

Arboricultural Implications Assessment

19th January 2022

Elm Tree Farm, Mill Drove North, Cowbit

Erection of a machinery store and the construction of a brick boundary wall

Client: Peter and Rita Bowman

DOCUMENT HISTORY

Revision	Layout Assessed	Author	Reviewer	Date
O	'Site as Proposed'	AMB	TC	06/05/2021
A	3515-5 Rev F	AMB	TC	19/01/2022

FILE REFERENCES:

This Report File Ref: 4324.Cowbit.Boor.AIA.Rev A

Arboricultural Implications Plan: 4324.Cowbit.Boor.AIP.Rev A

Contents

SUMMARY.....	1
1 INTRODUCTION	2
2 THE SITE	4
3 SURVEY FINDINGS	5
4 ANALYSIS OF THE PROPOSAL.....	6
5 ASSESSMENT CONCLUSIONS	8
Appendix A – Tree Survey Explanatory Notes.....	i
Appendix B – Tree Survey Data	ii
Appendix C – Assessing Constraints	v
Appendix D – Arboricultural Implications Plan	vii

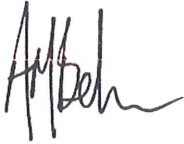
SUMMARY

This report, read in conjunction with drawing 4324.Cowbit.Boor.AIP.Rev A, describes the arboricultural implications of the proposed development.

Both the proposed developments result in the loss of boundary hedging but the proposal includes for compensatory planting and I consider that any loss of amenity and habitat can be replaced with appropriate landscaping.

Protection of the retained trees has been detailed in an Arboricultural Method Statement, provided with this document.

Signed:



A M Belson
Dip.Arb.RFS, M.Arbor.A, Tech.Cert.Arbor.A

This report is the property of Andrew Belson Arboricultural Consultant, it is not to be reproduced, retained or disclosed to any unauthorised person, either wholly or in part without the written consent of Andrew Belson Arboricultural Consultant.

1 INTRODUCTION

1.1 Instructions

- 1.1.1 This assessment was commissioned by Robert Boor on behalf of the Client because trees are a material consideration and this report is required to support the Client's planning application.
- 1.1.2 The first instruction was to survey the trees on or adjoining the site in line with the recommendations of BS5837: 2012. This survey took place on 6th May 2021 and the results of that survey are found at Appendix B.
- 1.1.3 The second instruction was to draw a plan showing the tree constraints overlaid to the planning drawing so that the implications could be assessed, and to write an Arboricultural Implications Assessment report for the proposed development.

1.2 Source documents

- 1.2.1 The drawings that have been used to inform this assessment are:

- Proposed site plan: 3515-5 Rev F

Note: This assessment is specific to the drawings listed above and cannot be generalised.

1.3 Assessment elements

1.3.1 This assessment provides the elements recommended by BS5837: 2012 'Trees in relation to design, demolition and construction':

- Consideration of any statutory protection affecting the site. (BS5837 section 5.2.3) (this document, section 2.4)
- Evidence of a tree survey conducted to BS5837:2012, including tree categorization (BS5837 section 4.4 and 4.5) (see Appendix A for explanatory notes on method, and Appendix B for the Survey Data Table)
- An impact assessment of the relationship between the trees and the proposed layout (see section 4; see also Appendix C for explanatory notes). Including:
 - A discussion of proposed tree losses (BS5837 section 5.2.3 and 5.4.3)
 - The potential impact of RPA incursions (BS5837 section 5.3.1 and 5.3.2)
 - Factors which may affect the reasonable enjoyment of the proposed structures such as shading, screening and privacy (BS5837 section 5.3.4)
 - Future growth and/or pressures for removal or pruning (BS5837 section 5.3.4)
 - Factors that may affect foundation design (BS5837 Annex A)
 - Foreseeable issues with the planned demolition/construction of the proposed layout such as working space and access. (BS5837 section 5.4.2)
- An Arboricultural Implications Plan showing the trees and their RPAs overlaid to the proposed layout, indicating trees for retention and removal. (BS5837 section 4.5 and 4.6) (provided with this report, see also Appendix D)

2 THE SITE

2.1 Setting

- 2.1.1 All of the trees inspected are growing within the site boundary.
- 2.1.2 The site is a recently constructed dwelling with various garages and outbuildings; with extensive landscaping including ponds and tree planting. The site is bounded to the north by a brick boundary wall.
- 2.1.3 The site is generally level, with ditches (or remains of) on or beyond all boundaries.

