Tree Survey, Categorisation & Constraints Report

in accordance with

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

At

Plas-y-Felin Primary School.

Caerphilly

On the instructions of

Caerphilly County Borough Council

Dated: November 2022

Inspected by: Mr. Ben Clark. L4 Dip Arb

Approved by Mr. S J Ambler. Cert.Arb.(RFS)., Tech.Arbor.A., Dip.Arb. (RFS)., F.ARBOR.A.

Of

Steve Ambler and Sons Tree Specialists Ltd.

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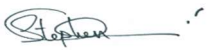
Signed Steve Ambler		Signed Ben Clark	B Clark
Date	22nd November 2022	Date	16th November 2022

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1. INTRODUCTION

Steve Ambler & Sons Tree Specialists Ltd are instructed by Caerphilly County Borough council to undertake an arboricultural survey at Plas-y-Felin Primary School 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 5837:2012[1] (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 -

→ A topographical survey of the school in DWG format.

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 many some tree 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.

The weather conditions were favourable for a survey of this nature and conducted from ground level on the 14th November 2022.

The survey was undertaken by our Arboricultural surveyor who has 7 years' experience in the Arboricultural industry and holds the following qualifications: -

a) Level 4 Diploma in Arboriculture
b) Bachelor's Degree in Geology
c) Technician Member of the Arboricultural Association
d) Numerous City & Guilds Certificates in Tree Surgery related skills.

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.

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

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

2. SITE DESCRIPTION AND OBSERVATIONS

The site is near Caerphilly town centre and is relatively low lying relative to the surrounding topography, being at the bottom of the valley next to the Nant-yr-Aber River. This factor, along with the built-up surroundings, provides a relatively sheltered setting.

A woodland adjoins the northern boundary of the school, and a strip of mature trees screen the school from the river and neighbouring Ysgol Gyfun Cwm Rhymni high school. There are several forest school areas throughout the site as well as some larger trees in the front parking area, that are dominant in the surrounding area.

Ordnance National Grid Reference: ST152877
Nearest Post Code: CF83 3RD
What3words: copy.spins.wisdom

Category A trees-
Due to their size and prominent locations in the landscape and general good health and condition with a life expectancy above 40 years.

- No Category A trees are recorded.

Category B trees
Which are large and prominent in the locality and in general good health and condition with some minor defects, or groups which cohesively provide screening of views into or out of the site (or between parts of it). The following Category B trees were recorded on site, identified as –

- Individual trees - T2, T3, T13, T14, T15, T19, T20, T24, and T31.
- The following groups and woodlands were also recorded as category B due to their collective benefits, Identified as- W1, W2, W3, G2.

Category C Trees
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.

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 -

- Bird cherry (*Prunus padus*)
- Common alder (*Alnus glutinosa*)
- Common ash (*Fraxinus excelsior*)
- Common holly (*Ilex aquifolium*)
- Cultivar apple (*Malus domestica*)
- Elder (*Sambucus nigra*)
- Field maple (*Acer campestre*)
- Goat willow (*Salix caprea*)
- Hazel *(Corylus avellana*)
- Norway maple (*Acer platanoides*)
- Pedunculate oak (*Quercus robur*)
- Plum (*Prunus domestica*)
- Rowan (*Sorbus aucuparia*)
- Scots pine (*Pinus sylvestris*)
- Silver birch (*Betula pendula*)
- Sugar maple *(Acer saccharum*)
- Sycamore (*Acer pseudoplatanus*)
- Weeping willow (*Salix babylonica*)
- Wild cherry (*Prunus avium*)

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 Standards[1] .

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

Your attention is drawn to the condition of tree numbers G5 (percentage of), T5, T6 and T27. These trees are considered to be in a dangerous condition, and the remedial actions within the management recommendations of the Schedule of Findings must be immediately implemented.

Recommended date of a tree condition inspection[2]: June 2023.

Efforts should be made to retain category A and B trees.

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

Category U trees should be removed as part of any site development and evaluated through a site risk assessment in the sites existing current situation.

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 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

[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.

