

BS5837:2012 Tree Survey & Arboricultural Constraints Report

Location: Pump house yard,

Gnoll country park

Neath

SA11 3DT

Grid Ref. SS76656 97511

w3w:driven.tracks.pumps

Client: NPTCBC / Andrew Scott

Consultant / Surveyor: Nick Thomas

May 2023

Tree Survey &
Arboricultural Constraints Report
CONTENTS

Summary

Section 1	Introduction
Section 2	Inspection and General Observations
Section 3	Tree and root protection area schedules
Section 4	Arboricultural impact assessment
Section 5	Recommendations
Section 6	Conclusion
Section 7	References

APPENDICES

Appendix 1	Terms and definitions used in the tree schedule.
Appendix 2	Design and specification of tree protection barrier.
Table 1	Cascade chart for tree quality assessment

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 located around the pump house yard 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 25 individual trees were inspected 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 The only information provided for this survey was one proposed layout plan supplied by Hiraeth Architecture.

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 31st May 2023 and was undertaken from ground level with no climbing inspections involved. The weather conditions during the survey were warm with sunny periods.

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. Regarding the new service yard it is intended that a ten metre buffer zone of scrub type trees is retained around the perimeter of the new access road, service yard and building. This will reduce the visual impact and prominence of the development.

2.3 Root morphology. The root spread of some of the trees within the inspected area will have been influenced and restricted by the vehicle tracks and footpaths and their impermeable 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 25 trees 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	0	0	0	0
B	5	0	0	0	5
C	8	0	0	0	8
U	12	0	0	0	6

Total A,B,C,U	25	0	0	0	25
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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)				Low branches	Cat.	Notes and recommended work
					N	E	S	W			
134	Sycamore	19	18,18,31,32,33,34,40	EM	5.8	5.0	6.2	4.5	5.0	C1	Multi stemmed with dead and dying branches due to grey squirrel damage, remove dead and dying branches
135	Ash	18	45	EM	0	5.0	6.0	6.0	3.5	U	Remove tree due to Ash dieback disease.
136	Poplar	16	27	SM	6.0	5.0	6.0	6.0	5.0	C1	Very poor form, remove tree.
137	Sycamore	12	29	SM	3.0	5.0	4.5	3.0	0	C1	Extensive grey squirrel damage, remove damaged branches and formative prune.
138	Poplar	13	18	SM	1.5	5.2	0	0	5.0	U	Very poor form with an unbalanced crown, remove tree.
139	Beech	20	48	EM	6.0	6.5	6.0	6.0	1.0	B1	Weak fork at 6 metres above ground level, reduce crown by 2.5 metres and lift crown above road to 5 metres.
140	Poplar	13	24	SM	5.0	6.0	2.0	1.3	5.0	U	Very poor form with crown dieback, remove tree.

141	Beech	20	32,45,53	EM	5.0	6.0	6.0	3.5	0	B1	Numerous forks with included bark, reduce crown by 2.5 metres and lift crown above road to 5 metres.
142	Poplar	16	22	SM	1.5	0	1.0	0	5.0	U	Very poor form, remove tree.
143	Poplar	20	32	SM	0.5	2.0	2.0	6.7	5.0	U	Advanced crown dieback, remove tree.
144	Poplar	14	20	SM	4.5	6.0	2.0	0	5.0	U	Very poor form with an unbalanced crown, remove tree
145	Poplar	8	26	SM	0	0	2.0	6.0	5.0	U	Very poor form with an unbalanced crown, remove tree.
146	Poplar	16	35	EM	3.0	2.0	4.0	6.0	4.5	C1	Remove deadwood and reduce over extended branches in upper crown above road by 3 metres.
147	Poplar	10	32	EM	3.9	6.0	2.0	2.0	5.0	C1	Sever Ivy and reduce one low branch above road.
148	Poplar	18	27	EM	0	2.0	2.0	0	5.0	C1	Remove deadwood in lower crown
149	Poplar	7	21	SM	0	2.0	6.0	0	4.0	U	Very poor form with an unbalanced crown, remove tree.
150	Poplar	21	50	EM	2.0	3.0	4.0	3.0	8.0	U	Remove tree
151	Alder	18	12,14,17 18,19,19 30	EM	4.2	2.2	6.0	8.4	3.0	U	Very poor form with one stem suspended on garage, cut all stems to near ground level and allow to regrow.
152	Ash	21	100	M	6.8	6.8	7.5	7.0	7.0	U	Advanced crown dieback, remove tree
153	Sycamore	18	23,28,40	EM	5.5	6.0	5.0	6.0	1.0	C1	Remove two stems with basal decay and retain third stem.
154	Goat Willow	14	42	OM	7.8	8.0	0	2.0	4.0	U	Very poor form and an unbalanced crown, remove tree.
155	Poplar	21	78	M	8.0	8.0	3.5	7.2	7.0	B1	

