

Raglan Enterprise
Park
Chepstow Road
Raglan
Usk
NP15 2JB



A Preliminary
Ecological Appraisal
By:



On Behalf Of:



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1 Executive Summary

- 1.1 Just south of Raglan, an area of land, behind Raglan Enterprise Park, is being put forward as a candidate site for Monmouthshire County Council's Local Development Plan. A Preliminary Ecological Appraisal of the site was therefore commissioned to provide baseline ecological information, in line with relevant policy and legislation. This comprised an ecological assessment of habitats and protected/priority species in October 2019, including its potential to qualify as a Site of Importance for Nature Conservation. Indicative proposals for the site currently comprise a solar farm, and expansion of the industrial estate.
- 1.2 The primary aim of this report is to highlight, as far as reasonably possible, the overall ecological value of the site, and the degree to which its allocation could potentially impact biodiversity. Recommendations appropriate to the findings of the survey are provided at the end of this report.
- 1.3 Covering an area of approximately 12.8 hectares, just south of the village of Raglan, the survey area consists mostly of semi-improved grassland with vegetated boundaries. The surrounding landscape is typically rural, and primarily characterised by pastoral farmland with a small pocket of woodland directly to the north, through which runs Nant y Wilcae Brook. No part of the site is within or directly adjacent to any statutory sites of nature conservation interest.
- 1.4 The woodland edge habitat, hedgerow and trees that create the boundaries and stretch across the site are the most intrinsically valuable habitat, and it is recommended that such habitats are safeguarded during any future development. Strands of invasive Himalayan balsam were recorded at the northern end of the site, which must be appropriately treated.
- 1.5 As a whole, the land behind Raglan Enterprise Park was assessed as having medium ecological value. Although further survey effort is required to more comprehensively assess ecological impacts, no part of the site warrants selection as a Site of Importance for Nature Conservation. Despite the potential for ecological impacts on protected and priority species, there is no reason why such impacts could not be avoided or appropriately mitigated with a well-conceived design layout and responsible build/management strategy. This baseline assessment presented no major ecological constraints that would prevent the site's Local Development Plan allocation. Nevertheless, any future development plans must be adequately informed by the results from more focused badger, dormouse, bats, breeding bird and invertebrate assessments.

2 Introduction

- 2.1 Raglan Enterprise Park is located just south of the village of Raglan, approximately 11km south-west of Monmouth town. The Just Mammals Consultancy LLP was commissioned to undertake a Preliminary Ecological Appraisal (PEA) of land behind Raglan Enterprise Park, and provide a report in accordance with Monmouthshire County Council (MCC) guidelines, to support a submission as a candidate site for the Local Development Plan (LDP). The site is located at National Grid Reference SO 41277 07167, at an altitude of approximately 51m Above Ordnance Datum. The site is being considered as a potential solar farm site and for the expansion of the industrial estate.
- 2.2 MCC requires baseline ecological data to inform the process of approving sites for inclusion within the Local Development Plan (LDP), in line with relevant policy and legislation.
- 2.3 Assessment of the site included an ecological survey of the site and formal desk study in accordance with current guidelines (CIEEM, 2017). The survey was completed during the daytime of 11th October 2019, and involved an assessment of habitats, as well as protected/priority species. The site was also assessed for its potential to qualify as a Site of Importance for Nature Conservation (SINC).
- 2.4 The primary aim of this report is to highlight, as far as possible, the overall ecological value of the site and the degree to which its allocation could potentially impact biodiversity. Recommendations appropriate to the findings of the survey are provided at the end of this report (Section 10).
- 2.5 Objectives of this PEA include:
 - using a formal desk study to assess the ecological value of the surrounding area and zone of influence (see Section 7);
 - determining the ecological value of the site using a formal assessment of on-site habitats and protected and priority species (see Section 9);

- identifying the key constraints or opportunities the site's LDP allocation may have on ecology and biodiversity (see Section 9); and
- highlighting potential requirements for further survey effort, mitigation measures and ecological enhancement opportunities for safeguarding biodiversity in the event of allocation (see Section 10).

3 Survey Team Experience

- 3.1 The field survey was undertaken by Carola Hoskins and Phoebe Williams. Table 1 below describes their relevant experience.

Table 1: Survey Team Experience

Name/Position	Licences	Experience
Carola Hoskins BA (Hons) MSc ACIEEM Senior Ecologist	S085820/1; bats, expiry 28 February 2021; S085814/1; otters, expiry 28 February 2021; S085817; crayfish, expiry 28 February 2021; S086094/1; great crested newt, expiry 31 March 2021	Carola is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and she holds an MSc in Environmental Conservation Management and has practical expertise with bats, birds, botanical assessments, mammalian and reptile surveys. As well as assisting in conservation-based research, she has carried out biodiversity audits and ecological enquiries. Carola holds licences with Natural Resources Wales for otters, bats, white-clawed crayfish and great crested newts. She has completed a study of water voles and is currently assisting with bird ringing. Carola is a Senior Ecologist with the Just Mammals Consultancy LLP
Phoebe Williams BA (Hons) Student CIEEM Assistant Ecologist		A Geography graduate from the University of Exeter, and a former trainee at Gwent Wildlife Trust she has completed a Natural Talent trainee programme, studying Hemiptera at the National Museum of Wales. Practical experience includes survey work for dormice, botany, newts, reptiles, and invertebrates. She has also carried out practical habitat management work whilst volunteering for Gwent Wildlife Trust. Phoebe is undertaking an MSc in Wildlife and Conservation Management at the University of South Wales. She is an Assistant Ecologist with the Just Mammals Consultancy LLP, and is a Student Member of the Chartered Institute of Ecology and Environmental Management

