



Site: 223 New Lane Hill, Tilehurst, Reading, Berkshire RG30 4JU

Client: Mr Richard Davey

Bat Survey - Preliminary Roost Assessment

14th April 2016

Status	Issue	Name of Author/Reviewer	Date
Draft	0	Lauren Fear MSc BSc (Hons)	13/04/2016
Technical Review (Draft)	0	Julie Powell Technical Lead of Ecology	14/04/2016
Final	1	Lauren Fear MSc BSc (Hons)	14/04/2016

Limitations

Arbtech Consulting Limited has prepared this report for the sole use of the above named Client or his agents in accordance with our General Terms and Conditions, under which our services are performed. It is expressly stated that no other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by us. This report may not be relied upon by any other party without the prior and express written agreement of Arbtech Consulting Limited. The assessments made assume that the sites and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this report are based upon information provided by third parties. Information obtained from third parties has not been independently verified by Arbtech Consulting Limited.

Copyright

© This report is the copyright of Arbtech Consulting Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

Contents Page

Executive Summary.....	5
1.0 Introduction and Context.....	6
1.1 Background	6
1.2 Scope of the Report	6
1.3 Site Context.....	7
1.4 Project Description.....	7
2.0 Methodology.....	8
2.1 Desk Study.....	8
2.2 Site Survey.....	8
2.2.1 Breeding birds and other incidental observations.....	8
2.3 Suitability Assessment	8
2.3 Limitations.....	9
3.0 Results and Evaluation.....	10
3.1 Desk Study Results	10
3.1.1 Designated sites	10
3.1.2 Landscape.....	10
3.1.3 Historical records	12
3.2 Survey Results	13
3.2.1 Breeding birds and other incidental observations.....	14
3.3 Evaluation – Likelihood of bats being present.....	14
4.0 Conclusions and Recommendations	16
4.1 Conclusions and Impact Assessment	16
4.1.1 Breeding birds and other incidental observations.....	16
4.2 Recommendations	16

4.2.1 Survey and assessment	16
4.1.1 Breeding birds	17
5.0 Bibliography	18
Appendix 1: Survey Plan	20
Appendix 2: Proposed Site Plan	21
Appendix 3: Photographs.....	22
Appendix 4: Legislation and Planning Policy related to bats	28
LEGAL PROTECTION	28
Effect on development works:	28
NATIONAL PLANNING POLICY (ENGLAND).....	29
National Planning Policy Framework	29
The Natural Environment and Rural Communities Act 2006 and The Biodiversity Duty	29
Appendix 5: Desk Study Information	30

Executive Summary

Arbtech Consulting Ltd. undertook a Preliminary Roost Assessment at 223 New Lane Hill, RG30 4JU on 12th April 2016. The aim of the assessment was to consider the value and suitability of the structures for roosting bats. The development proposals briefly comprise the '*demolition of conservatory and construction of a two storey rear extension*' under planning application 160274 with Reading Borough Council.

Building reference	Value of building for roosting bats	Recommendations for further survey and assessment
B1	Negligible Habitat Value	No further surveys.
B2	Negligible Habitat Value	No further surveys.

The survey concluded that both buildings (B1 and B2) comprise negligible habitat value for roosting bats. As such, no further surveys are required.

1.0 Introduction and Context

1.1 Background

Arbtech were commissioned by Mr Richard Davey to undertake a Preliminary Roost Assessment (PRA) at 223 New Lane Hill, Tilehurst, Reading, Berkshire RG30 4JU. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys – Good Practice Guidelines* (Collins, J., 2016).

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

1.2 Scope of the Report

This report provides a description of all structural 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 presence of roosting bats, and to gain an understanding of how they could use the building or structure. To achieve this, the following steps have been taken:

- A desk study has been carried out, including a request for information from Berkshire Bat Group
- A field survey has been undertaken, including an external and internal inspection of the building
- 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, photographs taken during the site survey are included in Appendix 3, and a summary of relevant legislation can be found in Appendix 4. A map showing priority habitats and designated sites is shown in Appendix 5. Full desk study records can be provided on request.

