ARBORICULTURAL IMPACT ASSESSMENT

Old Wood Energy Park

November 2024

Barton Hyett Associates
Arboricultural Consultants

Summary table		
Site Name:	Old Wood Energy Park	
Project reference:	5598	
Site Address:	Wysall, Rushcliffe, Nottinghamshire	
Nearest Postcode:	NG12 5QS	
Central Grid reference:	SK 59501 27477	
Local Planning Authority:	Rushcliffe Borough Council	
Relevant planning policies:	Rushcliffe Local Plan - Adopted December 2014	
Statutory Controls:	Tree Preservation Order	Conservation Area
	None	No
Soil Type: (Source: BGS online soils map © NERC 2023)	Superficial/Drift	Bedrock
	Thrussington Member - Diamicton	Barnstone Member - Mudstone and limestone, interbedded
Proposed site plan:	WLL02A-EXG-04-00-D-K001-P05 Site Layout Plan	
Notes:	Ancient Semi Natural Woodland (ASNW) - Old Wood (W1)	
Report author:	Ian Howell BA (Hons), Cert Arb L4 (ABC), TechArborA	
Checked by:	Richard Hyett MSc, BSc (Hons), MICFor, MArborA	
Date of issue (Revision B):	29.11.2024 Inclusion of northern and southern visibility splays within AIA and TRRP Plan	

Arboricultural Association Technician Member

TE6738

Institute of Chartered Foresters registered

Barton Hyett Arboricultural Consultants

REPORT CONTENTS:

1. INTRODUCTION

1.1. Barton Hyett Associates Ltd have been instructed by Pegasus Planning Group on behalf of Exagen Development' to survey trees located on land comprising two parcels of land to the west of Wysall, Nottinghamshire (the site) in accordance with the recommendations of British Standard 5837:2012 '*Trees in relation to design, demolition and construction - recommendations*'.

1.2. The scope of the instruction was to inspect trees relevant to a planning application for a renewable energy park including ground-mounted solar photovoltaics and a Battery Energy Storage System (BESS) (Old Wood Energy Park; the Development). and provide written advice on how they inform feasibility and design options for the site. The instruction also required an assessment of the potential impact (the Arboricultural Impact Assessment) of the Development on the site's arboricultural resource to be undertaken.

2. SITE DESCRIPTION

2.1. The Development comprises of two parcels of land to the west of the village of Wysall, Nottinghamshire. The first is located on land west of Lodge Farm, south of Bunny Old Wood and the second is slightly further south around Rough Plantation and north of Wysall Road.

2.2. Access to the site was gained via the existing field access off Bradmore Roads to the north and from Wysall Road to the south, and via the public footpath that passes through the site from Wysall to Bunny Old Wood.

2.3. A proposed cable route was also surveyed. Mature Category A and Category B trees within close proximity to the highway were plotted and assessed within the the Arboricultural Impact Assessment (AIA).

3. TREE SURVEY FINDINGS

3.1. A total of 161 trees, groups of trees, woodlands and hedgerows were surveyed. These are summarised in terms of their quality in accordance with the recommendations of BS5837 below, and shown in more detail in the Tree Survey and Constraints Plan (**Section 2**) and within the Tree Survey Schedule (**Section 4**).

	Total	A - High quality trees whose retention is most desirable.	B - Moderate quality trees whose retention is desirable.	C - Low quality trees which could be retained but should not significantly constrain the proposal.	U - Very poor quality trees that should be removed unless they have high conservation value.
Trees	**87**	7	55	25	0
Groups	**19**	0	16	3	0
Woodlands	**6**	1	5	0	0
Hedgerows	**49**	0	47	2	0
Total	**161**	**8**	**123**	**30**	**0**

4. KEY ARBORICULTURAL FEATURES

4.1. The vast majority of the site's arboricultural resource is of moderate quality (category B) with some quality (category A) and is therefore desirable for retention.

4.2. The most important arboricultural feature relevant to the site is the Ancient Semi-Natural Woodland (ASNW) named Old Wood (W1). Old Wood is located at the northern boundary of the site and consists of mature to mature mixed native broadleaf species, including numerous mature English oak and mature haze coppice. The woodland is listed within the DEFRA-hosted web resource (MAGIC) as designated An Semi-Natural Woodland (ASNW). It is, therefore, necessary to consider paragraph 180 of the N Planning Policy Framework 2021 (NPPF) and the associated Standing Advice produced by the Fo Commission and Natural England.

4.3. In relation to the Standing Advice, a c. 35m buffer has been applied to the ASNW.

4.4. Mature English oak and common ash trees are also present within some of the hedgerows boundaries across the site.

4.5. The majority of these mature English oak and common ash trees have larger-diameter sten hollowing) and are of excellent form and condition. Where significant niche habitat potential was pres such as deadwood, hollowing of stems, cracks and fissures, the trees were assigned the BS5837:2 subcategory '3'. This denotes a higher than typical 'conservation or heritage value'. These trees are often the subject of further ecological evaluation.

5. DEVELOPMENT

5.1. The Development proposal is for:

'Renewable energy development comprising the installation of 49.9MW ground-mounted solar farm with associated battery storage and associated infrastructure.'

6. IMPACT ASSESSMENT

6.1. The impact assessment considers the effects of any tree loss required to implement the Development as well as any reasonably foreseeable potentially damaging activities proposed in the vicinity of retained trees. Th is undertaken with reference to BS5837:2012 and considering the nature of the Development. Actual potential impacts can include tree removal to facilitate the Development, soil compaction in close proxim to trees, and direct impact damage to the canopy and roots of retained trees from construction activities summary of anticipated impacts resulting from the Development is provided below.

Trees/hedgerows to be removed

6.2. The Development will not require the complete removal of any significant trees, tree groups, or hedgerc at the site.

6.3. In order to allow for the routing of the site's internal access road c.25 linear meters of hedgerow will requ removal. This will equate to a very low arboricultural impact. These removals are shown as red s sections of hedgerow within the combined draft Tree Retention and Removal and Tree Protectio (**Section 3**).

Impacts on retained trees and hedgerows

6.4. The Development is not anticipated to result in any significant arboricultural impacts on retained trees, tree groups, woodlands or hedgerows at the site. The internal access roads, positioning of PV modules, investors, substation and associated equipment are remote from the site's arboricultural resource and the associated Root Protection Areas (RPAs) and ASNW buffers. This is due to the proposed layout responding to the arboricultural constraints that have been identified.

6.5. Where the bell-mouths for the main access points into the site are within RPAs there should be a 'no-dig' approach to their construction. To the south off Wysall Road, the bell-mouth for the existing farm access already passes through the RPA for T70 and there is a slight drop in ground levels from the road into the field. The required minor build-up of ground levels here will mean there would be no requirement for excavation into the existing ground levels and no significant additional arboricultural impacts.

6.6. In order to accommodate for the required visibility splay T79, T78, T70, T71 & T72 will need to be crown raised to achieve 5-6m ground clearance.

6.7. To the north, there is a requirement to establish a new field access off Bradmore Road. This would ideally be established without cutting into the existing ground levels where it passes over the northern edge of the RPA for T26. However, the impact of laying a sub-base and new surface over the outer 1m of the RPA for T26 is not likely to result in any significant negative impact on this tree.

6.8. This northern site access also has a visibility splay that extends north and south along the Bradmore Road which will require the coppicing of c.70m of hedgerow (H5 & H8) in order to achieve the required visibility. This hedgerow can then be retained as a lower level hedgerow (below 0.6m) for the life of the solar farm. Hedgerow ash (T24, T25, T26 T28 & G7) will be crown raised to achieve 5-6m ground clearance within the visibility splay.

6.9. Given that the guidance on visibility splays can be subjective and recommendations can vary by Highway Authority, there may be a requirement to fell 3x hedgerow ash (G7 & T24) who's stems are located in sections of hedgerow that fall within the visibility splay. However I consider this to be an unlikely requirement that would only result in a low arboricultural impact.

6.10. In relation to the installation of the connecting cable generic guidance relating to the installation of underground cabling in close proximity to tree roots has been compiled in volume 4 of the National Joint Utilities Group (NJUG) guidance.

6.11. For the installation of utilities (including cables), within Section 4 'How To Avoid Damage To Trees' details acceptable working methods relating to 'excavations or other works occurring within the Prohibited Zone or Precautionary Zone'. An illustration of these zones can be seen in Figure 2.

6.12. Section 4.1 of this guidance reinforces the role of the project arboriculturist and the requirement for arboricultural supervision to be necessary when working within RPAs: 'Wherever trees are present, precautions should be taken to minimise damage to their root systems. As the shape of the root system is unpredictable, there should be control and supervision of any works, particularly if this involves excavating through the surface 600mm, where the majority of roots develop'.

6.13. The preferred approach is to avoid RPAs through the realignment of the proposed trench and cable. NJU Volume 4 states: 'Whenever possible apparatus should always be diverted or re-aligned ou Prohibited or Precautionary Zones. Under no circumstances can machinery be used to excavat trenches within the Prohibited Zone'.

6.14. If, due to the constraints of the site, the cable route is required to pass through (beneath) tree gro woodlands the preferred solution is to use trenchless techniques such as directional drilling. NJUG st that where necessary, trenchless techniques should be used. The launch and receiver pits should be locatec outside the Prohibited or Precautionary Zones. In order to avoid damage to roots by percussive techniques, it is recommended that the depth of run should be below 600mm. Techniques involving externa lubrication of the equipment with materials other than water (e.g. oil, bentonite, etc.) must not be used whe working within the Prohibited Zone. Lubricating materials other than water may be usec Precautionary Zone following consultation and by agreement'.

6.15. It is likely that services already exist beneath the highway and that significant tree roots are therefore unlikely to be present. More mature trees are generally set back from the edge of the highway or lie beyond ditch or raised embankments along the length of the cable route and therefore do not present a constraint to open trench installation of the connecting cable. However, the above NJUG guidance should be adhered and arboricultural supervision should be sought where tree roots over 30mm are encountered. Tree r that are outside of the 'Prohibited or Precautionary Zones' and under 30mm can be cut to the edge o trench using a pruning saw if present.

Conclusion

6.16. The Development is feasible from an arboricultural perspective, and if carefully implemented there would b only a very low potential negative impact on the retained trees and hedgerows. A significant amount of ne hedgerow and tree planting is proposed as part of the Development which will in turn present a signific gain in tree canopy cover across the site. A combined draft Tree Retention and Removal and Tree Protectior Plan is included in **Section 3**.

7. TREE PROTECTION MEASURES

7.1. The proposed site security fence, which is to be erected around the periphery of the site, will ac effective tree protection barrier if erected before any construction works commence on site. This will mitigat the need to install BS 5837:2012 fencing along the outer perimeters of the site. However, the peri fencing will only protect trees located around the site periphery. Significant trees contained w interior of the site which could be impacted during the construction phase of the development will re some protection.

7.2. In order for the site security fence to successfully operate as a tree protective barrier and c Construction Exclusion Zone (CEZ), it will be necessary to avoid the tracking of plant, machinery and drivin of site vehicles in between the security fence and trees/hedgerows. The area beyond the site security fen should be considered to be a Construction Exclusion Zone (CEZ).

7.3. Where more significant, high-value trees (of moderate- or high-quality) are located within the site interior, specific robust temporary tree protection barriers have been proposed (BS 5837:2012 Figure 3.).

7.4. The location of the temporary tree protection barriers, and the barrier specification proposed, are shown on the combined Tree Retention/Removal and Protection Plan in **Section 3**.

8. HEADS OF TERMS FOR AN ARBORICULTURAL METHOD STATEMENT (AMS)

8.1. BS5837:2012 (Figure 1) recommends that detailed/technical design of tree protection and arboricultural methodologies should be resolved and finalised following the approval of the feasibility of a scheme by the Local Planning Authority.

8.2. Annex B and Table B.1 of BS5837:2012, an informative, advises that Arboricultural Method Statement (AMS) Heads of Terms are a sufficient level of information in order to deliver tree-related information into the planning system. The table also advises that a detailed AMS might reasonably be required as a 'reserved matter' or planning condition.

8.3. In relation to the site, it is anticipated that arboricultural working methods are to be straightforward. A brief summary of the principles of tree protection on development sites is included in **Section 7**.

8.4. A draft, 'Heads of Terms' for an AMS is set out below:

- Project arboriculturist – schedule of monitoring and supervision to be agreed upon with the applicant and LPA
- Pre-commencement site meeting - to be attended by the project arboriculturist, client, site manager and other relevant parties. Project arboriculturist to ensure that all parties have copies of the tree protection plan and this report.
- Hedgerow removal - as shown on the Tree Retention / Removal& Protection Plan (TRR&P)
- Erection of site perimeter fence and tree protection barriers as per the Tree Retention / Removal& Protection Plan (TRR&P)
- Main construction phase - all tree protection measures shall remain in situ and intact for the duration of the construction phase, with no access to any machinery within the fenced tree protection areas.
- Removal of tree protection barriers - only to occur following approval of site conditions by the project arboriculturist.
- Final landscaping including tree planting. Conclusions and recommendations

9. CONCLUSIONS AND RECOMMENDATIONS

9.1. In conclusion, the potential for significant negative arboricultural impacts to occur from the implementation of the proposed development is very low.