4 Survey Methodology

- 4.1 Sites of nature conservation interest within 1km of the site were identified using the web-based MAGIC database (www.MAGIC.gov.uk). These included sites with statutory designations of international importance, such as Special Areas of Conservation (SACs), Special Protected Areas (SPAs) and Ramsar sites, as well as sites of national importance, such as Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs). This resource was also used to assess whether the site fell within the Juvenile Sustenance Zone for the Wye Valley and Forest of Dean Bat Sites SAC. This was taken to be 600m for lesser horseshoe bats (*Rhinolophus hipposideros*), and 1km for greater horseshoe bats (*R. ferrumequinum*).
- 4.2 South East Wales Biodiversity Records Centre (SEWBReC) was consulted for records of Protected and Priority species within 1km of the site. The records centre also provided details of any Local Wildlife and SINC sites within 1km, as well as any sites listed on the Ancient Woodland Inventory.
- 4.3 MCC's Ecological Connectivity Assessment (Gwent Ecology, 2010) was examined to assess the site in the context of the local landscape. The MCC LDP web pages were also examined for any previous walkover information.
- 4.4 The PEA was completed on 11th October 2019 by an experienced ecologist and an assistant. The site and its boundaries were appraised according to the standard methodology detailed in the 'Handbook for Phase 1 habitat survey' (JNCC 2010). All habitats were mapped, described and photographed. Accompanying species lists and features of nature conservation interest were recorded. The assessment was extended to account for priority habitats listed under Section 7 of the Environment (Wales) Act. A digitised Phase 1 habitat map can be found in Figure 2 (see Appendix II) with photos in Appendix III.
- 4.5 Hedgerows were surveyed for their native species-richness and the degree to which they were classified as 'important' under the Hedgerow Regulations (1997). Surveyors also assessed the site for the presence of veteran trees in accordance with 'Veteran Trees: A Guide to Good Management' (Reed, 2000).

- 4.6 Surveyors appraised the site's suitability for protected species. These included badger (*Meles meles*), bats, otter (*Lutra lutra*), dormice (*Muscardinus avellanarius*), water vole (*Arvicola amphibius*), reptiles and amphibians. Where present, field signs or the animals themselves were also recorded. For great crested newts (*Triturus cristatus*), ponds within 500m of the site, were identified using Ordnance Survey maps and aerial imagery. Other priority species listed under Section 7 of the Environment (Wales) Act were also considered, such as brown hare (*Lepus europaeus*), west European hedgehog (*Erinaceus europaeus*), and harvest mouse (*Micromys minutus*).
- 4.7 Invasive species, such as Japanese knotweed (*Fallopia japonica*), and Himalayan balsam (*Impatiens glandulifera*), were also recorded, where present.

5 Site Description

- 5.1 The site is situated to the rear of Raglan Enterprise Park, located just south of the village of Raglan, roughly midway between Monmouth and Abergavenny. At around 12.8ha in size, the site comprises three agricultural fields that form part of a short-term holding. The majority of the site is bounded by hedgerows with a selection of dispersed trees, while the northern boundary is demarked by woodland edge habitat. This woodland just outside the site boundary stretches from east to west and steeply slopes down to the north, where it meets Nant y Wilcae Brook. The gradient of the site is relatively steep, with the highest point roughly marked by a concrete reservoir cover feature that is surrounded by scattered scrub. At the north-east corner of the site there is a fenced off area that is dominated by scrub.
- 5.2 Surrounding landscape includes residential properties in Raglan, to the north, with agricultural fields and a series of hedgerows and treelines that extend beyond the site.

6 Survey Constraints

- 6.1 The comprehensiveness of any ecological assessment may be limited by the season in which the site visit was undertaken. It must be noted that this PEA assessment is not intended to confirm the presence or absence of all plant species on site. This would require a more detailed botanical assessment over multiple site visits. However, it does provide a comprehensive ecological assessment of habitat types and dominant species at the time of the survey and highlights areas where further survey effort would be required. A small area at the north-eastern end of the site was fenced off with palisade fencing and could therefore not be thoroughly surveyed.

7 Desktop Study

- 7.1 No part of the site is within of directly adjacent to any statutory sites of nature conservation interest, and the desktop study confirmed no sites to be within 2km of the survey site. No part of the site falls within the Juvenile Sustenance Zone for the Wye Valley and Forest of Dean Bat Sites SAC.
- 7.2 The desk-study indicated that one SINC is present within 1km; Broom House Meadows designated for its species rich H4 neutral grasslands, approximately 670m south-west of the site.
- 7.3 SEWBREC's record search reported the woodland immediately north of the site as Ancient Semi Natural Woodland (ASNW).
- 7.4 SEWBREC's record search (unique reference 0190-392) reported 234 species records within 1km of the site. These are briefly summarised in the bullet list below:

- terrestrial mammals (excluding bats) – accounted for 25 records. [REDACTED]

At the eastern end of the same woodland, within close proximity to the site, several otter spraints have been recorded at Nant y Wilcae Bridge. Two hedgehog road casualties have been noted within 1km of the site. The closest polecat record was approximately 762m south-east of the site, as a road casualty on the A449. Within 2km, the closest record being 806m away from the site, several records of hazel dormouse have been returned. Two records of water vole have been made at Raglan castle over 1km from the site;

- bats accounted for 66 records. The closest roost record was that of a single pipistrelle species (*Pipistrellus sp.*) approximately 443m north of the site. Species including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*), and brown-long eared bat (*Plecotus auritus*), have been recorded commuting and foraging just beyond the woodland to the north of the site. Within 1km of

the site a number of bats including the species already mentioned, in addition to Daubenton's bat (*Myotis daubentonii*) have been recorded foraging and commuting. Slightly further afield, between 1-2km from the site, whiskered/Brandt's Bat (*Myotis mystacinus/brandtii* agg.), and Natterer's bat (*Myotis nattereri*), have been recorded commuting/foraging. A lesser horseshoe roost has been recorded within 2km of the site;

- amphibians accounted for 34 records, no reptile records were returned. Aside from one record of common frog (*Rana temporaria*) approximately 809m north of the site, the remaining 33 records are all great crested newt. A number of records of great crested newt have been made at a pond approximately 830m north-east of the site, which is the closest location to the site;
- birds accounted for 100 species records. The closest bird record to the site is that of red kite (*Milvus milvus*). Records of Section 7 birds have been returned from the data search; house sparrow (*Passer domesticus*), song thrush (*Turdus philomelos*), starling (*Sturnus vulgaris*) and dunno (Prunella modularis), all under 1km from the site;
- plants accounted for 4 records, all of which are records of bluebell (*Hyacinthoides non-scripta*), the closest record approximately 595m from the site;
- invertebrates accounted for 5 records, all of which are historical records of high brown fritillary (*Argynnis adippe*), over 595m from the site;
- no fish records were returned from the data search.

