

THE CHURCH OF ST JOHN THE BAPTIST, COLD OVERTON, LEICESTERSHIRE



BAT SURVEY AND ASSESSMENT IN RESPECT OF PROPOSED REPAIR WORKS AND BAT IMPACTS **FINAL**

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1.0 INTRODUCTION

- 1.1 Mark Stewart, Architect, is working for the PCC of the church of St John the Baptist, Cold Overton, Leicestershire to arrange stone repair works to the tower and south aisle, lead repairs to the tower roof, new gutters and down pipes to the aisles and chancel, below ground drainage works plus some internal plaster repairs.
- 1.2 Philip Parker Associates have been appointed by the PCC to give advice on the potential effects of this work on bat populations that are known to inhabit the church.
- 1.3 The presence of a large bat roost is well documented within the church and the PCC have also identified that they would also like to investigate measures to help reduce the impacts of the bats on the church. Philip Parker Associates have also been instructed to help advise on this issue.

2.0 LEGISLATION

- 2.1 In Britain all bat species and their roosts are legally protected, by both domestic and international legislation, namely:
- The Wildlife and Countryside Act (1981) (as amended);
 - The Countryside and Rights of Way Act, 2000;
 - The Natural Environment and Rural Communities Act (NERC, 2006); and
 - The Conservation of Habitats and Species Regulations (2010) .
- 2.2 This makes it an offence amongst others to:
- Intentionally or deliberately kill, injure or capture (take) bats;
 - Deliberately disturb bats (whether in a roost or not);
 - Damage, destroy or obstruct access to bat roosts.
- 2.3 A bat roost is regarded as *“any structure or place which any wild animal....uses for shelter or protection”* As bats tend to reuse the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time.

3.0 DESCRIPTION OF THE CHURCH

3.1 The description below is based on a site visit on 22nd May 2017. Refer to Drawing D1 for details of the survey. Illustrative photographs are shown in the text below. The Church of St John the Baptist, Cold Overton, Leicestershire, is located at Ordnance Survey Grid Reference SK 81024 10145 as shown on the following map and aerial photograph.



Figure 1 – Location plan
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Ordnance Survey



Figure 2 - Aerial photograph
Imagery © 2017 GeoEye, Getmapping plc,
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3.2 Description of the church

The Church of St John the Baptist, Cold Overton is Grade 1 listed and dates back to the C13, C14 and C15 with some c1800 restoration. The church comprises a nave with clerestory, chancel, north and south aisle, south porch and a western square tower topped by a stone steeple. The church is largely constructed from coursed and squared ironstone and limestone rubble with ashlar dressings. At the time of the survey the walls all appeared in good condition although cavities were noted at the western end of the nave (both north-western and south-western corners).



Figure 3 – Southern elevation of church



Figure 4 – Chancel roof



Figure 5 – Open window with grille



Figure 6 – Boiler room

3.3 Externally, the roofs were all covered with lead. The supporting roof timbers on the nave were hidden by parapet walls. The rafters on the chancel were exposed. Gaps were present beside the rafters on the southern side, those on the northern side appeared tighter.

3.4 Internally, the roof covering of the north and south aisles were supported by C19 roof timbers with arched braces supported by corbels.

3.5 The nave roof was supported by C19 common rafters with C16 chamfered span beams. The chancel roof was supported by a low pitched C19 with cambered tie beams.



Figure 7 – Parapet walls on nave



Figure 8 – Exposed timbers on north side of chancel



Figure 9 – View from the nave looking east towards chancel



Figure 10 – View of the nave roof showing clerestory windows



Figure 11 – View of grille over belfry window



Figure 12 – View of the churchyard looking south-east

- 3.6 The internal walls to the church were dressed stone and had not been rendered or lime washed. Overall, this gave the church a very dark appearance internally.
- 3.7 The tower was accessed via a spiral staircase. 3 bells were present in the belfry supported on a wooden bell frame. This was only viewed from the floor of the belfry, no attempt was made to reach a higher level for health and safety reasons. Metal grilles were present over the windows.
- 3.8 The church was set in a small well maintained churchyard directly to the east of an area of mature woodland. Residential properties with associated gardens were present to the north, east and south. Pasture and scattered trees with hedgerows was present surrounding the immediate village setting, all offering potentially good bat foraging habitat.

4.0 EXISTING BAT RECORDS

- 4.1 In order to assess whether there are any bat records for the church and the surrounding area, the website of the National Biodiversity Network (NBN) has been consulted (accessed 04/08/17 within 5km of the grid reference in which the church is located SK 81024 10145).
- 4.2 The NBN database has records of the following bat species for the square:
- Common pipistrelle *Pipistrellus pipistrellus*
 - Soprano pipistrelle *Pipistrellus pygmaeus*
 - Brown long eared *Plecotus auritus*
 - Daubentons *Myotis daubentonii*
 - Whiskered *Myotis mystacinus*
 - Serotine *Eptesicus serotinus*
 - Natterer's bat *Myotis nattereri*
 - Leislars *Nyctalus leisleri*
 - Noctule *Nyctalus noctula*
- 4.3 It might be possible to get further records of part of a data search with the local records office or the local bat group.

