



Bat Survey - Preliminary Roost Assessment

20 Chalgrove Way, Emmer Green, Reading, RG4 8SJ

Frances Boyes

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Arbtech Consulting Ltd. undertook a Preliminary Roost Assessment (PRA) at 20 Chalgrove Way, Emmer Green, Reading RG4 8SJ on 21st August 2017. The aim of the assessment was to consider the value and suitability of the structures for roosting bats.

The development proposals involve demolition of the existing dwelling and garages and the creation of two new residential units.

Recommendations - This is work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent.

Survey feature	Recommendations
B1, B2, B3	Roost presence/likely-absence surveys are required on the building. Two bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least one of the surveys should be completed during the optimal survey period (mid-May to August), and one of the surveys must be a dawn re-entry survey. If bats are observed using the building as a roost, a further survey will be required to inform a European Protected Species Mitigation Licence application to Natural England once planning has been granted. Four surveyors are required to provide full coverage of the buildings.

For full justification of these recommendations, please go straight to section [4.0 Conclusions, Impacts and Recommendations](#). Otherwise, the full report starts below.

Contents

1.0 Introduction and Context	5
1.1 Background	5
1.2 Site Context	5
1.3 Scope of the report	5
1.4 Project Description	5
2.0 Methodology	6
2.1 Desk Study methodology	6
2.2 Site Survey methodology	6
2.3 Breeding birds and other incidental observations	6
2.4 Suitability Assessment	7
2.5 Limitations – evaluation of the methodology	8
3.0 Results and Evaluation	9
3.1 Desk Study Results	9
3.2 Designated sites	9
3.3 Landscape	9
3.4 Historical records	11
3.5 Field Survey Results	12
3.6 Site Feature descriptions and photos	14
4.0 Conclusions, Impacts and Recommendations	21
4.1 Informative guidelines	21
4.2 Evaluation	22
5.0 Bibliography	23
Appendix 1: Survey Plan	25
Appendix 2: Proposed Site Plan	26
Appendix 3: Desk Study Information	26
Appendix 4: Legislation and Planning Policy related to bats	29

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Ltd. was commissioned by Frances Boyes to undertake a Preliminary Roost Assessment (PRA) at 20 Chalgrove Way, Emmer Green, Reading RG4 8SJ. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

No previous reports have been produced for this site by Arbtech Consulting Ltd.

1.2 Site Context

The site is located at National Grid Reference SU 7204 7682 and covers approx. 900m². Three buildings were surveyed as these will be impacted by the development. The site lies in a residential area in Emmer Green in close proximity to a golf course and woodland.

1.3 Scope of the report

This report provides a description of all features suitable for roosting bats, and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It provides information on constraints to the proposals as a result of roosting bats, and summarises the requirements for any further surveys, to inform subsequent mitigation proposals, achieve Planning or other statutory consent, and to comply with wildlife legislation.

The aim of the assessment was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how they could use the site. To achieve this, the following steps have been taken:

- A desk study has been carried out, including a bat records request from Berkshire and South Buckinghamshire Bat Group (BSBBG).
- A field survey has been undertaken, including an external survey and internal inspection where possible.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals
- Recommendations for further survey and assessment have been made, along with advice on European Protected Species Mitigation Licensing if appropriate

A survey plan is presented in Appendix 1, the proposed Project Plan is included in Appendix 2 (where available), desk study results are provided in the Appendix 3 and a summary of relevant legislation can be found in Appendix 4.

1.4 Project Description

The development proposals involve demolition of the existing dwelling and garages. The proposed site plan is included in Appendix 2 (where available).

2.0 Methodology

2.1 Desk Study methodology

Existing bat records relating to the site and a surrounding 2km radius (the study area) are required to conform to national guidelines. The data search is confidential information that is not suitable for public release.

A review of the following information sources has also been undertaken to inform the assessment:

- Landscape structure using aerial images from Google Earth and OS maps
- Designated sites, habitat and granted EPSL records held on Magic.gov.uk.

