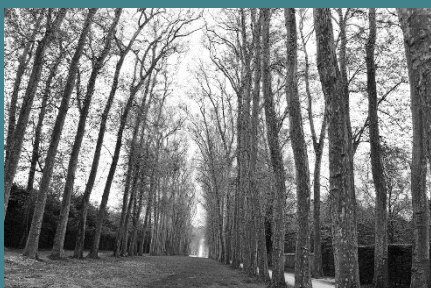


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ARBORICULTURAL ASSESSMENT

Client

CBRE

Project

**HQ Solar Farm,
Llangunnor, Carmarthen**

Date

June 2025

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Rev	Issue Status	Prepared/Date	Approved/Date
-	Draft	LES / 09.06.25	TEP / 09.06.25
A	Final	LES / 13.06.25	MHE / 13.06.25
B	Final	LES / 20.06.25	MHE / 20.06.25

1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of CBRE to present the findings of an Arboricultural Assessment and survey of trees located at Police Headquarters, Llangunnor, Carmarthen (hereafter referred to as the site), OS Grid Ref SN 429 192.

Site Description

- 1.2 The site is comprised of a field parcel to the south of Llangunnor Police Headquarters. The site is surrounded by agricultural field parcels and is located a short distance east of the town of Carmarthen.

Scope of Assessment

- 1.3 A tree survey and assessment of existing trees was carried out by FPCR Environment and Design on **Thursday 3rd April 2025** in accordance with guidance contained within British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' (hereafter referred to as BS5837).
- 1.4 This report has been produced to accompany a planning application for installation of 1480no. ground mounted PV panels, associated battery storage system and other ancillary works at Dyfed Powys Police Headquarters, Llangunnor, Carmarthen.
- 1.5 The purpose of this report is therefore to firstly, present the results of this assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly, provide an assessment of impact arising from the proposed development of the site.

2.0 PLANNING POLICY

Planning Policy Wales Edition 12 (February 2024)

- 2.1 National Planning Policy is defined by the Planning Policy Wales (PPW). This sets out the Government's most current and up to date land use planning policies for Wales and how these should be applied.
- 2.2 Paragraph 12 of the PPW states that the primary objective of the policy is to "ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation and resultant duties such as the Socio-economic Duty."
- 2.3 In relation to arboriculture, the PPW also states that:
- *6.4.27 Trees, hedgerows, groups of trees and areas of woodland are of great importance for biodiversity. They are important connecting habitats for resilient ecological networks and make an essential wider contribution to landscape character, culture, heritage and sense of place, air quality, recreation and local climate moderation. They also play a vital role in tackling the climate emergency by locking up carbon, and can provide shade, shelter and foraging opportunities, wider landscape benefits such as air and diffuse pollution interception, natural flood management, and building materials. The importance of trees, in particular urban trees, in creating distinctive and natural places which deliver health and well-being benefits to communities, now and in the future should be promoted as part of plan making and decision taking¹. Planning authorities must promote the planting of new trees, hedgerows, groups of trees and areas of woodland as part of new development.*
 - *6.4.39 Planning authorities must protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial green infrastructure function². Planning authorities should consider the importance of trees and woodland, particularly native woodland and valued trees, and should have regard to local authority tree strategies or SPG and the Green Infrastructure Assessment. Planning authorities should adopt appropriate, locally relevant, time sensitive, minimum tree canopy cover targets for their authority area to guide the protection and where appropriate the expansion of canopy cover. The Green Infrastructure Assessment and tools such as NRW's Tree Cover in Wales' Towns and Cities study and Forest Research's i-Tree Eco tool will help establish a baseline of canopy cover and guide the identification of appropriate and measurable canopy targets³. Tools to help with design and species choice in urban areas are also available⁴.*

¹ Tree Cover in Wales' towns and cities see www.naturalresources.wales/media/4123/tree-cover-in-wales-towns-and-cities-2014-study.pdf

² British Standard – BS5837:2012 Trees in relation to design, demolition and Constructions – Recommendations.

