

# David Clarke Chartered Landscape Architect and Consultant Arboriculturist Limited

David Clarke BSc (Hons) PD Arb (RFS) M Arbor A CMLI

## **ARBORICULTURAL REPORT: ARBORICULTURAL IMPACT ASSESSMENT and ARBORICULTURAL METHOD STATEMENT**

In relation to a Planning Application

at:

45 and 46 Chesham Road, Bovington,  
Hertfordshire, HP3 0EA

**Compiled by:**

David Clarke

BSc (Hons) Land Man, PD ARB (RFS), CMLI, M Arbor A

February 2021

Offices in Hertfordshire and Warwickshire

Head Office:

Willowbrook House

Church Lane

Fillongley

CV7 8EW

Telephone: (07775) 650 835 or (01676) 541 833

e:mail: [info@dccla.co.uk](mailto:info@dccla.co.uk)

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## **1.0 Instruction**

- 1.1 I have been instructed by my client – Roger Fleet and Ron New - to provide an appraisal of the likely impact to, and implications for trees on, or adjacent to, '45 and 46 Chesham Road, Bovington, Hertfordshire, HP3 0EA' in relation to a planning application on the site.
- 1.2 This application is for the demolition of the two existing dwellings and the residential development of the site with access from Chesham Road.

## **2.0 Introduction**

### **2.1 Qualifications and Experience**

- 2.1.1 I am David Clarke, I have a Bachelor of Science Honours Degree in Landscape Management from Reading University and I am a Chartered Landscape Architect and Chartered Member of the Chartered Landscape Institute (1998). I hold the Professional Diploma in Arboriculture (RFS) (2012) and I am a Professional Member of the Arboricultural Association. I have 29 years' experience of working in both the private and public sector in relation to arboricultural and landscape issues.

### **2.2 Scope of this Report**

- 2.2.1 This Arboricultural Impact Assessment and Arboricultural Method Statement form the Arboricultural Report for the Planning Application. They should be read in conjunction with Tree Protection Plan (TPP/4546CRBH/010 A) and Arboricultural Survey (Appendix A). The Arboricultural Report is aimed at identifying and addressing those matters concerning trees in relation to the proposed planning application. It will clarify these issues:

- The principles and procedures to be applied to achieve a harmonious and sustainable relationship between retained trees and structures.
- The species, size, position and condition of those trees within the area of the proposed development where trees may potentially have some significance to the proposed development. The full survey schedule is set out in Appendix A.
- The impact of the proposed development upon these trees (and vice versa) including those trees to be removed due to the proposed development.
- Any measures that are required to protect retained trees during the proposed works.

- 2.2.2 The trees have been assessed (see Arboricultural Survey – Appendix A) as set out in BS BS5837: 2012 `Trees in relation to design, demolition and construction. Recommendations.’ An Arboricultural Survey was undertaken by myself in February 2021 in relation to this planning application.
- 2.2.3 Tree numbers within the text (T1-T5 and G1-G2) relate to numbers designated as part of the Arboricultural Survey unless otherwise stated. The trees are plotted on Tree Protection Plan (TPP/4546CRBH/010 A) which accompanies the planning application.
- 2.2.4 BS 5837: 2012 `Trees in relation to design, demolition and construction. Recommendations’ provides recommendations for the assessment of trees on development sites and suggests four categories into which trees should be placed for assessment purposes. These categories have been used as part of the assessment of trees within this report.

### 2.3 Relevant Background Information

- 2.3.1 It is understood from my Client that none of the trees on the site are protected by a Tree Preservation Order (TPO) and that the site is not located within a Conservation Area.
- 2.3.2 It is recommended that this information on protected trees be confirmed by anyone proposing to undertake any (future) works to trees – both inside and outside the application site. This should be undertaken in writing with the Local Planning Authority (LPA) before proceeding with any tree works unless works within this report are agreed as part of a Planning Approval.

### 2.4 Documents and Information Provided

- 2.4.1 All plans within this report are based upon drawings supplied by Boast Architects, Hertfordshire.
- 2.4 This document has been prepared in accordance with guidance set out in British Standard BS 5837: 2012 `Trees in relation to design, demolition and construction. Recommendations’ (BS 5837:2012).

### **3.0 Report Limitations**

- 3.1 The report is for the sole use of the client and its reproduction or use by anyone else is prohibited unless written consent is given by the author.
- 3.2 The report observations are to be considered as correct at the time of inspection only. Trees are a growing, living organism, and are readily affected by many environmental factors. As such their condition and circumstances can change in a very short period of time. Therefore this report should be construed as valid for an absolute maximum of 12 months from the date of the Arboricultural Survey provided all factors remain unchanged.
- 3.3 This is an arboricultural report and as such no reliance should be given to comments relating to buildings, engineering, soils or other unrelated matters. The inspection of trees was undertaken from ground level and they were not climbed. No samples of wood, roots, soils or fungus were taken for analysis. Observations of the trees were confined to what was visible from within the site and surrounding public places. A full hazard risk assessment of the trees was not undertaken.
- 3.4 The presence of TPOs, a Conservation Area, or other designations, may affect the use of the site and the management of trees on the site. These designations can be served on the application, or adjacent, sites at any time. The landowner, or his representatives, should therefore satisfy themselves as to the presence (or absence) of these designations prior to:
- Undertaking any works to trees on, or adjacent to, the site. Where necessary written permission from the Local Authority will be required prior to undertaking tree works.
  - Undertaking any of the works specified in this Arboricultural Report before planning permission is granted.