2.2 Soil and Geology

- 2.2.1 With reference to Figure 4.3, Volume 1 'Tree Root Damage to Buildings' (P G Biddle), some soils can have shrinkable characteristics and this can affect the depth or type of foundations needed for both current and future planting.
- 2.2.2 The British Geological Survey of England and Wales identifies the bedrock geology at this location as Oxford Clay Formation – Mudstone with superficial deposits of Tidal Flat Deposits – Clay and silt.
- 2.2.3 Clay soils are easily damaged through compaction. This information has been used to inform an Arboricultural Method Statement

2.3 Statutory protection

- 2.3.1 This site does not lie within a Conservation Area.
- 2.3.2 None of the trees surveyed are included in a Tree Preservation Order.
- 2.3.3 Full Planning Consent would allow those works described in the supporting documentation or necessary to implement the consented development to go ahead without the need for any further notice or application to the Local Planning Authority.
- 2.3.4 Appropriate advice regarding the protection of wildlife and other ecological matters must be sought before any tree work proceeds on site.

3 SURVEY FINDINGS

3.1 Overview

3.1.1 The trees were inspected in line with the recommendations of BS5837: 2012 on 6th May 2021.

3.2 Specific notes

3.2.1 The full table of survey data can be found in Appendix B.

3.2.2 All the older hedges have been cut at a lower height in the past, with evidence of coppicing on the southern boundary (Group D). In order to bring the hedges back to a condition where they provide cover to ground level and have a smart well-tended appearance, they will need radical treatment such as coppicing with control of Ivy and invasive species plus infilling with new plants in some places (where Elms were historically removed for example).

3.2.3 Horse Chestnut NT2 is moderately affected by symptoms of Horse Chestnut Bleeding Canker. This is a bark-killing disease that is associated most frequently with the bacterium *Pseudomonas syringae pv aesculi*. Research by the Forestry Commission in 2007 concluded that around half the Horse Chestnut trees in Britain showed some degree of symptoms. Progress of the disease varies; some trees die within a few growing seasons while others survive for some considerable time. There is currently no practical method of control. On this property, the progress of the infection should be monitored. It may also be necessary to remove dead wood as it forms, although pruning or cutting away infected bark is not recommended. Felled trees and affected branches should be destroyed on site, either by burning or burying. Do not use logs cut from diseased trees for firewood and avoid chipping infected material.

4 ANALYSIS OF THE PROPOSAL

4.1 Boundary Wall

- 4.1.1 The proposal to culvert the drain and construct a brick wall directly implicates the loss of all of Group B and a small section of Group C.
- 4.1.2 The Clients' wish is to construct the wall. There is no statutory protection that would prevent them managing the hedge in whatever way they wish. However, to bring it back into being a useful and attractive boundary feature, it would need significant works and the loss of security would not be acceptable. Any perceived or actual loss of amenity or ecological value can be replaced within a relatively short space of time with the compensatory planting that has been offered as part of the proposal.
- 4.1.3 Although Horse Chestnut NT2 is in poor condition, the Clients wish to retain the tree. Part of the wall lies within the drawn Root Protection Area. Significant damage to the tree's root system can be avoided through the use of ground beams supported on mini-piles.

4.2 Machinery Store

- 4.2.1 The proposed building directly implicates the loss of a section of boundary hedge Group E. The value of this hedge is restricted to site.

4.3 Engineering and Design

- 4.3.1 Subject to the soil type found on site and an engineer's appraisal, the trees (whether retained or removed) may influence foundation design.

