

ELBA CRESCENT, SWANSEA

Tree Survey Report and Arboricultural Impact Assessment



JSL4233_770
Tree Survey and
Arboricultural Impact
Assessment
-
11 March 2022

TREE SURVEY AND ARBORICULTURAL IMPACT ASSESSMENT

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1 INTRODUCTION

- 1.1 This Tree Survey and Arboricultural Impact Assessment (AIA) has been prepared by RPS on behalf of Hawkland Estates Ltd, to support the application for a proposed residential development scheme on a parcel of land located to the north of Elba Crescent, Swansea, SA1 8QE.
- 1.2 A tree survey of the application area was carried out by RPS on the 20th October 2021 and 21st October 2021, in accordance with the requirements of BS5837:2012. Refer to Tree Constraints Plan JSL4233_700 (Appendix A). The weather was clear and dry.
- 1.3 This report has been prepared in broad accordance with the requirements set out in BS5837:2010 'Trees in relation to design, demolition and construction – Recommendations.'¹
- 1.4 The purpose of this report is to:
- Provide an assessment of the quality of the surveyed trees with reference to the categories and sub-categories listed within Table 1 - BS5837:2012.
 - Assess and quantify the arboricultural impact of the proposed development within the survey area, based on the proposed development layout.
 - Provide additional arboricultural information and advice in relation to the protection of trees throughout the development of the site.
 - Provide a Tree Protection and Removal Plan to detail the proposed protective measures to be taken in respect of the trees during development of the site.
- 1.5 The Tree Protection and Removal Plan JSL4233_710 included at Appendix C identifies the following:
- Trees to be retained;
 - Alignment and design of protective fence;
 - Root Protection Area (RPA) of trees;
- 1.6 The Tree Protection and Removal Plan shall be made available to all relevant site operatives prior to and throughout the construction process, so they understand the scope and importance of the tree protection measures.
- 1.7 To minimise the potential for harm to occur to retained trees all works shall be carried out with regard to the Tree Protection Measures and construction techniques detailed within this report.
- 1.8 In particular the establishment of a Construction Exclusion Zone (CEZ) by erection of Tree Protection Fencing will minimise the potential for harm to occur to retained trees.

¹ British Standards Institute. British Standard (BS5837) Trees in Relation to Design, Demolition and Construction - Recommendations. 2012.

2 SITE LOCATION

- 2.1 The survey covered a parcel of land located to the north of Elba Crescent, Swansea, SA1 8QE. Swansea is a city located on the south coast of Wales, approximately 40 miles east of Cardiff. The land is roughly centred on OS grid reference SS69859302.
- 2.2 The survey site currently comprises a car park surrounded by scrub, vegetation and trees. The wider environs consist of open fields, woodland and residential housing. Swansea University Bay Campus is located approximately 0.3 miles to the south of the site whilst Swansea Docks are located approximately 1.5 miles to the west.

3 SURVEY METHODOLOGY

- 3.1 This report was completed by Alice Brown of RPS and authorised by David Cox, a professional member of the Arboricultural Association and Chartered Landscape Architect of RPS Group.
- 3.2 The report and survey were carried out in general accordance with the requirements set out in BS 5837:2012 “Trees in Relation to Design, Demolition and Construction – Recommendations”.
- 3.3 The tree survey involved a visual inspection from the ground of individual specimens and groups of trees in order to record their amenity value, management recommendations and dimensions. Where observed, the general condition of all the trees has been noted. The survey does not constitute a full arboricultural condition assessment involving the detailed inspection of trees in relation to their structural condition, decay, and any other physical and pathogenic defects.
- 3.4 The locations of the trees were based upon topographic survey (JER7348-75-004) produced by EDI Surveys Ltd in September 2007.
- 3.5 The survey assesses individual trees and groups of trees for quality and benefits within the context of proposed development. The quality of each tree or group of trees has been recorded by allocating it to one of four categories as described in table 3.1. These categories have been differentiated on the Tree Constraints plan (JSL4233_700-Appendix A) by colours.
- 3.6 The survey information was recorded on the attached schedule (Appendix C) in general accordance with the guidance contained within Section 4 of BS 5837:2012 “Trees in relation to design, demolition and construction - Recommendations”.
- 3.7 The information recorded includes the following-

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Table 3.1 Tree characteristics recorded during survey

Tree Ref No:	Sequential reference number of trees or groups of trees. Avenues, woodlands and hedgerows were also recorded on the tree constraints plan. # - denotes inaccessible trees (best estimates are made about the location, physical dimensions and characteristics.)			
Species	Species listed by common name, with scientific names (italic lettering).			
Height (m)	Estimated height of canopy to nearest metre.			
Branch Spread	branch spread, taken as a minimum at the four cardinal points, to derive an accurate representation of the crown			
Stem diameter @ 1.5 m (m)	Estimated diameter of trunk at 1.5 m above ground level in metres unless otherwise indicated, multi-stemmed trees being measured in accordance with Annex C: BS5837			
Existing height above ground level	To inform on ground clearance, crown/stem ratio and shading the estimated height of the first significant branch and direction of growth and canopy above ground level.			
Stem No.	Number of stems (if necessary) of individual tree.			
Life Stage	Expressed as:-	Y	(Young)	OM (Over-mature)
		SM	(Semi-mature)	V (Veteran)
		EM	(Early-mature)	D (Dead)
		M	(Mature)	
Physical Condition	Apparent condition expressed as the following categories, based upon a brief visual inspection from the ground only:-			Good Fair Poor Dead
Comments / Management Recommendations	General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay and physical defect), and/or preliminary management recommendations and potential for wildlife habitats (not exhaustive).			
Estimated remaining contribution (years)	Estimated remaining contribution, in years (<10, 10+,20+,40+)			
Tree Quality Assessment Value: <u>Category</u>	Criteria grading with regards to Table 1: BS 5837:2012, expressed as:-	A (Trees/Vegetation of high quality and value) B (Vegetation of moderate quality and value) C (Trees/Vegetation of low quality and value) 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)		
Tree Quality Assessment Value: <u>Sub - Category</u>	* Category U trees can have existing or potential conservation value which might be desirable to preserve.			
	Criteria grading with regards to Table 1: BS 5837:2012, expressed as:-	1 (Trees with mainly <i>arboricultural</i> value) 2 (Trees with mainly <i>landscape</i> value) 3 (Trees with mainly <i>cultural / conservation</i> value)		

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Limitations

- 3.8 The findings of this survey are not valid following adverse or unpredictable weather conditions or for any failure due to 'force majeure' or unpredictable events.
- 3.9 Trees were not climbed or inspected below ground level and inaccessible trees will have best estimates made about the location, physical dimensions and characteristics.
- 3.10 Where the locations of trees were not highlighted in the provided topographical survey-JER7348-75-004 provided by RPS, they were estimated on site and highlighted within the supporting plan/s with a '#'.
- 3.11 Trees and woody vegetation were not assessed for their potential impact upon future construction issues such as foundation designs (re: NHBC chapter 4.2)². Whilst this report may assist in assessing likely future impacts, it should not be classed as a comprehensive vegetation survey in relation to impact upon future designs.

² NHBC. 'Chapter 4.2- Building Near Trees'. NHBC Standards 2016. 2016.

4 APPRAISAL AND RECOMMENDATIONS

Generally

- 4.1 In general, trees appear to be in good to fair health, being largely consistent with expectation for the age, management and species. **70nr.** individual trees, **12nr.** tree groups and **5nr.** hedges were recorded. Age varied between young and mature.
- 4.2 There was some variation in species, with Lawson Cypress, Scots Pine and Silver Birch being abundant.
- 4.3 The eastern boundary was bordered by a number of conifers, forming a tree belt. Collectively, these trees provided much landscape value.

