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Our Ref: 19/0966/SC

Date: 1 August 2019

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Dear Sir/Madam,

Reference: 19/0966/SC

Proposal: Scoping Opinion under EIA Regulations 2017 in relation to a solar-farm extension

Site Address: Bryn Henllys Solar Farm Extension, Waun Llwyd Farm, Ystradown, Swansea Powys

Thank you for your correspondence in respect of the above, and apologies for the delay in responding. The Local Planning Authority hereby gives the following opinion as to what information should be included within an Environmental Statement.

As part of the Scoping Opinion request a consultation has been undertaken and the following consultees have responded;

Clwyd Powys Archaeological Trust

Thank you for the consultation on this EIA scoping opinion.

We note the content of the Cultural heritage section (paras. 3.29 to 3.42) in the EIA scoping document.

We are in agreement with the scope of assessment set out which includes a desk based assessment, field visit and setting impact assessment. The resulting report should be sent to me for further comment on any impacts identified and mitigation that may be required. A copy of the report should also be sent to the Historic Environment Record via gary.duckers@cpat.org.uk

Natural Resources Wales

Thank you for consulting Natural Resources Wales (letter dated 13/06/2019) regarding the above.

We have reviewed the Environmental Impact Assessment Scoping Report dated June 2019 by Pegasus Group.

NRW agree with the subject matters to be addressed in the EIA however wish to make additional comments. Please note they are made without prejudice to any comments we may wish to make when consulted on any subsequent planning application or on the submission of a more detailed scoping report or an Environmental Statement.

At the time of any such consultation there may be new information available which might influence our response.

Based on the information submitted to us, we would recommend that any Environmental Impact Assessment (EIA) submitted to the local authority should include details of the following requirements to address significant concerns that we have identified.

Summary of Requirements

Requirement 1 - Landscape: The landscape assessment should include and consider further viewpoints in addition to the ones identified in Appendix C.

Landscape

Our advice relates to potential impacts on the Brecon Beacons National Park.

We have reviewed the submitted EIA Scoping document. Whilst we are in general agreement with the scope proposals for assessing Landscape and Visual Impact, we offer the following advice:

LANDMAP Aspect Area layers relating to Geology, Habitats and Historic Landscape should be reviewed as well as Visual & Sensory Aspect Areas potentially affected by the development should be reviewed as part of the assessment. It should be noted that the Cultural Aspect Area layer is currently being updated.

Reference should be made to the National Park Management Plan and its strategies in taking account of the Special Qualities, landscape character and visual amenity experienced in views from and towards the National Park.

Given that the land slopes to the west, further viewpoints should be considered within areas to the west within the National Park including from footpaths and access land. Viewpoints from high ground to the south looking towards the National Park should be included.

Requirement 1 - Landscape: The landscape assessment should include and consider further viewpoints in addition to the ones identified in Appendix C.

Background/Justification

The proposed extension site lies 140m from the National Park boundary at its closest point and comprises 2 parcels of land with an area of 25.6ha in total. Immediately to the east of the southern parcel, planning permission has been granted for a 20MW solar farm in 2015.

The Landscape & Visual Chapter notes that the site lies within LANDMAP Visual & Sensory Aspect Area BRCKNVS365, evaluated as low, mainly due to its previous use as an open cast mining site.

The assessment will include a review of relevant landscape planning policies, landscape character assessments & LANDMAP.

The proposed study area is 5km from the site boundaries.

Reference will be made to the Powys Renewable Energy Assessment: Landscape Sensitivity Study for Solar Farm Development, LANDMAP and Powys Landscape SPG (April 2019).

Reference will not be made to the National Landscape Character Areas as considered too broad scale to be relevant to the specifics of the proposal.

A preliminary ZTV has been prepared with viewpoints (Appendix C) similar to the previous scheme and allowing for cumulative effects. Viewpoints 6, 7, 8 & 9 are within the National Park.

Effects on the Special Qualities, landscape character & visual amenity experienced from the National Park and in views towards it will be considered along with a review of the Development Plan and National Park's Landscape Character Assessment.

Residual effects following mitigation at year 15 will be considered. Cumulative and In-combination effects will be considered in each technical chapter.

Biodiversity

NRW have a number of historic records of protected species (otter, bats, water vole) near the site but do not currently have any records of protected species within the boundary of the proposed development site. We agree with the scope of the biodiversity section of the report stating a Phase 1 Habitat Survey will be carried out first and the results of this will inform the requirements for additional species-specific surveys.

We advise that attention is given to the potential for drainage channels and other water bodies to host water voles. We hold an historic record for this species within 700m to the south.

Consideration must also be given to any likely impact on European Protected Species, such as otter and bats, which are likely to use the nearby Afon Twrch, adjacent woodland hedgerows and nearby water bodies for foraging, commuting and as a place of shelter. Consideration to disturbance associated with the construction phase, the impact of security lighting, as well as restrictions to wildlife movements during the operational phase must be clearly addressed within the ecological submissions.

The biodiversity section also needs to demonstrate that it has considered the potential impact that the development may have on any relevant protected sites.

Flood Risk

The site is not located within a mapped flood zone and we have no other information to suggest the site is at risk.

The scoping of the FCA confirms it will be focussed on surface water flooding, sustainable drainage, local flood risk and management.

These are matters for the local authority, as both Lead Local Flood Authority and SuDS Approval Body. We would therefore defer to the local authority for further comment on the FCA in this instance.

Hydrology and Ground Conditions and contamination

We consider the content of the scoping report to be appropriate, based on the limited information available.

We would expect the potential risk to groundwater to be considered as part of the assessment.

Please do not hesitate to contact us if you require further information or clarification of any of the above.

Our comments above only relate specifically to matters that are listed in our 'Consultation Topics' document (September 2018) which is published on our website: (<https://cdn.naturalresources.wales/media/686847/dpas-consultation-topics-august-2018-eng.pdf?mode=pad&rnd=131819256840000000>). We have not considered potential effects on other matters and do not rule out the potential for the proposed development to affect other interests, including environmental interests of local importance.

Cadw

Cadw, as the Welsh Government's historic environment service, has assessed the characteristics of this proposed development and its location within the historic environment. In particular, the likely impact on designated or registered historic assets of national importance. In assessing if the likely impact of the development is significant Cadw has considered the extent to which the proposals affect those nationally important historic assets that form the historic environment, including scheduled ancient monuments, listed buildings, registered historic parks, gardens and landscapes.

These views are provided without prejudice to the Welsh Government's consideration of the matter, should it come before it formally for determination.

Our records show that the following historic assets are potentially affected by the proposal.

Scheduled Ancient Monuments

BR333 Dorwen standing stone

BR334 Llwyncwmstabl round cairn

CM354 Cwm Twrch settlement

Listed Buildings:

15831 Henllys Vale Colliery Chimney (grade II)

15832 Henllys Vale Colliery Limekilns (grade II)

23086 Bethel Independent Chapel (grade II)

25946 74 Heol Giedd, Cwm Giedd (grade II)

25947 76 Heol Giedd, Cwm Giedd (grade II)

25948 78 Heol Giedd, Cwm Giedd (grade II)

25949 80 Heol Giedd, Cwm Giedd (grade II)

25950 83 Heol Giedd, Cwm Giedd (grade II)

25951 Henglyn Isaf (grade II)

The request for a scoping opinion was accompanied by a scoping report produced by the Pegasus Group. This work identifies that the proposed development could have an impact on the historic environment and has proposed in the first instance that an Archaeological and Cultural Heritage Desk Based Assessment should be produced to the standards and guidance set by the Chartered Institute for Archaeologists. We concur that this is an appropriate method to assess the impact of the proposed development on the historic environment. However, in our opinion the search area to identify designated heritage assets that could be effected by the proposed development suggested in the scoping resource is too small and should be extended to a distance of 3km around the proposed development (the designated heritage assets identified above are inside this recommended search area). In order to assess if the proposed development could have an impact on the settings of these designated heritage assets it is recommended that the guidance given in stage 1 of the Welsh Government document "The Setting of Heritage Assets in Wales" is followed. If this work identifies that an impact on the setting of the designated heritage assets could occur then the guidance given in stages 2 to 4 of that

document should be followed to identify the scale of the impact and any appropriate mitigation that could be instigated to reduce that effect.

Powys Contaminated Land

The following conditions would be recommended for any development.

Condition A

Condition 1. Preliminary Investigation

No development shall commence until a preliminary investigation and assessment of the nature and extent of contamination affecting the application site area has been submitted to and approved in writing by the local planning authority. This investigation and assessment must be carried out by or under the direction of a suitably qualified competent person, in accordance with current guidance and best practice, and shall assess any contamination on the site, whether or not it originates on the site.

The report of the findings shall include:

- A desk study
- A site reconnaissance
- Formulation of an initial conceptual model
- A preliminary risk assessment

If the preliminary risk assessment identifies there are potentially unacceptable risks a detailed scope of works for an intrusive investigation, including details of the risk assessment methodologies, must be prepared by a suitably qualified competent person. The contents of the scheme and scope of works are subject to the approval in writing of the local planning authority.

All work and submissions carried out for the purposes of this condition must be conducted in accordance with DEFRA and the Environment Agency's 'Model Procedures for the Management of Land Contamination, CLR 11' and the WLGA document 'Development of Land Affected by Contamination: A Guide for Developers' (2012).

Condition 2. Site Characterisation

No development shall take place until a site investigation of the nature and extent of contamination has been carried out, by a suitably qualified competent person, in accordance with a methodology which has previously been submitted to and approved in writing by the local planning authority. A written report of the findings of the site investigation shall be made available to the local planning authority before any development begins.

The written report should include an appraisal of remedial options and identification of the most appropriate remediation option(s) for each relevant pollutant linkage. The report is subject to the written approval of the local planning authority.

