

**CROOKTHORN LANE, CLIMPING,
WEST SUSSEX**

REPTILE SURVEY

A Report to: Brackley Investments

Report No: RT-MME-127825-01 Rev A

Date: May 2018



Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ

REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development".

Report Version	Date	Completed by:	Checked by:	Approved by:
Final	10/05/2018	Harry Stone (Ecological Project Officer)	Paul Roebuck MCIEEM (Principal Ecological Consultant)	Dr Philip Fermor CEnv MCIEEM (Managing Director)
Rev A	24/05/2018	Harry Stone (Ecological Project Officer)	Paul Roebuck MCIEEM (Principal Ecological Consultant)	Dr Philip Fermor CEnv MCIEEM (Managing Director)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 24 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to assess any changes in the status of reptile species on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In March 2018, Brackley Investments commissioned Middlemarch Environmental Ltd to undertake a reptile survey of the site of a proposed development at land to the rear of Baird's Farm Shop, Crookthorn Lane, Climping. This assessment is required to inform a planning application associated with the development of a dementia care centre.

Tyler Grange LLP has previously carried out Preliminary Ecological Appraisal at this site. The findings of this survey are detailed in Report 11423_R02d_MB_AL. The assessment identified suitable reptile habitat within the site boundary. Furthermore, the ecological desk study identified records of slow-worm within a 1 km radius of the site.

Therefore, a reptile presence/absence survey was recommended. The reptile presence/absence survey was undertaken between 20th April 2018 and 9th May 2018. No reptiles were recorded during these surveys, despite the work being carried out within appropriate weather conditions. As such there will be no impacts on reptiles during the proposed development.

No recommendations for further work are made. However, in the unlikely event that any reptiles are discovered on site during the development, works should cease immediately and Natural England and / or an experienced ecologist should be contacted immediately to determine a way forward.

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1. INTRODUCTION

1.1 PROJECT DESCRIPTION

In March 2018, Brackley Investments commissioned Middlemarch Environmental Ltd to undertake a reptile survey of the site of a proposed development at land to the rear of Baird's Farm Shop, Crookthorn Lane, Climping. The proposed development is a dementia care centre.

All native reptile species receive protection under UK law and are capable of being material considerations in the planning process. Further information about the legislation that protects reptile species is provided in Appendix 1.

1.2 DEVELOPMENT SITE DESCRIPTION AND CONTEXT

The development is located immediately south of Baird's Farm Shop on Crookthorn Lane (A259), Climping, West Sussex and east of Climping Street. The site is 0.84 hectares and located at National Grid Reference SU 99978 01701. The site if formerly arable land is comprises grassland, scrub, hedgerows, agricultural land (geese/ducks), hardstanding and portacabins. The site boundary comprises of mature trees, hedgerow and fencing. The site is bordered by roads to the north and west, arable land to the east and residential properties to the south. The broader landscape is arable land.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Site Plans and Proposal Drawings	Hunters Architects

Table 1.1: Documentation Provided by Client

2. METHODOLOGIES

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal by Tyler Grange (Report 11423_R02d_MB_AL) an ecological desk study was undertaken in March, 2018. The consultee for the desk study was Sussex Biodiversity Record Centre (SRBC). Relevant reptile data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

2.2 SITE SUITABILITY ASSESSMENT

An assessment of the suitability of the site to support reptile species was undertaken, based on a review of habitat characteristics and other parameters known to influence reptile distribution. The following parameters were considered:

- Location of site in relation to species range of native reptiles;
- Site management and disturbance;
- Topography and aspect of site;
- Vegetation type and structure;
- Likely prey abundance;
- Presence of refugia and potential hibernation habitat;
- Egg-laying site potential (grass snake and sand lizard only); and,
- Connectivity to surrounding habitat of potential value to reptiles.

The suitability assessment was used to design the route of survey transects for the presence/absence survey (see Section 2.3).

2.3 PRESENCE/ABSENCE SURVEY

A presence/absence survey for reptiles was undertaken in accordance with the best practice methodology detailed in the Herpetofauna Workers Manual (Gent and Gibson, 2003). This consisted of the following works:

- An initial assessment of the potential reptile habitat characteristics was undertaken, in order to identify features and habitats of potential value to reptile species.
- Survey transects through the site were identified to ensure all suitable habitats were covered by the survey.
- Checks of any natural refugia present within the survey area, such as log piles or rubble piles, were undertaken.
- A series of artificial refugia were installed within the site to facilitate detection of reptiles (further detailed below).
- Seven survey visits to the site were undertaken to inspect natural and artificial refugia in suitable weather conditions.

50 artificial survey refugia were installed within the site during the first survey visit. These refugia consisted of squares of roofing felt approximately 500 mm x 500 mm.

Reptiles are ectotherms, deriving their body heat from the external environment. Therefore the timing of the survey visits was dictated by the time of year and weather conditions. Where possible, surveys were undertaken on warm sunny days with little cloud cover and wind to maximise the probability of recording reptiles within the site. Suitable weather conditions for undertaking refugia checks are outlined in the Herpetofauna Workers Manual, and are summarised in Table 2.1.

Parameter	Value
Temperature	9 - 17° C
Sunshine	Preferable
Cloud	Little or None
Wind	Low/None

Table 2.1: Suitable Weather Conditions for Reptile Surveys

2.4 ASSESSMENT OF SITE IMPORTANCE FOR REPTILES

Current best practice guidance recognises that undertaking detailed population assessments for reptile species is difficult, as the number of survey visits required to give an accurate assessment is prohibitive for the majority of projects.

It is desirable, however, to attempt to judge the overall importance of the survey site for reptiles. In order to provide a basic assessment of site importance, the results of the survey were analysed in the context of Froglife Advice Sheet 10 - Survey Assessment: Key Reptile Sites (Froglife, 1999). This provides a simple methodology for assessing the value of a site to reptile species, based upon the number of species recorded on site and the peak adult count for each species per hectare, when refugia are installed at a density of up to 10 per hectare.

The guidelines for assessing the value of the site to reptile species are summarised in Table 2.2.

Reptile Species	Low Population Score 1	Good Population Score 2	Exceptional Population Score 3
Adder	<5 individuals/ha	5-10 individuals/ha	>10 individuals/ha
Grass snake	<5 individuals/ha	5-10 individuals/ha	>10 individuals/ha
Common lizard	<5 individuals/ha	5-20 individuals/ha	>20 individuals/ha
Slow worm	<5 individuals/ha	5-20 individuals/ha	>20 individuals/ha

Table 2.2: Key Reptile Site Population Class Assessment and Scoring Criteria

Froglife define a Key Reptile Site as one that meets any of the following criteria:

1. Site supports at least three reptile species;
2. Site supports two snake species;
3. Site supports an 'exceptional population' of one species (see Table 2.2);
4. Site supports an assemblage of species scoring at least 4 (see Table 2.2); or,
5. Site does not satisfy Points 1-4 but is of particular regional importance due to local rarity.

Sites that support populations of either smooth snake or sand lizard are also considered to be Key Reptile Sites.

3. DESK STUDY

3.1 BIOLOGICAL RECORDS

As part of the Preliminary Ecological Appraisal by Tyler Grange (Report 11423_R02d_MB_AL) an ecological desk study was undertaken in March, 2018. The consultee for the desk study was Sussex Biodiversity Record Centre (SRBC), who returned six records of slow-worm *Anguis fragilis* within 1km of the site, the closest being recorded 250 m south of the site.

