Bubney Solar Farm

LANDSCAPE AND VISUAL IMPACT ASSESSMENT

On Behalf Of Renewable Connections Developments Limited

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BUBNEY SOLAR FARM, GRINDLEY BROOK, WHITCHURCH, SHROPSHIRE, SY13 4QH

LANDSCAPE AND VISUAL IMPACT ASSESSMENT (REV A)

ON BEHALF OF RENEWABLE CONNECTIONS LTD

Pegasus Group

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DESIGN | ENVIRONMENT | PLANNING | ECONOMICS | HERITAGE

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1. INTRODUCTION

1.1 This Landscape and Visual Impact Assessment (LVIA, Rev A) has been prepared on behalf of Renewable Connections Ltd in support of a planning application for a proposed solar photovoltaic (PV) development on land at Bubney Farm, Grindley Brook, Whitchurch, Shropshire, SY13 4QH.

1.2 This assessment has been undertaken by a Chartered Member of the Landscape Institute (CMLI) in accordance with the best practice guidelines within GLVIA3[1] which states in paragraph 1.1 that:

> **"Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity."**[2]

1.3 GLVIA3 recognises in paragraph 2.23 that:

> **"Professional judgement is a very important part of LVIA. While there is some scope for quantitative measurement of some relatively objective matters much of the assessment must rely on qualitative judgements."**[3]

1.4 This LVIA (Rev A) and the site layout has been informed by Pegasus' Pre-Application Landscape and Visual Statement (22nd June 2020) and the subsequent Shropshire Council's Landscape Advice (ESP Consultants, July 2020). The LVIA (Rev A) has been undertaken with regards to the latest published guidelines and the detailed methodology provided in Appendix 1.

Author's Background

1.5 The author of this LVIA is Rob French BSC (Hons) DipLA CMLI. Rob is an Associate Landscape Architect at Pegasus Group, with over 15 years' experience in environmental consultancy, working on behalf of both public and private sector clients including government departments, agencies, local authorities, utility providers, private developers, renewable energy companies and national housebuilders.

[1] Guidelines for Landscape and Visual Impact Assessment (3rd Edition, 2013) - Landscape Institute / Institute of Environmental Management and Assessment
[2] Paragraph 1.1, Page 4, GLVIA3
[3] Paragraph 2.23, Page 21, GLVIA3

1.6 Operating within multi-disciplinary teams, Rob has wide project experience within the residential, industrial, commercial, highways, minerals, renewables and telecommunications sectors. This has included Nationally Significant Infrastructure Projects (NSIP), Developments of National Significance (DNS) in Wales, and Section 36 energy consents in Scotland.

1.7 Rob French is a Chartered Member of the Landscape Institute (CMLI) with a particular expertise in Landscape and Visual Impact Assessment (LVIA). He has prepared landscape proofs of evidence and rebuttal statements for numerous planning appeals including written representations, hearings, public inquiries and tribunals.

1.8 Rob French is based in the Cirencester office of Pegasus Group within a team of fifteen environmental planners and landscape architects who frequently advise upon developments located within or affecting statutory protected landscapes such as National Parks (NPs) or Areas of Outstanding Natural Beauty (AONB) and non-statutory designations such as Special Landscape Areas (SLAs).

1.9 The landscape architects within Pegasus Group undertake all their work in compliance with the Landscape Institute's Code of Standards of Conduct and Practice for Landscape Professionals (May 2012).

2. BASELINE CONDITIONS

2.1 The site is located on land at Bubney Farm, Grindley Brook, Whitchurch, Shropshire, SY13 4QH as shown on Figure 1. The proposed 30MWp solar PV development is situated within undesignated countryside between Bubney Farm, Grindley Brook and the A41 to the north, the Llangollen Canal to the east, the A525 Wrexham Road and Redbrook to the south, and Bubney Moor, Iscoyd Park and Wolvesacre Hall to the west. The proposed grid connection route is located along the farm track leading from Bubney Farm to Grindley Brook and the A41 to the north east of the site.

2.2 The site is located within gently undulating farmland between 85m and 95m AOD. The site is subdivided into approximately 7 no. medium-to-large scale fields defined by farm tracks, hedgerows, individual trees and dew ponds. A defined river terrace or embankment is located to the south and west of the site. An area of existing woodland extends along Redbrook tributary and Bubney Moor between the site and Iscoyd Park to the west, which is designated as a Registered Park and Garden (RPG) and Special Landscape Area (SLA).

2.3 A public footpath 0234/85/1 extends east-to-west across the northern part of the site between Wolvesacre Hall to connect into the Shropshire Way and Sandstone Trail following the Llangollen Canal towpath to the east of the site. A bridleway 0234/90/1 also crosses the site from the north east to the south west following the farm track between Grindley Brook and Bubney Moor. A further bridleway 0234/92/1 is located to the east of the site extending to Hadley Farm and the A525 Wrexham Road located to the south.

2.4 Other renewables infrastructure are located within the surroundings of the site including a single small scale wind turbine to the north at Bubney Farm and a circa 5MW solar PV development to the south of the A525 Wrexham Road at Blackoe Cottages. A sewerage treatment works is also located to the south of the site at Redbrook Bridge.

2.5 The site is located within the surroundings of the following environmental designations to the west of the site as shown on Figure 2:

- Access Land at Bubney Moor and Hall Green;
- Special Landscape Area (Policy ECA3) at Wolvesacre Hall, Iscoyd Park and Kiln Green;
- Iscoyd Park Registered Park and Garden (RPG); and

- Scheduled Monument, Grade II and II* Listed Buildings located near Wolvesacre Hall and Iscoyd Park House.

2.6 The site is located within the surroundings of the following published Landscape Character Areas (LCAs):

- Natural England, Shropshire, Cheshire and Staffordshire Plain (NCA 61);
- Shropshire Council, Principal Timbered Farmlands (LCT); and
- Shropshire Council, Settled Pastoral Farmlands (LCT)

2.7 The site is located within the surroundings of the following residential properties:

- Properties 17, 18 and 20 located on the farm track access on the A41 Chester Road to the north;
- Properties on Grindley Brook Lock to the north east;
- Canal Cottage to the east;
- Hadley Farm and Rising Sun Cottages near the sewerage treatment works at Redbrook to the south; and
- The recently constructed property at Wolvesacre Hall to the west of the site.

2.8 The site is located within the surroundings of the following highways and public rights of way (PROW):

- A41 Chester Road to the north and east;
- A525 Wrexham Road to the south;
- Public footpath 0234/85/1, 83/1 and 82/1 extending east-to-west across the northern part of the site;
- Bridleway 0234/86/1 and 90/1 crossing the site from the north east to the south west between Grindley Brook and Bubney Moor; and
- Bridleway 0234/92/1 and the Shropshire Way/Sandstone Trail extending along the Llangollen Canal to the east of the site.

3. PROPOSED DEVELOPMENT

3.1 The proposals would comprise a solar photovoltaic (PV) development including bifacial solar modules, security (deer) fencing, access tracks, and other ancillary infrastructure such as a single metering point, containerised sub-stations, and a 33kW DNO/ customer substation measuring approximately 5 x 5 metres. Vehicular access would be from the A41 to the north, via an existing access road to Bubney Farm.

3.2 The proposed solar modules would be bifacial and fixed onto a single tracker mounting systems, thus would be aligned along the north-to-south axis. The maximum height of the solar panels would be 2.4 metres in rotation above ground level (agl). The proposed solar arrays are separated into rows by a distance of approximately 3.2m therefore will not appear as a continuous block in the landscape.

3.3 A series of technical drawings illustrate the dimensions of the proposed solar PV development, and this LVIA should be read in conjunction with these plans and sections. The proposed solar modules would be located within the 7 no. fields and would be enclosed by security fencing and hedgerow reinforcements. The perimeter security fencing would be approximately 2 metres in height and of standard deer type stock proof fencing design with large aperture metal mesh supported by wooden fencing posts to appear transparent within medium and distant views.

3.4 The proposed solar modules would be located in rows or strings to represent a coherent and uniform layout. The maintenance access routes would utilise the existing farm tracks, gates and hedgerow gaps as far as possible. The proposed solar panels would be set back from the hedgerow boundaries to allow for perimeter security (deer) fencing, CCTV coverage, and proposed native tree and shrub planting along the existing hedgerows. The cabling that links the solar modules and inverters to the substations would either be routed via a network of shallow trenches which would be backfilled or installed above ground and suitably protected.

3.5 The proposed grid connection would be via an underground cable leading from the substation in the north eastern corner of the site to the A41. The cable route would follow the existing field boundaries and once completed would not be visible. The grid connection would then follow the A41 to the existing Whitchurch sub-station.

The land could effectively be reinstated to agricultural use and arable farmland on decommissioning.

3.6 This LVIA (Rev A) assesses the operational stage only, as the construction and decommissioning stages would be of short and temporary in duration. Any potential effects brought about by the construction and decommissioning stages are likely to be lower or similar to those assessed post construction. The effects are assessed at year 1 post-completion and at year 10 to take into account the proposed mitigation measures through hedgerow reinforcements and tree planting, etc.

Landscape Mitigation and Enhancement

3.7 The proposed solar PV development would include the following landscape and visual mitigation measures:

- Provision of a 30MWp solar PV development to tackle climate change and reduce carbon emissions;
- Provision of new native tree and shrub planting along the hedgerow boundaries to provide additional visual screening to the east, south and west of the site including from the Registered Park and Gardens (RPG) and Special Landscape Area (SLA) at Iscoyd Park to the west as shown on Figure 4;
- Retention of PROW passing through the solar PV development within hedge-lined corridors of approximately 13 metres width as requested by the Shropshire Council PROW officer;
- Setting back of the proposed solar modules from the Llangollen Canal towpath, Danson's Bridge and the Sandstone Trail/Shropshire Way to the east; and
- Provision of wildflower meadows along field margins and beneath the solar arrays as well as bird and bat boxes to deliver a biodiversity net gain (BNG) within the site.

Nature of Change

3.8 GLVIA3 includes an entry that states *"effects can be described as positive or negative (or in some cases neutral) in their consequences for views and visual amenity."*[4] GLVIA3 does not, however, state how negative or positive effects should be assessed and therefore becomes a matter of subjective judgement rather than reasoned criteria. Third party representations often refers to the industrial

[4] Para 6.29, Page 113, GLVIA 3rd Edition

character of a solar PV development. Whilst local objectors would undoubtedly view the proposals in this way, equally, other people would simply view the development as essential infrastructure that should be delivered as a matter of urgency to tackle climate change. This disparity of opinions or public attitudes from negative to positive is known within LVIA as valency. Due to inconsistencies with the assessment of negative or positive effects a precautionary approach is applied to this LVIA that assumes all landscape and visual effects are considered to be negative or adverse unless otherwise stated.

4. EFFECTS ON LANDSCAPE ELEMENTS

4.1 The effects on landscape elements are limited to within the site and include the direct physical change to the fabric of the land, such as the removal of site topography, trees, hedgerows or arable farmland.

Site Topography

4.2 The site is positioned on an undulating plateau which is generally south facing between approximately 85m and 95 metres AOD. It forms part of an undulating landscape dissected by a number of narrow and steep sided valleys. A defined river terrace and embankment is located to the south and west of the site. Redbrook and Stagg's Brook skirt the western and southern edge of the site with the lower and upper valley slopes falling outside of the site boundaries. The landform is considered to be of medium susceptibility, value and overall sensitivity. Although localised changes to site topography would occur through the trenching of cables and support axis for the bifacial solar modules, the prevailing landform would remain unaffected resulting in a negligible magnitude of change and overall effect.

Woodlands, Hedgerows and Trees

4.3 Generally, the site's boundaries are characterised by hedgerows and occasional field trees within the arable fields. The site's south western boundary follows a line of trees and understorey growth, which marks the break of the plateau and the upper slopes of the adjacent Redbrook valley. The southern boundary is open and lack any structural vegetation except for occasional trees which become more frequent near the south eastern boundary. The existing vegetation is considered to be of high value, susceptibility and overall sensitivity due to the contribution these landscape elements make to the character of the site.

4.4 The existing woodlands, hedgerows and trees on the site boundaries contribute to the physical and visual enclosure of the proposals within the site. The existing vegetation would be managed to increase the density, height and visual screening in the long term. In particular, additional hedgerow reinforcements and tree planting would be provided to the east, south and west of the site as shown on Figure 4. The proposals would result in a net gain of native trees and shrubs resulting a low magnitude of change and a moderate (beneficial) effect in the long term.

Landcover / Arable Farmland

4.5 The existing groundcover includes arable farmland with long grass margins adjacent to the existing hedgerows. The ephemeral nature of the arable crop suggests a low sensitivity to change as this landcover can be easily replaced in a relatively short timeframe. Following the completion of the construction stage, the area beneath the solar modules would be sown with an appropriate grassland mix to benefit biodiversity.

4.6 The proposals would inevitably result in the removal of the arable farmland and replacement with grassland that would be managed to encourage wildflowers and species diversity. With a medium sensitivity and a high magnitude of change, the proposals would result in a major (beneficial) effect on the landcover and arable farmland within the site. The effect is considered to be beneficial due to the opportunity to provide wildflower grassland and a biodiversity net gain (BNG) within the site.

Public Rights of Way (PROW)

4.7 The site is crossed by public footpath 0234/85/1, 83/1 and 82/1 which extends east-to-west across the northern part of the site and bridleway 0234/86/1 and 90/1 crossing the site from the north east to the south west between Grindley Brook and Bubney Moor. The PROW used by local residents and walkers are generally considered to be of high value, susceptibility and overall sensitivity within the site.

4.8 The proposals would retain the physical alignments of the PROW contained within 13 metre corridors and hedgerows as shown on Figure 5. Whilst the character and appearance of these PROW would inevitably be altered, they would remain publicly accessible resulting in a negligible magnitude of change on the physical alignment of these routes. With a high sensitivity and a negligible magnitude of change, the proposals would result in a negligible effect on the physical alignments of the PROW within the site.

4.9 The physical effects on the landscape elements within the site are summarised in Table 1:

Table 1, Summary of Effects on Landscape Elements

Landscape elements	Value	Suscept-ibility	Sensitivity	Magnitude	Effect
Site Topography	Medium	Medium	Medium	Negligible	Negligible
Woodland, Hedgerows and Trees	High	High	High	Low	Moderate (Beneficial)
Landcover / Arable Farmland / Wildflower Grassland	Medium	Medium	Medium	High	Major (Beneficial)
Public Rights of Way (PROW)	High	High	High	Negligible	Negligible

5. EFFECTS ON LANDSCAPE CHARACTER

5.1 The effects on landscape character considers how the introduction of new landscape 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 landscape character is perceived. Landscape character is defined in GLVIA3 as the:

> **"Distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse."**[5]

5.2 The site is located within the surroundings of the following published Landscape Character Areas (LCAs):

- Natural England, Shropshire, Cheshire and Staffordshire Plain (NCA 61)
- Shropshire Council, Principal Timbered Farmlands (LCT)
- Shropshire Council, Settled Pastoral Farmlands (LCT)

Natural England, Shropshire, Cheshire and Staffordshire Plain (NCA 61)

5.3 Natural England has identified 159 geographical areas of similar landscape character known as National Character Areas (NCAs). This mapping, sometimes described as 'The Character of England Map' provides a description of landscape character at the national scale. It is considered that whilst the NCAs provide a national spatial framework, the scale of the mapping and information is of limited use as a strategic planning tool at the local scale. The site is located within the Natural England, Shropshire, Cheshire and Staffordshire Plain (NCA 61). The key characteristics includes:

- **"Extensive, gently undulating plain, dominated by thick glacial till from the late Pleistocene Period, producing productive, clay soils and exemplifying characteristic glacial landforms including eskers, glacial fans, kettle holes, moraines and a landscape of meres and mosses;**
- **Prominent discontinuous sandstone ridges of Triassic age, characterised by steep sides and freely draining, generally infertile soil that supports broadleaved and mixed woodland;**
- **Few woodlands, confined to the area around Northwich and to estates, cloughs and deciduous and mixed woods on the steeper slopes of the wind-swept sandstone ridges. Locally extensive tracts of coniferous woodland and locally distinctive orchards scattered throughout;**

[5] Glossary, Page 157, GLVIA 3rd Edition

- **Strong field patterns with generally well-maintained boundaries, predominantly hedgerows, with dense, mature hedgerow trees. Sandstone walls occur on the ridges and estate walls and Cheshire-style (curved topped) metal railing fences occur locally on estates in Cheshire;**
- **Dairy farming dominates on the plain, with patches of mixed farming and arable in the north and large areas in the south-east;**
- **Diversity of wetland habitats includes internationally important meres and mosses comprising lowland raised bog, fen, wet woodland, reedbed and standing water, supporting populations of a host of rare wildlife, including some species of national and international importance;**
- **Extensive peat flood plains where flood plain grazing marsh habitats support regionally important populations of breeding waders in areas such as Baggy Moor, Weald Moor and Doxey Marshes;**
- **Many main rivers and their flood plains lie in this area, including the Dee, Dane, Severn, Penk and Sow. Significant areas of grazing marsh, alluvial flood meadows and hay meadows associated with the rivers Dee, Sow, Gowy and Severn. The area has the highest density of field ponds in western Europe;**
- **Rich archaeological evidence of iron-age hill forts concentrated on the sandstone ridges and the Weald Moors. Remnant ridge and furrow and moated houses are features of the plain. The Roman road, Watling Street, crosses the plain linking London to Wales via Wroxeter. Chester was an important Roman settlement;**
- **Regularly spaced, large farmsteads, dispersed hamlets, market towns and many other settlements including Macclesfield and Telford. Timber-frame buildings are a distinctive feature of the plain, often highly decorated in Cheshire, for example, the moated Little Moreton Hall. The historic towns including Stafford, Shrewsbury and the city of Chester have a wealth of 17th- and 18th-century half-timber, brick and red sandstone buildings;**
- **Parklands and gardens associated with estates such as Chillington, Trentham, Tatton and Attingham; country houses such as Gawsworth Hall, Arley Hall and Adlington Hall; and fortified manor houses and castles such as at Shrewsbury, Stafford, Beeston, Acton Burnell and Cholmondeley;**
- **Nationally important reserves of silica sand and salt. Active extraction of salt has developed a locally distinctive landscape of subsidence flashes, particularly around the area of Sandbach. Adjacent to these saline flashes are areas of salt marsh rarely found at inland sites; and**
- **The numerous canals are important for recreation as well as habitat. Several National Cycle Routes and nearly 5,000 km of public rights of way cross the plain. Six National Nature Reserves (NNRs) are scattered throughout, close to large population centres and well used for recreation."**

