additional measures are required or if some of the measures specified are no longer needed.



### 2. Tree survey

#### 2.1. Findings

- 2.1.1 The trees on and adjacent to the site were surveyed on 7<sup>th</sup> August 2023 by Abi St Aubyn. Information about the survey methodology and the tree data recorded can be found at **Appendix 1**. The root protection areas (RPAs) table and the tree constraints plan can be found at **Appendix 2** & **Appendix 3**.
- 2.1.2 A total of 25 individual trees, 1 group and 10 hedges were surveyed. A summary of their British Standard categorisation is provided at **Table 1** below.

	Tree	Individual	Group	Hedge	
	category	tree	Group		
-	Α	-	-	-	
	В	7	-	4	
	С	15	1	6	
	U	3	-	-	
	Totals	25	1	10	

Table 1: Tree categorisation summary

- 2.1.3 The key arboricultural features of the site are:
  - Native hedges H6, H20, H28 & H30
  - Hornbeam T1
  - White Willow T9
  - Tulip Tree T17, and
  - Silver Birch T33
- 2.1.4 These trees are in keeping with the character and appearance of the locality.

#### 2.2. Statutory protection

- 2.2.1 Lewes District Council does not provide online information about the locations of Tree Preservation Orders (TPOs) and therefore it is not known whether there are any TPOs within or adjacent to the site.
- 2.2.2 The site is not in the Ditchling Conservation Area.

#### 2.3. Other designations

- 2.3.1 A check of 'MAGIC'<sup>2</sup> map showed that there are no areas of ancient semi-natural woodland (ASNW) within or adjacent to the site. Ancient semi-natural woodland is any area that's been continuously wooded since at least 1600 AD.
- 2.3.2 The site is within the South Downs National Park.



<sup>&</sup>lt;sup>2</sup> The DEFRA MAGIC map website provides authoritative geographic information about the natural environment across government: www.magic.defra.gov.uk

## 3. Arboricultural impact assessment

#### 3.1. Overlay of the proposals to identify impacts

3.1.1 The design has been an iterative process, with the baseline tree survey information and tree constraints plan informing the evolving design. The final proposals have been overlaid with the tree constraints plan and the remaining arboricultural impacts identified. The tree removals plan can be found at **Appendix 4** and the tree protection plan at **Appendix 5**. The arboricultural impacts are described below.

#### 3.2. Proposals

3.2.1 The proposals are for the demolition of the existing dwelling and detached garage and construction of a replacement dwelling and garage. The footprint of the replacement detached garage is larger than the existing and is set forward (to the south-west) from the existing by approximately 0.7m.

#### 3.3. Relevant planning history

3.3.1 Pre-application advice was received by the applicant via a letter dated the 27<sup>th</sup> October 2023 ref: SDNP/23/03810/PRE for remodelling of the existing dwelling including demolition of the western part of the building and its replacement with a single-storey pitched roof structure with associated works. The advice stated that the proposed development would be likely to be supported at the application stage.

#### 3.4. Tree removals

3.4.1 Trees to be removed to enable the proposed development are shown with dashed outlines on the tree removals plan at **Appendix 4** and are shaded to indicate their British Standard tree category. A summary is shown at **Table 2** below.

Tree No.	Species	Cat- egory	Justification for tree removal
H2	Hornbeam & Leyland Cypress	С	Remove small section to enable construction of the garage
Т3	Leyland Cypress	С	Within the footprint of the proposed garage; small non-native conifer of only 2m in height; readily replaceable
Τ4	Purple Norway Maple	С	Too close to the footprint of the proposed garage to retain; small tree of only 6m in height; readily replaceable.
Т9	White Willow	В	Too close to proposed footprint to retain; mitigation planting proposed as part of the landscaping scheme.
T18	Box Elder	В	Too close to proposed footprint to retain; mitigation planting proposed as part of the landscaping scheme.
Т34	Pittosporum	С	Too close to proposed footprint to retain; small ornamental tree of 6.5m; mitigation planting proposed as part of the landscaping scheme.
Т36	Judas Tree	С	Too close to the proposed footprint to retain; small ornamental tree of 2.5m; mitigation planting proposed as part of the landscaping scheme.

Table 2: Tree removals summary

3.4.2 The proposed development will result in the removal of a total of 6 individual trees and a small section of a single hedge. Of these all are category 'C' apart from White Willow T9 and Box Elder T18, which are category 'B' trees. The White Willow (T9) is 11.5m in height, and the Box Elder (T18) is 6m in height, both are too close to the proposed footprint of the dwelling for their retention. Mitigation tree planting is indicated on the tree protection plan to include a Field Maple, a Walnut and a Mountain Ash.

