

Landscape and Visual Impact Assessment

Proposed Solar PV Array at Williams Farm,
Wrexham

Prepared for: Solar Ventures Limited

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Abstract

The proposal

The proposal is for a 5.5MW solar farm at National Grid Reference SJ 38153 48382 on land close to Wrexham Industrial Estate.

The study area is taken as a 5km radius buffer from the site boundary.

Methodology

A full desk-survey was carried out to review policies and guidance available from Wrexham County Borough Council relating to proposed development of solar farms.

Designated landscapes were identified and recorded in order to establish the sensitivity of the site to change.

The Visual Impact Assessment was carried out in accordance with the guidance set out in the *Landscape Institute publication Guidelines for Landscape and Visual Impact Assessment (2013)* and includes the production of a Zone of Theoretical Visibility model.

A site visit was carried out in September 2014 to assess the likely impacts within the study area. The weather was fine with distant views, and the trees and hedgerows in full leaf. Visibility to and from the site was therefore assessed in mid-summer. Landscape and Visual Impact Assessment (LVIA) was used as a tool to identify the effects of change resulting from development and the significance of those effects. It distinguishes between:

- Effects on landscape as a resource in its own right; and
- Effects on specific views and general visual amenity experienced by people.

Landscape Character Assessment

The site lies within the LANDMAP area for Wrexham.

There are three landscape character areas (LCAs) within the study area and listed on Wrexham County Borough Council's Website portal.

13a Welsh Maelor

13c Dee Terraces

14 Dee Floodplain

The site lies wholly within the LCA 13a Welsh Maelor. The boundary with LCA 14 is at the edge of the site and so both LCAs have been included in the assessment. LCA13c is also in close proximity, but the descriptions and guidelines for this LCA, which inform judgements about the site and the proposal, are covered by the other two LCAs.

Welsh Maelor summary

- Undulating, mainly pastoral lowland farmland
- Well-managed hedges with hedgerow trees and small woodlands
- Historic designed estates influence a large proportion of this area
- Field ponds abundant on areas with clay soils
- Historic settlement pattern with remnants of medieval ridge and furrow
- Erddig estate important for tourism, recreation, nature conservation and heritage
- Patches of valuable semi-natural habitats, especially in Clywedog valley
- Affected by urban pressures and economic changes to farming

Key characteristics - Visual character:

- Good views to the hills and over the Dee Valley from higher ground
- Undulating estate farmland with mosaic of farmland and trees (N. and S. areas) and undulating open farmland in the central area
- Designed parks and gardens
- Generally an abundance of well managed hedgerows and hedgerow trees
- Traditional red brick farmsteadings but many barns now converted to residential uses
- Tranquillity and landscape quality affected by A483 and pylons to west

Landscape sensitivity:

The traditional Welsh Maelor landscape is very vulnerable to continuing development and recreational pressures, to economic changes which threaten traditional farming, and from land use practices and development which do not take historical landscape features into account.

Aims Guidelines

Conserve rural character

- Promote replacement planting of hedgerow trees, particularly oaks and ash to ensure perpetuation of characteristic landscape
- The area is particularly sensitive to the 'suburbanisation' of farmsteadings - resist
- The character of rural villages and their settings are particularly sensitive to new development
- Encourage Village Design statements by local residents
- Areas for Horticulture are to conserve traditional field boundaries and avoid the proliferation of fences, structures and buildings within the countryside, where this would erode character

Conserve and manage ponds and other aquatic and wetland habitats

- Maintain integrity of landforms, including glacial and fluvial landforms, and assess new exposures
- Maintain high pond density, restore and enhance ponds. Protect species associated with ponds, eg. bats, newts, water vole, lesser silver diving beetle
- Enhance river bank habitats and minimise hard bank engineering; such as canalisation and retaining walls; protect otters and water voles
- Refer to River and Pond Habitat Action Plans and Otter Species Action Plan of Wrexham Biodiversity Action Plan
- Restrict drainage in wetland sites

Manage farmland for nature conservation

- Diversify general agricultural land and enhance and extend hedgerows
- Develop green networks to link fragmented habitats and species
- Maintain arable headlands and wide field margins
- Enhance and extend orchards and preserve historic fruit varieties

Conserve and manage woodlands

1.0 Maintain, expand and link fragmented native woodlands

2.0 Replace coniferous trees with native broadleaved trees in woodlands and increase diversity in woodland structure and retain old/dead standing or fallen trees

3.0 Restrict grazing in woodlands

Manage grassland to increase biodiversity

- Protect and manage lowland meadows and enhance lowland pastures
- Encourage cattle grazing in rush pastures

Response to Assessment of the Landscape Character Baseline

The site is low-lying and close to the floodplain of the River Clywedog. It contains a number of species rich hedgerows and mature trees which are characteristic of the local landscape character. Views to and from the site are limited by mature woodland and successional woodland and by the industrial buildings which border the site.

This is described as a sensitive landscape – very vulnerable to continuing development. Development pressures focus on new residential developments and the solar farm can be considered to sit outside of the pressures of building on this and similar sites although mention is made to conserve the rural character of the area by “conserve traditional field boundaries and avoid the proliferation of fences, structures and buildings within the countryside, where this would erode character”.

Recommendations for conserving and enhancing the landscape character include:

- Enhancing and extending hedgerows
- Developing networks to link fragmented woodlands, habitats and species
- Retention of old/dead standing or fallen trees
- Managing lowland meadows and enhancing lowland pastures

These will be important considerations in producing detailed design proposals for the development boundaries and mitigation proposals. This creates opportunities to enhance the landscape through the development process.

Landscape designations

There are no **SSSI** sites listed on the Council’s website which will be affected by the development. The nearest SSSI is the Afon Dyfrdwy (River Dee) site to the east from which there is no visual connection.

Sensitivity of the landscape to accommodate change

The site is considered to have **lower-medium sensitivity** to scenic qualities from footpaths in close proximity.

The sensitivity of the landscape to accommodate change is summarised, by category, below:

<i>Landscape character attribute</i>	<i>Sensitivity to changes to the landscape</i>
Landform	Lower sensitivity
Sense of openness/enclosure	Lower sensitivity
Field pattern and scale	Medium-Higher sensitivity
Land cover	Medium sensitivity
Perceptual qualities	Medium to lower sensitivity
Historic landscape character	Low sensitivity
Scenic and special landscape qualities	Lower-Medium sensitivity

Significance of Effects on landscape character

The significance of effects upon landscape character are assessed as **moderate** – “These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall adverse effect on a particular resource or receptor”.

This does not mean that the site is considered to be less significant in terms of its contribution to landscape character. It is an attractive and unspoiled area which derives much of its continued character from the fact that it is hidden and un-used by the general public. Developing a solar farm on this site will clearly change its character. However the physical damage to the site is considered to be very minor and the temporary nature of the development (as opposed to say housing) means that changes are comparatively short-lived. Indeed, the opportunity to protect the site from future more damaging development, and to enhance landscape character through additional planning and management practice, could be considered beneficial in the longer term.

The overall assessment is that the development will have a **moderately adverse** effect upon landscape character during the operational phase of the solar farm.

Assessment of Visual Sensitivity and Magnitude

When assessed against other proposed solar farm developments nationally, this site has very limited visibility from the surrounding area. This is unusual for a site of this size.

The proposal lies to the south of Wrexham Industrial Estate and is separated from it by the River Clweddog (a tributary of the River Dee), but existing development exists south and immediately adjacent to the site and there is also new factory development to the west with a road infrastructure in place suggesting that further growth is expected here. The site therefore is well-connected to the local existing and future industrial development.

Most buildings visible from within the site comprise factory roofscapes and chimneys. The Flo-Gas depot at Parkey Farm, off the B5130, contains an office building closed to the south site boundary has views into the south-west corner of the site concentrated on a section where no panels are proposed. Panels beyond and to the south side of this section would be clearly visible however, as this part of the boundary is fenced, but un-vegetated.

There are a very limited number of residential properties with views of the site (in summer and autumn – leaves on the trees). Views from the site located a cluster of private properties within the ZTV on a ridgeline between the Kings Mill and Hightown areas of SE Wrexham. It was not possible to access these properties, but a few gable ends with upper storey windows facing the site were visible from the site itself.

Similarly, there is no public access to, and therefore not possible to take images from, a few individual properties (eg. Cefn Park, Lywyn Knottia) lying on higher ground (east facing slope) to the north-west of the proposal between Marchwell to the west and the A5156 bypass to the north. These properties lie in very well vegetated parkland and farmland, but it is possible that glimpses of the site can be had from here, especially in winter. Similarly, there were no views (in September) from the public footpaths which run E-W through both of these properties. Where there are breaks in the vegetation views are obscured by the factories at Pentre Maelor. There were no views from the opposite (west) side of the road from which these properties are accessed.

The rest of the ZTV does not take into consideration the very built up landscape (comprising mainly very large scale factory buildings) to the NW, N and NE. Further East and South the site is obscured by topography and vegetation.

Although they also fall within the ZTV, there are no views from areas East of the River Dee (Afon Dyfrdwy), such as Shocklach Green, Worthenbury, and the area just South of Bangor on Dee / Bangor-is-y-Coed.

Magnitude and significance from visual receptors

Visibility to and from visual receptors is extremely limited. The visibility receptors are described in the section above.

The overall assessment of the representative viewpoints described in Section 5.8 and in the accompanying illustrated report is that **the proposal will have a slightly adverse effect upon views from a very limited number of viewpoints in the surrounding area.**

The assessments of the magnitude of the effect vary from High to Low (and include one assessment of Negligible) with the greatest adverse effects being experienced from the public footpath running along the eastern boundary of the site. The number of people affected is also very small. These are identified in the tabulated descriptions which accompany each representative view and in Section 5.8.

Design alterations and suggested mitigation measures will, over time, reduce the significance of these adverse effects to **slight**.

Landscape mitigation proposals

Alterations to layout - generally

The principal benefit will come from additional planting to screen the adverse visual effects experienced from Viewpoints 1, 3 and 4 – i.e. those which look into the site from the public footpath running to the east and north-east. This footpath appears to be rarely used, but the visual amenity, experienced by footpath users, will be noticeably changed.

Landscape mitigation proposals

The principal behind site mitigation is to minimise any adverse impacts arising from this assessment.

The key conclusions arising from this assessment which would inform mitigation proposals are:

- Little or no loss to existing vegetation.
- Screening or partial screening of specific views which will be adversely affected by the proposal – in particular by planting along the eastern hedgerow to fill gaps, and selective planting at the north-east corner of the site to screen views from the public footpath. This should be carried out with reference to Wrexham County Borough Council's guidelines.

