

BS5837:2012 Tree Survey & Arboricultural Constraints Report

Location: Proposed adventure playground

Gnoll country park

Neath

SA11 3DT

Grid Ref. SS76581 97425

w3w: slang.exists.pushy

Client: NPTCBC / Andrew Scott

Consultant / Surveyor: Nick Thomas

September 2023

Tree Survey &
Arboricultural Constraints Report
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Site plan(s) showing the position of the schedule trees with their colour coded BS category and the position of the root protection zone fencing.

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 within the development area shown on the Davies Landscape Architects plan 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. Due to the dense vegetation access to the individual trees was restricted and for the purpose of this report the area was divided into five areas. Only the trees within these five areas were inspected for this report.

1.2 The details of the individual areas 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 The only information provided for this survey was one proposed layout plan supplied by Davies Landscape Architects and a Scott topographic plan.

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 September 2023 and was undertaken from ground level with no climbing inspections involved. The weather conditions during the survey were calm with sunny periods.

2.2 The Gnoll country 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.

2.3 Root morphology. The root spread of some of the perimeter trees within the inspected area will have been influenced and restricted by the tracks and footpaths and their compacted surface which access and surround the area. The growing environment beneath these tracks and footpaths will be compacted and inhospitable for tree roots.

In all probability the roots will have exploited the undisturbed ground away from the tracks and footpaths 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 five areas were inspected. Their individual positions and boundaries are plotted on the site plan. There are small areas of wet ground with flowing and standing surface water. The wet ground conditions will increase the risk of trees uprooting during high winds and a number of trees have failed and are currently suspended in adjacent trees. A number of dead, dying and unstable trees have been marked with red spray paint. There are varying levels of natural regeneration within the five areas. The majority of the ground flora consists of Bramble, Ferns, Ivy and some Honeysuckle.

2.6 The quality rating for the trees on or affecting this site is summarised as follows. It should be noted that there are a mixture of B, C and U category trees within the individual areas but the predominant tree category has been listed in TABLE A.

TABLE A

BS5837 Quality category	Total number of individual trees surveyed	Total number of tree groups /areas surveyed	Total number of woodlands surveyed	Total number of hedges surveyed	Total
A	0	0	0	0	0
B	0	0	0	0	0

C	0	5	0	0	5
U	0	0	0	0	0
Total A,B,C,U		0	0	0	5

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)				Low branches	Cat.	Notes and recommended work
					N	E	S	W			
A1	Beech, Norway Maple, Sweet Chestnut	5 > 20	75 > 520	Y > EM	N/A	N/A	N/A	N/A	N/A	B2, C2, U	Refer notes section below.
A2	Beech, Goat Willow, Lime, Norway Maple, Silver Birch, Sweet Chestnut	4 > 20	75 > 410	Y > EM	N/A	N/A	N/A	N/A	N/A	B2, C2, U	Refer notes section below.
A3	Alder, Ash, Beech, Goat Willow, Norway Maple, Sweet Chestnut	5 > 20	75 > 530	Y > EM	N/A	N/A	N/A	N/A	N/A	B2, C2, U	Refer notes section below.

A4	Beech, Goat Willow, Norway Spruce, Oak, Silver Birch	4 > 22	75 > 710	Y > EM	N/A	N/A	N/A	N/A	N/A	B2, C2, U	Refer notes section below.
A5	Beech, Goat Willow, Lime, Norway Spruce, Oak, Silver Birch, Rowan	4 > 22	75 > 820	Y > M	N/A	N/A	N/A	N/A	N/A	B2, C2, U	Refer notes section below.
NOTES: A1 – A group of deciduous species with a number of whip type trees. There is significant grey squirrel damage to a large number of Norway Maple. Majority of trees are C category. A2 – As A1. Majority of trees are Norway Maple. Significant grey squirrel damage and localised areas of the invasive species Himalayan Balsam and Rhododendron. A3 – As A1. Majority of trees are Norway Maple with significant grey squirrel damage. A4 – A group of deciduous and coniferous species with a number of large Norway Spruce which were originally retained as part of the woodland management shelter wood system. A5 – As A4 with a small number of dead, semi mature Ash. Localised areas of the invasive species Himalayan Balsam and Rhododendron.											

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		
A1	Beech, N. Maple, S. Chestnut	75 > 520	3 > 124	0.9 > 6.3	Yes	Groups - offset by a maximum of 20% of the m2 and radial RPA.	Perimeter of tree area or group or the nearest side of the footpath.
A2	Beech, G. Willow, Lime, N. Maple, S. Birch, S. Chestnut	75 > 410	3 > 75	0.9 > 5.0	Yes	Groups - offset by a maximum of 20% of the m2 and radial RPA.	Perimeter of tree area or group or the nearest side of the footpath.
A3	Alder, Ash, Beech, Goat Willow, Norway	75 > 530	3 > 130	0.9 > 6.4	Yes	Groups -offset by a maximum of 20% of the m2 and radial RPA.	Perimeter of tree area or group or the nearest side of the footpath.