4. RESULTS

4.1 INTRODUCTION

The surveys were undertaken between 5th April 2018 and 9th May April 2018 by:

- Jacob Kench (Ecological Consultant);
- Pippa Jordan (Ecological Project Officer);
- Rodrigo Batistela (Ecological Project Officer);
- Richard Sainsbury (Ecological Project Officer); and,
- Harry Stone (Ecological Project Officer).

4.2 SURVEY CONSTRAINTS

No constraints were experienced during the survey. The fenced off area containing geese/duck was not surveyed but it was not considered to be a significant constraint.

4.3 SITE SUITABILITY ASSESSMENT

The habitat characteristics of the site with regard to suitability to support reptile species are summarised in Table 4.1. Photographs of the habitats present on site are provided in Chapter 8

Reptile Habitat Characteristic	Description
Location of site in relation to species range of native reptiles	All native species in range except sand lizard and smooth snake.
Site management and disturbance	The site appears to be lightly managed at the edges, the grass in the centre of the field is kept very short and regularly cut due to the existing dog training use. The various bordering features are largely unmanaged, allowing for scrub and tussocky grass habitat.
Topography and aspect of site	The site is generally flat. A tree-line on the west-southwest aspect creates some evening shading. Suitable habitat is located on all bordering aspects of the site.
Vegetation type and structure	Most of the site consists of grassland, bordered by various linear features including woodland, hedgerow, scrub and tussocky grass. A small amount of rubble is located in the south of the main field.
Likely prey abundance	The site is likely to support a wide range of invertebrates that may be used as prey for reptiles. Small mammals may also be present.
Presence of refugia and potential hibernation habitat	The site offers a range of refugia and hibernacula opportunities including rubbish spoil heaps, tussocky grassland and scrub habitats. Closed compost heaps in the adjacent and easily accessible garden centre could provide suitable hibernation habitats for all common reptile species.
Egg-laying site potential (grass snake and sand lizard only)	Compost heaps in the adjacent garden centre could also provide suitable egg-laying habitat.
Connectivity to surrounding habitat of potential value to reptiles	The site has moderate connection to adjacent off-site habitat. The busy main road to the north acts as a major barrier, and Climping Street to the east-southeast could also limit connectivity and dispersal. Arable land to the west offers extremely limited suitable habitat in its bordering features (hedgerows and treelines). Most off-site habitat is therefore in the residential gardens and hedgerow/treelines to the south and west.

Table 4.1: Summary of Reptile Habitat Characteristics

It should be noted that the presence of good quality reptile habitat (e.g. habitat providing features of value to reptiles) does not confirm that reptiles will be present at the site, just as the presence of low quality habitat does not confirm that reptiles will be absent.

4.4 PRESENCE / ABSENCE SURVEY

Weather conditions at the time of each of the survey visits are presented in Table 4.2.

Date/Time	Parameter	Cloud cover (%)	Air temperature (°C)	Precipitation	Wind speed (F)
20-04-18	Preceding survey	Clear and bright with no rain or wind.			
08:00	During survey	0	18	0	F1
26-04-18	Preceding survey	Overcast with no rain or wind.			
08:00	During survey	90	11	0	F1-2
27-04-18	Preceding survey	Overcast with no rain or wind.			
08:00	During survey	100	12	0	F3
02-05-18	Preceding survey	Clear and bright with no rain or wind.			
08:00	During survey	0	13	0	F0
03-05-18	Preceding survey	Clear and bright with no rain or wind.			
08:00	During survey	0	10	0	F0
04-05-18	Preceding survey	Clear and bright with no rain or wind.			
08:00	During survey	5	12	0	F1
09-05-18	Preceding survey	Clear and bright with no rain or wind.			
08:00	During survey	30	14	0	F1
*Artificial refugia set out on site					

Table 4.2: Weather Conditions During Survey Visits

The findings of the presence/absence survey are detailed in Table 4.3.

Visit	Date	Common Lizard	Slow-worm	Grass Snake	Adder	Smooth Snake	Sand Lizard
1	20-04-18	0	0	0	0	0	0
2	26-04-18	0	0	0	0	0	0
3	27-04-18	0	0	0	0	0	0
4	02-05-18	0	0	0	0	0	0
5	03-05-18	0	0	0	0	0	0
6	04-05-18	0	0	0	0	0	0
7	09-05-18	0	0	0	0	0	0
Key ♂: Male, ♀:Female, Juv – Juvenile							

Table 4.3: Presence/Absence Survey Results

No species of reptile have been recorded on site during the surveys. An abundance of common toads and a single common shrew were observed.

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF SITE PROPOSALS

It is understood that there are plans to build a dementia care centre on site.

5.2 HABITAT ASSESSMENT

Suitable habitat is located on all bordering aspects of the site. The site supports a wide range of invertebrates that may be used as prey for reptiles. The site also offers a range of refugia and hibernacula opportunities.

The survey area is moderately connected to suitable reptile habitat to the south and west (residential gardens, hedgerow, treelines and shrub). Less favourable habitat surrounds the eastern boundary of the site, and the main road to the north of the site acts as a major dispersal barrier.

5.3 FINDINGS OF REPTILE SURVEY AND KEY REPTILE SITE ASSESSMENT

Habitat on site is suitable for reptiles, particularly on the bordering features. No species of reptile have been recorded on site during the surveys. The site is not a Key Reptile Site.

5.4 CONCLUSIONS AND SUMMARY OF POTENTIAL IMPACTS

The negative results of the reptile survey indicate that these species are not present on site. Therefore, the proposed developments are unlikely to impact upon reptile species.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

- R1** No reptiles were recorded on site during the presence/absence survey, therefore no recommendations for further work are made. However, should any reptiles be discovered on site during the development, works should cease immediately and Natural England and / or an experienced ecologist should be contacted immediately to determine a way forward.
- R2** If works do not commence by May 2020 then this survey should be updated to assess whether reptiles have colonized the site in the intervening period.

7 PHOTOGRAPHS



Plate 8.1: Suitable refugia habitat, southwest



Plate 8.2: Southeast aspect



Plate 8.3: East aspect

REFERENCES AND BIBLIOGRAPHY

Betts, C. (2008). Checklist of Protected British Species. 3rd edition. Environmental Biology, Worcester.

Blomberg, S. and Shine, R. (1996), 'Reptiles'. IN: Sutherland, W. J. (ed). Ecological Census Techniques: a handbook. Cambridge University Press, Cambridge.

English Nature. (2004). Reptiles: guidelines for developers. English Nature, Peterborough.

Gent, T. and Gibson, S. (2003). Herpetofauna Worker's Manual – Second Edition, Joint Nature Conservation Committee, Peterborough.

The Highways Agency, Scottish Executive, Welsh Assembly Government and The Department For Regional Development. (2005). 'Design Manual For Roads And Bridges: Nature Conservation Advice in Relation to Reptiles and Roads'.

National Amphibian and Reptile Recording Scheme. Reptile Methods and Protocols. Available:
<http://www.narrs.org.uk>

Tyler Grange LLP (2018) *Proposed Dementia Care Centre at Land to the Rear of Baird's Farm Shop, Crookthorn Lane, Climping: Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment*. Report Number: 11423_R02d_MB_AL.

Wildlife & Countryside Act (1981) As Amended.

