Treework Environmental Practice

Arboricultural Impact Assessment

Margam Substation Extension, Port Talbot

Report Reference Number: 250808-1.5-AIA-MS-HB

On behalf of

Stantec

8 August 2025

Document Control Sheet

Project Name: **Margam Substation, Port Talbot**

Report Ref: **250808-1.5-AIA-MS-HB**

Report Title: **Arboricultural Impact Assessment**

	Name	Position	Date
Prepared by:	Mike Wood	Principal Arboricultural Consultant	29/04/2025
Surveyed by:	Mike Wood	Principal Arboricultural Consultant	26/11/2024
Additional Survey Work	Mike Wood	Principal Arboricultural Consultant	21/05/2025

Revision	Date	Description	Prepared by
1.0	30/04/2025	Draft	MW
1.1	2/06/2025	2nd Draft Following meeting with design and planning team and additional survey work.	MW
1.2	15/07/2025	Updated report with changes to the redline area.	MW
1.3	6/08/2025	Minor amendments and updated Proposed Development description.	Howard Booth
1.4	6/08/2025	Updates to align with Permitted Development Works	Howard Booth
1.5	8/08/2025	Minor edits following client feedback	Howard Booth

Table of Contents

Executive Summary

- This report provides an assessment of the impact upon trees of the Proposed Development which is an extension of the existing high voltage substation, and makes recommendations for mitigating negative impacts. It is suitable for submission in support of a planning application.

- The design has been developed with careful consideration to minimise the impact upon trees with coppicing (enabling regeneration following completion) rather than complete removal of trees, where possible, to facilitate the Proposed Development.

- A total of 50 individual trees and 39 tree groups were recorded within or adjacent to the site. The data for each is presented within the Tree Schedule at Appendix A.

- All trees to be removed or coppiced were recorded as category C in accordance with BS 5837:2012.

- Retained trees would be protected during the course of the Proposed Development with tree protection fencing. The substation perimeter fence would also provide an effective tree protection fence once installed. Sufficient space and adequate protection measures have been set out to show that retained trees could be protected during the pre-construction and construction phase and to enable their successful development post-construction. Tree protection measures are discussed throughout this report and illustrated on the Tree Protection Plan at Appendix B.

- The existing ecological nature within the main area of the site prevents additional tree planting opportunities across the SINC. However, there are limited planting opportunities around the SUDs pond area (outside of the 3m maintenance strip) and along the northern access route. This means a deviation from Planning Policy Wales due to ecological reasons.

1 Introduction

1.1 Brief and Context

1.1.1 Treework Environmental Practice was originally instructed by Stantec in April 2024 to provide an Arboricultural Impact Assessment, in accordance with British Standard BS5837: 2012 Trees in *Relation to Design, Demolition and Construction – Recommendations*, of the effect of development proposals on trees at the substation site, Margam, Port Talbot. Further survey work along the access road (Cefn Gwrgan Road) commissioned in May 2025 was undertaken to record overhanging trees by the access.

1.1.2 Trees are a material consideration for a Local Planning Authority when determining planning applications, whether or not they are afforded the statutory protection of a Tree Preservation Order or Conservation Area. British Standard BS 5837:2012 *Trees in Relation to Design, Demolition and Construction* sets out the principles and procedures to be applied to achieve a harmonious and sustainable relationship between trees and new developments. The Standard recommends a sequence of activities that starts in the initial feasibility and design phase (RIBA Stage 2 'Concept Design') with a survey to qualify and quantify the trees on site and establish the arboricultural constraints to development (above- and below-ground) to inform the design in an iterative process, and continues with an assessment of the arboricultural impacts of the final design and measures to mitigate such impacts should they be negative. Detailed technical specifications for mitigation and protection measures are devised in the design phase that follows (RIBA Stage 3 and 4 'Spatial Coordination' and 'Technical Design'), and the sequence ends with the 'Handover' and 'Use' phases (RIBA Stages 6 and 7), with the implementation of those measures once planning permission is granted, guided by Arboricultural Method Statements (RIBA Stage 4 and 5, 'Technical Design' and 'Manufacturing and Construction) and professional guidance where appropriate.

1.1.3 This Arboricultural Impact Assessment (AIA) reports on the direct and indirect impacts of the Proposed Development on trees in terms of both the buildability of the proposals and the long-term impact of the finished scheme, and where necessary presents mitigation for these impacts.

1.2 Purpose of this Report

1.2.1 This AIA, and accompanying Tree Schedule and Tree Protection Plan (TPP), is provided to support a planning application for the Proposed Development. It sets out the arboricultural impacts of the proposals using the following considerations as a framework:

- Trees to be removed and trees to be retained.

- Remedial tree work to retained trees to allow development and ensure retained trees will form a harmoniously integrated component of the Proposed Development.
- Suitable measures to protect retained trees.
- Special construction or engineering measures required to enable trees to be harmoniously integrated into the Proposed Development.

1.3 The Proposed Development

1.3.1 The Proposed Development is a full planning application for the extension of the Margam 275kV substation including the erection of a gas insulated switchgear hall (GIS hall) and the demolition of the existing control and amenities buildings to enable the erection of a new amenities building. Works to include earthworks, surface water management and drainage infrastructure, lighting, CCTV, boundary treatment, car parking, ecological improvements including a wildlife tower and gabion baskets, improved internal access roads, diesel generator and hardstanding, storage building and water storage tank, flood defence wall including flood gates and appropriate landscaping and other associated engineering operations.

1.3.2 A detailed overview of the proposed works to the existing Margam 275kV substation compound is provided below:

- Construction of a GIS hall to house 275 kV electrical switchgear and ancillary equipment;
- The GIS hall to include 12 bays with the provision of 3 spare bays;
- Mechanically Switched Capacitor with Damping Network;
- Realignment of the existing downleads and Super Grid Transformer circuits to new bays within the GIS hall;
- New amenities building to include welfare facilities, meeting room and ancillary office space;
- One diesel generator to be used in a backup situation only and hardstanding for a replacement freestanding diesel generator;
- Security fencing;
- Surface water management and drainage infrastructure including internal drainage systems;
- Flood defence wall (1150mm high and depth 1000mm) and flood gates at existing access points into the existing substation;
- Water storage tank (6m high and 6.1m diameter);
- CCTV;
- Lighting to include 6m medium duty, tilt down tubular steel construction (exact location to be agreed), 27no. ‘label C’, 18no. ‘label E’ and 13no. ‘label EX1), dark sky approved.
- Creation of new designated car parking area (four standard bays and two accessible bays).
- Landscaping to incorporate native planting / wildflowers.
- Ecological mitigation to include a wildlife tower and gabion baskets.

1.3.3 In parallel with, and in advance of the Proposed Development, National Grid are undertaking enabling works and temporary works in accordance with the Schedule 2, Town and Country Planning (General Permitted Development) Order 1995 (as amended). ("Permitted Development Works"). These Permitted Development Works are taking place within the land owned by National Grid and also extend into land owned by BOC Ltd, to the south of the National Grid land and within land to the west, owned by Tata Steel. The Permitted Development Works include activities within the footprint of the Proposed Development and within the wider red line boundary. As the footprint of the Permitted Development Works overlaps with the Proposed Development footprint and the premise of the Permitted Development Works is that the Site would be restored following completion to the condition it was in prior to the works, this AIA therefore considers the impact of the Proposed Development assuming a "future baseline" of the Site restored to its condition prior to the commencement of the Permitted Development Works. The timeline of the two elements means that the reality is that the Proposed Development works will proceed (subject to planning) prior to the completion of the Permitted Development works. However, taking the "pre-works" (i.e. Pre-Permitted Development Works) site baseline as the baseline for assessment in the AIA is the most appropriate approach to the assessment which aligns with the approach taken in the Ecological Impact Assessment and which clearly presents the tree losses (temporary and permanent) resulting from the Proposed Development permanent works only.

