REPORT ON TREES IN RELATION TO A PROPOSED DEVELOPMENT ON LAND NORTH OF BAY VIEW TERRACE, DINAS CROSS, NEWPORT, PEMBROKESHIRE

Prepared for:

Nick Cox

RLH Architectural Design Services Ltd.

16 Main Street

Fishguard

Pembrokeshire

SA65 9HJ

Prepared by:

Paul Cleaver Cert Arb L6 (ABC), MArborA, CUEW, RCArborA, MICFor

Chartered Arboriculturist

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EXECUTIVE SUMMARY

The second phase of an affordable housing development in Dinas Cross near Newport in Pembrokeshire is proposed.

The trees on site are low or poor quality; however, collectively, they provide ecological benefits. To minimise the proposal's impact on the site's ecology, most trees will be retained within an ecological buffer strip around the site's boundaries. Consequently, the proposal's impact on local amenity and landscape character is very low.

New tree planting is indicated on the proposed plan and will mitigate the limited tree losses and eventually enhance local amenity and landscape character.

TREE CONSULTANTS WALES

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1 INTRODUCTION

1.1 **Instruction:** Nick Cox, RLH Architectural Design Services Ltd, instructed me to survey trees on and immediately adjacent to land where a development is proposed. The purpose of the survey is to provide the following information to accompany the planning submission.

- A schedule of relevant trees, including basic data and a quality assessment.
- An assessment of the proposed development's impact on trees and any resulting impact on local amenity and landscape character.
- An arboricultural method statement dealing with the protection and management of trees to be retained and integrated into the proposed development.

1.2 **Proposed development**: The proposed development is a second phase of an affordable housing development by Wales and West Housing Association.

1.3 **Information provided:** This report is based on the following information-

- R543 OS-01 Site Location Plan.pdf
- DINAS FIELD FEB 2022 FF-Model.pdf
- DINAS FIELD FEB 2022 FF.dwg
- 22.03.22 - R543 SK-01 Feasibility Master Plan.dwg

1.4 **Relevant guidance:** The British Standard 5837:2012 *Trees in relation to design, demolition and construction - Recommendations* provides a framework for considering trees in the planning process. It gives guidance on categorising the qualities of trees to enable decisions to be made as to which trees are appropriate for retention within the development. It then advises on options for protecting retained trees during all phases of the development.

1.4.1 **Tree quality categorisation**: Tree quality is categorised using the TreeABC field sheet, Appendix 2.

1.5 **Limitations**: The following limitations apply.

1.5.1 The provided topographical survey did not include the trees encroaching into the site from the boundaries. Most of these trees have stems less than 100mm diameter and have little arboricultural value.

1.5.2 The survey of the trees was of a preliminary nature, and only defects visible from the ground have been identified. Each tree may not have been inspected closely because of access difficulties.

1.5.3 Where there is restricted access to the base of a tree, its attributes are assessed from the nearest point of access and dimensions estimated.

1.5.4 Where dense ivy is present on a tree, its condition is assessed from what can be seen from the ground. A separate note is recorded if further investigation may be required to clarify its status.

1.6 **Report printing:** This report has been issued as a single PDF file. The TPP may need to be printed separately when printing this report, considering any difference in its size and orientation to the report's standard A4 format.

2 TREE SURVEY

2.1 **Site visit:** I surveyed the trees on 21st March 2022; the area surveyed is shown in Figure 1, outlined in red.

2.2 **Site description**: The survey site is an overgrown, low lying parcel of wetland adjoining an active development site, on the north of Bay View Terrace and the A487 Fishguard Road. The site is located on the eastern edge of Dinas Cross, 4.5km west of Newport and 7km east of Fishguard in Pembrokeshire. The survey site is bounded by Pembrokeshire hedgebanks and has a narrow stream running along the bases of the south and east hedgebanks. Outside the site's western boundary is a public right of way, and fields adjoin the north and east boundaries.

Figure 1: survey area
Image: Apple Maps

2.3 **The trees:** The most significant trees are two mature ash and a sycamore located on or adjacent to the west boundary hedgebank, a mature ash on the north boundary, a mature ash near the eastern boundary hedgebank and another mature ash near the south boundary retained in the adjacent development site. All the mature ash have low vitality, crown dieback and epicormic growth, which are symptomatic of their infection by Ash dieback disease (*Hymenoscyphus fraxineus*). Ash dieback disease is likely to lead to the death of these trees within ten years. The sycamore is healthy but has basal defects that are likely to compromise its structural integrity within ten years. Due to their short life expectancy, none of the site's significant trees are worthy of being a constraint to site development.

