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## Preliminary Ecological Appraisal

**Survey site:**

New Living Well Centre, Severn Hospice, Bicton Heath, Shrewsbury, SY3 8HS

**Client:**

Gould Singleton Architects

**Survey date:**

23<sup>rd</sup> April 2024

**Project:**

This report is prepared to inform a planning application with the Shropshire Council. The proposal is described as:

A proposed photovoltaic array.

Survey methodology and legislation can be found in the Arbtech Supplement: [PEA Methodology and Legislation - 2024](#).

The site survey was undertaken by Robbie MacKenzie BSc, (Natural England Protected Species Licence Numbers: [Bats] (2021-53484-CLS-CLS) [Great Crested Newts] (2019-39449-CLS-CLS))					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (mph)	Rain
23/04/2024	9	65	30	9	None

<b>Ecological Survey Factor</b>	<b>Detailed using desk study and site survey (carried out under good weather conditions). Any specific limitations noted within relevant section. This table may include further work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. All clients are expected to read and understand this section, or to contact the lead surveyor for advice.</b>
<b>Conclusion, Impact or Recommendations</b>	
<b>Habitats and plants (see site location plan in appendix 1, preliminary ecological appraisal plan in appendix 2, offsite pond plan in appendix 3, proposal plan in appendix 4 and photos in appendix 5).</b>	
<b>Botanical species are described with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).</b>	
<i>Summary of Survey Findings</i>  <i>(UKHab codes used)</i>	The survey site is centred on National Grid Reference: SJ4605513895 and has an area of approximately 0.7ha. The site comprises modified grassland with scattered trees and scattered scrub, bramble scrub and a species-rich native hedgerow. The site is located in Bicton Heath, to the northwest of Shrewsbury. To the north the site is bordered by an area of woodland, with the B4380 road beyond. To the east, the site is bordered by residential apartments, with agricultural land beyond. To the south, the site is bordered by open agricultural land comprising grassland, with pockets of scrub and hedgerows. To the west, the site is bordered in part by woodland, with the Severn Hospice beyond and in part by a grassland field, with The Uplands care home beyond.

