# **Arboricultural Report**

# Proposed development at

Acre Wood

**Tower Road** 

**Aylmerton** 

Norfolk

21<sup>st</sup> April 2023



### **Client & Site**

FAL 48 Langham Road Cambridge CB1 3SE

## Acre Wood, Tower Road Aylmerton

## Planning authority

North Norfolk District Council Council Offices Holt Road Cromer Norfolk NR27 9EN

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#### Summary

- This report provides the results of a tree survey of land at Acre Wood, Tower Road, Aylmerton, West Runton, Norfolk, NR11 8QG and an arboricultural constraints assessment of the site, which may be used to inform the planning process.
- The local planning authority is North Norfolk District Council and interrogation of the Council's online TPO Register confirms that there are no Tree Preservation Orders within the site, although trees on adjacent land to the site are protected by TPO/05/0736 and that there are no Conservation Areas in Aylmerton.
- There are high quality (BS 5817:2012 Category A) trees on the site.
- No trees are proposed for removal to make space for the development.
- Recommended root protection areas are mapped in this report. No construction activities should take place within root protection areas, except as indicated in the detailed method statement.
- We consider that development can be accommodated with minimal impacts on the retained arboricultural interest of the site.

### **1. INTRODUCTION**

- 1.1. Greenlight Environmental Consultancy Ltd has been commissioned to prepare an arboricultural report for land at Acre Wood, Tower Road, Aylmerton, West Runton, Norfolk, NR11 8QG.
- 1.2. The site was accessed from approximate grid reference TG 18710 40890 (///natural.stadium.chaos).
- 1.3. The report includes a survey of those trees that may be affected and an assessment of the potential arboricultural impact of the proposed development on the trees.

### 2. METHODOLOGY

- 2.1. The tree survey and arboricultural aspects have been prepared in accordance with recommendations provided in BS 5837:2012, Trees in relation to design, demolition and construction recommendations.
- 2.2. The site survey included trees, within the boundaries of the site and those considered to be potentially affected by development proposals, with a stem diameter over 75mm at 1.5m height.
- 2.3. The tree inspection took place from ground level using visual tree assessment methods, with the use of binoculars and Suunto clinometer. The presence and condition of bark and stem wounds, cavities, decay, fungal fruiting bodies and any structural defects that could increase the risk of structural failure were noted.
- 2.4. Details for each tree were recorded with management recommendations if deemed necessary for the development requirements, a category grading according to BS 5837:2012, and tree protection distance.

### Constraints

- 2.5. No internal decay devices or other invasive tools to assess tree condition were used.
- 2.6. No soil excavation or root inspection was carried out.
- 2.7. The survey has not considered the effect that trees or vegetation may have on the structural integrity of future building through subsidence or heave.

### **3. DESKTOP REVIEW**

- 3.1 The proposed development site is located within the parish of in Aylmerton. Aylmerton is a village in the county of Norfolk, England. It is in the area of North Norfolk and lies 2.2 miles (3.5km) south of the North Sea, 3.2 miles (5.1km) southwest of Cromer and 7.5 miles (12.1km) east of Holt. The parish is bordered by the parishes of Beeston Regis and Runton to the north, West Beckham to the west, Felbrigg to the east and Gresham and Sustead to the south. The centre of the village is ¾ miles south of the A148 King's Lynn to Cromer road with Sandy Lane and Beechwood Avenue north of it. The nearest railway stations are West Runton at the bottom of Sandy Lane, Cromer at 2.9 miles (4.7km) and Roughton Road at 4.1 miles (6.6km).
- 3.2 The development proposal is for the construction of an extension to the accommodation of the existing residential dwelling and for the provision of additional car parking through the widening of the driveway.
- 3.3 The local planning authority is North Norfolk District Council and interrogation of the Council's online TPO Register confirms that there are no Tree Preservation Orders within the site, although trees on adjacent land to the site are protected by TPO/05/0736 and that there are no Conservation Areas in Aylmerton.