2.3.1 **The hedges and hedgebanks:** The boundary hedges are unmanaged and have become sparse due to natural suppression. Most of the remaining mature thorn trees are in decline, and many are entirely covered by ivy. The self-seeded young ash trees have

symptoms of Ash dieback disease. The hedgebanks are significant arboricultural features and worthy of being a constraint to development.

2.3.2 **Encroachment:** Within the site, young and mature willow and young alder encroach from the boundaries. Most of these trees have stems less than 100mm diameter and were not included in the topographical survey. The encroaching trees have no arboricultural value; however, they have important ecological benefits. Although not worthy of being a constraint to site development, the retention of some of the encroaching trees should be considered to conserve ecological benefits.

2.4 **Site photographs**:

Figure 2: Site and T16, looking southeast with Phase 1 site in the background

Figure 3: Site, looking northeast

Figure 4: Site, looking northwest

Figure 5: Site, looking southwest

Figure 6: T1, looking north

Figure 7: T2, looking north

Figure 8: T3 & G4, looking south

Figure 9: T7, looking south

Figure 10: T7, poor form

Figure 11: H9, looking north from public right of way

Figure 12: T10, looking northeast

Figure 13: T12 and H13, looking southwest

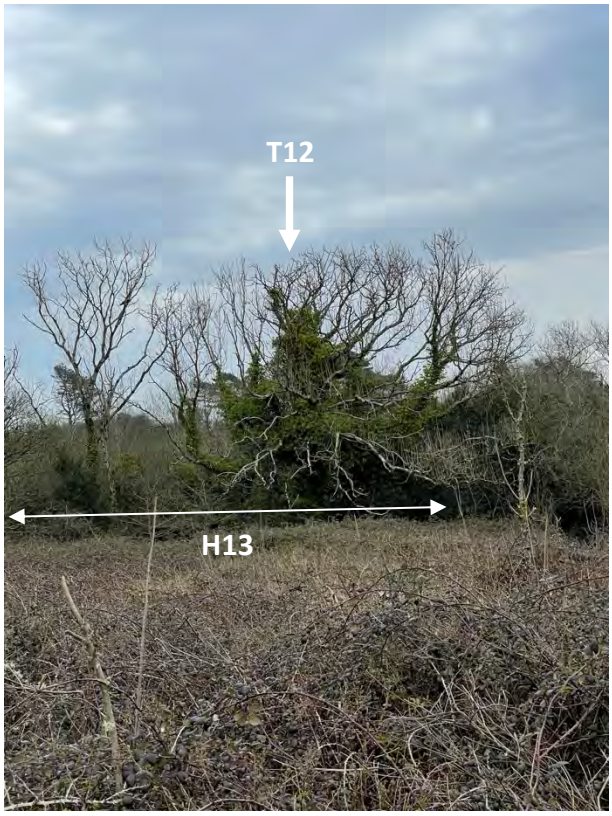


Figure 14: T14, looking south

2.5 **Legislative protection**: On 21st March 2022, the Pembrokeshire Coast National Park Authority's online Tree Preservation Order Map confirmed that none of the surveyed trees is subject to a tree preservation order, and the site is not within a designated conservation area.

2.6 **Soil assessment**: The site's soil was assessed by desktop analysis using the Soilscapes website, www.landis.org.uk/soilscapes/, which identified 'Slowly permeable wet very acid upland soils with a peaty surface'. This soil type "will exhibit varying intermediate degrees of shrinkage with change in moisture content" (Biddle, 1998[1]). This soil assessment is a guide only, and the project engineer should undertake detailed on-site soil analysis to inform foundation designs. The wet and acidic soil properties limit the range of plant species suitable for inclusion in site landscaping proposals.

