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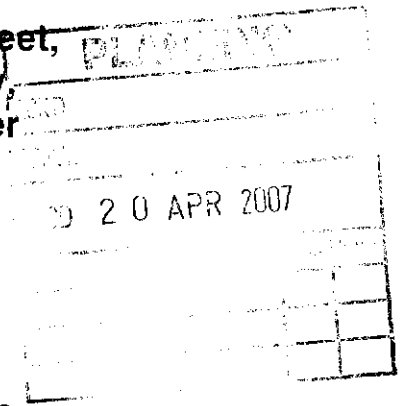

For
Mr. Conaghan,
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16/4/07

specialist in the requirements of bats for roosting and feeding
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Designs for providing new roosting options.

1. Introduction.

1.1 I was asked to survey this property to satisfy a planning requirement prior to the redevelopment of the site. The building is to be demolished imminently.

1.2 Please note that the law relating to bats applies irrespective of any issue the planners may or may not have drawn attention to, therefore to be protected from any risk of potential prosecution the developer should pay close attention to the recommendations made in this report.

1.3 My objective was to assess both the importance of this property to bats and whether or not the development is likely to affect their favourable conservation status through the destruction of a roost or roosts.

1.4 This building is of fairly modern brick construction, with a slate roof and a flat-roofed extension. It is located in an urban area surrounded immediately by light industrial units.

1.5 The pipistrelle bat is common and widespread in Greater Manchester and this species can be found in the most urban environments, but it is highly unlikely that any other species would be found in the immediate vicinity of these buildings. The pipistrelle has been recorded within 400m and is known to roost within 1km.

2. My credentials.

2.1 I have been working in bat conservation for 20 years, initially as a volunteer with the South Lancashire Bat Group and English Nature. I am now Bat Welfare Officer for the Greater Manchester Bat Group and represent the bat groups of the north-west region at national Bat Conservation Trust meetings.

2.2 My first formal training was in 1988, when I attended a 5-day bat ecology course run by acknowledged expert Dr. Robert Stebbings. Following this, I trained for and obtained an English Nature Bat Conservation and Education licence in 1989. It was extended in 1991 to cover winter hibernation sites/scientific work and to allow me to train volunteers for Conservation and Education licences.

2.3 Over the last 11 years I have done increasing numbers of bat surveys on a consultancy basis, firstly part-time, then-full time from December 2003.

2.4 Since November 2000 I have gained experience in applying-for and obtaining licences from the Department of the Environment, Food and Rural Affairs for clients whose developments have affected roosting bats.

2.5 Other experience includes:

- Attending the annual weekend-long Bat Worker's Conference every year since 1988.
- Helping the Clwyd Bat Group with their surveys of underground hibernation sites, mainly in the late 1980s and early 1990s.
- Participating in "Bat Detector Workshops" during the 1990s in different areas of the country, concerned with locating bat roosts and feeding sites/commuting routes.
- Sitting on local council "Wildlife Advisory Groups" (WAGs) in the Greater Manchester area form the early 1990s onwards.
- Participating in the Bat Conservation Trust's 3 year "Bats and Habitats" survey in the 1990s.
- Helping local authorities and the Greater Manchester Ecology Unit formulate their Biodiversity Action Plans for bats, as required under the European Habitats Directive.
- Administering the bat casework for English Nature in the South Lancashire and Greater Manchester areas over 1998-2000.

- Spending 8 nights in 1999 helping with bat survey work on a National Trust site in Somerset: involved participation in mist netting and radio-tracking.
- Assisting with similar work in 2001 in Wales.
- In 2001, attending a new 3-day course run by the Bat Conservation Trust - "Bats and Bat Surveys : a Foundation Course for Consultants".
- Continuing to attend courses run by recognised experts to ensure I stay up-to date both with respect to bat ecology and issues such as health and safety.