- Speed of impact of the visual screening without compromising local habitats and local species compositions.
- Planting layout and species mixes which build upon the local landscape character descriptions and which are informed by the Phase 1 habitat survey.
- Hedgerow species could be supplemented with fast growing nurse species characteristic of the area especially *Crataegus monogyna*, *Acer campestre*, *Prunus spinosa*, *Corylus avellana*. Field trees which would be planted and allowed to reach maturity would favour Ash (*Fraxinus excelsior*) and Pedunculate Oak (*Quercus robur*).
- Protection of, and integration with, the existing hedgerows and individual mature trees and areas of woodland to contribute to the enhancement of the local landscape character and to provide opportunities for recreational activities.
- Planting larger nursery stock individual trees to provide filtered views to the development and to supplement the screening effects of the field boundary hedgerows. This builds upon the visual character of the area where occasional larger boundary trees have been allowed to grow to maturity.
- Overall arrangement of planting and hedgerows which add to the pattern of vegetation when viewed from low level views and higher elevations.

1.0 Introduction

1.1 Background

Richard Sneesby Landscape Architects were commissioned by The Magnificent Science Company to carry out a Landscape and Visual Impact Assessment (LVIA) for the development of a proposed Solar PV Array on land at Williams Farm, Wrexham.

The LVIA was jointly produced by Richard Sneesby CMLI and The Magnificent Science Company Limited. The Zone of Theoretical Model (ZTV) was produced by The Magnificent Science Company Limited.

1.2 The Site and Proposal

The site is approximately 10ha in area and comprises three grassland fields containing several mature Pedunculate Oak (*Quercus Robur*) trees, which are scattered throughout the site. The eastern half of the site contains several small derelict brick buildings. The proposal is for a 5.5MW Solar PV Array centred on national grid reference SJ 38153 48382. The planned layout is shown in Appendix 4.

1.3 The Study Area

The study area is taken as a 5km radius buffer from the site boundary.

2.0 Methodology

2.1 Introduction

This section briefly describes the methodology and sequence of stages in the assessment process. Details of judgement criteria are included in Appendix 1.

2.2 Best practice guidance

A full desk-survey was carried out to review policies and guidance available from Wrexham County Borough Council relating to proposed development of solar farms.

Designated landscapes were identified and recorded in order to establish the sensitivity of the site to change.

The Visual Impact Assessment was carried out in accordance with the guidance set out in the Landscape Institute publication Guidelines for Landscape and Visual Impact Assessment (2013) and includes the production of a Zone of Theoretical Visibility model.

A site visit was carried out in July 2014 to assess the likely impacts within the study area.

2.3 Landscape and Visual Impact Assessment

Landscape and Visual Impact Assessment (LVIA) is a well-established tool to identify the effects of change resulting from development and the significance of those effects. It distinguishes between:

- Effects on landscape as a resource in its own right; and
- Effects on specific views and general visual amenity experienced by people.

The LVIA should be proportional to the scale and nature of the development proposal. For this proposal the scale and nature of the solar farm is described in the scoping process which describes what has been assessed and details those aspects which are considered most relevant to the proposal.

2.3.1 Landscape effects

The European Landscape Convention 2000 defines landscape as:

"An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors".

This covers not only landscapes that are recognised as being special or valuable, but also landscapes which can be considered ordinary or every day. These are landscapes where people live, work and spend leisure time – a setting for their day-to-day lives, and for aesthetic enjoyment. Furthermore, landscapes are considered as environment – for biodiversity, flora and fauna.

LVIA requires that the landscape is assessed by recording and recognising:

- Protected landscapes;
- the contribution the landscape character has on sense of place and quality of life; and
- the way change may affect:

Individual components of the landscape

Aesthetic and perceptual qualities

The character of the landscape in different areas

2.3.2 Visual effects

Assessment of the visual effects of the proposed development focuses on the following principles:

- How the surroundings of individuals/groups of people may be affected by changes to the landscape
- How people will be affected by changes in views and/or visual amenity at different places

In order to identify impacts various visual effects are assessed:

- The areas from which the development may be visible
- Different groups who may experience views of the development
- The places where they will be affected
- The nature of the views and visual amenity at those points
- Changes in specific views.

2.4 Assessment of significance

The significance of the proposal is **assessed** against two key criteria:

1. **The significance of the receptor.** This involves making judgements about the **susceptibility of the receptor** to the type of change arising from the proposal; and **the value attached to the receptor**.
2. **The magnitude of change.** Judgements are based upon the **size and scale of the effect** (for example, is there a complete loss of a particular element or a minor change); **the geographical extent** of the areas that will be affected; and **the duration of the effect and its reversibility**.

These assessment lead to judgements on the individual criteria and how these, **in combination**, provide a means of describing the **significance of the proposal**. This involves combining judgements of both the significance of the receptor and magnitude of change in order to demonstrate:

How the value of the receptor and its susceptibility of change contribute to its **sensitivity to the effects**;

How judgements about the scale of the proposal, its geographical extent and duration of the effect contribute to judgements about the **magnitude of the effects**; and

How the resulting judgements about sensitivity and magnitude are combined to inform judgements about the **overall significance of the effects**.

The assessments describe effects which can be **significant** and **non-significant**.

2.5 Methodologies used in the assessment process

2.5.1 Desk Study

- Receiving information from the developer and other consultants
- Identifying the site location and its surroundings using Ordnance Survey maps, aerial photographs and development site plans
- Familiarisation with the details of the proposals.
- Use of Wrexham Borough County Council's planning portal to acquire information on landscape designations, Rights of Way landscape character assessments, areas for Conservation Action, local Geological sites and any other information from Wrexham County Borough Council which may be relevant.
- The production of a Zone of Theoretical Visibility (ZTV) map which illustrates the potential visibility of the proposal within the 5Km study area. .
- A check, using Wrexham County Borough Council's planning portal for current or recent planning applications which may have an impact upon cumulative effects.

2.5.2 Field Survey

- Visits to the site to confirm, or otherwise, the understanding of the site and proposals gained through the desk study.
- Production of a photographic record of site features, landscape elements and details not revealed by maps or aerial photographs.
- Checks, within the areas identified by the ZTV, to confirm visibility, key viewpoints and visual receptors.
- Professional judgements which could be made about possible alterations to the design of the proposal and/or mitigation measures to address any possible negative judgements about the significance of the proposal.

2.5.3 Assessment

- Assessment of the significance of landscape and visual receptors, the susceptibility of the receptor to the type of change arising from the proposal; and the value attached to the receptors.
- Assessment of the magnitude of change based upon the size and scale of the effect; the geographical extent of the areas that will be affected; and the duration of the effect and its reversibility

- Assessment of the sensitivity to the effects and the magnitude of the effects
- Assessment of the overall significance of the effects
- Summary statements describing both significant and non-significant effects
- Assessment, where appropriate, of cumulative effects based upon available information.

2.5.4 Influences on design

- Assessment of changes to the proposal to minimise negative impacts and recommendations for mitigation measures.

2.5.5 Presentation of findings

- Production of this written report, supporting plans, maps, photographs and mitigation measures.

3.0 Baseline Conditions

Baseline conditions are described for both landscape and visual receptors within the 5Km study area. The landscape character baseline is set by the areas which directly effect, and are affected by, the development proposal. In the main this means the landscape within which the proposal will have visual and perceptual influence. For the visual baseline the study has focused upon those areas which have been revealed as having potential impacts through the Zone of Theoretical Visibility (ZTV) model illustrated in Appendix 4.

3.1 Landscape Character Baseline

3.1.1 Wrexham's Landscape Typology

The site lies within the LANDMAP area for Wrexham.

There are three landscape character areas (LCAs) within the study area and listed on Wrexham County Borough Council's Website portal.

13a Welsh Maelor

13c Dee Terraces

14 Dee Floodplain

The site lies wholly within the LCA 13a Welsh Maelor. The boundary with LCA 14 is at the edge of the site and so both LCAs have been included in the assessment. LCA13c is also in close proximity, but the descriptions and

guidelines for this LCA, which inform judgements about the site and the proposal, are covered by the other two LCAs.

3.1.2 LCA13a Welsh Maelor

Landscape context

This lowland rural area is similar to the English Maelor and Dee Terraces, and to the Cheshire and North Shropshire Plain beyond the Wrexham boundary. However it is geographically and historically separated from the English Maelor by the River Dee, and former administrative boundaries, and is currently more affected by proximity to urban areas

Welsh Maelor summary

- Undulating, mainly pastoral lowland farmland
- Well-managed hedges with hedgerow trees and small woodlands
- Historic designed estates influence a large proportion of this area
- Field ponds abundant on areas with clay soils
- Historic settlement pattern with remnants of medieval ridge and furrow
- Erddig estate important for tourism, recreation, nature conservation and heritage
- Patches of valuable semi-natural habitats, especially in Clywedog valley
- Affected by urban pressures and economic changes to farming

Key characteristics - Visual character:

- Good views to the hills and over the Dee Valley from higher ground
- Undulating estate farmland with mosaic of farmland and trees (N. and S. areas) and undulating open farmland in the central area
- Designed parks and gardens
- Generally an abundance of well managed hedgerows and hedgerow trees
- Traditional red brick farmsteadings but many barns now converted to residential uses
- Tranquillity and landscape quality affected by A483 and pylons to west

Landscape sensitivity:

The traditional Welsh Maelor landscape is very vulnerable to continuing development and recreational pressures, to economic changes which threaten

traditional farming, and from land use practices and development which do not take historical landscape features into account.