4.4 Services

- 4.4.1 Services are not shown on the drawing but there appears to be room to accommodate all services and soakaways without affecting any trees.

4.5 Shading, screening and privacy

- 4.5.1 Due to the type of development proposed, it will not be affected by shade cast by trees
- 4.5.2 The privacy and screening afforded by Hedge Group B would be replaced by the proposed wall and replacement planting.

4.6 Future growth and pressure to prune

4.6.1 I would not expect any significant future growth in either Horse Chestnut.

5 ASSESSMENT CONCLUSIONS

5.1 Tree work

5.1.1 The proposed development requires the removal of one entire hedge and two sections of hedge. These trees are indicated on the Arboricultural Implications Plan (see Appendix D) by way of a red dashed line.

5.1.2 The following hedges are implicated for removal as a result of the proposed development:

REF.	SPECIES
Group B	Various
Group C (part)	Cherry Laurel
Group E (part)	Various

5.2 Design

5.2.1 The layout only affects plants that are under the control of the applicants.

5.2.2 The proposals are reasonable home improvements.

5.3 Construction

5.3.1 There is ample space for the receipt, storage and handling of materials and for the movement of plant and machinery. However, in order to avoid accidental damage, a suitable tree protection scheme must be implemented before development begins.

5.3.2 Full details of a tree protection methodology have been provided in an Arboricultural Method Statement and Tree Protection Plan accompanying this application.

5.4 Protection

5.4.1 Barriers and ground protection will be required before any work commences on site.

5.4.2 The order in which the works are implemented will need to be carefully considered in order to provide the most successful tree protection scheme.

5.4.3 A high standard of site management will be essential to avoid damage to retained trees.

5.4.4 The retention of an Arboricultural Clerk of Works is recommended to enable works near trees to progress without damaging retained trees.

5.5 Replacement

- 5.5.1 The detail of the landscape scheme and how it will be maintained can be secured by Condition of any Consent.

Appendices

Appendix A – Tree Survey Explanatory Notes

Identification

All significant trees within and adjoining the site were surveyed. Most of the significant individual trees within the site were tagged with numbered aluminium tags, attached to the tree with two nails at around head height. Inaccessible or neighbouring trees have been designated the prefix 'NT' and numbered. Groups of trees were identified and designated a letter. Reference to the trees' locations can be made using the plans appended to this report.

Limitations

The tree survey was carried out for the purpose of informing the planning process. Relevant structural defects and aspects of tree condition are noted in the tree survey table in Appendix B; however, a full hazard assessment has not been carried out.

As trees and shrubs are living organisms whose health and condition can change rapidly, conclusions and recommendations are only valid for one year. The health, condition and safety of trees should be checked regularly, preferably annually.

It may have been necessary to estimate some measurements when assessing trees on neighbouring land. This will not generally affect the conclusions of this report.

No invasive investigations were carried out to assess the internal condition of the trees. Should this be required, it will be highlighted in the report.

The soil was not examined and no soil samples were taken. Should soil analysis be indicated, this will be recommended in the report.

Assessment

The trees were assessed in accordance with British Standard 5837.

Appendix B – Tree Survey Data

Key to Survey

Height	Measured with a clinometer or estimated where not considered critical (m)
Crown spread	At cardinal points (m)
Remaining Contribution	Estimated number of years the tree may make a safe useful contribution
Main Stem Diameter	Measured at 1.5 metres above ground or in accordance BS5837 Annex C and D
Condition	Good: No visible defects seen Reasonable: Some defects seen but none that contribute significantly to the overall health and safety of the tree Poor: Defects or health issues that contribute significantly to the overall health and safety of the tree
Age Class	Y = Young (Less than 1/3 of normal expected life) SM = Semi-mature (1/3 – 2/3 of normal expected life) M = Mature OM = Over-mature or in decline V = Veteran
Root Protection Area (Radius)	Distance in metres from centre of tree to achieve a circular Root Protection Area
Root Protection Area (Area)	Root Protection Area in square metres.
Recommendations	Recommendations based on the findings of the survey. These are intended to help guide the site layout; appropriate tree retention; tree management and generally inform site design. These are irrespective of proposed site layout and DO NOT form part of the Arboricultural Implications Assessment.

