Bat Survey Report

Marnhull Hybrid – Land Off Butts Close

August 2022

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12/08/2022

Chapman Lily Planning
Unit 5 Designer House
Sandford Lane
Wareham
BH20 4DY

Document Control:

Project no.	Project
11424	Marnhull Hybrid – Land Off Butts Close

Rev	Written by:	Checked by:	Authorised by:	Date:
Rev0	Natalie Arscott	Paul Carter	Paul Carter	12 August 2022

Phlorum Limited

Southern Office: Unit 12, Hunns Mere Way, Brighton, BN2 6AH

T: 01273 307 1670 E: info@phlorum.com W: www.phlorum.com

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Non-technical Summary

A single bat activity survey was carried out at the disused well at Land Off Butts Close, Marnhull on the 25th July 2022, prior to development. The bat survey follows on from an ecological site survey which has been carried out ahead of the production of an Ecological Impact Assessment (EcIA).

Current proposals are for a large residential development in this field. The bat activity survey area extended over approximately 1,000m^2.

The main findings of the survey are as follows:

- A disused well was surveyed since it was could not be determined whether it contained underground potential roosting features, and was therefore assessed as having low potential to support roosting bats. The well was situated within an agricultural field, surrounded by a derelict brick building and a tree.
- Two surveyors were used, positioned on opposite sides of the well, so that any emerging or re-entering bats could be seen.
- No bats were seen to emerge from or re-enter the well during the survey.
- Overall, there was a **low** level of bat activity at the site. A low number of bats were seen or heard passing the site and foraging. It was not possible to identify any species.
- Therefore, a precautionary approach to the start of works is recommended to safeguard roosting bats, should any start to utilise the well in the interim before developments start. Providing a **precautionary approach** is followed, and no bats are found, then a European Protected Species Mitigation **will not be** required. A suitably licenced ecologist should inspect the well, oversee the start of works to infill or cover the well, and discuss the stages of the proposed works with the on-site contractors.
- Further information regarding mitigation and site enhancement is provided in the recommendations section of the report.

1. Introduction

Background

1.1 Phlorum Limited was commissioned by Chapman Lily Planning to carry out a bat activity survey in relation to a disused well at Land Off Butts Close, Marnhull, Sturminster Newton (hereafter referred to as "the site") prior to development. This falls within the site boundary for the proposed Marnhull Hybrid Scheme.

1.2 The bat survey follows on from an ecological site survey which was undertaken ahead of the production of an Ecological Impact Assessment (EcIA).

1.3 It is understood that current proposals are for a large residential development. The survey area, for the bat activity survey, extended over approximately 1,000m^2.

1.4 During the initial ecological site survey, it was noted that there was a disused well on the site, located within a derelict brick building. Although no evidence of bats was seen, an internal inspection of the well was not possible and so it could not be ruled out that the well may provide underground bat roosting potential. It was therefore categorised as having low potential for roosting bats and it was recommended that a single activity survey be undertaken to assess whether or not bats are using the structure.

1.5 This report provides an assessment of the status of bats within the site, providing information on their presence/likely absence and distribution. Potential impacts of the proposed development are identified and measures to mitigate the effects of the proposed development on bats are discussed in outline.

Site Description

1.6 The well is located within an agricultural field off Butts Close in Marnhull, Sturminster Newton. The field was planted with wheat and bordered by hedgerow, ruderal vegetation, and scrub. Aside from the small village of Marnhull to the north and northwest, the surrounding area is predominantly agricultural. The field is bound by residential properties to the north and northwest, and by roads in all other directions.

1.7 The surveyed feature was a disused well, which was situated within a derelict brick building adjacent to a tree. No potential roosting features were seen within the well from the ground level inspection, however it was unknown whether the well may lead to an underground feature that is suitable for roosting bats.

1.8 The National Grid Reference for the well is ST 78144 18474. The survey area extended over approximately 1,000m^2.

2. Methodology

Data Search

2.1 Records for bats within a 5km radius of the wider Marnhull Hybrid site were obtained from the Local Records Centre (DERC, 2022) as part of the Ecological Impact Assessment (EcIA). The well is situated approximately 490m south of the centre of this search area.