	<p><b>Onsite Habitats</b></p> <p><u>Modified Grassland, Scattered Trees, Scattered Scrub, Tall or Tussocky Sward, Bare Ground [g3c 32 10 128 510]</u></p> <p>The majority of the site comprises a modified grassland field that appears to be subject to limited management, with a tussocky sward present across the majority of the grassland. An area of bare ground is present in the west of the site, which is understood to have been temporarily damaged due to works to a nearby substation.</p> <p>Species present within the modified grassland include:</p> <p><b>D:</b> meadow foxtail</p> <p><b>A:</b> red fescue</p> <p><b>F:</b> yorkshire-fog, cock's-foot, false-oat grass</p> <p><b>O:</b> common nettle, cleavers, broad-leaved dock, common ragwort, creeping buttercup, lesser celandine, dandelion, creeping thistle</p> <p><b>R:</b> common mouse-ear, white clover, field woodrush, hogweed, greater willowherb, raspberry, hedge bindweed, common vetch, thyme-leaved speedwell, meadow buttercup, red campion, spanish bluebell and daffodil</p> <p>Scattered trees are present throughout the edges of the grassland, species include alder, field maple, wild cherry, rowan, silver birch, sycamore, ash, oak and plum.</p> <p>An area of scattered scrub is present along the northern section of the eastern boundary, species include hazel, dogwood, spindle, guelder rose, hawthorn, dog-rose, bramble, goat willow and wayfaring tree.</p>
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	<p>Grassland – Condition Indication:</p> <p>On average there are less than 6-8 species per m<sup>2</sup>. Sward height across the habitat parcel is unmanaged with a varied and tussocky sward at the time of the survey. The area along the eastern boundary comprises scattered scrub accounting for &gt;20% of the grassland, while the majority of the grassland comprises very occasional scattered scrub accounting for &lt;20%. Physical damage is &gt;5% the total grassland area caused by the ground works to the associated substation. Cover of bare ground is between 1-10%. No bracken was recorded within the habitat parcel. Spanish bluebell is a non-native invasive species associated with the habitat parcel.</p> <p><u>Bramble Scrub, Ecotone [h3d 530]</u></p> <p>An area of scrub is present in the north of the site, which is dominated by bramble. Other species found rarely include elder, wayfaring tree, elm, hawthorn and hazel. Part of this habitat falls within a priority habitat classification of deciduous woodland. One tree is present within the onsite habitat itself and the habitat is considered to be a transitional ecotone between the adjacent woodland habitat and onsite grassland.</p> <p><u>Species-rich Native Hedgerow [h2a5]</u></p> <p>A species-rich hedgerow lies forms part of the southwestern boundary and appears to be immature and unmanaged at a height of ~4-6m. This hedgerow is dominated by hawthorn, with field maple, hazel, hornbeam, spindle and crab apple.</p>
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	<p><b>Local Habitats</b></p> <p><u>Lowland Mixed Deciduous Woodland [w1f]</u></p> <p>Lowland mixed deciduous woodland lies adjacent to the north of the site boundary. This woodland is classified as priority habitat deciduous woodland.</p>
<p><i>Foreseen Impacts</i></p>	<p>The grassland habitat on site is widespread and not notable. It is understood that the majority of grassland within the site could be retained post-development. It is anticipated that minor losses will occur to the grassland in order to install the foundations of the proposed solar panels.</p> <p>The hedgerow and trees are of greater ecological value and are to be retained as part of the proposals.</p> <p>In the absence of mitigation, there is potential for indirect effects to the retained hedgerow and trees and adjacent woodland such as pollution or tree/root damage that may occur during construction.</p>
<p><i>Recommendations</i></p>	<p>It is recommended that the retained grassland is enhanced through the oversowing of a species-rich wildflower grassland seed mixture.</p> <p>Best practice measures to minimise the possibility of pollution and damage affecting the retained hedgerow and trees, as well as the offsite woodland must be implemented during construction. A Construction Environment Management Plan (CEMP) may be required for this.</p>
<p><b>Locality and Designated Sites</b></p>	
<p><i>Summary of Survey Findings</i></p>	<p>The site is not known to be subject to any designation, and there are no known statutory sites nearby within 2km of the site.</p>

	The site does not fall within a SSSI Impact Risk Zone that highlights any potential impacts as a result of the proposed development.
<i>Foreseen Impacts</i>	None.
<i>Recommendations</i>	None required.
<b>Invasive / Non-native species</b>	
<i>Summary of Survey Findings</i>	Spanish bluebell was recorded within the grassland.
<i>Foreseen Impacts</i>	There is potential for this species to spread/hybridise with native bluebell present within the adjacent woodland.
<i>Recommendations</i>	It is recommended that this species is removed as part of the proposed development.
<b>Invertebrates</b>	
<i>Summary of Survey Findings</i>	No habitat for protected or notable invertebrates is found on site. It is likely that the habitats onsite such as modified grassland, hedgerow, scrub and trees support a common assemblage of invertebrates.
<i>Foreseen Impacts</i>	None foreseen.
<i>Recommendations</i>	It is recommended that species-rich grassland be provided as part of the proposed development which would provide enhanced opportunities for invertebrates post-development. It is recommended that log piles are provided post-development which would create new habitat within the site for saproxylic invertebrate species.
<b>Bats</b>	
<i>Summary of Survey Findings</i>	The hedgerow, trees and adjacent woodland offer suitable foraging and commuting opportunities for bats. The grassland is considered to offer limited foraging opportunities for bats.  A total of 3 granted EPSLs were identified within 2km of the site boundary, as follows:

	<ul style="list-style-type: none"> <li>• ~0.5km SE. Damage of a resting place, common pipistrelle and soprano pipistrelle (EPSM2012-4511)</li> <li>• ~0.8km SW. Destruction of a resting place, brown long-eared, soprano pipistrelle and common pipistrelle (2015-15993-EPS-MIT)</li> <li>• ~1.2km NW. Destruction of a resting place, common pipistrelle and brown long-eared (EPSM2011-3700)</li> </ul> <p>No trees within the site, or immediately adjacent to the site, were identified as having developed features that may potentially support roosting bats.</p>
<i>Foreseen Impacts</i>	There is potential for indirect impacts to occur through light spill generated by the proposed development to habitats that may be utilised for foraging/commuting bats, such as the onsite trees and hedgerow.
<i>Recommendations</i>	<p>A low impact lighting strategy will be adopted for the site post-development which outlines the areas of the site (such as retained hedgerow, trees and adjacent woodland) that will be retained as dark corridors. Parameters can be found on the Bat Conservation Trust website:</p> <p><a href="https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting-2">https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting-2</a></p> <p>The recommended creation of species-rich wildflower grassland would increase opportunities for invertebrates, which would serve as an enhanced foraging resource for bats.</p> <p>It is recommended that new bat boxes are installed on retained trees to provide enhanced roosting opportunities within the site post-development, in addition to any mitigation measures necessary in the event any roosts are lost/damaged as part of the proposed development.</p>
<b>Birds</b>	
<i>Summary of Survey Findings</i>	No notable bird species were recorded during the survey.

	The hedgerow, scrub, grassland and trees offer suitable foraging and nesting opportunities for birds.
<i>Foreseen Impacts</i>	The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests. Given that the hedgerow, scrub, trees and majority of the grassland are to be retained, it is not considered that significant adverse impacts to birds are likely as a result of the proposals.
<i>Recommendations</i>	<p>Any vegetation removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken immediately, by a qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.</p> <p>Precautions should be taken with machinery and noise levels when working close to any retained nests so as not to disturb any nearby nesting birds during construction works. At least a 3-5m buffer should be created between any machinery and active nests until the young have fledged.</p> <p>It is recommended that new bird boxes are installed on retained trees to provide enhanced nesting opportunities within the site post-development. The recommended enhancement to the retained grassland to improve its species-richness would provide enhanced foraging opportunities for birds.</p>
<b>Reptiles</b>	
<i>Summary of Survey Findings</i>	<p>Given the relaxed management of the grassland the presence of tussocks, it is considered that reptiles may be present within the grassland.</p> <p>The hedgerow, scrub and trees may also offer some shelter/hibernation opportunities for reptiles.</p>



<p><i>Foreseen Impacts</i></p>	<p>Given the proposals for the site are for the provision of solar panels over the existing grassland, it is considered that this would reduce the suitability of the grassland for reptiles through the reduction of sunlight, which is an essential resource for reptiles to be able to bask.</p> <p>There is also a risk that a reptiles could be injured or killed during construction without mitigation.</p>																																							
<p><i>Recommendations</i></p>	<p>It is recommended that specific surveys for reptiles are undertaken within the grassland to assess presence/absence of this group.</p>																																							
<p><b>Amphibians</b></p>																																								
<p><i>Summary of Survey Findings</i></p>	<p>Given the tussocky nature of the grassland, it is considered that this represents suitable habitat for amphibians. The hedgerow, scrub and trees offer shelter/hibernation opportunities for amphibians. There are a total of 12 ponds that lie within 500m of the site boundary that are not separated from the site by any significant dispersal barriers. The locations of these ponds can be seen at <b>Appendix 3</b> and distances from the site boundary are detailed in table 1 below:</p> <p><b>Table 1.</b> Offsite ponds located within 500m of site boundary.</p> <table border="1" data-bbox="638 874 1099 1391"> <thead> <tr> <th>Pond</th> <th>Distance (m)</th> <th>Direction</th> </tr> </thead> <tbody> <tr><td>P1</td><td>90</td><td>SW</td></tr> <tr><td>P2</td><td>130</td><td>NE</td></tr> <tr><td>P3</td><td>250</td><td>W</td></tr> <tr><td>P4</td><td>260</td><td>W</td></tr> <tr><td>P5</td><td>280</td><td>W</td></tr> <tr><td>P6</td><td>240</td><td>W</td></tr> <tr><td>P7</td><td>320</td><td>W</td></tr> <tr><td>P8</td><td>450</td><td>W</td></tr> <tr><td>P9</td><td>440</td><td>N</td></tr> <tr><td>P10</td><td>370</td><td>S</td></tr> <tr><td>P11</td><td>410</td><td>SE</td></tr> <tr><td>P12</td><td>470</td><td>NW</td></tr> </tbody> </table>	Pond	Distance (m)	Direction	P1	90	SW	P2	130	NE	P3	250	W	P4	260	W	P5	280	W	P6	240	W	P7	320	W	P8	450	W	P9	440	N	P10	370	S	P11	410	SE	P12	470	NW
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Habitat suitability index was undertaken of ponds P3, P4 and P5 during the habitat survey. The results of these surveys are shown in table 2 below.

