Arboricultural ASSOCIATION
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ArbTS

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Arboricultural Report

Including:

Tree Survey Data &

Tree Constraints Plan,

Arboricultural Impact Assessment,

Tree Protection Plan and Arboricultural Method Statement

To the British Standard 5837:2012
(Trees in relation to design, demolition and construction. Recommendations)

Date – 3rd September 2025

Site – Crymlyn Parc, Skewen

Project Reference – ArbTS_1945.7_Crymlyn Parc

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1A Tree Survey Data + 1B - Detailed Tree Survey Data Summary

2 Tree Constraints Plan

3 Tree Survey Key

4 Tree Protection Plan

5 Tree Photographs

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1.0 Introduction

1.1 The purpose of this report is to assess the quality of the trees at Crymlyn Parc, Skewen, assess the arboricultural impact of the proposed development design and provide details regarding the protection of retained trees during construction work.

1.2 This report identifies the quality of the trees on this site as categorised by the *British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations*. The survey and findings, as reported here, represent an unbiased third-party opinion offering professional advice on the value of the trees on or adjacent to this site. To illustrate the constraints identified trees pose to the design of future development, a Tree Constraints Plan (TCP) has been drawn, as found in Appendix 2.

1.3 Arboricultural constraints within the surveyed site relate primarily to the preservation of trees recommended for retention. Identified trees must be protected during the construction phase by employing a combination of tree protection methods as illustrated in Appendix 4, Tree Protection Plan and detailed within Section 6 - Arboricultural Method Statement.

1.4 The trees' root system and the associated soil structure is often overlooked during the construction process and can be damaged or altered by compaction, causing significant damage to the health of the tree. Generally, the tree's entire root system is within the top 600mm of soil, where it can be easily damaged. A calculated ground area around the tree should be protected during the onsite construction phase. In this report, it is referred to as the Root Protection Area (RPA).

2.0 The Tree Survey

2.1 The tree survey was conducted by *Stephen Lucocq BSc (Hons), Tech Cert (ArborA), M.Arbor.A* on 15th July and 27th August 2024.

2.2 Trees over 75mm were tagged where appropriate with numbered metal identification tags at around 2.0 metres above ground level.

2.3 All observations were made from the ground with an acoustic-sounding hammer. No invasive decay detective instruments were used.

2.4 The survey was carried out per *British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations.* This standard gives a systematic, consistent, transparent evaluation method for tree surveying.

2.5 The tree survey was conducted with the aid of a topographical survey.

2.6 **Preliminary management recommendations:** The survey has identified preliminary management recommendations for the trees on or adjacent to this site. Details regarding these specified operations are given in this report (See Appendix 1 - Tree Survey Data). Where work priority is stated to be H – High due to safety reasons, these operations should be carried out as soon as possible. Where work priority is

said to be M/H – medium/high or higher, these operations should be undertaken before the commencement of any works on site.

2.7 **Limitations of the tree survey**: Whilst every effort is made to ensure an accurate assessment of the tree's condition during the survey, no responsibility can be taken for resultant damage or injury that occurred by a failing tree. The survey only gives a snapshot of what is visible and is not obscured on the day of the survey. The survey identifies trees of varying quality and their above-ground/below-ground constraints. This survey does not constitute a full tree condition survey/tree risk assessment of the site, and this report is only valid for 24 months from the date of the tree survey.

3.0 The Trees

3.1 The complete tree survey data can be found in Appendix 1A Tree Survey Data

3.2 Tree Survey Summary Table (See Appendix 3 for BS5837 category definitions). (A more detailed Tree Survey Data Summary can be found in Appendix 1B)

BS5837:2012 Quality Category	Total Number of Individual Trees Surveyed	Total Number of Tree Groups Surveyed	Total Number of Tree Areas Surveyed	Total Number of Woodland Areas Surveyed	Total Number of Hedgerows Surveyed	Total
A (High - Most desirable for retention)	4	2	0	0	0	6
B (Moderate - Desirable for retention)	6	0	0	0	0	6
C (Low - Optional for retention)	7	2	0	0	15	24
U (Poor - Unsuitable for retention)	0	0	0	0	2	2
Total A,B,C,U	17	4	0	0	17	38

4.0 Tree Constraints Plan (TCP) Information

4.1 A Tree Constraints Plan (TCP) can be found in Appendix 2 of this report. An introduction to TCP can also be found at the start of this Appendix Section. For further information and details regarding TCP, please see the *British Standard 5837:2012, Trees in relation to design, demolition and construction – Recommendations.*

5.0 Arboricultural Impact Assessment (AIA)

5.1 The following Arboricultural Impact Assessment has been made for the proposed development design.

5.2.1 Tree Loss – AIA – LOW / MODERATE - The following trees and section of hedgerows are required to be removed to facilitate the construction of the proposed development design.

5.2.2 Individual Tree Loss –

- T1 – Oak - Moderate quality (B category) – T1 is a mature boundary oak tree that is assessed to be at the lower end of the B Category classification. This is because it has been repeatedly pruned back from the above electrical lines and has some internal decay of the main trunk. T1 is to be removed to create one access point into the site as defined in the adopted LDP where two access points are required.
- T11 – Small Silver Birch – Low quality (C category)
- T6 – Small Oak – Low quality (C category)

5.2.3 Hedgerow Loss –

- Hedgerow H1 – Length 17 metres - Low quality (C category)
- Hedgerow H2 – Length 3 metres - Poor quality (U category)
- Hedgerow H3 – Length 9 metres - Low quality (C category)

5.2.4 Overall Tree Loss –

Three trees have been identified as being removed to facilitate the construction of the proposed development design. Two of these trees identified for removal are low-quality trees (C Category). These trees should not present a constraint on developing the site. The removal of the one moderate quality tree (B Category =T1) can be readily mitigated by suitable compensatory tree planting within the site.

