

Combined Arboricultural Impact
Assessment/ Method Statement
Land off Parc y Delyn
Penlan Road
SA31 1DN



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Introduction

This survey was overseen by Ben Clark, Arboricultural Consultant, and Director at Tree Check Arboriculture Ltd. with over 9 years' experience in the arboriculture industry and holding the following qualifications:

- Level 4 Diploma in Arboriculture
- BSc. Geology (University of Southampton)
- LANTRA Professional Tree Inspection Certificate (PTI)
- Various NPTC qualifications in tree surgery.

Ben is a technician member of the arboricultural association and attends regular training and seminars to remain up to date with current arboricultural practices.

This survey was carried out by Josh Clark, Arboricultural Consultant, and Director at Tree Check Arboriculture Ltd. with over 9 years' experience in the arboriculture industry and holding the following qualifications:

- LANTRA Professional Tree Inspection Certificate (PTI)
- Various NPTC qualifications in tree surgery.

The methodology of this report is based on the recommendations provided by the British Standards Institute document BS5837: Trees in Relation to Design, Demolition and Construction – Recommendations, as well as other recommendations provided by institutions such as the Arboricultural Association.

Brief

Tree Check has been instructed by Evans Banks Planning to carry out a tree survey and categorisation at land off Parc y Delyn. Based on the findings, we were also instructed to carry out an impact assessment to consider proposed development on site, as well as produce a method statement to protect retained trees

The following information was available:

- Topographical Survey- DLG Surveying- 11/09/2020
- Clean Issue- 21/10/2024

It should be noted that all of the trees recorded in this report were shown on the topographical plan, and their locations in the Tree Constraints Plan are based on GPS and should be taken as indicative only. All locations and distances should be checked on site.

The site was visited on the 18-Jun-2024 during overcast but dry weather conditions considered favourable for this type of survey.

Scope

- The purpose of this report is to provide a recommended method statement aimed at avoiding, or minimising negative impact to trees by proposed development.
- Trees have only received a cursory inspection and this report does not constitute a full tree condition/safety survey. Ongoing inspection should proceed as per the landowner's tree management plan.
- A tree constraints plan has been produced to indicate the locations of trees and the BS5837 calculated rooting areas, in relation to the site.
- The intended purpose of this report is that it is used as an aid to assess impact on, and constraints caused by trees when designing the layout of the site.
- Where trees have been noted to be hazardous in terms of unacceptable third-party risk this has been noted and recommendations given.
- General management recommendations have been given where appropriate.

- The inspection was carried out at ground level from inside the site and along adjacent public roads trees were not climbed and no internal decay detection was used. It is our policy to recommend further investigation with decay detection equipment where features observed during visual inspection warrant such action.
- All heights of trees were estimated from ground level.
- Branch spread was measured from the base of the trees in four cardinal directions using a laser tape measure.
- Stem Diameter was measured at 1.5m above ground level using a diameter tape measure.
- Data on the observed structural condition of the tree has been entered, e.g., collapsing, leaning and the presence of any observed decay or physical defect has been noted.
- Soil analysis has not been carried out.

Interpretation

BS Categories

Trees have been assigned retention categories in accordance with BS5837. These are as follows:

Category A- Trees with a high retention value which are either arboriculturally important, important within the landscape, or culturally/ecologically important.

Category B- Trees with a moderate retention value i.e. they are good examples of their species, provide some notable amenity value to the area, or provide significant ecological or cultural value.

Category C- Trees with a low retention value. Including trees with defects which reduce their amenity value or expected lifespan but not to the extent that they cannot be realistically retained within the development.

Category U- Trees of which retention is considered unrealistic within the context of the development due to poor condition and low life expectancy.

See [Table I](#) in the appendices of this report for more information on the allocation of categories and subcategories.

Tree Age Ratings

Y- Young trees in their early stage of growth, have undergone minimal secondary thickening and are still primarily composed of active tissue.

EM- Early mature trees that have started to show characteristics of maturity such more developed crowns and increased stem thickness.

M- Mature fully developed trees.

OM- Over mature trees that are starting to show signs of decline.

A- Ancient trees that have reached a notably old age for their species and are therefore considered to be important.

V- Veteran trees with notable features such as wounds, cavities, cracks, etc. that provide significant habitat value. These are usually older trees.

Root Protection Areas (RPA's)

Root Protection areas have been calculated according to BS5837 and represent the estimated minimum rooting area required by the tree to carry out its functions.

Excavation in this area can cause physiological or structural harm to a tree and the movement of machinery or personnel over this area can cause soil compaction and in turn, physiological harm to the tree.

There will be excavation works going on in the RPA's of several trees. The methodology of this works will be stated in this method statement.

Remaining Contribution

Remaining contribution has been estimated based on the trees overall condition, approximate age, and the life expectancy of the species in question. This is based on the assumption that new factors are not introduced that will affect the trees life expectancy, such as pathogens, climate factors or other biotic or abiotic influences.

Terminology

See annex v for a glossary of the terms commonly used in tree reports.

Trees and groups are numbered with the following prefixes:

- **T-** individual trees.
- **G-** groups of trees with similar characteristics and rooting areas.
- **H-** Hedgerows.
- **W-** woodland groups, designated as such due to the presence of woodland features such as natural regeneration,

Tree Survey Table

Ref	Tag	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)				Crown Clearance (m)	Lowest Branch (m)	Survey Notes	Recommendations	Life Stage	Life Expectancy (years)	Retention Category	RPA Area (m ²)	RPA Radius (m)	Photo
					N	E	S	W										
G1	N/A	Common ash (<i>Fraxinus excelsior</i>)	10	350	4	4	4	4	4	3	Two trees next to a driveway and garage with Ash Dieback Disease (<i>Hymenoscyphus fraxineus</i>) health stage 3.	Fell to ground level.	EM	<10	U	0	0.0	1
G2	N/A	Hazel (<i>Corylus avellana</i>) Common ash (<i>Fraxinus excelsior</i>) Sycamore (<i>Acer pseudoplatanus</i>) Monterey pine (<i>Pinus radiata</i>)	9	450	5	5	5	5	1	1	Small to medium trees of reasonable form providing good screening near the edge of site	No action required at this time.	M	20-40	C2	91	5.4	2
G3	N/A	Sycamore (<i>Acer pseudoplatanus</i>) Common hawthorn (<i>Crataegus monogyna</i>) Common ash (<i>Fraxinus excelsior</i>) Pedunculate oak (<i>Quercus robur</i>) Blackthorn (<i>Prunus spinosa</i>)	15	500	4	4	4	4	0	0	Dense wooded area of trees of reasonable form amongst an understory of blackthorn and hawthorn. Providing good screening at the edge of site.	No action required at this time.	EM	20-40	B2	113	6.0	3
G4	N/A	Pedunculate oak (<i>Quercus robur</i>)	6	300	4	4	4	4	0	0	Open grown trees of good form within the field. Providing amenity value to site.	No action required at this time.	EM	20-40	B	40	3.6	4