2.7 **Tree schedule:**

Tree No.	Species	Height (m)	Stem dia. (mm)	Maturity	Crown spread (m)				Low branches	Cat	Notes & Work recommendations
					N	E	S	W			
T1	Ash	14	1000 [1]	Mature	6.5	6	5	5	No	C3	Low vigour, canker and epicormic growth, symptomatic of Ash dieback disease (ADD). Category reduced due to likely mortality within 10 years.
T2	Ash	14	600 [2]	Mature	6	8.5	5	5	No	C3	ADD low vigour, epicormic growth. Category reduced due to likely mortality within 10 years.
T3	Willow	7	150 [4]	Mature	0	4	2	0	No	U	Tree propped against neighbouring sycamore.
G4	Ash Sycamore	9	200 100 [2]	Maturing	2	3	4	2	No	C1	-
T5	Ash	9	200 [1]	Maturing	1	2.5	3	3	No	C1	Canker and ADD symptoms.
T6	Sycamore	9	200 [2]	Maturing	4	4	3	3	No	C1	-
T7	Sycamore	14	300 [2]	Mature	5.5	6.5	6.5	5	No	U	Poor form, tight union and pressed stems at base.
T8	Alder	10	300 [1]	Maturing	3.5	3.5	3.5	3.5	No	B	-
H9	Blackthorn Sycamore Holly Willow	10	200 [1]	Mature	2	2	2	2	No	B	Oldest trees (thorns) in poor condition. **Management plan needed to conserve hedge and prevent future nuisance issues.**

[1] Biddle P 1998, *Tree root damage to buildings,* Willowmead Publishing Ltd, Wantage

Tree No.	Species	Height (m)	Stem dia. (mm)	Maturity	Crown spread (m)				Low branches	Cat	Notes & Work recommendations
					N	E	S	W			
T10	Ash	12	800 [1]	Mature	5	5	5	5	No	U	Major crown dieback, no realistic prospect for recovery. **Remove tree, leaving stem as a 4.5m tall monolith.**
H11	Hawthorn Ash Holly	7	200 [1]	Mature	3	3	3	3	No	B	
T12	Ash	14	950 [1]	Mature	7	7	7	7	No	U	Significant crown dieback, poor vitality and epicormic growth, symptomatic of ADD. Ivy clad. **Remove tree, leaving stem as a 4.5m tall monolith.**
H13	Sycamore Hawthorn Ash Holly Willow	8	200 [1]	Mature	3	3	3	3	No	B	**Management plan needed to conserve hedge and prevent future nuisance issues.**
T14	Ash	14	800 [1]	Mature	5	7	7	5	No	C3	Tree retained on the Phase 1 site. Hedgebank and stream potentially influencing root spread into Phase 2 site. Sparse crown, apical dieback and epicormic growth, symptomatic of ADD.
H15	Holly Ash Sycamore Hawthorn	8	200 [1]	Mature	2.5	2.5	2.5	2.5	No	B	**Management plan needed to conserve hedge and prevent future nuisance issues.**
T16	Willow	5	200 [5]	Mature	4	4	4	4	No	U	Collapsing stems. **Remove tree.**

2.8 Schedule of root protection areas:

Tree No.	Species	Mean stem dia.* (mm)	BS5837:2012 Root protection area, RPA, (m^2)	Minimum radial protection distance from the base of the tree, (m)		Justification for RPA modification	Position of protective barrier from base of tree
				BS5837:2012	Modified		
T1	Ash	1000	452	12	Yes	Increased by protection of the RPA of T6 and T8.	**As shown on TPP**
T2	Ash	849	326	10	No	-	**10m on east side**
G4	Ash Sycamore	224	23	3	Yes	Increased by protection of the RPA of T6.	**As shown on TPP**
T5	Ash	200	18	2.4	Yes	Increased by protection of the RPA of T6 and T7.	**As shown on TPP**
T6	Sycamore	283	36	3	No	-	**3m from base of tree, on east side**
T7	Sycamore	300	41	3.6	Yes	Increased by ecological buffer zone and RPA of adjacent trees.	**As shown on TPP**
T8	Alder	300	41	3.6	No	-	**3.6m from base of tree, on east side**