5.3 Root Protection Area (RPA) – AIA – LOW - RPA potential damage can all be managed through the installation of tree protective fencing, arboricultural watching brief for excavation works within RPA and installation of Cellweb, as designed by an Arboriculturist will ensure no significant long-term adverse impact will occur to any of the retained trees.

5.4 Tree surgery work – AIA – LOW - Some branch reduction/branch pruning work will be required to facilitate this proposed scheme, as detailed in the tree protection plan (Appendix 4). This work will be carried out to the *British Standard 3998:2010 tree work recommendations.* Adhering to this standard will ensure no adverse impact on these trees' long-term health or visual amenity.

5.5 Future Tree Pressures – AIA – LOW - Overall, the design has considered the size and value of the trees on this site to minimise any future pressures to heavily prune or fell the higher-value trees.

5.6.1 Conclusion – AIA (*Including landscape mitigation*) – LOW - The site has several Arboricultural constraints that must be considered in the development design phase. Three trees have been identified as being removed to facilitate the construction of the proposed development design. Two of these trees identified for removal are low-quality trees (C Category). These trees should not present a constraint on developing the site. The removal of the one moderate quality tree (B Category =T1) can be readily mitigated by suitable compensatory tree planting within the site.

5.6.2 The construction of the proposed development, whilst complying with the tree protection scheme as detailed in section 6, will ensure that no significant long-term adverse Arboricultural impact occurs on the health of any retained trees on or adjacent to this site or the long-term amenity of the area.

6.0 Arboricultural Method Statement

6.1 The Tree Protection Plan to facilitate the construction of the development design can be found in Appendix 4 of this report. The Tree Protection Plan must comply with all of the following:

- Be regarded as sacrosanct and follow the sequence of events as detailed in the table below
- Be installed before commencement of any demolishing or construction works on site
- Must not be removed or altered without prior approval of the local planning authority

6.2 The following table overleaf provides a detailed sequence of events that must occur to protect the retained trees during all stages of the construction process. These methods must be communicated to the entire construction team before any work on site.

Stage	Arboricultural Method Statement (In the sequence of events)
1.) Preconstruction *(Prior to any on-site construction work, including demolition work, site material storage etc.)*	**1.1 – Design** areas for **construction site storage** by the site supervisor and the appointed Arboriculturist.
	1.2 – Design position, form and construction methods of **all utility services** with Arboricultural consideration. All underground service designs MUST conform to the NJUG Volume 4 Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. The full document is available at http://www.njug.org.uk/ and BS5837:2012. Local Planning Authority to be consulted on utility service design details and, if satisfied, to be approved in writing before installation during the construction phase.
	1.3– Tree surgery work to be carried out is detailed in the Tree Protection Plan (Appendix 4) of this report and to the *British Standard:3998:2010: Recommendation for tree works.*
	1.4 – Tree protective fencing installed in the position and form as detailed in the Tree Protection Plan (Appendix - 4). Installation is to be supervised by the appointed Arboriculturist. All weather tree construction exclusion zone posters are to be secured to fencing at regular intervals.

	1.5– No DIG Cellweb permanent ground protection installed as designed by the manufacturer, detailed in the Tree Protection Plan (Appendix 4). Installation is to be carried out by an experienced and qualified contractor and additionally supervised by the appointed Arboriculturist.
	1.6 – Site storage area containers installed as designed and supervised by the site supervisor and the appointed Arboriculturist.
	1.7– Onsite meeting with all parties, client, Local Planning Authority tree officer, agent, developer, site supervisor and the appointed Arboriculturist to ensure all tree protection methods are in place as detailed on the Tree Protection Plan (Appendix - 4). Any issues that arise from the site meeting are addressed if required.
	1.8 – Appointed Arboriculturist to document all tree protection methods in situ and photographs taken for reference purposes. Copy of document report sent to all parties.
2.) Construction	**2.1 – The site supervisor is** to be **briefed** by the appointed Arboriculturist regarding the Tree Protection Plan/Methods, and a laminated copy of the plan/methods is to be secured onto the wall in the site supervisor's office. Contact details of the appointed Arboriculturist, Council's Tree Officer, to be included. Emphasis is to be made to the site supervisor on the importance of the Tree Protection Plan/Methods and possible planning enforcement action (Stop Notice), problems with discharging tree protection conditions and/or legal action for noncompliance with these tree protection methods.
	2.2 – All contractors are to be **briefed** by the site supervisor and/or the appointed Arboriculturist regarding the tree protection plan and methods before starting work on site. Emphasis made to contractors on the importance of the Tree Protection Plan/Methods and possible planning enforcement action (Stop Notice), problems with discharging tree protection conditions and/or legal action for noncompliance with these tree protection methods.
	2.3 – Excavation under Arboricultural Supervision to be carried out in areas highlighted in the Tree Protection Plan (Appendix - 4). This work is to be carried out with the use of hand tools, an air spade and possible use of a small excavator (no greater than 2500kg) with a toothless bucket under the constant supervision of the appointed Arboriculturist. The excavator will only work from existing hard surfacing before its removal. Any roots discovered less than 25mm in diameter should be pruned cleanly with a securer or pruning saw. The careful excavation working method is as follows: • Digging started outside the Root Protection Area towards the retained tree. • No roots found to be ripped, pulled or crushed during excavation • Any exposed roots are to be covered with wet Hessian material • Any roots less than 25mm in diameter to be cut with a sharp knife/ secateurs covered with wet Hessian material • If any roots greater than 25mm in diameter are discovered, Arboriculturist to instruct further action. Innovative engineering methods will be sort to retain these roots.
	2.4 – Additional Tree Protection, as designed by the appointed Arboriculturist, to be Installed to protect the newly excavated ground.
	2.5 – The construction phase begins with regular **site inspection visits** from the appointed Arboriculturist (Frequency of visits to be agreed with the LPA) to ensure all tree protection methods are being adhered to**.** Arboriculturist to document findings from the site visits, including any issues identified, how to resolve and photographic evidence. Document report to be sent to all parties within 1 week after the site visit.
	2.6- Tree Safe Construction (Throughout site) – areas outside of the construction exclusion zones, as shown on the tree protection plan, must adhere to the following: •Building materials and fuels such as oil, bitumen or cement should not be stacked or discharged within 20 metres of the tree's stem. •Fires will not be lit beneath any tree or in a place where flames could extend to within 10 metres of the tree.