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 approved[3] 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

Ref.	Tree Tag	Species	Height (m)	Effectual Diameter (mm)	Crown Spread N	E	S	W	Lowest Branch	Canopy Clearance (m)	Life Stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	RPA Area	RPA Radius	Photos
G1	N/A	Goat willow Pedunculate oak Common ash	7.0	200	3.0	3.0	3.0	3.0	2(W)	1.0	Early Mature	Trees surrounding the pond, ash trees in group showing signs of Ash Dieback Disease (*Hymenoscyphus fraxineus)* health stage 2.	Monitor ash trees annually in summertime for progression of Ash Dieback Disease.	20-40	C2	18	2.4	-
G2	N/A	Pedunculate oak Common alder	15.0	600	8.0	8.0	8.0	8.0	2.5(W)	1.5	Mature	Row of trees between the boundary fence and the river providing excellent screening between the site and neighbouring school. Observed at a distance from within the school grounds.	No action required at this time.	20-40	B2	163	7.2	-
G3	3121-3123	Plum Cherry Cultivar apple	7.0	150	2.0	2.0	2.0	2.0	0.5(N)	0.5	Early Mature	Fruit trees planted as part of a school garden providing enrichment for the pupils.	No action required at this time.	20-40	C2,3	10	1.8	-
G4	N/A	Common ash	6.0	100	1.0	1.0	1.0	1.0	1(W)	1.0	Early Mature	Trees growing through the boundary fence. Ash Dieback Disease (*Hymenoscyphus fraxineus)* observed. Health Stage 3.	Fell to ground level. Treat the stumps with a suitable herbicide following manufacturers guidance.	<10	U	0	0.0	-
W1	3113-3114	Silver birch Pedunculate oak Goat willow Elder Common holly Wild cherry	150.0	150	3.0	3.0	3.0	3.0	2(E)	1.5	Early Mature	Woodland school area. Trees with tag numbers 3115 and 3116 have extensively decayed stems. Incipient branch failure observed on Tree with tag 3117.	Fell trees with tag numbers 3115 and 3116. Remove tagged branch on Tree with tag 3117.	20-40	B2	10	1.8	-
W2	N/A	Goat willow Common alder Pedunculate oak	15.0	400	8.0	8.0	8.0	8.0	2(S)	1.5	Mature	Native woodland bordering the school providing very good screening and high amenity value. Bases of trees are on the far side of the school fence, but the	Monitor ash trees within group annually in summertime for progression of Ash Dieback Disease.	20-40	B2	72	4.8	-

Ref.	Tree Tag	Species	Height (m)	Effectual Diameter (mm)	Crown Spread N	E	S	W	Lowest Branch	Canopy Clearance (m)	Life Stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	RPA Area	RPA Radius	Photos
		Hazel Common ash										canopies overhang the grounds. Ash trees within the group showing signs of ash dieback disease health stage 1-2.						
W3	3118-3119	Field maple Common ash Silver birch Rowan Pedunculate oak Common alder	12.0	200	4.5	4.5	4.5	4.5	1.5(W)	1.5	Early Mature	Woodland school area. Trees with tags 3049, 3048 and 3120 contain extensive stem lesions, a symptom of advanced Ash Dieback Disease (Hymenoscyphus fraxineus). Remaining ash trees with symptoms of Ash Dieback Disease (*Hymenoscyphus fraxineus)* health stage 1-2.	Fell trees with tags 3048, 3049 and 3120. Monitor remaining ash trees annually in summertime for progression of Ash Dieback Disease.	20-40	B2	18	2.4	4
T1	3047	Bird cherry	8.0	450	4.5	4.5	5.0	4.0	2(N)	1.5	Mature	Tree of average form providing some, minimal screening between the school grounds and Lewis Road. Dense ivy and epicormic growth as well as brambles obscure the base and stem for detailed inspection. Ivy extends into upper crown.	Remove epicormic shoot growth and brambles from around base. Sever 1m ivy band to allow for more detailed inspection of base and lower stem.	20-40	C2	92	5.4	-
T2	3103	Sugar maple	15.0	1360	4.0	7.0	7.5	7.0	2(SE)	1.5	Mature	Dominant tree within the area of average form. One large stem diverges at approximately 2m above ground level into 4 main stems at a tight, congested fork union. A compression fork is developing between the two Eastern and two western stems with rounded reactionary rib flares extending 1.5m below the fork, 400mm across and pronounced by 250mm.	3m Crown reduction to reduce loading on the main union. Monitor fork union annually.	20-40	B2	837	16.3	1
T3	3104	Norway maple	12.0	710	3.5	7.5	5.0	7.5	4.5(W)	4.5	Mature	Tree of reasonably good form providing some screening between the school grounds and Lewis	No action required at this time.	20-40	B2	228	8.5	-