Tree No.	Species	Mean stem dia.* (mm)	BS5837:2012 Root protection area, RPA, (m^2)	Minimum radial protection distance from the base of the tree, (m)		Justification for RPA modification	Position of protective barrier from base of tree
				BS5837:2012	Modified		
H9	Blackthorn Sycamore Holly Willow	200	18	2.4	Yes	Increased by ecological buffer zone and RPA of adjacent trees.	**As shown on TPP**
H11	Hawthorn Ash Holly	200	18	2.4	Yes	Increased by requirement for a 5m ecological buffer zone.	**5m from centre of hedge, on south side**
H13	Sycamore Hawthorn Ash Holly Willow	200	18	2.4	Yes	Increased by requirement for a 5m ecological buffer zone.	**5m from centre of hedge, on west side**
T14	Ash	800	290	10	Yes	Reduced to 5m ecological buffer zone due to effect of hedgebank and stream on north side.	**5m from base of hedge on north side**
H15	Holly Ash Sycamore Hawthorn	200	18	2.4	Yes	Increased by requirement for a 5m ecological buffer zone.	**5m from centre of hedge, on north side**

*The mean stem diameter is the stem diameter of a single-stemmed tree or combined stem diameter of a multi-stemmed tree being retained in the proposed development.

3 ARBORICULTURAL IMPACT ASSESSMENT

3.1 **Tree removals and pruning:** Tree removals and pruning required to implement the design and for good arboricultural management are detailed below.

Trees that will be affected

	British Standard 5837 category			
	A (High quality)	**B (Moderate quality)**	**C (Low quality)**	**U (Poor condition)**
Trees to be removed	-	-	-	T10, T12 & T16
Trees to be pruned	-	-	-	-

Abbreviations: T = individual; G = group; H = hedge

3.2 **Special precautions:** No trees require special precautions to protect them from potentially damaging development proposals.

3.3 **Temporary activities:** Temporary activities during construction, with the potential to damage retained trees, are considered below.

3.3.1 **Site access:** The existing entrance and proposed new road provide sufficient access for construction vehicles outside the RPA of retained trees.

3.3.2 **Contractor car parking:** Contractor parking can be provided within the site on existing and proposed hard surfacing outside the RPA of retained trees.

3.3.3 **Workspace:** The site has sufficient space to accommodate all activities associated with this scale of development without encroaching the RPA of retained trees.

3.3.4 **Storage:** The site has sufficient space to accommodate storage requirements outside the RPA of retained trees.

3.4 **Future pressure:** Future pressure to remove or substantially prune retained trees is considered below.

3.4.1 **Direct damage to structures:** Proposed new structures are sufficiently distanced from retained trees to prevent their damage by roots and branches.

3.4.2 **Shading:** Retained trees are sufficiently distanced from buildings to stop shading from being a significant issue.

3.4.3 **Seasonal nuisance:** Falling leaves, fruit, and flowers can cause a seasonal nuisance on sites. However, good general housekeeping will prevent this from becoming a significant issue.

3.5 CONCLUSIONS ON THE IMPACTS OF THE DEVELOPMENT PROPOSAL ON LOCAL LANDSCAPE CHARACTER

The site's trees are low or poor quality; however, collectively, they provide important ecological benefits. To minimise the proposal's impact on the site's ecology, many trees are retained within a buffer strip around the boundaries. Consequently, the proposal's impact on local amenity and

landscape character is very low. New tree planting shown on the proposed plan will mitigate the limited tree losses and, in time, enhance local amenity and landscape character.

3.5.1 **Modifications recommended to mitigate any impacts and better accommodate trees:** No modifications are required.