APPENDIX 1

LEGISLATION

All of the UK's native reptiles are protected by law. The two rarest species – sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) – benefit from the greatest protection.

Common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix natrix*) are protected under the Wildlife and Countryside Act 1981 (as amended) from intentional killing or injuring.

Sand lizard and smooth snake are protected under The Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended) which together make it illegal to kill, injure, capture, handle or disturb these animals. Places they use for breeding, resting, shelter and protection are protected from being damaged or destroyed. It is also illegal to obstruct these animals from using such areas.

All native reptile species are listed as Species of Principal Importance on the UK Post-2010 Biodiversity Framework (2012), and as such are material considerations in the planning process.

This is a simplified description of the legislation. In particular, the offences mentioned here may be absolute, intentional, deliberate or reckless. Note that where it is predictable that reptiles are likely to be killed or injured by activities such as site clearance, this could legally constitute intentional killing or injuring.

The reader should refer to the original legislation for the definitive interpretation.

**CROOKTHORN LANE, CLIMPING,
WEST SUSSEX**

GREAT CRESTED NEWT SURVEY

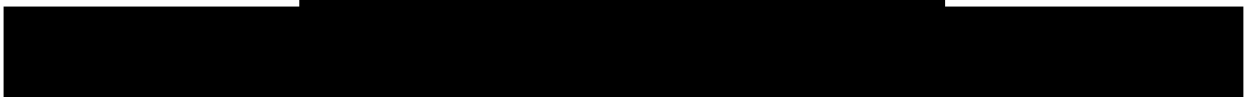
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Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of two to four years, depending upon the nature of works proposed and the potential for these works to impact upon great crested newts. If works have not commenced within two years of this study, it may be necessary to undertake an updated survey to allow any changes in the status of great crested newts on site to be assessed, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In March 2018, Brackley Investments commissioned Middlemarch Environmental Ltd to undertake a survey for great crested newts *Triturus cristatus* at the site of a proposed development at land to the rear of Baird's Farm Shop, Crookthorn Lane, Climping. The proposed development is a dementia care centre, and the ponds are located either side of Climping Street which runs adjacent to the site.

A total of 3 ponds were identified within 500 m of the proposed development, one of which (Pond P3) was excluded from further assessment as it was isolated within a housing estate and a major road acted as a significant dispersal barrier. Ponds P1 and P2 are located adjacent to the site on either side of Climping Street.

The results of the great crested newt habitat suitability index (HSI) found that Pond P1 had below average suitability and Pond P2 had excellent suitability.

Great crested newts were recorded in one pond (Pond P2), located approximately 25 m from the site boundary. The population size class assessment identifies that Ponds P1 and P2 on Climping Street support a single small population of great crested newts.

Due to the presence of a small population of great crested newts in Ponds P1 and P2 prior to any works commencing on site a great crested newt mitigation strategy will need to be developed to minimise potential impacts on great crested newts and/or their breeding and resting places and to ensure adequate mitigation is provided as part of the development proposals.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In April 2018, Brackley Investments commissioned Middlemarch Environmental Ltd to undertake a survey for great crested newts *Triturus cristatus* at the site of a proposed development at land to the rear of Baird's Farm Shop, Crookthorn Lane, Climping. The proposed development is a dementia care centre, and the ponds are located either side of Climping Street which runs adjacent to the site.

Great crested newts are European protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting great crested newts is included within Appendix 1. This section also provides some brief information on the ecology of great crested newts.

1.2 DEVELOPMENT SITE DESCRIPTION AND CONTEXT

The development is located immediately south of Baird's Farm Shop on Crookthorn Lane (A259), Climping, West Sussex and east of Climping Street. The site is 0.84 hectares and located at National Grid Reference SU 99978 01701. The site is formerly arable land and comprises grassland, scrub, hedgerows, agricultural land (geese/ducks), hardstanding and portacabins. The site boundary comprises of mature trees, hedgerow and fencing. The site is bordered by roads to the north and west, arable land to the east and residential properties to the south. The broader landscape is arable land.

1.3 SURVEY AREA AND JUSTIFICATION

Reference to Ordnance Survey mapped data indicates the potential presence of up to 3 ponds within a 500 m radius of the site. One pond situated approximately 500 m north of the site was not surveyed as a busy major road acts as a dispersal barrier and it is isolated within a housing development.

The distances of all ponds within the survey area from the development boundary, are provided in Table 1.1, along with the justification for inclusion or exclusion from the survey effort. The locations of these ponds in relation to the proposed development site are shown on Middlemarch Environmental Ltd Drawing C127825-02-01 in Chapter 7.

Pond Reference	Distance from Development Boundary	Subject to Survey?	Justification
P1	Approximately 1 m	Yes	Proximity to site and suitable aquatic habitat for great crested newt.
P2	Approximately 25 m	Yes	Proximity to site and suitable aquatic habitat for great crested newt.
P3	Approximately 500 m	No	Located across a busy major road which acted as a dispersal barrier.

Table 1.1: Distance of Ponds from the Development Boundary

1.4 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.2.

Document Name / Drawing Number	Author
Site Plans and Proposal Drawings	Hunters Architects

Table 1.2: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal by Tyler Grange (Report 11423_R02d_MB_AL) an ecological desk study was undertaken in March, 2018. The consultee for the desk study was Sussex Biodiversity Record Centre (SRBC). Relevant newt data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

2.2 HABITAT SUITABILITY INDEX AND CONNECTIVITY ASSESSMENT

All surveyed ponds were visually assessed for their suitability to support great crested newts by a suitably qualified ecologist. Ponds were assessed utilising the great crested newt Habitat Suitability Index (HSI) developed by Oldham *et al* in 2000 and revised by ARG UK in 2010. The HSI is a numerical index between 0 and 1, wherein a score of 1 represents optimal habitat for great crested newts. The HSI score is used to define the suitability of the pond on a categorical scale (Table 2.1). It should be noted, however, that the system is not precise enough to allow the conclusion that a pond with a high score will definitely support great crested newts whilst those with a low score will not.

HSI Score	Pond Suitability
< 0.5	Poor
0.5 – 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
> 0.8	Excellent

Table 2.1: Great Crested Newt HSI Scoring

The HSI is given by assigning a quantitative figure to each of 10 variables, including pond area, water quality and level of shading, which are all factors thought to affect great crested newts. The tenth root of the product of these variables is then calculated, giving a figure for habitat suitability. An assessment was also made of the habitat connectivity between ponds and the site, based on a review of habitat survey data (if available) and mapped sources.

2.3 GREAT CRESTED NEWT PRESENCE / ABSENCE SURVEY

Surveys for the presence of great crested newts require a minimum of four visits per year, with at least two visits between mid-April and mid-May to record peak numbers of great crested newts (English Nature, 2001).

Several survey methodologies are to be utilised during these visits. The standard survey methodologies include:

- Torchlight survey;
- Bottle trapping;
- Egg searching; and,
- Refuge searching.

The torchlight survey is a standard amphibian recording technique employing a high power torch to illuminate the ponds and allow the surveyor to record any great crested newts seen. This technique was undertaken during the survey visits, when males will be displaying and courting females.

Bottle traps were laid during the evening using the method described by Gent and Gibson (1998). The traps were then checked for newts before 10 am the following morning. Any newts found were recorded and then released back into the pond.

The egg search involved a direct assessment of emergent and submerged vegetation for great crested newt eggs. Egg surveys can only be undertaken during late spring and early summer (April to June).

