



ARBORICULTURAL IMPACT ASSESSMENT

Clump and Hill Solar
Farm (cable route)
Enderby

June 2024



Barton Hyett Associates
Arboricultural Consultants

Summary table		
Site Name:	Clump and Hill Solar Farm (cable route)	
Project reference:	5973	
Site Address:	Desford Road, Enderby, Leicester	
Nearest Postcode:	LE19 4AT	
Central Grid reference:	SK 52979 00110	
Local Planning Authority:	Blaby District Council	
Relevant planning policies:	Blaby District local plan (core strategy, adopted 21/02/2013), policy CE19 biodiversity & geodiversity	
Statutory Controls:	Tree Preservation Order	Conservation Area
	Yes - 'The Oaklands' (A1) & 'The Lodge' (T1 - T8) both dated 1975	Yes/No
Ancient trees / woodlands?	N/A	
Soil Type: (Source: BGS online soils map © NERC 2024)	Superficial/Drift	Bedrock
	Desford Rd; Slowly permeable seasonally wet slightly acid but base-rich loamy & clayey soils. A47; moving from E to W - as above; loamy soils with naturally high groundwater; Slightly acid loamy & clayey soils with impeded drainage	Edwalton Member - Mudstone. Sedimentary bedrock
Proposed site plan:	Figure Ref: EDY4.v6, dated: 10/01/2023	
Report author:	David Holmes, FdSc, MArborA	
Checked by:	Richard Hyett MSc, BSc (Hons), MICFor, MArborA	
Revision:	Rev. 02	
Date of issue:	05/06/2024	

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SECTION 8:	TREE PROTECTION / CONSTRUCTION EXCLUSION ZONE SIGN

1. INTRODUCTION

- 1.1. Barton Hyett Associates Ltd has been instructed to survey trees located at Enderby, near Leicester ('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 at the site for an underground electrical cable route 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 is located approximately 4km west of the village of Enderby and the proposed cable route includes sections of Desford Road and the A47 / Hinckley Road. The surrounding area is mostly rural.
- 2.2. Starting at The National Grid Enderby Substation entranceway, the route travels north-west along Desford Road, passing the junctions with Beggars Lane and Forest Road before coming to Desford Crossroads.
- 2.3. At the crossroads, the route turns left and travels south-west along the A47, passing the junctions with Peckleton Lane and Dan's Lane.
- 2.4. Approximately 600m before the roundabout with Leicester Road and Clickers Way, the route turns south-east through the verge into the field and follows the hedgerow for approximately 400m.



Figure 1: aerial image (Google Maps) of the site with the proposed cable route shown in red (approx 7.5km).

3. TREE SURVEY FINDINGS

- 3.1. The survey recorded 104 arboricultural features. These are summarised in terms of quality in accordance with the recommendations of BS 5837:2012 in Table 1 below and shown in more detail on the Tree Survey and Constraints Plan (**Section 2**) and within the Tree Survey Schedule (**Section 4**).

Table 1: arboricultural features by type and 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	63	12	42	9	-
Groups	34	3	30	1	-
Hedgerows	7	-	7	-	-
Total	104	15	79	10	0

4. KEY ARBORICULTURAL FEATURES

- 4.1. A total of thirteen high-quality oak have been recorded along the route. Two trees are located alongside Desford Road (T52 and T63), seven alongside the A47 (T16, T22, T24, T26, T27, T33, and T38), along with a group of three trees (G2) and one tree within the hedgerow at the south of the route (T1). All trees are good examples of the species with a limited number of defects.
- 4.2. Trees T32, T33, T35, T36 and group G27 are protected by 'The Oaklands' Tree Preservation Order (TPO). The site named 'The Lodge' also has a TPO in effect with the same name, however, there are no recorded trees within this part of the site.
- 4.3. Two high-quality features have been recorded off-site to the north of the A47 (G3 and G17). Sample areas of the features were recorded as groups where they abut the route as full access was not possible. The groups are the visible parts of mixed broadleaf woodland blocks with well-developed understories.

5. PROPOSED DEVELOPMENT

- 5.1. The development proposal is for a cable route to connect two approved solar farms to the National Grid. The proposed site layout is shown on the proposed site plan, drawing ref: EDY4.v6, dated: 10/01/2023 (as amended and submitted).
- 5.2. The trench for the cable will be approximately 920mm in width. Two depths are proposed depending on which part of the site the route will pass through. In the carriageway, the depth will be 900mm and this will be increased to 1100mm when crossing the agricultural section.

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. To facilitate the proposal, no trees or hedgerows are proposed to be removed. The retained trees are shown on the Tree Retention and Removal Plan in **Section 3**.

Impacts on retained trees

- 6.3. The cable route will be located within the proposed cable route planning boundary which is indicated by the red line in Figure 1 (and as per submitted site location plans). The detailed design of the cable alignment will be confirmed with the highways authority. The intention is to run the cable within the carriageway for the majority of the route and only pass through agricultural land at the far south of the route, adjacent to T1 - T6, G1, H1 - H3 and H5. The Root Protection Areas (RPAs) are to be considered as sacrosanct and the cable layout should be designed to avoid these zones.
- 6.4. It will not be possible to install temporary protective fencing around T3, T4 and G1 owing to landownership issues. Excavations must stay outside of the Root Protection Areas (RPAs) of T3, T4 & G1 (see tree schedules in schedule below for RPA dimensions). The RPAs are to be considered sacrosanct and not to be used for the storage of plant or materials.
- 6.5. To the south of the site where the route passes through agricultural land, the cable route has exploited existing gateways and gaps wherever possible. Where the route is shown to pass between or close to trees or hedgerows, localised adjustments should be made to avoid tree or hedgerow removal or excessive pruning of trees to create working space.
- 6.6. The cable route at the south of the site will cross two moderate-quality hedgerows H1 and H3 which will be installed using Horizontal Directional Drilling (HDD) and there will be no loss of hedgerow.
- 6.7. The tree T6 is established at the field edge where there is a significant change of levels with the highway to the west along with a drainage ditch. The cable route passes closely to the south of the RPA and it will be possible with localised adjustment at time of implementation to avoid this tree.
- 6.8. The agricultural land has seen usage from machinery and the clearance above ground level is sufficient for large vehicles to pass unhindered.
- 6.9. The installation of the cable is a permanent feature and the footprint of the cable route is to be kept outside of the RPAs.

Anticipated arboricultural impacts on retained trees

- 6.10. It will be necessary to install the cable close to the RPAs (Root Protection Areas) of significant trees and tree groups, as noted above.
- 6.11. Guidance is set out within the National Joint Utilities Group (NJUG) Volume 4 (Section 4) - *How to Avoid Damage to Trees* which details acceptable working methods relating to 'excavations or other works occurring within the Prohibited zone or Precautionary Zone'.
- 6.12. Section 4.1 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 to 600mm, where the majority of roots develop'*.
- 6.13. The preferred approach is to avoid RPAs through the realignment of apparatus. *'Whenever possible apparatus should always be diverted or re-aligned outside the Prohibited or Precautionary Zones. Under no circumstances can machinery be used to excavate open trenches within the Prohibited Zone'*.
- 6.14. If, due to the constraints of the site, the proposed cable route as identified in the Tree Retention and Removal Plan (**Section 3**) is not achievable, the preferred solution is to use trenchless techniques such as directional drilling. NJUG states that where necessary *'trenchless techniques should be used. The launch and receiver pits should be located outside the Prohibited or Precautionary Zones. In order to avoid damage to roots by percussive boring techniques, it is recommended that the depth of run should be below 600mm. Techniques involving external lubrication of the equipment with materials other than water (e.g., oil, bentonite, etc.) must not be used when working within the Prohibited Zone. Lubricating materials other than water may be used within the Precautionary Zone following consultation and by agreement'*.
- 6.15. As trenchless techniques may not be practical for sections of installation that are less than circa 50m in length, installation may utilise open trench excavation that will work around the RPAs of individual trees, where this is deemed to be a practical solution.
- 6.16. There are also certain factors that will have historically abated the growth of tree roots beneath the highway, such as the previous installation of services/apparatus which may have already severed tree roots and the presence of a drainage ditch or steep embankment at the highway edge.
- 6.17. The proposed cable route as identified in the Tree Retention and Removal Plan (**Section 3**) clearly shows two areas where trenchless techniques, Horizontal Directional Drilling (HDD), will be used as per the guidelines above to limit the impact on the retained trees.

- 6.18. The working methods, as set out above, will therefore need to be applied to the installation of the cable connection within the highway. If excavation is required to be carried out within RPAs, a schedule of arboricultural monitoring will need to be agreed upon with the project arboriculturist.

Conclusion

- 6.19. 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. A combined draft Tree Retention/Removal and Protection Plan is included in **Section 3**.

7. TREE PROTECTION MEASURES

- 7.1. Successful retention of the trees can only be achieved by preventing damage to stems and avoiding soil compaction and contamination. Temporary protective fencing installed around individual or groups of trees will prevent visible mechanical damage from occurring above ground and prevent the RPAs from becoming contaminated or compacted. The welded mesh panel fencing, commonly known as HERAS fencing is considered fit for purpose of tree fencing.
- 7.2. The high-quality tree T2 would be exposed to the construction zone and could be impacted during the installation phase of the development. Temporary protective fencing (HERAS specification) should be installed for the duration of the development as shown on the TRRP at Section 3. The fencing would need to abut the hedgerows for the duration of construction in most instances.

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 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 and site manager. Project arboriculturist to ensure that all parties have copies of the Tree Protection Plan and this report.
 - Site preparation (including erecting temporary protective fencing around T2)
 - Main installation phase (including HDD)

9. CONCLUSIONS AND RECOMMENDATIONS

- 9.1. Subject to the implementation of the advice contained within this report the proposed development is acceptable from an arboricultural perspective.
- 9.2. An 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 and submitted later as part of a pre-commencement planning condition (by agreement with the applicant).



David Holmes *FdSc, MArborA*
Arboriculturist



IMAGE 1: A view looking south-east along Desford Road at the ash T62 & Oak T63



IMAGE 2: A view looking south-east along Desford Road with the off-site groups G29 - G30 to the left of frame



IMAGE 3: A view looking south-east along Desford Road at T43



IMAGE 4: A view looking north-east at the mower route through G18



IMAGE 5: A view looking north at G1



IMAGE 6: A view looking north at T2



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
- 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	Label	Description
OOS1	Drainage swale, approx 300mm deep	MBL 001	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia, estimated @ 15m & 600mm respectively, assume Cat B 40+
OOS2	Drainage swale, approx 700mm deep		
OOS3	Drainage swale, approx 700mm deep		
OOS4	Drainage swale, approx 700mm deep		
OOS5	Drainage swale, approx 900mm deep	MBL 002	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia, estimated @ 15m & 600mm respectively, assume Cat B 40+
OOS6	Drainage swale, approx 900mm deep		
OOS7	Drainage swale, approx 900mm deep		
OOS8	Drainage swale, approx 300mm deep		
OOS9	Drainage swale, approx 900mm deep	MBL 003	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia, estimated @ 15m & 600mm respectively, assume Cat B 40+
OOS10	Drainage swale, approx 600mm deep. Foot trackway patterns noted in terrain, pavement to SE of swale		
OOS11	Drainage swale, approx 900mm deep		
OOS12	Drainage swale, approx 900mm deep		
OOS13	Drainage swale, approx 900mm deep		
OOS14 (mower route)	Track through plot made by verge mowing operators. Trees either side are a some mature approx dia & heights of 300mm (12m) respectively mix of predominantly sycamore & ash with English oak & horn		
OOS15	Drainage swale, approx 600mm deep		
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OOS17	Drainage swale, approx 600mm deep		

Label	Description
TPO - The Oaklands (A1)	Approximate location of an area TPO dating from 1975
TPO - The Lodge (A1)	Approximate location of TPOs dating from 1975



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

PROJECT TITLE

Clump & Hill (5973)

DRAWING TITLE

Tree Survey Plan

SCALE

Scale: 1:1,500 @ A1

DRAWN BY

TS

APPROVED BY

DH

REVISION

1 of 9

DATE

13/02/2024

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

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Arboricultural Consultants

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- 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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OOS12	Drainage swale, approx 900mm deep		
OOS13	Drainage swale, approx 900mm deep		
OOS14 (mower route)	Track through plot made by large flowering operators. Trees either side are a some mature approx dia. & heights of 300mm / 12m, respectively mix of predominantly sycamore & ash with English oak & horn		
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25