Condition 3. Submission of Remediation Scheme

No development shall take place until a detailed remediation scheme to bring the site to a condition suitable for the intended use by removing unacceptable risks to human health, buildings and other property and the natural and historical environment must be prepared, and is subject to the approval in writing of the local planning authority. The scheme must include all works to be undertaken, proposed remediation objectives and remediation criteria, timetable of works and site management procedures. The scheme must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 and The Contaminated Land (Wales) Regulations 2006, as amended by The Contaminated Land (Wales) (Amendment) Regulations 2012, in relation to the intended use of the land after remediation. The detailed remediation scheme should not be submitted until written approval for Condition 2 has been received from the local planning authority.

All work and submissions carried out for the purposes of this condition must be conducted in accordance with DEFRA and the Environment Agency's 'Model Procedures for the Management of Land Contamination, CLR 11' and the WLGA document 'Development of Land Affected by Contamination: A Guide for Developers' (2012).

Condition 4. Implementation of Approved Remediation Scheme

The approved remediation scheme must be carried out in accordance with its terms prior to the commencement of development other than that required to carry out remediation, unless otherwise agreed in writing by the local planning authority. The local planning authority must be given two weeks written notification of commencement of the remediation scheme works.

If during the course of development any contamination is found that has not been identified in the site investigation, additional measures for the remediation of this source of contamination shall be submitted to and approved in writing by the local planning authority. The remediation of the site shall incorporate the approved additional measures before the development is occupied.

Following completion of the measures identified in the approved remediation scheme, a verification report that demonstrates the effectiveness of the remediation carried out must be produced, and is subject to the approval in writing of the local planning authority. The verification report contents must be agreed with the local planning authority before commencement of the remediation scheme.

All work and submissions carried out for the purposes of this condition must be conducted in accordance with DEFRA and the Environment Agency's 'Model Procedures for the

Management of Land Contamination, CLR 11' and the WLGA document 'Development of Land Affected by Contamination: A Guide for Developers' (2012).

Condition 5. Long Term Monitoring and Maintenance

A monitoring and maintenance scheme to include monitoring the long-term effectiveness of the proposed remediation over a period of duration to be agreed in writing with the local planning authority and the provision of reports on the same must be prepared, both of which are subject to the approval in writing of the local planning authority.

Within six months following the completion of the measures identified in that scheme and the achievement of the remediation objectives, reports that demonstrate the effectiveness of the monitoring and maintenance carried out must be produced, and submitted to the local planning authority. This must be conducted in accordance with DEFRA and the Environment Agency's 'Model Procedures for the Management of Land Contamination, CLR 11'.

Ystradgynlais Town Council

The Ystradgynlais Town Council are of the view that the Scoping Opinion should include the need for the setting of a community fund to support deserving local projects.

Consideration

Officers agree with the Scope and Content of the EIA as outline within your correspondence that the following should be included within the Environmental Statement;

- Population - Assessed within the technical environmental chapters
- Human Health - Assessed within the technical environmental chapters
- Biodiversity - Assessed in Biodiversity chapter
 - Desktop assessment
 - Phase 1 Habitat Survey
- Water - Assessed within the Hydrology and Flood Risk chapter
 - Flood Consequence Assessment
- Climate - Assessed within the technical environmental chapters
- Cultural Heritage - Assessed within the technical environmental chapters
 - Archaeological and Cultural Heritage Desk Based Assessment
 - Zone of Theoretical Visibility
- Landscape - Assessed within the technical environmental chapter
 - Landscape and Visual Impact Assessment
 - Zone of Theoretical Visibility
- Transport - Transport Assessment
 - Construction Traffic Management Plan
- Ground Conditions - Site Investigation

- Cumulative
 - Coal Mining Risk Assessment
 - Contaminated Land Assessment
 - Cumulative assessment including approved 20 MW scheme

In addition to the above, and in particular with regards to the responses received from consultees during the Scoping Opinion, it is advised that the following should be provided as part of the Environmental Statement;

- Archaeological and Cultural Heritage Assessment in line with the guidance provided by the Chartered Institute for Archaeologists
- Search area within the assessment should extend to 3km to consider the assets outline in Cadw's response
- A Setting Impact Statement
- The LVIA should consider the Brecon Beacons National Park Management Plan and include further viewpoints as follows;
 - Viewpoints to the west within the National Park including from footpaths and access land
 - Viewpoints from high ground to the south looking towards the National Park

I trust the above and the consultation responses are of assistance.

Yours faithfully,

Tamsin Law
Principal Planning Officer
Powys County Council

Croesewir gohebiaeth yn y Gymraeg a'r Saesneg/Correspondence welcomed in Welsh and English

Data Protection and Privacy / Diogelu Data a Chyfrinachedd

In order to deliver the Planning Service (applications, complaints and appeals etc.) it is necessary for the council to process personal data, in accordance with relevant planning legislation, as listed on the Welsh Governments planning website (<https://gov.wales/topics/planning/?lang=en>). Information held by the Planning Service will be retained in accordance with the legislation and the Councils retention schedule. If you have any concerns regarding the use of your personal data please contact the Data Protection Officer by email at Information.Compliance@powys.gov.uk or by phone at 01597 826400. Please note that further information on the Data Protection and Privacy can be found at the following address: <https://en.powys.gov.uk/privacy>.

Er mwyn cyflawni ceisiadau, cwynion ac apeliadau'r Gwasanaeth Cynllunio mae angen i'r cyngor brosesu data personol yn unol â'r ddeddfwriaeth gynllunio berthnasol, sydd i'w weld ar wefan gynllunio Llywodraeth Cymru (<https://gov.wales/topics/planning/?skip=1&lang=cy>). Bydd y Gwasanaeth Cynllunio'n cadw Gwybodaeth yn unol â'r ddeddfwriaeth ac amserlen cadw'r Cyngor. Os oes gennych bryderon am sut rydym yn defnyddio'ch data personol cysylltwch â'r Swyddog Diogelu Data trwy e-bost Information.Compliance@powys.gov.uk neu drwy ffonio 01597 826400. Cofiwch y gallwch gael hyd i fwy o wybodaeth am Ddiogelu Data a Chyfrinachedd trwy fynd i: <https://cy.powys.gov.uk/article/653/Defnyddio-Cwcis>.

Assessment of physical effects

Table 1 Criteria for assessing the value of landscape elements and landscape character

Scale	Description
High	<p>Designated landscape including but not limited to World Heritage Sites, National Parks, Areas of Outstanding Natural Beauty considered to be an important component of the country's character experienced by a high number of people.</p> <p>Landscape condition is good and components are generally maintained to a high standard.</p> <p>In terms of seclusion, enclosure by land use, traffic and movement, light pollution and presence/absence of major infrastructure, the landscape has an elevated level of tranquillity.</p> <p>Rare or distinctive landscape elements and features are key components that contribute to the landscape character of the area.</p>
Medium	<p>Undesignated landscape including urban fringe and rural countryside considered to be a distinctive component of the national or local landscape character.</p> <p>Landscape condition is fair and components are generally well maintained.</p> <p>In terms of seclusion, enclosure by land use, traffic and movement, light pollution and presence/absence of major infrastructure, the landscape has a moderate level of tranquillity.</p> <p>Rare or distinctive elements and features are notable components that contribute to the character of the area.</p>
Low	<p>Undesignated landscape including urban fringe and rural countryside considered to be of unremarkable character.</p> <p>Landscape condition may be poor and components poorly maintained or damaged.</p> <p>In terms of seclusion, enclosure by land use, traffic and movement, light pollution and presence/absence of major infrastructure, the landscape has limited levels of tranquillity.</p> <p>Rare or distinctive elements and features are not notable components that contribute to the landscape character of the area.</p>

Table 2 Criteria for assessing the susceptibility of landscape elements

Scale	Description
High	<p>Scale of enclosure – landscapes with a low capacity to accommodate the type of development being proposed owing to the interactions of topography, vegetation cover, built form, etc.</p> <p>Nature of land use – landscapes with no or little existing reference or context to the type of development being proposed.</p> <p>Nature of existing elements – landscapes with components that are not easily replaced or substituted and require long time period to establish or perform their function as landscape elements influencing the landscape character (e.g. ancient woodland, mature trees, historic parkland, etc).</p> <p>Nature of existing features – landscapes where detracting features, major infrastructure or industry is not present or where present has a limited influence on landscape character.</p>
Medium	<p>Scale of enclosure – landscapes with a medium capacity to accommodate the type of development being proposed owing to the interactions of topography, vegetation cover, built form, etc.</p> <p>Nature of land use – landscapes with some existing reference or context to the type of development being proposed.</p> <p>Nature of existing elements – landscapes with components that are easily replaced or substituted and require medium term time period to establish or perform their function as landscape elements influencing the landscape character (typically field boundary hedgerows).</p> <p>Nature of existing features – landscapes where detracting features, major infrastructure or industry is present and has a noticeable influence on landscape character.</p>
Low	<p>Scale of enclosure – landscapes with a high capacity to accommodate the type of development being proposed owing to the interactions of topography, vegetation cover, built form, etc.</p> <p>Nature of land use – landscapes with extensive existing reference or context to the type of development being proposed (typically: managed agricultural fields and improved pastures).</p> <p>Nature of existing features – landscapes where detracting features or major infrastructure is present and has a dominating influence on the landscape.</p>

Professional judgement has been used to determine the magnitude of change on individual landscape elements within the Application Site, with Table 3 providing a generic guidance.

Table 3 Criteria for assessing magnitude of change for landscape elements

Scale	Description
High	Total loss or addition / improvement of a landscape element or one that characterised and defines the landscape.
Medium	Partial loss, alteration or modest addition / improvement to part of a landscape element.
Low	Minor loss, alteration or minor addition / improvement to part of a landscape element.
Negligible	No notable change or addition / improvement a landscape element

Assessment of effects on landscape character

Landscape character is defined as the “distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.”¹ The assessment of effects on landscape character considers how the introduction of new elements physically alters the landform, landcover, landscape pattern and perceptual attributes of the site or how visibility of the proposals changes the way in which the landscape character is perceived.

The generic criteria for assessing the value of landscape character is shown in Table 1 above and the assessment in this LVIA is guided by the GLVIA3 Box.5.1.

Professional judgement has been used to determine the magnitude of change on landscape character as shown in Table 4 below.