1.3.4 This AIA and TPP therefore considers the impacts associated with the Proposed Development only (i.e. Permanent works), the footprint of which is shown on the Tree Protection Plan and not those associated with the Permitted Development works taking place ahead of and in parallel with the Proposed Development. Any temporary works associated with the delivery of the Permanent works is assumed to be taking place under Permitted Development. A separate AIA and TPP addressing the tree losses (temporary or permanent) is being produced for the Permitted Development works. Note that some of the trees marked as "retained" in this AIA and TPP for the Proposed Development may be lost as a result of the Permitted Development works but will be considered and addressed in that separate AIA and TPP.

1.3.5 The following documents have been provided to and reviewed by Treework Environmental Practice:

Document Title	Document/Drawing number	Originator
Topographical Survey	109964-Margam South Wales	BakerHicks
Proposed Layout	Margam_ProposedLayout.shp Dated 30/07/2025	Stantec, extracted from layout drawings provided by BakerHicks
Tree Constraints Plan	220804-2.1-MPT_PSBS-TCP(AIA) -SH	Treework Environmental Practice

2 Existing Tree Population and Constraints

2.1.1 A survey covering trees on site and trees on adjacent land close enough to be affected by the development was undertaken in November 2024 and May 2025. The full survey results are presented in the Tree Schedule at Appendix A.

2.1.2 The site is not within a conservation area and there are no public records of veteran trees on or around the site. Beyond the site boundary to the east is an area of woodland recorded by Natural Resources Wales as a Restored Ancient Woodland Site, which is within G31 of this report. The trees on site may be protected by a Tree Preservation Order (TPO). This information should be verified with the Local Planning Authority before any tree works are planned or implemented prior to planning decision being issued.

2.1.3 The survey was undertaken based on trees plotted using an Ordnance Survey Mastermap basemap as reference in Treework Environmental Practice's specialist tree management software – MyTrees. The basemap did not contain a topographical survey of the trees. Trees and hedges were plotted on the basemap using GPS as a reference, and their positions are therefore approximate.

2.1.4 The majority of the trees on the Proposed Development site are *Salix caprea* (Goat Willow) which have populated the site naturally as a pioneer species. Other noted species include Common Hawthorn, Oak, Elder, Silver Birch and Alder.

2.1.5 Along the access route into the site, there are a variety of hedgerow features, a large conifer linear screen (G191) and early mature broadleaved trees, such as London Plane, Field Maple and Lime within these features.

2.1.6 BS 5837:2012 recommends classifying trees into four quality and value categories to determine their relative retentive worth. A summary of the relative retentive worth of the trees on site, as recorded during the tree survey and expressed by their categories, is given in Table 1. Appendix A includes an extract from BS 5837:2012 which describes the different tree categorises.

Table 1: Trees/Groups in each Retention Category

BS Category	No. of Trees (T)	No. of Groups (G)	Total
A	0	0	0
B	13	5	18
C	37	34	71
U	0	0	0
Total	**50**	**39**	**89**

2.1.7 Trees present constraints to development both above and below ground. The above ground constraints comprise the physical extent of tree crowns. The below ground constraints comprise the roots, and are expressed in terms of the root protection area (RPA), which is the minimum rooting area that a tree needs to sustain itself in reasonable health. These constraints, as established by the tree-survey, inform this assessment of the impact of the development proposals.

2.1.8 The full results of the tree survey on which this report is based are given in the Tree Schedule at Appendix A, and the above- and below-ground constraints are illustrated on the Tree Protection Plan at Appendix B. Each tree (T) and tree group (G) has been allocated an individual number to which it is referred in this report and all associated documents. The survey method and limitations are set out in Appendix E.

3 Arboricultural Impact of the Proposals

3.1 Tree Removal and Retention

3.1.1 Every effort has been made to retain trees wherever possible. Where high-quality trees have been found to be in conflict with the proposed design, the decision to remove such trees has been informed by an iterative process, following a review of alternative options. With regard to the Restored Ancient Woodland Site in G31 which is east of Upper Mother Ditch, none of the woodland would be directly impacted by the Proposed Development, there would be no loss nor deterioration.

3.1.2 There are 3 trees, 4 tree groups and part of 7 tree groups that would be removed, along with the coppicing of 3 trees and part of 1 tree group, to facilitate the Proposed Development. These are listed in Table 2 and Table 3 by BS 5837:2012 category, below; all are category C. Trees have been identified for removal where they come into direct conflict with structures,

where construction cannot be achieved without their removal, or where their future relationship with the development is considered unsustainable, having regard to their eventual potential size.

Table 2 – Tree Features for Removal by BS Category

Category A Trees/Groups	Category B Trees/Groups	Category C Trees/Groups	Category U Trees/Groups
None	None	T7, T8, G25, T36, G66, G67, G69 *G4, *G9, *G21, *G22, *G35, *G61, *G65	None
0	**0**	**14**	**0**

****Indicates part group removal***

Table 3 – Tree Features to be Coppiced

Category A Trees/Groups	Category B Trees/Groups	Category C Trees/Groups	Category U Trees/Groups
None	None	T68, T70, T71 *G32	None
0	**0**	**4**	**0**

****Indicates part of group coppiced***

3.1.3 Where considered appropriate, trees will be protected using a tree protection barrier. Some areas will be protected with the compound perimeter fencing. This is illustrated in Appendix B and details on the barrier are provided in Appendix D.

3.2 Tree Protection

3.2.1 ***Root Protection Areas and Construction Exclusion Zones***

The erection of site hoarding around the proposed substation extension will provide adequate and robust physical protection to trees from development activities associated with the proposed substation extension. Outside of this area retained trees will be protected during development by establishing a Construction Exclusion Zone (CEZ) around their Root Protection Areas (RPAs). RPAs are a layout design tool, indicating the minimum area around a tree deemed to contain sufficient roots and soil to maintain the tree's viability. RPAs should

be treated as a precautionary area within which activities such as ground compaction, excavation, the storing of materials, ground level changes and other construction activity are likely to cause damage to trees and should therefore be excluded. This CEZ can be achieved by the erection of barriers at the locations shown on the Tree Protection Plan at Appendix B. The extent of tree protection fence shown is the minimum to show a barrier between working areas and retained trees; subject to the spatial requirements for construction additional fence may be required to provide additional protection.

3.2.2 Tree protection barriers must be installed before any demolition or construction works start, and, unless approved by the Local Planning Authority or by an arboriculturist approved by them, should remain in place until all construction activity has been completed.

3.2.3 The type of barriers should match the level of activity around the retained trees. Where a high level of construction activity is expected, fencing must be braced to be robust to vehicular impact and to prevent it from being easily repositioned; a specification similar to Figure 3 in BS 5837:2012 will be suitable (reproduced in Fig. 3 at Appendix D). In areas away from the main construction activity and vehicle movement, it may be appropriate to install a lower specification fencing, examples of which are given in Fig. 3 at Appendix D.

3.2.4 All protection fencing should carry identifying signs that state its purpose and proscribe its removal until all demolition and construction work is complete. An example sign is given in Fig. 1 at Appendix D.

3.2.5 Conflicts between retained trees and aspects of the Proposed Development that cannot be dealt with by exclusion zones, tree protection or tree work can be mitigated by the use of special technical measures. General recommendations for these measures are presented in the sections that follow based on the information about the Proposed Development that is currently available. The specific details must be carefully planned once detailed construction information is available to avoid tree damage and an Arboricultural Method Statement is recommended to be produced before construction starts to guide sensitive works around trees, with provisions for supervision by a qualified arboriculturist where necessary.