9.2. If the site security/perimeter fence is installed ahead of construction activity commencing at the site the retained trees can be adequately protected during construction activities to sustain their health and longevity.

9.3. Installation of the proposed cable connection should be carried out as per NJUG guidance and does not present significant potential for negative arboricultural impacts.

9.4. A detailed AMS and finalised Tree Protection Plan may need to be produced. Where the feasibility of a scheme has been agreed upon by the Local Planning Authority, this detail can be agreed upon and submitted later as part of a reserved matters application or pre-commencement planning condition (by agreement with the applicant) if required.

[redacted]

Ian Howell BA (Hons), Dip Arb L4 (ABC), TechArborA
Arboriculturist

KEY

- Category A Tree - High quality (Retention highly desirable)
- Category A - Hedgerow, Group, Woodland - High quality (Retention highly desirable)
- Category B Tree - Moderate quality (Retention desirable)
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- Shrub mass/offsite tree/out of scope (OOS)
- * Tree/Group/Hedgerow not on topographical survey. Location given is an estimate

Ancient Tree / Woodland or Veteran Trees

- Ancient tree/woodland or Veteran tree: Important trees that require special consideration
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Statutory Protection

- Tree Preservation Order (TPO): Trees under statutory protection. No tree works to be undertaken without specific consent or by relevant exception

The site may be within a designated Conservation Area which restricts tree works. Please see attached advice and guidance.

Label	Description
Bramble	Area of bramble at the field edge established within a depression

Label	Description
TN 1	Existing gap in the hedgerow
TN2	Existing field access gateway
TN 1	Ditch either side of the highway with trees set back from the edge of the highway by 6-6m
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INDEX MAP

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GRID NORTH

0 25 50 100 Meters

PROJECT TITLE: Willoughby 2, Wysall (5598)

DRAWING TITLE: **Tree Survey Plan**

SCALE	DRAWING NUMBER
Scale: 1:1,500 @ A1	BHA_5598_01

DRAWN BY	APPROVED BY	REVISION	SHEET	DATE
TB	IH	-	1 of 6	29/11/2023

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (AOD)**

CLIENT: **Pegasus Planning Group**

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459900 459750 460000 460250

327250 327000 326750 326500

T64 -B1 T65 -B1 T66 -C3 T67 -C3 T68 -B1 T69 -A1 T70 -B2 T71 -B2 T72 -B1 T73 -B1 T74 -B1 T75 -B1 T76 -B1 T77 -B1 T78 -B1 T79 -B1 T80 -B2 T81 -B2 T82 -B1 T83 -B1 T84 -B1 G13 -B2 G14 -B2 G15 -B2 G16 -B2 H29 -B2 H30 -B2 H31 -B2 H32 -B2 H33 -B2 H34 -B2 H35 -B2 H36 -B2 H37 -B2 H38 -B2 H39 -B2 H40 -B2 H41 -B2 H42 -B2 H43 -B2 H44 -B2 H45 -B2 W5 -B2 Ditch Ditch Ditch Ditch Ditch

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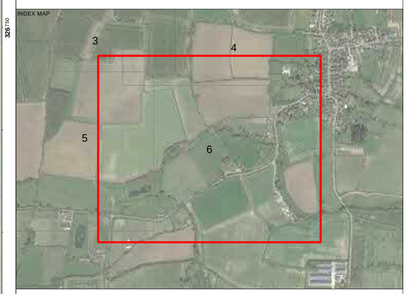

Note: The original of this drawing was produced in colour – a monochrome copy should not be relied upon. This drawing should be interpreted with reference to the accompanying tree schedule and written advice

N
GRID NORTH

0 25 50 100 Meters

PROJECT TITLE

Willoughby 2, Wysall (5598)

DRAWING TITLE

Tree Survey Plan

SCALE	DRAWING NUMBER
Scale: 1:1,500 @ A1	**BHA_5598_01**

DRAWN BY	APPROVED BY	REVISION	SHEET	DATE
TB	**IH**	**-**	**6 of 6**	**29/11/2023**

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

Pegasus Planning Group

Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN

KEY

Category A Tree - High quality (Retention highly desirable)

Category A - Hedgerow, Group, Woodland - High quality (Retention highly desirable)

Category B Tree - Moderate quality (Retention desirable)

Category B - Hedgerow, Group, Woodland - Moderate quality (Retention desirable)

Category C Tree - Low quality (May be retained but should not constrain development)

Category C - Hedgerow, Group, Woodland - Low quality (May be retained but should not constrain development)

Category U Tree - Very low quality (Mostly unsuitable for retention)

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Root Protection Area (RPA) - Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and soil volume to maintain the tree's viability

Shrub mass/offsite tree/out of scope (OOS)

* Tree/Group/Hedgerow not on topographical survey. Location given is an estimate

Tree / Hedgerow / Group to be removed

Ancient Tree / Woodland or Veteran Trees

Ancient tree/woodland or Veteran tree: Important trees that require special consideration

Ancient tree/woodland or Veteran tree buffer: As per published standing advice from Natural England and the Forestry Commission

Protection Measures

Tree Protection Barrier

All weather information notices to read 'Construction Exclusion Zone - No Entry' A3 in size. To be attached to tree protection barriers at regular intervals

Target Note

Construction Exclusion Zone (CEZ) - No work to occur within CEZ without prior approval of Project Arboriculturist and/or LPA. All ground levels to be maintained as existing

Target Notes

Label	Description
TN1	15m Hedgerow removal
TN2	Existing farm access. No excavation into existing ground levels within the RPA for T70
TN3	Some minor widening of the field access may result in 2-3m of hedgerow removal
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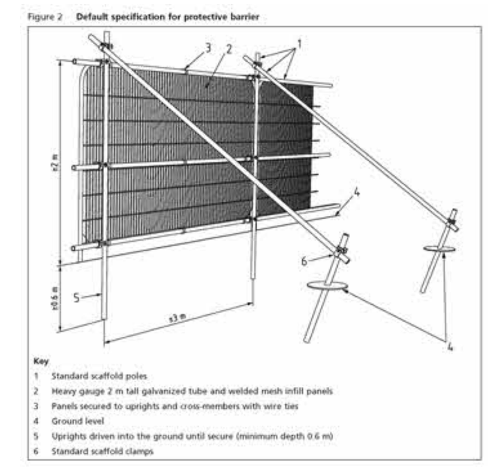
TN17	T72 to be crown raised to achieve 5-6m ground clearance

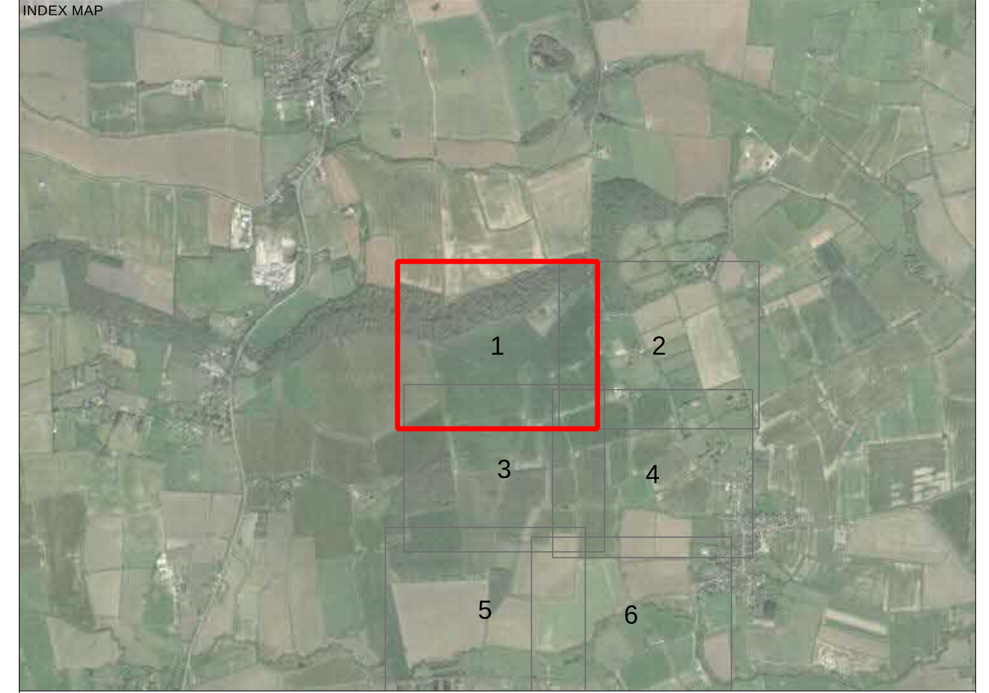
Label	Description
Bramble	Area of bramble at the field edge established within a depression

Cable Route

Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross



INDEX MAP



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GRID NORTH

0 25 50 100 Meters

PROJECT TITLE

Willoughby 2, Wysall (5598)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE	DRAWING NUMBER
Scale: 1:1,500 @ A1	**BHA_5598_02**

DRAWN BY	APPROVED BY	REVISION	SHEET	DATE
DB	**IH**	**-**	**1 of 6**	**27/11/2024**

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (AOD)**

CLIENT: **Pegasus Planning Group**

CREDITS

Barton Hyett Associates
Arboricultural Consultants
Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre, Eckington, Pershore, Worcestershire, WR10 3DN

DRAWING PRODUCED BY

SUMMIT GEO
info@summitgeo.co.uk

KEY

Category A Tree - High quality
(Retention highly desirable)

Category A - Hedgerow, Group, Woodland - High quality
(Retention highly desirable)

Category B Tree - Moderate quality
(Retention desirable)

Category B - Hedgerow, Group, Woodland - Moderate quality
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Category C Tree - Low quality
(May be retained but should not constrain development)

Category C - Hedgerow, Group, Woodland - Low quality
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Category U - Hedgerow, Group, Woodland - Very low quality
(Mostly unsuitable for retention)

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Tree Protection Barrier

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Target Note

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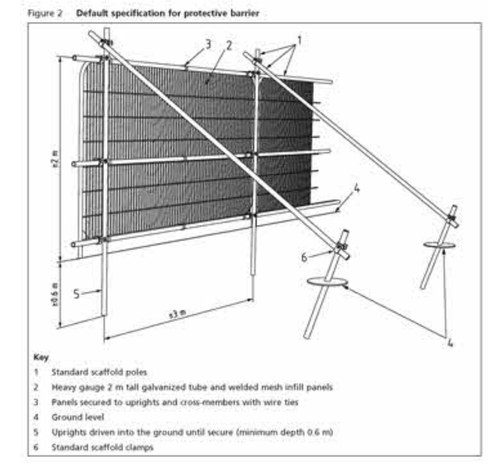
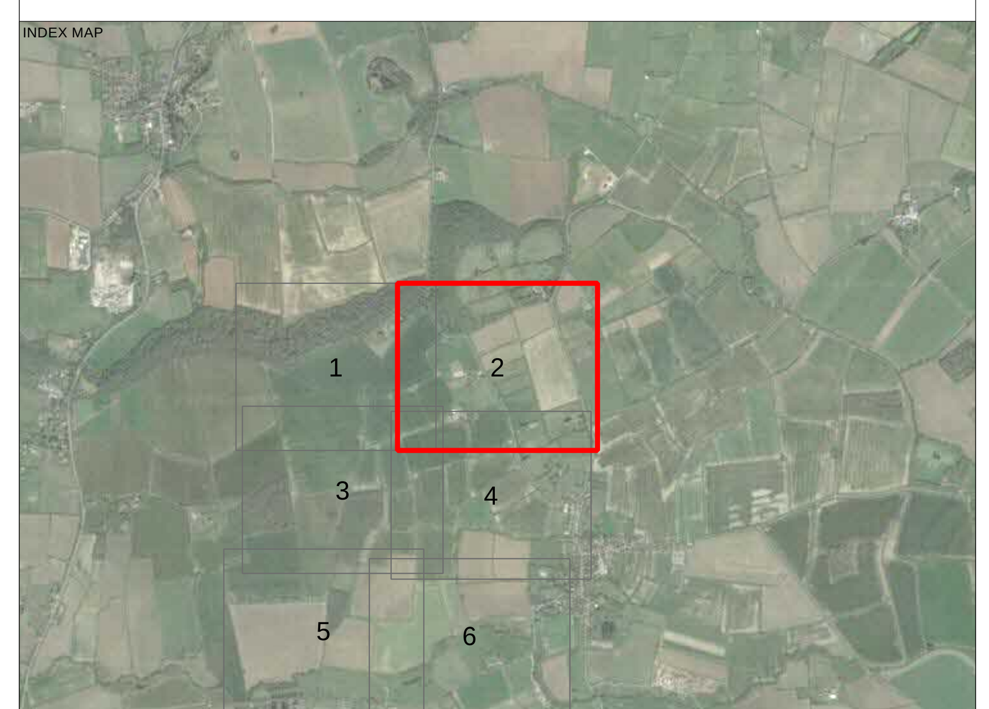
Cable Route

Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross

Figure 2 Default specification for protective barrier



INDEX MAP



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GRID NORTH

0 25 50 100 Meters

PROJECT TITLE

Willoughby 2, Wysall (5598)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE				DRAWING NUMBER
Scale: 1:1,500 @ A1				BHA_5598_02
DRAWN BY DB	APPROVED BY IH	REVISION -	SHEET 2 of 6	DATE 27/11/2024

COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)

CLIENT
Pegasus Planning Group

CREDITS

Barton Hyett Associates
Arboricultural Consultants
Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN

DRAWING PRODUCED BY
SUMMIT GEO
info@summitgeo.co.uk

KEY

- Category A Tree - High quality (Retention highly desirable)
- Category A - Hedgerow, Group, Woodland - High quality (Retention highly desirable)
- Category B Tree - Moderate quality (Retention desirable)
- Category B - Hedgerow, Group, Woodland - Moderate quality (Retention desirable)
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- Tree / Hedgerow / Group to be removed

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- Ancient tree/woodland or Veteran tree: Important trees that require special consideration
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Protection Measures

- Tree Protection Barrier
- All weather information notices to read 'Construction Exclusion Zone - No Entry' A3 in size. To be attached to tree protection barriers at regular intervals
- Target Note
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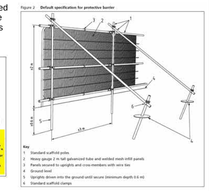
Cable Route

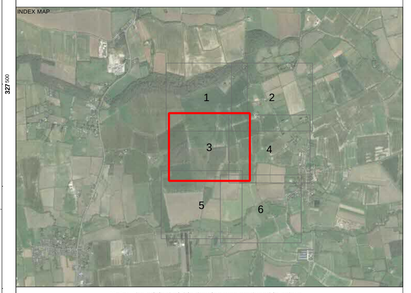
Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross

Figure 2 **Default specification for protective barrier**



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

INDEX MAP



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GRID NORTH

0 25 50 100 Meters

PROJECT TITLE

Willoughby 2, Wysall (5598)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE				DRAWING NUMBER	
Scale: 1:1,500 @ A1				**BHA_5598_02**	
DRAWN BY	APPROVED BY	REVISION	SHEET	DATE	
DB	**IH**	**-**	**3 of 6**	**27/11/2024**	

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

Pegasus Planning Group

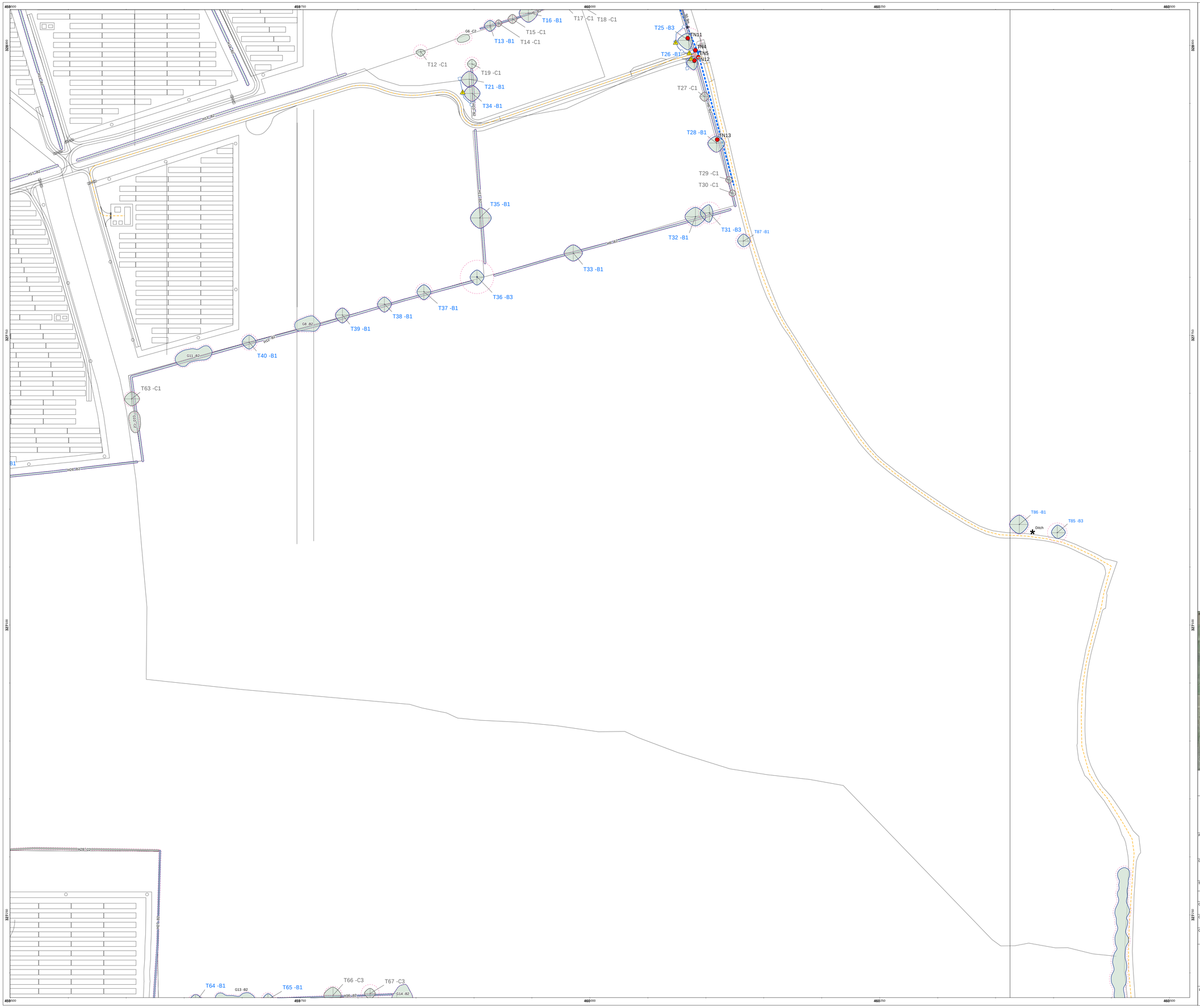
Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre, Eckington, Pershore, Worcestershire, WR10 3DN

DRAWING PRODUCED BY

SUMMIT GEO

info@summitgeo.co.uk



KEY

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Protection Measures

- Tree Protection Barrier
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- Target Note
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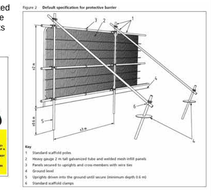
Label	Description
Bramble	Area of bramble at the field edge established within a depression

Cable Route

Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross

Figure 2 **Default specification for protective barrier**



INDEX MAP

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GRID NORTH

0 25 50 100 Meters

PROJECT TITLE

Willoughby 2, Wysall (5598)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE	DRAWING NUMBER
Scale: 1:1,500 @ A1	**BHA_5598_02**

DRAWN BY	APPROVED BY	REVISION	SHEET	DATE
DB	**IH**	-	**4 of 6**	**27/11/2024**

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (AOD)**

CLIENT: **Pegasus Planning Group**

Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
Address: Office SE, Deer Park Business Centre, Eckington, Pershore, Worcestershire, WR10 3DN

DRAWING PRODUCED BY

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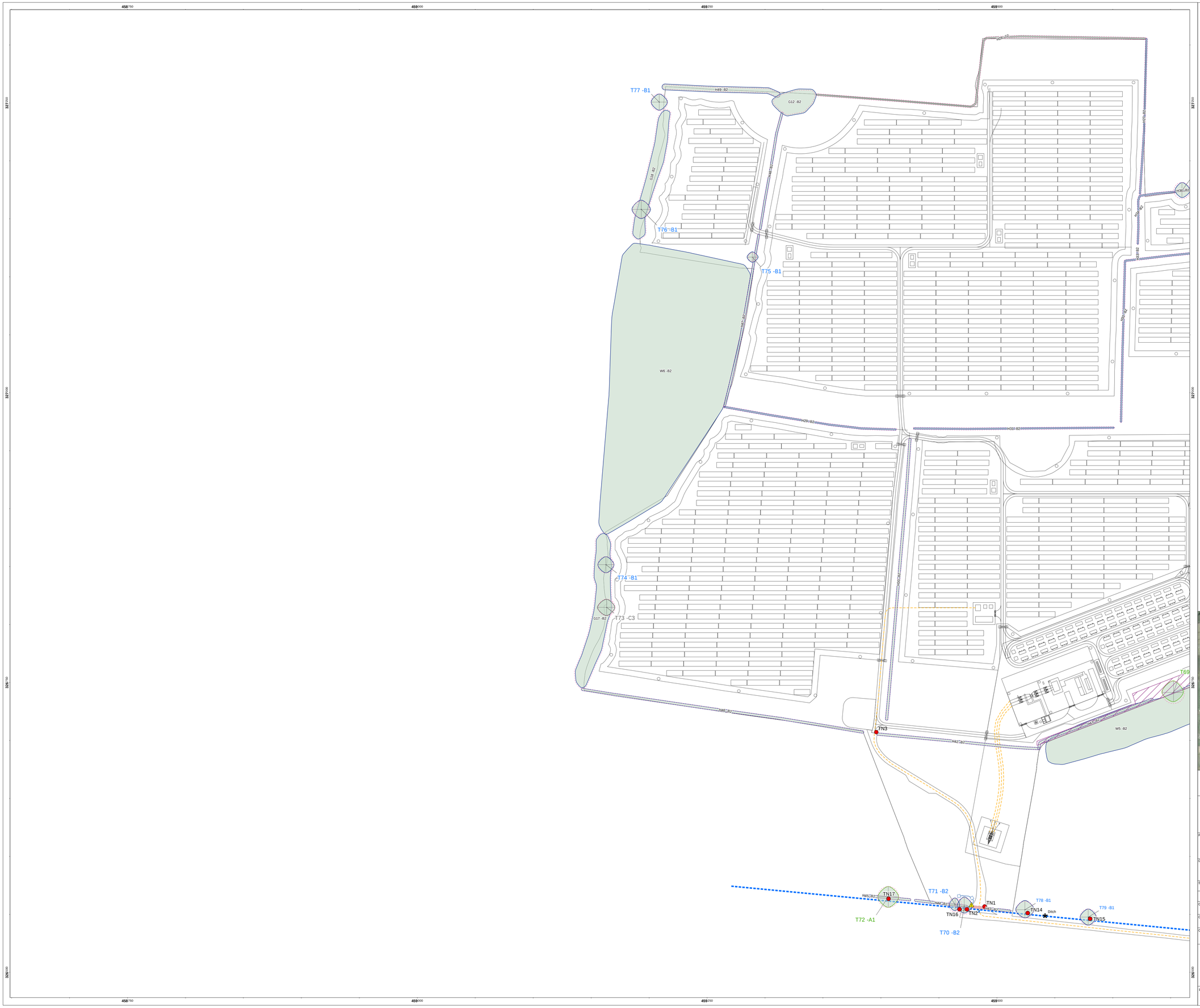

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Protection Measures

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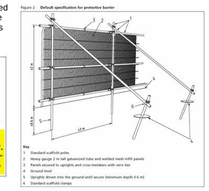
Cable Route

Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross

Figure 2 **Default specification for protective barrier**



INDEX MAP

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GRID NORTH

0 25 50 100 Meters

PROJECT TITLE

Willoughby 2, Wysall (5598)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE			DRAWING NUMBER	
Scale: 1:1,500 @ A1			**BHA_5598_02**	
DRAWN BY	APPROVED BY	REVISION	SHEET	DATE
DB	**IH**	**-**	**5 of 6**	**27/11/2024**

COORDINATE SYSTEM / DATUM: **British National Grid / Newlyn Datum (AOD)**

CLIENT: **Pegasus Planning Group**

Barton Hyett Associates
Arboricultural Consultants

Tel: 01386 576161
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DRAWING PRODUCED BY