Table 4 Criteria for assessing magnitude of change on landscape character

Scale	Description
High	Introduction of major new elements into the landscape or some major change to the scale, landform, landcover or pattern of the landscape or other factors characterising the landscape.
Medium	Introduction of some notable new elements into the landscape or some notable change to the scale, landform, landcover or pattern of the landscape or other factors characterising the landscape.
Low	Introduction of minor new elements into the landscape or some minor change to the scale, landform, landcover or pattern of the landscape or other factors characterising the landscape.
Negligible	No notable or appreciable introduction of new elements into the landscape or change to the scale, landform, landcover or pattern of the landscape or other factors characterising the landscape.

Assessment of effects on views

The effects on visual amenity considers the changes in views arising from the Proposed Development in relation to visual receptors including settlements, residential properties, transport routes, recreational facilities and attractions; and representative viewpoints or specific locations within the study area.

Sensitivity is determined by a combination of the value that is attached to a view and the susceptibility of the visual receptor to changes in that view that would arise as a result of the proposals. Both value and susceptibility are assessed on a scale of high, medium or low.

Table 5 Criteria for assessing the value of views

Scale	Description
High	Views with high scenic value within designated landscapes including but not limited to World Heritage Sites, National Parks, Areas of Outstanding Natural Beauty, etc. Likely to include key viewpoints on OS maps or reference within guidebooks, provision of facilities, presence of interpretation boards, etc.
Medium	Views with moderate scenic value within undesignated landscape including urban fringe and rural countryside.
Low	Views with unremarkable scenic value within undesignated landscape with partly degraded visual quality and detractors.

¹ Glossary, Page 157, GLVIA, 3rd Edition

Table 6 Criteria for assessing the susceptibility of views

Scale	Description
High	Includes occupiers of residential properties and people engaged in recreational activities in the countryside using public rights of way (PROW).
Medium	Includes people engaged in outdoor sporting activities and people travelling through the landscape on minor roads and trains. People along PRowS within urban environment.
Low	Includes people at places of work e.g. industrial and commercial premises and people travelling through the landscape on major roads and motorways. People travelling along residential roads in urban environment.

Professional judgement has been used to determine the magnitude change on visual receptors, both adverse and beneficial, as shown in Table 7.

Table 7 Criteria for assessing magnitude of change for visual receptors

Scale	Description
High	Major change / improvement in the view that has a defining influence on the overall view with many visual receptors affected.
Medium	Some change / improvement in the view that is clearly visible and forms an important but not defining element in the view.
Low	Some change / improvement in the view that is appreciable with few visual receptors affected.
Negligible	No notable change / improvement in the view.

Assessment of Cumulative Effects

Cumulative effects arise where the study areas for two or more solar farms overlap so that both of the solar farms are experienced at proximity where they may have a greater incremental effect. This means that the addition of the Proposed Development to a situation where other solar farms are apparent may result in a greater effect than where the Proposed Development is seen by itself. The cumulative assessment includes existing solar farms, those under construction, those that are consented and those for which planning applications have been submitted.

The cumulative assessment covers the potential cumulative effects on landscape character receptors and views. Cumulative effects on the landscape elements and physical effects, where relevant in the context of grid connection, have also been included.

As with the assessment of effects of the Proposed Development, the significance of cumulative effects is determined through a combination of the sensitivity of the landscape receptor or view and the magnitude of change upon it. The sensitivity of landscape receptors and views is the same in the cumulative assessment as in the assessment of the site itself. However, the definition of a significant cumulative effect is different from a significant effect in the assessment of the site itself, and this means that the magnitude of change is also assessed in a different way.

Cumulative magnitude of change

The cumulative magnitude of change is an expression of the degree to which landscape character receptors and views will be changed by the addition of the Proposed Development to solar farms that are already existing, consented or proposed. This is dependent on a number of variables:

- **The location of the Proposed Development in relation to other solar farms.** If the Proposed Development is seen in a part of the view that is not affected by another development, this will generally increase the cumulative magnitude of change as it will extend the influence of such form of development into an area that is currently unaffected. Conversely, if the Proposed Development is seen in the context of other developments, the cumulative magnitude of change may be lower as it is not extending development to hitherto undeveloped parts of the outlook. This is particularly true where the scale and layout of the Proposed Development is similar to that of the other cumulative schemes, as where there is a high level of integration and cohesion with an existing site, the various solar farms may appear as a single site;
- **The number and scale of the developments seen simultaneously, successively, or sequentially.** Generally, the greater the number of visible developments, the higher the cumulative magnitude of change will be.
- **The physical size and scale comparison between all of the solar farms.** If the Proposed Development is of a similar scale to other visible solar farms, particularly those seen in closest proximity to it, the cumulative magnitude of change will generally be lower as it will have more integration with the other sites and will be less apparent as an addition to the cumulative situation;
- **The distance of the Proposed Development from the viewpoint or receptor.** As in the assessment of the site itself, the greater the distance, the lower the cumulative magnitude of change will tend to be;
- **The magnitude of change of the Proposed Development as assessed in the main assessment.** The lower this is assessed to be, the lower the cumulative magnitude of change is likely to be. Where the Proposed Development itself is assessed to have a negligible magnitude of change on a view or receptor there will not be a cumulative effect as the contribution of the Proposed Development will equate to the 'no change' situation.
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Definitions of cumulative magnitude of change are applied in order that the process of assessment is made clear. These are listed in Table 8 below.

Table 8 Cumulative magnitude of change

Magnitude Change	of	Definition
High		The addition of the solar farm will make an immediately apparent contribution to the cumulative situation in a landscape receptor or view.
Medium		The addition of the solar farm makes a notable contribution to the cumulative situation, and its cumulative addition is readily apparent.
Low		The addition of the solar farm will make a minor contribution to the overall cumulative situation, and its cumulative addition is only slightly apparent.
Negligible		The addition of the solar farm will make a negligible contribution to the cumulative situation and its addition equates to a 'no change' situation.

Significance of cumulative effects

The objective of the cumulative assessment is to determine whether any effects that the Proposed Development will have on landscape character / landscape elements and views when seen or perceived in conjunction with other existing and proposed sites will be significant or not significant. A significant cumulative effect will occur where the addition of the Proposed Development to other existing and proposed solar energy schemes will result in a landscape character or view characterised primarily by such form of development so that other patterns and components are no longer definitive. If the solar farm itself is assessed to have a significant effect on a landscape character receptor or view, it does not necessarily follow that the cumulative effect will also be significant. If the joint effect of the two or more solar farms does not result in the perception of a solar farm-defined landscape, the cumulative effect will be not significant, even if the effect of the Proposed Development itself is significant.

Definitions of significant effects

The typical descriptors of the significance of effects are detailed within Table 9 and Table 10 below.

Table 10 Typical Descriptors of Landscape Significance of Effects

MAJOR BENEFICIAL	<p>Typically, the landscape resource has a high sensitivity with the proposals representing a high beneficial magnitude of change and/or the proposed changes would:</p> <ul style="list-style-type: none"> - enhance the character (including value) of the landscape; - enhance the restoration of characteristic features and elements lost as a result of changes from inappropriate management or development; - enable a sense of place to be enhanced.
MODERATE BENEFICIAL	<p>Typically, the landscape resource has a medium sensitivity with the proposals representing a medium beneficial magnitude of change and/or the proposed changes would:</p> <ul style="list-style-type: none"> - enhance the character (including value) of the landscape; - enable the restoration of characteristic features and elements partially lost or diminished as a result of changes from inappropriate management or development; - enable a sense of place to be restored.

MINOR BENEFICIAL	<p>Typically, the landscape resource has a low sensitivity with the proposals representing a low beneficial magnitude of change and/or the proposed changes would:</p> <ul style="list-style-type: none"> - complement the character (including value) of the landscape; - maintain or enhance characteristic features or elements; - enable some sense of place to be restored.
NEGLIGIBLE	<p>Typically, the proposed changes would (on balance) maintain the character (including value) of the landscape and would:</p> <ul style="list-style-type: none"> - be in keeping with landscape character and blend in with characteristic features and elements; - Enable a sense of place to be maintained.
MINOR ADVERSE	<p>Typically, the landscape resource has a low sensitivity with the proposal representing a low adverse magnitude of change and/or the proposed changes would:</p> <ul style="list-style-type: none"> - not quite fit the character (including value) of the landscape; - be a variance with characteristic features and elements; - detract from sense of place.
MODERATE ADVERSE	<p>Typically, the landscape resource has a medium sensitivity with the proposals representing a medium adverse magnitude of change and/or the proposed changes would:</p> <ul style="list-style-type: none"> - conflict with the character (including value) of the landscape; - have an adverse effect on characteristic features or elements; - diminish a sense of place.
MAJOR ADVERSE	<p>Typically, the landscape resource has a high sensitivity with the proposals representing a high adverse magnitude of change and/or the proposed changes would:</p> <ul style="list-style-type: none"> - be at variance with the character (including value) of the landscape; - degrade or diminish the integrity of a range of characteristic features and elements or cause them to be lost; - change a sense of place.

Table 11 Typical Descriptors of Visual Significance of Effects

MAJOR BENEFICIAL	Typically, the visual receptor is of high sensitivity with the proposals representing a high magnitude of change and/or the proposals would result in a major improvement in the view.
MODERATE BENEFICIAL	Typically, the visual receptor is of medium sensitivity with the proposals representing a medium magnitude of change and/or the proposals would result in a clear improvement in the view.
MINOR BENEFICIAL	Typically, the visual receptor is of low sensitivity with the proposals representing a low magnitude of change and/or the proposals would result in a slight improvement in the view.
NEGLIGIBLE	Typically, the proposed changes would be in keeping with, and would maintain, the existing view or where (on balance) the proposed changes would maintain the quality of the view (which may include adverse effects which are offset by beneficial effects for the same receptor) or due to distance from the receptor, the proposed change would be barely perceptible to the naked eye.
MINOR ADVERSE	Typically, the visual receptor is of low sensitivity with the proposals representing a low magnitude of change and/or the proposals would result in a slight deterioration in the view.
MODERATE ADVERSE	Typically, the visual receptor is of medium sensitivity with the proposals representing a medium magnitude of change and/or the proposals would result in a clear deterioration in the view.
MAJOR ADVERSE	Typically, the visual receptor is of high sensitivity with the proposals representing a high magnitude of change and/or the proposals would result in a major deterioration in the view.

