

Tree Survey, Categorisation & Constraints Report

in accordance with
BS 5837:2012 (Survey Phase 4.4, 4.5 & 4.6)

At
Swansea Road
Gellideg

On the instructions of
Sharon Matthews
Development Officer
Merthyr Valleys Homes Ltd



Inspected by:
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Signed Steve Ambler		Signed Scott Ambler	
Date	7 th June 2023	Date	23/05/2023

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1. INTRODUCTION

Steve Ambler & Sons Tree Specialists Ltd are instructed by Sharon Matthews (Development Officer (Merthyr Valleys Homes Ltd), to undertake an Arboricultural survey at an area of open land just off Swansea Road, Gellideg, to assist in the submission of a planning application to the Local Planning Authority.

This survey is in accordance with the standards set out in BS 5837:2012¹ (items 4.4, 4.5 & 4.6) essentially to gather tree related information to assist the Local Planning Authority in their decision-making process, in the context of design, demolition and construction.

I have been provided with the following information -

- AL(90)02_Rev W_Site Plan
- Official Copy of Title Plan - EDOC REGISTRATION - CYM854427
- SK23.02.02 Additional Topo Area

I understand there is a proposal to redevelop the site, however, the trees have been assessed objectively and without reference to any site layout proposals.

It should be noted that some trees recorded in the tree schedule were not included in the original topographical survey and their positions as indicated on the Tree Constraints Plan is/are plotted approximately only, using a GPS enabled tablet. GPS with an accuracy range of <4.9-m.

The weather conditions were favourable for a survey of this nature and conducted from ground level on the 17th & 18th of May 2023.

The survey was undertaken by Scott Ambler (Arboricultural Surveyor) who has 18 years' experience in the arboricultural industry and qualified with a Diploma in Arboriculture (Level 2 (ABC Awards). He is currently undertaking the level 4 Diploma in Arboriculture attending a course at Myerscough College. Scott has also successfully completed a visual tree assessment course (LANTRA) and has a wide skill set in arboricultural practices and experience in tree surveying.

This Tree Survey Report is overseen by Steve Ambler who is the company founder and a professional arboriculturist with over 40 years' experience in the industry. His company was established in 1999 and later expanded during 2006 with the launch of a Specialist Tree Management section to become - Steve Ambler & Sons Tree Specialists Ltd. Steve holds the following arboricultural qualifications: -

- a) Fellow Member of the Arboricultural Association.
- b) Professional Diploma in Arboriculture (Royal Forestry Society)
- c) Professional Technician in Arboriculture (Arboricultural Association)
- d) Certificate in Arboriculture (Royal Forestry Society)
- e) LANTRA Award, "Bats and Arboriculture – A Guide for Practitioners" developed by The Bat Conservation Trust.

¹ British Standards Institute Publication 'Trees in Relation to Design, Demolition and Construction - Recommendations' 2012

Unless otherwise stated, this Report remains valid for 12 months.

Where there is any recommendation within this Report for further investigation or diagnostic testing, climbing inspections, vegetation removal to allow a follow up survey etc., the onus is firmly on the Client to instruct such works in writing.

2. SITE DESCRIPTION AND OBSERVATIONS

The site is situated just off Swansea Road in Gellideg, which is 1.4 miles from Merthyr Town Centre and is 4.3 miles from Hirwaun and elevated at some 293-metres above sea level.

The site is mostly open with grass and other rank vegetation covering roughly 80% of the site with areas of Bramble (*Rubus fruticosus*).

There is a large group of trees to the Northwestern edge, with a linear strip of trees running along a stream edge to the Northeast. There are self-set trees scattered sporadically around the site many of which do not meet the diameter criteria set within the British Standard document (<75mm) to be included.

The site is roughly 4.3 acers in size. To the North is Swansea Road running the length of the site. To the East are private houses fenced off from the site. In one garden a Lawson Cypress (*Chamaecyparis lawsoniana*) is within influencing distance, and as such is included in the table findings.

A newly constructed waterway occurs on the Eastern boundary. This construction has evidently damaged the structural roots of those trees within G2, and evidence is provided as photographs at the rear of this Report.

To the South is an access lane to houses and to the West is Waunbant Court. The targets associated with this site at present are considered low to high.

There are several trees on site that are within close proximity to the Kerb on Highway. The Root Protection Area is reduced where this occurs as they will act as a natural root barrier.

There are areas on the site of the invasive species Japanese Knotweed (*Fallopia japonica*, syn. *Polygonum cuspidatum*, *Reynoutria japonica*).

There are some Ash (*Fraxinus excelsior*) trees on site that are infected with Ash dieback (*Hymenoscyphus fraxineus*). More information is provided below on this disease.

Whilst Ash Dieback Disease (*Hymenoscyphus fraxineus*) is briefly discussed here, poor health and/or structural issues maybe a symptom of other causal factors, either in conjunction with, or as a stand-alone pathogen such as drought, poor growing conditions, and pathogenic decay fungi including *Inonotus hispidus*, *Perenniporia fraxinea* and *Armillaria mellea*). Ash dieback is a fungal pathogen which is currently prevalent throughout the UK. Its main symptoms are crown dieback and lesions on the stem, all of which are exacerbated in humid conditions. Trees vary in their response to attack with most suffering serious crown dieback (Refer to Figure 1, below) and can succumb to this alone or to a secondary pathogen such as Honey fungus (*Armillaria mellea*) taking advantage of the weakened physiological state of the tree. Alternatively, they may undergo periods of decline and recovery. Others may have genetic and/or site induced resistance, and it is these

trees that are potentially important in retaining this species in the UK through natural regeneration and for seed collection for research, should this tolerance be inherited.

The disease is generally more prevalent in woodland settings where there is a significant proportion of the host species with favourable humid conditions favouring the fungi's life cycle. Climate and site conditions play a large part in terms of the tree's vitality with those under stress more likely to succumb.

With the associated leaf loss and crown dieback associated with this disease, the production of the stronger late wood decreases and over several years of infection this can lead to mechanically weaker stems, limbs and branches, with an increased risk of breakage.

There is no defined period from the initial point of infection to the death of the tree. Trees can go from a fully healthy canopy to a dead stage 4 tree, within one growing season, and this is certainly the case on several other wooded sites, we have surveyed recently.

Figure.

1

Symptoms



Figure 2. Health Stages (Grades).

Grade	% Remaining Canopy
1	100-75
2	75-50
3	50-25
4	25-0

Source: The Tree Council: Ash Dieback: An Action Plan Toolkit. February 2019.

Important Note. Infected Ash (*Fraxinus excelsior*) in Health Stages 3 & 4 are NOT safe to climb for the purposes of dismantling the tree etc. The use of assisted felling techniques, Mobile Elevated Working Platforms, or other

Category A tree

There were no category A trees recorded on this site.

Category B

There were no category B trees recorded on this site.

The remaining trees are not considered to be of any particular arboricultural or visual merit, are below the threshold of 75 - mm diameter when measured at 1.5 metres above ground level or are in poor condition and have been allocated retention categories C or U.

There was one stump noted on site which is indicated on the attached plan with an x.

NOTE - Category C trees are of little merit and need not necessarily be a significant constraint on the site's potential as their loss may be mitigated through planting.

3. SPECIES RECORDED

Listed in alphabetical order -

- Ash (*Fraxinus excelsior*)
- Downy Birch (*Betula pubescens*)
- Goat Willow (*Salix caprea*)
- Hawthorn (*Crataegus monogyna*)
- Lawson Cypress (*Chamaecyparis lawsoniana*)
- Silver Birch (*Betula pendula*)
- Sycamore (*Acer pseudoplatanus*)

4. TREE SURVEY & TREE SURVEY PLAN

This tree survey will include each tree within the site boundary with a stem diameter of above 75-mm or in the case of large groups those measuring above 150-mm when measured at a height of 1.5-m above ground level. Trees over this size growing on land adjacent to the site, which are within a distance equal to 12 times their stem diameter from the boundary, are also included.