Ref	Tag	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)				Crown Clearance (m)	Lowest Branch (m)	Survey Notes	Recommendations	Life Stage	Life Expectancy (years)	Retention Category	RPA Area (m²)	RPA Radius (m)	Photo
					N	E	S	W										
G5	N/A	Pedunculate oak (<i>Quercus robur</i>)	7	400	4	4	4	4	0	0	Open grown trees of good form within the field. Providing amenity value to site.	No action required at this time.	M	40+	B2	72	4.8	5
G6	N/A	Sycamore (<i>Acer pseudoplatanus</i>) Blackthorn (<i>Prunus spinosa</i>) Pedunculate oak (<i>Quercus robur</i>)	6	100	2	2	2	2	0	0	Small trees and scrub growing out of area of dense brambles which extend into the lower crowns of trees and threaten to outcompete the woody vegetation.	Remove surrounding bramble and non-woody scrub growth to promote the development of woody vegetation.	Y	40+	C2	4	1.2	6
G7	N/A	Hazel (<i>Corylus avellana</i>) Blackthorn (<i>Prunus spinosa</i>) Common beech (<i>Fagus sylvatica</i>)	6	150	2	2	2	2	0	0	Group of small trees acting as boundary between site and the adjacent agricultural fields, providing good screening.	No action required at this time.	EM	10-20	C2	10	1.8	/
G8	N/A	Pedunculate oak (<i>Quercus robur</i>)	7	300	3	3	3	3	0	0	Open grown trees of good form within the field. Providing amenity value to site.	No action required at this time.	EM	20-40	B2	40	3.6	/
G9	N/A	Pedunculate oak (<i>Quercus robur</i>) Sycamore (<i>Acer pseudoplatanus</i>) Hazel (<i>Corylus avellana</i>) Blackthorn (<i>Prunus spinosa</i>) Common hawthorn (<i>Crataegus monogyna</i>) Common ash (<i>Fraxinus excelsior</i>)	10	900	5	5	5	5	5	5	Unmaintained hedgerow with standard trees developing along the site boundary with the neighbouring B Road. Provides good screening at the edge of site.	No action required at this time.	M	20-40	B2	0	0.1	7

Ref	Tag	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)				Crown Clearance (m)	Lowest Branch (m)	Survey Notes	Recommendations	Life Stage	Life Expectancy (years)	Retention Category	RPA Area (m ²)	RPA Radius (m)	Photo
G10	N/A	Hazel (<i>Corylus avellana</i>) Common hawthorn (<i>Crataegus monogyna</i>) Common ash (<i>Fraxinus excelsior</i>) Sycamore (<i>Acer pseudoplatanus</i>)	11	250	3	3	3	3	1	1	Dense group of trees of reasonable form creating a woodland. Limited access to and around the group due to dense vegetation	No action required at this time.	EM	20-40	C2	28	3.0	/
G11	N/A	Pedunculate oak (<i>Quercus robur</i>) Common beech (<i>Fagus sylvatica</i>)	15	600	5	5	5	5	2	2	Dense area of trees. Limited access to and around the group due to dense vegetation. Observed from a distance with all dimensions estimated.	No action required at this time.	M	20-40	B2	162	7.2	/
G12	N/A	Common hawthorn (<i>Crataegus monogyna</i>) Common ash (<i>Fraxinus excelsior</i>) Blackthorn (<i>Prunus spinosa</i>) Pedunculate oak (<i>Quercus robur</i>) Sycamore (<i>Acer pseudoplatanus</i>) Goat willow (<i>Salix caprea</i>)	5	300	3	3	3	3	0	0	Dense area of small trees. Limited access to and around the group due to dense vegetation. Observed from a distance with all dimensions estimated.	No action required at this time.	Y	20-40	C2	40	3.6	/
TI	N/A	Pedunculate oak (<i>Quercus robur</i>)	6	150	3	3	3	3	0	0	Unremarkable tree of average form in dense area of brambles.	No action required at this time.	Y	40+	C2	10	1.8	/

Ref	Tag	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)				Crown Clearance (m)	Lowest Branch (m)	Survey Notes	Recommendations	Life Stage	Life Expectancy (years)	Retention Category	RPA Area (m ²)	RPA Radius (m)	Photo
					N	E	S	W										
T2	N/A	Pedunculate oak (<i>Quercus robur</i>)	14	700	8	8	8	8	8	6	Large tree of good form within a neighbouring garden, outside of site but within potential influencing distance.	No action required at this time.	M	20-40	B2	221	8.4	
T3	N/A	Sycamore (<i>Acer pseudoplatanus</i>)	14	650	5	5	5	5	6	7	Large tree of good form next to a residential garden, providing amenity value to site and the neighbouring property.	No action required at this time.	M	20-40	B2	191	7.8	/

Arboricultural Impact Assessment/Method Statement

1. Tree Preservation Orders and Conservation Areas

According to data obtained from Carmarthenshire County Councils online mapping service [\[4\]](#), none of the trees on site are subject to Tree Preservation Orders and the site is not within a conservation area.

2. Root Protection Areas (RPA's)

Root Protection areas have been calculated according to BS5837. These represent the below ground constraints for a given tree, the radius of which is included in the tree schedule and represented as an orange circle or polygon on the tree constraints plan.

3. Areas of Caution

A number of areas on site have been highlighted as areas of caution, these are areas where there is a heightened risk of damage to the above ground structure or root system of retained trees through the proposed works. Certain methodologies in this document will state that they must be followed within areas of caution. The location of all areas of caution can be found on the [Tree Protection Plan](#) within the appendix section of this report.

4. Schedule of Proposed Tree Works

The following schedule describes works proposed to make way for development as well as preliminary management recommendations.

Ref	Tag	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)				Crown Clearance (m)	Lowest Branch (m)	Proposed Works	Life Stage	Life Expectancy (years)	Retention Category	RPA Area (m ²)	RPA Radius (m)	Photo
					N	E	S	W									
G1	N/A	Common ash (<i>Fraxinus excelsior</i>)	10	350	4	4	4	4	4	3	Fell to ground level due to condition issues.	EM	<10	U	0	0.0	1
G2	N/A	Hazel (<i>Corylus avellana</i>) Common ash (<i>Fraxinus excelsior</i>) Sycamore (<i>Acer pseudoplatanus</i>) Monterey pine (<i>Pinus radiata</i>)	9	450	5	5	5	5	1	1	Fell approximately 4 trees to ground level to make way for development. As shown in the Tree Protection Plan .	M	20-40	C2	91	5.4	2

Ref	Tag	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)				Crown Clearance (m)	Lowest Branch (m)	Proposed Works	Life Stage	Life Expectancy (years)	Retention Category	RPA Area (m ²)	RPA Radius (m)	Photo
					N	E	S	W									
G3	N/A	Sycamore (<i>Acer pseudoplatanus</i>) Common hawthorn (<i>Crataegus monogyna</i>) Common ash (<i>Fraxinus excelsior</i>) Pedunculate oak (<i>Quercus robur</i>) Blackthorn (<i>Prunus spinosa</i>)	15	500	4	4	4	4	0	0	Remove the northern section of the group, approximately 10 trees to make way for development. As shown in the Tree Protection Plan . Prune remaining trees to achieve 4m clearance over the proposed rear gardens and boundary fences, removing secondary branches only where possible using natural target pruning. Prune the northern crowns of the remaining trees to achieve 4m clearance over the proposed rear gardens and boundary fences, removing secondary branches only where possible using natural target pruning.	EM	20-40	B2	113	6.0	3
G4	N/A	Pedunculate oak (<i>Quercus robur</i>)	6	300	4	4	4	4	0	0	Remove the southern section of the group, as shown in the Tree Protection Plan , approximately 12 trees. Prune the southern crowns of the remaining trees to achieve 4m clearance over the proposed rear gardens and boundary fences, removing secondary branches only where possible using natural target pruning.	EM	20-40	B	40	3.6	4
G5	N/A	Pedunculate oak (<i>Quercus robur</i>)	7	400	4	4	4	4	0	0	Remove to ground level to make way for design, approximately 6 trees. As shown on the Tree Protection Plan .	M	40+	B2	72	4.8	5
G6	N/A	Sycamore (<i>Acer pseudoplatanus</i>) Blackthorn (<i>Prunus spinosa</i>) Pedunculate oak (<i>Quercus robur</i>)	6	100	2	2	2	2	0	0	Remove to ground level to make way for design, approximately 6 trees. As shown on the Tree Protection Plan .	Y	40+	C2	4	1.2	6