³ www.naturalresources.wales/about-us/what-we-do/our-roles-and-responsibilities/green-spaces/urban-trees/?lang=en

⁴ www.naturalresources.wales/urban-trees/?lang=en

www.naturalresources.wales/guidance-and-advice/environmental-topics/woodlands-and-forests/?lang=en

www.naturalresources.wales/about-us/what-we-do/our-roles-and-responsibilities/green-spaces/?lang=en www.tdag.org.uk/our-guides.html

- *6.4.43 Ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees, woodlands and hedgerows are to be afforded protection from development which would result in their loss or deterioration unless very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory, work to improve its completeness and use it to ensure the protection of trees and woodland and identify opportunities for more planting as part of the Green Infrastructure Assessment, particularly in terms of canopy cover.*
- *6.4.44 The protection and planting of trees and hedgerows should be delivered, where appropriate, through locally-specific strategies and policies, through imposing conditions when granting planning permission, and/or by making Tree Preservation Orders (TPOs)¹⁴⁰. They should also be incorporated into Green Infrastructure Assessments and plans*

3.0 SURVEY METHODOLOGY

- 3.1 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturist and has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence on any proposals. Trees were assessed for their arboricultural quality and benefits within the context of the proposed development in a transparent, understandable, and systematic way.
- 3.2 Trees have been assessed as groups and hedgerows where it has been determined appropriate.
- The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture.
 - For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed under a regular pruning regime.
 - For the purposes of this assessment woodland is described as a habitat where 'trees are the dominant plant form. The individual tree canopies generally overlap and interlink, often forming a more or less continuous canopy'⁵. Woodlands, however, are not just formed of trees and generally include a great variety of other plants. These will include 'mosses, ferns and lichens, as well as small flowering herbs, grasses and shrubs'⁶.
- 3.3 An assessment of individual trees within groups, hedgerows and woodland has been made where a clear need to differentiate between them, for example, to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.

BS5837 Categories

- 3.4 Trees, groups and hedgerows have been divided into one of four categories based on Table 1 of BS5837, 'Cascade chart for tree quality assessment'. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below).
- 3.5 Category U trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are, for this reason not considered in the planning process on arboricultural grounds.
- 3.6 Categories A, B and C are applied to trees that should be of material consideration in the development process. Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.
- 3.7 **Category (U) – (Red):** Trees which are unsuitable for retention and are in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. Trees within this category are:
- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees that will become unviable after removal of other category U trees.

⁵ Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

⁶ http://www.countrysideinfo.co.uk/woodland_manage/whatis.htm

- Trees that are dead or are showing signs of significant, immediate or irreversible overall decline.
- Trees that are infected with pathogens of significance to the health and/ or safety of other nearby trees or are very low-quality trees suppressing adjacent trees of better quality.
- Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.

3.8 **Category (A) – (Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:

- Subcategory (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.
- Subcategory (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
- Subcategory (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.

3.9 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:

- Subcategory (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
- Subcategory (ii) trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
- Subcategory (iii) trees with material conservation or other cultural value.

3.10 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:

- Subcategory (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Subcategory (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
- Subcategory (iii) trees with no material conservation or other cultural value.

Ancient and Veteran Trees

3.11 Various published methodologies are currently available for the identification of Ancient and Veteran trees which, due to the complexity and subjectivity of the process of defining and assessing these trees, often have conflicting definitions.

3.12 BS:5837 defines veteran trees as.

“Tree that, by recognized 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”.

NOTE These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem

3.13 BS:5837 does not provide a definition for ancient trees and therefore the assessment and the criterion being used for identifying ancient tree is based upon government guidance on, Ancient woodland, ancient trees and veteran trees: advice for making planning decisions⁷ which states.

“All ancient trees are veteran trees, but not all veteran trees are ancient. The age at which a tree becomes ancient, or veteran will vary by species because each species ages at a different rate.”

3.14 Ancient and veteran trees are also material considerations within the planning process and their importance is specifically recognised within the National Planning Policy Framework (NPPF) 2023, which includes its own definition of ancient and veteran trees:

‘A tree which, because of its age, size, and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.’⁸

3.15 Stem girth is the most reliable guide when determining the age of trees and in normal growing conditions, ancient and veteran trees are those which have a large girth by comparison with other trees of the same species. To inform the assessment of chronological age reference has been made to the chart provided within Lonsdale (2013) (shown below in Figure 1).