Shropshire Council, Principal Timbered Farmlands

5.4 At the County level, the site is located within the Shropshire Council, Principal Timbered Farmlands LCT which is described in Appendix 2 as:

> **"The small-medium sized fields were enclosed directly from woodland or rough grazing land, whilst small woods and hedgerow trees give these lowland landscapes a wooded feel. Scattered farms and cottages represent the main form of settlement."**[6]

5.5 The Council's published, 'The Shropshire Landscape Typology' describes it as:

> **"This landscape type occurs throughout much of Shropshire, with notable concentrations along the northern boundary with Cheshire, and to the south of Shrewsbury. They are predominantly rolling lowland landscapes, with occasional steeply undulating valley sides, and are characterised by a mosaic of agricultural land. Treecover, in the form of dense stands of streamside trees, scattered hedgerow trees, and small to medium sized woodlands play an important role in structuring these landscapes, creating a small to medium scale and filtered views. (…) Oak and Ash represent the main hedgerow tree species, whilst alder and willow dominate along watercourses. (…) much of the agricultural land within this type was gradually enclosed from extensive tracts of woodland and 'waste' (…) This has produced an intricate countryside, characterised by a network of winding lanes, scattered farmsteads, and small irregular fields. (…) During the later 19th and 20th century, conifer plantations were established in some locations, occasionally on the site of older woodlands. Where more favourable soils exist, the introduction of intensive arable farming in the later 20th century has resulted in field enlargement, creating more open conditions and a larger scale landscape."**[7]

5.6 The key characteristics includes:

- **"Rolling lowland with occasional steep sided hills;**
- **Relic ancient woodland;**
- **Hedged fields with scattered hedgerow trees;**
- **Predominantly dispersed settlement pattern; and**
- **Small to medium scale landscapes with filtered views."**

[6] An Introduction to Shropshire's Landscapes <https://www.shropshire.gov.uk/media/1784/an-introduction-to-shropshires-landscapes.pdf> [accessed 21 October 2020].
[7] The Shropshire Landscape Typology <https://www.shropshire.gov.uk/media/1803/the-shropshire-landscape-typology.pdf> pp. 46-47 [accessed 21 October 2020].

5.7 The site is not located within any statutory or non-statutory landscape designations such as a National Park, Area of Outstanding Natural Beauty or local plan Special Landscape Area (SLA). The site is considered to be of local value in the hierarchy of landscape designations or of low status in terms of the requirement for landscape protection as advised within paragraph 171 of the NPPF. As such, the site would not constitute a valued landscape with regards to Framework paragraph 170a.

5.8 The landscape condition appears to be good. In terms of its scenic qualities, the site is considered to be pleasant although partly influenced by the large scale cattle sheds at Bubney Farm and the wind turbine to the north. The arable fields are seen in the context of small settlements and isolated farmsteads. The undulating topography offers occasional distant views, however, these are characterised by a combination of a wooded horizon, strong field pattern, with the topography often foreshortening views. The site itself does not appear to contain any landscape features that are rare or unique and is considered to be medium value, susceptibility and overall sensitivity.

5.9 The proposals would inevitably change the character of the site itself from undulating arable farmland to a solar PV development comprising bifacial solar modules at 2.4m height, transformer boxes, invertor stations, security (deer) fencing and other associated infrastructure. The site layout is considered to be suited to this expansive Timbered Farmlands character type due to the uniform medium-to-large scale field pattern and prevailing south facing topography for enhanced solar gain.

5.10 The arrangement of the proposed solar modules responds positively to the field pattern with the existing hedgerow vegetation being retained and strengthened. This would reinforce the field pattern and, to a degree, have a beneficial effect upon the overall landscape pattern. The proposals would also provide opportunities to enhance green infrastructure and deliver a biodiversity net gain (BNG) through the provision of new hedgerows, retained field margins, and wildflower meadow habitats beneath the solar modules as well as bird and bat boxes. On balance, the magnitude of change is considered to be low. With a medium sensitivity and a low magnitude of change, the proposals would result in a minor effect on landscape character.

5.11 The effects on landscape character are summarised in Table 2:

Table 2, Summary of Effects on Landscape Character

Landscape Character	Value	Suscept-ibility	Sensitivity	Magnitude	Effect
Natural England, NCA 61, Shropshire, Cheshire and Staffordshire Plain	Medium	Medium	Medium	Low	Minor
Shropshire Council, Principal Timbered Farmlands (LCT)					
Shropshire Council, Settled Pastoral Farmlands (LCT)					

6. EFFECTS ON VISUAL AMENITY

6.1 The effect on visual amenity considers the changes in views arising from the proposals in relation to visual receptors including the surrounding settlements, residential properties, highways, public rights of way (PROW) together with the effects on representative viewpoints. Visual amenity is defined in GLVIA3 as the:

> **"Overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area."**[8]

Zone of Theoretical Visibility (ZTV) mapping

6.2 In order to understand the potential visibility of the proposed solar PV development, a Zone of Theoretical Visibility (ZTV) map has been provided in Figure 6. This provides an indication of the extent and pattern of visibility assuming a height of 15 metres for woodland and 8 metres for buildings. The ZTV does not account for individual hedgerows, minor changes in landform, or seasonal variations in leaf coverage. The ZTV model is therefore a 'worst case scenario' based upon a maximum height of 3 metres above ground level. The actual extent and pattern visibility is more accurately reflected within representative viewpoints shown on Figure 7 and for Iscoyd Park on Figure 8.

General Visibility

6.3 In general terms, the proposed solar PV development would be visible to varying degrees between Bubney Farm and the A41 to the north (Viewpoint 2), limited sections of the Llangollen Canal and Danson's Bridge to the east (Viewpoints 3, 4, 5 and 6), the A525 Wrexham Road, Redbrook and the rising ground at Belton Farm to the south (Viewpoints 8, 9 and 14), Bubney Moor, Iscoyd Park and Wolvesacre Hall to the east (Viewpoints 10 , 11 and 12). The proposed solar PV development would inevitably change the character and appearance of the PROW passing through the site itself (Viewpoint 1).

6.4 Partial views of the solar PV development would be visible from the Llangollen Canal and the Sandstone Way, particularly from Danson's Bridge to the east of the site (Viewpoint 6). However, the proposed solar modules would be set back from the canal bridge and towpath by approximately 300 metres beyond intervening

[8] Glossary, Page 158, GLVIA 3rd Edition

hedgerows which would be reinforced with additional planting to further screen these views. Limited views of the upper solar modules would be perceptible through hedgerows in the winter months although due to the direction of travel, would not affect the overall experience when walking along the canal towpath.

6.5 The proposed solar modules would also be partially visible from peripheral areas of Iscoyd Park and Wolvesacre Hall within the Registered Park and Garden (RPG) and the Special Landscape Area (SLA) to the west of the site (Viewpoints 10 and 11). The majority of the solar PV development would be screened by the existing woodland at Bubney Moor to the west of the site with the exception of the northern most field and a number of points on the boundary of the estate's woodland through the trees as shown on the viewpoints within Figure 8.

Close Proximity Views

6.6 Close proximity views of the proposed solar PV development would be visible to varying degrees from:

- Bridleway 0234/86/1 and 90/1 crossing the site from the north east to the south west between Grindley Brook and Bubney Moor (Viewpoint 1);
- Public footpath 0234/85/1, 83/1 and 82/1 extending east-to-west across the northern part of the site (Viewpoint 6 and 7); and
- Bridleway 0234/92/1 to the east of the site extending to Hadley Farm and the A525 Wrexham Road (Viewpoint 7).

Medium Proximity and Distant Views

6.7 Beyond the site boundaries and immediate surroundings, the proposals would be partially visible to varying degrees from:

- Public footpath 0234/88/1 following the farm track to Bubney Farm to the north east (Viewpoint 2);
- Limited points in hedgerow gaps along the Shropshire Way/Sandstone Trail extending along the Llangollen Canal, Canal Cottages and Danson Bridge to the east (Viewpoints 3, 4, 5 and 6);
- Limited points from the A525 Wrexham Road to the south near Wrexham Bridge, Hadley Farm and Redbrook to the south (Viewpoint 8 and 9);
- Public footpaths 0234/106/1 and 107/1 on the higher ground at Belton Farm to the south (Viewpoint 14);
- Public footpath 0234/85/1 extending to the west between the site and Wolvesacre Hall (Viewpoint 11); and

- Public footpath 0234/90/1 extending to the south west of the site passing through the woodland to the south of Iscoyd Park (Viewpoint 10).

Public Highways

6.8 The proposals would be partially visible from isolated viewpoints from the A525 Wrexham Road to the south near Wrexham Bridge, Hadley Farm and Redbrook to south. The proposals would not generally be perceptible when travelling along the A41 Chester Road to the north. Views from motorists using public highways and rural lanes are generally considered to be of medium value, susceptibility and overall sensitivity due to the oblique, transient nature of views during travel.

6.9 The proposed solar modules would be partially visible within peripheral views when travelling along the A525 Wrexham Road in the eastbound and westbound directions although would not be immediately visible in the direction of travel. On balance, the proposals would result in a low magnitude of change at year 1 reducing to negligible by year 10, resulting in a minor to negligible effects on the surrounding public highways.

Public Rights of Way (PROW)

6.10 The proposals would inevitably be visible at close proximity from the PROW crossing the site itself including from bridleway 0234/86/1 and 90/1 crossing the site from the north east to the south west between Grindley Brook and Bubney Moor; public footpath 0234/85/1, 83/1 and 82/1 extending east-to-west across the northern part of the site leading to Wolvesacre Hall; and bridleway 0234/92/1 to the east of the site extending to Hadley Farm and the A525 Wrexham Road to the south. The proposals would also be partially visible from byway 25 extending to the north of Iscoyd Park and public footpath 11 at Bryn Owen extending to the north west of Wolvesacre Hall. Views from PROW used by local residents and walkers are generally considered to be of high value, susceptibility and overall sensitivity.

6.11 The physical alignment of the PROW crossing the site would be set within 13m wide corridors or buffers as requested by the Shropshire Council PROW officer as shown on Figure 5. The proposed solar modules would inevitably be visible from those PROW crossing the site resulting in a high magnitude of change and a major effect at year 1 reducing to a low magnitude of change and a moderate effect by year 10.

6.12 Views from the Llangollen Canal towpath and the Sandstone Trail to the east are generally orientated in a north-to-south direction and not directly overlooking the

site. There are a small number of hedgerow gaps in which the proposed solar modules would be visible within peripheral views. The proposed solar modules would be set back from the Llangollen Canal by at least 300 metres beyond intervening hedgerows that would be reinforced with additional native tree and shrub planting. The magnitude of change would be low at year 1 reducing to negligible by year 10 resulting in a moderate to negligible effect. However, the proposals would not generally be perceptible when walking along the canal towpath in the direction of travel due to the treecover.

6.13 Views from public footpaths 0234/106/1 and 107/1 on the higher ground at Belton Farm to the south are generally intervened by existing hedgerows and treecover. Partial views of the solar modules would be apparent in the surroundings of Bubney Farm and the small wind turbine. The magnitude of change would be low at year 1 reducing to negligible by year 10 resulting in a moderate to negligible effect.

6.14 Views from public footpaths 0234/85/1 and 0234/90/1 extending to the west would generally be screened by the intervening woodland on the boundary of Iscoyd Park. Partial glimpse views of the solar modules would be visible from the footpath during the winter months without leaf coverage. Beyond the site boundaries and the woodland on the boundary of Iscoyd Park, the proposals would result in a low to negligible magnitude of change and a moderate to negligible effect between year 1 and 10. Hedgerow reinforcements have been proposed to the west of site although it is anticipated that there will be a residual effect albeit reduced in the long term.

6.15 The proposed solar modules in the northern field would be partially visible from the public footpath 11 to the west of Wolvesacre Hall and byway 25 extending to the north of Wolvesacre Hall. The proposed solar modules would be partially visible in distance in the context of the higher ground, wind turbine and cattle sheds at Bubney Farm. The proposals would result in a low or negligible magnitude of change and moderate to negligible effects on these more distant PROW.

Wolvesacre Hall and Iscoyd Park

6.16 The effects of the solar PV development on the heritage assets at Iscoyd Park and Wolvesacre Hall are further assessed within the separate Heritage Assessment undertaken by Pegasus Group (P.20-1083, March 2021). The character of the views towards the site from Iscoyd Park and Wolvesacre Hall are shown on Figure 8, Iscoyd Park Viewpoints 1 - 12.

6.17 An existing public footpath ISC/12 extends to the west of the site through the woodland towards Wolvesacre Hall (Figure 8, Iscoyd Viewpoint 3). Another public footpath ISC/10 extends along the south eastern boundary of Iscoyd Park within woodland near Redbrook and Bubney Moor (Figure 7, LVIA Viewpoint 10).

6.18 The heritage assessment notes in paragraph 6.14 that:

> **"Today, there are only small glimpses out to the land beyond to the east, including the site, from the roof of Iscoyd House. These are not possible at ground level in the summer months. In winter months, the views toward the site are only very slightly more extensive from the roof (See Baseline Viewpoint 11 in the LVIA), and the site is barely perceptible from ground level at the house, with views very heavily filtered by the intervening vegetation on the edge of the parkland."**[9]

6.19 The heritage assessment notes in paragraph 6.20 that:

> **"Only very small glimpses of the proposed development will be possible from Iscoyd Park House. This would be anticipated to cause, at most, very minor harm to the historic significance of the asset through setting – through possible changes to views from the asset that may historically have included glimpses to agricultural land beyond the vegetation at the edge of the parkland, although this land was not part of the estate."**[10]

6.20 Due to the location of woodland following the stream at Redbrook and Bubney Moor to the west of the site, views of the proposed solar arrays would generally be screened from Iscoyd Park House and Wolvesacre Hall in the summer months which are set back from the woodland boundary to the east. Views of the solar arrays would be visible from the gap in the woodland to the north east of Wolvesacre Hall (Figure 8, Viewpoint 2). Filtered views through the treecover towards the site would also be visible in the winter months at various points along the woodland boundary to the east of Wolvesacre Hall and Iscoyd Park House (Figure 8, Iscoyd Viewpoints 3, 4, 5, 6, 7, 8 and 9). These residential properties are set back from the woodland boundary by approximately 140m and 230m respectively. Views of the solar arrays would generally be screened from the residential properties although would be partially visible through the trees at close proximity to the woodland in the winter months.

[9] Paragraph 6.14, Pegasus Heritage Assessment (March 2021)
[10] Paragraph 6.20, Pegasus Heritage Assessment (March 2021)

6.21 The effects on the representative viewpoints are summarised in Table 3:

Table 3, Summary of Effects on Representative Viewpoints

Representative Viewpoint	Value	Suscep-tibility	Sensitivity	Magnitude	Effect
Viewpoint 1 – Bridleway 0234/90/1 passing through the site	High	High	High	Yr1 High	Yr1 Major
				Yr10 Low	Yr10 Moderate
Viewpoint 2 – A41 Chester Road at Grindley Brook near access to Bubney Farm	Medium	Medium	Medium	Yr1 Low	Yr1 Minor
				Yr10 Negligible	Yr10 Negligible
Viewpoint 3 – Llangollen Canal at Grindley Brook Locks	High	High	High	Yr1 Negligible	Yr1 Negligible
				Yr10 Negligible	Yr10 Negligible
Viewpoint 4 – Llangollen Canal at hedgerow gap	High	High	High	Yr1 Low	Yr1 Moderate
				Yr 10 Negligible	Yr 10 Negligible
Viewpoint 5 – Llangollen Canal near Canal Cottages	High	High	High	Yr1 Negligible	Yr1 Negligible
				Yr 10 Negligible	Yr 10 Negligible
Viewpoint 6 – Public footpath 0234/81/1 on the Llangollen Canal at Danson's Bridge	High	High	High	Yr1 Medium	Yr1 Major
				Yr10 Low	Yr10 Moderate
Viewpoint 7 – Bridleway 0234/92/1 within site	High	High	High	Yr1 High	Yr1 Major
				Yr10 Low	Yr10 Moderate
Viewpoint 8 – Access Road and bridleway 0234/94/1 to Hadley Farm	High	High	High	Yr1 Low	Yr1 Moderate

				Yr10 Negligible	Yr10 Negligible
Viewpoint 9 – Access Road to Redbrook sewerage treatment works	High	High	High	Yr1 Low	Yr1 Moderate
				Yr10 Negligible	Yr10 Negligible
Viewpoint 10 – Bridleway 0234/90/1 on the woodland boundary near Iscoyd Park	High	High	High	Yr1 Low	Yr1 Moderate
				Yr10 Negligible	Yr10 Negligible
Viewpoint 11 – Byway 25 near Wolvesacre Barn	High	High	High	Yr1 Low	Yr1 Moderate
				Yr10 Negligible	Yr10 Negligible
Viewpoint 12 – Public footpath 004/FP5/1 near Agden Dairy Farm	High	High	High	Yr1 Negligible	Yr1 Negligible
				Yr10 Negligible	Yr10 Negligible
Viewpoint 13 – Llwybr Maelor Way near Grindley Brook	High	High	High	Yr1 Negligible	Yr1 Negligible
				Yr10 Negligible	Yr10 Negligible
Viewpoint 14 – Public footpath 0234/106/1 near Belton Farm	High	High	High	Yr1 Low	Yr1 Moderate
				Yr10 Negligible	Yr10 Negligible

7. LANDSCAPE PLANNNING POLICY

7.1 The relevant landscape planning policies are detailed within the National Planning Policy Framework (NPPF) and the adopted Shropshire Core Strategy (March 2011) and the Site Allocations and Management of Development (SAMDev) Plan.