- 7.7 MCC's Ecological Connectivity Assessment (Gwent Ecology, 2010), was examined to assess the site in the context of the local landscape. Within Raglan, primary routes of connectivity are represented by linear features that provide value for the movement of species, and the northern woodland edge habitat is highlighted as existing habitat connectivity. The Nant y Wilcae Brook flows just north of the site, with its tree-lined banks is noted as a valuable wildlife corridor. Hedgerows are also noted to provide connections to linear features, aiding the movement of wildlife. Opportunities to strengthen existing connectivity include ensuring hedgerows are sensitively managed and well connected, and to strengthen the robustness of the south end of the Nant y Wilcae corridor. It is also noted that the northern end of the site is located within a discrete area highlighted for its connectivity for great crested newts (see Figure 5).

8 Survey Results

- 8.1 The extended Phase 1 survey was completed on the 11th October 2019 by an experienced ecologist and an assistant. Details of the conditions under which the survey was conducted are given in Table 2 below. Wind speeds shown employ the Beaufort scale.

Table 2: Summary of Survey Activity and Weather Conditions

Survey Type	Date	Timing	Weather Conditions
Day time visual inspection, botanical survey and habitat assessment, including protected species assessment	11/10/2019	13.50 – 15.50 hours British Summer Time (BST)	Air temperature: 13°C Cloud cover: 8/8 oktas Wind speed: F3, gentle breeze Conditions: Dry
Surveyors	Carola Hoskins; Phoebe Williams		

- 8.2 For recording purposes, the site was divided into seven different habitat types and mapped following the codes and conventions described in the Phase 1 Habitat Survey Handbook (JNCC 2010). Table 3 below describes the on-site habitats. The most dominant plant species are also listed.

Table 3: Summary of Phase 1 Habitat Notes

Habitat	Phase 1 Classification	Description of Area and Typical Species
Type 1	A2.1 Scrub – Dense/continuous A2.2 Scrub – Scattered (1% of surface area).	A small area of dense scrub, enclosed by a security fence, is present at the north-east end of the site. Small patches of scrub are also dispersed along the woodland edge habitat to the north of the site. Species present include; Himalayan balsam (<i>Impatiens glandulifera</i>), birch (<i>Betula</i> sp.), bracken (<i>Pteridium aquilinum</i>) and common nettle (<i>Urtica dioica</i>).
Type 2	B6 Poor semi-improved grassland (94% of surface area).	The site is composed of a series of agricultural fields that encompass this habitat. The sward is relatively short and mostly consists of grasses including meadow grass (<i>Poa</i> sp) and perennial rye grass (<i>Lolium perenne</i>). The most common forbs are creeping buttercup (<i>Ranunculus repens</i>), white clover (<i>Trifolium repens</i>), dandelion (<i>Taraxacum officinale</i> agg.), with the occasional chickweed (<i>Stellaria media</i>), and rarely occurring scented mayweed (<i>Matricaria chamomilla</i>).

Type 3	J2.1.2 Intact hedge – Species poor (1% of surface area).	The majority of the site is bounded by hedgerows, including a double hedgerow that stretches along the southern end of the site. All hedgerows are species poor, with <5 woody species along a typical 30m length. The woody component included blackthorn (<i>Prunus spinosa</i>), hawthorn (<i>Crataegus monogyna</i>), hazel (<i>Corylus avellana</i>) and wych elm (<i>Ulmus glabra</i>). Associated herbaceous plants recorded include cleavers (<i>Galium aparine</i>), hedge woundwort (<i>Stachys sylvatica</i>), foxglove (<i>Digitalis purpurea</i>) and greater stitchwort (<i>Stellaria holostea</i>).
Type 4	J3.6 Buildings (<1% of the site's surface area). A2.2 Scrub – Scattered	Within the most northerly field, a featureless concrete structure is present. The exact purpose of this structure is unknown, and no access points were identified. Scrub is scattered around and on-top of this structure. Species present include alder (<i>Alnus glutinosa</i>), bramble (<i>Rubus fruticosus</i>), and hawthorn (<i>Crataegus monogyna</i>).
Type 5	J2.3.2 Hedge with trees – Species poor (<1% of surface area).	At the north-western edge of the site, the boundary feature comprises a stretch of hedgerow with dispersed trees. Species include ash (<i>Fraxinus excelsior</i>), hawthorn, holly (<i>Ilex aquifolium</i>) and field maple (<i>Acer campestre</i>).
Type 6	J3.1 Tall Ruderal (<1% of surface area).	A discrete area of this habitat is present along the fence line to the east of the site, where the boundary meets the Enterprise Park. Within this small area montbretia (<i>Crocsmia x crocosmiiflora</i>) was noted.
Type 7	J2.6 Dry Ditch (<1% of surface area).	A dry ditch runs alongside the double hedgerow that stretches along the southern end of the site.

- 8.3 Target Notes used to describe habitats not readily conforming to recognised types and evidence of, or suitability for, protected and priority species are described in Table 4. A Phase 1 map showing the habitats, building layout and Target Notes is displayed in Figure 4. Photographs of the site are provided in Appendix III.

Table 4: Target Notes

Target Note	Description
Target Note 1	Standing dead wood, valuable to invertebrates
Target Note 2	Rabbit warren
Target Note 3	
Target Note 4	Himalayan balsam within scrub
Target Note 5	Over-mature tree with bat potential
Target Note 6	Double hedgerow with parallel running dry ditch
Target Note 7	Over-mature tree with bat potential
Target Note 8	A stand of Himalayan balsam within scrub area
Target Note 9	A stand of Himalayan balsam along woodland edge habitat
Target Note 10	Montbretia plant within the patch of tall ruderal to the east of the site, believed to be recently deposited

- 8.4 Most of the survey area is covered in semi-improved grassland which is assessed as species poor and not considered to have any intrinsic ecological value. The margins of the site are formed by natural habitats which are well-developed. Although the grassland is not considered to be of any significant ecological importance, the margins of the site are. Consequently, the site is assessed to be of moderate ecological value overall. A single concrete structure is present on site; its exact purpose is unknown.
- 8.5 The majority of the site is bounded by hedgerows that are well-developed and intact. This boundary changes slightly to the west end of the site, where dispersed trees form part of the hedgerow boundary feature. Approximately 200m of woodland edge habitat runs the length of the northern boundary, which is edged with a barbed wire fence that is partially covered with bramble scrub. This bordering woodland habitat, outside the site boundary, steeply descends to the north where it meets with Nant y Wilcae Brook, which flows west to east through the woodland. A double hedgerow is present to the south of the site, adjacent to which flows a dry ditch.
- 8.6 Although hedgerows across the site are intact, they are not considered species rich since they have fewer than five woody native species within a specified length. Consequently, they are not classified as important under the Hedgerow Regulations. However, onsite hedgerows have several associated features in accordance with the Hedgerow Regulations, which are considered notable. These included:
- gaps accounting for less than 10% of its length;
 - connections with other hedgerows and woodland;
 - ditch along at least one half of the length of the hedgerow.