Planning considerations

- 4.4 Trees can offer many benefits, including the provision of visual amenity, softening or complementing the effect of the built environment, and adding maturity to new developments by making places more comfortable in tangible ways e.g. contributing screening and shade, reducing wind speed and turbulence, intercepting snow and rainfall, and reducing glare.
- 4.5 New tree planting opportunities should be considered as part of any potential redevelopment; this will help to broaden the age diversity of the tree cover within the area. Sufficient space should be provided for species with significant stature to grow out into maturity.
- 4.6 Under the UK planning system, local authorities have a statutory duty to consider the protection and planting of trees when granting planning permission for proposed development. The potential effect of development on trees, whether statutorily protected (e.g. by a tree preservation order or by their inclusion within a conservation area) or not, is a material consideration that is taken into account in dealing with planning applications.
- 4.7 Trees covered by a Tree Preservation Order are protected under the Town and Country Planning Act 1990 (Trees Regulation 2012) and the local authority must be consulted and permission sought for any works that may affect them.
- 4.8 TPOs: An email response from Neath Port Talbot County Borough Council confirmed that there are no trees within or surrounding the survey site that are covered by a TPO (Refer to Appendix D).
- 4.9 Conservation Areas: An email response from Neath Port Talbot County Borough Council confirmed that the site does not form part of a conservation area (Refer to Appendix D)..
- 4.10 Ancient woodlands: It was confirmed by 'Landmark Information Group' that the site does not form part of an ancient woodland (Refer to appendix E)

Design and Site Layout Considerations

- 4.11 A tree constraints plan defines the Root Protection Area (RPA) for each tree shown as a circle. This area may be adjusted should physical constraints or topographical features limit root activity in a particular area, however the total area should remain the same. Prior to any adjustment of the trees RPA zones the changes should be assessed by an arboriculturalist.

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- During any site planning exercises the current and future growth potential of the trees should be considered.
- 4.12 The RPA for single stem trees broadly equates to a radius 12 times the stem diameter of the tree at 1.5m above ground level or the extent of canopy spread, whichever is the greater. For multi-stemmed, low branching trees or those with trunks with an irregular girth the point of stem diameter measurement is adjusted in consideration of these factors and in accordance with the illustrations in BS5837:2012 (Annex C).
 - 4.13 The RPA should become an exclusion zone during construction works and for any development. It should be fenced-off and protected in accordance with BS5837:2012. The canopy is likewise susceptible to damage during construction work and requires similar protection.
 - 4.14 No activities that result in excavations, changes in level or soil compaction should take place within the RPA of any retained trees, especially older mature trees. This would include the storage of materials, any construction work, trafficking by vehicles or even excessive trafficking by pedestrians.
 - 4.15 If some form of construction has to take place within the RPA then certain measures need to be adopted to avoid disturbance or damage to the roots and to maintain moisture infiltration and gaseous diffusion into the soil.
 - 4.16 Services likewise should be routed outside the existing or potential root zone of trees. Where it is unavoidable, then certain measures should be employed to avoid damage to the trees larger roots.
 - 4.17 The location and siting of new services near trees should consider the potential impact on and conflict with both tree roots and canopy. This should take into account the ultimate size of existing young and middle-aged trees at maturity. Conversely the impact of the tree on the activities should also be considered with regard to obstruction, shading, leaf fall and root action. These are problems that can be managed provided sufficient space is allowed for.

Services

- 4.18 Services likewise should be routed outside the existing or potential root zone of trees. Where it is unavoidable, then certain measures should be employed to avoid damage to the trees larger roots.
- 4.19 The location and siting of new facilities near trees should consider the potential impact on and conflict with both tree roots and canopy. This should take into account the ultimate size of existing young and middle-aged trees at maturity. Conversely the impact of the tree on the activities should also be considered with regard to obstruction, shading, leaf fall and root action. These are problems that can be managed provided sufficient space is allowed for.
- 4.20 Any new services should avoid the RPAs of any retained tree. Where it is unavoidable, then the route of the services must be designed by an Engineer in consultation with an Arboriculturalist.
- 4.21 For further advice, read in full - NJUG Volume 4- "Guidance for the planning, installation and maintenance of utility services in proximity of trees". (The National Joint Utilities Group.

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*NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. 2007).*³

Trees and Management of Health and Safety

- 4.22 It is recommended that a programme of periodic arboricultural assessments be undertaken in order to regularly assess the full health and safety of all trees both in full leaf and bare stemmed. The assessments should prioritize areas based on levels of access and presence of target (i.e. exposure of people to hazard) and accord with arboricultural advice, taking account of relevant factors (where known) that affect safety such as the age class, condition, size and species of the trees.

³ N.J.U.G. 4: Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees. 2007

5 ARBORICULTURAL IMPACT ASSESSMENT

Introduction

- 5.1 Trees have finite energy reserves, developed each year throughout the growing season, which are utilised for biological processes such as growth and defence against pests or diseases throughout the following year.
- 5.2 Any development in proximity to trees has the potential to cause harm to those trees unless control measures are identified and acted upon; as such it is essential to consider the relationship between the proposed development and the retained trees to identify what precautions are necessary, proportionate and appropriate.
- 5.3 Development has the potential to impact upon the above ground and below ground parts of trees. Whilst some damage that can occur, such as physical damage to the trees stems and branches from machinery movements, is clearly visible the impact from other aspects of work common on development sites which can have a significant effect upon the continued health of trees are not always immediately evident.
- 5.4 Damage that is not immediately evident, but which can cause long term harm to retained trees includes things such as damage to the soil structure by compaction causing root damage and levels changes altering the water table and affecting moisture availability.
- 5.5 To minimise the potential for harm to occur to retained trees all works must be carried out with regard to the Tree Protection measures detailed within this report.
- 5.6 In general, it can be seen that, by adopting appropriate methods of working, precautionary and protective measures, significant harm to retained trees can be avoided.
- 5.7 In particular the establishment of a Construction Exclusion Zone (CEZ) by erection of Tree Protection Fencing will minimise the potential for harm to occur to retained trees.

Brief Description of Proposed Development

- 5.8 This report relates to the following:
 - Development of a new residential scheme and associated infrastructural works

Identified Tree Removal and Specific Works

- 5.9 In order for this development to be realised, the following trees and vegetation require removal:
 - 2 Category A trees (T25 & T61);
 - 4 Category B trees (T7, T9, T62 & T65);
 - 35 Category C trees (T10, T11, T12, T13, T14, T15, T16, T17, T18, T19, T20, T21, T22, T29, T30, T31, T32, T33, T34, T35, T36, T37, T38, T39, T40, T41, T42, T43, T44, T45, T46, T47, T48, T64 & T66);
 - 5 Category C tree groups (G5, G6, G8, G10 & G12);
 - 2 Category B tree groups (G7 & G11);
 - 4 Category C hedges (H1 (Partial removal), H2, H3, H4 & H5(Partial removal)).

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- 5.10 Additionally, pruning may be required from the eastern, southern and western edges of G7.

Root Protection Areas

- 5.11 To compensate for the loss of trees, considerable new tree planting is proposed as part of this scheme, using a broad range of species with a wider age diversity.
- 5.12 Any future tree planting associated with the landscaping proposals for the site should be undertaken in accordance with the guidelines detailed in BS8545 Young Trees: From Nursery to Independence in the Landscape⁴.

Root Protection Areas

- 5.13 Following the erection of tree protective fencing, the majority of the proposed development will take place outside of the RPA of trees to be retained.
- 5.14 However, it can be noted that where the development overlaps with the RPAs of T5 and G2, precautionary 'hand-dig' works in accordance with BS3998 will be required (Refer to the Tree Protection and Removal Plan-JSL4233_710).
- 5.15 Ground protection will be installed to protect the RPAs of trees which overlap with construction access.

Outline methodology within Root Protection Areas

- 5.16 All new (and existing re-routed) services shall be routed outside the existing or potential RPA of retained trees. Where it is unavoidable, then hand excavation shall be employed to avoid damage to the larger roots and the services slid through or below the root system. Ducting shall be used to carry cables. Reference shall be made to the recommendations included within Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (NJUG 4)⁵.
- 5.17 Details of Tree Protection Fencing and ground protection are detailed in the following section of this document.
- 5.18 The RPA should become an exclusion zone during construction works and for any development. It should be fenced-off and protected in accordance with BS5837:2012. The canopy is likewise susceptible to damage during construction work and requires similar protection.
- 5.19 No activities that result in excavations, changes in level or soil compaction should take place within the RPA of any retained trees, especially older mature trees. This would include the storage of materials, any construction work, trafficking by vehicles or even excessive trafficking by pedestrians.

