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Land West of Tudor Lodge, Fen Road, Holbeach

Arboricultural Implications Assessment

12th September 2022

Client: Seagate Homes

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SUMMARY

This report, read in conjunction with drawing 4408.Tudor_West.Seagate.AIP, describes the arboricultural implications of the proposed development.

It is my opinion that the proposed development scheme could provide dwellings in the approximate locations without any significant conflict but some tree loss is indicated.

The effects of the retained trees on the liveability in the indicative dwellings is acceptable.

Specifically:

- The proposed development will require the removal of some low quality conifers and a lapsed hedge of large shrubs.
- Most of the plans affected by the proposal do not offer any significant value to the public at large.
- Protection of the retained trees has been detailed in an Arboricultural Method Statement, which accompanies this application.

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 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 27th July 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: SE1027-1
- Proposed site plan: TLW-SH-SP-AR-002

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 or on land under the control of the Applicant.

2.1.2 The site is an area of land to the west of the property known as Tudor Lodge.

2.1.3 The land is generally level and has been used as a paddock.

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 West Walton Formation - Mudstone and siltstone 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 which has been submitted with this application.

2.3 Statutory protection

2.3.1 This site does not lie within a Conservation Area.

2.3.2 At the time of writing, it had not been possible to definitively state whether any 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 27th July 2021.

3.1.2 The trees that surround the site are in variable condition. One tree is a high-quality Grade A Beech and two trees have been graded 'U'.

3.2 Specific notes

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

3.2.2 Several Ashes in the linear Group to the south of the existing access are infected (or suspected of being infected with) Ash Heart Rot. This fungal decay pathogen causes the wood to degrade in such a way that it becomes brittle and liable to sudden fracture. An adequate safety factor can often be gained through pruning but the safe useful life of an infected tree is generally shortened.

3.2.3 The deadwood seen in the crowns of Beeches 8503 and NT13 presents a hazard of falling debris, with the level of risk affected by the activity below or near the tree. Removing the deadwood will reduce the level of risk, often to an acceptable level. However, whilst dead wood is a safety consideration, it is also good habitat for invertebrates so it is advantageous to retain some dead wood if possible. Therefore, the decision whether to remove the deadwood must be based on what actual harm may arise if the dead wood were to fall. I consider that in the context of re-development, it would be prudent to remove all significant dead wood (greater than 25mm in diameter).

3.2.4 Larch NT14 and Field Maple NT15 are dead and should be removed.

3.2.5 Weeping Willow 8504 is an over mature tree in poor condition which has suffered major scaffold failures. Regardless of development plans, this tree should be felled and replaced.

4 ANALYSIS OF THE PROPOSAL

4.1 Vehicular Access

4.1.1 Highway access is to be gained via the existing access road from Fen Road with the overall width increased to 5m. This directly implicates the loss of a section of hedging Group A at the site entrance.

4.1.2 The driveway lies within the Root Protection Areas (RPAs) of Ashes 8492, 8493, 8495 – 8500, it will therefore be necessary to construct the driveway in such a way that excavation is minimised and the materials used allow for a moisture and air permeable surface. In this way, changes in the trees' rooting environments will be minimised.

4.2 Layout

4.2.1 The implications of the proposed development are as-per the following table:

Tree reference	Species	Grade	Implications
8501	Ash	B1	Must be removed to accommodate Plot 9
Group C	Various	C2	Must be removed to accommodate Plot 9
Group D	Western Red Cedar	C2	Must be removed to accommodate Plot 9

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. The intention is to provide a service trench within the driveway.

4.4.2 The excavation of a service trench within the RPAs of the trees along the driveway is a practical proposition through the use of vacuum excavation or an 'AirSpade' to avoid significant root loss.

4.4.3 There appears to be room to accommodate all services and soakaways within the site without affecting any trees.

4.5 Shading, screening and privacy

4.5.1 Most plots will receive partial shading for a proportion of the day. The positive effects of shading include reduction in solar gain and the general cooling of air within garden spaces.

4.5.2 All current screening is to be retained.

4.6 Future growth and pressure to prune

4.6.1 I would not expect any significant future growth in the retained trees.

5 ASSESSMENT CONCLUSIONS

5.1 Tree work

5.1.1 The proposed development will result in the loss of several trees; however, the quality and condition of most of the trees means their value is restricted to site and three are recommended for removal as a result of their health or condition. These trees are indicated on the Arboricultural Implications Plan (see Appendix D) by way of a red dashed line.

