THE ARB TEAM

Arboricultural Contractors & Consultants

Specialists in the preservation and maintenance of trees

Access Hire | Grounds Maintenance | Tree Maintenance & Reports

BS5837:2012 Tree Survey & Arboricultural Constraints Report

Land south of Lon Cardi Bach

Cilgerran

SA43 2TF

Grid ref. SN19627 42706

April 2025

Client: Mike Southall, Amity Planning Consultants

Consultant / Surveyor: Nick Thomas - The Arb Team

Tree Survey &
Arboricultural Constraints Report
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APPENDICES

Section 1. Introduction

1.1 On the instructions of Mr Mike Southall the projects planning consultant the following tree report has been prepared. The instructions were to survey the trees in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction and provide a report on the impact of the development on the trees. As shown on the attached site and tree location plan a total of seven individual trees and four hedgerows were the only trees that were inspected for this report.

1.2 The details of the trees are listed in the tree schedule and the terms used in the schedule with their definitions are listed in Appendix 1. Further information is available via the Tree Terms website which can be accessed via the www address listed in the references section.
Due to dense undergrowth, hedges and neighbouring properties with restricted access a number of the tree's dimensions had to be estimated.

1.3 Only the features apparent at the time of the inspection could be considered and no liability can be accepted regarding trees or their parts that were inaccessible or obscured in part or in whole. It has to be emphasised that although the health and safety of the trees is part of the assessment methodology used, this report is only intended for planning purposes, therefore it should not be construed as an assessment of tree safety. As part of this study faults may be identified and recorded but it remains the land owners / clients responsibility to take the appropriate action. The assessor / surveyor can accept no liability for damage or injury sustained as a result of the failure of any tree or its parts.

1.4 The following information was provided by Amity Planning Consultants
1 site location plan R500-100
1 topographic survey plan R500-101
1 proposed site plan / block plan R500-103

1.5 Please note that this report does not provide an assessment of the impact and suitability of the proposed dwelling(s).

1.6 This report does not provide information on any conflicts between existing tree roots and buildings or infrastructure.

1.7 This report has been issued as a single PDF file. The tree location and root protection plan may need to be printed independently to evaluate and consider any difference in its size and orientation to the report's standard A4 format.

Section 2. Inspection and General Observations.

2.1 The tree survey was completed on the 17th April 2025 and was undertaken from ground level with no climbing inspections involved. The weather conditions during the survey were calm and sunny.

2.2 The site is accessed via a gateway on the western boundary. The site is relatively level and all the inspected trees are located around the perimeter of the site. In addition to the inspected trees there are deciduous hedges of native species on the western and eastern boundaries and a conifer hedge on the southern boundary.

2.3 Root expansion and morphology is unaffected on the majority of the trees but there will be some influence from the compacted surface of the adjacent highway on the Oak tree T4 and Grey Alder T5.

2.4 No information has been received regarding any statutory protection such as tree preservation orders on any of the trees which are within or adjacent to the site.

2.5 A total of seven individual trees were inspected. For identification purposes the individual trees and groups have been numbered T1 to T7 and their individual positions are plotted on the site plan. The trees are also shown in images A, B, C, and D.

2.6 The quality rating for the trees on or affecting this site is summarised as follows.

TABLE A

BS5837 Quality category	Total number of individual trees surveyed	Total number of tree groups surveyed	Total number of woodlands surveyed	Total number of hedges surveyed	Total
A	0	0	0	0	0
B	4	0	0	3	7
C	3	0	0	1	4
U	0	0	0	0	0
Total A,B,C,U	**7**	**0**	**0**	**4**	**11**

2.7 Soil assessment. The site's soil was assessed by desktop analysis using the Soilscapes website, www.landis.org.uk/soilscapes/, which identified a slowly permeable, seasonally wet, slightly acid but base rich loamy and clayey soils.
This soil assessment should only be used as a general guide and the project engineer should undertake a detailed on site soil analysis for the foundation calculations and specifications.

Section 3. Tree and root protection area schedules.