2.2 Site Survey methodology

The survey was undertaken by Natalie Evans, (Natural England Bat Licence Number: 2015-11257-CLS-CLS) on 21st August 2017.

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for-bats and signs of bat activity.

For any surveyed buildings:

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building(s) for potential access/egress points, and for signs of bat use. An internal inspection of the building was also made, including the living areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope, torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

For any surveyed trees

A visual inspection from ground level using binoculars and where accessible an internal inspection of suitable roosting features using an endoscope, torch and ladders.

2.3 Breeding birds and other incidental observations

The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds, and the suitability of the site for barn owls *Tyto alba*.

2.4 Suitability Assessment

All affected survey features on site were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, J. (ed) 2016). The features that dictate the likelihood of roosting bats are summarised in Tables 1 and 2 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 1: Features of a building that are correlated with use by bats

Likelihood of bats being present	Feature of building and its context
Higher	Buildings/structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data).
Lower	A small number of possible roost sites/features, used sporadically by more widespread species. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.

Table 2: Features of a tree that are correlated with use by bats

Likelihood of bats being present	Feature of tree and its context
Higher	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Lower	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.

2.5 Limitations – evaluation of the methodology

It should be noted that whilst every effort has been made to describe the features on site in the context of their suitability for roosting bats, this does not provide a complete characterisation of the site. This survey provides a preliminary view of the likelihood of bats being present. This is based on suitability of the habitats on the site and in the local area, the ecology and biology of bats as currently understood, and the known distribution of bats as recovered during the desk study.

The northern and western elevations of B2 could not be seen and the northern elevation of B3 could not be seen. This may lead to an under-recording of bat habitat.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results are provided below; full details are included in Appendix 3.

3.2 Designated sites

There is one statutory designated sites and no known non-statutory sites within the study area. Their location and extent are illustrated in Appendix 3. Table 2 provides details of the designated sites including their reasons for notification.

Table 3: Designated sites within 2km radius of the site

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England
Statutory Sites		
Clayfield Copse Local Nature Reserve (LNR)	240m east	Ancient woodland with service trees and a wild pear tree, bluebells, common orchids and wood anenomes. There are ancient boundary banks and ditches and plough baulks can be seen in the woodland.

3.3 Landscape

A review of the designated sites, aerial photographs (Figure 1), the Magic database and OS maps has been undertaken. Collated together, the site's local bat habitat is described below:

The local landscape offers valuable resources for bats, particularly areas of ancient and deciduous woodland which are of high value for bats. There is excellent connectivity via hedgerows, gardens and woodland edges to habitats in the local landscape.

Priority habitats within 2km of the site are listed in Table 4.

Table 4: Priority Habitat Inventory within 2km (Magic.gov.uk):

Habitat	Closest distance from site (approx.)
Deciduous Woodland	245m east
Ancient woodland	245m east
Woodpasture and parkland	430m south east

Traditional orchards	535m south east
Lowland dry acid grassland	490m east
Good quality semi improved grassland	1.22km
Lowland calcareous grassland	725m