**Table 2.** Habitat suitability index (HSI) of P3-P5.

Pond Ref	P3		P4		P5	
HSI Index	HSI Index Parameter	HSI Score	HSI Index Parameter	HSI Score	HSI Index Parameter	HSI Score
1 – Location	Zone A	1	Zone A	1	Zone A	1
2 – Pond Area	50m <sup>2</sup>	0.1	25m <sup>2</sup>	0.05	100m <sup>2</sup>	0.15
3 – Pond Drying	Never dries	0.9	Never dries	0.9	Annually	0.1
4 – Water Quality	Bad	0.01	Bad	0.01	Moderate	0.67
5 – Shade	0%	1	0%	1	10%	1
6 – Waterfowl	Absent	1	Absent	1	Absent	1
7 – Fish	Absent	1	Absent	1	Absent	1
8 – waterbody count in wider landscape within 1km	15	1	15	1	15	1
9 – Terrestrial Habitat	Poor	0.33	Poor	0.33	Moderate	0.67
10 – Macrophytes	0%	0.3	0%	0.3	90%	0.3
<b>TOTAL</b>	-	<b>0.394</b>	-	<b>0.367</b>	-	<b>0.538</b>
<b>CATEGORY</b>	-	<b>Poor</b>	-	<b>Poor</b>	-	<b>Below Average</b>

Two great crested newt European Protected Species Licences (EPSLs) were returned within 2km of the site boundary, as follows:

- ~0.5km SE. Destruction of a resting place (EPSM2010-2320)

	<ul style="list-style-type: none"> <li>• ~0.7km S. Damage and destruction of a resting place (2015-15236-EPS-MIT)</li> </ul> <p>A total of 8 great crested newt class licence returns are located within 2km of the site boundary. The closest class licence return is from 2017 and is located ~0.55km south of the site boundary.</p>
<p><i>Foreseen Impacts</i></p>	<p>It is understood that the majority of grassland within the site could be retained post-development. It is anticipated that minor losses will occur to the grassland in order to install the foundations of the proposed solar panels.</p> <p>Using Natural England’s rapid risk assessment for great crested newts, it highlights that there is a <b>Green: Offence Highly Unlikely</b> for any works onsite equating to &lt;0.01ha. An <b>Amber: Offence Likely</b> outcome is triggered for any works &gt;0.01ha within 100m of a breeding pond or works &gt;0.5ha within 100-250m of a breeding pond.</p> <p>It is possible that great crested newts and other amphibians may be killed or injured during construction in the absence of mitigation.</p>
<p><i>Recommendations</i></p>	<p><i>If proposed impacts to onsite habitats will not exceed 0.01ha:</i></p> <p>The risk of an offence is highly unlikely and a precautionary non-licenced mitigation plan with regard to great crested newts is recommended.</p> <p><i>If proposed impacts to onsite habitats will exceed 0.01ha but less than 0.5ha:</i></p> <p>It is recommended that an Environmental DNA (eDNA) survey is undertaken on pond P1 (subject to the approval of access) to assess presence/absence of great crested newts. In the event that this is returned</p>

