

ARBORICULTURAL IMPACT ASSESSMENT

Maes Bach ESS

October 2024



Barton Hyett Associates
Arboricultural Consultants

Summary table		
Site Name:	Maess Bach BESS	
Project reference:	6433	
Site Address:	Maes Bach Farm, Maesmawr Road, Gwaelod-y-garth, Cardiff	
Nearest Postcode:	CF15 9JL	
Central Grid reference:	<u>ST 10425 85647</u>	
Local Planning Authority:	<u>Rhondda Cynon Taf</u>	
Relevant planning policies:	<u>Rhondda Cynon Taf Local Development Plan 2011 - 2021</u> (still in use): Policy AW 8 - Protection and Enhancement of the Natural Environment	
Statutory Controls:	Tree Preservation Order	Conservation Area
	TBC	<u>No</u>
Ancient trees/ woodlands?	<u>Ancient Semi-Natural Woodland: W1, W2, W3</u>	
Soil Type: (Source: BGS online soils map © NERC 2024)	Superficial/Drift	Bedrock
	<u>Till, Devonian - Diamicton</u>	<u>Grovesend Formation - Sadstone / Higher Member - Mudstone</u>
Proposed site plan:	FST025 PL-01 Rev06	
Report author:	Joe Robson BSc (<i>Hons</i>), MArborA	
Checked by:	Richard Hyett MSc, BSc (<i>Hons</i>), MICFoR	
Date of issue:	25/10/24	

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1. INTRODUCTION

- 1.1. Barton Hyett Associates Ltd have been instructed by Firstway Energy on behalf of Net Zero Twenty Five Limited to survey trees located on land associated with Maes Bach Farm and adjacent roads ('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 an Energy Storage System (ESS) and an indicative cable route at the site and provide written advice on how they inform feasibility and design options. The instruction also required an assessment of the potential impact (the Arboricultural Impact Assessment) of the proposed development on the site's arboricultural resource to be undertaken.

2. SITE DESCRIPTION

- 2.1. The site consists of a single agricultural field and an indicative cable route. The field is located to the east of Maesmawr Road, Pontypridd. The cable route extends north from the field, along Maesmawr Road, joining Pound Farm Lane and then the A473, following this road to the east and terminating at a substation to the south of the A473.
- 2.2. The site is located to the south of Pontypridd, to the west of Caerphilly, to the north of Cardiff and to the east of Church Village.



Figure 1: Approximate survey area around agricultural field (yellow) and approximate RLB (red). Google Maps 2024.



Figure 2: Approximate indicative cable route, survey area with agricultural field within RLB shown with red point. Google Maps 2024.

- 2.3. The Red Line Boundary (RLB) spans the agricultural field's northern, southern and western boundaries but is within the field on its eastern boundary.
- 2.4. Category **B** managed hedgerows span the agricultural field's northern and western boundaries with a farm track beyond the northern field boundary within the RLB and Maesmawr Road beyond the western boundary. Category **A** individual and groups of trees span the agricultural field's southern boundary separating it from a solar farm. Category **B** individual and groups of trees are sporadically spaced beyond the Red Line Boundary (RLB) on the field's eastern boundary. There are no arboricultural features on the eastern RLB within the agricultural field.
- 2.5. The agricultural field is currently accessible via an agricultural access off the farm track outside the RLB to the northeast.
- 2.6. The agricultural field is on relatively level ground at around 118 metres above sea level. Ground level decreases steadily to the north as the site progresses along the indicative cable route.

3. TREE SURVEY FINDINGS

- 3.1. A total of 73 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 3**) and within the Tree Survey Schedule (**Section 4**).

Table 1: Summary of arboricultural features of each BS5837 quality category

	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	22	7	15	-	-
Groups	30	7	18	5	-
Woodlands	3	3	-	-	-
Hedgerows	18	-	14	4	-
Total	73	17	47	9	0

4. KEY ARBORICULTURAL FEATURES

- 4.1. The site benefits from numerous category **A** individual trees and groups of trees on the southern boundary of the agricultural field. These are T19, T20, T22, G27, G28 and G30 large, high-quality, characterful pedunculate oak with some hawthorn included in the group features. G30 extends further into the site on the southwestern side of the group, and the group is growing immediately north of an old ditch.
- 4.2. There are a number of high-quality category **A** features recorded alongside the indicative cable route on Maesmawr Road and Pound Farm Lane. This includes T10, a category **A1** sycamore with a large stem diameter which was recorded as 'notable'¹ in the Tree Survey Schedule, and T5, T6, G12, G13 and G17 consisting of various broadleaf species, including common beech, pedunculate oak, common ash and hybrid black poplar.
- 4.3. A single category **A** group was recorded alongside the indicative cable route adjacent to the A473. This high-quality tree group, G2, is located north of the A473 and opposite the sub-station where the indicative cable route terminates. The Root Protection Area (RPA) is almost entirely set back from the road.
- 4.4. RPAs associated with some recorded features alongside the indicative cable route extend beneath the public highways. These RPAs should be seen as notional; it is unlikely that the RPAs extend beneath the public highways to the extent which is displayed on the Tree Survey and Constraints Plan. It is more likely that the RPAs are in fact asymmetric and likely to extend further away from hard standing and toward less compacted ground which is better suited to root growth. The likelihood of RPAs being asymmetric and extending away from public highways is further increased where arboricultural features are growing on ground significantly higher or lower than that of the adjacent highway. This is the case at various points on Maesmawr Road and Pound Farm Lane, for example around G14 - G17.
- 4.5. Ancient Semi-Natural Woodlands (ASNW), W1, W2 and W3 have been recorded in the tree survey data and are located on either side of Pound Farm Lane on the indicative cable route. These woodlands have been recorded as category **A2** features owing to the ASNW designation assigned to them. Without the ASNW designation, these woodlands would be assigned a lower quality classification owing to their structural and physiological condition.
- 4.6. A woodland is described as ASNW when it has persisted since at least the year 1600. Planning Policy Wales states that "ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees, woodlands and hedgerows are to be afforded protection from development which would result in their **loss** or **deterioration** unless very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW..."² (emphasis added).

- 4.7. Government guidance also states that ASNW buffers should be a minimum of 15 metres from the boundary of the woodland, though it may be reasonable to extend the buffer further. Such buffers are implemented for several reasons including, for example, to protect delicate below-ground soil structures and mycorrhizal relationships.
- 4.8. Public highway Pound Farm Lane has already been developed well within the ASNW buffers. It is indeed likely, as per Data Map Wales ASNW mapping (see Figure 3), that W1 and W2 were once a single woodland and significant felling work was completed prior to the development of the road.
- 4.9. It is therefore highly unlikely that excavations into the public highway that fall within the ASNW buffers would cause any '**loss** or **deterioration**' to the ASNW. Root growth, if any, is likely to be fibrous and it is highly unlikely that mycorrhizal relationships have persisted following the development of the road.

5. PROPOSED DEVELOPMENT

- 5.1. The development proposal is for the installation of an Energy Storage System (ESS), associated infrastructure, access and underground cabling linking to a Point of Connection (PoC).
- 5.2. The proposed site layout is shown on the proposed site plan FST025 PL-01 Rev06 (as amended and submitted).

6. IMPACT ASSESSMENT

- 6.1. The impact assessment considers the effects of any tree loss required to implement the proposed development as well as any reasonably foreseeable, potentially damaging activities proposed in the vicinity of retained trees. This is undertaken with reference to BS 5837:2012 and considering the nature of the proposed development. Actual and potential impacts can include tree removal to facilitate the development, soil compaction in close proximity to trees, and direct impact damage to the canopy and roots of retained trees from construction activities. A summary of anticipated impacts resulting from the proposed development is provided below.

Trees to be removed

- 6.2. No trees, groups of trees or woodlands require removal to facilitate the development proposal.
- 6.3. Sections of two category **B2** hedgerows, H16 and H18, require removal to create an access into the agricultural field from Maesmawr Road. This amounts to 16 metres of hedgerow removal; 13 metres removed from the western side of H16 and 3 metres removed from the northern edge of H18. These removals are shown on the Tree Retention and Removal Plan in **Section 3**.

¹ The term 'notable' carries no weight within the National Planning Policy Framework (NPPF), but is a term that recognises a mature tree which may stand out in the local environment.