### **4.0 Brief Description of the Application Site and the Proposed Development**

- 4.1 The site consists of 2 no. residential properties set within a residential area of Bovingdon. They are set within large garden areas. There is an existing access from Chesham Road. The site boundaries are well screened with existing hedges. The site is relatively level. Trees are located to the site boundaries both inside and outside the site. There are no trees of good visual amenity value within the site.



Photograph A – Looking towards the existing site from Chesham Road.

- 4.2 This application is for the demolition of the two existing dwellings and the residential development of the site with access from Chesham Road.



Photograph B – Looking towards offsite trees Cedar (T2), Sorbus (T3) and Beech (T4).

## **5.0 General principles for protection of trees during development**

- 5.1 It is equally important to ensure the protection of trees both above and below ground. Guidance is provided in BS 5837: 2012 as to the protection of trees, before, during and after development.
- 5.2 The Arboricultural Impact Assessment will set out the potential impact of the proposals on trees and vice-versa. There is a need to protect trees and provide an Arboricultural Method Statement where proposals will impinge, or impact on the Root Protection Areas (RPAs) of retained trees. Root Protection Areas (RPAs) are a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. These are set out as Construction Exclusion Zones and have been calculated as part of the Arboricultural Survey.
- 5.3 The RPA for each tree is initially plotted as a circle centered on the base of the stem. Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area will be produced. These factors include the morphology and disposition of the roots, when known to be influenced by past or existing site conditions - such as the presence of roads and structures - and site topography. Modifications to the shape of the RPA within this report reflect a soundly based arboricultural assessment of likely root distribution. The RPA may change its shape but not reduce its area whilst still providing adequate protection for the root system.
- 5.4 Proposals may impinge on RPAs but these should be minimal and construction techniques such as specialized foundation designs should be considered to reduce the impact of development. The proposals will relate specifically to the site conditions and each individual tree and its category within the BS 5837 grading system.



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## ARBORICULTURAL IMPACT ASSESSMENT

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Offices in Hertfordshire and Warwickshire

Head Office:

Willowbrook House

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e:mail: [info@dccla.co.uk](mailto:info@dccla.co.uk)

## 6.0 **Arboricultural Impact Assessment (AIA)**

6.1 As stated above British Standard recommendations (BS5837: 2012) provides a formula for calculating the Root Protection Area (RPA) recommended to protect existing trees that are to be retained. The shape of the root protection area and its exact location will depend upon arboricultural considerations but the area will normally be represented on a plan as a circle. The purpose of the RPA is to prevent physical damage to tree roots and to prevent damage to the soil structure in which they live by soil compaction, changes in soil levels or prevention of gas exchange to living roots.

6.2 These RPAs are shown on the Tree Protection Plan (TPP/4546CRBH/010 A) which also forms part of the Arboricultural Method Statement. Where incursion within the RPA of a retained tree is necessary as part of the construction process then a methodology will be in place to prevent, or reduce to an insignificant level, damage to trees.

6.3 Below I have discussed the significance of the trees and the constraints that they are likely to pose to the proposed development (and vice-versa). Together with the Arboricultural Survey the AIA sets out any tree works required in order to facilitate the development as well as identifying works to trees (including removal) that should be undertaken as part of the management of trees on the site.

## 6.4 **Summary of Tree Impact Assessment**

6.5 There are 5 no. individual trees and 2 no. groups of trees which form the basis for this report and which could potentially be affected by the proposal.

## 6.6 **Trees recommended for removal for Arboricultural Reasons**

Of the trees within this report none are recommended for removal irrespective of the planning application.

## 6.7 **Schedule of trees recommended for removal for Arboricultural Reasons**

<u>Tree No.</u>	<u>Species</u> (Common Name)	<u>BS</u> <u>Category</u>	<u>Reason for recommended removal</u>
None			

### 6.8 **Trees removed due to the application**

Of the trees within this report 1 no. group of trees will need to be removed, or are proposed to be removed to implement the development.

6.9 These are low quality or unremarkable 'C' Category trees as set out in BS 5837:2012.. They are visible within the street scene due to their position to the site frontage but their amenity value is low.

6.10 It is recommended that these trees are replaced on the site frontage as part of the landscape proposals for the site development. These should include trees which offer long term viability and amenity value as well as being beneficial to wildlife. Species could include trees such as Hawthorn (Crataegus spp) or Rowan (Sorbus spp). Together these proposals will mitigate for the removal of trees as part of the site development.

6.11 It is therefore assessed that the removal and replacement of these trees as part of the site development will not have a long term or significant impact on the visual amenity of the local area or its enjoyment by the general public. It is not so significant that it would lead to, or warrant, the refusal of Planning Permission.