#### 3.5. Pruning

3.5.1 A summary of pruning works required is provided at **Table 3** below.

Tree No.	Species	Works required	Reasons for works
T1	Hornbeam	Crown lift from 2m to 5.5m at the southern and western edges of crown	To allow adequate crown clearance to construct the garage and over the entrance to the site
H2	Hornbeam & Leyland Cypress	Remove small section of the Hornbeam hedge and crown reduce to either the boundary line or where space allows to 1.5m from the proposed footprint of the garage	To allow adequate clearance to construct the garage
H6	Hawthorn	Minor works to prune back crown adjacent to proposed garage by c.0.5m	To allow adequate space for construction activities
G10	Leyland Cypress & shrubs	Minor pruning to trim back to edge of driveway	To allow adequate space for access for construction activities
T13	Tulip Tree	Crown reduce on S side to allow 1.5m clearance from the proposed footprint	To allow adequate space for construction activities.

Table 3: Summary of pruning

#### 3.6. Excavation

- 3.6.1 The footprint of the proposed dwelling does not encroach into the root protection areas (RPAs) of any of the retained trees. However, the footprint of the garage encroaches within the RPA of Hornbeam T1 and into the RPAs of the Hornbeam & Leyland Cypress hedge H2. The extent of the incursion into the RPA of T1 is 3.3% of its overall RPA.
- 3.6.2 Due to the small percentages of the respective RPAs affected, however, and subject to the protective measures described in Section 4 below, these minor encroachments are unlikely to compromise the trees' health or longevity.

#### 3.7. Proposed new hard surfacing

3.7.1 There are no areas of new hard surfacing proposed within the RPAs of retained trees. The layout of the existing driveway is to be retained.

#### 3.8. Footings of the existing garage

3.8.1 The footings of the existing garage are to be removed carefully as outlined within the method statement at section 4.

#### 3.9. Levels

3.9.1 No changes in levels are proposed within the RPAs of any retained trees.

#### 3.10. Services

3.10.1 It is proposed that the existing gas, electricity, water and foul waste connections will be reused.

#### 3.11. Landscaping

- 3.11.1 Indicative tree planting is shown on the tree removals and tree protection plan. This includes a Field Maple, a Walnut and a Mountain Ash. A high quality landscaping scheme could readily be secured by an appropriate planning condition.
- 3.11.2 Where tree or shrub planting occurs within the RPAs of retained trees, in order to avoid damage to roots and compaction to soil, these works must occur sensitively as described in the arboricultural method statement at section 4 of this report.

#### 3.12. Conclusions

- 3.12.1 The proposals will require the removal of a total of 6 individual trees and a small section of a single hedge. Of these all are category 'C' apart from White Willow T9 and Box Elder T18, which are category 'B' trees. Mitigation tree planting is indicated on the tree protection plan to include a Field Maple, a Walnut and a Mountain Ash.
- 3.12.2 Subject to the generic and specific tree protection measures recommended within the arboricultural method statement at section 4 of this report being adhered to, I consider that the proposals represent a minor impact on the amenity of locality in so far as it is contributed to by trees. However, following implementation of a high-quality landscaping scheme, as the new planting establishes it will progressively make a positive contribution to the age and species diversity, the extent of canopy cover and the amenity of the locality.



# 4. Arboricultural method statement (AMS)

#### 4.1. Pre-start meeting

- 4.1.1 Before any works take place on site, the site owner will hold a pre-start meeting. This meeting will be led by the project arboricultural consultant and will be attended by the site manager and if needed the demolition contractor and any other parties working close to the trees on the site. The LPA tree officer will also be invited to this meeting. At the pre-start meeting the project arboricultural consultant will:-
  - explain the approved tree protection methodology.
  - sign-off the pre-start tree works, tree protection fencing and temporary ground protection.
  - discuss any changes that may be required to the approved arboricultural method statement. These changes will either be agreed with the LPA tree officer at the time or if the LPA tree officer is not attendance, by exchange of email following the meeting.
  - agree the arboricultural monitoring frequency and reporting required with the LPA tree officer if in attendance.
  - contact numbers will be exchanged and the methods of tree protection outlined in this statement will be explained.

Works Order	Stage	Notes
1	Initial tree works	The approved tree works will be carried out in accordance with para 4.3 below.
2	Installation of tree protection fencing and temporary ground protection	The tree protection fencing and temporary ground protection will be installed in the locations shown on the tree protection plan and to the specification described in this method statement.
3	Pre-start meeting	The project arboricultural consultant will explain tree protection measures at the pre-start meeting. The tree works and protective fencing & ground protection will also be signed off. This meeting must occur before any plant activity, ground works or demolition & construction activities begin. The timings for the removal and replacement of the existing garage will also be agreed.
4	Construction phase	The tree protection fencing and temporary ground protection must be maintained and the construction exclusion zone maintained throughout the construction phase.
5	Landscaping	Landscaping works will take place after the construction phase has been completed and all heavy plant has left site.

#### 4.2. Phasing of works

Table 4: Phasing of works



#### 4.3. Tree works

4.3.1 The trees listed at **Table 5** below are to be felled or pruned as specified. All tree works will be carried out in accordance with British Standard BS 3998: 2010, *Tree Work – recommendations*. Advice should be sought from an ecologist regarding the nesting bird season and any protected species prior to the works being undertaken.