TABLE B

Tree no.	Species	Ht. (m)	Stem dia. (cm)	Age	Crown spread (m)				Low branches	Cat.	Notes
					N	E	S	W			
T1	Sessile Oak	9.5	55	EM	2.1	3.5	5.5	3.4	3.0	B1	An asymmetric crown due to heavy pruning on the north side of the crown to provide an adequate safety clearance from the overhead power lines. Tree is providing visual and ecological benefits.
T2	Sessile Oak	17.3	100	M	6.3	8.0	7.0	3.3	2.5	B1	Crown weight and lean to the east.
T3	Sessile Oak	13.0	76	EM	5.9	5.8	5.8	4.8	3.0	B1	No comment
T4	Sessile Oak	14.8	70	EM	7.2	6.7	5.1	7.5	3.5	B1	Overhead power lines beneath the crown's eastern side.
T5	Grey Alder	14.6	18, 20, 23	EM	5.0	6.5	4.7	4.8	2.5	C1	Multi stemmed (3), low vigour and dieback of some branches.
T6	Norway Spruce	8.8	17	SM	2.5	2.1	2.3	1.9	1.0	C1	Low vigour and sparse foliage.
T7	Grey Alder	12.5	30	EM	5.6	5.8	4.6	5.4	3.0	C1	Sparse foliage in the upper crown region.
H1	Hawthorn	1.5	7.5	SM	NA				NA	B	Young and well maintained.
H2	Blackthorn, Hawthorn, Hazel, Goat Willow, Elder	5.0	25	M	NA				NA	B	Overgrown and unmaintained.
H3	Leyland Cypress	3.0	30	EM	NA				NA	C	Recent heavy pruning.
H4	Blackthorn, Hawthorn, Elder	2.0	25	M	NA				NA	B	A roadside hedge, maintained by annual flailing. North of the existing gateway twenty metres of hedgerow will require removal for the new access road.

TABLE C

Tree no.	Species	Mean stem dia. (cm)	RPA 1 (m2)	Minimum radial protection (m)		Justification for RPA modification	Position of protective barrier
				RPA 2	Modified		
T1	Sessile Oak	55	137	6.6	No	Perimeter of root protection area (RPA)	
T2	Sessile Oak	100	547	13.2	Yes	The RPA can be offset by a maximum of 20% to the east. The serpentine footpath in the POS is within the RPA and should be constructed on a cellular confinement system as specified in Appendix 3 of this report or relocated.	
T3	Sessile Oak	76	261	9.1	No	Perimeter of root protection area (RPA)	
T4	Sessile Oak	70	222	8.4	No	Perimeter of root protection area (RPA)	
T5	Grey Alder	20	64	4.5	No	Within a neighbouring garden and does not require any barrier.	
T6	Norway Spruce	17	14	2.1	No	Perimeter of root protection area (RPA)	
T7	Grey Alder	30	41	3.6	No	Perimeter of root protection area (RPA)	
H1	Hawthorn	7.5	NA	1.0	No	Perimeter of RPA 1.0 metres from the centre of the hedge.	
H2	Blackthorn, Hawthorn, Hazel, Goat Willow, Elder	25	NA	3.0	No	Perimeter of RPA 3.0 metres from the centre of the hedge.	
H3	Leyland Cypress	30	NA	3.6	Yes	Perimeter of RPA 3.6 metres from the centre of the hedge. Permeable paving on the eastern side of plot 14 will be within the RPA and should be constructed on a cellular confinement system as specified in Appendix 3 of this report.	
H4	Blackthorn, Hawthorn,	25	NA	3.0	No	Perimeter of RPA 3.0 metres from the centre of the hedge.	

	Elder					

Section 4. Arboricultural Impact Assessment (AIA)

4.1 This section will assess the implications, if any, that the proposed development will have on the seven individual trees and four hedges listed in the tree schedule and provide advice on arboricultural actions that will mitigate any impact resulting from the proposed development.

4.2 This information can then be used to evaluate the impact of the development on the tree(s) and if any remedial measures are required.

4.3 Please note that Table D of the AIA has been evaluated for the design, construction and post development phases and on the site layout that has been provided at the time that this report was drafted. Any design changes after this time may require an amendment of the AIA.

