

BS5837:2012 Tree Survey & Arboricultural Constraints Report

**Location: Proposed car parking areas, Gnoll Country Park,
Neath**

SA11 3DT

Grid Ref: SS76665 97601

w3w:extra.twice.boat

Client: NPTCBC / Andrew Scott

Consultant / Surveyor: Nick Thomas

July 2023

Tree Survey &
Arboricultural Constraints Report
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Site plan(s) showing the position of the schedule trees and the position of the root protection zone fencing.

Summary

Section 1. Introduction

1.1 The following tree report has been prepared at the request of Mr Luke Rees of Andrew Scott Ltd.. The instructions were to survey the trees which are located around the perimeter of the proposed car parking areas and in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction provide a report on all the trees which could be affected by the development. A total of six individual trees and five small groups are shown on the attached site plan and these were the only trees that required surveying for this report.

1.2 The details of the individual 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 in Section 5 . References.](#)

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 Information provided for the survey include one proposed site plan, drawing number SK001.

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

1.6 This report has been issued as a single PDF file. The tree protection plan (TPP) 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 undertaken on the 13th July 2023 and was undertaken from ground level with no climbing inspections involved. The weather conditions during the survey were overcast with light showers.

2.2 The Gnoll country park is an early 18th century landscaped garden covering over 100 acres in the Vale of Neath. Due to its elevated position and location its western woodlands are clearly visible from the town of Neath and its surrounding areas.

The proposed work involves the creation of two new car parking areas to the east and west of the entrance road which will provide a total of ninety six car parking bays. At the present time the two areas are maintained as mown amenity areas. As part of the country parks pitch and putt golf course the western area has a putting green which is currently not in use.

2.3 Root morphology. The only restriction on the root spread of the trees is the main entrance road but due to the total rooting area that is available there will be little impact on the overall root spread of the trees. In all probability the roots will have exploited the undisturbed ground away from the road which is better for vigorous and healthy root growth.

2.4 The trees in this area are not protected with a tree preservation order and are not within a conservation area.

2.5 A total of 6 individual trees and 5 groups were inspected. Their individual positions are plotted on the site plan. All tags have been attached on the tree's main stems at approximately 2 metres above ground level.

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	1	0	0	1
B	4	3	0	0	7
C	1	1	0	0	2
U	1	0	0	0	1

Total A,B,C,U	6	5	0	0	11
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2.7 Soil assessment. The site's soil was assessed by desktop analysis using the Soilsclapes website, www.landis.org.uk/soilsclapes/, which identified the area as having a slowly permeable seasonally wet and acid loam or clay type soil.

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. (mm)	Age	Crown spread (m)				Lower branches	Cat.	Notes and recommended work
					N	E	S	W			
G1	Goat Willow	8	8,9,10, 10,13, 15	SM	n/a	n/a	n/a	n/a	1.5	C2	A group of multi stemmed trees
G2	Cherry, Field Maple, Oak, Sweet Chestnut, Small Leaf Lime	4	6	Y	1.0	1.0	1.0	1.0	1.3	B2	A line of young trees planted in 2021. If required these trees could be relocated.
0179	Birch	9	35	EM	4.7	5.3	3.4	3.8	0.5	B1	
0180	Birch	8	26	EM	3.7	5.0	3.1	3.6	2.0	B1	
0181	Pedunculate Oak	8	28	SM	3.6	6.7	5.6	0.9	2.0	C1	Asymmetric crown
0182	Birch	9	41	EM	5.8	6.0	5.0	5.6	1.2	B1	
0183	Grey Alder	7	36	EM	2.9	3.7	3.0	4.2	2.5	U	Advanced crown dieback and basal decay, remove tree.
0184	Birch	13	51	M	5.0	6.0	4.5	4.5	2.5	B1	One small storm damaged branch suspended on the south side of the crown, remove this branch.

G3	P. Oak	8	14,17,20	SM	n/a	n/a	n/a	3.4	0.3	A2	Planted in the 1990's by the local school children
G4	Cherry, Blackthorn, Birch, Hawthorn, Rowan, Field Maple, Sweet Gum	2-9	12	Y-SM	n/a	3.0	n/a	3.0	0	B2	There are a number of memorial trees within this group and one young dead tree, remove the dead tree.
G5	Alder, Lime, Purple Leaf Sycamore, Manna Ash, Hawthorn	5-12	31	SM-EM	4.3	4.0	5.1	n/a	0.5	B2	
NOTE: The root protection areas protective fencing for the five groups of trees G1 to G5 should be positioned at the measurement shown in Table C, column RPA2 or at the outer branches / drip line of the trees crowns whichever is the greater.											

