

ArbTS - Arboricultural Technician Services Ltd

(Tree Consultancy Services)

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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 – 15th April 2020

Site – Baglan Energy Centre

Project Reference – ArbTS_822.2_BaglanEnergyCentre

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1.0 Introduction

- 1.1 The purpose of this report is to give an assessment to the quality of the trees at Baglan Energy Centre, 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 as to 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 at Appendix 2.
- 1.3 Arboricultural constraints within the surveyed site relates primarily to the preservation of trees recommended for retention. Identified trees must be protected during the construction phase through the employment of 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 over looked during the construction process and can be damaged or altered by compaction causing major damage to the health of the tree. Generally the entire root system of the tree is within the top 600mm of soil where it can be easily damaged. A calculated area of ground around the tree should be protected for the duration of 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 25th February 2020.
- 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 the aid of an acoustic sounding hammer. No invasive decay detective instruments were used.
- 2.4 The survey was carried out in accordance to *British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations*. This standard gives a systematic, consistent and transparent evaluation method to 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 recommendation for the trees on or adjacent to this site. Details regarding these identified 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 practically possible. Where work

priority is stated to be M/H – medium/high or higher these operations should be undertaken before 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 is made during survey, no responsibility can be taken for resultant damage or injury occurred by a failing tree. The survey only gives a snap shot 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 to a full tree condition survey/tree risk assessment of the site and this report is only valid for 12 months from the date of the tree survey.

3.0 The Trees

- 3.1 The full 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)	0	0	0	0	0	0
B (Moderate - Desirable for retention)	1	4	0	0	0	5
C (Low - Optional for retention)	3	12	4	0	2	21
U (Poor - Unsuitable for retention)	2	0	0	0	0	2
Total A,B,C,U	6	16	4	0	2	28

4.0 Tree Constraints Plan (TCP) Information

- 4.1 A Tree Constraints Plan (TCP) can be found at 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 / Hedgerow Loss - The following trees and hedgerows are required to be removed to facilitate the construction of the proposed development design.

5.2.2 Individual Tree Loss –

- T5 - Scots Pine – Moderate quality (B category)
- T4 – Ash – Low quality (C category)
- T3 – Scots Pine – Poor quality (U category)

5.2.3 Grouped/Area Tree Loss –

- G3 – Group of three alder trees – Low quality (C category)
- G7 – Group of four alder trees – Low quality (C category)
- G4 – Group of two alder trees – Low quality (C category)
- G5 – Group of two birch trees – Low quality (C category)
- G8 – Group of birch trees – Low quality (C category)
- G1 – Small part (25 m2) of tree group – Low quality (C category)
- A1 – Part of tree area (115 m2) – Low quality (C category)

5.2.4 Hedgerow Loss –

- H2 – 28 metres of hedgerow - Low quality (C category)

5.2.5 Overall Tree Loss –

A small number of trees are identified to be removed to facilitate the construction of the proposed development design (3 individual trees, 5 small tree groups, part of a tree group and tree area and 28 metres of hedgerow). Nearly all 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 (T5 – Scots Pine) can be readily mitigated for by suitable compensatory tree planting.

5.3 Root Protection Area (RPA) – RPA potential damage can all be managed through the installation of tree protective fencing, arboricultural supervised excavation work etc, as designed by an Arboriculturist, will ensure that no significant long term adverse impact will occur to any of the retained trees roots system or associated soil structure.

5.4.1 AIA – Conclusion - The site has a number of Arboricultural constraints that needed to be considered in the development design phase. A small number of trees are identified to be removed to facilitate the construction of the proposed development design. Nearly all these trees are low quality that should not present a constraint on developing the site.

- 5.4.2 This proposed development design has aimed to retain a very high proportion of the moderate value trees (B Category) that form part of the site.
- 5.4.3 The proposal will not cause a long term adverse impact onto the local amenity of the area through tree loss. Mitigative tree, hedgerow and shrub planting will be required for the loss of the trees on this site through a combination of different diverse tree/shrub species and varied nursery aged stock.
- 5.4.4 The construction of the proposed development whilst complying to the tree protection scheme as detailed in section 6 will ensure that no significant long term adverse Arboricultural impact occurs onto the health of any retained trees on or adjacent to this site or to 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 below provides a detail sequence of events that must occur in order to ensure the protection of the retained trees during all stages of the construction process. These methods must be clearly communicated to the entire construction team prior to commencement of any work on site.