The surveyed tree/s are identified on the attached Tree Constraints Plan, within the Appendices, and the Schedule of Findings. This baseline data provides reference to an individual and the location of the tree using a tree reference number or tree tag number or both. Where tree tag number are used, a numbered tag is attached to the trunk of each tree at about 1.5-2.0 metres above ground level. A tabular format later in this Report records the baseline details of each tree or group against the reference number or numbered tag in the Findings tables Item 7.0.

The Report assigns the trees to one of four categories U, A, B, C (see Table One - Appendix A) depending on their overall health, size, condition, amenity, cultural and conservation value, their suitability in view of the increased usage that will arise following development. For trees in categories A to C, it should qualify under one or more of the three subcategories (1, 2, 3). Subcategories 1, 2, and 3 are intended to reflect arboricultural and landscape qualities, and cultural values, respectively. This system will also identify any unsuitable trees and suggest removal where necessary.

Where trees are found to require immediate attention, they will be identified in red bold text in the schedule of findings.

Care is needed when considering the quality and value of C grade and young trees, especially where they occur as individual specimens and should not dominate site layout considerations.

Trunk diameters are measured at 1.5 metres above ground level and rounded to the nearest 25 millimetres.

Trunk diameters and accessible crown spreads are measured with tree height, first significant branch and the lower crown ground clearance being estimated, unless otherwise stated.

NOTE - In all cases where a tree's position may be critical (e.g., in accurately determining clearances between a tree and a proposed structure) all dimensions should be checked on site.

5. TREE CONSTRAINTS PLAN

A Tree Constraints Plan accompanies this Report and identifies a 'Root Protection Area' (RPA) for each tree or group of trees surveyed. The RPA is in effect a layout design tool indicating the minimum area around a tree or group deemed to contain sufficient roots and rooting volume to maintain tree viability and stability, and in which the protection of the roots and soil structure is treated as a priority. Where a tree is to be retained, its RPA should be respected from the initial design period and throughout the demolition works until completion of the build. The necessary RPA distances are found in Table D1 of the British Standards¹.

The RPA is marked on the Tree Constraints Plan as a solid orange line and reflects a radial distance when measured from the centre of the tree's trunk which is shown as a circle, centred upon the trunk of the tree, to enclose an area equal to the required RPA. This measurement is replicated within the end column of the Schedule of Findings and again in tabular format and appears in the Tree Constraints Plan.

In practice, the distribution of roots may frequently prove to be uneven due to the presence of a variety of constraining influences. These may be physical barriers such as existing foundations etc., or the existence of localised soil conditions inhospitable to root growth, such as water logging or soil compaction. Conversely, soil conditions may be particularly conducive to root development in one quarter, and this might lead to an asymmetric distribution of roots around the tree. However, in most cases the nominal circular areas as indicated will provide a reasonable guide as to where special protection is needed.

Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area will be produced on the Tree Constraints Plan to represent this. Modifications to the shape of the RPA will reflect a soundly based arboricultural assessment of likely root distribution.

Proposed new planting may be marked on the plan as a constraint and the soil should be protected from compaction where this is to occur.

Trees will be coloured according to their category and the following will apply (Refer to 'Tree Quality Assessment' and Tree Constraints Plan in the Appendices).

U - Dark red

A - Light green

B - Mid blue

C - Grey

Planning Policy Wales 11 includes the following key paragraphs in relation to trees: -

4.1.1.9. Well-integrated green infrastructure, such as SUDS, street trees and verges, not only create a pleasant environment but can also achieve a range of other benefits, including pollutant filtering, urban cooling, water management and habitat creation. Such features should be included as part of a well-designed street layout.

6.2.1. Green infrastructure is the network of natural and semi-natural features, green spaces, rivers, and lakes that intersperse and connect places. Component elements of green infrastructure can function at different scales. At the landscape scale green infrastructure can comprise entire ecosystems such as wetlands, waterways, and mountain ranges. At a local scale, it might comprise parks, fields, public rights of way, allotments, cemeteries, and gardens. At smaller scales, individual urban interventions such as street trees, hedgerows, roadside verges, and green roofs/walls can all contribute to green infrastructure networks.

6.4.24 Trees, woodlands, copses and hedgerows are of great importance for biodiversity. They are important connecting habitats for resilient ecological networks and make a valuable wider contribution to landscape character, sense of place, air quality, recreation, and local climate moderation. They also play a vital role in tackling climate change by locking up carbon, and can provide shade and shelter, a sustainable energy source and building materials. The role, siting, and design requirements of urban trees in providing health and well-being benefits to communities, now and in the future should be promoted as part of plan making and decision taking.

6.4.25 Planning authorities should protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial and identified green infrastructure function. Planning authorities should consider the importance of native woodland and valued trees, and should have regard, where appropriate, to local authority tree strategies or SPG. Permanent removal of woodland should only be permitted where it would achieve significant and clearly defined public benefits. Where woodland or trees are removed as part of a proposed scheme, developers will be expected to provide compensatory planting.

6.4.26 Ancient woodland and semi-natural woodlands and individual ancient, veteran and heritage trees are irreplaceable natural resources, and have significant landscape, biodiversity, and cultural value. Such trees and woodlands should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits: this protection should prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory.

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

6.7.3 Certain sounds, such as those created by trees, birds, or water features, can contribute to a sense of tranquillity whilst others can be reassuring because of their association with the normality of everyday activities.....

Technical Advice Note 12 Design (2016). This advice note states the response to context should not be confined to architectural finishes. It is important to help integrate old and new development and reinforce hierarchy between spaces through the consideration of retaining existing landmarks, mature trees and hedgerows within housing areas as well as introducing new planting appropriate to the area. The guidance notes that opportunity should be taken when improving

the public realm to protect and enhance biodiversity and assist pollution abatement through careful design, implementation, and maintenance of planting. Planting, particularly large tree species can also be used to improve microclimate and reduce dust and the perception of noise through, shade, shelter, and screening.

In addition, following legislation applies -

The Town & Country Planning Act 1990.

Section 197 of the Act places an express duty on the local planning authority, when granting planning permission, to ensure whenever appropriate that adequate conditions are imposed to secure the preservation or planting of trees, and that any necessary tree preservation orders are made under section 198 of the Act. When granting outline planning permission, the authority may consider it appropriate to impose a condition requiring the submission of particular details relating to trees to be retained on the site, such as their location in relation to the proposed development and their general state of health and stability. When granting detailed planning permission, conditions may be used to secure the protection of trees to be retained, for example by requiring the erection of fencing around trees during development or restricting works which are likely to adversely affect them. The long-term protection of trees, however, should be secured by Tree Preservation Orders (TPO) rather than by condition: such orders may also be expedient for the temporary protection of existing trees until details of the reserved matters are submitted and it becomes clear whether there is a need to retain the trees.

The provision and acceptance of this report are subject to the general terms and conditions of Steve Ambler & Sons Tree Specialists Ltd, which can be made available upon request.

6. RECOMMENDATIONS

Crown lift trees overhanging the Highway in G4

Recommended date of a tree condition inspection²: October 2024

C category trees may be retained if desired although not need necessarily be a significant constraint on the site's potential.

Design and layout should take account of existing trees of importance and consider their requirements to maintain existing landscape value where possible. The site layout should ensure construction activity is outside the Root Protection Area of any retained trees. Recommended minimum Root Protection Area radii are shown in the final column of the survey schedule and diagrammatically as circles on the Tree Constraints Plan.

ANY LANDOWNER OR LAND MANAGER SHOULD BE AWARE THAT - Trees must receive regular tree inspections by persons with adequate specialist arboricultural qualifications. A landowner has a duty of care imposed by statute and common law to do so and keep records of such (see legal constraints below). For further advice contact www.trees.org.uk

Tree felling and surgery works should only be undertaken by trained, competent and appropriately certificated personal

² Any instructions from our client to undertake the physical tree works recommended in Section 7 of this Report will not invoke the future recommendations for undertaking inspections or monitoring. This must be formerly instructed in writing, citing the date and full title of the Report, the exact recommended items instructed and providing the relevant tree references. No liability will be accepted where liabilities arise due to any absence in future monitoring, which is not instructed separately.

with adequate experience and public, third party and employers liability insurance to 5,000,000 pounds. Always ask for proof from the contractors prior to engagement and seek references where necessary.