	<p>as positive, or if access cannot be obtained to survey, then it is recommended that a District Licence (DLL) be obtained from Natural England to facilitate the proposed works. In the event the eDNA survey is returned as negative, then a non-licenced mitigation plan with regard to great crested newts is recommended.</p> <p><i>If proposed impacts to onsite habitats will exceed 0.5ha:</i></p> <p>No further surveys. It is recommended that DLL be obtained from Natural England to facilitate the proposed works.</p> <p>The recommended enhancement of the grassland to a species-rich wildflower grassland would provide enhanced foraging opportunities for amphibians post-development. The provision of log piles would provide new shelter/hibernation opportunities in the event that amphibians are present in the locality.</p>
<b>Badger</b>	
<i>Summary of Survey Findings</i>	No evidence of badgers was recorded during the survey. The grassland, hedgerow, scrub and trees offer foraging opportunities for this species.
<i>Foreseen Impacts</i>	<p>No setts are anticipated to be impacted as a result of the proposed development.</p> <p>The minor losses of grassland (foraging habitat) is likely to be inconsequential to local badger populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of badgers, if present.</p>
<i>Recommendations</i>	<p>Basic precautionary mitigation during construction is recommended:</p> <ul style="list-style-type: none"> <li>• A pre-commencement inspection of the site will be undertaken for any new badger activity if works do not commence within three months.</li> </ul>

	<ul style="list-style-type: none"> <li>• Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape.</li> <li>• The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to habitats which badgers could use. South and west boundaries.</li> <li>• Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.</li> <li>• In the unlikely event that a badger sett is identified within 30m, works must cease and advice must be sought from a suitably qualified ecologist.</li> </ul> <p>The recommended enhancement of the grassland to a species-rich wildflower grassland would provide enhanced foraging opportunities for badgers post-development.</p>
<b>Riparian animals</b>	
<i>Summary of Survey Findings</i>	No watercourses were identified within close proximity to the site and as such, it is not considered that any riparian mammals would be present within the site.
<i>Foreseen Impacts</i>	None.
<i>Recommendations</i>	None.
<b>Hazel dormouse</b>	
<i>Summary of Survey Findings</i>	<p>The hedgerow offer potential opportunities for hazel dormice, however it is unlikely that this species would be present as they are not well recorded in the locality.</p> <p>There are no hazel dormouse European Protected Species Licences (EPSLs) within 4km of the site boundary.</p>

<i>Foreseen Impacts</i>	It is unlikely that hazel dormice would be present within the site. Given this and that no impacts are proposed to the hedgerow, no impacts are anticipated to hazel dormice as a result of the proposed development.
<i>Recommendations</i>	None.
<b>Other e.g. hedgehog</b>	
<i>Summary of Survey Findings</i>	The hedgerow, trees, scrub and grassland onsite provide foraging and commuting opportunities for hedgehogs.
<i>Foreseen Impacts</i>	It is considered that minor losses to grassland would be inconsequential to local hedgehog populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of hedgehogs, if present.
<i>Recommendations</i>	<p>The provision of the recommended wildflower grassland would provide enhanced foraging opportunities for this species post-development.</p> <p>A precautionary working method will be implemented during construction, including the following measures:</p> <ul style="list-style-type: none"> <li>• Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape.</li> <li>• The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which hedgehogs could use.</li> <li>• Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.</li> </ul> <p>If any hedgehogs are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance.</p>