TABLE D	**Issues**	**Observations**	**Impact**
Design phase	Category A	There are no trees in this category.	
	Category B	No trees in this category will require removal.	
	Category C	No trees in this category will require removal.	
	Category U	There are no trees in this category.	
	Structures in RPA	Where necessary ground protection as stated in Appendix 3 will be used during the construction phase.	
	Services in RPA	At the present time there are no services within the RPA's of the retained trees. Any incursions into the RPA's will be avoided.	
	Changes to existing ground levels	Some minor infringement into the RPA's may be required but this can be mitigated by offsetting.	
Construction phase	Demolition	There is no demolition work required.	
	Site access	A new site access is to be created on the western boundary.	
	Working areas	There are adequate working areas.	
	Site office, storage and welfare unit.	There is adequate space for these facilities within the boundary of the site.	

	Vehicle parking	There will be adequate on site parking.	
Post development	Tree pruning / maintenance	Some minor crown lifting may be required.	
	Tree roots	Post development root growth is a low risk.	
	Shading / periodic nuisance	Due to their location there will be very little shading from the trees. Falling leaves and debris have the potential to be a nuisance but general maintenance will prevent it from becoming a major issue.	

KEY - Prior to any mitigation measures

	No impact from development and no mitigation measures required.
	Some impact which will require mitigation measures.
	Low impact which may require mitigation measures.
	High impact which will require an amended design or tree removal.

4.4 Where there is any RPA infringement by the proposed development the trees in Table C have been marked with an asterisk (*) . To prevent any soil compaction and root damage to the retained trees the ground protection guidance in Appendix 3 must be followed. It should be noted that any offsetting of the RPA should only be undertaken if there are no alternatives and any offsetting must be limited to one side of the RPA and not exceed 20% of the total RPA radius. Where offsetting is proposed if possible the square metres shown in the column RPA 1 in Table C should be increased.
In addition to the required working practices in Appendix 3 any excessive infringement into a RPA will need to be constructed on a cellular confinement system as specified in the Arboricultural Associations *Guidance Note 12 - The use of cellular confinement systems near trees.* Further information on the installation of cellular confinement systems is available in Appendix 3 of this report.

Section 5. Recommendations.

5.1 To protect the trees root protection zones prior to any ground or construction work protective fencing as shown in Appendix 2 must be erected at an adequate distance from the trees. The minimum distances between the base of the main stem and the fencing are shown in Section 3, Table C under the RPA 2 column.
After consultation and agreement with the local planning authority if the fence cannot be erected at the recommended distance from the tree it should be erected at the maximum distance possible and ground

protection measures as stated in Appendix 3 must be implemented. When the protective fencing and ground protection has been installed weather resistant signs displaying wording such as TREE PROTECTION AREA - NO UNAUTHORISED ACCESS should be attached to the protective fencing. To ensure their prominence and visibility these signs must be adequate in number and spaced at suitable and regular locations.

5.2 The condition of the trees on this site range from category B to C. When the development is completed it would be advisable if the trees are inspected and evaluated for their general health and condition and reinspected every two years thereafter.

5.3 All tree work must be completed by suitably qualified and competent arborists in accordance with the guidelines in *BS3998:2010 Tree Work – Recommendations* and current good practice.

5.4 No burning of waste products must be undertaken in the vicinity of retained trees. No fires should be lit where the heat could damage any part of the tree above or below ground level. If a fire is necessary wind direction and the size of the fire should be considered. The fire must not be left unattended at any time and must be fully extinguished prior to leaving the site.

5.5 No items such as site notices or service cables should be attached to any retained tree.

5.6 To minimise any ground disturbance the removal of all stumps within the RPA's of retained trees must be undertaken by a stump grinder. Adequate ground protection with the use of bog mats to prevent soil compaction is usually required.

5.7 Soil contamination from cement mixing and washing should be avoided across the entire site. The RPA must be adequately protected from any material such as cement washings and fuels that could contaminate the soil. If due to the topography of the land there is a risk of any contamination entering the RPA's and vicinity of retained trees adequate precautions to contain all pollution e.g. heavy duty plastic sheeting and sand bags, must be implemented. To prevent any harmful materials seeping towards the RPA the topography of the land should be evaluated and taken into consideration.

