

Bat Survey - Preliminary Roost Assessment

29 Elm Grove, Barnham, West Sussex PO22 0HL

Marilyn McManus

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Arbtech Consulting Ltd. undertook a Preliminary Roost Assessment (PRA) at 29 Elm Grove, Barnham, West Sussex PO22 0HL on 6th September 2018. The aim of the assessment was to consider the value and suitability of the structures for roosting bats.

The development proposals involve the demolition of the garage and rear extension and the addition of a side and rear single storey extension to the existing dwelling.

Recommendations – this is work that must be carried out prior to planning consent.

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations
B1 Bats	The building has high habitat value due to the highly suitable roosting features on the building and the single bat dropping found within the loft void. There is also an EPSL record from a neighbouring property.	Any roosts present in the south west extension or front porch will be destroyed when the roof is replaced/porch demolished. Any roosts elsewhere in the building could be disturbed during demolition and extension works. Bats may be injured or killed if present.	Roost presence/likely absence surveys are required. Three bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least two 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. Three surveyors are required to provide the best possible coverage of the building.

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.....	6
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.....	11
3.6 Site Feature descriptions and photos.....	12
4.0 Conclusions, Impacts and Recommendations	18
4.1 Informative guidelines.....	18
4.2 Evaluation.....	19
5.0 Bibliography	19
Appendix 1: Survey Plan	22
Appendix 2: Proposed Site Plan.....	23
Appendix 3: Desk Study Information	25
Appendix 4: Legislation and Planning Policy related to bats	25

1.0 Introduction and Context

1.1 Background

Arbtech Consulting Ltd. was commissioned by Marilyn McManus to undertake a Preliminary Roost Assessment (PRA) at 29 Elm Grove, Barnham, West Sussex PO22 0HL. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

No previous surveys have been carried out by Arbtech.

1.2 Site Context

The site is located at National Grid Reference SU 9552 0510 and measures approx. 0.11ha. There is one building on site. The site lies in a residential area in Barnham.

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 search from Sussex Biodiversity Records Centre (SxBRC).
- 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 the demolition of the garage and rear extension and the addition of a side and rear single storey extension.

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 6th September 2018.

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*.

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.

There were no specific limitations to the survey.

3.0 Results and Evaluation

3.1 Desk Study Results

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

3.2 Designated sites

The table below provides details of statutory and non-statutory designated sites. Their location and extent are described in Table 3 below:

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

Designated Site Name	Distance from Site (Approx.)	Reasons for Notification from Natural England (unless otherwise stated)
Statutory Sites		
None within 2km		
Non-statutory Sites		
None known		

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 ancient and deciduous woodland and Woodpasture and parkland. There is excellent connectivity from the site to surrounding habitats via hedgerows and gardens.

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

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

Habitat	Closest distance from site (approx.)
Deciduous Woodland	560m south east
Ancient woodland	560m south east
Traditional orchard	630m north west
Woodpasture and parkland	1.36km north east
Lowland meadows	1.5km north west



Figure 1: Aerial photo of site, showing landscape structure

Bat records have been obtained from SxBRC are analysed and 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>	15	9	3
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	5	3	2
Unidentified pipistrelle	<i>Pipistrellus sp.</i>	7	5	3
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	1	0	0
Brown long-eared bat	<i>Plecotus auritus</i>	7	6	4
Unidentified long-eared	<i>Plecotus sp.</i>	3	3	0
Unidentified myotis	<i>Myotis sp.</i>	2	2	0
Serotine	<i>Eptesicus serotinus</i>	3	3	0
Western barbastelle	<i>Barbastella barbastellus</i>	27	6	4
Noctule	<i>Nyctalus noctula</i>	2	0	0

The bat records show that at least seven species of bat are present in the local area, including the rare Barbastelle bat. There are maternity roosts of common and soprano pipistrelle, brown long-eared bat and barbastelle bat present.

A search of the Magic database for granted European Protected Species Mitigation Licences (EPSMLs) for bats within a 2km radius found one licenced site, details are found 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
2016-24108-EPS-MIT and 2016-24108-EPS-MIT-1	150m south west	C-PIP	01/07/2016	30/06/2021	Destruction of a resting place

The EPSML records show that one roost has been destroyed within 2km involving common pipistrelles. Displaced bats could find roosting habitat on site.