Ref.	Tree Tag	Species	Height (m)	Effectual Diameter (mm)	Crown Spread N	E	S	W	Lowest Branch	Canopy Clearance (m)	Life Stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	RPA Area	RPA Radius	Photos
												Road. One of the dominant trees in the immediate area.						
T4	3105	Norway maple	10.0	480	3.0	3.5	1.0	5.0	4(E)	4.0	Mature	Decay cavity extending from the base to a height of 1.5m above ground level. Basic resonance test with a sounding hammer does not provide evidence of extensive internal decay in the vicinity. Wound wood is beginning to occlude the cavity opening, which is 100mm wide, less than 10% of the stem circumference.	Monitor annually for development of decay.	10-20	C2	104	5.8	-
T5	3106	Wild cherry	2.5	250	0.0	0.0	0.0	0.0	0(E)	0.0	Early Mature	Unstable, high stump, regrowth has failed, and the remaining stem is extensively decayed.	Fell to ground level.	Dead	U	28	3.0	-
T6	3017	Sugar maple	8.0	1500	3.0	3.0	3.0	3.0	2(NW)	2.0	Mature	Extensively decayed base and stem with numerous, mature fungal fruiting bodies of *Ganoderma adspersum* found on all sides at the base and stem up to a height of 2m. This is a parasitic decay fungus capable of breaching barrier zones and decaying live wood. Associated with a selective white rot which can lead to basal failure. The widespread presence of fungal fruiting bodies suggests an extensive column of decay, supported by basic resonance testing with a sounding hammer. The tree has previously been reduced to a scaffold	Assisted fell to ground level.	<10	U	1018	18.0	2

Ref.	Tree Tag	Species	Height (m)	Effectual Diameter (mm)	Crown Spread N	E	S	W	Lowest Branch	Canopy Clearance (m)	Life Stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	RPA Area	RPA Radius	Photos
												structure (presumably due to the presence of decay fungi) but remains in striking distance of the rear gardens of neighbouring property and the presence of dense regrowth exposes the weakened stem to wind loading.						
T7	3108	Weeping willow	12.0	900	8.0	6.0	7.0	6.5	5(N)	2.0	Mature	2 stems diverge at 1.5m above ground level leaning to the northwest and southeast. Northwest stem has a longitudinal crack on the tension side with significant decay developing.	Reduce to a 3.5m high scaffold structure. Monitor every 18 months to assess the stability of regrowth.	10-20	C2	366	10.8	3
T8	3109	Wild cherry	10.0	440	5.0	6.0	5.0	1.0	3.5(S)	2.0	Early Mature	Subordinate to T7 which shelters this tree from the prevailing south-westerly winds. Stem lean and asymmetrical crown towards the northeast due to phototropic tendencies. Proposed removal of the crown of T7 will alter the exposure of this tree significantly.	3m crown reduction. Monitor every 18 months to assess crown integrity.	10-20	C2	88	5.3	-
T9	3110	Rowan	6.0	240	2.0	2.0	2.0	2.0	2(N)	1.5	Early Mature	Unremarkable tree forming part of a small avenue surrounding the entrance footpath to site.	No action required at this time.	20-40	C2	26	2.9	-
T10	3111	Silver birch	6.0	130	2.5	2.5	2.5	2.5	2(N)	1.5	Early Mature	Unremarkable tree forming part of a small avenue surrounding the entrance footpath to site.	No action required at this time.	20-40	C2	8	1.6	-
T11	3112	Silver birch	6.0	130	3.0	3.0	3.0	3.0	2(N)	1.5	Early Mature	Unremarkable tree forming part of a small avenue surrounding the entrance footpath to site.	No action required at this time.	20-40	C2	8	1.6	-
T12	3112	Wild cherry	7.0	360	3.0	3.0	3.0	3.0	2(W)	2.0	Early Mature	Tree of average form	No action required at this time.	20-40	C2	59	4.3	-
T13	N/A	Pedunculate oak	15.0	800	9.0	9.0	9.0	9.0	4(E)	1.5	Mature	Tree of seemingly good form, part of the woodland in the far side of the fence.	No action required at this time.	40+	B2	290	9.6	-