5.8 Prior to any tree work the structure of the individual trees and surrounding area should be checked by a suitably competent and qualified person for protected species such as nesting birds and bats. If possible all tree work operations should be undertaken when the minimum disturbance is caused to the local wildlife.

5.9 The construction of new footpaths, parking and/or turning areas within root protection zones should be avoided. If this is unavoidable any works within these zones will require the installation of a cellular confinement system. It would be advisable to obtain the advice of a suitably qualified arborist prior to this type of work.

5.10 Adequate care and the correct working practices to protect any exposed or damaged roots must be implemented when installing the posts for new boundary fencing particularly within the RPA's of trees 1 and 4.

5.11 During the installation of utilities the National Joint Utilities Group (NJUG) Volume 4 guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees must be followed at all times.

Section 6. Arboricultural method statement

The following section provides the sequence for the required actions.

Phase 1: Preconstruction

- The site is designed around the retained trees. This design stage must include the identification for office and site storage during the construction work.
- All required tree work operations are undertaken in accordance with BS3998:2010
- As in 5.1 and Appendix 2 of this report tree protection fencing is installed around all the retained trees.
- As in Appendix 3 any required ground protection within root protection areas is installed.
- Site office, storage and welfare units are installed.
- The arboriculturist for the project inspects the site to confirm that all tree protection work has been undertaken in accordance with this report. All inspections will be adequately recorded e.g. date, time, observations.

Phase 2: Construction

- Site supervisor to be briefed by the project arboriculturist regarding the required tree protection measures e.g. tree protection plan, method statement.
- Prior to the start of any site work all site staff and subcontractors to be adequately briefed on the tree protection measures in particular the importance of the RPA and the protective fencing.
- Construction work commences.
- General working practices across the entire site should consider the risk of soil contamination, fires and the use of large machinery such as cranes in the vicinity of retained trees.
- Any unforeseen events that may affect retained trees are discussed with the project arborist and the local planning authority. Any alteration to the tree protection plan will require written authorisation from the LPA.

Phase 3: Post construction

- Tree protection fencing is removed.
- Hard and soft landscaping is undertaken in accordance with the guidelines and recommendations in BS5837:2012
- Any required tree remedial work is undertaken e.g. application of mulches.

TABLE E - KEY CONTACTS

POSITION	NAME	CONTACT DETAILS
LPA Tree / Arboricultural Officer	Richard Staden Pembrokeshire County Council	01437 764551
Arboricultural Consultant	Nick Thomas The Arb Team	01792 885184 nick@thearbteam.co.uk
Planning Consultant	Mike Southall Amity Planning Consultants	07740 338282 mike@amityplanning.co.uk
Main Contractor	TBC	TBC

Section 7. Conclusion

7.1 If the recommendations and guidance in BS5837:2012 and this report are followed due to the site's topography and the location of the trees in relation to the proposed development which is shown on the proposed site plan R500-103 the development of this site should not have a detrimental or significant impact on the retained trees.

Section 8. References.

British Standard 5837 : 2012 Trees in relation to design, demolition and construction.

British Standard 3998 : 2010 Tree Work – Recommendations.

Tree surveys – A guide to good practice (2005). N. Fay, D. Dowson & R. Helliwell.

Principles of tree hazard assessment and management (1999). D. Lonsdale.

National Joint Utilities Group Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees. Volume 4: Issue 2 - www.njug.org.uk

Arboricultural Guidance Note 12 - The use of cellular confinement systems near trees: A guide to good practice. (2020) B. Rose

