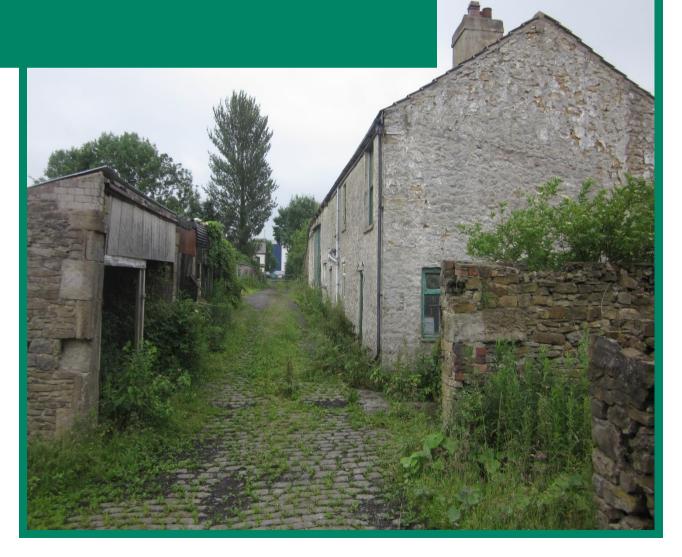
CAPITA

Bat Survey Report

Blackamoor - Blackburn with Darwen Borough Council October 2017





Quality Management

Job No	CS/093561-01				
Project	Blackamoor, Bat Survey Report				
Location	Blackamoor Road, Blackburn, La	ancashire, BB1 2LG			
Title	Blackamoor - Blackburn with Darwen Borough Council				
Document Ref	BLA-CAP-EBD-XX-RP-V-1001 Issue / Revision				
File reference	S:\Projects\SE Blackburn\Blackamoor\BIM - Ecology\03 Delivery\EBD Ecology\04 Reports\Bat Survey Report\Blackamoor Bat Survey Report_DW.docx				
Date	October 2017				
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Revision Status / History

Rev	Date	Issue / Purpose/ Comment	Prepared	Checked	Authorised

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1. Summary

Capita Ecologists were commissioned by Blackburn with Darwen Borough Council in September 2017 to undertake further bat surveys at Blackamoor in Darwen, Lancashire. A Preliminary Ecological Appraisal (PEA) was undertaken in June 2017 (Capita, July 2017) which stated that further bat surveys are required at the buildings on the site. Surveys undertaken to inform this report consist of internal inspection surveys of buildings not previously accessed and emergence/re-entry surveys for bats and the deployment of a static bat detector within the roof of building 5.

The address of the site is Blackamoor Road, Blackburn, Lancashire BB1 2LG. A central grid reference for the site is SD6983825636. The size of the site is approximately 19 ha and includes grassland fields, residential buildings, farm buildings, outbuildings and an area at the north where a number of buildings have now been demolished.

The design of the scheme is currently in the preliminary stages but is likely that the proposals will be for a housing development. The buildings subject to the survey need to be demolished in order to make way for future proposals at the site.

Emergence surveys were undertaken on the 31st August, 14th September and the 19th September, 2017.

No bat roosts have been confirmed in the buildings at the Blackamoor site, a moderate level of bat activity was recorded from foraging and commuting bats, the main area of activity was from foraging common pipistrelle bats up and down the lane between buildings 5 and 7. However, as the surveys were undertaken late in the survey season, precautionary methods of working are advised to ensure that bats are not harmed.

The recommendations and compensation methods are:

- If the buildings have not been demolished by May 2018, they should be subject to a
 further emergence survey at the beginning of the bat season to ensure that the results
 are representative of the entire bat active season. If this is not possible, precautionary
 methods of working are provided in the section below.
- As the buildings have potential to support hibernating bats works should avoid the
 hibernation season (November-March), although if works need to start during this time,
 it is possible that some of the outbuildings can be assessed for the presence of bats
 and works can be supervised as detailed in the precautionary methods of working
 below.
- The design of future proposals at the site should include a green corridor, to allow bats
 to continue to forage across the site; the corridor should include tree and vegetation
 planting and should remain dark from dusk until dawn during April-September. This
 corridor should aim to link to the reservoir.



- Careful consideration should be given to future lighting designs at the site, to ensure that they are wildlife friendly. It is recommended that the vegetation (in particular the advised green corridor) remains unlit so that bats can use the area to commute through the landscape and forage. If additional lighting is proposed, features such as hoods, cowls or louvers can be added to ensure that light is only directed to where it in intended. The Interim Guidance for Artificial Lighting and Wildlife (Bat Conservation Trust, 2014) and the Guidance Notes for the Reduction of Obtrusive Light (Institute of Lighting Professionals, 2011) should be referred to when designing the lighting schemes and an ecologists input should be sought.
- In order to compensate for the loss of suitable bat roosting habitat, five bat boxes should be erected around the site including:
 - 2F Schwegler Bat Boxes
 - 1FF Schwegler Bat Boxes
 - 1 FQ Schwegler Bat Roost (if attaching to external walls)
 - 1FW Bat Hibernation Box (to compensate for the loss of potential hibernation roosts).

Boxes should be placed on mature trees, at least 4 metres from the ground, facing south or south west. It should be ensured that bats have a clear flight line to the box (free from overhanging branches and structures etc.). The advice of an ecologist should be sought when placing the features to ensure they are appropriate and maximise the likelihood of use.

The recommended precautionary methods of working are:

- A toolbox talk should be given to those working on the scheme by an ecologist to
 ensure that they are aware of the potential presence of bats, where they are likely to be
 found, what to look for and what to do if a bat is found.
- Prior to the demolition works the ecologist should inspect the survey area to check for the presence or evidence of bats. An endoscope should be used to check small gaps in the brickwork.
- The demolition of roof at Building 4 and 5 should be supervised by an ecologist, slates should be removed carefully and checked for the presence of bats prior to being discarded.
- It is not advised to undertake works during the hibernation season for bats. However, if
 works are to start during this period it is possible that the smaller outbuildings can be
 checked for the presence of bats by an ecologist using an endoscope, and supervising
 the demolition works. Buildings that cannot be sufficiently checked for the presence of
 hibernating bats should not be demolished until March.
- If at any time a hibernating bat is found the bat should be left in situ and remain undisturbed. A licence will need to be applied for from Natural England in order to allow the works to proceed legally.



• If at any time a bat or evidence of bats is found, works should cease immediately and the ecologist should be contacted.



2. Introduction

2.1 Background

Capita Ecologists were commissioned by Blackburn with Darwen Borough Council in September 2017 to undertake further bat surveys at Blackamoor in Darwen, Lancashire. A Preliminary Ecological Appraisal (PEA) was undertaken in June 2017 (Capita, July 2017) which stated that further bat surveys are required at the buildings on the site. Surveys undertaken to inform this report consisted of internal inspection surveys of buildings not previously accessed and emergence/re-entry surveys for bats and the deployment of a static bat detector within the roof of building 5.

This report should be read in conjunction with the initial Preliminary Ecological Appraisal report.

2.2 Survey Site

The address of the site is Blackamoor Road, Blackburn, Lancashire BB1 2LG. A central grid reference for the site is SD6983825636. The size of the site is approximately 19 ha and includes grassland fields, residential buildings, farm buildings, outbuildings and an area at the north where a number of buildings have now been demolished.