² Paragraph 6.4.43 of the Planning Policy Wales - Edition 12, February 2024 (PPW).

Impacts on retained trees

- 6.4. Crown lifting works may be required to trees, groups of trees and woodlands alongside Maesmawr Road and Pound Farm Lane to allow for materials, plant and equipment to be transported to site. Pruning over the road would be to allow clearance of up to 6 metres. This work is in line with general good management practice for roadside trees. Given the agricultural ongoing works in the immediate area it is unlikely that pruning requirements are beyond what is already undertaken periodically as a matter of course.
- 6.5. The development proposal includes the provision for underground cabling to link to link the agricultural field to the south and the PoC to the north of the site. This cable is to be installed into the road (A473) from the PoC in the north, progressing to Pound Farm Lane and then Maesmawr Road in the south before linking with infrastructure in the agricultural field. The route impacts ASNW buffers and notional RPAs and is to be installed by means of an open trench. An arboricultural Watching Brief shall oversee the works at key points along the cable route. These key points are marked on the Tree Retention and Removal Plan with Target Notes 1-5 and are located around ASNW buffer zones and category **A** notional RPAs.
- 6.6. The design proposal includes a DNO access road within the agricultural field to the south of the site. This road impacts RPAs associated with G30 category **A2** group. A 'no-dig' construction methodology is to be utilised to minimise compaction within the RPA.
- 6.7. Any soft landscaping proposals within RPAs shall be undertaken using hand tools.
- 6.8. Due to the nature of the proposal, it is highly unlikely that any further significant tree works beyond general good maintenance will be required following its completion.

Conclusion

- 6.9. The proposal is feasible from an arboricultural perspective, and if carefully implemented according to an approved arboricultural method statement, there would be no or only a low potential negative impact on the retained trees.
- 6.10. The indicative cable route does not require the **loss** of any ASNW. Owing to the fact that public highways have long existed within ASNW buffers associated with W1, W2 and W3 it is unlikely that there will be any **deterioration** as a result of the cable being installed into the road by means of an open trench. An arboricultural Watching Brief further reduces the likelihood of deterioration.
- 6.11. RPAs associated with trees on roadsides can be seen as notional; it is unlikely that there is significant root growth beneath the highways. An arboricultural Watching Brief around category **A** features to ensure any root loss as a result of underground cable installation is minimised further reduces the likelihood of negative impact.
- 6.12. A combined draft Tree Retention and Removal and Tree Protection Plan are included in **Section 3**.

7. TREE PROTECTION MEASURES

- 7.1. Tree protection fencing is to be erected around RPAs associated with T21, T22, G28, G29 and G30. These arboricultural features, located on the southern boundary of the agricultural field, are close to the proposed DNO access road and main development area. A no-dig construction methodology is to be used to construct the access road where it is located within RPAs. Tree protection fencing is to be erected on the edge of the RPAs in the first instance and moved to a secondary position within the RPAs both during and following the construction of the no-dig section of the DNO access road.
- 7.2. This is shown on the draft Tree Protection Plan with tree protection fencing in its initial position in blue and in its secondary position in orange. Target Note 6 on the plan further explains this approach.
- 7.3. The main development area within the agricultural field is to be surrounded by security fencing. This security fencing is to be erected prior to any other works on site and is to serve as tree protection fencing for the remaining arboricultural features (hedgerows) on site. Should this prove to be impractical, for reasons such as supply or logistical issues, an alternative solution shall be agreed upon following consultation with the Local Planning Authority.

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

- 8.1. BS 5837:2012 (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 BS 5837:2012, 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. 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 removals and facilitation pruning - as shown on the Tree Retention and Removal Plan (TRRP).
 - Erection of tree protection barriers as may be required as per the Tree Protection Plan (TPP).
 - Erection of security fencing as per final design.
 - Site preparation and ground works - no access for any machinery within the fenced tree protection areas.

- Construction phase, main site area - to include no-dig construction within RPAs as per the TPP. Tree protection fencing to be moved to secondary position following completion of road within RPAs. All tree protection measures shall remain in situ and intact for the duration of the construction phase.
- Construction phase, indicative cable route - arboricultural Watching Brief to be undertaken within ASNW buffers and category **A** RPAs.
- Removal of tree protection barriers - only to occur following approval of site conditions by the project arboriculturist.
- Final landscaping including tree planting.

9. CONCLUSIONS AND RECOMMENDATIONS

- 9.1. In conclusion, overall the arboricultural impacts of the development proposal on trees at the site are minimal.
- 9.2. The design proposal requires the removal of up to 16 metres of category **B2** hedgerow.
- 9.3. The loss of the two sections of hedgerow can be mitigated by landscape planting.
- 9.4. Measures including tree protection fencing, no-dig construction and specific works being overseen by an arboricultural Watching Brief are sufficient to prevent any further loss or deterioration of retained arboricultural features and to sustain their health and longevity.
- 9.5. The feasibility and specification of a no-dig cellular confinement system construction for the DNO access road should be the subject of further technical design.
- 9.6. A detailed AMS and finalised Tree Protection Plan will 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 pre-commencement planning condition (by agreement with the applicant).

Joe Robson

Joe Robson BSc (Hons), MArborA
Arboriculturist



IMAGE 1: G28 and lower quality G29 on southern boundary of agricultural field. Photo taken facing southeast.



IMAGE 2: G30, facing southwest. Photo shows G30 extending into site on RHS.



IMAGE 3: G30 with ditch to south of stems and existing solar farm fencing to south of site. Photo taken facing northeast.



IMAGE 4: Facing south into agricultural field site access. Photo taken from just outside RLB.



IMAGE 5: H14 and T15 on Maesmawr Road facing north.



IMAGE 6: G9 facing north from Pound Farm Lane onto the A473.

Tree Ref	Species	Height (m)	LifeStage	RPA Radius (m)	RPA (m2)
T1	Willow (Goat)	12	EM	4.8	72
T2	Willow (Goat)	14	EM	5.4	92
T3	Alder (Common)	13	SM	3.3	36
T4	Willow (Goat)	10	EM	4.2	56
T5	Oak (English)	17	M	7	152
T6	Oak (English)	13	M	7.8	191
T7	Maple (Fries)	9	SM	3.6	41
T8	Sycamore	12	M	6.9	248
T9	Alder (Common)	10	SM	4.9	76
T10	Sycamore	17	M	14.4	651
T11	Chestnut (Horse)	14	EM	7.2	163
T12	Sycamore	17	M	8.4	222
T13	Ash (Common)	10	EM	5.4	92
T14	Sycamore	11	SM	8.4	222
T15	Oak (English)	12	EM	6	113
T16	Beech (Common)	6	EM	5.4	101
T17	Hawthorn	4	EM	2.8	22
T18	Hawthorn	3	EM	2.2	15
T19	Oak (English)	13	EM	6	113
T20	Oak (English)	11	EM	9	294
T21	Oak (English)	7	EM	6	113
T22	Oak (English)	14	EM	11.4	408

Group Ref	Species	Height Range (m)	LifeStage	RPA Radius (m)	RPA (m2)
G1	Ash, alder, oak, silver birch	5-18	EM	4.8	72
G2	Common ash, raywood ash, chest, silver birch, alder	2-18	EM	9	113
G3	Alder, sycamore, ash, silver birch	4-10	SM	3	36
G4	Alder	4-10	SM	2.4	18
G5	Silver birch, hazel, alder, hawthorn, gorse	3-10	SM	2.4	18
G6	Alder, silver birch, goat willow	3-10	SM	2.4	18
G7	Silver birch, alder, goat willow, gorse	3-7	Y	1.8	8
G8	Silver birch, alder, hawthorn, buddleja, gorse	3-5	Y	1.5	7
G9	Hazel, blackthorn, alder, silver birch, hawthorn, oak	3-10	SM	2.4	18
G10	Hazel, blackthorn, alder, silver birch, hawthorn, oak	3-10	SM	2.4	18
G11	Goat willow, alder, hawthorn	4-12	SM	2.4	18
G12	Ash, beech, oak	10-15	EM	7.2	163
G13	Oak, beech	8-13	EM	6	113
G14	Hazel, hawthorn, field maple, silver birch	3-10	SM	2.4	18
G15	Alder	13-15	SM	4.8	72
G16	Ash, oak	12-15	SM	3.6	41
G17	Hybrid black poplar	20-38	EM	9.6	290
G18	Sycamore, oak	6-12	SM	2.4	18
G19	Sycamore, ash, hazel, alder	4-10	SM	3.6	41
G20	Sycamore, lime	10-14	EM	6	113
G21	Sycamore, ash, alder, oak, hazel, goat willow	5-15	EM	4.2	55
G22	Sycamore, ash, alder, oak, hazel, goat willow	5-15	EM	4.2	55
G23	Oak, Rowan, hawthorn	3-10	EM	4.8	72
G24	Beech, oak	5-7	EM	5.4	92
G25	Beech, hawthorn	5-7	EM	5.4	92
G26	Hawthorn, alder, oak, hazel	4-9	EM	4.5	65
G27	Oak, hawthorn, ash	5-15	EM	9	294
G28	Oak, hawthorn	4-14	EM	7.2	163
G29	Oak	6-7	EM	4.2	55
G30	Oak	7-14	EM	10.8	305