Ref	Tag	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)				Crown Clearance (m)	Lowest Branch (m)	Proposed Works	Life Stage	Life Expectancy (years)	Retention Category	RPA Area (m ²)	RPA Radius (m)	Photo
					N	E	S	W									
G9	N/A	Pedunculate oak (<i>Quercus robur</i>) Sycamore (<i>Acer pseudoplatanus</i>) Hazel (<i>Corylus avellana</i>) Blackthorn (<i>Prunus spinosa</i>) Common hawthorn (<i>Crataegus monogyna</i>) Common ash (<i>Fraxinus excelsior</i>)	10	900	5	5	5	5	5	5	Remove the southern section of the group to make way for development, approximately 7 trees. As shown on the Tree Protection Plan .	M	20-40	B2	0	0.1	Z
G10	N/A	Hazel (<i>Corylus avellana</i>) Common hawthorn (<i>Crataegus monogyna</i>) Common ash (<i>Fraxinus excelsior</i>) Sycamore (<i>Acer pseudoplatanus</i>)	11	250	3	3	3	3	1	1	Remove to ground level to make way for design, approximately 15 trees. As shown on the Tree Protection Plan .	EM	20-40	C2	28	3.0	/
G11	N/A	Pedunculate oak (<i>Quercus robur</i>) Common beech (<i>Fagus sylvatica</i>)	15	600	5	5	5	5	2	2	Remove the northern section of the group to make way for development, approximately 4 trees. As shown on the Tree Protection Plan . Prune the northern crowns of the remaining trees to achieve 4m clearance over the proposed rear gardens and boundary fences, removing secondary branches only where possible using natural target pruning.	M	20-40	B2	162	7.2	/
G12	N/A	Common hawthorn (<i>Crataegus monogyna</i>) Common ash (<i>Fraxinus excelsior</i>) Blackthorn (<i>Prunus spinosa</i>) Pedunculate oak (<i>Quercus robur</i>) Sycamore (<i>Acer pseudoplatanus</i>) Goat willow (<i>Salix caprea</i>)	5	300	3	3	3	3	0	0	Remove the central section of the group to make way for development, approximately 10 trees retaining the northern and southern edges. As shown on the Tree Protection Plan . Prune the southern and northern crowns of the remaining trees in the northern and southern sections respectively to achieve 4m clearance over the proposed rear gardens and boundary fences, removing secondary branches only where possible using natural target pruning.	Y	20-40	C2	40	3.6	/

Tree Removal

The removal of approximately 74 trees is proposed to make way for development, as described in the above tree schedule and illustrated in the attached [Tree Protection Plan](#).

The trees within GI are also proposed for removal due to condition issues.

The following applies to all tree removals on site:

Control Measures

- All trees proposed for removal are to be marked clearly with orange paint spots by the project arboriculturalist prior to the commencement of clearance works.
- Trees deemed to be suitable for translocation are to be marked with green paint spots and transported to the mitigation area shown on the [Appendix ii: Tree Protection Plan](#) as per the methodology outlined in [Section 14](#) of this report.
- Where possible, trees selected for translocation are to be moved prior to tree clearance works.
- All tree clearance work is to be carried out before development works begin on site, so that construction exclusion zones can be effectively established around all retained trees.
- All vehicles and plant are to be kept out of the RPA of retained trees during tree clearance, if access into the RPA of retained trees is required, protective, interlocking ground mats, suitable for the expected loads, is to be installed to prevent soil compaction within RPA's.
- Steps are to be taken to avoid collisions between removed trees and retained trees during felling or dismantling operations, these may include, but are not limited to, use of winches, pull ropes, aerial rigging techniques and other assisted felling techniques and are to be prescribed by the contractor based on the specific conditions on site.
- Arisings, such as wood chip and timber are not to be piled against the base of retained trees if left on site.
- Any damage to retained trees is to be reported to the project arboriculturalist.
- Removal of any trees not listed above must be discussed with the project arboriculturalist beforehand.

Pruning Works

Light pruning works are recommended within a number of the retained groups, as described in the above tree schedule.

The following applies to all pruning carried out on site:

Control Measures

- All pruning is to be carried out by competent, trained individuals in accordance with BS3998.
- All pruning cuts should be made to the nearest suitable growth points utilising natural target pruning. Suitable growth points where a section equal to less than the prescribed dose is removed are preferable, growth points where the cut is more than 3x the diameter of the retained growth point are undesirable.
- Contractors must be made aware of relevant legal constraints such as tree preservation orders or conservation areas, where they apply to trees that are to be pruned. Work shall not be carried out on such trees until approval is granted by the local planning authority.
- No cuts greater than 100mm in diameter are to be made on the main stem of the tree unless otherwise specified.
- All cuts made on to the main stem must be to the branch collar utilising natural target pruning and ensuring that the branch collar is retained as this provides vital protection from pathogen entry into the main stem.
- If the proposed layout is changed in any way that may require further pruning of trees beyond what is already described in the tree schedule, the project arboriculturalist must be consulted.

5. Impact from Construction Activity

Physical Damage

Wherever construction or demolition work takes place on a site with retained trees, there is a risk of damage to the branches of retained trees from the movement and use of plant within the site.

The following trees are at significant risk of direct physical damage during development works and the methodology outlined below must be followed in order to prevent such incidents from occurring:

- | | |
|-------------------------|---------------------------|
| • G3 (retained section) | • G11 (retained section) |
| • G4 (retained section) | • G12 (retained sections) |
| • G7 | • T1 |
| • G8 | • T2 |
| • G9 (retained section) | • T3 |

Control Measures

- By maintaining a construction exclusion zone, with tree protective barrier fencing segregating retained trees from the rest of site, physical damage to trees can be avoided.
- Tree protective barrier fencing must be installed in the configuration outlined in the [Tree Protection Plan](#).
- The alternative tree protective fencing ([figure 3](#)) as outlined in BS5837 is preferable for this site due to its tight nature with fencing within RPA's. This configuration avoids driving posts into the ground, thus reducing root disturbance.
- The crowns of all trees must be enclosed within the tree protective fencing. If more space is needed than the current crown extents allow, the project arboriculturalist must be consulted in order to arrange appropriate pruning measures.
- Machine operators are to be briefed on positioning their equipment to avoid contact with branches from retained trees and the root protection zones.
- Where access is required beneath the crown or canopy area of retained trees, all pruning work to facilitate access must be carried out prior to the development stage, height restriction barriers are to be installed at the edge of areas of caution where entry beneath barriers occurs, and banksmen are to be assigned to make sure no contact with branches is made during the movement or use of plant.

Chemical Damage

There is a risk of chemical damage to trees from the mixing and storage of cement and other damaging chemicals.

The following trees are at significant risk of chemical damage during development works and the methodology outlined below must be followed in order to prevent such incidents from occurring:

- | | |
|-------------------------|---------------------------|
| • G3 (retained section) | • G11 (retained section) |
| • G4 (retained section) | • G12 (retained sections) |
| • G7 | • T1 |
| • G8 | • T2 |
| • G9 (retained section) | • T3 |

Control Measures

- Materials that may have an adverse effect on the health of trees will not be stored or transported within the RPA. E.g., oil, bitumen, cement, and concrete.
- Concrete and cement will not be mixed within 10m of the base of trees.
- Cement and concrete will be mixed downhill from the base of trees or watercourses to avoid the risk of contamination to runoff.
- Where it is not possible to mix and store concrete downhill from trees and watercourses, sediment barriers will be used to prevent runoff from storage and mixing areas.