	•Trees to be retained and protected should not be used as anchorage for services or equipment. •The use of cranes and large machinery on site should be planned and care taken not to damage the trees during the process.
	2.7 – Unforeseen issues which require the alteration of the Tree Protection Plan/Methods, required tree surgery work or immediate remedial work will be submitted to the Local Planning Authority for approval in writing.
3.) Post Construction *(Once all construction work has been completed, this includes all utility services)*	**3.1** – **Tree Protection fencing Removed.**
	3.2 – **Hard and soft landscaping commence -** All landscape team members are to be briefed regarding tree protections by an Arboriculturist.
	3.3 – **Any required remedial tree action is taken,** such as Leaf Mulch Application, soil de-compaction methods, contamination clean up etc., to be carried out.

7.0 Conclusion

7.1 Adhering to the tree protection details in this report, the proposed development can be constructed without any significant long-term adverse impact on the retained trees or the area's amenity.

8.0 Further Information & Qualifications

Stephen Lucocq has been involved in Arboriculture within South Wales for over twenty years. He has worked as an Arborist for many of these years and has an excellent working knowledge of the practical side of the profession. He has always taken an active interest in all areas of Arboriculture and kept up to date with current research and developments.

Qualifications

- First Class BSc (Hons) Degree – Combined Studies - Biology and IT
- Arboricultural Association Technicians Certificate – Level 4 - (Merit)
- PTI - Professional Tree Inspection (Lantra Awards)
- 2D Computer-Aided Design (City and Guilds - Level 3)
- Quantified Tree Risk Assessment (QTRA) – Mike Ellison
- Visual Tree Assessment (VTA) – Mike Ellison
- Arboriculture and Bats (Lantra)
- Industrial Rope Access Trade Association (IRATA)
- Practical Arboriculture Qualifications (NPTC)

Membership

- Arboricultural Association Professional Member (M.Arbor.A)

9.0 Web Information & Bibliography

Web Information

- Arboricultural Association

  http://www.trees.org.uk/

- Cellular Confinement System

  GeoWeb - GreenFix

  CellWeb - Geosynthetics Cellweb

- Underground Utilises Installation

  http://www.njug.org.uk/

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- British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations UK; British Standards Intuition
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10.0 Appendix 1A -Tree Survey Data

Tree ID #	Tree Species	Age	Stems	Stem Diam (mm)	Cat	Height + (Lower Branch Height)	Nrth	Est	Sth	Wst	Phys Cond	Struc Cond	Est. Remain Contrib	Comments		Preliminary Management Recommendations		Work Priority	RPR (m)	RPA (m2)
G1	Acer pseudoplatanus (Sycamore)	M	1	650	A2	14(4)	7	7	7	7	G/F	N/A	40+	low A category. Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	multistemmed forming a rough whole, tree group of fair to good form, forms part of a old hedgerow bank of trees of landscape value				7.8	191.2
G2	Acer pseudoplatanus (Sycamore)	M	1	650	A2	14(4)	7	7	7	7	G/F	N/A	40+	low A category. Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	multistemmed forming a rough whole, tree group of fair to good form, forms part of a old hedgerow bank of trees of landscape value				7.8	191.2
G3	Quercus robur (Common Oak),Salix caprea (Goat Willow)	M	1	350	C2	9(2)	5	5	5	5	F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	small group of boundary trees				4.2	55.42
G4	Betula pendula (Silver Birch),Acer pseudoplatanus (Sycamore),Sambucus nigra (Elder)	M	1	350	C2	8(2)	5	5	5	5	F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	small to medium boundary tree group				4.2	55.42
H1	Crataegus monogyna (Hawthorn),Ilex aquifolium (Holly)	EM	1	75	C2	3(0)	2.5	2.5	2.5	2.5	G/F	G/F	10+						0.9	2.55
H2	Ilex aquifolium (Holly)	EM	1	150	U	4(1)	2	2	2	2	P	P	<10		small section of declining hedgerow, appears to have had animal damage				1.8	10.18
H3	Ilex aquifolium (Holly),Cotoneaster frigidus (Cotoneaster)	EM	1	150	C2	4(1)	2.5	2.5	2.5	2.5	F	F	10+		section of hedgerow, appears to have had animal damage				1.8	10.18
H4	Ilex aquifolium (Holly),Betula pendula (Silver Birch)	EM	1	150	C2	4(1)	3	3	3	3	F	F	10+		section of elapsed managed hedgerow, appears to have had animal damage				1.8	10.18
H5	Ilex aquifolium (Holly)	EM	1	150	C2	4(1)	3	3	3	3	G/F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	section of overgrown hedgerow				1.8	10.18
H6	Ilex aquifolium (Holly)	EM	1	150	C2	4(1)	3	3	3	3	G/F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	section of elapsed managed hedgerow				1.8	10.18
H7	Ilex aquifolium (Holly),Crataegus monogyna (Hawthorn)	EM	1	150	C2	4(1)	3	3	3	3	G/F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	section of elapsed managed hedgerow				1.8	10.18

