



Wildwood Ecology Ltd

T J DAVIES & SONS

THE GARN FARM, ST HILARY, COWBRIDGE

PRELIMINARY ECOLOGICAL APPRAISAL REPORT

26 MARCH 2015

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DISCLAIMER

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The evidence which we have prepared and provided is true, and has been prepared and provided in accordance with the guidance of The Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

EXECUTIVE SUMMARY

- Wildwood Ecology was commissioned by T J Davies & Sons Ltd (the *Client*) to undertake a Preliminary Ecological Appraisal (*PEA*) in relation to the submission of a planning application for a small solar array / photovoltaic power system (the *Development*) to be sited in part of an arable field 0.6ha on The Garn Farm, St Hilary, Cowbridge (the *Site*).
- Habitats surveyed included arable fields and native species-rich defunct hedge.
- A non-statutory designated site (Site of Importance for Nature Conservation, SINC) is present within 60-150m of the *Development*, and potential impacts on the breeding population of great crested newts (GCN) it contains must be considered. No other protected sites were considered likely to be affected by the *Development*.
- Faunal use of the *Site* was also considered for use by a range of species.
- The local SINC designation and biodiversity records identify three ponds within 60-250m of the *Site* as supporting breeding a breeding population of GCN. In the absence of mitigation the scale of the impact at the *Site* level will likely be low; however there is a high risk of significant impacts to individual GCN. Other associated infrastructure works may have higher impacts through destruction and fragmentation of habitats.
- Subject to the provision of detailed site drawings, and restricting the works to be wholly within the footprint of the existing arable field with no works in close proximity to the hedge banks (exact distance to be determined later), then it may be possible to complete the installation of the solar panels with a small amount of ecological supervision in order to ensure that no offences in regard to GCN are committed. This approach would need to be discussed and agreed with the local authority's ecologist given the potential impacts on a protected species and impacts on a designated habitat, with the timing and manner of works to be detailed in a Biodiversity Method Statement, the provision and following of which should be made a planning condition.
- The potential impacts of lighting during and post-development on any bats utilising the habitat along the north western boundary must be considered. The production of a lighting plan, where illumination is proposed for the *Development*, is recommended to ensure that illumination of north western boundary is avoided.
- The hedge along the north western boundary provides potential habitat for nesting birds and should be retained in its current state. Measures to minimise disturbance impacts on nesting birds in the boundary hedgerow may be required, with a possible solution would be to fence off the southern side of the hedge. Access to the hedge by nesting birds would be retained on the northern side of the hedge, whilst any disturbance from the *Development* to the south would be minimised.

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1.0 INTRODUCTION

- 1.1 Wildwood Ecology was commissioned by T J Davies & Sons Ltd (the *Client*) to undertake a Preliminary Ecological Appraisal (*PEA*) in relation to the submission of a planning application for a small solar array / photovoltaic power system (the *Development*) to be sited in part of an arable field 0.6ha on The Garn Farm, St Hilary, Cowbridge (the *Site*), centred on Grid Reference ST 02956 73489 (see Figure 1).
- 1.2 This report confirms the findings of the *PEA*, which was undertaken by an experienced and (where appropriate) licenced ecologist. It outlines any ecological constraints or opportunities for the specific areas under this *Development* as defined above, includes mitigation/compensation measure where necessary, and sets out the need for any further surveys if required.

Site description

- 1.3 The aerial image of the *Site* (see Figure 1) shows it to consist of a roughly triangular-shaped section of an arable field. The north western boundary is defined by a hedgerow that runs towards a wooded pond to the north east of the *Site*. The western boundary of the field is defined by a wooden fence and farm track. The southern boundary is defined by another farm track found to the north of *The Garn* farm buildings. The eastern boundary, undefined at present, will run across the existing arable field.
- 1.4 In the wider area, the *Site* is surrounded by farmland (mostly arable fields) with hedgerows and woodland pockets. There are four ponds within 500m of the *Site*. Three to the north and one to the south west (see Figure 1).