- 8.7 Although none of the trees on site were assessed as 'veteran' using the principles outlined by Reed (2000), two specimens within the on-site hedgerows were noted as being over-mature.
- 8.8 [REDACTED]
- 8.9 Hazel dormice are not only a woodland species, but also make use of connecting hedgerows and scrub, both for dispersal and long-term purposes. Although no evidence for the presence of dormice was found during the survey, the hedgerow, scrub, and woodland edge habitat on site are considered to be suitable for dormice.
- 8.10 Reptiles favour tussocky, rank grassland with areas of bare ground, along with varied vegetative architecture. The grassland is mostly short and offers minimal shelter and protection for reptiles. No reptiles were found during the survey and the grassland habitat on site is of limited interest to reptiles due to its uniform structure.
- 8.11 Amphibians require ponds in which to breed and good quality terrestrial habitat that provides shelter, the grassland on site is not considered suitable and no ponds are on site. However, since great crested newts are known to use terrestrial habitat up to 500m from their breeding ponds, the wider landscape must also be taken into consideration. From reviewing maps and aerial photographs, four ponds are present within 500m of the site. The closest pond is roughly 78m north of the site, another pond is located approximately 282m to the west of the site, just beyond this pond are a further two closely situated ponds located approximately 325m west of the site. Records of great crested newt have been made some 809m north-west of the site, no records have been made from the ponds within 500m of the site. The site falls within a discrete area highlighted for its connectivity for great crested newts, hedgerows and woodland edge habitat on site offer such suitable connecting habitat.
- 8.12 The hedgerows, trees and scrub on site provide suitable habitat for nesting birds. Although no Section 7 birds were observed during the visit, the habitats are considered suitable for species such as song thrush (*Turdus philomelos*) and house sparrow (*Passer domesticus*). A more detailed breeding bird survey earlier in the season would be required to comprehensively assess the site's use by breeding birds.
- 8.13 Two over-mature trees on site were assessed as having potential for roosting bats. Since the reasonably rapid walkover survey did not assess trees on site in detail, it is possible additional survey effort in the future may reveal additional trees with potential to support roosting bats.
- 8.14 In terms of habitat quality, the site's scrub and boundary features are likely to attract sufficient flying insects to provide suitable foraging opportunities for bats. The site as a whole is likely to have dark vegetated corridors and linear connectivity to the wider countryside.
- 8.15 No watercourses were recorded within the survey area. However, the Nant y Wilcae Brook flows just north of the site, and its tree-lined banks make it a valuable wildlife corridor. Within close proximity to the site, immediately east of the woodland habitat to the north, records of otter spraint were returned from the data search. It is likely that otters pass through the woodland, along the brook just north of the site. Records of polecat and hedgehog have also been made within 1km of the site, hedgerows on site provide suitable shelter and foraging opportunities for such species. The site does not hold habitats suitable for water voles, a riparian species.
- 8.16 No Section 7 invertebrates were found during the survey, and the presence of such species cannot be ruled out without more targeted surveys.
- 8.17 Strands of Himalayan balsam (Target Note 4, 8 and 9) were noted within the enclosed area of scrub to the north-east of the site, just outside this area and at the northern end of the site, along the woodland edge habitat.

9 Discussion and Conclusions

- 9.1 Land at Raglan Enterprise Park is being put forward as a candidate site under the Local Development Plan. Proposals include the construction of a solar park, in addition to the potential

expansion of the existing industrial estate. Table 5 below presents a summary table for ecological features identified at Raglan Enterprise Park. Where further survey is or may be required, this is indicated in the relevant column.

Table 5: Summary of Ecological Features

Habitat	Ecological Value	Further Survey
Semi-improved neutral grassland	Makes up the majority of the site; not of intrinsic ecological value in itself but potentially valuable to other protected/priority species, such as invertebrates and song thrush, although this has not been confirmed	Possibly for invertebrates
Trees	Two over-mature trees are present on site and have potential for roosting bats. Trees are also present within hedgerow to the west of the site. Potentially valuable to other protected/priority species, such as nesting birds	Yes, if impacts cannot be avoided Bats
Tall ruderal	A discrete patch of this habitat is present at the eastern side of the site. A single montbretia plant is present within this area	None Removal of montbretia
Hedgerow	Semi-natural habitat that forms the boundary of the majority of the site. Hedges are generally continuous and relatively species poor, potentially valuable to protected/priority species such as nesting birds, foraging bats and possible dormouse. May also be used as corridors by great crested newt	Yes, if impacts cannot be avoided - Dormouse - Foraging and commuting bats
Scrub	A line of scrub runs along the northern boundary of the site adjacent to the woodland, as well as being present within the fenced off area at the north-eastern woodland	None
Protected/Priority Species		
Water vole	Site considered unsuitable and of negligible value for this species.	None
Dormouse	Suitability provided by woody habitats around site periphery, although this has not been confirmed. Records within 2km have been returned	Yes, if impacts cannot be avoided
Other Section 7 Mammals (excluding bats)	The habitats provide some suitable habitat for species such as European hedgehog and polecat	None
Bats (Roosting)	Two over-mature trees present on site	Yes, if impacts cannot be avoided
Bats (Foraging/commuting)	Hedgerow corridors likely to be of some value to foraging and commuting bats	If impacts, including lighting, cannot be avoided
Birds (nesting)	All habitats on site are suitable for breeding efforts of birds	Breeding bird survey
Section 7 Birds	Habitats on site considered suitable for house sparrow, dunnock and song thrush	Breeding bird survey is likely to flag up presence of these species
Reptiles	Negligible suitability for widespread reptiles, relatively short sward height of grassland. No records of reptiles recorded with 2km of the site	None
Amphibians	Some limited suitability for widespread amphibians, great crested newts recorded within 2km of the area. Habitat on site considered largely unsuitable, although woodland edge habitat to north is highlighted as existing great crested newt connectivity by MCC. Hedgerows onsite are also considered suitable for such connectivity	Measures to be put in place if impacts to hedgerows cannot be avoided
Invertebrates	Some suitability for invertebrate communities in discrete habitat types	Possibly. Entomologist to assess likelihood of usage due to low sward height and small areas of tall ruderal habitat
Otter	It is likely that otters pass through the woodland, along the brook just north of the site. Records of spraint recorded within 2km of the site	None

9.2 The desktop study, and field survey results, were both used to evaluate the ecological value of the site's different habitat and species in accordance with Monmouthshire County Council's own evaluation criteria described in 'Guidelines for the Selection of Wildlife Sites in South East Wales' (Gwent Wildlife Trust, 2004). A completed Site Summary Form is provided in Appendix IV. Different habitat types and species groups have been assessed separately using the available information. An overall site value for biodiversity is also defined.