Nature of Effects

Compliance with the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 requires that the likely significant effects that have been identified should be assessed to determine as to whether or not they are positive or negative (adverse) in nature.

In relation to many forms of development, the assessment will identify 'positive' and 'negative' effects by assessing these under the term 'Nature of Effect'. The landscape and visual effects of solar farms are difficult to categorise in either of these as, unlike other disciplines, there are no definitive criteria by which the effects of solar farms can be measured as being categorically 'positive' or 'negative'. In some disciplines, such as Noise, it is possible to quantify the effect of a solar farm in numeric terms, by objectively identifying/ quantifying the proportion of a receptor that is affected by the development, and assessing the nature of that effect in justifiable terms. However, this is not the case

in relation to landscape and visual effects where a subjective based approach is inevitably needed.

The nature of the effect, insofar as positive and negative effects are concerned, is a term that is used inconsistently by Landscape Professionals when preparing landscape and visual assessments, as evidenced in many appeal documents on this topic, and there is not a consensus of opinion that supports its use for solar farm assessments. The magnitude of change takes account of such considerations as scale comparisons and the appearance of the solar farm in relation to its surrounding landscape, which can be important to the assessment of significance. In this way positive and negative aspects of the effect are incorporated into the assessment of significance, but not individually expressed as positive or negative. It is relevant to note that judgements in this landscape and visual assessment, including those on nature of effect (where applicable), are based on professional experience and reasoned opinion informed by best practice guidance.

Whether or not an identified change in a view of the landscape is considered positive, neutral or negative, it cannot therefore be definitively stated. Therefore all effects upon landscape character / receptors or views are by default taken as negative unless specifically stated.



ARBORICULTURAL SURVEY, IMPACT ASSESSMENT AND PROTECTION PLAN

ON BEHALF OF

LIGHTSOURCE BP

FOR

**A PROPOSED SOLAR FARM DEVELOPMENT AND ASSOCIATED
INFRASTRUCTURE**

AT

WAUNLWYD FARM, YSTRADOWEN, SWANSEA

Prepared by: Ian Howell BA Hons, L4 Cert Arb (ABC), TechArborA
Checked by: Richard Hyett MSc, MArborA, MICFor
Reference: L.3179

Validation statement for LPA application registration

This report is submitted to Powys County Council to accompany a planning application. The report contains arboricultural information relating to the proposed development at Waunlwyd Farm.

For local planning authority (LPA) validation purposes, this report contains the following:

- A full tree survey compliant with the requirements of BS5837:2012 '*Trees in relation to design, demolition and construction – recommendations*' undertaken by a competent and qualified arboriculturist.
- A suitably scaled plan with a north point and the tree survey information.
- An assessment of the impacts of the proposed development on the existing trees. This includes recommendations of which trees should be removed/retained and the proposed protection measures.
- Heads of Terms for an arboricultural method statement outlining appropriate methods of tree protection and any specific technical construction methods needed to implement the design proposals.

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APPENDICES:

APPENDIX 1 – TREE SURVEY METHODOLOGY AND SCHEDULE

APPENDIX 2 – TREE SURVEY AND CONSTRAINTS PLAN

APPENDIX 3 – TREE PROTECTION PLAN

REVISIONS:

Date	Rev	Description of revision	Initials
04/07/19	-	First issue	IH

1. INTRODUCTION

- 1.1 I am instructed by Lightsource BP, to inspect the trees that could affect or be affected by the proposed development on land at Waunlwyd Farm, Ystradowen; hereafter referred to as 'the site'. This report, in compliance with BS5837:2012 '*Trees in relation to design, demolition and construction - recommendations*' is required to accompany the submission of a detailed planning application for solar park development and associated infrastructure.
- 1.2 The scope of my instruction was to visit the site and to survey relevant trees, hedges and shrub masses in accordance with BS5837:2012 and to prepare the following information:
- Tree survey summary
 - Schedule of tree survey data
 - Tree survey and constraints plan
- 1.3 With reference to the above information and BS5837:2012, I was also instructed to assess the impact of the proposed development on the site's arboricultural resource and to produce the following:
- Arboricultural impact assessment
 - Tree retention and removal plan
 - Tree protection plan

2. REPORT LIMITATIONS

- 2.1 The tree survey was undertaken from ground level and observations have been made solely from visual inspections for the purposes of assessment in terms relevant to planning and development. Only binoculars, mallet and a probe have been used to aid tree assessment. No invasive or non-invasive internal decay detection devices have been used in assessing tree condition.
- 2.2 The recommendations and conclusions in this report relate only to the conditions found on this site at the time of the site visit and inspection. The recommendations contained within this report are valid for a period of 12 months from the date of this report.
- 2.3 Any significant alteration to the site that may affect the trees present, for instance, changes in ground level, tree works, extreme weather events, hydrological changes etc,) may invalidate the survey findings and could necessitate a re-assessment of the trees.
- 2.4 This report is prepared for planning purposes only and does not evaluate the degree of risk posed by trees.
- 2.5 Trees are living organisms and self-supporting dynamic structures. Their physiological and structural condition can change rapidly in response to a wide range of biotic/abiotic factors. They have the potential to fail structurally, without prior manifestation of any reasonably observable symptoms. It is therefore not possible to categorically state that any tree is 'safe'.
- 2.6 It is beyond the scope of this report to comment in relation to structural damage – direct or indirect, existing or potential – that might be associated with vegetation growth, or vegetation-related soil subsidence or heave.
- 2.7 Any management recommendations set out within this report are of an advisory and preliminary nature only and relate to trees within the context of current site use. Any physical alterations to site conditions subsequent to the date of the site survey will have the potential to change/invalidate the findings and recommendations of this report.

3. DOCUMENTS AND INFORMATION PROVIDED

3.1 For the purposes of carrying out the assessment I have been provided with, and made reference to, the following information:

- Topographic survey – 20678-500-001 Waunlywd Farm
- Layout – Bryn Henllys Extension Layout_Rev5

4. DESCRIPTION OF SITE AND TREES

4.1 The site is located on existing farm land within the jurisdiction of Powys County Council.



Photo 1: Aerial photo of the site with **approximate** boundary shown in blue. (Source: Google Maps).

- Nearest postcode: SA9 2XX
- Central grid reference : SN 75856 12488

Site description

- 4.2 The site is located approximately two miles north-west of the town Ystradgynlais, in south-west Powys, Wales.
- 4.3 The locality is dominated by grass-covered agricultural fields. The access to the site is via the existing road (Pen-Y-Craig Rd) and farm track for Waunlwyd Farm itself.

- 4.4 The site lies within a sheltered location, being well screened by woodland and field edge tree groups. The northern section of the site is more visible from the hills that overlook the site to the north.
- 4.5 The arboricultural resource for the site predominantly consists of young to semi-mature trees that are contained within field edge groups and irregularly shaped woodland groups.
- 4.6 The site is bound on all sides by neighbouring agricultural fields and woodland.

5. STATUTORY PROTECTION

Statutory tree protection

- 5.1 I contacted Powys County Council, the Local Planning Authority (LPA) via email on 20/06/19 and they have confirmed that the site is not located within a Conservation Area and that none of the trees on site is currently protected by Tree Preservation Order (TPO).
- 5.2 The check with the local authority did, however, reveal that the site does abut an Ancient Woodland at the point of access from the east, central to the site's eastern boundary. This is the section of W7 that lies to the north of the track (Pen-Y-Craig Rd). However, the section of woodland (W7) that overhangs the site is not designated as Ancient Woodland on the natural resources wales, Ancient Woodland Inventory.
- 5.3 The following information with regards to tree works within Conservation Area and works to trees covered by Tree Preservation Order (TPO) is therefore provided for advisory purposes only.
- 5.4 Notwithstanding specific exemptions and in general terms, a TPO prevents the cutting down, uprooting, topping, lopping, wilful damage or wilful destruction of protected trees or woodlands without the prior written consent of the LPA.
- 5.5 Penalties for contravention of a TPO tend to reflect the extent of damage caused but can, in the event of a tree being destroyed, result in a fine of up to £20,000 if convicted in a Magistrates' Court, or an unlimited fine if the matter is determined by the Crown Court.
- 5.6 On many non-residential sites (excluding specific exemptions) there is also a statutory restriction relating to tree felling that relates to quantities of timber that can be removed within set time periods. In basic terms, it is an offence to remove more than 5 cubic metres of timber in any one calendar quarter without having first obtained a felling licence from the Forestry Commission.
- 5.7 Any proposed tree works that are planned to be carried out on site must be carried out in accordance with the statutory controls outlined.

Statutory Wildlife Protection

- 5.8 Although preliminary visual checks from ground level of likely wildlife habitats are made at the time of surveying, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside of the scope for this report.
- 5.9 Trees which contain holes, splits, cracks and cavities could potentially provide a habitat for protected species such as bats in addition to birds and small mammals. In some instances, specialist ecological advice may be required. This may result in tree works being carried out following a detailed climbing inspection to the tree to ensure that protected species or their

nests/roosts are not disturbed. If any are found, the site manager, owner or consulting arboriculturist should be informed and appropriate action taken as recommended by the appointed Ecologist or the relevant Statutory Nature Conservation Organisation (SNCO): Natural England, Scottish Natural Heritage or Natural Resources Wales.

