LC Ecological Services

ECOLOGICAL IMPACT ASSESSMENT
ROCK ARCH COTTAGE
STOURTON,
WARMINSTER
BA12 6QB

JULY 2023

ON BEHALF OF NATIONAL TRUST

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Authorisation

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It is company policy to share species records collected during our surveys with local biological records centres unless instructed otherwise by the client.

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1.0 EXECUTIVE SUMMARY

1.1 LC Ecological Services Limited were commissioned by National Trust to undertake an ecological appraisal at National Trust, Rock Arch Cottage, Stourton, Warminster, BA12 6QB (Grid reference: ST 77206 33741). The surveys were conducted in relation to the proposed works for the installation of a French drain consisting of a perforated pipe laid in a shallow trench containing single sized stone wrapped in terram fabric.

1.2 The scoping information provided by the ecological appraisal summarises the ecological baseline methods and results; evaluates the Important Ecological Features (IEFs); and indicates the potential impacts and proposes mitigation for the construction and operational of the proposed development.

1.3 Sixteen IEFs were identified during the EcIA, including one designated site of national importance, eleven sites of regional importance and three habitats and fauna of local importance. No significant negative impacts to the IEFs were identified during the assessment following the application of mitigation measures.

1.4 The zone of influence of the project was determined by the sensitivity of the ecological features to environmental change within the site and the surrounding area in accordance with the guidelines for EcIA (CIEEM, 2019).

2.0 INTRODUCTION

2.1 LC Ecological Services Limited were commissioned by National Trust to undertake an ecological appraisal at National Trust, Rock Arch Cottage, Stourton, Warminster, BA12 6QB (Grid reference: ST 77206 33741). The surveys were conducted in relation to the proposed works for the installation of a French drain consisting of a perforated pipe laid in a shallow trench containing single sized stone wrapped in terram fabric. A location map has been provided in appendix I, and proposal plan has been provided in appendix II.

2.2 The report summarises the ecological baseline methods and results; evaluates the Important Ecological Features (IEFs); and indicates the potential impacts and proposes mitigation for the construction and operational stages of the proposed development.

2.3 The purpose of this report is to outline the following:

- To identify and describe all potentially significant ecological effects associated with the proposed development.
- To set out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects.
- To identify how mitigation measures will/could be secured.
- To provide an assessment of the significance of any residual effects.
- To identify appropriate enhancement measures.
- To set out the requirements for post-construction monitoring.

3.0 LEGISLATION AND POLICY CONTEXT

Legislation

3.1 Full details of statutory obligations with respect to biodiversity and the planning system can be found in DEFRA Circular 06/2005. Relevant legislation to this application site includes the following:

- **Internationally Designated Sites:** Special Protection Areas (SPA) and Special Areas of Conservation (SACs) are protected under the *Conservation of Habitats and Species (Amendment) Regulations 2017* and Ramsar sites are protected under the *Ramsar Convention (1971).*
- **Nationally Designated Sites:** Sites of Special Scientific Interest (SSSIs) are protected under section 28 of the *Wildlife and Countryside Act (WCA) 1981* (*as amended).*
- **Bats**: all species of British bats and their roosts are fully protected under the *Wildlife and Countryside Act (WCA) 1981 (as amended)* and the *Conservation of Habitats and Species (Amendment) Regulations 2017.*
- **Mammals:** *Wild Mammals (Protection) Act 1996.*

National Planning Policy

3.2 Chapter 15 of the National Planning Policy Framework (NPPF 2021) '*Conserving and enhancing the natural environment*' sets out the Government's policies on biodiversity, landscape and geological conservation. Relevant paragraphs within this chapter include:

- **Paragraph 174:** Recognise the wider benefits of ecosystem services and minimise impacts on biodiversity, providing net gains in biodiversity;
- **Paragraph 175:** Planning positively and distinguishing between the hierarchy of designated sites and allocating land with the least environmental value, and maintaining and enhancing networks of habitats and green infrastructure;
- **Paragraph 179:** Protect and enhance biodiversity and geodiversity by safeguarding wildlife-rich habitats and wider ecological networks; promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and securing biodiversity net gain;
- **Paragraph 180:** Refuse development if found to have significant harm to biodiversity; is on land within or outside a SSSI (Site of Special Scientific Interest) which is likely to have an adverse effect; if results in the loss of deterioration of irreplaceable habitats. Developments with the primary objective to conserve or enhance biodiversity will be supported, while

opportunities to improve biodiversity in and around developments should be integrated as part of their design and can secure measurable net gains for biodiversity or enhance public access to nature.

- **Paragraph 181:** Protection to be given to potential SPA and possible SACs, proposed Ramsar sites, and sites identified or required as compensatory measures for impacts to these sites.

Local Planning Policy

3.3 Relevant planning policies within the Wiltshire Core Strategy (adopted January 2015) include:

- Core Policy 24: New Forest National Park
- Core Policy 50: Biodiversity and Geodiversity
- Core Policy 52: Green Infrastructure
- Core Policy 69: Protection of the River Avon SAC

Biodiversity Action Plans

3.4 Relevant Biodiversity Action plans (BAPs) are as follows:

- Noctule (*Nyctalus noctula*) (UK BAP)
- Soprano pipistrelle bat (*Pipistrellus pygmaeus*) (UK BAP)
- Brown long-eared bat (*Plecotus auritus*) (UK BAP)

4.0 ASSESSMENT METHODOLOGY

Study Area

4.1 The site is located at central Ordnance Survey (OS) grid reference ST 77206 33741 and the study area comprises the site plus:

- 5 kilometres for statutory designated sites
- 2 kilometres for non-statutory designated sites
- 2 kilometres for bats.