Figure 1. Site location

### 4. FIELD STUDY

- 4.1. The trees on the site within scope of the proposal are plotted on a plan shown in Figure 2 below. A schedule of the detailed survey data is reproduced in a table at appendix A.
- 4.2. The site is currently in residential use with a formal mature landscaped garden surrounding the dwelling which is a modern, flat roofed two storey building. The property is in an area of a very low density development within the heavily wooded landscape of the Holt-Cromer ridge.
- 4.3. The tree interest within scope of the proposal is restricted to the individual trees in the garden which range from very large old beech trees through maturing timber producing species to more recently established ornamental varieties. These trees are supplemented by boundary hedgerow treatments such as a young beech hedge along the northern side and part of the southern boundary being an outgrown conifer hedge. There are further trees behind those surveyed, many standing in the neighbouring property too. The trees are also under-planted in places with maturing shrub borders of mainly rhododendron.
- 4.4. The trees show evidence of regular maintenance work, some quite recent, and most trees are in good condition.
- 4.5. The natural soils in this area are freely draining, slightly acid, loamy soils and thus of low natural fertility and moderately resistant to compaction. The site stands in The *Central North Norfolk* National Character Area (NCA 78); "The gently undulating rural landscape of the Central North Norfolk National Character Area (NCA) stretches from the slightly flatter, more open land of Mid Norfolk NCA, to the prominent glacial landform of the Cromer Ridge and the dynamic exposed coastline of coastal cliffs, where large storm events dramatically shape its character. This is ancient countryside with a long-settled agricultural character, where arable land is enclosed by winding lanes and hedgerows, interspersed with woodland and remnant heath and dissected by lush pastoral river valleys. A patchwork of cultivated land, numerous church spires, distant wooded horizons and big skies dominates the landscape."
- 4.6. The site is prominent from the public road but the most impactful development is to the back of the existing building, out of sight from the road. It is suggested that the proposed redevelopment would have minimal adverse landscape impacts.





### **5** ASSESSMENT OF ARBORICULTURAL IMPLICATIONS

- 5.1 The trees likely to be affected on the site are plotted on a plan shown in Figure 2 above with their quality assessment according to the grading categories stipulated in the British Standard. A schedule of the detailed survey data is reproduced in a table at appendix A.
- 5.2 There are several trees deemed to be of sufficient quality to merit a category A grade, these are mainly the larger older trees with added ecological values, but also the large red oak in the front garden. Only the outlying trees and hedgerows are downgraded to category C due to irremediable defects, past management or decline. Category C trees should not constrain otherwise sustainable development. The cascade chart for tree quality assessment from BS5837:2012 is reproduced in appendix C.
- 5.3 No trees are proposed for removal to make space for the development.
- 5.4 There is some above ground conflict with the retained trees since the trees stand relatively close to the residential accommodation and there can be expected to be considerable shading and nuisance from falling tree debris, but no more than is already experienced.
- 5.5 There is below ground encroachment into the Root Protection Area (RPA) of the retained tree T3, a category A red oak where the driveway is to be widened and extended. This driveway will adopt the use of No-Dig construction techniques with a cellular containment load bearing structure and a permeable surfacing layer. The encroachment extends to less than 17% of the RPA and remains within the tolerances of the British Standard. Impacts will be minimal.
- 5.6 The proposed development includes a soft landscaping scheme to mitigate the minor visual impacts and is well screened by the surrounding trees and hedgerows, such that it is considered that the proposal will have only minor landscape impact.
- 5.7 Table 1 Quality assessment of trees recorded in survey in accordance with BS5837:2012

	Trees	Groups	Hedges	TOTALS	To be removed	
Category U	0	0	0	0	0	
Category A	9	0	0	9	0	
Category B	12	0	0	12	0	
Category C	2	0	2	4	0	
TOTALS	23	0	2	25	0	

#### **Tree Work**

- 5.8 The retained trees are generally in a fair condition and no further tree work is anticipated.
- 5.9 Any tree work should be undertaken to the standards set out in BS 3998:2010 British Standard Recommendations for Tree Work.

#### **Tree and Root Protection – Constraints on Development**

- 5.10 The Tree Constraints Plan in Figure 3 shows the distance that construction should normally be kept away from retained trees to provide the Root Protection Area (RPA) recommended in BS 5837: 2012. Full protection of the RPAs should normally be reinforced by creating Construction Exclusion Zones through the erection of protective fencing constructed to at least a minimum standard as prescribed in BS 5837: 2012 and described in the Arboricultural Method Statement. This fencing should carry warning notices to prevent inadvertent encroachment. A suggested line for the erection of protective fencing is shown in the tree protection plan.
- 5.11 An arboricultural method statement in Appendix D and tree protection plan in Appendix E provide further guidance for protecting trees during construction. This guidance may be amended should the proposed design be altered.

### **6** CONCLUSIONS

- 6.1 Recommended root protection areas are mapped in this report. No construction activities should take place within root protection areas, except as indicated in the method statement.
- 6.2 Based on the tree constraints plan and recommended tree protection measures, we consider that the proposed development can be accommodated on this site with minimal impacts on the arboricultural interest of the site.