### 6.12 **Schedule of trees removed due to the application**

<u>Tree No.</u>	<u>Species</u> (Common Name)	<u>BS</u> <u>Category</u>	<u>Reason for removal</u>
G1	3 no. Holly	C2	As part of the site development

### 6.13 **Trees potentially affected by the application**

Site access and the demolition of the existing dwellings will take place outside the RPAs and canopy spreads of retained trees. However construction of a dwelling, construction activity and the installation of hardstanding will take place within, or adjacent to the RPAs and/or canopy spreads of retained trees. Pre-development tree works will be carried out prior to the implementation of the proposed development.

6.14 These potential impacts are set out and evaluated below and measures to prevent, or reduce, the effects of the proposals on these trees are set out in the Arboricultural Method Statement. The impact on retained trees from this development will not be significant as long as the proposals set out in this report are followed.

### 6.15 Schedule of trees potentially affected by the application

<u>Tree No.</u>	<u>Species</u> (Common Name)	<u>BS</u> <u>Category</u>	<u>Reason for potential impact</u>
T1	Laburnum	C1	<ul style="list-style-type: none"><li>• Construction of hardstanding (car parking spaces) within 10% of RPA.</li></ul>
T4	Beech	B1	<ul style="list-style-type: none"><li>• Construction of dwelling within 10% of RPA.</li><li>• Construction of hardstanding (footpath) within 14% of RPA.</li><li>• Pre-development tree works.</li></ul>

### 6.16 Assessment of potential impacts on retained trees

#### 6.17 Assessment of Distribution of Roots of Trees

As set out above the RPAs have been calculated as part of the Arboricultural Survey. The shape of the RPA and its exact location will depend upon arboricultural considerations but the area will normally be represented on a plan as a circle. Pre-existing site conditions or other factors may indicate that rooting has occurred asymmetrically.

6.18 With regard to the retained trees within this report there are no visible restrictions on their root activity.

#### 6.19 Site Access

During the site development access will be via the existing access point from Chesham Road. This is outside the RPAs of retained trees. Therefore Ground Protection Measures are not required as part of this element of the development.

#### 6.20 Demolition

The demolition of the existing buildings and structures will take place outside the RPAs and canopy spreads of retained trees. However uncontrolled removal of these elements could lead to physical damage to retained trees which could adversely affect their long-term health and viability. To prevent unnecessary tree loss this phase of the project will be undertaken in a controlled manner as part of the phased operation of the development. This will include the use of Tree Protection Fencing. Specifications for these are set out in the Arboricultural Method Statement.

#### **6.21 Removal of Hard Landscape Elements within RPAs**

No hardstanding will need to be removed within the RPAs of trees. as part of the site development.

#### **6.22 Installation of Hard Landscape Elements within RPAs**

It is proposed to introduce new hardstanding within 14% of the RPA of Beech (T4). This is a 'B' Category tree. The incursion will occur within the RPA where the use of traditional excavation techniques has the potential to sever roots and affect the stability and long term viability of this tree. To ensure its long term retention the use of 'no dig' methods will be used. A specification for these 'no dig' methods are set out in the Arboricultural Method Statement.

6.23 The car parking area will be constructed within 10% of the RPA of Laburnum (T1). This is a low quality 'C' Category tree and the incursion will occur to the edge of the RPA. As set out in BS 5837:2012 there are soil volumes contiguous with this RPA which the tree can exploit and which will help to mitigate for this incursion. In this instance the use of standard construction techniques is assessed to be suitable in relation to the long term viability of this tree.

#### **6.24 Construction within RPAs**

The construction of a dwelling will take place within 10% of the RPA of Beech (T4). This incursion can be considered to be significant in relation to the long term retention of this tree. The use of standard (trench) foundations has the potential to sever roots affecting the stability of the tree and its ability to uptake nutrients and water. It is therefore proposed to use specialised foundations to ensure that the tree is not damaged by the site development. The site development will also be undertaken in a controlled and planned way to prevent direct and indirect damage to tree. This will include the use of Tree Protection Fencing and a dedicated banksman if required. Specifications for these are set out in the Arboricultural Method Statement.

#### **6.25 Construction Activity**

Uncontrolled construction activity could lead to direct or indirect damage to trees - both above and below ground. Therefore Tree Protection Fencing is proposed within the Arboricultural Method Statement to restrict and control and define construction activity and protect retained trees during the works.

6.26 Activity associated with the Construction Phase may take place within, or adjacent to, the RPAs of trees. This may involve pedestrian movements and/or the erection of scaffolding. It is proposed that specific Ground Protection Measures are introduced to support these movements and prevent any indirect impacts on trees to be retained. These measures are set out within the Arboricultural Method Statement.

### **6.27 Canopy Spreads and Presence of Trees**

Tree works will be undertaken as part of the site development. These relate to Beech (T4) where 2 no. lateral branches will be selectively pruned away from the proposed dwelling (Plot 8). This will create an harmonious relationship between the tree and the dwelling. This relationship will be maintained in the future.

6.28 These works are considered to be minor and insignificant within the current form and condition of the tree. All proposed pruning works would follow guidance set out in the relevant British Standard (BS 3998:2010 - 'Tree work - Recommendations') and will be carried out by a qualified tree surgeon/arboricultural contractor to ensure that the health, amenity and viability of the trees is maintained. All Arboricultural works should also comply with relevant bio-security measures – such as those set out in the Arboricultural Associations position statement 'Biosecurity in Arboriculture and Urban Forestry'. Initial tree works are specified in the Arboricultural Method Statement.