3. Bats and the Law.

3.1 All British bats and their roosts are legally protected under the Wildlife and Countryside Act of 1981 (as amended), through inclusion in Schedule 5 and under the Conservation (Natural Habitats, &c) Regulations 1994 which implements the EC Directive 92/43/EEC in the UK. Under this legislation it is an offence to intentionally or recklessly kill, injure or capture bats, disturb bats or damage, destroy or obstruct access to bat roosts. Since the introduction of the Countryside and Rights of Way (CROW) Act in 2000, doing so can result in a custodial sentence. Fines of up to £5000 per bat can be issued in cases of non-compliance with the law.

3.2 This puts the onus on developers to ensure as far as possible that they will not be impacting on a bat roost before commencing work. Bat roosts are protected irrespective of whether bats are present at the time. A "bat roost" is generally acknowledged to be "any structure or place which any wild [bat]... uses for shelter or protection". This quote is taken from English Nature's "Bat Worker's Manual".

3.3 Where a development will impact on roosting bats, a European Protected Species Licence is required before the roost can be interfered with in any way.

3.4 One of the conditions of such a licence is the maintenance of the favourable conservation status of the species. This has generally been interpreted as meaning no net loss of roosts. Therefore mitigation/compensation measures are required, followed by monitoring of the success of these. Mitigation has to be provided on as close to a like-for-like basis as possible.

3.5 It is also necessary to time the work to minimise the impact on bats. Therefore work must be planned for when the bats are expected to be absent, and an appropriate alternative roost must be available for them by the time they would normally be returning.

3.6 European Protected Species licences are issued providing planning permission has been granted, there is an over-riding public need for the development and there is no reasonable alternative available.

3.7 The CROW Act now gives a statutory grounding to the Biodiversity Action Plan process. A number of "key" bat species nationally, including the Pipistrelle (*pipistrellus* and *pygmaeus*), have been the subject of Bat Biodiversity Action Plans. Equivalent plans have been devised by most local authorities to cover either the Pipistrelle or bats in general. Some local authorities have added an extra species - for example the noctule or Daubenton's - where their borough is particularly important for that species.

3.8 In the case of a building, tree or other feature not already known to be a bat roost, if bats are found during the course of work contractors must stop and seek advice from the bat consultant involved with the site, if one had been appointed, or English Nature, before proceeding. Assuming a good-quality bat survey had been carried-out before the commencement of work and its recommendations followed, it would be unlikely that the discovery of bats during the course of the work would be considered to be "reckless" interference.

4. Basic Bat Facts.

4.1 Some basic bat facts are :-

- Bats have one baby each per year and females gather together in summer in warm, clean, draught-free maternity roosts to give birth.
- The average number of the commonest species of bat in a colony is around 50 individuals, but these bats are tiny, having a body length of around 4 cms, and therefore occupy little space and do no damage.
- Adult British bats feed solely on insects and their droppings quickly turn to powder which is easily blown or washed off external surfaces. Bat droppings are harmless.
- Bats are mammals and feed their babies on milk.
- Babies are generally born in June and are dependent on their mothers for about 6 weeks. When the youngsters are able to hunt independently, the summer maternity colonies disperse.
- Bats - pipistrelles in particular - generally change roosting place frequently. Each colony will use a range of different roost sites, even during summer when there are dependent young present. Once a roosting site is established bats are likely to return to it again.
- Often male bats roost singly. but in autumn are visited by small numbers of females for mating purposes. The females then store the sperm inside their bodies until spring when they become pregnant.
- Alternatively, in autumn some male bats gather at cave entrances and their equivalent and undertake swarming activity.
- Bats hibernate in winter in cool, humid places with stable conditions. Some bats will fly long distances to suitable sites, which can be quite remotely situated. Hibernation sites and summer sites are usually located separately.
- Bats are particularly vulnerable in summer when they have dependent babies, and in winter when they are unable to rouse quickly from their state of hibernation.
- Bats feed where insects occur, therefore they particularly favour habitats such as woodland edge, areas where there is standing or flowing water, usually where there are native shrubs and trees adjacent, and mature gardens.
- Bats follow "linear landscape features" such as lines of trees, hedges, buildings and waterways in order to commute from their roost sites to their feeding grounds. Likewise they use these features to navigate between feeding areas and alternative roosts.
- Sometimes bats use "night-roosts" for part of the night while out feeding. They return to a "day roost" at the end of the night, leaving behind droppings and/or discarded moth wings.
- Bats use a range of feeding sites over the course of a night and concentrate on different sites on different nights according to weather conditions and insect availability.