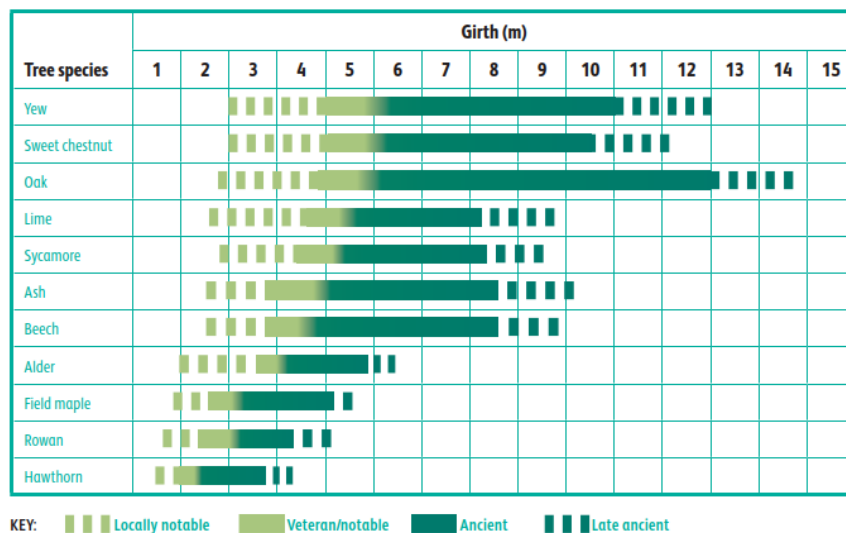


Figure 1: The chart of girth in relation to age and development classification of trees, as shown in Lonsdale (2013)⁹.

⁷ Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

⁸ Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

⁹ Lonsdale, D. (Ed.). 2013). Ancient and other veteran trees: further guidance on management. London: The Tree Council.

- 3.16 RAVEN 2 (Recognition of Ancient, Veteran & Notable trees) Julian Forbes-Laird (2023)¹⁰ has been adopted for gathering survey information as this provides a standardised framework for recording characteristic ancient/veteran features and this Arboricultural Assessment has also considered any potential candidates against this framework.

Considerations and Limitations of the Tree Survey

- 3.17 The survey was completed from ground level only and from within the boundary of the site. Aerial tree inspections or an assessment of the internal condition of the stem/s or branches were not undertaken at this stage as this level of survey is beyond the scope of the initial assessment.
- 3.18 The statements made in this report regarding the assessed trees applies to the date of survey and cannot be assumed to remain unchanged. It will be necessary to review all comments and observations made within this report, in accordance with sound arboricultural practice, within two years of the date of survey (unless explicitly stated elsewhere within this report). Further review may also be necessary where site conditions change or works to trees are carried out which have not been specified in detail within this report.
- 3.19 Hedgerows are identified as a Habitat of Principal Importance (HPI) as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The tree survey conducted, in accordance with BS5837, does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective, and is outside the scope of this assessment.
- 3.20 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within tree groups and hedgerows to assist structural calculations for foundation design of structures in accordance with NHBC Chapter 4.2 Building near Trees.

¹⁰ Recognition of Ancient, Veteran & Notable Trees – RAVEN 2 (2023) – Julian Forbes-Laird Consultancy.

4.0 RESULTS

- 4.1 A total of six individual trees, four groups of trees and two hedgerows were surveyed as part of the Arboricultural Assessment. Trees were surveyed as individual trees, groups, hedgerows and woodland as per the survey methodology.
- 4.2 Appendix A presents details of all individual trees, groups and hedgerows recorded during the assessment including heights, diameters at 1.5m from ground level, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area (RPA), calculated in accordance with Annex C, D and Section 4.6 of BS5837:2012.
- 4.3 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.
- 4.4 The individual positions of trees, groups and hedgerows have been shown on the Tree Survey Plan. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. Where topographical information has not identified the position of trees these have been plotted using a global positioning system and aerial photography to provide approximate locations. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on this plan.

Results Summary

- 4.5 Arboricultural features throughout the site were comprised of a mixture between ornamental planting, native tree planting and typical agricultural field boundary hedgerow.
- 4.6 Species identified throughout site are as follows:
- | | |
|--|--|
| hackberry – <i>Celtis occidentalis</i> | leyland cypress – <i>Cupressus leylandii</i> |
| Italian cypress – <i>Cupressus sempervirens</i> | English oak – <i>Quercus robur</i> |
| Scots pine – <i>Pinus sylvestris</i> | ash – <i>Fraxinus excelsior</i> |
| lawson cypress – <i>Chamaecyparis lawsoniana</i> | goat willow – <i>Salix caprea</i> |
- 4.7 Table 1 below summarises the trees assessed and several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance.