In view of the recommendations for the design and construction process, in considering tree care (Figure 1, Appendix A), further assessments are required throughout the planning and design phase and recommended as follows...

- (1) Arboricultural Implications Assessment (AIA)
- (2) Tree Protection Plan (TPP),
- (3) Arboricultural Method Statement (AMS) which should be undertaken by an 'Arboriculturalist' .

Tree clearance works or works other than those to deal with serious defects posing considerable risk shall not commence until such time written approval or full planning approval is received from the Local Planning Authority. Any authorised tree works should be completed prior to the onset of any demolition or construction works, taking account of all legal constraints.

All the retained trees should be re-examined by an arboricultural specialist, once the development is complete.

Where the installation of paths or lightweight structures such as walls are unavoidable near to trees, the design and construction specification needs to take account of future growth. Refer to Table A of the Standard.

Shading of buildings by trees can be a problem, particularly where there are rooms which require natural light. Buildings will need to be positioned further away than just the outer edge of tree canopies to reduce the likelihood of pressure from future occupiers for tree removal or trimming. This applies particularly where windows of habitable rooms will face onto tree canopies. Future dimensions of immature trees and shadow patterns should also be considered. A minimum of 2-m should be allowed between buildings and the outer edge of fully-grown canopies to allow for building maintenance and the erection of scaffolding etc.

Proposed buildings should be designed to take account of existing trees that are to be retained, their ultimate size and density of foliage, and the effect that these will have on the availability of light. Where sufficient distances (including allowances for future growth) cannot be achieved, the removal of C category trees should be considered. Larger trees are unlikely to increase greatly in height or spread. Older trees are particularly sensitive to root disturbance and are best retained within open space where they can be managed for optimum health, amenity value, and safety, rather than within private spaces.

All trees being retained must be protected by barriers and/or ground protection before -

- Any site activity, except for tree clearance.
- Materials or machinery are brought onto site.
- Demolition of any kind.
- Removal of surfaces.
- Stripping of soil.
- Stripping of vegetation.

Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. Where construction activity cannot be fully or permanently excluded in this manner from all or part of a tree's RPA,

appropriate ground protection should be installed (see 6.2.2 and Figure 2 of the standard) working under the guidance of an approved AMS and the supervision of the Project Arborist.

The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2 in the Appendices. The vertical tubes should be spaced at a maximum interval of 3 metres and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared in conjunction with the project arboriculturist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a free-standing scaffold support framework.

In order to prevent damage to the trees, including their roots, within the fenced area (RPA) there should be no...

- Alteration of ground levels, including soil stripping and digging.
- Installation of drainage or services using conventional open trenching methods which would not be in accordance with BS: 5837. (Any works should be in accordance with the National Joint Utilities NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees Volume 4)
- Excavation (there are exceptions when covered by an approved³ Arboricultural Method Statement)
- Storage of any materials or equipment, even on a temporary basis.
- Storage of oil, bitumen, cement or other harmful materials, mixed or discharged within 12-m of the trunk of any retained tree and making further allowances for any slope of the ground to prevent running contamination. Phytotoxic materials would include any mineral oil, fuels, cement mortar washings concrete washings, mortar.
- Fires must not be lit beneath or within 12-m of any tree canopies.
- Site operations such as - deliveries, site machines, crane jibs etc (should be organised to avoid damaging the trunk or crown of trees). Where this conflict is unavoidable, then facilitation pruning should be carried out in advance, rather than after damage has occurred. This may also be required to allow demolition operations. (facilitation pruning will require the consent of the LPA and should be under the guidance of the PA.
- Mechanical cultivation of the soil as part of landscaping operations.

Tree felling and surgery may be required to allow access for construction or future site traffic, or in the interests of the future health and safety. Detailed recommendations for such works can be provided once a final site layout is agreed and it is determined which trees (if any) are to be retained. All surgery should comply with the British Standards 3998:2010 Tree Work Recommendations or more recently accepted arboricultural good practice. The legal position regarding site designations should be considered.

³ Approved by the Local Planning Authority

7. SCHEDULE OF FINDINGS

Tree Number	Tree Tag	Species	Height (M)	Effectual Diameter (mm)	Branch Spread				1st Significant Branch	Canopy Clearance	Life stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	Root Protection Area (M ²)	Root Protection Radius (M)
					N	S	E	W									
1	540	Hawthorn (<i>Crataegus monogyna</i>)	4	100	2	2	2	2	0	0	SM	A tree of poor form. Twin stemmed from the base.	N/A	40+	C 2,3	5	1.20
2	N/A	Hawthorn (<i>Crataegus monogyna</i>)	4	100	2	2	2	2	0	0	Y	A tree of average form.	N/A	40+	C 2,3	5	1.20
G1	N/A	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	8	300	4	4	4	4	1	2	EM/M	This group is in a private garden that is fenced off, the trees are viewed from a distance. Sizes estimated as there was no access. The trees have been topped at 8-metres above ground level (AGL)	N/A	20-40	C 2,3	41	3.60
3	N/A	Goat Willow (<i>Salix caprea</i>)	3	125	3	3	3	3	0	0	SM	A tree of poor form on a steep embankment. Twin stemmed from base.	N/A	10-20	C 2,3	7	1.50

Tree Number	Tree Tag	Species	Height (M)	Effectual Diameter (mm)	Branch Spread				1st Significant Branch	Canopy Clearance	Life stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	Root Protection Area (M ²)	Root Protection Radius (M)
					N	S	E	W									
G2	541	Ash (<i>Fraxinus excelsior</i>), Goat Willow (<i>Salix caprea</i>), Hazel (<i>Corylus avellana</i>).	12	250	2	2	4	3	0	0	EM	A row of seven trees next to a newly constructed waterway. Root severance noted on the East side. Raised soil levels around all trees with no buttress roots visible. The Ash trees are infected with Ash dieback (<i>Hymenoscyphus fraxineus</i>) and are in health stage two. There is a snapped hanging limb on the most Northern Ash tree over the water way to the East.	A group of poor form with possible structural issues and physiological issues. Two options 1. Undertake a Mechanical Effective Root-plate Radius to determine the damage caused. 2. Fell the group to ground level and remove all arisings.	10-20	C 2,3	28	3.00
G3	545	Sycamore (<i>Acer pseudoplatanus</i>), Silver Birch (<i>Betula pendula</i>), Hazel (<i>Corylus avellana</i>).	6	125	2	2	2	3	0	0	SM	An undesirable group of trees.	N/A	20-40	C 2,3	7	1.50
4	537	European Larch (<i>Larix decidua</i>)	10	250	2	3	3	4	1	0	EM	A tree of reasonable form. 2-metres from the kerb.	N/A	40+	C 2,3	28	3.00

Tree Number	Tree Tag	Species	Height (M)	Effectual Diameter (mm)	Branch Spread				1st Significant Branch	Canopy Clearance	Life stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	Root Protection Area (M ²)	Root Protection Radius (M)
					N	S	E	W									
5	544	Downy Birch (<i>Betula pubescens</i>)	10	350	3	4	3	3	1	2	EM/M	A tree of average form. 1-metre from kerb	N/A	20-40	C 2,3	55	4.20
6	538	Hazel (<i>Corylus avellana</i>)	6	100	2	2	2	2	0	0	EM	A tree of average form. 1.5-metre away from kerb.	N/A	20-40	C 2,3	5	1.20
G4	n/a	Goat Willow (<i>Salix caprea</i>), Hawthorn (<i>Crataegus monogyna</i>), Silver Birch (<i>Betula pendula</i>), Lawson Cypress (<i>Cupressus</i>), Ash (<i>Fraxinus excelsior</i>)	12	325	4	4	5	4	0	1	EM/M	A self-set undesirable group made up of mostly Goat willows. The Willows are multi stemmed specimens from ground level, some small dead trees/stems within the group. Northwest leading-edge canopy overhanging the Highway.	Crown lift to achieve 5.2m clearance over the highway.	20-40	C 2,3	48	3.90
G5	n/a	Hawthorn (<i>Crataegus monogyna</i>), Goat Willow	6	175	3	3	3	3	0	0	EM	A self-set undesirable group.	Monitor union on Birch	20-40	C 2,3	14	2.10

Tree Number	Tree Tag	Species	Height (M)	Effectual Diameter (mm)	Branch Spread				1st Significant Branch	Canopy Clearance	Life stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	Root Protection Area (M ²)	Root Protection Radius (M)
					N	S	E	W									
		(<i>Salix caprea</i>), Silver Birch (<i>Betula pendula</i>).										A Silver birch is the biggest tree in the group and is twin stemmed at 0.5m AGL, which is a developing compressive union. One limb badly damaged by vandalism, attacking the periderm					

NOTES.