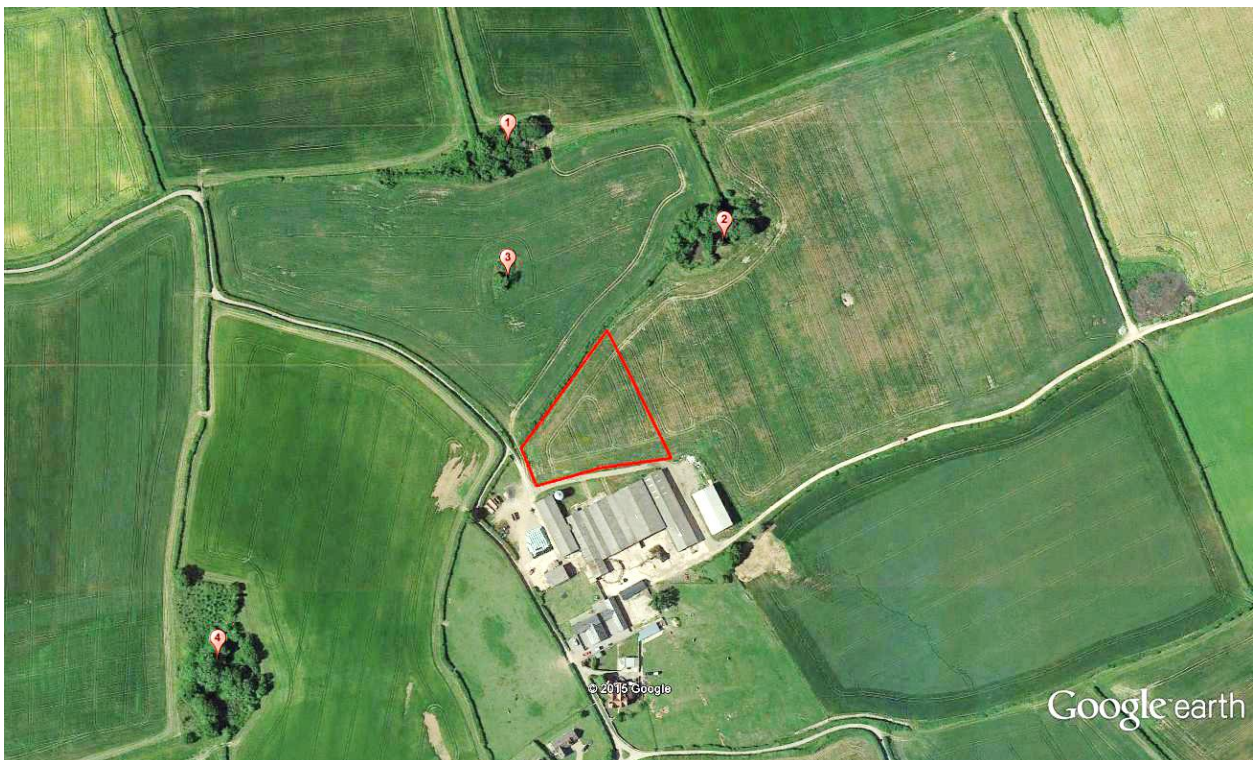


Figure 1 – Aerial image of the *Site* (red line shows the proposed location of the *Development*). Numbered red markers denote the positions of four ponds within 500m of the *Site*. NB Image used under licence (© 2015 Google). Imagery date 12/07/2013.

Survey scope

- 1.5 The *PEA* aims to categorise the ecological interest of the *Site* in relation to the habitats present and determine if any are protected or able to support protected species (e.g., bats, reptiles, nesting birds, badger and otter).
- 1.6 Where required, further surveys may be recommended to fully inform any reasonable avoidance, mitigation or compensation measures, so as to safeguard any significant existing ecological interest within the *Site*.
- 1.7 Where appropriate, opportunities for ecological enhancement (including landscape design or retention), with reference to national and local Biodiversity Action Plans (*BAPs*).

2.0 METHODOLOGY

2.1 The methodology used for this survey consisted of a desk study plus field survey.

Desk study

2.2 A search was conducted using the MAGIC website¹ for the location and citation details of any statutory protected areas designated for their conservation interest within 5km of the *Site*. This included Sites of Special Scientific Interest (SSSIs) or Special Areas of Conservation (SACs).

2.3 In order to compile background information on the *Site* and its immediate surroundings, the South East Wales Biodiversity Records Centre (SEWBReC) was consulted and a data obtained within an approximate 1.0km radius, including non-statutory designations - Sites of Importance for Nature Conservation (SINCs).

Field survey

2.4 This was carried out by Dr Alex Pollard on 16th March 2015, following the Chartered Institute of Ecology and Environmental Management (CIEEM) Preliminary Ecological Appraisal (2013) guidelines and standard Phase 1 Habitat Survey protocol (JNCC, 2010).

2.5 All habitats within and immediately adjacent to the *Site* were classified and mapped. All habitats with the potential to support rare, protected, or otherwise notable species of flora or fauna (together with any direct signs) were noted. A habitat map was drawn up incorporating target notes used to highlight features of particular ecological interest.

2.6 Plant species included in Schedule 9 of the Wildlife and Countryside Act (1981), as amended, were searched for during the Survey. Examples of plants that appear in the schedule include invasive species such as Japanese Knotweed (*Fallopia japonica*) and Giant Hogweed (*Heracleum mantegazzianum*). It is an offence under the Act to spread or cause the spread of these species. The presence of other highly invasive plant species, such as Himalayan Balsam (*Impatiens glandulifera*), was also investigated during the survey.

2.7 Habitats and features with potential to support protected and/or notable conservation priority species of fauna, plus any associated field signs, were recorded.

2.8 In addition, all accessible ponds within 500m of the *Site* were assessed for great crested newt (GCN) using the Habitat Suitability Index (HSI).