Sources of Information

4.2 The following sources of information were used to inform the impact assessment.

Table 1: Summary of survey work and sources of information

Survey type	Year(s)	Comment
Data search of protected species within 2 kilometres of the site	2023	Wiltshire & Swindon Biological Records Centre (WSBRC)
Data search for statutory sites within 2km, non-statutory sites within 2km	2023	Multi-Agency Geographic Information for the Countryside website database (MAGIC)
Ecological appraisal	2023	LC Ecological Services in May 2023

Assessment Process

4.3 The EcIA is in accordance with the CIEEM *Guidelines for Ecological Impact Assessment in the UK and Ireland* (CIEEM, 2019).

4.4 The starting point was to determine which features should be subject to detailed assessment, that is, those IEFs:

a) Of sufficient value that impacts upon them may be significant (in terms of legislation or policy); and

b) Potentially vulnerable to significant impacts arising from the development.

4.5 This approach is consistent with the EIA Regulations, which only require investigation of likely significant effects.

4.6 The CIEEM guidelines recommend that the value of IEFs or features is determined based on a geographic frame of reference that includes the following levels:

Table 2: Level of Value Assigned to each IEF (adapted from CIEEM, 2019)

Level of Value	Example of Definitions
International	An internationally important site e.g. SPA, SAC, Ramsar (or a site considered worthy of such a designation). A viable area of a habitat type listed in Annex 1 of the Habitats Directive, or smaller areas of such habitats which are essential to maintain the viability of a larger whole. A regularly occurring population of an internationally important species (listed on Annex IV of the Habitats Directive).
UK / National	A nationally designated site e.g. SSSI or a site considered worthy of such designation. A viable area of a priority habitat identified within the UK BAP, or of smaller areas of such habitat which are essential to maintain the larger whole. Any recurring population of a nationally important species e.g. listed on Schedules 5 and 8 of the Wildlife and Countryside Act 1981 (as amended). A feature identified as of critical importance in the UK BAP.
Regional (Wiltshire)	A site designated as a Local Wildlife Site (LWS) or habitats that meet the designation criteria for LWS's in Wiltshire Areas of internationally or nationally important habitats which are degraded but are considered readily restored. A regularly occurring, locally significant population of a species listed as being nationally scarce. A regularly occurring, locally significant number of a regionally important species.
Local (the zone of influence including the site and its immediate vicinity, including habitats within or linked to those on site)	Areas of internationally or nationally important habitats which are degraded and have little or no potential for restoration. A good example of a common or widespread habitat in the region.

Assessment Criteria

Predicting and Characterising Ecological Impacts

4.7 The assessment of magnitude of effect assesses whether an impact will be positive or negative; its extent; duration; reversibility and timing and frequency as well as the

cumulative effect. A combination of quantitative information and qualitative assessment based on professional judgment was used whilst considering all of these factors to assign effects on the IEFs to one of four categories as detailed in table 3 below.

Table 3: Assessment of Magnitude of Effects

Category	Definition
High	A permanent or long-term effect on the extent/size or integrity of a site, habitat, species assemblage or community, population or group. If adverse this is likely to threaten its sustainability. If beneficial this is likely to enhance its conservation status.
Medium	A permanent or long-term effect on extent/size or integrity of a site, habitat, species assemblage or community, population or group. If adverse this is unlikely to threaten its sustainability. If beneficial this is likely to be sustainable but is unlikely to enhance its conservation status.
Low	A short-term but reversible effect on the extent/size or integrity of a site, habitat or species assemblage or community, population or group that is within the range of variation normally experienced between years.
Negligible	A short-term but reversible effect on the extent/size or integrity of a site, habitat or species assemblage or community, population or group that is within the normal range or annual variation.

4.8 For each IEF, the significance of the effects of the proposed development during construction and operation are assessed and the type of impacts are characterised according to their importance and magnitude. Where there is uncertainty over the appropriate level of significance to assign, this will be stated but as a precautionary measure the higher level of significance will be applied. Where impacts will arise, mitigation and enhancement measures are provided.

Direct and Indirect Ecological Impacts

4.9 Both direct and indirect impacts are considered within this assessment. A direct impact is a defined action such as the physical loss of a habitat or the immediate mortality of an individual of a particular species. Indirect impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or IEF e.g. the loss of an important prey species for a predator.

5.0 BASELINE

5.1 An ecological appraisal was conducted in May 2023 by LC Ecological Services led by suitably qualified ecologist Alex Sinclair. The methodology and the key findings are summarised in this section to inform the nature conservation evaluation for each of the IEFs identified.

Statutory Sites

5.2 There is one statutory designated site within 2kilometres, Heath Hill Farm SSSI is located 1.1kilometres to the west of the site. Further detail is provided in appendix III.