Review of Preliminary Roost Assessment

2.2 A Preliminary Roost Assessment was carried out on any potentially suitable features across the wider site as part of the ecological site survey undertaken ahead of the Ecological Impact Assessment for Marnhull Hybrid. A review of these findings was carried out to guide the activity surveys and ensure appropriate coverage.

Personnel

2.3 The survey was led by Chris Hobbs, an ecological consultant with several years of survey experience leading and assisting on protected species surveys, including bats. The lead surveyor was assisted by Shazz Hooper, who has previous experience assisting on bat activity surveys.

Dusk Emergence Survey

2.4 An activity survey was carried out on the 25th July 2022. Two surveyors were used to assess the site for roosting, foraging and commuting activity. A Magenta Bat 5 heterodyne detector and Anabat SD2 detector were used for the survey.

2.5 During the survey the lead surveyor was positioned to the northwest of the well and the assistant surveyor was positioned to the southeast of the well.

2.6 The evening survey commenced at least 15 minutes before sunset and lasted for at least two hours after sunset.

2.7 All surveys followed standard protocols and accepted standards (Mitchell-Jones and McLeish, 2004; Collins, 2016).

Roost Characterisation

2.8 Where a potential bat roosting feature or confirmed roost was identified, the surveyor assessed how these could be used by bats throughout the year, in accordance with Natural England (2015):

- day roost - where individual bats, or small groups of males, rest or shelter in the day, but rarely on summer nights;

- night roost - where bats rest or shelter at night, but rarely during the day;
- feeding roost - where bats rest at night between feeding sessions, but rarely during the day;
- hibernation roost - where bats are found during winter;
- transitional or occasional roost - where bats gather at a temporary site before and after hibernation;
- mating site - where males and females gather from late summer to early winter;
- maternity roost - where babies are born and raised until they're independent;
- satellite roost - where breeding females roost close to the main nursery colony in the breeding season; and
- swarming site - where bats gather in large numbers from late summer to autumn.

Constraints

Data Search Constraints

2.9 It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

Bat Survey Constraints

2.10 Bats are mobile animals which can move roost sites both within and between years. It is possible that surveys carried out in July may miss roosts occupied earlier or later in the year.

3. Results

Data Search

3.1 The data search returned recent records (post 2006) for at least 12 different species of bat within approximately 5km of the site, including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Nathusius' pipistrelle (*Pipistrellus nathusii*), brown long-eared bat (*Plecotus auritus*), noctule (*Nyctalus noctula*), Leisler's bat (*Nyctalus leisleri*), Natterer's bat (*Myotis nattereri*), whiskered bat (*Myotis mystacinus*), Daubenton's bat (*Myotis daubentonii*), serotine (*Eptesicus serotinus*), Western barbastelle (*Barbastella barbastellus*), and greater horseshoe bat (*Rhinolophus ferrumequinum*). The closest record for a bat roost (post-2009) is a brown long-eared bat roost located approximately 950m to the southwest of the well, recorded in 2011.

Review of Preliminary Roost Assessment

3.2 During the ecological site survey carried out on the 6th July 2022, to inform an Ecological Impact Assessment (EcIA) for the site, a disused well was found in the southern field off Butts Close (grid reference ST 78144 18474). The well was surrounded by a derelict brick building.

3.3 Although no evidence of bats or obvious potential roosting features were seen from the ground level assessment, an internal inspection of the well was not possible and so it could not be ruled out that the well may lead to an underground feature that offers bat roosting potential. Underground roosting sites are frequently used by hibernating bats.

3.4 The disused well was therefore categorised as having low potential for roosting bats, and it was recommended that a single activity survey be undertaken prior to any work to the well, to assess whether or not bats are using the structure.

Survey Overview

3.5 The activity survey concentrated on the disused well, to establish whether bats were roosting in any underground features. Two surveyors were used, positioned on opposite sides of the well so any emerging or re-entering bats could be seen.

3.6 No bats were seen to emerge from or re-enter any features during the survey.

3.7 Overall, there was a low level of bat activity recorded at the site. As no bat activity was recorded by the Anabat SD2 detector, no species were identified. There were a low number of a bat passes and a single bat was seen foraging around the tree adjacent to the well for just under 30 minutes.

3.8 The area surveyed is illustrated in the Map in Appendix A.

Dusk Emergence Survey

25th July 2022

3.9 Sunset was at 21:07hrs and the temperature at the start of the survey was 16°C, falling to 15°C at the end of the survey. The weather was clear and dry with a light breeze.