1.3 Site Context

The site is located at National Grid Reference SU 6746 7281, and comprises an area of approximately 0.1ha. There are two buildings within the site boundaries. The site is situated in Tilehurst, west of Reading.

The site is located in a residential area with small fragments of woodland and parkland in the landscape. To the south are extensive areas of floodplain and grazing marsh around Holy Brook and its tributaries. There are also extensive areas of woodland and grassland to the north-west of the site.

1.4 Project Description

This report is prepared in support of a planning application for 160274 with Reading Borough Council.

The '*demolition of conservatory and construction of a two storey rear extension*' is proposed. The plan showing the proposed works, is included in Appendix 2. All works areas, storage and haul routes will be included within the site boundaries; access will be provided by existing roads and as such, no additional working footprints are anticipated.

2.0 Methodology

2.1 Desk Study

Existing bat records relating to the site and a surrounding 2 km radius (the study area) were requested from the Berkshire Bat Group. 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
- Designated sites, habitat and species data held on Magic.gov.uk.
- Designated sites information found on Natureonthemap.naturalengland.org.uk
- Information on the surrounding area using OS Opendata 2010

2.2 Site Survey

The survey was undertaken by Lauren Fear BSc (Hons), who holds an appropriate licence from Natural England (number 2015-18912-CLS-CLS on 12th April 2016).

All buildings that will be impacted by the project proposals (the survey area) were assessed for their potential to support roosting bats. The surveyor systematically searched for features suitable for roosting bats and signs of bat activity, by conducting a non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the buildings for potential access/egress points, and for signs of bat use. An internal inspection of the building was also made, including the 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.

2.2.1 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 breeding barn owls *Tyto alba*.

2.3 Suitability Assessment

The buildings were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, J., 2016); the features of the building that dictate the likelihood of roosting bats are

summarised in Table 1. 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 during the summer

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.

2.4 Limitations

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.

Where only four figure grid references are provided for bat records, it is not possible to determine their precise location as they could be present anywhere within the given 1km x 1km National Grid square.

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.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results are provided below; a map of priority habitats and designates sites in shown in Appendix 5.

3.1.1 Designated sites

There are three statutory designated sites within the study area. Table 2 provides details of the designated sites including their reasons for notification.

Table 2: Designated sites within 2 km of the site

Designated Site Name	Distance from Site (approx)	Reasons for Notification and integral value
Statutory Sites		
Blundells Copse – Local Nature Reserve (LNR)	620m	Habitats: Ancient woodland with a stream. There are large alder trees, cherry, willow and coppiced willow, alder and hazel with oak and ash standards. Species: Include bats, hedgehogs, muntjac deer, field mice and frogs.
Lousehill Copse - LNR	750m	Habitats: Semi-ancient woodland surrounded by housing. Mature oak and hazel woodland with some coppice. There are many bluebells and other spring flowers, streams, relics of old ponds and boggy areas. The site is on sand and gravel. There is an open meadow with gorse and broom in the northern section.
Round Copse – LNR	1.1km	Habitats: Deciduous woodland.

3.1.2 Landscape

The Magic database, within 2km of the site, shows small fragments of woodland and grassland to the north-east of the site. These woodland areas include ancient and semi-natural woodland, which provide good foraging and refuge resources for bats. These habitats are likely to be classified as priority habitats of principle importance, and of particular value to bats.

A review of aerial photographs (Figure 1) shows the site is located in close proximity to a golf course, which has a variety of habitats including woodland and grassland, providing bats with good opportunities to forage. The landscaped around the site is dominated by urban development, which provides limited foraging opportunities for bats. The woodland fragments north of the site can provide some good foraging opportunities, though there is a lack of suitable commuting corridors connecting the site to these habitats.