National Planning Policy Framework

7.2 The National Planning Policy Framework (February 2019) sets out the governments planning policies for England and how these are expected to be applied. NPPF paragraph 10 advises that:

> **"So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development."**

7.3 Section 12, Achieving well-designed places, paragraph 127 on page 38 states that:

> **"Planning policies and decisions should ensure that developments:**
>
> **…b) are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;**
>
> **c) are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change…"**

7.4 Section 15, Conserving and enhancing the natural environment, paragraph 170 on page 49 states that:

> **"Planning policies and decisions should contribute to and enhance the natural and local environment by:**
>
> **a) protecting and enhancing valued landscapes…in a manner commensurate with their statutory status or identified quality in the development plan…"**

7.5 Section 15, Conserving and enhancing the natural environment, paragraph 171 on page 49 states that:

> **"Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value…"**

Shropshire LDF Adopted Core Strategy (March 2011)

7.6 The relevant landscape planning policies from the Shropshire LDF Adopted Core Strategy (March 2011) includes Policy CS6, Sustainable Design and Development Principles which states:

> **"To create sustainable places, development will be designed to a high quality using sustainable design principles, to achieve an inclusive and accessible environment which respects and enhances local distinctiveness and which mitigates and adapts to climate change.**
>
> **…And ensuring that all development:**
>
> - **Protects, restores, conserves and enhances the natural, built and historic environment and is appropriate in scale, density, pattern and design taking into account the local context and character, and those features which contribute to local character, having regard to national and local design guidance, landscape character assessments and ecological strategies where appropriate."**

Shropshire Council, Site Allocations and Management of Development Plan

7.7 The relevant landscape planning policies from the SAMDev Plan includes Policy MD2, Sustainable Design which states:

> **"2. Contribute to and respect locally distinctive or valued character and existing amenity value by:**
>
> **i. Responding appropriately to the form and layout of existing development and the way it functions, including mixture of uses, streetscape, building heights and lines, scale, density, plot sizes and local patterns of movement; and**
> **ii. Reflecting locally characteristic architectural design and details, such as building materials, form, colour and texture of detailing, taking account of their scale and proportion; and**
> **iii. Protecting, conserving and enhancing the historic context and character of heritage assets, their significance and setting, in accordance with MD13; and**
> **iv. Enhancing, incorporating or recreating natural assets in accordance with MD12."**

7.8 Policy MD12, Natural Environment which states:

> **"2. Ensuring that proposals which are likely to have a significant adverse effect, directly, indirectly or cumulatively, on any of the following:**
>
> **i. the special qualities of the Shropshire Hills AONB;**
> **ii. locally designated biodiversity and geological sites;**

iii. priority species;
iv. priority habitats;
v. important woodlands, trees and hedges;
vi. ecological networks;
vii. geological assets;
viii. visual amenity;
ix. landscape character and local distinctiveness. will only be permitted if it can be clearly demonstrated that:

a) there is no satisfactory alternative means of avoiding such impacts through re-design or by re-locating on an alternative site and;

b) the social or economic benefits of the proposal outweigh the harm to the asset.

In all cases, a hierarchy of mitigation then compensation measures will be sought.

3. Encouraging development which appropriately conserves, enhances, connects, restores or recreates natural assets, particularly where this improves the extent or value of those assets which are recognised as being in poor condition.

4. Supporting proposals which contribute positively to the special characteristics and local distinctiveness of an area, particularly in the Shropshire Hills AONB, Nature Improvement Areas, Priority Areas for Action or areas and sites where development affects biodiversity or geodiversity interests at a landscape scale, including across administrative boundaries."

Compliance with Planning Policy

7.9 The site is not located within a statutory or non-statutory landscape designations such as a National Park, Area of Outstanding Natural Beauty or local plan Special Landscape Area (SLA). The site is considered to be of local value in the hierarchy of landscape designations or of low status in terms of the requirement for landscape protection as advised within paragraph 171 of the NPPF. As such, the site would not constitute a valued landscape with regards to Framework paragraph 170a.

7.10 The location, mass, scale and form of the proposed solar PV development is considered to be appropriate to the character and appearance of the surrounding landscape. The proposals would be designed and mitigated to meet the requirements of paragraphs 127, 170a and 171 of the NPPF; policy CS6 of the Shropshire LDF Adopted Core Strategy (March 2011) and policies MD2 and MD12 of the adopted Site Allocations and Management of Development Plan.

8. CONCLUSIONS

8.1 This LVIA has been prepared on behalf of Renewable Connections Ltd for a proposed 30MWp solar photovoltaic development on land at Bubney Farm, Grindley Brook, Whitchurch, Shropshire, SY13 4QH.

Baseline Conditions

8.2 The proposed 30MWp solar PV development is situated within undesignated countryside between Bubney Farm, Grindley Brook and the A41 to the north, the Llangollen Canal to the east, the A525 Wrexham Road and Redbrook to the south, with Bubney Moor, Iscoyd Park and Wolvesacre Hall to the west of the site.

8.3 The site is located within gently undulating farmland between 85 and 95m AOD and is sub-divided into approximately 7 no. medium-to-large scale fields defined by farm tracks, hedgerows, trees and dew ponds. The Llangollen Canal is located approximately 320 metres to the east and Iscoyd Park, which is designated as a Registered Park and Garden (RPG) and a Special Landscape Area (SLA), is approximately 50 metres to the west. Iscoyd Park is separated by an area of existing woodland at Bubney Moor which follows the course of the Redbrook tributary.

8.4 A public footpath extends east-to-west across the northern part of the site between Wolvesacre Hall to connect into the Llangollen Canal towpath at Danson's Bridge. A bridleway also crosses from the site from the north-east to the south-west partly following the farm track near Bubney Farm through arable fields between Grindley Brook and Bubney Moor before following the boundary of Iscoyd Park through woodland.

Effects on Landscape Character

8.5 The proposed 30MWp solar PV development at Bubney Farm would inevitably change the character of the site from undulating arable farmland to a solar PV development comprising bifacial solar modules, transformer boxes, invertor stations, security (deer) fencing and other associated infrastructure. The site layout is suited to this expansive Timbered Farmlands character type due to the uniform medium-to-large scale field pattern and prevailing south facing topography for enhanced solar gain.

8.6 The proposals would appear set within the undulating landform with partial visual enclosure provided by the framework of hedgerows and trees. The proposals would provide opportunities to enhance green infrastructure and deliver a biodiversity net gain (BNG) through hedgerow reinforcements, wildflower meadows, bird and bat boxes.

Effects on Visual Amenity

8.7 In general terms, the proposals would be visible to varying degrees between Bubney Farm and the A41 to the north, limited sections of the Llangollen Canal and Danson's Bridge to the east, the A525 Wrexham Road, Redbrook and the rising ground at Belton Farm to the south, Bubney Moor, Iscoyd Park, Wolvesacre Hall and Sandholes to the east. The proposals would inevitably effect the character and appearance of the PROW passing through the site itself.

8.8 Partial views of the proposals would be visible form the Llangollen Canal and the Sandstone Way, particularly from Danson's Bridge to the east of the site. However, the proposals would be set back from the canal towpath by approximately 300 metres beyond intervening hedgerows. Limited views of the upper solar modules would be perceptible through hedgerows in the winter months although due to the direction of travel, would not affect the overall experience when walking along the canal towpath.

8.9 The proposals would also be partially visible from peripheral areas of Iscoyd Park and Wolvesacre Hall within the Registered Park and Garden (RPG) and Special Landscape Area (SLA) to the west of the site. The majority of the proposals would be screened by the existing woodland at Bubney Moor to the west with the exception of the northern most field and a number of points on the outer boundary of the estate. Further hedgerow planting is proposed to increase the density of treecover along the western boundary to mitigate these effects although a minor residual effect is anticipated.

Iscoyd Park and Wolvesacre Hall

8.10 Due to the location of woodland following the stream at Red Brook and Bubney Moor to the west of the site, views of the proposed solar arrays would generally be screened from Iscoyd House and Wolvesacre Hall. These residential properties are set back from the woodland boundary by approximately 140m and 230m respectively. Views of the solar arrays would generally be screened from the

properties themselves although would be partially visible through the trees at close proximity to the woodland edge in the winter months.

Summary

8.11 The site is not located within any statutory or non-statutory landscape designations such as a National Park, Area of Outstanding Natural Beauty or local plan Special Landscape Area. The proposals have been designed to include suitable mitigation measures and offset distances to protect the character and appearance of the Llangollen Canal to the east and the Special Landscape Area (SLA) at Iscoyd Park to the west of the site. The proposals would be designed and mitigated to meet the requirements of paragraphs 127, 170a and 171 of the NPPF; policy CS6 of the Shropshire LDF Adopted Core Strategy (March 2011) and policies MD2 and MD12 of the adopted Site Allocations and Management of Development Plan.

APPENDIX 1: DETAILED LVIA METHODOLOGY

1. LANDSCAPE AND VISUAL IMPACT ASSESSMENT METHODOLOGY

1.1 This Landscape and Visual Impact Assessment (LVIA) has been undertaken with regards to best practice, as outlined within the following publications:

- Guidelines for Landscape and Visual Impact Assessment (3rd Edition, 2013) - Landscape Institute / Institute of Environmental Management and Assessment;
- Visual Representation of Development Proposals (2019) - Landscape Institute Technical Guidance Note 06/19;
- An Approach to Landscape Character Assessment (2014) - Natural England;
- An Approach to Landscape Sensitivity Assessment - To Inform Spatial Planning and Land Management (2019) - Natural England.

1.2 GLVIA3 states within paragraph 1.1 that *"Landscape and Visual Impact Assessment (LVIA) is a tool used to identify and assess the significance of and the effects of change resulting from development on both the landscape as an environmental resource in its own right and on people's views and visual amenity."*[1]

1.3 GLVIA3 also states within paragraph 1.17 that when identifying landscape and visual effects there is *a "need for an approach that is in proportion to the scale of the project that is being assessed and the nature of the likely effects. Judgement needs to be exercised at all stages in terms of the scale of investigation that is appropriate and proportional."*[2]

1.4 GLVIA3 recognises within paragraph 2.23 that *"professional judgement is a very important part of LVIA. While there is some scope for quantitative measurement of some relatively objective matters much of the assessment must rely on qualitative judgements"*[3] undertaken by a landscape consultant or a Chartered Member of the Landscape Institute (CMLI).

1.5 GLVIA3 notes in paragraph 1.3 *that "LVIA may be carried out either formally, as part of an Environmental Impact Assessment (EIA), or informally, as a contribution to the 'appraisal' of development proposals and planning applications."*[4] Although the proposed development is not subject to an EIA requiring an assessment of the likely significance of effects, this assessment is also titled as an LVIA rather than an 'appraisal' in the interests of common understanding.

[1] Para 1.1, Page 4, GLVIA, 3rd Edition
[2] Para 1.17, Page 9, GLVIA, 3rd Edition
[3] Para 2.23, Page 21, GLVIA, 3rd Edition
[4] Para 1.3, Page 4, GLVIA, 3rd Edition

1.6 The effects on cultural heritage and ecology are not considered within this LVIA.

Study Area

1.7 The study area for this LVIA covers a 3km radius from the site. However, the main focus of the assessment was taken as a radius of 1km from the site as it is considered that even with clear visibility the proposals would not be perceptible in the landscape beyond this distance.

Effects Assessed

1.8 Landscape and visual effects are assessed through professional judgements on the sensitivity of landscape elements, landscape character, visual receptors and representative viewpoints combined with the predicted magnitude of change arising from the proposals. The landscape and visual effects have been assessed in the following sections:

- Effects on landscape elements;
- Effects on landscape character; and
- Effects on visual amenity.

1.9 Sensitivity is defined in GLVIA3 as *"a term applied to specific receptors, combining judgments of susceptibility of the receptor to a specific type of change or development proposed and the value related to that receptor."*[5] Various factors in relation to the value and susceptibility of landscape elements, landscape character, visual receptors or representative viewpoints are considered below and cross referenced to determine the overall sensitivity as shown in Table 1:

Table 1, Overall sensitivity of landscape and visual receptors

	VALUE			
SUSCEPTIBILITY		**HIGH**	**MEDIUM**	**LOW**
	HIGH	High	High	Medium
	MEDIUM	High	Medium	Medium
	LOW	Medium	Medium	Low

1.10 Magnitude of change is defined in GLVIA3 as *"a term that combines judgements about the size and scale of the effect, the extent over which it occurs, whether it is*

[5] Glossary, Page 158, GLVIA, 3rd Edition

reversible or irreversible and whether it is short or long term in duration."[6] Various factors contribute to the magnitude of change on landscape elements, landscape character, visual receptors and representative viewpoints.

1.11 The sensitivity of the landscape and visual receptor and the magnitude of change arising from the proposals are cross referenced in Table 9 to determine the overall degree of landscape and visual effects.

2. EFFECTS ON LANDSCAPE ELEMENTS

2.1 The effects on landscape elements are limited to within the site and includes the direct physical change to the fabric of the land, such as the removal of woodland, hedgerows or grassland to allow for the proposals.

Sensitivity of Landscape Elements

2.2 Sensitivity is determined by a combination of the value that is attached to a landscape element and the susceptibility of the landscape element to changes that would arise as a result of the proposals – see pages 88-90 of GLVIA3. Both value and susceptibility are assessed on a scale of high, medium or low.

2.3 The criteria for assessing the value of landscape elements and landscape character is shown in Table 2:

Table 2, Criteria for assessing the value of landscape elements and landscape character	
HIGH	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. Landscape condition is good and components are generally maintained to a high standard. 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. Rare or distinctive landscape elements and features are key components that contribute to the landscape character of the area.
MEDIUM	Undesignated landscape including urban fringe and rural countryside considered to be a distinctive component of the national or local landscape character.

[6] Glossary, Page 158, GLVIA, 3rd Edition

	Landscape condition is fair and components are generally well maintained. 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. Rare or distinctive landscape elements and features are notable components that contribute to the character of the area.
LOW	Undesignated landscape including urban fringe and rural countryside considered to be of unremarkable character. Landscape condition may be poor and components poorly maintained or damaged. 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. Rare or distinctive elements and features are not notable components that contribute to the landscape character of the area.

2.4 The criteria for assessing the susceptibility of landscape elements and landscape character is shown in Table 3:

Table 3, Criteria for assessing landscape susceptibility	
HIGH	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. Nature of land use – landscapes with no or little existing reference or context to the type of development being proposed. Nature of existing elements – landscapes with components that are not easily replaced or substituted (e.g. ancient woodland, mature trees, historic parkland, etc). 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.
MEDIUM	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. Nature of land use – landscapes with some existing reference or context to the type of development being proposed. Nature of existing elements – landscapes with components that are easily replaced or substituted. Nature of existing features – landscapes where detracting features, major infrastructure or industry is present and has a noticeable influence on landscape character.

LOW	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. Nature of land use – landscapes with extensive existing reference or context to the type of development being proposed. Nature of existing features – landscapes where detracting features or major infrastructure is present and has a dominating influence on the landscape.

2.5 Various factors in relation to the value and susceptibility of landscape elements are assessed and cross referenced to determine the overall sensitivity as shown in Table 1.

Magnitude of Change on Landscape Elements

2.6 Professional judgement has been used to determine the magnitude of change on individual landscape elements within the site as shown in Table 4:

Table 4, Criteria for assessing magnitude of change for landscape elements	
HIGH	Total loss/gain of a landscape element.
MEDIUM	Partial loss/gain or alteration to part of a landscape element.
LOW	Minor loss/gain or alteration to part of a landscape element.
NEGLIGIBLE	No loss/gain or very limited alteration to part of a landscape element.

3. EFFECTS ON LANDSCAPE CHARACTER

3.1 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."*[7]

3.2 The assessment of effects on landscape character considers how the introduction of new landscape 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.

[7] Glossary, Page 157, GLVIA, 3rd Edition

Sensitivity of Landscape Character

3.3 Sensitivity is determined by a combination of the value that is attached to a landscape and the susceptibility of the landscape to changes that would arise as a result of the proposals – see pages 88-90 of GLVIA3. Both value and susceptibility are assessed on a scale of high, medium or low.

3.4 The criteria for assessing the value of landscape character is shown in Table 2.

3.5 The criteria for assessing the susceptibility of landscape character is shown in Table 3.

3.6 The overall sensitivity is determined through cross referencing the value and susceptibility of landscape character as shown in Table 1.

Magnitude of Change on Landscape Character

3.7 Professional judgement has been used to determine the magnitude of change on landscape character as shown in Table 5:

Table 5, Criteria for assessing magnitude of change on landscape character	
HIGH	Introduction of major new elements into the landscape or some major change to the scale, landform, landcover or pattern of 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.
LOW	Introduction of minor new elements into the landscape or some minor change to the scale, landform, landcover or pattern of 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.

4. EFFECTS ON VISUAL AMENITY

4.1 Visual amenity is defined within GLVIA3 as the *"overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating, visiting or travelling through an area."*[8]

4.2 The effects on visual amenity considers the changes in views arising from the proposals 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 as agreed with the Local Planning Authority.

Sensitivity of Visual Receptors

4.3 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 – see pages 113-114 of GLVIA3. Both value and susceptibility are assessed on a scale of high, medium or low.