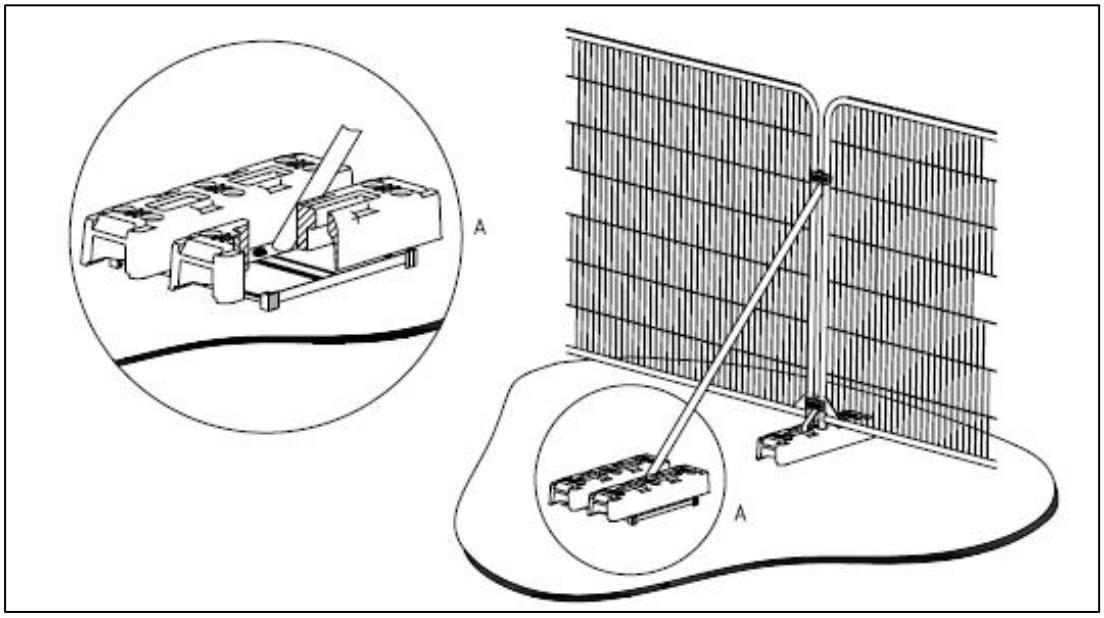
4 ARBORICULTURAL METHOD STATEMENT

4.1 **Note:** A copy of this arboricultural method statement and the tree protection plan must be available on site for the duration of development activities.

4.2 **Protective barriers**: The protective barrier specified below is considered fit for purpose, taking into account the nature of adjacent activities and the value of the trees.

4.2.1 **Barrier specification:** 2m tall welded mesh panels on rubber or concrete feet, as shown in Figure 15. The fence panels should be joined together using a minimum of two anti-tamper couplers installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1m and should be uniform throughout the fence. The panels should be supported on the inner side by stabiliser struts mounted on a block tray.

Figure 15: Barrier–Heras fencing panels



4.2.2 **Signage:** Attached to the protective barrier fencing at various locations will be laminated copies of the sign shown in Figure 16. Copies of this sign are available for download at: *https://www.treeconsultants.wales/about/resources/category/11-trees-and-development.html*

Figure 16: Signs to be attached to protective barriers

4.3 **Responsibility**: Responsibility for tree-related issues are detailed below:

4.3.1 **General site management**: It is the Main Contractor's responsibility is to ensure that the details of this arboricultural method statement and any agreed amendments are known and understood by all site personnel. Copies of the agreed documents will be available on site, and the site manager will brief all personnel who could impact trees on the specific tree protection requirements. This will be a part of the site induction procedures and written into appropriate site management documents.

4.3.2 **Arboricultural supervision:** Subject to contractual arrangements being in place, TreeConsultants.Wales will be the Arboricultural Consultants supervising the protection of trees for this project.

4.3.3 **The key contacts**: Details of those responsible for tree-related issues for this project are provided below.

Key contacts

Role	Name	Contact details
LPA Arboricultural Officer	Mike Higgins Pembrokeshire Coast National Park Authority	01646 624 881
Architect	Nick Cox RLH Architectural Design Solutions Ltd.	01348 345 004
Main Contractor	TBC	-
Arboricultural Consultant	Paul Cleaver TreeConsultants.Wales	01437 899 888
Ecological Consultant	Sian Williams Kite Ecology	07867 805 055

4.4 **Construction phasing:** A preliminary programme of construction phasing and arboricultural input is set out below.

Construction phasing

Phase		
1	**PRE-COMMENCEMENT**	
	Activity	**Arboricultural input**
	Tree work	• Liaison with tree work contractor, as required, to confirm the specification of permitted works
	Installation of tree protection barriers	• Liaison with the contractor to confirm specification and extent of the required barrier
2	**CONSTRUCTION**	
	Activity	**Arboricultural input**
	Construction of residential units and associated infrastructure	• Remain as the point of contact to advise on any arboricultural issues that may arise • Collection of photographic evidence to discharge any tree protection conditions attached to the planning consent
3	**LANDSCAPING & FINAL TIDY UP**	
	Activity	**Arboricultural input**
	Landscaping / making good	• Liaison with contractors, as required
	Removal of tree protection barriers	• Liaison with contractors, as required