Aims Guidelines

Conserve rural character

- Promote replacement planting of hedgerow trees, particularly oaks and ash to ensure perpetuation of characteristic landscape
- The area is particularly sensitive to the 'suburbanisation' of farm steadings - resist
- The character of rural villages and their settings are particularly sensitive to new development
- Encourage Village Design statements by local residents
- Areas for Horticulture are to conserve traditional field boundaries and avoid the proliferation of fences, structures and buildings within the countryside, where this would erode character

Conserve and manage ponds and other aquatic and wetland habitats

- Maintain integrity of landforms, including glacial and fluvial landforms, and assess new exposures
- Maintain high pond density, restore and enhance ponds. Protect species associated with ponds, eg bats, newts, water vole, lesser silver diving beetle
- Enhance river bank habitats and minimise hard bank engineering; such as canalisation and retaining walls; protect otters and water voles
- Refer to River and Pond Habitat Action Plans and Otter Species Action Plan of Wrexham Biodiversity Action Plan
- Restrict drainage in wetland sites

Manage farmland for nature conservation

- Diversify general agricultural land and enhance and extend hedgerows
- Develop green networks to link fragmented habitats and species
- Maintain arable headlands and wide field margins
- Enhance and extend orchards and preserve historic fruit varieties

Conserve and manage woodlands

- Maintain, expand and link fragmented native woodlands

- Replace coniferous trees with native broadleaved trees in woodlands and increase diversity in woodland structure and retain old/dead standing or fallen trees
- Restrict grazing in woodlands

Manage grassland to increase biodiversity

- Protect and manage lowland meadows and enhance lowland pastures
- Encourage cattle grazing in rush pastures

3.1.3 LCA 14 – Dee Floodplain

River Dee Floodplain summary

- Open flat farmland with pasture and arable use
- Little or no settlement other than at Bangor on Dee
- Extensive seasonal flooding
- The River Dee and its tributaries are of national importance for both geology and biodiversity
- The river meanders widely, forming a shifting boundary between Cheshire and Wrexham

Key characteristics - Visual character:

- Open, flat lowland with lines of trees
- Fields are mostly large and semi-regular, enclosed by fences, thorn hedges, occasional lines of trees and often ditches
- Great contrast between normal conditions and times of seasonal flood, when natural forces predominate
- Flooded landscape is visually exciting, with trees and sky reflected in flooded fields - may be perceived as beautiful, or alternatively as threatening
- Some spectacular views of floods, although viewpoints are limited
- Holt and Bangor-on-Dee are rural villages partly surrounded by floodplain

Landscape sensitivity:

The Dee Floodplain landscape is vulnerable to economic changes which threaten traditional farming, and to climatic change which could affect the

frequency and extent of flooding and necessitate further visually intrusive flood prevention measures

Aims Guidelines

Conserve distinctive visual qualities

- Enhance naturalness of floodplain and provide and enhance viewpoints
- Restrict structures and buildings which visually effect the openness and simple character of the floodplain

Increase nature conservation value of floodplain farmland

- Protect and extend lowland meadows - reinstate hay meadow management, reduce grazing intensity
- Diversify general agricultural land and enhance and extend hedgerows
- Increase diversity in woodland structure, extend woodland corridors, and retain old/dead trees standing or fallen
- Keep arable headlands and wide field margins

3.1.4 Response to Assessment of the Landscape Character Baseline

The site is low-lying and close to the floodplain of the River Clywedog. It contains a number of species rich hedgerows and mature trees which are characteristic of the local landscape character. Views to and from the site are limited by mature woodland and successional woodland and by the industrial buildings which border the site.

This is described as a sensitive landscape – very vulnerable to continuing development. Development pressures focus on new residential developments and the solar farm can be considered to sit outside of the pressures of building on this and similar sites although mention is made to conserve the rural character of the area by “conserve traditional field boundaries and avoid the proliferation of fences, structures and buildings within the countryside, where this would erode character”.

Recommendations for conserving and enhancing the landscape character include:

- Enhancing and extending hedgerows
- Developing networks to link fragmented woodlands, habitats and species
- Retention of old/dead standing or fallen trees

- Managing lowland meadows and enhancing lowland pastures

These will be important considerations in producing detailed design proposals for the development boundaries and mitigation proposals. This creates opportunities to enhance the landscape through the development process.

3.2 Landscape Designations

There are no **SSSI** sites listed on the Council's website which will be affected by the development. The nearest SSSI is the Afon Dyfrdwy (River Dee) site to the east from which there is no visual connection.

Other designations are shown on the Constraints Map which also illustrates that the proposal will not affect these designated landscapes.

3.3 Visual Baseline

In order to identify and assess the visual impact of the proposal on the surrounding area the proposal has been modelled using ZTV software which was then assessed, on site, through site visits and through the collection of photographic data which illustrates the key visual receptors which are affected by the proposal.

3.3.1 Zones of Theoretical Visibility (Appendix 4)

A ZTV study was prepared for the proposed development. This was carried out using a topographic model. The model does not include any buildings or vegetation such as trees, hedgerows and woodland. These, in reality, provide a considerable amount of screening and their effect in blocking and filtering views has been included by testing and interrogating the ZTV model on site.

Furthermore the ZTV model does not include any planting proposed as part of site mitigation and so can be considered as a worst-case scenario.

The potential visibility of the proposed solar farm is shown in orange on the map. This shows theoretical visibility from nearly 100% of the study area.

In reality the visibility is localised and restricted to key viewpoints identified in Section 5.8

Where visibility occurs outside this general description, selected views are illustrated in the accompanying Representative Viewpoints document.

3.3.2 Cumulative impact with other solar farms in the area

An assessment of the number and locations of existing solar farms in the area reveals that there are no such developments (other than very small residential or small holding infrastructure) with visual connection to the site or from

surrounding viewpoints. This proposal will add a new form of development (solar farm) to this part of the landscape.

3.4 Visual Receptors

The following visual receptors were assessed:

- Settlements
- Residential properties
- Public Rights of Way and transport links

3.4.1 Settlements

The following list is based upon The ZTV analysis and site observations within the wider 5km study area.

The settlement pattern within the study area is scattered. The study area includes the closest village of

Only those settlements which have a visual or perceived connection to the site are included. The main settlements, marked on the OS 1:25,000 map are:

Wrexham – Major settlement – outskirts start 2.5Km to the north-west.

Marchwell – Village 1.5Km to the west/south-west

Bangor-is-y-coed – Village 2.5Km to the south-east

3.4.2 Residential Properties

In accordance with the GLVIA guidelines residential receptors have not been assessed on an individual basis. The viewpoints have been selected to illustrate visibility from representative viewpoints and, where possible, these have been taken as close to those residential receptors which are likely to be most affected as possible.

The study area is not densely populated, and the proposed solar farm will be visible from few residential dwellings. The Field study did not reveal visibility from any of the settlements listed in 3.4.1 other than from individual properties represented below. It is possible that additional residential properties may have visibility of the proposed development, especially in winter.

Houses in close proximity to the development

This is not an exhaustive list and includes only those dwellings which were recorded as having direct visual connection to the site during mid-summer. Names are taken from the OS 1:10,000 map and recorded on site. There may

be other dwellings, not individually identified, which will be affected by the proposal.

Parkey House – no direct views of the proposal

Parkey Farm – no direct views of the proposal

3.4.3 Public Rights of Way and transport links

The ZTV indicates potential key views and viewpoints from Public Rights of Way and transport links which are listed below:

Footpaths

Public footpath between B5130 at Talwrn and Wrexham Industrial Estate. This footpath runs north-south to the east of the site and along the eastern boundary for a short stretch. The footpath crosses the River Clywedog close to the north east corner of the site. It appears to be an unpopular route and one that is rarely used. To the north-east of the site it becomes impassable.

Network of public footpaths to the south-east and east of Wrexham connecting residential areas to Wrexham Industrial Estate.

Footpaths in and around Llan-y-pwll due north from the site.

Roads

The major roads within the ZTV area are:

A525 - stretch between Wrexham and Bangor-is-y-coed

B5130 – short stretch between Cross Lanes and Bowling Bank.

Minor roads in and around the Wrexham Industrial Estate and Pentire Maelor

4.0 The Proposal

4.1 The proposal

The proposal is for a 5.5MW solar farm at National Grid Reference SJ 38153 48382 on land close to Wrexham Industrial Estate.

4.2 The proposal during operation

It is anticipated that the solar farm will be in operation for a minimum of 25-30 years. Predictions show that after 25 years the PV panels will still be operating at 80% efficiency and it is likely that the solar farm will continue to operate until the end of its viable economic life. When the site ceases to become

operational, all elements can be removed and the land reinstated to its former condition.

The long-term impact following decommissioning will be **negligible**. Removal of the solar farm and its foundation/infrastructure can be easily reinstated as farmland.

4.3 Glare

The PV panels are designed to absorb rather than reflect light. Reflection is likely to be around 2% - significantly less than other building materials. Glare is therefore not considered to be an issue in terms of landscape and visual effects.

4.4 During construction

The proposal does not require any loss of any landscape elements.

Construction of the solar farm will involve preparing the site, fencing, assembly and erection of the photovoltaic arrays, installation of the inverters/transformers and the grid connection.

Solar farms can be considered as a relatively 'clean build' with the majority of components arriving pre-fabricated ready for speedy erection on site. The impact of construction and deliveries to the local road network will be short-lived, but may require careful management.

5.0 Assessment of Effects and Significance

5.1 Landscape effects - Generally

5.1.1 Assessment of sensitivity of the landscape to change

The criteria used for assessing site sensitivity to both landscape and visual receptors are summarised in the table in Appendix 1.

The sensitivity of the site to accommodate changes to the **landscape** is assessed in the range:

Very High – High – Medium – Low - Negligible

5.1.2 Assessment of the magnitude of effect upon the landscape

The criteria used for assessing the magnitude of impact is summarised in the table in Appendix 1.

The magnitude of change to the **landscape** is assessed in the range:

Major – Moderate – Minor – Negligible – No Change

5.1.3 Assessment of sensitivity and magnitude combined – Significance of effect

In order to report on the overall significance of the proposal on both landscape and visual receptors the sensitivity of the site and the magnitude of change are assessed in combination. The outcomes are reported using descriptive terms rather than numerical scores and the terms used are summarised in Appendix 1.

The significance of the effect of the proposal upon the landscape is assessed in the range:

Very Large – Large – Moderate – Slight – Neutral

5.1.4 Valency

The outcome can be both positive – i.e. the proposal makes a **beneficial** change to the landscape; and negative – the proposal will result in an **adverse** change to landscape character and visual character. Effects are defined as adverse, neutral or beneficial. Descriptions of these are shown in the table in Appendix 1.

5.2 Sensitivity of the site to accommodate changes to the landscape

5.2.1 Landscape sensitivity - generally

Value/Sensitivity	
<i>Value (Sensitivity)</i>	<i>Typical Descriptors</i>
Very High	Very high importance and rarity, international scale and limited potential for substitution
High	High importance and rarity, national scale and limited potential for substitution
Medium	High or medium importance and rarity, regional scale, limited potential for substitution
Low (or Lower)	Low or medium importance and rarity, local scale
Negligible	Very low importance and rarity, local scale

The site is considered to have **medium value** – i.e: “high or medium importance and rarity, regional scale, with limited potential for substitution”. It will be critical to ensure that the existing hedgerows and important individual trees which make a critical contribution to the landscape and the character of the area are to be retained. This is fully described in the Phase 1 Habitat Survey.

5.2.2 Sensitivity of effects upon landform

The site and immediate landform is assessed as having a **lower sensitivity** to solar PV development. The site is low lying and comparatively flat with limited visibility from the surrounding area.

5.2.3 Sensitivity of effects upon openness/enclosure

The site and immediate landscape has varying levels of enclosure provided by lower hedgerows, broken hedgerows, boundary trees and belts of woodland. The site itself is contained within belts of vegetation. Some limited views to and from the site are available as glimpses, especially from the north and east. It is assessed as having a **lower sensitivity** to solar PV development.