Soil Compaction

With the movement of personnel and machinery around site, there is always a risk of soil compaction when construction activity takes place near retained trees.

The following trees are at significant risk of damage through soil compaction during development works and the methodology outlined below must be followed in order to prevent such incidents from occurring:

- G3 (retained section)
- G4 (retained section)
- G7
- G8
- G9 (retained section)
- G11 (retained section)
- G12 (retained sections)
- T1
- T2
- T3

The following trees are at particular risk of damage through soil compaction due to the requirement for access into their RPA's during the development phase:

- G3 (retained section)- installation of boundary dressings within RPA.
- G4 (retained section)- installation of boundary dressings within RPA.
- G9 (retained section)- installation of boundary dressings within RPA.
- G11 (retained section)- installation of boundary dressings within RPA.
- G12 (retained section) installation of boundary dressings within RPA.
- T2- installation of boundary dressings within RPA.
- T3- installation of boundary dressings within RPA.

Control Measures for Construction Exclusion Zones

- By maintaining a construction exclusion zone, with tree protective barrier fencing segregating retained trees from the rest of site, soil compaction related damage to trees can be avoided.
- Tree protective barrier fencing must be installed in the configuration outlined in the [Tree Protection Plan](#).
- The standard level of tree protective fencing ([figure 3](#)) as outlined in BS5837 is preferable for this site due to volume of plant and vehicle movement expected on site.
- No materials are to be stored within the RPA's of trees for any period of time, including in areas of caution.
- All RPA's are to be checked on site and marked out, measured based on the RPA radius shown in the tree schedule.

Control Measures Where Access into the RPA of Retained Trees is Required

- Where access is required into the RPA's of retained trees, the construction exclusion zone is to be maintained until access is required, at this point the following is to occur, in the order it is described here:
 - A section of tree protective fencing sufficient to allow access to the construction exclusion zone is to be removed, fencing panels and other components are to be stored away from the RPA's of retained trees.
 - As only pedestrian access is required, a scaffold board walkway placed on a 100mm thick layer of compression resistant material such as woodchip spread over a geotextile membrane, or onto a driven scaffold frame to create a suspended walkway, is to be installed in all areas of caution, as shown in the [Tree Protection Plan](#).
 - Ground protection must be installed under the supervision of a qualified arboriculturalist following their approval of the proposed configuration.
 - Ground protection is to be rolled out from the edge of the RPA into the area of caution in a way that ensures workers and machinery are always able to work from protected ground during installation.
 - Once ground protection has been installed, tree protective fencing is to be reinstated around the edge of the area of caution, preventing access to all unprotected ground.
 - Upon completion of works within areas of caution, the fencing surrounding the ground protection is to be removed, all fencing components are to be stored outside of the RPA of retained trees.

- Ground protection is then to be removed, this must be rolled back towards the edge of the RPA's of retained trees, so that personnel and/or machinery can always work from protected ground, or from the outside of the RPA.
- Once ground protection is removed, the tree protective fencing is to be reinstated in its original configuration.

6. RPA Incursions

Construction of Heavy Structures Within the RPA's of Retained Trees

There are no conflicts between the RPA's of trees on site with the current proposed layout of buildings or heavy structures.

- If the proposed layout is changed in any way that causes a conflict with the RPA of retained trees the project arboriculturalist must be consulted.

Construction of Light Structures Within the RPA's of Retained Trees

There are no conflicts between the RPA's of trees on site with the current proposed layout of light structures.

- If the proposed layout is changed in any way that causes a conflict with the RPA of retained trees the project arboriculturalist must be consulted.

Demolition Within the RPA's of Retained Trees

No demolition work is proposed within the root protection areas of retained trees.

- If the proposed layout is changed in any way that causes a conflict with the RPA of retained trees the project arboriculturalist must be consulted.

Installation of Services Within the RPA's of Retained Trees

There is no conflict between the proposed layout of services and the RPA's of retained trees.

- If access is required into the construction exclusion zones at any point during the development the project arboriculturalist is to be notified so specific methodologies can be applied.

Hard Surfacing Within the RPA's of Retained Trees

No Hard surfacing work is proposed within the RPA of any retained trees on site.

- If the proposed layout is changed in any way that causes a conflict with the RPA of retained trees the project arboriculturalist must be consulted.

7. Level Changes

RPA's of the retained sections of G3 and G11 are partially within the proposed rear gardens of plots. Spot levels as shown in the proposed layout indicate some minor level changes are to occur in order to create a more level surface within the gardens.

- Level changes within RPA's are to be avoided, all level changes must take place outside of the RPA's of retained trees.
- If level changes are required close to the RPA's of retained trees, they must be separated from the RPA by retaining walls to avoid soil movement causing compaction within the rooting area or exposing parts of the root system.

8. Impact of Retained Trees on the Proposed Structure

Shading Issues

The following trees may create future issues relating to shading on proposed living spaces.

- T2
- T3
- Retained section of G3
- Retained section of T9
- Retained section of G11
- Southern retained section of G12

Control Measures

- Consider shading issues when designing the internal layout of properties on the south side of site that are in close proximity to the trees and groups outlined above. Low use areas such as utility rooms and bathrooms should be located in the areas most affected by shading where possible.
- Incorporate shade tolerant landscaping in south facing gardens that are affected by shading of retained trees.
- Implement sky lights, clerestory windows, larger windows or other means to increase light penetration in properties affected by shading.
- Implement a management plan to include pruning every 3-4 years in order to maintain trees at their current dimensions and reduce future pressure for removal.

Nuisance Caused by Detritus from Trees

Falling leaves, twigs and other material can cause significant nuisance to residents and users of site, leading to increased pressure for removal, the most common causes of nuisance from detritus are outlined here:

- **Accumulation of leaves in guttering-** The close proximity of T2 as well as the retained sections of G3, G9 and G12 to proposed properties poses a slight risk of nuisance through accumulation of leaf material in the guttering. The following steps are to be taken to mitigate this issue:
 - Install gutter guards on any new guttering applied to the south side of the building.
- **Accumulation of leaves on footpaths, patios, decking and other hard surfaces-** The changes to the layout of site do not pose any increased risk of nuisance from the accumulation of leaves on hard surfacing.
 - No specific methodology is applicable for this section due to absence of significant impact.
- **Accumulation of leaves on vehicles or damage to paintwork through honeydew-** The changes to the layout of site do not pose any increased risk of nuisance from the accumulation of leaves or honeydew on vehicles, due to the below ground nature of the proposed car park.
 - No specific methodology is applicable for this section due to absence of significant impact.

Perceived Threat of Damage to Property Through Tree Failure

The threat of tree failure causing injury or damage to property can cause anxiety for residents and increase pressure for removal of trees in close proximity to living spaces or other high use areas.

T2, as well as the retained sections of G3, G4, G9, G11 and G12 may be affected by this issue and the following steps should be taken to reduce future pressure for removal as well as minimise the risk of future damage to property or injury to residents through tree failure:

- Detailed tree inspections to be carried out on all trees within striking distance of living areas to be carried out every 18-24 months.
 - Findings and recommendations of all tree inspections to be communicated clearly to residents and site users.
 - All recommendations provided in tree safety inspections are to be carried out, with an emphasis on proactive tree management.