The wider landscape consists of Fishmoor and Guide reservoir, bordering the site to the north and east, industrial units to the south and residential and commercial developments to the west. Blackburn town centre is approximately 2.5 north west of the site and the M65 runs approximately 550 metres to the south.

There are a number of buildings and structures on the site, as shown on the plans at Appendix A.

2.3 Project Description

The design of the scheme in currently in the preliminary stages but is likely that the proposals will be for a housing development. The works will involve the demolition of Buildings 2-7.

2.4 Report Objectives

The purpose of this report is:

- 1. To update the findings of the initial survey to include an internal inspection of the buildings not previously accessed.
- 2. To identify existing bat roosts on the site



- 3. To identify any evidence of usage of the site by bats
- 4. To provide an assessment of the likely importance of the site for bats and bat conservation.
- 5. To identify potential impacts of the proposed development on bats.
- 6. To provide clear advice on any necessary mitigation and enhancement proposals which will inform the design team and enable the development to proceed in full compliance with relevant wildlife and nature conservation legislation and planning policies.



3. Legislation and Planning Policy

Bats receive protection in the UK as a result of both legislation and planning policies. This section outlines the primary legislation protecting bats.

3.1.1 Legislation

Bats are protected under Annex II of the EC Council Directive 92/43/EEC 1992 "Conservation of Natural Habitats and Wild Fauna and Flora" (the Habitats Directive) as a European Protected Species (EPS). This legislation has been transposed into UK legislation through the Conservation of Habitats and Species Regulations 2010 (as amended).

Regulation 41 of the Conservation of Habitats and Species Regulations 2010 (as amended) makes it an offence to:

- Deliberately capture, injure or kill bats
- Deliberately disturb bats, or
- Damage or destroy a breeding site or resting place of a bat; this applies whether bats are present or not. Breeding sites and resting places are generally referred to as roosts.

With regards to the disturbance of bats, an offence includes (in particular) any disturbance that is likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young, hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong.

In addition to the above protection, all bat species in the UK are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). In addition to the above, it lists the following as additional offences:

- Disturbance of an animal whilst it is occupying a place which it uses for shelter or protection.
- Obstruct access to any structure or place which an animal uses for shelter or protection.

In order to permit a development where the above offences are likely to be committed a European Protected Species Licence needs be obtained from Natural England where appropriate mitigation is offered to offset the negative impacts to local bat populations (full information on licensing requirements can be found at Appendix B).

Section 40 of NERC Act 2006 places a statutory duty on public bodies, such as local authorities, that "every public body must, in exercising its functions have regard, so far as is



consistent with the proper exercise of those functions, to the purpose of conserving biodiversity".

3.1.1.1 Purpose of Legislation

The purpose of the legislation is to maintain and restore bat populations within their natural range. This implies that the habitats on which they rely and the ecology of their life cycles should not be compromised by human activities. Where activities have the potential to compromise bat populations, measures are required to be put in place to avoid impacts or compensate and mitigate for those impacts.

3.1.2 Planning Policy

In March 2012 The National Planning Policy Framework (NPPF) was published and replaces the previous detailed Planning Policy Statement 9 (PPS9) although the guidance document "Planning for Biodiversity and Geological Conservation: A Guide to Good Practice" ODPM 06/2005 has not been replaced by the Framework.

The NPPF promotes plan-making and decision-taking with a presumption in favour of **sustainable development.** Sustainable development is achieved where developments are designed to address the mutually dependent threads of sustainability: **economic**, **social and environmental needs**.

In terms of biodiversity, sustainable development should **not only achieve no net loss of biodiversity but incorporate proposals that achieve net gains for nature** alongside the other social and economic needs of society.

Protected sites and species are a material consideration in determining planning applications, therefore all information relating to protected sites and species must be submitted with planning submissions for determination of the whole application. The NPPF promotes the approval of plans where applications can demonstrate that they are in accordance with up-to-date Local Plans and have addressed material considerations.

3.1.3 Biodiversity Policy

Section 41 of the NERC Act requires the Secretary of State to draw up a list of Habitats and Species of Principal Importance which should be used to guide decision-makers (which include local authorities) in implementing their duty to have regard to conserving biodiversity as part of their decision making under Section 40. Several species of bat (listed below) are considered Species of Principal Importance, an important factor when considering proposed developments, in accordance with the Natural Environment and Rural Communities (NERC) Act 2006.

- Soprano pipistrelle Pipistrellus pygmaeus
- Brown long-eared Plecotus auritus



- Barbastelle Barbastella barbastellus
- Bechstein's Myotis bechsteinii
- Noctule Nyctalus noctula
- Greater horseshoe Rhinolophus ferrumequinum
- Lesser horseshoe Rhinolophus hipposideros

3.1.4 Blackburn with Darwen Local Development Framework

The following policies are taken from the Blackburn with Darwen Borough Council's Core Strategy, part of the Local Development Framework and are relevant to the proposals at the site:

Policy CS13: Environmental Strategy

'Development will only be permitted where it creates no unacceptable environmental impact including but not limited to.., development which results in the loss of or unacceptable damage to environmental resources including habitats and networks of habitats...'

Policy CS15: Protection and Enhancement of Ecological Assets

'The Borough's ecological assets will be protected, enhanced and managed with the aim of establishing and preserving functional networks which facilitate the movement of species and populations', and 'General habitats which may support species of principal importance either for shelter, breeding or feeding purposes (both natural and built features), will be protected from development, in accordance with the Environmental Strategy set out in Policy CS13.'

 Policy 9 – Development and the Environment, of the Blackburn with Darwen Local Plan Part 2 also states:

'Development likely to damage or destroy habitats or species of principal importance, Biological Heritage Sites, or habitats or species listed in the Lancashire Biodiversity Action Plan will not be permitted unless the harm caused is significantly and demonstrably outweighed by other planning considerations and an appropriate mitigation strategy can be secured'



4. Methods

4.1 Field Survey

4.1.1 Personnel

All fieldwork is carried out in accordance with current best practice guidelines under the supervision of senior staff and appropriately licensed ecologists, Principal Ecologist Donna Hall MCIEEM led the survey. Donna holds a Natural England Class 2 licence to survey for bats. A number of ecologists and field assistants aided the surveys:

- Suzannah Forshaw ACIEEM led the internal inspection surveys and assisted with the field surveys, Suzannah holds a Natural England Class 2 survey licence for bats.
- Neil Page MCIEEM
- Andrea Sarkissian ACIEEM
- Bev Plummer ACIEEM
- Sarah Lowe
- Daniel Sutcliffe

4.1.2 Building Inspection Survey

All buildings were inspected externally and internally, where possible, for field evidence of bats including droppings, urine staining, feeding remains, potential roosting/access points and individual bats (live or dead).

Observations were made from ground level using close focusing binoculars and a high powered torch to inspect external features of buildings where access was not possible.

Extendable ladders were used to inspect features with potential to support bat roosts where this did not pose a health and safety issue and to access the loft space at Building 5.

4.1.3 Emergence and Re-entry Surveys

Emergence surveys were undertaken on the 31st August, 14th September and the 19th September, 2017. The locations of surveyors during each of the surveys can be seen on the plan at Appendix A.

