How bats can affect your building project:

(March 2013)

A Church Growth Trust Briefing Paper

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1 Introduction

Many building owners are unaware of the implications that the presence of bats can have on any proposed building alterations, repairs, extensions, demolition works, or even pest control and timber treatment. Works as seemingly unimportant as replacing slipped tiles or insulating a roof void can have implications with regard to bats.

Sufficient time needs to be allowed in the design program for survey works before the building work commences. If bats are found to be present, then the period during which the building work is permitted to be undertaken can be dictated by the bats present.

If sufficient research and survey work is not undertaken this can result in costly delays, either in obtaining planning permission or, if building work is underway, delays in the building contract which can have cost implications. Such delays are explained in Section 8.

However, with good research and survey work most matters can be resolved. Having bats does not mean that building alterations cannot take place, but expert advice will be needed on how to proceed.

In order to understand why the presence of bats may impact upon building works, it is necessary to understand their lifestyle and habits, which are explained in Sections 3, 4 & 5.

2 Legislation

The Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000 give all bats legal protection. In addition any structure which shows signs of use by bats, either currently or in the past, is classed as a bat roost. Such structures could include outbuildings, garages etc, in addition to the principal buildings on the site.

The regulations make it an offence to:

- Intentionally or recklessly kill, injure, or take any bat;
- Intentionally or recklessly damage or destroy any bat roost, or to obstruct access to the roost;
- Intentionally or recklessly disturb any bat using a structure as a roost.

The Conservation (Nature Habitats & c.) Regulations 1994 (Amended 2007) also covers bats. Annexe iv lists all bats and Regulation 39 makes it an offence to:

- Deliberately kill or capture a bat;
- Deliberately disturb a bat;
- Damage or destroy a resting place or breeding site of any bat.

If any proposed building works would result in any of the illegal actions listed above then a licence must be obtained from Natural England prior to work being carried out. Natural England is an Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs

Illegally disturbing bats or roosts can carry fines up to £5,000 per bat disturbed, a six month jail sentence and extreme negative publicity.

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3 The importance of bats

Bats are an important part of our natural environment. They are mammals, having hair or fur on their bodies and are warm blooded. Bats are more closely related to humans than they are to mice. They make up over a quarter of the UK mammal species.

Bats play an important role in controlling insect populations. In the UK some species are classed as "indicator species" because changes in their population and activity can indicate changes in the local environment. Having a bat roost in your building is a sign of a healthy green environment, so making space for bats is an important positive conservation action.

Worldwide, over 500 plant species rely partly or wholly on bats to pollinate their flowers and spread their seeds. Plants pollinated by bats often have pale nocturnal flowers (in contrast, bees are mostly attracted to bright, daytime flowers).

4 Bats in the UK

There are 18 species of bats living in the UK, 17 of which are known to breed here. Some are very rare and near to extinction.

Bats in the UK eat only insects. Each species has its favourite types and hunts them in its own particular way. In the UK insects become scarce in the winter, so bats adapt to this scarcity by going into hibernation. Hibernation roosts are often in cool places with high humidity.

Most of the UK species originally roosted in trees and caves but, as the natural environment diminishes, many have adapted to live in buildings, tunnels and under bridges.

Bats need different roosting conditions at different times of the year and they will often move around to find a roost that meets their needs. This means that buildings need to be checked for bats at various times of the year.

In the UK summer maternity roosts often have a southerly or westerly aspect for maximum solar gain. Male roosts and hibernation sites typically have a northerly aspect.

Bats that use buildings can broadly be divided into four categories according to where they dwell, although some species can fall into more than one category and there can be regional variations:

- Crevice-dwelling bats (these tend to be hidden from view);
- Roof-void dwelling bats (these may be visible hanging from roof timbers);
- Bats that need flight space within certain types of roost;
- Bats that need flight space and flying access into the roost (some bats need to fly into the roost, rather than crawl in through a gap).

The misconception that all bats hang in the roof can lead to the error of briefly inspecting a roof for hanging bats and, observing none, assuming there are no bats present. The most common bat in the UK is the Common Pipistrelle. Measuring only 35-45mm long, it could fit into a matchbox. It can be

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found in crevices, often on the outside of buildings such as behind hanging tiles, below roof tiles or behind soffit boards, barge boards etc. You may not even be aware that you have them.