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## Appendix A Tree Survey Detail

Tree ID	Common Name	Maturity	Height (m)	Height and direction of first significant branch (m)	Diam (mm) *	RPA radius (m)	RPA Area (m2)	Spread - N (m) <sup>®</sup>	Spread - E (m)	Spread - S (m)	Spread - W (m)	Category	Sub category <sup>4</sup>	Life Expectancy	Phys Condition	Tree work recommendations
T1	Pittosporum	Semi-mature	8	1.7m N	233	2.8	25	3	2	2	3	В	1;2	>40 yrs	Fair	No action
Т2	Common Beech	Semi-mature	12	1.8m S	280	3.4	35	6	5	4	5	А	1;2	>40 yrs	Fair	No action
Т3	Red Oak	Mature	22	5m N	640	7.7	185	8	8	6	10	А	1;2	>40 yrs	Good	No action
H4	Monterey Cypress	Mature	12		200	2.4	18	4				С	1;2	20 to 40 yrs	Fair	No action
Т5	Common Holly	Semi-mature	12	3m	300	3.6	41	4	4	3	3	В	1;2	>40 yrs	Fair	No action
Т6	Monterey Cypress	Semi-mature	6	1m	230	2.8	24	2.5				С	1;2	20 to 40 yrs	Fair	No action
T7	Sweet Chestnut	Mature	22	6m W	750	9.0	254	7	6	7	8	A	1;2	>40 yrs	Fair	No action
т8	Common Holly	Semi-mature	10	3m	334	4.0	51	3				В	1;2	>40 yrs	Fair	No action
Т9	Common Beech	Over Mature	29	3m SW	1320	15.8	788	8				А	1;2	>40 yrs	Good	No action
T10	Common Beech	Over Mature	29	7m S	1090	13.1	537	7	9	9	7	A	1;2	>40 yrs	Good	No action
T11	Common Beech	Over Mature	25	5m S	980	11.8	434	9	8	9	8	А	1;2	>40 yrs	Good	No action
T12	Sweet Chestnut	Mature	22	6n W	740	8.9	248	4	3	3	4	В	1;2	>40 yrs	Fair	No action
T13	Monterey Cypress	Mature	22		600	7.2	163	4				А	1;2	>40 yrs	Good	No action
T14	Wild Cherry	Semi-mature	18	4m E	220	2.6	22	2	4	2	1	В	1;2	>40 yrs	Fair	No action
T15	Wild Cherry	Semi-mature	20	4m E	280	3.4	35	5	5	2	2	В	1;2	>40 yrs	Good	No action

Tree ID	Common Name	Maturity	Height (m)	Height and direction of first significant branch (m)	Diam (mm) *	RPA radius (m)	RPA Area (m2)	Spread - N (m) ®	Spread - E (m)	Spread - S (m)	Spread - W (m)	Category	Sub category <sup>4</sup>	Life Expectancy	Phys Condition	Tree work recommendations
T16	Not identified	Semi-mature	4	2m	190	2.3	16	2				С	1;2	10 to 20 yrs	Fair	No action
T17	Wild Cherry	Mature	21	10m E	1100	13.2	547	6	7	7	5	А	1;2	20 to 40 yrs	Good	No action
T18	Sweet Chestnut	Mature	22	8m E	760	9.1	261	6	8	7	6	А	1;2	>40 yrs	Good	No action
T19	Wild Cherry	Mature	20	5m E	450	5.4	92	5	6	2	2	В	1;2	>40 yrs	Fair	No action
H20	Common Beech	Young	3		100	1.2	5	1				с	1;2	>40 yrs	Fair	No action
T21	Common Beech	Over Mature	24	3m N	1310	15.7	776	9	8	6	8	В	1;2	10 to 20 yrs	Poor	No action
T22	Douglas Fir	Mature	18	8m	580	7.0	152	3	6	5	3	В	1;2	>40 yrs	Fair	No action
T23	Common Horse Chestnut	Young	6	1.7m	190	2.3	16	2	5	5	4	В	1;2	>40 yrs	Fair	No action
T24	Douglas Fir	Mature	16	4m	430	5.2	84	3.5	3.5	3.5	2	В	1;2	>40 yrs	Fair	No action
T25	Douglas Fir	Mature	16	4m	380	4.6	65	3.5	2	3.5	3.5	В	1;2	>40 yrs	Fair	No action

Key Age class: Young (1<sup>st</sup> qtr of life expectancy) Semi-mature (2<sup>nd</sup> qtr of life expectancy) Early-mature (3<sup>rd</sup> qtr of life expectancy) Mature (final qtr of life expectancy)