Figure 1: Aerial photo of site, showing landscape structure at scale 1:12000

3.1.3 Historical records

Berkshire Bat Group has provided bat records for within 2km of the site. These can be provided on request and are summarised in Table 3.

Table 3: Historical records of bats within 2 km of the site

Species	Details
6 records of common noctule <i>Nyctalus noctula</i>	Records range from 1985-2014 and include flight and roost records.
1 record of Leisler's noctule <i>Nyctalus leisleri</i>	Record from 2013 and is a flight record.
1 record of serotine <i>Eptesicus serotinus</i>	Record from 2014 and includes a flight record.
15 records for common pipistrelle <i>Pipistrellus pipistrellus</i>	Records range from 1985-2015 and include roost and flight records.
11 records of soprano pipistrelle <i>Pipistrellus pygmaeus</i>	Records range from 2007-2013 and include flight and roost records.
3 records of brown long-eared <i>Plecotus auritus</i>	Records range from 1988-2013 and include flight and roost records.

A search for European Protected Species Licenses (EPSL) was conducted using the Magic Maps (magicmaps.gov.uk) database. The results are shown in Table 4.

Table 4: EPSL details within 2km of the site

EPSL details	Approximate distance and direction from site
Case reference of granted application: EPSM2010-2341 Species on the licence: common pipistrelle <i>Pipistrellus pipistrellus</i> ; brown long-eared <i>Plecotus auritus</i> Licence Start Date: 04/10/2010 Licence End Date: 31/08/2012 Does licence impact on a breeding site: YES	250m north-west
Case reference of granted application: EPSM2011-3384 Species on the licence: common pipistrelle <i>Pipistrellus pipistrellus</i> Licence Start Date: 07/09/2011 Licence End Date: 01/09/2013 Does licence allow damage of a resting place: YES	850 north-east

There are records of common and widespread species in the landscape. There is also a known breeding roost located approximately 250m away from the site.

3.2 Survey Results

The buildings within the survey area comprised a detached residential dwelling and associate garage building. Each building or structure is referenced, as illustrated in the map in Appendix 1. The environmental variables recorded at the time of the survey are shown in Table 5.

Table 5: Environmental variables during the survey

	12/04/2016
Temperature	20°C
Humidity	48%
Cloud Cover	10%
Wind (m/s)	0.4m/s
Rain	None

B1 – residential dwelling

Building description

- B1 is a two storey, brick built, residential dwelling (reference photos 1-5 in Appendix 3). B1 has a pitched roof covered in clay tiles in good condition. There are no obvious missing or displaced tiles on the roof, reducing the likelihood of bats being able to roost under any lifted tiles. There are two gable ends, on the eastern and western elevations. The eastern gable end has timber barge boards in good condition. The good condition of the timber barge boards reduces the likelihood of bats being able to access the loft through any rotting or derelict timber boards. The western gable end has a brick cornice, reducing the likelihood of bats being able to access the loft space on this gable end. There is a hipped end on the southern elevation. There are two dormer windows, one of the eastern and western elevations (photo 3). Both dormer windows have pitched roofs covered in clay tiles and clay hanging tiles on the sides of the dormers. All the tiles are in good condition and are tight fitting, reducing the likelihood of bats being able to roost under any lifted tiles. The timber rafters from the loft space protrude out across all elevations. There are timber soffit boards between the protruding boards, which create an intact and enclosed loft space, with no gaps or crevices to allow bats access into the loft (photo 5).
- The loft space was inspected (photos 6-8). The loft is in a 'T' shape, with the longest point being 17m long and the widest being 12m long, with an approximate height at the central ridge of 1.5m. The temperature was recorded at 19.2°C with an internal relative humidity of 59%. The loft has timber rafters in good condition. Timber rafters create a good surface for bats to grip while roosting. There is intact bitumen membrane across the walls, with no gaps or tears,

reducing the likelihood of bats being to access the loft from underneath the tiles. The ridgeline and the ends of the T shape are heavily cobwebbed, indicating a lack of recent bat activity. The loft is full of storage, reducing the available flying space for bats. Storage items also create a good surface to search for bat evidence. The floor is covered in insulation and cardboard boards. There were no obvious gaps from under the soffit boards to allow access points for bats into the loft.