- 5.10 It is advised that tree/hedgerow works are carried out with the understanding that birds will generally nest in trees, hedges and shrubs between March and August. This time period only provides an indication of likely nesting times and as such diligence is required when undertaking tree works at *all* times.
- 5.11 Irrespective of the time of year, and other than any actions approved under General Licence, it is an offence to intentionally kill, injure or take any wild bird or to intentionally take, damage or destroy the nest or eggs of any wild bird. Ideally, tree operations should be avoided during the likely bird nesting period. However, any tree works should always only be carried out following a preliminary visual check of the vegetation.
- 5.12 For information, the Wildlife and Countryside Act 1981 (as amended), The Countryside and Rights of Way Act 2000 (as amended) and the Conservation of Habitat and Species Regulations 2010, form the basis of the statutory legislation for flora and fauna in England and Wales.
- 5.13 Any proposed tree works that are planned to be carried out on site must be carried out in accordance with any relevant statutory controls, outlined above.

6. ARBORICULTURAL SURVEY

Site visit

- 6.1 I visited the site on 19/06/19. The weather at the time of the visit was clear and sunny; these conditions in no way hindered my ability to view the trees. All observations were made from ground level (aided by the Visual Tree Assessment method – Mattheck and Breloer, 1994) and all dimensions were measured unless otherwise stated as estimated in the survey schedules.

Methodology

- 6.2 The survey was undertaken in accordance with BS5837:2012 and the methodology is set out within **APPENDIX 1** of this report.
- 6.3 The tree survey findings are recorded in the tree survey schedule at **APPENDIX 1** of this report.
- 6.4 Within the tree survey schedule, each surveyed, group (G), hedgerow (H) and woodland (W) on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan which can be found at **APPENDIX 2** of this report.

7. TREE SURVEY FINDINGS

7.1 A summary of the tree survey quality assessment findings that are relevant to the current proposals are shown in table form below:

	Total	A - High-quality trees whose retention is most desirable.	B - Moderate quality trees whose retention is desirable.	C - Low-quality trees which could be retained but should not significantly constrain the proposal.	U - Very poor quality trees that should be removed unless they have high conservation value.
Trees	-	-	-	-	-
Groups	8	-	6	2	-
Hedgerows	3	-	3	-	-
Woodland	7	-	7	-	-
Total	18	-	16	2	-

7.2 It can be seen from the above table that the arboricultural resource on the site is dominated by tree groups and woodland. In addition, a small number of hedgerows were also identified. The majority of groups (six out of a total of eight) were assessed as being of moderate-quality (category B). As were all seven of the woodlands identified.

7.3 Only three hedgerows were identified, all of which were assessed as being moderate-quality.

7.4 Select photographs of the site are shown on the following pages:



Photoview 1: H5, a typical hedgerow for the site. Note the wire fencing parallel to the hedgerow along its length which is present around all hedgerows and tree groups at the site.



Photoview 2: Looking toward the northern section of the site from the track that provides access through the establishing woodlands (W1, W2, W3).



Photoview 3: Looking south along the edge of G6, which is a typical example of the linear groups found dissecting the southern portion of the site.



Photoview 4: An example of one of the existing gateways in the southern section of the site that is to be utilised for the installation of the site construction and maintenance tracks.

8. IDENTIFICATION OF PRELIMINARY TREE CONSTRAINTS

- 8.1 In accordance with BS5837:2012, below ground constraints, or root protection areas (RPAs), for the surveyed tree groups, woodlands and hedgerows, have been plotted onto the tree survey plan for the site. These are represented as a circle centered on the base of each tree stem with a radius of 12 times stem diameter measured at 1.5m above ground level.
- 8.2 With reference to BS5837:2012, a root protection area (RPA) is defined as “a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree’s viability, and where the protection of the roots and soil structure should be treated as a priority”. “The default position [when considering design layout in relation to RPAs] should be that structures are located outside the RPAs of trees to be retained”.
- 8.3 BS5837:2012 states (4.6.2) that, “where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, a polygon of equivalent area should be produced.” The BS goes on to state that, “modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution,” and that any deviation from the original circular plot should take into account:
- morphology and disposition of roots
 - topography and drainage
 - soil type and structure
 - the likely tolerance of the tree to root damage/disturbance
- 8.4 In this instance, the default circular RPAs have been used throughout the site.
- 8.5 Root systems can be damaged in a number of ways as follows:
- Severance of a root will destroy all parts of the root beyond that point. The larger the root severed, the greater the impact on the tree. If roots are damaged close to the trunk, the anchorage and stability of the tree can be affected
 - The root bark protects the root from decay and is also essential for further root growth. If damage to the bark extends around the whole circumference, the root beyond that point will be killed
 - Soil compaction, which may occur from storage of material or passage of heavy equipment over the root area, can restrict and even prevent gaseous diffusion through the soil, and thereby asphyxiate the roots. The roots must have oxygen for survival, growth and effective functioning.

-
- Lowering the soil level will strip out the mass of roots near the surface
 - Raising soil levels will have the same effect as soil compaction
 - Incorrect selection and application of herbicide
 - Spillage of oils or other harmful materials

8.6 Above ground constraints posed by trees describe the capacity for trees to have an overbearing or inconvenient effect on new developments. Typical above-ground constraints include a number or combination of inconveniences including shading, branch spread, movement of trees during strong winds and so on. If not adequately considered, above ground constraints can lead to repeated requests to fell or heavily prune retained and/or protected trees.

9. DESCRIPTION OF PROPOSED DEVELOPMENT

- 9.1 Detailed planning consent is sought for the construction of a solar farm and associated infrastructure to be situated within agricultural fields surrounding Waunlwyd Farm.
- 9.2 Site access will be achieved via the existing road (Pen-Y-Craig Rd) from the village of Ystradowen to the west, and via existing farm tracks for Waunlywd Farm.
- 9.3 The proposed layout is shown on the tree protection plan at **APPENDIX 3**.

10. ARBORICULTURAL IMPACT ASSESSMENT (AIA)

10.1 With reference to BS5837:2012 '*Trees in relation to design, demolition and construction*', this AIA evaluates the direct and indirect effects of the proposals on the site's arboricultural resource.

10.2 The AIA considers the effects of any tree loss required to implement the design as well as any reasonably foreseeable potentially damaging activities proposed in the vicinity of retained trees. With reference to BS5837:2012 and the nature of the proposals, such activities might include:

- Tree removals to facilitate the design
- Soil compaction in proximity to retained trees
- Direct impact damage to trees and roots associated with construction operations

Description of proposed arboricultural losses

10.3 No tree groups or hedgerows will require removal in order for the proposed development to be implemented. The site layout has been designed with specific care and attention having been given to achieving a design with no arboricultural impacts.

Impacts on retained trees

Demolition and site clearance

10.4 No demolition or site clearance is required in order to allow the proposed development to be constructed.

Facilitation pruning

10.5 No facilitation pruning is anticipated to be required to facilitate the design, however if the requirement does arise then the project arboriculturist should be consulted .

10.6 The access for the site (via Pen-Y-Craig Rd) is bound by designated ancient woodland (W7) to the north. If vertical clearance is required for vehicles or plant and machinery within the woodland or its assigned buffer (as shown on the plan at Appendix 2) it will be necessary to contact the project arboriculturist for further advice and guidance.

10.7 All site traffic should avoid pulling onto or driving over roadside verges within the woodland approaching the site as this could cause damage to tree stems, and the roots of trees within the woodland to the south, and designated Ancient woodland to the north.

Service/cable installation

- 10.8 An internal network of connecting cables will be required. This will utilise existing gaps in hedgerows and avoid the RPAs of retained trees. Should it come to light that this is not possible in certain areas of the site then the project arboriculturist must be consulted and use of trenchless installation techniques considered.

Ground level changes

- 10.9 No ground level changes are proposed within the RPAs of retained trees.

Hard surfacing

- 10.10 New hard surfacing is proposed in the form of access tracks to allow for the construction and future maintenance/operation of the site. All of these tracks are outside, or just at the periphery of the RPAs of retained tree groups and hedgerows. Some of the tracks at the centre of the site that are routed through the woodland groups W1, W2, W3. These access tracks will utilise the existing stone surfaced farm tracks. These have been used by agricultural machinery for many years so no impacts to the nearby woodlands are anticipated.
- 10.11 With the proposed tree protection barriers installed ahead of commencing construction, and as per the guidance set out within section 10 of this report, there should be no significant impact on retained trees and hedgerows.

Soft landscaping

- 10.12 No soft landscaping is proposed within the RPAs of retained trees.

11. TREE PROTECTION PLAN

- 11.1 A Tree Protection Plan (TPP) is attached at **APPENDIX 3** of this report.
- 11.2 In accordance with BS5837:2012 the TPP is superimposed onto the proposed site layout plan and based on the topographical survey.
- 11.3 Where practical the TPP has been drawn to ensure the square meter area of the RPA's for individual trees has been maintained and also that the RPAs cover the likely rooting area of individual trees. In addition, where relevant, the TPP shows indicative locations of protective barriers (forming Construction Exclusion Zones in relation to RPAs of retained trees).
- 11.4 The preparation of the TPP has considered the following factors where relevant:-
- Site construction access;
 - intensity and nature of construction activity;
 - spatial requirements for:
 - - Temporary and permanent apparatus and service runs;
 - - Site huts, toilets (including drainage) and other temporary structures;
 - - Storage (either temporary or long-term) of materials, spoil, fuel and mixing of concrete.
 - All changes in ground levels including location of retaining walls, steps and adequate allowance for foundations of such walls and backfilling;
- 11.5 The tree protection measures shown on the TPP demonstrate the feasibility of the proposed development in relation to retained trees. However, they must be implemented with specific reference to a finalised TPP based on the approved layout and an arboricultural method statement that is relevant to the approved development.