There is one survey building which is 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: 06/09/18	
Temperature	25°C
Humidity	63%
Cloud Cover	10%
Wind	2mph
Rain	None

3.6 Site Feature descriptions and photos

The building is a detached two storey property which is currently unoccupied. The roof is cross gabled and clad in concrete tiles. The windows are timber framed and tight fitting. There is a sloped roof garage on the north west elevation also with a concrete tiled roof and timber fascia boards and soffit boxes. All features on the garage are tight fitting with no potential bat roosting features. The photo to the right shows the north east and north west elevations of the building.



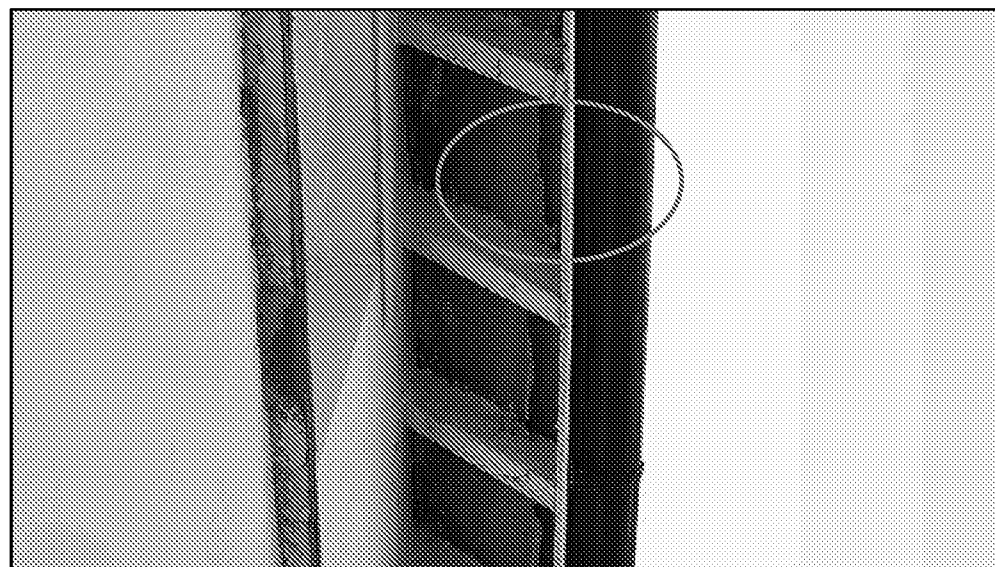
Marilyn McManus

On the sloped roof porch on the north east elevation there is a gap in the timber behind the skylight which could provide habitat for crevice dwelling bats.

29 Elm Grove, Barnham, West Sussex PO22 0HL



The building has overhanging eaves which have damaged exposed roofing felt visible which could provide suitable roosting crevices for bats and potential access into the loft void.