5.1.2 The following trees are recommended for removal as a result of their health or condition, regardless of ownership or any layout:

REF.	SPECIES
8494	Ash
8502	Lime
8504	Weeping Willow
NT9	Cherry
NT12	Scots Pine
NT14	Larch
NT15	Field Maple

5.1.3 In addition, the following trees are implicated for removal as a result of the proposed development:

REF.	SPECIES
8501	Ash
Group A (part)	Various
Group C	Various
Group D	Western Red Cedar
Group E	Box

5.1.4 Maintain Group F and Group P as hedges.

5.1.5 Remove dead wood greater than 25mm in diameter from the crowns of Beech 8503 and Beech NT13.

5.1.6 Lift the crowns of Beech NT7 and NT13 to 5m over the existing ground level.

5.2 Design

5.2.1 The current layout has been achieved through an informed design process. It appears possible to provide dwellings in the approximate locations without any significant conflict.

5.2.2 The layout indicated respects the best trees on the site which can be retained to maturity without the need for any arboricultural intervention.

5.3 Construction

5.3.1 Space will be at a premium for the receipt, storage and handling of materials and for the movement of plant and machinery. Therefore, 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.

5.5 Replacement

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

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 A	Hawthorn, Holly, Privet, Yew	M	200	5	0	5	B2	1.3	1.3	1.3	1.3	2.4	18.1	40+	Reasonable	Regularly maintained at present dimensions.	Could be retained. Cut as a hedge.
Group B	Yew, Western Red Cedar	M	750	12	0	12	C2	5	5	5	5	9	254.5	10+	Poor	Recent fire damage. One dead tree	Could be retained in the short-term.
Group C	Cherry Laurel, Privet, Elder, Lilac	M	300	7	0	7	C2	3.5	3.5	3.5	3.5	3.6	40.72	40+	Reasonable	Lapsed hedge. Good screen	Could be retained. No work required.
Group D	Western Red Cedar	M	691	14	0	14	C2	4	4	4	4	8.29	215.93	20+	Reasonable	Recent fire damage.	Could be retained in the short-term.
Group E	Box	M	250	2	0	2	C2	0.8	0.8	0.8	0.8	3	28.28	40+	Reasonable	Recently reduced in width	Cut as a hedge.
Group F	Privet	M	100	1.7	0	1.7	C2	0.4	0.4	0.4	0.4	1.2	4.52	40+	Reasonable	Recently reduced in width	Cut as a hedge.
Group G	Cherry Laurel, Privet, Plum	Y	150	3.5	0	3.5	C2	1.2	1.2	1.2	1.2	1.8	10.18	40+	Reasonable	Lapsed hedge. Good screen	Could be retained. No work required.

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8491	Walnut	M	900	14	2	14	C1	9	8	8	9	10.8	366.48	20+	Reasonable	Early signs of decay at old wounds. Scattered minor dead wood throughout crown. Some moderately-sized pieces of deadwood in crown. Stem divides below 1.5m. Included bark present in fork. Bees nest in Northern scaffold	Remove dead wood greater than 25mm in diameter.
Group H	Sweet Chestnut, Elder, Holly, Hybrid Black Poplar, Norway Maple, Blue Spruce, Whitebeam, False Acacia, Cherry Laurel, Fir, Lime, Norway Spruce, London Plane, Weeping Willow	SM	650	18	0	18	B2	8	8	8	8	7.8	191.16	40+	Reasonable	Linear woodland group comprising severeal older trees with more recent additional planting. Good screen. Some management required	Remove dead trees and any insecure deadwood. Manage Elders through targeted removals
8492	Ash	M	600	17	1.5	17	C1/C2	5	6	5	5	7.2	162.88	10+	Poor	Early signs of decay at old wounds. Scattered minor dead wood throughout crown. Infected with Ash Heart Rot. Dieback in crown.	Could be retained in the short-term. Remove dead wood greater than 25mm in diameter. Reduce crown by 3m