Table 1: Summary of Trees by Retention Category

	Individual Trees	Total	Groups of Trees	Total
Category U - Unsuitable	-	0	-	0
Category A (High Quality / Value)	-	0	-	0
Category B (Moderate Quality / Value)	-	0	-	0
Category C (Low Quality / Value)	T1, T2, T3, T4, T5, T6	6	G1, G2, G3, G4, H1, H2	6

- 4.8 Out of the six individual trees, four groups and two hedgerows, no arboricultural features displayed the characteristics to merit more than category C for arboricultural quality. This is largely attributed to the lack of maturity of tree stock within the site boundary.
- 4.9 Of note was T6, which was regarded as the most mature tree on site still only merited category C due to having an untypical form from historic root heave. T6 was considered to have been established at the time of surveying and resumes being one of a number of arboricultural features to provide some amenity value.

Ancient and Veteran Trees

- 4.10 None of the assessed trees were considered as ancient or veteran trees in accordance with our veteran survey methodology.

Statutory Considerations

- 4.11 Local authorities have a Duty under the Town and Country Planning Act to create Tree Preservation Orders (TPO) to protect and preserve specific trees and woodlands that bring significant amenity benefit to a particular site or location.
- 4.12 Under a TPO it is a criminal offence to cut down, top, lop, uproot or wilfully destroy a tree protected by that Order, or to cause or permit such actions, if carried out without the prior written consent of the acting LPA.
- 4.13 No direct consultation with the Local Planning Authority has taken place, however, it is understood having used the online search facility on the website for the Local Planning Authority, Carmarthenshire County Council that there are no Tree Preservation Orders and Conservation Areas that would apply to any trees present on, or in close proximity to the assessment site and therefore no statutory constraints would apply to the development in respect of trees. Before any tree works are undertaken confirmation of the online information should be sought from the Local Authority.
- 4.14 Information provided on Tree Preservation Orders and Conservation Areas is accurate to the date of this assessment and cannot be assumed to remain unchanged. The last check was carried out on the Friday 25th April 2025.

5.0 ARBORICULTURAL IMPACT ASSESSMENT

- 5.1 The following paragraphs present a summary of the tree survey and discussion of particular trees and groups recorded in the context of any proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.
- 5.2 The AIA has been based upon the 13271-FPCR-XX-XX-DR-L-0001-P03 Landscape Masterplan and seeks to outline the relationship between the proposals and the existing trees and hedgerows. The drawing shows the proposals for installation of 1480no. ground mounted PV panels, associated battery storage system and other ancillary works at Dyfed Powys Police Headquarters, Llangunnor, Carmarthen.
- 5.3 An overlay of the layout has been incorporated in the Tree Retention Plan to assist in identifying the relationship and any potential conflicts between the proposals and the existing trees and hedgerows. The plan also identifies which trees would be required to be removed or retained as part of the proposed development.
- 5.4 Table 2 below summarises the impact on tree stock and these impacts have been discussed in more detail following the table.

Table 2: Summary of Impact on Tree Stock

	Trees to be Retained	Total	Trees to be Removed in full or part	Total
Category C (Low Quality / Value)	T1, T2, T3, T4, T5, T6, G1, G2, G3, G4, H1	11	H2	1

Required Tree Loss

- 5.5 The only impact to arboricultural features posed by the proposals total to the loss of one low quality hedgerow (H2). This hedgerow was comprised of relatively new planting, which had been subject to typical hedgerow management and will be removed to facilitate the installation of the solar panels.
- 5.6 Mitigation for the loss of H2, can be found through the new planting to enhance the existing hedgerow along the southern boundary. As well as for mitigation for the loss of H2 the new planting will provide additional purpose as screening between the solar panels and the wider landscape.

Discussion

- 5.7 In conclusion for arboriculture, the proposals are considered to meet the aims and objectives of local and national policy through careful consideration of the design and retention of a high proportion of the existing tree cover. The retention of, coupled with targeted future management and enhancement of the existing and future tree cover will meet many of the individual aspirations set out in the various policies.