Tree No.	Species	Height (m)	Works
T1	Hornbeam	15	Crown lift from 2m to 5.5m at western edge of crown
H2	Hornbeam & Leyland Cypress	3-3.5	Remove small section and crown reduce to either the boundary line or where space allows to 1.5m from the proposed footprint of the garage
Т3	Leyland Cypress	2	Fell
T4	Purple Norway Maple	6	Fell
H6	Hawthorn	2	Minor works to prune back crown adjacent to proposed garage by c.0.5m
Т9	White Willow	11.5	Fell
G10	Leyland Cypress & shrubs	1-3	Minor pruning to trim back to edge of driveway
T13	Tulip Tree	6.5	Crown lift from 1m to 3.5m over the garden
T18	Box Elder	6	Fell
T34	Pittosporum	6.5	Too close to the proposed footprint to retain; small ornamental tree of 6.5m in height; mitigation planting
T36	Judas Tree	2.5	Fell

Table 5: Tree removals and pruning

- 4.3.2 Plant machinery will not be used to scrape vegetation or grub out stumps within RPAs. Tree stumps and vegetation located within the RPAs of retained trees will be cleared with controlled hand tools (e.g. stump grinder/brush cutter).
- 4.3.3 No bonfires will be used to dispose of arisings.

#### 4.4. Tree protection fencing and ground protection

- 4.4.1 Retained trees must be protected by tree protection fencing and ground protection before any materials or machinery are brought onto the site and before any demolition, development or stripping of soil commences.
- 4.4.2 The areas on the tree side of the protection fencing are construction exclusion zones and must be regarded as sacrosanct. There must be no storage of materials, no access for vehicles or people and no excavation or changes in soil level of any kind within the construction exclusion zones. The construction exclusion zones are shown as yellow hatching on the tree protection plan.
- 4.4.3 Following installation of the tree protection fencing and temporary ground protection, they must not be removed or altered without prior recommendation by the project arboricultural consultant and, where necessary, approval from the LPA tree officer.

#### 4.5. Tree protection fencing

- 4.5.1 The location of the fencing is denoted by the continuous purple lines on the tree protection plan.
- 4.5.2 The fencing specification will be in accordance with para 6.2.2.3 and Fig 3 of the British Standard as shown below:







Fig 1: Fencing specification

- 4.5.3 The fencing specification will be 2m tall welded mesh panels on rubber or concrete feet. The panels will be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers will be at least 1m and will be uniform throughout the fence. The panels will be supported on the inner side by stabilizer struts, which will be attached to a base plate secured with ground pins (as per Figure 3a of the British Standard). Where fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts will be mounted on a block tray (as per Figure 3b of the British Standard).
- 4.5.4 Notices stating "Tree Protection Zone Keep Out" will be attached with cable ties to every third panel.
- 4.5.5 Areas for storing or mixing of fuels, oils or cement will be agreed at the pre-start meeting.
- 4.5.6 No structures will be attached to the trunks or branches of trees.
- 4.5.7 When the installation of the protective fencing is complete, the project arboricultural consultant will be notified so that they can sign it off. If the protective fencing is accidently damaged, it will be marked with high visibility tape or mesh fencing and replaced within 48hrs. This incident must then be reported to the

project arboricultural consultant.

#### 4.6. Ground protection

- 4.6.1 In order to protect the structure of the soil within the RPAs of the trees adjacent to areas of building construction, temporary ground protection will be used in the locations shown as purple hatching on the tree protection plan.
- 4.6.2 The temporary ground protection must be designed by an engineer, based on its intended loading and the soil bearing capability. The options are:-
  - For lighter loading, scaffold boards placed either on top of a driven scaffold frame, as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;
  - For moderate loading, a proprietary inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;
  - For wheeled or tracked construction traffic a proprietary system or pre-cast reinforced concrete slabs to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.
- 4.6.3 To the north of the existing garage, either ground protection as per the above specification or retention of the footings for the existing garage would be acceptable as ground protection. This area is shown as olive solid hatching on the tree protection plan.

#### 4.7. Demolition

- 4.7.1 Prior to the demolition of the existing house and garage, the project arboricultural consultant will review the demolition method statement to ensure there are no conflicts with this method statement.
- 4.7.2 The timings for the demolition of the garage will also be agreed at the pre-start meeting.
- 4.7.3 If the footings of the existing garage are to be removed it will be carried out as follows under arboricultural supervision:-
  - An excavator using a hydraulic breaker and a suitably sized narrow toothless grading bucket will be used, with the project arboricultural consultant present to supervise the works from an arboricultural perspective. The excavator must either be used outside of the adjacent RPAs, or on top of hard surfacing or on temporary ground protection suitable for the loading.
  - Any roots exposed by the removal of the footings will be immediately protected and kept damp by covering with wet hessian. A further covering layer of top-soil will be applied as soon as possible.
  - If the footings to the north of the proposed garage footprint are to be removed, this area will immediately be covered with temporary ground protection.