Condensed Notes from Table 1 BS5837

- U Trees in poor condition offering less than 10 years safe useful life due to irreversible decline; containing serious defects; infected with pathogens significant to health of other trees nearby; or dead.
- A1 Trees of high quality and value offering at least 40 years' contribution; particularly good example of species
- A2 Trees of high quality and value; offering at least 40 years' contribution; a group or woodland or particular visual importance
- A3 Trees of high quality and value; offering at least 40 years' contribution with conservation, historical or other value
- B1 Trees of moderate value; offering at least 20 years' contribution; slightly impaired condition but remediable
- B2 Trees of moderate value; offering at least 20 years' contribution; distinct landscape feature as a group or woodland.
- B3 Trees of moderate value; offering at least 20 years' contribution; trees with clearly identifiable conservation or other cultural benefits.
- C1 Trees of low quality and value; at least 10 years' contribution; unremarkable trees of very limited merit
- C2 Trees of low quality and value; at least 10 years' contribution; groups or woodlands without significant landscape value, trees of low or temporary landscape value
- C3 Trees of low quality and value; at least 10 years' contribution; trees with limited conservation or other value

ref.	Species	Age Class	Ø m/s (mm)	Height (m)	Lower crown height (m)	Ultimate height (m)	Grade	Crown Spread N (m)	Crown Spread S (m)	Crown Spread E (m)	Crown Spread W (m)	RPA radius (m)	RPA (m ²)	Remaining Contribution	Condition	Comments	Recommendations made at time of survey, irrespective of any layout
Group A	Hawthorn, Ivy	M	250	3.5	0	3.5	B2	1.2	1.2	1.2	1.2	3	28.28	40+	Reasonable	Historically cut at 1.2m and 2.5m. Situated at top of Northern side of dyke	Cut as a hedge.
NT1	Horse Chestnut	M	650	11	2.5	11	B1/B2	5	5	5.5	6	7.8	191.16	20+	Reasonable	Various mechanical wounds on main stem and in lower crown. Most occluding or occluded but there is evidence of decay in some wounds.	No work required.
NT2	Horse Chestnut	M	600	10	3	10	C1/C2	3	5	5	6	7.2	162.88	<10	Poor	Moderate infection with Horse Chestnut Bleeding Canker. Various mechanical wounds on main stem and in lower crown. Most occluding or occluded but there is evidence of decay in some wounds. Northern limb removed with moderate decay at old wound	Could be retained in the short-term. No work required.
Group B	Hawthorn, Ivy, Field Maple, Elder, Elm	M	250	4.5	0	4.5	B2	2	2	2	2	3	28.28	40+	Reasonable	Historically cut at 3m. Situated at top of western side of dyke	Cut as a hedge.
Group C	Cherry Laurel	Y	150	3.6	0	3.6	C2	1	1	1	1	1.8	10.18	40+	Good	Multi-stemmed form. Regularly maintained at present dimensions.	Cut as a hedge.

ref.	Species	Age Class	Ø m/s (mm)	Height (m)	Lower crown height (m)	Ultimate height (m)	Grade	Crown Spread N (m)	Crown Spread S (m)	Crown Spread E (m)	Crown Spread W (m)	RPA radius (m)	RPA (m ²)	Remaining Contribution	Condition	Comments	Recommendations made at time of survey, irrespective of any layout
Group D	Hawthorn, Ivy, Elder	M	350	3.5	0	3.5	C2	1.2	1.2	1.2	1.2	4.2	55.42	40+	Reasonable	Historically coppiced and cut at 1m. More of a linear group with little cover in lower 2/3	Either leave as-is; coppice infill and protect or lay and infill
Group E	Hawthorn, Ivy, Elder, Plum, Rose, Elm	M	350	6	0	6	C2	2.5	2.5	2.5	2.5	4.2	55.42	40+	Reasonable	Lapsed hedge with growth both sides of dyke	Either leave as-is or coppice, control Plum and interplant with Hawthorn

Appendix C – Assessing Constraints

General

It is desirable to retain trees as they add maturity and structure to a site; provide shade and amenity value; screening or acoustic barrier.