5.3 Eleven non-statutory designated Local Wildlife Site's (LWS) lie within 2kilometres of the site. The site is in Bonham Hanging, and Garden Lake Stourhead is located 0.1kilometres north of the site, Stourhead Woods is located 0.2kilometres north of the site, Top Wood is located 0.4kilometres west of the site, Writh Coppice is located 0.5kilometres south of the site, Lynch Wood is located 0.6kilometres west of the site, Western Estate Fields is located 0.8kilometres south west of the site, Sunny Hanging Woods is located 0.8kilometres north of the site, Mill Covert is located 0.9kilometres south of the site, Bayley's Coppice is located 1.8kilometres northwest of the site and Stour Valley Fields is located 1.9kilometres south of the site. Full details are provided in appendix III.

Habitats

5.4 The habitat types within the site were noted during the survey on the 25th of May 2023. A Phase 1 Habitat Survey (Joint Nature Conservation Committee, 2016) was undertaken by experienced ecologist Alex Sinclair.

5.5 The following habitats were recorded on the site and are described below:

- Building
- Bare ground
- Tall ruderal
- Broadleaved woodland
- Invasive species

Building

5.6 The building recorded within the site boundary is a two-storey stone construction residential dwelling.

Bare ground

5.7 Areas of bare ground are present on site, north and east of the building.

Tall ruderal

5.8 Tall ruderal vegetation is present in the north and east of the site. The tall ruderal consists of dominant scaly male fern (*Dryopteris affinis*), locally dominant sycamore saplings (*Acer pseudoplatanus*), cherry laurel (*Prunus laurocerasus*) and common nettle (*Urtica dioica*), with abundant rhododendron (*Rhododendron ponticum*) and bramble (*Rubus fruticosus*), frequent common ivy (*Hedera helix*) and Hart's-tongue fern (*Asplenium scolopendrium*), occasional common comfrey (*Symphytum officinale*) and herb-Robert (*Geranium robertianum*), and locally rare silver birch (*Betula pendula*).

Broadleaved woodland

5.9 The broadleaved woodland is present in the northeast of the site and the woodland edge consists of dominant sycamore saplings, cherry laurel and locally rare silver birch.

Invasive species

5.10 One Schedule 9 invasive plant species was recorded on site. Rhododendron (*Rhododendron ponticum*) was recorded in the tall ruderal vegetation.

Assessment of habitats

5.11 The level of value of these habitats is summarised in table 4 below.

Table 4: Level of value of habitats recorded within and adjacent to the site

IEF	Evaluation rationale	Value of IEF
Building	The buildings can provide habitat for roosting bats and nesting birds, but do not provide any ecological value on its own merits.	N/A
Bare ground	The habitat does not have any ecological value.	N/A
Tall ruderal	This is a common habitat at local, county, and national levels which can support a range of fauna and flora.	Local
Broadleaved woodland	This is a common habitat at a local level which if mature can be important at a local, county or national level and support a range of flora and fauna, however, it is mostly cherry laurel with sycamore saplings and some silver birch.	Local

Protected and Notable Species

5.12 Based on the habitat suitability on the site and records returned by WSBRC, protected species surveys were subsequently completed in order to inform the EcIA and include:

- Badger activity survey
- Bat foraging suitability
- Hazel Dormouse
- Reptile habitat suitability assessment

Badger

5.13 The site, its boundaries and a 30-metre buffer zone around the site (where access was possible), were surveyed for badger evidence such as setts, latrines, pathways, footprints, snuffle holes and badger fur (English Nature, 2002). The survey was undertaken by experienced ecologist Alex Sinclair. Any setts recorded were classified according to published criteria (Harris, Cresswell and Jefferies, 1989).

5.14 During the survey no signs of badger activity such as latrines, hair or footprints were noted. No setts were found to be present on the site, and no evidence of badger have been historically recorded on site. The absence of a sett or evidence of badger activity within the survey areas it can be concluded that the site is not part of a core territory range around a sett. Badger have therefore been screened out of this assessment.

Bats

Foraging and commuting habitat

5.15 The habitats on site, and the habitats they connect to were assessed for their suitability to support foraging and commuting bats in accordance with the Bat Conservation Trust guidelines (BCT 2016). The site is of high quality for foraging and commuting bats. Although there is potential for bats the proposals are small scale. Adverse impacts to foraging and commuting bat species have therefore been screened out of this assessment.

Hazel dormouse

5.16 Suitable habitat is located on site in the form of broadleaved woodland; however, the proposed works will not affect the woodland. Therefore, hazel dormice have been screened out.

Reptiles

5.17 Habitats on site were assessed for their suitability to support reptile species in accordance with *Reptile surveys. An introduction to planning, conducting and*

interpreting surveys for snake and lizard conservation. (Froglife, 1999). High quality reptile habitat holds a mixed height sward of grassland habitats with areas of refuge, shelter and hibernation. Small areas of high-quality habitat are present on site in the tall ruderal and woodland edge vegetation, it is considered however, that the site is not suitable to support a population of more than a few individuals which may commute through the wider area.

Assessment of species

5.18 The level of value of these species is summarised in table 7 below.

Table 7: Level of value of protected species supported on the site.