#### 4.8. Supervised excavation

- 4.8.1 Excavation for the footings for the replacement garage will be within the RPAs of retained trees. This area is shown as solid dark brown lines with cross-hatching on the tree protection plan. Within this section:-
  - The existing footings for the garage to be removed will be removed as per para 4.7.3 above.
  - Below this, the first 650mm depth of excavation will be excavated using hand tools and/or an air spade only, under direct on-site arboricultural supervision.

- Any roots found with a diameter of less than 25mm be cut cleanly by the project arboricultural consultant. In the unlikely event that roots larger than 25mm diameter are found, the project arboriculturist will liaise with the site manager and LPA tree officer to agree a way forward.
- Where excavation is required below 650mm, this may be undertaken by a small tracked digger, with a small, narrow, toothless bucket under direct on-site arboricultural supervision. The machinery must be based either outside the RPAs of retained trees or on suitable ground protection, and there must be adequate clearance from the crowns of retained trees.

#### 4.9. Underground services

4.9.1 It is intended that existing service connections will be reused.

#### 4.10. Landscaping

- 4.10.1 Whilst any landscaping is being carried out within root protection areas, the site manager will ensure that:-
  - Any unwanted vegetation will be removed carefully using hand tools.
  - There will be no changes in existing ground levels.
  - No vehicles or plant will track across root protection areas.
  - No fuels or chemicals will be stored within root protection areas and nothing will be attached to trees.
  - Any approved excavation for fencing or other structures will be carried out using hand tools only. If
    roots are encountered, wherever possible the location of the excavation will be moved to a new
    location. If this is not possible then any roots with a diameter of less than 25mm may be cut cleanly
    using hand tools. Advice from the project arboriculturist is required if any roots are uncovered with
    a diameter greater than 25mm.

#### 4.11. Review of the detailed design prior to commencement on site

4.11.1 Prior to the pre-start meeting, the project arboricultural consultant will review and where necessary provide input into the arboricultural impacts of the detailed design including the levels, services, drainage and the construction management plan. Where necessary, this method statement and tree protection plan will be updated as required and submitted for approval to the LPA tree officer.

#### 4.12. Site monitoring

- 4.12.1 The site manager is responsible for giving adequate instructions about the approved tree protection measures and for giving a copy of this method statement to everyone who is working close to trees or who has control over others working close to trees. They are also responsible for ensuring that any works following the recommendations set out within this method statement are fit for purpose in relation to the development and comply with the health and safety policies of the site.
- 4.12.2 The site manager will provide a monthly update to the project arboricultural consultant including photographs to show that the tree protection fencing and ground protection are intact and that the construction exclusion zones are being observed. This will be forwarded to the LPA tree officer by the project arboricultural consultant.
- 4.12.3 The site owner will inform the arboricultural consultant if there is a change of site manager during the

project. If this occurs, the arboricultural consultant will arrange a meeting with the new site manager to explain the remaining aspects of the method statement as a matter of urgency.

#### 4.13. Arboricultural supervision

- 4.13.1 The project arboricultural consultant will provide arboricultural supervision for the following works:
  - Removal of the footings for the existing garage
  - Excavation for the footings for the proposed garage
- 4.13.2 The project arboricultural consultant will provide a short email summary with photos to the LPA tree officer on completion of each of the above stages.

#### 4.14. Unforeseen damage to trees

4.14.1 If at any time during the construction process damage is inadvertently caused to a tree, the project arboricultural consultant must be contacted to advise on the process going forward. This will involve liaison with the LPA tree officer to agree appropriate mitigation and remedial measures. The damage could be caused by chemical or fuel spillage, mechanical damage to roots, trunks or branches, or fire or any other unforeseen circumstances.



# Appendix 1 Tree survey schedule

#### Tree survey methodology

The site was surveyed on 7th August 2023 by Abi St Aubyn *MICFor MArborA DipArb L6 (ABC) MEng(Hons)*. Weather conditions on the date of the survey were clear, dry & bright. Trees were in full leaf.

The trees within and adjacent to the site were surveyed using Visual Tree Assessment<sup>3</sup> and following the recommendations of the British Standard<sup>4</sup>.

The survey information was recorded using *Axciscape* tree survey software. Heights and crown spreads were measured using a laser distometer or where inaccessible, these were estimated. Trunk diameters were measured using a diameter tape or where inaccessible, these were estimated.

Other tools used if needed were a nylon headed hammer to tap trunks to detect the difference in sound in degraded wood/cavities and a large screwdriver to determine the depth of cavities, within reach from ground level.

The assessment of the categories (A, B, C & U) for trees was carried out in accordance with the British Standard<sup>2</sup>.