### **6.29 Shading**

The retained trees within this report are located to the site boundaries and generally at a significant distance from the proposed dwellings. The relationship of offsite trees adjacent to Plot 8 will be managed to ensure they have an harmonious relationship to this dwelling. The garden areas are open to the south. There will be no meaningful shading of the dwellings or garden areas which would lead to future pressure to prune or fell retained trees due to the implementation of the project.

### **6.30 Levels**

No ground level changes are currently proposed or should take place within the RPAs of retained trees except any discussed and assessed within this report.

### **6.31 Herbicides and Pesticides**

The use of herbicides and pesticides is not proposed within the RPAs of retained trees as part of this application. Should this change then chemicals will be specified which will not have an impact on retained trees.

### **6.32 Utility Routes**

The exact location of services is not known at this stage. However it is assumed that any existing service runs to the site will be used or will access through the existing or proposed access and be outside the RPAs of retained trees. However if required specialised techniques – such as those set out in '*NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*' 2007 National Joint Utilities Group (NJUG) Volume No. 4: No. 1 – will be used. The situation regarding utility routes will need to be confirmed as part of conditions for a Planning Approval.

### **6.33 Temporary Site Buildings and Storage of Materials and Plant**

Poor placement of temporary site buildings (including latrines), contractors parking, materials and plant can lead to direct damage to retained trees or indirect damage such as through the compaction of soils. The layout and operation of the site has therefore been considered and planned at this early stage to reduce or prevent any potential and significant damage to retained trees. This includes the erection of Tree Protective Fencing as set out above and in the Arboricultural Method Statement.

### **6.34 Erection of Boundary Treatments**

New boundary treatments (fences) may be located within the RPAs of trees to define and secure the site boundaries. These are considered to be minor and insignificant to the long term retention of these trees. However they must be undertaken in a controlled and planned way to ensure that these trees are not damaged by the works. Therefore a specification for the installation of these is set out in the Arboricultural Method Statement.

### **6.35 End Use of the Proposal**

The proposals will have a residential use at the end of the project.

## **7.0 Recommendations**

- 7.1 All tree works – removal and pruning – should be undertaken prior to the start of the site development so as to avoid any conflict between trees and contractors during the implementation of the project.
- 7.2 Existing trees can be easily damaged directly through root severance and, inadvertently, through soil compaction which disrupts the soil structure causing asphyxiation of roots and subsequent root dysfunction. Spillage of toxic materials can also cause root death. Protection for trees selected for retention is essential to ensure they are not affected by the development.
- 7.3 Specifications for the protection of trees are proposed in the Arboricultural Method Statement. These include the use of Tree Protection Fencing and should be implemented to prevent, or limit, any significant damage to the roots of trees. Protective fencing should be erected as shown on the Tree Protection Plans.
- 7.4 The phasing of the operations should follow that set out in the Arboricultural Method Statement to ensure that the protection of trees is prioritised.
- 7.5 The location and siting of all utilities should be outside of the RPAs of retained trees as enforced on site. If incursions within RPAs are unavoidable then specialised installation techniques will need to be agreed with an Arboriculturist before proceeding.
- 7.6 An Arboriculturist should be the main contact with the Local Authority Tree Officer and notify them of the proposed schedule prior to work commencing on site.



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Offices in Hertfordshire and Warwickshire

Head Office:  
Willowbrook House  
Church Lane  
Fillongley  
CV7 8EW

Telephone: (07775) 650 835 or (01676) 541 833

e.mail: [info@dccla.co.uk](mailto:info@dccla.co.uk)

## **8.0 General**

8.1 This document sets out the methodologies for proposed works that affect trees on, and adjacent to, the site. These follow the granting of Planning Permission by the Local Planning Authority. Compliance with this (and subsequent) method statement(s) will be a requirement of all relevant contracts associated with the development proposals. Copies of this document will be available for inspection on site. The developer will inform the local planning authority if the arboricultural consultant is replaced. This method statement should be read in conjunction with Tree Protection Plan (TPP/4546CRBH/010 A).

## **9.0 Phasing of the Works**

9.1 The works are proposed to be undertaken in the following phases:

- Pre-Development Works  
Remove trees and other vegetation not being retained as part of the site development. Undertake pre-development tree works to Beech (T4).
- Confirm temporary site structures, contractors parking and storage areas can be accommodated outside the Construction Exclusion Zones prior to start of the site development. Ensure these are located so that they do not have to be relocated during the development – or that any change is minimal - thereby avoiding unnecessary vehicle movements on site.
- Confirm operation of the development site with relevant contractors and thereby ensure that proposed tree protection measures are suitable and 'fit for purpose'. If required modify proposed measures whilst still ensuring the protection of trees.
- Confirm design of foundations for Plot 8 to ensure that this will have no significant impact on these trees.
- Demolition Phase  
Installation of Tree Protection Fencing (TPF) prior to the start of the removal of the buildings and structures.