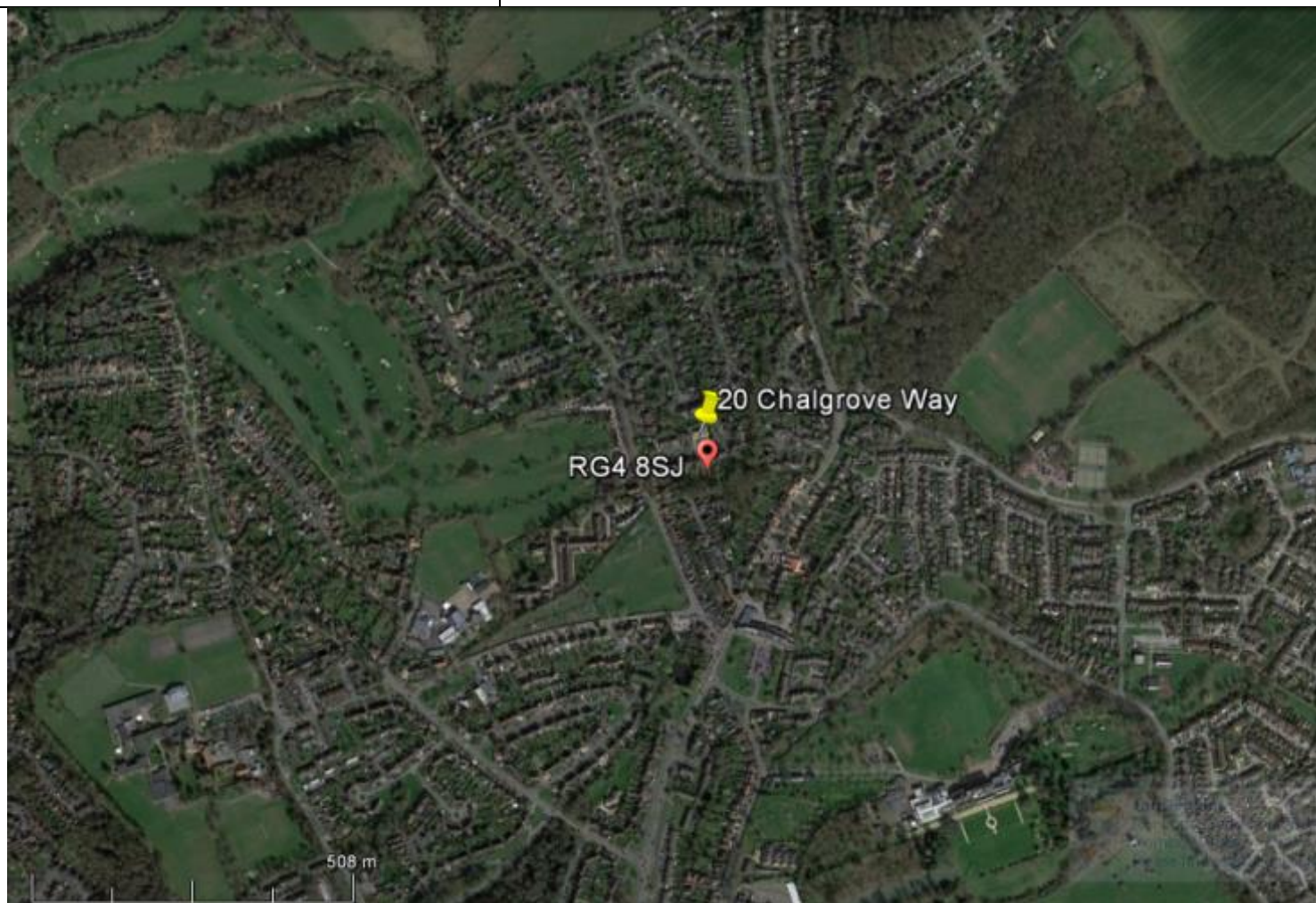


Figure 1: Aerial photo of site, showing landscape structure

3.4 Historical records

Bat records have been obtained from BSBBG and are summarised below:

Table 5: Historical records of bats within 2km of the site

Common name	Scientific binomial	Number of records	Number of roost records	Maternity roost records
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	29	7	0
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	27	9	0
Unidentified pipistrelle	<i>Pipistrellus sp.</i>	14	7	2
Brown long-eared	<i>Plecotus auritus</i>	18	9	1
Unidentified long-eared	<i>Plecotus spp.</i>	10	8	0
Noctule	<i>Nyctalus noctula</i>	28	12	12 (all from same roost as Daubenton's and Natterer's)
Serotine	<i>Eptesicus serotinus</i>		1	0
Daubenton's	<i>Myotis daubentonii</i>	41	5	5 (all from the same tree roost)
Unidentified myotis	<i>Myotis spp.</i>	4	0	0
Whiskered	<i>Myotis mystacinus</i>	1	0	0
Whiskered/Brandt's	<i>Myotis mystacinus/brandtii</i>	1	0	0
Natterer's	<i>Myotis nattereri</i>	2	1	1 (shared with Daubenton's roost)
Leisler's	<i>Nyctalus leisleri</i>	1	0	0
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	4	2	1

Bat records show at least 10 species of bat are present in the local area, five of which have breeding roosts. Several roost records are within very close proximity to the survey site.