6.0 NEW TREE AND HEDGEROW PLANTING

- 6.1 As part of the development proposals an adequate quantity of structured tree planting has been identified within the submitted Landscaping Plan to mitigate for the proposed tree removal. This new tree planting has been identified to thicken and enhance the existing hedgerow along the southern boundary.
- 6.2 The success of any landscaping scheme relies on an adequate provision of a high-quality rooting environment within which trees can thrive and reach their full potential. Planting trees with due care and consideration can, in the long term, provide a greater return on a schemes green investment and ensure trees remain healthy and grow to mature proportions.
- 6.3 Wherever possible, following discussions with the developer and utility companies, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance.
- 6.4 Tree planting should be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.
- 6.5 When deciding upon suitable tree species, careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties.
- 6.6 Through careful species selection, the landscape scheme shall reduce the risk of trees being removed in the future on the grounds of nuisance. Nuisance can be perceived in a number of ways and vary from person to person however most commonly, within the context of trees, low overhanging branches, excessive shading, seasonal leaf fall and the misinformed perception that trees close to buildings cause damage.
- 6.7 Hedgerows are identified as a Habitat of Principal Importance (HPI) as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Consequently, it is important that the proposed scheme delivers a net gain in terms of linear hedgerows through new planting to compensate for any losses. Species should be native, and characteristic of the locality.

Rooting Environment and Soil Volumes

- 6.8 The success of any landscaping scheme relies on an adequate provision of a high-quality rooting environment within which trees can thrive and reach their full potential. Planting trees with due care and consideration can, in the long term, provide a greater return on a schemes green investment and ensure trees remain healthy and grow to mature proportions. Healthy mature trees integrate well into the built environment; increase the maturity of the landscape; help provide a natural green and leafy urban environment in which people would want to reside whilst also benefiting local wildlife.
- 6.9 The planting of trees within confined urban environments should consider the use of appropriately designed planting pits specifically engineered to promote tree health and longevity. Crucially the aim will be to provide an adequate volume of quality soil for roots to suitably develop by calculating the amount of available soil volumes needed and selecting species whose mature size is compatible with the site. This is an integral component of the planning stage (Lindsey & Bassuk, 1991).

General Planting Recommendations

- 6.10 Wherever possible, following discussions with the developer and utility companies, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance.
- 6.11 Tree planting should be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.

7.0 TREE PROTECTION MEASURES

- 7.1 Retained trees should be adequately protected during works through the erection of the requisite tree protection measures. These protection measures should be detailed as part of a site-specific Arboricultural Method Statement, which could be imposed as a condition of planning approval.
- 7.2 Measures to protect trees should follow the guidance in BS5837 and be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

General Information and Recommendations

- 7.3 All trees retained on site should be protected by suitable barriers or ground protection measures around the calculated RPA, crown spread of the tree or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.
- 7.4 Barriers should be erected prior to commencement of any construction work and once installed, the area protected by fencing or other barriers will be regarded as a construction exclusion zone.
- 7.5 Any trees that are not to be retained as part of the proposals should be felled prior to the erection of protective barriers. Particular attention needs to be given by site contractors to minimise damage or disturbance to retained specimens.
- 7.6 Construction access may take place within the root protection area if suitable ground protection measures are in place. This may comprise single scaffold boards over a compressible layer laid onto a geo-textile membrane for pedestrian movements. Vehicular movements over the root protection area will require the calculation of expected loading and the use of proprietary protection systems.

Tree Protection Barriers

- 7.7 Tree protection fencing should be fit for the purpose of excluding any type of construction activity and suitable for the degree and proximity of works to retained trees. Barriers must be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.
- 7.8 In most situations, fencing should comprise typical construction fencing panels attached to scaffold poles driven vertically into the ground, as illustrated in Appendix B.
- 7.9 Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative will be specified appropriate to the level / nature of anticipated construction activity.

Protection outside the exclusion zone

- 7.10 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.
- 7.11 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development.
- 7.12 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are near retained trees.
- 7.13 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- 7.14 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 7.15 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in sections).