Receptor	Evaluation rationale	Value of receptor
Reptiles	Small areas of tall ruderal and woodland edge vegetation offers some potential for small numbers of common reptile species in the area to use for commuting around the wider area.	Local

6.0 ASSESSMENT OF POTENTIAL IMPACT

6.1 The impacts have been assessed against the development proposals including the inherent mitigation measures described below.

6.2 Impacts of the proposed development are discussed for the IEFs that are of at least local value or subject to legal consideration. The IEFs included from this point on are therefore limited to:

- Heath Hill Farm SSSI (National value)
- Bonham Hanging LWS (Regional value)
- Garden Lake Stourhead LWS (Regional value)
- Stourhead Woods LWS (Regional value)
- Top Woods LWS (Regional value)
- Writh Coppice LWS (Regional value)
- Lynch Wood LWS (Regional value)
- Western Estate Fields LWS (Regional value)
- Sunny Hanging Woods LWS (Regional value)
- Mill Covert LWS (Regional value)
- Bayley's Coppice LWS (Regional value)
- Stour Valley LWS (Regional value)
- Tall ruderal habitat (Local value)
- Broadleaved woodland (Local value)
- Reptiles (Local value)
- Invasive species (Local value)

Construction Phase

Statutory sites

SSSI

Habitat Loss, Degradation and Disturbance

6.3 The proposed works will be located sufficiently far from Heath Hill Farm SSSI for there not to be any direct impact on the habitats. There is no hydrological connectivity between the development site and the Heath Hill Farm. There is also no other direct habitat link between the Heath Hill Farm and the site. Heath Hill Farm is located 1.1kilometres from the proposed works therefore it is considered that Heath Hill Farm is sufficiently remote to avoid impacts from dust deposition and disturbance. As the IEFs are of **national** value, the magnitude of effect is **negligible** and therefore **not significant**.

Bonham Hanging LWS

Habitat Loss, Degradation and Disturbance

6.4 The proposed works are located inside of Bonham Hanging LWS. There will be a direct disturbance of an area of land to facilitate the works to install the crib wall and French drain around the house. This will result in an area of habitat loss. Direct impacts to the LWS from construction works may arise from machinery and construction staff through direct disturbance, dust, or noise. Due to the small scale of the proposed works and that the habitat features directly impacted by the works not being listed as being of importance to the designation, the habitat loss, disturbance and degradation of the IEF of **regional value** has a magnitude considered to be **permanent** and **negligible** and therefore the impact significant is **minor negative.**

Garden Lake Stourhead LWS

Habitat Loss, Degradation and Disturbance

6.5 The proposed works is located 0.1kilometres to the south of Garden Lake Stourhead LWS. Due to the scale of the proposed works, it is considered that there will be no direct impacts to the Garden Lake Stourhead from construction works. There is potential for indirect impacts to the lake in terms of runoff or dust from the construction site works. As the IEF is of **regional value**, the magnitude of impact from indirect disturbance and habitat degradation is considered to be **negligible** and therefore the impact significance is **not significant.**

Stourhead Woods LWS

Habitat Loss, Degradation and Disturbance

6.6 The proposed works is located 0.2kilometres to the south of Stourhead Woods LWS. Due to the scale of the proposed works, it is considered that there will be no direct impacts to Stourhead Woods from construction works. As the IEFs are of **regional value**, the magnitude of impact from disturbance and habitat degradation is considered to be **negligible** and therefore the impact significance is **not significant.**

Other LWS

Habitat Loss, Degradation and Disturbance

6.7 The proposed works will be located sufficiently far from Top Wood, Writh Coppice, Lynch Wood, Western Estate Fields, Sunny Hanging Woods, Mill Covert, Bayley's coppice and Stour Valley Fields for there not to be any direct impact on the habitats. There is no hydrological connectivity between the development site and the LWS's. There is also no other direct habitat link between the LWS's and the application site.

The designated sites are located between 0.4 and 1.9 kilometres from the proposed works therefore it is considered that they are sufficiently remote to avoid impacts from dust deposition and disturbance. As the IEFs are of **regional** value, the magnitude of effect is **negligible** and therefore **not significant**.

Habitats

Tall ruderal

6.8 There will be a loss of tall ruderal habitat as a result of the proposed works. As the IEF is of **local** importance, the magnitude of effect is considered to be **medium**, and therefore **not significant**.

Broadleaved woodland

6.9 There will be no loss of woodland habitat as a result of the proposed works. As the IEF is of **local** importance, the magnitude of effect is considered to be **negligible**, and therefore **not significant**.

Invasive species

6.10 During works, there is a low potential for the spread of invasive species (Rhododendron) into the wild due the potential for branches, shoots, roots or seeds to be transported off site on machinery. As the IEF is of **national** importance, the magnitude of effect is considered to be **low**, and therefore **minor negative**.

Protected and notable species

Reptiles

6.11 The tall ruderal habitat holds a potential for small numbers of common reptile species in the area to use for foraging and commuting around the wider area. The earth mound on site holds a low potential to be used by individual reptiles within the local area for hibernation. There will be a loss of suitable reptile habitat from the removal of these features prior to construction and if habitat removal is undertaken at an inappropriate time of year foraging, commuting and hibernating reptiles could be disturbed, harmed, damaged or destroyed. As the IEF is of **local value**, the magnitude of effect is **low** and therefore **not significant**.