A search of the Magic database for granted European Protected Species Mitigation Licences (EPSMLs) for bats within a 2km radius found 5 licenced sites and details are provided in Table 6 below.

Table 6: Granted EPSMLs (bats) within 2km of the site

Case reference of granted application	Approx. distance from site	Bat Species Effected	Licence Start Date:	Licence End Date:	Impacts allowed by licence
EPSM2011-3175	1.7km south	C-PIP	10/07/2011	31/08/2012	Disturbance
EPSM2013-6025	425m west	BLE	26/07/2013	31/12/2013	Destruction of a resting place
EPSM2012-4078	335m north east	BLE;DAUB;NATT	05/10/2012	30/01/2014	Disturbance
EPSM2012-4292	1.9km north west	C-PIP;S-PIP;BLE	18/04/2012	31/10/2014	Destruction of a resting place
EPSM2012-4727	1.7km north west	C-PIP;S-PIP;BLE	16/10/2012	31/10/2012	Destruction of a resting place

The EPSM licences in the surrounding area show that three roosts have been destroyed involving brown long-eared bats, common pipistrelles and soprano pipistrelles. Displaced bats of these species could find suitable roosting habitat on site.

3.5 Field Survey Results

There are three survey buildings designated as B1-B3 which are illustrated in the map in Appendix 1. The environmental variables recorded at the time of the survey are shown in Table 7.

Table 7: Environmental variables during the survey

Date: 21/08/17	
Temperature	20°C
Humidity	78%
Cloud Cover	100%
Wind	5mph
Rain	None

B1

B1 is a detached bungalow of brick construction. The roof is hipped and clad in clay tiles. Window frames are plastic and tight fitting.



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On the eastern elevation there is a chimney with raised lead flashing around the base and a missing roof tile behind. These features provide suitable roosting habitat for crevice dwelling bats and potential access into the loft.

20 Chalgrove Way, Emmer Green, Reading, RG4 8SJ



There are gaps between the wall and the soffit box on the western elevation. These could be accessed for inspection and were clogged with spider webs and debris indicating a lack of bat use.



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There are chunks of mortar missing from along the hip which provide suitable roosting crevices.

20 Chalgrove Way, Emmer Green, Reading, RG4 8SJ



There are raised roof tiles on the rear western corner providing further roosting crevices.



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There is a single loft void in B1. It has a high ridge of approx. 3m and dimensions of approx. 15m by 6m. The roof is lined with damaged bitumen felt which could allow bat access into the loft. There are timber rafters, purlins, cross beams and ridge beam on which bats could perch. The ridge beam has heavy cobwebbing indicating a lack of bat use. No bat evidence was found. Internal conditions were approx. 21.1°C and 63.8% humidity; warmer and drier than externally.

20 Chalgrove Way, Emmer Green, Reading, RG4 8SJ

**B2**

B2 is a brick built garage to the north west of B1. The roof is pitched and gabled with concrete roof tiles and concrete hanging tiles on the gable end. The northern gable end could not be seen. There are timber framed doors and windows which are tight fitting.



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There are gaps beneath hanging tiles and around the gable edges that provide suitable roosting crevices for bats. The gable end is lined with bitumen felt inside creating an enclosed roosting environment for crevice dwelling bats. The areas that were accessible by ladder for inspection were mostly clear of cobwebs but no bat evidence was found. This does not indicate absence as evidence is quickly weathered away externally and bats will crawl deep inside crevices that cannot be seen from the outside.

There are raised and damaged roof and ridge tiles on the eastern elevation that provide suitable roosting crevices. The western roof elevation could not be seen.