Surveyors were strategically positioned around the buildings to ensure all elevations were covered.

All observed bat passes were recorded on a plan of the site; noting the time, the location and, where possible, the direction of flight, species and behaviour of the bat (i.e. commuting, foraging, social calling). Particular importance was placed on noting the location of any points where bats were observed leaving or entering the building.



Surveyors were equipped with the following bat detectors:

- Anabat Walkabout
- Pettersson D230
- Batbox Griffin
- Batbox Duet
- Anabat SD1

The Pettersson and Anabat detectors were connected to digital recording devices to record bat calls for later analysis of sonograms, if necessary.

The emergence survey commenced 15 minutes prior to sunset and continued for 1.5 hours after sunset.

4.1.4 Static/Automated Survey

The survey was carried out during the $7^{th} - 12^{th}$ September 2017. An Anabat SD1 bat detector was placed into the loft space in order to record any bat activity in the area. The microphone was positioned to maximise the amount of bat activity able to be recorded within the roof space.

The Anabat was set to start recording approximately 30 minutes prior to sunset and to stop recording approximately 15 minutes after sunrise.

The results were then analysed using Analook W software.

4.2 Survey Constraints

Surveys were undertaken at the very end of the active bat season. The guidelines recommend that 1 survey (or two surveys for building with moderate suitability to support bat roosts) is undertaken between May-August. The surveys undertaken at Blackamoor were undertaken at the very end of this timeframe (31st August), which may not take into account bat activity throughout the entire active season for bats.

Due to the timing constraints from the client and the lack of suitable weather opportunities a dawn survey was not undertaken at the buildings. In accordance with the Good Practice Guidelines, buildings with a moderate roost suitability should be subject to one dusk emergence survey and a separate dawn re-entry survey.

During the survey on the 19/09/2017, the temperature dropped slightly below the recommended survey temperature for bat surveys (10°C). However, bats were active throughout the survey and this is not thought to be a significant constraint to the survey results.



Due to health and safety concerns, the loft area at the Farm House Building (Building number 5) was not fully accessed as the ceiling was visibly damp and the building was collapsing in places.

5. Results

5.1 Field Survey

5.1.1 **Building Inspection**

The table below has been taken from the initial ecology report (Capita, July 2017) and updated to include the results of the internal inspection surveys. Buildings 1 and 8 will no longer be affected by the proposals so have not been included.

Table 1: Building Inspection Results					
Building	Description	Photographs			
Number					
2	Building 2 is a red brick barn style building that is in a poor state of repair. The brickwork contains numerous gaps and holes, with failing render both externally and internally. There is a corrugated metal extension to the south and an extension to the east with a corrugated asbestos roof. The building is mainly surrounded by trees and dense Himalayan				
	balsam, which restricts flight access for bats. The roof is corrugated and is less suitable to support bats. The building appears to have been disused for a number of years and is likely to provide suitable hibernation habitat for bats. Low suitability to support bat roosts.				



Building	Description	Photographs
Number		
3	Building 3 is a corrugated metal shed with a flat roof. No gaps or cracks were observed in the building. The internal section of this building was not accessed. Negligible suitability to support bat roosts.	
4	Building 4 is a stone outbuilding with a slate roof. When conducting the internal inspection surveys this building is accessible from the barn to the south of the farmhouse (Building 5). The building is surrounded by scattered trees which restrict flight access for bats to parts of the building. House sparrows were nesting in parts of the building at the time of the initial survey. The building contains numerous gaps within the stone walls and under the roof slates, particularly at the gable ends. The building appears to have been disused for a number of years and is likely to provide suitable hibernation habitat for bats. Moderate suitability to support bat roosts.	



Building	Description	Photographs
Number		
5	The Farmhouse is one building with a separate barn and Building 4 adjoining to the south and west. The building is stone, with rendered elevations at the front and back (east and west). The gable end walls are stone and appear to contain multiple gaps. The slates on the roof appear to be in good condition, with limited amounts of gaps or broken slates noted. Internally the house is in a very poor state of repair and is damp and crumbing in places. The loft hatch is accessible from the bathroom on the first floor. Inside the loft there are access points present for bats, particularly at the northern gable end. The loft was not fully accessed due to health and safety concerns as parts of the building were crumbling. The building is linked to the hedgerow and has good connectivity to the wider environment. It has been unoccupied for a long time and is likely to provide a stable environment for hibernating bats. Moderate suitability to support bat roosts.	

Duilding	Description	Dhetegraphs
Building Number	Description	Photographs
6	Ruilding 6 comprises stone	
6	Building 6 comprises stone outbuildings that appear to be connected. They are in a very poor state of repair and have mostly become overgrown with scrub. The roof has partially collapsed and although contains numerous gaps and crevices, the features are likely to be too open and exposed to the weather for bats to roost within. The walls contain numerous gaps between the stones. The structure is very low to the ground, which may make bats vulnerable to predation and less likely to use this building. It may also provide suitable hibernation roosts for bats when there is less vegetation surrounding it during the winter months.	
	Low suitability to support bat	
	roosts.	
7	There are a number of derelict single storey outhouses that line the access track at the south of Area 1, opposite and surrounding Building 5. These structures are similar in construction so have been jointly labelled as Building 7. For the further inspection survey that have been divided as follows: 7a – The building is the southernmost building that is	Figure 1: 7a
	southernmost building that is separated from the main group of	3
	outbuildings. There are many gaps	
	beneath the slate tiles and the	
	pointing in the brickwork has failed in places, leaving suitable gaps for	
	bats to access. A bat dropping was	
	located close to the door of the	
	building, it is likely that this is from a passing foraging bat rather than a	
	paccing loraging bactation that a	

5/ Results



Building	Description	Photographs
Number		
	roosting bat. 7b – Buildings 7b-7g are all connected. 7b is the southernmost of these buildings. It contains a corrugated asbestos shed roof, the main potential roosting locations are the gaps within the brickwork. There is also failing render on the external elevations that may provide roosting access for low numbers or individual bats.	Figure 2: 7b
	7c – This building contains an asbestos roof and is heavily clad with ivy, restricting access for bats. 7d and e – These buildings are both old outhouse toilet, most of the roof is missing, with the remainder constructed of corrugated plastic. 7f – This building contains a slate	
	roof with no lining. There are wooden rafters that would provide roosting places for bats. There is also a large crack in the wall.	Figure 3: 7d
	7g- There is a large crack in the wall of this building that lead internally. The roof is constructed of corrugated asbestos.	
	7h – This building is separate from the row of buildings described above. It is situated to the north. The building contains a slate roof with numerous gaps and missing slates, the window is broken and the door contains a large metal sheet with grids, which may allow bats to access the internal areas. The building is divided into two areas and is likely to have once been stables or similar. There is	Figure 4: 7f



Building Number	Description	Photographs
	also a very dilapidated shed to the north of this building which contains an asbestos roof. Two old birds' nests were recorded inside the building. Overall, the buildings are in a very poor state of repair and are falling down in places. No evidence of bats has been found. The buildings are single storey with most of the features quite low to the ground, which may make bats vulnerable to predation and less likely to use the features, they are also very open to the elements in places which may make the features less appealing. The building have therefore been reclassified as having low potential to support roosting bats, limited to individual or low numbers. All buildings contain hibernation potential. Low suitability to support bat roosts.	Figure 5: 7g Figure 6: 7h



5.1.2 Emergence Survey Results

The details and weather conditions recorded during the surveys are described in the table below:

Table 2: Survey Details and Weather Conditions

Date	Start/End time	Sunset	Temp (°C)	Wind	Cloud Cover (%)	Rain? (Y/N)
31/08/2017	19:50	20.00	19	Light	5	N
	21:17	20:06	16	Light	0	N
14/09/2017	19:15	19:30	12	Moderate	20	N
	21:00	19.30	10	Moderate	20	N
19/09/2017	19:00	10.15	16	None	10	N
	20:45	19:15	9	None	0	N

With the exception of the survey on the 19/09/2017, the weather conditions during the survey were suitable. On the 19/09/2017, the temperature dropped slightly below the recommended survey temperature for bat surveys (10°C). However, bats were active throughout the survey and this is not thought to be a significant constraint to the survey results.