9.3

9.4

9.5

Although no evidence of hazel dormice was recorded during the survey, habitat on site is considered suitable. Hedgerows, are well-developed and well-connected to linear features beyond the site boundaries. Dormice are present along the habitat corridor of the A449, within 1km of the site. The dispersal of dormice into on-site woody habitat is considered possible. Consequently, further survey effort would be required ahead of any planning proposal, unless impacts on hedgerows can be avoided completely, including lighting.

9.6

It is considered unlikely that reptiles are present on site due to the absence of suitable habitat. In the case of amphibians, although there are no ponds present on site there are four ponds located within 500m of the site. A known population of great crested newt is present over 800m from the site. Their presence is more likely in surrounding areas of Raglan, where there exists better quality habitat, by way of species rich grasslands and woodland. However, it is possible that the hedgerows on site are used for dispersal. Within MCC's Ecological Connectivity Assessment (Gwent Ecology, 2010) the northern end of Raglan Enterprise is located within a discrete area highlighted for its connectivity for great crested newts. Consequently, impacts to hedgerow and woodland edge habitat must be avoided.

9.7

Although no Section 7 birds were observed during the site visit, trees, hedgerow and scrub provide suitable nesting bird habitat. The grassland may also be used by ground-nesting birds. All breeding birds, their active nests and their eggs are protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended) and it is an offence to damage, destroy or disturb an active nest. Birds must be allowed permanent access to the nest site until all chicks have fledged. Only when the nest is no longer in active use can it be destroyed and removed. Without a more focused breeding bird assessment in the spring or early summer months, it is not possible to formally assess the site for the breeding birds listed on Table 9 (Gwent Wildlife Trust 2004). Although it is feasible that on-site habitats may provide nesting opportunities for some of these species, as well as other Section 7 birds, it would not be reasonable for the land behind Raglan Enterprise Park to be selected on this basis alone, since the extent and quality of on-site habitats are unlikely to be of critical importance for these species. Although some further survey effort is recommended ahead of any future planning application, there would nonetheless be scope for safeguarding nesting birds on site.

9.8

Just east of the woodland to the north of the site, records of otter spraint were returned from the data search. It is highly likely otter pass through the woodland along Nant y Wilcae Brook. Part of the same woodland is listed under the Ancient Woodland Inventory as ASNW. At the time of writing, the proposals for the site are for a solar farm and expansion of the enterprise park. Although the solar park would not lead to a radical increase in traffic to and from the site and thereby a change in run-off and potential pollution sources, the extended industrial park may lead to such increases; consequently, measures need to be put in place to safeguard the nearby water feature and woodland, in turn protecting otter that may be using the habitat. Otters must also be safeguarded during the development and it must be ensured that animals can still travel across the site following development, security fencing must include gaps at the bottom.

9.9

Overall, using MCC's Evaluation Criteria, Raglan Enterprise Park has been assessed as having medium value. Although further survey effort would be required to more comprehensively assess ecological features (Table 3), no parts of the site are considered to be of SINC quality. It is considered unlikely that further survey information would trigger the site's upgrade from 'medium' to 'high' value even if additional species were recorded. Despite the potential for ecological impacts on protected and priority species, there is no reason why such impacts could not be avoided or appropriately mitigated with a well-conceived design layout and responsible build/management strategy. Indeed, the site's allocation is likely to present several opportunities for ecological enhancements. Overall, this baseline assessment presented no major ecological constraints that would prevent the site's LDP allocation.

10 Recommendations

- 10.1 Below is a summary of the recommended further survey effort, for more comprehensively assessing ecological impacts prior to a formal planning application.

Table 6: Summary of Recommended Further Survey/Works

Species/Habitat Feature	Scope of Work	Timescale
Badger	Assess clan territory and accurately map any setts present within vicinity of site	October to April
Bats	Further survey effort must be completed if any trees are to be removed or depending on lighting proposals, in order to fully assess the impacts on roosting bats in trees on site	May to September
Breeding birds	An initial 'scoping' breeding bird survey between mid-March to mid-April, by an experienced ornithologist to assess the extent to which Section 7 or Red Listed bird species may be impacted. The results of this must be used to inform whether any further survey effort would be reasonable and proportionate for informing a suitable mitigation strategy, LEMP proposals and/or artificial nesting provisions	Mid-March to mid-April
Dormouse	If impacts on hedgerows and scrub are anticipated, a dormouse-nest tube survey must be considered for establishing the presence or absence of this species prior to a planning application	April to November for standard nest-tube surveys
Invertebrates	Initial desk-based study or 'scoping' survey by an experienced entomologist to assess the site's potential value to invertebrate fauna and whether the layout design and/or mitigation proposals for any future development would benefit from more focussed and detailed survey effort	To be confirmed by appointed entomologist
Himalayan balsam	Specialist contractor and Himalayan balsam control strategy to be prepared for treating infected areas and prevent further spreading	Any time of year