5.0 BAT SURVEY METHODOLOGY

- 5.1 In summer, bats typically roost in trees and buildings (including churches). They feed along hedgerows, woodland edge, old pasture and over water. In winter, hibernation sites can include trees and buildings but more usually underground structures such as caves and ice houses. Due to the stable frost-free temperatures provided by churches in winter, they can also be used by hibernating bats.
- 5.2 Bat survey can involve two elements:
- Surveying sites for likely roost and hibernation sites;
 - Surveying likely foraging areas.
- 5.3 The Bat Mitigation Guidelines produced by English Nature (now Natural England) set out the timescales for survey work, as follows:

Table 1 Timescales for bat survey

SEASON	ROOST TYPE	INSPECTION	BAT DETECTOR AND EMERGENCE COUNTS
Spring (Mar – May)	Building	Suitable (Signs, perhaps bats)	Limited, weather dependent
	Trees	Suitable (Signs only)	Static detectors may be useful
	Underground	Suitable (signs only)	Static detectors may be useful
Summer (June – August)	Building	Suitable (signs and bats)	Suitable
	Trees	Difficult	Limited, use sunrise survey
	Underground	Suitable (signs only)	Rarely useful
Autumn (September – November)	Building	Suitable (signs and bats)	Limited, weather dependent
	Trees	Difficult	Rather limited, weather dependent; use sunrise survey
	Underground	Suitable (signs, perhaps bats)	Static detectors may be useful
Winter (December – February)	Building	Suitable (signs, perhaps bats)	Rarely useful
	Trees	Difficult (best for signs after leaves have gone)	Rarely useful
	Underground	Suitable (signs and bats)	Static detectors may be useful

5.4 Physical survey

The physical inspection of the church was made on the 22nd May 2017 by licensed bat worker, Philip Parker (bat licence 2015-14467-CLS-CLS). The survey commenced at 16:30 and was completed by 18:30.

5.5 The survey was conducted using a powerful Clulite lamp to allow for a thorough inspection of all parts of the church and a pair of 8 x 40 binoculars to allow the upper levels of the walls and underside of the roof structure to be adequately inspected.

5.6 The survey concentrated on checking horizontal surfaces on which bat droppings and feeding remains could rest (including window sills, beams, gutters, stored goods) as well as vertical surfaces such as walls. Potential access points to cavities and possible roost spaces were checked for urine staining and fur rubbings.

5.7 A brief update of the bat evidence distribution was undertaken on the 29th June 2017 prior to the second activity survey commencing.

5.8 Activity Survey

An initial emergence survey was undertaken following the physical survey on the 22nd May 2017 by licensed bat worker Phil Parker assisted by Alice Parker. Both surveyors were equipped with a Batbox Duet recorder. One surveyor was located to the south-west corner of the nave (looking at the corner considered most likely to be the access point). The other surveyor was positioned within the church monitoring the main identified roosting area and potential access point externally. The external surveyor was equipped with a Clulite CB-2 lamp

with a red filter and both were in communication via two-way radios. Additionally, infrared cameras were used to record the bats both internally (Canon XA-10 with additional infra-red lights) and externally (Canon XA-30) plus additional infrared floodlights. In addition, all calls internally and externally were recorded using a Anabat Express recorder which allows for quick and easy analysis using Analook and Kaleidoscope software.

5.9 An update emergence survey was undertaken on the 29th June 2017 again by Phil Parker assisted by licensed bat worker Karl Charters (2015-13353-CLS-CLS) and experienced assistant Kate Garner. The survey methodology was as per the survey on the 22nd May 2017 with the exception that the additional surveyor monitored the north-west corner of the nave. A re-entry survey was undertaken on the following morning (30th June 2017) again using the same survey methodology.

6.0 SURVEY RESULTS

6.1 Refer to Drawing D1 and also photographs in Appendix A.

6.2 Physical Survey – 22nd May 2017

Evidence of roosting and potential roosting features within the church are given in the following tables.