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100 Meters

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Tree Survey Plan

SCALE

Scale: 1:1,500 @ A1

DRAWING NUMBER

BHA_5973_01

DRAWN BY

TS

APPROVED BY

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3 of 9

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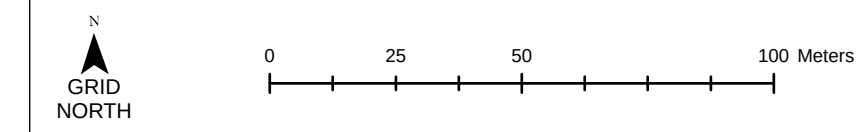
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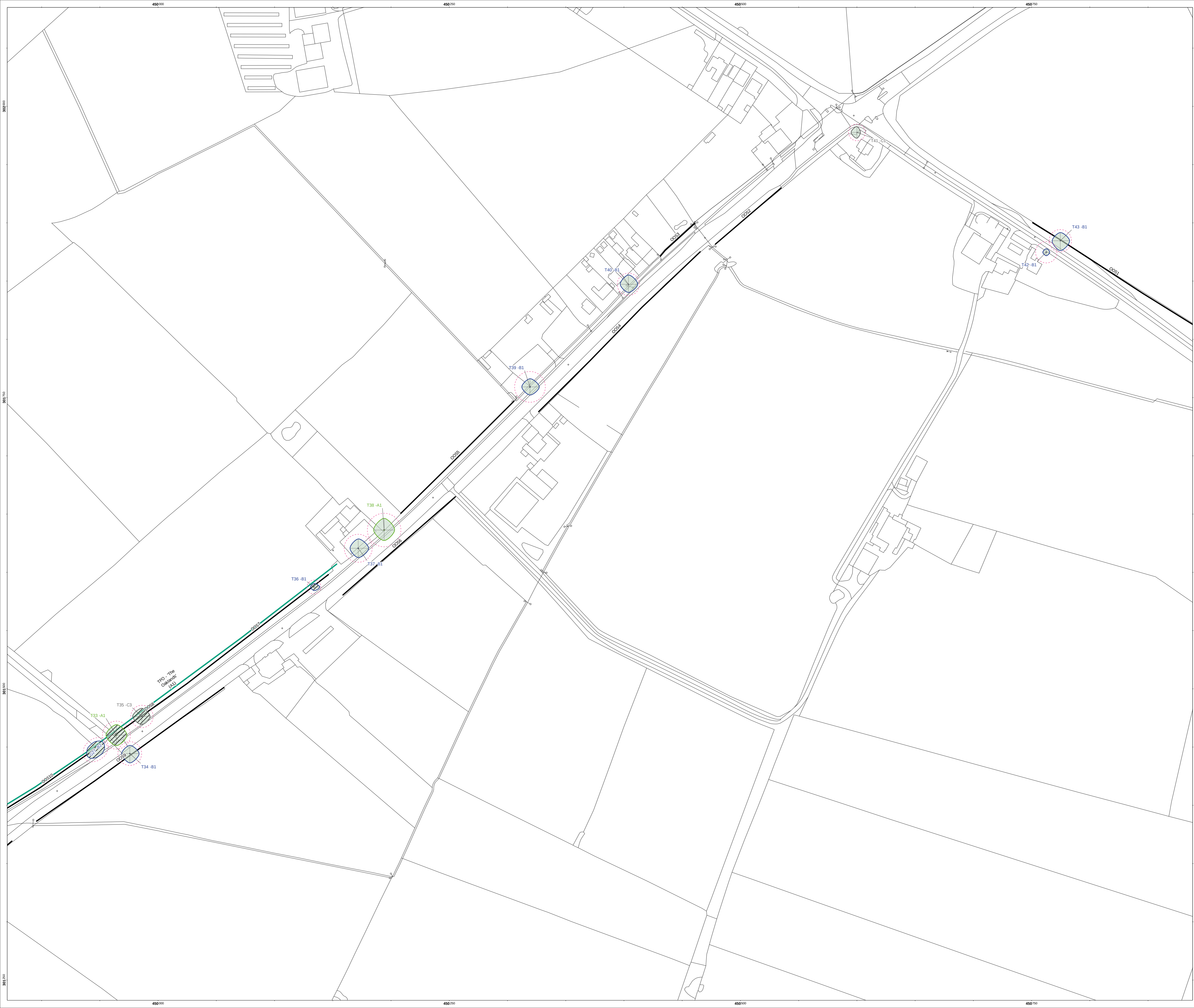
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PROJECT TITLE

Clump & Hill (5973)

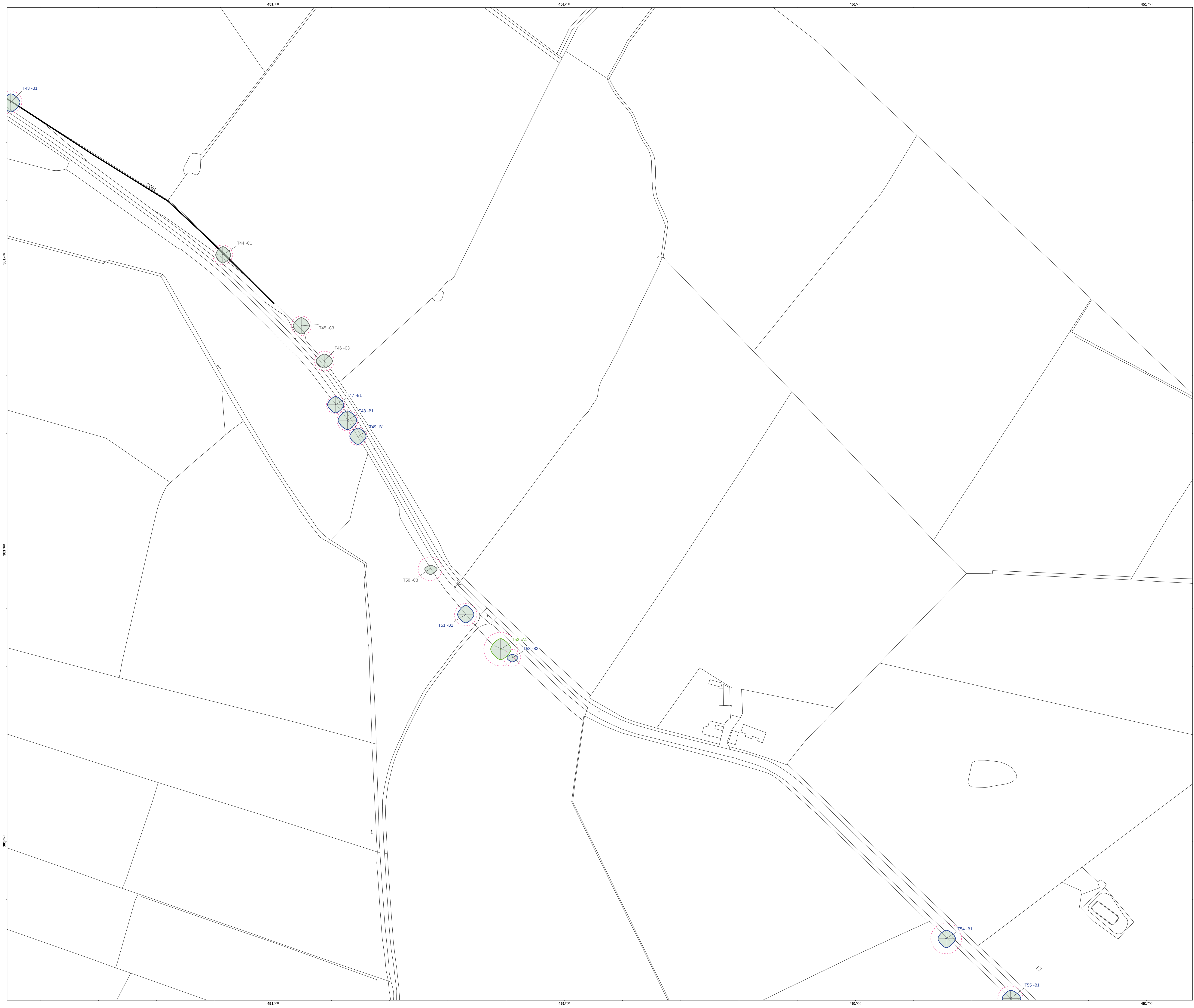
DRAWING TITLE

Tree Survey Plan

SCALE	Scale: 1:1,500 @ A1	DRAWING NUMBER	BHA_5973_01
DRAWN BY	TS	APPROVED BY	DH
REVISION	5 of 9	SHEET	13/02/2024
COORDINATE SYSTEM / DATUM	British National Grid / Newlyn Datum (AOD)		
CLIENT	Baywa		
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Barton Hyett Associates
Arboricultural Consultants

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



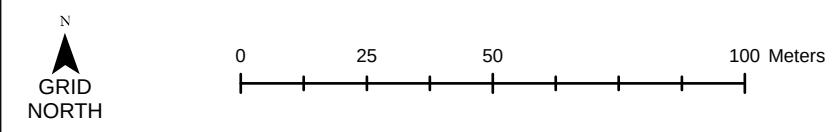
- KEY**
- Category A Tree - High quality (Retention highly desirable)
 - Category A - Hedgerow, Group, Woodland - High quality (Retention highly desirable)
 - Category B Tree - Moderate quality (Retention desirable)
 - Category B - Hedgerow, Group, Woodland - Moderate quality (Retention desirable)
 - 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)
 - 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
 - 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	Label	Description
OOS1	Drainage swale, approx 500mm deep	MBL 001	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively, assume Cat B 40+
OOS2	Drainage swale, approx 700mm deep		
OOS3	Drainage swale, approx 700mm deep		
OOS4	Drainage swale, approx 700mm deep		
OOS5	Drainage swale, approx 900mm deep	MBL 002	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively, assume Cat B 40+
OOS6	Drainage swale, approx 900mm deep		
OOS7	Drainage swale, approx 900mm deep		
OOS8	Drainage swale, approx 300mm deep	MBL 003	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively, assume Cat B 40+
OOS9	Drainage swale, approx 900mm deep		
OOS10	Drainage swale, approx 600mm deep. Foot track patterns noted in terrace pavement to SE of swale		
OOS11	Drainage swale, approx 900mm deep		
OOS12	Drainage swale, approx 900mm deep		
OOS13	Drainage swale, approx 900mm deep		
OOS14 (mower route)	Track through plot made by large mowing operators. Trees either side are a some mature approx dia. & heights of 300mm (12m) respectively) mix of predominantly sycamore & ash with English oak & horn		
OOS15	Drainage swale, approx 600mm deep		
OOS16	Drainage swale, approx 600mm deep		
OOS17	Drainage swale, approx 600mm deep		

Label	Description
TPO - The Oaklands (A1)	Approximate location of an area TPO dating from 1975
TPO - The Lodge (A1)	Approximate location of TPOs dating from 1975



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



PROJECT TITLE
Clump & Hill (5973)

DRAWING TITLE
Tree Survey Plan

SCALE	Scale: 1:1,500 @ A1	DRAWING NUMBER	BHA_5973_01
DRAWN BY TS	APPROVED BY DH	REVISION	SHEET 6 of 9
DATE 13/02/2024			
COORDINATE SYSTEM / DATUM British National Grid / Newlyn Datum (AOD)			
CLIENT Baywa			
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- 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
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Label	Description
OOS1	Drainage swale, approx 300mm deep
OOS2	Drainage swale, approx 700mm deep
OOS3	Drainage swale, approx 700mm deep
OOS4	Drainage swale, approx 700mm deep
OOS5	Drainage swale, approx 900mm deep
OOS6	Drainage swale, approx 900mm deep
OOS7	Drainage swale, approx 900mm deep
OOS8	Drainage swale, approx 300mm deep
OOS9	Drainage swale, approx 900mm deep
OOS10	Drainage swale, approx 900mm deep. Foot trackway patterns noted in terrace pavement to SE of swale
OOS11	Drainage swale, approx 900mm deep
OOS12	Drainage swale, approx 900mm deep
OOS13	Drainage swale, approx 900mm deep
OOS14 (mower route)	Track through plot made by large mowing operations. Trees either side are a mix of mature (approx 12m dia, 8 heights of 300mm (12m) respectively) mix of predominantly sycamore & ash with English oak & horn
OOS15	Drainage swale, approx 600mm deep
OOS16	Drainage swale, approx 600mm deep
OOS17	Drainage swale, approx 600mm deep

Label	Description
MBL 001	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 800mm respectively assume Cat B 40+
MBL 002	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 800mm respectively assume Cat B 40+
MBL 003	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 800mm respectively assume Cat B 40+

Label	Description
TPO - The Oaklands (A1)	Approximate location of an area TPO dating from 1975
TPO - The Lodge (A1)	Approximate location of TPOs dating from 1975