8.0 TREE MANAGEMENT

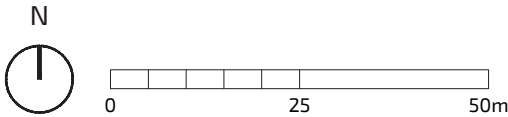
- 8.1 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 Post Development Management of Existing Trees, where there is a potential for public access to satisfy the landowner's duty of care.
- 8.2 Landowners responsible for trees, especially those within the public domain, have a legal 'duty of care' to ensure that visitors and neighbours of their land are reasonably safe and that nobody comes to harm or injury, by his or her negligence, through taking measures to reduce risks as far as is 'reasonably practical' (The Health and Safety at Work Act 1974).
- 8.3 To ensure that risks are reduced as far as is 'reasonably practicable' it will be necessary that, a review of the relationship between retained trees and the new development should be undertaken by a qualified arboriculturist to assess the retained tree cover and prepare a schedule of tree works.
- 8.4 The Occupiers Liability Act (1957 and 1984) also places a 'duty of care' to ensure that no reasonably foreseeable harm takes place due to tree defects. That duty of care should be reasonable, proportionate, and reasonably practicable when managing the risk¹¹.
- 8.5 It is currently expected that a suitably qualified Arboriculturist or tree surveyor should inspect trees with an appropriate level of regularity. The purpose of the inspections is to determine whether a tree could foreseeably cause harm by virtue of its size and physical condition.
- 8.6 All tree works undertaken should comply with British Standard 3998:2010 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.
- 8.7 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

¹¹ The Health and Safety at Work Act 1974

FIGURES

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Notes:

All dimensions to be verified on site. Do not scale this drawing, use figure dimensions only. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified site prior to and decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculation foundation depths.

- Category C - Trees / Groups of Low Quality (BS5837:2012)
- Hedgerow
Colour Indicates BS5837:2012 Category
- Root Protection Area
- Individual/Group number and BS5837:2012 Category
- Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

-	07.04.25	First Issue	LES / MHE
rev	date	description	drwn/chkd

client
CBRE

project
**HQ Solar Farm,
Llangunnor**

title
TREE SURVEY PLAN

scale
1:1000 @ A3

number
13271-T-01

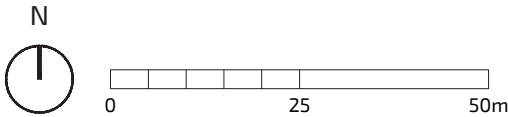
status
-

rev
-

FPCR | environment
& design

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Notes:

All dimensions to be verified on site. Do not scale this drawing, use figure dimensions only. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified site prior to and decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculation foundation depths.

- Tree/Group to be Retained
- Hedgerow Proposed to be Retained and Incorporated into the New Development
- Hedgerow proposed to be removed subject to relevant permissions
- Root Protection Area (Shown for retained trees only)
- Individual / Group Number and BS Category
- Individual / Group Number to be Removed and BS 5837:2012 Category
- Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

-	09.06.25	First Issue	LES / MHE
A	13.06.25	Redline Boundary Update	LES / MHE
rev	date	description	drwn/chkd

client
CBRE

project
**HQ Solar Farm,
Llangunnor**

title
TREE RETENTION PLAN

scale
1:1000 @ A3

number
13271-T-02

status
-

rev
A

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APPENDICES

Appendix A - Tree Schedule

Measurements	Age Classes	Quality Assessment of BS Category	ULE (relates to BS Category)
Height - Measured using a digital laser clinometer (m)	YNG: Establishing, typically with good vigour and fast growth rates and strong apical dominance; c. less than 1/3 life expectancy	Category U - Trees 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.	<10 years
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	SM: Semi-mature trees less than 1/3 life expectancy	Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.	40+ years
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	EM: Established, typically vigorous and increasing in apical height and lateral spread; 1/3 - 2/3 life expectancy. Offers landscape significance	Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	20-40 years
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	M: Fully established over 2/3 life expectancy, generally good vigour and achieving full height potential with crown still spreading	Category C - Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.	10-20 years
	OM: Fully mature, at the extremes of expected life expectancy, vigour decreasing, declining or moribund	Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value	
	V: biological, cultural or aesthetic value comprising niche saproxylic habitat. Individuals of large proportions (stem girth) in comparison to trees of the same species/surviving beyond the typical age range for their species.	The BS category particular consideration has been given to the following: <ul style="list-style-type: none"> • The presence of any structural defects in each tree/group and its future life expectancy • The size and form of each tree/group and its suitability within the context of a proposed development • The location of each tree relative to existing site features e.g. its screening value or landscape features • Age class and life expectancy 	