- Tree felling should only be undertaken by trained, competent and appropriately certificated personal with adequate experience and public liability insurance to £5,000,000. Always ask for proof from the contractors prior to engagement and seek references where necessary.
- Trees must receive regular tree inspections by persons with adequate specialist qualifications. For further advice contact www.trees.org.uk

8. LEGAL CONSTRAINTS

Tree Preservation Orders and Conservation Area Status in Wales

In Wales, the law on TPOs is in Part V111 of the Town and Country Planning Act 1990 Town and Country Planning (Trees) Regulations 1999. When any tree/s are protected by a TPO or are situated within a Conservation Area, it is an offence (1) cut down (2) uproot (3) top (4) lop (5) wilfully damage or (6) wilfully destruct a tree without the express written permission from the Local Planning Authority (LPA), there are exceptions. A LPA may grant permission, if considered reasonable following the submission of an application for consent to undertake the works, or where in accordance with an Approved Planning Application or under the exemptions within the Town and Country Planning Act 1990 of dead, dying, or dangerous. It is advisable to consult the LPA and an Arborist prior to conducting any tree works under these exemptions.

Felling Licence

A Felling Licence may be required in certain felling operations, and these are administered by the Forestry Commission where more than five cubic metres of wood are felled in one calendar quarter and when selling more than two cubic metres. There are exceptions, and these are in the Forestry Act 1967 and Regulations made under this Act. Contravention of the felling licence controls can incur substantial penalties. Tree felling forming part of a Local Authority Planning Approval is exempt.

Tree work operations have the potential to impact on protected species, most notably birds and bats. The Wildlife and Countryside Act 1981 is the primary legislation which protect birds in the UK, and it is an offence, with certain exceptions, to intentionally kill, injure or take any wild bird, or intentionally take, damage or destroy the nest of any wild bird while it is in use or being built or take or destroy an egg of any wild bird. Certain species of bird are afforded additional protection, whereby it is an offence to intentionally or recklessly disturb any wild bird included on Schedule 1 of the Act, while it is nest building or at a nest containing eggs or young or disturb the dependent young of such a bird.

It is not an offence to fell trees during the bird nesting period (which is generally considered to be between mid-February and September inclusive) providing it is done so without breaching the legislation detailed above.

Caution must be aired if tree works are programmed during the nesting season as there is potential for delay if nesting birds are found on site. Should nesting birds be present, then all but essential works must be postponed. If in undertaking essential works a nest or nests are found to be present, then further advice must be sought from the statutory nature conservation authority, which in Wales is Natural Resources Wales and in England is Natural England, or from an appropriately qualified ecologist. The penalty for disturbing or destroying one bird or nest can be an unlimited fine and up to six months in prison, or both.

Bats...Summary of Current Relevant Legislation

Bats are also generally associated with trees and can be impacted by tree work operations. There are some 17 species of bat which are known to breed in the British Isles, all are insectivorous and depend to some extent on habitat in which trees are a significant element. Bats are a protected species and are in decline both globally and nationally. Therefore, they are to be fully considered before any tree work commences and particularly if the trees are mature. All species of bats are afforded full protection under the Conservation of Habitats and Species Regulations 2017 (as amended) and partial protection under the Wildlife and Countryside Act 1981 (as amended). It is an offence (with limited exceptions) to deliberately take, injure, or kill a bat, intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats, deliberately damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time) or intentionally or recklessly obstruct access to a bat roost.

Therefore, bats are to be fully considered before any tree work commences and particularly if trees contain veteran features (which can occur in young trees as well as older trees). This can include all work on trees whether it is surgery, felling, the covering, or filling of cavities or the installation of rod braces and flexible cable braces. If a bat roost is known to be in any tree that is to be removed or worked on, or if any work is to take place adjacent to a known bat roost that may result in disturbance to that bat/s, then a license must be obtained from Natural Resources Wales or Natural England before work can take place.

Where there is the risk of a bat roosts being present, it is incumbent upon the owner or manager to commission a specialist bat survey to identify bat roosts before instructing tree surgery to commence. Failure to do so and in the event of breaching the legislation detailed above is an offence.

Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/1991 (i.e., £5000 in April 2001) per roost or bat disturbed or killed, or to both.

NOTE - This is a simplified summary of the legal position relating to bats and birds and is intended for guidance purposes only. If further assistance is required, the primary legislation should be referred to. It may also be necessary to see legal advice or the advice of an appropriately qualified ecologist.

In the event of disturbing a roost site or injuring any bats is an offence. Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/1991 (i.e., £5000 in April 2001) per roost or bat disturbed or killed, or to both.

Statute and Common Law – for Tree Inspections.

A landowner or land manager should be aware that both statute and common law dictates regular inspections of trees on land in their control are necessary where such trees could cause injury or damage in the event they should fall or shed any parts. A person suitably qualified in arboriculture should undertake such routine inspections and any remedial tree works recommended should be carried out within the time constraints specified, to prevent injury or damage occurring. A landowner should retain records of all inspections and any remedial tree works that have resulted from such inspections. Arboricultural Association, the Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire, GL10 3DL. Telephone 01242 522152. www.trees.org.uk are able to provide advice on suitably qualified persons or indeed suitable qualifications a person should hold to undertake qualified inspections.

9. LIMITATIONS OF THIS REPORT

It must be stressed that this report is a pre-development survey and not a risk assessment or a detailed report on the health and condition of the trees. Whilst any obvious problems noted during this ground level inspection may be noted, general comments are made based on a somewhat cursory, visual inspection. In addition, future management may receive a mention or be briefly discussed but such comments are general comments only, for basic information, which should not be taken to form immediate or long-term management plan, nor do they replace the need for having professional management plans for groups, areas, or woodlands.

Trees are living dynamic organisms which can be affected by external environmental conditions and very occasionally internal biological symptoms that are not visible, causing failure without warning. It is therefore not possible to state with any certainty that any tree is completely safe. There are occasions when even healthy and completely defect-free trees break or become windblown. This represents a "normal failure rate" which is the price of the lightweight, energy-saving structure that favours the species to compete with others in a cost-effective way.

Every attempt has been made to provide a realistic and accurate assessment of trees and their condition at the time of this inspection. No responsibility can be accepted for damage or injury because of the failure of any tree or its parts due to faults not apparent upon a visual inspection carried out at this season, or for faults developing subsequent to the survey. Similarly, no liability can be accepted for the condition of the trees that are obscured in part or by whole (e.g., due to dense ivy or other foliage), nor for any that proved inaccessible to the inspector. Certain features which might provide evidence of ongoing decay or decline (Such as seasonal fruiting bodies, damage to foliage, insect emergence holes etc.) may not be in evidence. Only those features present at the time of inspection could be assessed.

This report is based on the tree's circumstances and condition at the time of the survey. It must be recognised that the circumstances may be altered radically over the course of any development process and that such changes cannot be accurately predicted. The report also does not provide any specific long-term management recommendations.

The effect this new development may have on localised wind turbulence has not been assessed during this inspection. As trees grow, they respond and mechanically adapt to their surroundings and exposure limits. With the erection of dwellings near existing trees, new turbulence is created. The author accepts no liabilities to any failure subsequent upon such new imposed, artificial conditions.

Unless stated in writing, the inspection shall not include any underground parts of the tree. It does not consider indirect damage resulting from the extraction of moisture from shrinkable clay soils by tree roots causing subsidence or by heave occurring through soil rewetting following removal of trees on this site. Such problems are almost entirely restricted to areas of shrinkable clay soils and as I have *not* considered a soil analysis as part of my present brief, this aspect is *not* addressed at this time.