Refuge searching involved looking underneath objects such as rocks, logs, moss and discarded debris in the vicinity of a pond. Adult and juvenile great crested newt can often be found underneath such objects,

between March and October, especially if the objects are flat and retain moisture. Refuge searching is not a reliable method on its own and is only used as a supporting method to the other methods described.

2.4 POPULATION SIZE CLASS ASSESSMENT

In ponds where great crested newts were found a further two surveys were undertaken. This was in order to provide a population class estimate, as the determination of population class size in accordance with the 'Great Crested Newt Mitigation Guidelines' (English Nature, 2001) recommends that a minimum of 6 survey visits to each pond are made.

The peak population count for a single night is used to inform the calculation of population size class. Where ponds are within 250 m of each other the peak is summed for the same night and a size class assigned using the following criteria:

- **Small Population** – where peak count is up to 10;
- **Medium Population** – where peak count is 11 to 100; and,
- **Large Population** – where peak count exceeds 100.

The population size class assessment is used to determine the level of mitigation required, should great crested newts be found.

3. DESK STUDY RESULTS

3.1 BIOLOGICAL RECORDS

A desk study was completed by Middlemarch Environmental Ltd in May 2018, which found that great crested newts and several other amphibian species were potentially present on site. These records are summarised in Table 3.1.

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Study Area	Species of Principal Importance?	Legislation / Conservation Status
Palmate newt <i>Lissotriton helveticus</i>	5	2014	690 m south	-	WCA 5 S9(5)
Smooth newt <i>Lissotriton vulgaris</i>	74	2014	Potentially on site ⁺	-	WCA 5 S9(5)
Common frog <i>Rana temporaria</i>	71	2014	Potentially on site ⁺	-	WCA 5 S9(5)
Great crested newt <i>Triturus cristatus</i>	89	2016	Potentially on site ⁺	✓	ECH 2, ECH 4, WCA 5
Common toad <i>Bufo bufo</i>	17	2010	Potentially on site ⁺	✓	WCA 5 S9(5)

Key:
⁺: Grid reference provided was six figures and as such, the record may be located within 100 m of the study site.

ECH 2: Annex II of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation.

ECH 4: Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest in need of strict protection.

WCA 5 S9(5): Schedule 5 Section 9(5) of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds). Protection limited to selling, offering for sale, processing or transporting for purpose of sale, or advertising for sale, any live or dead animal, or any part of, or anything derived from, such animal.

Species of Principal Importance: Species of Principal Importance for Nature Conservation in England.

Note. This table does not include reference to the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats), the Bonn Convention on the Conservation of Migratory Species of Wild Animals or the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Table 3.1: Great Crested Newt Records Within 1 km of the Development Boundary

3.2 PREVIOUS GREAT CRESTED NEWT SURVEYS

As part of the Preliminary Ecological Appraisal by Tyler Grange in March 2018 (Report 11423_R02d_MB_AL) a great crested newt Habitat Suitability Index Assessment was undertaken. The assessment concluded that ponds P1 and P2 possessed 'Average' habitat suitability, scoring 0.65 and 0.64 respectively.

4. RESULTS

4.1 INTRODUCTION

The surveys were undertaken between 5th April 2018 and 3rd May 2018 by

- Jacob Kench (Ecological Consultant and Licence Holder);
- Pippa Jordan (Ecological Project Officer and Licence Holder);
- Victoria Aelen (Ecological Consultant and Licence Holder);
- Richard Sainsbury (Ecological Project Officer); and,
- Harry Stone (Ecological Project Officer).

At the time of the first presence / absence survey visit, each pond was subject to a habitat assessment to determine its suitability to support great crested newts. The findings of this assessment, including the calculated HSI score for each pond surveyed, are provided in Section 4.3.

The results of the great crested newt surveys are detailed in Section 4.4. Where additional survey visits were undertaken to inform a population size class assessment, the results of this assessment are provided in Section 4.5.

4.2 SURVEY CONSTRAINTS

Pond P3 was not surveyed as a busy major road acted as a dispersal barrier. Furthermore, the pond was isolated within a housing development which exacerbated its poor connectivity to the site.

Pond P2 had two active birds' nests, therefore a full survey of the southern and western banks was not possible. High levels of duckweed also inhibited torch surveys, despite clear water.

Pond P1 had high levels of turbidity which inhibited torch surveys.

4.3 HABITAT SUITABILITY INDEX ASSESSMENT AND CONNECTIVITY ASSESSMENT

Table 4.1 provides a brief description of each of the surveyed ponds, and assesses the presence or absence of habitat features favoured by great crested newts. Pond locations are shown on Middlemarch Environmental Ltd Drawing C127825-02-01 in the Chapter 7. Photographs of surveyed ponds are provided in Chapter 8.

Attribute	Description
Pond P1	
Description	Medium pond located immediately adjacent to road and backing onto the development site. Surrounded by trees and dense scrub.
Grid Reference	SU 99971 01652
Pond Area	Approx. 250 m ²
Distance from Development Boundary	0 m
Permanence	Dries out annually. Explained by local residents and water level dropped significantly throughout surveys.
Water Quality	Poor quality. Water clarity variable on visits, though frequently highly turbid. Drainage pipes located on the northern bank are a likely source of pollution. Moderate invertebrate diversity (<i>Agabus sp.</i> , <i>Dytiscus sp. larvae</i>). Low-moderate botanical diversity and very high levels of leaf and twig litter. High abundances of leeches and cladocera.
Shade	80%
Macrophytes	10%
Egg Laying Habitat	Very limited suitable vegetation. Submerged leaf litter and encroaching brambles could provide some substrate.
Open Courtship Area	Yes
Wildfowl	Absent
Fish	Absent (previously stocked with ghost koi, goldfish, tench and perch but extremely unlikely to currently support a fish population due to drying out)
Surrounding Terrestrial Habitat	Arable and hardstanding (adjacent to road), hedgerows and semi-improved grassland subject to maintenance.
Photo Reference (see Chapter 8)	Plates 8.1, 8.3 & 8.4
Pond P2	
Description	Medium pond located immediately adjacent to road and backing onto arable land. Connected with ditch. Surrounded by trees and dense scrub, less so on the western edge which significantly reduces shading.
Grid Reference	SU 99925 01663
Pond Area	Approx. 250 m ²
Distance from Development Boundary	25 m
Permanence	Never (explained by local resident)
Water Quality	Good quality. No signs of pollution and moderate macrophyte diversity. Water clarity excellent, though covered in duckweed. Plenty of starwort (<i>Callitriche sp.</i>) and very good invertebrate diversity and abundance (<i>Dytiscus marginalis</i> ; <i>Notonecta sp.</i> ; <i>Agabus sp.</i> ; <i>Anisoptera sp.</i>).
Shade	50%
Macrophytes	30%. Emergent yellow flag (<i>Iris pseudocaris</i>), marsh marigold (<i>Caltha palustris</i>) and among/beneath the duckweed potentially abundant submerged starwort (<i>Callitriche sp.</i>).
Egg Laying Habitat	Moderate suitable vegetation
Open Courtship Area	Yes
Wildfowl	Yes (two active moorhen nests)
Fish	No
Surrounding Terrestrial Habitat	Arable and hardstanding (adjacent to road), hedgerows and grassland along road verge and semi-improved grassland subject to maintenance.
Photo Reference (see Chapter 8)	Plate 8.2

Table 4.1: Pond Description and Assessment of Habitat Features for Great Crested Newts

The HSI score for each of the ponds assessed is detailed in Table 4.2.