Table 2 Location of internal church bat roosting features and evidence

Internal	Description of potential bat roost features	Description of bat evidence
Nave	<ul style="list-style-type: none"> Gaps between the principle rafters and the wooden boarding Potential roosting areas on the wall tops access between the ashlar posts 	<ul style="list-style-type: none"> Moderate scatter of pipistrelle type droppings over pews and floor 2 very heavy concentrations of pipistrelle type droppings close to the pulpit (south-east corner of the nave and western end) suggest roosting above
Chancel	<ul style="list-style-type: none"> Gaps in the roof timbers Potential roosting areas on the wall tops; Gap between the boarding and the eastern chancel wall 	<ul style="list-style-type: none"> Occasional to light scatter of droppings on the floor and pews Light scatter of droppings on the eastern and northern wall Moderate scatter of droppings on the southern wall
North aisle	<ul style="list-style-type: none"> Gaps in the roof timbers Potential roosting areas on the wall tops Potential access in the north-west and south-west corners of the nave 	<ul style="list-style-type: none"> Heavy urine staining on organ Light to moderate scatter of pipistrelle type droppings Concentration of natterers type droppings near organ.
South Aisle	<ul style="list-style-type: none"> Open at wall top Roosting potential in some roof timbers 	<ul style="list-style-type: none"> Light to moderate scatter of pipistrelle type droppings

South Porch	<ul style="list-style-type: none"> • Open at wall top 	<ul style="list-style-type: none"> • Occasional pipistrelle type droppings
Tower	<ul style="list-style-type: none"> • Loose render at the base of the tower • Roosting potential in the roof timbers of the belfry and tower supports 	<ul style="list-style-type: none"> • No obvious bat evidence
Boiler Room	<ul style="list-style-type: none"> • No safe access possible 	

Table 3 Location of external church bat roosting features and evidence

External Area	Description of potential bat roost features	Description of bat evidence
Nave	<ul style="list-style-type: none"> • Limited potential due to lead roof and parapets but gaps noted in north-west and south-west corners 	<ul style="list-style-type: none"> • No obvious bat evidence
Chancel	<ul style="list-style-type: none"> • Gaps beside rafters on southern elevation • Few recessed mortar joints on northern elevation 	<ul style="list-style-type: none"> • No obvious bat evidence
North aisle	<ul style="list-style-type: none"> • Few gaps near rafters (mostly tight) 	<ul style="list-style-type: none"> • No obvious bat evidence
South Porch	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> • No obvious bat evidence
Boiler Room	<ul style="list-style-type: none"> • No safe access 	<ul style="list-style-type: none"> • No safe access



Figure 13 – Droppings on nave pews (at least 1 month since last cleaned)



Figure 14 – Heavy urine staining on organ in north aisle



Figure 15 – Gap between principle nave rafter (2nd from the west) and timber boarding in the nave. This proved to be the main bat roosting area in the church



Figure 16 – South-west access point (nave) showing droppings on the wall



Figure 17 – Urine splashes on tombs (old = pale, fresh = dark)

6.3 Other species

Despite none being seen during the surveys, there is potential for amphibians and mammals to be present in the churchyard.

6.4 Activity Survey

The details of the emergency survey are shown in the following tables.

6.5 Emergence Survey 22nd May 2017

101 soprano pipistrelles were noted to emerge from the south-western cavity where the nave meets the tower plus 2 soprano pipistrelles were seen to emerge from the north-western corner when the internal surveyor made occasional circuits of the church. More were considered likely to have emerged from this location. More detailed activity survey details (June 2017) are given below.

6.6 A key to the species is given as follows:

CP	Common pipistrelle	SP	Soprano pipistrelle
NAT	Natterer's		

6.7 **Table 4 Emergence survey 29th June 2017**

Sunset time: 21:18	
Dusk: 22:05	
Time Commence: 20:40	Weather: Light rain throughout the survey
Internal Temp: 15.7 °C	Internal Humidity: 73.1%
External Temp: 14.0 °C	External Humidity: 82.2%
Timeline	
Notes	3 surveyors were positioned around the church, 1 internally, 1 on the south-western corner cavity and one on the northern-western elevation.
20:40 – 21:00	First SP foraging within church at 20:40. First SP emerged from the south-western corner cavity (where the nave meets the tower) at 20:45. 3 SP emerged from door or window on the tower (north side) at 20:51. 3 SP emerged from cavity on north-western corner of the nave at 20:53 with a further 1 SP at 20:56.
21:00 – 21:15	CP heard within the chancel with less than 10 SP flying internally at 21:07.
21:15 – 21:30	Single CP regularly foraging to the south during period.
21:30 – 21:45	Between 20:41 and 21:45, 100 SP emerged from the south-western cavity where the nave meets the tower. Single CP regularly foraging to the south during period. A further 37 SP emerged from the north-western nave cavity by 21:34.
21:45 – 22:00	1 CP appeared to emerge from the western elevation of the tower from the second tier (location not determined). 1 SP emerged from the north-western nave cavity at 21:51 (42 total). Single CP regularly foraging to the south during period.
22:00 – 22:15	Single CP regularly foraging to the south during period. Single SP emerged from south-western nave cavity during period (102 total). Total SP emerged from both north/south-west nave features = 144.
22:15 – 22:30	Several PIP foraging within the church landing on beams and ceiling near to the access plus occasional NAT. Single NAT emerged from beneath the north aisle gutter (western corner) plus a possible second at 22:16. Single SP re-entered the south-western cavity on the nave at 22:25. Very occasional passes by single CP to the south.
22:30 – 22:45	Single NAT pass to the north at 22:34. Single CP entered south aisle eaves above the western wall of the porch at 22:45. Single CP foraging to the north at 22:48. Single NAT pass to the south at 22:45. Single NAT pass to the north at 22:47. Single SP returned to the north-western nave cavity at 22:50 plus a possible NAT emergence at 22:50 on the northern elevation eaves (to rear of organ). Occasional pass of single CP during period. 20 SP had re-entered the south-western nave cavity by the end of the survey plus 18 SP returned to the north-western nave cavity.
Time Complete: 22:45	
External Temp: 11.7°C	External Humidity: 87.9%

