



ECOLOGICAL IMPACT ASSESSMENT

**WITCHER WELL
DUNSOP BRIDGE**

**RSC-19-01
AUGUST 2019**



Naturally Wild Consultants Limited
3 Halegrove Court
Cygnet Drive
Bowesfield
Stockton-on-Tees
TS18 3DB

Email: hello@naturallywild.co.uk

ECOLOGICAL IMPACT ASSESSMENT

**WITCHER WELL
DUNSOP BRIDGE
RIBBLE VALLEY
BB7 3AZ**

**GRID REF
SD 6519 5209**

**REPORT FOR
JOHN IBISON**

Quality Assurance

Version	Prepared by	Date	Checked by	Date	Approved by	Date
R1	Scott Taylor	18/07/2019	Julie Skinner	19/07/2019	Graeme Skinner	19/07/2019
Amendments to report to demonstrate net-gain arising from the development						
R2	Scott Taylor	13/08/2019	Matthew Buxton	13/08/2019	Matthew Buxton	13/08/2019

This report is intended to provide an accurate description of findings from survey work undertaken on the date shown in the report; however, it cannot fully account for any changes to site conditions following the completion of the survey work due to activities carried out on site or the dynamic nature of the natural environment. All work carried out by Naturally Wild Consultants Ltd is subject to our Terms and Conditions.

The report has been produced in accordance with current best practice guidelines.

REPORT CONTENTS

EXECUTIVE SUMMARY	4
1 INTRODUCTION	5
2 RELEVANT LEGISLATION	6
3 METHODOLOGY	7
3.1 Overview	7
3.2 Survey Area	7
3.3 Survey Constraints	8
3.4 Field Survey	8
3.4.1 Habitat Assessment	8
3.4.2 Protected Species Risk Assessment	8
4 RESULTS	11
4.1 Desktop Study	11
4.1.1 Designated Sites	11
4.1.2 Biological Records	13
4.2 Site Assessment	13
4.2.1 On-Site Ecological Features	13
4.2.2 Off-Site Ecological Features	15
4.3 Protected Species	15
4.4 Invasive Species	18
5 CONCLUSIONS AND RECOMMENDATIONS.....	19
5.1 Mitigation Measures	19
5.2 Compensation Measures	20
5.3 Enhancement Measures	21
6 SITE IMAGES.....	22
7 BIBLIOGRAPHY & REFERENCES.....	27
8 APPENDICES	28
8.1 Additional Information for the Legislation of Other Protected Species	28
8.2 Development Plans	30
8.3 Warwickshire Biodiversity Calculator Summary	31
8.4 Refugia/Hibernacula Design	32
8.5 Bat Roosting and Bird Nesting Features	33

EXECUTIVE SUMMARY

Naturally Wild were instructed to undertake an Ecological Impact Assessment (EclA) at Witcher Well, Dunsop Bridge. The survey area is comprised of a mosaic of bracken, species-rich semi-improved grassland and a small flush which supports some areas of marshy grassland. The proposals are for the construction of four camping pods, a car park, demolition of two of the buildings on site and the conversion of an existing building into managers accommodation

The EclA comprised two parts: a desktop study and a series site visit. The desktop study collated available public information regarding the biodiversity of the area, including the habitat structure of the site and surrounding area and the presence of any statutory or non-statutory designated sites. In addition, biological records within 1 km of the site were requested from the Lancashire Environmental Record Network (LERN).

The initial site visit consisted of an assessment of all habitats on site and in the surrounding area to determine their ecological importance to protected species and was conducted on 24th May 2019 by Director of Ecology David Pollard. A subsequent bat activity survey was conducted on the evening of the 24th May by David Pollard (2015-8910-CLS-CLS) aided by an experienced assistant surveyor. A further site visit was undertaken on 10th July 2019 by Senior Ecologist Scott Taylor PhD BSc (Hons) to update the findings of previous surveys.

The site was considered to be of low ecological value overall. The buildings on site were considered to have either low or negligible bat roost potential, with no bats observed emerging during the activity survey and are therefore considered to be likely absent from the site. The semi-improved grassland, alongside the mosaic of bracken and the flush, provides suitable habitat for reptiles and for common amphibians in their terrestrial stage. The semi-improved grassland also offers some suitability for ground-nesting birds and foraging bats.

It is recommended that Reasonable Avoidance Measures (RAMs) are implemented in regards to the clearance of vegetation and top soil on site, to avoid significantly impacting reptiles and amphibians. In brief, this entails the timing of works outside of active reptile and amphibians' season, vegetation management to encourage dispersal and the supervision of potentially harmful works. Any clearance of the semi-improved grassland should also be undertaken outside of the nesting bird season (March – August inclusive). However, if this is not possible, a check should be carried out by a suitably qualified person shortly prior to the start of works to ensure no active nests are present. A low-level lighting scheme should also be implemented to avoid unnecessary light spill onto the adjacent woodland and stream habitats, further details of this are outlined in Section 5 of this report. Compensation measures to ensure the development achieves a net gain in biodiversity value, as well as additional enhancement measures, are outlined within Section 5 of the report.

Providing the recommendations of this report are implemented in full, Naturally Wild would conclude that there will not be a significant impact to protected species or habitats as a result of the proposed works.

ECOLOGICAL IMPACT ASSESSMENT: WITCHER WELL, DUNSOP BRIDGE

1 INTRODUCTION

Naturally Wild were instructed to undertake an Ecological Impact Assessment (EclA) at Witcher Well, Dunsop Bridge (Figure 1). The survey area is comprised of several buildings surrounded by species-rich semi-improved grassland, bracken and a small flush supporting some areas of marshy grassland. The main objective of the assessment was to determine the suitability of the site to support protected species and to check for any evidence of the presence of protected species, as well as the presence of any protected or notable habitats.

The proposals are for the construction of four camping pods, a car park, which will drain into a rain garden, demolition of two of the existing buildings and re-instatement of the ground, construction of pathways, and the conversion of an existing building into managers accommodation. All newly constructed and retained buildings will be fitted with a green roof. Additional tree and shrub planting is also proposed, alongside the management of the habitats on site. As part of the planning process, an ecological assessment is required to determine if any European, UK Biodiversity Action Plan (BAP) or other important protected species/habitats are likely to be affected by the proposed works, and to show how any negative ecological impacts would be mitigated and compensated.