2.9 In the context of this report, protected or notable conservation priority fauna species were those considered to meet any of the following criteria:

- Species protected by UK or European legislation;
- UK Post 2010 UK Biodiversity Framework priority species or Local Biodiversity Action Plan (LBAP) species;
- Nationally rare or nationally scarce species;
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber Lists).

¹ <http://magic.defra.gov.uk/>

Limitations and assumptions

- 2.10 The data enquiries and ecological survey will not produce a comprehensive list of plants and animals as this will be limited by factors that influence their presence (e.g. activity and dormancy periods). An assessment can however be made of the habitats within the survey area as to their nature conservation value and potential to support protected or priority species.
- 2.11 Pond number 2 was assessed during the survey; however, assessment of ponds further away from the *Site* (Ponds 1, 3 and 4) was outside of the scope of the PEA.
- 2.12 No other limitations were encountered during the course of either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the *Site's* ecological value could be made.

3.0 RESULTS

Desk study

3.1 Areas of statutory designations of nature conservation interest were identified within the local area together with designations of international nature conservation importance found in the wider area.

Statutory designations

3.2 There are no statutory designations on the *Site* itself. There are four statutory designations of nature conservation interest within a 5.0km radius of the *Site*: all SSSIs (see Table 1 for further details).

Non-statutory designations

3.3 There are no non-statutory designations on the *Site* itself. There is one non-statutory designation of nature conservation interest within a 5.0km radius of the *Site*, a SINC (see Table 1 for further details).

Table 1 – Statutory ecological designations on or near the *Site*.

| Site name | Designation | Description/Special Features | Distance & direction from <i>Site</i> (approx.) |
|-----------------------|-------------|--|---|
| North of the Garn | SINC | <ul style="list-style-type: none"> Two ponds which support good populations of GCN | < 60m NW, <150m N |
| Coed Hills | SINC | <ul style="list-style-type: none"> Extensive area of woodland – a mix of ancient semi-natural broadleaved, semi-natural broadleaved woodland on an ancient woodland site, semi-natural broadleaved woodland and plantation. | 0.50 km S |
| Pysgodlyn Mawr | SSSI | <ul style="list-style-type: none"> Mesotrophic Lake Invertebrate species including Downy Emerald Dragonfly and Hairy Dragonfly | 2.80 km NE |
| Cors Aberthin | SSSI | <ul style="list-style-type: none"> Marshy Grassland Species-rich Neutral Grassland | 3.25 km NW |
| Nant Whitton Woodland | SSSI | <ul style="list-style-type: none"> Semi-natural Broadleaved Woodland | 3.60 km SE |
| Ely Valley | SSSI | <ul style="list-style-type: none"> A strong population of Monkswood | 5.08 km NE |

3.4 An additional data search using the South East Wales Biodiversity Records Centre (*SEWBRc*) produced records of a number of priority and protected species. Only species records from within the last 10 years were considered (see Table 2).

Table 2 – Summary of species records (last 10 years) from local record centre biodiversity search

| Protected & priority species | | # of species (# of records) | | |
|------------------------------|----------------------------|-----------------------------|--------|--------|
| | | On site | < 500m | > 500m |
| Species | Bats | - | - | 3(21) |
| | GCN | - | 1(2) | 1(8) |
| | Otter | - | - | - |
| | Water vole | - | - | - |
| Groups | Birds | - | 3(6) | 9(19) |
| | Fish | - | - | - |
| | Invertebrates | - | - | - |
| | Other amphibians (non-EPS) | - | 2(4) | 4(21) |
| | Other mammals (non-EPS) | - | - | 2(2) |
| | Plants | - | - | 1(1) |
| | Reptiles | - | - | 1(1) |

Field survey

- 3.1 The distribution and extent of habitats observed both within and adjacent to the *Site* is illustrated in the *PEA* survey plan (see Appendix I). An accompanying species list (including scientific names) can be found in Appendix III.
- 3.2 The habitats present on *Site* are described in detail below using the standard Phase 1 survey habitat classification hierarchical alphanumeric reference codes (JNCC, 2010).
- 3.3 The *Site* was made up of the following habitat types: arable and native species-rich defunct hedge.

Arable (J1.1)

- 3.4 The majority of the *Site* consisted of roughly triangular-shaped section of an arable (corn) field. The field was punctuated throughout by exposed stones, with a more extensive area of stones in the south western corner of the field.
- 3.5 Other species present included cleavers, common nettle, creeping buttercup, selfheal and teasel.

Native species-rich defunct hedge (J2.2.1)

- 3.6 The north western boundary was defined by a flailed hedgerow that ran towards a wooded pond to the north east of the *Site*.
- 3.7 Species present included ash, blackthorn (predominant), bramble, broad leaved dock, common nettle, elder, forget-me-not sp., hawthorn, hogweed, holly, ivy, lords & ladies, red campion, rose sp., tansy and wild carrot.

Off-site habitat

- 3.8 Approximately 75m to the north east of the *Site* there was a wooded pond. The HSI calculated for the pond was 0.47, which equates to a pond suitability of 'poor' (see Appendix IV). NB this was the only accessible pond.