- 10.2 Protection of the boundary features, including; woodland edge habitat, hedgerows and trees within and around the site must be a priority during and following any proposed development. This must include root protection areas, as well as protection from light pollution. The recommended survey efforts will also flag up any additional measures to be observed.
- 10.3 The hedgerow boundaries and woodland edge habitat are the most ecologically valuable habitats on site. Appropriate safeguards and management process need to be put in place as to protect these habitats during and following developments. In particular, the following is recommended:
- any future layout design must, as a minimum, allow for the protection of these areas following guidance set out by British Standards (BS 5837:2012 Trees in relation to design, demolition and construction). This would ensure these features are suitably protected from any direct physical damage during construction;
 - the existing woodland could be reinforced by planting additional woodland habitat adjacent to the southern boundary of the woodland to the north of the site, with native woodland species such as oak, hazel, blackthorn, hawthorn, holly and field maple (pending the results of any future assessment);
 - Access to the hedgerows and a means of access between the fields for terrestrial wildlife must be possible at all times during and following construction. This includes gaps of at least 15cm at the bottom of any security fencing.
- 10.4 Future landscape proposals must be informed by results of further surveys for dormice, breeding birds, invertebrates, badgers and bats. Dark corridors and linear habitat must be maintained around and also where possible across the site.
- 10.5 A landscape and environmental management plan (LEMP) must cover how retained and newly planted habitats will be managed in the long-term. The LEMP must also set out any measures necessary to ensure protected species, such as roosting bats and badger, are appropriately safeguarded.
- 10.6 Since the site is situated approximately 30m away from Nant y Wilcae Brook, any future proposals must adequately mitigate for any possible damage to the habitats and integrity of this feature by water pollution evens by, for example, a Construction and Environmental Management Plan (CEMP). Such a plan must also set out appropriate precautionary measures for ensuring that otters are safeguarded during the construction process. In the long-term, any future layout must be designed to adequately safeguard otters from incidental mortality during the operation phase by, for example, traffic calming measures, road signs and connectivity through the site.

- 10.7 It is recommended that a permanent wildlife pond is integrated into the layout. If designed and managed appropriately, such a feature would provide a significant enhancement measure to the site and possibly the local area by providing valuable habitat for amphibians, aquatic plants and invertebrates such as dragonflies and damselflies. Such a feature would also go some way to enhancing great crested newt connectivity for which the area was highlighted in MCC's Ecological Connectivity Assessment (Gwent Ecology, 2010), as shown in Figure 5.
- 10.8 Since Himalayan balsam is listed under Schedule 9 of the Wildlife and Countryside Act, care must be taken during works within areas supporting Himalayan balsam to ensure that vegetative material is not spread. A specialist contractor must therefore be employed to prepare a Himalayan balsam control strategy.

11 References

- Anon (2010). *'Ecological Connectivity Assessment of Settlements in Monmouthshire Report'*. Gwent Ecology, Monmouth
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- Joint Nature Conservation Committee (1993). *'Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit'*. JNCC, Peterborough
- Natural England (2010). *'Farm Environment Plan (FEP) Manual - Third Edition'*. Natural England, Peterborough.
- Reed, H (2000). *'Veteran Trees: A Guide to Good Management'*. Natural England, Peterborough.
- Rose, F. (1981). *'The Wild Flower Key'*. Frederick Warne, London

Appendix I: Site Plan

Figure 1: Site location plan



Aerial View of the Site

Site Reference:
GEN1619c

Map Scale:
1:25,000 & 1:5000

Source:
© Google Satellite Imaging
2019

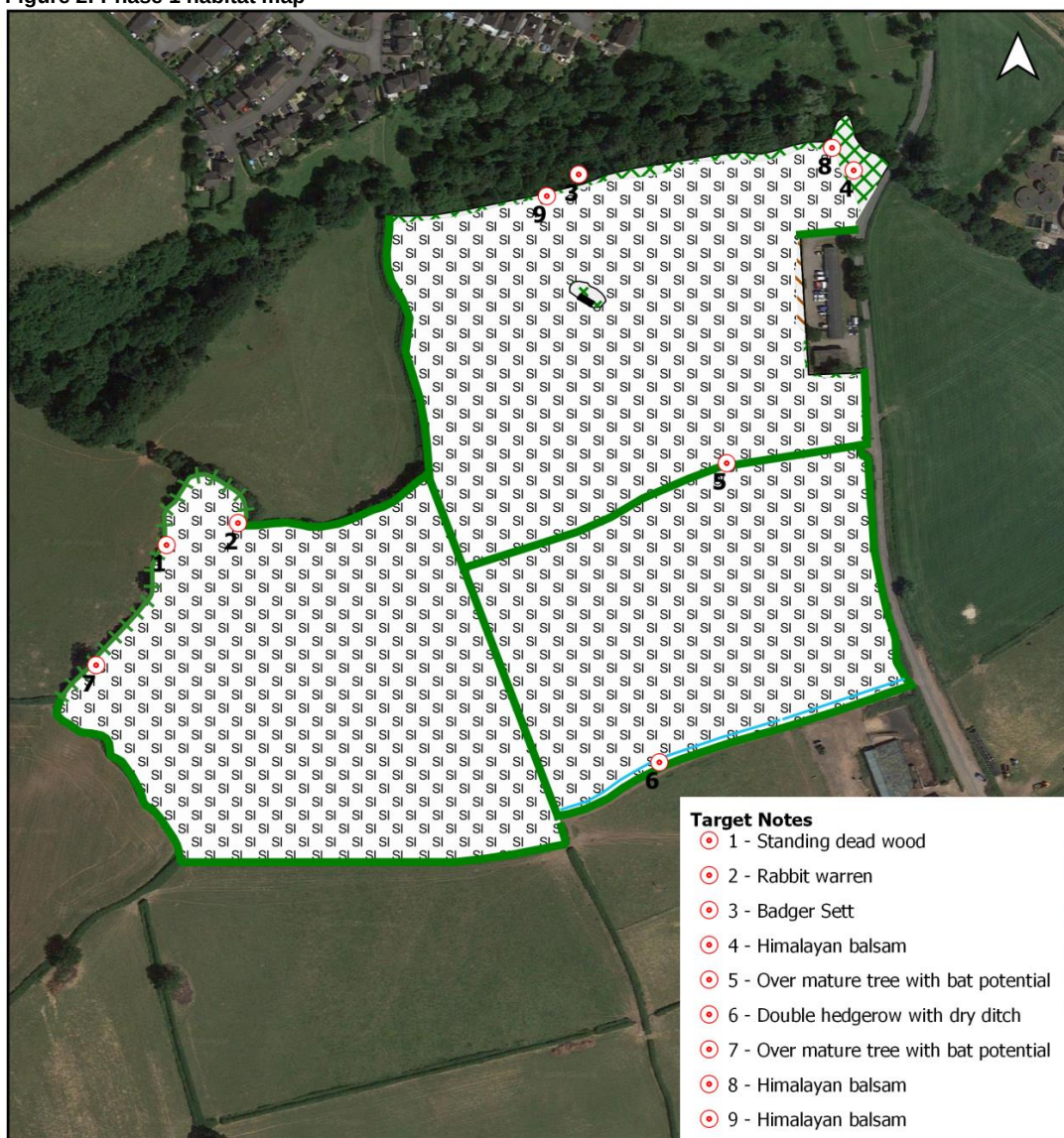


Legend

- Site location
- Site boundary

Appendix II: Survey Findings

Figure 2: Phase 1 habitat map



Phase 1 Habitat Survey Map	
Project reference: GEN1619c	 Just MAMMALS Consultancy Limited Liability Partnership
Map scale: 1: 3200	
Source: © Google Satellite Imaging (2019)	