Table 5 Re-entry survey 30th June 2017

Sunset time: 21:18	
Dusk: 22:05	
Time Commence: 02:30	Weather: Heavy rain
Internal Temp: 16.0 °C	Internal Humidity: 77.0%
External Temp: 12.5 °C	External Humidity: 97.0%
Timeline	

Notes	
02:30 – 02:45	At commencement, 2 SP flying within church close to the roost. Occasional CP and SP passes to the south during period.
02:45 – 03:00	SP pass to the north at 02:43. At 2:45, 3 SP flying within church (western end). 1 SP entered north-western cavity and emerged again at 02:49. 3 SP flying at western end of the church at 03:00. Occasional SP passes to the south during period.
03:00 – 03:15	10 SP flying within church at 03:05. Occasional SP passes to the south during period.
03:15 – 03:30	2 SP present within church at 03:37 plus a large bat (silent) in nave before going to roost in the north-eastern corner. CP foraging to the north and trees to the west.
03:30 – 03:45	Occasional SP and CP passes to the south during period.
03:45 – 04:00	1-2 SP within church on and off at 03:51. Occasional SP passes to the south during period.
04:00 – 04:15	SP foraging to the north and south, entering and emerging from features.
04:15 – 04:30	SP foraging to the north and south, entering and emerging from features.
04:30 – 04:45	108 SP into south-western nave cavity between 04:00 and 04:32. 4 SP into south-western nave cavity between 04:36 and 04:51 (112 total). 26 SP returned to the north-western nave cavity between 03:39 and 04:53.
04:45 – 05:00	138 SP re-entered the church via the north/south-western nave cavities during the survey (almost the same as had emerged the evening before)
Time Complete: 05:00	
Internal Temp: 15.2 °C External Temp: 12.3 °C	
Internal Humidity: 76.0% External Humidity: 93.0%	

6.8 Anabat survey June 2017

The Anabat survey inside the main body of the church confirmed the presence of both soprano pipistrelle and natterers in the church plus the occasional common pipistrelle.

6.9 Constraints to the surveys

The surveys concentrated on the western end of the church as this was the area where most of the bat evidence was noted. Floodlights on the southern side of the church meant that any bat roosting and emergence on this elevation was considered most likely. During the re-entry survey, the northern elevation of the church (out of the floodlights) could be observed from the location of the observer and no bats were seen to enter. Very few bats have been recorded using the eastern end of the nave or the chancel internally when assessed on the internal cameras.



Figure 18 – Flood light



Figure 19 – The effect of floodlighting on church taken after bat emergence complete

6.10 Summary of the survey results

The survey has confirmed the presence of a moderate sized maternity roost of soprano pipistrelles (Peak count emerging from the church 144) – It assumed that the majority if not all of these would comprise adults as the young would still likely to remain in the roost/church in late June. Therefore, it can be assumed that the late summer colony size would probably be in excess of 200 (some soprano pipistrelle roosts can reach over 1000). In addition, there were small numbers of natterer's and individuals of common pipistrelles present. The emergence of the bats was much earlier than might normally be expected (i.e. about 15 minutes prior to sunset). It was thought to have been affected by the floodlighting (i.e. emerged before the lights came on).



Figure 20 – Location of bat access points and roosting area



Figure 21 – North-west access point



Figure 22 – South-western access point

6.11 **Summary of the value of the church to bats**

The church clearly supports a maternity roost of soprano pipistrelles with small numbers of common pipistrelles and natterers recorded. Roosting for all appears to be in the nave. The main access is into the nave and north aisle (few bats were seen to use the chancel). Pipistrelle access is mainly in the south-western corner of the nave and less in the north-west corner. Natterers access was the north-west corner of the north aisle near the organ.