3.10 No bats were seen to emerge from or re-enter any features for the duration of the survey.

3.11 The first bat pass was recorded at 21:56hrs which was heard but not seen. The highest level of activity was recorded between 22:18 and 22:54. During this period, a few minutes of continuous activity was heard followed by the sighting of a single bat which foraged continuously for 26 minutes near the well. The last pass was recorded at 22:54hrs which was this foraging bat. As no bat activity was recorded by the Anabat SD2 detector, no species were identified. Overall, bat activity was considered to be low.

3.12 The full survey data can be found in Appendix C.

4. Discussion and Recommendations

Discussion

4.1 Overall, there was a **low** level of bat activity recorded at the site. A low number of bats were seen or heard passing the site and foraging.

4.2 No emergences or re-entries were recorded.

4.3 It is considered that there is a likely absence of roosting bats in the disused well, therefore a European Protected Species Mitigation (EPSM) licence **will not be required**.

4.4 A precautionary approach to the infilling or closure of the well is recommended. A suitably licenced ecologist should oversee the start of the works. The well should be visually inspected with a high-powered torch prior to works to check for evidence of bats. If during the precautionary works a bat is found, then the ecologist needs to be informed and all work stopped until it has been assessed. If a roost is confirmed, then a bat EPSM licence may be required before the work commences.

Recommendations

Precautionary approach

4.5 A precautionary approach to the infilling or closure of the well should be adopted in order to safeguard any bats that could potentially roost within the structure in the interim.

4.6 It is recommended that the infilling or closure of the well is undertaken outside of the hibernation period, when bats are considered least vulnerable. The hibernation period is taken to run between mid to late November and mid-March, weather dependant.

4.7 A suitably licenced ecologist should oversee the start of the works. On arrival to the site the ecologist will re-inspect the well with a high-powered torch to look for evidence of roosting bats. An on-site assessment can then be made by the ecologist regarding the likelihood of bats to be roosting in the well.

4.8 The ecologist will then discuss the different stages of the proposed works with the on-site contractors. The ecologist may need to return to the site to oversee certain stages of the works.

4.9 If considered necessary following consultation with the on-site contractors, the ecologist will guide the start of the works.

4.10 If bats are subsequently found to be present during the remainder of the work, activities should cease immediately and advice sought from a suitably qualified ecologist.

Habitat Enhancement/Retention

4.11 It is recommended that hedgerows and trees within the wider site should be retained where possible. These features provide foraging opportunities and habitat connectivity to the wider landscape.

4.12 Additional roosting opportunities should be incorporated into the final design to enhance the site for roosting bats post works. This should include the installation of at bat boxes such as the Schwegler 1FF bat box located on retained mature trees within the site or on the new buildings. These should be orientated with a southeast or southwest aspect and located at least 3m from ground level.

Bats and Lighting

4.13 Different species of bat have been found to react differently to night-time lighting however research has found that generally, all species of bats are sensitive to artificial lighting and that excessive lighting can delay bats from emerging, thus shortening the time available for foraging, as well as causing individuals to move away from suitable foraging grounds or roost sites to alternative dark areas (Jones, 2000). Bats can also become isolated from their foraging grounds if the linear features they use for commuting are suddenly illuminated, creating a light barrier (Fure, 2006).

4.14 The current site is not well lit at night and therefore the development should serve to maintain the site's value for foraging bats and to minimise indirect impacts from lighting associated with the new buildings and facilities. This can be achieved by following accepted best practice (Institute of Ecology and Environmental Management 2006, Institute of Lighting Professionals 2018, Bat Conservation Trust, 2014):

- The level of any artificial lighting including flood lighting should be kept to a minimum, particularly around the site boundaries;
- LED lights are a preferred option to low pressure sodium lights or high pressure sodium or mercury lamps. LED lights do not emit UV radiation, towards which some insects are attracted, drawing them away from bat foraging areas in the surrounding landscape;
- all lights should be directed at a low angle with minimal light spillage wherever possible;
- ideally the site boundaries should be kept dark, preferably at bat emergence (0-1 hour after sunset) and during peak bat activity periods (e.g. 1.5 hours after sunset and 1.5 hours before sunrise);
- artificial lighting should not directly illuminate any potential bat commuting areas such as boundary features. Similarly, any newly planted linear features or buffer areas around the site boundary should not be directly lit; and

- if security lights are required, then they will be set on a Passive Infrared (PIR) sensor and timer so that the light is only emitted for the short time period required.