Legend

- Target notes
- J2.1.2 - Intact hedge - species-poor
- J2.3.2 - Hedge with trees - species-poor
- J2.6 - Dry ditch
- A2.1 - Scrub - dense/continuous
- A2.2 - Scrub - scattered
- B6 - Poor semi-improved grassland
- C3.1 - Other tall herb and fern - ruderal
- J3.6 - Buildings

Figure 3: Page 79 of MCC's ecological connectivity assessment with land at Raglan Enterprise highlighted by the red circle

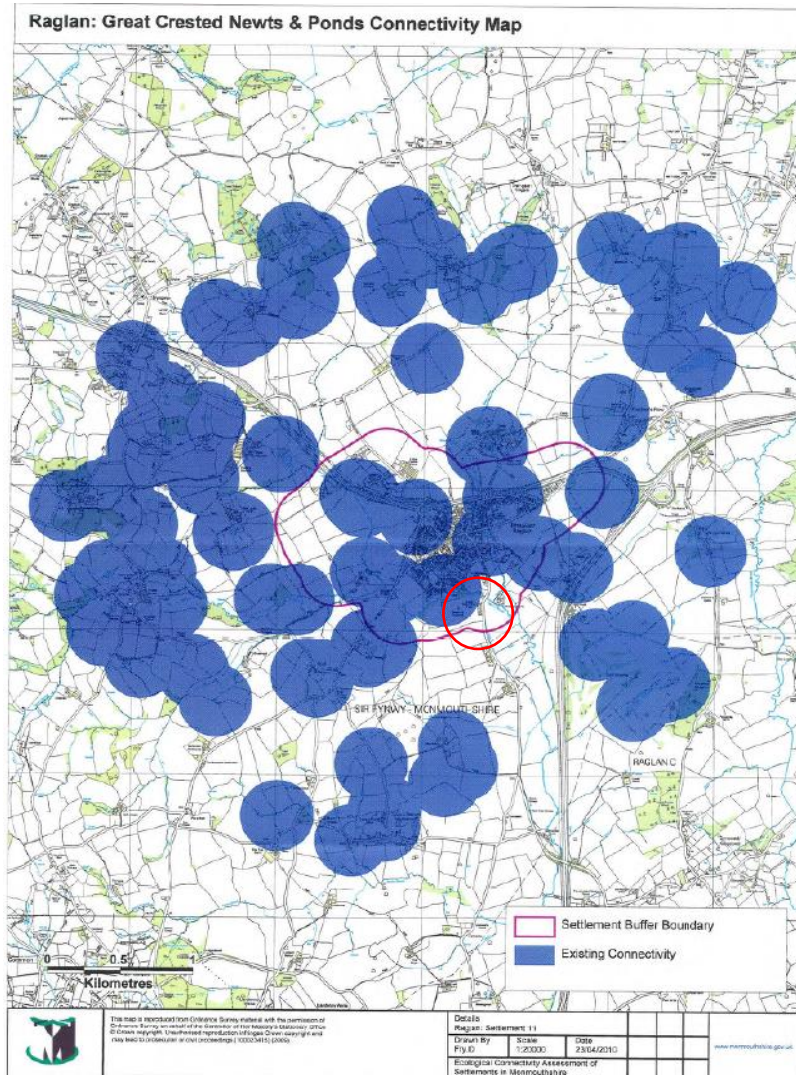
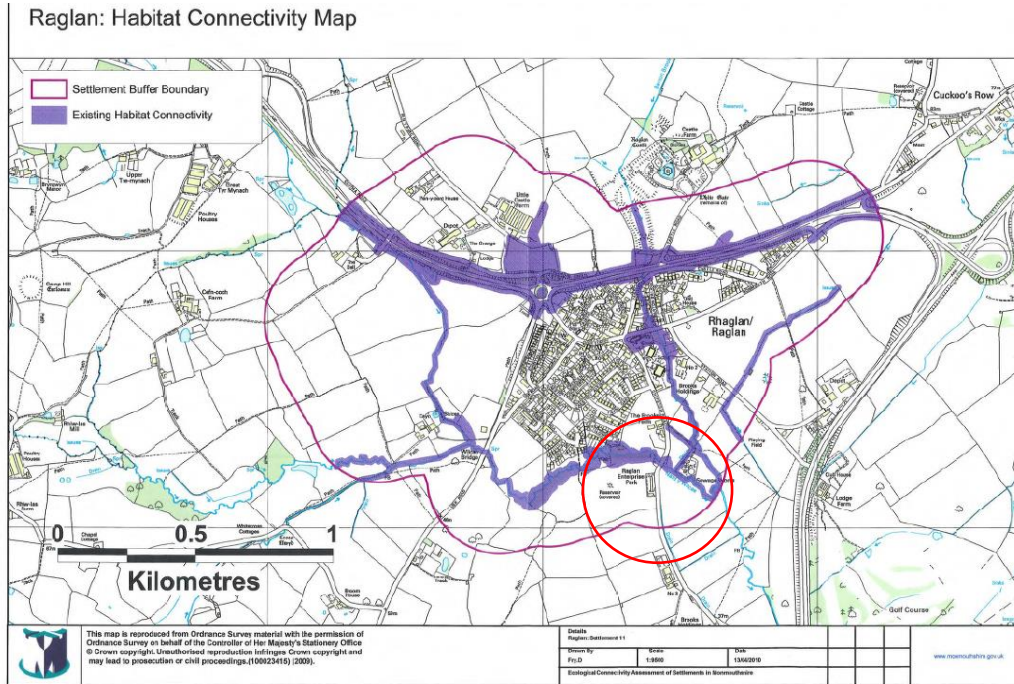


Figure 4: Page 77 of MCC's ecological connectivity assessment with land at Raglan Enterprise Park highlighted by the red circle