Tree ID #	Tree Species	Age	Stems	Stem Diam (mm)	Cat	Height + (Lower Branch Height)	Nrth	Est	Sth	Wst	Phys Cond	Struc Cond	Est. Remain Contrib	Comments		Preliminary Management Recommendations		Work Priority	RPR (m)	RPA (m2)
H8	Crataegus monogyna (Hawthorn)	EM	1	150	C2	4(1)	3	3	3	3	G/F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	section of elapsed managed hedgerow				1.8	10.18
H9	Ilex aquifolium (Holly)	EM	1	150	C2	3(1)	3	3	3	3	G/F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	section of elapsed managed hedgerow				1.8	10.18
H10	Crataegus monogyna (Hawthorn)	EM	1	150	C2	3(1)	2	2	2	2	G/F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	section of elapsed managed hedgerow				1.8	10.18
H11	Crataegus monogyna (Hawthorn)	EM	1	150	U	3(1)	2	2	2	2	F/P	F/P	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	section of elapsed managed hedgerow, stem decay noted				1.8	10.18
H12	Ilex aquifolium (Holly),Crataegus monogyna (Hawthorn),Acer pseudoplatanus (Sycamore)	M	1	200	C2	4(0)	3	3	3	3	F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	overgrown hedgerow				2.4	18.1
H13	Ilex aquifolium (Holly),Crataegus monogyna (Hawthorn),Acer pseudoplatanus (Sycamore),Quercus robur (Common Oak),Salix caprea (Goat Willow)	M	1	250	C2	5(0)	4	4	4	4	F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	overgrown hedgerow				3	28.28
H14	Quercus robur (Common Oak),Ilex aquifolium (Holly)	M	1	350	C2	5(2)	4	4	4	4	F	F	10+		small section of elapsed managed hedgerow				4.2	55.42
H15	Crataegus monogyna (Hawthorn),Ilex aquifolium (Holly)	M	1	150	C2	4(1)	2	2	2	2	G/F	F	10+		overgrown hedgerow				1.8	10.18
H16	Crataegus monogyna (Hawthorn),Ilex aquifolium (Holly)	M	1	150	C2	4(1)	2	2	2	2	G/F	F	10+		overgrown hedgerow				1.8	10.18
H17	Ilex aquifolium (Holly),Crataegus monogyna (Hawthorn),Acer pseudoplatanus (Sycamore),Quercus robur (Common Oak),Salix caprea (Goat Willow)	M	1	250	C2	5(0)	4	4	4	4	F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	overgrown hedgerow				3	28.28
T1	Quercus robur (Common Oak)	M	1	800	B3	9(2)	4	6	6	6	G/F	F	20+	low B category.	small hedge bank oak, trunk damage with dysfunction and internal decay with surrounding callus growth noted, northern branches cut back from electrical lines				9.6	289.6