12. HEADS OF TERMS FOR AN ARBORICULTURAL METHOD STATEMENT

- 12.1 BS5837:2012 (Figure 1) recommends that detailed/technical design of tree protection and arboricultural methodologies should be resolved and finalised following on from the approval of the feasibility of a scheme by the relevant regulatory body.
- 12.2 Annex B and Table B.1 of BS5837:2012, an informative, advises that arboricultural method statement heads of terms are a sufficient level of information in order to deliver tree-related information into the planning system. The table also advises that a detailed arboricultural method statement might reasonably be required, by agreement, as a pre-commencement planning condition.
- 12.3 In relation to the above site, it is anticipated that arboricultural working methods are likely to be quite straightforward. A draft, 'heads of terms' is set out below:
- Project arboriculturist – schedule of monitoring and supervision (as required)
 - Pre-commencement site meeting
 - Tree removals and facilitation pruning
 - Erection of tree protection barriers
 - Main construction phase
 - Removal of tree protection barriers

13. SUMMARY

- 13.1 The site is located approximately two miles north-west of the town of Ystradgynlais in south-west Powys, Wales. The locality is dominated by grass-covered agricultural fields. The access to the site is via Pen-Y-Craig Rdm and the existing farm track for Waunlwyd Farm Farm.
- 13.2 The arboricultural resource for the site predominantly consists of young to semi-mature native broadleaf trees that are contained within field edge groups and irregularly shaped woodland groups.
- 13.3 The site is not located within a Conservation Area and that none of the trees on site is currently protected by Tree Preservation Order (TPO).
- 13.4 The site borders an area of designated Ancient Woodland. This designation refers to the section of W7 to the north of Pen-Y-Craig Rd. However, the southern section of W7 (that overhangs the site) is not designated, Ancient Woodland.
- 13.5 Detailed planning consent is sought for the construction of a solar farm and associated infrastructure to be situated within agricultural fields surrounding Waunlwyd Farm.
- 13.6 No tree groups or hedgerows will require complete removal in order for the proposed development to be implemented. However, some partial removal will be required to allow for the installation of site security fences and internal construction and maintenance tracks.
- 13.7 Given the limited maturity of the trees affected and the minimal amount of tree group and hedgerow removal proposed, and in the context of the wider arboricultural resource of the site, the proposed loss is considered to be insignificant and acceptable in arboricultural terms.
- 13.8 New hard surfacing is proposed in the form of access tracks to allow for the future maintenance and operation of the site. All of these tracks are outside, or just at the periphery of the RPAs of retained tree groups and hedgerows. Some of the proposed tracks at the centre of the site that run through woodlands W1, W2, W3 will utilise existing stone surfaced farm tracks. These have been used by agricultural machinery for many years so no impacts to the nearby woodlands are anticipated.
- 13.9 The tree protection measures shown on the TPP demonstrate the feasibility of the proposed development in relation to retained trees.
- 13.10 On the basis of the advice contained within this report being adopted the proposed development is acceptable from an arboricultural perspective.

APPENDIX 1

TREE SURVEY METHODOLOGY AND SCHEDULE

TREE SURVEY SCHEDULE

WAUNLWYD FARM, YSTRADOWEN

PROJECT NO: L.3179

SURVEYOR: IAN HOWELL

CLIENT: LIGHTSOURCE BP

JUNE 2020



GROUPS OF TREES

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	RPA m ²	TPO
G1	Common ash, common alder, rowan, hawthorn	2-5	150+	#	140	2	0.5	Y	None	Linear group of young trees. Some diseased ash trees throughout.	Good	Good	40+	C2	1.7	9	No
G2	Common ash, common alder, rowan, hawthorn	2-5	150+	#	140	2	0.5	Y	None	Linear group of young trees. Some diseased ash trees throughout.	Good	Good	40+	C2	1.7	9	No
G3	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	3-6	150+	#	175	3	0.5	Y	None	Linear group at the field edge boundary, contained within a wire fence. Some diseased ash throughout.	Good	Good	40+	B2	2.1	14	No
G4	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	3-6	150+	#	175	3	0.5	Y	None	Cross-shaped group dissecting the southern fields, contained within a wire fence. Some diseased ash throughout.	Good	Good	40+	B2	2.1	14	No
G5	Common ash, English oak, horse chestnut	20-22	20	#	800	7	2.0	M	None	Off-site group of significant trees set back from the sites western boundary by 10+meters.	Good	Good	40+	B2	9.6	290	No
G6	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	3-8	150+	#	200	3	0.5	Y	None	Linear group bisects the southern most fields, contained within a wire fence. Some diseased ash throughout.	Good	Good	40+	B2	2.4	18	No
G7	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	3-6	150+	#	175	3	0.5	Y	None	Linear group dissecting the southern fields, contained within a wire fence. Some diseased ash throughout.	Good	Good	40+	B2	2.1	14	No
G8	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	3-8	150+	#	200	3	0.5	Y	None	Linear group, contained within a wire fence. Some diseased ash throughout.	Good	Good	40+	B2	2.4	18	No

TREE SURVEY SCHEDULE

WAUNLWYD FARM, YSTRADOWEN

PROJECT NO: L.3179

SURVEYOR: IAN HOWELL

CLIENT: LIGHTSOURCE BP

JUNE 2020



WOODLAND

Ref	Species	Height range (m)	No. of trees	Est diam?	Max stem diam (mm)	Av. Crown radius (m)	Avg. Canopy Height (m)	Life Stage	Special importance	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO
W1	Common ash, larch, field maple, goat willow, alder, birch, cherry	5-12	5000+	#	200.0	3	0.5	SM	None	Dense and establishing woodland of predominantly native species. Bisected by a track (8m wide inclusive of the verge).	Good	Good	40+	B2	2.4	No
W2	Common ash, larch, field maple, goat willow, alder, birch, cherry	5-12	5000+	#	200.0	3	0.5	SM	None	Dense and establishing woodland of predominantly native species. Bisected by a track (8m wide inclusive of the verge).	Good	Good	40+	B2	2.4	No
W3	Common ash, larch, field maple, goat willow, alder, birch, cherry	5-12	5000+	#	200.0	3	0.5	SM	None	Dense and establishing woodland of predominantly native species. Bisected by a track (8m wide inclusive of the verge).	Good	Good	40+	B2	2.4	No
W4	Common ash, larch, field maple, goat willow, alder, birch, cherry	3-6	5000+	#	150.0	2	0.5	Y	None	Dense and establishing woodland of predominantly native species.	Good	Good	40+	B2	1.8	No
W5	Common ash, larch, field maple, goat willow, alder, birch, cherry	3-6	5000+	#	150.0	2	0.5	Y	None	Off-site woodland. Dense and establishing woodland of predominantly native species.	Good	Good	40+	B2	1.8	No
W6	Birch, common ash, sweet chestnut, aspen, goat willow, larch, English oak	5-15	5000+	#	250.0	4	0.5	SM	None	Off-site woodland. Dense and establishing woodland of predominantly native species. Bisected by a track, and overhanging the site by up to 4m in its southern portion.	Good	Good	40+	B2	3.0	No
W7	English oak, sycamore, hazel, common ash	5-22	1000+	#	700.0	7	2.0	M	Ancient woodland	Off-site woodland bisected by the access track and populating steep sided river banks.	Good	Good	40+	B2	8.4	No

TREE SURVEY SCHEDULE

WAUNLWYD FARM, YSTRADOWEN

PROJECT NO: L.3179

SURVEYOR: IAN HOWELL

CLIENT: LIGHTSOURCE BP

JUNE 2020



HEDGES

Ref	Species	Avg. Height (m)	Avg. width (m)	Avg. Stem diam (mm)	Avg. Canopy Height (m)	Life Stage	General Observations	Health & vitality	Struct. cond.	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	Estimated Remaining Contribution (Years)	BS5837 Category	RPA Radius (m)	TPO
H1	Hawthorn, blackthorn, field maple	2.5	1.8	80	0.2	SM	Dense and well maintained hedgerow contained within a wire fence.	Good	Good	40	B2	1.0	40+	B2	2.4	No
H2	Hawthorn, blackthorn, field maple	2.5	1.8	80	0.2	SM	Dense and well maintained hedgerow contained within a wire fence.	Good	Good	40	B2	1.0	40+	B2	2.4	No
H3	Hawthorn, blackthorn, field maple	2.5	1.8	80	0.2	SM	Dense and well maintained hedgerow contained within a wire fence.	Good	Good	40	B2	1.0	40+	B2	2.4	No

- The tree survey was carried out with reference to the methodology set out in BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- Trees were surveyed individually or as groups where it was considered that they had grown together to form cohesive arboricultural features either aerodynamically (trees that provide companion shelter), visually (eg avenues or screens) or culturally (including for biodiversity). However, where it was considered that there was an arboricultural need to differentiate between attributes trees within groups/woodlands were also surveyed as individuals
- The full tree survey findings are recorded in the following tree survey schedule.
- Within the tree survey schedule, each surveyed TREE (T), GROUP (G), HEDGEROW (H), WOODLAND (W) or SHRUB MASS on or adjacent to the site is given a reference number which refers to its position on the tree survey and constraints plan.
- TREE SPECIES are listed by common name.

The **DIMENSIONS** taken are:

- STEM-No. Indicates the number of main stems (i.e. whether the trunk divides at or below 1.5m; (Used in the calculation of RPA.) "m-s" = Multi-stemmed.
- STEM DIAMETER (in millimetres), obtained from the girth measured at approx.1.5m. For trees with 2 to 5 sub-stems, a notional figure is derived from the sum of their cross-sectional areas. For multi-stemmed trees the notional diameter may be estimated on the basis of the average stem size x the number of stems. (A notional diameter may be estimated where measurement is not possible.)
- HEIGHT, are measured in metres. They are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- The CROWN SPREAD are taken at the four cardinal points to derive an accurate representation of the tree crown. They are recorded up to the nearest half metre for dimensions up to 10m and to up the nearest whole metre for dimensions over 10m.
- CROWN CLEARANCES are expressed both as existing height above ground level of first significant branch along with its direction of growth (eg 2.5m-N), and also in terms of the overall canopy. Measurements are recorded to the nearest half metre for dimensions up to 10m and to the nearest whole metre for dimensions over 10m.
- ESTIMATES. Where any measurement has had to be estimated, due to inaccessibility for example, this is indicated by a "#" suffix to the measurement as shown in the tree survey schedule.

LIFE STAGE is defined as follows:

- Y Young: normally stake dependent, establishing trees. Should be growing fast, usually primarily increasing in height more than spread, but as yet making limited impact upon the landscape.
- SM Semi-mature: Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment. Semi-Mature (still capable of being transplanted without preparation, up to 30cm girth and not yet sexually mature).
- EM Early-mature: Not yet having reached 75% of expected mature size. Established young trees, normally of good vigour and still increasing in height, but beginning to spread laterally. Beginning to make an impact upon the local landscape & environment.