Operational phase

Statutory sites

SSSI

6.12 The proposed works once complete and operational will result in no additional noise, lighting, dust or any other direct or indirect impacts, along with being sufficiently distanced from the SSSI. As the IEF is of **national** value, the magnitude of effect is **negligible** and therefore **not significant**.

Bonham Hanging LWS

Habitat Loss, Degradation and Disturbance

6.13 The proposed works are located inside of Bonham Hanging LWS. Once operational the newly created features will not result in any additional impacts on the LWS. The crib wall may become vegetated and support new vegetation naturally dispersed in the area. As the IEF of **regional value,** the magnitude of the affect is considered **negligible** and therefore **not significant.**

Garden Lake Stourhead LWS

Habitat Loss, Degradation and Disturbance

6.14 The proposed works are 0.1kilometres to the south of Garden Lake Stourhead LWS. Due to the nature of the proposed works to install a French drain and distance from this site, it is considered that there may be an impact to the hydrology in the area therefore affecting Garden Lake Stourhead. As the IEF is of **regional value**, the magnitude of impact is considered to be **low** and therefore the impact significance is **unknown.**

Stourhead Woods LWS

Habitat Loss, Degradation and Disturbance

6.15 The proposed works is located 0.2kilometres to the south of Stourhead Woods LWS. Due to the scale of the proposed works, it is considered that there will be no direct or indirect impacts in the operation phase of the proposed works to Stourhead Woods. As the IEF is of **regional value**, the magnitude of impact is considered to be **negligible** and therefore the impact significance is **not significant.**

Other LWS

6.16 The proposed works once operational are considered to be sufficiently isolated from the other LWS and will result in no additional noise, lighting, dust or any other direct or indirect impacts. The IEFs are of **regional value**, the magnitude of impact is considered to be **negligible** and therefore the impact significance is **not significant**.

Ecological enhancements

6.17 There will be a small loss of tall ruderal habitat from the proposed development, however this will be naturally restored following works and so no habitat compensation is required. The site offers limited potential for installation of biodiversity enhancing features however a minimum of one nest box for birds and one bat box must be provided, fixed under the eaves of the external walls of the property. The crib wall also offers potential for reptile hibernation use.

6.18 These IEF's are of **local** importance and the level of impact will be **low**, resulting in a **positive but not significant impact**.

7.0 MITIGATION

7.1 While the impacts identified in section 6 are mostly minor or not significant, legislation must be adhered to and therefore the following mitigation outlined in this section is required.

Construction Phase

Bonham Hanging LWS

7.2 The proposed works will directly impact the Bonham Hanging LWS in a minor negative and permanent way through direct loss of tall ruderal habitat. This cannot be mitigated for. Indirect impacts from construction works machinery and staff can be minimised through a Construction Environmental Management Plan (CEMP) detailing methods of construction to avoid impacts to the surrounding habitats and ensure minimising potential direct disturbance, dust, run-off, lighting and noise. Details on the proposed construction methodology including factors such as construction access, methods of construction, timing of work and working hours, and industry standard dust suppression methodology.

Invasive species

7.3 Measure must be taken to ensure no spread of the identified invasive species (Rhododendron) into the wild, these measures should be detailed in the CEMP.

Protected and notable species

Reptiles

7.4 Although the adverse impact on reptiles during the construction phase was not significant, mitigation will be implemented to negate the potential for any individuals being harmed or injured in accordance with legislation.

7.5 An ecological watching brief will be maintained during clearance of all suitable reptile hibernation and sheltering features such as earth piles and tall ruderal vegetation affected by the proposed works. This involves a suitably qualified ecologist working alongside construction plant and conducting a destructive search for reptiles. This will be undertaken in the reptile active season between March and October when the temperatures are above 10˚C. Any reptiles found are safely re-located to retained habitats outside the works area.

Badger

7.6 Although no evidence of badgers was recorded on site; this species is wide ranging and could potentially commute through the site (as could any terrestrial mammal). In order to minimise the impact of works upon badgers, any trenches created will either be covered over night or ramps will be installed to ensure badgers (or other wildlife) do not become trapped.

Operational Phase

Garden Lake Stourhead LWS

7.7 The proposed works are 0.1kilometres to the south of Garden Lake Stourhead LWS. Due to the nature of the proposed works to install a French drain and distance from this designated site, it is considered that there may be an impact to the hydrology in the area therefore affecting Garden Lake Stourhead. It is unknown what the scale of the impact will be and whether it will be positive or negative, however measures can be taken to ensure minimal changes to the hydrology affecting the lake though a CEMP.

8.0 RESIDUAL EFFECTS

8.1 No significant negative impacts from the proposed works were identified during the assessment. A **minor negative** impact on the Bonham Hanging LWS is identified during the construction phase through a direct loss of tall ruderal habitat. This cannot be mitigated for, however once works are complete the operational phase does not incur any resounding negative impacts.

8.2 With the proposed mitigation and enhancements outlined above the works will result in a **non-significant** residual impact overall.

9.0 IN-COMBINATION EFFECTS

9.1 There are numerous local planning applications for individual residential dwelling home improvements, including both two and single storey extensions, as well as loft and garage conversions.