Evidence of bats

- No evidence of bats using this building was found.

B2 – garage building

Building description

- B2 is a single storey garage building (photos 9-11). The eastern elevation has a flat roof covered in bitumen material, which has no habitat value for bats. The western elevation has a small pitched roof covered in clay tiles. These tiles are in good condition, reducing the likelihood of bats being able to roost under any lifted tiles. There are timber garage doors in good condition. There are timber soffit boards which are intact, across all elevations. This reduces the likelihood of bats being able to roost behind any decaying timber boards.

Evidence of bats

- No evidence of bats using this building was found.

3.2.1 Breeding birds and other incidental observations

No suitable habitat to provide value for breeding birds was identified on these buildings. No evidence of the use of these buildings by breeding birds was found.

3.3 Evaluation – Likelihood of bats being present

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

Table 6: Evaluation of buildings/structures on site

Reference	Value for / Likelihood of bats using the building for roosting	Brief summary of justification
B1	Negligible Habitat Value	No evidence of the use of this building by bats was found. There are no suitable features to support roosting bats in the building. The site is located in an urban developed area with limited foraging opportunities in the adjacent landscape, other than the nearby golf course.
B2	Negligible Habitat Value	No evidence of the use of this building by bats was found. There are no suitable features to support roosting bats in the building. The site is located in an urban developed area with limited foraging opportunities in the adjacent landscape, other than the nearby golf course.

4.0 Conclusions and Recommendations

4.1 Conclusions and Impact Assessment

The PRA concludes that both buildings (B1 and B2) comprise negligible habitat value for roosting bats. Bats are very unlikely to be roosting within these buildings and as such, there are not anticipated to be any impacts on bats as a result of the proposed works. 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.

4.1.1 Breeding birds and other incidental observations

No evidence of breeding birds was found on either of the buildings. 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.

4.2 Recommendations

4.2.1 Survey and assessment

Best practice survey guidelines (Collins, J., 2016) recommends additional surveys for all buildings assessed as having low to high suitability for roosting bats. Buildings assessed as comprising negligible suitability for roosting bats do not normally require further surveys. Appropriate justification for this assessment is provided in Section 3.0 and Table 6 of this report.

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.

Recommendations for further survey or assessment associated with each building are provided in Table 7.

Table 7: Survey recommendations

Building Ref	Value for / Likelihood of supporting roosting bats	Recommendations
B1	Negligible Habitat Value	No further surveys required.
B2	Negligible Habitat Value	No further surveys required.

4.2.2 Recommendations for enhancement

The Local Planning Authority has a duty to ask for enhancement under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99, therefore bat boxes should be installed in the grounds of the site to provide an enhancement.

These should be of the Schweglar type e.g. 1FF and a minimum of one box can be installed on retained trees or the new building within the grounds.

The box should be no less than three meters off ground level and face south/southwesterly. No artificial light should shine on the boxes and clear flight paths to and from the boxes should be considered.