5 Typical places for bats to roost in buildings

Bats are not only to be found in the belfry, as is the common phrase, although many historic church structures provide the ideal conditions for a roost. A common misconception is that bats live in the roof void of buildings but, as many species are crevice-dwellers, they can be found in many other places, both inside and outside the building. Typical locations which a bat may use include:

- Roof voids and attics;
- Porches or canopies;
- Cellars;
- Mortar gaps in brickwork, stonework and coping stones;
- Mortar gaps in verge pointing, between or under ridge tiles or hip tiles, or gable ends;
- Gaps formed by broken or loose roof tiles or slates;
- Voids between underfelt and roof tiles;
- Voids behind timber or upvc cladding and behind hanging tiles;
- Gaps in fascia boards and soffit boards;
- In roof valleys, in rainwater gutters and behind downpipes;
- Gaps around lead flashings to roofs and chimneys;
- Hollow joints or gaps in exposed roof timbers and trusses;
- Gaps in and around window frames, sashes, dormer windows and their framing;
- Hollow lintels;
- Wall cavities.

The majority of bat species can crawl into their roosts through a small gap in the range of 15-20mm high and 20-50mm wide, so the gaps which provide access can sometimes be quite small and easily missed without close inspection. Only bats which fly into the roost, such as horseshoe bats and greater horseshoe bats, need larger openings.

Many suitable voids and crevices can be found in modern and new buildings but it goes without saying that dilapidated buildings are likely to provide a greater number of opportunities for use by bats.

Bats are very different to humans in that they seek warm roosts in summer and cool roosts in winter. As nocturnal creatures they can find artificial light shining on or towards their roosts or access points very disturbing.

6 Undertaking bat surveys: What to expect

6.1 What to look for

It is possible for anybody to find bats, including untrained persons and volunteers. However lack of evidence does not necessarily mean bats are not present. In many cases the evidence is not obvious to the untrained person and a professional survey is required

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The Bat Conservation Trust has over 90 local groups of volunteers split into regions, who may be able to give informal advice. Contact details are shown in the appendix. Help and advice can also be obtained from your local Statutory Nature Conservation Organisation (SNCO) or a professional licensed ecological consultant. Contact details for your SNCO can be found on the Natural England website given in the appendix.

Although initial research and advice can be undertaken by volunteers, if evidence or reports are to be submitted as part of a planning application they are unlikely to be accepted if they have not been prepared by a qualified ecologist.

Apart from actual sightings of bats, evidence of bat activity includes:

- Bat droppings;
- Urine stains;
- Signs of feeding, such as moth wings.

Bat droppings can be found anywhere, but tend to accumulate below favoured roosting sites or entrance points. They look like mouse droppings, or slightly larger, but are smaller than rat droppings. However, bat droppings consist mainly of insect remains. They are dry and crumble in your fingers into small semi-shiny fragments. Rodent droppings are smooth and plastic, quickly becoming hard. They do not crumble.

If you wish to do the crumble test the use of protective gloves is recommended. Bat droppings do not present any known health hazards in the UK, but the same cannot be said if they prove to be rodent droppings.

6.2 Scoping Surveys

Scoping surveys, otherwise termed as “initial surveys”, are carried out by a professional ecologist for submission with a planning application. Their purpose is to determine whether there is evidence or likelihood of bat presence. They are often combined with checks for the presence of other protected species, whilst carrying out the bat survey.

They will usually commence with a desk-top study to check for possible wildlife activity in the immediate area. This can include checking for nearby sites designated for their ecological value, such as SINC (Site of Importance for Nature Conservation), SSSI (Site of Special Scientific Interest) and National Nature Reserves. They can also include a check for sightings of protected species in the immediate area listed by species and grid reference. This can provide a useful indicator of the species known to be in the area, giving the ecologist an indication of what to look for.

The physical part of the scoping survey will typically take around half a day to carry out, followed by writing up the report. The ecologist will look for potential roosting and access points, such as those listed in Section 5 and evidence of bats, as listed in Section 6.1. If evidence of bat activity is found, this may be differentiated between evidence of historic activity (eg. old droppings) and recent activity (eg. fresh droppings).

If no evidence of bat activity is found, this is not necessarily conclusive, as different species have differing and specific roosting requirements and can move around throughout the year. For this reason, ideally, bat surveys should be spread over a number of months.

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The scoping survey will usually make recommendations. If no evidence of bat activity is found, there is usually no recommendation for additional survey work. However, if recent or current bat activity is noted, the scoping survey will almost certainly recommend an activity survey as outlined below.