Note: *The precise order and timing of some of the above operations may change due to site operating requirements, but all operations that can affect trees will remain under arboricultural supervision.*

4.5 **Tree work:** The proposed tree works are set out in the Notes & Work recommendations column of the tree schedule, section 2.7. The trees to be removed are highlighted with red text in the schedule and shown on the plan with a red crown fill. The following points should also be noted before carrying out any work:

4.5.1 **Implementation of work:** All tree work must be carried out with regard to BS 3998 Recommendations for Tree Work as modified by more recent research. *It is advisable to select a contractor from the local authority list and preferably one approved by the Arboricultural Association. The Arboricultural Association's register of Contractors is available free from The Malthouse, Stroud Green, Standish, Stonehouse, Gloucestershire GL10 3DL; phone 01242 522152; website http://www.trees.org.uk/*

4.5.2 **Statutory wildlife obligations:** The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000, provides statutory protection to birds, bats and other species that inhabit trees. These provisions cover all tree work operations, and advice from an ecologist must be obtained before undertaking any work that might constitute an offence.

4.5.3 **Stumps:** Stumps to be removed within the RPAs of retained trees must be ground out with a stump grinder to minimise any disturbance unless otherwise authorised by the appointed arboricultural consultant.

4.6 **Precautionary areas:** There are no precautionary areas required for this project.

4.7 **Precautions outside RPAs**: Any risk to trees from activities outside RPAs, but close enough to have a knock-on impact, will be assessed daily by the Main Contractor, and appropriate precautions to reduce the risk shall be implemented.

4.7.1 **Prevention of soil contamination:** All cement mixing and washing points for equipment will be outside RPAs. Where the contours of the site create a risk of polluted water or toxic liquids running into RPAs, a precautionary measure of using heavy-duty plastic sheeting and sandbags with the ability to contain accidental spillages will be put in place to prevent

contamination. Contaminated mixer and tool wash water shall be decanted into a sealed container and transported off site for appropriate disposal.

4.7.2 **Burning of waste:** No fires will be lit on site within 3m of root protection areas due to the danger of scorching leaves and branches of overhanging trees.

4.8 **Installation of new services:** The installation of new services within the RPA of any retained trees is not proposed.

1	2	3	4	5	6				7	8	9
Tree No.	Species	Height (m)	Stem dia. (mm)	Maturity	Crown spread (m)				Low branches	Cat.	Notes & Work recommendations
					N	E	S	W			

Note: Trees in red text require removal to implement the proposed design or for good arboricultural management.

1 **Tree No.:** The tree number is a unique identifier assigned to a relevant tree feature.
Tree number prefixes are abbreviations describing the nature of the tree feature:

T = Individual tree
G = Tree group
H = Hedgerow
W = Woodland
S = Stump

2 **Species:** Species identification is based on visual observations. Where there are more than one species in a group, only the most frequent are noted, and not all the species present may be listed.

3 **Height:** Height is estimated to provide an indication of the size of the tree.

4 **Stem diameter:** Stem/trunk diameter is estimated or measured and recorded in 2.5cm increments as advised in BS 5837 Table D1. It is measured with a diameter tape unless access is restricted, direct measurement is not possible because of ivy on the trunk, or the tree is assessed as poor quality. The point of measurement and the adjustments for stem variations are advised in Figure C1 of BS 5837. For multi-stemmed trees, the number of significant tree stems is provided in square brackets.

5 **Maturity:** In the context of site development, maturity provides a simplistic indication of a tree's ability to tolerate and adapt to disturbances in its growing environment and its potential for

further growth. For this report, 'young' indicates a potential to significantly increase in size and a high ability to adapt to change, 'maturing' indicates some potential to increase in size and some ability to adapt to change, and 'mature' indicates little potential to increase in size and limited ability to adapt to change.

6 **Crown spreads:** The crown spread measured from the centre of the trunk to the tips of the live lateral branches and rounded up to the nearest half metre for dimensions up to 10m and the nearest whole metre for measurements over 10m, N= north, E= east, S= south, and W=west.

7 **Low branches:** Any low branches that would not be feasible for removal during normal management and therefore need to be considered as a design constraint.