4.2.3 Breeding birds

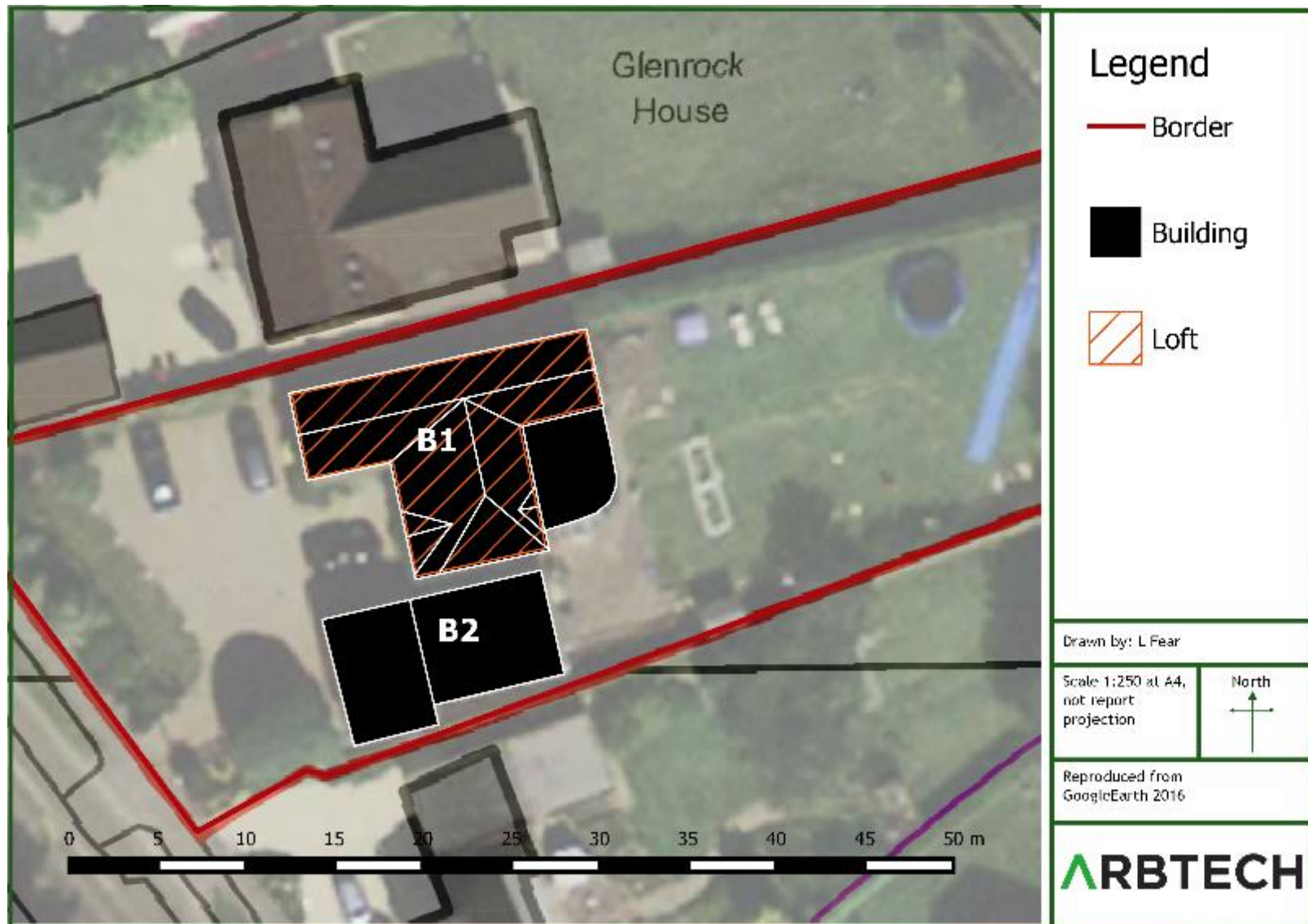
No mitigation required.