In general, Grade 'A' and 'B' trees should be retained, especially if they offer a visual amenity to the wider community. It may be desirable to retain Grade 'C' trees where they can continue to offer a presence until they are replaced but they should not generally prevent an otherwise satisfactory layout from being achieved.

Root system

Construction can impose enormous strain on trees through damage to, or loss of root mass. The root system is the part of the tree most susceptible to damage during construction. Any retained trees could be at risk of root damage through:

- Demolition and site clearance
- Excavation causing root severance
- Siting of services and excavation causing root severance
- Access for plant and vehicles which may cause compaction of the root zone leading to root death through asphyxiation
- Storage of materials or spillage of damaging substances such as fuel oil, petrol or lime, which can kill roots.
- The raising of soil levels which can kill roots through asphyxiation
- The lowering of soil levels which removes root mass, including many of the fine water collecting roots and beneficial humus layer

The symptoms that can arise from root damage as identified above can take several years to become evident.

The Arboricultural Implications Plan (see Appendix D) shows the Root Protection Area (RPA) as a magenta circle or polygon around each tree or group of trees. This is the area where if the trees are retained, ideally no excavation should take place; the soil level should not be raised or lowered; no materials should be stacked; there must be no contamination and no services should be routed. However, trees can be tolerant of some disturbance or root loss and recent advances in construction techniques can avoid causing significant damage to roots. This will depend on a number of factors including tree species and site conditions along with the type of construction methods available to the developer.

The Root Protection Area (RPA) required for each tree may affect the layout of road, footpath, housing services and other built structures. It may be possible to pave a proportion of the RPA.

Above Ground

Construction can threaten the aerial parts of the tree through physical damage by contact from various plant and delivery vehicles; and through the lighting of fires.

The height of the lower crown above ground is shown in the Tree Survey Table (Appendix B). Lifting (or raising) the crown to a set height above ground in order to allow access for plant and machinery or to erect fences for example would be an acceptable arboricultural practice. Crown spread may in itself be a constraint where it is greater than the RPA radius.

A development may affect the way wind passes the retained trees, by raising its speed or direction. This may leave weakened or newly exposed trees liable to wind throw.

Suitability and future growth

Some trees are not suitable for retention due to brittle wood, poisonous berries or leaves, prickles and thorns. Leaves falling from any of the retained trees may block gutters of nearby buildings. Fruit, blossom and leaves can become a potential slip hazard.

Whilst trees may be small at the time of survey, future growth may be considerable, both in height and radial crown spread. Very large trees worry some people because they perceive the trees to be imposing and dangerous. This is typically unfounded.

Shade

Building within the shade area can be acceptable where internal layout, fenestration or proposed use of buildings means they are not adversely affected by a lack of daylight received. Some shading may be welcomed in the summer when solar gain can make room temperatures uncomfortable.

The shade footprint that may be cast by the trees has been shown as a grey hatch on the Arboricultural Implications Plan (see Appendix D). The shade area is based on a solar inclination of 45 degrees in line with the median suggested by BS5837: 2012 that covers the main daylight hours. This simplifies the actual shade area that may affect the site but it is considered to be a good representation of the area in question.

It should also be noted that deciduous trees only cast shade for seven or eight months of the year, depending on species.

Engineering and Design

The species and height of trees (both retained or removed) may also affect the type and depth of foundations used.

The British Standard 5837: 2012 'Trees in Relation to Design, Demolition and Construction' gives more detailed guidance.

Appendix D – Arboricultural Implications Plan

A full-sized version of the Arboricultural Implications Plan (Filename: 4324.Cowbit.Boor.AIP.Rev A) has been provided with this file.