Unless otherwise stated in writing and in the absence of altered circumstances, a report on the health and safety of a tree or trees cannot be relied on after a period of 12 months. Following such a period, a further inspection is required.

Soil testing to ascertain the plasticity index or shrinkable characteristics of the soil on the development site to provide information in relation to the likelihood of building damage caused by tree related subsidence or heave where trees are within influencing distance has not been carried out. The author cannot be held liable for building damage as a result. A soil analysis can be provided if requested.

Further and more general report limitations are set out in the authors Terms and Conditions and copies are available upon request.

10. TERMS AND DEFINITIONS

For the purposes of this British Standard, the following terms and definitions apply.

Access facilitation pruning

One-off tree pruning operation, the nature and effects of which are without significant adverse impact on tree physiology or amenity value, which is directly necessary to provide access for operations on site.

Arboricultural method statement

Methodology for the implementation of any aspect of development that is within the root protection area (3.7) or has the potential to result in loss of or damage to a tree to be retained.

Arboriculturist

Person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.

Competent person

person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached. NOTE A competent person is expected to be able to advise on the best means by which the recommendations of this British Standard may be implemented.

Construction

Site-based operations with the potential to affect existing trees.

Construction exclusion zone

Area based on the root protection area from which access is prohibited for the duration of a project.

Crown Spread

The crown spread is measured as the radius from the centre of the trunk in meters and in most cases is approximate covering the four points of the compass. For woodlands or substantial tree groups, the overall extent of the canopy.

Diameter (DBH)

The trunk diameter for each tree is measured in millimetres at a height of approximately 1.5 metres above ground level, unless otherwise stated. All measurements are approximate.

Height

The height of the trees, shrub masses and hedgerows are measured in metres and is usually approximate. If the abbreviation 'Clinom' appears after the given measurement, it indicates the tree has been measured with an optical measuring instrument, a Clinometer, and is accurate to within 5 metres.

Life Stage

The age of the tree is given based on its life expectancy. For example, an oak tree at an age of 100-years is perceived as early mature when a hawthorn at 100 years would be considered old. Age classes are given as follows: -

- Y. Young trees (recently planted or saplings under 15 years old)
- SM. Semi mature (around 1/3 their life expectancy, still growing vigorously but not as fast as a younger tree)
- EM. Early Mature (between 1/3 – 2/3 life expectancy still growing reasonably vigorously)
- M. Mature trees (above 2/3 life expectancy. Growth rates beginning to slow down at this stage)
- OM. Over Mature trees (growth rates slow and possibly beginning to display signs of decline)
- V. Veteran (decline is well set-in, but the tree may be of specific ecological value. The tree is likely to contain sufficient deadwood and decay that is a special habitat for many rare invertebrates that are at risk from extinction)

Number (No.)

A tree number is allocated to each tree or group and provides reference to an individual. It will occur either by way of a T-number T1, T2 etc. or a series of numbers e.g., 00123 that relates to an identification tag attached to the stem of each tree. Such numbers will occur on the Tree Constraints Plan.

Recommendations

The recommendations give the appropriate action required for the trees or groups of trees to fulfil the brief, which possibly include reducing the most blatant foreseeable risk or improve the physiology of the tree.

Root protection area (RPA)

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 is treated as a priority.

Service

Any above- or below-ground structure or apparatus required for utility provision.

NOTE Examples include drainage, gas supplies, ground source heat pumps, CCTV and satellite communications.

Stem

Principal above-ground structural component(s) of a tree that supports its branches.

Special Precaution Area

This is an area, usually within the root protection area, where construction or other activity may be permitted but only under the direction of an 'Arboricultural Method Statement' and the supervision of an Arborist.

Species

The species is the given name of the tree which is usually provided in both the common and scientific names.

Structure

Manufactured objects, such as a building, carriageway, path, wall, service run, and built or excavated earthwork.

Tree Protection Plan

scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention, and illustrating the tree and landscape protection measures.

Veteran Tree

Tree that, by recognized criteria, shows features of biological, cultural, or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. NOTE These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.

NOTES.

All measurements given are approximate.

AGL: an abbreviation for above ground level.

REFERENCE: The British Standards Institution 2012

11. GLOSSARY OF TERMS

Adaptive Growth: in tree biomechanics, the process whereby wood formation is influenced both in quality and in quantity by the action of gravitational force and mechanical stresses on the cambial zone (THIS HELPS TO MAINTAIN A UNIFORM DISTRIBUTION OF MECHANICAL STRESS)

Adventitious: Latent or dormant bud on stem or root often invisible until stimulated into growth which occurs from an unusual place i.e., not a twig, leaf or bud.

Anchorage: in trees, the holding of the root system within the soil, involving the flow of forces from the stem through the branches of the root system to the cohesive root/soil interface.

Architecture: in a tree, a term describing the pattern of branching of the crown or root system.

Assessment: in relation to tree hazards, the process of estimating the risk which a tree or group of trees poses to persons or property (THIS INVOLVES A VISUAL INSPECTION FOR DEFECTS AND CONTRIBUTORY SITE FACTORS, AND SOMETIMES ALSO A DETAILED INVESTIGATION OF SUSPECTED DEFECTS)

Assym: This abbreviation means...asymmetric...and refers to the tree having an asymmetric or unbalanced crown. This is usually preceded by a measurement in metres which provides the extent of crown asymmetry and is measured from the centre of the trunk. It may also have a correlation to the lever arm.

Arboriculturalist: person who has, through relevant education, training, and experience, gained recognised qualifications and expertise in the management of trees generally and in relation to construction.

Architecture: in a tree, a term describing the pattern of branching of the crown or root system.

Arboricultural Implication Assessment (AIA) study, undertaken by an arboriculturalist, to identify, evaluate and possibly mitigate the extent of direct and indirect impact on existing trees that may arise as a result of the implementation of the site layout.

Arboricultural Method Statement: methodology for the implementation of any aspects of development that has the potential to result in loss of or damage to a tree.

Assessment: in relation to tree hazards, the process of estimating the risk which a tree or group of trees poses to persons or property (THIS INVOLVES A VISUAL INSPECTION FOR DEFECTS AND CONTRIBUTORY SITE FACTORS, AND SOMETIMES ALSO A DETAILED INVESTIGATION OF SUSPECTED DEFECTS)

Bole (trunk): the main stem of a tree below its first major branch

Branch: a limb extending from the main stem or parent branch of a tree

Canopy: the topmost layer of twigs and foliage in a woodland, tree, or group of trees

Construction Exclusion Zone: area based on the RPA (meters as a radial measurement and sometimes a m²), identified by an Arboriculturalist, to be protected during development, including demolition and construction work, by use of barriers and/or ground protection fit for the purpose to ensure the successful long-term retention of a tree.

Crown: in arboriculture the main foliage-bearing portion of a tree containing the leaves and branches

Defect: in relation to tree hazards, any feature of a tree that detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.

Dysfunction: in woody tissues, the loss of physiological function, especially water conduction.

Failure: in connection with tree hazards, a partial or total fracture within woody tissues or loss of cohesion between roots and soil. (IN TOTAL FAILURE, THE AFFECTED PART SNAPS OR TEARS AWAY COMPLETELY. IN PARTIAL FAILURE, THERE IS A CRACK OR DEFORMATION WHICH RESULTS IN AN ALTERED DISTRIBUTION OF MECHANICAL STRESS)

Group: the term 'group' is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g., trees that provide companion shelter), visually (e.g., avenues or screens) or culturally including for biodiversity (e.g., parkland or wood pasture).

Heave: in relation to a shrinkable clay soil, expansion due to re-wetting, sometimes after the felling or root severance of a tree which was previously extracting moisture from the deeper layers: also, in relation to root growth, the lifting of pavements and other structures by radial expansion: also, in relation to tree stability, the lifting of one side of a wind-rocked root plate.

Leader: in a tree, a topmost shoot that has apical dominance.

Preventive action: in a tree hazard management, action that helps to prevent injury to persons or damage to property.

Pruning: the removal or cutting back of twigs, branches or roots: in some contexts, applying only to twigs or small branches only, but more often used to describe all kinds of work involving cutting.

Retained Tree: a tree that has been considered suitable by an Arborist for retention and which during the design stage is selected for retention and incorporated within the development.