⁴ British Standards Institute. *British Standard (BS8545) Young Trees: From Nursery to Independence in the Landscape*

⁵ <http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf>

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- 5.20 The location and siting of new facilities near trees should consider the potential impact on and conflict with both tree roots and canopy. This should take into account the ultimate size of existing young and middle-aged trees at maturity. Conversely the impact of the tree/s on end user activities should also be considered with regard to obstruction, shading, leaf fall and root action. These are problems that can be managed provided sufficient space is allowed for.
- 5.21 Where works within the RPA are unavoidable works must be undertaken by hand and the soil levels should be carefully reduced by hand to avoid damage to the bark of larger roots directly beneath and adjacent to the excavation. Where these become exposed, they should be further protected from drying out. Where root pruning is unavoidable it should be made at a suitable place within the root system, avoiding damage to surrounding tissue in accordance with BS 3998:2010⁶. Final pruning cuts shall be made at right angles to the axis of the root and the final cut wound should be smooth and as small as possible, free from ragged torn ends.
- 5.22 To minimise harm occurring as a result of the works existing hardstanding should be reused. Any necessary hard surface removal within the Root Protection Area (RPA) shall be carried out by low impact hand held pneumatic tools. Removal of the surface shall occur in strips working from the undisturbed surface, working in a retreating manner away from the retained trees. Subsequent removal of arisings / debris shall also be carried out by hand.

⁶ British Standards Institute. British Standard (BS3998) Trees Work - Recommendations. 2010.

6 TREE WORKS

Standard of Work (If required)

- 6.1 All tree works shall be carried out in accordance with BS3998:2010 and latest arboricultural best practice.
- 6.2 All tree work shall be carried out by suitably qualified, competent and insured arboricultural contractors in accordance with Arboricultural Association Standard Conditions of Contract and Specifications for Tree Works (2008) Edition and BS 3998:2010 Tree Work.
- 6.3 All green and woody waste generated by the tree works shall be removed from site and disposed of in an environmentally sustainable manner.
- 6.4 When a branch is removed at its point of attachment, injury of the wood and bark of the parent stem or branch above the cut shall be avoided. If a branch collar is visible, the final cut shall be just outside it and care shall be taken to avoid tearing retained wood and bark when the cut is made. Preliminary cuts shall be made, if necessary, so as to remove weight, before a final cut is made. Care shall be taken to prevent falling branches from harming other parts of the tree (including its roots), its surroundings, people or property. Heavy branches shall be removed in sections and, where necessary, shall be lowered with ropes.
- 6.5 Prior to the commencement of any tree works an appropriate risk assessment shall be produced to describe the measures required to fulfil the statutory safety obligations. It shall aim to identify and prioritise the necessary control measures and precautions.
- 6.6 Following the works, it is recommended that the trees are monitored on a regular basis to ensure their ongoing vitality and health. These inspections shall be completed by a suitably qualified and experienced person.

Timing of Works

- 6.7 Any tree works required shall be completed prior to any construction and enabling works on the site.

7 TREE PROTECTION MEASURES

Construction Exclusion Zone

- 7.1 The protective fence line defines the Construction Exclusion Zone (CEZ) and the fencing shall not be moved or taken down at any time. Within the Construction Exclusion Zone there must be no mechanical digging or scraping; no alteration to existing ground levels including soil stripping; no earthworks; and no handling or discharge of any chemical substance, concrete washings or of any fuels.
- 7.2 Furthermore vehicular or pedestrian access and the storage of any materials is prohibited within the Construction Exclusion Zone.
- 7.3 Additionally no materials that may contaminate the soil such as concrete mixings, diesel oil and vehicle washings shall be discharged within 10m of the stem of any tree and no fires shall be lit within 10m of the maximum extent of a trees crown.

Tree Protection Fencing

- 7.4 The tree protection fence shall be erected as shown on the Tree Protection and Removal Plan (JSL4233_710) included with is report.
- 7.5 The fence line shown is the minimum required and the length of the fence shall be extended or adjusted on site as agreed with the Arboricultural Consultant to ensure satisfactory protection of all retained trees and RPAs.
- 7.6 Where proposed (permanent) construction site-hoarding provides the same level of protection to the retained trees and RPAs as the proposed tree protection fence, subject to agreement with the Arboricultural Consultant, the hoarding may serve as the tree protection fence. Notwithstanding, depending on the form and alignment of the construction site-hoarding it may be necessary to provide additional tree protection fence to ensure adequate protection of retained trees and RPAs as shown on the Tree Protection Plan.
- 7.7 Unless otherwise agreed in writing with the Arboricultural Consultant and/or LPA Tree Officer, the fencing system to be utilised shall be in accordance with Appendix B and compliant with BS5837:2012.
- 7.8 Once the protective barrier is in place it must remain in situ throughout the course of the development until the completion of development, other than to facilitate agreed tree removal; see below.
- 7.9 Where necessary, tree protection fencing may be temporarily re-aligned in order to facilitate tree removal. Fencing is to be re-instated immediately following removal in a manner that encompasses the remaining trees and their respective RPAs. During tree removal, no
- 7.10 Wheeled or tracked machinery is to enter the area previously encompassed by tree protective fencing as shown in the Tree Protection and Removal Plan.
- 7.11 Copies of the Tree Protection and Removal Plan shall be placed in the site office for reference by all site staff.
- 7.12 Signs detailing the purpose of the protective barrier shall be attached to the barriers at 10m intervals. Such signs should be weatherproof and shall be substantially in the form of the

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specimen provided at Appendix H. Signs must be replaced as necessary should they be removed or become illegible.

Site Compounds and Materials Stores

- 7.13 Activities related to the establishment of a temporary site compound have the potential to impact upon retained trees by various means. In particular the storage and mixing of chemicals and materials such as concrete can have a damaging effect on tree health if precautions are not taken.
- 7.14 To prevent harm occurring to trees, provision for materials storage, deliveries and other related activities shall be made available in areas away from retained trees.
- 7.15 Under no circumstances shall materials or plant be stored beneath the canopy or within or abutting the Root Protection Zone of any retained trees/hedges, whether fenced or not.

Reporting

- 7.16 Should any arboricultural issues become apparent during the works the site manager should immediately contact the Arboricultural Consultant or the Council's Tree Officer for advice upon how to proceed.

8 CONCLUSION

- 8.1 A comprehensive tree survey has been completed on the site and its immediate surroundings. The survey was completed in accordance with BS5837:2012.
- 8.2 In order for this development to be realised, two category A trees, four category B trees, thirty-five category C trees, five category C tree groups, two category B tree groups and four category C hedges will require full or partial removal.
- 8.3 Pruning may be required from the eastern, southern and western edges of G7.
- 8.4 Precautionary 'hand-dig' works in accordance with BS3998 will be required where the development overlaps with the RPAs of T5 and G2 (Refer to the Tree Protection and Removal Plan-JSL4233_710).



APPENDICES

Appendix A

Tree Constraints Plan JSL4233_700



Appendix B

Tree Survey Schedule JSL4233_750

Tree Survey Schedule

Site Elba Crescent, Swansea

Project schedule ref: JSL4233_750

Drawing reference: JSL4233_700

Survey date: 20.10.2021 & 21.10.2021

Surveyor: A Brown

Status: For Information

Revision: .

Notes:



Ref. no.	Species	Height (m)	Crown spread (m)				Stem dia. (m)	Stem no. at 1.5m	Height of crown clearance (m)	Dir/ height	Age class	Structural condition	Physiological condition	General observations Management recommendations	Estimated remaining contribution (years)	Tree Quality Category (BS5837)
			N	E	S	W										
T1#	Chamaecyparis lawsoniana Lawson Cypress	11.0	2.5	2.5	2.5	2.5	0.20 0.33 0.6	3.00	2.00	E	EM	Good	Good	Tri-stemmed.	40+	B2
T2#	Salix sp. Willow	11.0	3.0	3.5	2.0	2.0	0.37	1.00	1.00	N	EM	Fair	Fair	Bias to east. Some wood rot.	30+	C2
T3#	Salix sp. Willow	3.0	1.0	1.0	1.0	1.0	0.35	1.00	-	-	SM	Fair	Fair	Fallen tree (to east). Some regeneration.	20+	C2
T4#	Chamaecyparis lawsoniana Lawson Cypress	11.0	3.5	1.5	2.5	1.5	0.15 0.38 0.45	3.00	2.50	N	EM	Good	Good	Trifurcates at 1m.	40+	B2
T5#	Chamaecyparis lawsoniana Lawson Cypress	11.0	2.0	2.5	2.5	2.5	0.2 0.3 0.33*4	6.00	0.00	N	M	Good	Good	Prominent, multi-stemmed tree.	40+	B2
T6#	Populus x candescens Grey Poplar	7.0	3.0	2.0	1.0	2.0	0.17 0.21	2.00	1.00	S	SM	Fair	Fair	Poplar on edge of footpath, bifurcates at 0.5m.	20+	C2
T7#	Chamaecyparis lawsoniana Lawson Cypress	10.0	3.0	2.5	3.0	2.5	0.4*2	2.00	2.00	N	M	Good	Good	Prominent tree. Twin-stemmed at 0.5m.	40+	B2
T8#	Populus x candescens Grey Poplar	9.0	3.0	2.0	2.0	3.0	0.22	1.00	1.00	W	SM	Good	Good	Semi-mature Poplar.	20+	C2
T9#	Chamaecyparis lawsoniana Lawson Cypress	10.0	3.0	2.5	3.0	2.5	0.50	1.00	2.50	E	EM	Good	Good	Prominent tree.	40+	B2
T10#	Salix caprea Goat Willow	4.5	1.5	1.5	1.5	1.5	0.15	1.00	0.50	W	Y	Good	Good	Willow set in hedge.	10+	C2
T11#	Salix caprea Goat Willow	4.0	2.0	1.5	1.5	1.5	0.15	1.00	0.50	N	Y	Good	Good	Goat Willow set in hedge.	10+	C2
T12#	Salix caprea Goat Willow	5.0	2.5	2.5	2.5	2.5	0.20	1.00	2.50	N	SM	Good	Good	Goat Willow set in hedge.	20+	C2

Note: This survey is based on a brief visual inspection from the ground.
It is not intended as a full arboricultural inspection.
- Indicates estimated tree. * - Indicates off site tree.

Tree Survey Schedule

Site Elba Crescent, Swansea
Project schedule ref: JSL4233_750
Drawing reference: JSL4233_700
Survey date: 20.10.2021 & 21.10.2021

Surveyor: A Brown
Status: For Information
Revision: .
Notes:



Ref. no.	Species	Height (m)	Crown spread (m)				Stem dia. (m)	Stem no. at 1.5m	Height of crown clearance (m)	Dir/ height	Age class	Structural condition	Physiological condition	General observations Management recommendations	Estimated remaining contribution (years)	Tree Quality Category (BS5837)
			N	E	S	W										
T13#	Salix caprea Goat Willow	5.0	1.5	1.5	1.5	1.5	0.12	1.00	1.50	S	Y	Good	Good	Goat Willow(shrub) set in hedge.	10+	C2
T14#	Salix caprea Goat Willow	5.0	1.0	1.5	2.0	1.5	0.18	1.00	2.00	N	Y	Good	Good	Goat Willow set in hedge.	10+	C2
T15#	Salix caprea Goat Willow	6.0	1.5	2.0	2.0	1.5	0.15	1.00	2.00	S	Y	Good	Good	Young Goat Willow.	10+	C2
T16#	Salix caprea Goat Willow	5.5	1.5	1.5	2.0	1.5	0.15	1.00	2.00	S	Y	Good	Good	Young Goat Willow.	10+	C2
T17#	Betula pendula Silver Birch	4.0	1.0	1.5	1.0	1.0	0.15	1.00	1.00	W	Y	Good	Good	Shrub set within Bramble.	10+	C2
T18#	Betula pendula Silver Birch	4.5	1.5	1.5	1.5	1.5	0.16	1.00	0.50	N	Y	Good	Good	Young Silver Birch.	10+	C2
T19#	Salix caprea Goat Willow	4.5	2.0	2.0	1.5	1.5	0.10 x6	6.00	0.50	W	Y	Good	Good	Multi-stemmed Goat Willow.	10+	C2
T20#	Salix caprea Goat Willow	4.5	1.5	2.0	1.5	1.5	0.11 0.15 0.17	3.00	1.00	S	Y	Good	Good	Tri-stemmed tree.	10+	C2
T21#	Salix caprea Goat Willow	5.0	1.5	1.5	1.5	1.5	0.20	1.00	0.50	E	SM	God	Good	Semi-mature Goat Willow.	20+	C2
T22#	Salix caprea Goat Willow	4.0	2.0	2.0	2.0	2.0	0.15 x2	2.00	0.50	S	Y	Good	Good	Young Goat Willow.	10+	C2
T23#	Salix caprea Goat Willow	6.0	1.5	2.0	1.5	1.0	0.12 x2	2.00	1.50	E	Y	Good	Good	Young Goat Willow, tri-stemmed.	10+	C2
T24#	Salix caprea Goat Willow	6.0	1.5	1.5	1.5	1.5	0.11 0.12	2.00	1.00	E	Y	Good	Good	Young Goat Willow, tri stemmed. Stem occlusion.	10+	C2

Note: This survey is based on a brief visual inspection from the ground.
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Tree Survey Schedule

Site Elba Crescent, Swansea
Project schedule ref: JSL4233_750
Drawing reference: JSL4233_700
Survey date: 20.10.2021 & 21.10.2021

Surveyor: A Brown
Status: For Information
Revision: .
Notes:



Ref. no.	Species	Height (m)	Crown spread (m)				Stem dia. (m)	Stem no. at 1.5m	Height of crown clearance (m)	Dir/ height	Age class	Structural condition	Physiological condition	General observations Management recommendations	Estimated remaining contribution (years)	Tree Quality Category (BS5837)
			N	E	S	W										
T25	Pinus sylvestris Scots Pine	11.0	2.5	5.0	2.0	5.0	0.60	1.00	3.00	E	M	Good	Good	Mature Pine with slight lean west. Previous pruning evident.	40+	A2
T26	Betula pendula Silver Birch	9.0	3.0	3.0	3.0	3.0	0.35	1.00	3.50	S	EM	Good	Good	Bifurcates at 3m.	40+	B2
T27#	Betula pendula Silver Birch	9.0	1.0	1.5	2.5	1.5	0.20	1.00	1.50	W	SM	Fair	Good	Slight bias to south.	20+	C2
T28#	Betula pendula Silver Birch	9.0	1.5	1.5	1.5	1.0	0.15 0.2	2.00	2.00	N	SM	Good	Good	Semi-mature silver Birch.	20+	C2
T29	Salix caprea Goat Willow	5.0	2.5	2.5	2.5	2.5	0.20	1.00	2.00	W	SM	Good	Good	Leans to east.	20+	C2
T30#	Salix caprea Goat Willow	7.0	1.5	1.5	1.5	1.5	0.20	1.00	2.00	W	SM	Good	Good	Limited inspection.	20+	C2
T31#	Salix caprea Goat Willow	5.0	2.0	2.0	2.0	2.0	0.1 x3 0.15 x2	5.00	0.50	W	SM	Good	Good	Multi-stemmed.	20+	C2
T32#	Salix caprea Goat Willow	5.0	2.0	2.0	2.0	2.0	0.15 x4	4.00	0.50	W	SM	Good	Good	Multi-stemmed.	20+	C2
T33#	Betula pendula Silver Birch	6.0	1.5	1.0	2.0	1.5	0.15	1.00	0.50	S	Y	Good	Good	Young Silver Birch.	10+	C2
T34#	Betula pendula Silver Birch	6.0	1.5	1.5	1.0	1.5	0.15	1.00	2.00	W	Y	Good	Good	Young Silver Birch.	10+	C2
T35#	Betula pendula Silver Birch	8.0	1.5	2.0	1.5	1.0	0.20	1.00	0.50	E	SM	Good	Good	Easterly bias.	20+	C2
T36#	Betula pendula Silver Birch	7.0	1.5	1.5	1.5	1.0	0.20	1.00	1.00	6.00	SM	Fair	Fair	Semi mature Silver Birch.	20+	C2

Note: This survey is based on a brief visual inspection from the ground.
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Tree Survey Schedule

Site Elba Crescent, Swansea
Project schedule ref: JSL4233_750
Drawing reference: JSL4233_700
Survey date: 20.10.2021 & 21.10.2021

Surveyor: A Brown
Status: For Information
Revision: .
Notes:



Ref. no.	Species	Height (m)	Crown spread (m)				Stem dia. (m)	Stem no. at 1.5m	Height of crown clearance (m)	Dir/ height	Age class	Structural condition	Physiological condition	General observations Management recommendations	Estimated remaining contribution (years)	Tree Quality Category (BS5837)
			N	E	S	W										
T37#	Betula pendula Silver Birch	7.0	1.0	1.5	1.5	1.0	0.15	1.00	1.00	S	Y	Fair	Good	Slight lean to east.	10+	C2
T38#	Salix caprea Goat Willow	5.0	2.5	2.5	2.5	2.5	0.1*2 0.15*2	4.00	0.50	S	SM	Good	Good	Semi-mature tree.	20+	C2
T39#	Betula pendula Silver Birch	4.5	1.0	1.0	1.0	1.0	0.20	1.00	1.00	S	SM	Good	Good	Semi-mature tree.	20+	C2
T40#	Betula pendula Silver Birch	6.0	1.0	1.5	1.0	1.5	0.12	1.00	0.50	W	Y-M	Fair	Fair	Silver Birch(shrub) with slight lean to east.	10+	C2
T41#	Salix caprea Goat Willow	4.5	2.5	2.5	2.5	2.5	0.12 0.2	2.00	0.50	E	SM	Good	Good	Twin-stemmed.	20+	C2
T42#	Betula pendula Silver Birch	4.5	1.5	1.5	1.0	1.0	0.15	1.00	1.00	S	Y	Fair	Good	Yount silver Birch, leans to north east.	10+	C2
T43#	Salix caprea Goat Willow	5.0	1.5	1.5	1.5	1.5	0.10 x3 0.15 x2	5.00	0.50	N	Y	Good	Good	Young Goat Willow.	10+	C2
T44#	Salix caprea Goat Willow	7.0	2.0	2.0	2.0	2.0	0.15 x2	2.00	1.00	E	SM	Good	Good	Bifurcates at 0.5m.	20+	C2
T45#	Salix caprea Goat Willow	8.0	2.5	2.5	2.0	2.5	0.15 x2 0.2 x2	4.00	2.50	N	EM	Good	Good	4 stemmed tree.	40+	C2
T46#	Salix caprea Goat Willow	7.0	1.5	1.5	1.0	1.5	0.12 0.13	2.00	0.50	S	SM	Good	Good	Young Goat Willow.	10+	C2
T47#	Salix caprea Goat Willow	8.0	2.5	2.5	2.5	2.5	0.15 x3 0.2	4.00	W	0.50	SM	Good	Good	Semi-mature goat Willow.	20+	C2
T48#	Salix sp. Willow sp	7.0	1.5	2.5	1.5	1.5	0.20	1.00	3.00	W	SM	Fair/Poor	Fair/Poor	Slight bias to east. Deadwood in crown. Some wood rot.	10+	C2

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Tree Survey Schedule

Site Elba Crescent, Swansea
Project schedule ref: JSL4233_750
Drawing reference: JSL4233_700
Survey date: 20.10.2021 & 21.10.2021

Surveyor: A Brown
Status: For Information
Revision: .
Notes:



Ref. no.	Species	Height (m)	Crown spread (m)				Stem dia. (m)	Stem no. at 1.5m	Height of crown clearance (m)	Dir/ height	Age class	Structural condition	Physiological condition	General observations Management recommendations	Estimated remaining contribution (years)	Tree Quality Category (BS5837)
			N	E	S	W										
T49#	Chamaecyparis lawsoniana Lawson Cypress	11.0	2.0	1.5	2.0	1.5	0.45	1.00	0.50	N	EM	Good	Good	Early-mature tree.	40+	B2
T50#	Chamaecyparis lawsoniana Lawson Cypress	11.0	2.0	1.5	2.0	1.5	0.2 0.4	2.00	2.00	W	EM	Good	Good	Twin-stemmed at 0.5m.	40+	B2
T51#	Salix sp. Willow	10.0	1.5	1.5	1.5	1.5	0.15 0.2	2.00	2.00	E	SM	Good	Good	Twin-stemmed.	20+	C2
T52#	Salix sp. Willow	8.0	1.5	1.5	1.5	1.5	0.10 0.15 0.20	3.00	0.50	N	SM	Good	Good	Tri-stemmed.	20+	C2
T53#	Chamaecyparis lawsoniana Lawson Cypress	11.0	2.5	2.0	2.5	2.0	0.35 0.4	2.00	2.50	W	EM	Good	Good	Twin-stemmed.	40+	B2
T54#	Chamaecyparis lawsoniana Lawson Cypress	11.0	2.5	2.0	2.5	2.0	2.00	2.00	2.00	E	EM	Good	Good	Twin-stemmed.	40+	B2
T55#	Chamaecyparis lawsoniana Lawson Cypress	11.0	1.5	2.0	3.0	2.0	0.25 x2 0.3 0.4	4.00	2.50	E	M	Good	Good	4 stems.	40+	B2
T56#	Chamaecyparis lawsoniana Lawson Cypress	11.0	2.5	1.5	3.0	1.5	0.15 x3 0.25 0.4 x2	6.00	2.00	E	M	Good	Good	Multi-stemmed.	40+	A2
T57#	Chamaecyparis lawsoniana Lawson Cypress	11.0	2.5	1.5	2.5	1.5	0.4 x2	2.00	2.00	N	M	Good	Good	Bifurcates at 0.5m.	40+	B2
T58	Pinus sylvestris Scots Pine	12.0	2.0	2.5	2.0	2.0	0.45	1.00	3.00	E	M	Fair	Fair	Many pruning wounds. Dead wood in crown.	30+	B2
T59	Pinus sylvestris Scots Pine	12.0	1.5	2.0	2.0	2.5	0.45	1.00	4.00	N	EM	Good	Good	Early-mature tree.	40+	A2
T60	Pinus sylvestris Scots Pine	12.0	1.5	1.5	2.5	3.0	0.40	1.00	3.00	W	EM	Good	God	Bias to west.	40+	B2

Note: This survey is based on a brief visual inspection from the ground.
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- Indicates estimated tree. * - Indicates off site tree.

Tree Survey Schedule

Site Elba Crescent, Swansea
Project schedule ref: JSL4233_750
Drawing reference: JSL4233_700
Survey date: 20.10.2021 & 21.10.2021

Surveyor: A Brown
Status: For Information
Revision: .
Notes:



Ref. no.	Species	Height (m)	Crown spread (m)				Stem dia. (m)	Stem no. at 1.5m	Height of crown clearance (m)	Dir/ height	Age class	Structural condition	Physiological condition	General observations Management recommendations	Estimated remaining contribution (years)	Tree Quality Category (BS5837)
			N	E	S	W										
T61	Pinus sylvestris Scots Pine	12.0	3.0	2.5	2.5	3.0	0.45 0.5	2.00	2.50	S	M	Good	Good	Twin-stemmed.	40+	A2
T62	Pinus sylvestris Scots Pine	11.0	2.0	1.5	1.5	1.5	0.35	1.00	4.00	N	SM	Good	God	Semi-mature Pine.	20+	B2
T63	Pinus sylvestris Scots Pine	12.0	3.0	3.0	3.0	2.0	0.45	1.00	2.50	N	M	Fair	Good	Mature tree.	40+	B2
T64#	Pinus sylvestris Scots Pine	10.0	1.5	3.5	2.0	1.0	0.30	1.00	3.50	N	SM	Poor	Fair	Lean to north east.	20+	C2
T65	Pinus sylvestris Scots Pine	12.0	5.0	5.0	3.0	3.0	0.38 0.5	2.00	2.00	N	M	Good	Good	Bias to north-east. Large crown. Limited inspection.	40+	B2
T66	Pinus sylvestris Scots Pine	11.0	2.0	2.0	2.0	2.0	0.30	1.00	2.00	E	SM	Fair	Fair	Deadwood in crown.	20+	C2
T67	Chamaecyparis lawsoniana Lawson Cypress	11.0	1.5	1.5	1.5	2.0	0.15 0.4*2	3.00	1.50	S	M	Good	Good	Tri-stemmed.	40+	B2
T68#	Chamaecyparis lawsoniana Lawson Cypress	12.0	1.0	1.5	1.0	2.0	0.3*3	3.00	0.50	W	M	Good	Good	Tri-stemmed	40+	B2
T69#	Chamaecyparis lawsoniana Lawson Cypress	12.0	1.0	1.0	3.0	3.0	0.55	1.00	2.00	S	EM	Good	Good	Located in corner.	40+	B2
T70#	Chamaecyparis lawsoniana Lawson Cypress	12.0	1.0	2.0	3.0	1.0	0.60	1.00	2.00	S	EM	Good	Good	Early-mature tree.	40+	B2
G1#	Chamaecyparis lawsoniana, Pinus sylvestris, Betula pendula, Quercus robur, Salix sp., - Lawson Cypress, Scots Pine, Silver Birch, Pedunculate Oak, Willow sp.	12.0	See plan				-	-	-	-	Y-M	Good	Good	Forms tree belt across southern boundary, providing collective landscape value. Primarily consists of Lawson Cypress, with a number of different species within.	40+	B2

Note: This survey is based on a brief visual inspection from the ground.
It is not intended as a full arboricultural inspection.
- Indicates estimated tree. * - Indicates off site tree.