TABLE C

Tree no.	Species	Mean stem dia. (mm)	RPA 1 (m2)	Minimum radial protection (m)		Justification for RPA modification	Position of protective barrier
				RPA 2	Modified		
G1	Goat Willow	110	N/A	7.8	No		Perimeter of RPA 2
G2	Cherry, Field Maple, Oak, Sweet Chestnut, Small Leaf Lime	60	N/A	1.0	No		As G1
0179	Birch	35	55	4.2	No		As G1
0180	Birch	26	30	3.1	No		As G1
0181	Pedunculate Oak	28	34	3.3	No		As G1

0182	Birch	41	75	4.9	No		As G1
0183	Grey Alder	36	58	4.3	No		Tree to be removed
0184	Birch	51	117	6.1	Yes	With the correct working practices and offsetting the infringement into the RPA will be within the trees tolerance.	4.8 metres from the base of the tree.
G3	P. Oak	17	N/A	2.0	No		As G1
G4	Cherry, Blackthorn, Birch, Hawthorn, Rowan, Field Maple, Sweet Gum	12	N/A	1.4	No		As G1
G5	Alder, Lime, Purple Leaf Sycamore, Manna Ash, Hawthorn	31	N/A	3.7	No	Within RPA of group	As G1

Section 4. Arboricultural Impact Assessment (AIA)

4.1 This section will assess the implications, if any, that the proposed development will have on the individual and groups of trees in the tree schedule – Table B 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 demolition, construction and post development phases and on the assumption that the new visitor centre will be on the same or very similar footprint to the existing building. Any design changes after this time may require an amendment of the AIA.

<u>TABLE D</u>	Issues	Observations	Impact
<i>Design phase</i>	Category A	There is one group G3 in this category	
	Category B	There are four individual trees 0179,0180,0182, 0184 and three groups G2,G4 and G5 in this category.	
	Category C	There is one individual tree 0181 and one group G1 in this category	
	Category U	There is one individual tree 0183 in this category	
	Structures in RPA	To be confirmed	
	Services in RPA	To be confirmed	
	Changes to existing ground levels	To be confirmed	
<i>Construction phase</i>	Demolition	There is no demolition work	
	Site access	With the recommended tree protection measures the existing site access can be used for the construction vehicles and machinery.	
	Working areas	There are sufficient working areas and the root protection areas will not be affected.	
	Site office, storage and welfare unit.	There are sufficient areas outside the root protection areas that are adequate.	
	Vehicle parking	There is adequate car parking.	
<i>Post development</i>	Tree pruning / maintenance	If the tree work in Table B is undertaken before the start of any demolition work any further pruning will be limited to general maintenance.	
	Tree roots	Future root growth is unlikely to affect the car park surface.	

	Shading / periodic nuisance	There will be some shading and issues with falling leaves. General maintenance should keep this issue within acceptable limits.	
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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 Any infringement of the root protection areas of the retained trees to allow a sufficient area for the construction work will require ground protection. This should comprise of a membrane laid on the soil surface with a 10cms covering of wood chippings and finally the installation of bog mats which can then be used for the passage of materials and site staff. Additional measures such as a cellular confinement system for new footpaths may need to be considered.

4.5 Due to the nature of this work there will be very little if any impact on the visual landscape.

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 4.4 above must be implemented.

5.2 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.

5.3 No burning of waste products must be undertaken in the vicinity of retained trees.

5.4 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.

5.5 Soil contamination from cement mixing and washing must be avoided. 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.

5.6 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.

5.7 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.

Section 6. Conclusion

6.1 If the recommendations in BS5837:2012 and this report are followed due to the location of the trees and the location of the new car parking areas this development should not have a significant impact on the majority of the existing trees.

6.2 The RPA of tree 184 is within a number of the new car parking bays. These bays should be relocated or a cellular confinement system will need to be installed.

6.3 Additional precautions such as ground protection will be required for any work within the root protection areas of retained trees.

Section 7. 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). Fay, Dowson & Helliwell.