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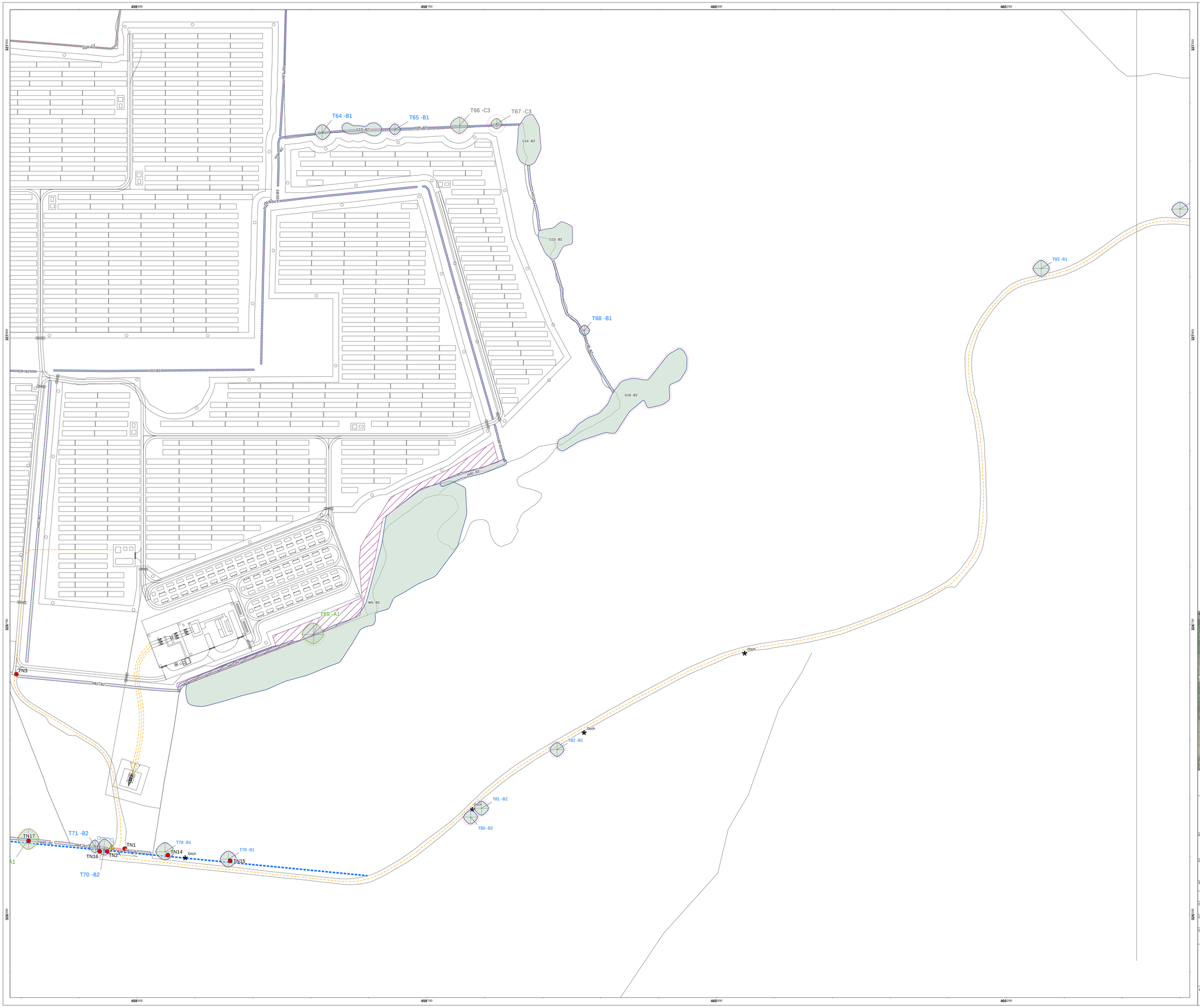

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- - - - Cable Route

Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross

Figure 2 Default specification for protective barrier

Key

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2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

INDEX MAP

Note: The original of this drawing was produced in colour – a monochrome copy should not be relied upon. This drawing should be interpreted with reference to the accompanying tree schedule and written advice

GRID
NORTH

0 25 50 100 Meters

PROJECT TITLE

Willoughby 2, Wysall (5598)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE **Scale: 1:1,500 @ A1**			DRAWING NUMBER **BHA_5598_02**	
DRAWN BY **DB**	APPROVED BY **IH**	REVISION **-**	SHEET **6 of 6**	DATE **27/11/2024**

COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)

CLIENT
Pegasus Planning Group

CREDITS

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Tel: 01386 576161
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DRAWING PRODUCED BY
SUMMIT GEO
info@summitgeo.co.uk

Hedge Ref	Species	Avg. Height (m)	LifeStage	RPA Radius (m)	RPA (m2)	Remove
H1	Hawthorn; elder	4	M	1.3	5	
H2	Hawthorn; elder	4	EM	1.3	5	
H3	Hawthorn; elder	2	M	1.3	5	
H4	Hawthorn; elder	4	M	1.3	5	
H5	Hawthorn	1.75	EM	1	3	
H6	Hawthorn; blackthorn	1.5	EM	1	3	
H7	Hawthorn; blackthorn	1.5	EM	1	3	
H8	Hawthorn; blackthorn	1.75	EM	1	3	
H9	Hawthorn; blackthorn	1.75	EM	1	3	
H10	Hawthorn; blackthorn	2	EM	1	3	
H11	Hawthorn; blackthorn	2	EM	1	3	
H12	Hawthorn; blackthorn	1.75	EM	1	3	
H13	Hawthorn; blackthorn	2	EM	1	3	
H14	Hawthorn; elder	2	M	1.3	5	
H15	Hawthorn; elder	2	M	1.3	5	
H16	Hawthorn; elder	2	M	1.3	5	
H17	Hawthorn; blackthorn	2	EM	1	3	
H18	Hawthorn; blackthorn	2	EM	1	3	
H19	Hawthorn; blackthorn; elder	4	EM	1	3	
H20	Hawthorn; blackthorn	2	EM	1	3	
H21	Hawthorn; blackthorn	2	EM	1	3	
H22	Hawthorn; blackthorn	2	EM	1	3	
H23	Hawthorn; elder; blackthorn; hazel	2.5	M	1.3	5	
H24	Hawthorn; blackthorn	2	EM	1	3	
H25	Hawthorn; blackthorn	1.75	EM	1	3	
H26	Hawthorn; blackthorn	1.75	EM	1	3	
H27	Hawthorn	1.5	M	1	3	
H28	Hawthorn; elder	1.75	M	1	3	
H29	Hawthorn	1.75	M	1	3	
H30	Hawthorn	2	M	1	3	
H31	Hawthorn	1.5	M	1	3	
H32	Hawthorn	1.5	M	1	3	
H33	Hawthorn	1.5	M	1	3	
H34	Hawthorn; elder	1.5	M	1	3	
H35	Hawthorn	1.5	M	1	3	
H36	Hawthorn; elder	1.5	M	1	3	
H37	Hawthorn; blackthorn	1.75	EM	1	3	
H38	Hawthorn; blackthorn	1.75	EM	1	3	
H39	Hawthorn	1.5	M	1	3	
H40	Hawthorn; field maple	5	EM	1.8	10	
H41	Hawthorn	2	M	1	3	
H42	Hawthorn	2	M	1	3	
H43	Hawthorn	2	M	1	3	
H44	Hawthorn	2	M	1	3	
H45	Hawthorn	2	M	1	3	
H46	Hawthorn	2	M	1	3	
H47	Hawthorn; blackthorn	2	M	1	3	
H48	Hawthorn; blackthorn	2	M	1	3	
H49	Hawthorn; field maple	5	EM	1.8	10	

Tree Ref	Species	Height (m)	LifeStage	RPA Radius (m)	RPA (m2)	Remove
T1	Oak (English)	15	M	7.2	163	
T2	Oak (English)	20	M	8.4	222	
T3	Oak (English)	17	M	9.6	290	
T4	Ash (Common)	8	SM	3.6	41	
T5	Ash (Common)	8	SM	3.6	41	
T6	Ash (Common)	20	M	10.8	366	
T7	Ash (Common)	18	M	9	254	
T8	Oak (English)	20	M	10.2	327	
T9	Ash (Common)	20	M	10.8	366	
T10	Ash (Common)	8	SM	3.6	41	
T11	Ash (Common)	20	M	7.2	163	
T12	Cypress (Leyland)	16	EM	6	113	
T13	Ash (Common)	8	SM	5.4	92	
T14	Chestnut (Horse)	6	SM	2.4	18	
T15	Ash (Common)	8	SM	3	28	
T16	Ash (Common)	17	M	7.2	163	
T17	Ash (Common)	8	SM	3	28	
T18	Ash (Common)	8	SM	3	28	
T19	Cypress (Leyland)	16	EM	6	113	
T20	Ash (Common)	20	M	7.2	163	
T21	Ash (Common)	18	M	6	113	
T22	Ash (Common)	16	M	6	113	
T23	Ash (Common)	16	M	6	113	
T24	Ash (Common)	17	M	7.2	163	
T25	Ash (Common)	17	M	10.8	366	
T26	Ash (Common)	16	M	6.6	137	
T27	Ash (Common)	8	SM	3	28	
T28	Ash (Common)	18	M	7.8	191	
T29	Ash (Common)	8	SM	3	28	
T30	Ash (Common)	8	SM	3	28	
T31	Ash (Common)	20	M	9.4	275	
T32	Ash (Common)	20	M	9	254	
T33	Ash (Common)	17	M	7.2	163	
T34	Ash (Common)	18	M	6	113	
T35	Ash (Common)	20	M	8.2	209	
T36	Willow (Crack)	15	M	14.4	651	
T37	Ash (Common)	15	M	7.2	163	
T38	Ash (Common)	16	M	6.6	137	
T39	Ash (Common)	14	EM	6.2	122	
T40	Ash (Common)	16	M	7	152	
T41	Ash (Common)	12	EM	4.8	72	
T42	Ash (Common)	8	EM	3.3	35	
T43	Ash (Common)	8	EM	3.3	35	
T44	Ash (Common)	8	EM	3.3	35	
T45	Ash (Common)	9	EM	3.6	41	
T46	Ash (Common)	10	EM	3.8	46	
T47	Ash (Common)	12	EM	4.2	55	
T48	Ash (Common)	8	SM	2.6	22	
T49	Ash (Common)	8	EM	3.6	41	
T50	Ash (Common)	6	SM	3	28	
T51	Oak (English)	6	SM	3	28	
T52	Ash (Common)	10	SM	2.6	22	
T53	Ash (Common)	15	M	7.2	163	
T54	Oak (English)	20	M	10.2	327	
T55	Ash (Common)	16	EM	5.4	92	
T56	Ash (Common)	16	EM	5.4	92	
T57	Ash (Common)	14	EM	3.6	41	
T58	Ash (Common)	15	EM	4.8	72	
T59	Ash (Common)	6	SM	2.4	18	
T60	Ash (Common)	9	EM	4.2	55	
T61	Ash (Common)	8	SM	2.4	18	
T62	Ash (Common)	20	M	9	254	
T63	Ash (Common)	14	EM	6.6	137	
T64	Ash (Common)	18	EM	7	152	
T65	Oak (English)	12	SM	6	113	
T66	Ash (Common)	18	M	7.8	191	
T67	Ash (Common)	15	M	7.8	191	
T68	Ash (Common)	10	SM	3.6	41	
T69	Ash (Common)	20	M	9.6	290	
T70	Ash (Common)	18	M	7	152	
T71	Ash (Common)	18	EM	5.8	104	
T72	Ash (Common)	20	M	9	254	
T73	Ash (Common)	18	M	7.2	163	
T74	Ash (Common)	18	EM	7	152	
T75	Ash (Common)	12	SM	3.6	41	
T76	Oak (English)	20	EM	7.2	163	
T77	Oak (English)	18	EM	7.2	163	
T78	Ash (Common)	18	M	7.2	163	
T79	Ash (Common)	18	M	7	152	
T80	Ash (Common)	17	M	7	152	
T81	Ash (Common)	17	M	7	152	
T82	Ash (Common)	17	M	7	152	
T83	Ash (Common)	17	M	7.8	191	
T84	Sycamore	17	M	6.6	137	
T85	Ash (Common)	17	M	8.4	222	
T86	Poplar (Hybrid black)	21	M	8.4	222	
T87	Ash (Common)	17	M	6.6	137	

Group Ref	Species	Height Range	LifeStage	RPA Radius (m)	RPA (m2)	Remove
G1	Blackthorn; hawthorn	5>5	SM	1.8	10	
G2	Common ash; elm; hawthorn	5-14	SM	3.6	41	
G3	Common ash; hazel; hawthorn	5-20	EM	6	113	
G4	Weeping willow	15	EM	5.7	102	
G5	Black poplar	8-16	EM	7.2	163	
G6	Leyland cypress	12	EM	3	28	
G7	Common ash	16-20	M	7.2	163	
G8	Common ash	10-15	EM	6	113	
G9	Common ash	10-13	SM	3.9	48	
G10	Common ash	10-12	EM	4.2	55	
G11	Common ash	10-15	EM	6	113	
G12	Grey willow; blackthorn	4-8	EM	3	28	
G13	Common ash; field maple; English oak	12-19	EM	6.9	150	
G14	Crack willow; hawthorn	5-17	M	6	113	
G15	Common ash; willow; hawthorn	5-17	M	6	113	
G16	Common ash; willow; hawthorn	5-20	M	7.2	163	
G17	Common ash; hawthorn; field maple	6-12	EM	4.8	72	
G18	Common ash; hawthorn; elm; English oak; field	6-12	EM	4.8	72	
G19	Sycamore; common lime	14-17	EM	7.5	177	

WoodRef	Species	Height Range	LifeStage	RPA Radius (m)	RPA (m2)	Remove
W1	Common ash; English oak; hawthorn; hazel	5-20	M	8.4	222	
W2	Common ash; poplar; hawthorn	5-25	EM	6	113	
W3	Common ash; English oak; hawthorn	5-20	EM	4.8	72	
W4	Common ash; English oak; hawthorn	5-20	EM	4.8	72	
W5	Common ash; willow; hawthorn	5-18	EM	4.8	72	
W6	Common ash; hawthorn	5-20	EM	4.8	72	

INDEX MAP

Note: The original of this drawing was produced in colour – a monochrome copy should not be relied upon. This drawing should be interpreted with reference to the accompanying tree schedule and written advice

GRID NORTH

0 25 50 100 Meters

PROJECT TITLE

Willoughby 2, Wysall (5598)