Pond Ref.	HSI Category										HSI Score
	SI 1	SI 2	SI 3	SI 4	SI 5	SI 6	SI 7	SI 8	SI 9	SI 10	
P1	1	0.5	0.1	0.33	0.6	1	1	0.9	0.67	0.4	0.55 (below average)
P2	1	0.5	0.9	1	1	1	1	0.9	0.33	1	0.82 (excellent)
Key: SI 1 – Location SI 2 – Pond Area SI 3 – Pond Drying SI 4 – Water Quality SI 5 – Shade SI 6 – Waterfowl SI 7 – Fish SI 8 – Ponds Within 1km SI 9 – Terrestrial Habitat SI 10 – Macrophytes											

Table 4.2: Habitat Suitability Index of Accessible Ponds Within 500 m of Study Area

4.4 GREAT CRESTED NEWT SURVEY RESULTS

Table 4.3 provides a summary of the survey dates and weather conditions.

Survey Visit Number	Date	Time	Parameter			
			Temperature °C	Cloud %	Precipitation	Wind (Beaufort Scale)
1	05-04-18	pm	7	0	Dry	F0
	06-04-18	am	7	0	Dry	F0
2	16-04-18	pm	12	50	Dry	F1
	17-04-18	am	9	0	Dry	F0
3	19-04-18	pm	12	0	Dry	F0
	20-04-18	am	18	0	Dry	F1
4	24-04-18	pm	12	100	Dry	F2
	25-04-18	am	9	50	Dry	F0
5	26-04-18	pm	11	95	Dry	F0-1
	27-04-18	am	8	100	Dry	F2
6	02-05-18	pm	9	0	Dry	F0
	03-05-18	am	10	0	Dry	F0

Table 4.3: Weather Conditions During Great Crested Newt Surveys

Table 4.4 details the results of the great crested newt surveys.

During the great crested newt surveys carried out between 5th April 2018 and 2nd May 2018, the presence of great crested newts was confirmed in Pond P2. In order to inform a population size class assessment a total of 6 surveys were undertaken to these ponds. The results of this assessment are detailed in Section 4.5.

Pond Reference	Parameters		Great Crested Newts											Other Amphibians			
	Vegetation Cover (0-5)	Turbidity (0-5)	Torch			Bottle Trapping			Refugia Search			Egg Search (Y/N)	Peak GCN Count	SN	PN	CF	CT
			M	F	Juv	M	F	Juv	M	F	Juv						
Survey Visit 1 – [05-04-18 / 06-04-18]																	
P1	1	4												2			3
P2	3	0												1		2	
Survey Visit 2 – [16-04-18 / 17-04-18]																	
P1	1	4												7			
P2	3	0												2			
Survey Visit 3 – [19-04-18 / 20-04-18]																	
P1	1	4															
P2	3	0				1							1				
Survey Visit 4 – [24-04-18 / 25-04-18]																	
P1	1	4												10			
P2	3	0					1						1	4	1 (Juv)		
Survey Visit 5 – [26-04-18 / 27-04-18]																	
P1	1	3												1	1		
P2	3	1				1*							1		3		
Survey Visit 6 – [02-05-18 / 03-05-18]																	
P1	1	5	1**											1			
P2	3	0				1	1						2				
Key: M - Male F - Female Juv – Juvenile/sub-adult GCN – Great crested newt <i>Triturus cristatus</i> SN – Smooth newt <i>Lissotriton vulgaris</i> PN – Palmate newt <i>Lissotriton helveticus</i> CF – Common frog <i>Rana temporaria</i> CT – Common toad <i>Bufo bufo</i>																	
Notes: *had a stumpy tail **unconfirmed 'Peak GCN Count' is the peak count of adult great crested newts recorded during a single visit using a single survey technique. 'Vegetation Cover': 0 = No vegetation obscuring survey. 5 = Water completed obscured by vegetation 'Turbidity': 0 = Completely clear. 5 = Very turbid.																	

Table 4.4: Great Crested Newt Survey Results

4.5 POPULATION SIZE CLASS ASSESSMENT

As detailed in Section 2.4, the population size class assessment is determined by taking the peak count for all ponds within 250 m of one another during a single survey visit by a single technique (English Nature, 2001). Where multiple ponds are recorded within a 250 m radius of each other these are generally considered to hold a single great crested newt population and the peak count for each survey visit for these ponds is summed to generate the peak count for the population.

Table 4.5 details the results of the population size class assessment for the site.

Population Reference	Pond Reference	Peak Great Crested Newt Count	Population Class
Population A	Pond P2	2	Small

Table 4.5: Great Crested Newt Population Size Class Assessment for Surveyed Ponds

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF SITE PROPOSALS

The proposed development at the site is a dementia care centre.

5.2 HABITAT SUITABILITY INDEX ASSESSMENT

The results of the HSI index assessment for all ponds surveyed are summarised in Table 5.1.

HSI Score	Pond Suitability for Great Crested Newt	Pond Reference
< 0.5	Poor	
0.5 – 0.59	Below average	P1
0.6 – 0.69	Average	
0.7 – 0.79	Good	
> 0.8	Excellent	P2

Table 5.1: Pond Habitat Suitability Index Results

Pond P2 scored highly suitable for great crested newts while Pond 1 was deemed less suitable. P1 is located immediately adjacent to the site, and P2 approximately 25 m from the site, across the road from P1.

5.3 GREAT CRESTED NEWT SURVEY FINDINGS

Great crested newts were recorded in one pond within the study area during the survey visits. The population size class assessment identifies that the survey area supports a small sized meta-population of great crested newts.

The ponds supporting great crested newts are shown on Drawing C127825-02-01 in Chapter 7. This drawing shows radii of 50 m, 250 m and 500 m around the ponds, as these are the distances identified by Natural England as providing core terrestrial habitat (0-50 m), intermediate terrestrial habitat (50-250 m) and distant terrestrial habitat (250-500 m). The major road A259 Crookthorn Lane north of the site acts as a significant dispersal barrier, likely preventing connectivity with any potentially suitable habitat to the north of the site.

Smooth newts and palmate newts were recorded in both ponds. Tadpoles were observed in both ponds, with adult common frogs recorded in Pond P2 and common toads in Pond P1. A separate reptile survey carried out by Middlemarch also recorded common toads utilising terrestrial habitat on site, close to Pond P1. No amphibian diseases or invasive amphibian species were observed.

5.4 CONCLUSIONS AND SUMMARY OF POTENTIAL IMPACTS

The proposed development works will not result in the loss of the ponds located adjacent to the site.

Drainage pipes located in Pond P1 are already a possible source of pollution limiting the suitability of the habitat for great crested newts and other amphibians. Any pollution as a result of the development works would have a detrimental impact on the ecological health of the pond and the small population of great crested newts.

The works will however result in the loss of a degree of terrestrial habitat from within the site. Such habitat includes well managed grassland of low value. Furthermore, areas of rubble and building materials located on site - mostly <20 m from Pond P1 - provide suitable refugia habitat for great crested newts, and therefore moving these features could have an impact on the population. Without mitigation, the works may also kill or injure great crested newts using the terrestrial habitats. This is an offence under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981.