WoodRef	Species	Height Range (m)	LifeStage	RPA Radius (m)	RPA (m2)
W1	Goat willow, alder, ash, oak, gorse	3-10	SM	2.4	18
W2	Oak, ash, sycamore, silver birch, hazel, hawthorn	3-17	EM	3.6	41
W3	Sycamore, oak, beech, holly, hazel	5-18	EM	6	113

Hedge Ref	Species	Avg. Height (m)	Life Stage	RPA Radius (m)	RPA (m2)
H1	Hazel, hawthorn, holly, blackthorn	4	EM	1.3	5
H2	Hazel, hawthorn, holly, blackthorn	4	EM	1.3	5
H3	Hazel, hawthorn, holly, blackthorn	4	EM	1.3	5
H4	Oak, hawthorn, hazel, holly, ash, blackthorn	3	SM	1.5	7
H5	Oak, hawthorn, hazel, holly, ash, blackthorn	3	SM	1.5	7
H6	Oak, hawthorn, hazel, holly, ash, blackthorn	3	SM	1.5	7
H7	Oak, hawthorn, hazel, holly, ash	2	SM	1.5	7
H8	Oak, hawthorn, hazel	2	SM	1.5	5
H9	Sycamore, hawthorn, hazel	2	SM	1.3	5
H10	Sycamore	5	SM	1.3	5
H11	Cherry laurel	5	SM	1.1	4
H12	Leyland cypress	12	M	2.4	18
H13	Sycamore, hazel, holly, blackthorn	3	EM	1.3	5
H14	Sycamore, hazel, holly, blackthorn	3	EM	1.3	5
H15	Blackthorn, hawthorn, hazel, holly	1	SM	1	3
H16	Holly, hazel, hawthorn, beech	1.5	SM	1.5	5
H17	Holly, hazel, hawthorn, beech	1.5	SM	1.3	5
H18	Holly, hazel, hawthorn, beech	1.5	SM	1.1	4

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)

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

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/offside tree/out of scope (OOS)

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

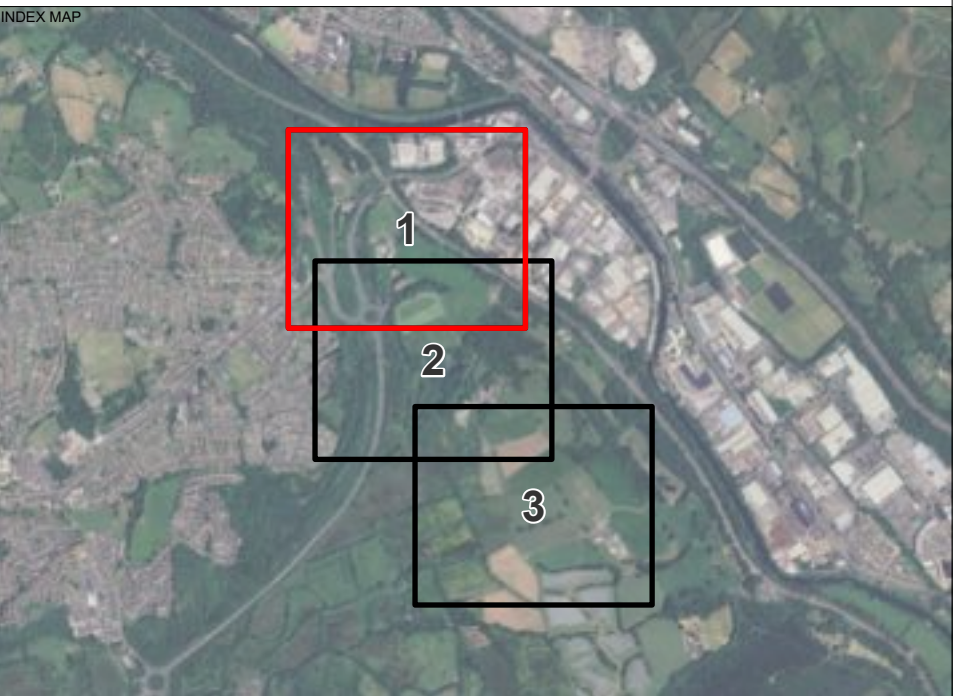
Target Note

Label	Description
OOS	Newly planted trees small diameter. Establishing well.

Target Notes

Label	Description
TN1	Public highway through ASNW polygon

Tree Canopy Area	Tree Group Canopy Area	Woodland Canopy Area	Hedgerow Canopy Area
Category	Category	Category	Category
Total SCM	Total SCM	Total SCM	Total SCM
A 1271.7	A 1001.6	A 6019.9	B 2415.2
B 1170.4	B 35259.1	C 5170.4	C 437.4
C	C		



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

20

40

80 Meters

PROJECT TITLE

Maes Bach (6433)

DRAWING TITLE

Tree Survey Plan

SCALE

Scale: 1:1,250 @ A1

DRAWING NUMBER

BHA_6433_01

DRAWN BY

LB

APPROVED BY

JR

REVISION

-

SHEET

1 of 3

DATE

08/10/2024

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

Net Zero Twenty Five Limited

CREDITS

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Ordnance Survey Copyright Licence number 100054267.

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SUMMIT

GEO

DRAWING PRODUCED BY

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Tree Ref	Species	Height (m)	LifeStage	RPA Radius (m)	RPA (m2)
T1	Willow (Goat)	12	EM	4.8	72
T2	Willow (Goat)	14	EM	5.4	92
T3	Alder (Common)	13	SM	3.3	36
T4	Willow (Goat)	10	EM	4.2	56
T5	Oak (English)	17	M	7	152
T6	Oak (English)	13	M	7.8	191
T7	Maple (Fries)	9	SM	3.6	41
T8	Sycamore	12	M	6.9	248
T9	Alder (Common)	10	SM	4.9	76
T10	Sycamore	17	M	14.4	651
T11	Chestnut (Horse)	14	EM	7.2	163
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G3	Alder, sycamore, ash, silver birch	4-10	SM	3.3	36
G4	Alder	4-10	SM	2.4	18
G5	Silver birch, hazel, alder, hawthorn, gorse	3-10	SM	2.4	18
G6	Alder, silver birch, goat willow	3-10	SM	2.4	18
G7	Silver birch, alder, goat willow, gorse	3-7	Y	1.8	8
G8	Silver birch, alder, hawthorn, buddleja, gorse	3-5	Y	1.5	7
G9	Hazel, blackthorn, alder, silver birch, hawthorn, oak	3-10	SM	2.4	18
G10	Hazel, blackthorn, alder, silver birch, hawthorn, oak	3-10	SM	2.4	18
G11	Goat willow, alder, hawthorn	5-12	SM	2.4	18
G12	Ash, beech, oak	10-15	EM	7.2	163
G13	Oak, beech	8-13	EM	6	113
G14	Hazel, hawthorn, field maple, silver birch	3-10	SM	2.4	18
G15	Alder	13-15	EM	4.8	72
G16	Ash, oak	12-15	SM	3.6	41
G17	Hybrid black poplar	20-38	EM	9.6	290
G18	Sycamore, oak	6-12	SM	2.4	18
G19	Sycamore, ash, hazel, alder	4-10	SM	3.8	41
G20	Sycamore, lime	10-14	EM	6	113
G21	Sycamore, ash, alder, oak, hazel, goat willow	5-15	EM	4.2	55
G22	Sycamore, ash, alder, oak, hazel, goat willow	5-15	EM	4.2	55
G23	Oak, Rowan, hawthorn	3-10	EM	4.8	72
G24	Beech, oak	5-7	EM	5.4	92
G25	Beech, hawthorn	5-7	EM	5.4	92
G26	Hawthorn, alder, oak, hazel	4-9	EM	4.5	65
G27	Oak, hawthorn, ash	5-15	EM	9	264
G28	Oak, hawthorn	4-14	EM	7.2	163
G29	Oak	6-7	EM	4.2	55
G30	Oak	7-14	EM	10.8	365