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8493	Ash	M	450	16	1.5	16	C1/C2	5	6	5	5	5.4	91.62	10+	Poor	Early signs of decay at old wounds. Scattered minor dead wood throughout crown. Dieback in crown.	Could be retained in the short-term. Remove dead wood greater than 25mm in diameter.
8494	Ash	M	850	16	1.5	16	U	4	4	4	4	10.2	326.89	<10	Poor	Some moderately-sized pieces of deadwood in crown. Infected with Ganoderma australe. Advanced crown dieback. Major deadwood in crown. Extensive basal decay	Remove as soon as practical
8495	Ash	M	380	15	1	18	B1/B2	5	6	4	5	4.56	65.33	40+	Reasonable	Scattered minor dead wood throughout crown.	Could be retained with space. Remove dead wood greater than 25mm in diameter.
8496	Ash	M	750	17	1.5	17	C1/C2	4	5	6	4	9	254.5	<10	Poor	Early signs of decay at old wounds. Scattered minor dead wood throughout crown. Infected with Ash Heart Rot. Dieback in crown.	Could be retained in the short-term. Remove dead wood greater than 25mm in diameter. Reduce crown by 3m

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8497	Ash	M	450	15	1.5	15	C1/C2	6	4	3	5	5.4	91.62	10+	Poor	Low vigour. Scattered minor dead wood throughout crown. Dieback in crown. Could be infected with Ash Dieback	Could be retained in the short-term. Remove dead wood greater than 25mm in diameter.
8498	Ash	M	550	17	1.5	17	C1/C2	4	5	6	4	6.6	136.87	<10	Poor	Scattered minor dead wood throughout crown. Some moderately-sized pieces of deadwood in crown.	Could be retained in the short-term. Remove dead wood greater than 25mm in diameter.
8499	Ash	M	650	18	1	18	B1/B2	7	9	6	7	7.8	191.16	40+	Reasonable	Scattered minor dead wood throughout crown. Some moderately-sized pieces of deadwood in crown.	Could be retained. Remove dead wood greater than 25mm in diameter.
8500	Ash	M	650	18	1	18	B1/B2	9	8	10	5	7.8	191.16	40+	Reasonable	Scattered minor dead wood throughout crown. Some moderately-sized pieces of deadwood in crown.	Could be retained. Remove dead wood greater than 25mm in diameter.
8501	Ash	Y	400	15	2	18	B1	6	6	6	6	4.8	72.39	40+	Good	No visible defects seen.	Could be retained with space.

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
8502	Lime	OM	600	14	1	14	U	5	5	5	5	7.2	162.88	<10	Poor	Scattered minor dead wood throughout crown. Some moderately-sized pieces of deadwood in crown. Infected with Ganoderma australe. Dieback in crown. Advanced decay in main stem	Fell and replace.
NT1	Lime	M	700	17	1	17	B1/B2	5	7	7	7	8.4	221.7	40+	Good	No visible defects seen.	Could be retained with space.
NT2	Beech	M	800	17	1	17	C1/C2	7	5	7	7	9.6	289.57	40+	Reasonable	Scattered minor dead wood throughout crown. Unable to inspect stem due to undergrowth. Phytophthora bleeds on main stem	Could be retained in the short-term. Remove dead wood greater than 25mm in diameter.
NT3	Lime	M	450	15	1	15	C1/C2	3	3	7	7	5.4	91.62	20+	Reasonable	No visible defects seen. Suppressed. Unable to inspect stem due to undergrowth.	Could be retained with space.

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
NT4	Purple Beech	M	1000	15	1	18	B1/B2	8	7	9	8	12	452.45	40+	Good	No visible defects seen. Branches encroaching upon building.	Could be retained with space.
Group J	Norway Maple, Elder, Box Elder, Holm Oak, Hawthorn, Cherry, Hornbeam, Silver Birch, Plum	Y	250	12	0	18	B2	4	4	4	4	3	28.28	40+	Reasonable	Linear woodland group comprising severeal older trees with more recent additional planting. Good screen.	No work required.
NT5	Silver Birch	M	500	16	1	16	B1/B2	7	7	6	6	6	113.11	20+	Good	No visible defects seen. Now in last third of safe useful life expectancy.	Could be retained.
NT6	Hornbeam	M	550	16	2	16	B1/B2	6	8	9	8	6.6	136.87	40+	Reasonable	Multi-stemmed form. No visible defects seen. Early signs of decay at old wounds.	No work required.
NT7	Beech	M	900	17	1	17	B1/B2	10	6	13	10	10.8	366.48	40+	Reasonable	Scattered minor dead wood throughout crown. Unable to inspect stem due to undergrowth.	Could be retained with space. Remove dead wood greater than 25mm in diameter.