- M Mature: Well-established trees, still growing with some vigour, but tending to fill out and increase spread. Bark may be beginning to crack & fissure. In the middle half of their safe, useful life expectancies.
- LM Late-Mature: In full maturity but possibly beyond mature and in a state of natural decline). Still retaining some vigour but any growth is slowing.
- A Ancient: A tree that has passed beyond maturity and is old./aged compared with other trees of the same species. Typically having a very wide trunk and a small canopy.

PHYSIOLOGICAL CONDITION (HEALTH & VITALITY):

Essentially a snapshot of the general health of the tree based upon its general appearance, its apparent vigour and the presence or absence of symptoms associated with poor health, physiological stress etc. (Fungal infections may be recorded here but decay giving rise to structural weakness would be recorded under 'Structural Condition' – see next parameter):

- Good: No significant health issues.
- Fair: indications of slight stress or minor disease (e.g. the presence of minor dieback/deadwood or of epicormic shoot growth)
- Poor: Significant stress or disease noted; larger areas of dieback than above
- Dead: (or Moribund)

STRUCTURAL CONDITION:

Defects affecting the structural stability of the tree, including decay, significant dead wood, root-plate instability or significant damage to structural roots, weak forks (e.g. those where bark is included between the members) etc. Classified as:

- Good: No obvious structural defects: basically sound
- Fair: Minor, potential or incipient defects
- Poor: Significant defect(s) likely to lead to actual failure in the medium to long-term
- Dead: (or Moribund)

REMAINING USEFUL LIFE EXPECTANCY:

An estimate of the length of time in years that a tree might be expected to continue to make a useful contribution to the locality at an acceptable level of risk (based on an assumption of continued routine maintenance)

- less than 10 years
- 10+ years
- 20+ years
- 40+ years

SPECIAL IMPORTANCE:

Trees that are particularly notable as high value trees such as ancient, veteran or emerging veteran trees (i.e. trees that have some characteristics of veterans but are not yet considered to have achieved full veteran status). Such trees may be regarded as the principal arboricultural features of a site, and pose a significant constraint to potential development.

QUALITY CATEGORY:

Trees are classed as category U, A, B or C, based on criteria given in BS5837:2012; summary definitions as follows (see BS5837 for further details). Categories A, B and C are further characterised by the use of sub-categories, which attempt to identify what aspect of the tree is the main source of its perceived value:

- (1) arboricultural qualities
- (2) landscape qualities, and
- (3) cultural, historic or ecological/conservation qualities.

Examples of these qualities for each of the three categories are given below, although these are indicative only.

Note: This is NOT a health and safety classification; the classification does not take into account any requirement for remedial tree care or ongoing maintenance apart from that which may affect the trees' general suitability for retention.

CATEGORY U: UNSUITABLE:

Trees likely to prove to be unsuitable for retention for longer than 10 years should any significant increase in site usage arise as a result of development.

E.g. dead or moribund trees; those at risk of collapse or in terminal decline; trees that will be left unstable by other essential works such as the removal of nearby category U trees; trees infected by pathogens that could materially affect other trees; low quality trees that are suppressing better specimens (Category U trees may have conservation values that it might be desirable to preserve.

It may also include trees that should be removed irrespective of any development proposals.)

CATEGORY A: HIGH QUALITY:

Trees or groups whose retention should be given a particularly high priority within the design process.

Normally with an expected useful life expectancy of at least 40 years.

- A1: Notably fine specimens; rare or unusual specimens; essential component trees within groups, semi-formal or formal plantings (e.g. dominant trees within an avenue etc.)
- A2: Trees, groups or woodlands of particular visual importance as landscape features.
- A3: Trees, groups or woodlands of particular significance by virtue of their conservation, historical, commemorative or other value (e.g. veteran trees or wood pasture.)

CATEGORY B: MODERATE QUALITY:

Trees or groups of some importance with a likely useful life expectancy in excess of 20 years. Their retention would be highly desirable; selective removal of certain individuals may be acceptable, but only after full consideration of all alternative courses of action.

- B1: Fair quality but not exceptional; good specimens showing some impairment (e.g. remediable defects, minor storm damage or poor past management.)
- B2: Acceptable trees situated such as to have little visual impact within the wider locality. Also numbers of trees, perhaps in groups or woodlands, whose value as landscape features is greater collectively than would warrant as individuals (such that the selective removal of an individual would not impact greatly upon the trees' overall, collective value).
- B3: Trees, groups or woodlands with clearly identifiable conservation or other cultural benefits.

CATEGORY C: MINOR VALUE:

Trees or groups of rather low quality, although potentially capable of retention for at least approx. 10 years.

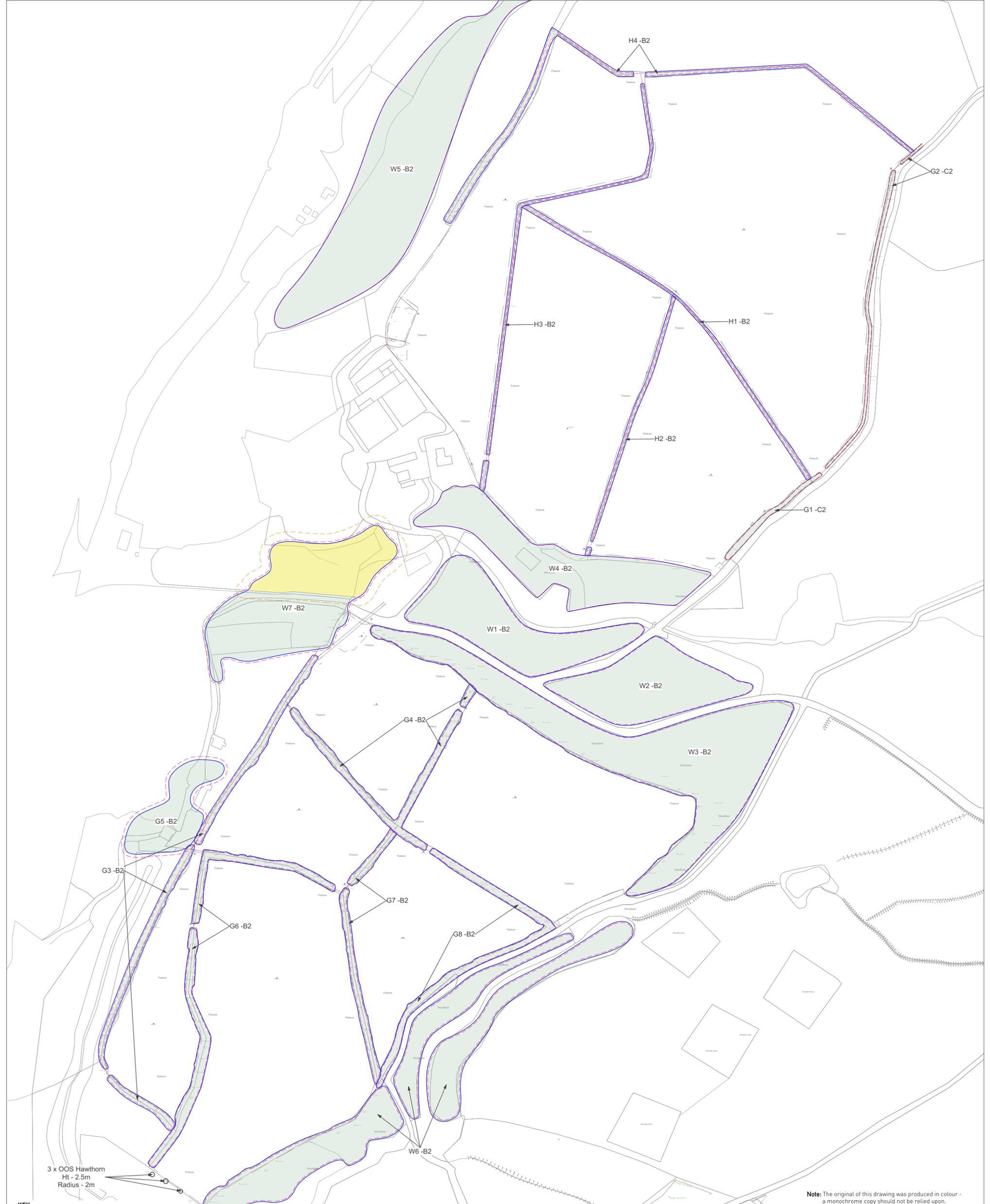
Also small trees with stems below 15cm diameter.

Potentially retainable, but not of sufficient value to be regarded as a significant planning constraint.

- C1: Unremarkable trees of very limited merit or of significantly impaired condition.
- C2: Trees offering only low or short-term landscape benefits; also secondary specimens within groups or woodlands whose loss would not significantly diminish their landscape value.
- C3: Trees with extremely limited conservation or other cultural benefit.

