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Proposed Residential Development at Vernatt's Strategic Urban Extension Phase 1: Parcel 1 – Yews Farm 100 Plots

Arboricultural Implications Assessment

8th December 2021

Client: Ashwood Homes

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DOCUMENT HISTORY

Revision	Layout Assessed	Author	Reviewer	Date
-	74-SL-01	TC	AMB	08/12/2021

FILE REFERENCES:

This Report File Ref: 4158.Yews.Ashwood..AIA

Arboricultural Implications Plan: 4158.Yews.Ashwood..AIP

Contents

SUMMARY

This report, read in conjunction with drawing 4158.Yews.Ashwood..AIP, describes the arboricultural implications of the proposed development.

It is my opinion that the proposed development scheme could provide dwellings in the locations without any conflict.

Specifically:

- Several trees growing either side of a dyke are not in a suitable condition for retention and they are shown for removal.
- None of the trees affected by the proposal offer any significant value to the public at large.

In the process of redevelopment, I also consider that there is an opportunity to replace trees and provide additional planting that would provide a net gain in tree cover, providing a positive overall benefit to the locality in terms of landscape quality and value.

Signed:

A M Belson
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1 INTRODUCTION

1.1 Instructions

1.1.1 This assessment was commissioned by the Client because trees are a material consideration and this report is required to support the Client's Full 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 17th February 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:

- Topographical survey: 24272911071217
- Proposed site plan: 74-SL-01

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 relevant 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).
- 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 relatively level area of agricultural land to the north-west of Spalding.

2.1.3 At the time of survey, a new road scheme was under construction.

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.

2.3 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 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 17th February 2021.

3.2 Specific notes

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

3.2.2 To the east of the site, a row of Silver Birch bounds the road. However, these were not surveyed as they are to be removed as part of highway works to widen the road.

3.2.3 Group B Hawthorn to the west is thus the only arboricultural feature within or adjacent to the site. It comprises trees in poor condition with low vigour and less than 10 years of remaining safe useful life expectancy. These trees should be removed, regardless of any proposed development.

4 ANALYSIS OF THE PROPOSAL

4.1 Vehicular Access

4.1.1 Highway access is to be gained off Spalding Road via a roundabout to be constructed at the junction with Enterprise Way. This has no arboricultural implications.

4.2 Layout

4.2.1 The layout does not directly or indirectly implicate the loss of any trees.

4.3 Engineering and Design

4.3.1 Subject to the soil type found on site and an engineer's appraisal, the removed trees may influence foundation and retaining wall design.

4.4 Services

4.4.1 Services are not shown on the drawing but there is room to accommodate all services and soakaways without any arboricultural implications.

5 ASSESSMENT CONCLUSION

5.1.1 The proposed development will not result in the loss of any trees; however, those trees in Group B Hawthorn are recommended for removal as a result of their health and condition regardless of any layout. These trees are indicated on the Arboricultural Implications Plan (see Appendix D) by way of a red dashed line.

Andrew Belson
Arboricultural Consultant

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 B	Hawthorn	M	200	4	0	4	C2	2	2	2	2	2.4	18.1	10+	Poor	Low vigour. Not worthy of retention. Fragmented hedge remnants	Fell and replace.

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: 4158.Yews.Ashwood..AIP) has been provided with this file.