Figure 1. Site location plan. Red line shows the area proposed for re-development.

(© Crown Copyright and MAGiC database rights 2019. Ordnance Survey 100022861).

2 RELEVANT LEGISLATION

British wildlife is protected by a range of legislation, the most important being the Wildlife and Countryside Act 1981, the Countryside Rights of Way Act 2000 and The Conservation of Habitats and Species Regulations 2017. The Wildlife and Countryside Act, as amended mainly by the Countryside Rights of Way Act, protects species listed in Schedules 5 and 8 of the Act (animals and plants respectively) from being killed, injured, and used for trade. For some species, such as great crested newts and all bat species, the provisions of this act go further to protect animals from being disturbed or taken from the wild and protects aspects of their habitats. The Act also stipulates that offences occur regardless of whether they were committed intentionally or recklessly. The parts of this legislation that apply to most reptile species are in regard to killing, injury and trade only and do not protect their habitat, nor are they protected from disturbance or from being taken from their habitat.

The Conservation of Habitats and Species Regulations is the English enactment of European legislation and provides similar but subtly different protection for species listed on Schedules 2 and 4 of those regulations. A recent change in this legislation means that the provisions of this act now complement those of the Wildlife and Countryside Act more. Species to which these provisions apply are the European Protected Species. Activities that might cause offences to be committed can be legitimised by obtaining a licence from the relevant statutory body.

Further details on the legislation protecting species of British wildlife relevant to this assessment can be found in section 8.1 of this report.

3 METHODOLOGY

3.1 Overview

The EclA comprised of a desktop study and a series of site visits. The desktop study collated available public information regarding the biodiversity of the area, including the habitat structure of the site and surrounding area and the presence of any statutory or non-statutory designated sites, using the Multi-Agency Geographic Information for the Countryside (MAGIC) resource. In addition, biological records within 1 km of the site were requested from the Lancashire Environmental Record Network (LERN), which included records of protected and notable species and any nearby non-statutory designated sites (Biological Heritage Sites) not available through MAGIC.

The objective of the surveys was to ascertain if any protected species may be using the site, document the habitats present and determine any potential ecological risks during and following the completion of the works. The surveys would be completed under suitable weather conditions and by experienced ecologists. Further to this, the results of the desktop study and site surveys would be assessed to determine the ecological impacts posed by the work, any additional survey work required, and how such impacts should be mitigated and compensated for.

The survey work and the preparation of this report has been conducted by Director of Ecology David Pollard and Senior Ecologist Scott Taylor PhD BSc, who are experienced in protected species survey work. All survey and assessment work has been completed in line with official guidelines produced by Natural England and the Chartered Institute for Ecology and Environmental Management, and British Standard document BS 42020: 2013 '*Biodiversity – Code of practice for planning and development.*'

3.2 Survey Area

The application site is located at Grid Reference SD 6519 5209 and can be accessed via a private access road off the main road through Dunsop Bridge. The assessment focused on the application site, as well as all habitats in the immediate surrounding area (where access was available).



Figure 2. Location of the surveyed area. Application site boundary is shown by the red line.

(Image taken from Google Earth Pro: ©2019 Map Data Google 2019)

3.3 Survey Constraints

There were no constraints with regards to site access or completion of the survey objectives across the site.

3.4 Field Survey

3.4.1 Habitat Assessment

The initial survey was carried out on Friday 24th May 2019 and consisted of an assessment of the habitats on and adjacent to the site. A subsequent site visit was undertaken on Wednesday 10th July 2019 to update survey findings. The dominant vegetation structure was identified, where present, allowing the habitats to be classified. Following this, the habitats present were assessed for their suitability to support protected species and for the presence of any evidence of protected species.

3.4.2 Protected Species Risk Assessment

Based on the habitats present, the site was assessed with particular regard to determine the presence or otherwise of badgers (*Meles meles*), bats, great crested newts (GCN) (*Triturus cristatus*), nesting birds, and reptiles. An overview of the survey methods used is outlined below.

Badgers: An assessment of the site and surrounding habitats (where access was available), with particular focus on any areas of dense vegetation, was carried out in order to identify any evidence of badgers, including:

- the presence of any setts

- well-used runs/tracks
- supplementary evidence, such as hairs or prints
- badgers themselves

Bats: An assessment of the on-site buildings was carried out in order to identify the presence of any potential roost features (PRFs) for bats, and/or evidence of roosting bats, in accordance with the current Bat Conservation Trust (BCT) survey guidelines (Collins, 2016). An external inspection of the buildings was carried out, focussing on features that may provide roosting opportunities or access points to roosting features internally, such as the barge boards or exposed voids. An internal inspection was also carried out, with any roof spaces present checked for any evidence of bats. The buildings were then categorised based on their assessed value for roosting bats, in accordance with the BCT guidelines, detailed in Table 1.

Table 1. Guidelines for assessing bat roosting potential of structures and trees.

Suitability	Habitat description	Further action required?
Negligible	Negligible habitat features on site likely to be used by roosting bats.	No further bat risk assessment effort or bat activity surveys are required.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).	Structures: One bat activity survey is required to determine whether the structure is being utilised by roosting bats; this may be a dusk or dawn survey. This survey must occur between May and August. The discovery of a roosting bat during this single bat activity survey will require further survey effort.
	A tree of sufficient size and age to contain PRFs, but with none seen from the ground or features seen with only very limited roosting potential.	Trees: No further bat risk assessment effort or bat activity surveys are required.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection conditions and surrounding habitat, but unlikely to support a roost of high conservation status.	Two bat activity surveys are required to determine whether the structure or tree is being utilised by roosting bats; this should be comprised of one dusk and one dawn survey. One survey must occur between May and August.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Three bat activity surveys are required to determine whether the structure or tree is being utilised by roosting bats; this should be comprised of one dusk and one dawn survey, with an additional survey (either dusk or dawn). Two surveys must occur between May and August.

Evidence of roosting bats includes: bat droppings in, around or below an entrance hole; staining around an entrance hole; small scratches around an entrance hole; audible squeaking at dusk or in warm weather; smoothening of surfaces around cavity or an entrance hole; distinctive smell of bats.

The bat risk assessment was completed using ladders, binoculars and a powerful torch. An endoscope was also available to check any small gaps/cracks for evidence of bats.