6.12 A summary of the bat roosting value of the church has been assessed against Table 4.1 of the Bat Survey Guidelines 2016.

Table 6 Suitability of structures for bat use

Suitability	Description of roosting habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure 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.

6.13 On the basis of the above table, the church (in common with most medieval churches) is considered to have high roosting potential.

Table 7 Norfolk Bats in Churches roost classification

Grade	Description
High	Large maternity roost (typically over 100)
Upper moderate	Small to moderate maternity roost (typically 50-100)
Lower moderate	Moderate number of non-breeding bats/ small maternity roost (typically 10-50)
Low	Small number of roosting bats (less than 10)

6.14 The evidence has been assessed against the Norfolk Bats in Churches Roost classification (it is not known whether there is a similar classification in place in Leicestershire). On the basis of the physical survey undertaken on the 22nd May 2017 (updated on the 29th June 2017) and the activity surveys undertaken on the 29th and 30th June 2017, the church would appear to support roosting bats in the high category.

6.15 OTHER SPECIES

A swallow *Hirundo rustica* was noted to be nesting in the porch (the door to the porch was being left open to prevent the birds from becoming trapped) whilst a starling *Sturnus vulgaris* was noted to be nesting in the south-west corner of the chancel and a tit species in the south-east corner during the survey on the 25th May 2017. Within the tower, there was a large amount of jackdaw *Corvus monedula* nesting material present.



Figure 23 – Swallow nests within the south aisle



Figure 24 – Jackdaw nest within the tower

7.0 SCOPE OF THE DELIVERY STAGE WORKS AND IMPLICATIONS ON BAT POPULATIONS AND LICENSING REQUIREMENTS

7.1 Delivery Stage

The delivery stage works are as set out in the Quinquennial Inspection Report dated 4th August 2016 prepared by Mark Stewart.

7.2 On the basis of the results of the physical survey and activity surveys, potential effects on bats are provided in the following table. Timescales for each of the operations of are not known and require further discussion.

Table 8 Implications of works on bats and other wildlife

PROPOSED WORKS	IMPLICATIONS ON BATS AND WILDLIFE
Erect scaffolding to the tower	Possible obstruction or disturbance of bats accessing the internal part of the church via the south-west and north-west access points
Install a lead roof and extended gargoyles on the roof of the tower	Unlikely to be any bat impact
Repoint and repair masonry on the spire	No bats seen to be using the external part of the spire during the survey
Repairs to the upper tower and parapet	Single bat appeared to emerge from the western part of the tower. Not seen to return. Unlikely to be

PROPOSED WORKS	IMPLICATIONS ON BATS AND WILDLIFE
	any significant impacts from the works as long as assessed from the scaffolding
South of the tower, amend poor detail to the tower parapet. It is difficult to assess what this is and what the remedy will be without some dismantling	Unlikely to be any impact on bat roosting or access points from the surveys undertaken
Repoint and consolidate the ironstone to the south aisle	Unlikely to be any impact on bat roosting or access points from the surveys undertaken
Remove perimeter gutter and repair the base to the walls	Unlikely to have any impact on bats. Possible impact to amphibians and small mammals that might be present in the churchyard.
Refix porch gutters	Unlikely to be any significant impacts.
Fix new cast iron gutters to each side of the chancel, the north aisle and the south aisle	Possible obstruction of bat roosting and access points beside rafters albeit no obvious use was observed during the activity surveys undertaken
Re-fix existing hoppers and downpipes plus 2 new additional downpipes	Possible obstruction of bat roosting and access points beside rafters albeit no obvious use was observed during the activity surveys undertaken
Install new surface water drainage system	Unlikely to have any impact on bats. Possible impact to amphibians and small mammals that might be present in the churchyard.
Demolish boiler house and chimney and make good original external walls	The boiler house has not been surveyed. No bats observed to emerge during the activity survey but not accessed due to the presence of asbestos
Remove asbestos boarding in the chancel and make good plaster	Limited bat activity in the chancel. No likely impact on bats
Urgent local masonry repairs (wall pointing)	Unlikely to be any impact on bat roosting or access points from the surveys undertaken
Consolidate and limewash C12 south doorway	Unlikely to be any impact

7.3 EPS licensing

A European Protected Species licence is required from Natural England where the proposed development would result in an otherwise un-lawful activity. In the case of this development, this could result from:

- a. The killing or disturbance of a bat;
- b. Damage, destruction or obstruction of any place used for shelter or protection by a bat.

7.4 Any licence application will take a minimum of 30 working days to process and can only be processed once planning permission has been granted. Granting of planning permission is no guarantee that a licence will be granted.