Stage	Arboricultural Method Statement (In sequence of events)
1.) Preconstruction (Prior to any construction work on site including demolition work, site material storage etc.)	1.1 – Design areas for construction site storage by site supervisor and the appointed Arboriculturist.
	1.2 – Tree surgery work to be carried out as detailed within section 5.2 of this report and to the <i>British Standard:3998:2010: Recommendation for tree works</i> .
	1.3 – Tree protective fencing installed in the position and form as detailed on the Tree Protection Plan (Appendix - 4). Installation to be supervised by the appointed Arboriculturist. All weather tree construction exclusion zone posters to be secured to fencing at regular intervals.
	1.4– Site storage area containers etc. installed as designed and supervised by site supervisor and the appointed Arboriculturist.
	1.5 – 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 – Site supervisor to be briefed by the appointed Arboriculturist regarding the Tree Protection Plan/Methods and a laminated copy of the plan/methods 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 made to 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 of noncompliance with these tree protection methods.
	2.2 – All contractors to be briefed by 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 of noncompliance with these tree protection methods.
	2.3 – Excavation under Arboricultural Supervision to be carried out in areas highlighted on the Tree Protection Plan (Appendix - 4). This work to be carried out with the use of hand tools, 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. Excavator will only work from existing hard surfacing prior to its removal. Any roots discovered less than 25mm in diameter to be pruned cleanly with securer or pruning saw. Careful excavation working method as follows: • Digging started from outside of the Root Protection Area towards the retained tree. • No roots found to be ripped, pulled or crushed during excavation • Any exposed roots 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 engineer methods will be sort to retain these roots.
	2.4– Construction phase begins
	2.5 - 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 trees 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 that are to be retained and be 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.
	2.6 – 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 (<i>Once all construction work has been completed, this includes all utility services</i>)	3.1 – Tree Protection fencing Removed.
	3.2 – Hard and soft landscaping commence - All landscape team members to be briefed regarding tree protections by an Arboriculturist.
	3.3 – Any required remedial tree action 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 as found within this report the proposed development can be constructed without any significant long-term adverse impact onto the retained trees or the amenity of the area.

8.0 Further Information & Qualifications

Stephen Lucocq has been involved in Arboriculture within South Wales for nearly twenty years. He has worked as an Arborist for many of these years and has a good 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/>

Bibliography

- British Standards 3998 (2010) Recommendations for Tree Work UK; British Standards Intuition
- British Standard 5837:2012, Trees in relation to design, demolition and construction - Recommendations UK; British Standards Intuition
- Coombes, A.J (1992) Trees London; Dorling Kindersley
- Lonsdale, D (1999) Principle of Tree Hazard Assessment and Management Edinburgh; Forestry Commission
- Mattheck, C (2007) Field Guide for Visual Tree Assessment Germany; Karlsruhe Research Centre
- Shigo, A.L (1991) Modern Arboriculture USA; Shigo and Trees, Association
- Sterry, P (2007) Collins Complete British Trees London; Collins
- Strouts, R.G (2000) Diagnosis of ill-health in trees Edinburgh; Forestry Commission
- Weber, K & Mattheck, C (2003) Manual of wood decay UK; Arboricultural Association