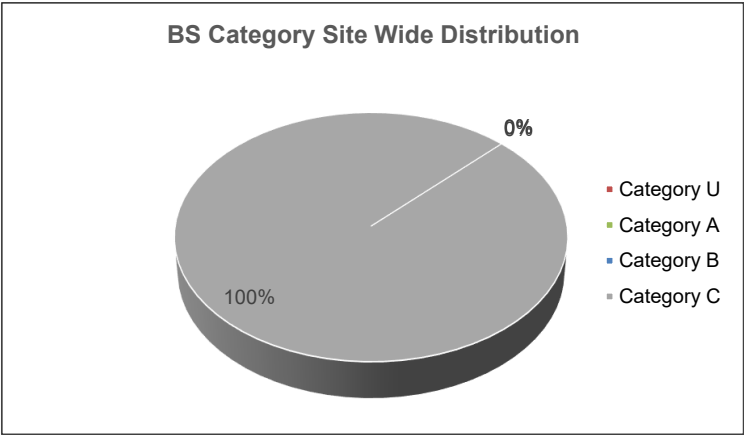
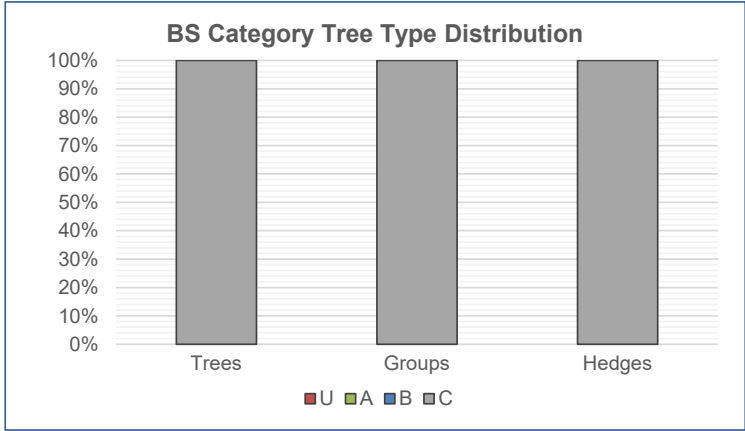
Structural Condition	Physiological Condition	Root Protection Area (RPA)
Good - No significant structural defects	Good - No significant health problems	<ul style="list-style-type: none"> • The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected. • Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.
Fair - Structural defects that can be remediated	Fair - Symptoms of ill-health that can be remediated	
Poor - Significant defects beyond remediation, present a risk of failure in the foreseeable future	Poor - Significant ill-health. Unlikely the tree will recover in the long term	
Dead - Dead tree with structural integrity of tree severely compromised	Advanced Decline / Dead - Advanced state of decline and unlikely to recover or Dead	

Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A		0		0
Category B		0		0
Category C	T1, T2, T3, T4, T5, T6	6	G1, G2, G3, H1, H2	5
	Total	6	Total	5

BS Category Tree Type Distribution displays the proportion of trees assessed in each type to enable a better understanding of the category distribution.

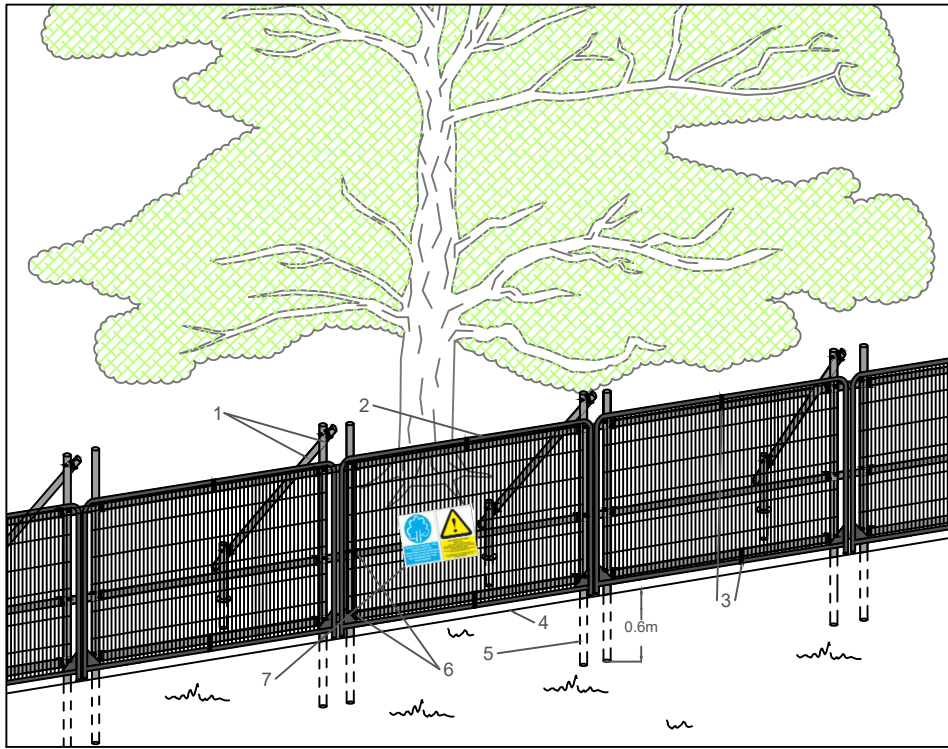
BS Category Site Wide Distribution shows the proportion of trees assessed in each category across the whole site which allows an interpretation of the site's overall quality.



Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	Hackberry <i>Celtis occidentalis</i>	3	upto 280	3	SM	G	Situated along the main entrance to the headquarters car park. Open grown form and with good vitality. Exposed heartwood and loose bark on eastern aspect resulting from minor dead branch.	35	3.4	C (i)
T2	Italian Cypress <i>Cupressus sempervirens</i>	5	upto 270	2	SM	F	Located to the immediate south of site on the mouth of the junction. Crown raised to a height of 3m recently for increased visibility. Crown in good health.	33	3.2	C (i)
T3	Scots Pine <i>Pinus sylvestris</i>	6	upto 260	3	SM	F	Located towards the west of site 2m south of H1. Unremarkable tree due to immaturity. Bend in stem present from a height of 1.2m, towards prevalent wind direction.	31	3.1	C (i)
T4	Scots Pine <i>Pinus sylvestris</i>	8	upto 350	N - 5 S - 3 E - 5 W - 3	SM	F	Located towards the west of site 2m north of H1. Unremarkable tree with good vitality but untypical form. Bend in stem from a height of 4m, towards prevalent wind direction.	55	4.2	C (i)
T5	Scots Pine <i>Pinus sylvestris</i>	4	upto 70 70 60 90 70	3	SM	F	Located towards the south west of site 2m north of H1. Unremarkable tree due to immaturity. Historically root heaved and now presents in pheonix form. Small hazel sapling noted on upheaval rootball.	12	1.9	C (i)
T6	Scots Pine <i>Pinus sylvestris</i>	8	upto 500	6	SM	F	Located towards the south west of site 2m north of H1. Historically root heaved and now presents as a well established pheonix form. Untypical form, good vitality.	113	6.0	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Lawson Cypress Chamaecyparis lawsoniana Leyland Cypress Cupressocyparis leylandii	2	avg 80	2	SM	G	Situated along the main entrance to the police headquarters car parks. Several small ornamental shrubs. Aesthetically pleasing but offer little in value from an arboricultural perspective.	3	1.0	C (ii)
G2	English Oak Quercus robur Ash Fraxinus excelsior	5	avg 120	2	SM	F	Group of more recently planted trees on the western boundary. Seven trees in total five of which are English oak and two are ash. Due to immaturity are regarded as low quality from an arboricultural perspective. Oaks are in good health, one dead ash and other in decline.	7	1.4	C (ii)
G3	Goat Willow Salix caprea	7	avg 70 70 100 110 90	3	SM	F	Copse of formally planted goat willow to the south east of site. Semi mature specimens present as coppiced form. Vitality is good through group. Unremarkable arboricultural feature.	18	2.4	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna	2	avg 70	1.25	SM	F	Mechanically managed hedgerow on the western boundary. Unremarkable from an arboricultural perspective.	2	0.8	C (ii)
H2	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Hazel Corylus avellana	3	avg 70 70 80 100 90	2	SM	F	Mechanically managed hedgerow to the north of site. Unremarkable from an arboricultural perspective. Relatively new planting.	16	2.2	C (ii)



Specification for High Intensity Protection Barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs



Specification for Low Intensity Protection Barrier

1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

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