Moderate numbers of smooth newts, palmate newts, common frogs and common toads were recorded within the surveyed ponds. If the recommendations are followed it is not anticipated that the works will have a detrimental impact on the amphibian population of the area.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

- R1** Due to the presence of a small population class of great crested newts in Pond P2, prior to any works commencing on site a great crested newt mitigation strategy will need to be developed to minimise potential impacts on great crested newts and / or their breeding and resting places and to ensure adequate mitigation is provided as part of the development proposals.

7. DRAWINGS

Drawing C127825-02-01 – Pond Location Plan



Legend

Pond surveyed - GCN present

Pond surveyed - no GCN present

50 m radius from GCN pond

250 m radius from GCN pond

500 m radius from GCN pond

Site boundary

Project

Crookthorn Lane, Climping, West Sussex

Drawing

GCN Survey Results

Client

Brackley Investments

Drawing Number

C127825-02-01

Revision

00

Scale @ A3

1:5,000

Date

May 2018

Approved By

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C127825-02-01

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8. PHOTOGRAPHS



Plate 8.1: Pond P1



Plate 8.2: Pond P2



Plate 8.3: Pond P1 Turbid/Polluted Water



Plate 8.4: Pond P1 Drainage Pipe



Plate 8.5: Ditch Connected to Pond P2



Plate 8.6: Male Great Crested Newt P2

REFERENCES AND BIBLIOGRAPHY

ARG UK. (2010). *ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index*. Amphibian and Reptile Groups of the United Kingdom.

Countryside Rights of Way Act, 2000.

English Nature. (2001). *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

Gent, A. and Gibson, S. (1998). *Herpetofauna Workers Manual*, Joint Nature Conservation Committee, Peterborough.

Joint Nature Conservation Committee (2012). *UK Post-2010 Biodiversity Framework*. Available:
http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf

Langton, T., Beckett, C. and Foster, J. (2001). *Great Crested Newt: Conservation Handbook*. Froglife, Suffolk.

Oldham R. S., Keeble, J., Swan, M. J. S. and Jeffcote, M. (2000). 'Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*)'. *Herpetological Journal* **10** (4), 143-155.

The Conservation of Habitats and Species Regulations 2017.

The Wildlife and Countryside Act, 1981 (as amended).

Tyler Grange LLP (2018) *Proposed Dementia Care Centre at Land to the Rear of Baird's Farm Shop, Crookthorn Lane, Climping: Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment*. Report Number: 11423_R02d_MB_AL

APPENDIX 1

LEGISLATION

Great crested newts and the places they use for shelter or protection receive European protection under The Conservation of Habitats and Species Regulations 2010 (Habitats Regulations 2010). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that great crested newts, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2010, states that a person commits an offence if they:

- deliberately capture, injure or kill a great crested newt;
- deliberately disturb great crested newt;
- deliberately take or destroy eggs of a great crested newt; or
- damage or destroy a great crested newt breeding site or resting place.

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2010 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead great crested newt, part of a great crested newt or anything derived from great crested newt, which has been unlawfully taken from the wild. This legislation applies to all life stages of great crested newt.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

Great crested newts are listed as Species of Principal Importance on the UK Post-2010 Biodiversity Framework (2012), and as such are material considerations in the planning process.

ECOLOGY

The great crested newt is the largest of the three newt species in the UK. Like all UK amphibians, they breed within ponds but great crested newts spend the majority of the year on land. Great crested newts prefer to breed in medium to large ponds without fish or significant numbers of waterfowl. Ponds which lack shade on the southern margins appeared to be favoured. Newts enter the ponds to breed in the spring, immediately after they come out of their winter dormancy. The females lay eggs individually on the leaves of aquatic vegetation, and these generally hatch within four weeks, although the exact timing is dependent on environmental conditions. The larvae then stay in the water until the metamorphosing into adult newts (when they lose their external gills) between August and October and are now able to leave the water. Great crested newts can live up to 14 years in the wild and spend most of their lives out of the ponds, foraging at night in areas of undisturbed habitat, favouring rough grassland, scrub and woodland areas. Newts may travel up to 1 km from a breeding pond, but most tend to travel no more than 250 m if the ponds are close to suitable terrestrial habitat. Great crested newts are predators from birth, taking a variety of live prey including aquatic invertebrates, frog tadpoles, slugs, earthworms, spiders and other land invertebrates. Great crested newt hibernate during the winter months in underground crevices, such as gaps between tree roots, or under piles of logs, rubble etc.

Great crested newt populations have declined significantly in Britain, and continental Europe, since the 1940s as a result of habitat loss.

**CROOKTHORN LANE, CLIMPING,
WEST SUSSEX**

**NOCTURNAL EMERGENCE
SURVEY**

A Report to: Brackley Investments

Report No: RT-MME-127825-03 Rev A

Date: May 2018



Triumph House, Birmingham Road, Allesley, Coventry CV5 9AZ

REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development".

Report Version	Date	Completed by:	Checked by:	Approved by:
Draft	14/05/2017	Harry Stone (Ecological Project Officer)	Paul Roebuck MCIEEM (Principal Ecological Consultant)	Dr Philip Fermor CEnv MCIEEM (Managing Director)
Rev A	24/05/2017	Harry Stone (Ecological Project Officer)	Paul Roebuck MCIEEM (Principal Ecological Consultant)	Dr Philip Fermor CEnv MCIEEM (Managing Director)

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

VALIDITY OF DATA

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, an updated site visit should be carried out by a suitably qualified ecologist to assess any changes in the habitats present on site, and to inform a review of the conclusions and recommendations made.

NON-TECHNICAL SUMMARY

In May 2018, Brackley Investments commissioned Middlemarch Environmental Ltd to undertake a nocturnal emergence bat survey at the site of a proposed development at land to the rear of Baird's Farm Shop, Crookthorn Lane, Climping. These surveys are required to inform a planning application associated with the development of a dementia care centre.

A nocturnal emergence was undertaken on 2nd May 2018. Two species of bat, common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* were recorded during the survey. No bats were considered to be roosting in the surveyed structures.

Following the results of the nocturnal emergence and dawn re-entry surveys, the following recommendations have been made:

R1 Building 2 – Portacabin Building B2

Building B2 has been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), and no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed building have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the building in the interim. Updated Preliminary Bat Roost Assessments can be undertaken at any time of year. Updated surveys requiring nocturnal or dawn assessment will need to adhere to the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) with the surveys undertaken between April and September inclusive. In the unlikely event that a bat is found during site works all works in that area must immediately cease and a suitably qualified ecologist should be contacted.

R2 Lighting

Bats are likely to use hedgerows and trees for foraging and commuting. Therefore, in line with paragraph 125 of the National Planning Policy Framework, the development should aim to limit the impact of light pollution on bats through the careful use of lighting in critical areas only and at a low level with minimum spillage. Any lighting, either temporary or permanent, along the site boundaries (especially along the southern boundary where an offsite building has been identified as having high potential for roosting bats) should be kept to a minimum and directed away from the boundary features to maintain dark areas and corridors.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In May 2018, Brackley Investments commissioned Middlemarch Environmental Ltd to undertake nocturnal emergence bat survey at the site of a proposed development at land to the rear of Baird's Farm Shop, Crookthorn Lane, Climping. This survey was required to inform a planning application associated with the development of a dementia care centre.