Tree ID #	Tree Species	Age	Stems	Stem Diam (mm)	Cat	Height + (Lower Branch Height)	Nrth	Est	Sth	Wst	Phys Cond	Struc Cond	Est. Remain Contrib	Comments		Preliminary Management Recommendations		Work Priority	RPR (m)	RPA (m2)
T2	Acer pseudoplatanus (Sycamore)	M	1	350	C2	5(2)	5	3	3	3	G/F	N/A	10+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	topped sycamore tree under electrical lines				4.2	55.42
T3	Betula pendula (Silver Birch)	M	1	370	B2	10(2)	3	6	5	4	G/F	F	20+	low B category.	tree of fair form, cut back slightly from electrical lines				4.44	61.94
T4	Quercus robur (Common Oak)	M	1	800	B2	10(2)	6	6	6	6	G/F	N/A	40+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	boundary oak tree short and broad in form				9.6	289.6
T5	Quercus robur (Common Oak)	M	1	900	A2	10(2)	8	8	8	8	G/F	N/A	40+	Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	boundary oak of good form and of some age				10.8	366.5
T6	Quercus robur (Common Oak)	SM	1	200	C2	7(2)	3	3	3	3	F	F	10+						2.4	18.1
T7	Quercus robur (Common Oak)	M	1	600	B2	12(2)	7	7	7	6	G/F	N/A	20+	Ivy on tree. Surrounding vegetation prevented close inspection of the tree therefore all observations and measurements are estimated.	open grown oak of fair to good form				7.2	162.9
T8	Betula pendula (Silver Birch)	EM	1	270	C2	8(1)	3	3	3	3	F	F	10+						3.24	32.98
T9	Acer pseudoplatanus (Sycamore)	EM	1	250	C2	8(1)	3.5	3.5	3.5	3.5	F	F	10+						3	28.28
T10	Betula pendula (Silver Birch)	M	1	450	B2	13(3)	4	5	3	2	G/F	F	20+						5.4	91.62
T11	Betula pendula (Silver Birch)	M	1	450	C2	13(3)	6	5	1	2	G/F	F	10+	high C category.	suppressed in form, some internal hollowing of trunk some surface root damage noted				5.4	91.62
T12	Quercus robur (Common Oak)	M	1	580	B2	11(3)	4	6	5	4	G/F	F	20+		oak of fair form, some surface root damage noted				6.96	152.2
T13	Ilex aquifolium (Holly)	OM	1	350	C2	5(2)	4	4	4	4	F	F	10+	Sparse foliage cover.					4.2	55.42
T14	Quercus robur (Common Oak)	M	1	550	A2	13(4)	7	8	7	8	G/F	G/F	40+		field boundary oak of fair to good form, some surface root damage noted				6.6	136.9
T15	Quercus robur (Common Oak)	M	1	700	A2	13(4)	8	8	8	8	G/F	F	40+		field boundary oak of fair to good form, some surface root damage noted				8.4	221.7
T16	Quercus robur (Common Oak)	M	2	#####	A2	13(4)	9	10	9	9	G/F	G/F	40+		field boundary oak of fair to good form, twin stem				11.1	384.3

Tree ID #	Tree Species	Age	Stems	Stem Diam (mm)	Cat	Height + (Lower Branch Height)	Nrth	Est	Sth	Wst	Phys Cond	Struc Cond	Est. Remain Contrib	Comments	Preliminary Management Recommendations	Work Priority	RPR (m)	RPA (m2)
T17	Betula pendula (Silver Birch)	M	2	350	C2	8(3)	2	5	2	5	F/P	F/P	10+	low C category. Sparse foliage cover. Suppressed growth from surrounding trees.			5.94	110.9

10.0 Appendix 1B – Detailed Tree Survey Data Summary

(Please see Appendix 3 - Tree Survey Key)

Field Usage Results.		
Total Records: 38		
Type	Count	% of Total
T	17	44.7
G	4	10.5
H	17	44.7
Tree Species	Count	% of Total
Quercus robur (Common Oak)	9	23.7
Ilex aquifolium (Holly)	5	13.2
Crataegus monogyna (Hawthorn)	3	7.9
Acer pseudoplatanus (Sycamore)	4	10.5
Betula pendula (Silver Birch)	5	13.2
Average Stem Diameter	Count	% of Total
<100	1	2.6
<250	14	36.8
<500	13	34.2
<750	6	15.8
<1000	4	10.5
Cat	Count	% of Total
A2	6	15.8
B2	5	13.2
B3	1	2.6
C2	24	63.2
U	2	5.3
Age	Count	% of Total
SM	1	2.6
EM	13	34.2
M	23	60.5
OM	1	2.6
Height	Count	% of Total
<5	14	36.8

<10	12	31.6
<15	12	31.6
Phy Cond	Count	% of Total
G/F	23	60.5
F	12	31.6
F/P	2	5.3
P	1	2.6
Stuc Cond	Count	% of Total
G/F	3	7.9
F	15	39.5
F/P	2	5.3
P	1	2.6
N/A	17	44.7
Est. Remain Contrib	Count	% of Total
<10	1	2.6
10+	25	65.8
20+	4	10.5
40+	8	21.1

10.0 Appendix 2 - Tree Constraints Plan

An introduction to the Tree Constraints Plan (TCP)

Trees identified to be retained should be treated as constraints to the design of future development. A Tree Constraints Plan has been drawn and can be found over leaf.

- **Tree Quality** - The TCP highlights the above and below-ground constraints each tree poses to design future development schemes. Further, the BS5837 tree quality category (A - High, B - Moderate, C - Low and U- Unsuitable for retention) are coloured coded as solid circles at the centre of the tree's position.

- **Root Protection Area** – The magenta circle on the TCP sets out the root protection area (RPA). No construction work in this area, ground-level alteration or site traffic (machinery or persons) should occur. This prevents damage to tree roots and soil compaction. (Where possible, an Arboriculturist can design suitable tree protection methods to facilitate construction work/site traffic within these areas).

- **Tree Canopy -** The green circle/oval on the TCP sets out the above-ground constraints of tree canopy spread. Within this area, no construction work or site traffic (machinery or persons) should occur if the tree is to be retained. This prevents damage to the tree branches and trunk. (Where possible, an Arboriculturist can design suitable tree protection methods to facilitate construction work/site traffic within these areas).

- **Tree Shading** – Shade from the retained trees should be considered in the development design. Depending on the tree's height and width, the shade cast will be from a North West to East pattern through the central part of the day.

- **Tree Future growth** - Within future development design, consideration should also be given to the ultimate height and extent of the canopy spread of all trees within site identified to be retained.