The main areas of bat activity are provided on the map at Appendix A. A description of bat activity from each survey is provided below.

5.1.2.1 Emergence Survey 31/08/2017

Common pipistrelles, noctules and *Myotis* bat species were recorded during this survey, although there were also a number of unidentified bat observations where bat activity was not picked up sufficiently on the detector in order to enable accurate identification.

The main area of activity was from foraging common pipistrelle bats between Building 5 and 7, flying continuously up and down the lane for the majority of the survey. Bats were also observed foraging to the south of Building 4 and over the fields to the west of Building 5.

No bats were seen to emerge from the buildings, a moderate level of bat activity was recorded during the survey.

5.1.2.2 Emergence Survey 14/09/2017

Common pipistrelles, noctules and *Myotis* bat species were recorded during this survey, although there were also a number of unidentified bat observations where bat activity was not picked up on the detector in order to enable accurate identification.

The main area of activity was from foraging common pipistrelle bats between Buildings 5 and 7, flying continuously up and down the lane for the majority of the survey. Bats were also observed commuting at the south of Building 4 and over the fields to the west of Buildings 4 and 5. Many social calls were recorded during the survey.



No bats were seen to emerge from the buildings, a moderate level of bat activity was recorded during the survey.

5.1.2.3 Emergence Survey 19/09/2017

Common pipistrelles, noctules and *Myotis* bat species were recorded during this survey, although there were also a number of unidentified bat observations where bat activity was not picked up on the detector in order to enable accurate identification.

The main area of activity was from foraging common pipistrelle bats between Building 5 and 7, flying continuously up and down the lane for the majority of the survey. There were also a number of bats commuting from west to east across the top of the buildings. Many social calls were recorded during the survey.

No bats were seen to emerge surveying the survey; a moderate level of bat activity was recorded during the survey.

5.1.3 Static Anabat Survey Results

The Anabat deployed in the loft space of Building 5, ran successfully for six consecutive nights. No bat activity was recorded on the detector.



6. Interpretation and Evaluation

6.1.1 Conclusion

No bat roosts have been confirmed in the buildings at the Blackamoor site, a moderate level of bat activity was recorded from foraging and commuting bats. The main area of activity was from foraging common pipistrelle bats up and down the lane between buildings 5 and 7. However, as the surveys were undertaken late in the survey season, precautionary methods of working are advised to ensure that bats are not harmed during the demolition of these structures.

6.1.2 Potential Impacts

Proposals for the site are currently unknown; however it is likely that the site will be cleared for housing developments. Clearance of the site has the potential to result in the loss of bat foraging and commuting habitat for common bat species, resulting in a low level of impact at a local level.

As the surveys were undertaken at the end of the active bat season there is potential that roosts may have been missed, if bat roosts are destroyed this will result in an offence under the Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended).

There is the potential for the project to result in net losses of biodiversity if habitats are not replaced.

6.1.3 Recommendations and Compensation

- If the buildings have not been demolished by May 2018, they should be subject to a
 further emergence survey at the beginning of the bat season to ensure that the results
 are representative of the entire bat active season. If this is not possible, precautionary
 methods of working are provided in the section below.
- As the buildings have potential to support hibernating bats works should avoid the
 hibernation season (November-March), although if works need to start during this time,
 it is possible that some of the outbuildings can be assess for the presence of bats and
 works can be supervised as detailed in the precautionary methods of working below.
- The design of future proposals at the site should include a green corridor, to allow bats
 to continue to forage across the site; the corridor should include tree and vegetation
 planting and should remain dark from dusk until dawn during April-September. This
 corridor should aim to link to the reservoir. Details of species that can be used to create
 a bat friendly environment can be found at Appendix C.
- Careful consideration should be given to future lighting designs at the site, to ensure
 that they are wildlife friendly. It is recommended that the vegetation (in particular the
 advised green corridor) remains unlit so that bats can use the area to commute through



the landscape and forage. If additional lighting is proposed, features such as hoods, cowls or louvers can be added to ensure that light is only directed to where it in intended. The Interim Guidance for Artificial Lighting and Wildlife (Bat Conservation Trust, 2014) and the Guidance Notes for the Reduction of Obtrusive Light (Institute of Lighting Professionals, 2011) should be referred to when designing the lighting schemes and an ecologists input should be sought.

- In order to compensate for the loss of suitable bat roosting habitat, five bat boxes should be erected around the site including:
 - o 2F Schwegler Bat Boxes
 - 1FF Schwegler Bat Boxes
 - 1 FQ Schwegler Bat Roost (if attaching to external walls)
 - 1FW Bat Hibernation Box (to compensate for the loss of potential hibernation roosts).

Boxes should be placed on mature trees, at least 4 metres from the ground, facing south or south west. It should be ensured that bats have a clear flight line to the box (free from overhanging branches and structures etc.). The advice of an ecologist should be sought when placing the features to ensure they are appropriate and maximise the likelihood of use.

6.1.4 Precautionary Methods of Working

To ensure bats are not harmed and an offence is not committed under the relevant legislation, the following methods of working should be adhered to throughout the works:

- A toolbox talk should be given to those working on the scheme by an ecologist to
 ensure that they are aware of the potential presence of bats, where they are likely to be
 found, what to look for and what to do if a bat is found.
- Prior to the demolition works the ecologist should inspect the survey area to check for the presence or evidence of bats. An endoscope should be used to check small gaps in the brickwork.
- The demolition of roof at Building 4 and 5 should be supervised by an ecologist, slates should be removed carefully and checked for the presence of bats prior to being discarded.
- It is not advised to undertake works during the hibernation season for bats, however, if
 works are to start during this period it is possible that the smaller outbuildings can be
 checked for the presence of bats by an ecologist using an endoscope, and supervising
 the demolition works. Buildings that cannot be sufficiently checked for the presence of
 hibernating bats should not be demolished until March.
- If at any time a hibernating bat is found the bat should be left in situ and remain undisturbed. A licence will need to be applied for from Natural England in order to allow the works to proceed legally.



• If at any time a bat or evidence of bats is found, works should cease immediately and the ecologist should be contacted.