5.0 Bibliography

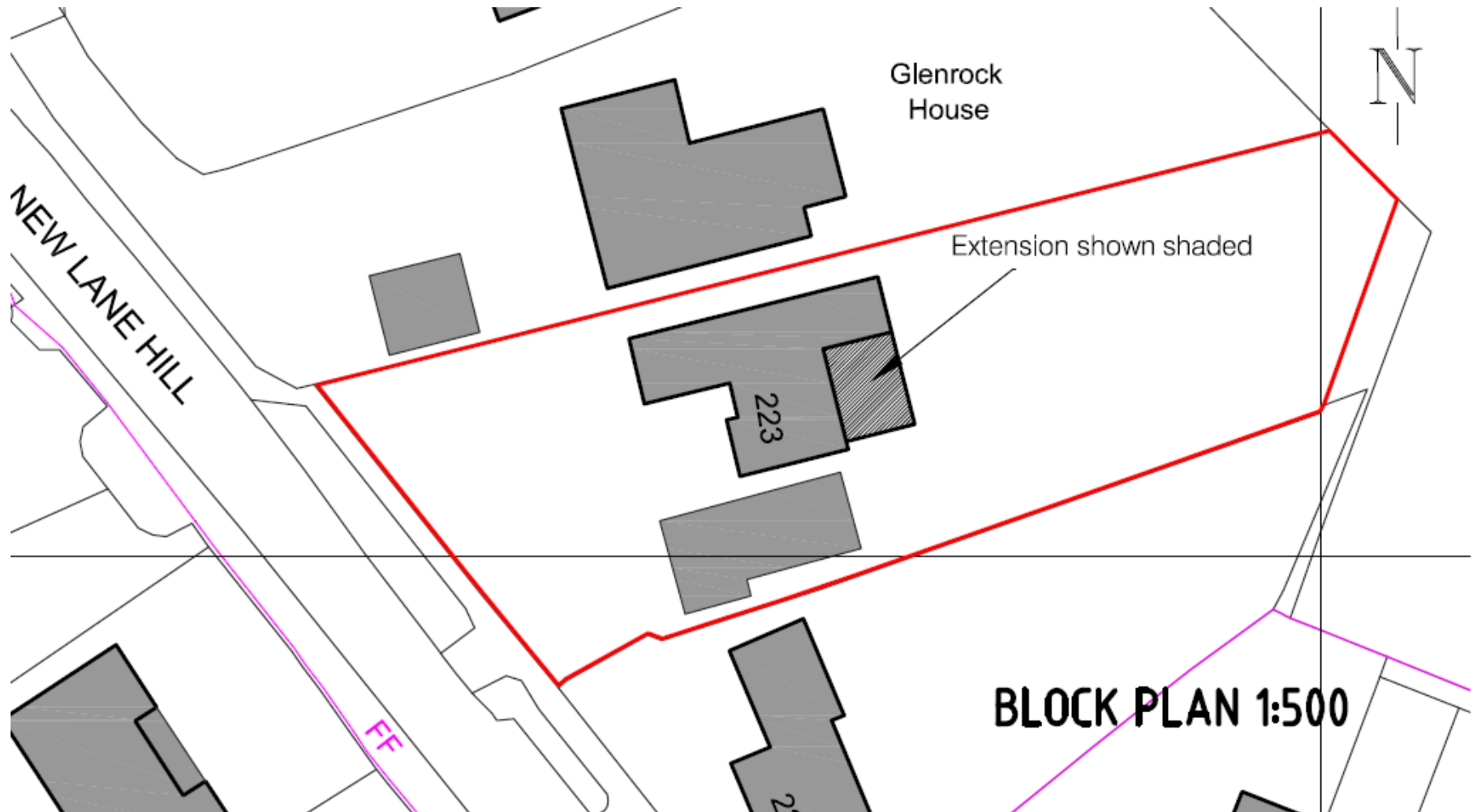
- Collins, J., 2016. Bat Surveys—Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.
- Garland & Markham (2008) Is important bat foraging and commuting
- Lake, S., Liley, D., Still, R. & Swash, A., (2015). Britain's Habitats: A guide to the Wildlife Habitats of Britain and Ireland. WildGuides Ltd, Hampshire UK.
- Berthinussen, A., Richardson, O.C. & Altringham, J.D., (2014). Bat Conservation: Global evidence for the effects of interventions. Exeter: Pelagic Publishing.
- Magic Maps (magicmaps.gov.uk) accessed on 12th April 2016.
- Google Maps 2016 accessed via QGIS on 12th April 2016.