WoodRef	Species	Height Range (m)	LifeStage	RPA Radius (m)	RPA (m2)
W1	Goat willow, alder, ash, oak, gorse	3-10	SM	2.4	18
W2	Oak, ash, sycamore, silver birch, hazel, hawthorn	3-17	EM	3.6	41
W3	Sycamore, ash, oak, beech, holly, hazel	5-18	EM	6	113

HedgeRef	Species	Avg. Height (m)	Life Stage	RPA Radius (m)	RPA (m2)
H1	Hazel, hawthorn, holly, blackthorn	4	EM	1.3	5
H2	Hazel, hawthorn, holly, blackthorn	4	EM	1.3	5
H3	Hazel, hawthorn, holly, blackthorn	4	EM	1.3	5
H4	Oak, hawthorn, hazel, holly, ash, blackthorn	3	SM	1.5	7
H5	Oak, hawthorn, hazel, holly, ash, blackthorn	3	SM	1.5	7
H6	Oak, hawthorn, hazel, holly, ash, blackthorn	3	SM	1.5	7
H7	Oak, hawthorn, alder, oak, hazel	2	SM	1.5	7
H8	Oak, hawthorn, hazel	2	SM	1.5	5
H9	Sycamore, hawthorn, hazel	2	SM	1.3	5
H10	Sycamore	5	SM	1.3	5
H11	Cherry laurel	5	SM	1.1	4
H12	Leyland cypress	12	M	2.4	18
H13	Sycamore, hazel, holly, blackthorn	3	EM	1.3	5
H14	Sycamore, hazel, holly, blackthorn	3	EM	1.3	5
H15	Blackthorn, hawthorn, hazel, holly	1	SM	1	3
H16	Holly, hazel, hawthorn, beech	1.5	SM	1.5	5
H17	Holly, hazel, hawthorn, beech	1.5	SM	1.3	5
H18	Holly, hazel, hawthorn, beech	1.5	SM	1.1	4

- 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)

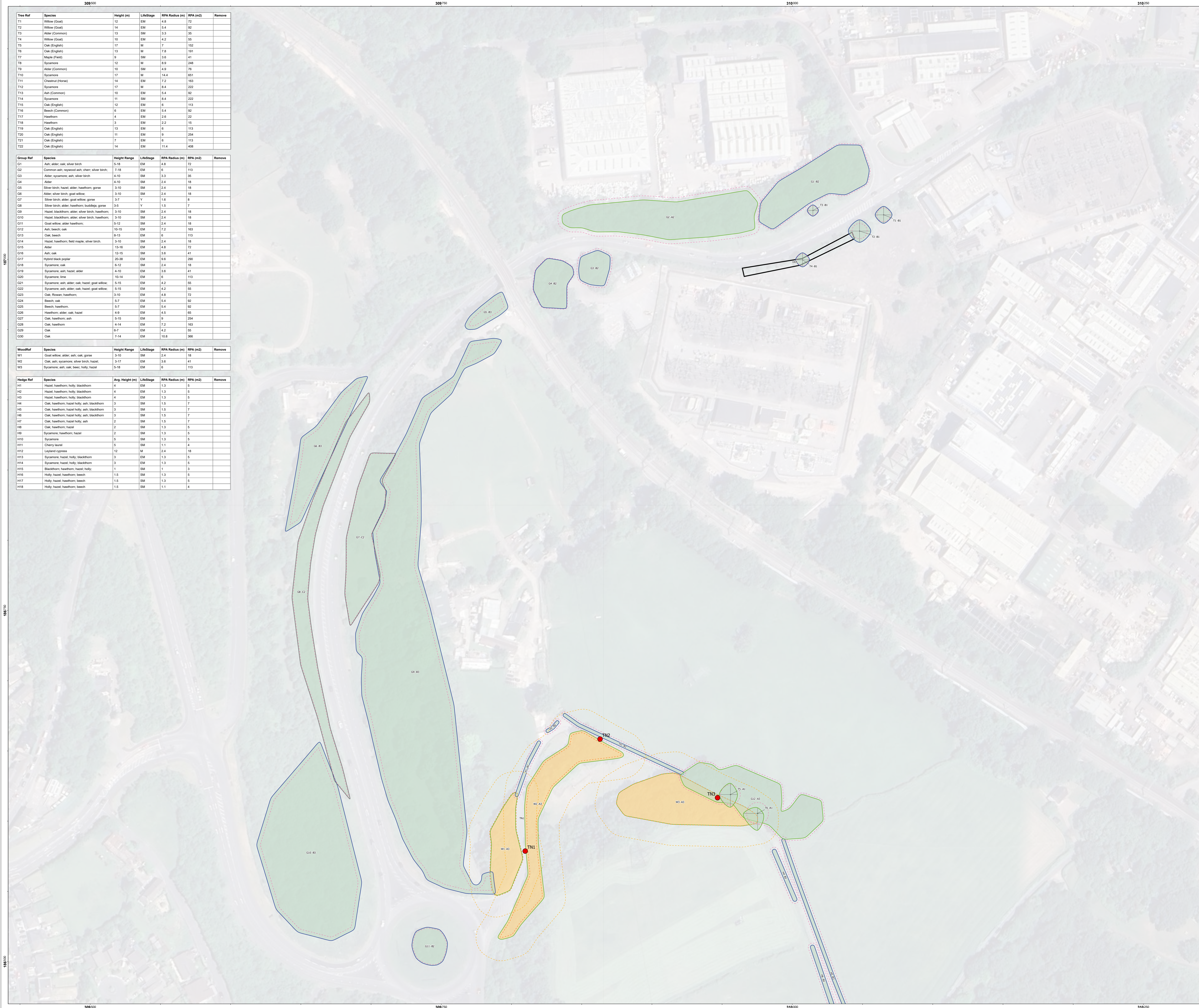
Category U - Hedgerow, Group, Woodland - Very low quality
(Mostly unsuitable for retention)

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

Target Note
- | Label | Description |
|-------|--|
| OOS | Newly planted trees small diameter. Establishing well. |
- | Label | Description |
|-------|-------------------------------------|
| TN1 | Public highway through ASNW polygon |
- | Tree Canopy Area | | Tree Group Canopy Area | | Woodland Canopy Area | | Hedgerow Canopy Area | |
|------------------|-----------|------------------------|-----------|----------------------|-----------|----------------------|-----------|
| Category | Total SCM | Category | Total SCM | Category | Total SCM | Category | Total SCM |
| A | 1273.7 | A | 1001.6 | A | 1001.6 | B | 2415.2 |
| B | 1170.4 | B | 35259.1 | B | 6519.9 | C | 437.4 |
| C | | C | 5170.4 | C | | | |
-
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-
- PROJECT TITLE
Maes Bach (6433)
- DRAWING TITLE
Tree Survey Plan
- | SCALE | Scale: 1:1,250 @ A1 | DRAWING NUMBER | BHA_6433_01 |
|----------|---------------------|----------------|-------------|
| DRAWN BY | LB | APPROVED BY | JR |
| REVISION | - | DATE | 08/10/2024 |
| SHEET | 2 of 3 | | |
- COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)
- CLIENT
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- Barton Hyett Associates**
Arboricultural Consultants
- Tel: 01386 576161
Address: Office 3E, Deer Park Business Centre,
Edington, 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)
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- Shrub mass/offside tree/out of scope (OOS)
- Tree/Group/Hedgerow not on topographical survey. Location given is an estimate
- Tree / Hedgerow / Group to be removed

Protection Measures

- Tree Protection Barrier
- Secondary Tree Protection Barrier - location to allow works within CEZ (only in accordance with detailed AMS)
- Cellular Confinement System (see AMS report for specification)
- 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

Target Notes

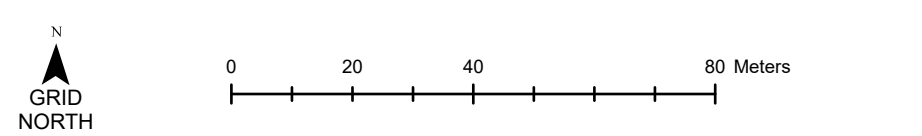
Label	Description
TN3	Cable route. Open trench with washing brief
TN2	Cable route. Open trench with washing brief
TN1	Cable route. Open trench with washing brief
TN4	Cable route. Open trench with washing brief
TN5	Cable route. Open trench with washing brief
TN6	Tree protection notices to be attached to outer (blast) line in first instance then moved to inner (orange line following completion of roady road)

Label	Description
OOS	Newly planted trees small diameter. Establishing well.