9.2 As the proposed development will not increase the number of local residential units within the impact zones outlined above it is considered that the level of in-combination effects upon the identified IEF's is negligible. No cumulative effects are considered following these developments.

10.0 CONCLUSION

10.1 A phase 1 survey was undertaken at the proposed development site. Assessments of desk studies including the proximity to designated sites and protected and notable species were made. The impact assessment concluded that there would be a negligible to minor negative impact overall.

10.2 Mitigation measures during the construction phase have been provided to include protecting the Bonham Hanging LWS that the development sits in, ensure no spread of invasive species and ensure no harm or injury to any potential reptiles or badgers on site. Mitigation measures during the operational phase are recommended to ensure protection of the near-by Garden Lake Stourhead LWS. Implementing these mitigation measures will ensure that there are not any residual effects.

10.3 This survey is valid for 18 months and should the works be delayed past this time then an updated survey will be required.

11.0 REFERENCES

CIEEM (2019) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal*, Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester

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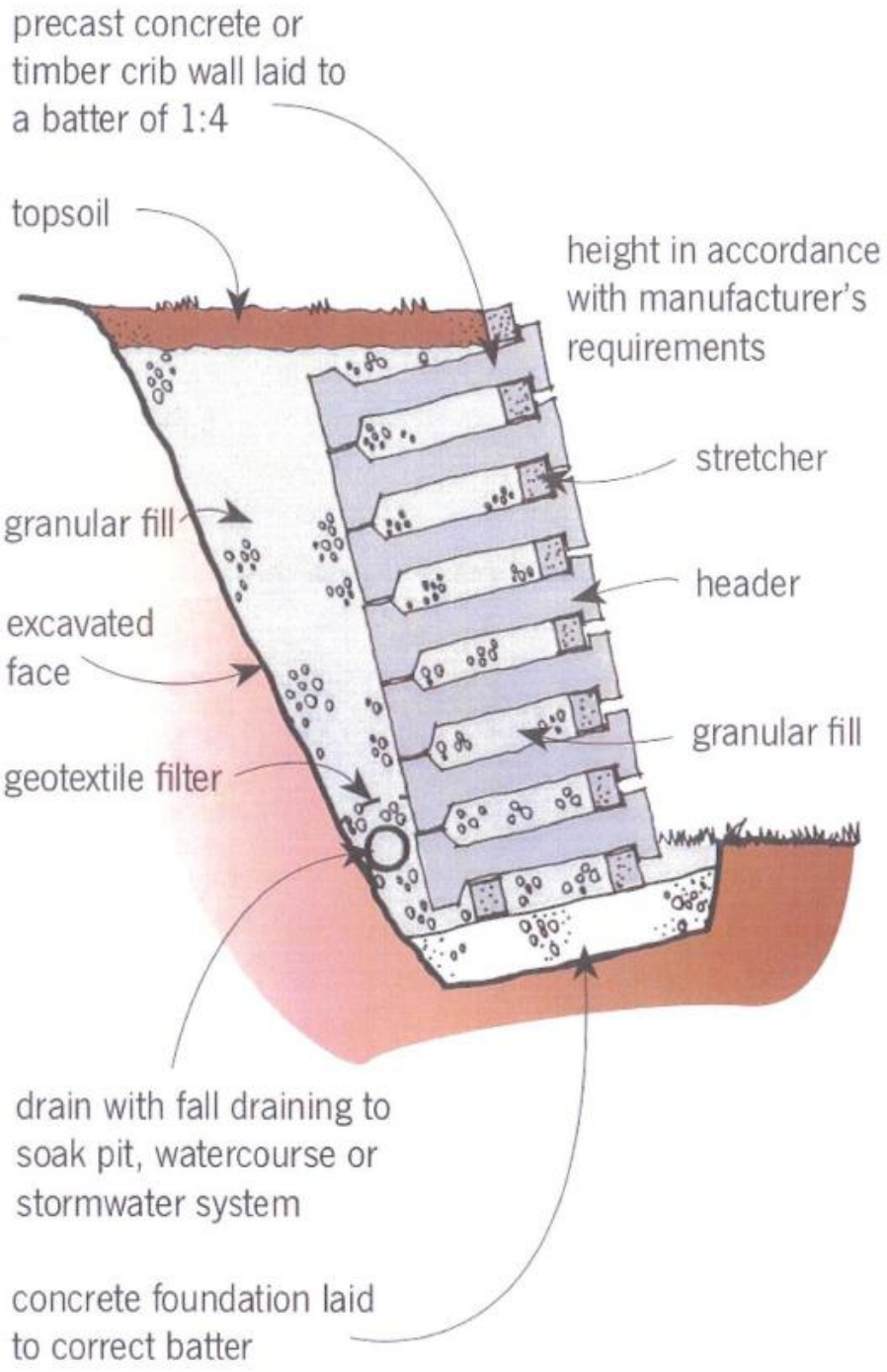
Office of the Deputy Prime Minister (2005). *Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*