5.2.4 Sensitivity of effects upon field pattern and scale

The landscape has a mixture of larger-scale modern fields and some smaller more historic enclosures – associated with the meandering river and floodplain. It is assessed as having **medium-higher sensitivity** to solar PV development.

5.2.5 Sensitivity of effects upon land cover

The landscape is assessed as having a **medium sensitivity** to effects upon land cover. The visual assessment describes how, from all viewpoints, the proposed solar farm will have woodland, agricultural fields and hedgerows as a backdrop. There is significant light industrial development bordering the site and in close proximity giving an unusual mix of semi-natural landscape and built structures.

5.2.6 Sensitivity of effects upon perceptual qualities

The landscape is assessed as having a **medium to lower sensitivity** to effects upon perceptual qualities. This is a semi-natural landscape (medium sensitivity) with larger scale industrial buildings (lower sensitivity). There are very few scattered residential dwellings and farmsteads.

5.2.7 Sensitivity of effects upon historic landscape character

The site has a number of derelict brick buildings which may be historically significant. The site itself, and the immediate surroundings, are assessed as having a **low sensitivity** to solar PV development.

5.2.8 Sensitivity of effects upon scenic and special landscape qualities

Because the site is well hidden from the surroundings and from visual receptors, it is considered to have **lower-medium sensitivity** to effects upon scenic qualities.

The sensitivity of the landscape to accommodate change is summarised, by category, below:

<i>Landscape character attribute</i>	<i>Sensitivity to changes to the landscape</i>
Landform	Lower sensitivity
Sense of openness/enclosure	Lower sensitivity
Field pattern and scale	Medium-Higher sensitivity
Land cover	Medium sensitivity
Perceptual qualities	Medium to lower sensitivity
Historic landscape character	Low sensitivity
Scenic and special landscape qualities	Lower-Medium sensitivity

5.3 Magnitude of Effect

In the national context the proposal is defined as a “medium” solar PV farm (5-10Ha). The magnitude of effect upon the landscape character of the area is assessed as **Moderate**. “This will involve some loss of resource, but not adversely affecting integrity: Partial loss of/damage to key characteristics, features or elements”.

5.4 Significance of Effects on landscape character

The significance of effects is taken as a combined measure of the sensitivity of the site and the magnitude of change.

The significance of effects upon landscape character are assessed as **moderate** – “These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall adverse effect on a particular resource or receptor”.

This does not mean that the site is considered to be less significant in terms of its contribution to landscape character. It is an attractive and unspoiled area which derives much of its continued character from the fact that it is hidden and un-used by the general public. Developing a solar farm on this site will clearly change its character. However the physical damage to the site is considered to be very minor and the temporary nature of the development (as opposed to say housing) means that changes are comparatively short-lived. Indeed, the opportunity to protect the site from future more damaging development, and to enhance landscape character through additional planning and management practice, could be considered beneficial in the longer term.

The overall assessment is that the development will have a **moderately adverse** effect upon landscape character during the operational phase of the solar farm.

5.5 Timescale and nature of the effects

The principal landscape and visual effects will occur over the operational life of the solar farm which can be considered to be around 30 years. At the end of its operational life the solar farm will be decommissioned and the land returned to its existing condition. During construction the effect upon the landscape and visual receptors will be minimal and short-lived and are not considered significant in this report.

5.6 Timescale of mitigation planting growth

The timescale for young trees and hedgerow plants to achieve the desired height for mitigation screening is dependent upon a wide range of factors, some of which are rather unpredictable. Planting will be carried out in accordance with good practice for establishing young woodlands and hedgerows and become the responsibility of the landowner to look after and manage the young plants through to maturity. This will involve removing competition from weeds and grasses and also cutting hedgerows and thinning young trees within plantations to select the best specimens for long term maturity.

To maximise the speed of establishment the landowner will need to adopt best horticultural and silvicultural practice – in particular removing grazing animals, competition from weeds and grasses, and ensuring that the trees are properly drained around the rooting zone, properly watered in dry conditions, and receive any necessary applications of fertiliser.

Assuming this is put into action, it is likely that a typical mixed native screen hedgerow, established from two year old transplants, would reach around 1.5m at Year 4-5 and 2.5m at Year 8-10. At Year 15 the woodland could achieve a height of 4-5m. Occasional individual advanced nursery stock trees, such as local fruit tree varieties, will help to speed the screening effect.

5.7 Visual effects

5.7.1 Assessment of Visual Sensitivity and Magnitude

This section describes the effect of the proposal upon selected viewpoints together with assessments about the significance of these effects. Priority is given to viewpoints with public access such as public rights of way, roads and, in particular, residential dwellings which would be unacceptably harmed by views of the proposed development.

Representative viewpoints for the assessment of visual effects have been identified in the baseline assessment. These are at publicly accessible locations such as roads and public rights of way and public open space. The sensitivity of receptor, magnitude of change to the view, and the significance of the impact on the receptor are assessed for each representative viewpoint.

For private dwellings assessment is made at ground level. In reality, views may be apparent from first floor windows or further upper floors. These have not been assessed.

5.7.2 Visibility generally

The ZTV illustrates theoretical widespread visibility to and from the site

A Field Study was undertaken to assess the visual effect upon areas with public access within the ZTV zone. The survey was undertaken in September 2014 when the woodland, field hedgerows, and trees and vegetation surrounding residential properties were still in full leaf. The site was not assessed in winter when deciduous species will not be in leaf, and when an assessment of the visibility of the site from its surroundings may lead to slightly different conclusions.

The Field Study assessment shows that the solar farm will be visible from some viewpoints within the area identified by the ZTV. The viewpoints listed in Section 5.8 have been selected to illustrate representative views. In selecting these views the key public roads were assessed in both directions and representative views from clusters of houses and settlements were taken. Because of access and privacy constraints, individual dwellings were not assessed. Whilst the viewpoints have been selected carefully, it is possible that views from individual dwellings may not be represented.

There are no other solar farms which were observed to have a visual connection to the site and so this development can be regarded as a new visual addition to the landscape.

When assessed against other proposed solar farm developments nationally, this site has very limited visibility from the surrounding area. This is unusual for a site of this size.

The proposal lies to the south of Wrexham Industrial Estate and is separated from it by the River Clwddog (a tributary of the River Dee), but existing development exists south and immediately adjacent to the site and there is also new factory development to the west with a road infrastructure in place suggesting that further growth is expected here. The site therefore is well-connected to the local existing and future industrial development.

Most buildings visible from within the site comprise factory roofscapes and chimneys. The Flo-Gas depot at Parkey Farm, off the B5130, contains an office building closed to the south site boundary has views into the south-west corner of the site concentrated on a section where no panels are proposed. Panels beyond and to the south side of this section would be clearly visible however, as this part of the boundary is fenced, but un-vegetated.

There are a very limited number of residential properties with views of the site (in summer and autumn – leaves on the trees). Views from the site located a cluster of private properties within the ZTV on a ridgeline between the Kings Mill and Hightown areas of SE Wrexham. It was not possible to access these properties, but a few gable ends with upper storey windows facing the site were visible from the site itself.

Similarly, there is no public access to, and therefore not possible to take images from, a few individual properties (eg Cefn Park, Lywyn Knottia) lying on higher ground (east facing slope) to the north-west of the proposal between Marchwell to the west and the A5156 bypass to the north. These properties lie in very well vegetated parkland and farmland, but it is possible that glimpses of the site can be had from here, especially in winter. Similarly, there were no views (in September) from the public footpaths which run E-W through both of these properties. Where there are breaks in the vegetation views are obscured by the factories at Pentre Maelor. There were no views from the opposite (west) side of the road from which these properties are accessed.

The rest of the ZTV does not take into consideration the very built up landscape (comprising mainly very large scale factory buildings) to the NW, N and NE. Further East and South the site is obscured by topography and vegetation.

Although they also fall within the ZTV, there are no views from areas East of the River Dee (Afon Dyfrdwy), such as Shocklach Green, Worthenbury, and the area just South of Bangor on Dee / Bangor-is-y-Coed.

5.7.3 Magnitude and significance from visual receptors

Visibility to and from visual receptors is extremely limited. The visibility receptors are described in the section above.

The overall assessment of the representative viewpoints described in Section 5.8 and in the accompanying illustrated report is that **the proposal will have a slightly adverse effect upon views from a very limited number of viewpoints in the surrounding area.**

The assessments of the magnitude of the effect vary from High to Low (and include one assessment of Negligible) with the greatest adverse effects being experienced from the public footpath running along the eastern

boundary of the site. The number of people affected is also very small. These are identified in the tabulated descriptions which accompany each representative view and in Section 5.8.

Design alterations and suggested mitigation measures will, over time, reduce the significance of these adverse effects to **slight**. These are described in Section 6.

5.8 Visual Impact Schedule – Representative viewpoints

Please refer to ZTV plans (Accompanying documents) for viewpoint locations. For more detailed descriptions of the visual receptors, refer to illustrations in the accompanying documents.

VIEWPOINT 1			
View from public footpath - south-east corner of the site - looking west			
Distance to development:	Approx. 20m		
<i>Receptor</i>	<i>Sensitivity of receptor</i>	<i>Duration of view (include 'none' if no view)</i>	<i>Significance</i>
The Travelling Public	Footpath users	Intermittent	Low
Description of the view			
From the corner of the site a view opens out looking west through a gateway and low vegetation.			
This is an unusually open view from this section of the footpath.			
The view of the solar panels will be very obvious from this location with mature field trees breaking the arrays and with the derelict brick buildings in the background.			
Magnitude of Effect on Views			Valency
High	Total or major alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamentally changed.		Adverse
Significance of Effect on Views			Valency
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall adverse effect on a particular resource or receptor		Adverse
Action: Design development/Mitigation and effect			
Planting gaps in the boundary hedgerow will, in the early establishment years, help to filter views towards the panels and following successful establishment and maintenance screen the panels from the footpath.			
Likely assessment of significance post design development/Mitigation			
Moder	These beneficial or adverse effects may be important,		Slightly

ate	but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall adverse effect on a particular resource or receptor	Adverse
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VIEWPOINT 2 View looking west from the public footpath running along the eastern boundary of the site			
Distance to development:	Approx.		
<i>Receptor</i>	<i>Sensitivity of receptor</i>	<i>Duration of view (include 'none' if no view)</i>	<i>Significance</i>
The Travelling Public	Footpath users	Intermittent	Low
Description of the view A view from the footpath just north from Viewpoint 1 where the footpath is located further from the site boundary. The site boundary is well vegetated with partial glimpse views of the solar panels through gaps in the boundary. The hedgerow vegetation is deciduous and this view will be more apparent in winter. From this point the path continues northwards with similar views possible when travelling along the footpath.			
Magnitude of Effect on Views			Valency
Low	Minor alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be largely unchanged despite discernible differences.		Adverse
Significance of Effect on Views			Valency
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Slightly adverse
Action: Design development/Mitigation and effect Planting gaps in the hedgerow will, following establishment, screen the solar panels from the footpath in summer and provide filtered views in winter.			
Likely assessment of significance post design development/Mitigation			
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Neutral