Tree Survey Schedule

Site Elba Crescent, Swansea

Project schedule ref: JSL4233_750

Drawing reference: JSL4233_700

Survey date: 20.10.2021 & 21.10.2021

Surveyor: A Brown

Status: For Information

Revision: .

Notes:



Ref. no.	Species	Height (m)	Crown spread (m)				Stem dia. (m)	Stem no. at 1.5m	Height of crown clearance (m)	Dir/ height	Age class	Structural condition	Physiological condition	General observations Management recommendations	Estimated remaining contribution (years)	Tree Quality Category (BS5837)
			N	E	S	W										
G2#	Pinus sylvestris, Chamaecyparis lawsoniana, Betula pendula, Salix sp., Acer pseudoplatanus, Ilex aquifolium - Scots Pine, Lawson Cypress, Silver Birch, Willow sp., Sycamore, Common Holly	9.0			See plan		-	-	-	-	Y-M	Fair	Fair	Forms tree belt across southern boundary, providing collective landscape value. Primarily consists of Scots Pine, with a number of different species within.	40+	B2
G3#	Pinus sylvestris Scots Pine	8.0			See plan		-	-	-	-	SM	Fair	Fair	Collection of semi-mature Scots Pine.	20+	C2
G4#	Salix sp. Willow	7.0			See plan		-	-	-	-	Y	Good	Good	Small group. Limited inspection.	10+	C2
G5#	Chamaecyparis lawsoniana Lawson Cypress	6.5			See plan		-	-	-	-	Y	Good	Good	Young Conifers.	10+	C2
G6#	Salix caprea, Betula pendula Goat willow, Silver Birch	7.0			See plan		-	-	-	-	Y	Good	Good	Collection of young trees and shrubs.	10+	C2
G7#	Populus x candescens Grey Poplar	9.0			See plan		-	-	-	-	Y	Good	Good	Young regeneration of Poplar.	20+	B2
G8#	Chamaecyparis lawsoniana Lawson Cypress	8.0			See plan		-	-	-	-	Y-SM	Good	Good	Collection of trees across southern boundary.	20+	C2
G9#	Populus x canescens, Populus tremula, Chamaecyparis lawsoniana Grey poplar, Aspen, Lawson Cypress	8.0			See plan		-	-	-	-	Y-SM	Good	Good	Regeneration of trees.	20+	B2
G10#	Salix caprea, Betula pendula, Buddleja, Rubus fruticosus Goat Willow, Silver Birch, Butterfly-bush, Bramble	10.0			See plan		-	-	-	-	Y-SM	Good	Good	Large group of regenerating trees. Primarily young trees and shrubs. Many hedge plants within. Collective landscape value. Limited inspection due to bramble	20+	C2
G11#	Betula pendula, Salix caprea, Rubus fruticosus Silver Birch, Goat Willow, Bramble	10.0			See plan		-	-	-	-	Y-SM	Good	Good	Regenerating group. Many shrubs/plants within.		B2

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Tree Survey Schedule

Site Elba Crescent, Swansea

Project schedule ref: JSL4233_750

Drawing reference: JSL4233_700

Survey date: 20.10.2021 & 21.10.2021

Surveyor: A Brown

Status: For Information

Revision: .

Notes:



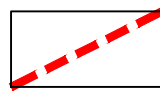
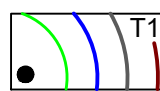
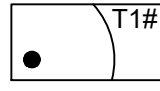
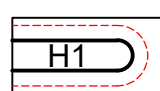
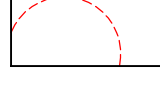
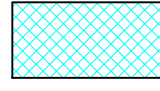
Ref. no.	Species	Height (m)	Crown spread (m)				Stem dia. (m)	Stem no. at 1.5m	Height of crown clearance (m)	Dir/ height	Age class	Structural condition	Physiological condition	General observations Management recommendations	Estimated remaining contribution (years)	Tree Quality Category (BS5837)
			N	E	S	W										
G12	Salix caprea, Pinus sylvestris, Betula pendula Goat Willow, Scots Pine, Silver Birch	9.0		See plan			-	-	-	-	Y-SM	Good	Good	Provides collective landscape value.	20+	C2
H1	Pinus sylvestris, Betula pendula, Salix sp., Buddleja, Rubus fruticosus Scots Pine, Silver Birch, Willow, Butterfly-bush, Bramble			See plan			-	-	-	-	Y	Fair	Fair	Collection of shrubs and hedge plants.	10+	C2
H2	Acer pseudoplatanus, Buddleja Rubus fruticosus Sycamore, Butterfly-bush, Bramble	5.0		See plan			-	-	-	-	Y	Good	Good	Collection of shrubs and plants.	10+	C2
H3	Buddleja, Rubus fruticosus Butterfly-bush, Bramble	4.0		See plan			-	-	-	-	Y	Good	Good	Row of hedge plants.	10+	C2
H4	Populus × canescens, Buddleja, Elaeagnus commutata, Rubus fruticosus Grey poplar, Butterfly-bush, Silverberry, Bramble	4.0		See plan			-	-	-	-	Y	Fair	Fair	Hedge which stretches through field. Evidence of much tree/vegetation clearance.	10+	C2
H5	Buddleja, Rubus fruticosus Butterfly-bush, Bramble	4.0		See plan			-	-	-	-	Y	Good	Good	Row of shrubs.	10+	C2

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Appendix C

Tree Protection and Removal Plan JSL4233_710

Key

-  Survey boundary.
-  Tree with numbered reference. Canopy spread and BS5837:2012 tree quality category as shown below.
-  Tree (location estimated) with numbered reference. Canopy spread and BS5837:2012 tree quality category.
-  Vegetation group with numbered reference. Canopy extents and BS5837:2012 tree quality category as shown below.
-  Hedge with numbered reference. Width and BS5837:2012 tree quality category as shown below.
- BS 5837:2012 Tree Quality Categories - Table 1
-  Category A - High quality
 -  Category B - Moderate quality
 -  Category C - Low quality
 -  Category U - Unsuitable for retention
-  Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
-  Tree to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.
-  Vegetation group or hedge to be removed with numbered reference. Canopy spread and BS5837:2012 tree quality category.
-  Excavation to be completed by hand, any required root pruning to be in accordance with BS 3998. Pruning of roots over 25mmØ to be monitored by arboriculturalist, with ongoing monitoring of trees condition by an arboriculturalist being recommended.
-  Temporary protective fencing in accordance with Section 6.2 - BS5837:2012. See inset details for example barriers.

Rev	Description	By	CB	Date
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Lakesbury House, Hittingbury Road, Chandlers Ford,
Hampshire SO53 5SS
T: 02380 810 440 E: rpssso@rpsgroup.com

Client **Hawkland Estates Ltd**

Project **Elba Crescent, Swansea**

Title **Tree Protection and Removal Plan**

Status **For Planning** Drawn By **AB** PM/Checked by **DC**

Job Ref **JSL4233** Scale @ A1 **1:500** Date Created **March 2022**

RPS Drawing / Figure Number **710** Rev **-**

rpsgroup.com

- NOTES:
- Refer to RPS Tree Survey Report & Schedule for further details.
 - Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
 - Plan produced in accordance with recommendations set out in BS 5837:2012 - 'Trees in Relation to design, demolition and construction'.
 - Due to the legal protection afforded to breeding birds vegetation removal should not take place during the bird nesting period; generally, although not restricted to, March - August inclusive.
 - Survey based upon topographic survey produced by MRP in March 2005.
 - Pedestrian/vehicular emergency access routes to be maintained at all times.
 - All protective fencing to be completed and approved by LPA / CA prior to commencement of any site works.
 - All works to conform with requirements of:
BS 3998:2010 - Tree Works
BS 5837:2012 - Trees in relation to design, demolition and construction

Precise position of
footpath alignment to
be agreed at detailed
design stage

Appendix D

Email response from Neath Port Talbot County Borough Council

Alice

As far as our records show there are no TPO's or Conservation Areas on this area of land.