**Over mature** (beyond life expectancy and declining naturally)

**Veteran** (of great age for its species and possibly of conservation value)

\* derived measurement using protocols in BS5837

<sup>†</sup> Sub category "1" Arboricultural values, Sub category "2" Landscape values, Sub category "3" Cultural values

<sup>®</sup> Where only a northerly radial crown spread is given, the crown is assumed to be roughly circular

## **Appendix B** - **Photographic record of selected trees**



#### Acre Wood, Aylmerton - Arboricultural Report v1.0





## Appendix C - BS 5837:2012 Table 1 Cascade chart for tree quality assessment

Table 1	Cascade	chart f	or tree	g ua lity	assessment
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Category and definition	Criteria (including subcategories where appropriate)									
Trees unsuitable for retention	(see Note)									
Category U Those in such a condition	<ul> <li>Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g., where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> </ul>									
be retained as living trees in	<ul> <li>Trees that are dead or are showing s</li> </ul>	<ul> <li>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> </ul>								
the context of the current land use for longer than 10 years	<ul> <li>Trees infected with pathogens of sig quality trees suppressing adjacent trees</li> </ul>	nificance to the health and/or safety of other ees of better quality	trees nearby, or very low							
	NOTE Category U trees can have existing see 4.5.7.	g or potential conservation value which it mig	yht be desirable to preserve:							
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation							
Trees to be considered for retain	ention									
Category A	Trees that are particularly good	Trees, groups or woodlands of particular	Trees, groups or woodlands							
Trees of high quality with an estimated remaining life expectancy of at least 40 years	examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	visual importance as arboricultural and/or landscape features	of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)							
Category B	Trees that might be included in	Trees present in numbers, usually growing	Trees with material							
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	conservation or other cultural value							
Category C	Unremarkable trees of very limited merit or such impoired condition that	Trees present in groups or woodlands, but without this conferring on them	Trees with no material							
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	they do not qualify in higher categories	significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	cultural value							

## Appendix D

## **ARBORICULTURAL METHOD STATEMENT**

## Acre Wood, Tower Road, Aylmerton

### Scope of the Works

- The document provides a methodology for the protection of trees during the proposed development at the above site and should be read in conjunction with the Tree Protection Plan (TPP) in Appendix E and Timetable for Protection Works below.
- 2. The main features in the protection of the retained trees on site are as follows:
  - Provision of temporary protective barriers
  - Use of No-Dig construction techniques
  - Protective measures must be in place prior to any ground or construction works take place.

### **Timing of Works**

- 3. Tree protection works will be completed according to the timetable below.
- 4. The exact commencement date is yet to be decided, however, the timetable provides the order in which the works need to be implemented to ensure the trees are suitably protected and states when specific arboricultural input will be required.

ltem	Operation	Before starting Works	During Construction Works	On Completion
1.	Carry out a pre-commencement site meeting to discuss any tree protection matters arising	х		
2.	Erect temporary protective fencing (thick pink line) on edge of the CEZ as specified in the AMS and TPP	Х		
3.	Erect warning signs on fencing around each CEZ stating "Construction Exclusion Zone - Keep Out".	Х		
4.	Install No-Dig driveway construction	х		
5.	Maintain ground protection, protective fences and signs in good condition.		x	
6.	Remove protective measures			Х
7.	Check condition of the protected trees and consider if remedial works are necessary.			х

#### **Tree Protection Barriers**

- 5. Retained trees will be protected by forming Construction Exclusion Zones (CEZ) as shown on the Tree Protection Plan.
- 6. Temporary barriers will be erected as shown by the thick pink lines on the TPP to form the Construction Exclusion Zone (CEZ). The barriers will consist of 2m tall welded mesh panels (Heras) supported on rubber or concrete feet. The fence panels should be joined together using a minimum of two anti-tamper couplers installed so they can be removed from the inside of the fence. The distance between couplers should be at least 1m and be uniform throughout the fence. Panels should be supported on the inner side by stabilizer struts which should normally be attached to a base plate and secured with ground pins. Where the fence will be erected on hard surfacing or it is otherwise unfeasible to use ground pins the struts should be mounted on a block tray.



Fig 1: Temporary protective fencing as recommended by the British Standards (2012).

- Notices should be erected on the barriers forming each CEZ stating "Construction Exclusion Zone – No Access ". These should face outwards towards the work area. Signs must be maintained in good condition and remain in place until completion of the works.
- 8. Barriers will be maintained throughout the duration of the works, ensuring that access is denied to the CEZ throughout the process.