4.4 The criteria for assessing the value of views is shown in Table 6:

Table 6, Criteria for assessing the value of views	
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.

[8] Page 158, Glossary, GLVIA3

4.5 The criteria for assessing the susceptibility of views is shown in Table 7:

Table 7, Criteria for assessing visual susceptibility	
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.
LOW	Includes people at places of work e.g. industrial and commercial premises and people travelling through the landscape on major roads and motorways.

Magnitude of Change on Visual Receptors

4.6 Professional judgement has been used to determine the magnitude change on visual receptors as shown in Table 8:

Table 8, Criteria for assessing magnitude of change for visual receptors	
HIGH	Major change in the view that has a defining influence on the overall view with many visual receptors affected.
MEDIUM	Some change in the view that is clearly visible and forms an important but not defining element in the view.
LOW	Some change in the view that is appreciable with few visual receptors affected.
NEGLIGIBLE	No notable change in the view.

5. DEGREE OF LANDSCAPE AND VISUAL EFFECTS

5.1 The degree of effects are professional judgements based upon all the factors in terms of landscape and visual sensitivity and the magnitude of change arising from the proposals. The cross referencing of landscape and visual sensitivity and the magnitude of change determines the overall degree of effects as shown in Table 9:

Table 9, Degree of landscape and visual effects

		Sensitivity		
		HIGH	**MEDIUM**	**LOW**
Magnitude of Change	**HIGH**	Major	Major	Moderate
	MEDIUM	Major	Moderate	Minor
	LOW	Moderate	Minor	Minor
	NEGLIGIBLE	Negligible	Negligible	Negligible

6. TYPICAL DESCRIPTORS OF LANDSCAPE EFFECTS

6.1 The typical descriptors of the landscape effects are detailed within Table 10:

Table 10, Typical Descriptors of Landscape Significance of Effects	
MAJOR BENEFICIAL	The landscape resource has a high sensitivity with the proposals representing a high beneficial magnitude of change and/or the proposed changes would: - 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	The landscape resource has a medium sensitivity with the proposals representing a medium beneficial magnitude of change and/or the proposed changes would: - 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	The landscape resource has a low sensitivity with the proposals representing a low beneficial magnitude of change and/or the proposed changes would: - complement the character (including value) of the landscape; - maintain or enhance characteristic features or elements; - enable some sense of place to be restored.
NEGLIGIBLE	The proposed changes would (on balance) maintain the character (including value) of the landscape and would: - be in keeping with landscape character and blend in with characteristic features and elements; - Enable a sense of place to be maintained.
NO CHANGE / NEUTRAL	The proposed changes would not be visible and there would be no discernible change to landscape character.
MINOR ADVERSE	The landscape resource has a low sensitivity with the proposal representing a low adverse magnitude of change and/or the proposed changes would: - 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	The landscape resource has a medium sensitivity with the proposals representing a medium adverse magnitude of change and/or the proposed changes would: - 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	The landscape resource has a high sensitivity with the proposals representing a high adverse magnitude of change and/or the proposed changes would: - 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.

7. TYPICAL DESCRIPTORS OF VISUAL EFFECTS

7.1 The typical descriptors of the visual effects are detailed within Table 11:

Table 11, Typical Descriptors of Visual Significance of Effects	
MAJOR BENEFICIAL	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	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	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	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.
NO CHANGE/ NEUTRAL	The proposed changes would not be visible and there would be no change to the view.
MINOR ADVERSE	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	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	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.

8. NATURE OF EFFECTS

8.1 GLVIA3 includes an entry that states *"effects can be described as positive or negative (or in some cases neutral) in their consequences for views and visual amenity."*[9] GLVIA3 does not, however, state how negative or positive effects should be assessed and therefore becomes a matter of subjective judgement rather than reasoned criteria. Third party representations often refers to the industrial character of a solar PV development. Whilst local objectors would undoubtedly view the proposals in this way, equally, other people would simply view the development as essential infrastructure that should be delivered as a matter of urgency to tackle climate change. This disparity of opinions or public attitudes from negative to positive is known within LVIA as valency. Due to inconsistencies with the assessment of negative or positive effects a precautionary approach is applied to this LVIA that assumes all landscape and visual effects are considered to be negative or adverse unless otherwise stated.

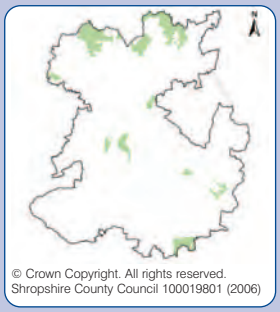
[9] Para 6.29, Page 113, GLVIA 3rd Edition

APPENDIX 2: SHROPSHIRE COUNTY COUNCIL, PRINCIPAL TIMBERED FARMLANDS AND SETTLED PASTORAL FARMLANDS LANDSCAPE CHARACTER TYPE (LCT)

Principal Timbered Farmlands

Key Characteristics

- Rolling lowland with occasional steep sided hills
- Relic ancient woodland
- Hedged fields with scattered hedgerow trees
- Predominantly dispersed settlement pattern
- Small to medium scale landscapes with filtered views



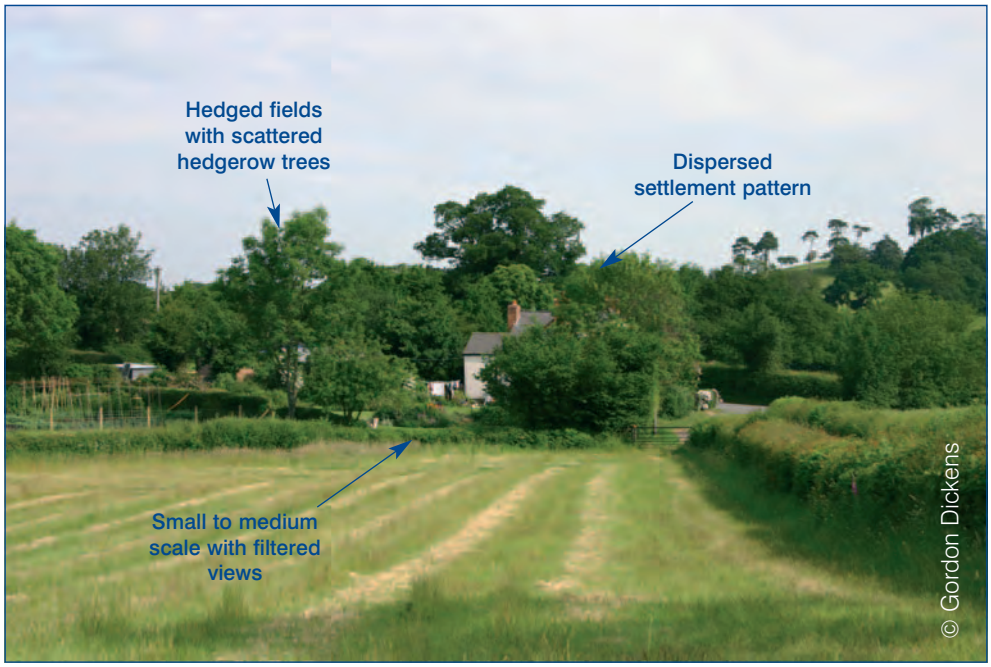
Description

This landscape type occurs throughout much of Shropshire, with notable concentrations along the northern boundary with Cheshire, and to the south of Shrewsbury. They are predominantly rolling lowland landscapes, with occasional steeply undulating valley sides, and are characterised by a mosaic of agricultural land.

Tree cover, in the form of dense stands of streamside trees, scattered hedgerow trees, and small to medium sized woodlands play an important role in structuring these landscapes, creating a small to medium scale and filtered views. Much of the woodland has an ancient character, although some woods have been replanted with conifers. Oak and Ash represent the main hedgerow tree species, whilst alder and willow dominate along watercourses.

The settlement pattern typically comprises of a medium to high density dispersal of farms and wayside cottages, with occasional hamlets and small villages.

Like the Wooded Farmlands, much of the agricultural land within this type was gradually enclosed from extensive tracts of woodland and 'waste' (common rough pasture) during the medieval and early modern periods. This has produced an intricate countryside, characterised by a network of



winding lanes, scattered farmsteads, and small irregular fields. Examples include the areas around Buttonbridge, on the edge of the Wyre Forest, and Coptiviney, to the north-west of Ellesmere.

Localised open fields existed around the larger settlement foci, the piecemeal enclosure of which had generally been completed by the 17th century.

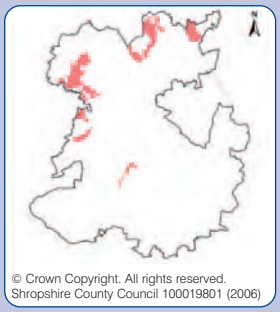
In some places, for example around Exfords Green and Longden Common, to the south of Shrewsbury, and Ebrewood to the north-east of the town, sizable areas of common wood pasture and rough grazing land survived into the early modern period. Encroachment by smallholders around the edges of these areas, between the 16th and 19th century, account for the small concentrations of wayside cottages that occur in some places. Enclosure of the remaining area of common land was completed in the 18th and 19th centuries, creating a regular pattern of rectilinear fields and straight roads.

During the later 19th and 20th century, conifer plantations were established in some locations, occasionally on the site of older woodlands. Where more favourable soils exist, the introduction of intensive arable farming in the later 20th century has resulted in field enlargement, creating more open conditions and a larger scale landscape.

Settled Pastoral Farmlands

Key Characteristics

- Heavy, poorly drained soils
- Pastoral land use
- Scattered hedgerow trees
- Irregular field pattern
- Small to medium scale landscapes



Description

Located mainly in the northern and western parts of the county, Settled Pastoral Farmlands are lowland agricultural landscapes. Heavy, often poorly drained soils are one of the defining characteristics of this landscape type and have traditionally been associated with livestock farming. This land use means that the historic pattern of small to medium, sub-regular, hedged fields has been retained in most places.

Whilst small, relict pieces of ancient woodland are present in some areas, tree cover is largely provided by scattered hedgerow oaks and Ash trees, along with linear bands of willows and alders along watercourses. Although these are not as densely distributed as they are in the Timbered pastures, they can be present in significant numbers and, combined with the field size, generate a small to medium scale landscape with predominantly filtered views.

A medium to high density dispersal of farmsteads and wayside cottages, linked by a sinuous network of lanes, represents the prevailing settlement pattern. However, occasional hamlets and small villages also exist in some areas, for example around Kinnerley, south-west of Oswestry.

The irregular field patterns within these landscapes have varied origins. Where the settlement pattern is more clustered, many of the fields derive from the informal, piecemeal enclosure of open fields during the late medieval and early modern

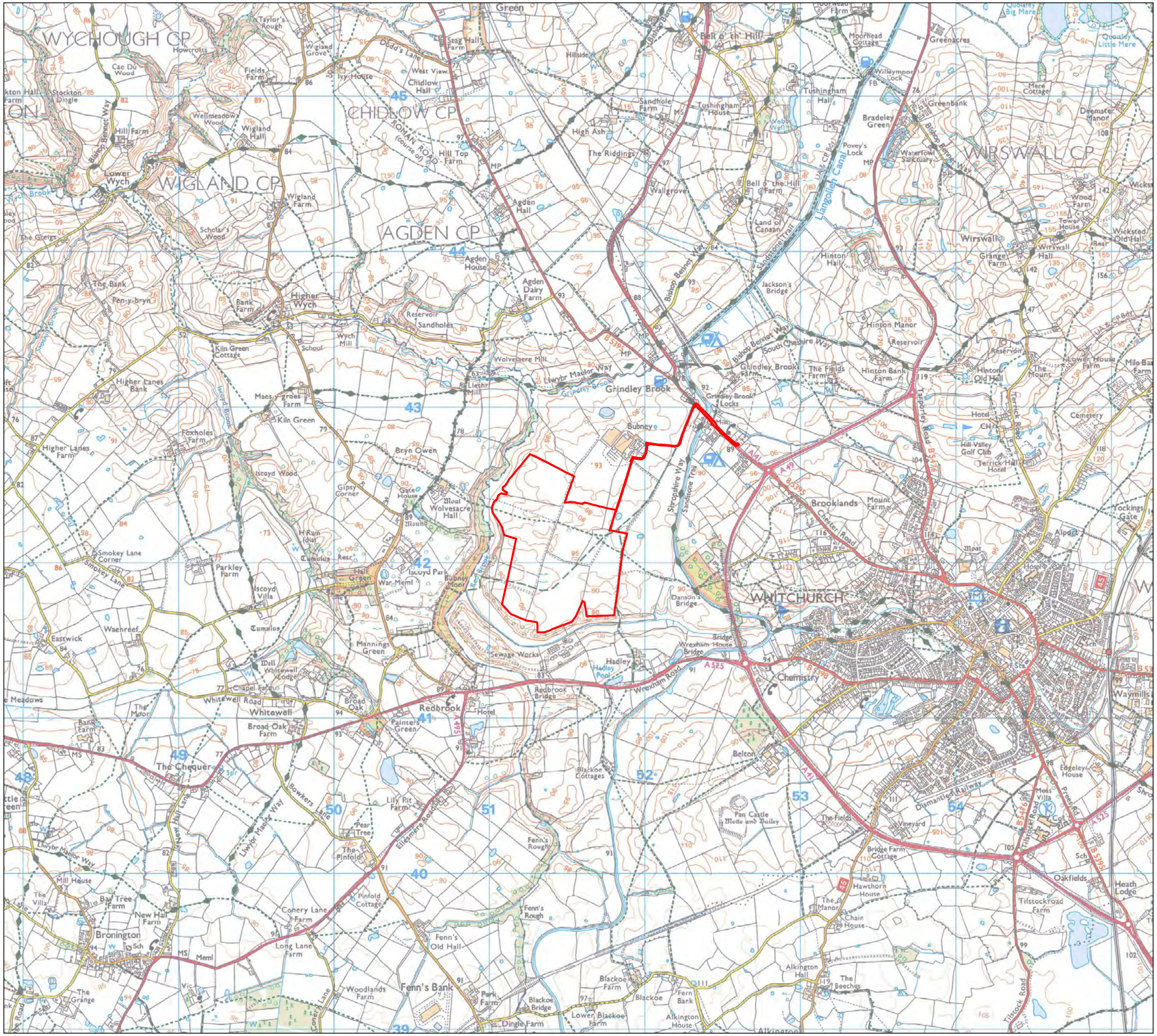
period. This process may have been encouraged by growing specialisation within the agricultural economy, particularly in northern Shropshire where dairying farming became increasingly important during this period.

Beyond the open fields, for example around Winnington Green, near Middletown, and to the south of Maesbury, near Oswestry, the field patterns derives from a mixture of woodland clearance, together with intakes and encroachment in areas of former common rough pasture.

Between the mid-17th and mid-19th centuries rural industries became important in some areas, for example limestone quarrying around Llanymynech.

During the later 20th century agricultural intensification has resulted in widespread pasture improvement and the introduction of intensive arable cropping in some places. Overall, however, the historic field patterns remain largely unchanged.

FIGURE 1: SITE LOCATION PLAN



KEY

Site Boundary

Revisions:
First Issue- 05/06/2020 JS
A - (18/03/2021 AD) Revised red line

0 1 km

N

Site Location Plan

Bubney Solar Farm, Grindley Brook

Client: Renewable Connections Developments Ltd

DRWG No: **P20-1083_02** Sheet No: **-** REV: **A**

Drawn by: AD Approved by: HD

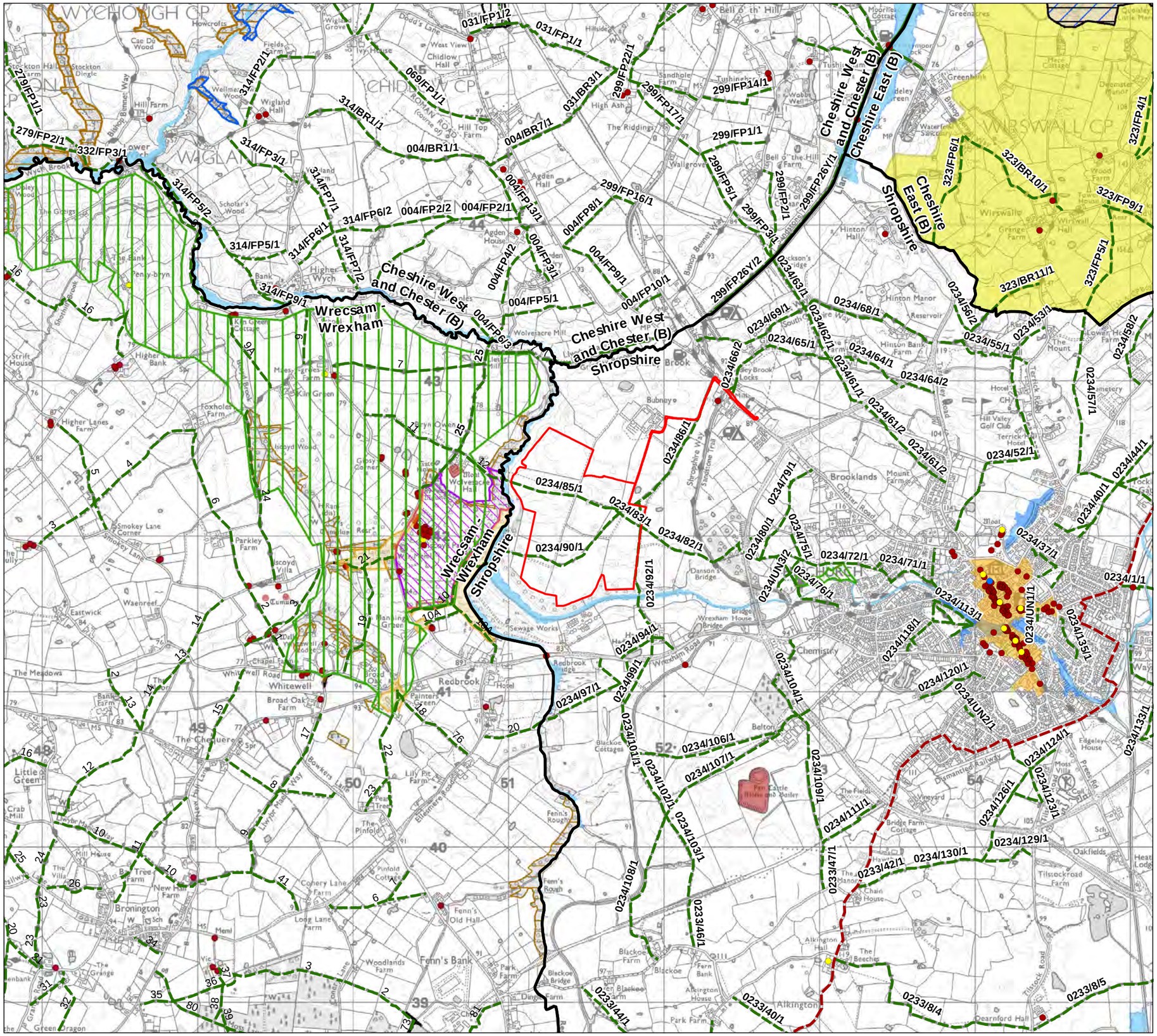
Date: 18/03/2021

Scale: 1:25,000 @ A3

Pegasus Environment

DESIGN | ENVIRONMENT | PLANNING | ECONOMICS | HERITAGE

FIGURE 2: ENVIRONMENTAL DESIGNATIONS PLAN



DESIGN | ENVIRONMENT | PLANNING | ECONOMICS | HERITAGE

KEY

- Site Boundary
- Local Authority Boundary
- SUSTRANS National Route
- Public Right of Way
- Open Access Land / Registered Common Land
- Grade I Listed Building
- Grade II* Listed Building
- Grade II Listed Building
- Scheduled Monument
- Conservation Area
- Local Nature Reserve (LNR)
- RAMSAR
- Special Area of Conservation (SAC)
- Site of Special Scientific Interest (SSSI)
- Ancient Woodland
- RSPB Reserve
- Statutory Access Land (SAL)
- Registered Park / Garden (RPG)
- Special Landscape Area (EC6)
- Area of Special County Value (NE.3)
- EA Flood Zone 3
- EA Flood Zone 2