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)
A1	Alnus glutinosa (Common Alder),Salix caprea (Goat Willow),Betula pendula (Silver Birch),Salix fragilis (Crack Willow)	M	1	300	C2	9(1)	4	4	4	4	F	F	10+	high C category. Surrounding terrain prevented close inspection of the tree therefore all observations and measurements are estimated.	sprawling area of mainly multistemmed goat willow and alder, some alder trees upright and of fair form				3.6	40.72
A2	Alnus glutinosa (Common Alder),Salix caprea (Goat Willow),Betula pendula (Silver Birch),Salix fragilis (Crack Willow)	M	1	300	C2	9(1)	4	4	4	4	F	F	10+	Surrounding terrain prevented close inspection of the tree therefore all observations and measurements are estimated.	sprawling boundary area of mainly multistemmed goat willow and alder				3.6	40.72
A3	Salix caprea (Goat Willow)	EM	1	150	C2	8(0)	4	4	4	4	F	F	10+		sparse area of sprawling goat and untidy scrub				1.8	10.18
A4	Alnus glutinosa (Common Alder),Salix caprea (Goat Willow),Betula pendula (Silver Birch),Salix fragilis (Crack Willow),Acer pseudoplatanus (Sycamore)	M	1	400	C2	16(1)	5	5	5	5	F	F	10+	high C category. Surrounding terrain prevented close inspection of the tree therefore all observations and measurements are estimated.	sprawling area of mainly multistemmed goat willow, elder and alder, some alder trees upright, tall and of fair form				4.8	72.39
G1	Ulmus procera (English Elm),Sambucus nigra (Elder),Pinus app (Pine),Betula pendula (Silver Birch),Alnus glutinosa (Common Alder),Salix caprea (Goat Willow),Corylus avellana (Hazel)	EM	1	200	C2	9(1)	4	4	4	4	G/F	F	10+		boundary group of small upright slender trees and scrub				2.4	18.1
G2	Alnus glutinosa (Common Alder),Metasequoia glyptostroboides (Dawn Redwo	EM	1	300	B2	9(2)	3	3	3	3	G/F	G/F	20+		group of three dawn redwoods and one alder, three dawn redwood of Good form	remove alder tree to allow dawn redwood trees to develop	M/L	3.6	40.72	
G3	Alnus cordata (Italian Alder)	EM	1	275	C2	8(1)	4	4	4	4	G/F	F	10+	high C category.	group of three alder forming a whole of fair form and health, generally a shorted lived species prone to branch and stem failure				3.3	34.22
G4	Alnus cordata (Italian Alder)	EM	1	200	C2	7(1)	3	3	3	3	F	F	10+		group of two alder forming a whole of fair to poor form and health				2.4	18.1
G5	Betula pendula (Silver Birch)	EM	1	150	C2	6(1)	2	2	2	2	G/F	F	10+		group of two birch of fair form and health				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)
G6	Quercus petraea (Sessile Oak)	EM	1	200	B2	8(1)	3	3	3	3	G/F	G/F	20+	group of three oaks forming a rough whole of fair to Good form and health			2.4	18.1
G7	Alnus cordata (Italian Alder)	EM	1	275	C2	8(1)	3	3	3	3	G/F	F	10+	low B category. group of four alder forming a whole of fair form and health, generally a shorted lived species prone to branch and stem failure			3.3	34.22
G8	Betula pendula (Silver Birch)	EM	1	150	C2	8(1)	2	2	2	2	G/F	F	10+	group of four birch of fair form and health			1.8	10.18
G9	Alnus glutinosa (Common Alder)	M	1	200	C2	9(1)	4	4	4	4	F	F	10+	small sprawling area of mainly multistemmed alder			2.4	18.1
G10	Alnus cordata (Italian Alder)	EM	1	200	C2	7(1)	2	2	2	3	G/F	F	10+	low B category. group of three alder forming a whole of fair form and health, generally a shorted lived species prone to branch and stem failure			2.4	18.1
G11	Betula pubescens (Downy Birch)	EM	1	150	C2	7(1)	2	2	2	3	G/F	F	10+	group of two birch of fair form and health, generally a shorted lived species prone to branch and stem failure			1.8	10.18
G12	Pinus sylvestris (Scots Pine)	SM	1	225	B2	8(1)	2	2	2	2	G	G/F	20+	group of three Scots pines tree of fair to Good form and good health			2.7	22.91
G13	Quercus petraea (Sessile Oak)	EM	1	200	B2	8(1)	3	3	3	3	G/F	G/F	20+	group of three oaks forming a rough whole of fair to Good form and health			2.4	18.1
G14	Betula pubescens (Downy Birch)	EM	1	150	C2	7(1)	2	2	2	3	G/F	F	10+	group of three birch of fair form and health, generally a shorted lived species prone to branch and stem failure			1.8	10.18
G15	Fraxinus excelsior (Ash)	SM	2	318	C2	8(2)	3	3	3	3	F	F	10+	low C category. Low bud/leaf density. group of three Ash trees of fair form, early signs of Ash dieback disease			3.82	45.85
G16	Metasequoia glyptostroboides (Dawn Redwo, Ash)	EM	1	100	C2	9(2)	1.5	1.5	1.5	1.5	G/F	G/F	20+	group of two small dawn redwoods and one ash, consider transplanting dawn redwoods if required			1.2	4.52
H1	Fagus sylvatica (Beech), Quercus petraea (Sessile Oak)	EM	1	100	C2	2(0)	1	1	1	1	G/F	G/F	10+	A hedgerow with no noticeable gaps noted. Received some regular recent maintenance. upright oak trees equally spaced in hedgerow			1.2	4.52