Tree Terms website - https://treeterms.co.uk

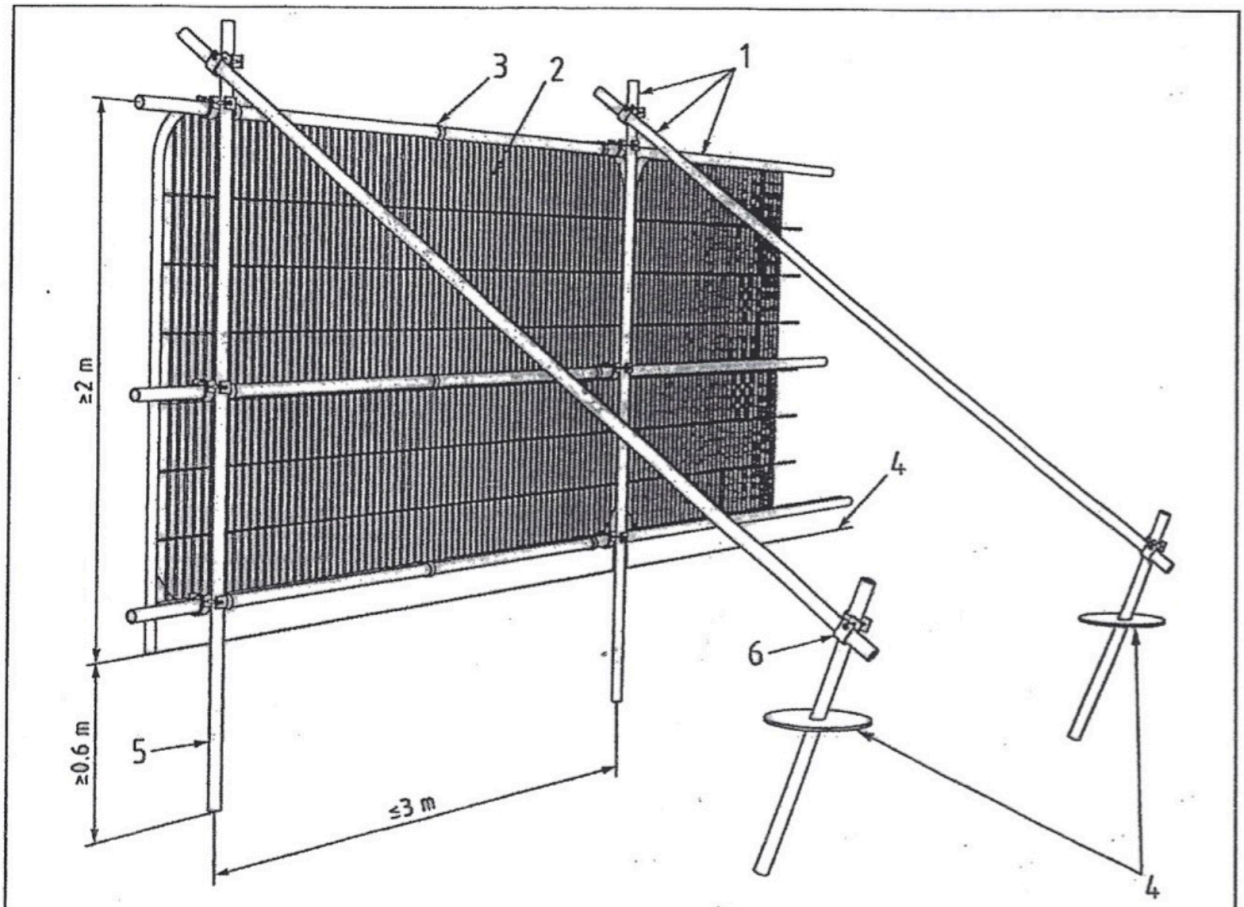
Cranfield Soil and Agrifood Institute Soilscapes website - www. landis.org.uk/soilscapes/

Appendix 1: Terms used in tree and root protection area schedules

BS5837:2012 Trees in relation to design, demolition and construction tree survey.

Tree no.	- tree tag / plan numbers
Tree name	- Common English name
Height	- Height in metres
Stem diameter	- Stem diameters measured as per BS5837:2012 recommendations. If due to climbing plants, dense vegetation or restricted access a direct measurement is not possible the diameter will be estimated. With multi stemmed trees the stem diameters are shown in square brackets.
Age class	- SM - Semi mature EM - Early mature M - Mature OM - Over mature
Crown spread	- Crown radius in metres to North, South, East and West
Low branches	- Distance to the lowest branch from ground level. - N/A - not applicable due to tree form.
RPA 1	- Recommended root protection area in square metres.
RPA 2	- Recommended root protection area radius measured from the base of the tree.
BS category	- refer Table 1 for classification and further information.