DRAWING TITLE

Tables Plan

SCALE				DRAWING NUMBER	
Scale: 1:1,500 @ A1				**BHA_5598_02A**	
DRAWN BY	APPROVED BY	REVISION	SHEET	DATE	
DB	**IH**	**-**	**Tables**	**27/11/2024**	

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

Pegasus Planning Group

CREDITS

Barton Hyett Associates
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Tel: 01386 576161
Address: Office 5E, Deer Park Business Centre,
Eckington, Pershore, Worcestershire, WR10 3DN

DRAWING PRODUCED BY

SUMMIT GEO

info@summitgeo.co.uk

BS5837:2012 TREE SURVEY SCHEDULE

WILLOUGHBY 2, WYSALL

PROJECT NO: 5598

SURVEYOR: IAN HOWELL

CLIENT: PEGASUS

SURVEY DATE: 11/05/2023

Barton Hyett Arboricultural Consultants

INDIVIDUAL TREES

Ref	Species	On/off site	Top Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. low crown height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²
T1	Oak (English)	On	15.0	1	Yes	600	6.0-5.0-6.0-6.0	4.0	4.0	None	M	None	Hedgerow oak	Good	Good	40+	B1	7.2	163.0
T2	Oak (English)	On	20.0	1	Yes	700	7.0-7.0-7.0-7.0	4.0	4.0	None	M	None	Hedgerow oak	Good	Good	40+	B1	8.4	222.0
T3	Oak (English)	On	17.0	1	Yes	800	7.0-7.0-6.0-6.0	2.0	2.0	S	M	None	Oak tree set away from the woodland edge	Good	Good	40+	A1	9.6	290.0
T4	Ash (Common)	On	8.0	1	Yes	300	4.0-5.0-5.0-5.0	3.0	2.0	S	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.6	41.0
T5	Ash (Common)	On	8.0	1	Yes	300	4.0-4.0-4.0-4.0	3.0	2.0	S	SM	None	Establishing hedgerow tree	Good	Good	40	C1	3.6	41.0
T6	Ash (Common)	On	20.0	1	Yes	900	6.0-10.0-10.0-10.0	4.0	4.0	W	M	None	Mature woodland edge tree	Good	Good	40+	A1	10.8	366.0
T7	Ash (Common)	On	18.0	1	Yes	750	9.0-7.0-9.0-9.0	4.0	4.0	N	M	None	Mature ash. Located just east of the hedgerow	Good	Fair	40+	B3	9.0	254.0
T8	Oak (English)	On	20.0	1	Yes	850	9.0-7.0-10.0-8.0	4.0	4.0	None	M	None	Hedgerow oak; ivy throughout crown	Good	Good	40+	A1	10.2	327.0
T9	Ash (Common)	On	20.0	1	Yes	900	10.0-7.0-10.5-12.0	4.0	4.0	W	M	None	Hedgerow ash; existing field access to the north	Good	Good	40+	A1	10.8	366.0
T10	Ash (Common)	On	8.0	1	Yes	300	4.0-4.0-4.0-4.0	3.0	2.0	S	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.6	41.0
T11	Ash (Common)	On	20.0	1	Yes	600	9.0-9.0-9.0-10.0	4.0	3.0	W	M	None	Hedgerow ash	Good	Good	40+	B1	7.2	163.0
T12	Cypress (Leyland)	On	16.0	1	Yes	500	2.0-4.0-4.0-4.0	1.0	1.0	None	EM	None	Outgrown evergreen screening tree	Good	Fair	40	C1	6.0	113.0
T13	Ash (Common)	On	8.0	1	Yes	450	4.5-5.0-5.0-5.0	3.0	2.0	None	SM	None	Hedgerow ash; existing hard surfaced track to the north	Good	Good	40+	B1	5.4	92.0
T14	Chestnut (Horse)	On	6.0	1	Yes	200	3.0-3.0-3.0-3.0	1.0	1.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	2.4	18.0
T15	Ash (Common)	On	8.0	1	Yes	250	4.0-4.0-4.0-4.0	3.0	2.0	S	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.0	28.0
T16	Ash (Common)	On	17.0	1	Yes	600	8.0-8.0-8.0-8.0	4.0	3.0	None	M	None	Hedgerow ash; existing hard surfaced track to the north	Good	Good	40+	B1	7.2	163.0
T17	Ash (Common)	On	8.0	1	Yes	250	4.0-4.0-4.0-4.0	3.0	2.0	S	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.0	28.0

BS5837:2012 TREE SURVEY SCHEDULE

WILLOUGHBY 2, WYSALL

PROJECT NO: 5598

SURVEYOR: IAN HOWELL

CLIENT: PEGASUS

SURVEY DATE: 11/05/2023

Barton Hyett Arboricultural Consultants

Ref	Species	On/off site	Top Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. low crown height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²
T18	Ash (Common)	On	8.0	1	Yes	250	4.0-4.0-4.0-4.0	3.0	2.0	S	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.0	28.0
T19	Cypress (Leyland)	On	16.0	1	Yes	500	4.0-4.0-4.0-4.0	1.0	1.0	None	EM	None	Outgrown evergreen screening tree	Good	Fair	40+	C1	6.0	113.0
T20	Ash (Common)	On	20.0	1	Yes	600	10.0-8.0-9.0-9.0	4.0	4.0	SW	M	None	Hedgerow ash; existing hard surfaced track to the north	Good	Good	40+	B1	7.2	163.0
T21	Ash (Common)	On	18.0	1	Yes	500	7.0-7.0-7.0-7.0	4.0	3.0	None	M	None	Hedgerow ash	Good	Good	40+	B1	6.0	113.0
T22	Ash (Common)	On	16.0	1	Yes	500	7.0-8.0-7.0-6.0	4.0	3.0	N	M	None	Hedgerow ash; existing hard surfaced track to the north	Good	Fair	40+	B1	6.0	113.0
T23	Ash (Common)	On	16.0	1	Yes	500	5.0-2.0-6.0-5.0	4.0	4.0	S	M	None	Hedgerow ash; existing hard surfaced track to the north	Good	Fair	40+	B1	6.0	113.0
T24	Ash (Common)	On	17.0	1	Yes	600	6.0-3.0-7.0-8.5	4.0	4.0	W	M	None	Hedgerow ash; pruned back from the overhead wires to the east	Good	Fair	40+	B1	7.2	163.0
T25	Ash (Common)	On	17.0	1	Yes	900	6.0-3.0-8.0-9.5	4.0	3.0	W	M	None	Hedgerow ash; pruned back from the overhead wires to the east; decay in main stem	Good	Fair	40+	B3	10.8	366.0
T26	Ash (Common)	On	16.0	1	Yes	550	6.0-3.0-6.0-6.5	4.0	4.0	None	M	None	Hedgerow ash; pruned back from the overhead wires to the east	Good	Fair	40+	B1	6.6	137.0
T27	Ash (Common)	On	8.0	1	Yes	250	4.0-4.0-4.0-4.0	3.0	2.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.0	28.0
T28	Ash (Common)	On	18.0	1	Yes	650	6.0-7.0-8.0-7.5	4.0	4.0	None	M	None	Hedgerow ash	Good	Fair	40+	B1	7.8	191.0
T29	Ash (Common)	On	8.0	1	Yes	250	3.0-3.0-3.0-3.0	3.0	2.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.0	28.0
T30	Ash (Common)	On	8.0	1	Yes	250	3.0-3.0-3.0-3.0	3.0	2.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.0	28.0
T31	Ash (Common)	On	20.0	1	Yes	780	7.0-3.0-8.0-8.0	4.0	4.0	None	M	None	Hedgerow ash; decay in stems	Good	Fair	40+	B3	9.4	275.0
T32	Ash (Common)	On	20.0	2	Yes	750	8.0-9.0-8.0-9.0	4.0	3.0	SW	M	None	Hedgerow ash	Good	Fair	40+	B1	9.0	254.0
T33	Ash (Common)	On	17.0	1	Yes	600	7.0-8.0-7.0-8.0	4.0	3.0	None	M	None	Hedgerow ash	Good	Good	40+	B1	7.2	163.0

BS5837:2012 TREE SURVEY SCHEDULE

WILLOUGHBY 2, WYSALL

PROJECT NO: 5598

SURVEYOR: IAN HOWELL

CLIENT: PEGASUS

SURVEY DATE: 11/05/2023

Barton Hyett Arboricultural Consultants

Ref	Species	On/off site	Top Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. low crown height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²
T34	Ash (Common)	On	18.0	1	Yes	500	7.0-7.0-7.0-7.0	4.0	3.0	None	M	None	Hedgerow ash	Good	Good	40+	B1	6.0	113.0
T35	Ash (Common)	On	20.0	1	Yes	680	9.0-10.0-9.0-8.0	4.0	3.0	None	M	None	Hedgerow ash	Good	Good	40+	B1	8.2	209.0
T36	Willow (Crack)	On	15.0	1	Yes	1200	6.0-6.0-7.0-6.0	2.0	1.0	None	M	None	Mature willow of low pollard form	Good	Good	40+	B3	14.4	651.0
T37	Ash (Common)	On	15.0	1	Yes	600	6.0-6.0-7.0-6.0	4.0	3.0	None	M	None	Hedgerow ash	Good	Good	40+	B1	7.2	163.0
T38	Ash (Common)	On	16.0	1	Yes	550	6.0-6.0-7.0-6.0	4.0	3.0	W	M	None	Hedgerow ash	Good	Good	40+	B1	6.6	137.0
T39	Ash (Common)	On	14.0	1	Yes	520	6.0-6.0-7.0-6.0	4.0	3.0	S	EM	None	Hedgerow ash	Good	Good	40+	B1	6.2	122.0
T40	Ash (Common)	On	16.0	1	Yes	580	6.0-6.0-6.0-6.0	4.0	4.0	None	M	None	Mature hedgerow ash	Good	Good	40+	B1	7.0	152.0
T41	Ash (Common)	On	12.0	1	Yes	400	5.0-5.0-5.0-5.0	3.0	3.0	S	EM	None	Establishing hedgerow tree; reduced vitality	Fair	Fair	40+	C1	4.8	72.0
T42	Ash (Common)	On	8.0	1	Yes	280	4.0-4.0-4.0-4.0	4.0	2.0	N	EM	None	Establishing hedgerow tree	Good	Good	40+	B1	3.3	35.0
T43	Ash (Common)	On	8.0	1	Yes	280	4.0-3.0-4.0-4.0	4.0	2.0	N	EM	None	Establishing hedgerow tree	Good	Good	40+	B1	3.3	35.0
T44	Ash (Common)	On	8.0	1	Yes	280	3.0-3.0-3.0-4.0	4.0	2.0	W	EM	None	Establishing hedgerow tree; reduced vitality	Fair	Fair	10+	C1	3.3	35.0
T45	Ash (Common)	On	9.0	1	Yes	300	4.0-4.0-6.0-4.0	4.0	2.0	None	EM	None	Establishing hedgerow tree; reduced vitality	Fair	Fair	10+	C1	3.6	41.0
T46	Ash (Common)	On	10.0	1	Yes	320	5.0-5.0-5.0-5.0	4.0	3.0	NW	EM	None	Hedgerow ash tree	Good	Fair	40+	B1	3.8	46.0
T47	Ash (Common)	On	12.0	1	Yes	350	6.0-6.0-5.0-5.0	4.0	3.0	NW	EM	None	Hedgerow ash tree	Good	Fair	40+	B1	4.2	55.0
T48	Ash (Common)	On	8.0	1	Yes	220	3.0-3.0-3.0-3.0	3.0	3.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	2.6	22.0
T49	Ash (Common)	On	8.0	1	Yes	300	4.0-4.0-4.0-4.0	4.0	3.0	None	EM	None	Hedgerow ash tree	Good	Fair	40+	B1	3.6	41.0
T50	Ash (Common)	On	6.0	1	Yes	250	3.0-3.0-3.0-3.0	3.0	3.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	3.0	28.0
T51	Oak (English)	On	6.0	1	Yes	250	4.0-4.0-4.0-4.0	3.0	3.0	S	SM	None	Establishing hedgerow tree	Good	Good	40+	B1	3.0	28.0
T52	Ash (Common)	On	10.0	1	Yes	220	4.0-4.0-4.0-4.0	3.0	3.0	S	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	2.6	22.0
T53	Ash (Common)	Off	15.0	1	Yes	600	6.0-7.0-7.0-6.0	4.0	4.0	None	M	None	Hedgerow ash in neighbouring land; reduced vitality	Good	Good	<10	C1	7.2	163.0