Displacement of Lightweight Structures through Secondary Root Thickening

There is no significant risk of displacement of lightweight structures or surfacing through the secondary root thickening of retained trees.

- No specific methodology is applicable for this section due to absence of significant impact.

Indirect Damage through Shrinkable Clay Soils

Larger trees can cause indirect damage to structures by removing water from clay rich soils, causing them to contract, which potentially leads to subsidence.

- No soil analysis has been carried out but, geotechnical advice including soil testing should be taken when construction is taking place near large trees. For advice on avoiding subsidence related damage refer to NHBC Chapter 4.2.
- If soil testing reveals a high level of plasticity, consult a suitably qualified arboriculturalist to work alongside project engineers to determine necessary foundation depths in accordance with NHBC Chapter 4.2.
- The removal of mature trees prior to development in an attempt to prevent subsidence issues is not generally advisable as it may lead to heave, causing damage to built structures.

Potential Damage Through Branch Contact

Not applicable on this site.

- No specific methodology is applicable for this section due to absence of significant impact.

9. Drainage and SUDS

No drainage plans have been provided, the topography of site suggests that there is a risk of runoff accumulating around trees to the south of site.

- Drainage plan to be approved by a qualified arboriculturalist as well as site engineers before implementation.

10. Conflict from Boundary Walls and Fences

Boundary fencing is proposed within the RPA's of the following:

- | | |
|------|-------|
| • T2 | • G9 |
| • T3 | • G11 |
| • G3 | • G12 |
| • G4 | |

Therefore, the following methodology must be followed in all areas of caution as indicated on the [Tree Protection Plan](#).

Control Measures

- The design of the fence must allow flexible spacing between posts, permitting adjustments as needed to avoid significant roots encountered during installation. Fence panels of a fixed length are not suitable for installation within RPA's.
- Pruning works to provide clearance, as outlined in [Section 4](#), must be carried out before these works begin.
- Ground protection measures, as specified in [Section 5](#), are to be employed in the RPA to prevent soil compaction.
- Excavations for fence posts within the RPA are to be supervised by the project arboriculturalist. Where possible, excavations should be completed using hand tools to minimize root disturbance.

- The project arboriculturalist is to test the site of each post hole prior to excavation by driving a pole into the ground to the required depth. If large roots are felt during this another location is to be selected.
- Auger use within the RPA is permitted but must be operated from an excavator no greater than 1.5t in weight and positioned either outside of the RPA or on interlocking ground protection boards.
- The arm of the excavator must not exceed a maximum working height of 3.5 meters to ensure clearance from branches. The project arboriculturalist is to supervise all use of excavators beneath the crowns of trees.
- Roots under 25mm in diameter encountered during post hole excavation may be pruned back to the edge of the post hole with a sharp hand saw. Roots over 25mm in diameter are to be retained wherever possible, and post locations should be adjusted to accommodate these roots.
- Each post hole within the RPA is to be lined with an impermeable membrane to prevent chemical leaching into the soil, protecting tree roots from potential contamination.

11. Conflict with Proposed Landscaping and Retained Trees

The RPA's of the following trees are partially within the proposed rear gardens of plots:

- | | |
|------|-------|
| • G3 | • G9 |
| • G4 | • G11 |

The following methodology must be applied in all areas of caution to prevent damage to retained trees from the implementation of landscaping:

Control Measures

- Hard landscaping is not to be installed within the RPA of retained trees.
- All landscaping works within the RPAs of retained trees are to avoid soil disturbance wherever possible. Preparatory works are to be undertaken with hand tools only, as mechanical equipment is not permitted within the RPA unless on ground protection signed off by the project arboriculturalist.
- Ground protection measures, as specified in Section 5, must be installed within the RPA to prevent soil compaction from foot traffic and tools. Temporary ground protection is to be in place before landscaping works begin.
- Soil level alterations within the RPA are not permitted. No soil should be removed or added in these areas to avoid disrupting the tree's natural root environment. Minor adjustments to surface levels can only be carried out under direct supervision of the project arboriculturalist.
- Where planting or turfing is to be undertaken, excavations must be kept shallow, typically no deeper than 50mm to avoid significant root disturbance. If deeper planting holes are necessary, they should be carried out by hand under the supervision of the project arboriculturalist.
- Any roots encountered during shallow digging that are under 25mm in diameter may be pruned back cleanly to the edge of the planting hole using a sharp hand saw. Roots over 25mm in diameter are to be retained in situ, and the planting location should be adjusted to accommodate them.
- Only light, organic mulches (such as wood chip or bark mulch) are permitted within the RPA. Mulch should be spread to a depth of no more than 75mm, avoiding contact with the base of the tree to prevent moisture build-up and potential decay.
- Where new planting within the RPA is required, only small shrubs, herbaceous plants, or ground cover plants are permitted. Tree planting is not permitted within the RPA to avoid future root competition with retained trees.
- Any irrigation required within the RPA should avoid oversaturation. Irrigation equipment must not puncture the soil deeper than 50mm, and care should be taken to avoid compaction from irrigation systems.
- All landscaping materials and tools are to be stored outside of the RPA. Under no circumstances should materials be piled within the RPA or against tree trunks, as this can cause both compaction and physical damage to the trees.

12. Scope for Preventing Tree Losses through Design Change

Due to the tight nature of site, scope for preventing tree losses through design change without severely impacting the viability of the development is extremely limited.

13. Mitigation of Tree Losses

Mitigation Through Replacement Planting

In line with Planning Policy Wales Edition 12 (2024), the trees lost to development must be replaced by equal quality trees of equivalent environmental and ecological importance of those lost at a ratio of 3:1, therefore, the following mitigation planting is proposed to offset approximately 74 trees lost to development:

- A total of 222 trees, 70% feathered, 30% light standard, providing a mixed age throughout the stand, to be planted in the areas indicated on the [Tree Protection Plan](#) in the appendix of this report.
- Trees translocated as per the specifications below will offset the total number of trees required for planting, with trees >60mm DBH and 1.5m in height offsetting the required number of light standard trees.
- The following native species are recommended based on location and soil type:
 - Silver Birch (*Betula pendula*)
 - Scots Pine (*Pinus sylvestris*)
 - Common Alder (*Alnus glutinosa*)
 - Rowan (*Sorbus aucuparia*)
 - Pedunculate Oak (*Quercus robur*)
 - Sessile Oak (*Quercus petraea*)
 - Hawthorn (*Crataegus monogyna*)
 - Common Holly (*Ilex aquifolium*)
- Planting pits are to be excavated on the same day as planting, pre-preparing pits days before planting is not appropriate as this will lead to drying out of planting pits.
- Planting pits are to be excavated as a square, large enough to accommodate the entire root ball without distorting or compressing roots, but small enough so that the tree fits snugly, to encourage the roots to become established outside of the planting pit without encircling the outside of the pit.
- The edge of the planting pit is to be scarified, removing the smooth surface created by the spade during excavation, in order to encourage root establishment outside of the planting pit.
- Trees are to be placed in the pre-prepared planting pits, ensuring it is at the correct depth ensuring all roots are below ground level, but the root flares at the base of the tree are above ground.
- Planting pits are to be backfilled with soil, ensuring there are no air pockets. Water the tree to field capacity after planting.
- Stakes or guy wires are to be employed to stabilize the tree until it re-establishes, ensuring supports are not too tight and allow for some movement to allow development of stem taper.
- Mulch is to be applied to a depth of 50mm over an area 12 times the stem diameter of the transplanted tree, avoiding the accumulation of mulch on the base.
- Ground around the trees to be irrigated to field capacity weekly in the first year after translocation and throughout the summer months during periods of dry weather for 3 years after planting.
- Annual inspection schedule to be implemented to monitor the trees for signs of stress, disease, or pest infestation, enabling adjustments to the support and watering regimes as necessary as well as prescribing any necessary pruning or pest control measures.
- Continue regular inspections and maintenance. Remove supports once the tree is stable and well-established.