Appendix 2



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 3

Ground protection and additional precautions

Where the construction working area or temporary access for the construction work within the RPA is justified the protective fencing should be positioned accordingly. If there is existing hard surfacing that is not going to be utilised in the finished design it should not be removed at the ground work or demolition phase but should be retained as temporary ground protection.

If there is no existing hard surfacing the exposed RPA will require temporary ground protection which must be installed before any site work begins. This temporary ground protection must be adequate and capable of supporting any vehicle or pedestrian traffic without any distortion and compaction of the underlying ground.

The following specifications can be utilised for the different scenarios.

(i) For pedestrian traffic only and to provide a suspended walkway a single thickness of scaffolding boards can be placed above a scaffold frame or alternatively the scaffold boards can be laid on a 100mm depth of compression resistant material such as wood chippings. Prior to the spreading of the wood chippings a geotextile membrane should be laid on the original ground surface.

(ii) For pedestrian operated plant / machinery up to a maximum weight of 2 tonnes inter linked ground protection boards should be placed on a 150mm depth of compression resistant material such as wood chippings. As in (i) above prior to the spreading of the wood chippings a geotextile membrane should be laid on the original ground surface.

(iii) For construction machinery in excess of 2 tonnes a system which utilises precast reinforced concrete slabs or similar material will be required. In conjunction with arboricultural advice this system will need an engineering specification to ensure that the maximum loading is taken into consideration.

The objective of every system should be to prevent any ground compaction which will ensure that tree roots have suitable soil conditions for healthy and active growth.

Installation of roads, driveways and footpaths

Tree roots are vital to a tree's health and anchorage and are usually located in the upper metre of the

ground with the majority in the upper 600mm. The nutrient and water absorbing roots can be near the surface and are small and difficult to see but are very easily damaged.

Any ground disturbance and excavations can have an adverse effect on these roots. Any conventional work to install roads, driveways and footpaths in the vicinity of retained trees should be outside the RPA's of trees. If this is not possible a no dig cellular confinement system or similar installation must be used. This system must be correctly designed and planned and all work must be undertaken by contractors who have the necessary experience and expertise. The work should also be supervised by a suitably qualified arboriculturist.

If required and prior to any work surface vegetation can be treated with an appropriate herbicide that will not leach into the soil and affect the tree roots. All herbicides must be applied in accordance with the manufacturers guidance and current good practice.

Loose organic matter and a thin layer of turf can be removed from the soil surface but this work should be undertaken with care and only hand tools should be used. Prior to the installation of the cellular confinement system if any uneven surfaces require levelling a suitable and inert material such as a washed no fines gravel should be used.

The final surface should allow moisture to percolate into the ground. Suitable surfaces include washed gravel, paving slabs or block pavers with built in infiltration.. Porous asphalt and resin bonded gravels will initially provide good levels of porosity but will in time become blocked by dust which will reduce their porosity significantly.