In addition to the above, as one of the buildings was assessed to be of low value for roosting bats during the initial assessment, in accordance with the above guidelines, one activity survey was carried out. A dusk emergence survey was carried out on the evening of Friday 24th May 2019. The survey was carried out by two surveyors using a range of bat detectors and direct visual observation. Naturally Wild staff who conducted the surveys included Director David Pollard (Natural England bat survey licence ref: 2015-8910-CLS-CLS) aided by an experienced assistant surveyor.

Great Crested Newts: An assessment of the habitats present on the site was carried out in order to determine their suitability to support GCN and any natural or artificial refugia (such as logs, stones, discarded building materials etc.) present were also lifted to check for the presence of GCN.

Nesting Birds: The habitats on site were assessed to determine their suitability for nesting, with a check carried out for the presence of any active nests or any evidence of nesting behaviour.

Reptiles: The assessment for reptiles followed a similar methodology to that for GCN, with an assessment of the habitats present carried out to determine their suitability to support reptiles, and with any refugia lifted to check for the presence of reptiles or evidence of reptiles, such as sloughs (shed skins).

Other Wildlife: In accordance with good practice, the site was checked for the presence of any other protected/notable species, with particular regard to any other species highlighted in the desktop study.

Invasive Species: The site was also surveyed for the presence of any invasive, non-native flora or fauna.

4 RESULTS

4.1 Desktop Study

4.1.1 Designated Sites

There are no statutory protected sites on or directly adjacent to the proposed re-development. The nearest statutory protected site is Bowland Fells Special Protection Area (SPA Ref No. UK9005151) and Site of Special Scientific Interest (SSSI Ref No. 1004042). Bowland Fells designation is situated 0.38 km away to the west at its closest point, but occupies the wider landscape to the north and east. It occupies an area of roughly 16007.83 ha with the habitats largely comprised of blanket bog and heather moorland. The site supports a range of nationally scarce plants and provides suitable habitat for a diverse upland breeding bird community. There are a further two statutory protected sites within 5 km.

Due to the limited footprint of the proposed re-development, which is limited to the existing structures and a relatively small proportion of the grassland area on site overall, alongside the distance away from Bowland Fells, it is considered unlikely that there will be any significant impacts upon the SSSI or SPA.

The site is situated within the Biological Heritage Site (BHS) Valley of the River Dunsop. The site supports a rich mosaic of habitats such as mire, heathland, species-rich grassland, marshy grassland, species-rich flushes and strands of gorse and bracken. Of particular note is the presence of variegated horsetail *Equisetum variegatum* and ivy-leaved bellflower *Hesperocodon hederaceus*, which are included in the Provisional Lancashire Red Data List of Vascular Plants. The river holds good spawning grounds for salmon and sea trout and supports bird species such as dipper *Cinclus sp.*, common sandpiper *Actitis hypoleucos* and grey wagtail *Motacilla cinerea*. There are a further five Biodiversity Heritage Sites within 1 km of the proposed development.

Whilst the site is situated within the Valley of the River Dunsop BHS, due to its limited footprint, relatively low impact design (installation of green roof – with a suitable seed mix) and likelihood of the future management being of benefit to the BHS, primarily through the management of bracken to maintain the species richness of the grassland and flushes on site, it is considered that the Valley of the River Dunsop BHS and any surrounding BHS's will not be significantly impacted by the proposed development.

Table 3. Statutory and non-statutory designations in the areas surrounding the site.

Designation	Reference	Name	Area (ha)	Distance and direction from site
Sites of Special Scientific Interest (SSSI)	1004042	Bowland Fells	16007.83	0.38 km W (At closest point)
	1003982	Myttons Meadows	10.09	4.9 km E
Special Areas of Conservation (SAC)	UK0014775	North Pennine Dales Meadows	492.67	4.9 km E

Special Protection Areas (SPA)	UK9005151	Bowland Fells	16007.83	0.38 km W (At closest point)
Non-statutory Protected Sites				
Biological Heritage Site	65SE01	Valley of the River Dunsop	34.93	On-site
	65SE03	Oxenhurst Clough Wood	2.12	
	65SE07	Lower Whitendale Clough	2.02	
	65SE08	Dunsop Fell and Low Fell	279.16	
	65SW02	Penny Brook Wood	1.69	
	65SW03	Hareden Mire	3.41	

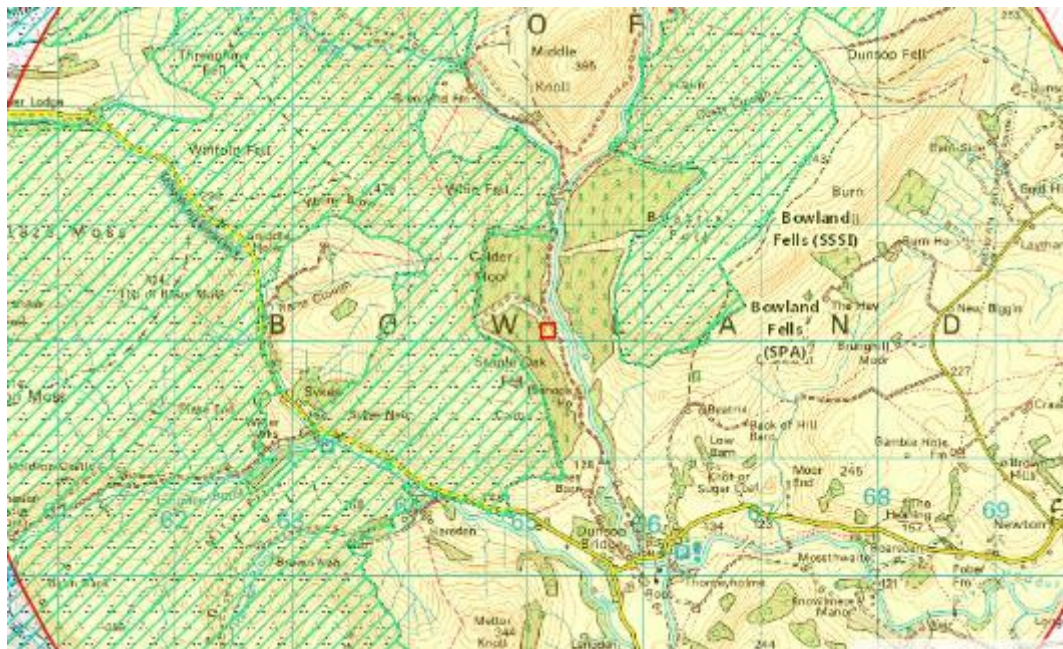


Figure 3. Location of the surveyed site in relation to the surrounding designated sites (hatched turquoise).