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N
GRID
NORTH

0 25 50 100 Meters

PROJECT TITLE

Clump & Hill (5973)

DRAWING TITLE

Tree Survey Plan

SCALE

Scale: 1:1,500 @ A1

DRAWING NUMBER

BHA_5973_01

DRAWN BY

TS

APPROVED BY

DH

REVISION

7 of 9

SHEET

13/02/2024

DATE

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

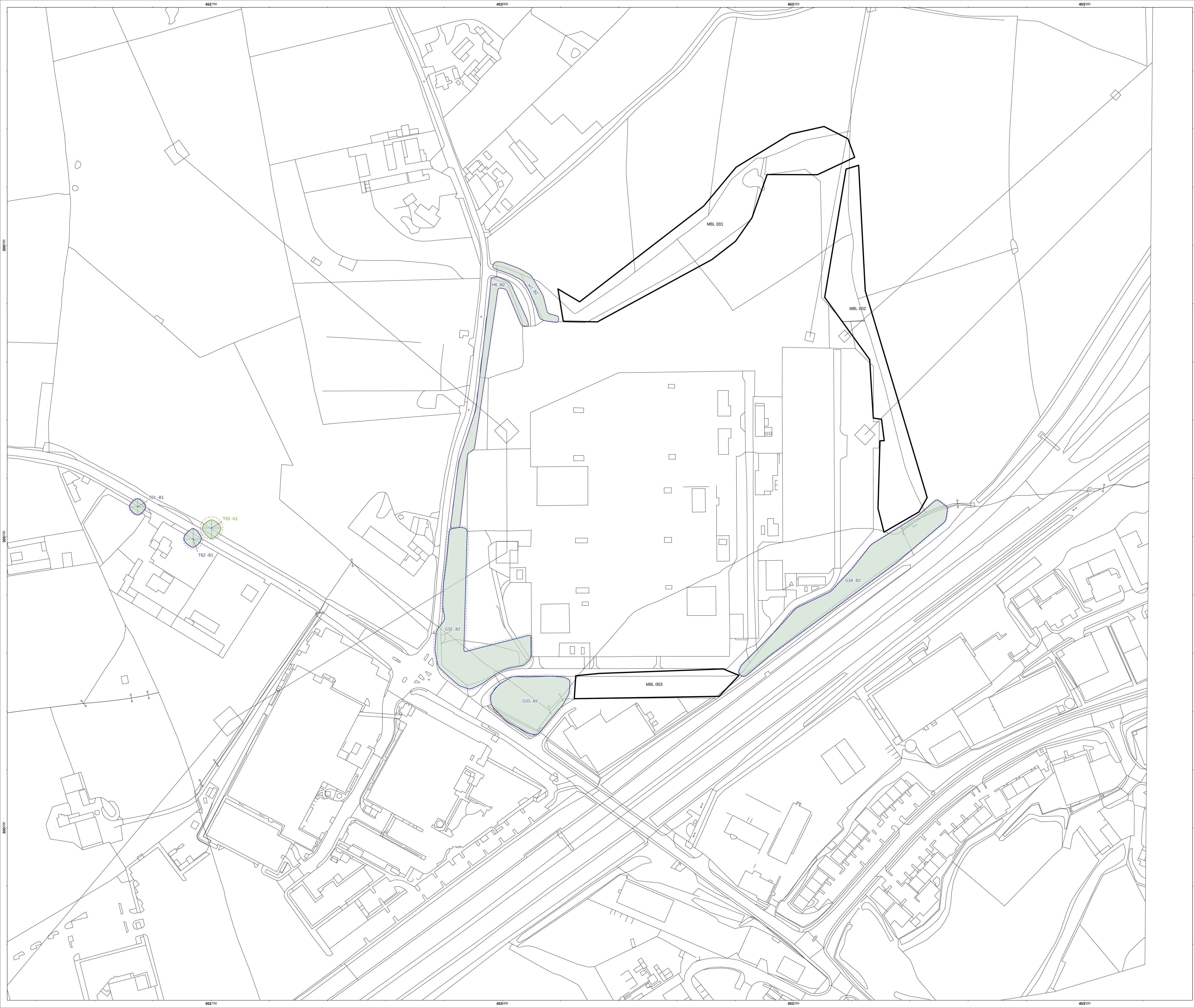
Baywa

CREDITS

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- KEY**
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 - Category B - Hedgerow, Group, Woodland - Moderate quality (Retention desirable)
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 - 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
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Label	Description	Label	Description
OOS1	Drainage swale, approx 500mm deep	MBL 001	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively assume Cat B 40+
OOS2	Drainage swale, approx 700mm deep		
OOS3	Drainage swale, approx 700mm deep		
OOS4	Drainage swale, approx 700mm deep		
OOS5	Drainage swale, approx 900mm deep	MBL 002	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively assume Cat B 40+
OOS6	Drainage swale, approx 900mm deep		
OOS7	Drainage swale, approx 900mm deep		
OOS8	Drainage swale, approx 300mm deep		
OOS9	Drainage swale, approx 900mm deep	MBL 003	Mixed broadleaf boundary group, canopy observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively assume Cat B 40+
OOS10	Drainage swale, approx 900mm deep. Root history patterns noted in timeline: consistent to SE of swale		
OOS11	Drainage swale, approx 900mm deep		
OOS12	Drainage swale, approx 900mm deep		
OOS13	Drainage swale, approx 900mm deep		
OOS14 (mower route)	Track through plot made by verge mowing operators. Trees either side are a some mature approx dia. & heights of 300mm (12m) respectively mix of predominantly sycamore & ash with English oak & horn		
OOS15	Drainage swale, approx 600mm deep		
OOS16	Drainage swale, approx 600mm deep		
OOS17	Drainage swale, approx 600mm deep		

Label	Description
TPO - The Oaklands (A1)	Approximate location of an area TPO dating from 1975
TPO - The Lodge (A1)	Approximate location of TPOs dating from 1975



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N

GRID NORTH

0

25

50

100 Meters

PROJECT TITLE

Clump & Hill (5973)

DRAWING TITLE

Tree Survey Plan

SCALE

Scale: 1:1,500 @ A1

DRAWING NUMBER

BHA_5973_01

DRAWN BY

TS

APPROVED BY

DH

REVISION

9 of 9

DATE

13/02/2024

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

Baywa

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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
- Tree / Hedgerow / Group to be removed

Protection Measures

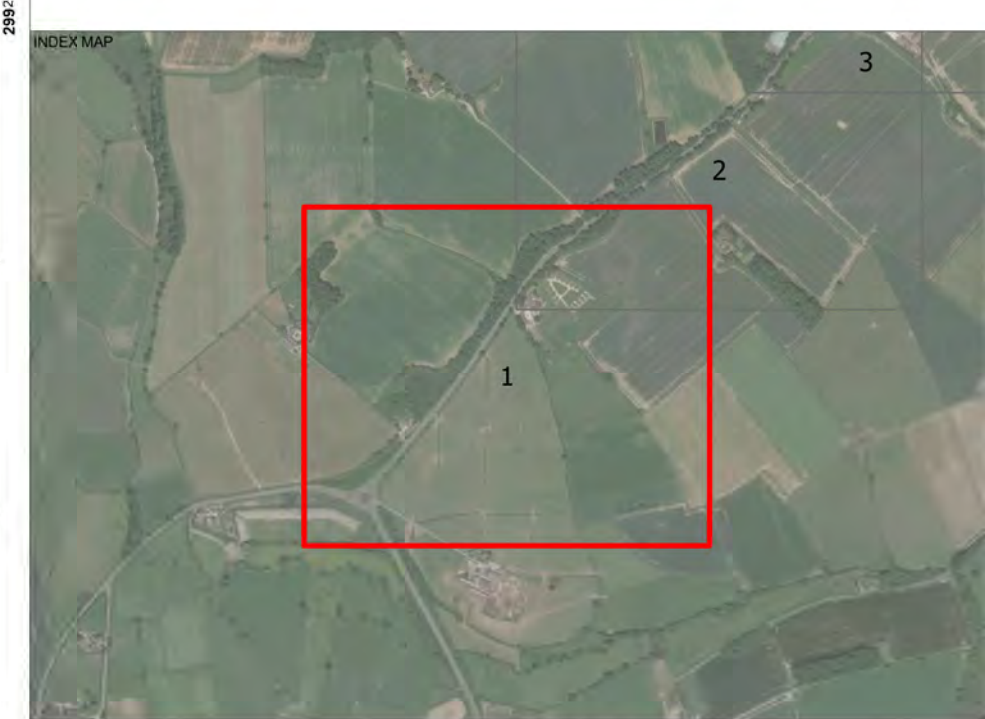
- Tree Protection Barrier
- All weather information notices to read 'Construction Exclusion Zone - No Entry' A3 in size. To be attached to tree protection barriers at regular intervals
- Target Note

Label	Description	Label	Description
OOS1	Drainage swale, approx 900mm deep	MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS2	Drainage swale, approx 700mm deep		
OOS3	Drainage swale, approx 700mm deep		
OOS4	Drainage swale, approx 700mm deep		
OOS5	Drainage swale, approx 600mm deep	MBL 002	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS6	Drainage swale, approx 900mm deep		
OOS7	Drainage swale, approx 900mm deep		
OOS8	Drainage swale, approx 300mm deep		
OOS9	Drainage swale, approx 900mm deep	MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS10	Drainage swale, approx 600mm deep, Root heavy pattern noted in drainage pavement to SE of swale		
OOS11	Drainage swale, approx 900mm deep		
OOS12	Drainage swale, approx 900mm deep		
OOS13	Drainage swale, approx 900mm deep		
OOS14 (rower)	Track through pit made by verge mowing operation. Trees either side are a semi mature species (G1 & height of 300mm / 12m) respectively mix of predominantly mature & oak with English oak & horn		
OOS15	Drainage swale, approx 600mm deep		
OOS16	Drainage swale, approx 600mm deep		
OOS17	Drainage swale, approx 600mm deep		

Label	Description
TPC - The Oaklands (A1)	Approximate location of an area TPO dating from 1975
TPC - The Lodge (A1)	Approximate location of TPOs dating from 1975

Target Notes

Label	Description
TN1	Excavations must stay outside of the 80% of T3, T4 & T5 (see tree schedule in AIA Ref 5973 for details)
TN2	H20 to be used for insulating cable beneath H1 & H3



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PROJECT TITLE
Clump & Hill (5973)

DRAWING TITLE
Tree Retention and Removal Plan

SCALE
Scale: 1:1,500 @ A1

DRAWING NUMBER
BHA_5973_02

DRAWN BY
TS

APPROVED BY
IH

REVISION
1 of 9

DATE
05/06/2024

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

CLIENT
Baywa

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

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

Label	Description	Label	Description
OOS1	Drainage easel, approx 900mm deep	MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS2	Drainage easel, approx 700mm deep		
OOS3	Drainage easel, approx 700mm deep		
OOS4	Drainage easel, approx 700mm deep		
OOS5	Drainage easel, approx 500mm deep	MBL 002	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS6	Drainage easel, approx 900mm deep		
OOS7	Drainage easel, approx 900mm deep		
OOS8	Drainage easel, approx 300mm deep		
OOS9	Drainage easel, approx 500mm deep	MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS10	Drainage easel, approx 600mm deep, foot heavy pattern noted in drainage pavement to SE of easel		
OOS11	Drainage easel, approx 900mm deep		
OOS12	Drainage easel, approx 500mm deep		
OOS13	Drainage easel, approx 900mm deep		
OOS14 (rower)	Track through pit made by verge mowing equipment. Trees either side are a mix of mature (approx 300mm / 120) and young (approx 150mm / 60) of predominantly European & ash with English oak & horn		
OOS15	Drainage easel, approx 600mm deep		
OOS16	Drainage easel, approx 600mm deep		
OOS17	Drainage easel, approx 600mm deep		

Label	Description
TPC - The Oaklands (A1)	Approximate location of an area TPC dating from 1975
TPC - The Lodge (A1)	Approximate location of TPCs dating from 1975

Target Notes

Label	Description
TN1	Endnotes must stay outside of the 80% of T1, T2 & T3 (see tree schedule in AHA Ref 5973 for details)
TN2	H20 to be used for installing table beneath H1 & H3



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PROJECT TITLE
Clump & Hill (5973)