<sup>&</sup>lt;sup>3</sup>Visual Tree Assessment (VTA) is a tree survey methodology established by **Mattheck & Breloer**, outlined within the *Principles of Tree Hazard Assessment and Management* by **Lonsdale**, where external above ground visual signs of decay and of growth-related defects are recorded from ground level, using binoculars where necessary.

<sup>&</sup>lt;sup>4</sup>BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* (the British Standard). The survey methodology follows the British Standard apart from sub-categories have not been included and the first significant branch and direction of growth have been omitted. These adjustments are because the British Standard is nearly 10 years old and overdue a review, and in practice the omitted information is very rarely used to inform the design process or tree protection measures. However, if in a particular case this information is relevant, it will be included in the comments. Also, an additional category of 'collection' is used for new tree planting of a similar age, to supplement the recommended individual, group, woodland and hedge categories.

#### Tree survey schedule key

Νο	Sequential reference number. Individual trees are recorded as T, groups as G, and hedges as H.
Species	Common tree name.
Height	Measured/estimated in metres as access allows.
Trunk diameter	Measured/estimated in millimetres as access allows.
Crown clearance	Height between the existing ground level, estimated in metres.
Radial crown spread	Either an average or at four cardinal points. Measured/estimated as access allows.
Life stage	Young, semi-mature, early-mature, mature, over-mature and ancient.
Physiology	Good, average, below average, poor, dead.
Structure	Good, average, below average, hazardous, dead.
Landscape value	High, moderate, low.
Lifespan	<10 years, 10+ years, 20+ years, 40+ years
Comments	Presence of any decay and/or physical defects, and/or preliminary management recommendations. Whether a tree is considered to be a veteran tree <sup>5</sup> , irrespective of its age.
Category	A – trees of high quality with an estimated remaining life expectancy of at least 40 years
	<ul> <li>B – trees of moderate quality with an estimated remaining life expectancy of at least</li> <li>20 years</li> </ul>
	C – trees of low quality with an estimated remaining life expectancy of at least 10 years, or young tree with a stem diameter below 150mm
	U – trees unsuitable for retention due to their condition

<sup>&</sup>lt;sup>5</sup> Whist veteran trees typically provide a range of niche habitats, they are especially valuable if ancient, due to their scarcity and high habitat value 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, where present, will be of high value, category 'A'.



No.	Species	Height (m)	Trunk Dia. (mm)	Crown Clearance (m)	R	adial Cro (	own Spre m)	ead	Life Stage	Physi- ology	Structure	Structure Landscape Value		Comments	Cate- gory
					N	E	S	W	1						
T1	Hornbeam	15	420, 400 & 250	2	6	8	7	8	Mature	Below average	Below average	Moderate	40+	Off-site; no access to base of tree; triple-stemmed; extensive dieback in southern most stem; good density of foliage in the rest of the crown.	В
H2	Hornbeam & Leyland Cypress	3-3.5	150, 150 & 50	0	1.5	1.5	1.5	1.5	Mature	Average	Average	Low	40+	Line of Hornbeam hedging on the site side and a line of Leyland Cypress hedging growing adjacent to the Hornbeam hedging on the neighbouring land of the residential garden of No. 48; Leyland Cypress hedging is c.0.5m higher than the Hornbeam hedging.	C
Т3	Leyland Cypress	2	30	0	1	1	1	1	Early-mature	Below average	Average	Low	40+	Large shrub, pruned to a dome; bronzed foliage within crown typical of Cypress aphid.	С
T4	Purple Norway Maple	6	230 @ 1.2m	2	2	4	4	2	Semi-mature	Average	Below average	Low	40+	Small tree growing adjacent to garage; crown heavily pruned over neighbouring land.	С
H5	Hawthorn	2	25	1	0.5	0.5	0.5	0.5	Early-mature	Average	Average	Low	40+	Low level boundary screening; small section adjacent to garage door; regularly maintained.	С
H6	Hawthorn	2	25	0	0.75	0.75	0.75	0.75	Early-mature	Average	Average	Low	40+	Low level native hedgerow; provides screening.	В
Т7	Purple Norway Maple	2	50	0.5	1	1	1	1	Young	Average	Below average	Low	10+	Recently planted; lost leaders; of poor form and low quality.	С
T8	Cherry	2	25	0.5	1.5	1.5	1.5	1.5	Semi-mature	Below average	Hazardous	Low	<10	Sparse crown; small tree of little potential.	U
Т9	White Willow	12	170, 230, 120, 120 & 85	1.5	3.5	3.5	3.5	3.5	Early-mature	Average	Average	Moderate	40+	Multi-stemmed from 1.2m; growing adjacent to garden wall.	В
G10	Leyland Cypress & shrubs	1-3	65 & 55	0	1.5	1.5	1.5	1.5	Semi-mature	Average	Average	Low	40+	Mixture of conifers and shrubs growing in a soft landscaped area; some maintained as low domes and one small tree/large shrub of c.3m in height; of low landscape value; readily replaceable.	
H11	Leyland Cypress	2	55	0	1	1	1	1	Semi-mature	Poor	Average	Low	20+	Non-native conifer hedge; northern side is extensively impacted by the Cypress aphid, with large sections of bronzed foliage from which no new growth will develop.	, c
H12	Leyland Cypress	2	55	0	1	1	1	1	Semi-mature	Poor	Average	Low	20+	Non-native conifer hedge; northern side is extensively impacted by the Cypress aphid, with large sections of bronzed foliage from which no new growth will develop.	, C
T13	Tulip Tree	6	145	1	2.5	2.5	2.5	2.5	Early-mature	Average	Below average	Low	20+	Twin leaders from 3m, with one historically removed and one remaining; small crown.	В