(© Crown Copyright and MAGIC database rights 2019. Ordnance Survey 100022861).



Figure 4. Location of the surveyed site in relation to the adjacent Biodiversity Heritage Site (hatched red).

(© Lancashire Environmental Record Network).

4.1.2 Biological Records

Biological records were obtained from the Lancashire Environmental Record Network for a 1 km radius surrounding the application site. A total of 526 records were returned, that can be separated into the following groups: one amphibian record (common frog); 122 bird records (37 species); 154 fish records (five species); 207 plant records (26 species); 13 insect records (six species); one liverwort record; one lichen record; 19 moss records (nine species); seven reptile records (common lizard, slow-worm). The importance of individual species records in the context of the proposals are discussed in Section 4.3 – Protected Species, where and if appropriate. A full list of received records is available on request with the permission of the records centre, excluding records of sensitive species.

4.2 Site Assessment

4.2.1 On-Site Ecological Features

The site comprised of several buildings surrounded by a mosaic of species-rich semi-improved grassland, marshy grassland/neutral flush and strands of bracken *Pteridium aquilinum*. The general ecological value of each habitat is described in the paragraphs below, with specific details on the buildings and any notable species-specific findings detailed in section 4.3 and outlined on Figure 5 below.

Descriptions of the on-site buildings, along with an assessment of their ecological value, are provided in section 4.3 – Bats.

Anecdotal evidence suggests that prior to current ownership, the site was dominated by bracken. The current management of the site, albeit relatively low-impact, has undoubtedly improved the ecological value. Habitats on site could generally be split between areas east and west of the flush and marshy grassland, which restricts the access of machinery. This divide between sections is therefore reflective of the vegetation management undertaken on-site. Western areas were dominated by bracken (Br – Figure 5), where access of machinery is impeded due to the presence of the flush. Some areas to the north also support a coverage of bracken, where the slope steepens. Whilst bracken dominates species coverage, scattered foxglove *Digitalis sp.* and larger thistle species *Cirsium spp.* are present throughout.

Where access is available to the east and some element of cutting or mowing has taken place, species-rich semi-improved grassland dominates the habitat (SIG – Figure 5). Dominant species included perennial rye-grass *Lolium perenne*, crested dog's-tail *Cynosurus cristatus*, purple moor-grass *Molinia caerulea*, ribwort plantain *Plantago lanceolata*, yarrow *Achillea millefolium*, shepherd's-purse *Capsella bursa-pastoris*, self-heal *Prunella sp.*, creeping buttercup *Ranunculus repens*, clover *Trifolium repens*, hairy vetch *Vicia hirsuta*, purple loosestrife *Lythrum salicaria*, black medick *Medicago lupulina*, red sorrel *Rumex acetosella*, mixed dock species *Rumex spp.*, mixed thistle species, common nettle *Urtica dioica* and foxglove. Some pathways are present throughout the site and take on a more improved grassland character, dominated by creeping bent *Agrostis stolonifera* and clover. In addition, some recently planted shrubs are also present.

The small flush would be classified as neutral, supporting a bryophytic carpet of largely *Sphagnum sp.* mosses, with overlying rushes *Juncus sp.*, although some areas expressed a more marshy grassland character, where moss coverage is replaced by peaty soil, with rush *Juncus spp.* and sedge *Carex sp.* species dominating ground coverage.

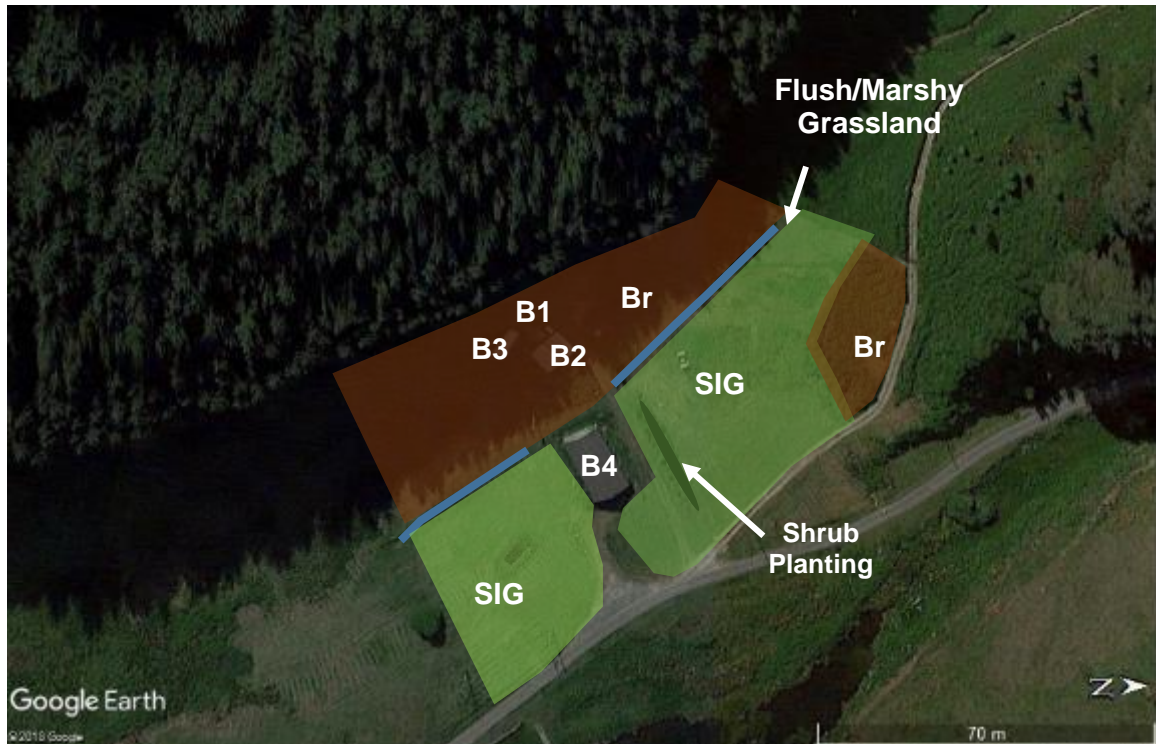


Figure 5. Overview of habitats present on site.
 (Image taken from Google Earth Pro: ©2019 Map Data Google 2019)

4.2.2 Off-Site Ecological Features

Coniferous woodland dominates habitats to the west and north, with some areas of grassland scattered in between. The River Dunsop is situated 100m to the east, with smaller tributaries situated in closer proximity to the north and east. A small pool is situated 50m to the east, the feature is possibly natural but may have been created under Environment Agency operations on the site previously. The River Dunsop and adjacent areas off-site are also included within the Valley of the River Dunsop BHS.