7. References

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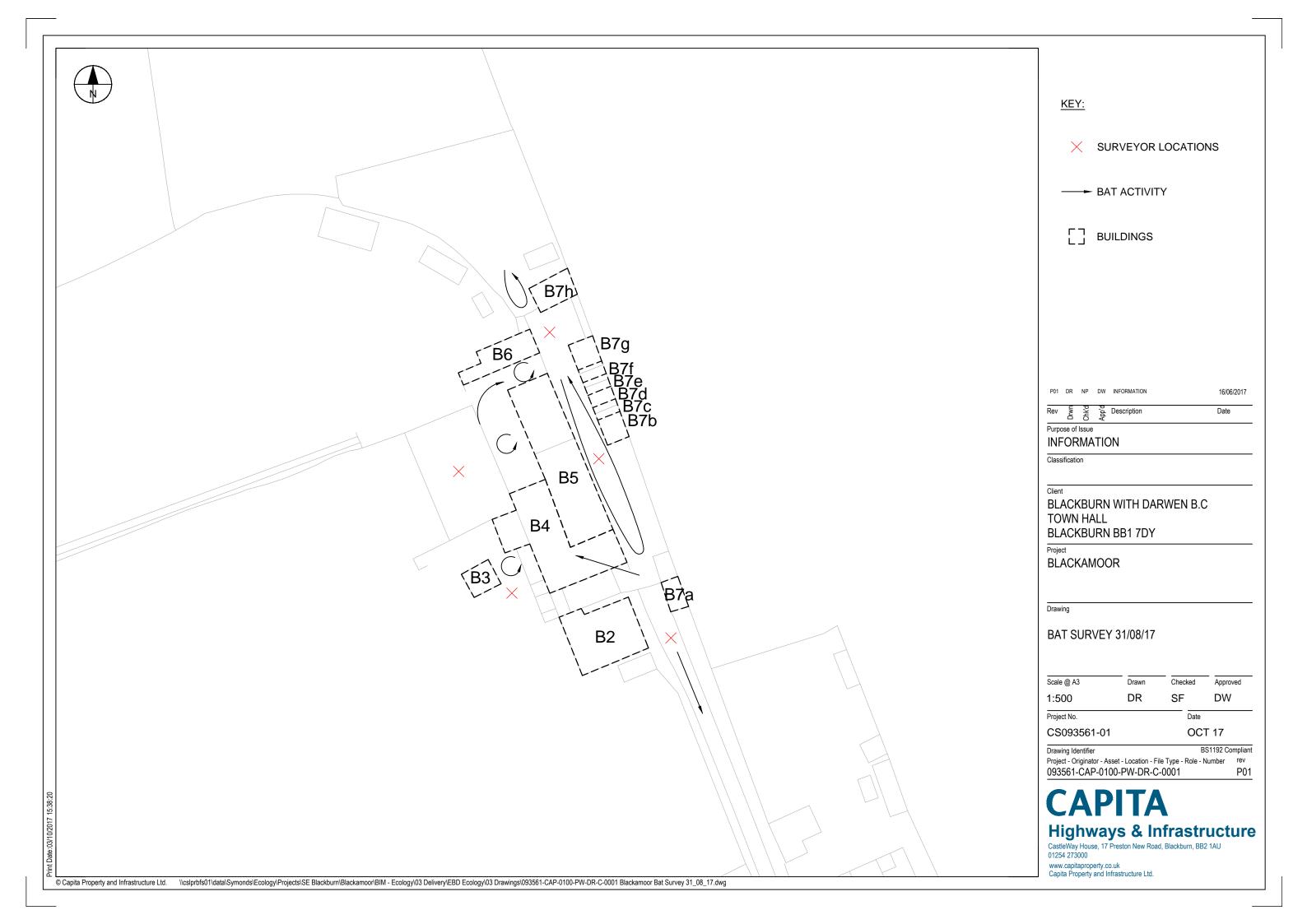
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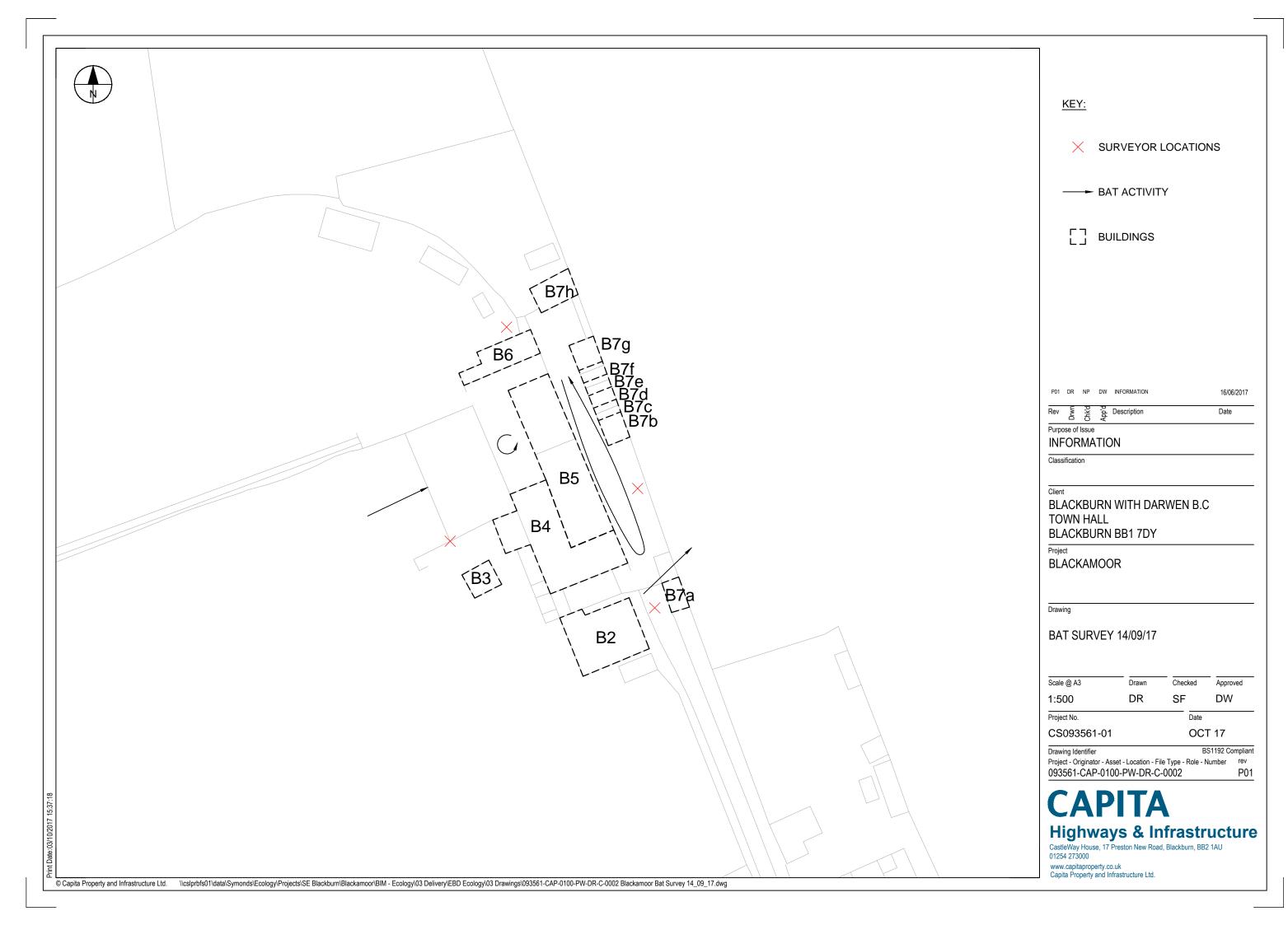
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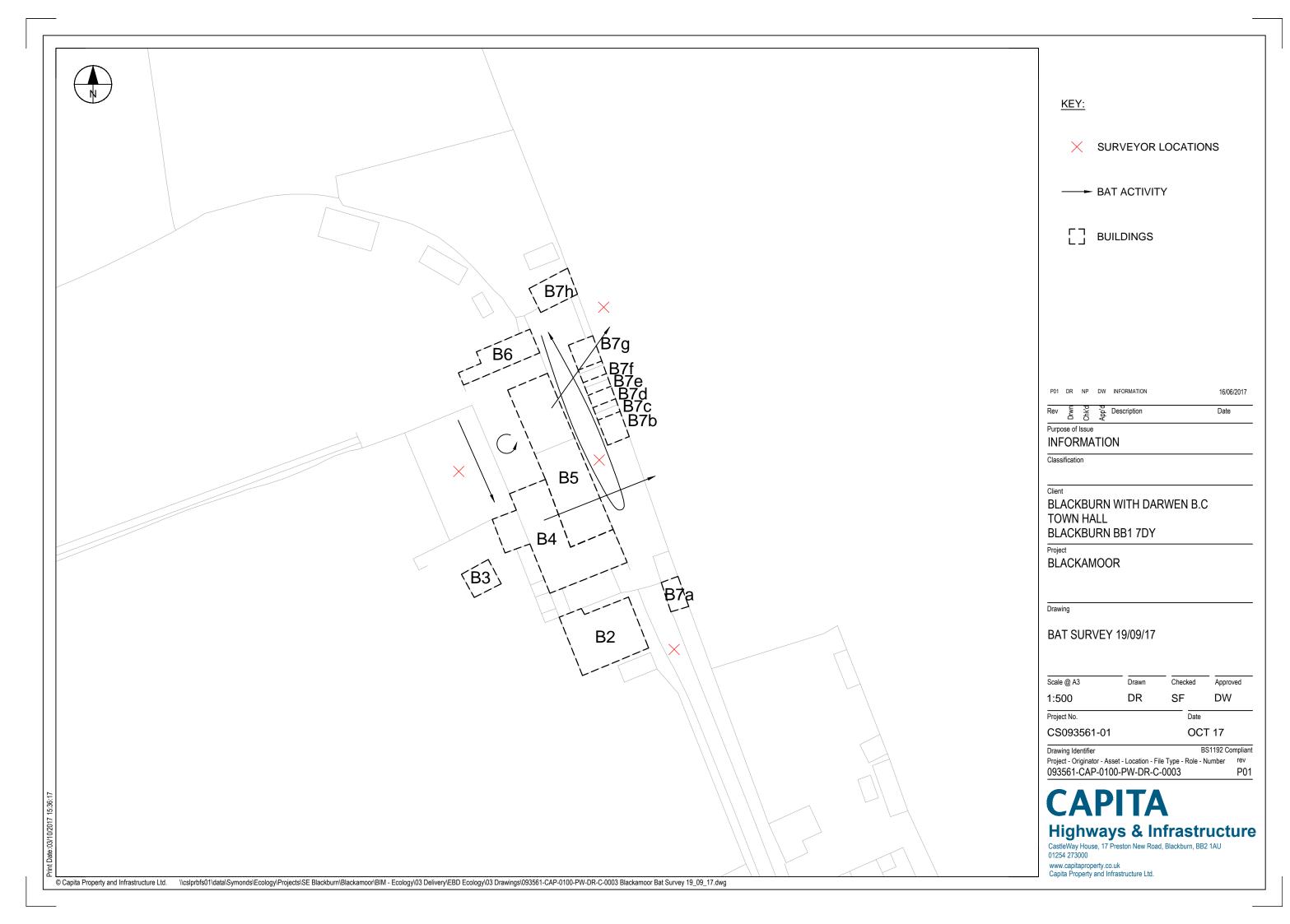
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Appendix A – Survey Results