3.3 Additional Precautions

3.3.1 ***Utilities and Services***

Detailed information on the location of utility and service runs for the Proposed Development beyond and connecting to the substation extension was not available at time of writing. In principle, traditional trench-installed utilities should be routed outside of the RPAs of retained trees to avoid root damage. Where routing utility runs within RPAs is unavoidable, all work should comply with The National Joint Utilities Volume 4 and advice should be sought from a professional Arboricultural Consultant.

3.3.2 ***Soft Landscaping***

The Arboricultural Consultant should review any landscape operations that involve any work within the RPAs of retained trees and input additional site specific methodology where necessary.

3.3.3 Planning Policy Wales (Edition 12, February 2024) highlights the importance of retaining trees, and in the event of them being removed there should be compensatory planting that is proportionate the loss. It is understood that the existing ecological nature within the main area of the site prevents tree planting opportunities across the Site of Importance for Nature Conservation (SINC). Opportunities around the SUDs pond area (outside of the 3m maintenance strip) and along the northern access route should be explored for planting but this is unlikely to provide complete compensatory planting so would be a deviation from Planning Policy Wales that could be justified by the wider ecological value of the site and the benefits the Proposed Development would provide.

Appendix A

Tree Schedule

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
G1	10	*Salix caprea* Goat Willow/Great Sallow	7.0	1	15	N 2.0 E 2.0 S 2.0 W 2.0	2.5		Early Mature	Fair	Linear row, alongside hard surfaced access road.	10.2	1.8	20-40	C	2
G2	2	*Salix caprea* Goat Willow/Great Sallow	7.0	3	34	N 3.0 E 3.0 S 3.0 W 3.0	2.5		Early Mature	Fair	Two multi stem trees.	54.3	4.2	20-40	C	2
G3	4 1	*Salix caprea* Goat Willow/Great Sallow *Sambucus sp.* Elder sp.	6.0	5	11	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Early Mature	Fair	Two multi stem trees.	5.7	1.3	20-40	C	2
G4	6	*Salix caprea* Goat Willow/Great Sallow	6.0	5	11	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Early Mature	Fair	Young self set trees,less than 75mm dia. multi stemmed. **Fell - Ground level.** Remove part of tree group to facilitate the installation of the basin.	5.7	1.3	20-40	C	2
T5	1	*Salix caprea* Goat Willow/Great Sallow	6.5	10	18	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	16.3	2.3	20-40	C	1
T6	1	*Salix caprea* Goat Willow/Great Sallow	5.0	5	13	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	8.1	1.6	20-40	C	1
T7	1	*Salix caprea* Goat Willow/Great Sallow	5.0	5	13	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia. **Fell - Ground level.**	8.1	1.6	20-40	C	1
T8	1	*Salix caprea* Goat Willow/Great Sallow	5.0	5	13	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia. **Fell - Ground level.**	8.1	1.6	20-40	C	1

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
G9	6	*Salix caprea* Goat Willow/Great Sallow	8.0	5	11	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Early Mature	Fair	**Fell - Ground level.** Fell 30% of the group to the north.	5.7	1.3	20-40	C	2
T10	1	*Salix caprea* Goat Willow/Great Sallow	8.0	8	16	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	13.0	2.0	20-40	C	1
T11	1	*Salix caprea* Goat Willow/Great Sallow	8.0	8	28	N 4.0 E 4.0 S 4.0 W 4.0	0.5		Semi Mature	Good	Multi-stemmed.	36.2	3.4	20-40	C	1
T12	1	*Salix caprea* Goat Willow/Great Sallow	7.0	8	16	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	13.0	2.0	20-40	C	1
T13	1	*Salix caprea* Goat Willow/Great Sallow	7.0	6	17	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	13.3	2.1	20-40	C	1
T14	1	*Salix caprea* Goat Willow/Great Sallow	7.0	7	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	11.4	1.9	20-40	C	1
T15	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	11.4	1.9	20-40	C	1
T16	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	11.4	1.9	20-40	C	1
G17	4	*Salix caprea* Goat Willow/Great Sallow	8.0	5	11	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Early Mature	Fair		5.7	1.3	20-40	C	2

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
G18	15	*Salix caprea* Goat Willow/Great Sallow	8.0	5	11	N 4.5 E 4.5 S 4.5 W 4.5	0.5		Early Mature	Fair	Access not possible at time of survey due to water logged conditions. Surveyed from 20-50m.	5.7	1.3	20-40	C	2
G19	8	*Salix caprea* Goat Willow/Great Sallow	8.0	5	11	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Early Mature	Fair	Access not possible at time of survey due to water logged conditions. Surveyed from 20-50m.	5.7	1.3	20-40	C	2
G20	10 3	*Salix caprea* Goat Willow/Great Sallow *Sambucus sp.* Elder sp.	7.0	1	15	N 2.0 E 2.0 S 2.0 W 2.0	2.5		Early Mature	Fair	Linear row,alongside hard surfaced access road and existing compound car park.	10.2	1.8	20-40	C	2
G21	20 5 2	*Salix caprea* Goat Willow/Great Sallow *Buddleja sp.* Buddleja *Sambucus sp.* Elder sp.	8.0	5	11	N 4.0 E 4.0 S 4.0 W 4.0	0.5		Early Mature	Fair	Count indicative. **Fell - Ground level.** Remove south east part of the group as illustrated on the Tree Protection plan.	5.7	1.3	20-40	C	2
G22	10	*Salix caprea* Goat Willow/Great Sallow	8.0	5	22	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Early Mature	Fair	Tree count is indicative. **Fell - Ground level.** Removal small section for new access as shown on Tree Protection Plan.	22.6	2.7	20-40	C	2
T23	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	11.4	1.9	20-40	C	1

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T24	1	*Salix caprea* Goat Willow/Great Sallow	7.0	7	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	11.4	1.9	20-40	C	1
G25	20	*Salix caprea* Goat Willow/Great Sallow	8.0	40	31	N 4.0 E 4.0 S 4.0 W 4.0	0.5		Early Mature	Good	Count indicative. **Fell - Ground level.**	45.2	3.8	20-40	C	2
T26	1	*Salix caprea* Goat Willow/Great Sallow	5.0	3	17	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Early Mature	Good		13.9	2.1	20-40	C	1
T27	1	*Salix caprea* Goat Willow/Great Sallow	7.0	7	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	11.4	1.9	20-40	C	1
T28	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	11.4	1.9	20-40	C	1
T29	1	*Salix caprea* Goat Willow/Great Sallow	8.0	8	16	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	13.0	2.0	20-40	C	1
T30	1	*Salix caprea* Goat Willow/Great Sallow	8.0	8	16	N 3.0 E 3.0 S 3.0 W 3.0	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	13.0	2.0	20-40	C	1
G31	50 10	*Salix caprea* Goat Willow/Great Sallow *Quercus robur* English Oak	13.0	5	89	N 5.0 E 5.0 S 5.0 W 5.0	0.5		Early Mature	Good	Access into wooded area not possible at time of survey due to water logged conditions and dense vegetation. Surveyed from10-30m. Tree dia. based on larger trees in group.	361.9	10.7	20-40	B	2