6.3 Activity Surveys

If bats are known, or thought, to be present as a result of the scoping survey it will be necessary to produce a mitigation plan as outline in Section 7. The mitigation plan will typically include proposals for accommodating existing roosts, providing additional or alternative accommodation for bats etc. However, the proposals contained in the mitigation plan will be based directly upon the number and species of bats present and their roosting locations. In order to prepare the proposals it is therefore necessary to obtain information about the bats using the building and this is the purpose of the activity survey.

An activity survey will usually involve monitoring the departure of bats from the building at dusk and arrival at dawn. They show the number and species of bats using the building, where they access the internal areas of the building and if external gaps are being used by crevice-dwelling bats.

Activity surveys need to be undertaken between May and September when bats are active and not during autumn and winter months when bats hibernate. Ideally at least one survey should be undertaken in June to cover the breeding season. Surveys outside this period could give rise to false data as insects on which the bats feed may not be present when temperatures drop below certain levels. It is therefore important in planning a project, or preparing a planning application, to be aware of the season in which activity surveys can be undertaken. Forward planning is essential, including undertaking the scoping survey in good time to allow for an activity survey if recommended. If a scoping survey is not carried out until October and it subsequently recommends an activity survey, there would be a delay until the following May before the activity survey could be carried out, thus delaying registering the planning application.

The work involved in an activity survey means they usually cost substantially more than a scoping survey. Depending upon the size and layout of the building, two or more ecologists may be required to monitor the building so that all approaches can be viewed. The emergence survey will typically last two hours, starting half an hour before sunset. The re-entry survey will also typically last two hours, starting one and three quarter hours before dawn. The visual activity survey will usually be accompanied by electronic detectors and recorders.

Certain circumstances, including the presence of a maternity colony may require additional surveys to be undertaken. When the weather gets warmer, usually in early summer, pregnant female bats gather together in warm, safe places to have their babies. These roosts are called maternity roosts. Some groups of bats return to the same site every year. Bats are very sensitive during the maternity season and may abandon their young if they are disturbed. Dry indoor spaces like lofts are often ideal for maternity colonies.

7 Mitigation measures

The information gained from an activity survey, will enable a qualified ecologist to draw up a Mitigation Plan. The plan may include details of areas of the building which must not be disturbed,

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voids or crevices which must be retained, constraints on timing of some operations, and proposals for providing alternative facilities for bats, such as bat boxes, bat roof tiles, raise ridge tile and similar provisions. It may also require a licensed bat ecologist to be present when certain parts of the structure are removed by hand.

For planning applications the Mitigation Plan will need to be submitted as part of the planning application package, often together with a certificate to confirm the Mitigation Plan has been approved.

Assuming planning permission is granted, and before commencement of the work, it is important that the building contractors are handed a copy. Apart from giving information on additional work which may be required, the Plan may put constraints on the timing of work to be undertaken, of which the building contractor will need to be aware.

8 How can bats affect the building program?

8.1 Delay at planning application stage

Every planning application in England, whether for new buildings or alterations to existing buildings, has to be accompanied by application form APP1, except for householder applications which use a simpler form. One section of Form APP1 specifically relates to Biodiversity. It requires a declaration as to whether there is a reasonable likelihood of protected species or important habitats being affected by the proposals, either on the application site or adjacent or near to it.

All Local Planning Authorities have a duty to consider protected species in the planning process. Planning Guidance issued by the Office of the Deputy Prime Minister advises that planning decisions should only be made with adequate information about biodiversity. Local Planning Authorities will therefore usually require a biodiversity check list or survey data to be presented as part of the application.

It would be mistaken to believe that bat surveys are only required in rural areas. They can also be required in urban and city areas. Simple extensions to buildings can also affect the bat population, particularly where extensions adjoin existing roofs or include roof conversions. Extensions may also block the access into the existing roof void for bats.

If a planning application is submitted and further information or surveys are requested regarding bats, there can be a problem of timescale for submitted the additional information. There are different degrees of bat survey, depending upon whether bats are thought or known to be present or not. Some types of survey, particularly activity surveys, can only be carried out at certain times of the year and more information regarding this is given in Section 6 .

Once a planning application is submitted the Local Planning Authority will be under pressure to process applications within the target time scale. Therefore, even if the time of year is suitable for undertaking the surveys, it may not be possible to arrange the surveys, write up the reports and submit them within the timescale available. Again, this may result in a withdrawal or refusal.

For these reasons many Local Planning Authorities, especially in areas where bats are known to be active, will refuse to register a planning application without the necessary surveys or Mitigation Plan being submitted with the application documents. It is worth contacting the Local Planning

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Authority in advance to determine if this is the case. This policy can result in a delay in submitting the planning application of many months until the appropriate season for undertaking surveys arrives.