NOTE;
Only relevent landscape designations and designations on or adjacent to the Site are shown

Revisions:
First Issue- 05/06/2020 JS
A - (18/03/2021 AD) Revised red line

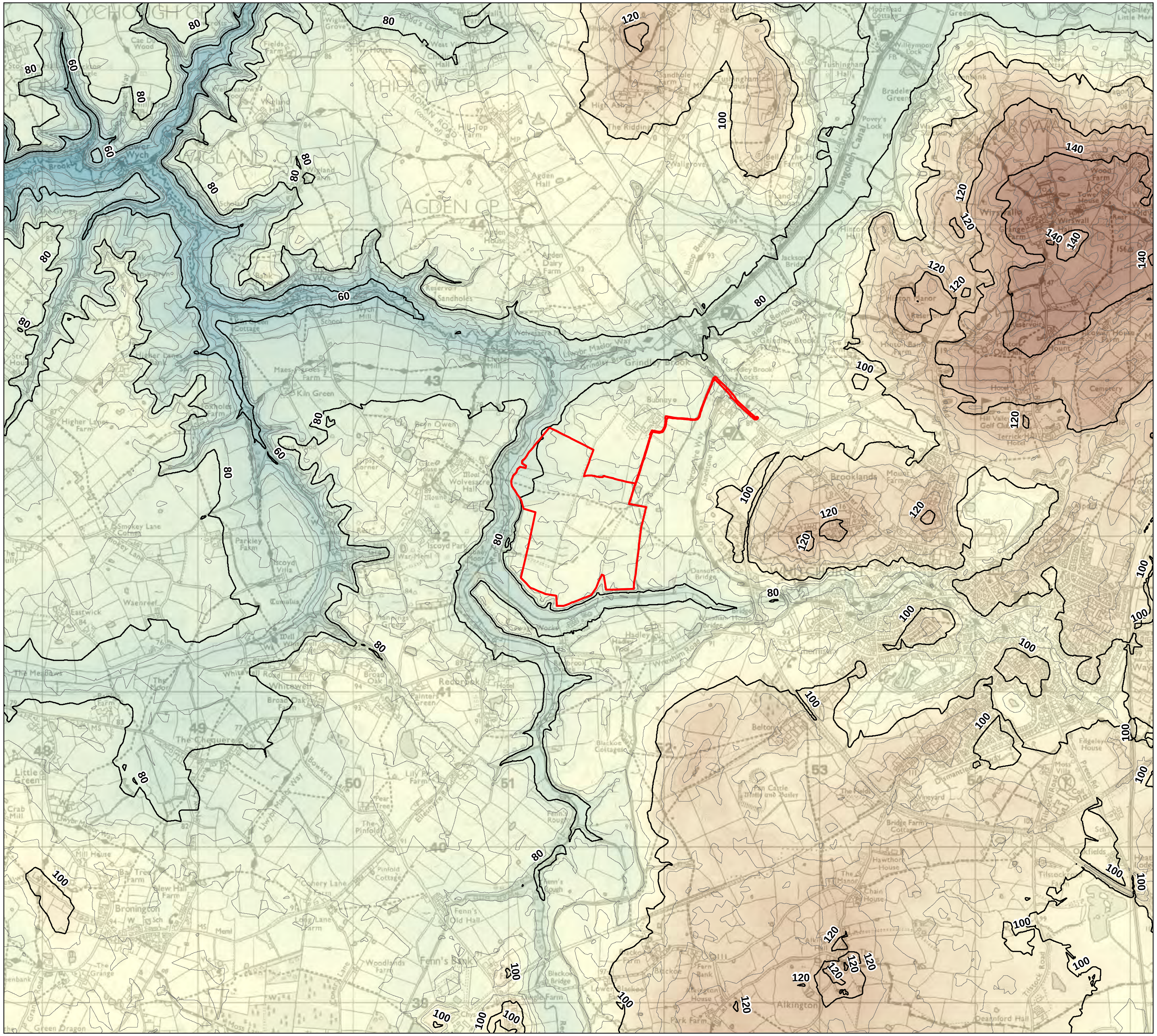
Environmental Designtions Plan

Bubney Solar Farm, Grindley Brook

Client:	Renewable Connections Developments Ltd		
DRWG No:	**P20-1083_03**	Sheet No: **-**	REV: **A**
Drawn by:	AD	Approved by:	RF
Date:	18/03/2021		
Scale:	1:25,000 @ A3		

Pegasus Environment

FIGURE 3: TOPOGRAPHY PLAN



KEY

Site Boundary

Contour

DTM (metres above ordnance datum)

High : 157.725

Low : 40.4072

Revisions:
First Issue- 05/06/2020 JS
A - (18/03/2021 AD) Revised red line

Topography Plan

Bubney Solar Farm, Grindley Brook

Client:	Renewable Connections Developments Ltd
DRWG No:	**P20-1083_04** Sheet No: - REV: **A**
Drawn by:	AD Approved by: RF
Date:	18/03/2021
Scale:	1:25,000 @ A3

Pegasus Environment

0 1 km

N

DESIGN | ENVIRONMENT | PLANNING | ECONOMICS | HERITAGE

FIGURE 4: LANDSCAPE MITIGATION PLAN

PLANTING SCHEDULE

Native Tree Planting:

Quantity	Species	Height (cm)	Girth (cm)	Habit	Ages / Times Transplanted	Root Condition
Heavy Standard Trees						
39	*Acer campestre*	350-425	12-14	Clear stem min 200 cm; 5 breaks	3x	40L
30	*Quercus robur*	350-425	12-14	Clear stem 175-200 cm; 5 breaks	3x	40L

Native Hedgerow Planting:
To be planted at 5/linear m, double staggered row at 0.5m offsets

Quantity	Species	Mix %	Height (cm)	Habit	Ages / Times Transplanted	Root Condition
3606	*Acer pseudoplatanus*	15	60-80	Transplant – seed raised	1+1	B
3606	*Corylus avellana*	15	40-60	Transplant – seed raised; branched; 2 breaks	1+1	B
9615	*Crataegus monogyna*	40	40-60	Transplant – seed raised	1+1	B
2404	*Ilex aquifolium*	10	20-30	Leader with laterals	-	0.5L
1202	*Prunus spinosa*	5	60-80	Transplant - seed raised; branched; 2 breaks	1+1	B
1202	*Rosa canina*	5	60-80	Transplant – seed raised; branched; 3 breaks	1+1	B
2404	*Sambucus nigra*	10	60-80	Transplant – seed raised; branched; 3 breaks	1+1	B

PLANTING SPECIFICATION

1 GENERAL

1.1 All plants will conform to BS 3936-1 (1992): and be in accordance with the National Plant Specification. Supplying nurseries will be registered under the HTA Nursery Certification Scheme. All plants will be packed and transported in accordance with the Code of Practice for Plant Handling as produced by CPSE.

1.2 Planting will not be carried out when the ground is waterlogged, frost bound or during periods of cold drying winds.

1.3 All bare-root planting stock will be kept covered until actually planted in order to minimise water-loss and prevent the roots from drying out.

1.4 All bare-root planting stock will be root dipped in an approved water-retaining polymer.

1.5 If the formation level is compacted it should be ripped through before topsoiling.

2 TREE PLANTING

Ground Preparation and Tree Pit Excavation

2.1 Where necessary remove existing weeds by hand. Chemical removal using a glyphosate based herbicide will be avoided unless large areas need clearing – following which allow a suitable period to elapse, as recommended by the manufacturer, for the herbicide to take effect.

2.2 Tree pits of at least 75mm diameter greater than the root system and no deeper than the rootball / container depth are to be excavated and the sides well scarified to prevent smearing. All extraneous matter such as plastic, wood, metal and stones greater than 50mm in any dimension shall be removed from site.

2.3 During excavation of the pit, the soil dug should be placed to one side separating topsoil and subsoil as far as is practical.

Tree Planting

2.4 Trees shall be planted as per the planting arrangement as set out on the planting plan and plant schedule.

2.5 The typical rooting depth for trees is 900mm. The first 300mm shall be made up of topsoil; it shall be ensured that a suitable subsoil provides the remainder of the minimum rooting depth.

2.6 The root system of the tree should be wetted prior to planting. The tree should be planted at the correct depth taking into account the position of the root flare and the finished level - the rootball or root stem transition should be level with the existing host soil or surface. The base of the rootball should typically sit on subsoil, for larger rootballs the subsoil will sit around the lower portion of the rootball.

2.7 Tree pits should be backfilled with the excavated topsoil, if the original topsoil is not available or deemed unsuitable, a multi-purpose topsoil should be used. Any subsoil excavated should be discarded and the subsoil depth (beyond 300mm deep) backfilled with a high sand content subsoil. Backfill should be added gradually, in layers of 150mm to 230mm depth, ensuring the tree is held upright At each stage the fill should be firmed in to eliminate all air pockets under and around the root system, but with care being taken not to excessively compact the soil. The final layer should not be consolidated.

2.8 General-purpose slow release fertiliser (at the rate of 75gm/m2) and Tree Planting and Mulching Compost at the rate of (20litres/m2) are to be incorporated into the top 150mm of topsoil during final cultivations.

2.9 All extra heavy standard size trees are to be double staked with 75mm dia stakes. Stakes should be driven at least 300mm into undisturbed ground before planting the tree, taking care to avoid underground services and cables etc. and should typically be one third the height of the tree stem above ground.

2.10 Staked trees shall be secured to stakes with suitable proprietary rubber tree ties and spacers.

2.11 Immediately after planting, but before applying the below bark mulch, all trees should be saturated to field capacity.

2.12 Ornamental composted bark mulch will be spread to a depth of 75mm across a 0.8m dia circle around individual trees, ensuring that the root flare and base of the stem, along with any ground cover plants, are not buried.

3 NATIVE HEDGE TRANSPLANTS

4 Ground Preparation

4.1 Where necessary existing weeds will be treated with a glyphosate-based herbicide and a suitable period allowed to elapse, as recommended by the manufacturer, for the herbicide to take effect.

4.2 All extraneous matter such as plastic, wood, metal and stones greater than 50mm diameter will be removed from site to a registered waste disposal facility.

Planting

4.3 New hedgerows to be planted at 5/linear m, double staggered row at 0.5m offset as per schedule.

4.4 Existing hedgerows to have infill planting (as required following detailed review on site), species and stock size to match proposed new hedgerow planting (see planting schedule).

4.5 The plants should be planted using L shaped or straight notches) using spades of a design suitable for this purpose. The notches must be vertical and deep enough for the roots to hang freely, with the transplant being planted so that the root collar is exactly level with the ground surface. The notch must then be closed and the soil will be well firmed round the roots in line with the guidelines as set out in BS 4428 (1989).

4.6 All bare-root hedge planting stock will be protected from rabbit damage using approved proprietary 600mm clear plastic spiral guards, supported with 0.9m 12/14lb canes as advised by the manufacturer. Excluding evergreen species.

4.7 All container-grown planting stock will be protected from rabbit damage using approved proprietary 600mm plastic shrub shelters, supported with 0.9m x 32mm x 32mm softwood stakes as advised by the manufacturer.

4.8 All plants shall be watered in at the end of each day of planting.

4.9 Weed growth in all areas of tree planting will be controlled until successful establishment is achieved by careful application of a systemic herbicide such as Roundup by an approved landscaping contractor in order to clear any extraneous vegetation.

4.10 All hedgerow planted areas to be finished with a 50mm min depth of Amenity bark mulch.

Maintenance during first growing season

4.11 All dead, dying or diseased hedge plants will be replaced with plants of similar size and species. If the failure of the plant is due to disease and the disease is considered likely to re-occur then an alternative species may be used as replacement if agreed with the LPA.

4.12 The planting area will be kept weed free throughout the maintenance period using approved herbicides in April, June and August.

5 GRASS

Preparation

5.1 Areas to be seeded will be sprayed out using a glyphosate-based herbicide and cultivated to a minimum depth of 100mm. During the construction phase there may be areas which have suffered high soil compaction, for instance due to heavy machinery being deployed. These areas should be harrowed using a disc harrow to ensure the soil structure is suitable for subsequent sowing. If such a requirement arises to harrow with discs, caution should be exercised to ensure newly installed underground services are not damaged during harrowing.

5.2 Seeding should take place in early spring in the first year following completion of underground wiring, and be broadcast by machine and rolled where possible. The gaps between strings of panels are to be wide enough to accommodate a tractor travelling between them for harrowing, sowing and rolling purposes. In areas where a machine is unable to access, such as far underneath panels, bare areas shall be raked by hand and seeding in these areas should be broadcast by hand.

Beneath and between the panels

5.3 Grass seed will be sown in accordance with BS 4428 (1989), and will be sown from April to May or from September to October, during calm weather and not when the ground is frost bound or waterlogged. The site will be seeded where shown using the seed mix shown below or equivalent (to be agreed with the project ecologist).

5.4 The seed supplier should be contacted prior to purchasing the seed mixture and the soil conditions and location of the site should be discussed. A bespoke seed mixture suitable for the specific conditions on the site may be more suitable.

5.5 Seeds can be mixed with a substrate such as sand or sawdust for ease of broadcasting.

Grassland Cutting

5.6 Following establishment of a suitable sward, the grassland habitats will be managed through either grazing and/or mechanical cuts to develop grassland with a varied structure. Both approaches are identified below.

5.7 Problem perennial weeds within the grassland will be controlled by carefully targeted applications of a suitable selective none residual herbicide by way of spot spraying with a knapsack (low pressure to avoid spray drift), or weed wiping.

5.8 In the unlikely event that grassland fails to become established upon areas of bare ground created during the works these areas will be lightly scarified and reseeded with the same seed mix used to seed the site at the during the construction phase.

5.9 An inspection will be undertaken in early August following completion of the installation. The inspection will be undertaken by the solar farm operator. Should the proportion of bare ground be greater than 20% sowing will be repeated in these areas. Reseeding in August is likely to be particularly appropriate where the months of May, June and July have been very dry. The operating company will assess the proportion of bare ground on the site.

5.10 Mechanical Cutting Regime

Areas of newly seeded grassland will be subject to one cut during the first year of establishment. In good growing conditions (warm soils and adequate rainfall) the grass will establish and require its first management around 6-10 weeks from sowing. Cut when sward reaches 100mm in height. However, additional cuts may be required to prevent the height of the sward from obscuring the solar panels. The grassland should be cut to 40-70mm. Arising´s will be left in situ for 3-5 days to allow seeds to disperse, then be collected with a baler or rake to remove nutrients and thereby promote the establishment of a bio diverse sward.

Cutting should follow a sympathetic method (ie working outwards towards the boundary features), this will allow fauna such as invertebrates, birds and small mammals to temporarily and safely vacate the area.

The management will take a flexible approach and the exact dates will be dependent upon weather conditions. A phased (rotational) cutting regime is recommended (ie ideally the entire area should not be cut at the same time) in order to allow for more structured grassland.

Grassed areas along hedgerow bases can be cut less frequently once established, with a single main cut (reducing sward height to approximately 150mm) late in the season, between August and September, subject to weather conditions.

All arising´s will be removed from site.

Please refer to seed suppliers recommendations for ongoing maintenance and cutting regime.

5.11 Grazing Regime

Once established the grassland within the perimeter fence can be managed by sheep grazing as an alternative to mechanical cutting. Grazing should follow a low-intensity grazing regime.