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
G32	10	*Salix caprea* Goat Willow/Great Sallow	7.0	8	22	N 2.0 E 2.0 S 2.0 W 2.0	2.5		Early Mature	Fair	Self set establishing multi stem group. **Fell - Coppice.** Cut back small section as shown on Tree Protection Plan.	23.2	2.7	20-40	C	2
T33	1	*Salix caprea* Goat Willow/Great Sallow	7.0	7	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia.	11.4	1.9	20-40	C	1
G34	4	*Salix caprea* Goat Willow/Great Sallow	7.0	8	22	N 2.0 E 2.0 S 2.0 W 2.0	2.5		Early Mature	Fair	Self set establishing multi stem group.	23.2	2.7	20-40	C	2
G35	10	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N 2.0 E 2.0 S 2.0 W 2.0	0.5		Early Mature	Fair	Linear row, within Reed area. Water logged at the time of the survey. Tree count estimated. **Fell - Ground level.** Remove majority as shown on Tree Protection Plan.	10.2	1.8	20-40	C	2
T36	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	18	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia. **Fell - Ground level.**	15.5	2.2	20-40	C	1
T37	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	21	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good		20.3	2.5	20-40	C	1
T38	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	21	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good		20.3	2.5	20-40	C	1
G39	15	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N 2.0 E 2.0 S 2.0 W 2.0	0.5		Early Mature	Fair	Linear row, within reed area. Water logged at the time of the survey. Tree count estimated.	10.2	1.8	20-40	C	2

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T40	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	21	N E S W 3.5 3.5 3.5 3.5	0.5		Semi Mature	Good		20.3	2.5	20-40	C	1
G41	8	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N E S W 2.0 2.0 2.0 2.0	0.5		Early Mature	Fair	Linear row, within reed area. Water logged at the time of the survey. Tree count estimated.	10.2	1.8	20-40	C	2
T42	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	21	N E S W 3.5 3.5 3.5 3.5	0.5		Semi Mature	Good	Multi-stemmed.	20.3	2.5	20-40	C	1
G43	3	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N E S W 2.0 2.0 2.0 2.0	0.5		Early Mature	Fair	Small group, within reed area. Water logged at the time of the survey.	10.2	1.8	20-40	C	2
T44	1	*Salix caprea* Goat Willow/Great Sallow	6.0	7	13	N E S W 3.5 3.5 3.5 3.5	0.5		Young	Good	Multi stem tree, under 75mm dia.	7.9	1.6	20-40	C	1
G45	3	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N E S W 2.0 2.0 2.0 2.0	0.5		Early Mature	Fair	Small group, within reed area. Water logged at the time of the survey.	10.2	1.8	20-40	C	2
G46	20 5 5	*Salix caprea* Goat Willow/Great Sallow *Betula pendula* Silver Birch *Alnus sp.* Alder sp.	7.0	1	15	N E S W 2.0 2.0 2.0 2.0	0.5		Early Mature	Fair	Linear group, within reed area. Water logged at the time of the survey.	10.2	1.8	20-40	C	2
T47	1	*Crataegus monogyna* Common Hawthorn/Quick/May	6.0	5	11	N E S W 3.5 3.5 3.5 3.5	0.5		Early Mature	Good	Multi stem tree, under 75mm dia.	5.7	1.3	20-40	C	1

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
G48	50 4	*Salix caprea* Goat Willow/Great Sallow *Quercus robur* English Oak	8.0	1	15	N E S W 2.0 2.0 2.0 2.0	0.5		Early Mature	Fair	Group in waterlogged reed ares, near BOC boundary. Tree count estimated.	10.2	1.8	20-40	C	2
T49	1	*Crataegus monogyna* Common Hawthorn/Quick/May	5.0	2	9	N E S W 3.5 3.5 3.5 3.5	0.5		Early Mature	Fair		4.0	1.1	20-40	C	1
G60	5 2	*Crataegus monogyna* Common Hawthorn/Quick/May *Salix caprea* Goat Willow/Great Sallow	4.5	1	8	N E S W 2.0 2.0 2.0 2.0	0.5		Early Mature	Fair	Group around bramble vegetation.	2.9	1.0	20-40	C	2
G61	25	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N E S W 2.5 2.5 2.5 2.5	0.5		Early Mature	Fair	Access to inspect base - Not possible. Dense area, within reed area. Water logged at the time of the survey. Tree count estimated. **Fell - Ground level.** Fell a section of group as shown on the Tree Protection Plan.	10.2	1.8	20-40	C	2
G62	15	*Salix caprea* Goat Willow/Great Sallow	7.0	1	15	N E S W 2.0 2.0 2.0 2.0	0.5		Early Mature	Fair	Linear row, within reed area adjacent the big mats. Water logged at the time of the survey. Tree count estimated. Fragmented in places.	10.2	1.8	20-40	C	2
T63	1	*Salix caprea* Goat Willow/Great Sallow	3.5	7	42	N E S W 3.0 3.0 3.0 3.0	0.5		Early Mature	Good		81.1	5.1	20-40	C	1

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T64	1	*Salix caprea* Goat Willow/Great Sallow	4.5	7	31	N 2.0 E 2.0 S 2.0 W 2.0	0.5		Early Mature	Good		45.6	3.8	20-40	C	1
G65	15	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Early Mature	Fair	Access to inspect base - Not possible. Dense area. Tree count estimated. **Fell - Ground level.** Fell a section of the group as shown on the Tree Protection Plan.	10.2	1.8	20-40	C	2
G66	60 5	*Salix caprea* Goat Willow/Great Sallow *Betula pendula* Silver Birch	8.0	5	22	N 2.0 E 2.0 S 2.0 W 2.0	0.5		Early Mature	Good	Within reed area, adjacent existing substation. Water logged at the time of the survey. Tree count estimated. **Fell - Ground level.**	22.6	2.7	20-40	C	2
G67	25	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N 2.5 E 2.5 S 2.5 W 2.5	0.5		Early Mature	Fair	Access to inspect base - Not possible. Dense area, within reed area. Water logged at the time of the survey. Tree count estimated. **Fell - Ground level.**	10.2	1.8	20-40	C	2
T68	1	*Salix caprea* Goat Willow/Great Sallow	7.0	2	8	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	Multi stem tree, under 75mm dia. **Fell - Coppice.**	3.3	1.0	20-40	C	1
G69	25 10	*Salix caprea* Goat Willow/Great Sallow *Betula pendula* Silver Birch	8.0	2	14	N 2.5 E 2.5 S 2.5 W 2.5	0.5		Early Mature	Fair	Access to inspect base - Not possible. Dense area, within reed area. Water logged at the time of the survey. Tree count estimated. **Fell - Ground level.**	9.0	1.7	20-40	C	2
T70	1	*Salix caprea* Goat Willow/Great Sallow	7.0	2	11	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	**Fell - Coppice.**	5.8	1.4	20-40	C	1

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T71	1	*Salix caprea* Goat Willow/Great Sallow	7.0	2	11	N 3.5 E 3.5 S 3.5 W 3.5	0.5		Semi Mature	Good	**Fell - Coppice.**	5.8	1.4	20-40	C	1
G72	3	*Salix caprea* Goat Willow/Great Sallow	8.0	1	15	N 2.0 E 2.0 S 2.0 W 2.0	0.5		Early Mature	Fair	Small group, within reed area. Water logged at the time of the survey.	10.2	1.8	20-40	C	2
G73	5 5	*Salix caprea* Goat Willow/Great Sallow *Betula pendula* Silver Birch	8.0	5	22	N 2.0 E 2.0 S 2.0 W 2.0	0.5		Early Mature	Good	Adjacent existing substation.Tree count estimated.	22.6	2.7	20-40	C	2
G74	10	*Salix caprea* Goat Willow/Great Sallow	7.0	8	22	N 2.0 E 2.0 S 2.0 W 2.0	0.5		Early Mature	Fair	Self set establishing multi stem group.	23.2	2.7	20-40	C	2
G171	5 3	*Salix caprea* Goat Willow/Great Sallow *Corylus avellana* Common Hazel	9.0	10	31	N 3.0 E 3.0 S 3.0 W 3.0	2.5		Early Mature	Fair	Linear row, alongside hard surfaced access road. Does not extend over road.	45.2	3.8	20-40	C	2
G172	5 5 5	*Acer pseudoplatanus* Sycamore *Crataegus monogyna* Common Hawthorn/Quick/May *Salix caprea* Goat Willow/Great Sallow	12.0	1	35	N 5.0 E 6.0 S 5.0 W 5.0	5.0		Early Mature	Good	5 trees in group overhang road by 1-1.5m.	55.4	4.2	40+	B	2