20 Chalgrove Way, Emmer Green, Reading, RG4 8SJ



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Inside the building is vaulted and is lined with bitumen felt which is in good condition. There are timber rafters, cross beams and ridge beam on which bats could perch. The ridge beam has heavy cobwebbing indicating a lack of bat use. No evidence of bats was found.

20 Chalgrove Way, Emmer Green, Reading, RG4 8SJ



B3

B3 is identical to B2 in structure and condition. It too has concrete roof tiles with raised and damaged areas and concrete hanging tiles with gaps around the edges and under tiles. The interior could not be accessed. No evidence of bats was found externally.



Evidence of bats- summary

No evidence of the presence of bats was located internally or externally on buildings B1, B2 and B3. It is very difficult to find external evidence under features such as roof tiles, hanging tiles and raised flashing as droppings get weathered away therefore a lack of external evidence does not suggest the absence of a roost.

Breeding birds and other incidental observations

No evidence of breeding birds was found.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Bats are protected under the Wildlife and Countryside Act and Conservation Regulations; see Appendix 3 for a summary of legislation protecting bats in the UK. Legislation protects all wild birds whilst they are breeding, and prohibits the killing, injuring or taking of any wild bird or their nests and eggs. Certain species of bird, including the barn owl, are subject to special provisions; it is an offence to disturb any bird or their young during the breeding season.

There are three possible outcomes of this survey, each with specific recommendations. These are outlined below:

Confirmed bat roost

Best practice survey guidelines (Collins, 2016) recommends additional surveys for confirmed roosts. Three further surveys are required to characterise the bat roost present including species, roost type and access points to inform a European Protected Species Mitigation Licence (EPSML) application with Natural England. Surveys must be completed during the active bat season (May – September). At least two of the surveys should be completed during the optimal survey period mid-May to August, and at least one of the surveys should be a dawn re-entry survey (Collins, J. 2016).

Low, moderate or high likelihood of a bat roost present

Best practice survey guidelines (Collins, 2016) recommends additional surveys for features assessed as having low to high suitability for roosting bats. One, two or three further surveys are required to confirm presence/likely-absence of a bat roost, based on a low, medium or high roost likelihood evaluation. Surveys must be completed during the active bat season (May – September). If more than one survey is recommended, at least one of them should be completed during the optimal survey period mid-May to August, and at least one of the surveys should be a dawn re-entry survey (Collins, J. 2016). The survey effort recommended at this stage is iterative (if less than three) and if bats are recorded emerging from the buildings, a further survey will be required to provide sufficient information to inform an EPSML application to Natural England.

Negligible likelihood of a bat roost present

Buildings assessed as comprising negligible suitability for roosting bats do not normally require further surveys. However, if bats are found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.

Appropriate justification for this assessment is provided in Section 3 and Tables 1 and 2 of this report.

4.2 Evaluation

Taking the desk based assessment and site survey results into account, the following value for roosting bats has been placed on each site survey feature.

Table 8: Evaluation of the building on site

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements
B1	The building has moderate habitat value. The external features have crevices suitable to support roosting bats and could also provide access into the loft for void dwelling bats such as brown long-eared bats.	If roosts are present these will be destroyed when the building is demolished. Any bats present may be injured or killed.	Roost presence/likely-absence surveys are required on the building. Two bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least one of the surveys should be completed during the optimal survey period (mid-May to August), and one of the surveys must be a dawn re-entry survey. If bats are observed using the building as a roost, a further survey will be required to inform a European Protected Species Mitigation Licence application to Natural England once planning has been granted. Two surveyors are required to provide full coverage of the building.	The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99 To be confirmed following further surveys.