Appendices

Appendix 1: Survey Plan



Appendix 2: Proposed Site Plan



Appendix 3: Photographs



Photo 1: The southern and western elevations of B1.



Photo 2: The eastern elevation of B1.



Photo 3: The western elevation dormer window of B1.



Photo 4: The northern elevation of B1.



Photo 5: Timber boards protruding from loft.



Photo 6: Loft space of B1.



Photo 7: Loft space of B1.

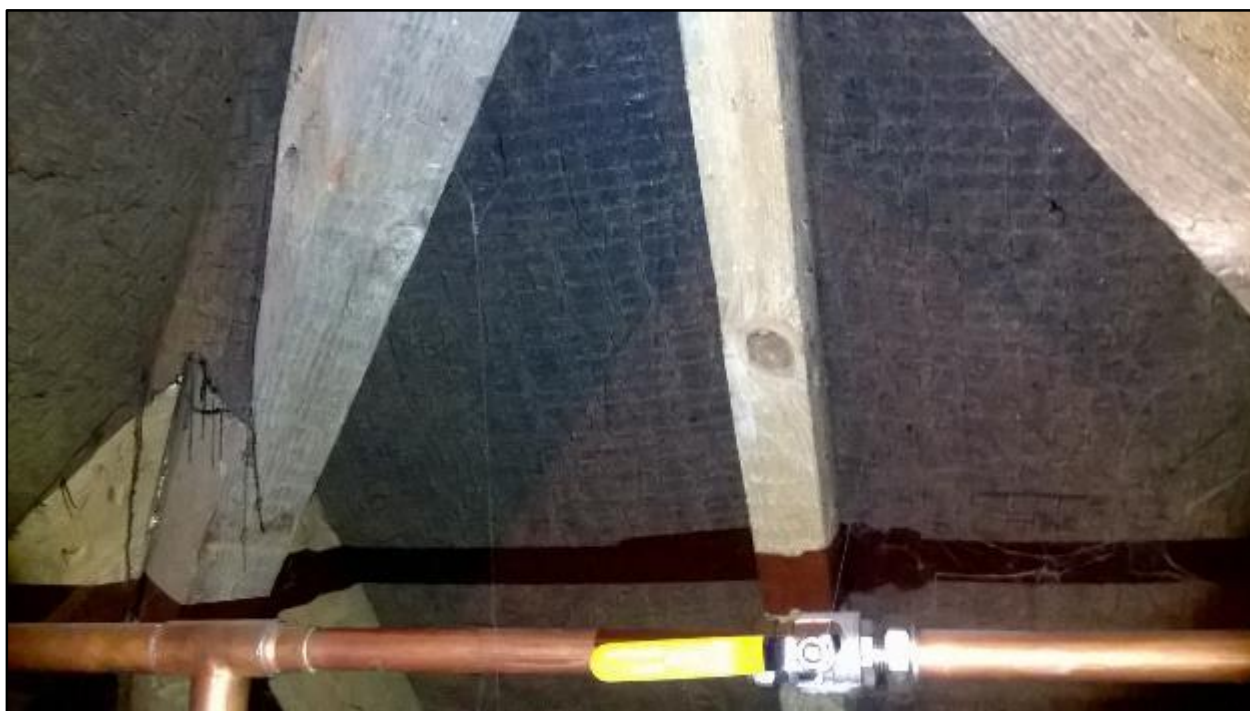


Photo 8: Bitumen membrane across walls of B1.



Photo 9: The western and northern elevations of B2.



Photo 10: The timber boards across the elevations of B2.



Photo 11: The pitched roof and flat roof of B2.