8 **Cat:** Tree retention category awarded according to the criteria detailed on the TreeABC field sheet provided overleaf. Our assessment automatically considered tree physiological/structural condition (BS 5837, 4.4.2.5h), and so these are not listed separately in the schedule. Additionally, the category accounts for the remaining contribution (BS 5837, 4.4.2.5i) as greater than 40 years for A trees, greater than 20 years for B trees, at least 10 years for C trees and less than 10 years for U trees, so this is also not listed separately in the schedule.

9 **Notes and <u>Work recommendations</u>:** Only relevant features relating to physiological or structural condition and low branches that may help clarify the categorisation are noted. If there are no notes, then the presumption should be that no relevant features were observed. Work recommendations are made where management is considered necessary or prudent.

TreeABC field sheet (Version 16.03-UK)

Ancient/veteran: Each tree is assessed by a visual check. If it is a veteran/ancient tree, then it is automatically categorised as A2, and not subjected to any of the category U, C or B considerations.

Category U (unsuitable for retention): Any remaining trees that are unsuitable for retention because they are dead; in irreversible decline; and/or have irremediable structural conditions; and/or are causing severe structural damage or inconvenience, are categorised as U.

Category C (low quality): Any remaining trees are systematically reviewed to decide if they fit into any of the four C subcategory groups listed below.

Category B (moderate quality): Any remaining trees are automatically category B, with the possibility of being promoted to category A.

Category A (high quality): If a category B tree is already large, or has the potential to become so, it can be promoted to category A, at the discretion of the assessor.

Category C: Low quality trees not worthy of being a material constraint

C		**Size and legal exemptions:** Trees that are too small to be important or unlikely to be suitable for legal protection
	1	**Size:** Young or insignificant small tree
	2	**Legal exemptions:** Trees unlikely to be suitable for legal protection, e.g. a maintained urban hedge, shrubs, etc
		Deteriorating health/condition: Trees that are likely to be removed within 10 years because of deteriorating health and/or structural condition
	3	**Health:** Deteriorating health with little realistic prospect of recovery
	4	**Crown instability:** Deteriorating structural conditions where an increasing risk of failure can be temporarily addressed by reasonable intervention, e.g. storm damage, cavities, decay, included bark, wounds, excessive imbalance, etc
	5	**Root instability:** Deteriorating whole tree stability through poor anchorage, increased exposure to weather, etc
		Excessive nuisance: Trees that are likely to be removed within 10 years because of unacceptable impact on people
	6	**Inconvenience:** Ongoing and increasing inconvenience to residents to the extent that a TPO appeal is likely to result in tree removal, e.g. dominance, debris, interference, etc
	7	**Damage:** Ongoing and increasing structural damage to property to the extent that a TPO appeal is likely to result in tree removal, e.g. severe damage to surfacing and structures, etc
		Good management: Trees that are likely to be removed within 10 years through responsible management of the tree population
	8	**No future potential:** Poor condition or location with no realistic potential for recovery or improvement, e.g. dominated by adjacent trees or buildings, poor architectural framework, etc
	9	**Benefit nearby trees:** Removal would benefit better adjacent trees, e.g. relieve physical interference, suppression, etc
	10	**Maintenance costs:** Unacceptably high maintenance costs, e.g. structural conditions requiring high levels of regular pruning, etc

NOTE: Although C trees are not worthy of influencing new designs, urgent removal is not essential and they could be retained in the short term, if appropriate.

Categories B and A: Moderate and high quality trees suitable for retention for more than 10 years, and worthy of being a material constraint

B	All trees that are not categories U or C that can be retained with minimal or limited intervention

NOTE: Category B trees that are already large, or have the potential to become so, with minimal or limited intervention, can be promoted to category A1, at the discretion of the assessor. Veteran/ancient trees are automatically category A2. Although all category A and B trees are sufficiently important to be material constraints, category A trees are at the top of the categorisation hierarchy and should be given the most weight in any selection process.

A	1	Single category B trees or small groups which, at the discretion of the assessor, have been promoted to category A because they are already large, or have the potential to become large
	2	Veteran/ancient tree

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Further explanation of this enhancement of the BS 5837 method can be found at www.TreeAZ.com.