BS5837:2012 TREE SURVEY SCHEDULE

WILLOUGHBY 2, WYSALL

PROJECT NO: 5598

SURVEYOR: IAN HOWELL

CLIENT: PEGASUS

SURVEY DATE: 11/05/2023

Barton Hyett Arboricultural Consultants

Ref	Species	On/off site	Top Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. low crown height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²
T54	Oak (English)	On	20.0	1	Yes	850	8.0-8.0-9.0-9.0	4.0	4.0	None	M	None	Hedgerow oak; prominent and mature	Good	Good	40+	A1	10.2	327.0
T55	Ash (Common)	On	16.0	1	Yes	450	6.0-6.0-6.0-5.0	4.0	3.0	None	EM	None	Hedgerow ash tree	Good	Good	40+	B1	5.4	92.0
T56	Ash (Common)	On	16.0	1	Yes	450	6.0-6.0-6.0-7.0	4.0	3.0	S	EM	None	Hedgerow ash tree	Good	Good	40+	B1	5.4	92.0
T57	Ash (Common)	On	14.0	1	Yes	300	5.0-6.0-5.0-5.0	4.0	3.0	W	EM	None	Hedgerow ash tree	Good	Good	40+	B1	3.6	41.0
T58	Ash (Common)	On	15.0	1	Yes	400	6.0-6.0-7.0-7.0	4.0	3.0	W	EM	None	Hedgerow ash tree	Good	Good	40+	B1	4.8	72.0
T59	Ash (Common)	On	6.0	1	Yes	200	3.0-2.0-1.0-3.0	2.0	2.0	S	SM	None	Establishing hedgerow tree	Good	Fair	20+	C1	2.4	18.0
T60	Ash (Common)	On	9.0	1	Yes	350	4.0-4.0-4.0-4.0	4.0	3.0	None	EM	None	Hedgerow ash tree	Good	Fair	40+	B1	4.2	55.0
T61	Ash (Common)	On	8.0	1	Yes	200	3.0-3.0-3.0-3.0	3.0	3.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	C1	2.4	18.0
T62	Ash (Common)	On	20.0	1	Yes	750	10.0-9.0-9.0-9.0	4.0	4.0	SW	M	None	Mature hedgerow ash	Good	Good	40+	B1	9.0	254.0
T63	Ash (Common)	On	14.0	1	Yes	550	6.0-7.0-6.0-6.0	4.0	2.0	None	EM	None	Hedgerow tree; reduced vitality	Fair	Fair	10+	C1	6.6	137.0
T64	Ash (Common)	On	18.0	1	Yes	580	7.0-7.0-6.0-6.0	3.0	3.0	None	EM	None	Established hedgerow tree	Good	Good	40+	B1	7.0	152.0
T65	Oak (English)	On	12.0	2	Yes	500	5.0-5.0-4.5-4.5	3.0	3.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	B1	6.0	113.0
T66	Ash (Common)	On	18.0	1	Yes	650	7.0-7.0-7.0-8.0	4.0	3.0	None	M	None	Mature ash; in decline; possibly dead or late coming into leaf. Should be reduced and retained for habitat	Poor	Poor	<10	C3	7.8	191.0
T67	Ash (Common)	On	15.0	1	Yes	650	4.5-4.5-4.5-5.0	4.0	3.0	None	M	None	Mature ash; in decline; decay in stems. Should be retained for habitat	Fair	Fair	10+	C3	7.8	191.0
T68	Ash (Common)	On	10.0	1	Yes	300	4.5-4.5-4.5-4.5	4.0	3.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	B1	3.6	41.0
T69	Ash (Common)	On	20.0	1	Yes	800	10.0-8.5-8.0-10.0	4.0	3.0	None	M	None	Mature woodland edge tree	Good	Good	40+	A1	9.6	290.0
T70	Ash (Common)	On	18.0	1	Yes	580	8.0-7.0-6.0-6.0	4.0	3.0	None	M	None	Mature roadside/ hedgerow tree; existing access to the east	Good	Good	40+	B2	7.0	152.0

BS5837:2012 TREE SURVEY SCHEDULE

WILLOUGHBY 2, WYSALL

PROJECT NO: 5598

SURVEYOR: IAN HOWELL

CLIENT: PEGASUS

SURVEY DATE: 11/05/2023

Barton Hyett Arboricultural Consultants

Ref	Species	On/off site	Top Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. low crown height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²
T71	Ash (Common)	On	18.0	1	Yes	480	6.0-4.0-5.0-5.0	4.0	3.0	None	EM	None	Early mature roadside/ hedgerow tree; existing access to the east	Good	Good	40+	B2	5.8	104.0
T72	Ash (Common)	On	20.0	1	Yes	750	9.0-9.0-9.0-9.0	4.0	3.0	None	M	None	Mature roadside/ hedgerow tree of excellent form and condition	Good	Good	40+	A1	9.0	254.0
T73	Ash (Common)	On	18.0	1	Yes	600	7.0-7.0-7.0-8.0	4.0	3.0	None	M	None	Mature ash; in decline; possibly dead or late coming into leaf. Should be reduced and retained for habitat	Poor	Poor	<10	C3	7.2	163.0
T74	Ash (Common)	On	18.0	1	Yes	580	7.0-7.0-7.0-7.0	3.0	3.0	None	EM	None	Established hedgerow tree	Good	Good	40+	B1	7.0	152.0
T75	Ash (Common)	On	12.0	1	Yes	300	4.5-5.0-4.5-4.5	4.0	3.0	None	SM	None	Establishing hedgerow tree	Good	Good	40+	B1	3.6	41.0
T76	Oak (English)	On	20.0	1	Yes	600	8.0-8.0-8.0-8.0	4.0	4.0	None	EM	None	Hedgerow oak tree	Good	Good	40+	B1	7.2	163.0
T77	Oak (English)	On	18.0	1	Yes	600	7.0-7.0-7.0-7.0	4.0	4.0	None	EM	None	Hedgerow oak tree	Good	Good	40+	B1	7.2	163.0
T78	Ash (Common)	On	18	1	Yes	600	8.0-8.0-7.0-8.0	5.0	3	N	M	None	Mature roadside/ hedgerow tree	Good	Good	40+	B1	7.2	163
T79	Ash (Common)	On	18	1	Yes	580	7.0-7.0-7.0-7.0	5.0	3	S	M	None	Mature roadside/ hedgerow tree	Good	Good	40+	B1	7	152
T80	Ash (Common)	On	17	1	Yes	580	6.0-6.0-6.0-6.0	5.0	4	S	M	None	Mature roadside/ hedgerow tree	Good	Good	40+	B2	7	152
T81	Ash (Common)	On	17	1	Yes	580	6.0-6.0-6.0-6.0	5.0	4	S	M	None	Mature roadside/ hedgerow tree	Good	Good	40+	B2	7	152
T82	Ash (Common)	On	17	1	Yes	580	6.0-6.0-6.0-6.0	5.0	4	S	M	None	Mature roadside/ hedgerow tree	Good	Good	40+	B1	7	152
T83	Ash (Common)	On	17	1	Yes	650	7.0-7.0-7.0-7.0	5.0	5	S	M	None	Mature roadside/ hedgerow tree. Located on a roadside embankment	Good	Good	40+	B1	7.8	191
T84	Sycamore	On	17	1	Yes	550	6.0-7.0-7.0-7.0	5.0	5	N	M	None	Mature roadside/ hedgerow tree. Set back from the highway edge by 5m	Good	Good	40+	B1	6.6	137

BS5837:2012 TREE SURVEY SCHEDULE

WILLOUGHBY 2, WYSALL

PROJECT NO: 5598

SURVEYOR: IAN HOWELL

CLIENT: PEGASUS

SURVEY DATE: 11/05/2023

Barton Hyett Arboricultural Consultants

Ref	Species	On/off site	Top Height (m)	No. of Stems	Est diam?	Calc. / Actual Stem Dia. (mm)	Crown radii (m) N-E-S-W	Avg. low crown height (m)	1st branch ht (m)	1st branch dir.	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m²
T85	Ash (Common)	On	17	1	Yes	700	6.5-7.0-5.0-5.0	5.0	4	S	M	None	Mature roadside/ hedgerow tree. Shallow ditch to the west	Good	Good	40+	B3	8.4	222
T86	Poplar (Hybrid black)	On	21	1	Yes	700	8.0-7.5-8.0-8.5	5.0	4	S	M	None	Mature roadside/ hedgerow tree. Shallow ditch to the west	Good	Good	40+	B1	8.4	222
T87	Ash (Common)	On	17	1	Yes	550	6.0-6.0-5.0-5.0	5.0	4	None	M	None	Mature roadside/ hedgerow tree. Shallow ditch to the east	Good	Good	40+	B1	6.6	137

GROUPS OF TREES

Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. low crown height (m)	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G1	Blackthorn; hawthorn	On	5+6	20	Yes	150.0	3.0	0.1	SM	None	Small section of establishing scrub/thorn trees	Good	Fair	40+	C2	1.8
G2	Common ash; elm; hawthorn	On	5-14	20	Yes	300.0	4.0	2.0	SM	None	Establishing broadleaf trees located within the hedgerow or within the roadside verge/bank to the east	Good	Fair	40+	B2	3.6
G3	Common ash; hazel; hawthorn	On	5-20	1000	Yes	500.0	5.0	1.0	EM	None	Off site woodland separate from the site by a road. May be necessary to consider shading	Good	Good	40+	B2	6.0
G4	Weeping willow	On	15	3	Yes	475.0	7.0	2.0	EM	None	Group of off site willow within the neighbouring property	Good	Good	40+	B2	5.7
G5	Black poplar	On	8-16	6	Yes	600.0	6.0	1.0	EM	None	Poplar trees in a group planting forming a cohesive canopy	Good	Fair	40+	B2	7.2
G6	Leyland cypress	On	12	5	Yes	250.0	1.0	1.0	EM	None	Outgrown evergreen screening trees	Good	Fair	40+	C2	3.0
G7	Common ash	On	16-20	2	Yes	600.0	8.0	5.0	M	None	Hedgerow trees; pruned clear of overhead wires to the west	Good	Fair	40+	B2	7.2
G8	Common ash	On	10-15	3	Yes	500.0	5.0	3.0	EM	None	Hedgerow ash trees forming a cohesive canopy	Good	Fair	40+	B2	6.0
G9	Common ash	On	10-13	6	Yes	325.0	5.0	3.0	SM	None	Hedgerow ash trees forming a cohesive canopy	Good	Fair	40+	B2	3.9
G10	Common ash	On	10-12	3	Yes	350.0	5.0	3.0	EM	None	Hedgerow ash trees;reduced vitality	Fair	Fair	10+	C2	4.2

BS5837:2012 TREE SURVEY SCHEDULE

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Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. low crown height (m)	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
G11	Common ash	On	10-15	6	Yes	500.0	5.0	3.0	EM	None	Hedgerow ash trees forming a cohesive canopy	Good	Fair	40+	B2	6.0
G12	Grey willow; blackthorn	On	4-8	10	Yes	250.0	4.0	0.5	EM	None	Group of willow located around a pond at the woodland edge	Good	Fair	40+	B2	3.0
G13	Common ash; field maple; English oak	On	12-19	4	Yes	575.0	6.0	2.0	EM	None	Hedgerow trees forming a cohesive canopy	Good	Good	40+	B2	6.9
G14	Crack willow; hawthorn	On	5-17	5	Yes	500.0	6.0	1.0	M	None	Off site group of mature broadleaf trees	Good	Fair	40+	B2	6.0
G15	Common ash; willow; hawthorn	On	5-17	5	Yes	500.0	6.0	1.0	M	None	Off site group of mature broadleaf trees	Good	Fair	40+	B2	6.0
G16	Common ash; willow; hawthorn	On	5-20	500	Yes	600.0	6.0	1.0	M	None	Off site group of mature broadleaf trees	Good	Fair	40+	B2	7.2
G17	Common ash; hawthorn; field maple	On	6-12	50	Yes	400.0	4.0	0.5	EM	None	Outgrown hedgerow with ash establishing along its length	Good	Fair	40+	B2	4.8
G18	Common ash; hawthorn; elm; English oak; field maple	On	6-12	50	Yes	400.0	4.0	0.5	EM	None	Outgrown hedgerow with oak and ash establishing along its length	Good	Fair	40+	B2	4.8
G19	Sycamore; common lime	On	14-17	10	Yes	625.0	6	5	EM	None	EM to M trees located parallel to the road. Set back from the edge of the highway by 3-5m	Good	Good	40+	B2	7.5

HEDGES

Ref	Species	On/off site	Av. Height (m)	Av. width (m)	Av. Stem diam (mm)	Avg. low crown height (m)	Life Stage	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)
H1	Hawthorn; elder	On	4.0	3	100	0.1	M	Dense and well maintained hedgerow; 4-5m height	Good	Good	40+	B2	1.3
H2	Hawthorn; elder	On	4.0	3	100	0.2	EM	Informal hedgerow; gaps of up to 10m along its length; unmaintaned	Fair	Fair	20+	C2	1.3
H3	Hawthorn; elder	On	2.0	2	100	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.3
H4	Hawthorn; elder	On	4.0	3	100	0.1	M	Dense and well maintained hedgerow; 3-4m height	Good	Good	40+	B2	1.3
H5	Hawthorn	On	1.75	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H6	Hawthorn; blackthorn	On	1.5	1	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H7	Hawthorn; blackthorn	On	1.5	1	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0