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T173	1	*Buddleja sp.* Buddleja	2.5	5	22	N E S W 2.0 2.0 2.0 2.0	0.5		Early Mature	Good	Growing into road by 0.75m. Could be cut back.	22.6	2.7	10-20	C	1
G174	2 2 1	*Fraxinus excelsior* Ash *Salix caprea* Goat Willow/Great Sallow *Crataegus monogyna* Common Hawthorn/Quick/May	12.0	1	35	N E S W 5.0 6.0 5.0 5.0	1.5		Early Mature	Good	3 trees in group overhang road by 0.5-1m. Could be pruned back.	55.4	4.2	40+	B	2
G175	3 1 1	*Salix caprea* Goat Willow/Great Sallow *Buddleja sp.* Buddleja *Crataegus monogyna* Common Hawthorn/Quick/May	12.0	1	35	N E S W 5.0 6.0 5.0 5.0	1.5		Semi Mature	Good	3 trees in group overhang road by 0.5-1m. Could be pruned back. Located just inside gates.	55.4	4.2	40+	C	2
T176	1	*Buddleja sp.* Buddleja	2.5	5	22	N E S W 2.0 2.0 2.0 2.0	0.0		Early Mature	Good	Growing into road by 1-1.5m. Could be cut back.	22.6	2.7	10-20	C	1
T177	1	*Buddleja sp.* Buddleja	2.5	5	22	N E S W 2.0 2.0 2.0 2.0	0.0		Early Mature	Good	Growing into road by 0.25m. Could be cut back.	22.6	2.7	10-20	C	1
T178	1	*Populus sp.* Poplar sp.	22.0	1	75	N E S W 7.0 7.0 7.0 7.0	2.5		Mature	Good	Overhangs Road by 2m, Crown height over road is 3.5m. Overhangs hatched Bay by 6m. Could be crown lifted. Tree is located on verge, behind railing.	254.5	9.0	20-40	B	1

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T179	1	*Populus sp.* Poplar sp.	20.0	1	65	N E S W 7.0 7.0 7.0 7.0	15.0		Mature	Good	Previously crown lifted with epicorkic shoots sprouting, upto 1m over road. Shoots could be removed. Tree is located on verge behind railing.	191.1	7.8	20-40	B	1
T180	1	*Populus sp.* Poplar sp.	20.0	1	65	N E S W 7.0 7.0 7.0 7.0	3.0		Mature	Good	Overhangs Road and hatched area by 5.5m. Between 3 and 4.5m clearance. Could be crown lifted. Tree is located on verge behind railing.	191.1	7.8	20-40	B	1
G181	5 3	*Tilia sp.* Lime sp. *Acer campestre* Field Maple	15.0	1	45	N E S W 4.5 4.5 4.5 4.5	1.5		Early Mature	Good	Tips of lower branches overhang curb by 0.5-1m. Could be tip pruned.	91.6	5.4	20-40	B	2
G182	4 4 2	*Sambucus sp.* Elder sp. *Buddleja sp.* Buddleja *Salix caprea* Goat Willow/Great Sallow	5.0	1	20	N E S W 3.5 3.5 3.5 3.5	2.0		Early Mature		Group overhangs footpath, but not the road. Could be pruned back.	18.1	2.4	10-20	C	2
T183	1	*Platanus x hispanica* London Plane	15.0	1	50	N E S W 8.0 8.0 8.0 8.0	2.5		Early Mature	Good	Overhangs Road by 6m. Lo ccrown, aporox. 3-4m. Could be pruned back. There is pre fabricated 2m concrete sectional wall at the edge of the curb.	113.1	6.0	40+	B	1 2
T184	1	*Platanus x hispanica* London Plane	15.0	1	50	N E S W 8.0 8.0 8.0 8.0	2.5		Early Mature	Good	Overhangs Road by 6m. Low crown, aporox. 3-4m. Could be pruned back. There is pre fabricated 2m concrete sectional wall at the edge of the curb.	113.1	6.0	40+	B	1 2

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T185	1	*Platanus x hispanica* London Plane	15.0	1	50	N 8.0 E 8.0 S 8.0 W 8.0	2.5		Early Mature	Good	Overhangs Road by 4m. Low crown, aporox. 3-4m. Could be pruned back. There is pre fabricated 2m concrete sectional wall at the edge of the curb.	113.1	6.0	40+	B	1 2
T186	1	*Platanus x hispanica* London Plane	15.0	1	50	N 8.0 E 8.0 S 8.0 W 8.0	2.5		Early Mature	Good	Overhangs Road by 2m. Low crown, approx. 1.5-2m. Could be pruned back to wall. There is pre fabricated 2m concrete sectional wall at the edge of the curb.	113.1	6.0	40+	B	1 2
T187	1	*Platanus x hispanica* London Plane	15.0	1	50	N 8.0 E 8.0 S 8.0 W 8.0	2.5		Early Mature	Good	Overhangs Road by 4m. Low crown, approx. 3-4m. Could be pruned back. There is pre fabricated 2m concrete sectional wall at the edge of the curb.	113.1	6.0	40+	B	1 2
T188	1	*Acer campestre* Field Maple	12.0	1	45	N 8.0 E 8.0 S 8.0 W 8.0	3.5		Early Mature	Good	Overhangs Road by 3m. Low crown, approx. 3-4m. Could be pruned back. There is pre fabricated 2m concrete sectional wall at the edge of the curb.	91.6	5.4	40+	B	1 2
T189	1	*Platanus x hispanica* London Plane	15.0	1	50	N 8.0 E 8.0 S 8.0 W 8.0	2.5		Early Mature	Good	Overhangs Road by 4m. Lo ccrown, approx. 3-4m. Could be pruned back. There is pre fabricated 2m concrete sectional wall at the edge of the curb.	113.1	6.0	40+	B	1 2
T190	1	*Platanus x hispanica* London Plane	15.0	1	50	N 8.0 E 8.0 S 8.0 W 8.0	2.5		Early Mature	Good	Overhangs Road by 4m. Low crown, approx. 3-4m. Could be pruned back. There is pre fabricated 2m concrete sectional wall at the edge of the curb.	113.1	6.0	40+	B	1 2
G191	50	*Cupressocyparis leylandii* Leyland Cypress	18.0	1	25	N 2.5 E 2.5 S 2.5 W 2.5	5.0		Early Mature	Good	Overhangs concrete sectional wall at edge of curb by 2-3m. Crown clearance of 4.5-5m. Pruning would result in brown foliage which would not regrow.	28.3	3.0	20-40	B	2