DRAWING TITLE
Tree Retention and Removal Plan

SCALE
Scale: 1:1,500 @ A1

DRAWING NUMBER
BHA_5973_02

DRAWN BY
TB

APPROVED BY
IH

REVISION
2 of 3

SHEET
05/06/2024

DATE
05/06/2024

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

CLIENT
Baywa

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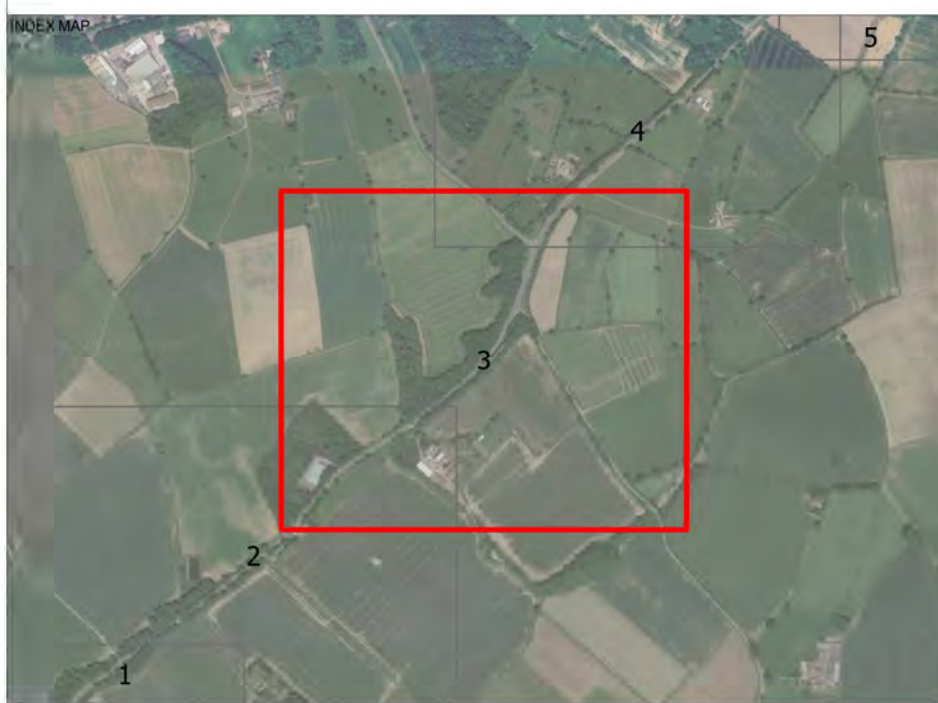
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 - Tree/Group/Hedgerow not on topographical survey. Location given is an estimate
 - Tree / Hedgerow / Group to be removed
- Protection Measures**
- Tree Protection Barrier
- All weather information notices to read 'Construction Exclusion Zone - No Entry' A3 in size. To be attached to tree protection barriers at regular intervals
- Target Note

Label	Description	Label	Description
OOS1	Drainage easels, approx 900mm deep	MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively, assume Cat B 40+
OOS2	Drainage easels, approx 700mm deep		
OOS3	Drainage easels, approx 700mm deep		
OOS4	Drainage easels, approx 700mm deep		
OOS5	Drainage easels, approx 500mm deep	MBL 002	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively, assume Cat B 40+
OOS6	Drainage easels, approx 900mm deep		
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OOS8	Drainage easels, approx 300mm deep	MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively, assume Cat B 40+
OOS9	Drainage easels, approx 500mm deep		
OOS10	Drainage easels, approx 600mm deep, foot heavy pattern noted in drainage preventer to SE of easel		
OOS11	Drainage easels, approx 900mm deep		
OOS12	Drainage easels, approx 500mm deep		
OOS13	Drainage easels, approx 900mm deep		
OOS14 (rower)	Track through pit made by verge mowing operations. Trees either side are a mix of mature (approx 10m / 12m) and young (approx 5m / 6m) of predominantly European & ash with English oak & horn		
OOS15	Drainage easels, approx 600mm deep		
OOS16	Drainage easels, approx 600mm deep		
OOS17	Drainage easels, approx 600mm deep		

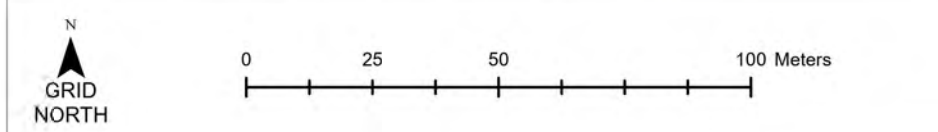
Label	Description
TPC - The Oaklands (A1)	Approximate location of an area TPO dating from 1975
TPC - The Lodge (A1)	Approximate location of TPOs dating from 1975

Target Notes

Label	Description
TN1	Endorsements must stay outside of the 80% of T1, T2 & T3 (see tree schedule in AHA Ref 5973 for details)
TN2	H20 to be used for installing table beneath H1 & H3



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PROJECT TITLE

Clump & Hill (5973)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE

Scale: 1:1,500 @ A1

DRAWING NUMBER

BHA_5973_02

DRAWN BY

TB

APPROVED BY

IH

REVISION

3 of 9

SHEET

DATE

05/06/2024

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

Baywa

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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

Label	Description	Label	Description
OOS1	Drainage swale, approx 900mm deep	MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively, assume Cat B 40+
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OOS3	Drainage swale, approx 700mm deep		
OOS4	Drainage swale, approx 700mm deep		
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OOS6	Drainage swale, approx 500mm deep		
OOS7	Drainage swale, approx 900mm deep		
OOS8	Drainage swale, approx 300mm deep	MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively, assume Cat B 40+
OOS9	Drainage swale, approx 500mm deep		
OOS10	Drainage swale, approx 600mm deep, foot heavy pattern noted in drainage preventer to SE of area		
OOS11	Drainage swale, approx 500mm deep		
OOS12	Drainage swale, approx 500mm deep		
OOS13	Drainage swale, approx 900mm deep		
OOS14 (new)	Track through pit made by verge mowing operation. Trees either side are a mix of mature (approx 20m / 120mm dbh) & young (approx 10m / 60mm dbh) of predominantly European & ash with English oak & horn		
OOS15	Drainage swale, approx 600mm deep		
OOS16	Drainage swale, approx 600mm deep		
OOS17	Drainage swale, approx 600mm deep		

Label	Description
MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively, assume Cat B 40+
MBL 002	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively, assume Cat B 40+
MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively, assume Cat B 40+

Label	Description
TPC - The Oaklands (A1)	Approximate location of an area TPC dating from 1975
TPC - The Lodge (A1)	Approximate location of TPCs dating from 1975

Target Notes

Label	Description
TN1	Estimate must stay outside of the 80% of T3, T4 & T5 (see tree schedule in AHA Ref 5973 for details)
TN2	H20 to be used for installing table beneath H1 & H3

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

PROJECT TITLE

Clump & Hill (5973)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE

Scale: 1:1,500 @ A1

DRAWING NUMBER

BHA_5973_02

DRAWN BY

TB

APPROVED BY

IH

REVISION

4 of 5

SHEET

4 of 5

DATE

05/06/2024

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

CLIENT

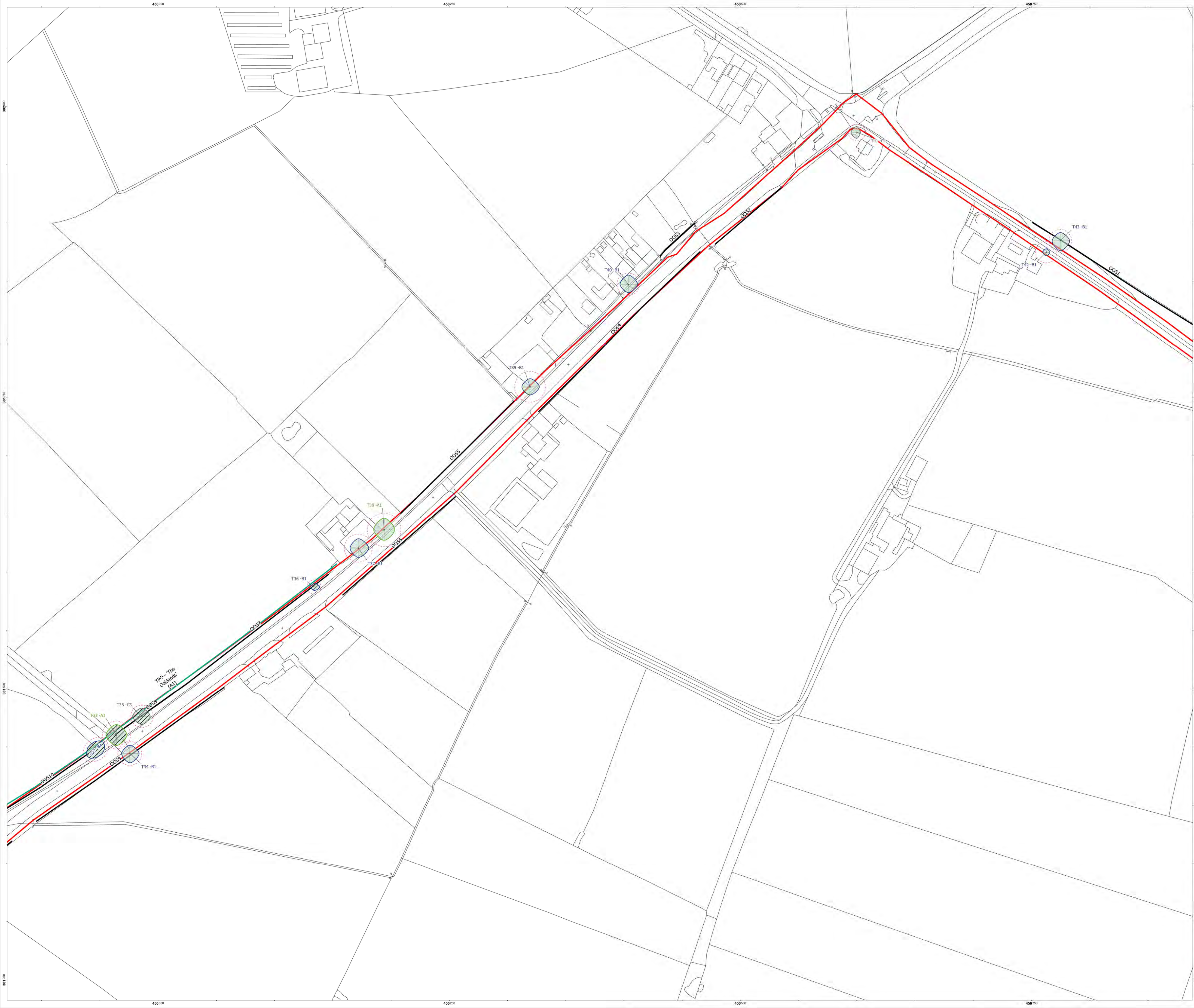
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Barton Hyett Associates
Arboricultural Consultants

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

Label	Description	Label	Description
OOS1	Drainage swale, approx 900mm deep	MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively assume Cat B 60+
OOS2	Drainage swale, approx 700mm deep		
OOS3	Drainage swale, approx 700mm deep		
OOS4	Drainage swale, approx 700mm deep		
OOS5	Drainage swale, approx 600mm deep	MBL 002	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively assume Cat B 60+
OOS6	Drainage swale, approx 900mm deep		
OOS7	Drainage swale, approx 900mm deep		
OOS8	Drainage swale, approx 300mm deep	MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 600mm respectively assume Cat B 60+
OOS9	Drainage swale, approx 600mm deep, floor		
OOS10	Drainage swale, approx 600mm deep, floor heavy pattern noted in drainage pavement to SE of area		
OOS11	Drainage swale, approx 600mm deep		
OOS12	Drainage swale, approx 600mm deep		
OOS13	Drainage swale, approx 900mm deep		
OOS14 (newer)	Track through pit made by verge mowing equipment. Trees either side are a semi mature species (6m & height of 300mm / 12m) respectively mix of predominantly mature & oak with English oak & horn		
OOS15	Drainage swale, approx 600mm deep		
OOS16	Drainage swale, approx 600mm deep		
OOS17	Drainage swale, approx 600mm deep		

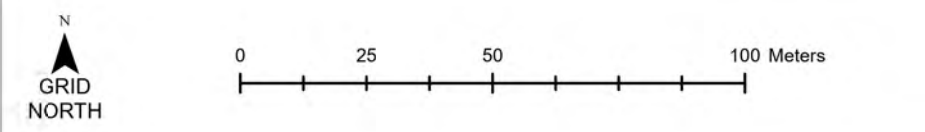
Label	Description
TPC - The Oaklands (A1)	Approximate location of an area TPC dating from 1975
TPC - The Lodge (A1)	Approximate location of TPCs dating from 1975