Fauna

- 3.9 The presence of the following species were observed or detected around the *Site* during the survey: blackbird, blue tit, chaffinch, collared dove (x3), fox, mole, moorhen, robin and wood pigeon.

Target notes

- 3.10 Please refer to Table 3 for a list and description of the on- and off-site target notes. The on-site positions for these target notes can be seen in the *PEA* Plan in Appendix I.

Table 3 – Target note summary.

| Target note number | Description |
|--------------------|--|
| ① | On-site: Stony area in the south western corner of the arable field. |
| ② | Off-site: Closest pond to the <i>Site</i> . |

4.0 INTERPRETATION AND ASSESSMENT

Ecological impacts of *Development*

- 4.1 The *Development* will require some displacement of habitats present and disturbance to their associated features. This section concerns the assessment of ecological impacts resulting from the *Development*.
- 4.2 The following interpretation and assessment is provided to ensure full compliance with both legislation and policy as described within this report and relate specifically to GCN, nesting birds and bats.

Ecological designations

- 4.3 There are no statutory designations on the *Site* itself. There are four statutory designations of nature conservation interest within a 5.0km radius of the *Site*: all SSSIs (see Table 1 for further details).
- 4.4 There are no statutory designations on the *Site* itself. There are two non-statutory designation of nature conservation interest within a 5.0km radius of the *Site*, a Site of Importance for Nature Conservation (SINC) (see Table 1 for further details), including one within 70-200m of the *Site* which is designated for its population of GCN.

Potential impacts

- 4.5 The statutory designations mentioned above (and in Table 1) are sufficiently well separated from the *Site* that no direct or indirect impacts on their designated features are anticipated as a result of the *Development*.
- 4.6 Land use as determined by aerial images show the land around the North of the Garn SINC ponds being used for grazing until around 2007, after which arable crops are visible in images from 2009 onwards. Changes in land use and management may have impacted on the SINC and the current use of the *Site* and surrounding habitats (including the development site) by GCN.
- 4.7 There is likely to be a limited indirect impact on the Land north of the Garn SINC as a result of this *Development*, with potential benefits if the land below the solar panels is returned to grazing with no future ploughing, increasing the amount of terrestrial habitat for GCN. In addition to the direct impacts on GCN discussed below, it will be appropriate to enhance the habitat features (hedgerows) between the ponds, and if not already available then a suitable ongoing management strategy for the SINC should be created.

Fauna

Great crested newt

- 4.8 Two ponds within 150m of the *Site* are designated as the North of the Garn SINC, as they support populations of GCN.
- 4.9 Data from the *SEWBR*eC search returned 10 records of GCN. Two records <500m from the *Site* (both from 2004) and eight records >500m from the *Site* (between 2005 and 2014). Those records >500m from the *Site* were all associated with the Coed Hills SINC to the south.
- 4.10 Those <500m from the *Site* were recorded in ponds 2 (75m NW – included in the SINC) and 4 (200m SW – not including in the SINC) (see Figure 1). No records were returned from the northern pond (pond 1), although this is known to also contain GCN as it forms part of the SINC.

- 4.11 The condition of the ponds when the last data was gathered in 2004 is unknown, although levels of tree cover appear similar in aerial images between 2004 and 2013. Notwithstanding the HSI result for pond 2 (0.46 = poor), local records indicate the presence of eight adults (6 female / 2 male) in 2004, and so in the absence of any further survey findings the presence of breeding GCN in all ponds will be assumed, with the newts using terrestrial habitats around the ponds at other times of year for migration and hibernation.
- 4.12 Adequate cover is important immediately around a breeding pond as young newts require damp habitat to move into when they leave the water (in order to prevent desiccation). In addition, this habitat will provide both shelter from predators and a viable food source. Most adult amphibians remain close to the breeding site, which makes the habitat immediately surrounding the pond important (Baker *et al.*, 2011). In terrestrial habitat, GCN are associated with rough grassland, scrub and woodland, however, arable land within 100m of breeding sites is also associated with low levels of occupancy (Gent & Gibson, 2003).
- 4.13 The construction of the solar array will result in destruction of the arable habitat to allow for the installation of ground supports for the solar panels, with the ground presumed to be reinstated as grassland following completion of construction. In the absence of mitigation the scale of this impact on the GCN population will be low as the *Development* will be a temporary destruction of intermediate terrestrial habitat >50m from a breeding pond (English Nature, 2001, p.34). Installation of cables, fencing, and other equipment may result in partial destruction (medium impact), or the destruction or isolation/fragmentation of habitats (high impact), depending upon their positioning, and particularly if the bounding hedgerows would be breached.
- 4.14 There still remains a limited risk to individual GCN of killing, injury, and disturbance, dependent upon timing and methods of working.