Ref.	Tree Tag	Species	Height (m)	Effectual Diameter (mm)	Crown Spread N	E	S	W	Lowest Branch	Canopy Clearance (m)	Life Stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	RPA Area	RPA Radius	Photos
T14	N/A	Pedunculate oak	15.0	800	6.5	6.5	6.5	6.5	4(S)	1.0	Mature	Tree of seemingly good form, part of the woodland in the far side of the fence.	No action required at this time.	40+	B2	290	9.6	-
T15	N/A	Pedunculate oak	15.0	800	9.0	9.0	9.0	9.0	4(E)	1.5	Mature	Tree of seemingly good form, part of the woodland in the far side of the fence.	No action required at this time.	40+	B2	290	9.6	-
T16	3050	Silver birch	8.0	150	3.0	3.0	3.0	3.0	0.5(W)	0.0	Young	Multi-stemmed tree of below average form.	No action required at this time.	40+	C2	10	1.8	-
T17	3121	Silver birch	8.0	150	3.0	3.0	3.0	3.0	0.5(W)	0.0	Young	Multi-stemmed tree of below average form.	No action required at this time.	40+	C2	10	1.8	-
T18	3124	Silver birch	10.0	350	3.5	3.5	3.5	3.5	2(S)	2.0	Mature	Provides some amenity value to an otherwise built-up area of the school. Limited rooting area. Branches fouling school roof.	Prune to achieve 2m clearance from school roof. Monitor every 18 months for basal stability.	20-40	C2	55	4.2	-
T19	3124	Scots pine	6.0	340	3.5	3.5	3.5	3.5	1.5(NE)	1.0	Early Mature	Tree appears to be of good form and provides amenity value to the playground. Previous poor pruning has left 3 x 1-2m long dead stubs over the picnic bench.	Remove pruning stubs back to the branch collar using natural target pruning.	40+	B2	52	4.1	-
T20	3125	Wild cherry	6.0	490	5.0	5.0	5.0	5.0	1(N)	1.0	Early Mature	Tree appears to be of reasonably good form and provides amenity value to the playground. 1 x 3m long 60mm diameter piece of deadwood observed in lower crown.	Remove all deadwood >50mm diameter from crown.	20-40	B2	109	5.9	-
T21	3126	Bird cherry	6.0	90	1.0	1.0	1.0	1.0	2(W)	2.0	Young	Insignificant tree within the playground area providing limited amenity value.	No action required at this time.	40+	C2	4	1.1	-
T22	3127	Sycamore	8.0	250	2.5	2.5	2.5	2.5	2(S)	2.0	Early Mature	Tree of seemingly good form. Provides amenity value to play area.	No action required at this time.	40+	C2	28	3.0	-
T23	3128	Bird cherry	6.0	90	1.0	1.0	1.0	1.0	2(W)	2.0	Young	Insignificant tree within the playground area providing limited amenity value.	No action required at this time.	40+	C2	4	1.1	-

Ref.	Tree Tag	Species	Height (m)	Effectual Diameter (mm)	Crown Spread N	E	S	W	Lowest Branch	Canopy Clearance (m)	Life Stage	General Observations	Preliminary Management Recommendations	Remaining Contribution (years)	Retention Category	RPA Area	RPA Radius	Photos
T24	3129	Scots pine	6.0	340	3.5	3.5	3.5	3.5	1.5(NE)	1.0	Early Mature	Tree appears to be of good form and provides amenity value to the playground.	No action required at this time.	40+	B2	52	4.1	-
T25	3130	Silver birch	10.0	320	3.0	3.0	3.0	3.0	2.5(NW)	1.5	Early Mature	Tree of seemingly good form providing some amenity value to the playground area.	No action required at this time.	20-40	C2	46	3.8	-
T26	3131	Norway maple	10.0	320	4.0	4.0	4.0	4.0	2.5(NW)	1.5	Early Mature	Tree of seemingly good form providing some amenity value to the playground area.	No action required at this time.	20-40	B2	46	3.8	-
T27	3132	Common ash	10.0	150	2.0	2.0	2.0	2.0	2(W)	2.0	Early Mature	Tree causing direct physical damage to built structure due to secondary thickening	Fell to ground level. Treat stump with appropriate herbicide following manufacturers guidance.	<10	U	10	1.8	-
T28	N/A	Goat willow	7.0	250	4.0	4.0	4.0	4.0	2(W)	2.0	Early Mature	Limited space with branches fouling adjacent shed as well as the school roof. Base inaccessible for inspection.	Fell to ground level. Treat stump with appropriate herbicide following manufacturers guidance.	10-20	C2	28	3.0	-
T29	N/A	Goat willow	12.0	410	6.0	6.0	6.0	6.0	1(W)	0.5	Over Mature	Viewed from a distance due to lack of access.	No action required at this time.	10-20	C2	76	4.9	-
T30	3121	Silver birch	8.0	150	3.0	3.0	3.0	3.0	0.5(W)	0.0	Young	Multi-stemmed Tree of below average form. Viewed from a distance due to lack of access.	No action required at this time.	40+	C2	10	1.8	-
T31	N/A	Wild cherry	15	800	10	10	10	10	3 (E)	3	Mature	Tree in neighbouring property on the far side of the footpath, observed from a distance.	No action required at this time,	40+	B2	290	9.6	-