- Place temporary site structures - such as latrines – contractors parking and storage areas outside the Construction Exclusion Zones.
- Commence Demolition Phase.
- Undertake regular monitoring of the Tree Protection Measures to ensure they remain fit for the purpose of preventing unnecessary damage to trees. Should any unforeseen damage occur then this should be reported to the Local Planning Authority. Remedial tree surgery should be undertaken at the earliest opportunity as approved by a competent and qualified Arboriculturist.
- Construction Phase  
Installation of Tree Protection Fencing (TPF) prior to the start of the Construction Phase. Install Ground Protection Measures for the relevant part of the Construction Phase
- Place temporary site structures - such as site huts and latrines – contractors parking and storage areas outside the Construction Exclusion Zones.
- Commence Construction Phase. Where required (for Plot 8) use a dedicated banksman to direct machinery adjacent to retained trees.
- Undertake regular monitoring of the Tree Protection Measures to ensure they remain fit for the purpose of preventing unnecessary damage to trees. Should any unforeseen damage occur then this should be reported to the Local Planning Authority. Remedial tree surgery should be undertaken at the earliest opportunity as approved by a competent and qualified Arboriculturist.
- Completion of Construction Phase and removal of any temporary site structures.
- Removal of Tree Protection Fencing and any Ground Protection Measures.
- Landscaping of the site including planting of replacement trees and erection of boundary treatments. Install 'no dig' surfacing within the RPA of Beech (T4).

- It is advisable to carry out a further tree survey to identify any remedial trees surgery that may be required following the completion of the development. This will include any changes in the condition of the trees that may have occurred from the original survey.

9.2 It is noted that some phases of the work may overlap. For instance some landscaping of the site may occur whilst Tree Protection Measures are still in place.

## **10.0 Construction Site Access**

10.1 The access for construction site vehicles and contractors will follow the Designated Access Route which is the access point from Chesham Road. This is outside the RPAs of trees. No Ground Protection Measures are required to protect trees for this element of the site development.

## **11.0 Pre-Development Tree Works**

11.1 It is proposed to undertake the following works to trees within the site. These works will only be undertaken if required.

### **11.2 Selective Prune – Beech (T4)**

It is proposed to prune 2 no. lateral branches over the application site to allow for the erection Plot 8 without damaging this tree. These branches are:

- 1 x 50 mm diameter limb
- 1 x 100 mm diameter limb

These works will ensure an adequate and harmonious separation between the tree canopies and Plot 8. The tree will be maintained in the future.

11.3 Pruning will involve the removal of secondary branches or branch shortening rather than removal of branches back to the stem. The amount of material to be removed and the diameter(s) of the pruning cut(s) will be the minimum required for the purpose.

11.4 All proposed pruning works would follow guidance set out in the relevant British Standard (BS 3998:2010 - 'Tree work - Recommendations') and will be carried out by a qualified tree surgeon/arboricultural contractor to ensure that the health, amenity and

viability of the trees is maintained. All Arboricultural works should also comply with relevant bio-security measures – such as those set out in the Arboricultural Associations position statement ‘Biosecurity in Arboriculture and Urban Forestry’.

## **12.0 Tree Protective Fencing**

12.1 Root Protection Areas (RPAs) are the minimum areas (in m<sup>2</sup>) which should be left undisturbed around each retained tree as Construction Exclusion Zones. These areas have been calculated as part of the Arboricultural Survey. The protective distances where possible will be enforced by the use of robust protective fencing as outlined in BS 5837: 2012. The fencing will be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the trees.

12.2 In this instance it is proposed to use the following methods:

- 2.0 m high metal Heras panels (See Photograph C below). The panels will be joined together using a minimum of two anti-tamper couplers to prevent access except for maintenance operations. The distance between the fence couplers will be at least 1.0 m and they will be uniform throughout the fence. Where space does not allow for a full panel to be erected then panels may overlap each other to fill a gap. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to rubber blocks. Where required the site the panels will be staked and secured in place so that they do not move during the development process.

12.3 The exact composition of the soil is unknown. Clay soil, for instance, compacts very easily when wet, so it is essential that fenced areas remain undisturbed before and during construction to prevent root asphyxiation.

12.4 Laminated site warning signs will be attached to the fencing. These signs will state:

### **‘CONSTRUCTION EXCLUSION ZONE – NO ACCESS**

*No storage of materials or use of machinery should take place within this area. These fences should remain intact unless under instruction from the site foreman following consultation with an Arborist.’*



Photograph C – Example of Heras Tree Protective Fencing

12.5 Tree Protection Fencing will be erected to protect retained trees before any machinery or pedestrians enter the site in connection with the Demolition Phase. It will be relocated for the Construction Phase. The position of the fencing is shown on Tree Protection Plan (TPP/4546CRBH/010 A). Otherwise fencing will not be removed or relocated – except to allow for grounds maintenance operations - until the main part of the development is complete. It will then be removed to allow for the landscaping of the site and the erection of boundary treatments.

**13.0 Ground Protection Measures including installation of `No Dig` Surfacing**

13.1 Pedestrian movements and/or the erection of scaffolding will occur within the RPA of Beech (T4). Ground Protection Measures will be introduced for the Construction Phase as shown on Tree Protection Plan (TPP/4546CRBH/010 A). The structure of any

protection measures will be designed to avoid localised compaction, by evenly distributing the carried weight over the Ground Protection Materials. They will cater for the 'worse-case' scenario.