Appendix III: Site Photographs

Plate 1: Looking north to the woodland habitat



Plate 2: Concrete structure surrounded by scrub



Plate 3: Hedgerow with trees to the north-west of site



Plate 4: Double hedgerow to the south of the site



Appendix IV: Site Summary Form

Reference No: CS/0000

Site General Information			
Name: Raglan Enterprise		Grid Reference: SO 41277 07167	
Current land use and management: Agricultural land		Size: 12.8ha	
Proposed use: Solar farm, extension of industrial park		Form Completed by: Just Mammals Consultancy LLP	
Overall Site Evaluation: HIGH / MEDIUM / LOW			
Site Summary Table			
Statutory Designated Site(s)	No	Section 7 Habitat(s)	Part
SAC Juvenile sustenance zone	No	Protected Species	Poss
Non Statutory Designated Site(s)	No	Section 7 Species	Poss
SINC Recommendation	No	Ecological Connectivity	Conn
SEWBreC unique data code: 0190-392			

Statutory Designated Sites

Is the site within or adjacent to an International or European Designated Site? (Special Protection Area, Ramsar Site or Special Area of Conservation) (*Underline the relevant designation*)

Whole of site

☐

Part of site

☐

Directly adjacent/within 250m buffer

☐

Within 500m buffer

☐

Within 1km buffer

☐

No

☒

Is the site within or adjacent to a Nationally Designated Site? (National Nature Reserve or Site of Special Scientific Interest) (*Underline the relevant designation*)

Within

☐

Part of site

☐

Directly adjacent/within 250m buffer

☐

Within 500m buffer

☐

No

☒

Juvenile sustenance zones – is any part of the site within 1km of a greater horseshoe bat roost SSSI or within 600m of a lesser horseshoe bat roost SSSI?

Greater horseshoe

☐

Lesser horseshoe

☐

Distance from roost (m)

☐

No

☒

Non Statutory Designated Sites

Is the site within or adjacent to a pre-designated Locally Designated Site? (Local Wildlife Site/Site of Importance for Nature Conservation or Ancient Semi Natural Woodland)

Within

☐

Part of site

☐

Directly adjacent/within 250m buffer

☐

Within 500m buffer

☐

No

☒

List All Relevant Statutory and Non-Statutory Designated Sites identified by the desktop study:

Broom House Meadows (SINC) over 600m from site

SINC Recommendation

Is the whole site or part of the site of SINC (LWS) quality? (Underline whole or part as appropriate)

Yes:

☐

Whole:

☐

Part:

☐

Qualifying criteria:

Borderline:

☐

No:

☒

Has the Monmouthshire County Council Biodiversity and Ecology Team been contacted to discuss what further information may be required?

Yes:

☐

No:

☒

Date:

Priority Habitats and Important Features

Phase 1 Habitat	Wales Priority Habitat (Section 7)	% of whole site
J2.1.2	Hedgerow intact species poor (Boundary and linear features)	1%

Are there any **veteran trees or over-mature trees** on site?

Yes: ☐

No: ☒

If 'Yes' how many and what species?

Does the site have any **hedgerows**?

Species-rich (high) potential

Hedgerow Regulations Quality

0	Length (m)
---	------------

Species-poor (medium)

Has some potential

>1500	Length (m)
-------	------------

Species-poor (low)

Single species dominant AND Gappy

0	Length (m)
---	------------

No

Does the site have any **water features** present?

Ponds

☐

Streams

☐

Ditches (dry)

☒

Other:

☐

No

☐

Ecological Connectivity

Adjacent Land Uses and Habitats

The surrounding landscape is typically rural and primarily characterised by pastoral farmland with a small pocket of woodland directly to the north, through which runs Nant y Wilcae Brook. The woodland to the north of the site, (woodland edge habitat on-site) is highlighted as existing habitat connectivity in MCC's Ecological Connectivity Assessment (Gwent Ecology, 2010).

Does the site have any ecological connectivity value to either adjacent habitat or the wider landscape?

Critical connectivity:

☐

Existing Connectivity:

☒

No connectivity:

☐

Connectivity Opportunity:

☐

Protected Species

Have protected species been recorded at the site/reasonably likely to be present at site?

Confirmed: ☐ Reasonably likely: ☒ No and unlikely to be present: ☐

List Species: SEWBrEC record	Evidence of presence on site (seen directly or field signs)	Potential to be present on site (habitat and location mean that it is likely)
		Dormouse Nesting birds Badger Amphibians

Priority Species

Are there records for Priority (Section 7) Species (not included above)?

Yes: ☐ Potential: ☒ No: ☐

List Species: SEWBrEC record	Evidence of presence on site (seen directly or field signs)	Potential to be present on site (habitat and location mean that it is likely)
		European hedgehog Invertebrates

Conclusions

What additional ecological surveys/assessments will be required?

To determine if the site could be allocated for the purpose identified	Prior to the submission of planning application to influence site design etc.
None	Further bat roost surveys of trees (if impacts including lighting cannot be avoided). Dormouse nest-tube surveys (if impacts cannot be avoided). Breeding bird assessment. Invertebrate assessment. Himalayan balsam assessment.

Summary of potential biodiversity constraints

<u>Habitats</u>: hedgerow; scattered over-mature trees Protected/Priority species (confirmed): badger in adjacent woodland habitat Protected/Priority species (reasonably likely): roosting bats; dormouse; nesting birds; European hedgehog. Protected/Priority species (unlikely, but precautionary approach recommended): great crested newts; otter and invertebrates. Invasive species: Himalayan balsam
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Recommended avoidance/mitigation/compensation measures

Design layout to avoid and protect the Root Protection Areas (RPAs) of adjacent woodland habitat as set out by British Standards (BS 5837:2012 Trees in relation to design, demolition and construction). Any future landscape proposals (including appropriate compensation measures if necessary) to be informed by the results of further protected species surveys including; badger, dormouse (if necessary), bats (if necessary), breeding birds and invertebrates. Any future layout to mitigate against the long-term incidental mortality of otters, such as traffic calming measures, road signs and connectivity through part of the site. A landscape and environmental management plan (LEMP) for the operational site to cover how retained, newly planted habitats and species-specific measures will be managed in the long-term.

Any future layout proposals (including appropriate compensation measures if necessary) to be informed by the results of a more comprehensive site-wide bat roost assessment.

Himalayan balsam control strategy.

Enhancements that could be delivered through development including ecological connectivity opportunities

Reinforce existing woodland with additional planting to the south

A permanent wildlife pond to be integrated into the layout and managed appropriately in the long-term.

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Natural Problem Solvers

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