Mitigation Through Translocation

There is scope to translocate certain trees on site in order to offset the tree losses and retain partially established trees.

Trees can easily be killed during translocation works through poor excavation and replanting techniques, inappropriate site selection for the translocation areas and poor aftercare. Therefore, the following methodology must be followed in order to maximise the survival rate of translocated trees:

Control Measures

All of the following works relating to translocation must be supervised by a qualified arboriculturalist.

Preparation:

- Project arboriculturalist is to identify and mark up trees suitable for translocation within the groups allocated for removal.
- Root pruning to be carried out during late autumn to late winter, 6-12 months before translocation is to take place. Excavate around the root zone to prune roots with a sharp hand saw. This will encourage new growth closer to the trunk. The size of the pruned root ball should be proportional to the size of the tree, typically 10-12 times the diameter of the trunk at breast height (DBH). After root pruning, backfill the trench with quality soil and water weekly within the area close to the base. This encourages the development of new feeder roots within the pruned area.
- The project arboriculturalist is to prescribe pruning dosage for all trees selected for translocation, the crown pruning must take place at least 6 months before translocation.
- New planting site to be prepared, ensuring the soil conditions are suitable and similar to the original site. Dig a planting hole large enough to accommodate the tree's root ball.

Translocation

- The best time of year for translocating UK native trees is during their dormant season. This period typically spans from late autumn to early spring. If the trees are to be translocated in late Autumn, then the above root pruning steps should be taken during the previous year's dormant season, if trees are to be translocated, root pruning during late autumn of the previous year may be appropriate.
- Excavation to take place using hand tools, beginning excavations about 12.5cm outside of the previously pruned root ball.
- Excavated root ball is to be wrapped in hessian or another protective material to secure the root ball to prevent soil from falling away during transportation.
- Appropriate lifting equipment (e.g., crane, tree spade, excavator arm) is to be employed to carefully lift the tree, ensuring the tree is stable and secure during the lifting process.
- Trees are to be moved to the new site using suitable vehicles, minimizing transit time to reduce stress on the tree.
- Planting pits are to be excavated on the same day as planting, pre-preparing pits days before planting is not appropriate as this will lead to drying out of planting pits.
- Planting pits are to be excavated as a square, large enough to accommodate the entire root ball without distorting or compressing roots, but small enough so that the tree fits snugly, to encourage the roots to become established outside of the planting pit without encircling the outside of the pit.
- The edge of the planting pit is to be scarified, removing the smooth surface created by the spade during excavation, in order to encourage root establishment outside of the planting pit.
- Relocated trees are to be placed in the pre-prepared planting pits, ensuring it is at the correct depth (same as original) and orientation, in the same direction as it was originally growing, if possible.
- Planting pits are to be backfilled with soil, ensuring there are no air pockets. Water the tree to field capacity after planting.
- Stakes or guy wires are to be employed to stabilize the tree until it re-establishes, ensuring supports are not too tight and allow for some movement to allow development of stem taper.
- Mulch is to be applied to a depth of 50mm over an area 12 times the stem diameter of the transplanted tree, avoiding the accumulation of mulch on the base.
- Ground around the trees to be irrigated to field capacity weekly in the first year after translocation and throughout the summer months during periods of dry weather for 3 years after planting.
- Annual inspection schedule to be implemented to monitor the trees for signs of stress, disease, or pest infestation, enabling adjustments to the support and watering regimes as necessary as well as prescribing any necessary pruning or pest control measures.
- Continue regular inspections and maintenance. Remove supports once the tree is stable and well-established.

Appendix

Appendix i: Photographs taken on site.

Appendix ii: Tree protection/loss/retention plan showing the location of trees, their root protection areas and their retention category in relation to the proposed development.

Appendix iii: A cascade chart from BS5837: 2012- Trees in relation to design, demolition, and construction– Recommendations explaining the categorisation of trees.

Appendix iv: A diagram showing the recommended configuration for tree protective fencing, from BS5837: 2012- Trees in relation to design, demolition, and construction– Recommendations.

Appendix v: A Glossary of terms and phrases commonly used in tree reports.

Appendix vi: Information to Inform Selection of Trenchless Solutions for the Installation of Services

Appendix i: Photos

Photo 1: [GL](#)- Ash trees infected with Ash dieback Disease. Category U.



Photo 2: [G2](#)- Small to medium trees of fair form.



Photo 3: [G3](#)- Dense wooded area. Limited access to and around the group due to dense vegetation.



Photo 4: [G4](#)- Small Oak trees of good form within the field.



Photo 5: [G5](#)- Small oak trees of good form.



Photo 6: [G6-](#) Dense area of small trees and scrub.



Photo 7: [G9](#) unmaintained hedgerow containing standard trees.



Photo 8: [T2](#) a large tree of seemingly good form in a neighbouring property.





Ref	Tag	Species	Height	Stem Diam (mm)	Life Stage	Life Expectancy	Retention Category	RPA Area (m²)	RPA Radius (m)
G1	N/A	Common ash (Fraxinus excelsior)	10	350	EM	<10	U	0	0
G2	N/A	Hazel (Corylus avellana) Common ash (Fraxinus excelsior) Sycamore (Acer pseudoplatanus) Monterey pine (Pinus radiata)	9	450	M	20-	C2	92	5.4
G3	N/A	Sycamore (Acer pseudoplatanus) Common hawthorn (Crataegus monogyna) Common ash (Fraxinus excelsior) Pedunculate oak (Quercus robur) Blackthorn (Prunus spinosa)	15	500	EM	20-	B2	113	6
G4	N/A	Pedunculate oak (Quercus robur)	6	300	EM	20-	B	41	3.6
G5	N/A	Pedunculate oak (Quercus robur)	7	400	M	40+	B2	72	4.8
G6	N/A	Sycamore (Acer pseudoplatanus) Blackthorn (Prunus spinosa) Pedunculate oak (Quercus robur)	6	100	Y	40+	C2	4.5	1.2
G7	N/A	Hazel (Corylus avellana) Blackthorn (Prunus spinosa) Common beech (Fagus sylvatica)	6	150	EM	10-	C2	10	1.8
G8	N/A	Pedunculate oak (Quercus robur) Sycamore (Acer pseudoplatanus) Blackthorn (Prunus spinosa) Common hawthorn (Crataegus monogyna) Common ash (Fraxinus excelsior)	7	300	EM	40	B2	41	3.6
G9	N/A	Hazel (Corylus avellana) Common hawthorn (Crataegus monogyna) Common ash (Fraxinus excelsior) Sycamore (Acer pseudoplatanus)	10	350	M	20-	B2	55	4.2
G10	N/A	Pedunculate oak (Quercus robur) Common beech (Fagus sylvatica)	11	250	EM	40	C2	28	3
G11	N/A	Common hawthorn (Crataegus monogyna) Common ash (Fraxinus excelsior) Blackthorn (Prunus spinosa) Pedunculate oak (Quercus robur) Sycamore (Acer pseudoplatanus) Goat willow (Salix caprea)	5	300	Y	40	C2	41	3.6
G12	N/A	Pedunculate oak (Quercus robur)	6	150	Y	40+	C2	10	1.8
T1	N/A	Pedunculate oak (Quercus robur)	14	700	M	20-	B2	222	8.4
T2	N/A	Sycamore (Acer pseudoplatanus)	14	650	M	40	B2	191	7.8
T3	N/A								

Key

- Category A. Trees with high retention value.
- Category B. Trees with moderate retention value.
- Category C. Trees with low retention value.
- Category U. Trees unsuitable for retention due to condition
- Root Protection Area (RPA)

Tree Key

- Canopy extents, hatched area represents area within the canopy.
- Location of tree base, taken from position on TOPO or GPS.
- Reference number (T for trees, G for groups, W for woodlands, H for hedges).