- 13.2 (i) For pedestrian use either concrete laid on a suitable geo-textile layer or inter-linked ground protection boards placed on top of a compression-resistant layer (150 mm depth of woodchip), laid onto a geotextile membrane will be used.
- (ii) For scaffolding areas a single thickness of scaffold boards placed on top of a driven scaffold frame, so as to form a suspended walkway, will be used.

13.3 **Installation of 'No Dig' Surfacing**

A footpath will be installed along the flank wall of Plot 8 within the RPA of Beech (T4). To ensure that this tree is not damaged by these works a 'no dig' surface will be installed. This will be a permeable surface set on a suitable free draining sub-base. The structure of the hard surface will be designed to avoid localised compaction, by evenly distributing the carried weight of pedestrians that are proposed to use this area. This surface will be installed once development is complete with Ground Protection Measures subsequently being used in the interim (see above).

- 13.4 A Terram 1000 geotextile membrane and a 150mm deep Eroccl 25/15 Geocell containment grid with block pavements on top (to a total depth of approximately 215 mm) would be a suitable solution but the final design will be confirmed as part of Planning Conditions for any Planning Approval. The surface will therefore have a limited impact upon retained trees.

- 13.5 The surfaces would be constructed from outside the RPAs using the laid surfacing for support to prevent damage to RPAs during the works. The 'no dig' approach may continue outside the RPAs of retained trees or revert to a standard construction. This will, in part, depend on levels within the site and the final design of the surfacing. Care will be taken during the works to prevent compaction of soils and therefore to ensure that roots are not damaged.

13.6 The Ground Protection Measures will be in place prior to any vehicles entering the site in connection with the relevant part of the Construction Phase. The position of Ground Protection Measures is shown on the Tree Protection Plan. These measures will only be removed once the relevant part of the Construction Phase is complete.

#### **14.0 Foundation Design**

14.1 As set out in BS 5837 “*Construction within the RPA should accord to the principle that the tree and soil structure take priority.... Soil structure should be preserved at a suitable bulk density for root growth and function .... existing rootable soil retained and roots themselves protected*”. The use of traditional strip footings can result in extensive root loss and should be avoided.

14.2 In this instance a pile and beam foundation may be suitable (see example below). However the final design will be determined by a Structural Engineer in consultation with an Arboriculturist. On site investigation (including the excavation of trial holes) will be undertaken to determine the optimal location of the piles whilst avoiding damage to roots which may be important to the stability of the trees. Trial holes will be dug using hand held tools to a minimum depth of 600 mm.

14.3 The smallest practical pile diameter would be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. A sleeved bored pile or screw pile is proposed to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete.

14.4 Beams would be laid at or above ground level and cantilevered as necessary to avoid tree roots identified by site investigation.

14.5 If this is a shrinkable soil, the foundation design should take account of the risk of indirect damage to the structure from subsidence or heave. The floor slabs will be constructed with a ventilated air space between the underside of the slab and the existing soil surface to enable gas exchange and venting through the soil surface.



## **15.0 Site Organisation and Storage of Materials and Plant**

- 15.1 During the proposed construction works attention will be paid to the protection and well being of retained trees. The site will be organised in such a manner so as to minimise the effects of the construction work on trees. This will include defining and containing the development footprint with Tree Protection Fencing.
- 15.2 All materials and plant to be used during, or generated by, the Development Phase will be stored outside the enforced tree protection areas. The operation of the site will be undertaken within the constraints imposed by the protection of trees. Where necessary materials will be brought to site in loads which are applicable to that phase of the works. This would help to minimise the development footprint within the site.
- 15.3 All toxic substances such as oils, bitumen's and residues from concrete mixing will be retained by effective catchment areas. No toxic material will be discharged within 10 m of a tree stem. No fires will be lit within 10 m of a tree stem.
- 15.4 All access onto and from the site will be via the Designated Access Route. All contractors parking, temporary latrines and any other temporary structures will be outside the Construction Exclusion Zones.

## **16.0 Tree Protection and Utilities**

- 16.1 The exact location of services is not known at this stage. However it is assumed that any existing service runs to the site will be used or will access through the proposed access and be outside the RPAs of retained trees. However if required specialised techniques – such as those set out in '*NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*' 2007 National Joint Utilities Group (NJUG) Volume No. 4: No. 1 – will be used. The situation regarding utility routes will need to be confirmed as part of conditions for a Planning Approval.

## **17.0 Landscape Proposals Including Erection of Boundary Treatments**

17.1 Any landscaping will avoid soil re-grading and unnecessary disturbance within the RPAs of retained trees. Any ground works, such as planting of trees or shrubs or the spreading of top soil, within the RPAs of retained trees will be undertaken using hand held tools.

### **17.2 New Boundary Treatments**

New or replacement fencing may be erected as part of the proposed development to form defined or secure site boundaries.

17.3 Care will be taken when digging new holes and these will be undertaken by hand within these RPAs. Where roots larger than 25 mm are encountered the post hole (where possible) will be moved to ensure the roots are not affected. Where it is not possible to move the post hole roots larger than 25 mm will only be severed following consultation with an Arboriculturist, as they may be essential to the tree's health and stability. Roots smaller than 25 mm may be pruned back to create a clean cut, preferably to a side branch, using a proprietary cutting tool such as bypass secateurs or handsaws.