	Maple, Sweet Chestnut						
A4	Beech, Goat Willow, Norway Spruce, Oak, Silver Birch	75 > 710	3 > 230	0.9 > 8.55	Yes	Groups -offset by a maximum of 20% of the m2 and radial RPA.	Perimeter of tree area or group or the nearest side of the footpath.
A5	Beech, Goat Willow, Lime, Norway Spruce, Oak, Silver Birch, Rowan	75 > 820	3 > 303	0.9 > 9.8	Yes	Groups - offset by a maximum of 20% of the m2 and radial RPA.	Perimeter of tree area or group

Section 4. Arboricultural Impact Assessment (AIA)

4.1 This section will assess the implications, if any, that the proposed development will have on the five areas 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 from information on the current plan. 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 are no trees in this category	
	Category B	The final design has not been confirmed but there are a number of trees in this category.	
	Category C	The majority of the trees in all five areas are in this category.	
	Category U	For safety reasons these trees should be removed prior to the start of any demolition work.	
	Structures in RPA	Various play equipment	

	Services in RPA	There are no services within the RPA's	
	Changes to existing ground levels	To be confirmed	
<i>Construction phase</i>	Demolition	There is no demolition involved with this scheme but various areas of trees and vegetation will require clearance.	
	Site access	With the recommended tree protection measures the existing site access points can be used for the construction vehicles and machinery.	
	Working areas	Some work will be required within the root protection areas therefore additional precautions will be required.	
	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 construction work any further pruning will be limited to general maintenance.	
	Tree roots	Future root growth is unlikely to affect the new structures but the access paths should be inspected on an annual basis and any damage and repaired promptly.	
	Shading / periodic nuisance	There will be some shading and issues with falling leaves. General maintenance should keep this issue within acceptable limits.	

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 will be required for all the new or upgraded footpaths which are within the RPA's of the retained trees.

4.5 Due to the retained trees around the perimeter of the play area there will be a low impact on the areas visual amenity and 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.

5.8 On completion of the development it would be beneficial to the site and surrounding area if an appropriate mixture of tree species was planted. This new planting will provide a natural screen, visual diversity, habitat for wildlife and a broader age class that currently exists.

Section 6. Conclusion

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

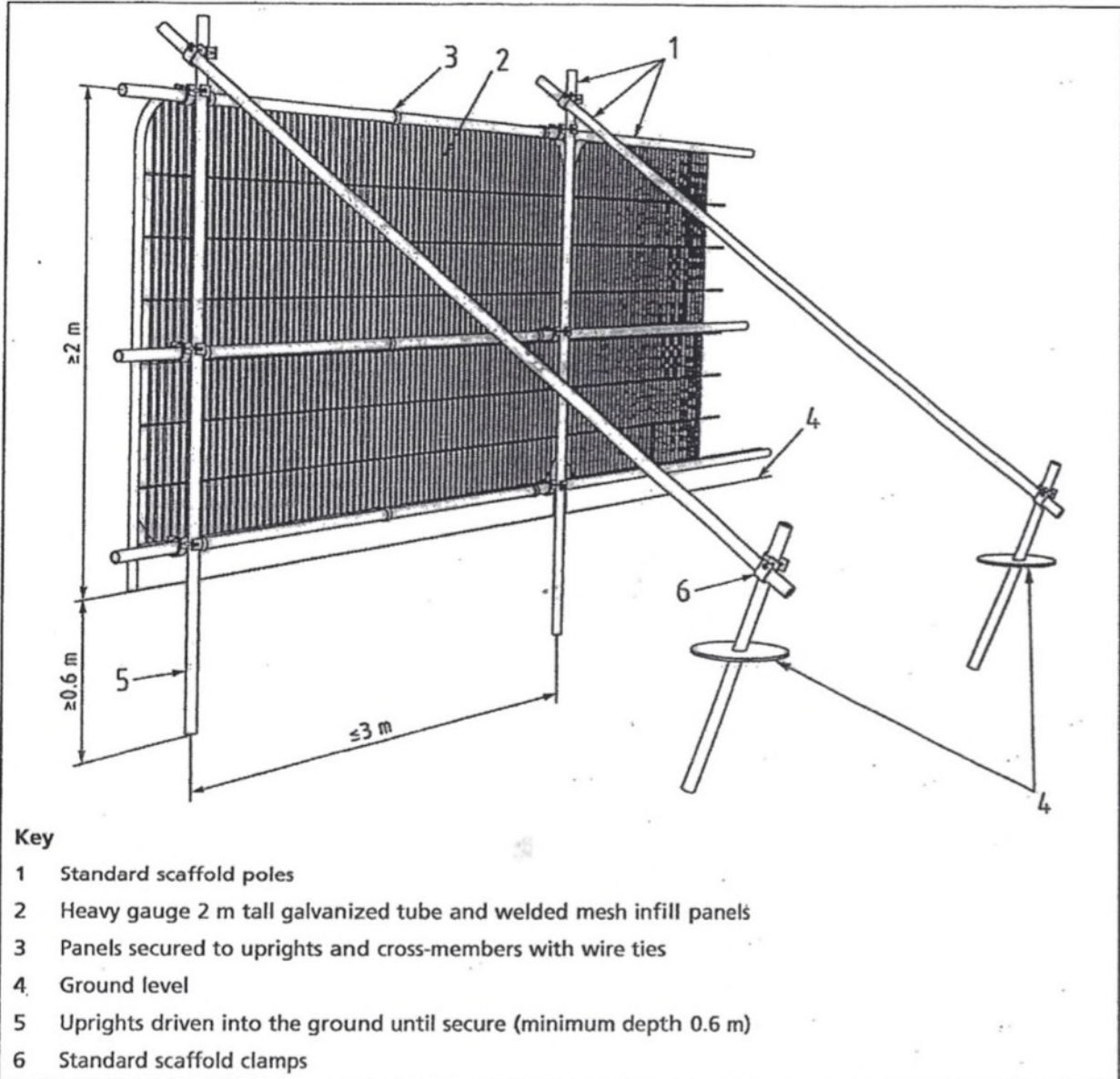


Table 1 Cascade chart for tree quality assessment

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				
NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve;					
<table> <tr> <th>1 Mainly arboricultural qualities</th><th>2 Mainly landscape qualities</th><th>3 Mainly cultural views including conservation</th></tr> </table>			1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural views including conservation
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