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 check with specific requirements of any relevant planning conditions).



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PROJECT TITLE
Maes Bach (6433)

DRAWING TITLE
Tree Retention and Removal Plan

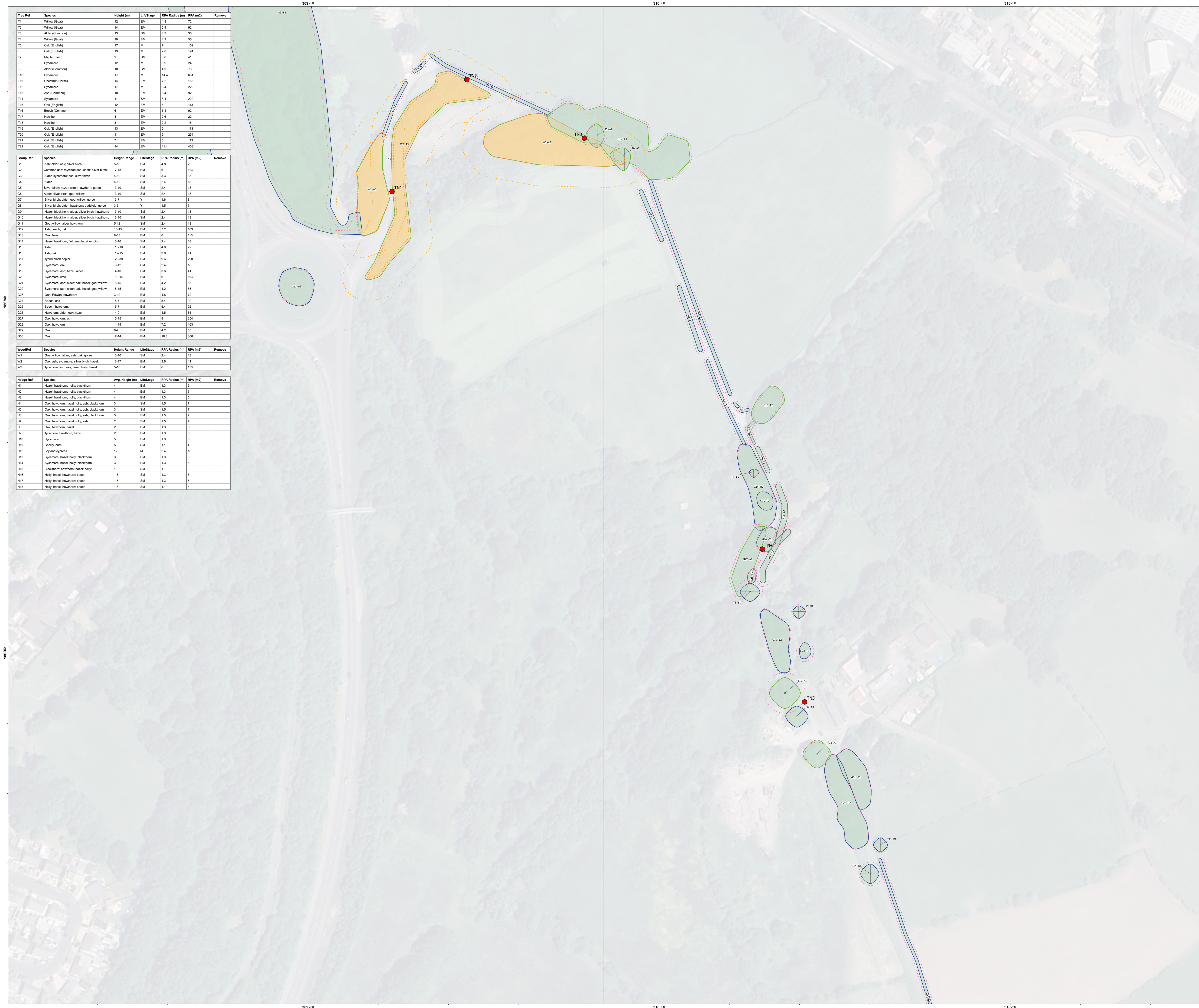
SCALE: Scale: 1:1,250 @ A1
DRAWN BY LB APPROVED BY JR REVISION - SHEET 1 of 3 DATE 22/10/2024
COORDINATE SYSTEM / DATUM British National Grid / Newlyn Datum (AOD)

CLIENT
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Arboricultural Consultants
Tel: 01386 576161
Address: Office 3E, Deer Park Business Centre, Edington, Pershore, Worcestershire, WR10 3DN

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

Tree / Hedgerow / Group to be removed

Protection Measures

Tree Protection Barrier

Secondary Tree Protection Barrier - location to allow works within CEZ
(only in accordance with detailed AMS)

Cellular Confinement System (see AMS report for specification)

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

Target Notes

Label	Description
TN1	Cable route. Open trench with washing brief
TN2	Cable route. Open trench with washing brief
TN3	Cable route. Open trench with washing brief
TN4	Cable route. Open trench with washing brief
TN5	Cable route. Open trench with washing brief
TN6	Tree protection barriers to be erected to outer (dead) line in first instance then moved to inner (orange line following completion of roady road.

Label	Description
G13	Newly planted trees small diameter. Establishing well.

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 check with specific requirements of any relevant planning conditions).

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

20

40

80 Meters

PROJECT TITLE

Maes Bach (6433)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE

Scale: 1:1,250 @ A1

DRAWING NUMBER

BHA_6433_02

DRAWN BY

LB

APPROVED BY

JR

REVISION

-

SHEET

2 of 3

DATE

22/10/2024

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

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DRAWING PRODUCED BY

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KEY

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All weather information notices to read "Construction Exclusion Zone - No Entry"
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Target Notes

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TN2	Cable route. Open trench with washing brief
TN1	Cable route. Open trench with washing brief
TN4	Cable route. Open trench with washing brief
TN5	Cable route. Open trench with washing brief
TN6	Tree protection notices to be erected to outer (blank) line in first instance then moved to inner (orange line following completion of road work)

Label	Description
OOS	Newly planted trees small diameter. Establishing well.

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 check with specific requirements of any relevant planning conditions).

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N
GRID
NORTH

0 20 40 80 Meters

PROJECT TITLE

Maes Bach (6433)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE	Scale: 1:1,250 @ A1	DRAWING NUMBER	BHA_6433_02
DRAWN BY	LB	APPROVED BY	JR
REVISION	-	SHEET	3 of 3
DATE	22/10/2024		

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

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Eckington, Pershore, Worcestershire, WR10 3DN