17.4 Roots which are exposed, but are to be retained, will be wrapped in dry, clean hessian sacking to prevent desiccation and to protect from rapid temperature changes. Prior to backfilling, any Hessian wrapping will be removed and retained roots should be surrounded with sharp sand or other loose granular fill, before soil or other material is placed over the roots. This material should be free of contaminants and other foreign objects potentially injurious to tree roots.

17.5 At this point it is recommended that these treatments are erected at the end of the Construction Phase when the majority of construction works have occurred. Tree Protection Fencing will be removed whilst this element of the work is carried out.

## **18.0 Conclusion**

18.1 This application is for the demolition of the two existing dwellings and the residential development of the site with access from Chesham Road.

- 18.2 Of the trees within this report none are currently recommended to be removed for arboricultural reasons irrespective of this planning application.
- 18.3 Of the trees within this report 1 no. group of trees will need to be removed, or are proposed to be removed to implement the development. These are low quality or unremarkable 'C' Category trees as set out in BS 5837:2012. Overall these trees have limited visual amenity within the local area. Replacement trees, hedging and shrubs will be planted as part of the landscape proposals for the site. This will help to mitigate for the removal of these trees, use species beneficial to wildlife and provide screening to the site boundaries. The removal of trees is not so significant that it would lead to the refusal of Planning Permission.
- 18.4 There will be incursions within, or adjacent to, the RPAs and canopy spreads of trees as part of the development of the site. These include for construction of Plot 8, construction activity and the installation of hardstanding. Overall the incursions within the RPAs have been assessed within the Arboricultural Impact Assessment to either have a minimal and insignificant impact on retained trees or can be reduced to an insignificant level through the use of relevant construction techniques. These are set out within the Arboricultural Method Statement. These will ensure that the development will be completed without having any undue impact on retained trees.
- 18.5 Retained trees will be protected during the site development. This report sets out how retained trees are an important part of the development of the site and how protection and retention of trees will be achieved. The effect on trees from the proposals will be minimal given the proposed site layout and conditions and providing that the Arboricultural Method Statement is implemented.
- 18.6 The development is therefore acceptable in arboricultural terms and should receive planning consent.

# Appendix A

## Arboricultural Survey

45 and 46 Chesham Road, Bovington,  
Hertfordshire, HP3 0EA

### 1.0 Introduction

- 1.1 I visited the application site in February 2021 to inspect relevant trees in relation to a Planning Application on the site. These trees are within the area of the proposed development and may potentially have some significance to the proposed development. The survey includes the species, size, position and condition of these trees. A full list and description of Survey Terms is given below. The position of these trees has been noted on the accompanying Tree Protection Plans.
- 1.2 This survey has been prepared following guidance set out in BS 5837: 2012 'Trees in relation to design, demolition and construction. Recommendations'. It seeks to offer guidance in relation to planning application discussions or designs for the site. As suggested by BS5837: 2012 all trees with a stem diameter of less than 75 mm at 1.5 m above ground level were excluded from the survey.

### 2.0 Description of Survey Terms

- 2.1 **Tree Reference Number** is the number allocated as part of this Arboricultural Survey. This may be different from other surveys undertaken on the site.
- 2.2 **Height** of the tree is measured in metres to the centre of the crown or the highest point of the tree. There is a tolerance of plus or minus 1.0 m.
- 2.3 **Crown Spread** is taken at compass points N, E, S and W from the centre of the tree stem. This is to the nearest 0.5 m. Where tree canopies spread off-site then estimations (est) have been made. With regard to groups the average canopy spread is given. Where individuals within the group are significantly different from this these are shown on the plan and the maximum spread stated within the report.
- 2.4 **Stem Diameters** are taken at 1.5 m above ground level unless otherwise stated. Where measurements of trunk diameter are not possible then estimations (est) have been made. This may be due to ivy on the trunk or where trees are not on the application site. The annotation ms refers to multi-stemmed trees.

- 2.5 **Root Protection Areas** (RPAs) are calculated from stem diameter measurements as set out in BS5837: 2012 'Trees in relation to design, demolition and construction. Recommendations'. RPAs are the areas (in m<sup>2</sup>) around each retained tree which contain sufficient rooting volume to ensure the survival of the tree. The area will normally be represented on a plan as a circle or polygon. If shown as a circle the **Radius of Root Protection Area Zone** is included.
- 2.6 **Age Class** - A young tree (Y) is within its first 1/3<sup>rd</sup> of life expectancy. A middle aged tree (MA) is within its second 1/3<sup>rd</sup> of life expectancy and a mature tree (M) is within its final third of life expectancy. An Over Mature tree (OM) is beyond its average life expectancy and a Veteran (V) is usually beyond the typical age range for the species but of biological, cultural or aesthetic value.
- 2.7 **Physiological and Structural Condition** - Trees in a Good Physiological or Structural Condition have no visible problems or significant defects. Those in a Fair Condition have remedial symptoms or defects or where these symptoms or defects are not remedial but will not affect the **Estimate Remaining Useful Contribution** and those in a Poor Condition have defects which are not remedial and removal of the tree should be considered.
- 2.8 **Comments** give a description of the tree including its general form, description of any physical defects, disease or decay and other appropriate details based on the health, vitality and overall structural integrity. It also includes the environment in which the tree is growing. **Recommendations** for the management of the tree or group will be given where required. Any proposals for removal of trees will need to be agreed with the tree owner.
- 2.9 A tree of good form has a shape that is typical of the species or has amenity in its own right. A tree with moderate form has been affected by its environment and is not typical of the species and has limited amenity value on its own right though it may have a collective amenity with adjacent trees. A tree with poor form has low quality and may also have structural defects which will affect its long term retention. **Canopy height above ground level** is given where this is applicable.
- 2.10 **Estimated Remaining Useful Contribution** is the estimated number of years that the tree will continue to make a safe and useful contribution to its surroundings, taking into account its current age, physiological and structural condition and its current location or environment. This assumes that there will be no changes within its immediate environment.
- 2.11 **Category Grading** - trees have been categorised in accordance with the cascade chart set out within BS5837: 2012 'Trees in relation to design, demolition and construction. Recommendations'.