Target Notes

Label	Description
TN1	Endnotes must stay outside of the 80% of T3, T4 & T5 (see tree schedule in AHA Ref 5973 for 10% tolerance)
TN2	H20 to be used for installing table beneath H1 & H3



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Clump & Hill (5973)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE

Scale: 1:1,500 @ A1

DRAWING NUMBER

BHA_5973_02

DRAWN BY

TB

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IH

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DATE

05/06/2024

COORDINATE SYSTEM / DATUM

British National Grid / Newlyn Datum (AOD)

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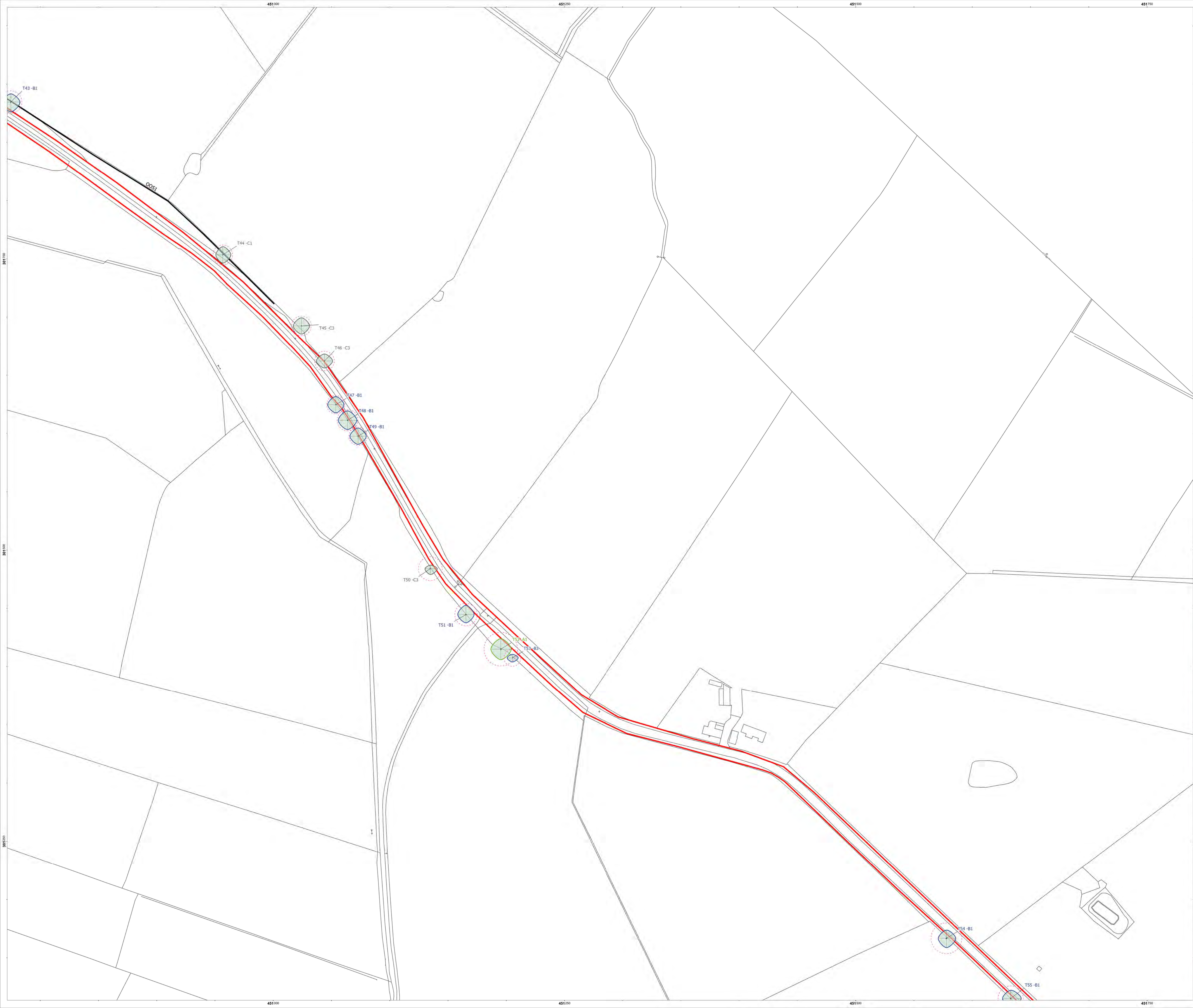
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KEY

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- Tree / Hedgerow / Group to be removed

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

Label	Description	Label	Description
OOS1	Drainage swale, approx 900mm deep	MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS2	Drainage swale, approx 700mm deep		
OOS3	Drainage swale, approx 700mm deep		
OOS4	Drainage swale, approx 700mm deep	MBL 002	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS5	Drainage swale, approx 500mm deep		
OOS6	Drainage swale, approx 900mm deep		
OOS7	Drainage swale, approx 900mm deep		
OOS8	Drainage swale, approx 300mm deep	MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS9	Drainage swale, approx 500mm deep		
OOS10	Drainage swale, approx 600mm deep, Road heavy pattern noted in drainage pavement to SE of route		
OOS11	Drainage swale, approx 900mm deep		
OOS12	Drainage swale, approx 500mm deep		
OOS13	Drainage swale, approx 900mm deep		
OOS14 (newer)	Track through pit made by verge mowing operations. Trees either side are a semi mature (approx 20m & height of 300mm / 12m) respectively mix of predominantly mature & oak with English oak & horn		
OOS15	Drainage swale, approx 600mm deep		
OOS16	Drainage swale, approx 600mm deep		
OOS17	Drainage swale, approx 600mm deep		

Label	Description
TPC - The Oaklands (A1)	Approximate location of an area TPC dating from 1975
TPC - The Lodge (A1)	Approximate location of TPCs dating from 1975

Target Notes

Label	Description
TN1	Endnotes must stay outside of the 80% of T1, T2 & T3 (see tree schedule in AIA Ref 5973 for 1975/1976/1977)
TN2	H20 to be used for installing table beneath H1 & H3



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PROJECT TITLE
Clump & Hill (5973)

DRAWING TITLE
Tree Retention and Removal Plan

SCALE
Scale: 1:1,500 @ A1

DRAWING NUMBER
BHA_5973_02

DRAWN BY
TB

APPROVED BY
IH

REVISION
8 of 9

SHEET
5 of 9

DATE
05/06/2024

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

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KEY

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

 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

Label	Description
OCS1	Dramatic swellings, approx 900mm deep
OCS2	Dramatic swellings, approx 700mm deep
OCS3	Dramatic swellings, approx 700mm deep
OCS4	Dramatic swellings, approx 700mm deep
OCS5	Dramatic swellings, approx 900mm deep
OCS6	Dramatic swellings, approx 900mm deep
OCS7	Dramatic swellings, approx 1000mm deep
OCS8	Dramatic swellings, approx 300mm deep
OCS9	Dramatic swellings, approx 900mm deep
OCS10	Dramatic swellings, approx 600mm deep. Root system patterned around in patches providing evidence of seepage
OCS11	Dramatic swellings, approx 900mm deep
OCS12	Dramatic swellings, approx 900mm deep
OCS13	Dramatic swellings, approx 600mm deep
OCS14 (inferred)	Through pit made by truck, through operations. Trench cut across road a metre wide. Soil surface shows signs of pitting. Numerous small pits of approximately 1cm radius randomly spaced along perimeter of embankment. No evidence of seepage or saturation with English oak at base.
OCS15	Dramatic swellings, approx 600mm deep
OCS16	Dramatic swellings, approx 600mm deep
OCS17	Dramatic swellings, approx 600mm deep

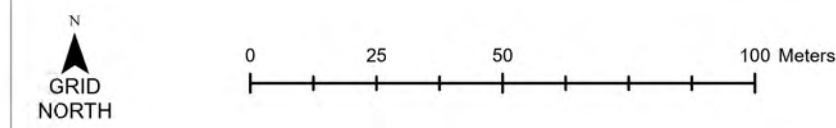
Label	Description
MSL 001	Mixed tropical boundary group, cursory observation from nearest boundary; approx max height & dist. estimated @ 10m & 600mm respectively; assume Cat B 40+
MSL 002	Mixed broadleaf boundary group, cursory observation from nearest boundary; approx max height & dist. estimated @ 15m & 600mm respectively; assume Cat B 40+
MSL 003	Mixed tropical boundary group, cursory observation from nearest boundary; approx max height & dist. estimated @ 15m & 500mm respectively; assume Cat B 40+

Label	Description
TPO - 'The Oaklands' (A1)	Approximate location of an area TPO dating from 1975
TPO - 'The Lodge' (A1)	Approximate location of TPOs dating from 1975

Label	Description
TN1	Excavations must stay outside of the RPA's of T3, T4 & G1 (see tree schedules in AIA Ref. 5973 for RPA dimensions)
TN2	HDD to be used for installing cable beneath H1 & H3



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PROJECT TITLE

Clump & Hill (5973)

DRAWING TITLE

Tree Retention and Removal Plan

SCALE

Scale: 1:1,500 @ A1	DRAWING NUMBER	BHA_5973_02
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DRAWN BY TB	APPROVED BY IH	REV
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COORDINATE SYSTEM / DATUM **British National Grid / Newlyn Datum (AOD**

CLIN

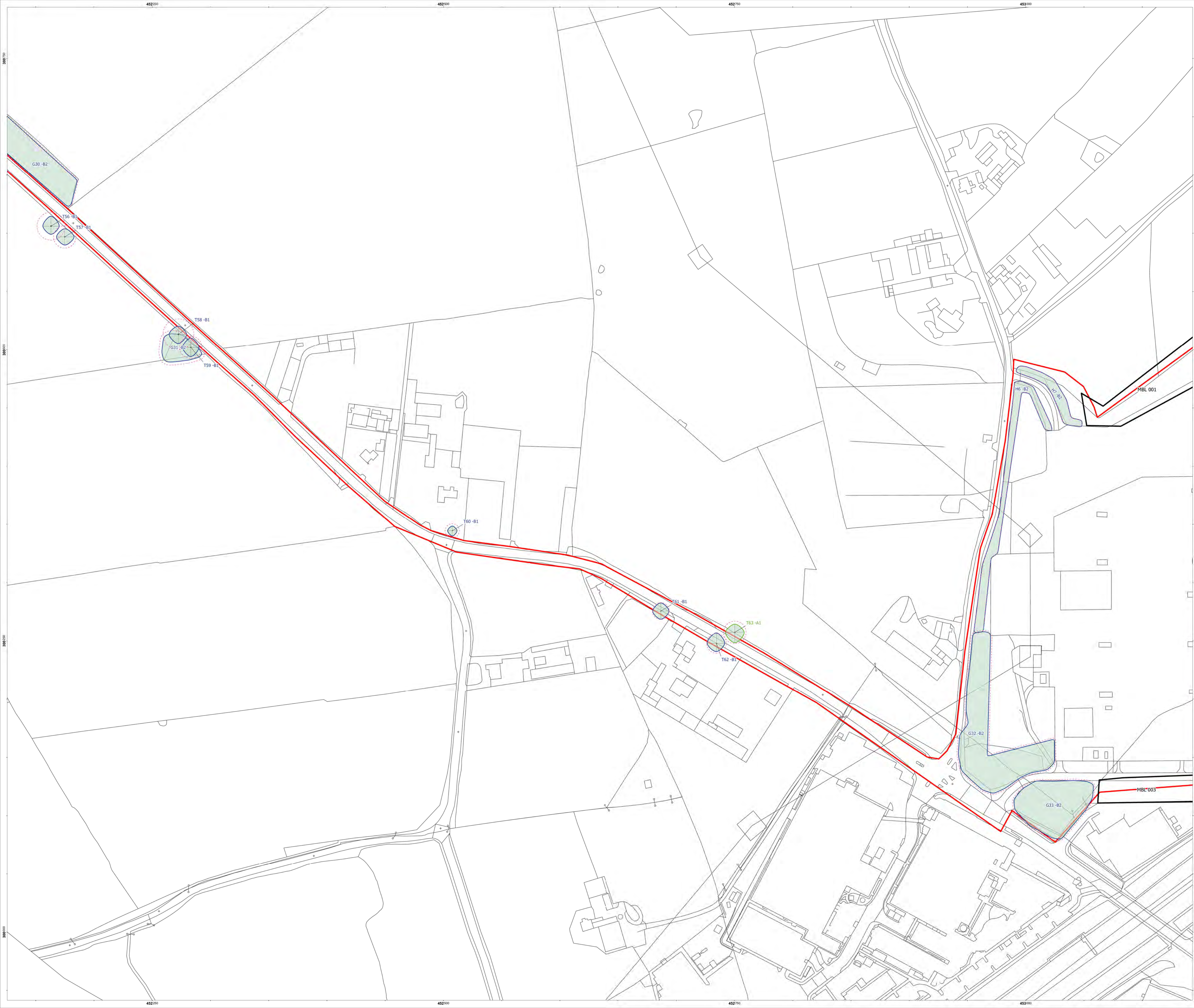
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- Category A Tree - High quality**
(Retention highly desirable)
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(Retention highly desirable)
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(Retention desirable)
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(May be retained but should not constrain development)
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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**