B2 and B3	The buildings have moderate habitat value. The external features have crevices suitable to support roosting bats.	If roosts are present these will be destroyed when the buildings are demolished. Any bats present may be injured or killed.	Roost presence/likely-absence surveys are required on the building. Two bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least one of the surveys should be completed during the optimal survey period (mid-May to August), and one of the surveys must be a dawn re-entry survey. If bats are observed using the building as a roost, a further survey will be required to inform a European Protected Species Mitigation Licence application to Natural England once planning has been granted. Two surveyors are required to provide full coverage of the buildings.	To be confirmed following further surveys.
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- British Trust for Ornithology (2016) www.bto.org/about-birds/nnbw/putting-up-a-nest-box
- Collins, J. (ed.) (2012). Bat Surveys for Professional Ecologists — Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2017) accessed on 25/08/17
- Magic database (2017) <http://www.magic.gov.uk/MagicMap.aspx> accessed on 25/08/17.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan

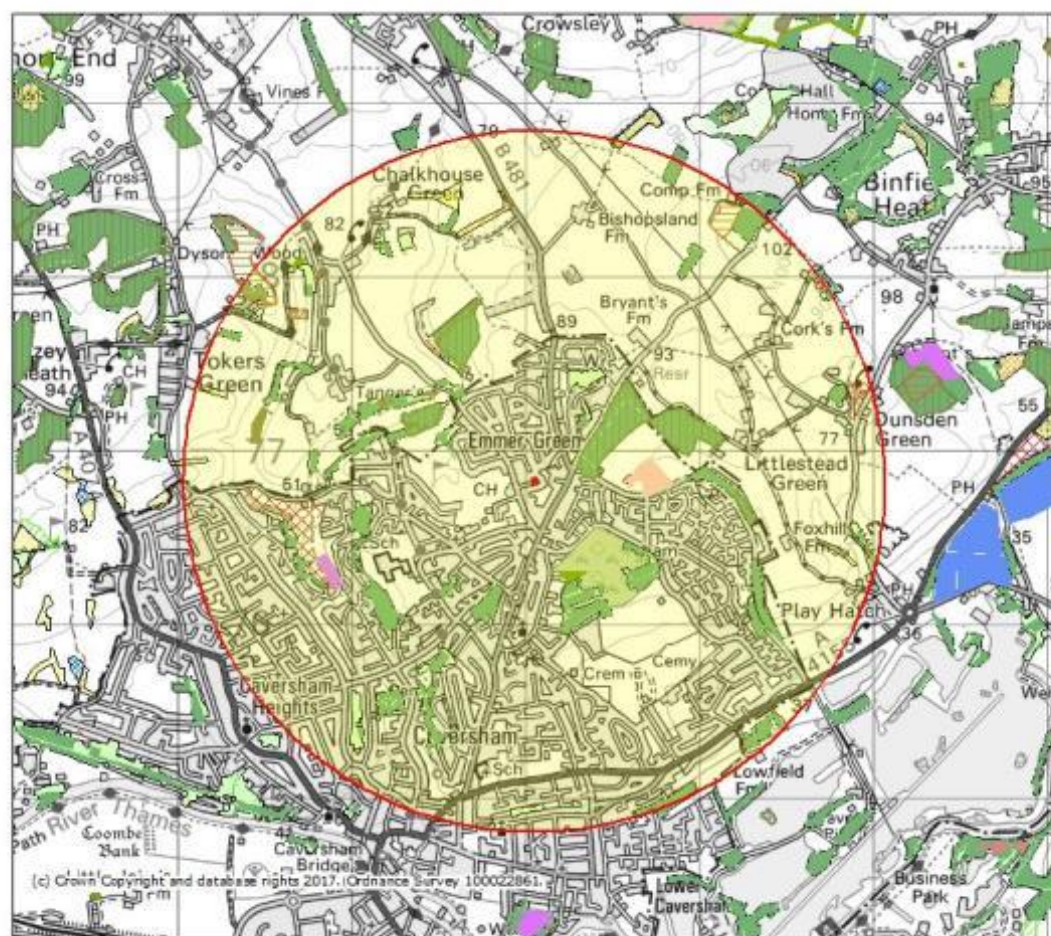


Appendix 2: Proposed Site Plan

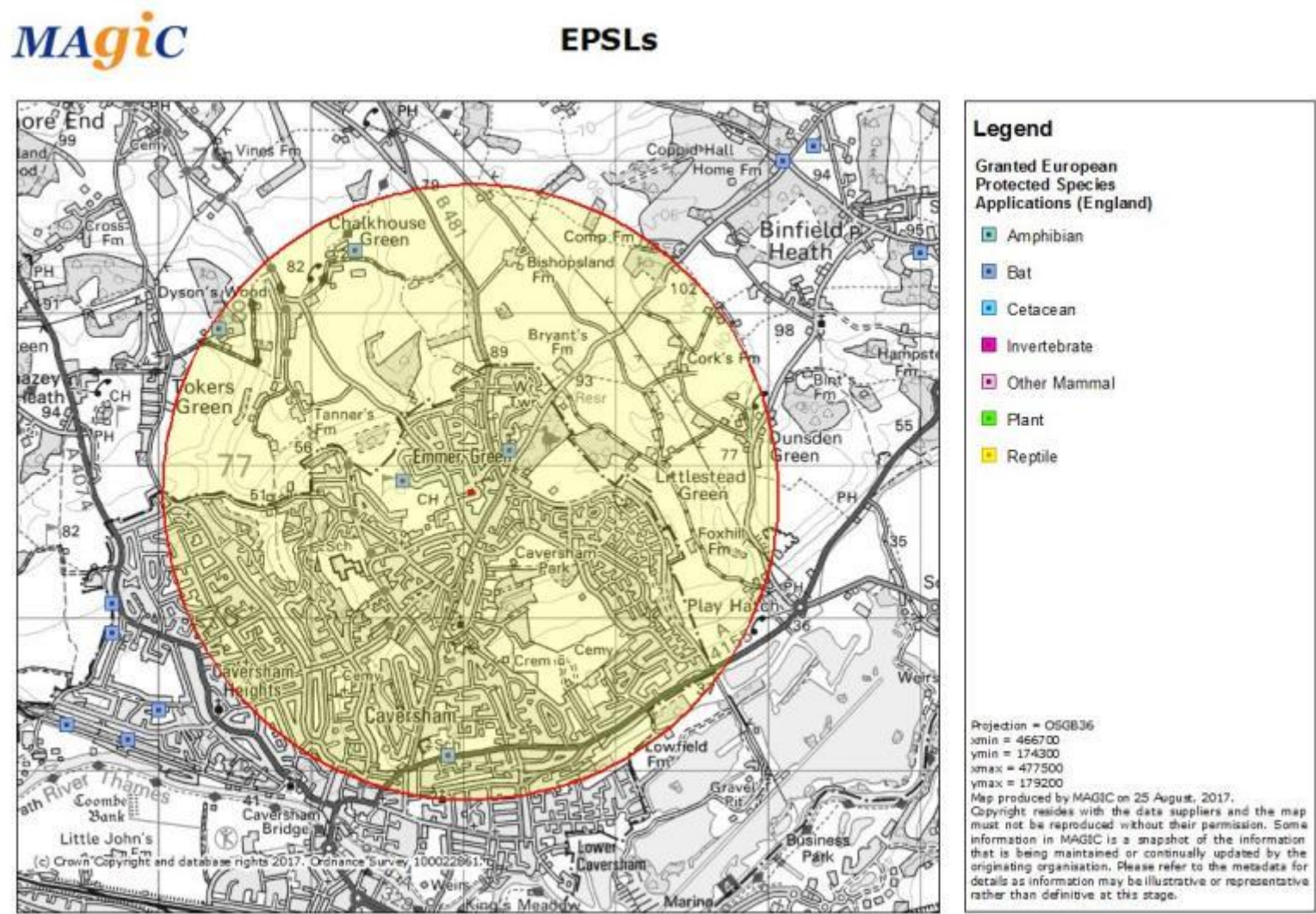


Appendix 3: Desk Study Information

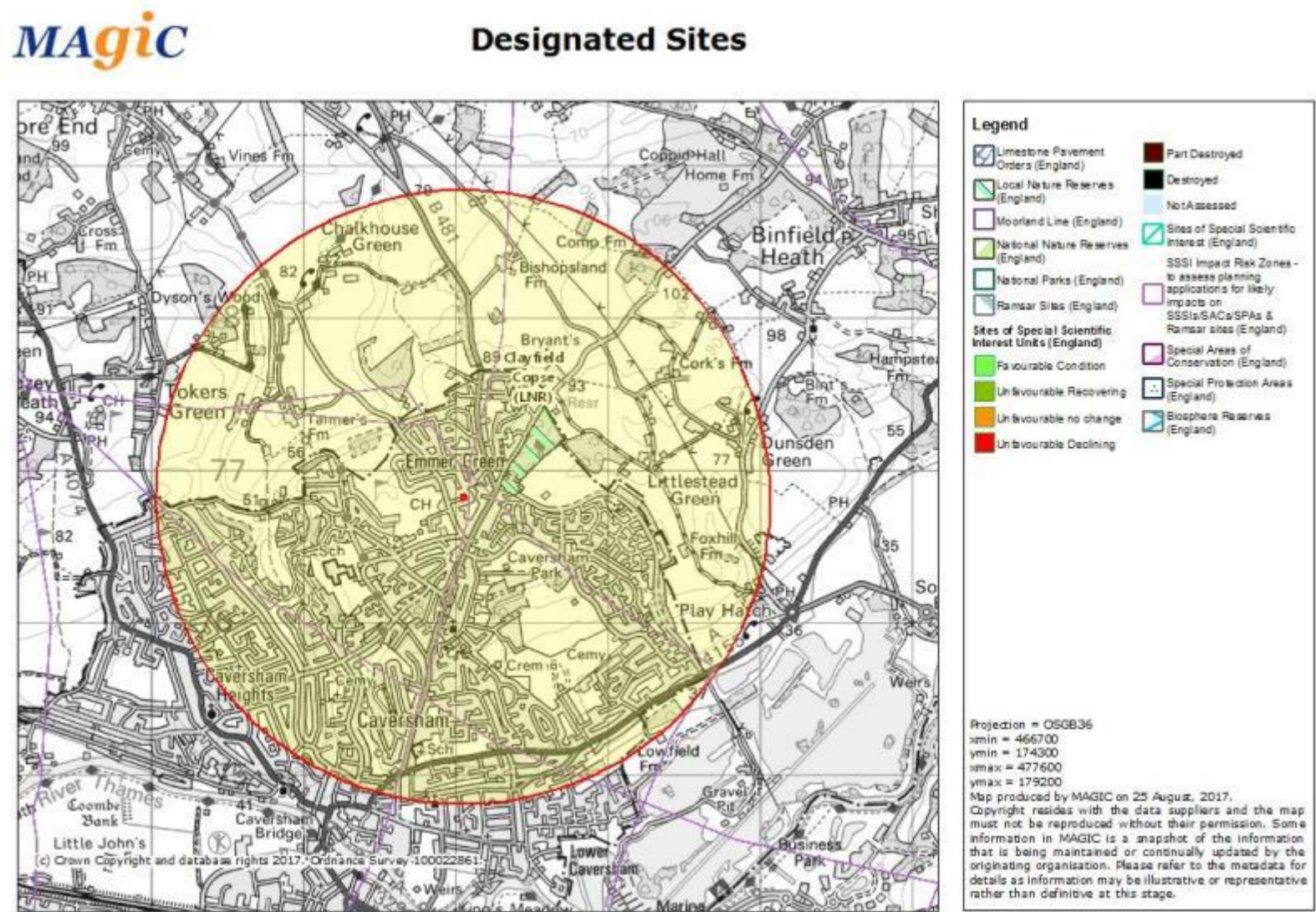
Priority habitats within 2km:

MAGiC**Habitats**

EPSL's within 2km:



Designated sites within 2km:



Appendix 4: Legislation and Planning Policy related to bats

LEGAL PROTECTION

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 (e.g. all bats)
- Deliberate disturbance of bat species as:
 - a) to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young
 - (ii) to hibernate or migrate
 - b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant statutory authority (e.g. Natural England) will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored.

The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

National Planning Policy Framework

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.