7.5 Following changes to the Habitats Regulations in 2007, the threshold to which a person commits an offence of deliberately disturbing a European Protected Species has changed, such that the disturbance is likely to affect;

- (i) the ability of any significant group of animals of that species to survive, breed, or rear or nurture their young, or;
- (ii) the local distribution or abundance of that species.

- 7.6 Further changes took place in January 2009 but these generally relate to increased monitoring of licensed mitigation works.
- 7.7 Guidance from Natural England in their EPS Mitigation Licensing – Latest Developments July 2011 – clarified that the destruction of a bat roost is an absolute offence and requires a mitigation licence from Natural England. This relates even to a single roosting bat of a common species. However, Natural England have subsequently advised that in the case of churches, if only small numbers of bats are to be affected and roosting potential remains within the church, it is acceptable to treat the church as the roost rather than the individual feature that the bats are using.
- 7.8 In April 2015, a new Class Licence trial was introduced which allows for low level impacts on small numbers of common bat species. Philip Parker Associates is a registered consultant to work under this licence
- 7.9 If the works are timed and undertaken in such a way as set out in the mitigation section below, it is not considered that an EPS licence or registration under the Class Licence will be required (again subject to further discussion)

8.0 REQUIREMENTS FOR FURTHER SURVEY

8.1 REQUIREMENT FOR FURTHER SURVEY

Bats

The latest bat survey guidelines (BCT 2016) state the following in terms of works on bat roosts

Table 9 Recommended minimum number of survey visits for presence/absence surveys

Potential	Description
Negligible	No surveys required
Low suitability	One survey visit. One dusk emergence or dawn re-entry survey
Moderate suitability	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey
High suitability	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third could be either dusk or dawn.

- 8.2 The active bat season is May to September (with the key months May to August).
- 8.3 As identified in the above table, the 2016 Bat survey Guidelines identify that a minimum of 3 separate surveys should be undertaken to classify the level of bat use on any building that had high level bat use. To date, a single emergence survey and a combined emergence/re-entry survey has been undertaken. This is as per the instruction from the PCC. However, as there

have been savings in the original surveys it would be possible to undertake a final survey within the budget costs applied. This should give good information as to the level of bat use at the church.

8.4 Although the surveys are less than might normally be undertaken for a planning application etc, given the nature of the works and precautionary mitigation proposed in Section 9, these are considered adequate to determine the potential impacts on the bats present and appropriate mitigation.

9.0 PROPOSED MITIGATION MEASURES

9.1 GENERAL

The initial mitigation is based on the survey evidence to date.

9.2 BATS

General

The bat mitigation guidelines identify the following:

Table 10 Guidelines for proportionate mitigation

Roost status	Mitigation/compensation depending on the impact
Feeding perches of common/rarer species ↓ Individual bats of common species ↓ Small numbers of common species. Not a maternity site	Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring
Feeding perches of Annex II species ↓ Small numbers of rarer species. Not a maternity Site	Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements

Roost status	Mitigation/compensation depending on the impact
Hibernation sites for small numbers of common/rarer species  Maternity sites of common species	Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred.
Maternity sites of rarer species  Significant hibernation sites for rarer/rarest species or all species assemblages	Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed and usage demonstrated. Monitoring for at least 2 years.
Sites meeting SSSI guidelines  Maternity sites of rarest species	Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.

9.3 On the basis of the likely use of the church by bats, the level of appropriate mitigation for the church of St John the Baptist, Cold Overton is shown in orange shading of Table 10 above.

9.4 **Timing of the works**

The Bat Mitigation Guidelines suggest the following timescales for work in relation to bats:

Table 11 Optimum seasons for undertaking work in different types of roost

Bat usage of the site	Optimum period for carrying out works (some variation between species)
Maternity	1 st October – 1 st May
Summer (not a proven maternity site)	1 st September – 1 st May
Hibernation	1 st May – 1 st October
Mating/swarming	1 st November – 1 st August

9.5 There is clearly a maternity roost of soprano pipistrelles using the church. These largely access the church via the south-western nave access (split 71%) with a smaller number accessing the church via the north-western nave access (Split 29%).

9.6 At this stage, given the potential for impacts on breeding bats (i.e effects on the access points), it is recommended that the scaffolding is erected from mid-September onwards, any initial disturbance works in relation to the tower and south aisle being completed by the end of October and all works in relation to the tower and south aisle being completed by the end of March the following year, thus avoiding all the vulnerable summer and winter periods.

9.7 Works to the drainage, downpipes and gutters could (from the evidence of the surveys) be undertaken at other times if necessary as this is unlikely to have any significant impact on the bats present.