Label	Description	Label	Description
OOS1	Drainage easels, approx 900mm deep	MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS2	Drainage easels, approx 700mm deep		
OOS3	Drainage easels, approx 700mm deep		
OOS4	Drainage easels, approx 700mm deep	MBL 002	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS5	Drainage easels, approx 500mm deep		
OOS6	Drainage easels, approx 500mm deep		
OOS7	Drainage easels, approx 900mm deep		
OOS8	Drainage easels, approx 300mm deep	MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS9	Drainage easels, approx 500mm deep		
OOS10	Drainage easels, approx 600mm deep, flood heavy pattern noted in map; pavement to SE of easel		
OOS11	Drainage easels, approx 500mm deep		
OOS12	Drainage easels, approx 500mm deep		
OOS13	Drainage easels, approx 900mm deep		
OOS14 (new)	Track through pit made by verge mowing operation. Trees either side are a mix of mature species (60% - 120% respectively) mix of predominantly mature & oak with English oak & horn		
OOS15	Drainage easels, approx 600mm deep		
OOS16	Drainage easels, approx 600mm deep		
OOS17	Drainage easels, approx 600mm deep		

Label	Description
TPC - The Oaklands (A1)	Approximate location of an area TPC dating from 1975
TPC - The Lodge (A1)	Approximate location of TPCs dating from 1975

Target Notes

Label	Description
TN1	Endorsements must stay outside of the 80% of T1, T2 & T3 (see tree schedule in AIA Ref 5973 for details)
TN2	H20 to be used for installing table beneath H1 & H3



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PROJECT TITLE
Clump & Hill (5973)

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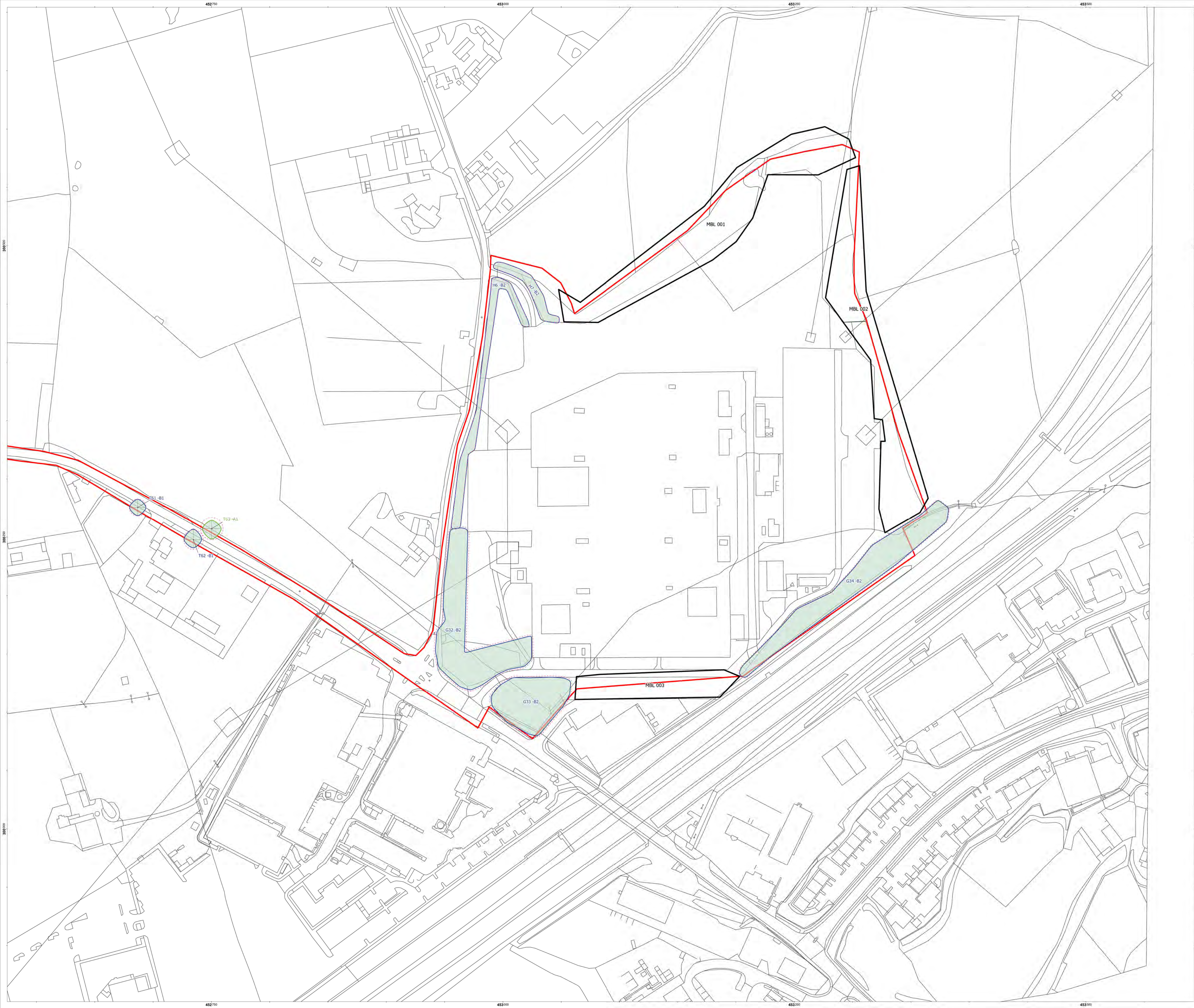
COORDINATE SYSTEM / DATUM
British National Grid / Newlyn Datum (AOD)

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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

Tree / Hedgerow / Group to be removed

Protection Measures

Tree Protection Barrier

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Target Note

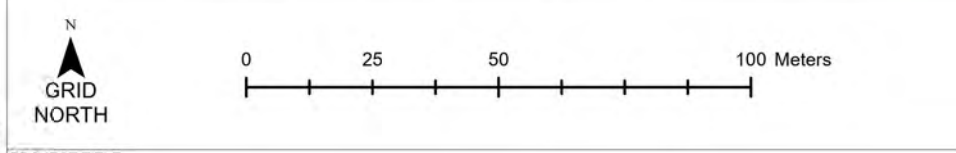
Label	Description	Label	Description
OOS1	Drainage easement, approx 900mm deep	MBL 001	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS2	Drainage easement, approx 700mm deep		
OOS3	Drainage easement, approx 700mm deep		
OOS4	Drainage easement, approx 700mm deep		
OOS5	Drainage easement, approx 600mm deep	MBL 002	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS6	Drainage easement, approx 600mm deep		
OOS7	Drainage easement, approx 900mm deep		
OOS8	Drainage easement, approx 300mm deep		
OOS9	Drainage easement, approx 600mm deep	MBL 003	Mixed tropical boundary group, country observation from nearest boundary, approx max height & dia. estimated @ 15m & 500mm respectively assume Cat B 40+
OOS10	Drainage easement, approx 600mm deep, flood history pattern noted in drainage prevention to SE of easement		
OOS11	Drainage easement, approx 600mm deep		
OOS12	Drainage easement, approx 600mm deep		
OOS13	Drainage easement, approx 600mm deep		
OOS14 (rower)	Track through plot made by verge mowing operation. Trees either side are a mix of mature species (20m+ / 12m+), predominantly mix of predominantly mature & oak with English oak & horn		
OOS15	Drainage easement, approx 600mm deep		
OOS16	Drainage easement, approx 600mm deep		
OOS17	Drainage easement, approx 600mm deep		

Target Notes

Label	Description
TN1	Exclusion zone must stay outside of the 80% of T1, T2 & T3 (see tree schedule in A3 file) 50% for T4 & T5
TN2	H20 to be used for installing table beneath H1 & H2



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SCALE

Scale: 1:1,500 @ A1

DRAWING NUMBER

BHA_5973_02

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JH

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Eckington, Pirehill, Wrocksall, WY10 3DN

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	TPO
T1	Maple (Field)	On	9.0	1	Yes	350	3.0-3.5-3.0-3.0	3.0	0.0	None	EM	None	Hedgerow tree; heavily swathed in ivy	Good	Fair	20+	C1	4.2	55.0	None
T2	Oak (English)	On	16.0	1	Yes	800	7.0-9.0-8.0-8.0	3.5	3.0	N	M	None	Main stem splits @3m into 3x scaffold limbs; visible bark damage around main union; wide spreading crown; historic storm damage to E of crown @3 - 6m; small to moderate sized deadwood throughout crown; good habitat tree	Good	Fair	40+	A1	9.6	290.0	None
T3	Ash (Common)	Off	18.0	1	Yes	700	8.0-8.0-7.0-8.0	1.0	3.5	S	M	None	Good vigour throughout crown; visible woodpecker activity around old wound sites; cursory inspection from boundary	Good	Fair	20+	B1	8.4	222.0	None
T4	Willow (Weeping)	Off	15.0	1	Yes	750	7.0-8.0-6.0-7.0	1.0	0.0	None	M	None	Cursory inspection from boundary	Good	Fair	20+	B1	9.0	254.0	None
T5	Oak (English)	Off	14.0	1	Yes	650	2.0-2.0-7.0-7.0	2.5	3.0	W	EM	None	Laterally suppressed by adjacent mature oak; main stem & scaffold limbs heavily swathed in ivy	Good	Fair	20+	C1	7.8	191.0	None
T6	Ash (Common)	Off	14.0	6	Yes	860	6.0-6.0-6.0-6.0	2.0	0.0	None	EM	None	Multi stemmed tree; stems swathed in ivy	Good	Fair	20+	B1	10.3	335.0	None
T7	Oak (English)	Off	17.0	1	Yes	650	7.0-7.0-7.0-7.0	4.0	1.5	SW	EM	None	Main stem & scaffold limbs heavily swathed in ivy	Good	Fair	40+	B1	7.8	191.0	None
T8	Oak (English)	On	20.0	1	Yes	800	8.0-8.0-8.0-8.0	3.0	0.0	None	M	None	Main stem & scaffold limbs heavily swathed in ivy	Good	Fair	40+	B1	9.6	290.0	None
T9	Sycamore	On	14.0	1	Yes	600	6.0-5.0-5.0-5.0	0.0	0.0	N	EM	None	Typical for age & species	Good	Fair	20+	B1	7.2	163.0	None

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	TPO
T10	Oak (English)	On	20.0	1	Yes	900	9.0-8.0-8.0-9.0	3.0	0.0	None	M	None	Main stem splits @8m into main stem & 1x scaffold limb; main stem & scaffold limbs swathed in ivy	Good	Fair	40+	B1	10.8	366.0	None
T11	Oak (English)	On	20.0	1	Yes	1000	8.0-9.0-9.0-9.0	4.5	3.0	NE	M	None	Main stem splits @3m into 4x scaffold limbs; main stem & limbs swathed in ivy; recent flail damage (bark loss) to SE of stem @2m	Good	Fair	40+	A1	12.0	452.0	None
T12	Oak (English)	On	16.0	1	Yes	700	5.0-5.0-5.0-6.0	3.0	2.0	W	EM	None	Basal damage to W of stem; pronounced root flare; water shoots triggered throughout crown; main stem swathed in ivy	Fair	Fair	20+	B1	8.4	222.0	None
T13	Oak (English)	On	17.0	1	Yes	750	6.0-6.0-6.0-6.0	3.0	2.0	W	M	None	Large area of loose bark to S of stem @0 - 1.5m; water shoots triggered throughout crown; small sized deadwood in upper crown; ivy cover to main stem; spoil heap of grass clippings to S of root plate	Fair	Fair	20+	C2	9.0	254.0	None
T14	Oak (English)	On	17.0	1	Yes	750	7.0-7.0-7.0-7.0	3.0	2.0	S	M	None	Large area of bark damage to N of stem @0.5m; pronounced root flare; water shoots triggered throughout crown; small sized deadwood in upper crown	Good	Fair	20+	B1	9.0	254.0	None
T15	Ash (Common)	On	18.0	2	Yes	1060	7.0-7.0-7.0-7.0	4.0	0.0	None	M	None	Twin stemmed (dia. est @0.5m); good vigour throughout crown	Good	Fair	20+	B1	12.7	508.0	None