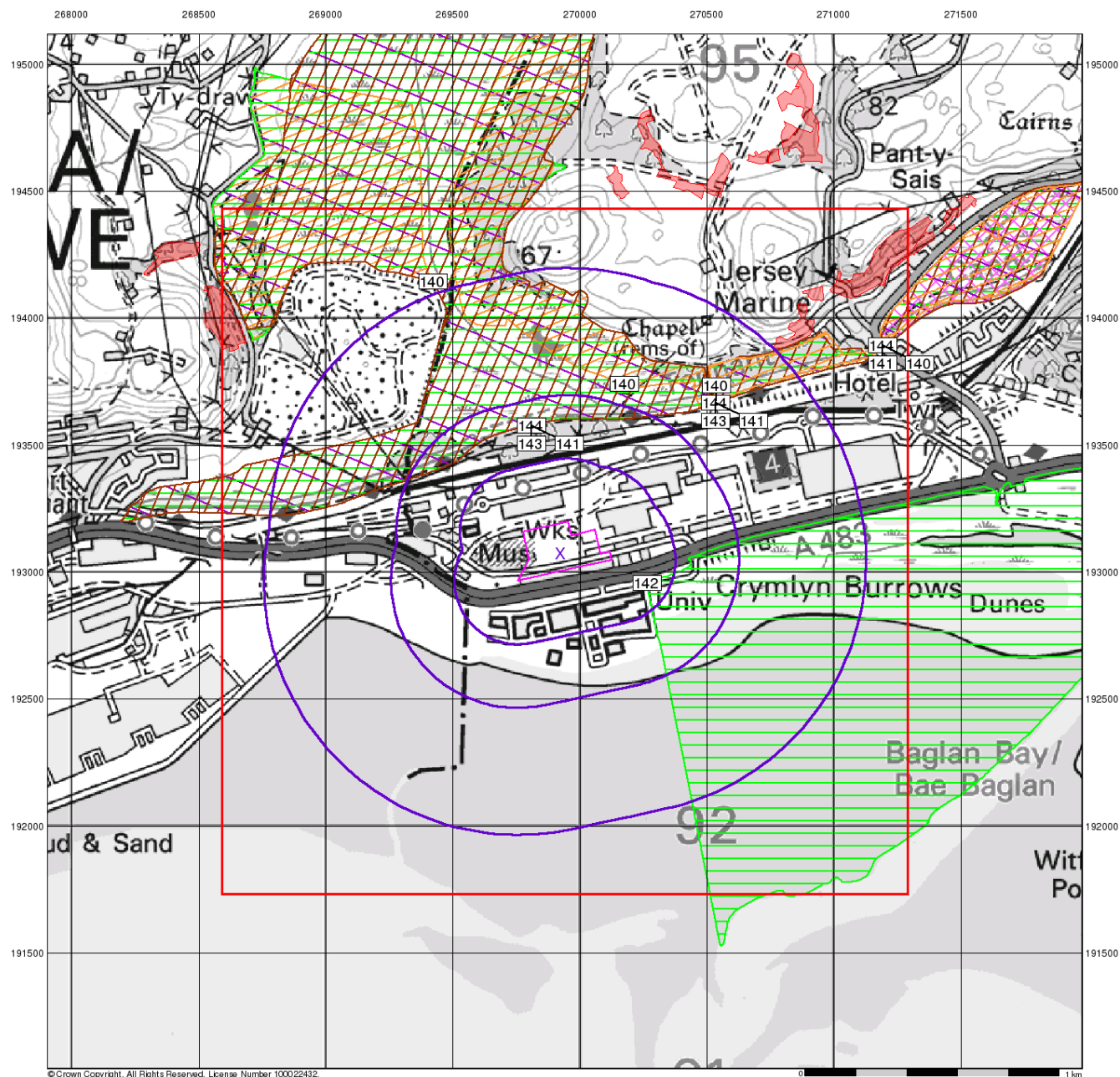
Thanks

Liz Hill

Land Charges Assistant
Neath Port Talbot County Borough Council
Cyngor Bwrdeistref Sirol Castell-nedd Port Talbot
Tel/ Ffôn: 01639 763722

Appendix E

Sensitive Land Uses information



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Sensitive Land Uses

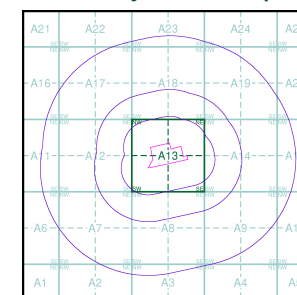
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A



Order Details

Order Number: 285967663_1_1
 Customer Ref: JER9273
 National Grid Reference: 269920, 193070
 Slice: A
 Site Area (Ha): 4.98
 Search Buffer (m): 1000

Site Details

1, Elba Crescent, Crymlyn Burrows, SWANSEA, SA1 8QQ

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Appendix F

Arboricultural site register

(Example template only)

ARBORICULTURAL SITE REPORT

PROJECT: XXX, XX Street, XXX Town	SITE CONTACT: Mr XXX	REPORT NO: 001
INSPECTION COMPLETED BY: Mr XXX	DATE AND TIME: XXX	SHEET: X OF X

1.1 IT EM	LOCATION	NOTES / RECOMMENDATIONS	ACTION
1	E.g. Adjacent to T999, north of building	E.g. Damaged fence, materials spilled into RPA, further inspection requirements, damage to tree	E.g. Reinstate fencing, make good levels with topsoil
2			
3			

CIRCULATION:

Mr XXX

Mr XXX

Appendix G

Example Tree Protection Barriers (BS5837:2012 Fig 2 & 3)

Figure 2 Default specification for protective barrier

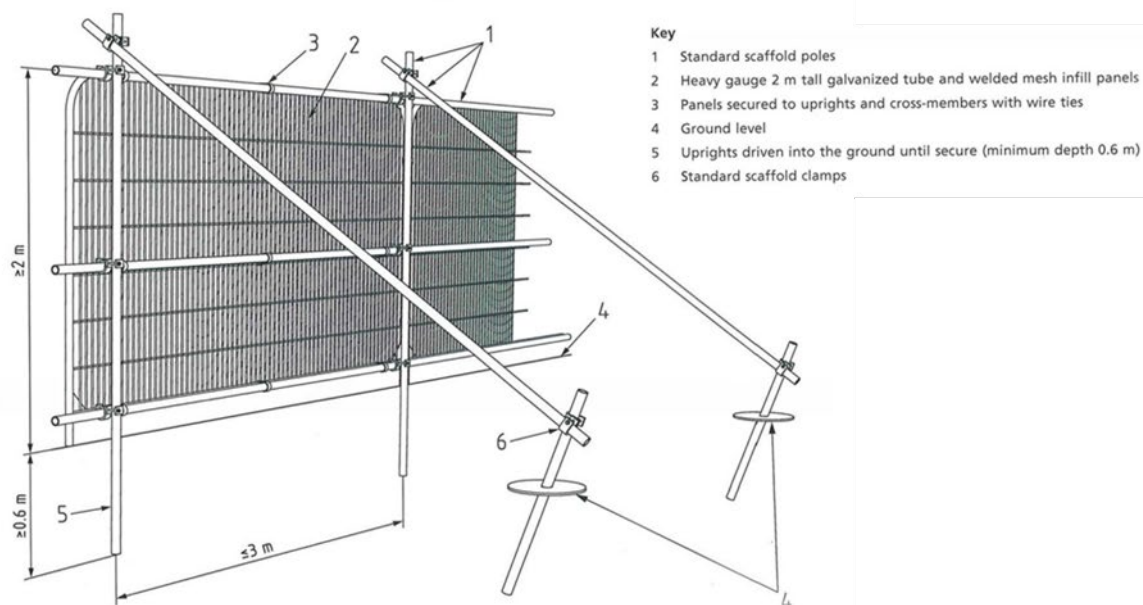
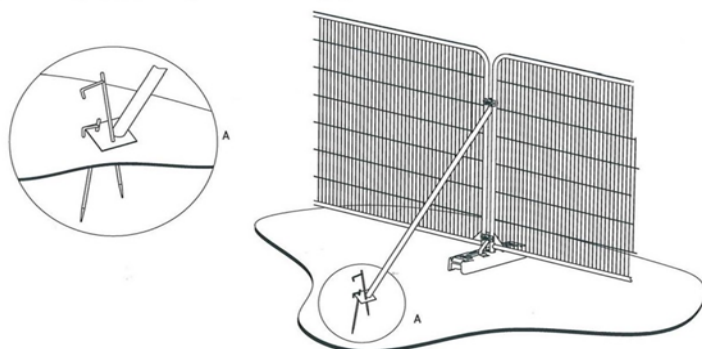
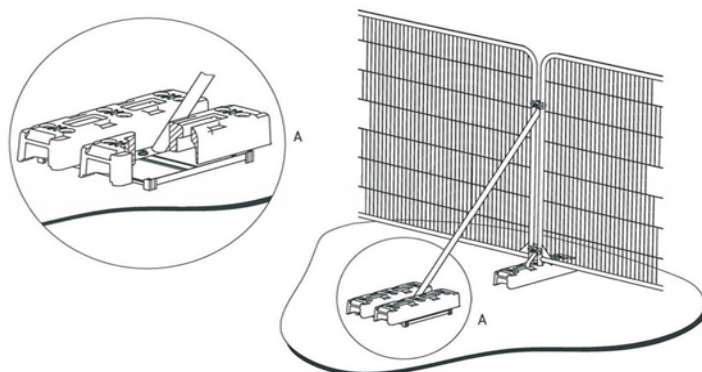