Some local authorities go further and will not register a planning application which includes a Mitigation Plan, until the Plan has been checked and a Certificate of Approval issued. Who checks the plan and who grants the approval will vary according to the policy of the local authority, but typically it may be done by their own natural environment team or department. Obtaining the Certificate of Approval can sometimes take several weeks, thus delaying the registration of the planning application even further.

8.2 Delay during building works

Many smaller building projects, such as roof repairs etc may not require planning approval and so the requirement for bats surveys during the planning application process does not arise.

Problems arise, however, if the presence of bats is only discovered during the building works. Work may have to stop whilst surveys or mitigation work is undertaken, or necessary licences obtained. This could take several weeks, even if the season for the work is appropriate.

Where all possible alternatives have been considered and rejected, licences can be granted to allow disturbance of the bats or destruction of roosts, but this would normally be a last resort. For sites in England licences are granted by Natural England and are known as Mitigation Licences, previously or more generally referred to as Development Licences. The licensing process can take two months or more. Licences are normally only granted if (i) the activity is in the public interest, (ii) there is no satisfactory alternative and (iii) the activities will not be detrimental to the species concerned.

Such delays could have substantial financial implications, such as any claims by the building contractor for delays beyond his control, or associated costs for delay in completing the building work, such as cost of extended hire of temporary accommodation.

If bat surveys have been carried out as part of the planning application process, or if they have been carried out voluntarily in advance of signing the building contract, the chances of unanticipated delays during the building program will be much reduced.

8.3 Adjusting the building program

The findings of advance surveys or the resulting proposals in any Mitigation Plan can significantly affect the timing of the proposed building works in order to eliminate harm or reduce disturbance to any bats present.

For example: it may be necessary to avoid some works during November to March if hibernating bats are present, or May to August if a maternity colony is present. Bats are very sensitive to disturbance in the maternity season. They generally only give birth to one young per year and may abandon them if disturbed, so disturbance during the maternity period will have a critical effect on survival of the young.

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9 Bats and demolition

With the exception of residential buildings, many types of building do not require planning permission for their demolition. Unless the demolition is part of a planning application to construct a new building, demolition of a building is unlikely to be picked up in the planning process and so no bat surveys will be requested. Such a situation would typically arise if an owner intends to demolish and clear a site, before placing it on the market for sale.

Before demolition the applicant has to complete a Section 80 Demolition Notice to the local authority, but most local authorities have Section 80 Notices that do not include any questions on protected species. It therefore follows that demolition of buildings is a major threat to bat species who use them.

To be safe, however, if there is a suspicion or likelihood that bats use a building to be demolished, it should still be surveyed as the protective legislation still applies.

10 Summary

If professional ecological advice is sought at an early stage in a building project, bats are unlikely to cause serious problems, delays or excessive costs; although, to the client, the cost of employing a qualified ecological consultant to undertake surveys will be an additional cost to be included within the project budget.

Considering the required timing of surveys, particularly the window for activity surveys between May and September, is essential when planning the design stage of the project.

This paper only deals with bats, but other protected species, such as nesting birds, reptiles, barn owls, badgers, great crested newts, dormice, otters and water voles may also require consideration when carrying out a biodiversity checklist.

11 Additional information

"Good Repair Guide GRG36: Bats and Refurbishment" Published by the British Research Establishment. Copies available from IHS BRE Press Tel: 01344 328039 or the BRE Bookshop www.brebookshop.com Price £10.00 as hard copy, £12 as pdf download.

"Bats and Buildings" Published by the Bat Conservation Trust. Tel: Bat Helpline 0845 1300 228. Available as free download from BCT website www.bats.org.uk.

"Bat Surveys: Good Practice Guidelines" Second Edition. Published by the Bat Conservation Trust. Available from NHBS at www.nhbs.com Price £24.99. Available as free download from BCT website www.bats.org.uk.

www.bats.org.uk The web site of the Bat Conservation Trust. Contains a wealth of information on bats, including data sheets on all UK species, sound samples for species, educational material, volunteer groups, how to care for bats if you have them, etc.

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www.natureonthemap.org.uk Nature England's interactive website identifying locations of Nature Reserves, Sites of Special Scientific Interest, special habitats etc.

www.magic.gov.uk Government website which brings together environment information from many departments. An interactive map which shows habitat inventories etc.

www.naturalengland.org.uk The website of Natural England. The government's advisor on the natural environment.

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