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TREE SURVEY SCHEDULE

SITE NAME: MAES BACH

PROJECT NO: 6433

SURVEYOR: L FORD

CLIENT: FIRSTWAY SOLAR

SURVEY DATE: 02/10/24



INDIVIDUAL TREES

Ref	Species	On/off site	Height (m)	No. of stems	Est diam?	Calc. / actual stem dia. (mm)	Crown radii (m) N-E-S-W	Av. 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)	BS 5837 Category	RPA radius (m)	RPA m²
T1	Willow (Goat)	On	12.0	1	Yes	400	6.0-6.0-6.0-6.0	2.5	3.0	W	EM	None	Spreading canopy.	Good	Good	40+	B1	4.8	72.0
T2	Willow (Goat)	On	14.0	1	Yes	450	8.0-8.0-8.0-8.0	2.5	3.0	W	EM	None	Growing behind raised mound. Spreading canopy.	Good	Good	40+	B1	5.4	92.0
T3	Alder (Common)	On	13.0	1	Yes	280	4.0-4.0-4.0-4.0	3.0	3.0	NW	SM	None	Low cat B.	Good	Good	40+	B1	3.3	35.0
T4	Willow (Goat)	On	10.0	1	Yes	350	5.0-5.0-5.0-5.0	2.5	3.0	W	EM	None	Growing behind raised mound. Spreading canopy.	Good	Good	40+	B1	4.2	55.0
T5	Oak (Pedunculate)	On	17.0	2	Yes	580	8.0-5.0-9.0-8.0	6.0	5.0	N	M	None	Contorted form. High aesthetic value for road users. Growing on top of road bank 1m above road level.	Good	Good	40+	A1	7.0	152.0
T6	Oak (Pedunculate)	On	13.0	1	Yes	650	4.0-4.0-12.0-10.0	6.0	3.0	S	M	None	Contorted form. High aesthetic value for road users. Growing on top of road bank 1m above road level.	Good	Good	40+	A1	7.8	191.0
T7	Maple (Field)	On	9.0	1	Yes	300	2.0-4.0-4.0-3.0	5.5	4.0	SW	SM	None	Within larger wooded group compact medium sized pontential tree.	Good	Good	40+	B1	3.6	41.0
T8	Sycamore	On	12.0	5	Yes	740	6.0-7.0-7.0-7.0	3.0	5.0	N	M	None	Ivy clad tree.	Good	Good	40+	B1	8.9	248.0
T9	Alder (Common)	On	10.0	2	None	410	4.0-5.0-5.0-4.0	4.0	3.0	NW	SM	None	Garden tree. Low cat B.	Fair	Good	40+	B1	4.9	76.0
T10	Sycamore	On	17.0	1	Yes	1200	11.0-11.0-11.0-11.0	4.0	4.0	SW	M	Notable	Large spreading tree with large low lateral branches. Impressive size and good form form. Set back from road along footpath.	Good	Good	40+	A1	14.4	651.0
T11	Chestnut (Horse)	On	14.0	1	Yes	600	7.0-8.0-8.0-8.0	4.0	5.0	E	EM	None	Viewed from behind wall. Balanced crown.	Good	Good	40+	B1	7.2	163.0
T12	Sycamore	On	17.0	1	Yes	700	10.0-10.0-10.0-10.0	4.0	5.0	W	M	None	Set back from road. Canopy thinning but possibly just autumn leaf drop.	Good	Good	40+	A1	8.4	222.0

TREE SURVEY SCHEDULE

SITE NAME: MAES BACH

PROJECT NO: 6433

SURVEYOR: L FORD

CLIENT: FIRSTWAY SOLAR

SURVEY DATE: 02/10/24



Ref	Species	On/off site	Height (m)	No. of stems	Est diam?	Calc. / actual stem dia. (mm)	Crown radii (m) N-E-S-W	Av. 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)	BS 5837 Category	RPA radius (m)	RPA m²
T13	Ash (Common)	On	10.0	1	Yes	450	5.0-5.0-5.0-5.0	6.0	6.0	S	EM	None	Growing from 1 m above road level. Low cat B.	Good	Good	20+	B1	5.4	92.0
T14	Sycamore	On	11.0	10	Yes	700	7.0-6.0-7.0-7.0	4.0	2.0	SW	SM	None	Probably regeneration from cut stump. Low cat B.	Good	Good	40+	B1	8.4	222.0
T15	Oak (Pedunculate)	On	12.0	1	None	500	6.0-5.0-7.0-6.0	2.0	3.5	N	EM	None	Wound in stem of east occluding. Canopy cut back off road.	Good	Good	40+	B1	6.0	113.0
T16	Beech (Common)	On	6.0	1	Yes	450	7.0-4.0-6.0-5.0	2.5	2.0	SE	EM	None	Stunted canopy; large stem. Looks like a bonsai. High cat B because highly aesthetically pleasing. Hornets nest in cavity.	Good	Good	40+	B1	5.4	92.0
T17	Hawthorn	On	4.0	6	None	220	2.0-3.0-2.0-2.0	1.5	0.0	NW	EM	None	Stunted tree on field boundary.	Fair	Good	40+	B1	2.6	22.0
T18	Hawthorn	On	3.0	6	None	180	1.0-1.0-1.0-1.0	1.0	0.5	NW	EM	None	Stunted tree on field boundary.	Fair	Good	40+	B1	2.2	15.0
T19	Oak (Pedunculate)	On	13.0	1	None	500	7.0-3.0-5.0-6.5	5.0	4.0	NE	EM	None	Forms larger high value group.	Good	Good	40+	A1	6.0	113.0
T20	Oak (Pedunculate)	On	11.0	1	None	750	3.0-6.0-7.0-5.5	4.0	4.0	NE	EM	None	Forms larger high value group.	Good	Good	40+	A1	9.0	254.0
T21	Oak (Pedunculate)	On	7.0	1	None	500	3.0-3.0-3.0-3.0	2.0	3.0	W	EM	None	Tree in decline; possibly from waterlogged soil.	Fair	Good	40+	B1	6.0	113.0
T22	Oak (Pedunculate)	On	14.0	1	None	950	11.0-11.0-6.0-5.0	3.0	2.0	E	EM	None	Largest individual within larger group. Spreading canopy; good form.	Good	Good	40+	A1	11.4	408.0



GROUPS OF TREES

Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. crown radius (m)	Av. low crown height (m)	Life stage	Special importance	General observations	Health & vitality	Structural condition	Estimated remaining contribution (Years)	BS 5837 Category	RPA radius (m)
G1	Ash; alder; oak; silver birch	On	5-18	50	None	400.0	4.0	2.0	EM	None	Predominantly ash som of which have crowns dying back. Bramble understory.	Fair	Good	40+	B2	4.8
G2	Common ash; raywood ash; cherr; silver birch; alder; oak	On	7-18	80	None	500.0	3.0	5.0	EM	None	Aesthetically pleasing roadside group with good screening value. Coming into maturity; some dead roadside ash trees. Raywood ash looking in good condition.	Good	Fair	40+	A2	6.0
G3	Alder; sycamore; ash; silver birch	On	4-10	6	None	280.0	2.0	2.0	SM	None	Low value b group. Has screening value.	Good	Good	40+	B2	3.3
G4	Alder	On	4-10	6	None	200.0	2.0	2.0	SM	None	Low value b group. Has screening value.	Good	Good	40+	B2	2.4
G5	Silver birch; hazel; alder; hawthorn; gorse	On	3-10	80	None	200.0	5.0	1.0	SM	None	Establishing dense tree group. Individuals within group of low value but as a large continues group it has higher value. Growing 2-3 m from road in verge.	Good	Good	40+	B3	2.4
G6	Alder; silver birch; goat willow;	On	3-10	80	None	200.0	5.0	1.0	SM	None	Pioneer species. Establishing dense tree group. Individuals within group of low value but as a large continues group it has higher value. Get less dense towards road with trees of lower quality. Low cat B.	Good	Good	40+	B3	2.4
G7	Silver birch; alder; goat willow; gorse	On	3-7	20	None	130.0	2.0	1.0	Y	None	Fragmented low value group near roadside. Pioneer species.	Good	Good	40+	C2	1.6
G8	Silver birch; alder; hawthorn; buddleja; gorse	On	3-5	200	None	120.0	2.0	2.0	Y	None	Fragmented group of pioneer species low value; turns into higher quality dense group further up verge away from road.	Good	Good	40+	C2	1.5
G9	Hazel; blackthorn; alder; silver birch; hawthorn; oak; ash; goat willow; Rowan; dog rose; gorse	On	3-10	300	None	200.0	5.0	1.0	SM	None	Establishing dense tree group. Individuals within group of low value but as a large continues group it has higher value. Possibly important linking habitat for neighbouring ASNW.	Good	Good	40+	B3	2.4
G10	Hazel; blackthorn; alder; silver birch; hawthorn; oak; ash; goat willow; Rowan; dog rose; gorse	On	3-10	150	None	200.0	5.0	1.0	SM	None	Establishing dense tree group. Individuals within group of low value but as a large continues group it has higher value. Possibly important linking habitat for neighbouring ASNW.	Good	Good	40+	B3	2.4
G11	Goat willow; alder hawthorn;	On	5-12	50	None	200.0	3.0	2.0	SM	None	Same species assemblage as nearby ASNW.	Good	Good	40+	B2	2.4



Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. crown radius (m)	Av. low crown height (m)	Life stage	Special importance	General observations	Health & vitality	Structural condition	Estimated remaining contribution (Years)	BS 5837 Category	RPA radius (m)
G12	Ash; beech; oak	On	10-15	20	None	600.0	6.0	7.0	EM	None	Predominantly oaks with some ash and beech. Ash showing signs of crown dieback. Individuals of higher value on his side of the road than other side even though other side is ASNW on maps.	Good	Good	40+	A3	7.2
G13	Oak; beech	On	8-13	4	None	500.0	7.0	7.0	EM	None	Growing on top of bank 2m above road level down separate road on junction.	Good	Good	40+	A2	6.0
G14	Hazel; hawthorn; field maple; silver birch.	On	3-10	30	Yes	200.0	3.0	2.0	SM	None	Ditch runs through centre of group parallel to road. Trees on either side of ditch. Trees road side of ditch of lower value. Low cat B generally.	Good	Good	40+	B2	2.4
G15	Alder	On	13-16	2	Yes	400.0	5.0	4.0	EM	None	Within larger wooded group. Growing from 4-5 m into verge. Ivy clad.	Good	Good	40+	B2	4.8
G16	Ash; oak	On	12-15	4	None	300.0	3.0	7.0	SM	None	Roadside trees growing 1.5m into verge. High category C. Suppressed by larger poplars behind.	Fair	Good	20+	C2	3.6
G17	Hybrid black poplar	On	20-38	8	None	800.0	8.0	10.0	EM	None	Set back from road; behind stream and 2m below road level.	Good	Good	40+	A2	9.6
G18	Sycamore; oak	On	6-12	4	Yes	200.0	2.0	5.0	SM	None	Growing 2-3 m into verge from road. Suppressed by larger poplars behind. Poor form and low future potential.	Fair	Good	20+	C2	2.4
G19	Sycamore; ash; hazel; alder	On	4-10	14	None	300.0	3.0	4.0	EM	None	Low cat B group. Ash trees are dying back and trees are young and ivy clad. Set back from roadside.	Fair	Good	40+	B2	3.6
G20	Sycamore; lime	On	10-14	2	None	500.0	4.0	4.0	EM	None	Trees located up bank 1-2m above road level.	Good	Good	40+	B2	6.0
G21	Sycamore; ash; alder; oak; hazel; goat willow;	On	5-15	25	Yes	350.0	4.0	3.0	EM	None	Predominantly sycamore and alder with some ash and oak making up over story. Hazel and holly understory. Many multi stemmed trees crown lifted over road. Most trees growing from bank set back from road.	Good	Good	40+	B2	4.2
G22	Sycamore; ash; alder; oak; hazel; goat willow;	On	5-15	25	Yes	350.0	4.0	3.0	EM	None	Predominantly sycamore and alder with some ash and oak making up over story. Hazel and holly understory. Many multi stemmed trees crown lifted over road. Most trees growing from bank set back from road.	Good	Good	40+	B2	4.2
G23	Oak; Rowan; hawthorn;	On	3-10	4	None	400.0	7.0	2.5	EM	None	1 large oak; 1 small Rowan and hawthorn both suppressed; 1 less suppressed hawthorn.	Good	Good	40+	B2	4.8
G24	Beech; oak	On	5-7	6	None	450.0	4.0	2.5	EM	None	Windswept trees.	Good	Good	40+	B2	5.4

TREE SURVEY SCHEDULE

SITE NAME: MAES BACH

PROJECT NO: 6433

SURVEYOR: L FORD

CLIENT: FIRSTWAY SOLAR

SURVEY DATE: 02/10/24



Ref	Species	On/off site	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. crown radius (m)	Av. low crown height (m)	Life stage	Special importance	General observations	Health & vitality	Structural condition	Estimated remaining contribution (Years)	BS 5837 Category	RPA radius (m)
G25	Beech; hawthorn.	On	5-7	4	None	450.0	4.0	2.5	EM	None	Windswept trees.	Good	Good	40+	B2	5.4
G26	Hawthorn; alder; oak; hazel	On	4-9	14	None	380.0	3.0	3.0	EM	None	One mature but stunted hawthorn; some larger oak and alder with hazel and hawthorn as smaller trees. High cat B.	Good	Good	40+	B2	4.5
G27	Oak; hawthorn; ash	On	5-15	28	None	750.0	5.0	4.0	EM	None	Generally taller than linear group to west; growing either side of drainage ditch. Predominantly oak with 4 hawthorn and one ash. Will possibly stay as smaller statured trees because of wind exposure.	Good	Good	40+	A2	9.0
G28	Oak; hawthorn	On	4-14	12	None	600.0	5.0	2.0	EM	None	Gnarled and windswept oaks; with one hawthorn. Cavities twisted stems and deadwood.	Good	Good	40+	A2	7.2
G29	Oak	On	6-7	3	None	350.0	3.0	2.0	EM	None	Stunted and in decline; one dead. Makes up larger high value group which means they are a high cat C group.	Poor	Good	40+	C2	4.2
G30	Oak	On	7-14	15	None	900.0	5.0	3.0	EM	None	Gnarled and windswept group. Cavities and deadwood. All located on north ditch bank.	Good	Good	40+	A2	10.8

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	Goat willow; alder; ash; oak; gorse	On	3-10	100	None	200	2.0	2.0	SM	ASNW	Lower individual tree quality than other ASNW compartments nearby but nonetheless ASNW. Small statured young trees.	Good	Good	40	A3	2.4	15.0
W2	Oak; ash; sycamore; silver birch; hazel; hawthorn	On	3-17	200	None	300	5.0	4.0	EM	ASNW	Maps indicate ASNW. High wildlife value and amenity value given to road users.	Good	Good	40	A3	3.6	15.0
W3	Sycamore; ash; oak; beech; holly; hazel	On	5-18	20	None	500	6.0	6.0	EM	ASNW	Most higher value trees set back up bank away from road. Trees close to road are of lower value containing ash with significant crown dieback and low value sycamores.	Good	Good	40	A3	6.0	15.0

TREE SURVEY SCHEDULE

PROJECT NO: 6433

SITE NAME: MAES BACH

SURVEYOR: L FORD

CLIENT: FIRSTWAY SOLAR

SURVEY DATE: 02/10/24



HEDGEROWS

Ref	Species	On/off site	Av. height (m)	Av. width (m)	Av. stem diam (mm)	Av. low crown height (m)	Life stage	General observations	Health & vitality	Structural condition	Estimated remaining contribution (Years)	BS 5837 Category	RPA radius (m)
H1	Hazel; hawthorn; holly; blackthorn	On	4.0	2.5	100	0.0	EM	Maintained hedgerow.	Good	Good	40+	B2	1.3
H2	Hazel; hawthorn; holly; blackthorn	On	4.0	2.5	100	0.0	EM	Maintained hedgerow.	Good	Good	40+	B2	1.3
H3	Hazel; hawthorn; holly; blackthorn	On	4.0	2.5	100	0.0	EM	Maintained hedgerow.	Good	Good	40+	B2	1.3
H4	Oak; hawthorn; hazel holly; ash; blackthorn	On	3.0	3	120	0.0	SM	Maintained hedgerow.	Good	Good	40+	B2	1.5
H5	Oak; hawthorn; hazel holly; ash; blackthorn	On	3.0	2.5	120	0.0	SM	Maintained hedgerow.	Good	Good	40+	B2	1.5
H6	Oak; hawthorn; hazel holly; ash; blackthorn	On	3.0	3	120	0.0	SM	Maintained hedgerow.	Good	Good	40+	B2	1.5
H7	Oak; hawthorn; hazel holly; ash	On	2.0	2	120	0.0	SM	Maintained hedgerow.	Good	Good	40+	B2	1.5
H8	Oak; hawthorn; hazel	On	2.0	2	100	0.0	SM	Maintained hedgerow.	Good	Good	40+	B2	1.3
H9	Sycamore; hawthorn; hazel	On	2.0	1.5	100	0.0	SM	Hedgerow on top of bank.	Fair	Good	40+	C2	1.3
H10	Sycamore	On	5.0	3	110	1.0	SM	Hedgerow outgrown and dying.	Fair	Fair	20+	C2	1.3
H11	Cherry laurel	On	5.0	4	90	0.0	SM	Growing on top of bank 1.5 m above road level. Residential garden hedge.	Good	Good	20+	C2	1.1
H12	Leyland cypress	On	12.0	4	200	2.0	M	Outgrown hedgerow; likely be reduced soon.	Good	Good	10+	C2	2.4
H13	Sycamore; hazel; holly; blackthorn	On	3.0	2	110	0.0	EM	Healthy hedgerow on roadside.	Good	Good	40+	B2	1.3
H14	Sycamore; hazel; holly; blackthorn	On	3.0	2	110	0.0	EM	Healthy hedgerow on roadside.	Good	Good	40+	B2	1.3
H15	Blackthorn; hawthorn; hazel; holly;	On	1.0	2	80	0.0	SM	Heavily flailed hedgerow.	Good	Good	40+	B2	1.0
H16	Holly; hazel; hawthorn; beech	On	1.5	1.5	110	0.0	SM	Flailed hedgerow on top of earth wall/mound.	Good	Good	40+	B2	1.3
H17	Holly; hazel; hawthorn; beech	On	1.5	1.5	110	0.0	SM	Flailed hedgerow on top of earth wall/mound.	Good	Good	40+	B2	1.3
H18	Holly; hazel; hawthorn; beech	On	1.5	1.5	90	0.0	SM	Flailed hedgerow on top of earth wall/mound.	Good	Good	40+	B3	1.1