Tree Constraints Plan

Site - Crymlyn Parc, Skewen

Project Ref - 1945.7

Scale 1:750 @ A2

KEY BS 5837:2012 Tree Quality (Colour Coded) (Individual Tree)

- Category A (High) (*Highly desirable for retention*)
- Category B (Moderate) (*Desirable for retention*)
- Category C (Low) (*Optional for retention*)
- Category U (Poor) (*Unsuitable for retention*)

Tree Key - Individual Trees

Branch Spread *(Measured on the North, East, South and West side of Tree)*

T1-Beech

Tree Species *(Common Tree Name Shown)*

Tree ID# (T- Individual Tree)

Root Protection Area (RPA) *(A layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.)*

Tree Key - Group/Area/Woodland/Hedgerow

Tree ID# (G-Tree Group, A-Tree Area, W-Woodland, H- Hedgerow)

G3 - Ash

Tree Species *(Common Tree Name Shown)*

BS 5837:2012 Tree Quality *(Colour Coded as for individual trees)*

Average Branch Spread

Shade Pattern - shade pattern not shown on plan *(Early morning shade starting North West through to evening shade to the East)*

Definitions of BS5837:2012 Categories for Trees, Woodlands and Hedgerows (Colour Coded):

A - Those of high quality with an estimated remaining life expectancy of at least 40 years. (*Highly desirable for retention*)

B - Those of moderate quality with an estimated remaining life expectancy of at least 20 years. (*Desirable for retention*)

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. (*Optional for retention*)

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. (*Unsuitable for retention unless provides high conservation value*)

Please Note:

Barriers and Ground Protection must be designed by an arboriculturist, installed before materials or machinery is bought onto site and before any demolition, development or stripping of soil commences. Once erected, barriers and ground protection should be regarded as sacrosanct, and should not be removed or altered without prior recommendation by an Arboriculturist and approval of the Local Planning Authority (LPA).

Tree Constraints Plan

Site - Crymlyn Parc, Skewen

Project Ref - 1945.7

Scale 1:750 @ A2

KEY BS 5837:2012 Tree Quality (Colour Coded) (Individual Tree)

- Category A (High) (*Highly desirable for retention*)
- Category B (Moderate) (*Desirable for retention*)
- Category C (Low) (*Optional for retention*)
- Category U (Poor) (*Unsuitable for retention*)

Tree Key - Individual Trees

Branch Spread (Measured on the North, East, South and West side of Tree)

T2-Beech

Tree Species (Common Tree Name Shown)

Tree ID# (T- Individual Tree)

Root Protection Area (RPA) *(A layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.)*

Tree Key - Group/Area/Woodland/Hedgerow

Tree ID# (G-Tree Group, A-Tree Area, W-Woodland, H- Hedgerow)

G3 - Ash

Tree Species (Common Tree Name Shown)

BS 5837:2012 Tree Quality (Colour Coded as for individual trees)

Average Branch Spread

Shade Pattern - shade pattern not shown on plan *(Early morning shade starting North West through to evening shade to the East)*

Definitions of BS5837:2012 Categories for Trees, Woodlands and Hedgerows (Colour Coded):

A - Those of high quality with an estimated remaining life expectancy of at least 40 years. (*Highly desirable for retention*)

B - Those of moderate quality with an estimated remaining life expectancy of at least 20 years. (*Desirable for retention*)

- Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm. (*Optional for retention*)

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. (*Unsuitable for retention unless provides high conservation value*)

Please Note:

Barriers and Ground Protection must be designed by an arboriculturist, installed before materials or machinery is bought onto site and before any demolition, development or stripping of soil commences. Once erected, barriers and ground protection should be regarded as sacrosanct, and should not be removed or altered without prior recommendation by an Arboriculturist and approval of the Local Planning Authority (LPA).

10.0 Appendix 3 - Tree Survey Data Key

- **Tree ID # -** Identifies the location of individual trees (T-ID Number), Groups of trees (G-ID Number), Area of trees (A-ID Number), Hedgerow (H-ID Number), Woodland (W-ID Number), Row of trees (R-ID Number) and tree Stumps (S-ID Number) on the accompanying plan. *(Please note: A group of trees here refers to two or more standing trees that form a visual whole, whereas an area of trees refers to dispersed individual trees standing within the site)*

- **Tree Species -** Scientific names and common tree name in brackets are generally shown.

- **Age**
  - (Y) Young – Less than 1/3 of life completed
  - (SM) Middle Aged - 1/3 - 2/3 of life completed
  - (EM) Early Mature – Just entering Maturity
  - (M) Mature – more than 2/3 of life completed
  - (OM) Over Mature - more than 3/3 of life completed and declining
  - (V) Veteran - (v) Veteran – Veteran trees have no precise definition but are trees considered to be of biological aesthetic or ecological value because of their age

- **Stems –** Number of tree stems used to calculate the RPR/RPA

- **Stem Diam** (mm) - Diameter of tree stem measured in millimetres for single stem trees or average stem diameter calculated for multi-stemmed trees as detailed in section 4.6 & Annex C of the British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations. The height above ground level where the stem measurement was taken will be shown if not measured at 1.5 metres above ground level. *(Please note: that the stem diameter of certain trees will have to be estimated due to difficulties in taking measurements or for trees with a large number of stems)*

- **Cat** – Tree Quality Category - British Standard 5837:2012 A, B, C, U + 1, 2, 3

  Based on BS5837:2012, categories A, B, C, and U provide the basis for prioritising trees for retention:

  - A – Those of high quality with an estimated remaining life expectancy of at least 40 years. (*Most desirable for retention*)
  - B - Those of moderate quality with an estimated remaining life expectancy of at least 20 years. (*Desirable for retention*)
  - 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. (*Optional for retention*)
  - 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. (*Unsuitable for retention unless provides high conservation value*)

Retention Criteria Subcategories: Used for identifying subcategories

E.g. A2 = A high-quality tree with high landscape qualities (further details can be found in British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations UK; British Standards Intuition)

- 1 – Mainly Arboricultural qualities
- 2 – Mainly landscape qualities
- 3 – Mainly cultural values, including conservation

- **Height + (Lower Branch Height) -** Tree height in metres and in brackets height in metres of the crown (tree branches) clearance at its lowest point above adjacent ground levels.