Tyler Grange LLP has previously carried out Preliminary Bat Roost Assessment at this site. The findings of this survey are detailed in Report 11423_R02d_MB_AL. The assessment identified one portacabin building (B2) as having low bat roost potential, due to a gap behind a plastic roof fascia running along all sides of the building.

The portacabin building (B2) identified as having low potential to support roosting bats will be lost as part of the proposed development. Therefore, in line with Good Practice Guidelines (Collins, 2016) a single dusk emergence or dawn re-entry survey was required. This report details the results of the survey undertaken on the evening of the 2nd May 2018.

All UK bat species are European protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1. This section also provides some brief information on the ecology of British bat species.

1.2 SITE DESCRIPTION AND CONTEXT

The site under consideration comprises 0.84 hectares of land immediately south of Baird's Farm Shop on Crookthorn Lane (A259), Climping, West Sussex. The National Grid Reference is SU 99978 01701. The site is formerly arable land and comprises grassland, scrub, hedgerows, agricultural land (geese enclosure), hardstanding and portacabins. The site boundary comprises of mature trees, hedgerow and fencing. The site is bordered by roads to the north and west, arable land to the east and residential properties to the south. The broader landscape is arable land.

Three buildings can be found on site, all of which are scheduled for demolition as part of the proposed development. Buildings B2 and B3 are portacabins and B4 is a small brick building. Buildings B3 and B4 are considered to offer negligible potential roosting habitat. Portacabin building B2 is considered to offer low potential roosting habitat due to gaps behind the roof fascia which would be suitable for crevice-dwelling bat species. A nearby offsite building (B5) is considered to offer high potential roosting habitat.

1.3 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

Document Name / Drawing Number	Author
Site Plans and Proposal Drawings	Hunters Architects

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal by Tyler Grange (Report 11423_R02d_MB_AL) an ecological desk study was undertaken in March, 2018. The consultee for the desk study was Sussex Biodiversity Record Centre (SRBC). Relevant bat data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

The desk study included a search for statutory nature conservation sites designated for bats within a 10 km radius of the site.

2.2 FIELD SURVEYS

2.2.1 Overview of Nocturnal Emergence Survey

The portacabin building B2 was classed as having low potential to support roosting bats as limited features of interest to bats were identified during the daytime survey. In line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), a nocturnal emergence survey was carried out. The aim of this surveys was to detect whether bats are roosting within the building, and to enable a profile of site utilisation by bats to be compiled.

Eleven trees with low potential to support roosting bats were not surveyed, as the Preliminary Bat Roost Assessment found that precautionary soft felling of any that are to be removed or modified was considered sufficient.

2.2.2 Nocturnal Emergence Bat Survey

In line with the specifications detailed in Bat Surveys: Good Practice Guidelines (Collins, 2016), the nocturnal survey commenced 20 minutes prior to sunset and continued until 120 minutes after sunset. The nocturnal emergence survey was conducted using electronic bat detectors (Bat Box Duet with associated recording devices) to facilitate the detection of bats and to aid in the determination of species of bat using the site. Subsequent computer analysis of recordings allowed all species of bat using the site to be identified.

3. DESK STUDY

3.1 STATUTORY NATURE CONSERVATION SITES

The site is located within 2 km of Climping Beach SSSI, located approximately 1.5 km south. This stretch of coast comprises a single vegetated shingle beach and sand dune system with an intertidal zone, which supports populations of wintering birds. SSSIs are of national value.

3.2 SPECIES RECORDS

The data search was carried out in May 2018 by Sussex Biodiversity Record Centre (SBRC). Records of bat species within a 2 km radius of the survey area provided by the consultee are summarised in Table 3.1. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Study Area	Species of Principal Importance?	Legislation / Conservation Status
Serotine bat <i>Eptesicus serotinus</i>	3	2014	320 m south-east	-	ECH 4, WCA 5, WCA 6
Long-eared bat <i>Plecotus</i> sp.	2	2015	320 m south-east	#	ECH 4, WCA 5, WCA 6
Unidentified bat <i>Chiroptera</i> sp.	7	2016	410 m south-east	#	#
Common pipistrelle <i>Pipistrellus pipistrellus</i>	5	2016	450 m south	-	ECH 4, WCA 5, WCA 6
Daubenton's bat <i>Myotis daubentonii</i>	1	2015	660 m east	-	ECH 4, WCA 5, WCA 6
Whiskered bat <i>Myotis mystacinus</i>	1	2015	1.6 km east	-	ECH 4, WCA 5, WCA 6
Brown long-eared bat <i>Plecotus auritus</i>	2	1999	1.8 km north	✓	ECH 4, WCA 5, WCA 6
Unidentified myotis <i>Myotis</i> sp.	1	2015	1.9 km north	-	ECH 4, WCA 5, WCA 6
Nathusius's Pipistrelle <i>Pipistrellus nathusii</i>	2	2015	1.9 km north	-	ECH 4, WCA 5, WCA 6
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	1	2015	1.9 km north	✓	ECH 4, WCA 5, WCA 6
Key: # : Dependent on species. ECH 4: Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest in need of strict protection. WCA 5: Schedule 5 of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds). WCA 6: Schedule 6 of Wildlife and Countryside Act 1981 (as amended). Animals which may not be killed or taken by certain methods. Species of Principal Importance: Species of Principal Importance for Nature Conservation in England. Note. This table does not include reference to the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats), the Bonn Convention on the Conservation of Migratory Species of Wild Animals or the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).					

Table 3.1: Bat Species Records Within 2 km of Survey Area

4. SURVEY RESULTS

4.1 NOCTURNAL EMERGENCE SURVEY

The nocturnal emergence survey was undertaken on 2nd May 2018 by Jacob Kench (Ecological Consultant) and Harry Stone (Ecological Project Officer). The weather conditions recorded at the time of the survey are detailed in Table 4.1.

Parameter	Conditions	
	Start	Finish
Temperature (°C)	13	10
Cloud Cover (%)	0	0
Precipitation	Dry	Dry
Wind Speed (Beaufort)	F0	F0

Table 4.1: Weather Conditions During Nocturnal Emergence Survey

The nocturnal emergence survey commenced 20 minutes prior to sunset and continued until 120 minutes after sunset. Sunset was at 20:25 hrs (BBC Weather Centre Data for Littlehampton). Two species of bat, common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* were recorded during the survey.

Common pipistrelle

At 21:19 a common pipistrelle was detected to the north-west of the site. This bat was not observed emerging from any features associated with the site.

Soprano pipistrelle

At 21:55 a soprano pipistrelle was detected to the north-west of the site. This bat was not observed emerging from any features associated with the site.

No other species of bat were detected or observed during this survey.

5. DISCUSSION AND CONCLUSIONS

5.1 DISCUSSION

5.1.1 Summary of Proposals

The proposals by Brackley Investments include the development of a dementia care centre.

5.1.2 Summary of Nocturnal Emergence Survey

Nocturnal Emergence Survey

The nocturnal emergence survey was undertaken on 2nd May 2018. Two species of bat were recorded during the nocturnal survey; common pipistrelle and soprano pipistrelle.

No bats were recorded emerging from the building.