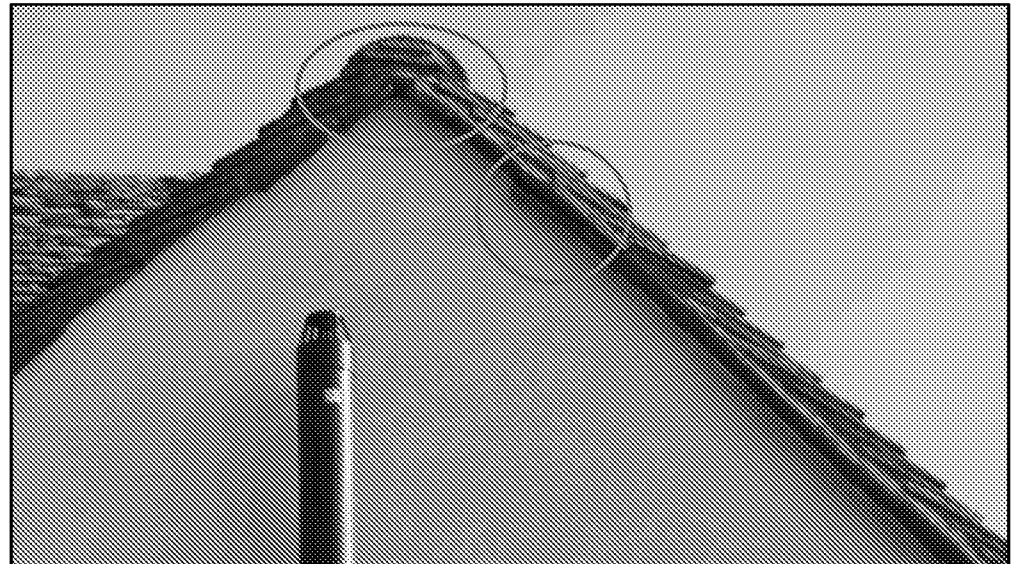
Marilyn McManus

At the rear of the building (south west elevation) there is a single brick chimney which is tight fitting to the roof. There is a large flat roofed dormer window clad in hanging tiles which could be used by crevice dwelling bat species (circled). There is a single storey gabled roof extension with cedar chip roof tiles and vertical hanging tiles.

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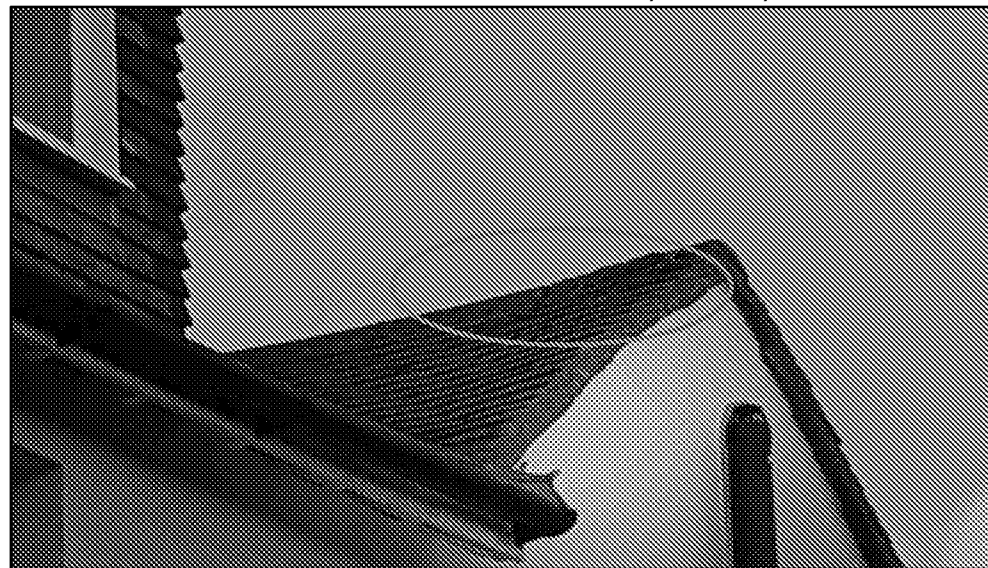
The rear gable end has gaps at the apex and along the roof edge that could provide roosting habitat for crevice dwelling bats and possible entry into the loft void.