Appendix B – Legislation and Licensing for Bats

B.1 Legislation and Policy

Bats receive protection in the UK as a result of both legislation and planning policies. This section outlines the primary legislation protecting bats, as well as related information about licences. All of the information below is relevant to this bat report and to the work proposed at the development site.

B.1.1 Legislation

Bats are protected under Schedule 2 of the EC Council Directive "Conservation of Natural Habitats and Wild Fauna and Flora" (the Habitats Directive) as a European Protected Species (EPS). This legislation has been transposed into UK legislation through the Conservation of Habitats and Species Regulations 2010.

Regulation 41 of the Conservation of Habitats and Species Regulations 2010 (as amended) makes it an offence to:

- Deliberately capture, injure or kill bats
- Deliberately disturb bats, or
- Damage or destroy a breeding site or resting place of a bat; this applies whether bats are
 present or not. NB breeding sites and resting places are generally referred to as roosts.

With regards to the disturbance of bats, an offence includes (in particular) any disturbance that is likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young, hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong.

In addition to the above protection, all bat species in the UK are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). In addition to the above, it lists the following as additional offences:



- Disturbance of an animal whilst it is occupying a place which it uses for shelter or protection.
 NB places of shelter or protection are generally referred to as roosts
- Obstruct access to any structure or place which an animal uses for shelter or protection.

Section 40 of NERC Act 2006 places a statutory duty on public bodies such as local authorities that "every public body must, in exercising its functions have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity". Section 41 of the NERC Act requires the Secretary of State to draw up a list of Habitats and Species of Principal Importance which should be used to guide decision-makers (which include local authorities) in implementing their duty under Section 40.

B.1.2 Purpose of Legislation

The purpose of the legislation is to maintain and restore bat populations within their natural range. This implies that the habitats on which they rely and the ecology of their life cycles should not be compromised by human activities. Where activities have the potential to compromise bat populations, measures are required to be put in place to avoid impacts or compensate and mitigate for those impacts.

B.2 Licences

Presence of bats does not necessarily prevent a development from proceeding as long as suitable, approved mitigation is incorporated within the scheme whereby exemptions can be granted from the protection afforded to bats under Regulation 41 by means of a "European Protected Species Licence" issued by the Statutory Nature Conservation Organisation (SNCO) which, in England, is Natural England. Before Natural England can issue a licence to permit otherwise prohibited acts, three aspects have to be considered (these are generally known as the 'Three Tests'. The three aspects fall under Regulation 53 of the Conservation of Habitats and Species Regulations 2010 and are as follows:

- Licences may be granted by the SNCO to 'preserve public health or public safety or other
 imperative reasons of overriding public interest including those of a social or economic
 nature and beneficial consequences of primary importance for the environment'.
- A licence may not be granted unless the SNCO is satisfied 'that there is no satisfactory alternative'.
- A licence cannot be issued unless the SNCO is satisfied that the action proposed 'will not be
 detrimental to the maintenance of the population of the species concerned at a favourable
 conservation status in their natural range'.