Nesting birds

- 4.15 Data from the *SEWBR*eC search returned records of three protected and priority species of bird, <500m from the *Site* (common kestrel, northern lapwing and yellowhammer). In addition, the search returned records of nine protected and priority species of bird, >500m from the *Site* (barn owl (Schedule 1 species), common bullfinch, common kestrel, common starling, hedge accentor, house sparrow, northern lapwing, song thrush and yellowhammer). During the survey, five bird species were observed or detected in and around the *Site* (blackbird, blue tit, chaffinch, moorhen, robin, woodpigeon and wren).
- 4.16 The hedge along the north western boundary provides potential habitat for small nesting birds, with potential disturbance likely during the construction phase of the *Development*.
- 4.17 All wild birds, their nests, eggs and dependent young are afforded protection under the Wildlife and Countryside Act 1981 (as amended), with the bird nesting season generally from 1st March until 31st August, and beyond this during good conditions. It should be assumed that birds are nesting within trees during this time, unless proven otherwise. A development cannot take place whilst birds are nesting i.e. until all the young birds have fledged from the nests.
- 4.18 In the absence of mitigation there may be a negative impact on nesting birds as a result of the proposed *Development* through disturbance.

Bats

- 4.19 Data from the SEWBReC search returned records of three protected and priority species of bat, all >500m from the *Site* (common pipistrelle, greater horseshoe and lesser horseshoe).
- 4.20 There were no on-site buildings and the arable field provides some limited opportunities for foraging. The north western hedge is well connected and provides opportunities for foraging bats, but also a potential commuting route to the wider countryside.
- 4.21 In the absence of mitigation there may be a negative impact on bats as a result of the proposed *Development*, through lighting and other disturbance along the north western boundary.

Reptiles

- 4.22 A data search using the SEWBReC returned a single record for adder, 1054m from the *Site* in 2008.
- 4.23 Reptiles are protected against killing and injuring under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it illegal to intentionally kill or injure a common reptile. As a result, reptiles must be removed from areas of development and relocated onto suitable release sites before any *Site* works can commence.
- 4.24 The arable nature of the *Site* is unsuitable to support reptiles.
- 4.25 In the absence of mitigation, no impacts on reptiles are therefore anticipated as a result of the proposed *Development*.

Otter

- 4.26 Data from the SEWBReC search returned no records for otter.
- 4.27 The nearest large watercourse is the River Thaw, approximately 3km to the east of the *Site*. There is no suitable habitat for otter on the *Site*.
- 4.28 In the absence of mitigation, no impacts on otters are therefore anticipated as a result of the proposed *Development*.

Badger

- 4.29 Data from the SEWBReC search returned no records of badger.
- 4.30 No setts or features that could be used as a sett, or latrines or snuffle holes were observed within or near to the *Site*. There were some animal paths recorded within the north western hedge, however, there was no corroborating evidence to associate these with badger.
- 4.31 In the absence of mitigation, no impacts on badgers are therefore anticipated as a result of the proposed *Development*.

Common dormouse

- 4.32 Data from the SEWBReC search returned no records of common dormouse.
- 4.33 No evidence of common dormice was observed on-site and the on-site habitat along the north western boundary was sub-optimal, although with good connectivity to the wider environment.
- 4.34 In the absence of mitigation, no impacts on common dormice are therefore anticipated as a result of the proposed *Development*.

Water vole

- 4.35 Data from the SEWBReC search returned no records of water vole.

4.36 No on-site ponds were present and the terrestrial habitat was highly cultivated.

4.37 In the absence of mitigation, no impacts on water vole are therefore anticipated as a result of the proposed *Development*.

Marsh fritillary

4.38 Data from the *SEWBRc* search returned no records of marsh fritillary butterfly (a single record for small pearl-bordered fritillary was returned 1752m from the *Site*).

4.39 The on-site habitats were considered unsuitable to support populations of this species.

4.40 In the absence of mitigation, no impacts on marsh fritillary are therefore anticipated as a result of the proposed *Development*.

5.0 CONCLUSION AND RECOMMENDATIONS

- 5.1 A Preliminary Ecological Appraisal (PEA) was undertaken at the Garn Farm site by an experienced ecologist from Wildwood Ecology in March 2015.
- 5.2 A non-statutory designated site (SINC) is present within 60-150m of the *Development*, and potential impacts on the breeding population of GCN it contains must be considered. No other protected sites were considered likely to be affected by the *Development* due to their spatial separation from the *Site*.
- 5.3 Habitats surveyed included arable and native species-rich defunct hedge. Faunal use of the *Site* was also considered for use by a range of species.
- 5.4 Recommendations are provided below with regard to GCN, nesting birds and bats.