Arboricultural impact assessment **(AIA)**	An evaluation of the probable direct and indirect effects of the proposed design on the trees, and vice versa, and where necessary recommends mitigation.
Arboricultural method statement **(AMS)**	Details of protective and precautionary measures needed to protect the retained trees from potentially damaging construction activities.
Construction exclusion zone **(CEZ)**	An area based on the root protection area where access is prohibited for the duration of construction activities on site. Access to the CEZ is prevented by installing fencing or installing ground protection to allow limited access while protecting the rooting environment below.
Coppice	A technique where trees are cut to ground level and allowed to resprout from the stump.
Monolith	In arboriculture, the term is used to describe a tree reduced to its main stem (i.e. without branches), sometimes left on felling a dead or dying tree in appropriate contexts.
Precautionary area	An area within RPAs where limited construction activities are permitted subject to specific precautions that minimise the activity's impact on the tree's rooting environment.
Root protection area (**RPA)**	"The minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where protection of the roots and soil structure is treated as a priority." *BS 5837:2012 Trees in relation to design, demolition and construction- Recommendations.*
Tree protection plan **(TPP)**	A drawing based on the finalised proposed site layout depicting the retained trees and the measures for protecting the trees and landscape.

Appendix 4:

Plans

Scale 1:500

0 10 20 50

ALL COPIES OF THIS PLAN MUST BE REPRODUCED IN COLOUR

KEY

A high or moderate quality tree

A low or poor quality tree

Numbering

1 = The **tree identification number** in survey schedule

Number prefixes:

T = An **individual tree**
G = A **group of trees**
H = A **hedgeline** formed by trees

RPA as BS 5837;2012

Crown spread of tree/s being retained, following any recommended pruning

Crown spread of tree/s being removed

Position of protective barriers

Construction exclusion zone (CEZ)
Area where no construction activities are permitted and access is prevented by protective barriers

Notes:

1. Protective barrier.

Specification: 2m tall welded mesh panels on rubber or concrete feet (figures 1 and 2).

The fence panels should be joined together using a minimum of two anti-tamper couplers installed so that they can only be removed from inside the fence.

The distance between the fence couplers should be at least 1m and should be uniform throughout the fence.

The panels should be supported on the inner side by stabiliser struts mounted on a block tray.

Attached to the protective barrier fencing, at various locations, will be laminated copies of the sign shown in figure 3.

Figure 1.

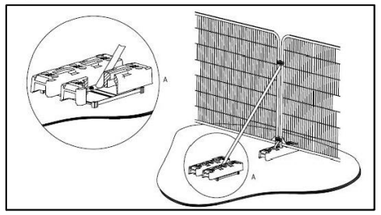

Figure 2.

Figure 3.

2. General precautions required for work outside the RPA of retained trees.

Prevention of soil contamination: All cement mixing and washing points for equipment will be outside RPAs.

Where the contours of the site create a risk of polluted water or toxic liquids running into RPAs, a precautionary measure of using heavy-duty plastic sheeting and sandbags with the ability to contain accidental spillages will be put in place to prevent contamination.

Contaminated mixer and tool wash water shall be decanted into a sealed container and transported off site for appropriate disposal.

Burning of waste: No fires will be lit on site within 3m of root protection areas due to the danger of scorching leaves and branches of overhanging trees.

Installation of new services: The installation of new services within the RPA of any retained trees is not permitted.

3. Construction exclusion zone.

Protective barrier incorporates the 5m ecological buffer required on north, west and east boundaries.

TREE CONSULTANTS WALES
Springfield, Tiers Cross, Haverfordwest,
Pembrokeshire SA62 3DG

01437 899 888
paul@treeconsultants.wales

CLIENT:
RLH ArchitecturalDesign Solutions Ltd.
16 Main Street
Fishguard
Pembrokeshire
SA65 9HJ

SITE:
LAND NORTH OF BAY VIEW TERRACE, DINAS CROSS, PEMBROKESHIRE

TITLE:
TREE PROTECTION PLAN

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:500	22/03/22	PC	-

DRAWING REF::
PC21-220

TreeConsultants.Wales
Springfield
Tiers Cross
Haverfordwest
Pembrokeshire
SA62 3DG

01437 899 888
info@treeconsultants.wales
www.treeconsultants.wales

Institute of Chartered Foresters
Registered Consultant