In order to meet the Tests, the SNCO first expects the planning position to be fully resolved; if planning permission is required for a development, Local Planning Authorities are required to consider, and make a judgement about, all three aspects before the SNCO will make their decision. Full planning permission, if applicable, will need to have been granted and any planning conditions relating to wildlife fully discharged before an EPS Licence will be granted.

The consideration of the three tests by the local planning authority as a Section 28G body (as identified in the Wildlife & Countryside Act 1981 (as amended)), must be formally recorded as evidence to demonstrate that the local authority has addressed their duties under the Habitats Directive. This duty extends to the consideration of the impacts of the development on local bat populations and that the proposed mitigation incorporated within a development satisfies the three tests above and conserves local bat populations at favourable conservation status within their natural range. Planning applications should not be determined unless this is the case and bat surveys and mitigation strategies cannot be requested as planning conditions as protected species are a material consideration in determining planning applications.

Natural England assesses Licence Applications in relation to the third element (regarding Favourable Conservation Status) and will expect to see information from the local authority about the other elements before they will determine any licence application. The whole licence application process can take over two months before a licence is issued. Natural England will normally take approximately 30 working days to determine an application.

Appendix C – Bat Conservation Trusts Bat Planting Guidelines

Bat Conservation Trust

Encouraging bats

A guide for bat-friendly gardening and living



Seeing bats in our gardens on a warm summer evening is a magical experience. These small and fascinating creatures often live close to us, using our gardens as a source of food, water and shelter.

Here we offer advice on creating a haven for bats in your garden, along with some helpful tips on how to identify these nocturnal visitors.

Gardening for bats

Gardens can be wonderful places for people and wildlife, particularly bats. A garden that is good for insects is good for bats, as all species of British bat eat only insects such as midges, moths, mosquitoes and beetles. Whether you have a tiny city garden or acres in the countryside, you can do your bit to help bats.

Bats need insects

Flying uses a lot of energy, so bats have huge appetites! For example, a tiny common pipistrelle can eat around 3,000 midges, mosquitoes and other small flies in a single night. Moths, beetles and craneflies (daddylong-legs) are popular with other species, but flies are the main food for most British bats.

Most plants depend on insects

We grow flowers in our gardens for our own enjoyment, but their colour and perfume are really the plants' way of advertising themselves to insects. Sweet nectar and protein-rich pollen are bait to encourage insects to visit. In return, the insects carry pollen on their bodies from one flower to another so the flowers are fertilised. The key to a successful wildlife garden is to include plenty of plants that will attract insects, and to ensure that your garden has a good supply of insects from spring through to autumn.

Choose the right plants

Grow a wide range of plants to attract insects, and by planting a mixture of flowering plants, vegetables, trees and shrubs, you can encourage a diversity of insects to drop in and refuel from spring to autumn. Native plants tend to support

far more species of insect than hybrids or exotics, so they should be used as much as possible.

Different plants attract different types of insects. Flowers with long narrow petal tubes, such as evening primrose and honeysuckle, are visited by moths; only their long tongues can reach deep down to the hidden nectar. Short-tongued insects include many families of flies and some moths; they can only reach nectar in flowers with short florets.

Try to include some of the following:

- O Flowers that vary not only in colour and fragrance, but also in shape.
- O Pale flowers that are more easily seen in poor light, so attracting insects at dusk.
- O Single flowers, which tend to produce more nectar than double varieties.
- Flowers with insect-friendly landing platforms and short florets, like those in the daisy or carrot families.

The plant list overleaf may give you some ideas, although the best method is often to simply watch and see which insects you find feeding on which plants.

Looking after your visitors

A problem often faced by bats in gardens is cats. If you own a cat, you can help to save lives this summer by bringing your cat in for the night half an hour before sunset. This will allow bats to emerge from their roosts undisturbed. This is especially important from mid-June to the end of August, which is when bats are rearing their young. The bats will also be able to return at dawn undisturbed by cats. If you find a bat that appears to have been injured by a cat, call the Bat Helpline (0345 1300 228) for details of your nearest bat carer.

Plant trees and shrubs

These are important in providing food for insect larvae and adult insects, shelter for flying insects and roosting opportunities for bats. In a small garden, choose trees that can be coppiced – cut down to the ground every few years – to allow new shoots to spring from the base. Young shoots and leaves will support leaf-eating insects, even if they do not produce flowers, and bulbs will flourish under the reduced canopy.

Create a wet area

No wildlife garden would be complete without a water feature. Not only will a small pond, marshy area or even a bog garden provide bats with somewhere to drink, but they will also attract insects, as many of the tiny flies favoured by bats start life in water as aquatic larvae. Marginal plants can be planted around the pond to create soft edges and encourage insects further. Goldfish should definitely be avoided as they eat the insect larvae.

Make a compost heap or log pile

Recycle kitchen and garden waste – such as fruit and vegetable trimmings, annual weeds and lawn clippings – to produce useful garden compost, as well as an ideal habitat for insects. A log pile in a damp, shady spot will also encourage insects, particularly beetles.

Avoid using pesticides

Chemical pesticides kill non-target beneficial invertebrates including natural predators and so may do more harm than good. They reduce bats' insect prey.

Encourage natural predators

Hoverflies, wasps, ladybirds, lacewings, ground beetles and centipedes are the gardener's friends, and natural pest controllers. Follow these suggestions to help maintain a natural balance:

- O Allow some weeds to grow to provide ground cover for natural predators.
- O Leave hollow-stemmed plants to overwinter as shelter for ladybirds.
- O Leave heaps of dead leaves and brushwood undisturbed for hedgehogs.
- O Provide regular food and water for garden birds, as they are also effective predators.

Which plants should I choose?

Bat-friendly gardeners should aim to plant a mixture of flowering plants, vegetables, trees and shrubs to encourage a diversity of insects, which in turn may attract different bat species. Flowers that bloom throughout the year, including both annuals and herbaceous perennials, are a good idea: night-flowering blossoms attract night-flying insects. Trees and shrubs provide food for insects and roosting opportunities for bats.

Approximate flowering periods are listed below, although they may vary according to area and weather conditions!