Great crested newt

- 5.5 Local records and SINC designations identified three ponds within 250m of the *Site* as GCN breeding ponds. GCN are likely to be present within the neighbouring ponds during the breeding season, and will use the terrestrial habitats, including the *Development* boundary, at other times of year for migration and hibernation.
- 5.6 In the absence of mitigation the scale of the impact at the *Site* level is likely to be low from works contained within the arable field only, however there is a risk of impacts to individual GCN. Depending upon the positioning of cable trenches and other infrastructure there may be higher impacts as a result of the destruction and fragmentation of habitats.
- 5.7 The installation of a solar array of this size will be relatively short in duration (approximately one week). Subject to the provision of detailed site drawings, and restricting the works to be wholly within the footprint of the existing arable field with no works in close proximity to the hedge banks (exact distance to be determined later), then it may be possible to complete the installation of the solar panels with a small amount of ecological supervision in order to ensure that no offences in regard to GCN are committed. We feel this approach would be proportional; however, it would need to be discussed and agreed with the local authority's ecologist given the potential impacts on a protected species and impacts on a designated habitat. The timing and manner of works should be detailed in a Biodiversity Method Statement, the provision and following of which should be made a planning condition.

Bats

- 5.8 The potential impacts of lighting during and post-development on any bats utilising the habitat along the north western boundary must be considered.
- 5.9 The production of a lighting plan, where illumination is proposed for the *Development*, is recommended to ensure that illumination of north western boundary is avoided.

Nesting birds

- 5.10 The hedge along the north western boundary provides potential habitat for nesting birds and should be retained in its current state.
- 5.11 All wild birds, their nests, eggs and dependent young are afforded protection under the Wildlife and Countryside Act 1981 (as amended), with the bird nesting season generally from 1st March until 31st August. It should be assumed that birds are nesting within trees during this time, unless proven

otherwise. The *Development* cannot take place whilst birds are nesting i.e. until all the young birds have fledged from the nests.


- 5.12 In the event that clearance work has to be undertaken during the nesting season, a breeding bird survey would be required and must be carried out by a suitably qualified person. Any active nests identified should be protected until the young have fledged. Where a Schedule 1 species (as defined in the Wildlife and Countryside Act - <http://www.jncc.gov.uk/page-3614>) is involved, compensation for impacts, e.g., loss of nesting sites, should be devised and implemented.
- 5.13 Measures to minimise disturbance impacts on nesting birds in the boundary hedgerow may be required, with a possible solution would be to fence off the southern side of the hedge. Access to the hedge by nesting birds would be retained on the northern side of the hedge, whilst any disturbance from the *Development* to the south would be minimised.

6.0 REFERENCES


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APPENDIX I: PRELIMINARY ECOLOGICAL APPRAISAL PLAN

Legend


 Site boundary

Habitat classifications

 J.1.1 Arable

Boundary features

 Defunct hedgerow, native species-rich

 Fence

Points

 Target note

PROJECT

The Garn Farm

CLIENT

T J Davies & Sons

DRAWING TITLE

Preliminary Ecological Appraisal Plan

SCALE (@A3): 1:5,000 DRAWN BY: MD DATE: 24 Mar 2015

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APPENDIX II: SURVEY IMAGES



Figure 2 – Arable field looking north east (note the stony area in the foreground - south western corner).



Figure 3 – Arable field looking south east (farm buildings beyond).



Figure 4 – Native species-rich defunct hedge looking north east (NB habitat surrounding Pond 2 can be seen in the distance).



Figure 5 – Arable field looking north (fenced western boundary and hedge along north western boundary can be seen).



Figure 6 – Pond 2 to the north east of the Site.



Figure 7 – Pond 2 to the north east of the Site.

APPENDIX III: SPECIES LIST

To be submitted to the appropriate Local Records Centre

Site Name: The Garn Farm, St Hilary, Cowbridge
 Grid ref: ST 02956 73489

Provided by: Wildwood Ecology
 Verified by: Alex Pollard

| Common name | Scientific Name (if known) | Number | Comment |
|-------------------|-------------------------------|--------|---------|
| F L O R A | | | |
| ash | <i>Fraxinus excelsior</i> | | |
| blackthorn | <i>Prunus spinosa</i> | | |
| bramble | <i>Rubus fruticosus</i> | | |
| broad leaved dock | <i>Rumex obtusifolius</i> | | |
| elder | <i>Sambucus nigra</i> | | |
| forget me-not | <i>Myosotis sp.</i> | | |
| hawthorn | <i>Crataegus monogyna</i> | | |
| hogweed | <i>Heracleum sphondylium</i> | | |
| holly | <i>Ilex aquifolium</i> | | |
| ivy | <i>Hedera helix</i> | | |
| lords and ladies | <i>Arum maculatum</i> | | |
| red campion | <i>Silene dioica</i> | | |
| rose | <i>Rosa sp.</i> | | |
| selfheal | <i>Prunella vulgaris</i> | | |
| tansy | <i>Tanacetum vulgare</i> | | |
| teasel | <i>Dipsacus sp.</i> | | |
| wild carrot | <i>Daucus carota</i> | | |
| F A U N A | | | |
| blackbird | <i>Turdus merula</i> | | |
| blue tit | <i>Cyanistes caeruleus</i> | | |
| chaffinch | <i>Fringilla coelebs</i> | | |
| collared dove | <i>Streptopelia decaocto</i> | | |
| fox | <i>Vulpes vulpes</i> | | |
| mole | <i>Talpa europaeus</i> | | |
| moorhen | <i>Gallinula chloropus</i> | | |
| robin | <i>Erithacus rubecula</i> | | |
| woodpigeon | <i>Columba palumbus</i> | | |
| blackbird | <i>Turdus merula</i> | | |
| blue tit | <i>Cyanistes caeruleus</i> | | |
| chaffinch | <i>Fringilla coelebs</i> | | |