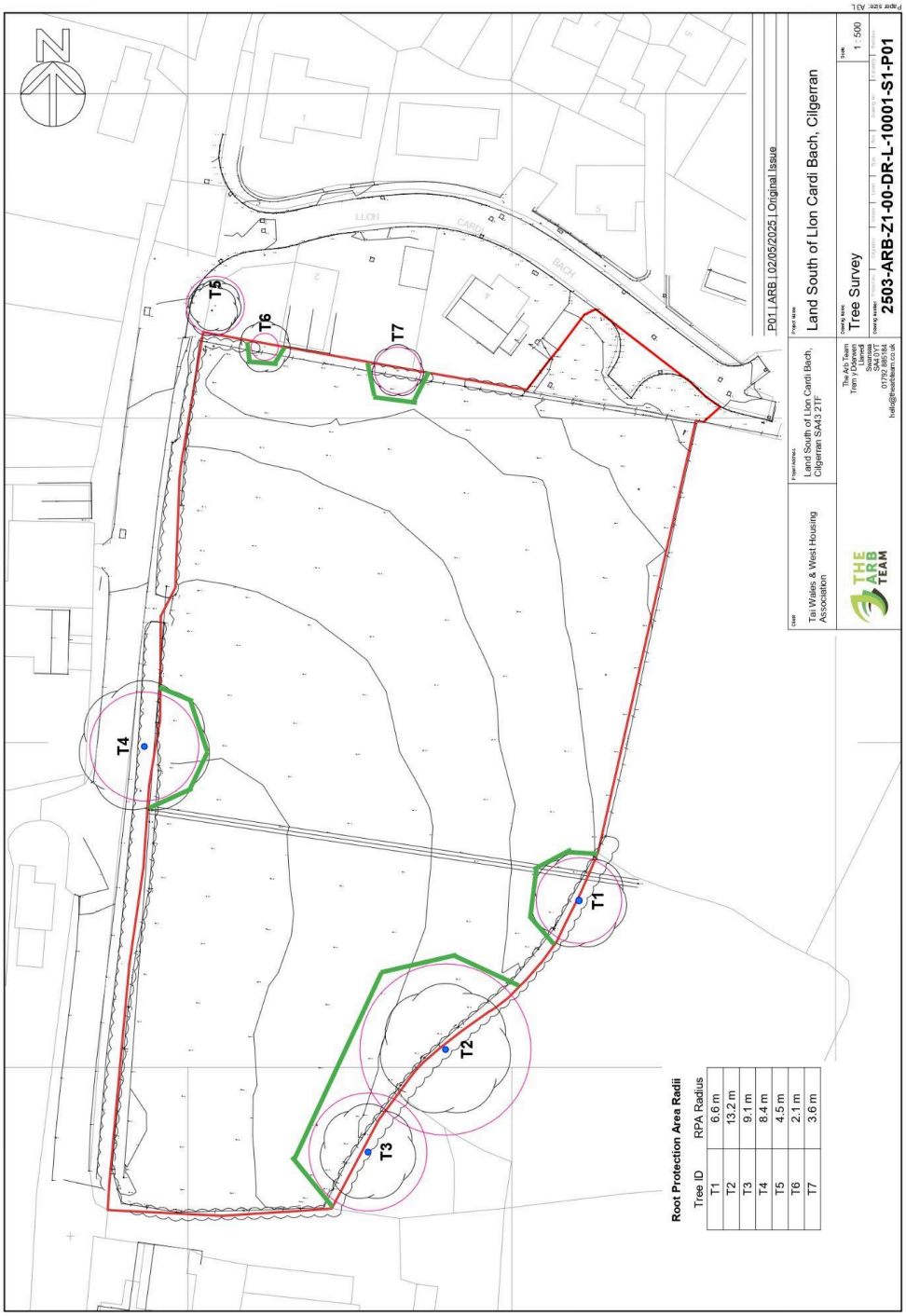
A correctly installed cellular confinement system will prevent soil compaction, allow gaseous diffusion between the atmosphere and the soil and allow moisture into the ground. Further information on the specification and installation of cellular confinement systems is available in the Arboricultural Association Guidance Note 12 *The use of cellular confinement systems near trees: A guide to good practice*. Additional advice is also available from manufacturers and suppliers such as Greenfix (Geoweb), Terram (Geocell) and Geosynthetics (Cellweb).

Prior to and during installation the ground directly adjacent to the new structure must be adequately protected from any disturbance or compaction. This protection is provided by following the advice in the 'Ground protection' section above and correct working practices which will roll out the new surface and avoid any direct contact with the existing ground.

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (Including subcategories where appropriate)		Identification on plan
Trees unsuitable for retention (see Note)			
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 category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) •Trees that are dead or 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;		
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural views including conservation**
Trees to be considered for retention			
Category A Trees 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 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)	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 Trees of moderate quality with an estimated remaining life expentancy 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 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 higher collective rating than they might as individuals; or trees occuring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value
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	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 benifits	Trees with no material conservation or other cultural value

PLAN A - Location of trees and root protection areas



Plan B - Location of hedgerows H1 to H4.