- The tree survey was carried out with reference to the methodology set out in BS 5837:2012 '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.
- 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.
- OOS: The recorded Out Of Scope trees and features refer to either a dead-standing or failed tree; a stump or minor shrubs; where trees are inaccessible or located off-site and unlikely to be affected by the development or, it is found that the trees are undersized according to BS 5837:2012, which stipulates a minimum recordable diameter of 75mm.

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 root protection area (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. Note: 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, expressed both as the existing height above ground level of the 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, e.g., due to inaccessibility, 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 a 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 on the local landscape and environment. Semi-mature are still capable of being transplanted without preparation, up to 300mm girth and not yet sexually mature.

- EM Early-mature: Not yet having reached 75% of expected mature size. Established young trees, normally of good vigour and still increasing in height but beginning to spread laterally. Beginning to make an impact on the local landscape and environment.
- M Mature: Well-established trees, still growing with some vigour but tending to fill out and increase spread. 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 retaining 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 same 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, its apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (fungal infections may be recorded here but decay giving rise to structural weakness would be recorded under 'Structural Condition' – see next parameter):

- Good: No significant health issues.
- Fair: Indications of slight stress or minor disease (e.g., the presence of minor dieback/deadwood or epicormic shoot growth).
- Poor: Significant stress or disease noted; larger areas of dieback than above.
- Dead: (or Moribund).

STRUCTURAL CONDITION:

Features affecting the structural stability of the tree include decay, significant deadwood, root-plate instability or significant damage to structural roots, weak forks (e.g. those where bark is included between the members) etc. Classified as:

- Good: No obvious structural defects: basically sound.
- Fair: Minor, potential or incipient defects.
- Poor: Significant feature(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 contribution 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.

The term '*notable*' carries no weight within the National Planning Policy Framework (NPPF), but is a term that recognises a mature tree which may stand out in the local environment because it is large in comparison with other trees around it.

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 BS 5837:2012; summary definitions as follows (see BS 5837 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, minor storm damage or poor past management).
- B2: Acceptable trees situated such as to have little visual impact within the wider locality. Also the number of trees, perhaps in groups or woodlands, whose value as landscape features is greater collectively than would warrant as individuals (such that the selective removal of an individual would not impact greatly upon the 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. Also small trees with stems below 150mm diameter.

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

- C1: Unremarkable trees of very limited merit or significantly impaired condition.
- C2: Trees offering only low- or short-term landscape benefits; also secondary specimens within groups or woodlands whose loss would not significantly diminish their landscape value.
- C3: Trees with extremely limited conservation or other cultural benefits.

CATEGORY U: VERY LOW QUALITY

Trees likely to prove to be unsuitable for retention for longer than 10 years should any significant increase in site 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 other essential works such as the removal of nearby category U trees; trees infected by pathogens that could materially 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 also 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 the stem diameter, measured at 1.5m above ground level. The shape of the RPA may be altered where site conditions 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 (in metres) around an ancient or veteran tree that 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 stem 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 of at least 15 metres to avoid root damage. Where assessment shows other impacts are likely to extend beyond this 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 important and sustainable elements of green infrastructure, contribute to urban cooling and reduce energy demands in buildings. Their importance is acknowledged in relation to adaptation to the effects of climate change. Other benefits 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

NATIONAL PLANNING POLICY

Paragraph 6.4.43 of the Planning Policy Wales - Edition 12, February 2024 (PPW) states in relation to Ancient Woodland:

'Ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees, woodlands and hedgerows are to be afforded protection from development which would result in their loss or deterioration unless very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss¹³⁹. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory, work to improve its completeness and use it to ensure the protection of trees and woodland and identify opportunities for more planting as part of the Green Infrastructure Assessment, particularly in terms of canopy cover'.

The PPW goes on to state:

'The protection and planting of trees and hedgerows should be delivered, where appropriate, through locally-specific strategies and policies, through imposing conditions when granting planning permission, and/or by making Tree Preservation Orders (TPOs)¹⁴⁰. They should also be incorporated into Green Infrastructure Assessments and plans'.

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 if 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 without 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 accordance with the statutory controls outlined. Therefore, we recommend that a further check is made with the LPA 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 time of surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside of the scope for this report.

Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for protected species such as bats in addition to birds and small mammals. It is advised that in some instances specialist ecological advice may be required. This may result in tree works being carried out following a detailed climbing inspection to the tree to ensure that protected species or their nests/roosts are not disturbed. If any are found, the site manager, site owner or consulting arboriculturist should be informed and appropriate action taken as recommended by the appointed

Ecologist or the relevant Statutory Nature Conservation Organisation (SNCO): Natural England, Scottish Natural Heritage or Natural Resources Wales.

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

Irrespective of the time of year and other than any actions approved under General Licence, it is an offence to intentionally kill, injure or take any wild bird or to intentionally take, damage or destroy the nest or eggs of any wild bird. Ideally, tree operations should be avoided during the likely bird nesting 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 Rights of Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form the basis of the statutory legislation for flora and fauna in England and Wales. A different legislative 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 to advice from a qualified arboriculturist. Cellular confinement systems that enable hard surfaces to be built 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 boring, directional drilling, air excavation or hand digging. These operations often require supervision by the project arboriculturist.

Compensate

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

Considerations:

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

Tree constraints

Root Protection Areas:

With reference to BS5837:2012, a root protection area (RPA) is defined as “a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure should be treated as a priority”. **“The default position [when considering design layout in relation to RPAs] should be 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 rooting has occurred asymmetrically, a polygon of equivalent area should be produced.” The BS goes on to state that, “modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution,” and that any deviation from the original circular plot should take 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 Plans may show the following:

Recommended Developable area - an advisory area defined in order to minimise arboricultural impacts using standard approaches to construction. Restricting proposed development to this area will limit the risk of harm to retained trees and of the Local Planning Authority objecting to the proposed development. It may be possible to propose development outside of this area but specific 'low impact' construction techniques may be needed recommended.

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

Tree Opportunities

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

Appropriately designed new tree planting is extremely important in maintaining healthy and sustainable 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 new trees is appropriate. Subsequently the sourcing of high-quality stock, suitable planting and the provision 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 contained 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 with 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 where heat could damage foliage or branches. Fires must be a minimum of 20m from the trunk of any retained tree or 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



CONSTRUCTION EXCLUSION ZONE - NO ENTRY

TREE PROTECTION FENCING

THIS FENCE MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED TREE PROTECTION PLANS AND ARBORICULTURAL METHOD STATEMENT FOR THIS DEVELOPMENT.

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION CAN RESULT IN BREACH OF PLANNING CONDITIONS AND/OR CRIMINAL PROSECUTION.
(TOWN AND COUNTRY PLANNING ACT 1990)

FOR ALL ENQUIRIES REGARDING TREES AT THIS DEVELOPMENT
PLEASE CALL 01386 576161 OR EMAIL ENQUIRIES@BARTON-HYETT.CO.UK