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	TPO
T16	Oak (English)	On	17.0	1	Yes	1000	8.0-8.0-8.0-8.0	0.5	3.0	S	M	None	Main stem splits @6m into multiple scaffold limbs; main stem & limbs heavily swathed in ivy; vigorous basal shoots	Good	Fair	40+	A1	12.0	452.0	None
T17	Oak (English)	Off	13.0	1	Yes	600	6.0-6.0-6.0-6.0	3.0	2.0	S	EM	None	Heavily swathed in ivy; good vigour throughout crown	Good	Fair	20+	B1	7.2	163.0	None
T18	Oak (English)	Off	12.0	1	Yes	550	6.0-5.0-6.0-6.0	3.0	3.0	S	EM	None	Good vigour throughout crown	Good	Fair	20+	B1	6.6	137.0	None
T19	Oak (English)	Off	14.0	1	Yes	600	6.0-5.0-6.0-6.0	4.0	4.0	S	EM	None	Small sized deadwood in upper crown	Good	Fair	20+	B1	7.2	163.0	None
T20	Oak (English)	On	18.0	2	Yes	920	8.0-8.0-6.0-7.0	4.0	0.0	None	M	None	Twin stemmed with included basal union	Good	Fair	20+	B1	11.0	383.0	None
T21	Oak (English)	On	17.0	1	Yes	1000	9.0-9.0-9.0-9.0	4.5	3.0	W	M	None	Main stem splits @8m into multiple scaffold limbs; main stem & limbs heavily swathed in ivy; crown reduction to E	Good	Fair	40+	A1	12.0	452.0	None
T22	Oak (English)	On	16.0	1	Yes	850	8.0-8.0-8.0-8.0	4.0	0.0	None	M	None	Main stem splits @3m into multiple scaffold limbs; has appearance of lapsed pollard; main bole & stems heavily swathed in ivy	Good	Fair	40+	A1	10.2	327.0	None
T23	Sycamore	On	17.0	1	Yes	650	7.0-7.0-7.0-7.0	4.0	3.5	W	M	None	Main stem splits @6m into multiple scaffold limbs	Good	Fair	20+	B1	7.8	191.0	None
T24	Oak (English)	On	18.0	1	Yes	850	8.0-9.0-9.0-8.0	4.5	3.5	SW	M	None	Main stem splits @5 - 6m into multiple scaffold limbs; main stem heavily swathed in ivy; non-progressive lean to SE	Good	Fair	40+	A1	10.2	327.0	None

CLIENT: BAYWA

SURVEY DATE: 06 & 07/02/2024

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	TPO
T25	Ash (Common)	On	17.0	1	Yes	700	7.0-7.0-7.0-8.0	5.5	6.0	W	M	None	Wound sites & minor twiggy dieback throughout crown; recent pruning to remove sub dominant stem	Fair	Fair	20+	B1	8.4	222.0	None
T26	Oak (English)	On	18.0	1	Yes	900	7.0-8.0-8.5-8.0	4.0	4.0	SW	M	None	Numerous occluded pruning wounds to main stem; crown reduction to NE	Good	Fair	40+	A1	10.8	366.0	None
T27	Oak (English)	On	20.0	1	Yes	1000	9.0-10.0-10.0-8.0	3.0	3.0	S	M	None	Main stem splits @4m into 3x scaffold limbs; asymmetric crown weighted to E; main stem & scaffold limbs swathed in ivy; crown reduction to E	Good	Fair	40+	A1	12.0	452.0	None
T28	Poplar (Hybrid black)	On	18.0	1	Yes	700	6.0-5.0-5.0-6.0	3.0	2.0	E	EM	None	Established atop swale banking; non-progressive lean to NE	Good	Fair	20+	B1	8.4	222.0	None
T29	Oak (English)	On	18.0	1	Yes	750	8.0-8.0-8.5-8.0	4.0	3.5	S	M	None	Main stem heavily swathed in ivy; crown reduction to E	Good	Fair	40+	B1	9.0	254.0	None
T30	Ash (Common)	On	18.0	1	Yes	850	8.0-7.0-9.0-8.0	6.0	7.0	S	M	None	Basal damage to N; recent storm damage to S of crown @6m; minor twiggy dieback throughout crown; shaggy bracket debris on ground beneath tree	Fair	Fair	20+	B1	10.2	327.0	None
T31	Oak (English)	On	14.0	1	Yes	700	4.0-6.0-5.0-7.0	3.5	4.5	N	M	None	Main stem splits @4.5m into 2x scaffold limbs; historic damage & bark wounds to main stem; upper crown is formed by semi mature Lammas growth / re-gen with good vigour noted	Good	Fair	40+	B1	8.4	222.0	None

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	TPO
T32	Oak (English)	On	18.0	1	Yes	750	8.0-9.0-8.0-8.0	3.5	2.5	S	M	None	Main stem splits @4m into 2x scaffold limbs; recent storm damage to E of crown @3m	Good	Fair	40+	B1	9.0	254.0	Yes
T33	Oak (English)	Off	18.0	1	Yes	1000	9.0-9.0-9.0-9.0	3.0	3.0	SW	M	None	Main stem splits @7m into 5x scaffold limbs; recent storm damage to E of crown @6m	Good	Fair	40+	A1	12.0	452.0	Yes
T34	Oak (English)	On	17.0	1	Yes	850	7.0-8.0-8.0-7.0	6.0	4.5	E	M	None	Crown lift to E resulting in a slightly unbalanced crown	Good	Fair	40+	B1	10.2	327.0	None
T35	Ash (Common)	On	18.0	1	Yes	800	7.0-7.0-7.0-8.0	4.0	0.0	S	M	None	Sparse crown with small sized deadwood; broken limbs & lateral branches with re-gen; numerous rounds & associated decay; sub dominant stem to S (1st sig. limb); good habitat tree. Could be reduced & retained as a habitat monolith @ approx 5m in height	Fair	Poor	10+	C3	9.6	290.0	Yes
T36	Ash (Common)	On	16.0	1	Yes	500	3.0-5.0-3.0-3.0	4.0	0.0	W	EM	None	Sub dominant limb to W (1st sig. limb); heavily swathed in ivy	Good	Fair	20+	B1	6.0	113.0	Yes
T37	Oak (English)	Off	18.0	1	Yes	1000	8.0-9.0-8.0-7.0	3.0	3.0	S	M	None	Main stem splits @6m into 3x scaffold limbs with an additional limb to S (1st sig. limb); recent crown reduction to E of crown	Good	Fair	40+	B1	12.0	452.0	None
T38	Oak (English)	Off	20.0	1	Yes	1200	10.0-9.0-9.0-9.0	4.0	0.0	None	M	None	Main stem splits @3 - 4m into main stem & 3x scaffold limbs resulting in a wide spreading form; main stem & limbs swathed in ivy	Good	Fair	40+	A1	14.4	651.0	None
T39	Ash (Common)	On	16.0	6	Yes	1100	7.0-8.0-7.0-7.0	4.0	0.0	None	EM	None	Multi stemmed tree; stems heavily swathed in ivy	Fair	Fair	20+	B1	13.2	547.0	None

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	TPO
T40	Oak (English)	Off	16.0	1	Yes	800	8.0-8.0-7.0-7.0	4.0	3.0	N	M	None	Within private garden on boundary with adjoining property; small cavity visible to N below main union	Good	Fair	40+	B1	9.6	290.0	None
T41	Oak (English)	On	11.0	1	Yes	600	5.0-3.0-5.0-5.0	2.0	2.0	S	SM	None	Main stem splits @6m into multiple scaffold limbs; main stem swathed in ivy; pruned to clear street furniture (traffic lights & telecom lines)	Good	Fair	20+	C1	7.2	163.0	None
T42	Holly (Highclere)	On	9.0	15	Yes	770	3.0-3.0-3.0-3.0	2.5	0.0	None	SM	None	Multi stemmed tree; wall to N of root plate has recently failed with masonry debris in verge	Good	Fair	20+	B1	9.2	268.0	None
T43	Oak (English)	Off	16.0	1	Yes	800	7.0-8.0-8.5-7.0	4.0	4.0	SW	M	None	Main stem splits @5 - 6m into 3 main scaffold limbs; recent limb loss to S of crown @6.5m; small sized deadwood throughout crown; light ivy cover to lower stem	Good	Fair	40+	B1	9.6	290.0	None
T44	Ash (Common)	Off	16.0	1	Yes	700	7.0-7.0-7.0-6.0	4.0	3.5	S	M	None	Main stem splits @3m into multiple scaffold limbs; wound sites throughout crown with associated decay; small twiggy dieback & Lammass growth throughout crown	Fair	Fair	20+	C1	8.4	222.0	None
T45	Ash (Common)	Off	14.0	1	Yes	700	7.0-7.0-7.0-7.0	6.0	0.0	None	M	None	Visible woodpecker activity to scaffold limbs; extensive deadwood throughout crown; shaggy bracket staining visible to main stem; good habitat tree. Could be reduced & retained as a habitat monolith @ approx 6m in height	Fair	Fair	20+	C3	8.4	222.0	None

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	TPO
T46	Ash (Common)	Off	14.0	1	Yes	700	6.0-7.0-6.0-7.0	4.5	3.5	SE	M	None	Visible cavitation to main stem; extensive deadwood throughout crown; shaggy brackets visible around main union; ivy cover to main stem; good habitat tree. Could be reduced & retained as a habitat monolith @ approx 5m in height	Fair	Fair	20+	C3	8.4	222.0	None
T47	Oak (English)	Off	15.0	1	Yes	650	7.0-7.0-7.0-7.0	4.0	3.0	NE	EM	None	Main stem splits @5m into multiple scaffold limbs; light ivy cover to lower stem	Good	Fair	40+	B1	7.8	191.0	None
T48	Oak (English)	Off	16.0	1	Yes	750	8.0-8.0-8.0-8.0	4.0	4.5	SW	M	None	Main stem splits @5m into 2 main scaffold limbs; small sized deadwood throughout crown; light ivy cover to lower stem	Good	Fair	40+	B1	9.0	254.0	None
T49	Oak (English)	Off	15.0	1	Yes	650	7.0-7.0-7.0-7.0	4.0	3.0	S	EM	None	Main stem splits @5m into multiple scaffold limbs; light ivy cover to main stem	Good	Fair	40+	B1	7.8	191.0	None
T50	Ash (Common)	Off	10.0	1	Yes	850	3.0-6.0-5.0-4.5	3.0	0.0	None	EM	None	Mature bole with crown formed by semi mature re-gen; visible cavitation to main stem; good habitat tree. Could be reduced & retained as a habitat monolith @ approx 5m in height	Fair	Fair	20+	C3	10.2	327.0	None
T51	Oak (English)	Off	17.0	1	Yes	800	8.0-7.0-7.0-7.0	2.5	3.5	N	M	None	Small to moderate sized deadwood throughout crown; light ivy cover to main stem	Good	Fair	40+	B1	9.6	290.0	None

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	TPO
T52	Oak (English)	On	20.0	1	Yes	1200	9.0-9.0-9.0-8.5	3.0	2.5	N	M	None	Main stem splits @7 - 9m into multiple scaffold limbs forming a wide spreading crown; historic storm damage to S of crown @10m; small to moderate sized deadwood throughout crown; good stem taper; tag affixed - No: 838	Good	Fair	40+	A1	14.4	651.0	None
T53	Oak (English)	Off	10.0	1	Yes	600	3.0-5.0-3.5-4.5	3.0	0.0	None	EM	None	Main stem splits @3m into 3x scaffold limbs; bark wound to S of main stem @0m; historic storm damage with cracked stump & old wounds; visible woodpecker activity; cavitation to main stem; good habitat tree; tag affixed - No: 839	Fair	Fair	20+	B3	7.2	163.0	None
T54	Oak (English)	Off	16.0	1	Yes	1100	7.0-8.0-8.0-7.0	4.0	4.0	SE	M	None	Main stem splits @4m into 3x scaffold limbs; swelling below main union @3.5m arising from old pruning wounds; small to moderate sized deadwood throughout crown with pruning wounds evident; Lammas growth throughout crown	Good	Fair	40+	B1	13.2	547.0	None
T55	Oak (English)	Off	15.0	1	Yes	900	7.0-9.0-7.0-7.0	4.5	4.0	N	M	None	Main stem splits @5m into 4x scaffold limbs; swelling around main stem @2m arising from old pruning wounds; small to moderate sized deadwood throughout crown	Good	Fair	40+	B1	10.8	366.0	None