4.2 Bats traditionally roosted in holes and cracks in old trees, beneath ivy-cover and in caves. With the decline in old deciduous woodlands, the most common species have adapted to roosting in buildings and other man-made structures. They often choose to roost within crevice systems, especially in winter, where they are hard to locate. Confirming whether or not a potential roost is ever used can be difficult, unless there is clear evidence present such as the accumulation of old droppings.

4.3 In general bat roosts are likely to occur in cavities in mature/dead trees where these are available, behind weather boarding or hanging tiles on buildings, in roof voids, under roof slates/felt, above/within wooden beams, in cellars, in cavities in walls and in crevices in culverts and bridges, especially where the latter are associated with water.

4.4 Bats can be located when feeding or commuting, away from the roost, by use of an ultrasound receiver. This converts their normally inaudible calls to a pitch that can be heard by the human ear.

4.5 In summer bat roosts can be located by the "swarming" activity of colony members around the roost at dawn.

4.6 In light of the recent discovery of European Bat Lyssavirus in Daubenton's bats in Britain, the current recommendation is that bats should not be handled by the public.

5. Regional Bat Species and their Requirements.

5.1 The commonest species, the Pipistrelle (*Pipistrellus pipistrellus)*, has adapted well to roosting in buildings of many types, and most commonly roosts behind weather boarding and under slates or in other crevices associated with the exterior of buildings.

5.2 There is a second Pipistrelle species (*Pipistrellus pygmaeus*). This roosts in the same sort of situations to Pipistrellus pipistrellus, but it is generally less common, and prefers locations near water.

5.3 Pipistrelles feed on midges and small flies. These are still abundant, in contrast to the more specialist moths and beetles that some species need.

5.4 The Daubenton's bat (*Myotis daubentonii)* is the species most likely to use culverts and bridges, but often uses trees or buildings near water to rear its young. It is usually discovered feeding where there is water, for example over lodges, rivers and canals.

5.5 The Brown long-eared bat (*Plecotus auritus*) is the species found most commonly inside barns and buildings with open roof-voids, where it will fly at dusk before emerging to feed. This species is mainly a woodland species. It is difficult to locate away from the roost as it echolocates very quietly, so its calls are hard to pick-up by ultrasound receiver. One characteristic of this species is that it sometimes leaves collections of moth wings beneath a favoured "feeding perch". Its droppings typically are found beneath the ridge beam or other major beams.

5.6 Other species such as the Noctule (*Nyctalus noctula*) are still relatively dependent on holes in trees for roosting, but fly long distances when out feeding.

5.7 Species such as the whiskered(*Myotis mystacinus*)/Brandt's(*Myotis brandtii*) and Natterer's (*Myotis nattererii*) will use buildings, similar to those favoured by the brown long-eared in the case of Natterer's, or trees. Natterer's bat is relatively uncommon.

5.8 Brandt's bats can only be separated from whiskered in the hand. Most records of these species come from observing bats in flight and hearing their echolocation calls by ultrasound receiver.

6. Survey Method.

6.1 I visited the site during the day on 12th April 200.

6.2 I inspected the buildings inside and out for the presence of live bats and signs that bats were, or had been, present. This involved observing for droppings, dead bats, food remains such as moth wings, staining and scratch marks with the aid of a million candle-power torch and binoculars.

6.3 I also assessed the potential for use by roosting bats in terms of factors such as temperature, draughtiness, humidity, cleanliness and presence of suitable crevices.