#### Hard Surfacing within the RPA of Retained Trees

- 9. No excavation is allowed in the areas shown cross hatched in orange on the Tree Protection Plan and a No-Dig method of construction for hard surfacing installation is required.
- 10. A hard surface should be designed to avoid localized compaction by evenly distributing the load over the path or car parking space. The proper source of advice on a finished design are the structural engineers for the project to ensure it is fit for the intended loading and ground conditions. The design must also take full account of arboricultural advice. Appropriate methods include three dimensional cellular confinement systems or in some circumstances engineered solutions. The key element is that there will be no excavation.
- 11. In this situation it is likely that a three dimensional cellular confinement system constructed without excavation will be the best solution. Figure 2, below, shows a typical construction method of such a No-Dig surface using Cellweb produced by Geosynthetics Ltd. This example has permeable asphalt as the top surface but block paving or gravel or other permeable surfaces can be used. It should be noted that there are other manufacturers of cellular confinement systems.
- 12. It will be important ensure that the surface design merges with the level of the other sections of the road. An appropriate depth of confinement system should be chosen and if necessary ramps to smooth out level changes should be constructed.



### Fig 2: Example of No-Dig surfacing as illustrated by Geosynthetics Ltd.

- 13. The following methodology should be used for the installation of a No-Dig Surface.
  - The construction must be undertaken in dry weather. There will be no machine movement within the RPA until the load-bearing layer has been installed
  - Any major protrusions such as flints will be removed prior to commencement. Any hollows will be filled with clean sharp sand prior to laying a separating geotextile.
  - The Cellweb panels will be extended to the full length and pinned into place with staking pins to anchor the cells open. Adjacent panels will be stapled together to form a continuous mattress. The surface must be located at least 0.5m from the base of the retained trees.
  - The mattress will be edged with treated softwood edging boards of sufficient width to accommodate the infill material and held in place with pegs at a minimum spacing of 500mm.
  - The cells will be filled with a minimum of 100mm of no fines angular granular fill (40 to 20mm). The infill material to be piled at the end of the extended web and pushed over the expanded cells working off the infill material. No machinery will encroach on the ground unless supported by the infill material.
  - It is recommended that the No-Dig surface is not used for construction traffic. If it is, a sacrificial layer of stone should be laid on another geotextile membrane and scraped off at the end of the construction to form the final surface.

To lay the final surface a second layer of geotextile separation fabric will be laid over the in-filled Cellweb sections. Then a layer of sharp sand will be laid and compacted with a vibro-compactor plate prior to laying surface course. A range of surface finishes can be used. However the final surface must be permeable to allow continued water and gaseous diffusion.

### Storage Shipping Containers, Site Huts and Temporary Buildings

14. All storage containers, site huts and temporary buildings will be sited outside the CEZ.

#### **Additional Precautions**

15. The movement of plant in proximity to retained trees should be conducted under the supervision of a banksman to ensure adequate clearance from the branches of the trees. Hydraulic cranes, forklifts, excavators or piling rigs (other than small rigs used for mini piling) must be avoided in the immediate vicinity the crown of the trees.

- 16. Cement, oil, bitumen or any other products which spillage would be likely to be detrimental to tree growth should be stored well away from the outer edge of the RPA of retained trees. Precautions should include ensuring all toxic liquids are stored in fully bunded containers. Spill kits including absorbent materials must be available on site to deal with any accidental spillages that may occur.
- 17. Lighting of fires on site should be avoided. Where they are unavoidable they must be at such a distance from retained trees that there is no risk of the heat causing fire damage to the trunk or branches. Full account must be taken of wind direction. Fires must be attended at all times until they are completely extinguished.

#### Service Trenches

- 18. No details of new service runs have been provided at this stage. They should be routed to avoid the RPAs of trees. If this is not possible, special techniques must be employed to place the services within the RPA of the trees. The British Standard suggests a range of trenchless methods suitable for various applications including micro-tunnelling, surface launched directional drilling, pipe ramming and impact moleing/thrust boring. It is important common ducts should be used where it is not possible to avoid the RPA. Further guidance on installing underground services adjacent to trees can be found in the NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Volume 4 Issue 2). This document outlines a number of techniques that may be used for trenching near trees, including trenchless techniques, discontinuous trenching and hand digging.
- 19. It will be necessary to prepare detailed plans for these services that should be produced in conjunction with an arboriculturist, and include allowance for the space needed for access for the installations, and the levels across the proposed area.
- 20. Any overground services including CCTV must also be positioned to avoid the need for any regular or detrimental pruning to the trees.

# Appendix F-Tree Protection Plan