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H8	Hawthorn; blackthorn	On	1.75	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H9	Hawthorn; blackthorn	On	1.75	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H10	Hawthorn; blackthorn	On	2.0	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H11	Hawthorn; blackthorn	On	2.0	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H12	Hawthorn; blackthorn	On	1.75	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H13	Hawthorn; blackthorn	On	2.0	2	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H14	Hawthorn; elder	On	2.0	2	100	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.3
H15	Hawthorn; elder	On	2.0	2	100	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.3
H16	Hawthorn; elder	On	2.0	2	100	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.3
H17	Hawthorn; blackthorn	On	2.0	2	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H18	Hawthorn; blackthorn	On	2.0	2	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H19	Hawthorn; blackthorn; elder	On	4.0	4	80	0.1	EM	Section of particularly wide hedgerow; becoming outgrown on the top	Good	Fair	40+	B2	1.0
H20	Hawthorn; blackthorn	On	2.0	2	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H21	Hawthorn; blackthorn	On	2.0	2	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H22	Hawthorn; blackthorn	On	2.0	2	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H23	Hawthorn; elder; blackthorn; hazel	On	2.5	2.5	100	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.3
H24	Hawthorn; blackthorn	On	2.0	2	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H25	Hawthorn; blackthorn	On	1.75	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H26	Hawthorn; blackthorn	On	1.75	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H27	Hawthorn	On	1.5	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H28	Hawthorn; elder	On	1.75	1	80	0.1	M	Dense and well maintained hedgerow; gaps of up to 6m along its length	Good	Fair	40+	C2	1.0
H29	Hawthorn	On	1.75	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H30	Hawthorn	On	2.0	2	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H31	Hawthorn	On	1.5	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0

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H32	Hawthorn	On	1.5	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H33	Hawthorn	On	1.5	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H34	Hawthorn; elder	On	1.5	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H35	Hawthorn	On	1.5	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H36	Hawthorn; elder	On	1.5	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H37	Hawthorn; blackthorn	On	1.75	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H38	Hawthorn; blackthorn	On	1.75	1.5	80	0.1	EM	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H39	Hawthorn	On	1.5	1	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H40	Hawthorn; field maple	On	5.0	5	150	0.1	EM	Outgrown section of hedgerow	Good	Fair	40+	B2	1.8
H41	Hawthorn	On	2.0	2	80	0.1	M	Dense and well maintained hedgerow at the woodland edge	Good	Good	40+	B2	1.0
H42	Hawthorn	On	2.0	2	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H43	Hawthorn	On	2.0	2	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H44	Hawthorn	On	2.0	2	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H45	Hawthorn	On	2.0	2	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H46	Hawthorn	On	2.0	2	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H47	Hawthorn; blackthorn	On	2.0	1.5	80	0.1	M	Dense and well maintained hedgerow forming the woodland edge/field boundary	Good	Good	40+	B2	1.0
H48	Hawthorn; blackthorn	On	2.0	1.5	80	0.1	M	Dense and well maintained hedgerow	Good	Good	40+	B2	1.0
H49	Hawthorn; field maple	On	5.0	5	150	0.1	EM	Outgrown section of hedgerow/woodland edge trees	Good	Fair	40+	B2	1.8

BS5837:2012 TREE SURVEY SCHEDULE

WILLOUGHBY 2, WYSALL

PROJECT NO: 5598

SURVEYOR: IAN HOWELL

CLIENT: PEGASUS

SURVEY DATE: 11/05/2023

Barton Hyett Arboricultural Consultants

WOODLANDS

Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. low crown height (m)	Life Stage	Special importance	General Observations	Health & vitality	Structural condition	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	ASNW or ARW buffer (m)
W1	Common ash; English oak; hawthorn; hazel	On	5-20	5000	Yes	700.0	7.0	1.0	M	ASNW	Mature broadleaf woodland with bluebells in the shrub layer	Good	Good	40+	A2	8.4	12.0
W2	Common ash; poplar; hawthorn	On	5-25	500	Yes	500.0	6.0	1.0	EM	None	Predominantly ash and poplar with an understorey of hawthorn	Good	Good	40+	B2	6.0	-
W3	Common ash; English oak; hawthorn	Off	5-20	2500	Yes	400.0	6.0	2.0	EM	None	Predominantly ash woodland with an understorey of hawthorn	Good	Fair	40+	B2	4.8	-
W4	Common ash; English oak; hawthorn	Off	5-20	2500	Yes	400.0	6.0	2.0	EM	None	Predominantly ash woodland with an understorey of hawthorn	Good	Fair	40+	B2	4.8	-
W5	Common ash; willow; hawthorn	On	5-18	1000	Yes	400.0	5.0	1.0	EM	None	Predominantly ash woodland beyond the site boundary	Good	Good	40+	B2	4.8	-
W6	Common ash; hawthorn	On	5-20	1500	Yes	400.0	6.0	2.0	EM	None	Predominantly ash with an understorey of hawthorn	Good	Fair	40+	B2	4.8	-

SELECT IMAGES FROM THE TREE SURVEY

PROJECT NO: 5598

WILLOUGHBY 2, WYSALL

SURVEYOR: IAN HOWELL

Barton Hyett
Arboricultural Consultants

IMAGE 1: Broadleaf woodland (W5) at the sites southern boundary with a high quality mature common ash (T69) at the woodland edge.

IMAGE 2: Existing farm access into the Southern section of the site.

IMAGE 3: Existing farm access into the Northern section of the site.

IMAGE 4: Eastern section of the ASNW (W1).

IMAGE 5: Western section of the ASNW (W1)

IMAGE 6: Common ash within a hedgerow.

SECTION 4

- The tree survey was carried out with reference to the methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction –Recommendations'.
- Trees were surveyed individually or as groups where it was considered that they had grown together to form cohesive arboricultural features either aerodynamically (trees that provide companion shelter), visually (e.g. avenues or screens) or culturally (including for biodiversity). However, where it was considered that there was an arboricultural need to differentiate between attributes trees within groups and / or woodlands were also surveyed as individuals.
- The full tree survey findings are recorded in the following tree survey schedule.
- Within the tree survey schedule, each surveyed TREE (T), GROUP (G), HEDGEROW (H), WOODLAND (W) or SHRUB MASS on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan.
- TREE SPECIES are listed by common name.

The **DIMENSIONS** taken are:

- STEM-No. Indicates the number of main stems (i.e. whether the trunk divides at or below 1.5m; (Used in the calculation of RPA.) "m-s" = Multi-stemmed.
- STEM DIAMETER (measured in millimetres), obtained from the girth measured at approx. 1.5m. For trees with 2 to 5 sub-stems a notional figure is derived from the sum of their cross-sectional areas. For multi-stemmed trees, the notional diameter may be estimated on the basis of the average stem size x the number of stems. (A notional diameter may be estimated where measurement is not possible.)
- HEIGHT (measured in metres), recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- The CROWN SPREAD, taken at the four cardinal points to derive an accurate representation of the tree crown, recorded up to the nearest half metre for dimensions up to 10m and to up the nearest whole metre for dimensions over 10m.
- CROWN CLEARANCES are expressed both as existing height above ground level of first significant branch along with its direction of growth (e.g. 2.5m-N), and also in terms of the overall crown e.g. the average height of the crown above ground level. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- ESTIMATES. Where any measurement has had to be estimated, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.

LIFE STAGE is defined as follows:

Y Young: Normally stake dependent, establishing trees. Should be growing fast, usually primarily increasing in height more than spread but as yet making limited impact upon the landscape.

SM Semi-mature: Established young trees, normally of good vigour and still increasing in height but beginning to spread laterally. Beginning to make an impact upon the local landscape and environment. Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature).

EM Early-mature: Not yet having reached 75% of expected mature size. Established young trees, normall good vigour and still increasing in height but beginning to spread laterally. Beginning to make an ir upon the local landscape and environment.

M Mature: Well-established trees, still growing with some vigour but tending to fill out and increase sp Bark may be beginning to crack and fissure. In the middle half of their safe, useful life expectancies.

LM Late-Mature: In full maturity but possibly beyond mature and in a state of natural decline). Still ret some vigour but any growth is slowing.

A Ancient: A tree that has passed beyond maturity and is old/aged compared with other trees of the species. Typically having a very wide trunk and a small canopy.

PHYSIOLOGICAL CONDITION (HEALTH & VITALITY):

Essentially a snapshot of the general health of the tree based upon its general appearance, it's apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (Fungal infections ma be recorded here but decay giving rise to structural weakness would be recorded under 'Structural Condition' –se next parameter):

Good: No significant health issues.

Fair: Indications of slight stress or minor disease (e.g. the presence of minor dieback/deadwoc epicormic shoot growth).

Poor: Significant stress or disease noted; larger areas of dieback than above.

Dead: (or Moribund).

STRUCTURAL CONDITION:

Defects affecting the structural stability of the tree including decay, significant dead wood, root-plate instabilit significant damage to structural roots, weak forks (e.g. those where bark is included between the members) Classified as:

Good: No obvious structural defects: basically sound.

Fair: Minor, potential or incipient defects.

Poor: Significant defect(s) likely to lead to actual failure in the medium to long-term.

Dead: (or Moribund).

ESTIMATED REMAINING CONTRIBUTION:

An estimate of the length of time in years that a tree might be expected to continue to make a useful contribu to the locality at an acceptable level of risk (based on an assumption of continued routine maintenance):

- Less than 10 years
- 10+ years
- 20+ years
- 40+ years

SPECIAL IMPORTANCE:

Trees that are particularly notable as high value trees such as ancient trees/woodland or veteran trees. Such trees may be regarded as the principal arboricultural features of a site and pose a significant constraint to potential development.

An *ancient* tree is one that has passed beyond maturity and is very old compared with other trees of the same species. Very few trees reach the ancient life-stage.

Veteran trees are often very old but not necessarily so; they may be regarded as 'survivors' that have developed some of the characteristic features of an ancient tree but have not necessarily lived as long. All ancient trees are veterans but not all veteran trees are ancient.

An ancient woodland is an area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland (ASNW), plantations on ancient woodland sites (PAWS) and ancient replanted woodland (ARW)

QUALITY CATEGORY:

Trees are classed as category U, A, B or C, based on criteria given in BS5837:2012; summary definitions as follows (see BS5837 for further details). Categories A, B and C are further characterised by the use of sub-categories, which attempt to identify what aspect of the tree is the main source of its perceived value, These are:

(1) arboricultural qualities
(2) landscape qualities, and
(3) cultural, historic or ecological/conservation qualities.

Examples of these qualities for each of the three categories are given below, although these are indicative only.

Note: This is NOT a health and safety classification; the classification does not take into account any requirement for remedial tree care or ongoing maintenance apart from that which may affect the trees' general suitability for retention.

CATEGORY A: HIGH QUALITY:

Trees or groups whose retention should be given a particularly high priority within the design process. Normally with an expected useful life expectancy of at least 40 years.

A1: Notably fine specimens; rare or unusual specimens; essential component trees within groups, semi-formal or formal plantings (e.g. dominant trees within an avenue etc.).

A2: Trees, groups or woodlands of particular visual importance as landscape features.

A3: Trees, groups or woodlands of particular significance by virtue of their conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture.)

CATEGORY B: MODERATE QUALITY:

Trees or groups of some importance with a likely useful life expectancy in excess of 20 years. Their retention would be desirable; selective removal of certain individuals may be acceptable but only after full consideration of all alternative courses of action.

B1: Fair quality but not exceptional; good specimens showing some impairment (e.g. remediable defects, min storm damage or poor past management.)

B2: Acceptable trees situated such as to have little visual impact within the wider locality. Also numbers of tree perhaps in groups or woodlands, whose value as landscape features is greater collectively than warrant as individuals (such that the selective removal of an individual would not impact greatly upo trees' overall, collective value).

B3: Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.

CATEGORY C: LOW QUALITY:

Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years. Al small trees with stems below 15cm diameter.

Potentially retainable, but not of sufficient value to be regarded as a significant planning constraint.

C1: Unremarkable trees of very limited merit or of significantly impaired condition.

C2: Trees offering only low or short-term landscape benefits; also secondary specimens within g woodlands whose loss would not significantly diminish their landscape value.

C3: Trees with extremely limited conservation or other cultural benefit.

CATEGORY U:

Trees likely to prove to be unsuitable for retention for longer than 10 years should any significant increase in usage arise as a result of development.

E.g. dead or moribund trees; those at risk of collapse or in terminal decline; trees that will be left unstable by oth essential works such as the removal of nearby category U trees; trees infected by pathogens that could materia affect other trees; low quality trees that are suppressing better specimens.

(Category U trees may have conservation values that it might be desirable to preserve. This category may include trees that should be removed irrespective of any development proposals.)

ROOT PROTECTION AREA (RPA):

These are normally represented as a circle centred on the base of each tree stem with a radius of 12 times s diameter, measured at 1.5m above ground level. The shape of the RPA may be altered where site cor dictate that there are sound reasons to do so.

VETERAN OR ANCIENT TREE BUFFER (VTB/ATB)

In line with the Standing Advice produced by the Forestry Commission and Natural England this is a buffer zone (i metres) around an ancient or veteran tree that should be at least 15 times larger than the diameter of the tree. Th buffer zone should be 5m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter.

ANCIENT WOODLAND BUFFER (FOR ASNW, PAWS OR ARW)

In line with the Standing Advice produced by the Forestry Commission and Natural England this is a buffer zone a at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond t distance, a larger buffer zone may be required.

THE IMPORTANCE OF TREES

Wider benefits:

There is a growing body of evidence that trees bring a wide range of benefits to the places people live.