Risk: the likelihood of the potential harm from a particular hazard becoming actual harm.

Root Protection Area (RPA): layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m².

Soil heave: see heave.

Subsidence: in relation to soil or structures resting in or on soil, a sinking due to shrinkage when clay soils dry out, sometimes due to extraction of moisture by tree roots.

Subsidence: in relation to branches of trees, a term that can be used to describe a progressive downward bending due to increasing weight.

Targets: in a tree hazard assessment (and with somewhat incorrect terminology), persons or property or other things of value, which might be harmed by mechanical failure of the tree or by objects falling from it.

Tree: a woody plant, which typically has a single main stem and, in maturity, attains a height of at least four metres and a stem diameter at breast height of at least 75-mm.

Tree Constraint Plan (TCP): plan prepared by an Arboriculturalist for the purpose of layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have on layouts through shade dominance, etc.

Tree Preservation Order: in Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of specified trees.

Tree Protection Plan: scale drawing prepared by an arboriculturalist showing the final layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

Trunk: the single main stem of a tree.

Vigour: in tree assessment, an overall measure of the rate of shoot production, shoot extension or diameter growth (*cf* vitality)

Visual Tree Assessment (VTA): in addition to the literal meaning, a system expounded by Mattheck & Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.

Wind exposure: the degree to which a tree or other object is exposed to wind, with regard both to duration and velocity.

Wind pressure: the force exerted by wind on a tree or other object.

Wind snap: the breaking of a tree stem by wind.

Windthrow: the blowing over of a tree at its roots.

12. REFERENCES

- o British Standard Recommendations for Tree Work BS 3998: 2010
- o British Standard 5837: 2012 Trees in Relation to Design, Demolition and Construction - Recommendations
- o Guidance Note 10, Protected Species and Arboriculture (Arboricultural Association)
- o Fay N, Dowson D, Heliwell R. Tree Surveys, A Guide to Good Practice (Arboricultural Association)
- o Lonsdale D. Principles of Tree Hazard Assessment and Management. (Department of the Environment, Transport and Regions)
- o Mattheck C. & Breloer H. The Body Language of Trees (Department of the Environment).
- o Hillier Manual of Trees and Shrubs
- o Lonsdale D. Hazards from Trees, A General Guide, Forestry Practice Guide

13. APPENDICES

APPENDIX A - TABLE 1 TREE QUALITY ASSESSMENT

APPENDIX B - DEFAULT SPECIFICATION FOR PROTECTIVE BARRIER

APPENDIX C - TABLE B1- TREES AND THE PLANNING SYSTEM

APPENDIX D – PHOTOGRAPHS

APPENDIX E – BASE LINE DATA CAPTURE

APPENDIX F – SITE LOCATION PLAN

APPENDIX G - TREE CONSTRAINTS PLAN

APPENDIX A - TABLE 1 TREE QUALITY ASSESSMENT

The trees are categorised as stated within the British Standard in a way that should help assist those within local government to help form a balanced judgement. The primary purpose of this report is to provide an assessment of the trees and to determine their suitability for retention in any proposed development.

The Tree Categories used in evaluating the trees on this site are reproduced below. This categorisation is also included in the tree data schedules and by colour code on the attached plan.

Category and definition Criteria (including subcategories where appropriate)

Category U

Trees unsuitable for retention (see Note)

Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.

- ✓ Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g., where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)
- ✓ Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline
- ✓ Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low-quality trees suppressing adjacent trees of better quality

NOTE - Category U trees can have existing or potential conservation value which it might be desirable to preserve: Refer to 4.5.7. See Table 2

Trees to be considered for retention.

Category A

Trees of high quality with an estimated remaining life expectancy of at least 40 years

- ✓ 1 Mainly arboricultural qualities- Trees that are particularly good examples of their species, especially if rare or unusual: or those that are essential components of groups or formal or semi-formal arboricultural features (e.g., the dominant and/or principal trees within an avenue)
- ✓ 2 Mainly landscape qualities- Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features
- ✓ 3 Mainly cultural values, including conservation- Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g., veteran trees or wood-pasture) See Table 2

Category B

Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

- ✓ 1 Mainly arboricultural qualities- Trees that might be included in category A, but are downgraded because of impaired condition (e.g., presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for

retention for beyond 40 years: or trees lacking the special quality necessary to merit the category A designation

- ✓ 2 Mainly landscape qualities- Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals: or trees occurring as collectives but situated so as to make little visual contribution to the wider locality
- ✓ 3 Mainly cultural values, including conservation- Trees with material conservation or other cultural value See Table 2

Category C

Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.

- ✓ 1 Mainly arboricultural qualities- Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories
- ✓ 2 Mainly landscape qualities- Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value: and/or trees offering low or only temporary/transient landscape benefits.
- ✓ 3 Mainly cultural values, including conservation- Trees with no material conservation or other cultural value. See Table 2.

NOTE - The British Standard states...Particular care is needed when evaluating young trees, especially where they occur as individual specimens. Where these are less than 150 mm stem diameter at 1.5 m above adjacent ground level, it might be acceptable and relatively straightforward to mitigate their loss, if necessary, with similar new tree planting. Alternatively, it might be practicable to relocate such trees within the site (e.g., using a tree spade). Whilst the presence of young trees of good form and vitality is generally desirable (i.e. those trees which have the potential to develop into quality mature specimens), they need not necessarily be a significant constraint on the site's potential.

Where remaining contributory years' score is provided within the 'Findings' , and where further investigative works are required, these scores are preliminary only and based on an incomplete inspection.