Grassland to be subject to light intermittent grazing by sheep between late August/September and November and through to February where conditions allow. Stock should be removed in the late winter period if ground conditions become saturated in order to prevent compaction of wet earth and excessive damage to the sward.

During the spring and summer (March to August), sheep will be removed to allow flowering plants to set seed. Light summer grazing may also be carried out if grass growth is particularly vigorous, particularly in the early years after establishment.

Guidance on stocking levels for lowland grassland (number of sheep per hectare) can be obtained from the Lowland Grassland Management Handbook produced by Natural England.

Please refer to seed suppliers recommendations for ongoing maintenance and cutting regime.

5.12 Grass Seed Mixtures

Germinal (or similar) WFG8 Hedgerow & Shaded Areas
(To be agreed with the project ecologist) sown at 4gms/m2
To be sown around the perimeter areas of the Application Site as indicated on the plans.

Cotswold Seeds (or similar) Solar Park Long Term Grazing Mixture with Clover
(To be agreed with the project ecologist) sown at 32.5kg/ha
To be sown within the security fencing of areas occupied by solar panels as indicated on the plan.

Emorsgate (or similar) EM3 Special General Purpose Meadow Mixture
(To be agreed with the project ecologist) sown at 4gms/m2
To be sown to areas within proposed Conservation Areas and areas within grassland for bird nesting .

Proposed Hedgerow Planting	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
	(67 lin m)	*(15 lin m)*	*(22.5 lin m)*	*(17.5 lin m)*	*(400 lin m)*	*(800 lin m)*	*(285 lin m)*	*(580 lin m)*	*(80 lin m)*	*(245 lin m)*	*(240 lin m)*
Transplant											
Acer pseudoplatanus	50no.	11no.	17no.	13no.	300no.	600no.	214no.	435no.	60no.	184no.	180no.
Corylus avellana	50no.	11no.	17no.	13no.	300no.	600no.	214no.	435no.	60no.	184no.	180no.
Crataegus monogyna	134no.	30no.	45no.	35no.	800no.	1600no.	570no.	1160no.	160no.	490no.	480no.
Ilex aquifolium	34no.	8no.	11no.	9no.	200no.	400no.	143no.	290no.	40no.	123no.	120no.
Prunus spinosa	17no.	4no.	6no.	4no.	100no.	200no.	71no.	145no.	20no.	61no.	60no.
Rosa canina	17no.	4no.	6no.	4no.	100no.	200no.	71no.	145no.	20no.	61no.	60no.
Sambucus nigra	34no.	8no.	11no.	9no.	200no.	400no.	143no.	290no.	40no.	123no.	120no.

Proposed Hedgerow Planting	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII
	(325 lin m)	*(245 lin m)*	*(385 lin m)*	*(18.5 lin m)*	*(100 lin m)*	*(260 lin m)*	*(95 lin m)*	*(150 lin m)*	*(75 lin m)*	*(280 lin m)*
Transplant										
Acer pseudoplatanus	244no.	184no.	289no.	14no.	75no.	195no.	71no.	113no.	56no.	210no.
Corylus avellana	244no.	184no.	289no.	14no.	75no.	195no.	71no.	113no.	56no.	210no.
Crataegus monogyna	650no.	490no.	770no.	37no.	200no.	520no.	190no.	300no.	150no.	560no.
Ilex aquifolium	163no.	123no.	193no.	9no.	50no.	130no.	48no.	75no.	38no.	140no.
Prunus spinosa	81no.	61no.	96no.	5no.	25no.	65no.	24no.	38no.	19no.	70no.
Rosa canina	81no.	61no.	96no.	5no.	25no.	65no.	24no.	38no.	19no.	70no.
Sambucus nigra	163no.	123no.	193no.	9no.	50no.	130no.	48no.	75no.	38no.	140no.

Revisions:
First Issue- 11/03/2021 JN
A- (11/03/2021 JN) Planting proposals revised
B- (17/03/2021 JN) Site layout updated

Landscape Proposals
Bubney Solar Farm

Client: Renewable Connections Developments Ltd

DRWG No: **P20-1083_11** Sheet No:_ REV: B

Drawn by : JN Approved by: AMS/RF

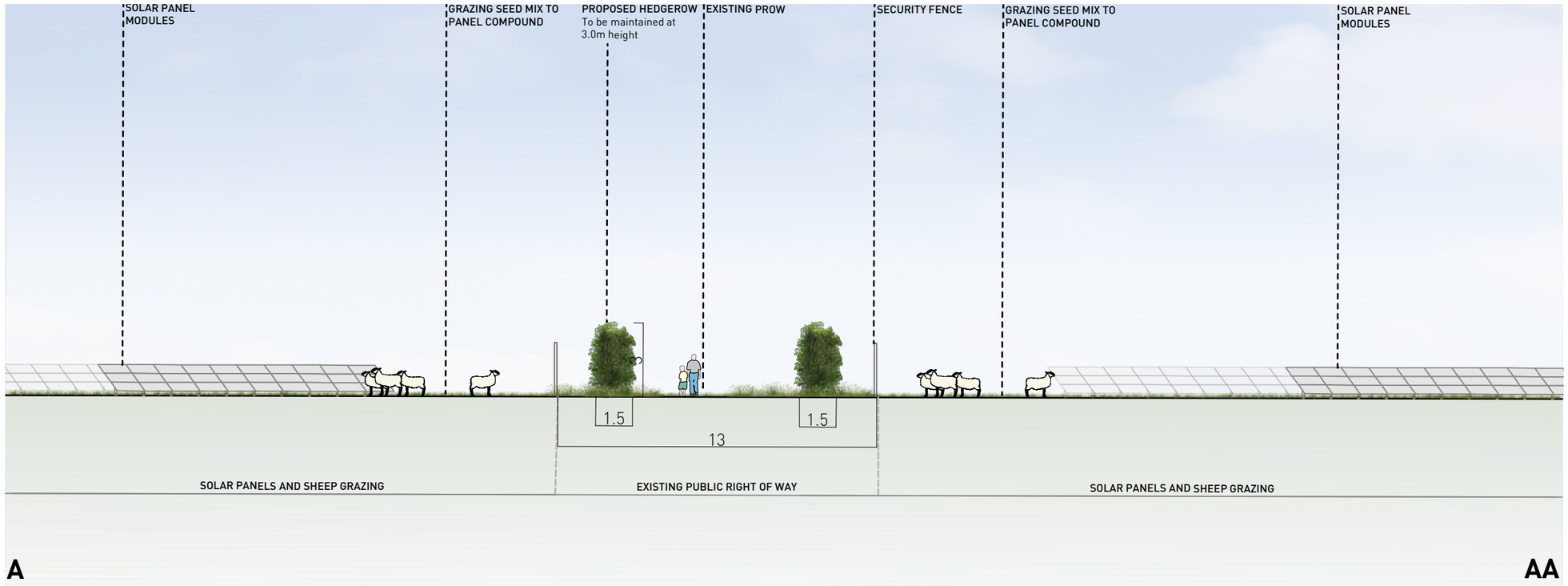
Date: 17/03/2021

Scale: 1:1500 @ A0

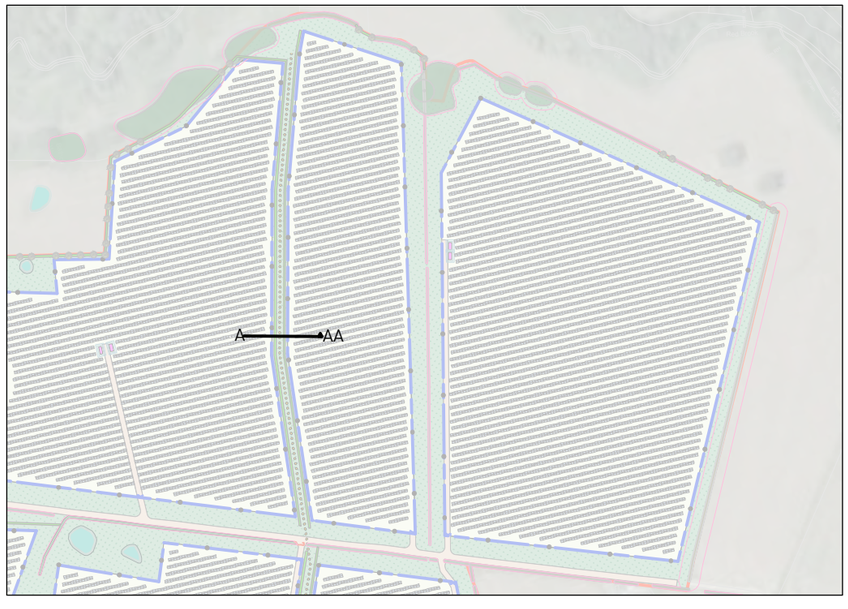
Pegasus Design

FIGURE 5: INDICATE LANDSCAPE SECTION ALONG PROW

Section A-AA (Slace 1:200)



Section Location Plan (Scale 1:2500)



Revisions:
First Issue- 17/03/2021 JN

Indicative Landscape Site Section

Bubney Solar Farm

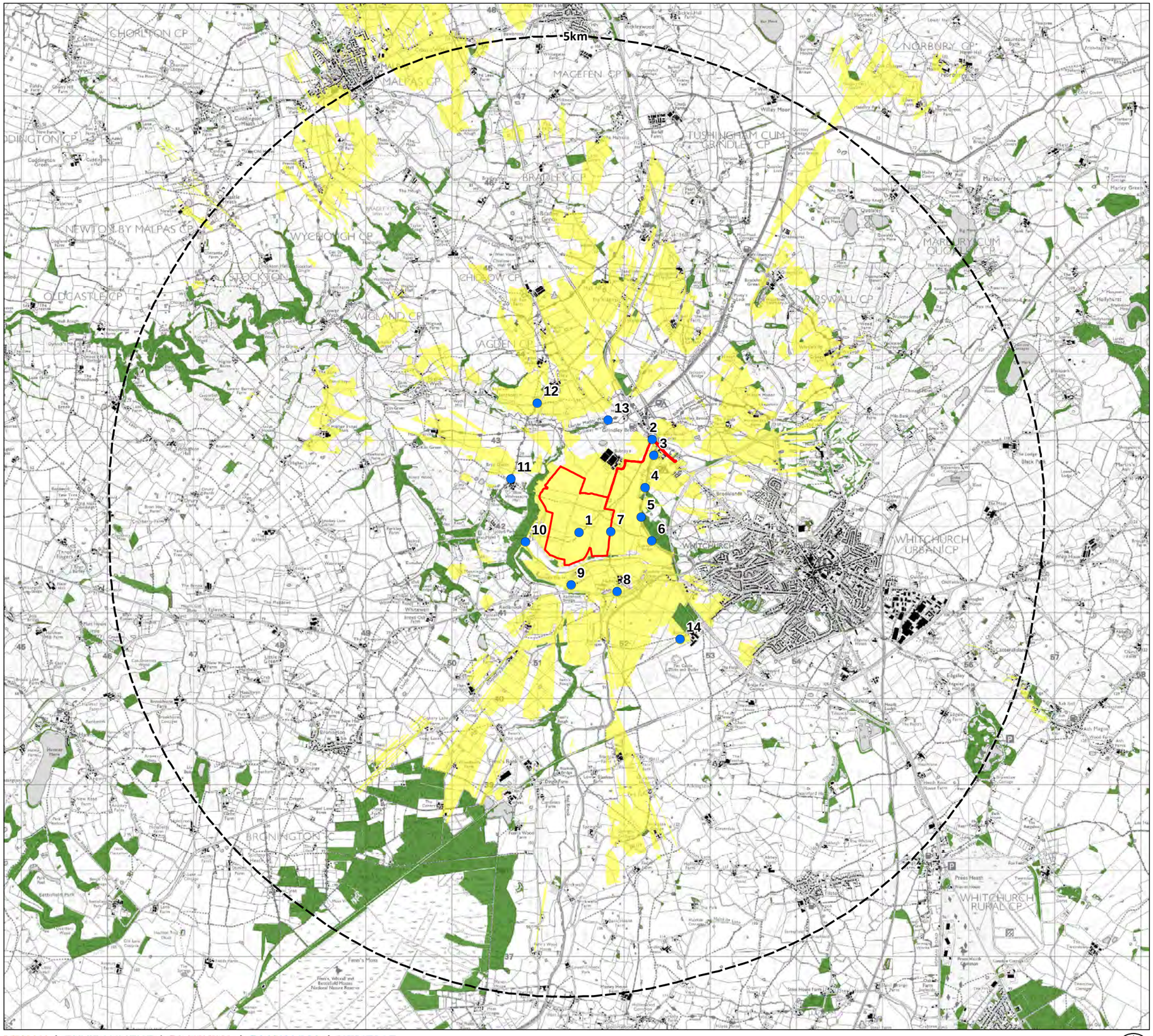
Client: Renewable Connections Developments Ltd
DRWG No: **P20-1083_15** Sheet No:_ REV:_
Drawn by : JN Approved by: RF
Date: 17/03/2021
Scale: Vary @ A3

N

Pegasus Design

DESIGN | ENVIRONMENT | PLANNING | ECONOMICS | HERITAGE

FIGURE 6: ZONE OF THEORETICAL VISIBILITY (ZTV) MAP AND VIEWPOINT LOCATIONS



KEY

- Site Boundary
- Viewpoint Location
- OS Open Map Local Woodland
- OS Open Map Local Buildings
- Zone of Theoretical Visibility (3m)

Screened ZTV Production Information -
- DTM data used in calculations is OS Terrain 5 that has been combined with OS Open Map Local data for woodland and buildings to create a Digital Surface Model (DSM).

- Indicative woodland and building heights are modelled at 15m and 8m respectively.
- Viewer height set at 1.7m (in accordance with para 6.11 of GLVIA Third Edition)
- Calculations include earth curvature and light refraction

N.B. This Zone of Theoretical Visibility (ZTV) image illustrates the theoretical extent of where the development may be visible from, assuming 100% atmospheric visibility, and includes the screening effect from vegetation and buildings, based on the assumptions stated above.

DESIGN | ENVIRONMENT | PLANNING | ECONOMICS | HERITAGE

0 2 km

N

Revisions:
First Issue- 30/04/2020 JS
A - (18/03/2021 AD) Revised red line

Screened Zone of Theoretical Visibility and Viewpoints Location Plan

Bubney Solar Farm, Grindley Brook

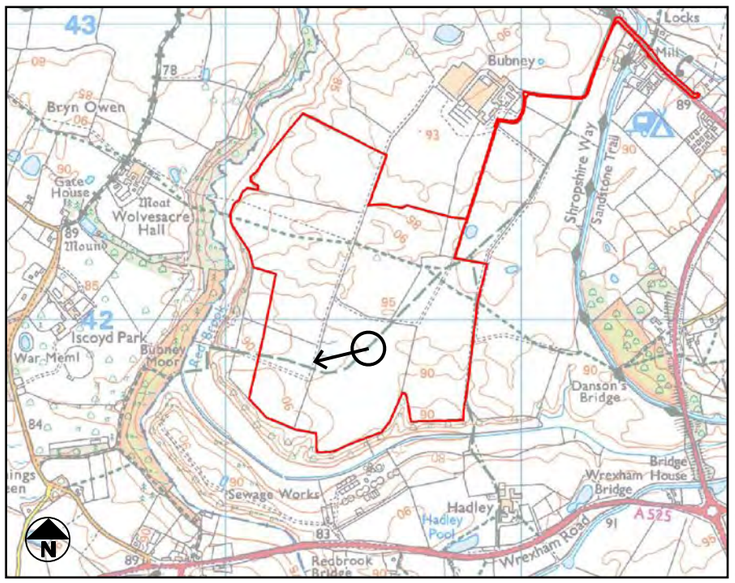
Client:	Renewable Connections Developments Ltd		
DRWG No:	**P20-1083_01**	Sheet No: **-**	REV: **A**
Drawn by:	AD	Approved by:	GR
Date:	18/03/2021		
Scale:	1:45,000 @ A3		