Figure 3 Examples of above-ground stabilizing systems



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

Appendix H

Construction Exclusion Zone (CEZ) Signage



Appendix I

Site Photographs



Appendix J

Arboricultural Glossary

Age-class - A general classification of the tree into either - young, semi-mature, early mature, mature, over-mature, or veteran.

Apical Bud/Shoot – The apical bud, also known as the leading shoot, is responsible for shoot extension and is dominant.

Apical Dominance – A singular, leading shoot remains dominant.

Arboreal - In connection with, or in relation to, trees.

Arboriculturalist – Person who has, through relevant education, training and experience, gained recognised qualifications and expertise in the field of trees in relation to construction.

Arboricultural Implications Assessment (AIA) – Study, undertaken by an arboriculturalist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Arboricultural Method Statement (AMS) – Methodology for the implementation of any aspect of development that has the potential to result in the loss of or damage to a tree. Note The AMS is likely to include details of an on-site tree protection monitoring regime.

Asymmetric crown- Crowns that have a morphological bias in a particular direction. This can give the tree an aesthetically unfavourable appearance, but can also subject the tree to uneven wind- loading forces and potentially result in failure.

Basal – Referring to the bottom part of a tree's stem.

Basifugal mortality – A natural process seen in trees in an advanced life stage whereby the trees extremities die back and the inner crown expresses new growth, in order to conserve energy reserves.

Bifurcated - A growth characteristic, where two stems of similar size grow from the same point. Can create an inherent weakness.

Branch union/junction - The point at which a branch joins a larger stem. Can be a point of weakness, especially in certain species.

Brown Rot- Decay caused by certain species of fungus which results in the affected wood becoming brittle and liable to suddenly 'break out', especially if in key structural areas.

Buttress flares – Extensions of the basal stem of a tree that provide additional structural support. See reaction wood.

Bifurcated- A growth characteristic, where two or more stems of similar size grow from the same point. Can create an inherent weakness.

Cable braces – Cable braces used to support the crown of a tree, reduce impacts caused by wind- throw oscillation.

Canker – A clearly defined area of dead and sunken or malformed bark, caused by bacteria or fungi. Can have a bearing on structural integrity of infected limb(s) depending on size and location.

Central leader- See apical dominance.

Chalara ash dieback- A disease affecting ash trees caused by the fungus *Hymenoscyphus fraxineus*. Usually fatal, the disease causes leaf loss and crown dieback in infected trees. It was first confirmed in Britain in 2012.

Chlorosis- yellowing of leaves which can be caused by a range of factors, often an indicator of nutrient deficiency.

Compaction - The compressing & hardening of soil around tree root systems, due to vehicular/pedestrian use etc. Loss of pore space between soil granules limits water movement and gaseous exchange, and inhibits root growth.

Companion shelter- Shelter provided by neighbouring trees in groups to one another, factors such as wind throw are reduced due to supporting branches and interlocking root systems. Removing individual trees on the peripheries of such groups can expose neighbouring trees to environmental factors they have not previously been subjected to and can lead to individual failure.

Competent person – Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached

Note 1 A competent person understands the hazards and the methods to be implemented to eliminate or reduce the risks that can arise. For example, when on site, a competent person is able to recognise at all times whether it is safe to proceed.

Note 2 A competent person is able to advise on the best means by which the recommendations of this British Standard may be implemented.

Condition – Assessment based on a visual and professional view giving consideration to many factors such as tree health, structural integrity and suitability of its position.

Conservation dead- wooding- Removal of deadwood using 'coronet cuts' that mimic the way a branch would naturally break off, maximising deadwood habitat availability for invertebrates.

Coppice - The method of managing trees by cutting the stems at between 1.0 inch and 1.0 foot from the ground level on a regular cycle, the cut stumps of the trees or shrubs are allowed to re-grow many new stems.

Crown spread - Gives distances between extreme limits of the crown and the stem, usually along the four compass points. Helps to show crown symmetry.

Crown Reduction – The removal of branch ends to reduce the extreme limits of a trees branch spread and height.

Crown Thin – The removal of selected branches within the crown to thin the internal branch structure.

D.B.H. - 'Diameter at Breast Height', an industry standard to gauge tree stem size and development. Within arboriculture, breast height is taken to be 1.5m above ground level.

Dieback - The reduction in crown vigour and extension growth progressing to death of distal parts; often associated with decline.

Epicormic growth - New growth from dormant buds that can often form tenuous attachments. Although some species readily form such shoots, it can be an indication of stress.

Form - A general assessment of the shape and position of the tree within its environment.

Hanger – Term used to describe a branch that has become detached and is being supported by other branches. Can be a hazard to persons and property below.

Hazard Beam – After the loss of a distal part, a limb concentrates growth upwards creating adverse end weights that can render the limb susceptible to failure. .

Included bark – Growth characteristic usually caused when two or more stems/branches growing in close proximity 'fuse' together entrapping the bark from when the parts were separate in the middle, creating a structural weakness.

Invertebrate tower – Pollarding of a (usually dead) tree to a safe height that leaves part of the main stem as a deadwood habitat for invertebrate species.

Occlusion/Occluded – Normally used to describe the overgrowth of a wound. Also, immovable foreign objects in contact with a tree part can become encased or 'occluded' by the tree as it grows incrementally.

Pathogen - An agent that causes disease, especially a living microorganism such as a bacterium or fungus.

Phototropic growth – Growth responding to a light stimulus i.e. the sun. This can influence the form of a tree, particularly where other factors e.g. buildings or other trees, affect the amount/ direction light is received.

Pollard – The removal and subsequent regular re-removal of the crown of a tree above animal browsing height. Can be an effective method of controlling the size of trees in urban areas. This is ideally begun in the trees early stages and maintained throughout its life.

Reaction wood - Essentially additional wood laid down by the tree to compensate for structural defects such as cavities.

Rhizosphere - The rhizosphere is the narrow region of soil that is directly influenced by root secretions and associated soil microorganisms. In particular, mycorrhizal fungi form a symbiotic relationship with trees and assist in the assimilation of phosphates essential to the trees health.

Ring barking/Girdling – the removal of bark around the entire circumference of a stem or branch, causing the death of all distal parts.

Root Protection Area (RPA) – Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m².

Scaffold limbs - The main structural branches within the crown.

Tree protection plan – scale drawing prepared by an arboriculturalist showing the finalised layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

U.L.E – ‘Useful Life Expectancy’ is an estimate based on currently known factors of the possible remaining life of the tree as an asset. AKA ‘Estimated remaining contribution’.

Veteran tree – Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Vigour - A general classification, as to the present and future potential growth and development of a tree. A comment regarding the health status of the tree specific to its species.

White Rot - A type of decay caused by certain species of fungi which results in the affected wood becoming flexible with little compressive strength.