Flowers for borders

*Aubretia (spring to early summer)

*Candytuft (summer to autumn)

*Cherry pie (summer to autumn)

Corncockle

Cornflower

Corn marigold

Corn poppy

*Echinacea

English Bluebell (spring)

*Evening primrose (summer to autumn)

Field poppies (summer)

*Honesty (spring)

*Ice plant 'Pink lady' (early autumn)

Knapweed (summer to autumn)

Mallow (summer to autumn)

*Mexican aster (summer to autumn)

*Michaelmas daisy (summer to autumn)

*Night-scented stock (summer)

Ox-eye daisy (summer)

*Phacelia (summer to autumn)

*Poached egg plant (summer)

Primrose (spring)

Red campion (spring)

*Red valerian

(summer to autumn)

Scabious (summer)

St John's wort (spring)

*Sweet William (summer)

*Tobacco plant

*Verbena

(summer to autumn)

*Wallflowers

(spring to early summer)
Wood forget-me-not

(spring)

Yarrow (early summer)



Plants marked * are hybrids or exotics that may be useful in the garden



Herbs (both leaves & flowers are fragrant)

Angelica
Bergamot (summer to early autumn)
Borage (spring to early autumn)
Coriander (summer)

English marigolds

Fennel (summer to early autumn)
Feverfew (summer to autumn)

Hyssop (summer to early autumn)

Lavenders
Lemon balm
Marjoram (summer)
Rosemary (spring)

Sweet Cicely (spring to early summer)

Thyme (summer)

Things to remember

- O Pesticide-free gardens tend to be better for wildlife and bats.
- Wherever possible, try to choose native plants and trees.
- O Never dig up plants from the wild. Buy native plants from reputable suppliers who breed their own stock
- O Use peat-free compost or peat-substitutes such as coir. Peat extraction is unsustainable and seriously damages our unique bog habitats. Gardeners can help by reducing the demand for this product.
- O Creating a range of habitats such as a pond, vegetable garden and hedgerow makes your garden more attractive to insects and in turn bats.
- Add a seat, put your feet up and watch your garden come to life!
- O Hedge and tree lines are important to help bats navigate.
- O Use lighting sensitively in your garden and do not point it at a bat box or roost.

Trees, shrubs & climbers

Bramble (climber)
*Buddleia (shrub)
Common alder
(suitable for coppicing)
Dog rose (climber)
Elder (small)
English oak (large gardens only)
Gorse (shrub)
Guelder rose (shrub)

Hawthorn (suitable for coppicing)
Hazel (suitable for coppicing)
Honeysuckle (native honeysuckle)
Hornbeam
Ivy (climber)
*Jasmine (night-scented)
Pussy willow (suitable for coppicing)
Rowan
Silver hirch





Wild flowers for pond edges & marshy areas

Bog bean
Bugle
Creeping Jenny (spring to summer)
Flag iris
Hemp agrimony (summer)
Lady's smock (spring to summer)
Marsh mallow
Marsh marigold (spring)

Marsh woundwort
Meadowsweet
(summer to early autumn)
Purple loosestrife (summer)
Water avens
Water forget-me-not
(summer to autumn)
Water mint (summer to autumn)

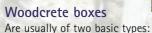
Bat boxes

Bat boxes are artificial roosts designed to encourage bats into areas where there are few roosting sites, such as holes in trees or buildings.

There are various designs of bat box, some that can be made at home and some that are available commercially. Different bat species also need different spaces.

Wooden boxes

Are usually cubic or wedgeshaped, with a grooved 'bat ladder' and a narrow entrance slit at the bottom. They can be nailed to trees or walls.



O cylindrical with an access hole in the front and designed to be hung on tree branches with a wire loop; or

O brick-shaped, usually with narrow roosting crevices inside and an entry slit at the bottom, designed to be fixed to flat surfaces such as walls of buildings.

Making your own box

Bats do not like draughts, and prefer well insulated boxes where temperature and humidity remain constant. They also need a rough textured wood to cling to.

The wood should not be treated because bats are very sensitive to chemicals. A 'bat ladder' or other landing area that leads to an entry slit wide enough to admit bats, but narrow enough to keep out predators is also essential (15 – 20 mm).

Once up, a bat box cannot be opened legally without a licence. For more information on bats and the law call the Bat Helpline (0345 1300 228).

Things to remember

- O Make sure joints are well sealed and avoid large, loose-fitting front panels
- All timber used in bat boxes should be roughsawn (unplaned) and untreated from sustainable sources
- O Keep entrance slits small (15 -20mm)
- O Removable lids should not be used and the box should not be opened

Designs and instructions for making your own bat box can be found at www.bats.org.uk.

Putting up your box

Boxes are more likely to be used if they are located where bats are known to feed. Ideally, several boxes should be put up facing in different directions to provide a range of conditions. Some bats use a tree line or hedgerow for navigation. Putting boxes near these features may help the bats find the box.

Boxes should be put as high as possible in sheltered sunny places. On buildings, boxes should be placed as close to the eaves as possible.

Where to put boxes

- O close to hedges and tree lines that bats fly along
- O at least 4 or 5m above the ground
- sheltered from strong winds and exposed to the sun for part of the day (usually S/SW)

Bats need time to find and explore new homes, and it may be several years before boxes have residents – be patient! Droppings on the landing area, urine stains around the lower parts of the box and chittering noises from inside on warm afternoons and evenings are signs of occupation.

Watching for bats

Here's a guide to the species of bat that you're most likely to see in and around your garden, particularly as it begins to get dark.



Pipistrelles emerge around sunset, and these are the bats that you are most likely to spot. They have an erratic flight – twisting and turning around buildings, streetlights, trees and hedges. There are three species of pipistrelle that look very similar: common pipistrelle, soprano pipistrelle and the rarer Nathusius' pipistrelle.



Another of our bats is the **brown long-eared bat**. Long-eared bats come out after dark, and usually fly very close to trees, making them difficult to spot. Their flight is slow and hovering, a little bit like that of a big butterfly.



The **noctule** is one of our biggest bats; noctules emerge early in the evening, just as it starts to get dark. They can sometimes be seen flying in a straight line, high overhead. About the size of a starling, their narrow wings are quite distinctive.



If you see a bat flying very low over water, skimming the surface like a mini hovercraft, it's a **Daubenton's bat**. Watch Daubenton's bats carefully and you may see them touch the water's surface to seize an insect with their big hairy feet.

The best way to experience the usually secret nocturnal world of bats is by using a bat detector. These amazing devices enable you to listen in to bat calls, usually too high-pitched for humans to hear – with a bit of practice it's very satisfying to be able to distinguish between bat species! Your local bat group will probably hold bat walks and talks throughout the summer months to provide an introduction to these fascinating creatures and how to spot them.

If you regularly see bats in your garden, it's possible that bats are roosting in your home, or perhaps in one of your neighbours' houses. Call the Bat Helpline (0345 1300 228) to ask for a copy of the 'Living with bats' booklet, which gives advice on what to do if you share your house with bats. The Bat Helpline will also be able to provide details of your nearest bat group, and also more information on taking part in our summer bat surveys – if you enjoy watching and listening for bats, why not sign up for our National Bat Monitoring Programme and help us to count the UK's bats?

The future for bats

The Bat Conservation Trust (BCT) is working towards a future where everyone, everywhere can enjoy seeing and hearing bats as a natural part of their environment.

Join the Bat Conservation Trust and donate today. Visit www.bats.org.uk for more details on how you can support bat conservation.

Useful contacts

Bat Conservation Trust (BCT)

Quadrant House, 250 Kennington Lane, London SE11 5RD. National Bat Helpline 0345 1300 228, enquiries@bats.org.uk

www.bats.org.uk

Contact BCT for more information on gardening for bats, bat box advice, taking part in the National Bat Monitoring Programme and for details of your local bat group or bat carers.

Statutory Nature Conservation Organisations (SNCOs)

Natural England 0300 060 6000 www.naturalengland.org.uk

Scottish Natural Heritage www.snh.org.uk

Natural Resources Wales 0300 065 3000 www.naturalresourceswales.gov.uk

Northern Ireland Environment Agency 028 9054 0540 www.ni-environment.gov.uk

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Updated August 2015

Printed on chlorine-free paper made of wood pulp from sustainable forests.

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