5. Conclusions

Conclusions

5.1 The site is located at Land Off Butts Close, Marnhull, Sturminster Newton. The surveyed feature was a disused well. The surrounding area comprises predominantly agricultural land with some residential properties. Together with a network of treelines and hedgerows, there are potential roosting, foraging and commuting opportunities for bats in the wider landscape.

5.2 The disused well was situated within an agricultural field, surrounded by a derelict brick building and a tree. The field was planted with wheat and bordered by a hedgerow, ruderal vegetation, and scrub.

5.3 It is understood that current proposals are for a large residential development in this field. The bat activity survey area extended over approximately 1,000m^2.

5.4 During the initial preliminary roost assessment undertaken on the 6th July 2022, it was noted that the disused well could contain underground potential roosting features and it was therefore considered to offer **low** potential for roosting bats.

5.5 Overall, the bat activity survey detected a **low** level of bat activity at the site. A low number of bats were seen or heard passing the site and foraging. It was not possible to identify any species.

5.6 No bats were seen to emerge from or re-enter the week during the survey.

5.7 There remains some potential for bats to roost in the well and therefore a precautionary approach to works to infill or close the well is recommended to safeguard roosting bats. This will involve an inspection and supervision by a suitably licenced ecologist. Providing a precautionary approach is followed, a European Protected Species Mitigation licence in **will not be required**.