ANY IMPACTS TO THESE HABITATS?

4.3 Protected Species

Badgers: The site offers some suitability for badger sett creation, although conditions are sub-optimal as it is somewhat exposed. Suitable habitat for sett creation is present within the woodland areas surrounding the site and the site offers some suitability for foraging and commuting, although no evidence indicative of any badger activity was observed during the site visits. Overall, providing basic mitigation measures are implemented, badgers are highly unlikely to be significantly impacted by the proposed development.

Bats: Table 4 below provides an overview of each building and its suitability to support roosting bats.

Table 4. Building Descriptions and Assessment of Bat Roosting Value.

Building Ref.	Description	Assessment	Suitability
B1	Concrete block and stone-rendered outbuilding with a pitched, corrugated concrete roof. Wooden barge boards on end. Internally the walls are exposed and the roof was unlined, with exposed timber beams.	<p>In relatively poor structural condition. Render peeling away in some places. Ridge line heavily cobwebbed, indicative of a lack of bat use.</p> <p>Gaps near ridge allow bats access but create sub-optimal environmental conditions due to ingress of precipitation and temperature fluctuations, alongside the lack of insulation.</p> <p>Small gaps also present beneath barge boards.</p> <p>No evidence of bats observed.</p>	Low
B2	<p>Stone block and concrete-walled building with a curved corrugated metal roof.</p> <p>Internally, concrete and block walls are exposed. Timber and steel supports support the roof.</p>	<p>Gap in air brick and between the roof and block work creates potential access points for bats.</p> <p>Internally some roosting features located where timber beams join the wall and small gaps are present.</p> <p>Building likely subject to significant temperature fluctuations, creating sub-optimal roosting conditions.</p> <p>No evidence of bats observed.</p>	Low
B3	Concrete block walls and curved corrugated metal roof. The building houses the water tank.	<p>Some access between small gaps. No roosting features internally and the building is likely subject to significant temperature fluctuation, creating sub-optimal roosting conditions.</p> <p>No evidence of bats observed.</p>	Negligible
B4	<p>Single storey stone brick building with a pitched, synthetic tiled roof.</p> <p>Numerous vent openings uniformly spaced several tiles down from the ridge.</p> <p>Building was not accessed internally.</p>	<p>Fairly limited access opportunities overall, apart from the vent openings.</p> <p>Roof in good condition and appeared relatively new.</p> <p>No evidence of bat activity along the exterior.</p> <p>No evidence of bats observed.</p>	Low (No proposed impact to building)

The grassland on site offers some value for foraging bats, with the stream immediately off site to the east

and the woodland edge to the west creating ideal commuting corridors.

Bat Activity Survey

Due to B1 and B2 being assessed to have some value for roosting bats, one bat activity survey was carried out on these buildings. The weather conditions for the survey was considered suitable for bats to be active and are summarised in Table 5.

Table 5. Bat Activity Survey Weather Conditions.

Date	Survey start	Sunset/sunrise	Survey end	Temp. (°C)	Precipitation	Wind (Beaufort)	Cloud (Oktas)
24/05/19	21:03	21:18	22:48	12 – 10	None	2 – 3	2 – 6 (thin)

The overall level of bat activity was considered to be low, with intermittent foraging by common *Pipistrellus pipistrellus* and soprano pipistrelles *Pipistrellus pygmaeus* in small numbers to the west of the buildings along the woodland edge. Several faint noctule *Nyctalus noctula* calls were heard as well as a small number of faint *Myotis sp.* calls, all of which were considered to be located near the pool and stream area to the east. No bats were observed emerging from any of the buildings on-site.

Overall, based on a combination of the above survey findings, it is considered that bats are likely absent from the buildings on site and, in turn, it is considered highly unlikely that bats will be significantly impacted by the proposed development; however, basic mitigation measures should be implemented to avoid indirectly impacting foraging and commuting bats post development.

Great Crested Newts: The habitats on site offer some value for GCN within their terrestrial phase; however, there are no suitable ponds within 500m¹ of the site and the site itself lies within a much larger sub-optimal geographical area for GCN (ARG UK, 2010). The only still waterbody is the pool located along the small tributary off the River Dunsop. The pool is connected to the stream and is therefore likely to contain fish, which are likely to impact any GCN breeding activity by preying on their eggs. In addition, the presence of waterfowl was apparent, which may also affect GCN populations present by eating the newts themselves. The pool was considered unlikely to support GCN, but may offer some suitability for palmate newts *Lissotriton helvetica* and other common amphibian species. No records of GCN were obtained during the desktop study.

Overall it is considered highly unlikely that GCN would be significantly impacted by the development.

Nesting Birds: The site offers some limited value for ground-nesting birds; however, due to the relatively small footprint of the development, providing appropriate mitigation measures are implemented it is considered that nesting birds will not be significantly impacted. In addition, the building on site offer some

¹ Typical maximum roaming range of GCN from a pond which they occupy.

suitability for nesting birds. Provided appropriate mitigation measures are implemented, it is unlikely that significant birds will be significantly impacted.

Reptiles: The habitat on site offers moderate value for reptiles with the mixed sward length of the semi-improved grassland offering sheltering, foraging and basking opportunities. Some refugia was also present, although a visual check on-site did not reveal any reptiles.

The surrounding mosaic of habitats, situated within the wider area of the Valley of the River Dunsop BHS, was considered to be of high value for reptiles. Three records of common lizard *Zootoca vivipara* were obtained during the desktop study. All related to sightings within the BHS. In addition, out of the four records of slow-worm *Anguis fragilis* obtained, one was located within the BHS. It is therefore considered likely that reptiles are present on-site in small numbers.

Due to the relatively limited footprint of the works, it is considered that providing appropriate mitigation measures are implemented, any reptiles present on site will not be significantly impacted.