Pegasus Environment

FIGURE 7: REPRESENTATIVE VIEWPOINTS 1 – 14

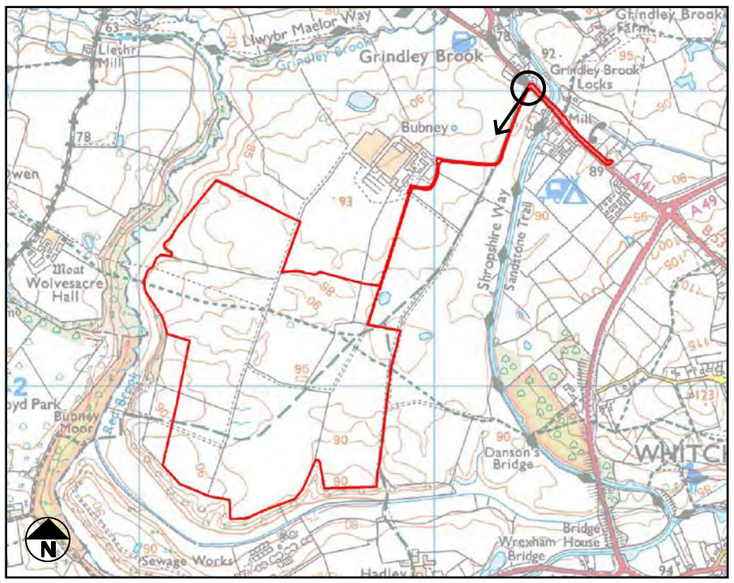
CONTEXT BASELINE VIEWPOINT 1

Bridleway 0234/90/1 passing through the site



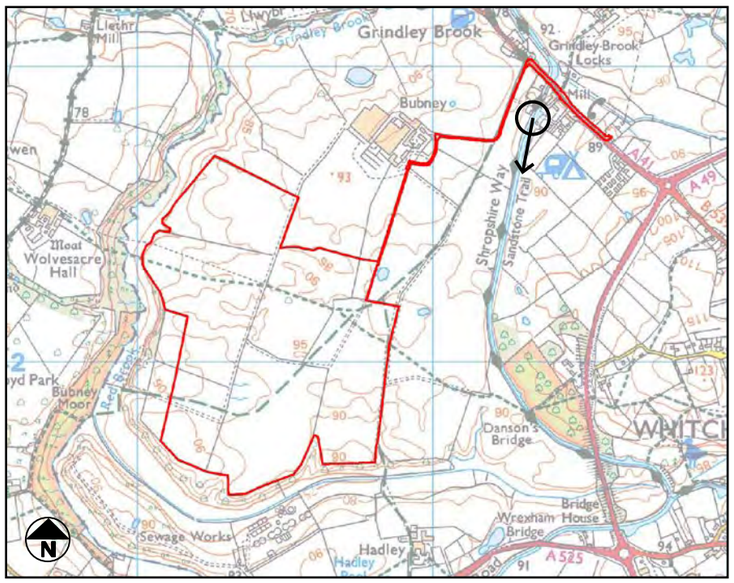
CONTEXT BASELINE VIEWPOINT 2

A41 Chester Road at Grindley Brook near access to Bubney Farm



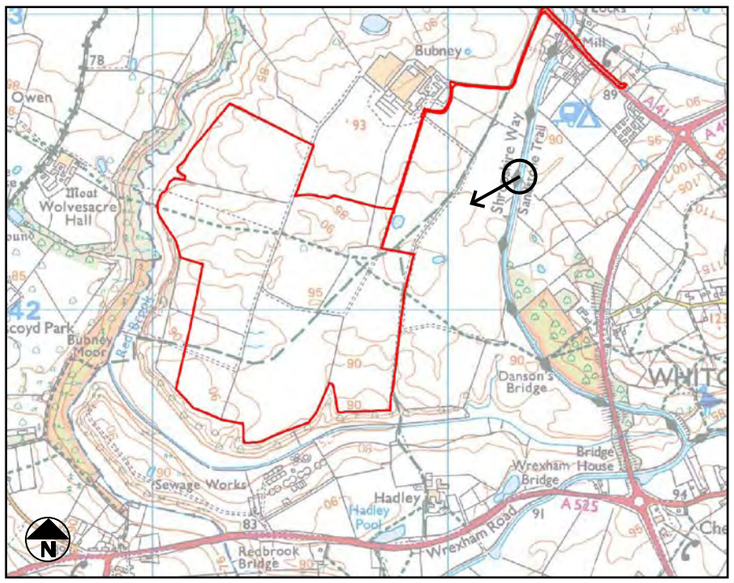
CONTEXT BASELINE VIEWPOINT 3

Llangollen Canal at Grindley Brook Locks



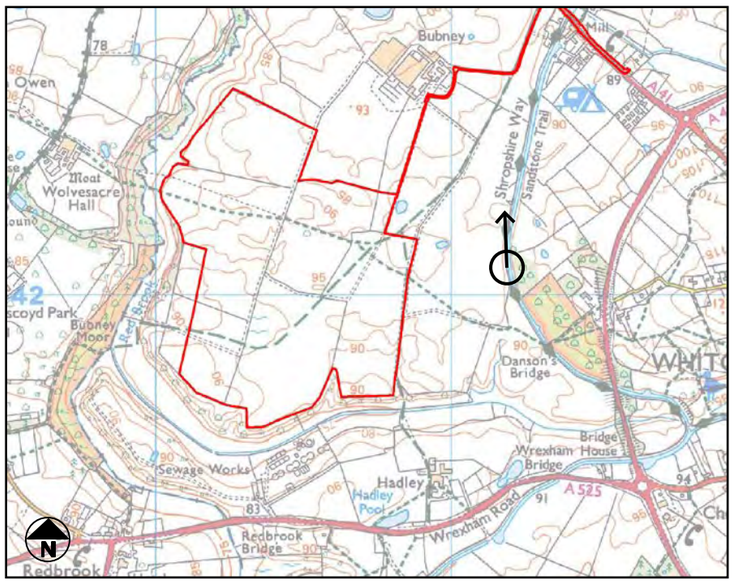
CONTEXT BASELINE VIEWPOINT 4

Llangollen Canal at hedgerow gap



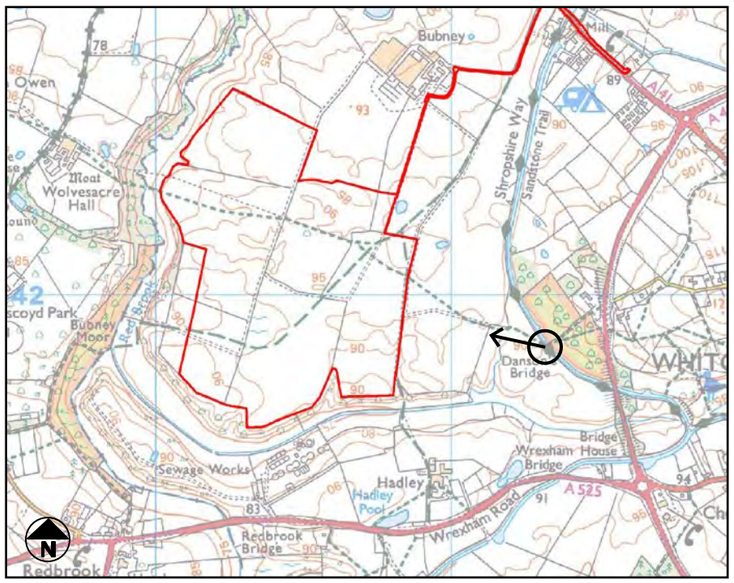
CONTEXT BASELINE VIEWPOINT 5

Llangollen Canal near Canal Cottages



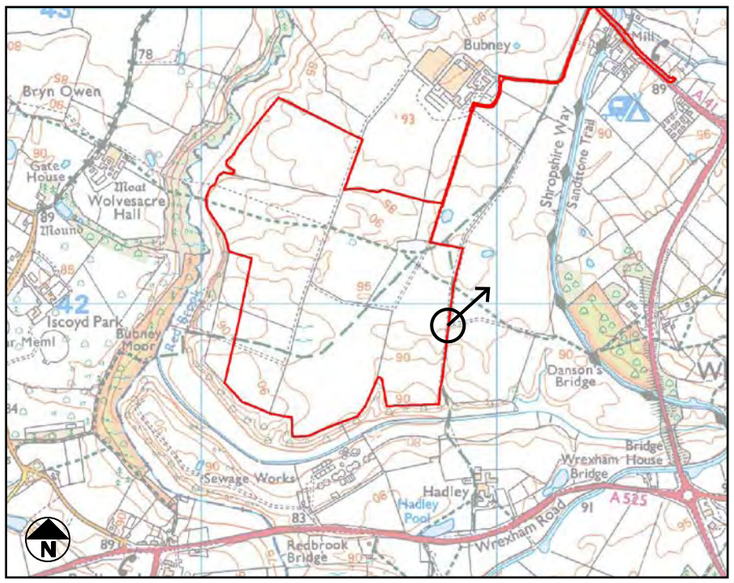
CONTEXT BASELINE VIEWPOINT 6

Public footpath 0234/81/1 on the Llangollen Canal at Danson's Bridge



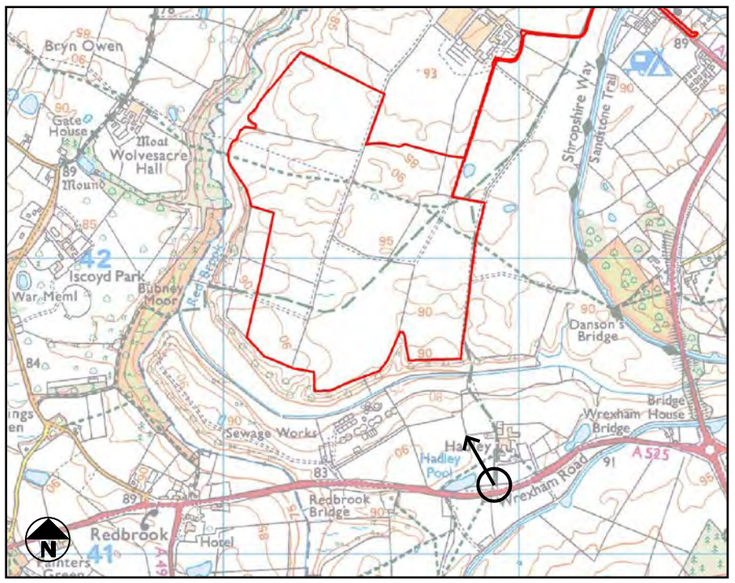
CONTEXT BASELINE VIEWPOINT 7

Bridleway 0234/92/1 within site



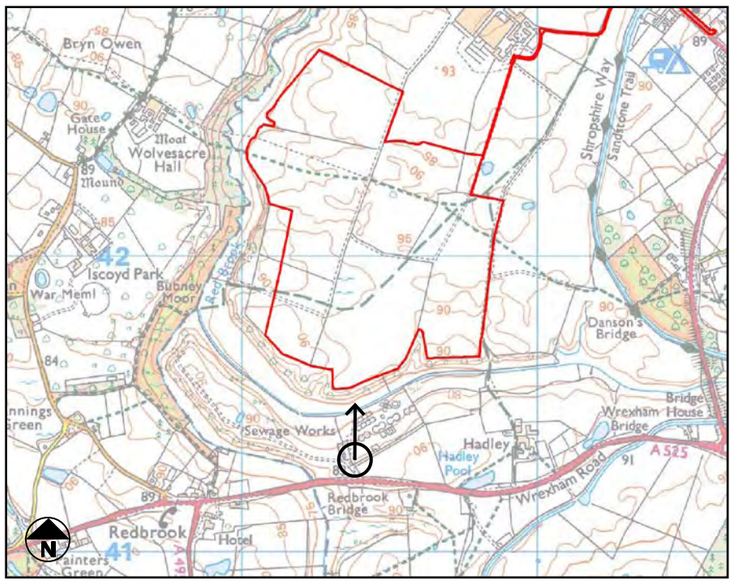
CONTEXT BASELINE VIEWPOINT 8

Access Road and bridleway 0234/94/1 to Hadley Farm



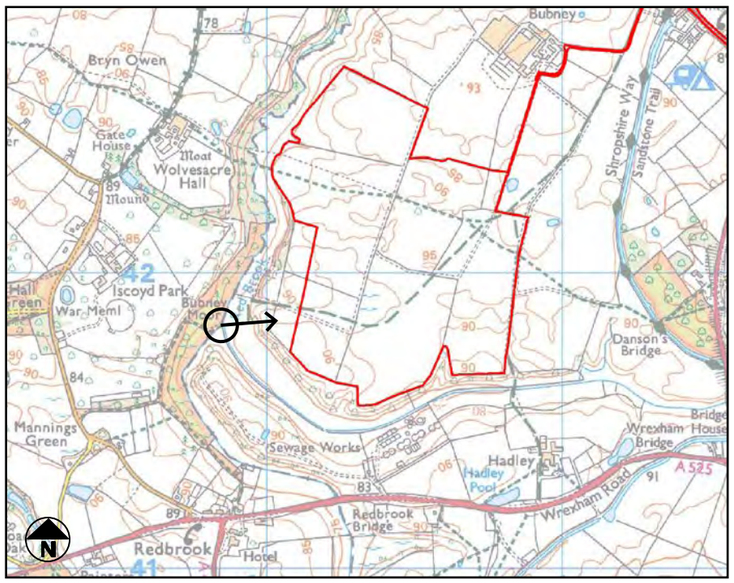
CONTEXT BASELINE VIEWPOINT 9

Access Road to Redbrook sewerage treatment works



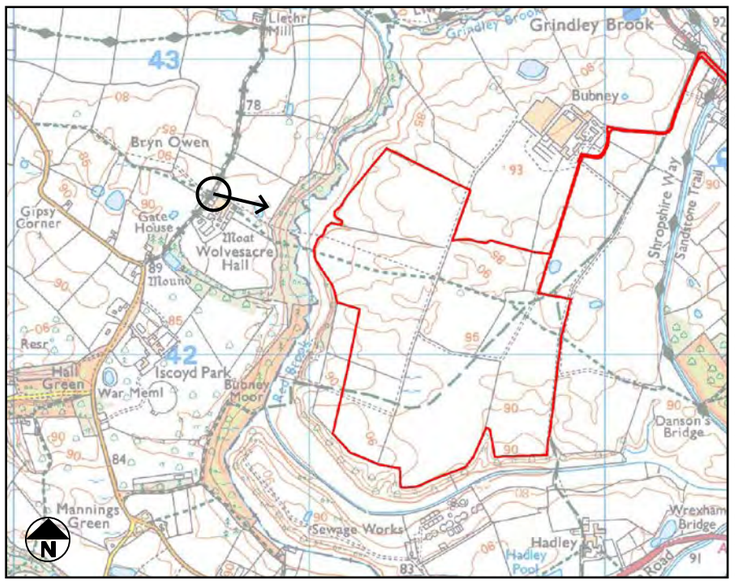
CONTEXT BASELINE VIEWPOINT 10

Bridleway 0234/90/1 on the woodland boundary near Iscoyd Park



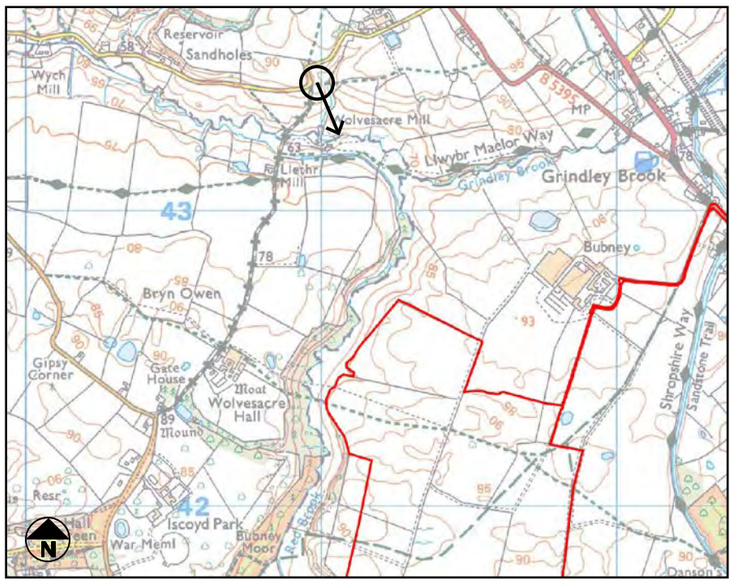
CONTEXT BASELINE VIEWPOINT 11

Byway 25 near Wolvesacre Barn



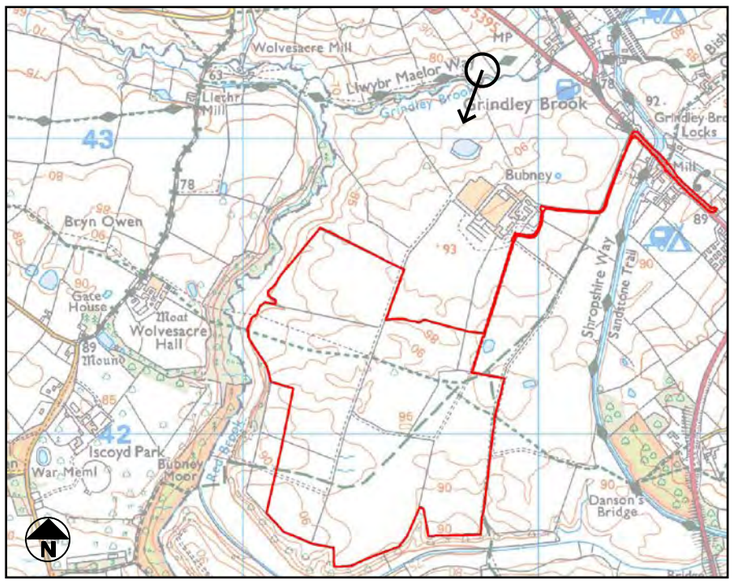
CONTEXT BASELINE VIEWPOINT 12

Public footpath 004/FP5/1 near Agden Dairy Farm



CONTEXT BASELINE VIEWPOINT 13

Llwybr Maelor Way near Grindley Brook



CONTEXT BASELINE VIEWPOINT 14

Public footpath 0234/106/1 near Belton Farm

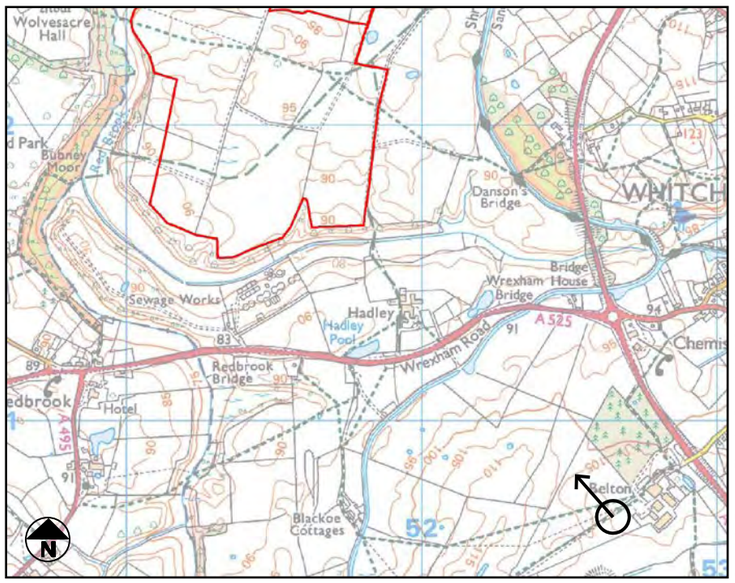
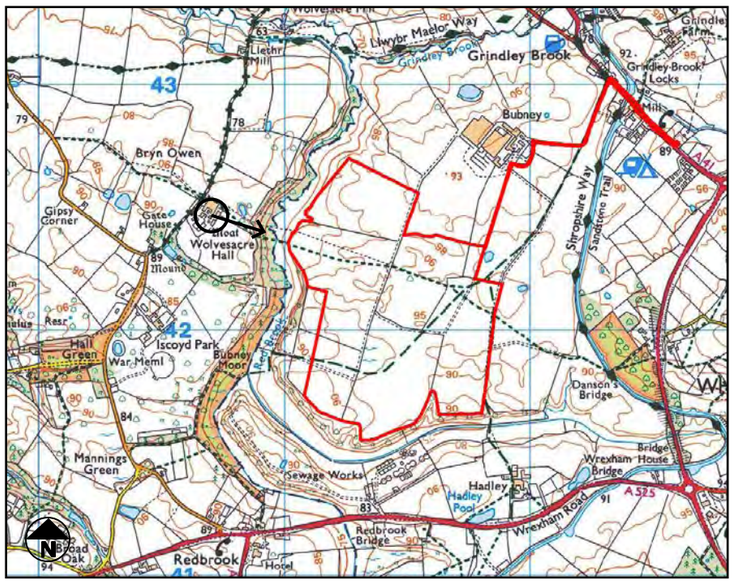