6. References

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Appendix A
Bat Survey Map

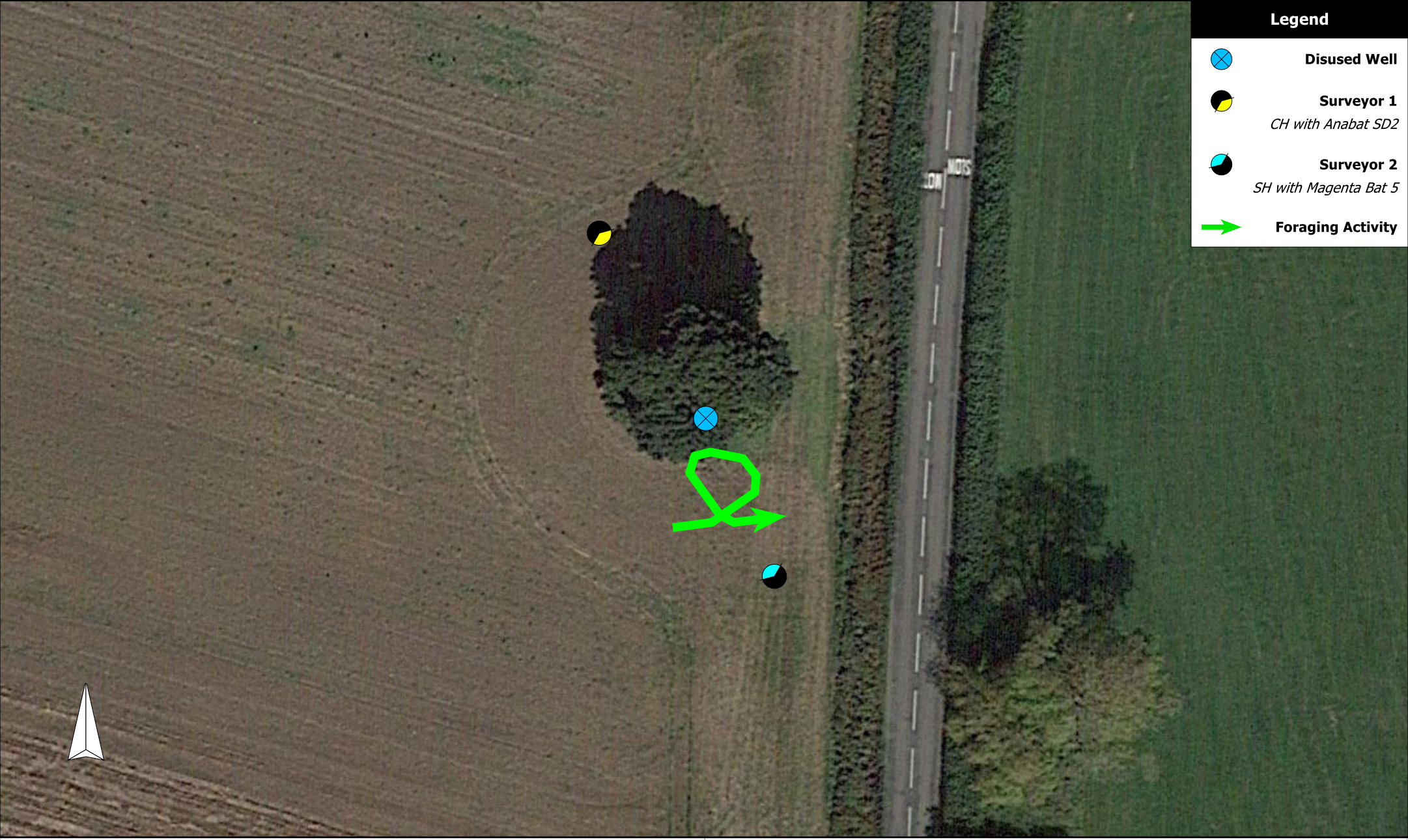

Figure 1: Marnhull Hybrid - Land Off Butts Close Bat Survey Map

Drawn by: NA
On the: 09/08/2022
Not to Scale
Ref: 11424

Phlorum Limited, 12 Hunns Mere Way,
Woodingdean, Brighton, East Sussex,
BN2 6AH
Tel: +44(0)1273 307167
Web: www.phlorum.com
Email: info@phlorum.com

Appendix B
Legislation

Legislation

This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.

Species

The objective of the EC Habitats Directive1 is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include:

- Countryside and Rights of Way (CRoW) Act 2000;
- Deer Act 1991;
- Natural Environment & Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Bats

Bats are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). This act protects individuals from:

- intentional or reckless disturbance (at any level);
- intentional or reckless obstruction of access to any place of shelter or protection; and

[1] Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

- selling, offering or exposing for sale, possession or transporting for purpose of sale

In addition, all species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- deliberate killing, injuring or capturing of Schedule 2 species (all bats);
- deliberate disturbance of bat species as to impair their ability:

  (i) to survive, breed, or reproduce, or to rear or nurture young; and

  (ii) to hibernate or migrate.
- deliberate disturbance of bat species as to affect significantly the local distribution or abundance of the species;
- damage or destruction of a breeding site or resting place; and
- keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake activities listed above. A licence is required to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and monitored.

Appendix C
Bat Survey Data

Bat Survey Data

Dusk Emergence Survey on 25th July 2022

Number of Surveyors	Site and Job no:	Start Time	Sunset Time	Finish Time	Temperature (°C) at start	Temperature (°C) at end	Cloud Cover (Oktas 1-8)	Windspeed (Beauforts 1-12)	Rain
2	11424 Marnhull Well	20:52	21:07	23:07	16	15	1	2	0

Surveyor 1: CH				Bat Detector Used: Anabat SD2
Time	Location	Activity observed	Number of passes	Comments/Notes
-	-	-	-	No bats seen or heard.

Surveyor 2: SH				Bat Detector Used: Magenta Bat 5
Time	**Location**	**Activity observed**	**Number of passes**	**Comments/Notes**
21:56	N/A	N/A	1	Heard not seen.
22:07	N/A	N/A	1	Heard not seen.
22:18	N/A	N/A	Several	Heard not seen. A few minutes of activity.
22:28	Tree by well	Foraging	Several	Seen and heard. Constant foraging until 22:54.

Phlorum Limited

Head Office & Registered Office:
Unit 12
Hunns Mere Way
Woodingdean
Brighton
East Sussex
BN2 6AH
T: 01273 307 167

Northern Office:
Ground Floor
Adamson House
Towers Business Park
Wilmslow Road
Didsbury
Manchester
M20 2YY
T: 0161 955 4250

Western Office:
One Caspian Point
Pierhead Street
Cardiff Bay
Cardiff
CF10 4DQ
T: 029 2092 0820

info@phlorum.com
www.phlorum.com

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