Other Wildlife: The vegetation on site may provide some suitability for common toad *Bufo bufo*, a UK Biodiversity Plan priority species, which may also utilise the pool near to the site.

4.4 Invasive Species

No invasive species – including non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) – were recorded within the site extent at the time of the site survey, or within habitats adjacent to the site.

5 CONCLUSIONS AND RECOMMENDATIONS

The site was considered to be of low ecological value overall. The buildings on site were considered to have either low or negligible bat roost potential, with no bats observed emerging during the activity survey and are therefore considered to be likely absent from the site. There is some suitable habitat for reptiles and for common amphibians in their terrestrial stage. The semi-improved grassland offers some suitability for ground-nesting birds and foraging bats. Following the site assessment and in review of the findings, Naturally Wild would recommend the following:

5.1 Mitigation Measures

- It is recommended that Reasonable Avoidance Measures (RAMs) are adopted during any site clearance to avoid significantly impacting any herpetofauna (reptiles and amphibians). This precautionary approach should involve works being timed to occur between November – February when amphibians and reptiles are unlikely to be active above ground and are therefore unlikely to be present within the habitats to be impacted. In addition to the above, vegetation clearance and the initial top soil strip should be supervised by a suitably qualified and experienced ecologist to check for the presence of any species of herpetofauna.
 - This should be preceded by vegetation management whereby the existing vegetation is trimmed to lower the sward height, reducing the habitat suitability for reptiles and encouraging any animals present to move off via the disturbance, in the unlikely event that they are present at the time of the works.
 - Following initial vegetation management, subsequent ground works should be carried out following the destructive search methodology, whereby the turf layer is scraped away using an excavator with a ditching bucket attached.
 - An ecologist should be present to oversee these works and carry out a careful inspection to check for any amphibians or reptiles present.
 - Any amphibians or reptiles encountered during these works should be safely captured and moved to suitable habitat off site.
 - In the event of any common species of amphibian or reptile being found in small numbers, they will be caught by the on-site ecologist and moved to a safe area away from the works; however, if large numbers of reptiles or any GCNs are encountered, it will be necessary to stop work and contact the County Ecologist and/or Natural England to agree appropriate action.
 - Any materials to be stored on site that could act as temporary resting places should be raised off the ground, on pallets or something similar.
 - Further detail would be provided in a Method Statement.
- As the semi-improved grassland provides some suitable ground-nesting bird habitat, and in accordance with the above mitigation measures, it is recommended that any site clearance works are timed to commence outside of the bird nesting season (March – August inclusive). The demolition of the buildings should also be undertaken outside of nesting bird season; however, if this is not possible, a check should be carried out by a suitably qualified person shortly prior to the start of works to ensure no active nests are present.

-
- If any nests are encountered prior to or at any time during the works, all works in the area around the nest should cease and an ecologist contacted to check the status of the nest.
 - If an active nest is confirmed, a suitable buffer (minimum of 5 m) should be kept around the nest until it can be confirmed as no longer active, after which time works in the area can continue.
 - A low-level lighting scheme should be implemented during and after construction to avoid indirect disturbance to foraging and commuting bats, birds and small mammals that may be using the woodland to the west and stream to the east, and should include the following elements:
 - Sensitive positioning of lighting to avoid unnecessary spill onto the adjacent woodland and stream;
 - Angle of lighting: avoidance of direct lighting and light spill onto areas of habitat that are of importance as commuting pathways and/or foraging areas;
 - Type of lighting: studies have shown that light sources emitting higher amounts of UV light have a greater impact to wildlife. Use of narrow-spectrum bulbs that avoid white and blue wavelengths are likely to reduce the number of species impacted by the lighting;
 - Reduce the height of lighting columns to avoid unnecessary light spill.
 - To reduce the impact to badger and other wildlife that may use the site, it is recommended that any trenches or voids are dug and filled within the same working day. Should this not be possible, an adequate means of escape should be provided and/ or the trench should be securely covered overnight.

5.2 Compensation Measures

In order to demonstrate net gain or identify the requirement for additional compensation over that proposed, the Warwickshire Biodiversity Impact Assessment Calculator was used. The calculator takes into account the distinctiveness, extent and quality of habitats to be lost, retained, retained and enhanced, and created, providing an overall biodiversity impact score for the development. A summary of the calculation can be seen in Appendix 8.3, which has produced a biodiversity impact score of 4.28, indicating that the development will achieve a net gain in biodiversity. The achievable net gain is subject to the following measures being implemented:

- All retained or newly constructed buildings will have green roofs installed. Some example planting mixtures could incorporate Emorsgate Turf Roof Mixture ER1 or Wildflowers for Green Roofs ER1F.
- Proposed tree planting should incorporate native species suited to the upland climate and could incorporate coniferous species, in keeping with adjacent plantation such as Scots pine *Pinus sylvestris*. In addition, broad leaved species such as alder *Alnus glutinosa* and silver birch *Betula pendulua* could also be planted.
- Native shrub planting should also be undertaken and could include species of gorse *Ulex sp.*, juniper *Juniperus sp.*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.
- The existing areas of semi-improved grassland will be enhanced through sowing with an additional seed mix to improve floral diversity. An example seed mix would be the Emorsgate EM7 – Meadow mixture for sandy soils.

-
- The rain garden should incorporate a suitable species mixture, that will tolerate periods of inundation. The Emorsgate EP1 Pond Edge Mixture is recommended.
 - The dense areas of bracken should be cleared and managed to create additional areas of semi-improved grassland and dwarf shrub communities.
 - Sections of the flush should also be managed, through the clearance of encroaching terrestrial vegetation, to promote the restoration of bog mosses.
 - Further details on the above and an appropriate management scheme to ensure the establishment and longevity of the habitats to be enhanced and created, would be detailed within a Landscape and Ecological Management Plan.