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	TPO
T56	Oak (English)	Off	20.0	1	Yes	1000	8.5-7.0-7.0-7.0	5.5	5.0	S	M	None	Main stem splits @9m into 4x scaffold limbs; small to moderate sized deadwood throughout crown; light ivy cover to main stem	Good	Fair	40+	B1	12.0	452.0	None
T57	Oak (English)	Off	18.0	1	Yes	800	7.0-8.0-7.0-7.0	3.5	3.0	S	M	None	Historic storm damage to upper crown with small to moderate sized deadwood in upper crown; light ivy cover to main stem	Good	Fair	40+	B1	9.6	290.0	None
T58	Oak (English)	Off	18.0	1	Yes	1100	7.0-7.0-8.0-8.0	2.5	1.5	W	M	None	Historic storm damage to upper crown with loss of scaffold limb to NE of stem @9m; vigorous re-gen in upper crown; good stem taper; withered beef steak fungal fruiting body to S of root collar; light ivy cover to main stem; large sized deadwood to S @11m	Fair	Fair	40+	B1	13.2	547.0	None
T59	Oak (English)	Off	18.0	1	Yes	800	8.0-7.0-8.0-7.0	4.5	4.0	S	M	None	Historic storm damage to upper crown with small sized deadwood in upper crown & small to moderate sized deadwood in mid crown; Lammas growth throughout upper crown; light ivy cover to main stem	Good	Fair	40+	B1	9.6	290.0	None
T60	Birch (Silver)	Off	18.0	1	Yes	500	4.0-4.0-4.5-4.0	2.5	1.0	E	EM	None	Southern most stem in a stand of 5x birch; largest stem within stand; good vigour throughout crown	Good	Fair	20+	B1	6.0	113.0	None

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	TPO
T61	Ash (Common)	Off	15.0	1	Yes	600	7.0-7.0-7.0-7.0	4.0	3.0	NE	EM	None	Boundary tree; visible wound with associated decay to N of main union @3m resulted from a failed scaffold limb; partially swathed in ivy	Good	Fair	20+	B1	7.2	163.0	None
T62	Ash (Common)	Off	18.0	1	Yes	700	9.0-7.0-7.0-8.0	4.0	4.0	E	M	None	Boundary tree within cypress hedge; small deadwood throughout crown (typical for age & species)	Good	Fair	20+	B1	8.4	222.0	None
T63	Oak (English)	On	18.0	1	Yes	800	7.0-8.0-9.0-8.0	4.0	3.0	S	M	None	Heavily swathed in ivy; good vigour noted throughout crown	Good	Fair	40+	A1	9.6	290.0	None

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)	TPO
G1	English oak	On	17 - 18	3	Yes	750.0	7.0	3.0	M	None	3x trees on site boundary forming a cohesive crown; ivy cover to main stems; unions & scaffold limbs; middle tree is mildly suppressed laterally by 2x outer trees	Good	Fair	40+	A2	9.0	None
G2	Ash; birch; cherry; eucalyptus; cypress; Corsican pine; bamboo	Off	2 - 16	30	Yes	350.0	4.0	0.0	EM	None	Off-site group; sample of feature recorded where plot abuts survey area; cursory inspection from site boundary	Good	Fair	20+	C2	4.2	None
G3	English oak; ash; lime; sycamore; elm; hawthorn; hazel; holly	Off	2 - 18	160	Yes	700.0	7.0	0.0	M	None	Off-site copse; sample of feature recorded where plot abuts survey area	Good	Fair	40+	A2	8.4	None
G4	English oak; sycamore; ash; hazel	Off	2 - 16	70	Yes	650.0	6.0	0.0	M	None	Off-site copse; sample of feature recorded where plot abuts survey area	Good	Fair	40+	B2	7.8	None
G5	English oak; ash	On	17	5	Yes	750.0	7.0	5.0	M	None	All stems swathed in ivy; good vigour throughout crowns	Good	Fair	40+	B2	9.0	None
G6	Ash	On	17	2	Yes	750.0	7.0	5.0	M	None	Both stems opposite lay-by; good vigour throughout crowns	Good	Fair	20+	B2	9.0	None

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)	TPO
G7	English oak; ash; hybrid black poplar; sycamore; hawthorn; hazel	Off	2 - 18	120	Yes	650.0	6.0	0.0	M	None	Off-site copse; sample of feature recorded where plot abuts survey area	Good	Fair	40+	B2	7.8	None
G8	English oak	On	16 - 17	2	Yes	700.0	6.0	2.0	M	None	Both stems swathed in ivy; good vigour throughout crowns	Good	Fair	40+	B2	8.4	None
G9	English oak	On	18	3	Yes	750.0	7.0	2.0	M	None	Close grown; 2x northern most stems swathed in ivy	Good	Fair	40+	B2	9.0	None
G10	English oak; ash	Off	13 - 16	6	Yes	650.0	5.0	0.0	EM	None	Off-site sporadic group of 5x oak & 1x ash	Good	Fair	20+	B2	7.8	None
G11	English oak	On	14 - 18	3	Yes	750.0	7.0	2.0	M	None	Close grown; 2x northern most stems swathed in ivy; 2 outer stems dominate plot with middle tree laterally suppressed	Good	Fair	40+	B2	9.0	None
G12	English oak; ash; sycamore; hawthorn; hazel	On	2 - 18	100	Yes	650.0	6.0	0.0	M	None	Off-site shelter belt established around industrial site; sample of feature recorded where plot abuts survey area	Good	Fair	40+	B2	7.8	None
G13	English oak	Off	16 - 18	2	Yes	750.0	7.0	2.0	M	None	Close grown; both stems swathed in ivy; small sized deadwood throughout crown of northern most stem	Good	Fair	40+	B2	9.0	None
G14	English oak; ash	Off	14 - 18	25	Yes	700.0	7.0	2.0	M	None	Mature stems with semi & early mature stems outside industrial buildings; close grown; stems established on both sides of palisade boundary fence	Good	Fair	40+	B2	8.4	None
G15	English oak	Off	15 - 16	2	Yes	650.0	6.0	2.0	EM	None	Adjacent to swale	Good	Fair	40+	B2	7.8	None
G16	English oak; birch; ash; Norway maple; hornbeam; hawthorn; sycamore	Off	2 - 16	60	Yes	650.0	6.0	0.0	EM	None	Off-site shelter belt on boundary; laid midlands style hedge to boundary; sample of feature recorded where plot abuts survey area	Good	Fair	20+	B2	7.8	None
G17	English oak; alder; elm; ash; goat willow; hornbeam; sycamore; hawthorn; holly; hazel	Off	2 - 18	400	Yes	700.0	6.0	0.0	M	None	Off-site copse on boundary; sample of feature recorded where plot abuts survey area	Good	Fair	40+	A2	8.4	None
G18	English oak; ash; birch; hawthorn; sycamore	On	2 - 18	60	Yes	350.0	6.0	0.0	EM	None	Highways planting at junction; sample of feature recorded where plot abuts survey area - see OOS note RE: mower track through plot	Good	Fair	20+	B2	4.2	None
G19	English oak	Off	16 - 17	2	Yes	750.0	8.0	3.0	M	None	Adjacent to private driveway / turning-head; evidence of historic crown lift to both stems with including wounds	Good	Fair	40+	B2	9.0	None

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)	TPO
G20	English oak; ash	On	12 - 16	5	Yes	650.0	6.0	3.0	EM	None	Roadside group; 4x ash & 1x oak; twiggy dieback throughout ash crowns; basal bark damage to oak	Good	Fair	20+	B2	7.8	None
G21	English oak; ash	On	12 - 16	2	Yes	600.0	5.0	3.0	EM	None	Roadside group; close grown	Good	Fair	20+	B2	7.2	None
G22	Ash	On	15 - 16	2	Yes	600.0	5.0	3.0	EM	None	Roadside group; close grown; ash to S of plot showing minor twiggy dieback throughout crown	Good	Fair	20+	B2	7.2	None
G23	English oak	On	14 - 15	2	Yes	750.0	7.0	3.0	M	None	Roadside group; close grown; recent storm damage to SE of crown to northern most stem	Good	Fair	40+	B2	9.0	None
G24	Lombardy poplar; hybrid black poplar	On	13 - 19	20	Yes	600.0	3.0	2.5	EM	None	Roadside group; close grown; established atop swale banking	Good	Fair	20+	B2	7.2	None
G25	English oak	On	16 - 18	3	Yes	700.0	7.0	4.0	M	None	Roadside group; close grown; crown reduction to E of crowns	Good	Fair	40+	B2	8.4	None
G26	English oak	On	14 - 18	3	Yes	650.0	7.0	4.0	EM	None	Roadside group; close grown; crown reduction to E of crowns	Good	Fair	40+	B2	7.8	None
G27	Horse chestnut	On	14 - 15	2	Yes	750.0	6.0	4.0	M	None	Roadside group; close grown; crown reduction to E of crowns	Good	Fair	20+	B2	9.0	Yes
G28	English oak; ash; field maple; cherry; elm; larch; Scot's pine; hazel; hawthorn	Off	2 - 12	100	None	300.0	2.5	0.0	SM	None	Shelter belt established in rows on field boundary with road; thorn hedge to roadside boundary; majority of pine stems have failed	Good	Fair	20+	B2	3.6	None
G29	English oak; Norway maple; ash; field maple; cherry; sycamore; elm; larch; Norway spruce; Scot's pine; hazel;	Off	2 - 12	160	None	300.0	2.5	0.0	SM	None	Shelter belt established in rows on field boundary with road; thorn hedge to roadside boundary	Good	Fair	20+	B2	3.6	None
G30	English oak; ash; field maple; cherry; elm; larch; Norway spruce; Scot's pine; hazel; hawthorn	Off	2 - 12	120	None	280.0	2.5	0.0	SM	None	Shelter belt established in rows on field boundary with road; thorn hedge to roadside boundary	Good	Fair	20+	B2	3.3	None
G31	English oak	Off	15 - 18	3	Yes	800.0	7.0	1.0	M	None	Copse to roadside / field boundaries; developing thorn; maple & elm understory; all 3x stems showing small to moderate sized deadwood throughout crowns	Good	Fair	40+	B2	9.6	None
G32	Ash; hybrid black poplar; elm; field maple; hawthorn; elder	On	2 - 16	80	Yes	350.0	3.0	0.0	SM	None	Group established on graded bund; thorn hedge to boundaries; sample of feature recorded where plot abuts survey area	Good	Fair	20+	B2	4.2	None

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)	TPO
G33	Sycamore; ash; hybrid black poplar; hawthorn	On	2 - 16	60	Yes	350.0	3.0	0.0	SM	None	Group established on graded bund; thorn hedge to boundaries; sample of feature recorded where plot abuts survey area	Good	Fair	20+	B2	4.2	None
G34	Sycamore; ash; field maple; hawthorn	Off	2 - 14	80	Yes	300.0	3.0	0.0	SM	None	Group assessed from footpath; sample of feature recorded where plot abuts survey area	Good	Fair	20+	B2	3.6	None

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	Hawthorn; blackthorn	On	2.5	2	80	0.0	SM	Maintained by flail; sample of feature recorded where it abuts the survey area	Good	Fair	40+	B2	1.0
H2	Hawthorn; blackthorn; field maple	On	3.5	3	120	0.0	SM	Maintained by flail; predominantly thorn	Good	Fair	40+	B2	1.5
H3	Hawthorn; blackthorn; elder; dogrose	On	2.5	2	80	0.0	SM	Maintained by flail	Good	Fair	40+	B2	1.0
H4	Hawthorn; blackthorn; dogrose	On	2.5	2	80	0.0	SM	Maintained by flail	Good	Fair	40+	B2	1.0
H5	Hawthorn; blackthorn; field maple; hazel; sycamore	On	3.5	3	120	0.0	SM	Maintained by flail; predominantly thorn; post & rail within plot - blackthorn has suckered to the W of the fence within the field margin	Good	Fair	40+	B2	1.5
H6	Ash; field maple; elm; hawthorn; elder	On	7.0	4	150	0.0	SM	Outgrown hedge to boundary; cut back on roadside for clearance; sample of feature recorded where plot abuts survey area	Good	Fair	20+	B2	1.8
H7	Ash; field maple; elm; hawthorn; elder	On	7.0	4	150	0.0	SM	Outgrown hedge to boundary; cut back above track for clearance; sample of feature recorded where plot abuts survey area	Good	Fair	20+	B2	1.8

- 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

The National Planning Policy Framework 2023 (NPPF paragraph 186) states that, when determining planning applications, local planning authorities should apply the following principle:

c) 'development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland 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 includes 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 exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life stage.'

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

Other paragraphs of the NPPF 2023 of relevance to this report are:

Paragraph 136: *'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 180: *'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 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