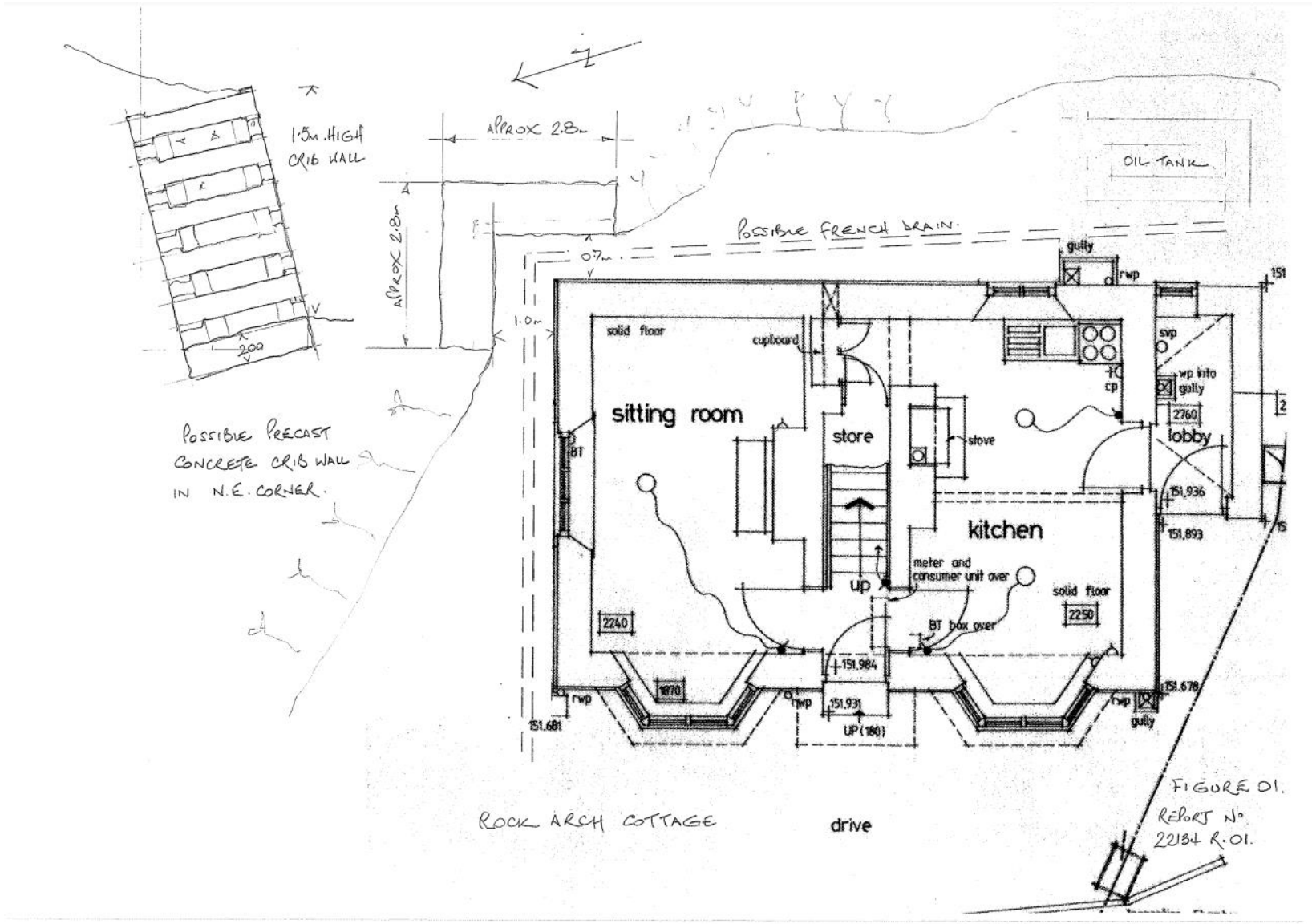
Wiltshire Council (2015) *Wiltshire Core Strategy adopted development plan*

APPENDIX I: Site location – *Image taken from Google Earth on 18/07/23.*



APPENDIX II: Site proposals




1.5m HIGH CRIB WALL
APPROX 2.8m
APPROX 2.8m
OIL TANK
POSSIBLE FRENCH DRAIN
0.7m
1.0m
200
POSSIBLE PRECAST CONCRETE CRIB WALL IN N.E. CORNER
gully
rwp
solid floor
cupboard
sitting room
store
stove
kitchen
lobby
svp
wp into gully
cp
2760
BT
151,936
151,893
meter and consumer unit over
up
solid floor
2250
2240
BT box over
151,984
1870
151,931
UP (180)
151,681
151,678
ROCK ARCH COTTAGE
drive
FIGURE 01.
REPORT No 22134 R.01.

APPENDIX III: Designated sites and protected and notable species results

Table 1: Statutory sites within 2 kilometres and non-statutory designated sites located within 2 kilometres of Rock Arch Cottage.