5.3 Enhancement Measures

- Any landscape planting and planting on the green roofs of the camping pods and managers accommodation should use native plant species and/or species of known wildlife value that will enhance the ecological value of the site for local populations of invertebrates, birds, bats and small mammals. Details are provided in section 5.2, above.
- Any bund area created round the proposed car park could be created and managed for the benefit of invertebrate species. This would involve using a low nutrient substrate such as building sand or chalky rubble to cap the bund, prior to seeding with a suitable wildflower/calcareous grassland seed mix. Vegetation should be managed along the bund to maintain a sparse coverage, with annual strimming of up to half of the overall area recommended, alternating areas on consecutive years. All cuttings should be removed to prevent the accumulation of nutrients. Naturally Wild can provide further details upon request.
- In addition to the above, any excess spoil could be retained on site and combined with partially buried rubble, obtained from the demolition work, to provide suitable refugia/hibernacula for reptiles. Ideally the refugia/hibernacula would incorporate an earth bank, which should ideally be created with south and east facing aspects in order to create suitable basking opportunities. Example hibernacula design can be seen in appendix 8.4.
- Tree-mounted bat and bird boxes could be installed in the surrounding area to enhance the existing biodiversity value of the site. Some example designs can be seen in appendix 8.5.

Providing the recommendations of this report are implemented in full, Naturally Wild would conclude that there will not be a significant impact to protected species or habitats as a result of the proposed works.

6 SITE IMAGES



Image 1. Building 1



Image 2. Interior of Building 1



Image 3. Building 2



Image 4. Building 2 Interior



Image 5. Building 3



Image 5. View north west showing boundary between bracken and grassland. With the flush/ marshy grassland in between



Image 7. View east across southern section of the site



Image 8. Gap in air brick in B2



Image 9. Southern section of flush



Image 10. Pool located ~75m to the east

7 BIBLIOGRAPHY & REFERENCES

Amphibian and Reptile Groups of the UK (2010) *ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index*. Available: <http://www.arguk.org/download-document/9-great-crested-newt-habitat-suitability-index-arg-advice-note-5>

British Standards Institution (2013) *BS 42020:2013. Biodiversity – Code of practice for planning and development*. British Standards Institution, London.

CIEEM (2016) *Guidelines for Accessing and Using Biodiversity Data*. CIEEM, Winchester.

CIEEM (2017a) *Guidelines for Preliminary Ecological Appraisal (2nd ed.)*. CIEEM, Winchester.

CIEEM (2017b) *Guidelines for Ecological Report Writing (2nd ed.)*. CIEEM, Winchester.

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland (3rd ed.)*. CIEEM, Winchester.

Collins, J. (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edn*. Bat Conservation Trust, London.

The Conservation of Habitats and Species Regulations 2017.

Cresswell, W. and Whitworth, R. (2004) *An assessment of the efficiency of capture techniques and the value of different habitats for great crested newts*. English Nature Research Reports 576. English Nature, Peterborough.

European Commission. Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

European Economic Community. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

Harris, S., Cresswell, P, and Jeffries, D. (1989) *Surveying Badgers*. Occasional Publication No. 9. The Mammal Society, London.

Ministry of Housing, Communities and Local Government (2019) *National Policy Planning Framework*. Crown Copyright 2019. <https://www.gov.uk/government/collections/revised-national-planning-policy-framework>

Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.

Multi-Agency Geographical Information for the Countryside (MAGIC). Crown Copyright and database rights [2018]. Ordnance Survey 100022861. Available at: <http://www.magic.gov.uk/>

Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000) *Evaluating the suitability of habitat for the Great Crested Newts (*Triturus cristatus*)*. Herpetological Journal 10: 143-155.

The Protection of Badgers Act (1992).

Rose, F. and O'Reilly, C. (2006) *The Wild Flower Key*, Revised Edition. Penguin Books, London.

The UK Biodiversity Action Plan. Available: <http://jncc.defra.gov.uk/page-5155>

Wildlife and Countryside Act 1981 (as amended).

8 APPENDICES

8.1 Additional Information for the Legislation of Other Protected Species

Badgers: The badger is geographically widespread across the UK; however, they are still vulnerable to baiting, hunting and detrimental impacts of development to their habitat. Both the badger and its habitat are protected under The Protection of Badgers Act 1992, Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) an Appendix Three of the Bern Convention. Therefore, badgers have legal protection against deliberate harm or injury and it is an offence to:

- Interfere with a badger sett by damaging or destroying it
- Kill, injure, take or possess a badger
- Cruelly ill-treat a badger
- Obstruct access to a badger sett
- Disturb a badger whilst it is in a badger sett

Bats: All British bat species are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are therefore afforded protection under Section 9 of this Act. In addition, all bat species are listed in Schedule 2 of The Conservation (Natural Habitats, &c.) Regulations 1994 (SI 1994 No. 2716) (as amended) (known as the Habitats Regulations) and are therefore protected under Regulation 39 of the Regulations. These Regulations make provision for the purpose of implementing European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 1992, under which bats are included on Annex IV. The Act and Regulations makes it an offence, *inter alia*, to:

- Intentionally kill, injure, take (handle) or capture a bat;
- Intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (this is taken to mean all bat roosts whether bats are present or not) - under the Habitats Regulations it is an offence to damage or destroy a breeding site or resting place of any bat; or
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection - under the Habitats Regulations it is an offence to deliberately disturb a bat (this applies anywhere, not just at its roost) in such a way as to be likely to affect its ability to survive, breed, reproduce, rear or nurture their young or hibernate.

Further details of the above legislation, and of the roles and responsibilities of developers and planners in relation to bats, can be found in Natural England's Bat Mitigation Guidelines (Mitchell-Jones, 2004).

Nesting Birds: Birds receive protection under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally or recklessly kill, injure or take any wild bird; take, damage or destroy a nest of a wild bird whilst it is in use or being built; or to take, damage or destroy an egg of a wild bird. The bird-nesting season is defined as being from 1st March until 31st August with exceptions and alterations for some species.

Great Crested Newts: Great crested newts are a European Protected Species, listed on Annex II and IV of the EEC Directive on the Conservation of Natural Habitats and Wild Fauna and Flora, receiving

protection under Schedule 2 of The Conservation of Habitats and Species Regulations 2017. This species is also afforded full protection under the Schedule 5 of the Wildlife and Countryside Act 1981. Under such legislation it is an offence to:

- Intentionally or recklessly* kill, injure or capture a great crested newt;
- Possess or control any live or dead specimen or anything derived from a great crested newt;
- Intentionally or recklessly* damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; and
- Intentionally or recklessly* disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.
- Damage or destroy a breeding site or resting place.
- Sell, barter, exchange or transport or offer for sale great crested newts or parts of them.