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 License

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 manger 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 in 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 serious 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 object, 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 m^2), 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 m^2.
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

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

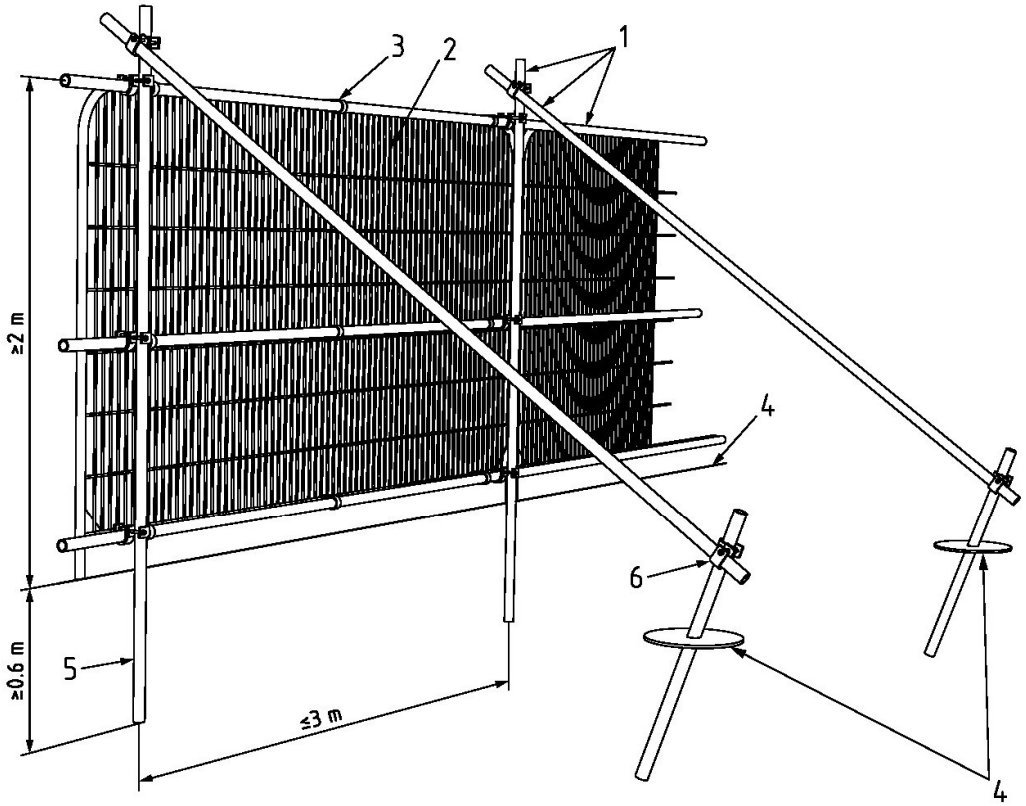
NOTE - The British Standard states...*Particular care is needed when evaluating young trees, especially where they occur as individual specimens. Where these are less than 150 mm stem diameter at 1.5 m above adjacent ground level, it might be acceptable and relatively straightforward to mitigate their 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

APPENDIX B - DEFAULT SPECIFICATION FOR PROTECTIVE BARRIER

Figure 2 **Default specification for protective barrier**



Key

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

APPENDIX C - TABLE B1- TREES AND THE PLANNING SYSTEM

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

APPENDIX D - PHOTOGRAPHS

Photograph 1. Reactionary rib flare relating to the developing compression fork in T2.