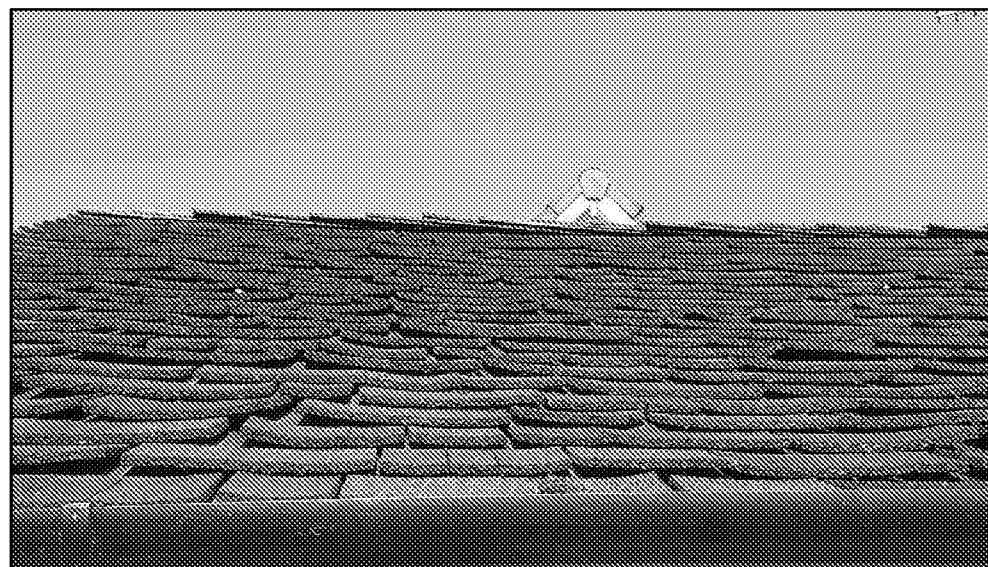
Marilyn McManus

On the north west roof elevation of the south west gable end there are gaps under the roof tiles and missing mortar under the ridge tile that could provide suitable roosting habitat for crevice dwelling bats.

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The cedar chip roof on the extension has warped and raised tiles suitable for crevice dwelling bats are present.



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There are also gaps under the timber barge boards on the gable end which could also be utilised by crevice dwelling bat species.

29 Elm Grove, Barnham, West Sussex PO22 0HL



The loft is mainly converted however there still remains a small loft void in the north east facing gable and crawl spaces around the converted sections. The roof is lined with bitumen felt and timber sarking which appears to be intact. There are modern timber rafters and ridge beam on which bats could perch. The ridge height is approx. 1.5m and the main loft area measures approx. 9m long by 3m wide.



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A single bat dropping was found on the floor of the loft. This could have fallen through from a crevice dwelling roost between the roof tiles and roof lining or could have been deposited by a bat during a brief exploratory fly-through.

Evidence of bats

A single bat dropping was found within the loft void. Roosts under roof tiles or other external features would not leave any visible evidence externally and therefore a lack of evidence of crevice dwelling species does not indicate the absence of a roost.

Nesting birds

No evidence. Overhanging eaves provide excellent nesting habitat for swifts and house martins.

29 Elm Grove, Barnham, West Sussex PO22 0HL



4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Bats are protected under the Wildlife and Countryside Act and Conservation Regulations; see Appendix 4 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.

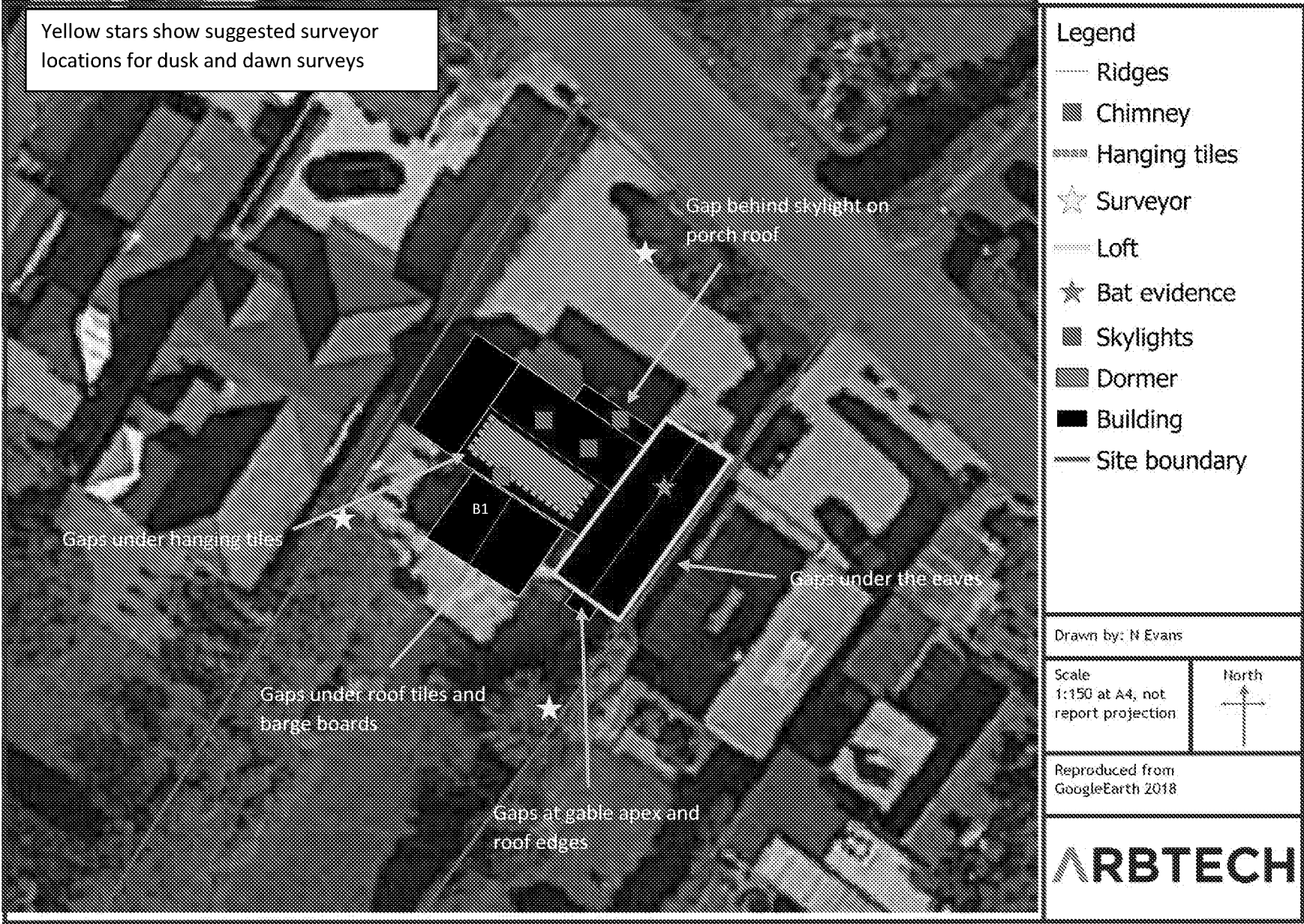
Table 8: Evaluation of the building on site