No.	Species	Height (m)	Trunk Dia. (mm)	Crown Clearance (m)	Ra	adial Cro (I	own Spre m)	ead	Life Stage	Physi- ology	Structure	Landscape Value	cape Life- Life- Comments		Cate- gory
TAA					N	E	S	W		•					
T14	Rowan	5	25	1.5	1.5	1.5	1.5	1.5	Early-mature	Average	Average	Low	20+	Small ornamental tree.	C
T15	Silver Fir	2	60	0	1	1	1	1	Semi-mature	Average	Average	Low	40+	Non-native conifer with great growth potential.	С
T16	Yew	2	25	0	2	0.5	2	2	Semi-mature	Average	Average	Low	40+	Large shrub.	С
T17	Tulip Tree	10	435	0.5	4.5	4.5	4.5	4.5	Mature	Average	Below average	Low	40+	Historically topped at 5m (leaders removed); poor form; great growth potential.	В
T18	Box Elder	6	105, 85, 45, 45, 45, 20, 20 & 20	1.5	2.5	2.5	2.5	3	Early-mature	Average	Average	Low	40+	Small ornamental tree; multi-stemmed from 1.5m.	В
H19	Lawson Cypress	2	55	0	0.5	0.5	0.5	0.5	Semi-mature	Poor	Average	Low	20+	Non-native conifer hedge; numerous patches of brown foliage caused by Cypress aphid, no new green growth will develop from these area; of low quality.	С
H20	Hawthorn	1.5-3	25	1	0.5	0.5	0.5	0.5	Early-mature	Average	Average	Low	40+	Native hedge; low level boundary screening; northern end managed at a lower level to southern end.	В
T21	Cherry Plum	2	25	1	1	1	1	1	Semi-mature	Poor	Below average	Low	<10	Small tree with sparse foliage and cankerous legions on trunk; in irreversible decline.	U
T22	Purple Norway Maple	4	45	1.5	3	3	3	3	Semi-mature	Average	Average	Low	40+	Small tree.	С
Т23	Apple	2	25	0	1.5	3	3	3	Mature	Average	Below average	Low	10+	Trunk leans 25' to the SW; small fruit tree; of low quality.	С
T24	Fastigiate Hornbeam	7	110	0	1.25	1.25	1.25	1.25	Semi-mature	Average	Average	Low	40+	Upright form; small crown with tight unions.	С
T25	Dawn Redwood	6	90	0	1.5	1.5	1.5	1.5	Semi-mature	Average	Below average	Low	40+	Small tree with great growth potential; specimen tree but due to age readily replaceable.	С
T26	Apple	3	25	0	1.5	1.5	1.5	1.5	Semi-mature	Average	Average	Low	20+	Small fruit tree.	С
Т27	Corkscrew Willow	12	200, 150, 75, 75, 75, 25, 25 & 25	1.5	3.5	3.5	3.5	3.5	Early-mature	Average	Average	Moderate	20+	Unable to inspect stem due to dense ivy; triple- stemmed from base; eastern stem decayed with deadwood fungus and sparse crown; recommend removal of eastern stem.	В
H28	Field Maple, Hawthorn & Blackthorn	2	55	0	1.5	1.5	1.5	1.5	Semi-mature	Average	Average	Moderate	40+	Mixed native hedge; provides screening.	В
Т29	Lawson Cypress	3	50	0	0.5	0.5	0.5	0.5	Semi-mature	Average	Average	Low	40+	Small non-native conifer; great growth potential; not in keeping with the local landscape character.	С