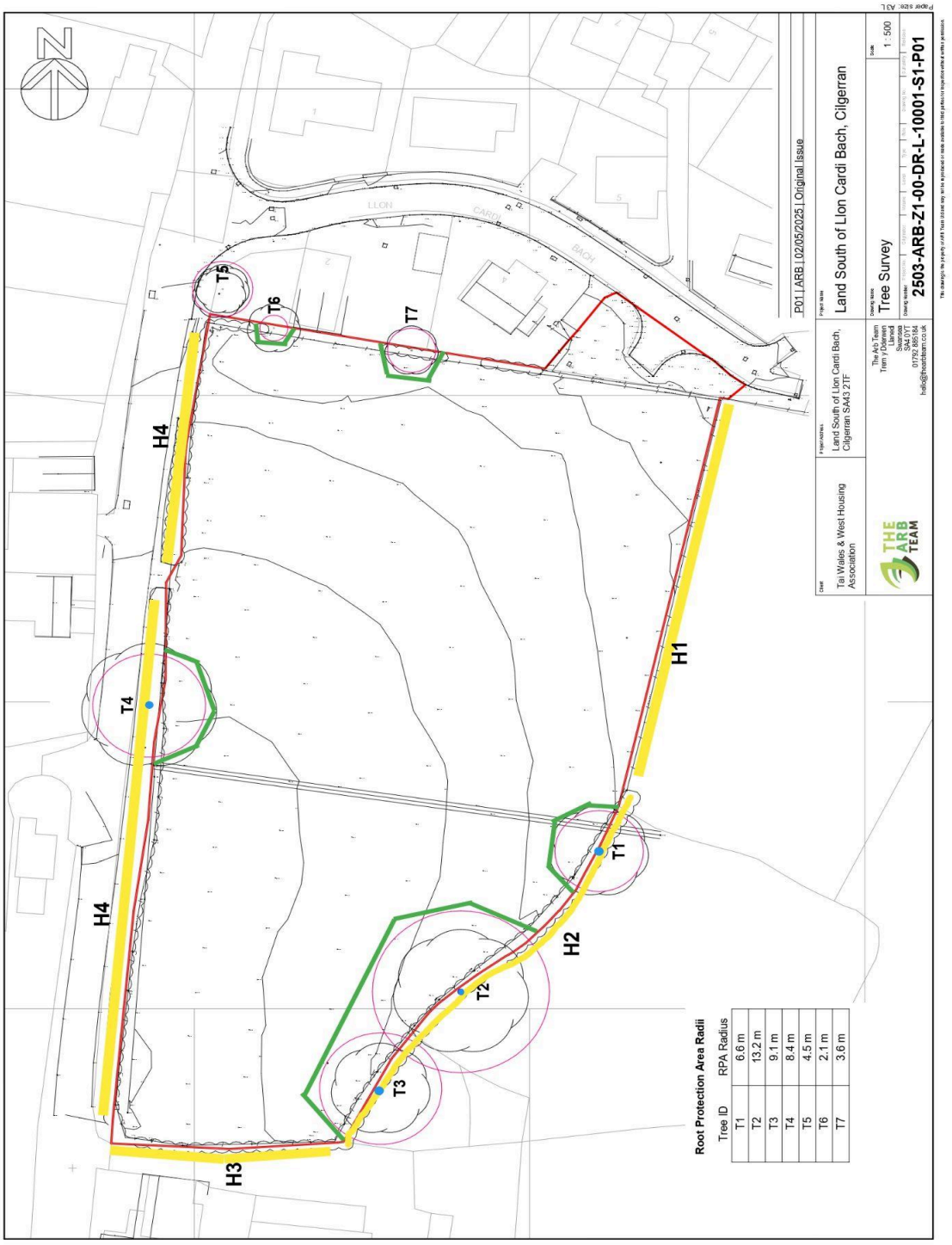


IMAGE A: Trees T1 to T3 and H2

IMAGE B: Tree T4 and H4

IMAGE C: Trees T5 and T6

IMAGE D: Tree T7

Terms and Conditions

The Arb Team, Trem Y Dderwen, Llanedi, Pontarddulais, Swansea, SA4 0YT

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