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99
B1 Bats	The building has high habitat value due to the highly suitable roosting features on the building and the single bat dropping found within the loft void. There is an EPSL record from a neighbouring property.	Any roosts present in the south west extension or front porch will be destroyed when the roof is replaced/porch demolished. Any roosts elsewhere in the building could be disturbed during demolition and extension works. Bats may be injured or killed if present.	Roost presence/likely absence surveys are required. Three bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least two 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. Three surveyors are required to provide the best possible coverage of the building.	To be confirmed following further surveys.
B1 Breeding Birds	No evidence of nesting birds was found.	No impact	No further work required	Install the following bird boxes on the building: Schwegler No 17 swift nest boxes Schwegler 1SP Sparrow Terraces

				Schwegler 9B House Martin Nests Nest boxes should be positioned at least 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight.
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- British Trust for Ornithology (2016) www.bto.org/about-birds/nbw/putting-up-a-nest-box
- Collins, J. (ed.) (2016). 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 (2018) accessed on 10/09/18
- Magic database (2018) <http://www.magic.gov.uk/MagicMap.aspx> accessed on 10/09/18
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

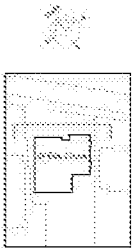
Appendix 1: Survey Plan



Appendix 2: Proposed Site Plan

This drawing has been prepared for the purpose of giving planning permission only and does not represent to be a building or construction drawing and should not be used for any building or construction purpose.

This drawing has been prepared based on survey drawings and information prepared by others.



REVISIONS

FRONT ELEVATION (NORTH)
AS PROPOSED

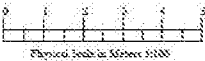
Job No. 590
Draw No. 590-121
Scale: 1:150 and 1:50 (A1) (8 JUL 2019)

Proposed Address: 29 Elm Grove
Barnham, West Sussex, PO22 0HL
ECR 25 Road West, 25, Barnham 12020000



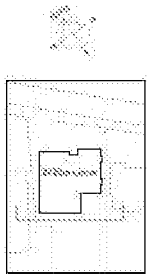
James Wells Architects

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Chichester, West Sussex, PO19 1PL
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E: james@jameswellsarchitects.co.uk



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This drawing has been prepared based on survey drawing and information provided by others.