Margam, South Wales
Tree Survey BS5837-2012 Substation Extension Site

Treework Environmental Practice

Tree/Group Reference	Tree Count	Species	Height (m)	Stem Count	Stem Diameter (cm)	Crown Radius (m)	Crown Clearance Height (m)	Lowest Branch Height (m)	Life Stage	Physiological Condition	Observations and Recommendations	RPA (m^2)	RPR (m)	Remaining Contribution (Years)	Retention Category	Retention Sub-category
T192	1	*Populus tremula* Aspen	47.0	1	70	N E S W 8.0 8.0 8.0 8.0	3.0		Mature	Good	Located on grass verge between access roads.,overhangs layby and footpath by 5m. Could be crown lifted/pruned back.	221.7	8.4	20-40	B	1
T193	1	*Alnus glutinosa* Common Alder	11.0	1	45	N E S W 6.0 6.0 6.0 6.0	2.0		Early Mature	Good	Overhangs pavement by 1m.	91.6	5.4	40+	B	1
T239	1	*Salix caprea* Goat Willow/Great Sallow	8.0	1	30	N E S W 1.0 6.0 4.0 0.0	2.5		Early Mature	Good	Overhangs access road by 0.5m.	40.7	3.6	10-20	C	1
T240	1	*Salix caprea* Goat Willow/Great Sallow	7.0	7	39	N E S W 2.5 2.5 2.5 2.5	2.0		Early Mature	Fair	Adjacent to bridge. Crown does not extend over access road.	71.3	4.8	20-40	C	1

Tree Schedule Key

Treework Environmental Practice

Tree/Group Reference	Reference number for individual trees or groups of trees, prefixed by T (Tree), G (Group), W (Woodland), H (Hedge) or S (Shrub) to indicate the type of feature.
Tree Count	Number of trees of a particular species recorded within a group feature, with the default value of 1 for single trees.
Species	Scientific name followed by common name (where available).
Height (m)	Tree height to the nearest metre, either measured with a device or estimated. Tree height for group records refers to the estimated average height of trees within the group (unrepresentative trees may be excluded from this estimate).
Stem Count	Number of stems. Stem count indicates whether the tree is single-stemmed or multi-stemmed and informs the RPA calculation.
Stem Diameter (cm)	Stem diameter, measured at 1.5m above ground level in accordance with Annex C of BS5837:2012. Diameters of multi-stemmed trees are presented as a combined stem diameter calculated in accordance with the formulae in Section 4.6.1 of BS5837:2012. Stem diameter for group records refers to the estimated average stem diameter of trees within the group (unrepresentative trees may be excluded from this estimate).
Crown Radius (m)	Distance from stem position to crown periphery in either the four cardinal or four ordinal directions, estimated to the nearest half metre. Crown spreads for group records refer to the estimated average spreads of trees within the group (unrepresentative trees may be excluded from this estimate).
Crown Clearance Height (m)	Distance between the ground and the lowest point of the crown periphery, estimated to the nearest half metre.
Lowest Branch Height (m)	Height of the lowest branch, the removal of which is considered likely to have a significant negative effect on the tree in terms of physiology or in terms of the size of wound created.
Life Stage	Young, Semi-mature, Early Mature, Mature, Late Mature, Ancient or Veteran.
Physiological Condition	Good, Fair, Poor, Dead.
Observations	General description of the tree or tree group, including basic features and morphology, structural and physiological condition, growing conditions and surroundings.
Recommendations	Management recommendations for tree works to address immediate unacceptable risks, or to facilitate development proposals.
RPA (m^2)	Minimum area around a tree deemed to contain sufficient roots and rooting soil volume to maintain the tree's viability, in which the protection of roots and soil structure is treated as a priority. Calculated from the stem diameter according to the formulae in BS5837:2012. RPA for group records is based on the estimated average stem diameter of trees within the group (unrepresentative trees may be excluded from this estimate).
RPR (m)	Radius of the RPA, in metres, when this is plotted as a circle around the tree stem.
Remaining Contribution (years)	Estimated number of years for which the tree will continue to make a positive contribution to the site, banded as < 10, 10-20, 20-40, 40 +.
Retention Category	Quality and value category (**A**, **B**, **C** or **U**) as defined in Table 1 of BS5837: 2012 (reproduced below), where **A** = high quality and value; **B** = moderate quality and value; **C** = low quality and value and **U** = tree identified for removal due to poor condition regardless of development proposals.
Retention Sub-category	One or more sub-categories (1-3) as defined in Table 1 of BS5837: 2012 (reproduced below), assigned for Categories **A**, **B** or **C** where 1 = arboricultural qualities, 2 = landscape qualities and 3 = conservation and cultural value.

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 are 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; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, 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)	See Table 2
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 though remediable 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 a 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	See Table 2
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	See Table 2

Appendix B

Tree Protection Plan

N

W E

S

Access route to install attenuation basin.

Attenuation Pond

Proposed Peat Burial Area

Proposed Access road

Proposed Substation Extension

Existing Substation

Ditch Diversion

Proposed Peat Burial Area

Pitch and Putt Course

Sports Facility

Margam Green Energy Plant

Margam Moors

Abbots Close

Bowling Green

Tennis Courts

Works

Tree or Group Reference Number

Tree Stem Position A Category Tree

Tree Stem Position B Category Tree

Tree Stem Position C Category Tree

Tree Stem Position U Category Tree

Tree Crown

Root Protection Area

Proposed Permanent work area

Tree Protection Fencing

Initial Tree Protection Fencing

Ground Protection

Special Engineering /Supervised Excavations

Construction Exclusion Zone

Pruning/Tree Removal

Planning Application Boundary

Topographical Survey

Date: August 2025

Scale: 1:1250 @ A1

Project Name: Margam, Port Talbot Proposed Substation

Drawing Title: Tree Protection Plan

Drawing Number: 250807-2.5-MPT_PSBST-TPP(AIA)-SH

Treework Environmental Practice

Treework Environmental Practice
2nd Floor
10-12 Bourlet Close
London
W1W 7BR

Tel: 0117 244 0012
Web: www.treeworks.co.uk
Email: info@treeworks.co.uk

Appendix C

Tree Constraints Plan

N
W
E
S

Abbots Close
Bowling Green
Tennis Courts
Pitch and Putt Course
Sports Facility
Pavilion
Balancing Pond
Upper Mother Ditch
Margam
Green Energy
Plant
Power Station
Margam
Moors
Works
Works

T1 Tree or Group Reference Number
Tree Crown
Root Protection Area
Redline boundary for planning application
Proposed Permanent work area
Tree Stem Position A Category Tree
Tree Stem Position B Category Tree
Tree Stem Position C Category Tree
Tree Stem Position U Category Tree
Planning Application Boundary

Date: August 2025

Scale: 1:1250 @ A1

Project Name: Margam, Port Talbot Proposed Substation

Drawing Title: Tree Constraints Plan

Drawing Number: 220804-2.1-MPT_PSBS-TCP(AIA) -SH

Treework Environmental Practice
2nd Floor
10-12 Bourlet Close
London
W1W 7BR
Tel: 0117 244 0012
Web: www.treeworks.co.uk
Email: info@treeworks.co.uk

Appendix D

Tree Protection Specifications

Technical Measures to Prevent Tree Damage

Tree Pruning

Tree pruning will be carried out where the design and/or planned site operations encroach into the crowns of trees and where these encroachments can be accommodated through facilitation pruning without significantly reducing the landscape value and/or viability of the tree.