APPENDIX IV: HABITAT SUITABILITY ASSESSMENT

| HSI | Category | SI | Criteria | Pond # |
|-----|----------|----|----------|--------|
| | | | | 2 |

| | | | | |
|--------------------------|----------------|------|--|------|
| SI ₁ Location | A (optimal) | 1 | | |
| | B (marginal) | 0.5 | | 0.50 |
| | C (unsuitable) | 0.01 | | |

| | | | | |
|---------------------------|-------------------|-------------------|--|------|
| SI ₂ Pond area | (m ²) | 950m ² | | 0.97 |
|---------------------------|-------------------|-------------------|--|------|

| | | | | |
|-----------------------------|-----------|-----|---|------|
| SI ₃ Pond drying | Never | 0.9 | Never dries | |
| | Rarely | 1.0 | Dries no more than 2 years in 10 or only in drought | 1.00 |
| | Sometimes | 0.5 | Dries between 3 years in 10 to most years | |
| | Annually | 0.1 | Dries annually | |

| | | | | |
|-------------------------------|----------|------|--|------|
| SI ₄ Water quality | Good | 1.0 | Abundant and diverse invertebrate community | |
| | Moderate | 0.67 | Moderate invertebrate diversity | 0.67 |
| | Poor | 0.33 | Low invertebrate diversity, few submerged plants | |
| | Bad | 0.01 | Clearly polluted, only pollution tolerant inverts, no submerged plants | |

| | | | | |
|-----------------------|---|-----|--|------|
| SI ₅ Shade | Estimate perimeter shaded to at least 1m from shore | 60% | | 1.00 |
|-----------------------|---|-----|--|------|

| | | | | |
|----------------------|--------|------|---|------|
| SI ₆ Fowl | Absent | 1 | No evidence of water fowl (although moorhen may be present) | |
| | Minor | 0.67 | Waterfowl present, but little sign of impacts | |
| | Major | 0.01 | Severe impact of waterfowl | 0.01 |

| | | | | |
|----------------------|----------|------|---|------|
| SI ₇ Fish | Absent | 1 | No records of fish stocking and no fish revealed during survey | |
| | Possible | 0.67 | No evidence of fish, but local conditions suggest they may be present | 0.67 |

| | | | | |
|--|-------|------|--|--|
| | Minor | 0.33 | Small numbers of crucian carp, goldfish or stickleback known to be present | |
| | Major | 0.01 | Dense populations of fish known to be present | |

| | | | | |
|-----------------------|---|---------------|--|------|
| SI ₈ Ponds | Count # ponds within 1km of survey pond, not separated by major barriers & divide by 3.14 | 7/3.14 = 2.23 | | 0.85 |
|-----------------------|---|---------------|--|------|

| | | | | |
|-------------------------------------|----------|------|--|------|
| SI ₉ Terrestrial habitat | Good | 1 | | |
| | Moderate | 0.67 | | 0.67 |
| | Poor | 0.33 | | |
| | None | 0.01 | | |

| | | | | |
|------------------|---|-----|--|------|
| SI ₁₀ | Estimate the % pond surface area occupied by macrophyte cover (between May and end of Sept) | 20% | | 0.50 |
|------------------|---|-----|--|------|

$$HSI = (0.50 \times 0.97 \times 1.00 \times 0.67 \times 1.00 \times 0.01 \times 0.67 \times 0.85 \times 0.67 \times 0.50)^{1/10} = 0.46$$

| | | |
|------|---|------------------|
| HSI | = | Pond suitability |
| <0.5 | = | poor |

APPENDIX VI: PLANNING POLICY AND LEGISLATION

The following local and national planning policy and both primary and European legislation relating to nature conservation and biodiversity status are considered of relevance to the current proposal.

Planning and biodiversity

Local Authorities have a requirement to consider biodiversity and geological conservation issues when determining planning applications under the following planning policies.

Planning Policy Wales (2014) and Technical Advice Note 5 (2009)

Planning Policy Wales (Edition 7, July 2014) sets out the land use planning policies of the Welsh Government, with Chapter 5 dealing with Conserving and Improving Natural Heritage and the Coast. The advice contained within Planning Policy Wales (PPW) is supplemented for some subjects by Technical Advice Notes (TAN's).

TAN 5 (Welsh Government, 2009) specifically provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. The TAN provides advice for local planning authorities on the key principles of positive planning for nature conservation; nature conservation and Local Development Plans; nature conservation in development management procedures; development affecting protected internationally and nationally designated sites and habitats; and development affecting protected and priority habitats and species.