## Appendix 1: Site Location





## Appendix 2: PEA Survey Results

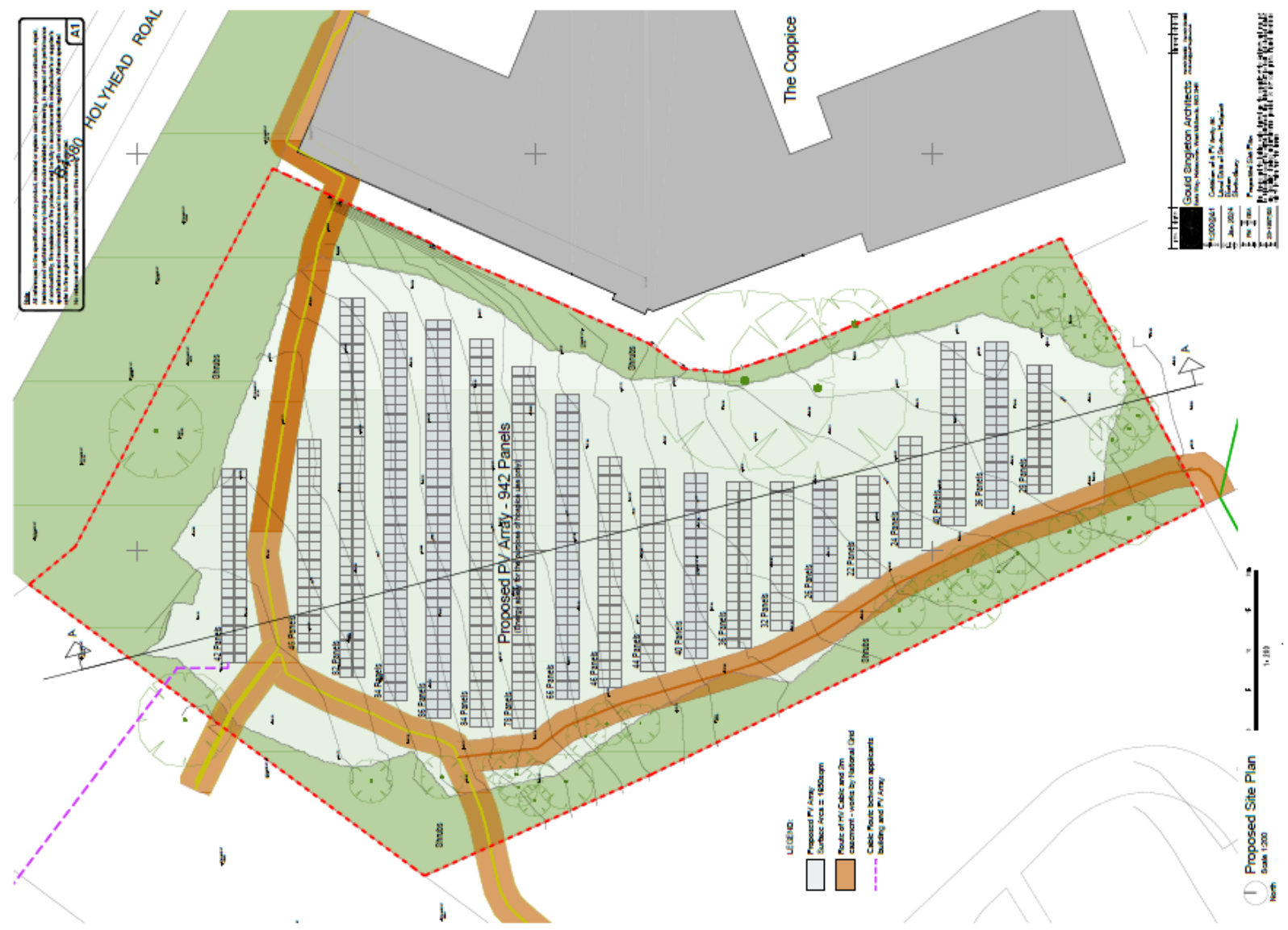




### Appendix 3: Offsite Ponds



### Appendix 4: Proposed plans





**Appendix 5: Photos**



Pond P3



Pond P4





Pond P5



Modified Grassland with Scattered Scrub





Modified Grassland looking south from northern boundary



Scattered trees in foreground, with an area of bare ground and hedgerow H1 beyond.

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