6.4 The survey was conducted with the needs of different species of bat over the seasons in mind.

6.5 I assessed the likely impact of the proposed development on the favourable conservation status of bats.

6.6 Additional survey work was needed prior to demolition and this was carried-out at dawn on 16th April, commencing 75 minutes before sunrise and continuing for an hour. A watch was made to check that no bats were returning to use the building as a day roost. A heterodyne ultrasound receiver was used to help identify the presence of bats in flight.

7. Limitations of the Survey.

7.1 There was no access to the loft. As demolition was imminent this problem was overcome by carrying out a dawn survey on the morning the demolition was to commence.

7.2 Any droppings deposited on the outside of a building are often washed or blown away quickly, so evidence of use often doesn't last long once the bats have moved, but an assessment has been made of potential bat roosting places associated with the exterior of the building.

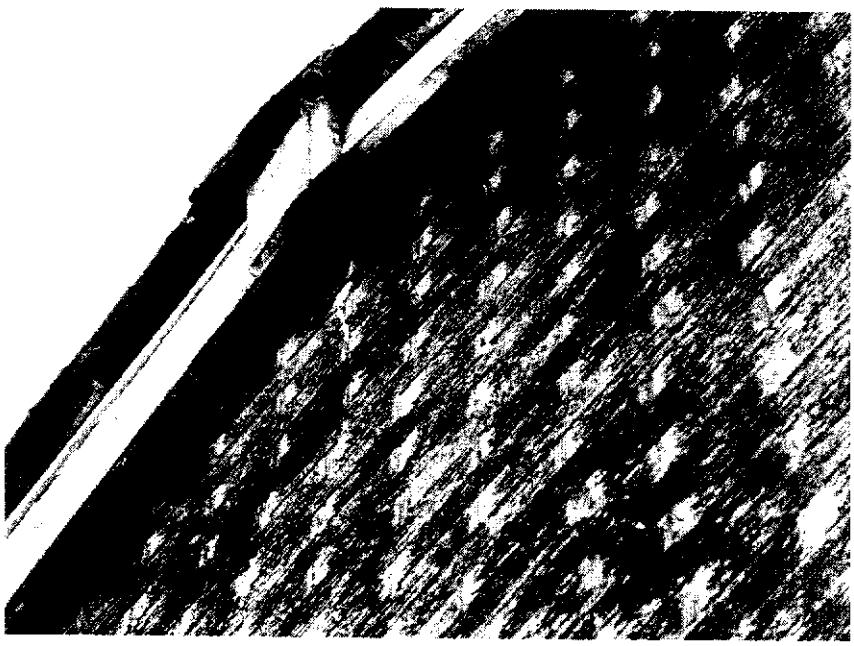
7.3 As bats often roost in crevices in winter, and are particularly hard to locate when hibernating, the report highlights the areas that could be used by bats in winter without their presence necessarily being obvious.

8. Findings.

8.1 This building has been unused for some time, has been badly vandalised inside and many of the upper storey floors are unsafe. it has been invaded by pigeons.

8.2 The cellar was accessible and bat access was probably possible, but there was no evidence to suggest bats had been present.

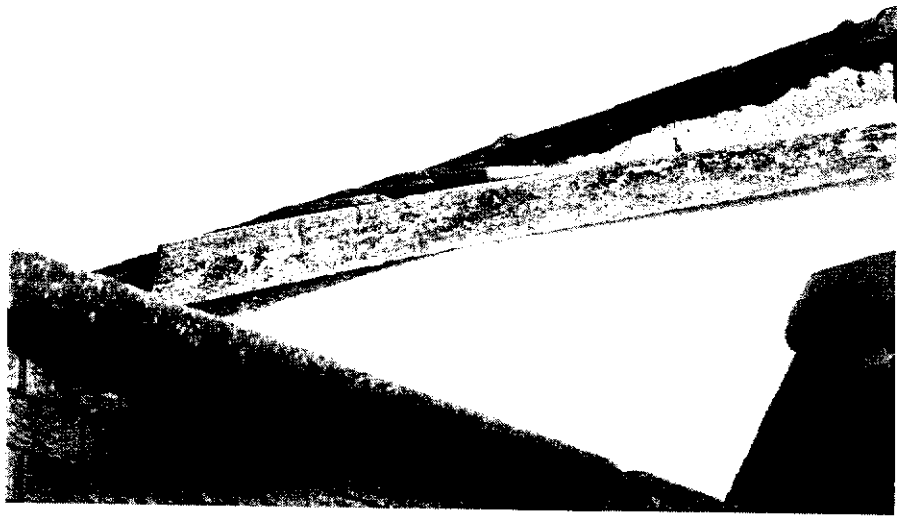
8.3 There was no safe access to the loft. However, the west-facing gable eaves are boxed-in, providing a potential roosting place of a type often favoured by maternity colonies of pipistrelle bats.