Under Section 2.4 within the TAN 5, 'when deciding planning applications that may affect nature conservation local planning authorities should':

- Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;
- Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;
- Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;
- Ensure that appropriate weight is attached to designated sites of international, national and local importance;
- Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;
- Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;
- Ensure that the range and population of protected species is sustained;
- Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered;

Legislation and biodiversity

Certain species of animals and plants found in the wild in the UK are legally protected from being harmed or disturbed. These species are listed in the Wildlife and Countryside Act 1981 (as amended) or are named as European Protected Species (EPS) in the Conservation of Habitats and Species Regulations 2010 (as amended). These two main pieces of legislation have been consulted when writing this report and are therefore described in detail within this section.

Other relevant legislation and policy documents that have been consulted include - The Countryside and Rights of Way Act 2000; Natural Environment and Rural Communities Act 2006; The Hedgerow Regulations 1997; Biodiversity Action Plans, both UK-wide (UKBAP) and Local plans (LBAPs), and The National Planning Policy Framework (NPPF).

There is also legislation that legally protects certain animals - for example, the Protection of Badgers Act (1992) protects badgers and their setts, and the Deer Act (1991) places restrictions on actions that can be taken against deer species.

Wildlife & Countryside Act 1981 (as amended)

The Wildlife & Countryside Act 1981 (as amended) [WCA] is the primary legislation for England and Wales for the protection of flora, fauna and the countryside. Part I within the Act deals with the protection of wildlife.

Most European Protected Species offences are now covered under the Conservation of Habitats and Species Regulations (see below), but some 'intentional' acts are still covered under the WCA, such as obstructing access to a bat roost.

The WCA prohibits the release to the wild of non-native animal species listed on Schedule 9 (e.g. Signal Crayfish and American Mink). It also prohibits planting in the wild of plants listed in Schedule 9 (e.g. Japanese Knotweed and *Rhododendron ponticum*) or otherwise deliberately causing them to grow in the wild. This is to prevent the release of invasive non-native species that could threaten our native wildlife.

The provisions relating to animals in the Act only apply to 'wild animals'; these are defined as those that are living wild or were living wild before being captured or killed. It does not apply to captive bred animals being held in captivity.

There are 'defences' provided by the WCA. These are cases where acts that would otherwise be prohibited by the legislation are permitted, such as the incidental result of a lawful operation which could not be reasonably avoided, or actions within the living areas of a dwelling house.

Licensing: certain prohibited actions under the Wildlife and Countryside Act may be undertaken under licence by the proper authority. For example scientific study that requires capturing or disturbing protected animals can be allowed by obtaining a licence – e.g. bat surveys.

Conservation of Habitats and Species Regulations 2010 (as amended)

The Conservation of Habitats and Species Regulations 2010 (as amended) (which are the principal means by which the EC Habitats Directive is transposed in England and Wales) update the legislation and consolidate all the many amendments which have been made to the Regulations since they were first made in 1994.

These regulations provide for the:

- protection of European Protected Species [EPS] (animals and plants listed in Annex IV Habitats Directive which are resident in the wild in Great Britain) including bats, dormice, great crested newt, and otters;
- designation and protection of domestic and European Sites - e.g. Site of Special Scientific Interest [SSSI] and Special Area of Conservation [SAC]; and
- adaptation of planning controls for the protection of such sites and species.

Public bodies (including the Local Planning Authority) have a duty to have regard to the requirements of the Habitats Directive in exercising their function – i.e. when determining a planning application.

There is no defence that an act was the incidental and unavoidable result of a lawful activity.

Licensing: it is possible for actions which would otherwise be an offence under the Regulations to be undertaken under licence issued by the proper authority. For example, where a European Protected Species has been identified and the development risks deliberately affecting an EPS, then a 'development licence' may be required.

Species protection

The following protected species information is relevant to this report. Legislation is only discussed in relation to planning and development; other offences may exist.

Amphibians

The common frog, common toad, common newt, and palmate newt receive limited protection under the Wildlife and Countryside Act 1981 (as amended), making it illegal to sell or trade them.

The Great Crested Newt and Natterjack Toad are fully protected under the Conservation of Habitats and Species Regulations 2010 (as amended) as European Protected Species. It is illegal to:

- Deliberately capture, injure, kill, or disturb either species,
- Intentionally or recklessly obstruct access to any structure/place used for shelter or protection, or
- Damage or destroy a breeding site or resting place.

Bats

All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence inter alia to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place of a bat.

In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Obstruct access to any structure or place which any bat uses for shelter or protection; or
- Disturb any bat while occupying a structure or place which it uses for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts, then a licence will need to be obtained from Natural Resources Wales, which would be subject to appropriate measures to safeguard bats.

Birds

In the UK, the provisions of the Birds Directive are implemented through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 (as amended). All wild birds, their nests and eggs are protected it an offence to:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any such bird whilst it is in use or being built; or
- take or destroying an egg of any such wild bird.

The law covers all species of wild birds including common, pest or opportunistic species.

Special protection against disturbance during the breeding season is also afforded to those species listed on Schedule 1 of the Act.