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)
H2	Fagus sylvatica (Beech)	EM	1	100	C2	1.5(0)	1	1	1	1	G/F	G/F	10+	A hedgerow with no noticeable gaps noted. Received some regular recent maintenance.	upright oak trees equally spaced in hedgerow				1.2	4.52
T1	Fraxinus excelsior (Ash)	SM	1	100	U	4(2)	1	1	1	1	P	P	<10	Dieback in crown.			fell	H/M	1.2	4.52
T2	Fraxinus excelsior (Ash)	SM	1	150	C2	6(2)	2	2	2	2	G/F	G/F	10+						1.8	10.18
T3	Pinus sylvestris (Scots Pine)	M	1	350	U	8(2)	3	4	5	5	D	D	<10				fell	H/M	4.2	55.42
T4	Fraxinus excelsior (Ash)	SM	2	283	C2	8(2)	3	3	3	3	F	F	10+	low C category. Low bud/leaf density.	twin leader, early signs of Ash dieback disease				3.4	36.32
T5	Pinus sylvestris (Scots Pine)	EM	1	250	B2	8(2)	5	3	3	3	G/F	G/F	20+	low B category. Suppressed growth from surrounding trees.	tree of fair form and good health				3	28.28
T6	Fraxinus excelsior (Ash)	EM	1	250	C2	8(2)	4	4	4	4	F	F	10+	Low bud/leaf density.	early signs of Ash dieback disease, multistemmed				3	28.28

10.0 Appendix 1B – Detailed Tree Survey Data Summary

(Please see Appendix 3 - Tree Survey Key)

Field Usage Results.		
Total Records: 28		
Tree Species	Count	% of Total
Alnus cordata (Italian Alder)	4	14.3
Betula pendula (Silver Birch)	2	7.1
Quercus petraea (Sessile Oak)	2	7.1
Fraxinus excelsior (Ash)	5	17.9
Fagus sylvatica (Beech)	1	3.6
Salix caprea (Goat Willow)	1	3.6
Alnus glutinosa (Common Alder)	1	3.6
Pinus sylvestris (Scots Pine)	3	10.7
Betula pubescens (Downy Birch)	2	7.1
Type	Count	% of Total
T	6	21.4
G	16	57.1
A	4	14.3
H	2	7.1
Cat	Count	% of Total
B2	5	17.9
C2	21	75
U	2	7.1
Age	Count	% of Total
SM	5	17.9
EM	18	64.3
M	5	17.9
Average Stem Diameter	Count	% of Total
<150	4	14.3
<250	13	46.4
<500	11	39.3
Height	Count	% of Total
<5	3	10.7

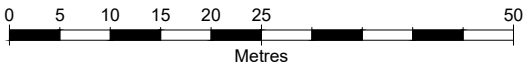
<10	24	85.7
<20	1	3.6
Phy Cond	Count	% of Total
G	1	3.6
G/F	16	57.1
F	9	32.1
P	1	3.6
D	1	3.6
Stuc Cond	Count	% of Total
G/F	9	32.1
F	17	60.7
P	1	3.6
D	1	3.6
Est. Remain Contrib	Count	% of Total
<10	2	7.1
10+	20	71.4
20+	6	21.4
RPR	Count	% of Total
<5	28	100
RPA	Count	% of Total
<5	4	14.3
<15	6	21.4
<20	6	21.4
<25	1	3.6
<30	2	7.1
other	9	32.1

10.0 Appendix 2 - Tree Constraints Plan

An introduction to the Tree Constraints Plan (TCP)

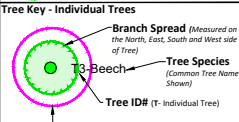
Trees that have been identified to be retained should be treated as constraints to the design of future development. A Tree Constraints Plan has been drawn and can be found over leaf.

- **Tree Quality** - The TCP highlights the above and below ground constraint each tree poses to the design of future development schemes. Further to this 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 trees position.
- **Root Protection Area** – As shown as cyan circle on the TCP sets out root protection area (RPA). Within this area no construction work, alteration in ground levels 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. The shade cast, depending on the trees height and width, will be from a North West to East pattern through the main 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 the site identified to be retained.