VIEWPOINT 3 View looking south/south-east from the footpath in the north-east corner of the site.			
Distance to development:	Approx.		
<i>Receptor</i>	<i>Sensitivity of receptor</i>	<i>Duration of view (include 'none' if no view)</i>	<i>Significance</i>
The Travelling Public	Footpath users	Intermittent	Low
Description of the view From the same footpath, close to the bridge over the River Clweddog at the most north-easterly corner of the site, the panels will be visible when looking south through another unusual break in the boundary vegetation. North from this viewpoint the footpath leaves the site and vegetation becomes overgrown rendering the path difficult to access.			
Magnitude of Effect on Views			Valency
High	Total or major alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamentally changed.		Adverse
Significance of Effect on Views			Valency
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Adverse
Action: Design development/Mitigation and effect From this location new hedgerow planting will have a significant effect in screening the solar panels from the footpath.			
Likely assessment of significance post design development/Mitigation			
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Neutral

VIEWPOINT 4 View looking south-east into the site from the main entrance			
Distance to development:	Approx. 20m		
<i>Receptor</i>	<i>Sensitivity of receptor</i>	<i>Duration of view (include 'none' if no view)</i>	<i>Significance</i>
Workers	Working hours	Intermittent	Low
Description of the view View into the site looking due east from the main entrance on the western boundary. The view is restricted to the north facing slopes of a small part of the south-			

western arrays. The topography rises close to the viewpoint with the majority of the solar panels located behind the grassy slope in the foreground. From this location the solar panels will be very obvious.		
Magnitude of Effect on Views		Valency
High	Total or major alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamentally changed.	Adverse
Significance of Effect on Views		Valency
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project	Adverse
Action: Design development/Mitigation and effect		
New hedgerow planting along the entrance track, between the track and the solar panels, will screen the development in summer and filter views in winter. This will be achieved after the establishment phase of the new hedgerow.		
Likely assessment of significance post design development/Mitigation		
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project	Neutral

VIEWPOINT 5			
View from road above Llan-y-pwll			
Distance to development:	Approx. 4Km		
<i>Receptor</i>	<i>Sensitivity of receptor</i>	<i>Duration of view (include 'none' if no view)</i>	<i>Significance</i>
Residents	Local residents with awareness of the development	Intermittent	Low
The Travelling Public	Motorists	Intermittent	Low
Description of the view			
View from a minor road looking south towards the site close to where 'Borras Hall' is marked on the OS Map. It is difficult to make out the site from this location. It is theoretically possible to see the solar farm from this viewpoint, but it will be a very minor proportion of the view and is contextualised by the industrial infrastructure and grey roofs in the middle distance.			
Magnitude of Effect on Views			Valency
Negligible	Very minor alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamentally unchanged with barely perceptible differences.		Neutral

Significance of Effect on Views		Valency
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project	Neutral
Action: Design development/Mitigation and effect		
Mitigation is not considered to have any beneficial effect from this viewpoint.		

6.0 Outcomes of landscape and visual impact assessment influencing design development and mitigation

6.1 Alterations to layout - generally

The landscape and visual impact assessment process is one part of an overall study which looks at the impact of the proposal upon the landscape. The proposals include PV panel arrays, inverter cabins and a customer substation as well as a new access tracks. It is assessed that the solar farm will appear as a new development within a working agricultural landscape. The assessment has concluded that the proposal will have a slightly adverse effect upon the landscape, to varying degrees, and will have a very limited adverse visual effect upon a range of visual receptors in the study area and footpaths which run close to site boundaries. Site mitigation, in terms of screen planting and following the establishment phase, will have a beneficial effect in reducing the adverse significance.

The principal benefit will come from additional planting to screen the adverse visual effects experienced from Viewpoints 1, 3 and 4 – i.e. those which look into the site from the public footpath running to the east and north-east. This footpath appears to be rarely used, but the visual amenity, experienced by footpath users, will be noticeably changed.

6.2 Landscape mitigation proposals

The principal behind site mitigation is to minimise any adverse impacts arising from this assessment.

The key conclusions arising from this assessment which would inform mitigation proposals are:

- Little or no loss to existing vegetation.
- Screening or partial screening of specific views which will be adversely affected by the proposal – in particular by planting along the eastern hedgerow to fill gaps, and selective planting at the north-east corner of

the site to screen views from the public footpath. This should be carried out with reference to Wrexham County Borough Council's guidelines.

- Speed of impact of the visual screening without compromising local habitats and local species compositions.
- Planting layout and species mixes which build upon the local landscape character descriptions and which are informed by the Phase 1 habitat survey.
- Hedgerow species could be supplemented with fast growing nurse species characteristic of the area especially *Crataegus monogyna*, *Acer campestre*, *Prunus spinosa*, *Corylus avellana*. Field trees which would be planted and allowed to reach maturity would favour ash (*Fraxinus excelsior*) and pedunculate oak (*Quercus robur*).
- Protection of, and integration with, the existing hedgerows and individual mature trees and areas of woodland to contribute to the enhancement of the local landscape character and to provide opportunities for recreational activities.
- Planting larger nursery stock individual trees to provide filtered views to the development and to supplement the screening effects of the field boundary hedgerows. This builds upon the visual character of the area where occasional larger boundary trees have been allowed to grow to maturity.
- Overall arrangement of planting and hedgerows which add to the pattern of vegetation when viewed from low level views and higher elevations.

6.3 Mitigation proposals

Detailed proposals for site mitigation will be developed from the principles described in the section above and which cover all recommendations arising from accompanying planning documents, especially the Phase 1 Habitat Survey and detailed development proposals of ground fixings, ancillary structures and boundary fencing.

This should be undertaken as a separate commission.

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pp.  November 2014	

7.0 APPENDIX 1 – Assessment Criteria Tables

7.1 Landscape character sensitivity

Landform and scale				
A smooth, convex or flat landform is likely to be less sensitive to development than a landscape with a dramatic rugged landform, distinct landform features (including prominent headlands and cliffs) or pronounced undulations; and larger scale landforms are likely to be less sensitive than smaller scale landforms - because solar farms may appear out of scale, detract from visually important landforms or appear confusing in the latter types of landscapes.				
Examples of sensitivity ratings				
Lower sensitivity		Higher sensitivity		
e.g. an extensive lowland flat landscape or elevated plateau, often a larger scale landform	e.g. a simple gently rolling landscape, likely to be a medium-large scale landform	e.g. an undulating landscape, perhaps also incised by valleys, likely to be a medium scale landform	e.g. a landscape with distinct landform features, and/or irregular in topographic appearance (which may be large in scale), or a smaller scale landform	e.g. a landscape with a rugged landform or dramatic landform features (which may be large in scale), or a small scale landform

Landform cover pattern and presence of human scale features				
Simple, regular landscapes with extensive areas of consistent ground cover are likely to be less sensitive to development than landscapes with more complex or irregular land cover patterns, smaller and/ or irregular field sizes and landscapes with frequent human scale features that are traditional of the landscape, such as stone farmsteads and small farm woodlands 18. This is because large features may dominate smaller scale traditional features within the landscape.				
Examples of sensitivity ratings				
Lower sensitivity		Higher sensitivity		
e.g. a very large-scale landscape with uniform groundcover and lacking in human scale features	e.g. a landscape with large-scale fields, little variety in land cover and occasional human scale features such as trees and domestic buildings	e.g. a landscape with medium sized fields, some variations in land cover and presence of human scale features such as trees, domestic buildings	e.g. a landscape with irregular small-scale fields, variety in land cover and presence of human scale features such as trees, domestic buildings	e.g. a landscape with a strong variety in land cover and small scale/irregular in appearance containing numerous human scale features
Tracks/transport pattern				
Landscapes that are devoid of tracks will be particularly sensitive to development because it will be more difficult to absorb permanent new tracks into the landscape				

without change to character in these areas. In addition, if an LCA has a rural road network which contributes to landscape character (e.g. winding narrow lanes bounded by high hedge banks or sunken lanes), this aspect of character may be affected by access works to enable HGVs carrying development materials to a site. This characteristic therefore also influences sensitivity.

Examples of sensitivity ratings

Lower sensitivity		Higher sensitivity	
e.g. a landscape containing existing roads and vehicular tracks, and no restrictions in terms of narrow hedged lanes	e.g. a landscape containing existing roads and vehicular tracks, and few restrictions in terms of narrow hedged lanes	e.g. a landscape containing some existing roads and vehicular tracks, including some restrictions in terms of narrow hedged lanes	e.g. a landscape containing few lanes or vehicular tracks, and these are predominantly narrow lanes bounded by high hedge banks

Perceptual qualities

Landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance and having a perceived naturalness or a strong feel of traditional rurality with few modern human influences) tend to increase levels of sensitivity to development compared to landscapes that contain signs of modern development (as the development will introduce new and uncharacteristic features which may detract from a sense of tranquillity and or remoteness/ naturalness).

Examples of sensitivity ratings

Lower sensitivity		Higher sensitivity	
e.g. a landscape with much human activity and development such as industrial areas or a port	e.g. a rural landscape with much human activity and dispersed modern development	e.g. a rural landscape with some modern development and human activity	e.g. a more naturalistic landscape and / or one with little modern human influence and development

Historic Landscape Character

Landscapes comprising prehistoric and medieval enclosures (including strip fields) are considered to have a higher sensitivity to development than landscapes comprising modern enclosures or industrial/military Historic Landscape Types (HLTs) due to the potential effects of development on the coherence of these landscapes (including effects of access tracks on field boundaries) and the ability to appreciate them. Historic landscape types such as rough ground, ancient woodland, other woodland, marsh, dunes, mud, sand, outcrop/ scree/ cliffs, water meadows, and orchards also have a higher sensitivity to energy development as a result of potential change to the coherence of these historic landscape types.