No.	Species	Height (m)	Trunk Dia. (mm)	Crown Clearance (m)	R	adial Cro (	own Spre m)	ead	Life Stage	Physi- ology	Structure	Landscape Value	Life- span	Comments	Cate- gory
					Ν	E	S	W							
H30	) Beech	2-3.5	75	0	1	1	1	1	Semi-mature	Average	Average	Moderate	40+	Short section of native hedge; provides screening.	В
T31	Purple Leaved Cherry Plum	4	60	1.5	2.5	2.5	2.5	2.5	Mature	Below average	Below average	Low	<10	Multi-stemmed from base; sparse crown; suppressed by adjacent shrubs; of little potential.	U
H32	2 Lawson Cypress	2	25	0	0.5	0.5	0.5	0.5	Semi-mature	Poor	Average	Low	10+	Large sections of bronzed foliage typical of the Cypress aphid; non-native species.	С
Т33	Silver Birch	15	455	0	5.5	5.5	5.5	5.5	Mature	Good	Average	Moderate	20+	Large crown; pruning stub with a cavity on E side at c.2m of c.250mm diameter, area surrounding cavity was tapped with nylon headed hammer, and the intonation indicated that the cavity is localised; good density of foliage.	В
T34	Pittosporum	6	25	1.5	1.5	1.5	1.5	1.5	Early-mature	Below average	Average	Low	10+	Small ornamental tree with a sparse crown.	С
Т35	Cherry Plum	6	175	1.5	2.5	2.5	2.5	2	Over-mature	Below average	Average	Low	<10	Off-site; no access to base of tree; tree has a sparse crown.	С
Т36	Judas Tree	2	35	1	1.25	1.25	1.25	1.25	Young	Average	Average	Low	10+	Small ornamental tree.	С

# Appendix 2 Table of root protection areas (RPAs)

#### The root protection areas (RPAs) table

The root protection area (RPA) of a tree is a layout design tool which shows 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.

The British Standard provides calculations for both single and multi-stemmed trees, which are based on mathematical formulae using the trunk diameter of a tree.

For single stem trees, the RPA, is calculated as an area equivalent to a circle with a radius 12 times the stem diameter. This is capped at a circle of 15m diameter or 707m<sup>2</sup>. For trees with 2-5 stems and 5+ stems more complex calculations are required in accordance with the methodology recommended within the British Standard.

The RPA radius and nominal RPA area for each tree is shown at **Table 3** below.

The root protection areas (RPAs) for all trees are initially plotted on the tree constraints plan **(Appendix 3)** as a circle centred on the base of the stem/s. Where pre-existing site conditions (road, building foundations etc) or other factors (for example trenching) indicate that rooting has occurred asymmetrically, the standard circle has been modified to reflect the more likely root distribution. Although the shape of the RPA may be amended, no change will be made to its overall area, up to a maximum distance of a 15m from the stem. Beyond this, marginal decreases in RPAs might result if there are no other areas suitable for rooting within the 15m radius.

The trees' RPAs are shown on the tree constraints plan in the colour of their corresponding categories