5.2 CONCLUSIONS

Following the suite of survey work undertaken on site it can be confirmed that the portacabin building B2 does not contain a bat roost.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 Building 2 – Portacabin Building B2

Building B2 has been subject to a full suite of activity surveys in line with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), and no bat roosts were identified. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed building have not commenced within this timeframe it will be essential to update the survey effort to establish if bats have colonised the building in the interim. Updated Preliminary Bat Roost Assessments can be undertaken at any time of year. Updated surveys requiring nocturnal or dawn assessment will need to adhere to the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) with the surveys undertaken between April and September inclusive. In the unlikely event that a bat is found during site works all works in that area must immediately cease and a suitably qualified ecologist should be contacted.

R2 Lighting

Bats are likely to use hedgerows and trees for foraging and commuting. Therefore, in line with paragraph 125 of the National Planning Policy Framework, the development should aim to limit the impact of light pollution on bats through the careful use of lighting in critical areas only and at a low level with minimum spillage. Any lighting, either temporary or permanent, along the site boundaries (especially along the southern boundary where an offsite building has been identified as having high potential for roosting bats) should be kept to a minimum and directed away from the boundary features to maintain dark areas and corridors.

REFERENCES AND BIBLIOGRAPHY

Altringham, J (2003). *British Bats*. New Naturalist. HarperCollins.

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

English Nature (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

Joint Nature Conservation Committee (2012). *UK Post-2010 Biodiversity Framework*. Available:
http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf

Jones, K and Walsh, A (2006). *A Guide to British Bats*. The Mammal Society, London.

Mitchell-Jones, A.J. & McLeish, A.P. (2004). *The Bat Workers' Manual (3rd Ed.)*. JNCC, Peterborough.

The Conservation of Habitats and Species Regulations 2017.

Tyler Grange LLP (2018) *Proposed Dementia Care Centre at Land to the Rear of Baird's Farm Shop, Crookthorn Lane, Climping: Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment*. Report Number: 11423_R02_MB_MM

APPENDIX 1

LEGISLATION

Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

For England:

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*.

The reader should refer to the original legislation for the definitive interpretation.

ECOLOGY

At present, 18 species of bats are known to live within the United Kingdom, of which 17 species are confirmed as breeding. All UK bat species are classed as insectivorous, feeding on a variety of invertebrates including midges, mosquitoes, lacewings, moths, beetles and small spiders.

Bats will roost within a variety of different roosting locations, included houses, farm buildings, churches, bridges, walls, trees, culverts, caves and tunnels. At different times of the year the bats roosting requirements alter and they can have different roosting locations for maternity roosts, mating roosts and hibernation roosts. Certain bat species will also change roosts throughout the bat activity season with the bat colony using the site to roost for a few days, abandoning the roost and then returning a few days or weeks later. This change can be for a variety of reasons including climatic conditions and prey availability. Bats are known live for several years and if the climatic conditions are unfavourable at a particular roost, they may abandon it for a number of years, before returning when conditions change. Due to the matriarchal nature of bat colonies, the locations of these roosts can be passed down through the generations.

Bats usually start to come out of hibernation in March and early April (weather dependent), when they start to forage and replenish the body weight lost during the hibernation period. The female bats then start to congregate together in maternity roosts prior to giving birth and a single baby is born in June or July. The female then works hard to feed her young so that they can become independent and of a sufficient weight to survive the winter before the weather gets too cold and invertebrate activity reduces. Males generally live solitary lives, or in small groups with other males, although in some species the males can be found living with the females all year. The mating season begins in the autumn. During the winter bats hibernate in safe locations which provide relatively constant conditions, although they may venture outside to forage on warmer winter nights.

BIODIVERSITY CHECKLIST

Please complete this form having regard to the Biodiversity Checklist Notes, which can be found at:
<http://www.arun.gov.uk/biodiversity-checklist>

If you tick Yes, you must provide supporting information/statement with the application. If you do not the application will be held as invalid until you do so.

Site Address/Application Reference Number:

CHURCHILL LANE, LUMING, WEST SUSSEX

Bats

YES

NO

Has the site been surveyed for bats?

☒
☐

Are there any structures on site which have the potential to support roosting bats?

☒
☐

Structures with high potential include all agricultural buildings, buildings with weather boarding, tunnels, mines, ice houses, bridges, cliff faces with crevices and woodland. Further guidance can be found in 'Bat Surveys: Good Practice Guidelines' available from www.bats.org.uk and the Bat Mitigation Guidelines available from:

<http://www.naturalengland.org.uk/ourwork/regulation/wildlife/species/bats.aspx>

Are there any trees on the site which have the potential to support roosting bats?*

☐
☒

Trees with high potential to support roosting bats include old and veteran trees and any tree with cracks or crevices. Where appropriate, foraging and commuting routes should be incorporated into the design of the scheme. Further guidance can be found in 'Bat Surveys: Good Practice Guidelines'.

Barn Owls

YES

NO

Has the site been surveyed for barn owls?*

☐
☒

Is there any evidence of barn owls nesting on or near the site or are there suitable nesting areas on the development site?*

☐
☒

Barn owls often nest in farm buildings, dovecotes, bale stacks, hollow trees and a wide variety of derelict buildings. Barn owls require habitat which supports high number of small mammals including pasture, hedgerows and woodland. Further information can be found at <https://www.gov.uk/guidance/construction-near-protected-areas-and-wildlife>

Breeding birds

YES

NO

Has the site been surveyed for breeding birds?*

☐
☒

Will areas of hedgerow/scrub/woodland/trees or other features likely to be used by nesting birds be affected by the proposal?*

☒
☐

If 'Yes' then mitigation measures to ensure occupied nests are protected should be included with the application.

Badgers

YES

NO

Has the site been surveyed for badgers?*

☐
☒

Is there any evidence of badgers on or near the application site?*

☐
☒

Are badgers commuting through the site to foraging areas?*

☐
☐

Badgers use a wide variety of habitats and setts can be found in hedgerows, woodlands, scrub and field margins. Where appropriate, safe routes to foraging areas should be incorporated into the development proposals. Further information can be found in 'Badgers and Development' available at:

<http://www.naturalengland.org.uk/ourwork/regulation/wildlife/species/badgers.aspx>

Updated 11/05/16

	YES	NO
<i>Dormice</i>		
Has the site been surveyed for dormice?*	☐	☒
Is there suitable habitat for dormice on, or close to the application site?*	☐	☒

Dormice are found in a variety of habitats including ancient semi-natural woodland, scrub, young plantations (both broadleaved and coniferous) and hedgerows. Occasionally they are recorded in gorse scrub, heathland and alder trees in reedbeds.

<https://www.gov.uk/guidance/hazel-dormice-protection-surveys-and-licences>

	YES	NO
<i>Great crested newts</i>		
Has the site been surveyed for great crested newts?*	☒	☐
Is there suitable habitat for great crested newts on, or close to the application site?*	☒	☐

Great crested newts are often recorded in ponds, reedbeds, ditches and mineral workings. Terrestrial habitat used by newts is varied and includes semi-natural grassland, woodland, hedgerows and pasture and are often found in urban sites including gardens. Further guidance on great crested newts can be found in the Great Crested Newt Mitigation Guidelines from:

<https://www.gov.uk/guidance/great-crested-newts-protection-surveys-and-licences>

	YES	NO
<i>Reptiles</i>		
Has the site been surveyed for reptiles?*	☒	☐
Is there suitable habitat on the site for reptiles?*	☒	☐

Reptiles use a variety of habitats including rough grassland, heathland, allotments, scrub, brownfield sites, field margins and abandoned gardens. Further information can be found at:

<https://www.gov.uk/guidance/reptiles-protection-surveys-and-licences>