Examples of sensitivity ratings

Lower sensitivity	Higher sensitivity
--------------------------	---------------------------

e.g. majority of the landscape covered by least sensitive HLTs	e.g. majority of the landscape covered by lower sensitivity HLTs, but may include some small areas of higher sensitivity	e.g. majority of the landscape covered by medium sensitivity HLTs or a mixture of higher and lower sensitivity HLTs	e.g. majority of the landscape covered by higher sensitivity HLTs, but may include some small areas of lower sensitivity	e.g. the majority of the landscape covered by higher sensitivity HLTs
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Scenic and Special Qualities					
Landscapes that have a high natural beauty/ scenic quality (which may be recognised as a National Park, Heritage Coast or AONB) and whose scenic qualities, special qualities (as recorded in the LCA or by AGLV designation) or natural beauty are likely to be affected by development will be more sensitive than landscapes of low scenic quality or whose special scenic qualities or special qualities are not likely to be affected by wind energy development (some areas may include special qualities that might not be affected by development). Scenic and special qualities may relate to landscapes that are not designated as well as landscape designated for their natural beauty.					
Examples of sensitivity ratings					
Lower sensitivity					Higher sensitivity
e.g. landscape has low scenic quality such as an industrial area or despoiled land – special qualities will not be affected by energy development	e.g. landscape has low-medium scenic quality, or special qualities are unlikely to be affected by energy development	e.g. landscape has a medium scenic quality and some of the special qualities may be affected by energy development	e.g. landscape has a medium-high scenic quality – most of the special qualities are likely to be affected by energy development	e.g. area has a high scenic quality (likely to be recognised as National Park/AONB/ Heritage Coast) and the scenic qualities will be affected by energy development	

7.2 Sensitivity Values

Measures of **sensitivity** are described more fully in this report, but follow the general principles outlined in the table below:

Value/Sensitivity	
<i>Value (Sensitivity)</i>	<i>Typical Descriptors</i>
Very High	Very high importance and rarity, international scale and limited potential for substitution
High	High importance and rarity, national scale and limited potential for

	substitution
Medium	High or medium importance and rarity, regional scale, limited potential for substitution
Low (or Lower)	Low or medium importance and rarity, local scale
Negligible	Very low importance and rarity, local scale

The overall **significance of the effects** is also described in more detail later in this report and conforms to the overall principles illustrated in the graph below.

7.3 Assessment of magnitude effect on landscape character

The criteria used for assessing the magnitude of impact is summarised in the table below:

Magnitude of Impact upon Landscape Character	
<i>Magnitude of impact</i>	<i>Typical Criteria Descriptors</i>
Major	Loss of resource and/or quality and integrity: severe damage to key characteristics, features or elements (<i>Adverse</i>) Large scale or major improvement of resource quality: extensive restoration or enhancement: major improvement of attribute quality (<i>Beneficial</i>)
Moderate	Loss of resource, but not adversely affecting integrity: Partial loss of/damage to key characteristics, features or elements (<i>Adverse</i>) Benefit to, or addition of, key characteristics, features or elements: improvement of attribute quality (<i>Beneficial</i>)
Minor	Some measurable change in attribute's quality or vulnerability: minor loss of, or alteration to, one (or maybe more) key characteristics, features or elements (<i>Adverse</i>) Minor benefit to, or addition of, on (or maybe more) key characteristics, features or elements: some beneficial impact on attribute or a reduced risk of negative impact occurring (<i>Beneficial</i>)
Negligible	Very minor loss or detrimental alteration to one or more characteristics, features or elements (<i>Adverse</i>) Very minor benefit to or positive addition of one or more characteristics, features or elements (<i>Beneficial</i>)

No change	No loss or alteration to characteristics, features or elements: no observable impact in either direction
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7.4 Sensitivity and magnitude combined – Significance of effect

In order to report on the overall significance of the proposal on both landscape and visual receptors the sensitivity of the site and the magnitude of change are assessed in combination. The outcome can be both positive – i.e. the proposal makes a positive change to the landscape; and negative – the proposal will result in a negative change to landscape character and visual character. The outcomes are reported using descriptive terms rather than numerical scores and the terms used are summarised below:

Significance of Effect	
<i>Significance of Category</i>	<i>Typical descriptors of Effect</i>
Very Large	Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a major change in a site or feature of local importance may also enter this category
Large	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall adverse effect on a particular resource or receptor
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project
Neutral	No effects or those that are beneath levels or perception, within normal bounds of variation or within the margin of forecasting error

7.5 Valency of effect – Landscape and Visual Assessment

Effects are defined as adverse, neutral or beneficial.

Valency of Effect	
<i>Nature of Effect</i>	<i>Definition</i>
Adverse	Effect that would result in damage to the condition, integrity or key characteristics of the landscape or visual resource
Neutral	Effect that would maintain, on balance, the existing level of condition, integrity or key characteristics of the landscape or visual resource. Whilst the nature of the change may be significant, the proposal does not compromise the inherent qualities of the resource and can incorporate a combination of positive and negative effects.
Beneficial	Effect that would result in improvement to the condition, integrity or key characteristics of the landscape or visual resource

7.6 Sensitivity of Visual Receptors

7.6.1 The sensitivity of visual receptors – general principles

- the location i.e. proximity and context of the viewpoint;
- the expectations and occupation or activity of the receptor, including awareness of their surroundings and duration of viewing opportunity, whether prolonged or intermittent;
- the importance of the view, which may be determined with respect to its popularity or numbers of people affected, its appearance in guidebooks, on tourist maps, and in the facilities provided for its enjoyment and references to it in literature or art.

A wide variety of visual receptors can reasonably be anticipated to be affected by a proposed solar farm development. The range of visual receptors will include pedestrians, and recreational users of the surrounding landscape such as walkers, cyclists and those otherwise engaged in the pursuit of leisure activities within the visual envelope of the site, local residents, motorists, those working outdoors and other workers. All categories of receptors can potentially be affected to a greater or lesser degree by a solar farm development. The four main visual receptor groups are considered in more detail below under the headings of residents, workers, the travelling public, and visitors.

7.6.2 Residents

Local residents tend to have a higher level of sensitivity to changes in their landscape and visual environment than those passing through. For residents, the most important views are those from their homes, although they will also be sensitive to other views such as those experienced when travelling to work or other local destinations. However, it is these latter views, from public areas nearby houses that are of relevance to the main body of the visual impact assessment (assessment of effects from the representative viewpoints).

7.6.3 Workers

Workers are generally less sensitive to effects as they are focussed on the tasks they are carrying out. Indoor workers generally have a Low sensitivity, and outdoor workers, such as farmers and those offering outdoor pursuits are considered to have a Low to Medium sensitivity.

7.6.4 The Travelling Public

This category of visual receptor group overlaps to a degree with the other categories in that it embraces local residents, workers and those who come to visit the area. This group of visual receptors will include the following:

- Motorists - For major trunk routes and motorways, the sensitivity of users will be Low, as they will be travelling at speed and will be primarily focussed on achieving their destination. Users of other A-roads will have a Low to Medium sensitivity, unless these are particularly scenic or slow routes, in which case the sensitivity may be assessed as Medium. The users of local roads will have a Medium sensitivity.
- Cyclists and footpath users - These groups are addressed under the heading of visitors as they are generally less concerned with the object of reaching their destination than with the enjoyment of being outside and enjoying the landscape and available views.

7.6.5 Visitors

This category includes several visual receptor groups, each with different objectives and levels of sensitivity to any change in the fabric or character of the landscape and views arising from the proposed development. This group includes those who are mainly concerned with enjoyment of the outdoor environment but also those who may pursue indoor recreational pursuits and is anticipated to include the following (arranged in decreasing sensitivity):

- Those whose main preoccupation is the enjoyment of scenery (High sensitivity).
- Recreational walkers and equestrians (High sensitivity)
- Those visitors engaged in cultural pursuits (High-Medium sensitivity)

- Cyclists (High-Medium sensitivity)

7.7 Magnitude of Effect on Views from Representative Viewpoints

Magnitude of effect identifies the degree of change to the character and quality of views experienced by the visual receptor. This will be influenced by:

the distance of the viewpoint from the proposed development and the scale of change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development;

the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics in terms of form, scale and mass, line, height, colour and texture.

Magnitude of Effect on Views	
High	Total or major alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamentally changed.
Medium	Partial alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be noticeably changed.
Low	Minor alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be largely unchanged despite discernible differences.
Negligible	Very minor alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamentally unchanged with barely perceptible differences.

8.0 APPENDIX 2 – Glossary

Cumulative effects - The summation of effects that result from changes caused by a development in conjunction with other past, present or reasonably foreseeable actions.

Indirect effects - Effects on the environment, which are not a direct result of the development but are often produced away from it or as a result of a complex pathway. Sometimes referred to as secondary impacts.

Landscape character type - A landscape type will have broadly similar patterns of geology, landform, soils, vegetation, land use, settlement and field pattern discernible in maps and field survey records.

Landscape effects - Change in the elements, characteristics, character and qualities of the landscape as a result of development. These effects can be negative or positive.

Landscape character - means the distinct and recognisable pattern of elements that occur consistently in a particular type of landscape, and how these are perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement. It creates the particular sense of place of different areas of the landscape.

Landscape quality (or condition) - is based on judgements about the physical state of the landscape, and about its intactness, from visual, functional, and ecological perspectives. It also reflects the state of repair of individual features and elements which make up the character in any one place.

Landscape value - is concerned with the relative value that is attached to different landscapes. In a policy context the usual basis for recognising certain highly valued landscapes is through the application of a local or national landscape designation. Yet a landscape may be valued by communities for many different reasons without any formal designation.

Landscape capacity - refers to the degree to which a particular landscape character type or area is able to accommodate change without significant effects on its character, or overall change of landscape character type. Capacity is likely to vary according to the type and nature of change being proposed. 1

Landscape sensitivity - The extent to which a landscape can accept change of a particular type and scale without material effects on its character.

Magnitude - A combination of the scale, extent and duration of an effect.

Mitigation. Measures, including any process, activity or design to avoid, reduce, remedy or compensate for adverse landscape and visual effects of a development project.

Receptor - Physical landscape resource, special interest or viewer group that will experience an effect.

Visual amenity - The value of a particular area or view in terms of what is seen.

Visual effect - Change in the appearance of the landscape as a result of development. This can be positive (i.e. beneficial or an improvement) or negative (i.e. adverse or a detractor).

Visual envelope - Extent of potential visibility to or from a specific area or feature.

Zone of visual influence - Area within which a proposed development may have an influence or effect on visual amenity.