- **Nrth, Est, Sth, Wst** - Crown Spread (Metres) -Tree branch spread in metres measured in four directions (North, East, South, West) from the trunk.

- **Phys Cond -** Physiological Condition Indicating the health of the tree -

  - (G) Good
  - (F) Fair
  - (P) Poor
  - (D) Dead

- **Struc Cond –** Structural Condition indicating the structural integrity of the tree -

  - (G) Good – No, or remediable physical defects or decay
  - (F) Fair - Physical non-remediable defects or decay present, not presenting imminent danger but should be monitored
  - (P) Poor - physical non-remediable defects or decay present, tree liable to imminent collapse or loss of major limbs.
  - (D) Dead

- **Est. Remain Contrib - (<10, 10+, 20+, 40+)**

  The trees estimated remaining contribution in years, recorded as:

  - <10 – less than 10 years
  - 10+ – at least 10 years
  - 20+ – at least 20 years
  - 40+ – at least 40 years

- **Comments –** Additional Comments, if required

- **Preliminary Management Recommendations –** Work Recommendations, including further investigation of suspected defects that require more detailed assessment and pose potential for wildlife habitat.

- **Work Priority -** Work Priority -This gives a work priority rating of preliminary management for each tree.
    - H - High – Urgent work to be carried out as soon as practicable due to safety reasons (Within 14 days).
    - H/M – High - Medium – Work to be carried out within 6 months/or before the construction phase begins
    - M - Medium – Work to be carried out in 12 months
    - L - Low – After consideration/Re-inspect in 18-24 months
    - Blank – No work required.

- **RPR –** Root protection radius / **RPA -** Root Protection Area **-** Is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability and where the protection of the roots and soil structure is treated as a priority. RPR is a circular area measured as a radius in metres from the tree's centre, or RPA is an area in metres squared. This area may be changed in shape but not reduced in size, providing adequate protection for the tree's rooting system.

10.0 Appendix 4 – Tree Protection Plan

Tree Protective Fencing (High Risk)

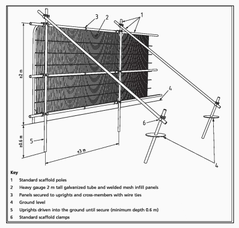
- Trees for removal to be identified from the drawing and marked by an arboriculturist.
- No vehicles to enter the grass verge or root protection zone during tree removal or fencing installation/removal.
- Fencing to be installed prior to any construction works (including demolition, materials delivery, works compound installation).
- The location of the tree protective fencing is indicative only and must not be directly measured from this plan. Its true location must be surveyed accurately on site and where applicable be measured from the tree centre by the stated dimension value.
- Fencing to remain in place until all construction works have ceased.

BS5837: 2012 Recommendations (extract)

6.2.2 - Barriers
6.2.2.1 - Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.
6.2.2.2 - The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed.

Fencing Specification

The fencing will comprise of standard GS7/Heras styled steel self-supporting security fencing panels. The panels must be securely clamped together. They must be secured to the ground with robust steel stakes to a depth of 600mm. These are securely clamped to the panels. **The use of steel mesh panels in conjunction with just clamps and self supporting bases is not acceptable for use.** They must be secured to the ground with stakes to prevent movement. Where stated, additional bracing of the panels must use angled scaffolding poles to prevent further movement (see diagram).



Why Is Fencing Erected Around Trees?

- The major cause of damage to trees on construction sites is due to soil compaction.
- Roots use the spaces between soil particles to obtain Oxygen, Water and Nutrients.
- Heavy plant and machinery compresses (compacts) the soil, squashing out the air spaces and preventing root function.
- A compacted soil structure will stay compacted.
- Consequently the tree suffers and will show signs of branch die-back.
- Symptoms such as die-back may take several years to appear.
- Soil compaction over roots can be prevented by maintaining a fenced exclusion zone over the tree roots.
- The exclusion zone is calculated using British Standard 5837.
- Protective Fencing is installed around the calculated area.
- Protective Fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subjected to legal action.

Tree Protective Fencing (Low Risk)

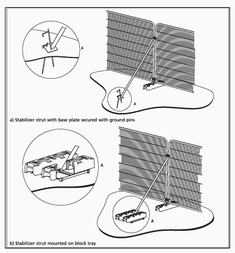
- Trees for removal to be identified from the drawing and marked by an arboriculturist.
- No vehicles to enter the grass verge or root protection zone during tree removal or fencing installation/removal.
- Fencing to be installed prior to any construction works (including demolition, materials delivery, works compound installation).
- The location of the tree protective fencing is indicative only and must not be directly measured from this plan. Its true location must be surveyed accurately on site and where applicable be measured from the tree centre by the stated dimension value.
- Fencing to remain in place until all construction works have ceased.