Photograph 2. Fungal fruiting bodies of *Ganoderma adspersum* observed throughout the base and stem of T6.

Photograph 3. Longitudinal crack observed on T7.

Photograph 4. Stem lesions on ash trees within W3.

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.

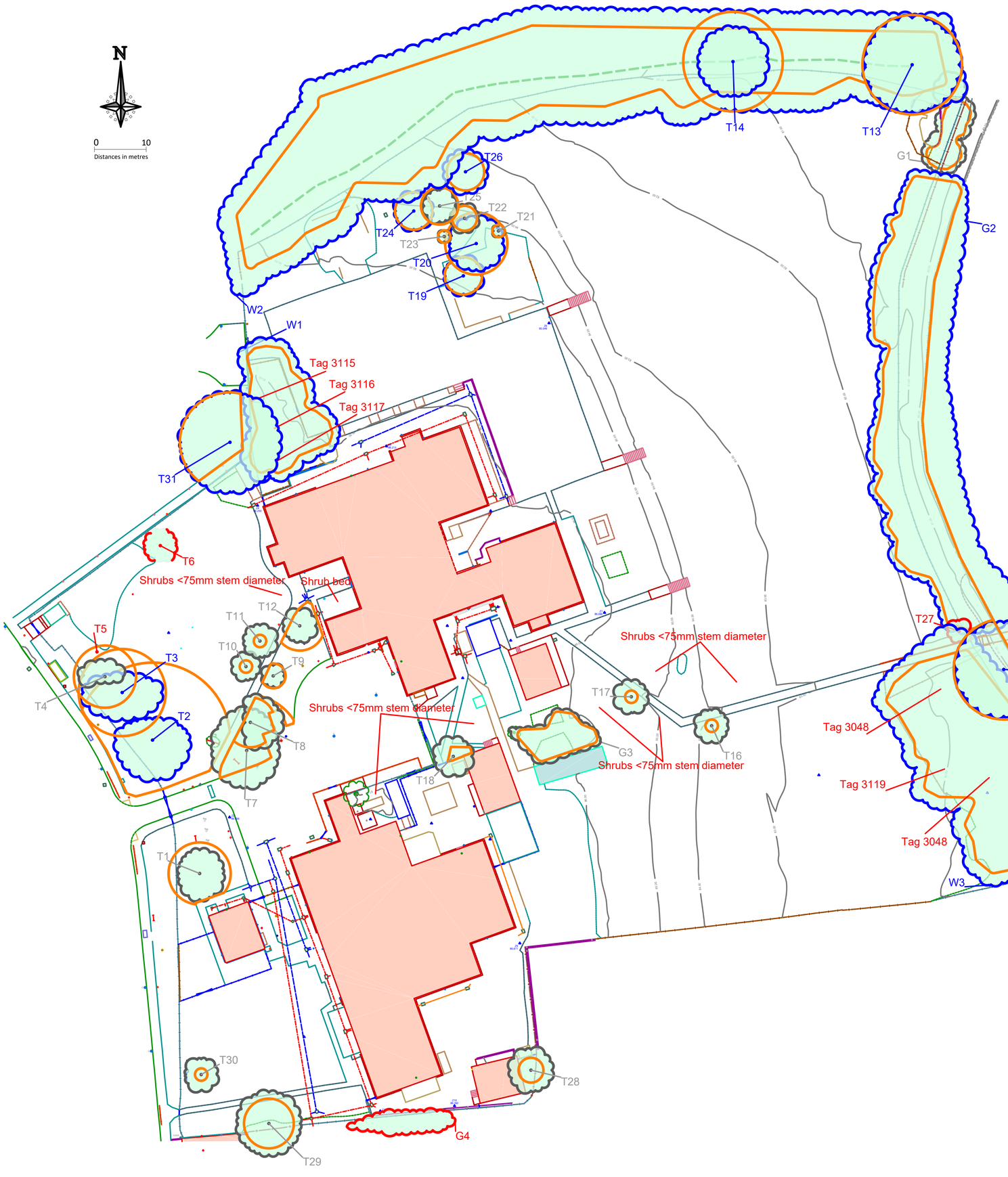
Life expectancy is classed as: less than 10 years (<10) (Very Short): 10-20 years (Short): 20-40 years (Medium): or more than 40 years (40+) (Long). This is an indication of the safe useful life expectancy and number of years before removal is likely.