9.0 APPENDIX 3 – References

1. Guidelines for Landscape and Visual Impact assessment, Third Edition, Landscape Institute and Institute of Environmental Management and Assessment, 2013

2. National Planning Policy Framework, March 2012
3. Landscape Character Assessment Guidance for England and Scotland, Scottish Natural Heritage and The Countryside Agency, 2002
4. Countryside Character Map of England, Countryside Agency, 1999
5. Devon Landscape Policy Group Advice Note No 2: Accommodating Wind and Solar PV Developments in Devon's Landscape. Consultation Draft, Land Use Consultants, January 2013
6. Wrexham County Borough Council Landscape Character Area 13a Welsh Maelor
7. Wrexham County Borough Council Landscape Character Area 13c Dee Terraces
8. Wrexham County Borough Council Landscape Character Area 14 Dee Floodplain

10.0 APPENDIX 4 – Supporting Documents

Please refer to accompanying A3 documents

10.1 Zone of Theoretical Visibility and Figures

Zone of Theoretical Visibility (ZTV) and 5km study area boundary



Key

- PV panel and inverter housing extents
- Zone of Theoretical Visibility
- 5km study area
- 1km - 4km buffers

Williams Farm Solar Farm
Zone of Theoretical Visibility Map
Client: Solar Ventures Limited
Location: SJ 38153 48382
Mapped by: FFM GIS mapping: FFM
Issued: 19 September 2014

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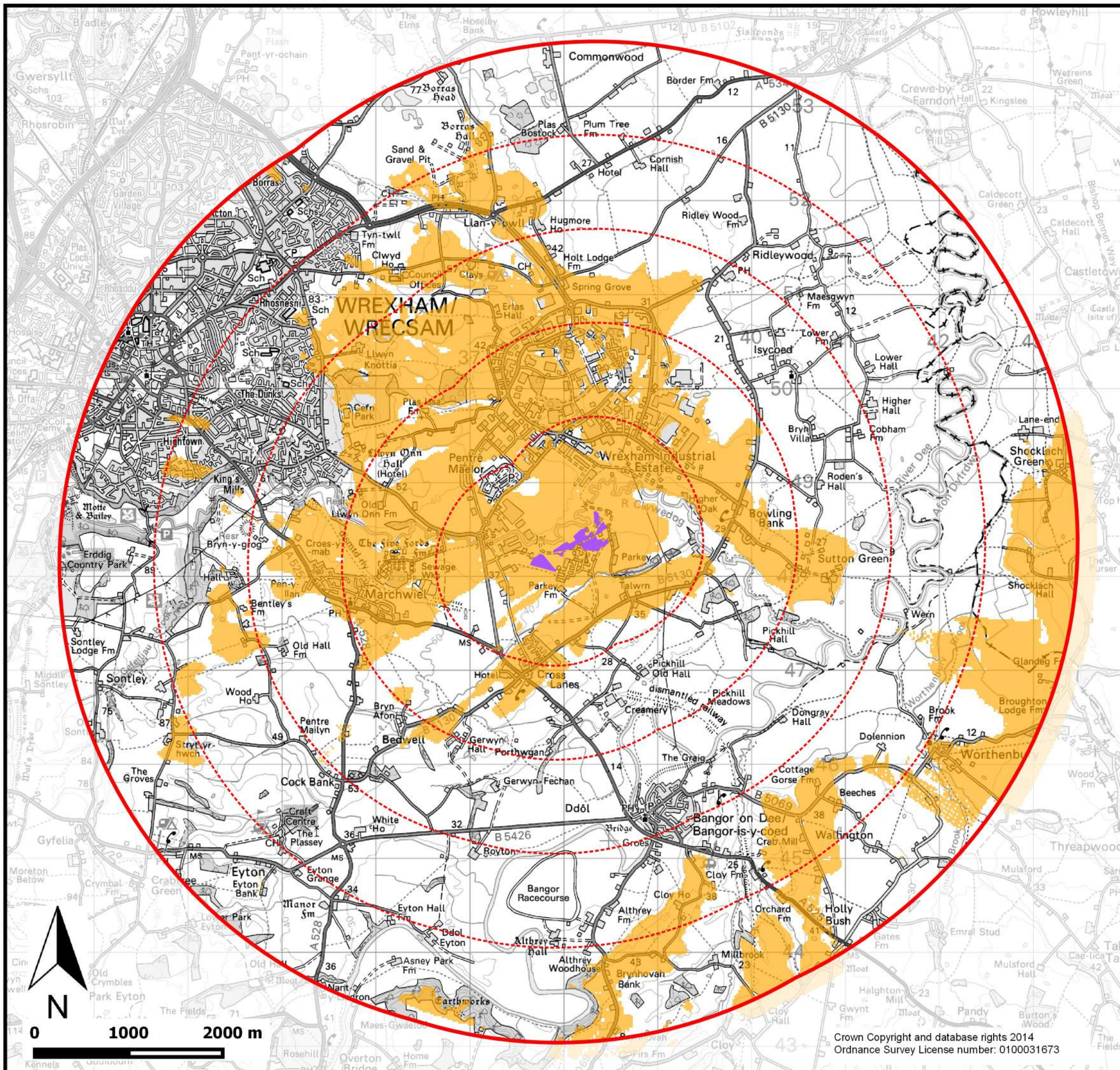


Figure 1 – Statutory and non-statutory designated sites within study area

Figure 2 – LANDMAP Character Areas

RURAL/URBAN VILLAGES

Wrexham urban villages are associated with past coal mining, and located on the edge of the uplands and to the north of Wrexham town. The villages are set among farmland, wooded valleys and regenerating or restored landscapes. This complex character area contains main roads, railways and canal, as well as Offa's Dyke and prehistoric hill forts, reflecting Wrexham's history on the border between Wales and England, upland and lowland.

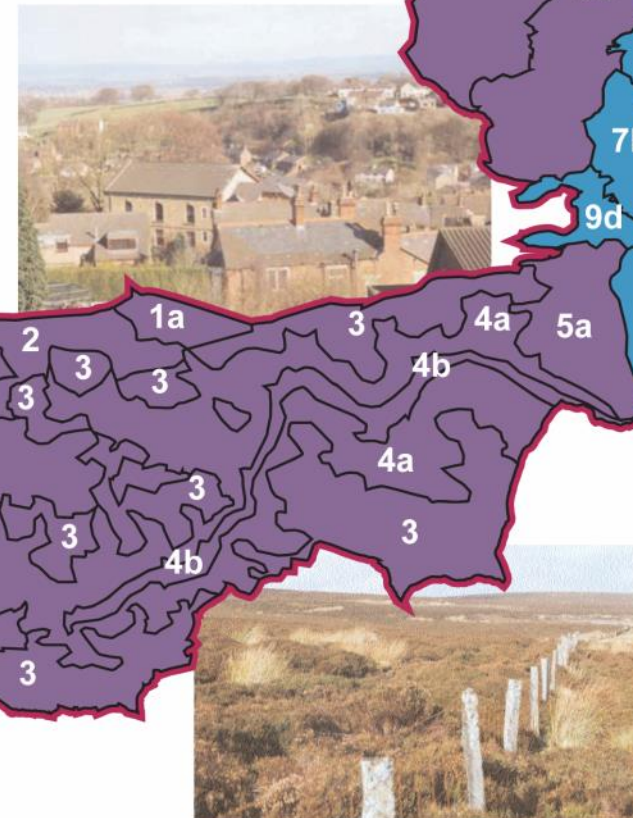
Detailed Character Areas

- 7a Chirk
- 7b Cefn Mawr
- 7c Rhosllanerchrugog, Rhostyllen, Ruabon, Pen y Cae
- 7d West Wrexham Ridges and Valleys
- 8 Gwersyllt, Llay, Gresford, Borras
- 9a Clywedog Valley
- 9b River Alyn Valley
- 9c Ffrith Valley
- 9d Froncysyllte to Newbridge

LANDMAP Character Areas

Rural/Urban Villages : Key Landscape Issues

- The future of 'urban fringe' landscapes
- The potential for urban forestry
- Impact of new housing on traditional community identity
- Maintenance of local distinctiveness
- The future of Bersham tip
- The need for footpath and cycle links
- The long-term impact of sand and clay quarries and landfill
- Preservation of local history and industrial archaeology



Upland : Key Landscape Issues

- Impact of development in remote and wild areas
- Effects on agricultural land use of economic changes and conservation constraints
- Impact on cultural identity of rural villages and farms of commuters and incomers
- Landscape protection - potential Area of Outstanding Natural Beauty designation
- Management of tourism and recreation

UPLANDS

Ruabon/Esclusham Mountain is an open moorland plateau with remnants of former quarrying and mining. Much of the area is uninhabited, but there are scattered farmsteads on the eastern slopes, and to the north, the highest village in Wales - Bwlchgwyn.

Ceiriog Valley/Berwyn Mountain is a rural upland area consisting of the enclosed River Ceiriog Valley, and surrounding hills. The higher hills are open moorland, and the lower areas contain a mixture of small farms and woodlands, with villages along the valley floor.

Detailed Character Areas

- 1a Berwyn Mountain
- 1b Ruabon/Esclusham Mountain
- 2 Ceiriog Forest
- 3 Berwyn Foothills
- 4a Ceiriog Valley Slopes
- 4b Ceiriog Valley Corridor
- 5a Chirk Estate and above Froncysyllte
- 5b Eastern slopes of Ruabon Mountain
- 6 Minera, Gwynfryn, Bwlchgwyn



URBAN

Wrexham town is the main residential, commercial and social centre, and is of regional importance, performing many of the functions of a city in North Wales. The Wrexham Industrial Estate is a very large employment area of national importance, set within open countryside and containing many habitats and species of high biodiversity value.

Landscape Character Area

- 10 Wrexham Town
- 11 Wrexham Industrial Estate



Urban : Key Landscape Issues

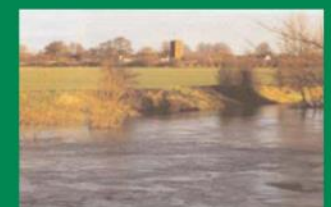
- Impact of cumulative development on wildlife and green space within urban areas
- Impact of long term expansion of urban areas into surrounding countryside
- Protection and enhancement of urban character areas

RURAL LOWLANDS

The Eastern lowland areas of Wrexham are largely rural and agricultural and share many characteristics of the neighbouring Cheshire and North Shropshire landscape. The general area also includes the River Dee floodplain and flat river terraces, and Fenn's Moss, an extensive area of heathland and bog. There are scattered farmsteadings, attractive small villages, and historic landscape features including medieval ridge and furrow and moated sites.