No.         Species         Category (m)         Radius (m)         (m²)           T1         Hornbeam         B         7.58         180.53           H2         Hornbeam & Leyland Cypress         C         2.62         21.57           T3         Leyland Cypress         C         1.39         6.07           T4         Purple Norway Maple         C         2.76         23.93           H5         Hawthorn         C         0.73         1.67           H6         Hawthorn         B         0.85         2.27           T7         Purple Norway Maple         C         0.6         1.13           T8         Cherry         U         0.67         1.41           T9         White Willow         B         4.12         53.33           G10         Leyland Cypress & shrubs         C         1.02         3.27           H11         Leyland Cypress         Shrubs         C         0.66         1.37           H12         Leyland Cypress         C         0.66         1.37           T13         Tulip Tree         B         1.74         9.51				RPA	RPA
T1       Hornbeam       B       7.58       180.53         H2       Hornbeam & Leyland Cypress       C       2.62       21.57         T3       Leyland Cypress       C       1.39       6.07         T4       Purple Norway Maple       C       2.76       23.93         H5       Hawthorn       C       0.73       1.67         H6       Hawthorn       B       0.85       2.27         T7       Purple Norway Maple       C       0.6       1.13         T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       Shrubs       C       0.66       1.37         H12       Leyland Cypress       Shrubs       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         H13       Tulip Tree       B       1.74       9.51	No.	Species	Category	Radius	(m²)
T1       Hornbeam       B       7.58       180.53         H2       Hornbeam & Leyland Cypress       C       2.62       21.57         T3       Leyland Cypress       C       1.39       6.07         T4       Purple Norway Maple       C       2.76       23.93         H5       Hawthorn       C       0.73       1.67         H6       Hawthorn       B       0.85       2.27         T7       Purple Norway Maple       C       0.60       1.13         T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       Shrubs       C       0.66       1.37         H12       Leyland Cypress       Shrubs       C       0.66       1.37         H12       Leyland Cypress       Shrubs       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51				(m)	. ,
H2       Hornbeam & Leyland Cypress       C       2.62       21.57         T3       Leyland Cypress       C       1.39       6.07         T4       Purple Norway Maple       C       2.76       23.93         H5       Hawthorn       C       0.73       1.67         H6       Hawthorn       B       0.85       2.27         T7       Purple Norway Maple       C       0.6       1.13         T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51	T1	Hornbeam	В	7.58	180.53
T3       Leyland Cypress       C       1.39       6.07         T4       Purple Norway Maple       C       2.76       23.93         H5       Hawthorn       C       0.73       1.67         H6       Hawthorn       B       0.85       2.27         T7       Purple Norway Maple       C       0.6       1.13         T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51	H2	Hornbeam & Leyland Cypress	С	2.62	21.57
T4       Purple Norway Maple       C       2.76       23.93         H5       Hawthorn       C       0.73       1.67         H6       Hawthorn       B       0.85       2.27         T7       Purple Norway Maple       C       0.6       1.13         T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51	T3	Leyland Cypress	С	1.39	6.07
H5       Hawthorn       C       0.73       1.67         H6       Hawthorn       B       0.85       2.27         T7       Purple Norway Maple       C       0.6       1.13         T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51	T4	Purple Norway Maple	С	2.76	23.93
H6       Hawthorn       B       0.85       2.27         T7       Purple Norway Maple       C       0.6       1.13         T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51	H5	Hawthorn	С	0.73	1.67
T7       Purple Norway Maple       C       0.6       1.13         T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51	H6	Hawthorn	В	0.85	2.27
T8       Cherry       U       0.67       1.41         T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51	T7	Purple Norway Maple	С	0.6	1.13
T9       White Willow       B       4.12       53.33         G10       Leyland Cypress & shrubs       C       1.02       3.27         H11       Leyland Cypress       C       0.66       1.37         H12       Leyland Cypress       C       0.66       1.37         T13       Tulip Tree       B       1.74       9.51	T8	Cherry	U	0.67	1.41
G10         Leyland Cypress & shrubs         C         1.02         3.27           H11         Leyland Cypress         C         0.66         1.37           H12         Leyland Cypress         C         0.66         1.37           T13         Tulip Tree         B         1.74         9.51	Т9	White Willow	В	4.12	53.33
H11         Leyland Cypress         C         0.66         1.37           H12         Leyland Cypress         C         0.66         1.37           T13         Tulip Tree         B         1.74         9.51	G10	Leyland Cypress & shrubs	С	1.02	3.27
H12         Leyland Cypress         C         0.66         1.37           T13         Tulip Tree         B         1.74         9.51	H11	Leyland Cypress	С	0.66	1.37
T13         Tulip Tree         B         1.74         9.51	H12	Leyland Cypress	С	0.66	1.37
	T13	Tulip Tree	В	1.74	9.51
T14 Rowan C 0.85 2.27	T14	Rowan	С	0.85	2.27
T15         Silver Fir         C         0.72         1.63	T15	Silver Fir	С	0.72	1.63
T16 Yew C 0.9 2.55	T16	Yew	С	0.9	2.55
T17 Tulip Tree B 5.22 85.61	T17	Tulip Tree	В	5.22	85.61
T18 Box Elder B 1.92 11.58	T18	Box Elder	В	1.92	11.58
H19 Lawson Cypress C 0.66 1.37	H19	Lawson Cypress	С	0.66	1.37
H20 Hawthorn B 0.73 1.67	H20	Hawthorn	В	0.73	1.67
T21 Cherry Plum U 0.85 2.27	T21	Cherry Plum	U	0.85	2.27
T22 Purple Norway Maple C 0.54 0.92	T22	Purple Norway Maple	С	0.54	0.92
T23 Apple C 0.95 2.84	T23	Apple	С	0.95	2.84
T24 Fastigiate Hornbeam C 1.32 5.47	T24	Fastigiate Hornbeam	С	1.32	5.47
T25 Dawn Redwood C 1.08 3.66	T25	Dawn Redwood	С	1.08	3.66
T26 Apple C 0.73 1.67	T26	Apple	С	0.73	1.67
T27 Corkscrew Willow B 3.42 36.75	T27	Corkscrew Willow	В	3.42	36.75
H28 Field Maple, Hawthorn & Blackthorn B 0.66 1.37	H28	Field Maple, Hawthorn & Blackthorn	В	0.66	1.37
T29 Lawson Cypress C 0.6 1.13	T29	Lawson Cypress	С	0.6	1.13
H30 Beech B 0.9 2.55	H30	Beech	В	0.9	2.55
T31 Purple Leaved Cherry Plum U 1.76 9.73	T31	Purple Leaved Cherry Plum	U	1.76	9.73
H32 Lawson Cypress C 0.79 1.96	H32	Lawson Cypress	С	0.79	1.96
T33 Silver Birch B 5.46 93.67	T33	Silver Birch	В	5.46	93.67
T34 Pittosporum C 0.95 2.84	T34	Pittosporum	С	0.95	2.84
T35         Cherry Plum         C         2.1         13.86	T35	Cherry Plum	С	2.1	13.86
T36 Judas Tree C 0.84 2.22	T36	Judas Tree	С	0.84	2.22



# Appendix 3 Tree constraints plan









Key:

Τ1



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Drawn by

AStA

# Appendix 4 Tree removals plan









# Appendix 5 Tree protection plan







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### **Contact Details**

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tbc