RPA- an indication of the estimated minimum rooting area required by the tree.
Calculated in accordance with BS5837.

Tree Protective Fence

Areas of Caution where specific methodology outlined in the Combined AIA and Method Statement- Land off Parc y Delyn (Tree Check 2024) must be followed.

Indicative location for replacement trees.

Tree Protection Plan	
Land Off Parc y Delyn	
1:400 at A1	
Client	Evans Banks
Survey Code	24077
Drawn by	JC
Surveyed by	JC
Date	24/06/2024

Tree Check
Arboriculture Ltd.

Ben Clark
TechArborA, Dip Arb L4 (ABC)

Tree Check Arboriculture Ltd.
Tel. 07736236152
Email:ben@treecheck.co.uk
www.Treecheck.co.uk

Plot 1: ground 71.90 - first 72.60
Plot 2: ground 73.15 - first 75.85
Plot 3: ground 73.71 - first 75.85
Plot 4: ground 74.07 - first 76.17
Plot 5: ground 74.38 - first 76.17
Plot 6: ground 75.24 - first 77.04
Plot 7: ground 75.00 - first 78.10
Plot 8: ground 76.00 - first 78.07
Plot 9: ground 76.87 - lower ground 74.17
Plot 10: ground 76.55 - lower ground 72.85
Plot 11: ground 76.75 - lower ground 70.85
Plot 12: ground 73.95 - lower ground 67.19
Plot 13: ground 73.85 - lower ground 67.45
Plot 14: ground 69.86 - lower ground 68.95
Plot 15: ground 72.15 - lower ground 68.53
Plot 16: ground 71.85 - lower ground 68.32
Plot 17: ground 71.02 - lower ground 68.32
Plot 18: ground 71.02 - lower ground 68.32
Plot 19: ground 71.02 - lower ground 68.32
Plot 20: ground 71.02 - lower ground 68.32

SCALE PERIMETERS OF PROPOSED UNITS
18.5 m MAX WIDTH (incl garage)
12.8 m DEPTH
9.5m Height (finished floor level to top of chimney)

Drawing designed to be viewed in colour.
Indicative only, check all RPA's on site in accordance with table.

Appendix iii: Cascade Table for the Categorisation of Trees (BS5837)

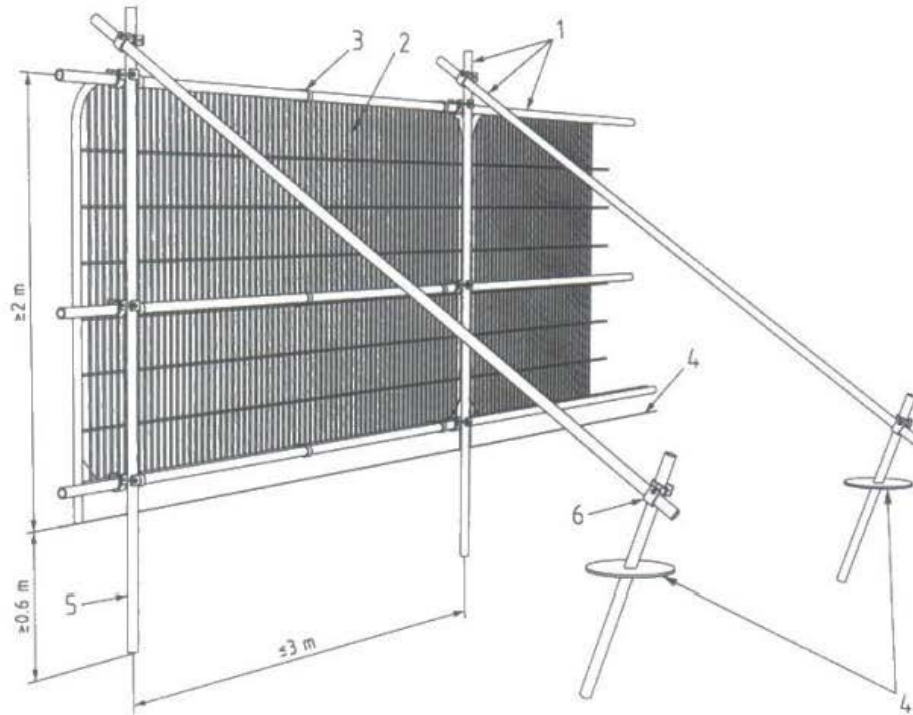
Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)		
Category U 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 U category trees (i.e. 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; see 4.5.7		
	1 Mainly Arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation
Category A Those of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as Arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation; historical, commemorative or other value (e.g. veteran trees or wood-pasture)
Category B Those of moderate quality with an estimated remaining life expectancy of at least 20 years	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	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	Trees with material conservation or other cultural benefits
Category C Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	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	Trees with no material conservation or other cultural value

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Appendix iv: Recommended Configuration for Tree Protective Fencing (BS5837)

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 v: Glossary

Aerial Inspection: A close inspection of the aerial part of a tree, either by mobile elevated work platform (MEWP) or by a tree surgeon (climbing inspection). **Adaptive Growth;** The growth of new wood in response to a stress concentration in the structure of a tree

Adventitious; A shoot which arises from tissue other than a growing shoot apex or bud, for instance in callus associated with a wound.

Anchorage; The holding of the structural root system of a tree with in the soil,.

Architecture; the formation and distribution of a trees branch system.

Arboricultural Impact Assessment: That part of the BS 5837 (2012) procedure that evaluates the tree-related constraints to a development (loss of trees, encroachment into root protection areas etc.).

Arboricultural Method Statement: That part of the BS 5837 (2012) procedure that sets out how site works should be carried out near trees to avoid accidental damage.

Arboriculturalist: A person skilled or knowledgeable in the field of arboriculture. The alternative term 'arboriculturalist' is sometimes used. A Person trained and experienced in the management of trees, and trees in relation to construction.,

Assessment; The process of examining the variables involving a trees condition and location in order to assess the risk posed by an individual tree.

Bole (trunk): The main , vertical stem or trunk of a tree.

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

Canopy: the combined foliage of a group of trees or a woodland, i.e. the combined area of numerous crowns.

Construction Exclusion Zone; The part of a development site from which all pedestrian and vehicular movements are excluded by protective fencing, typically to ensure the wellbeing of trees, during site works. Usually determined by the RPA of a tree.

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

Defect: Any feature of a tree that is likely to make it less safe (in the case of a structural defect) or otherwise to reduce its health, longevity, landscape prominence or conservation value for any other reason.

Dysfunction: The cessation of physiological function in woody material, especially vascular functions such as water and sap transportation.

Failure: Fracture or deformation in any load bearing part of the tree, compromising stability or causing loss of support for part of, or all of the tree structure,

Group: More than one tree in close proximity that possess sufficient similarity or cohesiveness that they can be treated as a single entity for the purpose of this report.

Heave: deformation of shrinkable clay soil related to the expansion caused by rehydration.

Leader: the dominant, vertical shoot or stem of a tree.