FIGURE 8: ISCOYD PARK VIEWPOINTS 1 – 12

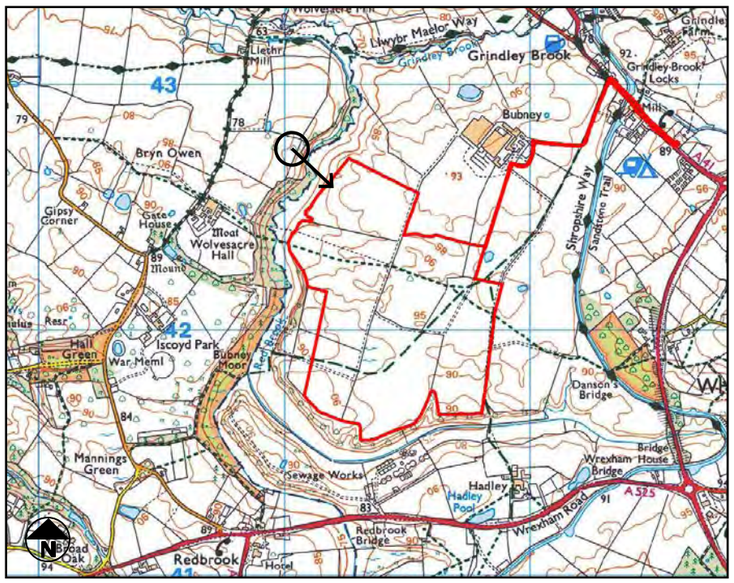
VIEWPOINT 1

Eastern frontage of Wolvesacre Hall (east direction)



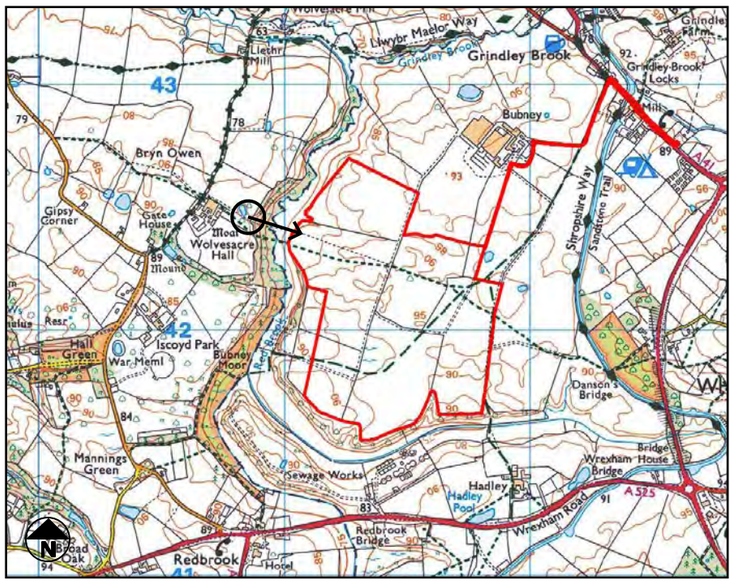
VIEWPOINT 2

Gap in woodland to north east of Wolvesacre Hall (south east direction)



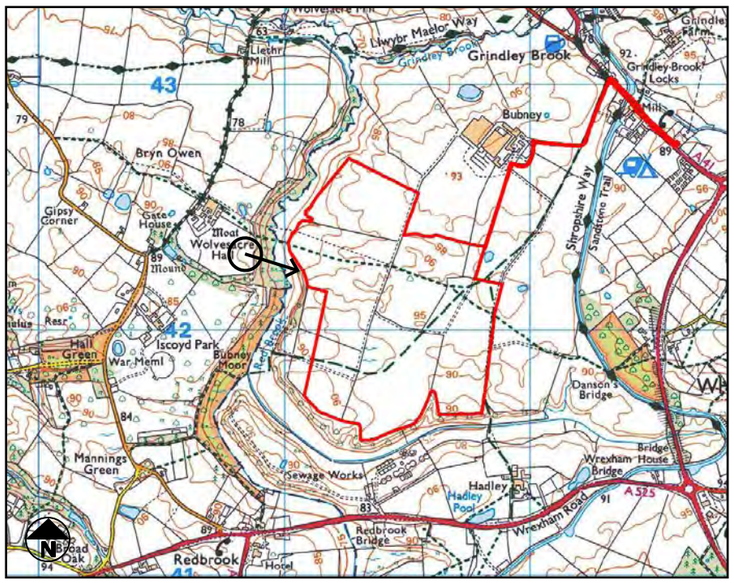
VIEWPOINT 3

Existing public footpath ISC12 (east direction)



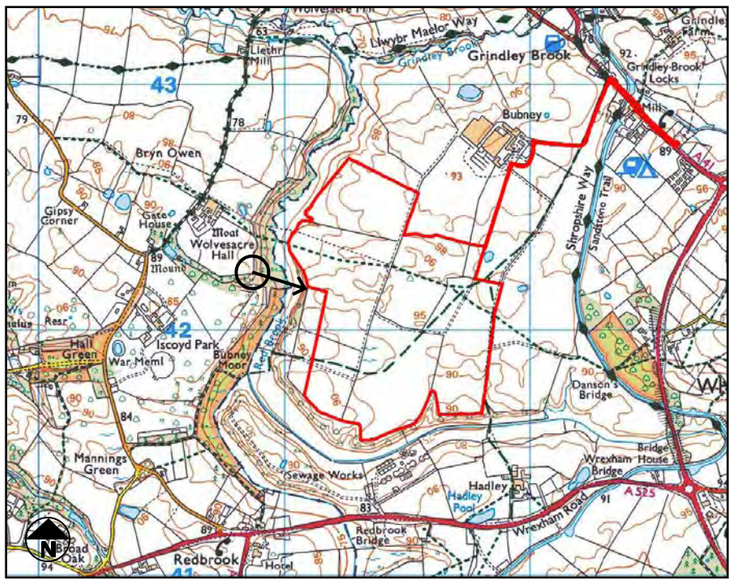
VIEWPOINT 4

Edge of woodland to south east of Wolvesacre Hall (east direction)



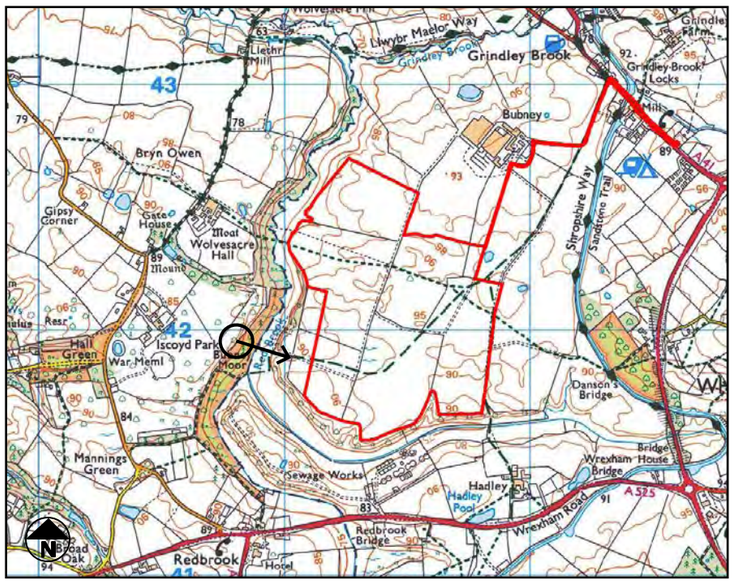
VIEWPOINT 5

Edge of woodland to south of existing public footpath ISC12 (east direction)



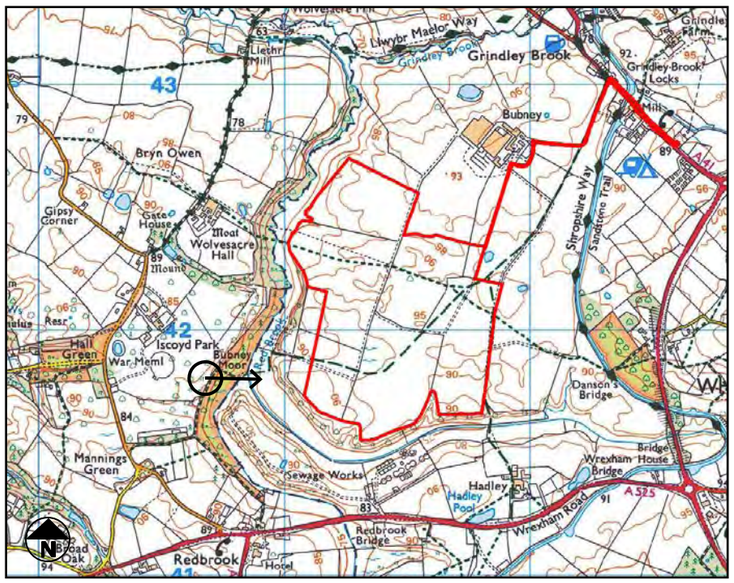
VIEWPOINT 6

Edge of woodland to east of Iscoyd Park (east direction)



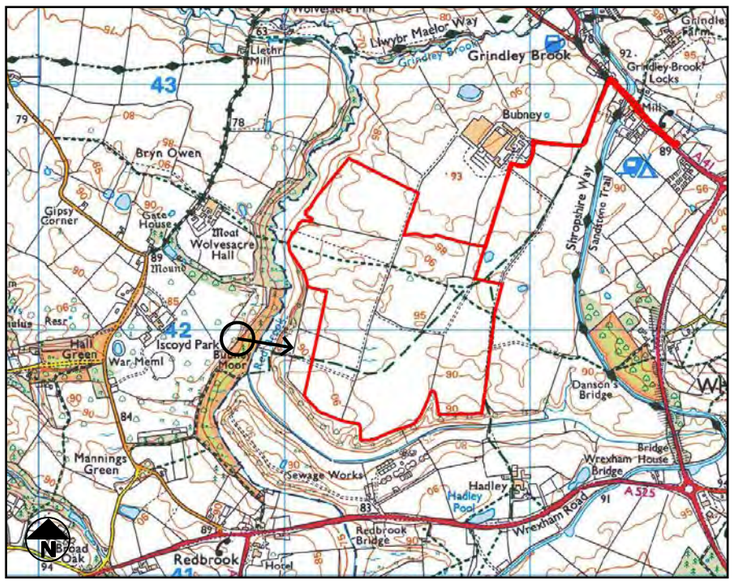
VIEWPOINT 7

Lower edge of woodland to south east of Iscoyd Park near bridleway ISC10 (east direction)



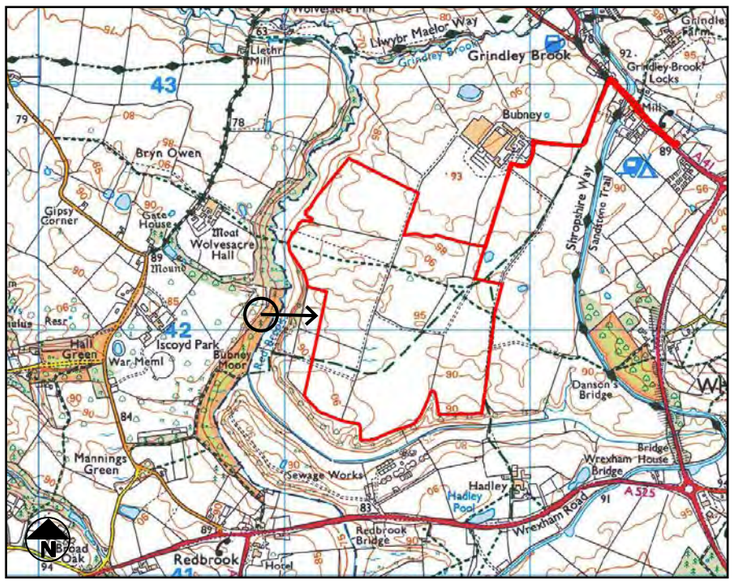
VIEWPOINT 8

Lower edge of woodland to east of Iscoyd Park (east direction)



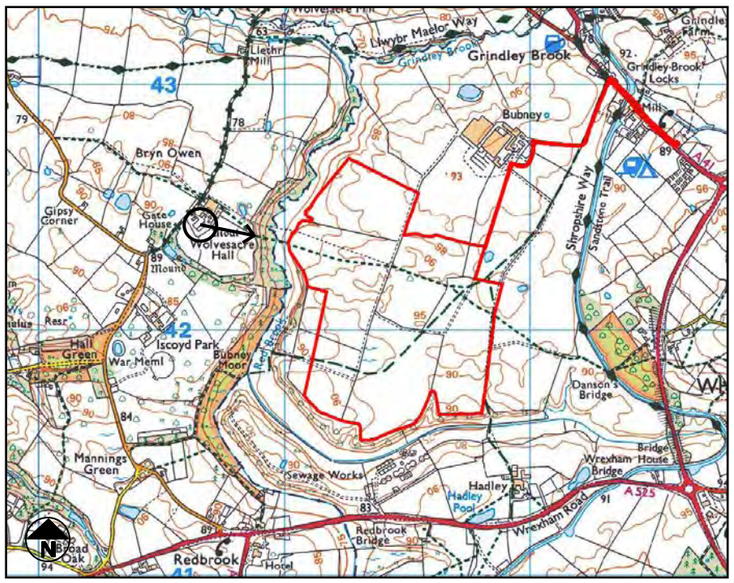
VIEWPOINT 9

Lower edge of woodland to east of Iscoyd Park (east direction)



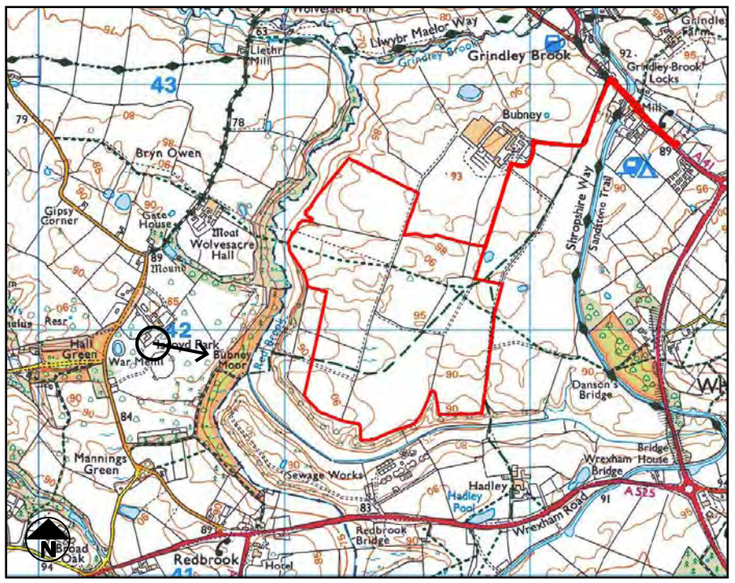
VIEWPOINT 10

Scheduled monument (moat) to south of Wolvesacre Hall (east direction)



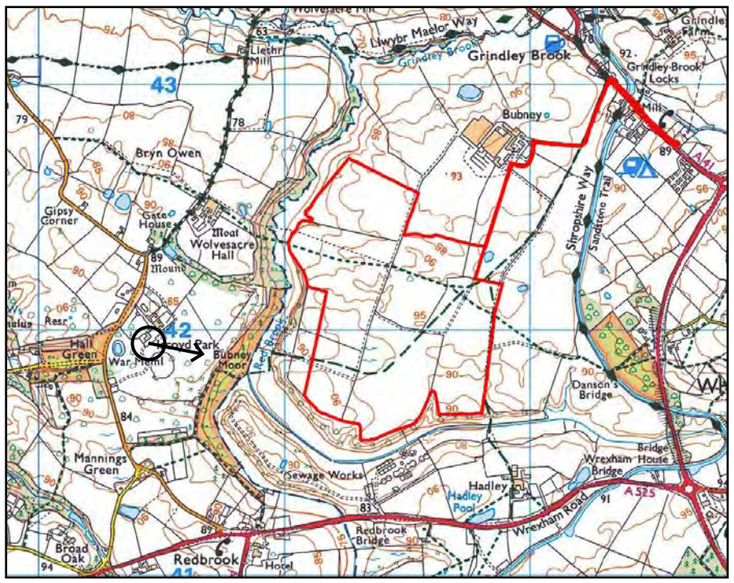
VIEWPOINT 11

Frontage of Iscoyd Park House (east direction)



VIEWPOINT 12

Upper floors of Iscoyd Park House (east direction)



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