9.8 **Scaffolding**

Scaffolding could obstruct bat access and roosting points. This would particularly be the case on the north-west and south-west corners of the nave. It is understood from the architect however that the scaffolding can be erected in such a way that it does not obstruct these identified access points and does not need to be netted or enclosed in any way. Generally, the walkway of any scaffolding along the eaves should be positioned at least 1.0m below the external rafters or access points to prevent bats from becoming trapped. Also, it is important that the poles do not block any potential access or roosting sites especially at eaves level and provide a free flight path.

9.9 **Bat Ecologist attendance**

An allowance should be made for the bat ecologist to be present at various stages during the Delivery Stage as follows:

- At the pre-contract meeting to give a Tool Box talk to the nominated contractor;
- Once the scaffolding has been erected on the tower to enable a high-level inspection of any potential roosting or access sites on the tower or the nave/aisles to be made with the architect. These can then either be temporarily blocked or excluded as appropriate;
- An allowance should be made for visits midway during the contract to discuss any issues that have arisen and prior to the scaffolding being removed to ensure that all relevant roosting areas have been retained or reinstated as per the guidance within this report;
- An allowance to be made for an emergency visit should any bats be found during the course of the works;

9.10 **Replacement roosting**

Works should aim to retain/reinstate any identified access and roost areas (thus maintaining continued Ecological Functionality).

9.11 Bat boxes

An allowance should be made for a Schweglar Bat Box to be retained in the church or on the scaffolding during the course of the works. Given potential winter works, a hibernation box 1FW should be provided. This provides the opportunity for somewhere to place the bats should any be found during the course of the works.

9.12 It is also suggested that roosting potential be provided away from the church for the duration of the works. This can be achieved by the erection of boxes on trees within the churchyard. Kent bat boxes are recommended, erected three to a tree at a height of 5-6 metres with a total of 6 boxes being recommended (2 trees).

9.13 General Precautions

If any part of the works opens up cavities that were not previously visible, it is important that these are closed up or temporarily blocked prior to works finishing on that day. This avoids the potential for bats to access during the night, thus creating a new potential roosting site. If any bats or bat evidence is found during the works whilst the bat ecologist is not present, works in that area must stop. If a bat is present it should be recovered if safe to do so and Philip Parker be contacted for further advice.

9.14 Lighting

Floodlighting on the southern side of the church currently comes on at dusk and goes off at dawn, being on all night. This appears to have some impact on the emergence times of the bats. It is understood that the keeping the lights on all through the night has only occurred in recent years and is in response to recent local lead thefts. Anything that can be done to reduce the impact of the lighting on the church and bats would be advantageous and should be considered.

9.15 Chemicals

If any treatment works are carried out to timbers as part of the delivery stage works, these will need to be carried out using bat friendly chemicals. A list of these is provided in Appendix B. If applied in situ, it is important that the chemicals are painted on rather than being sprayed and must not be applied when bats are present.

9.16 An estimate of costs relating to the delivery stage of the works is given in Appendix C.

9.17 HLF bats in church project

The church of St John the Baptist, Cold Overton, has been included on the shortlist (Group 2) for churches to receive some level of assistance under the HLF bats in Churches Project.

- 9.18 This will involve an appropriate consultant making contact with the church, visiting to undertake a physical survey and undertaking an interview with members of the PCC using a standard pro-forma. Philip Parker Associates have been appointed to undertake the survey.
- 9.19 As part of Philip Parker Associates initial appointment by the PCC, consideration was to be given to whether there were any methods which could be employed to reduce the impact of the bats on the structure and fabric of the church. This is the aspect that will be considered further as part of the HLF project.
- 9.20 The soprano pipistrelles largely roost between the second principle from the west end of the church and the under boarding, where the rafter has pulled away leaving a suitable gap. There is also evidence that some bat roosting takes place under the rafter on the northern side and potentially between the western rafter and the end wall. Bats access the church either via the south-western or north-western corners of the nave.
- 9.21 An option for potential mitigation is a bat box shown as follows:

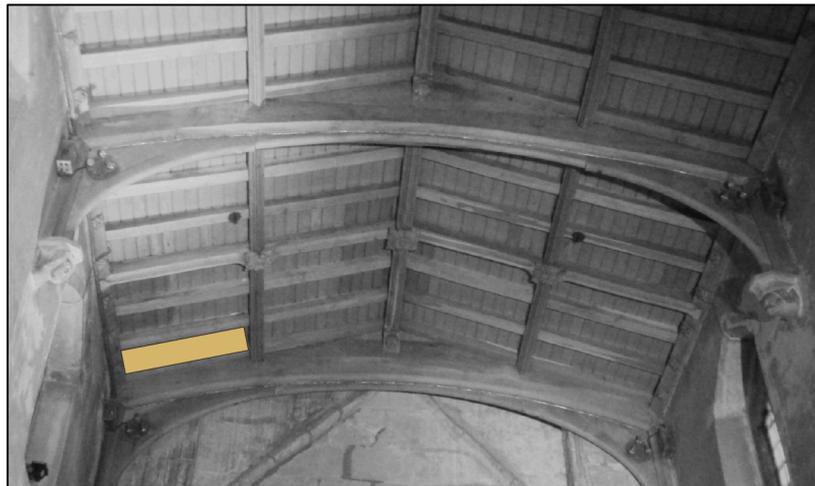


Figure 25 – Proposed bat box location

- 9.22 Between the common rafter where the bats access, insert 15mm deep battens on the underside of the oak boards. These should be tight to the common rafters. Oak boards (to match the existing) should then be attached to the battens to create an enclosed box. This could be further sub-divided into chambers through the use of vertical battens. These boards would extend as far as the purlin giving a potential box size half the height of the roof.
- 9.23 The bottom boards should be removable to allow droppings to be cleared out if considered necessary.

- 9.24 From experience at other churches, it is likely to take a couple of years for the bats to start to find and use the box. Use of the box should be monitored by observing bats entering the eaves from inside the church and comparing to the numbers actually leaving the access slots.
- 9.25 Once evidence has been shown that the bats are using the box, it may then be appropriate to obtain a licence to block the north-western access point and also the eaves close to the south-west access therefore only leaving bats to access the box. These exclusions would not affect the identified natterer's access location on the north aisle (or indeed any other access points that the bats might know about at eaves level on either of the aisles).
- 9.26 Should the soprano pipistrelles not take to the box within a couple of years., the use of a deterrent could be considered. Various deterrents have been trialed in bats in churches research projects in East Anglia and Northamptonshire including lighting, radar and acoustics. Only acoustic deterrents have found to be effective and safe. These can also be used under licence.
- 9.27 The installation of the bat box should not require a licence as long as it does not block the access for the bats into the church. The blocking of the access points will require a licence. Currently, this would need to be a standard European protected Species (EPS) licence but there are plans to introduce a new Bats in Churches Class Licence. This will allow registered consultants to register appropriate sites and carry out suitable works to mitigate any impacts. Such a registration does however require a good level of survey and monitoring to be undertaken. Philip Parker has been invited to register for this licence.

10.0 SUMMARY

- 10.1 A survey of the church of St John the Baptist, Cold Overton, Leicestershire has confirmed the presence of the following:
- A moderate sized maternity roost of soprano pipistrelle bats (peak count to date 146 adults on the 29th June 2017 – likely colony size late summer in excess of 200 but further survey would be required to demonstrate this)
 - Small numbers of natterer's (peak count of 3 on 29th June 2017);
 - Common pipistrelle (individuals recorded on the Anabat Express recorded left in the church overnight).
- 10.2 In common with most medieval churches, the church is considered to have high roosting potential due to the number of roosting cavities within the roof of the church. The roost size

(within the church) as assessed against the Norfolk Bats in Churches roost size criteria was considered to be High.

- 10.3 The bats access the church principally via a cavity on the south-west corner of the nave with a smaller number accessing via a similar cavity in the north-west corner.
- 10.4 The repair works to the church includes stone works to the tower and south aisle, lead roof to the tower, new gutters and downpipes to the aisles and chancel, below ground drainage works plus some internal plaster repairs.
- 10.5 The works to the tower and south aisle have the potential to impact on bats access in the main body of the church.
- 10.6 Bat Mitigation proposals include the following:
- Timing of the works to the tower and south aisle to avoid the main maternity bat season (work period to be Mid-September to end October for disturbance works and Mid-September to the end of March for the main works);
 - Maintenance of the access points into the church (particularly with respect to the placement of the scaffolding);
 - Attendance of the bat ecologist at the pre-contract meeting, various stages during the works including an inspection once the scaffolding has been erected on the tower to check for possible roosting and access points with respect to the stone work repairs
 - Temporary blocking of any cavities uncovered so that they are not left open overnight;
 - Use of bat friendly chemicals in any timber treatment works;
 - Provision of bat boxes in the church and churchyard for the duration of the works;
 - No additional lighting and consideration in reducing the impact of the existing flood-lighting
- 10.7 Separate proposals have been put forward for mitigating the impact of the bats on the existing church structure. This includes the construction of a bat box on the underside of the boarding close to the current access point. This could be undertaken as part of the repair works. It is recommended that 2 years are given to bats to find the box after which appropriate deterrent techniques maybe required. This could include blocking off the north-west access into the church and lighting access in the south-west corner into the box.
- 10.8 The church has recently been included on the list of 100 churches for light touch surveys as part of the HLF Project. Philip Parker Associates has been confirmed to undertake the survey. This needs to be completed before the end of September.

11.0 REFERENCES

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