156	Sycamore	18	38,39,61	EM	3.8	6.0	7.0	8.0	2.0	B1	Grey squirrel damage on a number of branches.
157	English Elm	7	17,30	SM	6.0	7.0	0	1.0	1.0	C1	
158	Sycamore	18	28,33,66	EM	6.0	5.0	6.0	5.0	1.0	B1	Grey squirrel damage on a number of branches.
NOTE:											

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		
134	Sycamore	29	537	13.1	Yes	Existing road and track	Adjacent to access track and yard
135	Ash	45	92	5.4	N/A	Tree to be removed	
136	Poplar	27	32	3.2	No		As RPA 2
137	Sycamore	29	39	3.5	No		As RPA 2
138	Poplar	18	16	2.2	N/A	Tree to be removed	
139	Beech	48	106	5.8	No	As 082	As RPA 2
140	Poplar	24	26	2.9	N/A	Tree to be removed	
141	Beech	43	268	9.2	N/A		As RPA 2
142	Poplar	22	23	2.7	N/A	Tree to be removed	
143	Poplar	32	48	3.9	N/A	Tree to be removed	
144	Poplar	20	18	2.4	N/A	Tree to be removed	

145	Poplar	26	206	8.1	N/A	Tree to be removed	
146	Poplar	35	55	4.2	No		As per RPA 2
147	Poplar	32	48	3.9	No		As per RPA 2
148	Poplar	27	32	3.2	No		As per RPA 2
149	Poplar	21	20	2.5	N/A	Tree to be removed	
150	Poplar	50	113	6.0	N/A	Tree to be removed	
151	Alder	18	92	5.4	N/A	Tree to be removed	
152	Ash	100	452	12.0	N/A	Tree to be removed	
153	Sycamore	30	133	6.5	No		As per RPA 2
154	Goat Willow	42	81	5.1	N/A	Tree to be removed	
155	Poplar	78	278	9.4	No		As per RPA 2
156	Sycamore	46	302	9.8	No		As per RPA 2
157	English Elm	24	75	4.9	Yes		As per RPA 2
158	Sycamore	42	238	8.7	No		As per RPA 2

Section 4. Arboricultural Impact Assessment (AIA)

4.1 This section will assess the implications, if any, that the proposed development will have on the 25 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 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	There are a small number of trees that will require additional measures when working within their root protection areas	
	Category C	The retention of these trees is optional and should not restrict or prevent any development work.	
	Category U	For safety reasons these trees should be removed prior to the start of any ground work.	
	Structures in RPA	There are no structures within the RPA's	
	Services in RPA	There are no services within the RPA's	
	Changes to existing ground levels	To be confirmed	
<i>Construction phase</i>	Demolition	The demolition of the existing buildings will require the installation of full tree protection measures prior to the start of any site work.	
	Site access	With the recommended tree protection measures the existing site access 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 demolition work any further pruning will be limited to general maintenance.	
	Tree roots	Future root growth is unlikely to affect the new infrastructure but the access roads and parking areas should be inspected on an annual basis and any damage 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 for new footpaths may need to be considered.

4.5 Due to the remaining trees the impact on the visual landscape will be within acceptable limits.

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 retained trees this development should not have a significant impact on the majority of the 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.