2.12 The trees inspected as part of this report were inspected from the ground only and were not climbed. No samples of wood, roots, soils or fungus were taken for analysis. Observations of the trees were confined to what was visible from within the site and surrounding public places. A full hazard risk assessment of the trees was not undertaken.



Photograph D – Looking north and east from within the site.

# Tree Schedule

Tree Ref No.	Species Common Name (Scientific Name)	Height (m)	Stem Diameter (mm) <b>Root Protection Area (m<sup>2</sup>)</b>	Radius of Root Protection Area zone (m)	Branch Spread (m)	Age Class	Physiological/ structural Condition	Comments  • Preliminary Management Recommendations within Current Environment	Estimated Remaining Useful Contribution (years)	Category Grading
T1	Laburnum spp	3	175 est <b>13.9</b>	2.1	N – 3.0 E – 2.0 S – 3.0 W – 1.5 all est	MA	Fair/Fair	Offsite tree – full inspection of tree not possible. Multi-stem tree. Part of tree collapsed to south-east and laying on the ground. Previously pruned.  • Monitor condition of tree and manage accordingly.	10+	C1
T2	Cedar (Cedrus spp)	10	300 est <b>40.7</b>	3.6	N – 3.5 E – 3.5 S – 4.5 W – 4.5 all est	MA	Fair/Good	Offsite tree – full inspection of tree not possible. Lower end `B` Category.  • No preliminary management recommendations at time of survey.	20+	B1
T3	Sorbus spp	8	125 est <b>7.1</b>	1.5	N – 3.5 E – 2.0 S – 2.5 W – 2.0 all est	MA	Fair/Fair	Offsite tree – full inspection of tree not possible. Growing to west.  • No preliminary management recommendations at time of survey.	10+	C1
T4	Beech (Fagus sylvatica)	13	300 est <b>40.7</b>	3.6	N – 4.5 E – 4.0 S – 5.5 W – 4.5 all est	MA	Good/Fair	Offsite tree – full inspection of tree not possible. Developing tree. Limited ivy growth to trunk. Lower end `B` Category.  • No preliminary management recommendations at time of survey.	20+	B1
T5	Sycamore (Acer pseudoplatanus)	13	390 <b>68.8</b>	4.7	N – 4.0 E – 2.5 S – 4.5 est W – 4.5 est	MA	Fair/Good	Growing to the rear of the application site. Moderate form – one sided to east. Upright form. Previously pruned. Lower end `B` Category.  • No preliminary management recommendations at time of survey.	10+	C1

Tree Ref No.	Species Common Name (Latin Name)	Height (m) range	Stem Diameter (mm) <b>Root Protection Area (m<sup>2</sup>)</b> <i>Radius of Root Protection Area zone (m)</i>	Branch Spread - min (max) (m)	Age Class (general)	Physiological/ Structural Condition (general)	Comments (general) • Preliminary Management Recommendations	Estimated Remaining Useful Contribution (years)	Category Grading
G1	3 no. Holly ( <i>Ilex aquifolium</i> )	6	100 est – 175 est <b>4.5 – 13.9</b> 1.2 – 2.1	N – 1.0 (1.5) E – 1.0 (1.5) S – 1.0 (2.5) W – 1.0 (1.5)	Y-MA	Poor-Fair/Fair	Growing to site frontage. Previously pruned and 1 no. is shaped over adjacent driveway. Covered in ivy – full inspection of trees not possible.  • No preliminary management recommendations at time of survey.	10+	C2
G2	1 no. Cypress ( <i>Chamaecyparis</i> spp), 1 no. Hawthorn ( <i>Crataegus</i> spp) and several Holly ( <i>Ilex</i> spp)	5-9	75 est – 404 est <b>2.5 – 73.8</b> 0.9 – 4.8	N – 1.0 (3.5) E – 1.0 (3.0) S – 1.0 (3.0) W – 1.0 (3.0) all est	Y-MA	Fair/Fair	Trees growing to rear boundaries of site and adjacent property. Of mixed form and condition. Some have ivy to their trunks. Full inspection of trees not possible. Dead wood present to some trees.  • No preliminary management recommendations at time of survey.	10+	C2