Tree pruning operations will:

- be specified by the arboricultural consultant
- be in accordance with current best practice
- be carried out by a suitably experienced and qualified arborist

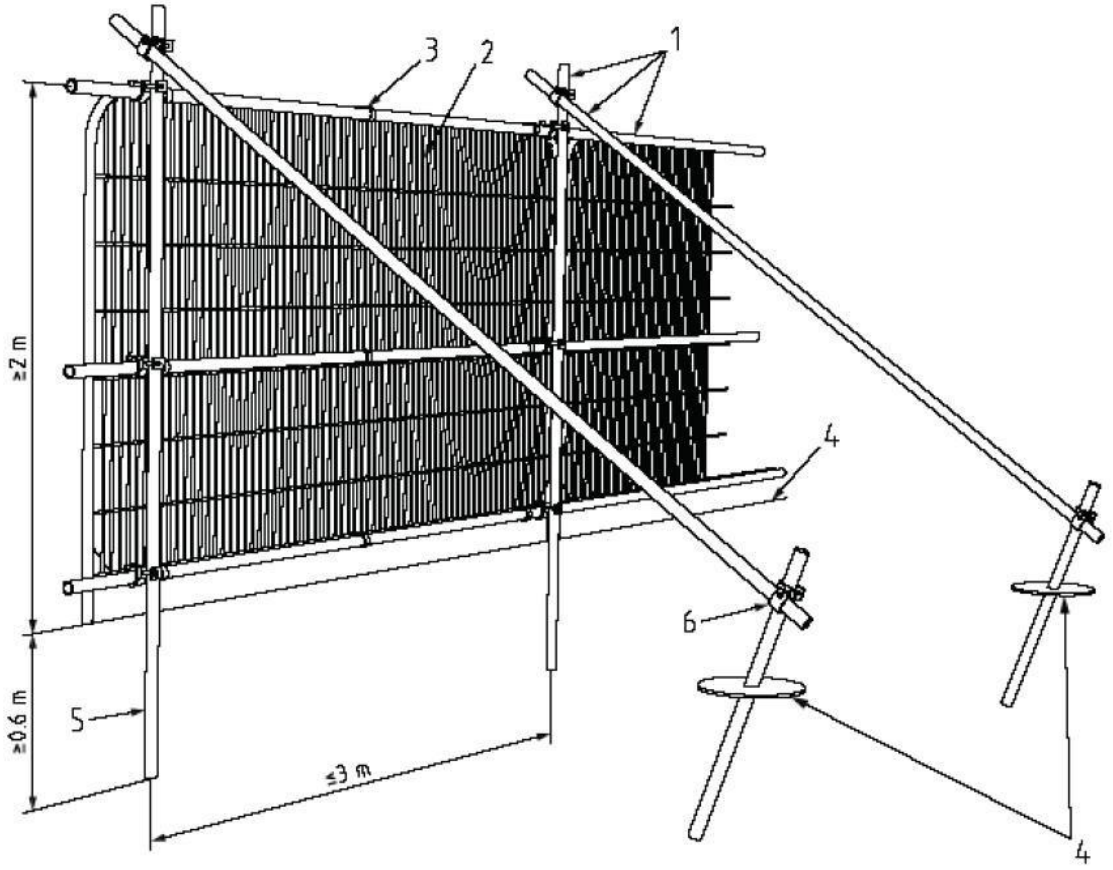
Tree Protection Fencing

Tree protection fencing will be located at the edge of the Construction Exclusion Zone (CEZ) and will be suitably robust to provide sufficient protection for trees. The performance requirement for fencing will be determined by the type of activity that will take place in the area around the CEZ.

Typically the performance requirement for the Tree Protection Fencing will be:

- Tree Protection Fencing will be installed prior to commencement of activity on the site.
- Tree Protection Fencing will only be removed once all works associated with the development have been completed.
- The Tree Protection Fencing will be installed and removed without causing damage to retained trees.
- Installation, removal and, where required, replacement of Tree Protection Fencing will be supervised and signed off by the Arboricultural Consultant.
- The Tree Protection Fencing will be stable and robust (typical construction method, in accordance with BS5837: 2012, see below).
- The area between the Tree Protection Fencing and the tree will be a Construction Exclusion Zone (CEZ)
- Fence panels will be made of mesh (e.g.: Heras fencing) or, if solid, will have 30cm windows cut into enough panels to enable conditions within the CEZ to be viewed.
- The CEZ will be clearly identified (see Construction Exclusion Zone sign example below)

Fig. 1: Example Tree Protection Fencing Sign



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Fig. 2: BS 5837:2012 - Figure 2 – Tree Protective Barrier