REVISIONS:

REAR ELEVATION (SOUTH)
AS PROPOSED

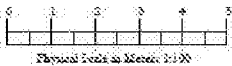
Job No. 590
Dwg No. 590-122
Scale: 1:100 (A3) / 1:50 (A1) (8 JUL 2018)

Project Address: 29 Elm Grove
Barnham, West Sussex PO22 0HL
FOR ALL WORK TO BE DONE BY 10/08/2018

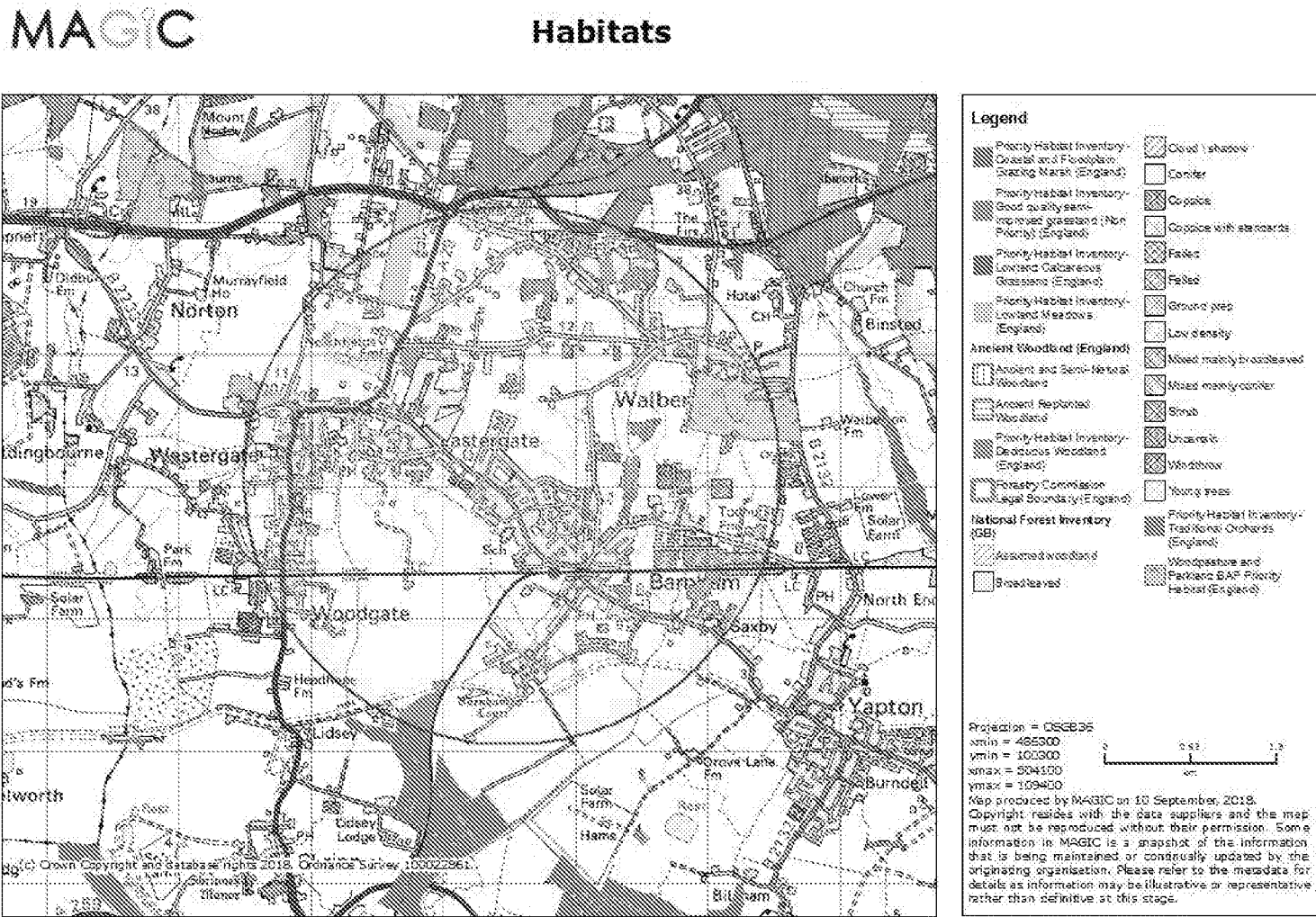


James Wells Architects

James Wells Architects
12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