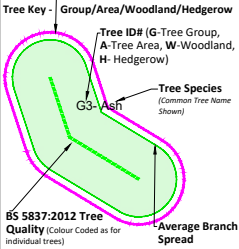


Tree Constraints Plan
Site - Baglan Energy Centre
Project Ref - 822.2
Scale 1:750 @ A2
KEY 855837:2012 Tree Quality (Colour Coded)

- 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*)



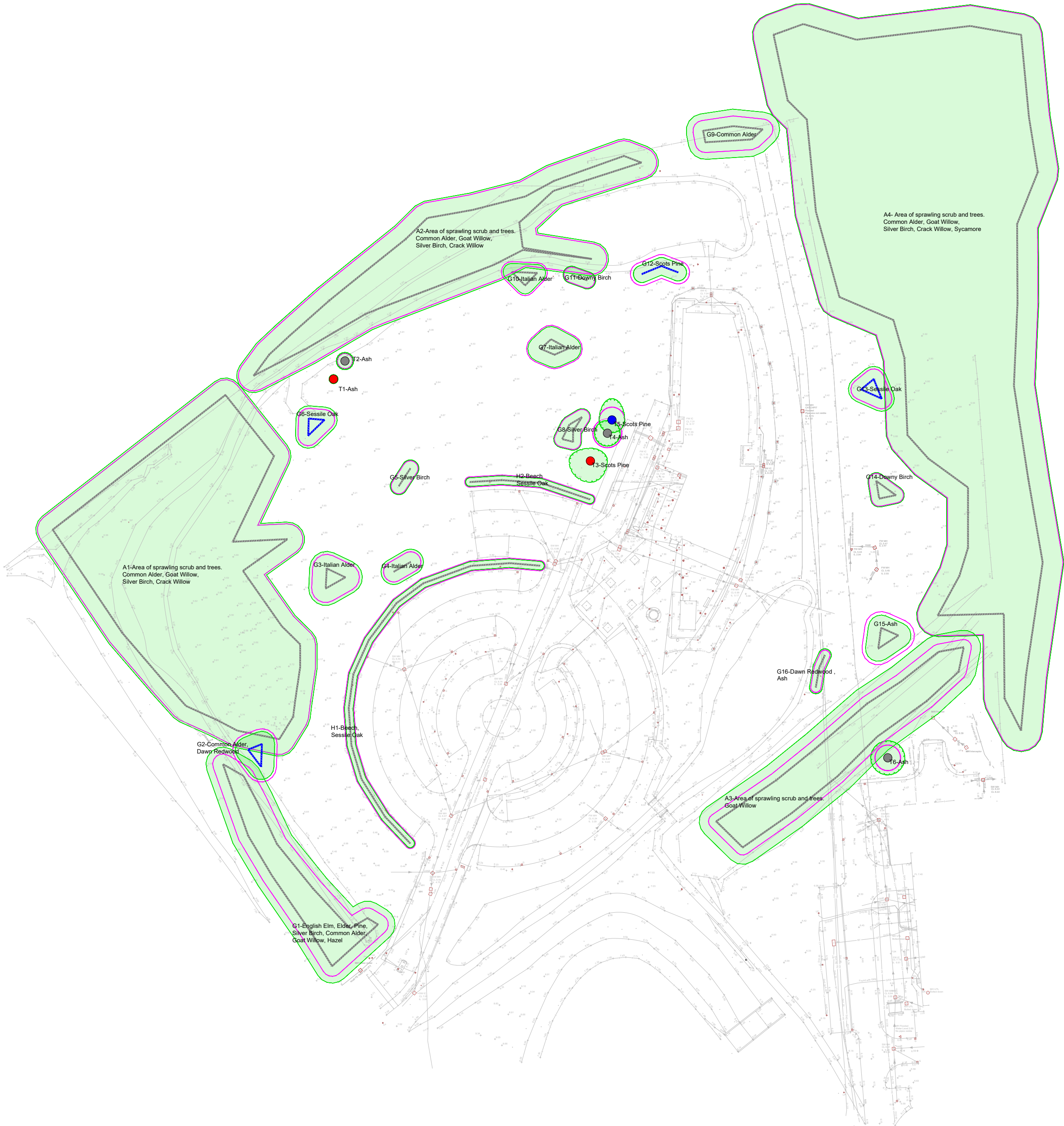
Root Protection Area (RPA) (A layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.)