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

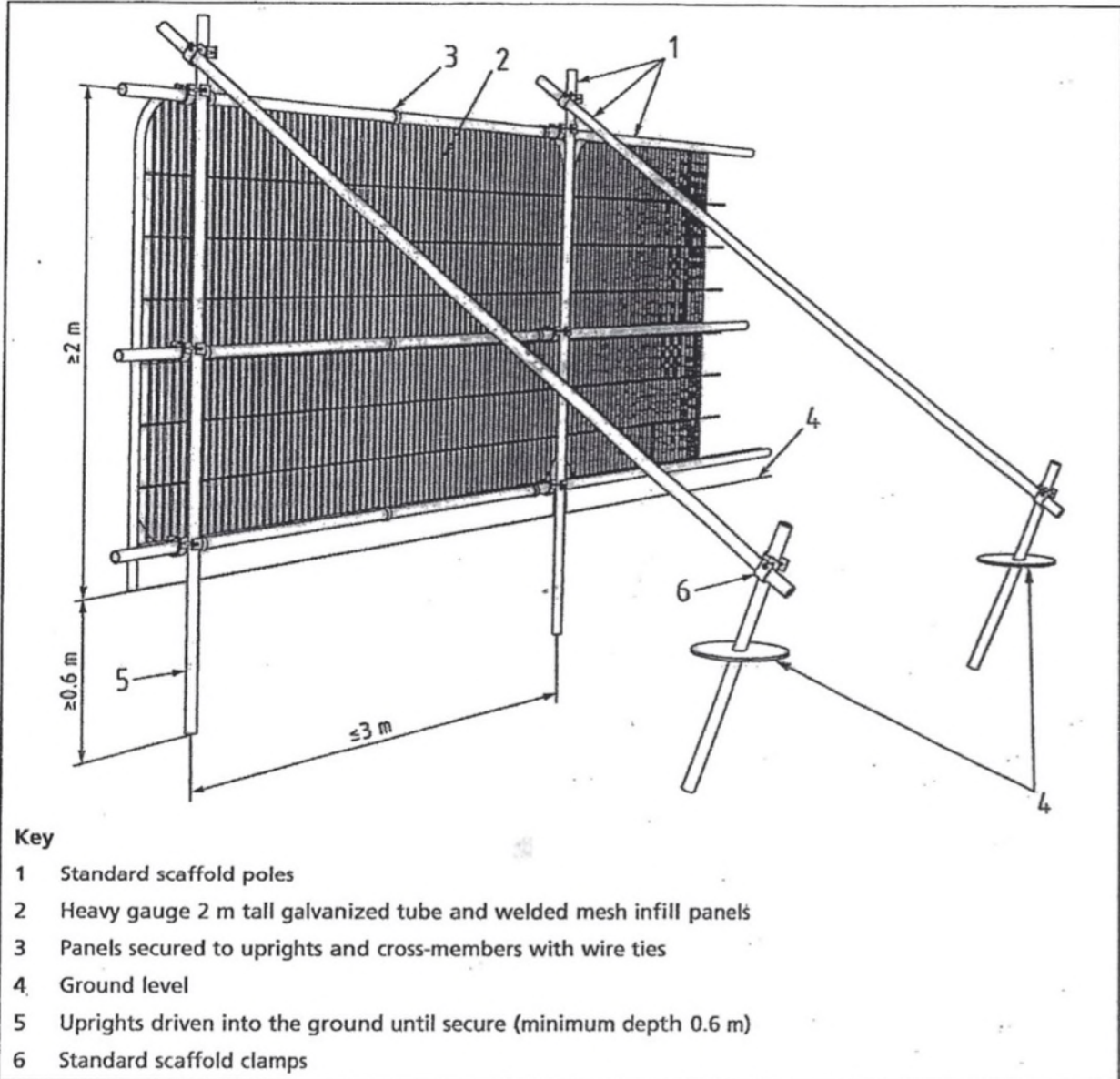


Table 1 Cascade chart for tree quality assessment

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	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 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	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 benefits	Trees with no material conservation or other cultural value	

Site and tree location plan