BRITISH STANDARD BS 5837:2012

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APPENDIX B - DEFAULT SPECIFICATION FOR PROTECTIVE BARRIER

Figure 2 Default specification for protective barrier

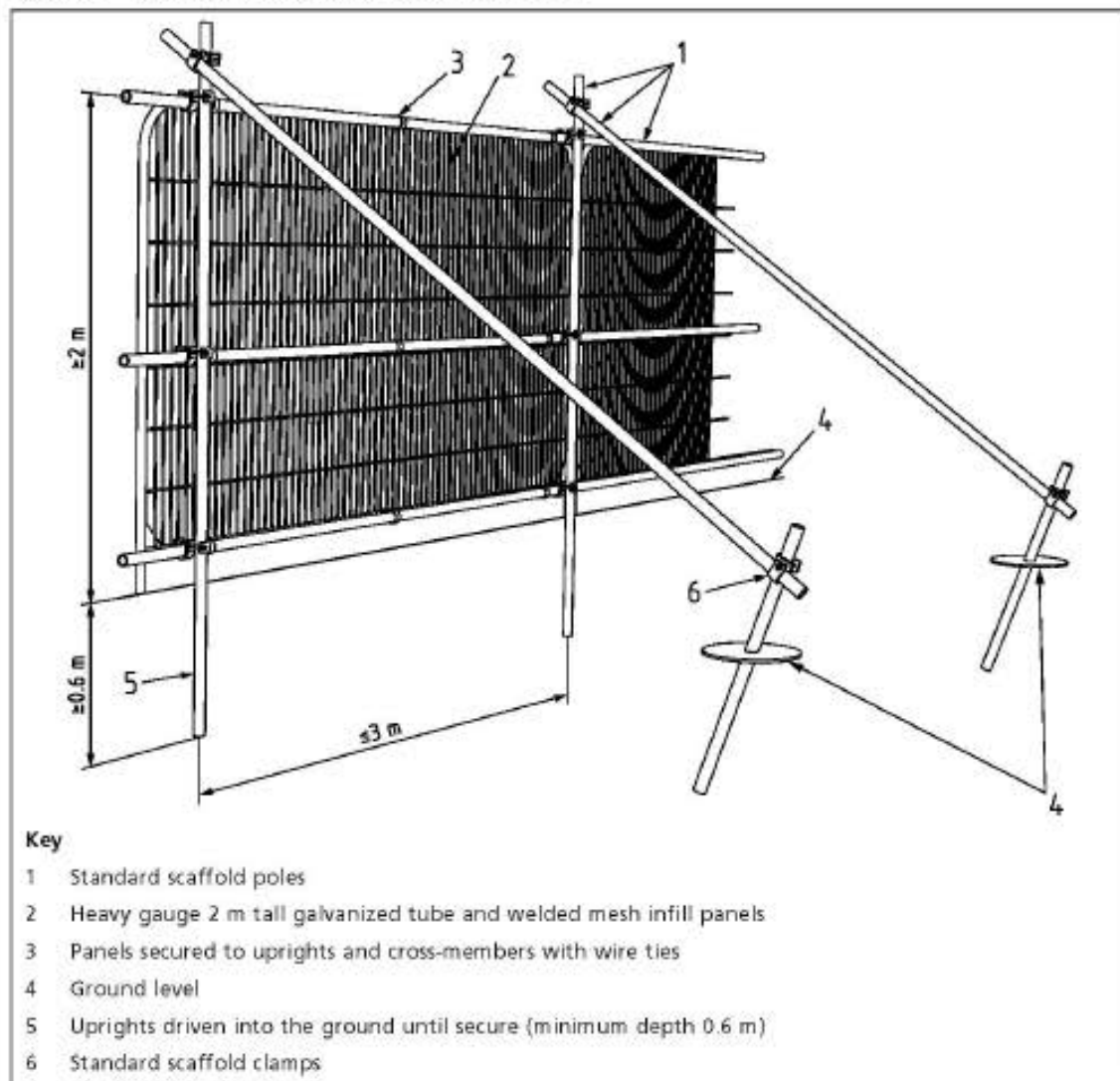
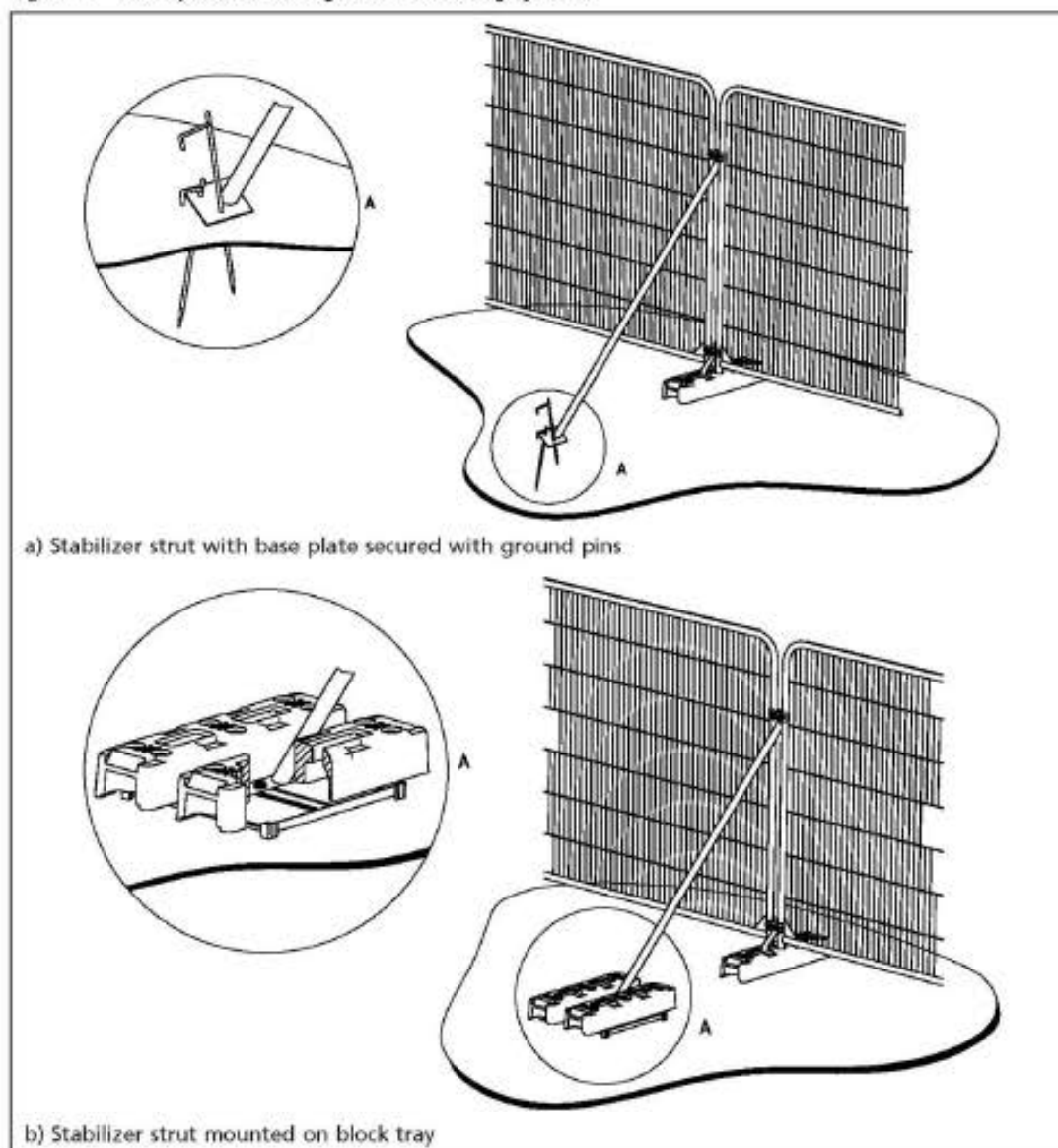


Figure 3 Examples of above-ground stabilizing systems



APPENDIX C - TABLE B1- TREES AND THE PLANNING SYSTEM

BS 5837:2012

BRITISH STANDARD

**Annex B
(informative)**

Trees and the planning system

Under the UK planning system, local authorities have a statutory duty to consider the protection and planting of trees when granting planning permission for proposed development. The potential effect of development on trees, whether statutorily protected (e.g. by a tree preservation order or by their inclusion within a conservation area) or not, is a material consideration that is taken into account in dealing with planning applications. Where trees are statutorily protected, it is important to contact the local planning authority and follow the appropriate procedures before undertaking any works that might affect the protected trees.

The nature and level of detail of information required to enable a local planning authority to properly consider the implications and effects of development proposals varies between stages and in relation to what is proposed. Table B.1 provides advice to both developers and local authorities on an appropriate amount of information. The term "minimum detail" is intended to reflect information that local authorities are expected to seek, whilst the term "additional information" identifies further details that might reasonably be sought, especially where any construction is proposed within the RPA.

Table B.1 Delivery of tree-related information into the planning system

Stage of process	Minimum detail	Additional information
Pre-application	Tree survey	Tree retention/removal plan (draft)
Planning application	Tree survey (in the absence of pre-application discussions) Tree retention/removal plan (finalized) Retained trees and RPAs shown on proposed layout Strategic hard and soft landscape design, including species and location of new tree planting Arboricultural impact assessment	Existing and proposed finished levels Tree protection plan Arboricultural method statement – heads of terms Details for all special engineering within the RPA and other relevant construction details
Reserved matters/ planning conditions	Alignment of utility apparatus (including drainage), where outside the RPA or where installed using a trenchless method Dimensioned tree protection plan Arboricultural method statement – detailed Schedule of works to retained trees, e.g. access facilitation pruning Detailed hard and soft landscape design	Arboricultural site monitoring schedule Tree and landscape management plan Post-construction remedial works Landscape maintenance schedule

APPENDIX D - PHOTOGRAPHS

Photograph 1.



One of many saplings on site which does not meet the size criteria to be included in the Report.

Photograph 2



Japanese Knotweed (*Fallopia japonica*, syn. *Polygonum cuspidatum*, *Reynoutria japonica*). on site

Photograph 3



G1, conifers in a private garden abutting the site boundary.

Photograph 4



G2 on the left with the new water culvert 1-metre away. All tree roots on this side are now severed. Wind-throw likely

Photograph 5



G2, two Ash trees from this group can be seen at the top of the photo with two severed roots indicated using red arrows.

Photograph 6



Part of G4 next to the highway.

Photograph 7



One of the many Willows in G4.

APPENDIX E – BASE LINE DATA CAPTURE

The following baseline data for each tree, group of trees or woodland have been recorded in the Table of Findings & Section 3.

Prefix – Tree (T), Group (G), Hedge (H), Woodland (W).

Species including the common and scientific names.