Some *Economic* benefits of trees include:

- Trees can increase property values
- As trees grow larger, the lift they give to property values grows proportionately
- They can improve the environmental performance of buildings by reducing heating and cooling costs, thereby cutting bills
- Mature landscapes with trees can be worth more as development sites
- Trees create a positive perception of a place for potential property buyers
- Urban trees improve the health of local populations, reducing healthcare costs

Some *Social* benefits of trees include:

- Trees help create a sense of place and local identity
- They benefit communities by increasing pride in the local area
- They can create focal points and landmarks
- They have a positive impact on people's physical and mental health
- They can have a positive impact on crime reduction

Some *Environmental* benefits of trees include:

- Urban trees reduce the 'urban heat island effect' of localised temperature extremes
- They provide shade, making streets and buildings cooler in summer
- They help remove dust and particulates from the air
- They help to reduce traffic noise by absorbing and deflecting sound
- They help to reduce wind speeds
- By providing food and shelter for wildlife they help increase biodiversity
- They can reduce the effects of flash flooding by slowing the rate at which rainfall reaches the ground
- They can help remediate contaminated soil

On new development sites:

Trees bring many benefits to new development. Where retained successfully they can form impo sustainable elements of green infrastructure, contribute to urban cooling and reduce energy demands in building Their importance is acknowledged in relation to adaptation to the effects of climate change. Othe brought by trees include:

- increasing property values;
- visual amenity
- softening, complementing and adding maturity to built form
- displaying seasonal change
- increasing wildlife opportunities in built-up areas
- contributing to screening and shade
- reducing wind speed and turbulence

NATIONAL PLANNING POLICY

The National Planning Policy Framework 2021 (NPPF paragraph 180) states that, when determi planning applications, local planning authorities should apply the following principle:

c) 'development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodlan and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.'

In this respect the following definitions apply:

'Ancient woodland: An area that has been wooded continuously since at least 1600 AD. It in ancient semi-natural woodland and plantations on ancient woodland sites (PAWS)', and

'Ancient or veteran tree: A tree which, because of its age, size and condition, is of e biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are enough to be ancient, but are old relative to other trees of the same species. Very few trees species reach the ancient life-stage.'

Note: Further information from the National Planning Policy Guidance Suite and Standing Ad provided in the design guidance section.

Other paragraphs of the NPPF 2021 of relevance to this report are:

Paragraph 131: *'Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.'*

Paragraph 174: *'Planning policies and decisions should contribute to and enhance the natural and local environment by:*
b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.'

STATUTORY CONTROLS

Statutory tree protection

Works to trees which are covered by Tree Preservation Orders (TPOs) or are within a Conservation Area (CA) require permission or consent from the Local Planning Authority. Where information is available on any Statutory designations such as this they are identified within the summary table in Section 1 and on the Tree Survey and Constraints Plan at Section 2.

Notwithstanding specific exceptions and in general terms, a TPO prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of protected trees or woodlands without the prior written consent of the LPA.

Penalties for contravention of a TPO tend to reflect the extent of damage caused but can, in the event of a tree being destroyed, result in a fine of up to £20,000 if convicted in a Magistrates' Court, or an unlimited fine is the matter is determined by the Crown Court.

Similarly, and again notwithstanding specific exceptions, it is an offence to carry out any works to a tree in a Conservation Area with a trunk diameter greater than 75mm diameter at 1.5 height without having first provided the LPA with 6 weeks written notification of intent to carry out the works.

On many non-residential sites (excluding specific exemptions) there is also a statutory restriction relating to tree felling that relates to quantities of timber that can be removed within set time periods. In basic terms, it is an offence to remove more than 5 cubic metres of timber in any one calendar quarter witho having first obtained a felling licence from the Forestry Commission.

Any proposed tree works that are planned to be carried out on site must be carried out in accorda with the statutory controls outlined. Therefore, we recommend that a further check is made with the LP before any tree works are carried out.

Statutory Wildlife Protection

Although preliminary visual checks from ground level of likely wildlife habitats are made at the tim surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fal outside of the scope for this report.

Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for prote species such as bats in addition to birds and small mammals. It is advised that in some in specialist ecological advice may be required. This may result in tree works being carried out followinç detailed climbing inspection to the tree to ensure that protected species or their nests/roosts a disturbed. If any are found, the site manager, site owner or consulting arboriculturist should be informe and appropriate action taken as recommended by the appointed Ecologist or the relevant Sta Nature Conservation Organisation (SNCO): Natural England, Scottish Natural Heritage or Resources Wales.

It is advised that tree/hedgerow works are carried out with the understanding that birds will gen nest in trees, hedges and shrubs between March and August. This time period only pr indication of likely nesting times and as such diligence is required when undertaking tree works times.

Irrespective of the time of year and other than any actions approved under General Licence, it offence to intentionally kill, injure or take any wild bird or to intentionally take, damage or destrc nest or eggs of any wild bird. Ideally, tree operations should be avoided during the likely bird ne period. However, any tree works should always only be carried out following a preliminary visual check of the vegetation.

For information, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Righ Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form basis of the statutory legislation for flora and fauna in England and Wales. A different l framework applies in Scotland and Northern Ireland.

Any proposed tree works that are planned to be carried out on site must be carried out in accordance with any relevant statutory controls, outlined above.

DESIGN GUIDANCE

Approach

The approach adopts the guidelines set out in the British Standard BS 5837:2012 Trees in relation to design, demolition and construction –Recommendations. The process is broken down to coordinate with the key elements within both the RIBA Plan of Work (2013) and British Standard 5837:2012 as set out in the table below:

Information Stage	RIBA Stage	BS5837:2012
Stage A –Tree Survey	2: Concept	4: Feasibility
Stage B –Arboricultural Impact Assessment	3: Developed design	5: Proposals
Stage C –Arboricultural Method Statement	4: Technical design	6: Technical Design
Stage D –Arboricultural Site Supervision	5: Construction	7: Demolition and construction

A hierarchical approach is adopted in order to achieve optimum use of the site and location of built structures. This is set out below:

Avoid

The starting point of Site layout design should be to avoid the RPA of retained trees and provide suitable clearance from above ground constraints [tree canopies]. Where possible building lines should be at least 2m outside the RPA to provide working space for construction. However, protection measures can be taken if such clearance is not achievable.

Mitigate

Where intrusion within the RPA is unavoidable then its impact on the tree can be mitigated by specialist measures:

Foundations that avoid trenching e.g. screw piles, suspended floor slabs or casting at ground level for lightweight structures such as bin and cycle stores.

Limited use may be made for parking, drives or hard surfaces within the root protection areas, subject t advice from a qualified arboriculturist. Cellular confinement systems that enable hard surfaces to be buil above existing soil levels are acceptable methods subject to site-specific soil conditions.

Service runs that cannot be routed outside the RPA(s) can be installed by, for example, thrust bo directional drilling, air excavation or hand digging. These operations often require supervision b project arboriculturist.

Compensate

Replacement planting can ensure the continuity of tree cover where tree removal is unavoid desirable. Off-site provision may be considered in some circumstances but this will require negotia with the local planning authority.

Considerations:

For proposed residential developments, consideration must be given to numerous factors future growth and orientation.

Tree constraints

Root Protection Areas:

With reference to BS5837:2012, a root protection area (RPA) is defined as “a layout de indicating the minimum area around a tree deemed to contain sufficient roots and rooting volu maintain the tree’s viability, and where the protection of the roots and soil structure should be treated a a priority”. “**The default position [when considering design layout in relation to RPAs] shoul that structures are located outside the RPAs of trees to be retained**”.

BS5837:2012 states (4.6.2) that, “where pre-existing site conditions or other factors indicate that rootin has occurred asymmetrically, a polygon of equivalent area should be produced.” The BS goes state that, “modifications to the shape of the RPA should reflect a soundly based arb assessment of likely root distribution,” and that any deviation from the original circular plot should t into account:

- Morphology and disposition of roots;
- topography and drainage;

- soil type and structure;
- the likely tolerance of the tree to root damage/disturbance.

Additional buffer zones beyond the RPA:
The following text is taken from the Standing Advice produced by the Forestry Commission and Natural England as included in the National Planning Policy Guidance:

'A buffer zone's purpose is to protect ancient woodland and individual ancient or veteran trees. The size and type of buffer zone should vary depending on the scale, type and impact of the development'.

Ancient woodland buffer:
'For ancient woodlands, you should have a buffer zone of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this distance, you're likely to need a larger buffer zone. For example, the effect of air pollution from development that results in a significant increase in traffic'.

Ancient and veteran tree buffer:
'A buffer zone around an ancient or veteran tree should be at least 15 times larger than the diameter of the tree. The buffer zone should be 5m from the edge of the tree's canopy if that area is larger than 15 times the tree's diameter'.

Above ground:
Above ground constraints posed by trees describe the capacity for trees to have an overbearing or dominating effect on new developments; usually post occupancy. Typical above ground constraints include a number or combination of inconveniences including shading, branch spread, movement of trees during strong winds and so on. If not adequately considered, above ground constraints can lead to repeated requests to fell or heavily prune retained and protected trees.

Shade:
Adverse shading and blocked views from windows raise concerns for incoming residents, which may lead to pressure to fell or remove trees in the future. Wherever possible it is advisable to arrange fenestration away from tree canopies to lessen the conflict, or increase window size to accommodate ambient light. Conversely, appropriate designed development can use existing or new trees to create necessary and welcome shade and screening.
As part of the adopted approach the above considerations and constraints are assessed cumulatively in order to provide clear and site-specific advice on the areas of a site most suitable for the location of development.

Dependent on the site and nature of the proposed development, the Tree Survey and Constraints Plan may show the following:

Recommended Developable area - an advisory area defined in order to minimise arboricultural impact using standard approaches to construction. Restricting proposed development to this area will limit t risk of harm to retained trees and of the Local Planning Authority objecting to t development. It may be possible to propose development outside of this area but specific 'low impa construction techniques may be needed recommended.

Recommended Buffer to development - similar to the Recommend Developable Area but defined as line marking a suitable buffer to retained trees. More commonly used on large sites or sites where presence of trees is localised.

Tree Opportunities

Depending on the scale of developments existing trees can often provide opportunities to enhance t existing arboricultural resource of a site by bringing it into good management or by putting in remedial measures e.g. soil amelioration.

Appropriately designed new tree planting is extremely important in maintaining healthy and sustainab tree populations. For the reasons highlighted, new trees can bring many benefits to new developments It is critical to the establishment of new tree planting that the locations, species and specification of ne trees is appropriate. Subsequently the sourcing of high-quality stock, suitable planting and the provisio of post planting maintenance are essential to allow new trees to establish and to allow them to mature.

HOW TREE DAMAGE CAN OCCUR

Above the ground

Damage can occur as a result of knocks and scuffs, breakages of branches and/or tree trunks. This is often but not always associated with machine operations, groundworks excavations, tele handlers, high sided vehicles and crane use. Other forms of above ground damage include fixings to trunk and unauthorised cutting back of branches. Wounds will harm a tree's health and shorten its life by letting in disease-causing organisms.

Below the ground

It is often not appreciated that the majority of most tree roots are generally located within the top 600mm of the ground. On this basis it needs to be understood that damage to roots can occur in three ways:

- Root severance can occur as a result of, for example, soil stripping during site clearance or excavations.
- Root dieback and death can result from compaction of the soil. Compaction can occur as a result of vehicle weight, weight of stored materials or increased pedestrian access. Compaction crushes out soil pore space and prevents tree respiration from occurring (respiration requires gas exchange between the ground and the atmosphere). Compacted soil is denser and therefore inhibits/prevents any further new root growth.
- Pollution of the soil with chemicals such as oil or cement washings can destroy the soil environment, making it inhospitable for the tree cause causing it stress.

The effects of these impacts can be disfiguring to a tree's appearance and also weaken a tree making it more liable to attack by pest and diseases. In addition, root damage or death results in corresponding decline above the ground with dieback occurring within the tree crown.

The effects of damage to trees generally take some time to become fully apparent. In many cases, damaged trees decline slowly after the completion of a new development, until they eventually need to be removed due to ill health.

Tree protection barriers and load distributing 'no-dig' paths are specified in order to prevent soil compaction from taking place.

GENERAL SITE RULES FOR TREE PROTECTION

Do not independently carry out any activity that is at odds with the site scheme of tree protection. This is containe within an approved Arboricultural Method Statement (AMS) and accompanying Tree Protection Plan.

In simple terms: do not carry out any work within any Construction Exclusion Zone (CEZ) without prior liaison w the Project Arboriculturist and written authorisation from the Local Planning Authority.

Within the CEZ:

- No mixing of cement
- No soil/turf stripping, raising/lowering of ground levels (unless advised), deposit or excavation of soil or rubble
- No excavations for services or installation of services
- No storage of materials, machinery fuel, chemicals or other materials of any other description
- No parking/use of tracked or wheeled machinery
- No siting of temporary structures including hard standing areas, portaloos, site huts
- No lighting of fires or disposal of liquids
- Fires on site should be avoided if possible. Where they are unavoidable, they must not be lit in a position wher heat could damage foliage or branches. Fires must be a minimum of 20m from the trunk of any retained tree o the centre line of any hedgerow to be retained
- No signs, cables, fixtures or fittings of any other description shall be attached to any part of a retained tree