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
NT8	Silver Birch	M	602	16	1	16	B1/B2	5	5	6	6	7.22	163.79	20+	Reasonable	No visible defects seen. Now in last third of safe useful life expectancy.	Could be retained.
NT9	Cherry	M	520	10	1	10	U	4	4	4	4	6.24	122.34	<10	Dead	Dead.	Remove
NT10	Purple Beech	M	750	15	1	18	C1/C2	5	10	12	10	9	254.5	40+	Reasonable	No visible defects seen. Suppressed.	Could be retained with space.
NT11	Beech	M	850	17	1	17	B1/B2	12	10	12	10	10.2	326.89	40+	Reasonable	Scattered minor dead wood throughout crown. Some moderately-sized pieces of deadwood in crown. Unable to inspect stem due to undergrowth.	Could be retained with space. Remove dead wood greater than 25mm in diameter.
NT12	Scots Pine	M	350	10	1	10	U	4	4	4	4	4.2	55.42	<10	Dead	Dead.	Remove
8503	Beech	SM	500	14	2	14	C1/C2	6	6	6	6	6	113.11	10+	Poor	Low vigour. Scattered minor dead wood throughout crown. Dieback in crown.	Could be retained in the short-term. Remove dead wood greater than 25mm in diameter.

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
8504	Weeping Willow	OM	1000	14	2	14	C1/C2	4	7	9	0	12	452.45	10+	Poor	Unlikely to be considered suitable for retention. Scattered minor dead wood throughout crown. Recent and historic major scaffold failure	Fell and replace.
NT13	Beech	M	950	17	1	17	A1	10	10	10	10	11.4	408.33	40+	Good	No visible defects seen. Scattered minor dead wood throughout crown. Branches encroaching upon building.	Could be retained with space. Remove dead wood greater than 25mm in diameter. Prune to clear building by 1m.
Group K	Holly, Elder, Cherry Laurel, Privet	Y	250	12	0	18	B2	3	3	3	3	3	28.28	40+	Reasonable	Linear woodland group comprising severeal older trees with more recent additional planting. Good screen.	No work required.
NT14	Larch	SM	300	10	1	10	U	6	3	3	4	3.6	40.72	<10	Dead	Dead.	Remove
NT15	Field Maple	SM	400	10	1	10	U	4	4	4	4	4.8	72.39	<10	Dead	Dead.	Remove
Group L	Cherry Laurel	Y	50	2	0	2	C2	0.7	0.7	0.7	0.7	0.6	1.13	40+	Reasonable	Young hedge. Good screen	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 M	Apple, Pear, Plum	Y	50	2	0	5	C2	0.7	0.7	0.7	0.7	0.6	1.13	40+	Reasonable	No visible defects seen.	Could be retained.
Group N	Leyland Cypress	M	250	14	0	18	B2	4	4	4	4	3	28.28	40+	Reasonable	Established hedge cut to western side to 3m. Good screen	Cut as a hedge.
Group P	Cherry Laurel	Y	50	2	0	2	C2	0.7	0.7	0.7	0.7	0.6	1.13	40+	Reasonable	Young hedge. Good screen	Cut as a hedge.
Group R	Norway Maple, Silver Birch, Purple Leaf Plum, Cherry	SM	400	12	1	16	C2	4	4	4	4	4.8	72.39	40+	Reasonable	Linear group on highway verge. Variable form	Could be retained.

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

1:500 Plan follows. To be printed in colour on A1.



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NOTES: Based on survey drawing TLW-SH-SP-AR-002

The original of this drawing was produced in colour – a monochrome copy should not be relied upon

KEY

- GRADE A TREES
- GRADE B TREES
- GRADE C TREES
- GRADE U TREES
- ROOT PROTECTION AREA
- CANOPY OUTLINE - INDIVIDUAL TREE
- CANOPY OUTLINE - GROUPS
- CANOPY OUTLINE - FUTURE POTENTIAL
- TREES TO BE REMOVED
- INDICATIVE SHADE AREA

Rev	Description	Date
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Purpose of Issue
Planning

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SEAGATE HOMES

Project
Tudor Lodge West, Fen Rd, Holbeach

Drawing Title
Arboricultural Implications Plan

Drawn	Checked	Reviewed	Date
AMB	--	--	15/09/2022
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