**Reckless offences were added by the Countryside and Rights of Way Act 2000, which applies only to England and Wales.*

To undertake surveys for great crested newts it is necessary to hold an appropriate licence issued by Natural England.

Reptiles: All native British species of reptile (of which there are 6) are listed on Schedule 5 of the Wildlife and Countryside Act 1981 and, as such, are protected from deliberate killing, injury or trade. Therefore, where development is permitted and there will be a significant change in land use, a reasonable effort must be undertaken to remove reptiles off site to avoid committing an offence. The same Act makes the trading of native reptile species a criminal offence without an appropriate licence.

8.2 Development Plans



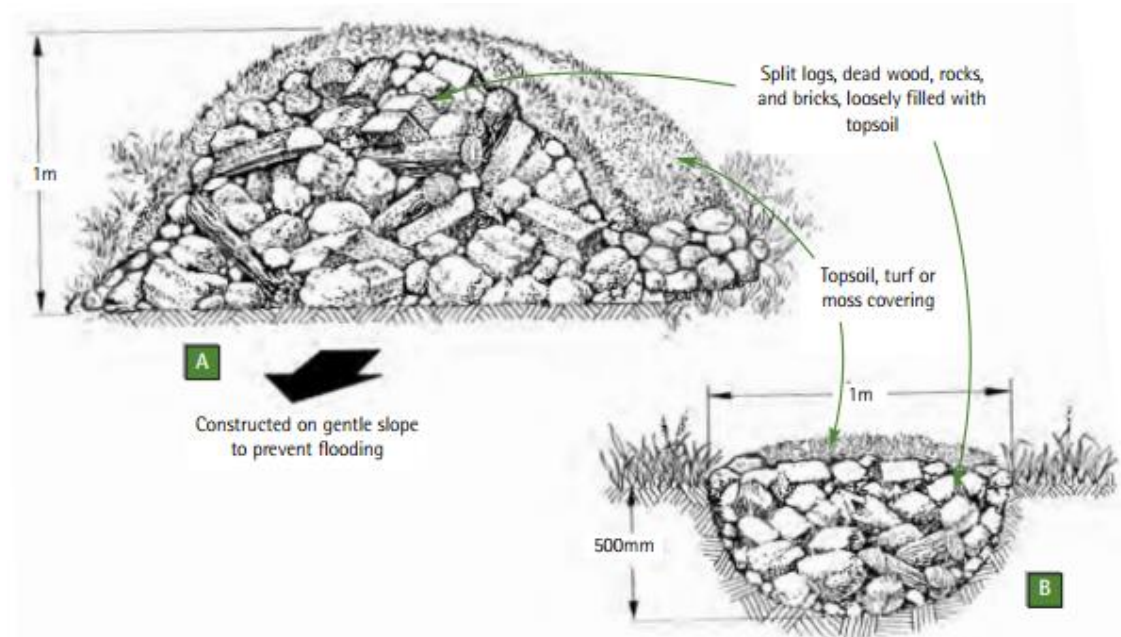
8.3 Warwickshire Biodiversity Calculator Summary

Biodiversity Impact Assessment Summary

Site name:	Witcher Well, Dunsop Bridge
Planning reference number:	-

Habitats	Area (ha)	Habitat Biodiversity Value
Total existing area onsite	1.40	10.36
Habitats negatively impacted by development Habitat Impact Score	0.70	3.33
On site habitat mitigation Habitat Mitigation Score	1.39	7.61
Habitat Biodiversity Impact Score If -ve further compensation required		4.28
Percentage of biodiversity impact		
Linear features	Length (km)	Linear Biodiversity Value
Total existing length onsite	0.80	4.80
Linear features negatively impacted by development Linear Impact Score	0.00	0.00
On site linear mitigation Linear Mitigation Score	0.80	0.00
Linear Biodiversity Impact Score If -ve further compensation required		0.00
Percentage of linear biodiversity impact		

8.4 Refugia/Hibernacula Design



(illustration from Great Crested Newt Conservation Handbook, Froglife www.froglife.org)

Hibernacula and refugia piles are to be created using materials from the site and adjacent (rubble, vegetation cuttings) to a similar specification as that shown above. Refugia piles can be created from the ground up and are generally simple mounds of materials suitable for sheltering species. Hibernacula are often more effective by first creating a depression or hole that is then filled with materials and often capped with the removed soil, leaving gaps to allow entry into the chambers created beneath. The soil will then overtime vegetate and become inconspicuous. The hibernacula and refugia piles will also provide areas of basking opportunities for reptiles.

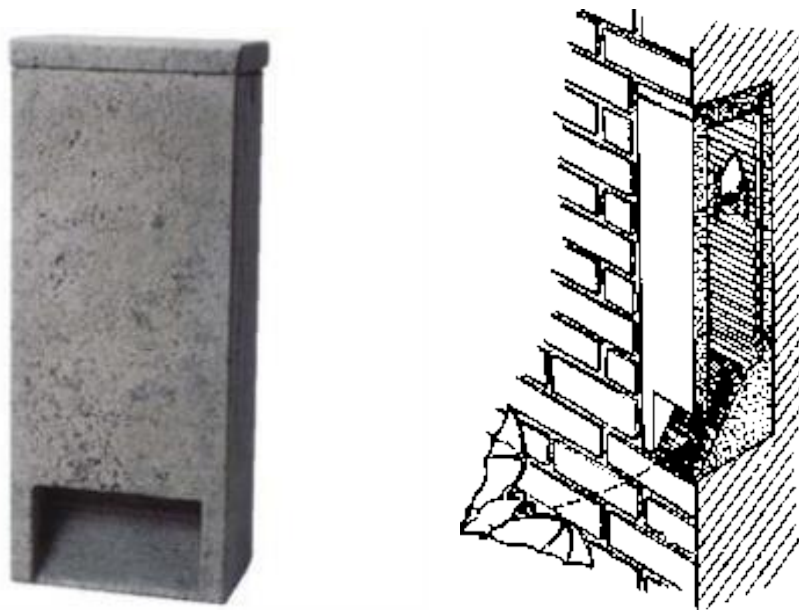
8.5 Bat Roosting and Bird Nesting Features

Integrated Bat Boxes

Ibstock enclosed bat box:



Schwegler 1FR:



Off-site Bat Boxes

Schwegler 2F, 1FF, 2FN (left to right)



Off-site Bird Boxes

Schwegler 1B Nest Box