Pruning: The cutting off or cutting back of tree branches or foliage to direct growth, remove an obstructing part, mitigate a nuisance, make safe, remove a diseased part, increase longevity, simulate natural damage, enhance habitat for wildlife etc.

Retained Tree: a tree that has been considered suitable for retention and therefore selected to remain as part of the final site layout.

Risk: the likelihood of a hazard to cause actual harm to people or property,

Root Protection Area (RPA); The area around the base of a tree that contains sufficient root volume to ensure the future well-being of the tree in the event of nearby soil disturbance (as on a development site). It is calculated according to guidelines in BS 5837 (2012).

Subsidence (branch): Branches, especially if spreading, tend gradually to subside under their own weight, and may eventually reach ground level in large open-grown trees. Rapid subsidence may result in crown separation or congested bark and can lead to branch failure where there is no support within the elastic limit of a given branch.

Subsidence (soil): Broadly, the downward movement of ground and an affected foundation influenced by soil properties, weather, foundation depth and nearby vegetation.

Targets: An element of tree risk: the subject of injury or damage within range of a hazard.

Tree: The definition of 'tree' is a composite of tree species, tree form and tree size. The blue book offers the following: A perennial plant with a self-supporting woody main stem, usually developing woody branches at some distance from the ground and growing to a considerable height and size. This definition has the three main elements in general form. **For the purposes of 5837 surveys, only plants with a stem diameter of 75mm or above are considered trees.**

Tree Constraint Plan (TCP): Site plan showing the tree-related constraints to development as envisaged in BS 5837 (2012). Common constraints are the loss of trees, encroachment into a tree's root protection area.

Tree Condition Inspection/Survey: A procedure to inspect a tree or trees. Variables used to describe a tree include position (if not already plotted on a topographical survey), species identity, maturity, various dimensions (main stem diameter, height, crown radius etc.), aspects of form, vigour, condition, incidence of pests, diseases, damage and defects, evidence of past management etc. Site factors, position in the landscape and site usage may also be relevant, usually including its position, species identity, dimensions, age class, condition, conservation value etc. as appropriate, and to identify and evaluate defects. It is also common to make management recommendations (see schedule of works). Tree inspection is a fundamental of tree management and advisory practice in arboriculture.

Tree Preservation Order: (UK) an order made by a local authority or other planning authority to protect a tree, group of trees, area of (scattered) trees or woodland under Part VIII of the Town and Country Planning Act 1990. There have been several amendments, the latest being the Town and Country Planning (Tree Preservation) (England) Regulations 2012. An order is generally made on the grounds of amenity and expediency. Anyone proposing works to a TPO tree must seek prior consent from the authority using the form IAPP. With the advent of the 2012 regulations, some of the detail in existing TPOs in England has been revoked.

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: see bole.

Vigour: The health and resilience of a tree (from the Latin 'to be strong'), reflected in the capacity of the whole tree to grow (see growth rate). The term is often used as a description of overall condition on a qualitative scale from 'high' to 'low'.

Visual Tree Assessment (VTA): The standard approach to tree risk assessment consisting of the diagnosis of structural defects and the evaluation of their significance from visible signs and the application of biomechanical criteria. Simple equipment such as a sounding mallet, probe and binoculars are commonly used.

Wind exposure: the degree to which a tree or other object is exposed to wind, with regard both to duration and velocity, often taking into account prevailing wind directions.

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

References

1. Cranfield Soil and Agrifood Institute (2023). Soilsclapes soil types viewer - National Soil Resources Institute. Cranfield University. [online] www.landis.org.uk. Available at: <https://www.landis.org.uk/soilsclapes/>.
2. Claus Mattheck, Klaus Bethge and Karlheinz Weber (2015). The body language of trees encyclopedia of visual tree assessment. Karlsruhe Karlsruhe Inst. Of Technology - Campus North.
3. Hirons, A.D. and Thomas, P.A. (2018b). Applied tree biology. Chichester, West Sussex Wiley Blackwell.
4. British Standards Institution (2012). Trees in relation to design, demolition and construction : recommendations. London, Eng.: B.S.I.
5. British Standards Institution (2010). Tree work : recommendations. London: British Standards Institution.
6. Rose, B. (2020). THE USE OF CELLULAR CONFINEMENT SYSTEMS NEAR TREES: A GUIDE TO GOOD PRACTICE. [online] Stonehouse, Gloucestershire: Arboricultural Association. Available at: <https://www.trees.org.uk/News-Blog/Latest-News/New-guide-to-use-of-cellular-confinement-systems-n> [Accessed 25 Mar. 2023].
7. www.carmarthenshire.gov.wales. (n.d.). My Nearest - Planning information. [online] Available at: <https://www.carmarthenshire.gov.wales/home/council-services/planning/my-nearest-planning-information/?searched=true&Easting=252727.0072&Northing=212881.6225&Language=en-GB&Address=ACORN+LODGE%2C+DREFACH%2C+LLANELLI%2C+SA14+7AD> [Accessed 12 Jun. 2024].

Terms and conditions

The Client is the party commissioning and funding the survey. The Consultant is any person(s) employed by Tree Check Arboriculture LTD to carry out any related works, as well as Tree Check Arboriculture LTD as an entity.

Limitations

1. This survey reflects the condition of the trees as they were observed on 04/10/2023. The condition of trees can change quickly and if any significant change is observed then a qualified arboriculturist should be consulted regardless of the recommended reinspection period.
2. While every attempt has been made to provide accurate recommendations based on the condition of the observed trees, Tree Check Arboriculture Ltd. can accept no liability for damage, injury, or loss of property caused by faults that were not apparent at the time of inspection. These include but are not limited to faults that may only be visible seasonally such as fungal fruiting bodies, or faults that were obscured or inaccessible to the surveyor such as those high up in the crown or obscured by ivy.
3. During adverse weather conditions such as storms, otherwise healthy trees can fail. Trees should be visually inspected after any high winds.
4. This report cannot predict the reaction of inspected trees to external factors such as extreme climate events, accidents, or vandalism.
5. The author(s) can accept no liability for damages if the recommended works are not carried out as per this report in line with BS:3998.
6. Operational recommendations (e.g.) climb and dismantle, are for loose guidance only. It remains the responsibility of the assigned contractor to decide on the safest work method. Tree Check Arboriculture LTD. accepts no responsibility for damages occurring during the carrying out of recommended works.
7. This report does not cover any underground part of trees, nor does it consider any affect inspected trees may have on shrinkable clay soils since these issues are almost entirely restricted to areas of shrinkable clay soils and soil analysis was not specified in the brief.
8. **Recommendations made in this report do not override any legislation covering the affected trees. Trees in a conservation area, trees subject to preservation orders and groups of trees requiring felling licenses still require relevant permissions before work can be carried out. Unless otherwise agreed the Tree Check Arboriculture LTD will not be checking for the presence of this legislation or be applying for these permissions. The Client must contact the consultant if they are unsure on this matter.**
9. Certain areas of the site were inaccessible in the time scale of this survey due to dense vegetation cover. Areas and trees where this has been an issue are described in certain trees and groups in the survey table.
10. **The findings of this report cannot be relied upon after 12 months from the time of inspection or the recommended reinspection date (if sooner).**

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4. This report only covers the scope described in the introduction of this report, as discussed with the client, Trees, and methods of inspection not described in the scope were not included, and it is the client's responsibility to bring it to the attention of Tree Check Arboriculture LTD if they feel the scope doesn't fully meet their requirements.
5. The consultant is under no obligation to inspect trees in areas that are not freely accessible. It is the client's responsibility to ensure that all relevant areas of site are legally and practically accessible to the consultant.
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