Site name	Conservation status	Nearest Distance from site (km)	Value	Site description and ecological features
Heath Hill Farm	SSSI[1]	1.1km west	National	20.73ha site with meadows and pastures which support floristically rich unimproved neutral to calcareous grassland, and rush pasture, in a mosaic with semi-improved and improved grassland.
Bonham Hanging	LWS[2]	0.0km	Regional	Broadleaved and coniferous plantation woodland on an ancient site on a steep west-facing slope on the Stourhead estate.
Garden Lake Stourhead	LWS	0.1km north	Regional	A large ornamental lake in a landscaped parkland setting.
Stourhead Woods	LWS	0.2km north	Regional	Mainly coniferous woodland managed under a continuous cover system. Areas of interest mainly restricted to streams and flushes where wet alder woodland predominates as corridors.
Top wood	LWS	0.4km west	Regional	A small ancient woodland site on a roughly circular hilltop supporting Beech plantation with ornamental plantings.
Writh Coppice	LWS	0.5km south	Regional	A small ancient woodland site with stands of conifer and broadleaved plantation and areas of wet and dry semi-natural woodland.
Lynch Wood	LWS	0.6km west	Regional	A small ancient woodland site, formerly coniferised but recently replanted with broadleaves on the Stourhead Western Estate.
Western Estate Fields	LWS	0.8km southwest	Regional	A series of damp meadows on the Stourhead Western estate.

[1] SSSI: Site of Special Scientific Interest
[2] LWS: Local Wildlife Site

Site name	Conservation status	Nearest Distance from site (km)	Value	Site description and ecological features
Sunny Hanging Woods	LWS	0.8km north	Regional	Hanging woodland on a steep southwest-facing ancient woodland site on the Stourhead estate.
Mill Covert	LWS	0.9km south	Regional	Wet Alder, Ash and Willow woodland and drier Oak woodland in a shallow valley on the Stourhead Western Estate.
Bayley's coppice	LWS	1.8km northwest	Regional	A small Beech plantation on a flat ancient woodland site on the Stourhead estate.
Stour Valley Fields	LWS	1.9km south	Regional	A series of west-facing pastures with abundant springs and flushes adjacent to the headwaters of the River Stour.

Records were provided by WSBRC (Reference: 20230530-4) from the last 15 years for most species, 30 years for plants and no time constraint for bat records. A full copy of the data search can be provided on request however a summary is provided below:

Amphibians and reptiles

Common lizards (*Zootoca vivipara*), slow worms (*Anguis fragilis*), and grass snakes (*Natrix helvetica*) are records that were all provided by WSBRC.

Birds

Thirty-two species of bird were provided from the last 15 years. Species recorded included red kite (*Milvus milvu*), greyling goose (*Answer anser*), spotted flycatcher (*Muscicapa striata*), yellowhammer (*Emberiza citrinella*) and tree sparrow (*Passer montanus*).

Higher plants

Flowering plants records include purple moor grass (*Molina caerulea*), star sedge (*Carex echinata),* and tutsan (*Hypericum androsaemum*) were provided.

Invertebrates

Seven records of Coleoptera including black oil beetle (*Meloe proscara*), one hundred and forty-eight records of Lepidoptera including the small heath (*Coenonympha pamphilus*), and thirty-two records of Odonata including downy emerald (*Cordulia aenea*) were provided by WSBRC.

Mammals

Bat records including bat species (*Chiroptera*), horseshoe bat species (*Rhinolophus*), greater horseshoe (*Rhinolophus ferrumequinum*), lesser horseshoe (*Rhinolophus hipposideros)*, western barbastelle (*Barbastella barbastellus*) serotine (*Eptesicus serotinus*), Myotis bat species (*Myotis sp*), Bechstein's bat (*Myotis bechsteinii*), Brandit's bat (*Myotis brandtii*), Daubenton's bat (*Myotis daubentoniid*), whiskered bat (*Myotis mystacinus*), Natter's bat (*Myotis nattereri*) noctule (*Nyctalus noctula*), pipistrelle bat species (*Pipistrellus sp*) common pipistrelle (*Pipistellus pipistrellus*), soprano pipistrelle, long-eared bat species (*Plecotus sp*) and brown long-eared bat (*Plecotus auratus*) were provided.

Records of hedgehogs (*Erinaceus europaeus*), otters (*Lutra lutra*), badger and hazel dormouse were also provided.

These records of protected and notable species in the vicinity of the site increase the likelihood of them being present where suitable habitat is identified in the field survey.

APPENDIX IV: Phase 1 habitat survey

Descriptions of the habitats recorded on site during the 25th of May 2023 site visit by Alex Sinclair are provided below:

Building

The building recorded within the site boundary is a two-storey stone construction residential dwelling.

Bare ground

Areas of bare ground are present on site, north and east of the building.

Tall ruderal

Tall ruderal vegetation is present in the north and east of the site. The tall ruderal consists of dominant scaly male fern (*Dryopteris affinis*), locally dominant sycamore saplings (*Acer pseudoplatanus*), cherry laurel (*Prunus laurocerasus*) and common nettle (*Urtica dioica*), with abundant rhododendron (*Rhododendron ponticum*) and bramble (*Rubus fruticosus*), frequent common ivy (*Hedera helix*) and Hart's-tongue fern (*Asplenium scolopendrium*), occasional common comfrey (*Symphytum officinale*) and herb-Robert (*Geranium robertianum*), and locally rare silver birch (*Betula pendula*).

Broadleaved woodland

The broadleaved woodland is present in the northeast of the site and the woodland edge consists of dominant sycamore saplings, cherry laurel and locally rare silver birch.

APPENDIX IV: Phase 1 habitat map