BS5837: 2012 Recommendations (extract)

6.2.2.3 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority.

Fencing Specification

For example : 2metre tall welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins. Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g.due to the presence of underground services, the stabilizer struts should be mounted on a block tray. (See Diagram Below)



Why Is Fencing Erected Around Trees?

- The major cause of damage to trees on construction sites is due to soil compaction.
- Roots use the spaces between soil particles to obtain Oxygen, Water and Nutrients.
- Heavy plant and machinery compresses (compacts) the soil, squashing out the air spaces and preventing root function.
- A compacted soil structure will stay compacted.
- Consequently the tree suffers and will show signs of branch die-back.
- Symptoms such as die-back may take several years to appear.
- Soil compaction over roots can be prevented by maintaining a fenced exclusion zone over the tree roots.
- The exclusion zone is calculated using British Standard 5837.
- Protective Fencing is installed around the calculated area.
- Protective Fencing is a condition of planning approval, if it is removed or repositioned the construction firm is in breach of a condition and may be subjected to legal action.

Key : Tree Protection Methods

- Temporary Tree Protective Fencing (High Risk) -*(Not to be altered without prior approval from the Local Planning Authority)*
- Temporary Tree Protective Fencing (Low Risk) -*(Not to be altered without prior approval from the Local Planning Authority)*
- Construction Exclusion Zone *(No access, storage of any building material or equipment at any time for the entire construction period)*
- Trees to be removed to facilitate construction work *(See Section 5.2 for details)*
- Trees surgery operations required - to *BS3998:2010 :Tree works Recommendations (See Section 5.4 for details)*
- Permanent Ground protection - NO DIG - 3D Cellweb (See Diagram 1 below)
- Excavation work to be carried out under the supervision of an Arboriculturist (Clean root pruning, use of hand tools, airspade and toothless bucket on small excavator (3000kg)

Please Note:
Arboricultural Method Statement:
MUST be followed in sequence, include site supervision by an Arboriculturist where specified and adhered to at all times. Details can be found in Section 6 of this report. Noncompliance with this method statement may result in planning enforcement action or prosecution.

Tree Protection Plan

Site - Crymlyn Parc, Skewen

Project Ref - 1945.7

Scale 1:750 @ A2

KEY BS 5837:2012 Tree Quality (Colour Coded) (Individual Tree)

- Category A (High) (*Highly desirable for retention*)
- Category B (Moderate) (*Desirable for retention*)
- Category C (Low) (*Optional for retention*)
- Category U (Poor) (*Unsuitable for retention*)

Tree Key - Individual Trees

Branch Spread *(Measured on the North, East, South and West side of Tree)*
T - Beech
Tree Species *(Common Tree Name Shown)*
Tree ID# (T - Individual Tree)

Root Protection Area (RPA) *(A layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.)*

Tree Key - Group/Area/Woodland/Hedgerow

Tree ID# (G-Tree Group, A-Tree Area, W-Woodland, H- Hedgerow)
G3 - Ash
Tree Species *(Common Tree Name Shown)*
BS 5837:2012 Tree Quality (Colour Coded as for individual trees)
Average Branch Spread

Shade Pattern - shade pattern not shown on plan *(Early morning shade starting North West through to evening shade to the East)*

Definitions of BS5837:2012 Categories for Trees, Woodlands and Hedgerows (Colour Coded):

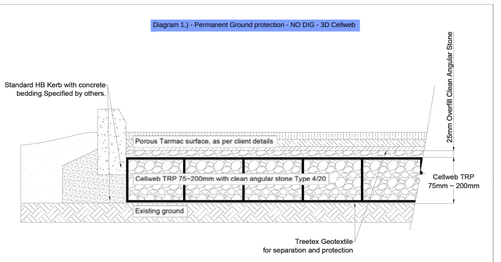
A - Those of high quality with an estimated remaining life expectancy of at least 40 years. (*Highly desirable for retention*)

B - Those of moderate quality with an estimated remaining life expectancy of at least 20 years. (*Desirable for retention*)

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. (*Optional for retention*)

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. (*Unsuitable for retention unless provides high conservation value*)

Diagram 1.) - Permanent Ground protection - NO DIG - 3D Cellweb



Note: Subbase could be required depending on the existing ground CBR % and the type of traffic on the surface.

Geosynthetics Ltd	Project: Cellweb 75~200mm Porous Tarmac Surface (Standard Detail)	Description:	Drawn By: GM	Scale: NTS	Date: 16/07/2018	Checked By: POB
Heavy Duty Geosynthetic Engineering, Unit 1, Ffordd Penllan, Caernarfon, Gwynedd, LL55 2BD Tel: 01286 676766 Fax: 01286 677144 www.geosynthetics.co.uk			Checked By: RMF	Version: V1	Sheet: Cellweb Tarmac Surface.dwg	

10.0 Appendix 5 – Tree Photographs

Tree ID#H1

Tree ID#T1

Tree ID#T1

Tree ID#H2 + H3

Tree ID#H4

Tree ID#T2

Tree ID#T3

Tree ID#T5 + T4

Tree ID#H13

Tree ID#G1 + G2

Tree ID#T7

Tree ID#T8 + T9

Tree ID#H3

Tree ID#T10

Tree ID#T11

Tree ID#T13

Tree ID#T17

Tree ID#T16

Tree ID#G4

Tree ID#G3