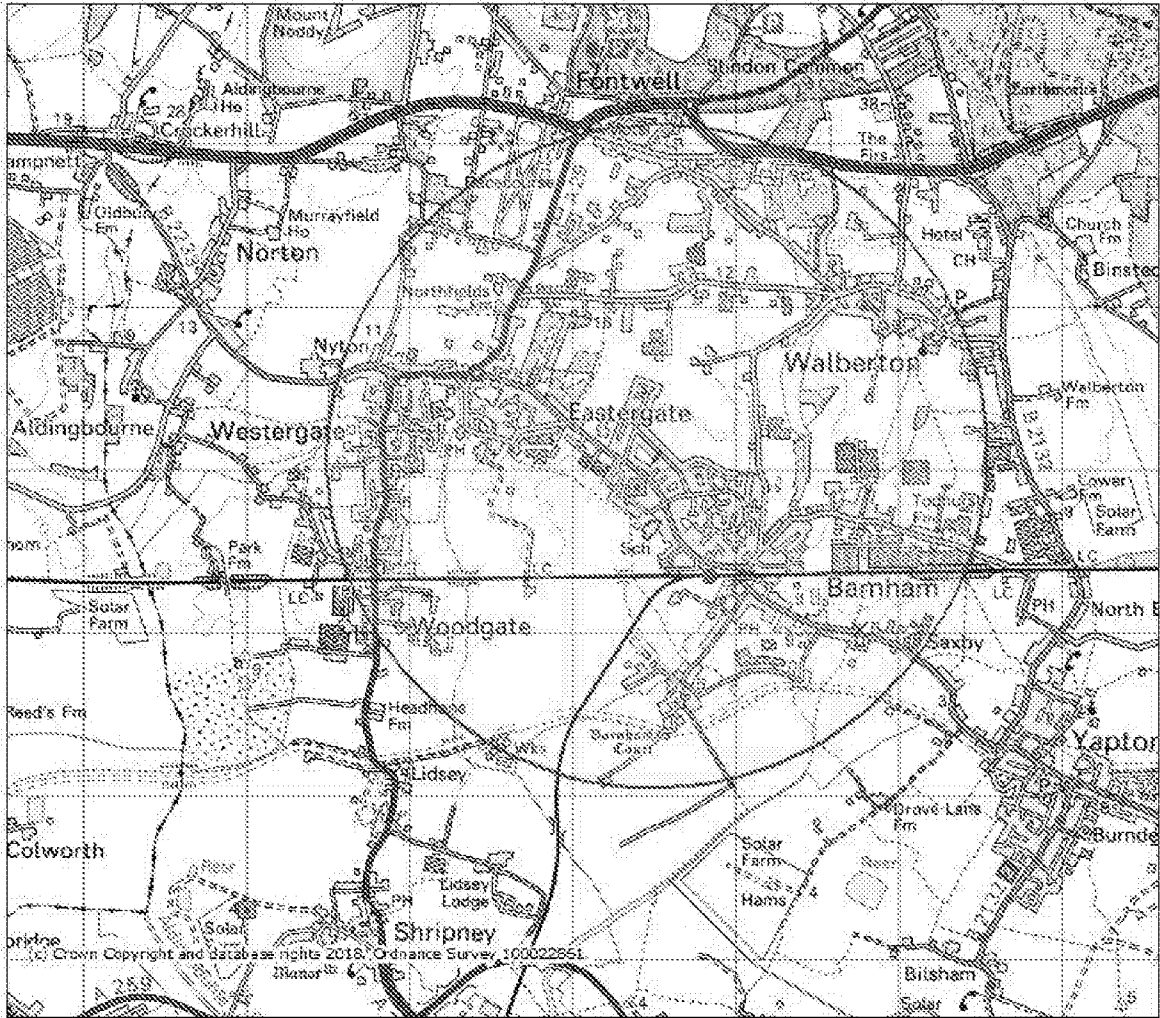


Appendix 3: Desk Study Information



MAGIC

EPSLs



Legend

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

Projection = OSGRB
xmin = 485000
ymin = 100400
xmax = 504100
ymax = 109100
Map produced by MAGIC on 10 September 2018.
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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.