APPENDIX 2

TREE SURVEY AND CONSTRAINTS PLAN



KEY BS 5837 : 2012 Categories

- + Tree Category A - High Quality
- + A Category - Hedgerow, Group, Woodland
- + Tree Category B - Moderate Quality
- + B Category - Hedgerow, Group, Woodland
- + Tree Category C - Low Quality
- + C Category - Hedgerow, Group, Woodland
- + Tree Category U - Unsuitable for Retention
- + U Category - Hedgerow, Group, Woodland
- + Root Protection Area to BS 5837:2012
- + Shrub Mass / Offsite Tree / OOS (Out of scope)
- + Ancient Woodland
- + Ancient Woodland Buffer

3 x OOS Hawthorn
Ht - 2.5m
Radius - 2m

GRID NORTH

0 20 40 60 80 100
Meters

Tree No	Species	RPA Radius M	RPA Area M2	Category
G1	Common ash, common alder, rowan, hawthorn	1.7	n/a	C2
G2	Common ash, common alder, rowan, hawthorn	1.7	n/a	C2
G3	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	2.1	n/a	B2
G4	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	2.1	n/a	B2
G5	Common ash, English oak, horse chestnut	9.6	n/a	B2
G6	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	2.4	n/a	B2
G7	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	2.1	n/a	B2
G8	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	2.4	n/a	B2
W1	Common ash, larch, field maple, goat willow, alder, birch, cherry	2.4	n/a	B2
W2	Common ash, larch, field maple, goat willow, alder, birch, cherry	2.4	n/a	B2
W3	Common ash, larch, field maple, goat willow, alder, birch, cherry	2.4	n/a	B2
W4	Common ash, larch, field maple, goat willow, alder, birch, cherry	1.8	n/a	B2
W5	Common ash, larch, field maple, goat willow, alder, birch, cherry	1.8	n/a	B2
W6	Birch, common ash, sweet chestnut, aspen, goat willow, larch, English oak	3	n/a	B2
W7	English oak, sycamore, hazel, common ash	8.4	n/a	B2
H1	Hawthorn, blackthorn, field maple	1	n/a	B2
H2	Hawthorn, blackthorn, field maple	1	n/a	B2
H3	Hawthorn, blackthorn, field maple	1	n/a	B2
H4	Hawthorn, blackthorn, field maple	1	n/a	B2

Note: The original of this drawing was produced in colour - a monochrome copy should not be relied upon.

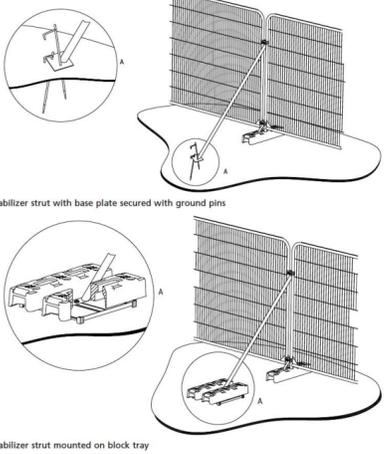
PROJECT TITLE		DRAWING NUMBER	
Waunlywd Farm (Brynn Henllys extension) L.3179		BHA_591_01	
DRAWING TITLE		DATE	
Tree Survey & Constraints Plan		19/06/2019	
SCALE	@ A2	REVISION	SHEET
1:2000		-	-
DRAWN BY	APPROVED BY	REVISION	SHEET
SD	IH	-	-
CLIENT			
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COORDINATE SYSTEM / DATUM			
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Barton Hyett Associates Arboricultural Consultants			
<small>Tel: 01386 576161 Address: Office 5E, Deer Park Business Centre, Eckington, Pershore, Worcestershire, WR10 3DN</small>			

APPENDIX 3

TREE PROTECTION PLAN

Tree Protection Barrier - Barrier to be erected prior to the commencement of works on site and not to be altered or removed until works are complete (cross check with specific requirements of any relevant planning conditions)

BS:5837:2012 Figure 3 Examples of above-ground stabilizing systems



For more details refer to BS:5837:2012 'Trees in relation to design, demolition and construction - Recommendations' p.21

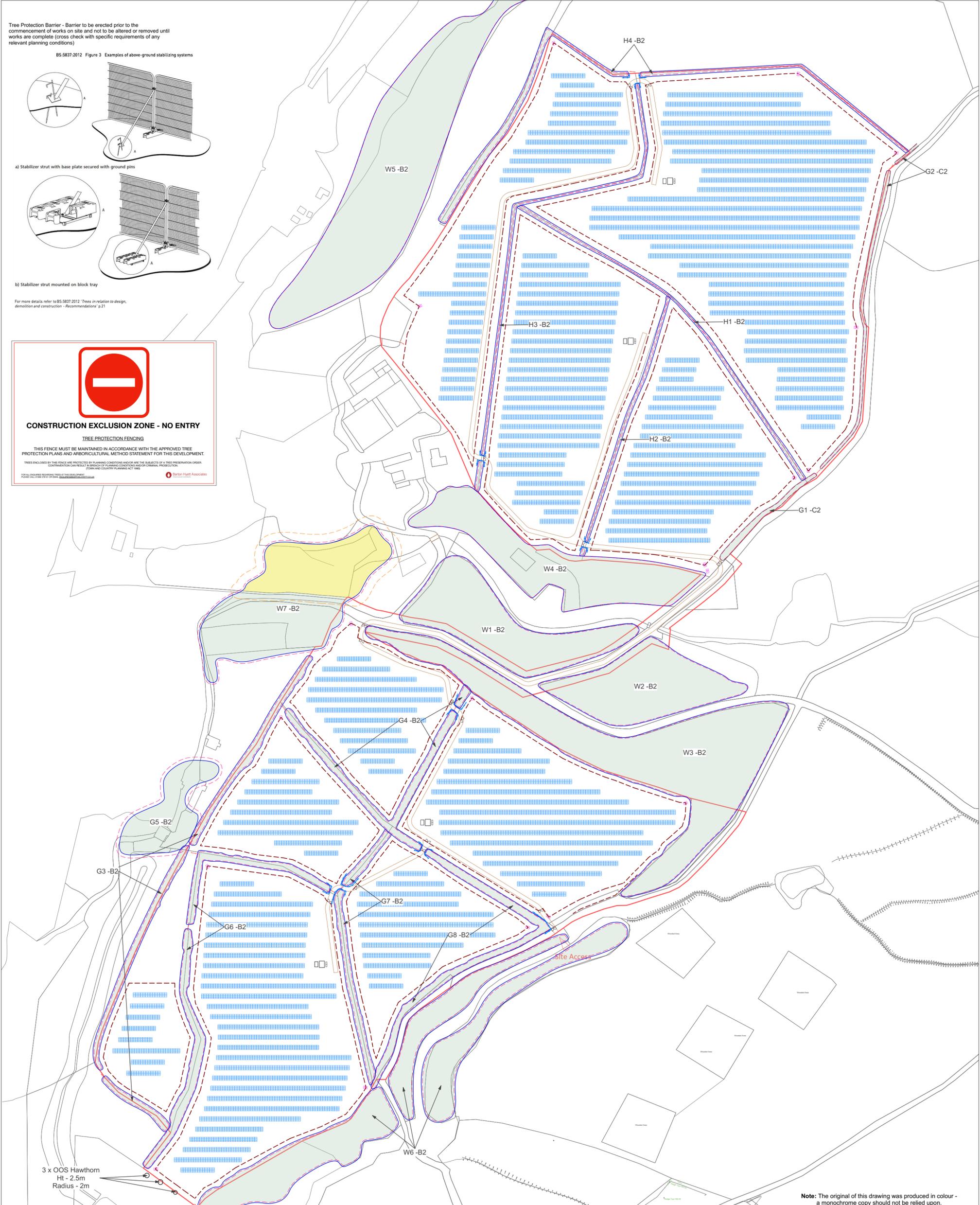
CONSTRUCTION EXCLUSION ZONE - NO ENTRY

TREE PROTECTION FENCING

THIS FENCE MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED TREE PROTECTION PLANS AND ARBORICULTURAL METHOD STATEMENT FOR THIS DEVELOPMENT.

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER. CONSTRUCTION CAN RESULT IN BREACH OF PLANNING CONDITIONS AND/OR CRIMINAL PROSECUTION. (TOWN AND COUNTRY PLANNING ACT 1990)

FOR ALL ENQUIRIES REGARDING TREES AT THIS DEVELOPMENT PLEASE CALL OUR FREE ENTRY OF DATA: 0800 045 6222



KEY BS 5837: 2012 Categories

- Tree Category A - High Quality
- A Category - Hedgerow, Group, Woodland
- Tree Category B - Moderate Quality
- B Category - Hedgerow, Group, Woodland
- Tree Category C - Low Quality
- C Category - Hedgerow, Group, Woodland
- Tree Category U - Unsuitable for Retention
- U Category - Hedgerow, Group, Woodland
- Root Protection Area to BS 5837:2012
- Shrub Mass / Offsite Tree / OOS (Out of scope)
- Ancient Woodland
- Ancient Woodland Buffer
- Site Security Fence
- Tree Protection Barrier to BS 5837:2012

GRID NORTH

0 20 40 60 80 100
Meters

Tree No	Species	RPA Radius M	RPA Area M2	Category
G1	Common ash, common alder, rowan, hawthorn	1.7	n/a	C2
G2	Common ash, common alder, rowan, hawthorn	1.7	n/a	C2
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G5	Common ash, English oak, horse chestnut	9.6	n/a	B2
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G7	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	2.1	n/a	B2
G8	Common ash, birch, hazel, blackthorn, hawthorn, rowan, goat willow	2.4	n/a	B2
W1	Common ash, larch, field maple, goat willow, alder, birch, cherry	2.4	n/a	B2
W2	Common ash, larch, field maple, goat willow, alder, birch, cherry	2.4	n/a	B2
W3	Common ash, larch, field maple, goat willow, alder, birch, cherry	2.4	n/a	B2
W4	Common ash, larch, field maple, goat willow, alder, birch, cherry	1.8	n/a	B2
W5	Common ash, larch, field maple, goat willow, alder, birch, cherry	1.8	n/a	B2
W6	Birch, common ash, sweet chestnut, aspen, goat willow, larch, English oak	3	n/a	B2
W7	English oak, sycamore, hazel, common ash	8.4	n/a	B2
H1	Hawthorn, blackthorn, field maple	1	n/a	B2
H2	Hawthorn, blackthorn, field maple	1	n/a	B2
H3	Hawthorn, blackthorn, field maple	1	n/a	B2
H4	Hawthorn, blackthorn, field maple	1	n/a	B2

PROJECT TITLE
Waulwyd Farm (Brynn Henllys extension) L.3179

DRAWING TITLE
Tree Protection Plan

SCALE 1:2000 @ A2 **DRAWING NUMBER** BHA_591_03

DRAWN BY SD **APPROVED BY** IH **REVISION** A **SHEET** - **DATE** 01/07/2019

CLIENT Lightsource BP

COORDINATE SYSTEM / DATUM British National Grid / Newlyn Datum (AOD)

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