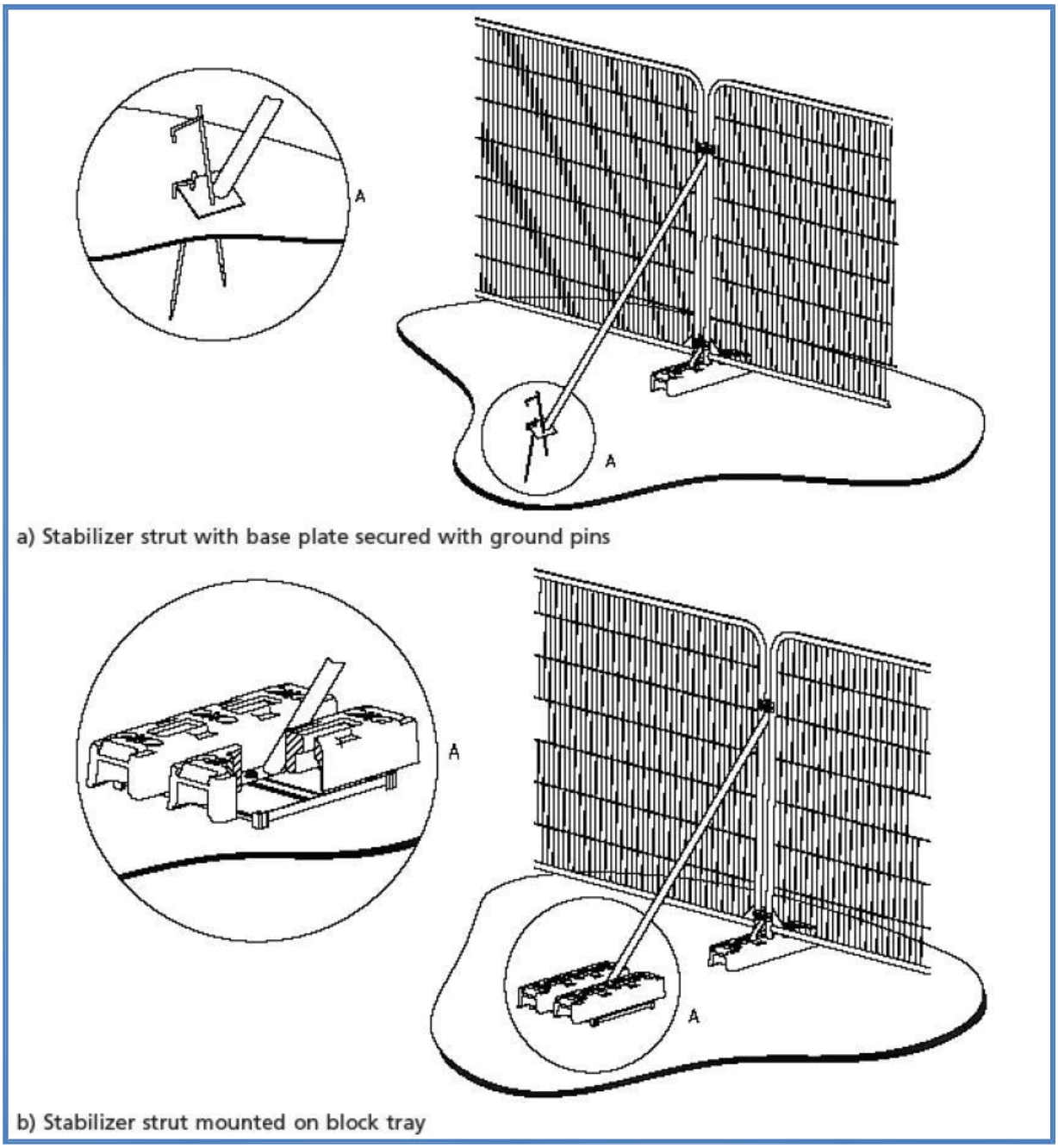


Fig. 3: BS 5837:2012 - Figure 3 – Examples of Above Ground Stabilisation Systems

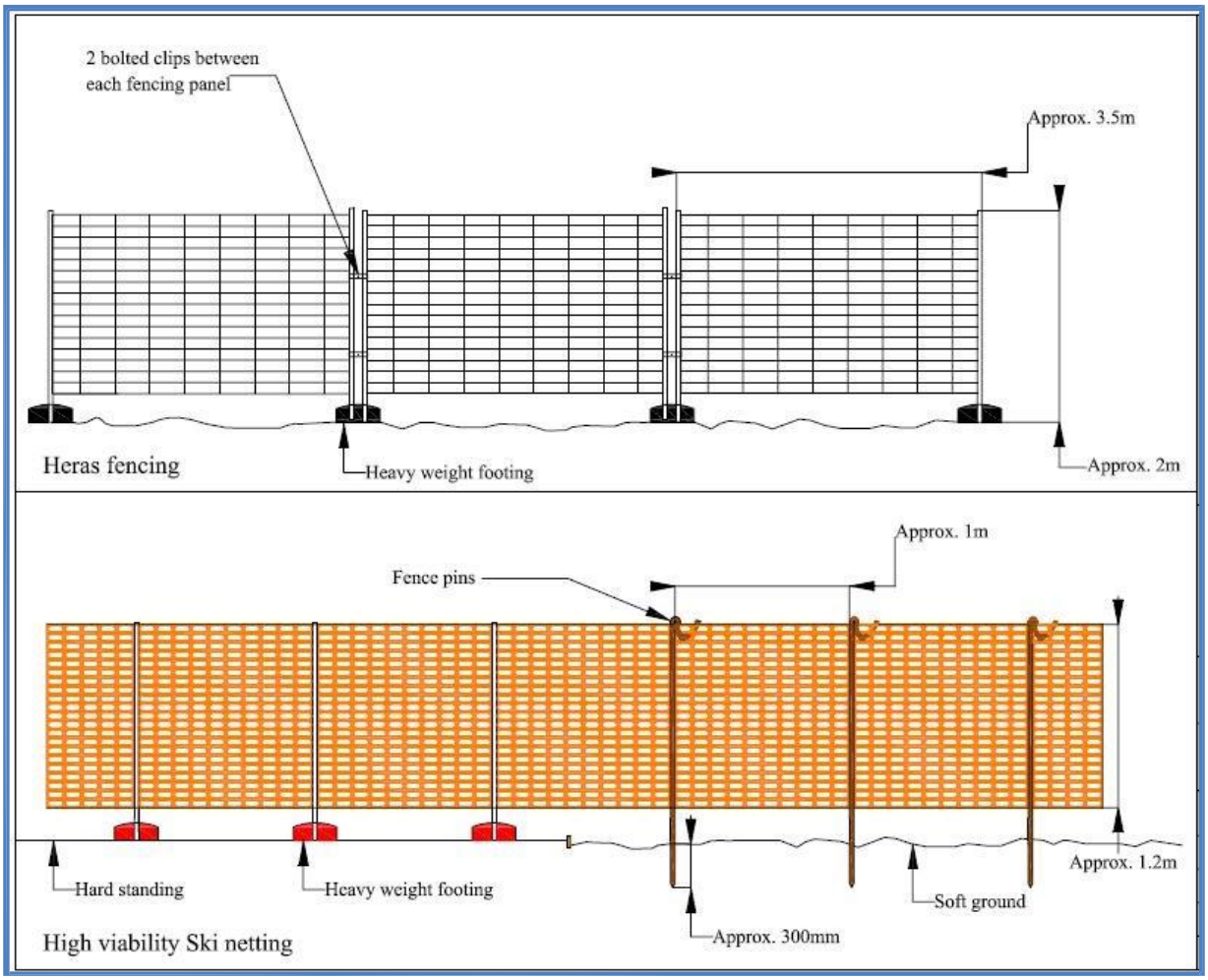


Fig. 4: Examples of specification fencing that may be appropriate for areas of low-intensity activity

No-dig Construction and Special Engineering Measures

No-dig construction methods and special engineering measures will be employed to enable the construction of roads and other built features within the RPAs of trees without damaging tree roots. Installation of built features using no-dig and special engineering measures will meet the following performance criteria:

- Ensure that tree roots are not damaged.
  - *For the roots of the trees to remain undamaged there must be no excavation, soil stripping or site grading within the rooting areas – in other words NO DIGGING.*
- Ensure that soil is not compacted.
- Ensure that no spilled toxic materials seep into the soil.
- Ensure that sufficient rain water reaches tree roots.
- Ensure that gaseous exchange can take place within the soil around tree roots.
- All operations will be supervised and signed off by the Arboricultural Consultant.

Appendix E

Tree Survey Method and Limitations

Treework Environmental Practice

Tree Survey Method and Limitations

Tree Survey Method

1. The tree survey was conducted from ground level aided by the Visual Tree Assessment method (Mattheck and Breloer, 1994) and in accordance with BS5837: 2012.

2. All trees on the site with a stem diameter of over 75 mm (measured at 1.5 m above ground) were included in the survey.

3. Offsite trees within influencing distance of the site (typically those located within a distance of up to 12 times their stem diameter away from the site) were included in the survey.

4. Data collected included:

   - a designated tree number
   - type of feature (trees, group, woodland, hedge)
   - number of trees in group
   - tree species
   - height (metres)
   - number of stems
   - stem diameter (in centimetres, as measured at 1.5 m above ground)
   - crown clearance (height of periphery of crown spread above ground level in metres)
   - height of lowest branch (metres),
   - branch spread (to N, S, E and W)
   - age class
   - physiological condition
   - useful life expectancy
   - structural condition
   - BS5837 retention category (A, B, C or U)
   - site notes (where this has a bearing on the present or future health or structural condition of the tree)
   - preliminary management recommendations.

5. All measurements were made in metric using measuring devices where applicable. Estimated stem diameters (e.g., due to lack of access or dense undergrowth) were recorded as such and are shown in the Tree Schedule in bold (see the key at the end of the Tree Schedule table at Appendix A for an explanation of the measurements and codes presented therein).

6. While the appraisals of the surveyed trees are not tree risk assessments, they nonetheless take into account observed structural defects in drawing conclusions about the trees' retentive worth.

Survey Limitations

1. The survey was a preliminary assessment from ground level and observations were made solely from visual inspection for the purposes of an assessment relevant to planning and development. Only binoculars, trowel, mallet and fine manual metal probe were used to aid tree assessment, where necessary. No invasive or other detailed internal decay detection devices were used in assessing trunk condition.

2. The conclusions relate to conditions found at the time of survey. Any significant alteration to the site that may affect the trees that are present or have a bearing on the planning implications (including level changes, hydrological changes, extreme climatic events or other site works) will require a re-assessment of the trees and the site.

3. This survey is not a tree safety inspection. It is carried out in order to inform the planning process. Where clear and obvious hazards have been observed, these have been addressed in the recommendations (see Appendix A - Tree Schedule). A full assessment of the levels of risk posed by trees would need to consider site use together with tree hazards.