Height measured in metres from the stem base. Where the ground has a significant slope, measurements are taken from the higher ground.

Crown height within groups is measured in metres as an indication of average height where the main crown is formed.

Stem diameter is measured in millimetres at 1.5-m above ground level. Where the ground has a significant slope measurements are taken from the higher ground or immediately above the root flare for multi-stemmed trees.

Crown spread is measured in metres at the four cardinal points to accurately represent the crown.

Age class is described as young, semi-mature, early mature, mature or over-mature.

Physiological condition as applicable is classed as good, fair, poor, or dead. This is an indication of the health of the tree and considers vigour, presence of disease and dieback.

Structural condition as applicable is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.

Life expectancy is classed as: less than 10 years (<10) (Very Short): 10-20 years (Short): 20-40 years (Medium): or more than 40 years (40+) (Long). This is an indication of the safe useful life expectancy and number of years before removal is likely.

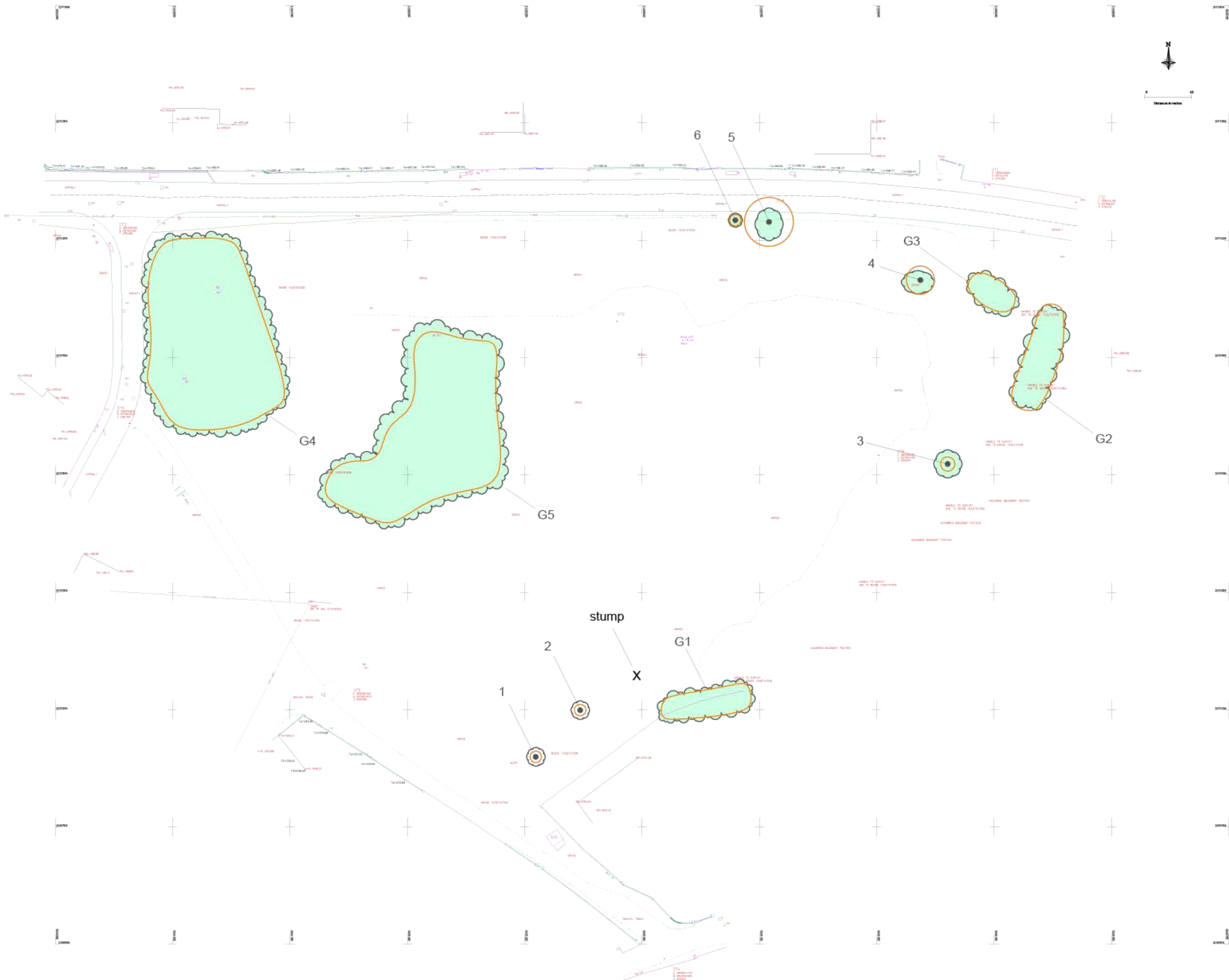
General Observations may include a brief description to include the visual merits of the tree/s, other beneficial characteristics, form, vitality, health and any visually obvious significant defects that may be present.

Recommendations are given in order to offset risks posed by identified hazards, management to improve the amenity value / habitat value / life expectancy.

APPENDIX F – SITE LOCATION PLAN



APPENDIX G – TREE CONSTRAINTS PLAN



Tree Number	Tree Tag	Species	Effectual Diameter (mm)	Remaining Contribution (years)	Retention Category	Root Protection Area (m²)	Root Protection Radius (m)
1	540	Hawthorn (<i>Crataegus monogyna</i>)	100	40+	C.2.3	5	1.2
2	N/A	Hawthorn (<i>Crataegus monogyna</i>)	100	40+	C.2.3	5	1.2
G1	N/A	Lawson Cypress (<i>Chamaecyparis lawsoniana</i>)	300	20-40	C.2.3	41	3.6
3	N/A	Goat Willow (<i>Salix caprea</i>)	125	10-20	C.2.3	7	1.5
G2	541	Ash (<i>Fraxinus excelsior</i>) , Goat Willow (<i>Salix caprea</i>) , Hazel (<i>Corylus avellana</i>)	250	10-20	C.2.3	28	3
G3	545	Sycamore (<i>Acer pseudoplatanus</i>) , Silver Birch (<i>Betula pendula</i>) , Hazel (<i>Corylus avellana</i>)	125	20-40	C.2.3	7	1.5
4	537	European Larch (<i>Larix decidua</i>)	250	40+	C.2.3	28	3
5	544	Downy Birch (<i>Betula pubescens</i>)	350	20-40	C.2.3	55	4.2
6	538	Hazel (<i>Corylus avellana</i>)	100	20-40	C.2.3	5	1.2
G4	n/a	Goat Willow (<i>Salix caprea</i>) , Hawthorn (<i>Crataegus monogyna</i>) , Silver Birch (<i>Betula pendula</i>) , Lawson Cypress (<i>Cupressus</i>) , Ash (<i>Fraxinus excelsior</i>)	325	20-40	C.2.3	48	3.9
G5	n/a	Hawthorn (<i>Crataegus monogyna</i>) , Goat Willow (<i>Salix caprea</i>) , Silver Birch (<i>Betula pendula</i>)	175	20-40	C.2.3	14	2.1

(Please check all RPA's on site.)

Key

Trees to be considered for retention.

A – High

B - Moderate

C - Low

Root Protection Area

Trees unsuitable for retention.

U - Fell

Tree Key

Crown Spread

Measured in North, South, East and West side of tree.

T1

Trees Number

(T - Individual Tree, G - Group, A - Tree area, W - Woodland, H - Hedgerow)

Root Protection Area (RPA)

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 is treated as a priority.



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Client	xxx
Surveyed by	SJA
Date surveyed	May 2023
Drawn by	LP
Scale	1:500 when printed at A1
OS Grid Ref	302560 (E) 207070 (N)

INDICATIVE ONLY.
PLEASE REFER TO ROOT PROTECTION TABLE.
DO NOT SCALE FROM THIS DRAWING
CHECK ALL DIMENSIONS ON SITE

REF. DRAWINGS	Additional Topographic Area by Zenith
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TITLE

Tree Constraints Plan
Swansea Road, Gellideg

DRAWING No:

23-037

This plan should be read in conjunction with the
23-037 Swansea Road, Gellideg
Tree Survey & Categorisation Report
May 2023 (Ambler SJ.)

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