Detailed Character Areas

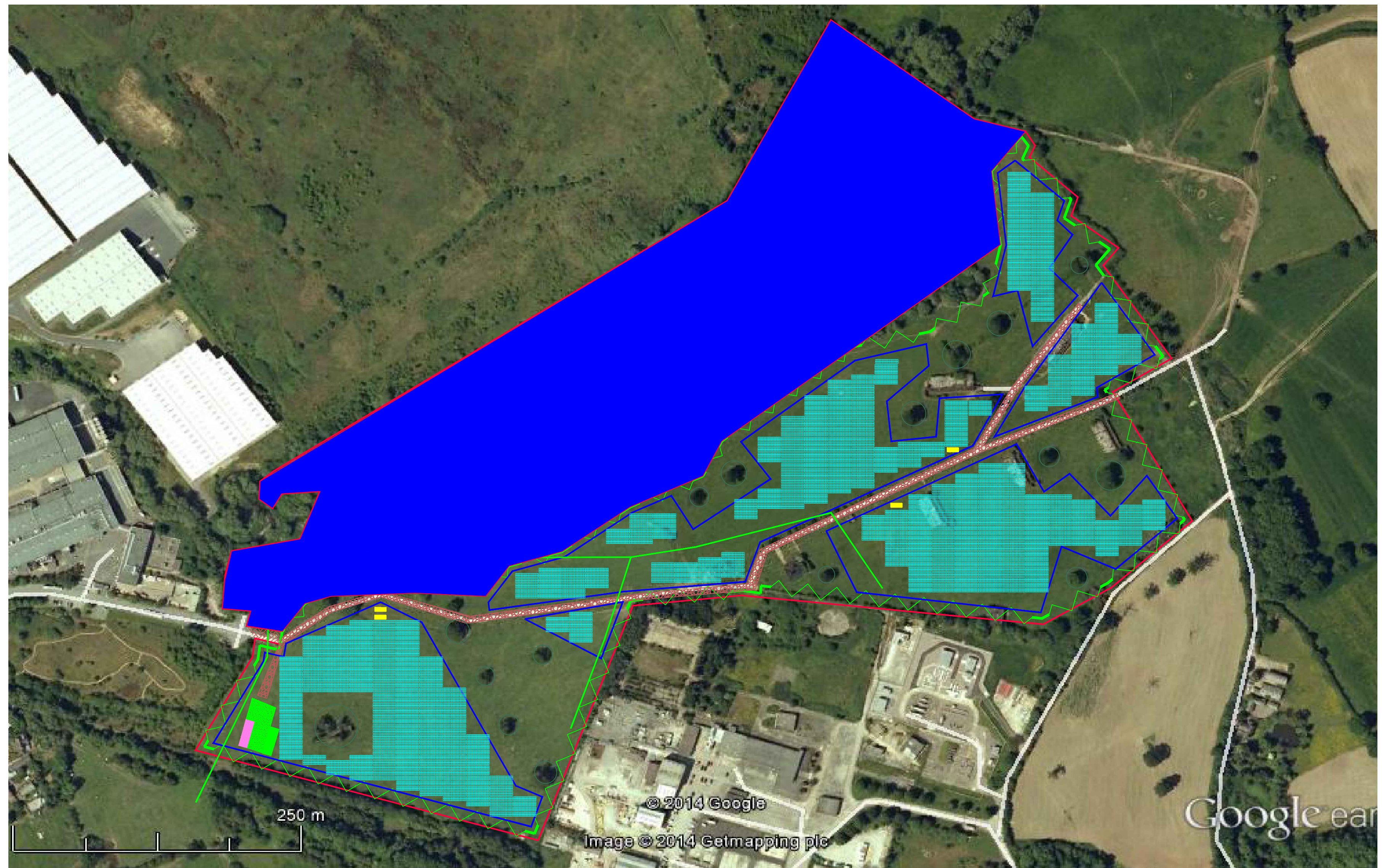
- 12a Dee/Ceiriog Wooded Valley
- 12b Wych Valley
- 13a Welsh Maelor
- 13b English Maelor
- 13c Dee Terraces
- 14 Dee Floodplain
- 15 Fenn's Moss



Rural Lowlands : Key Landscape Issues

- Impact on rural character of commuter pressure
- Conservation and management of historic parks, gardens and boundary walls
- Hedgerow and hedgerow tree conservation and restoration
- Impact of flooding defence measures
- Impact on historic landscape features of agricultural changes
- Effects of economic diversification and recreation in the countryside
- Footpath and cycle links between town and country
- Impact on landscape and wildlife by farm building conversions to housing

Figure 4 – Proposed Panel Layout



Williams Farm

5.5 MW

LL13 9XS

scale 1:2500 A2

- | | | | |
|---|-----------------------------|---|----------------|
|  | 2 Inverter cabin |  | Fence |
|  | DNO Substation and metering |  | Site Boundary |
|  | Customer Substation |  | Site PV |
|  | PV pannels |  | OHL 11 kV |
|  | DNO Track |  | OHL 132 kV |
|  | Track to site |  | Trees |
|  | Flood area |  | Tracks on site |

Figure 5: Viewpoints outside the site boundary



10.2 Representative Views



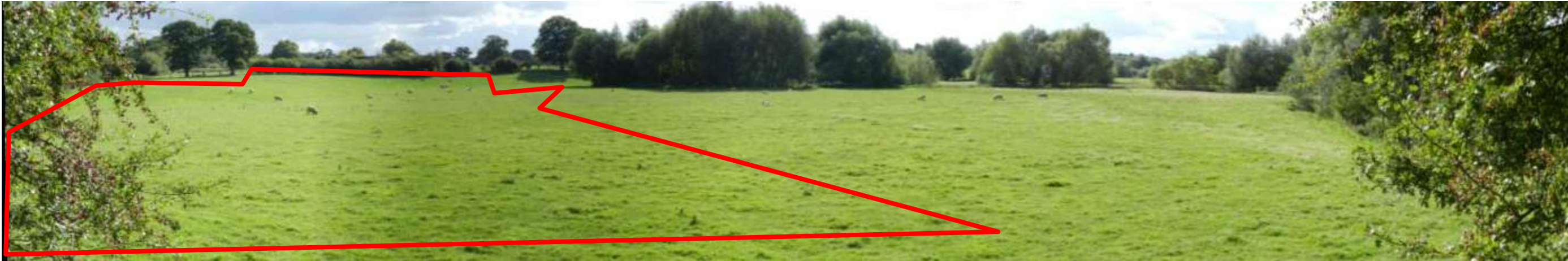
Viewpoint 1 From footpath looking west

VIEWPOINT 1			
View from public footpath - south-east corner of the site - looking west			
Distance to develop-ment:	Approx. 20m		
Receptor	Sensitivity of receptor	Duration of view (include 'none' if no view)	Significance
The Travelling Public	Footpath users	Intermittent	Low
Description of the view From the corner of the site a view opens out looking west through a gateway and low vegetation. This is an unusually open view from this section of the footpath. The view of the solar panels will be very obvious from this location with mature field trees breaking the arrays and with the derelict brick buildings in the background.			
Magnitude of Effect on Views			Valency
High	Total or major alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamen- tally changed.		Adverse
Significance of Effect on Views			Valency
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall ad-verse effect on a particular resource or receptor		Adverse
Action: Design development/Mitigation and effect			
Planting gaps in the boundary hedgerow will, in the early establishment years, help to filter views towards he panels and following successful establishment and maintenance screen the panels from the footpath.			
Likely assessment of significance post design development/Mitigation			
Moderate	These beneficial or adverse effects may be important, but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall ad-verse effect on a particular resource or receptor		Slightly Adverse



Viewpoint 2 From footpath looking west

VIEWPOINT 2 View looking west from the public footpath running along the eastern boundary of the site			
Distance to develop-ment:	Approx. 50m		
Receptor	Sensitivity of receptor	Duration of view (include 'none' if no view)	Significance
The Travelling Public	Footpath users	Intermittent	Low
Description of the view A view from the footpath just north from Viewpoint 1 where the footpath is located further from the site boundary. The site boundary is well vegetated with partial glimpse views of the solar panels through gaps in the bounda-ry. The hedgerow vegetation is deciduous and this view will be more apparent in winter. From this point the path continues northwards with similar views possible when travelling along the footpath.			
Magnitude of Effect on Views			Valency
Low	Minor alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be largely un- changed despite discernible differences.		Adverse
Significance of Effect on Views			Valency
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Slightly adverse
Action: Design development/Mitigation and effect			
Planting gaps in the hedgerow will, following establishment, screen the solar panels from the footpath in sum- mer and provide filtered views in winter.			
Likely assessment of significance post design development/Mitigation			
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Neutral



Viewpoint 3 From footpath looking west

VIEWPOINT 3			
View looking south/south-east from the footpath in the north-east corner of the site.			
Distance to develop-ment:	Approx. 10m		
Receptor	Sensitivity of receptor	Duration of view (include 'none' if no view)	Significance
The Travelling Public	Footpath users	Intermittent	Low
Description of the view From the same footpath, close to the bridge over the River Clweddog at the most north-easterly corner of the site, the panels will be visible when looking south through another unusual break in the boundary vegetation. North from this viewpoint the footpath leaves the site and vegetation becomes overgrown rendering the path difficult to access.			
Magnitude of Effect on Views			Valency
High	Total or major alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamentally changed.		Adverse
Significance of Effect on Views			Valency
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Adverse
Action: Design development/Mitigation and effect			
From this location new hedgerow planting will have a significant effect in screening the solar panels from the footpath.			
Likely assessment of significance post design development/Mitigation			
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Neutral



VIEWPOINT 4			
View looking south-east into the site from the main entrance			
Distance to develop- ment:	Approx. 20m		
Receptor	Sensitivity of receptor	Duration of view (include 'none' if no view)	Significance
Workers	Working hours	Intermittent	Low
Description of the view View into the site looking due east from the main entrance on the western boundary. The view is restricted to the north facing slopes of a small part of the south-western arrays. The topography rises close to the viewpoint with the majority of the solar panels located behind the grassy slope in the fore-ground. From this location the solar panels will be very obvious.			
Magnitude of Effect on Views			Valency
High	Total or major alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamen- tally changed.		Adverse
Significance of Effect on Views			Valency
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Adverse
Action: Design development/Mitigation and effect			
New hedgerow planting along the entrance track, between the track and the solar panels, will screen the de- velopment in summer and filter views in winter. This will be achieved after the establishment phase of the new hedgerow.			
Likely assessment of significance post design development/Mitigation			
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Neutral

Viewpoint 4 From footpath looking west



VIEWPOINT 5 View from road above Llan-y-pwll			
Distance to develop-ment:	Approx. 4Km		
Receptor	Sensitivity of receptor	Duration of view (include 'none' if no view)	Significance
Residents	Local residents with awareness of the devel-opment	Intermittent	Low
The Travelling Public	Motorists	Intermittent	Low
Description of the view View from a minor road looking south towards the site close to where 'Borras Hall' is marked on the OS Map. It is difficult to make out the site from this location. It is theoretically possible to see the solar farm from this viewpoint, but it will be a very minor proportion of the view and is contextualised by the industrial infrastruc-ture and grey roofs in the middle distance.			
Magnitude of Effect on Views			Valency
Negligible	Very minor alteration to key elements, features or characteristics of the view, such that post development the baseline situation will be fundamen-tally unchanged with barely perceptible differences.		Neutral
Significance of Effect on Views			Valency
Slight	These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision-making process, but are important in enhancing the subsequent design of the project		Neutral
Action: Design development/Mitigation and effect			
Mitigation is not considered to have any beneficial effect from this viewpoint.			