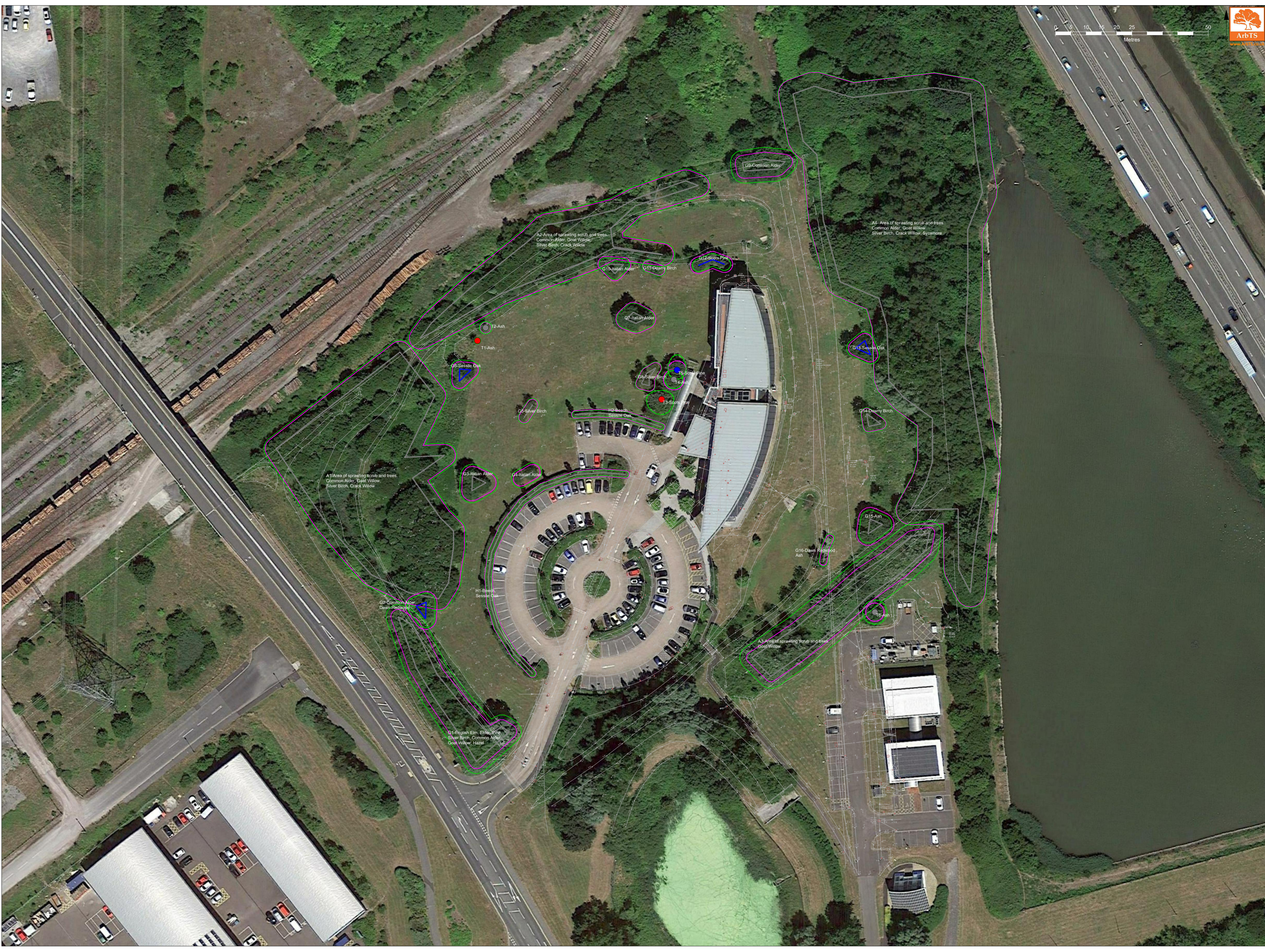


Definitions of 855837:2012 Categories for Trees, Woodlands and Hedgerows (Colour Coded):

- 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 brought 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 - Baglan Energy Centre
Project Ref - 822.2

Scale 1:750 @ A2

- KEY BS5837:2012 Tree Quality (Colour Coded)**
- 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 branch side, not the tree side of tree)
 - Tree Species (Common tree name shown)
 - Tree ID# (1 - 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)
 - 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 with west through to evening shade to the east)

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

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