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 (ENGLAND)

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

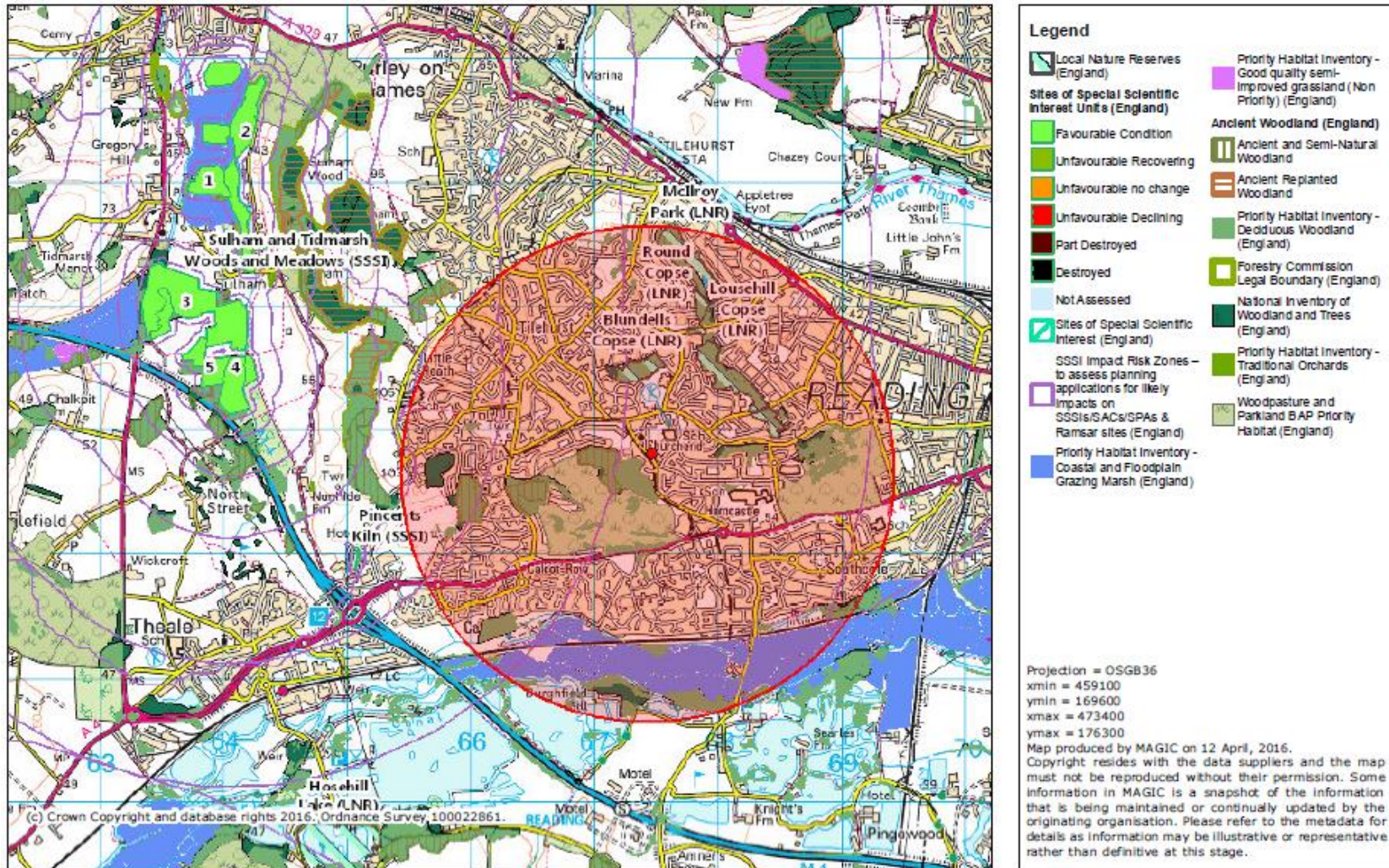
Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

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.

Appendix 5: Desk Study Information

Full historical records can be provided on request.

A map showing priority habitats and designated sites in a 2km radius (red circle) around the site (red dot):



BACK PAGE

Arbtech Consultant's Contact details:

Lauren Fear BSc (Hons)
07703 829590
lf@arbtech.co.uk

Arbtech Consulting Ltd
<https://arbtech.co.uk>