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



Ref.	Tree Tag	Common Name	Height (m)	Effectual Diameter (mm)	Remaining Contribution (years)	Retention Category	RPA Area	RPA Radius
G1	N/A	Goat willow Pedunculate oak Common ash	7	200	20-40	C2	18	2.4
G2	N/A	Pedunculate oak Common alder	15	600	20-40	B2	163	7.2
G3	3121-3123	Plum Cherry Cultivar apple	7	150	20-40	C2,3	10	1.8
G4	N/A	Common ash	6	100	<10	U	0	0.0
W1	3113-3114	Silver birch Pedunculate oak Goat willow Elder Common holly Wild cherry	150	150	20-40	B2	10	1.8
W2	N/A	Goat willow Common alder Pedunculate oak Hazel Common ash	15	400	20-40	B2	72	4.8
W3	3118-3119	Field maple Common ash Silver birch Rowan Pedunculate oak Common alder	12	200	20-40	B2	18	2.4
T1	3047	Bird cherry	8	450	20-40	C2	92	5.4
T2	3103	Sugar maple	15	1360	20-40	B2	837	16.3
T3	3104	Norway maple	12	710	20-40	B2	228	8.5
T4	3105	Norway maple	10	480	10-20	C2	104	5.8
T5	3106	Wild cherry	3	250	Dead	U	0	0.0
T6	3107	Sugar maple	8	1500	<10	U	0	0.0
T7	3108	Weeping willow	12	900	10-20	C2	366	10.8
T8	3109	Wild cherry	10	440	10-20	C2	88	5.3
T9	3110	Rowan	6	240	20-40	C2	26	2.9
T10	3111	Silver birch	6	130	20-40	C2	8	1.6
T11	3112	Silver birch	6	130	20-40	C2	8	1.6
T12	3112	Wild cherry	7	360	20-40	C2	59	4.3
T13	N/A	Pedunculate oak	15	800	40+	B2	290	9.6
T14	N/A	Pedunculate oak	15	800	40+	B2	290	9.6
T15	N/A	Pedunculate oak	15	800	40+	B2	290	9.6
T16	3050	Silver birch	8	150	40+	C2	10	1.8
T17	3121	Silver birch	8	150	40+	C2	10	1.8
T18	3124	Silver birch	10	350	20-40	C2	55	4.2
T19	3124	Scots pine	6	340	40+	B2	52	4.1
T20	3125	Wild cherry	6	490	20-40	B2	109	5.9
T21	3126	Bird cherry	6	90	40+	C2	4	1.1
T22	3127	Sycamore	8	250	40+	C2	28	3.0
T23	3128	Bird cherry	6	90	40+	C2	4	1.1
T24	3129	Scots pine	6	340	40+	B2	52	4.1
T25	3130	Silver birch	10	320	20-40	C2	46	3.8
T26	3131	Norway maple	10	320	20-40	B2	46	3.8
T27	3132	Common ash	10	150	<10	U	0	0.0
T28	N/A	Goat willow	7	250	10-20	C2	28	3.0
T29	N/A	Goat willow	12	410	10-20	C2	76	4.9
T30	3121	Silver birch	8	150	40+	C2	10	1.8
T31	N/A	Wild cherry	15	800	20-40	B2	290	9.6

(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.

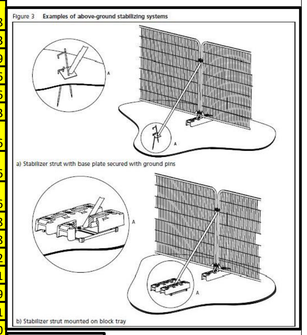
- U - Fell

Tree Key

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

T1 Tree 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.



This plan should be read in conjunction with the Plas-y-Felin Tree Survey & Categorisation Report November 2022 (Ambler SJ.)

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

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Client	Caerphilly County Borough Council
Surveyed by	SJA
Date surveyed	November 2022
Drawn by	BC
Scale	1:400 when printed at A1
OS Grid Ref	ST 15215 87722

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

REF. DRAWINGS 21716_A_2D	Plas-y-Felin Topographical Survey

TITLE

Tree Constraints Plan
Play-y-Felin Primary School

DRAWING No:

22-153