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

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

<https://treeterms.co.uk>

Appendix 1: Terms used in Table B Tree and root protection area schedules

Tree no.	- tree tag / plan numbers
Tree name	- Common English name
Height	- Height in metres
Stem diameter climbing plants,	- 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.
Age class	- SM - Semi mature EM - Early mature M - Mature LM - Late mature
Crown spread	
Low branches	- Crown radius in metres to North, South, East and West - 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

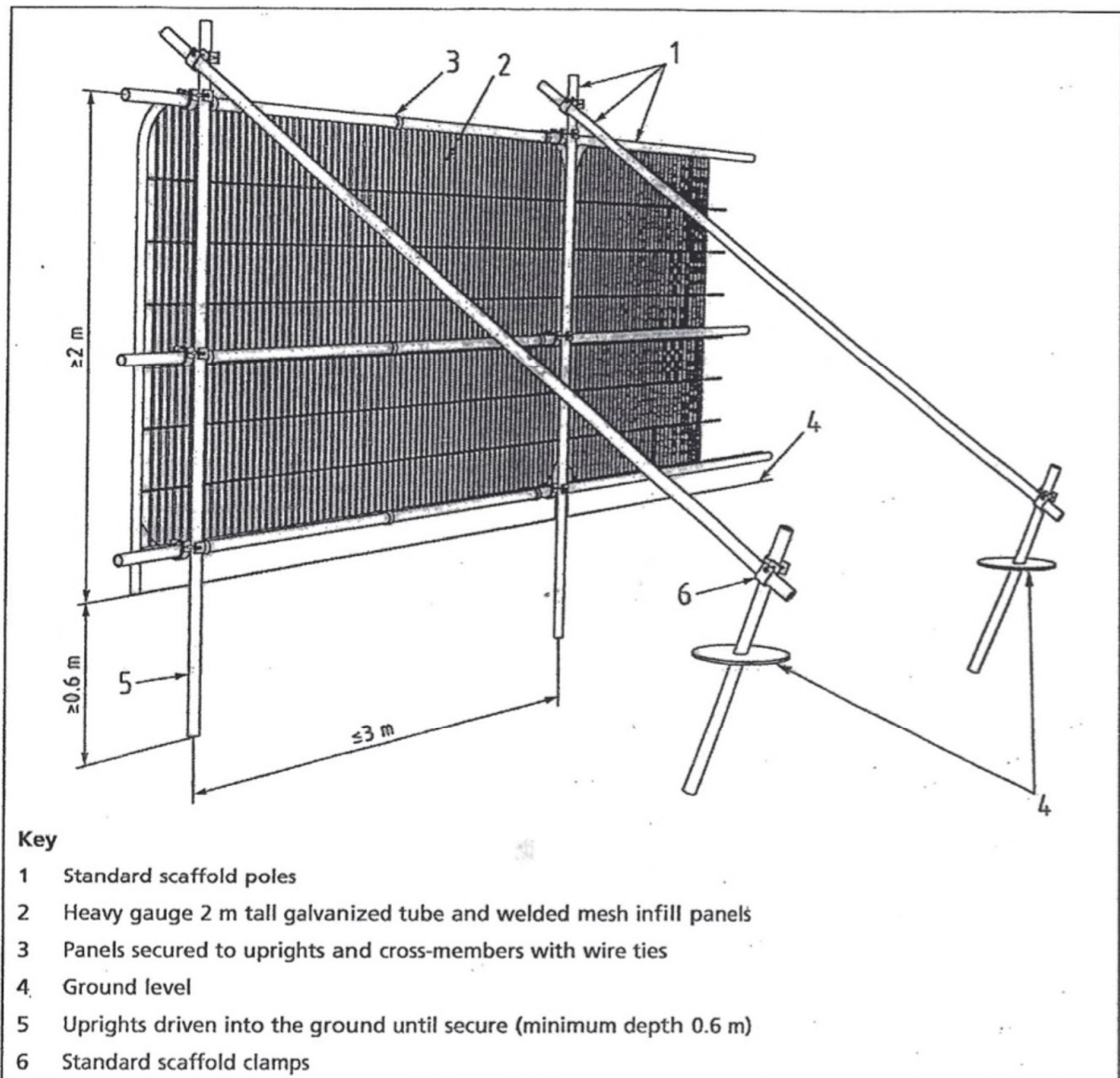


Table 1 Cascade chart for tree quality assessment

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
Category B Trees 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 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 occurring as collectives but situated so as to make little visual contribution to the wider locality
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 with no material conservation or other cultural value

Site and tree location plan