8.4 Had access to the loft been possible, signs of use by this species might have been evident. Bats roosting in these sorts of locations will often roost within the boxed

eaves and, if access is available, within the cavity wall and on the inside of the gable wall.

8.5 Other potential roosting places exist under roof slates and ridges, including gable edges. It could be seen that at least part of the roof is lined:



8.6 There is a gap around a window frame in the north-facing wall where bats could get in to roost between the frame and the window, and via which they may be able to access the cavity wall.

8.7 At dawn, 11 contacts with bats were made by ultrasound receiver, two of them for around a minute continuously. In one of these minutes a second individual was also detected. The last bat contact was around 35 minutes before sunset and there was no indication that the bats were roosting in this building.

9. Conclusions.

9.1 This building had sufficient potential roosting places for the pipistrelle bat that, given that the species has been recorded within 400m, it merited further investigation prior to demolition.

9.2 Maternity colonies start to gather over April and I therefore considered it wise to double check that no bats were present in the building before work commenced.

9.3 This additional survey recorded bats in flight but none were seen "swarming" outside the building or entering potential roosting places.

9.4 However, this one-off survey cannot confirm that no bats have ever roosted here, therefore in order to ensure this development does not compromise the favourable conservation status of bats by causing a net loss of roosts, new roosting potential must be provided in the new build.

9.5 I believe this will be a modern warehouse with part brick and part metal sides. As I believe the design provides some full height areas of wall, the easiest way to provide for bats would be to install purpose-made roost units in these areas, towards the eaves. See attached information.

9.6 So long as the recommendations are followed, I do not think this development will affect the conservation status of bats.

10. Recommendations.

10.1 Commence demolition processes on 16th April as planned. However, bear in mind that all in-use birds nests, and eggs, are protected by law.

10.2 If at any time a bat or droppings that may have come from a bat are found, work **must** stop immediately. As far as practicable the feature that was sheltering the bat/s should be replaced. Further advice **must** then be sought before work continues, either from myself or from Natural England in Wigan (01942 820342). Any bat found should not be handled.

10.3 Provide roosting potential in the new build, in the form of Schwegler roost units, preferably one in each wall. Ideally a series of 4x2FR should be used as illustrated, to maximise the potential available to a maternity colony.

11. Further Reading.

11.1 Office of the Deputy Prime Minister. Planning for Biodiversity and Geological Conservation: A Guide to Good Practice. 2006. HMSO.

11.2 Office of the Deputy Prime Minister. Planning Policy Statement 9: Biodiversity and Geological Conservation. 2005. HMSO.

11.3 Office of the Deputy Prime Minister. Government Circular: Geological and Biological Conservation – Statutory obligations and their implications within the planning system. 2005. HMSO.

11.4 English Nature Northumbrian Team. Bat Surveys for Development Proposals in North-east England. March 2004. Not published.

11.5 Edited by Mitchell-Jones, A.J and Mcleish, A.P.. Bibliography in, plus content of, The Bat Workers' Manual. Third Edition. 2004. HMSO JNCC.

11.6 Mitchell-Jones, A. J. Bat Mitigation Guidelines. 2004. English Nature.

11.7 Entwistle, A. C. et al. Habitat Management for Bats. 2001. JNCC.

11.8 Childs, J. Bats and the Law. 2001. The Bat Conservation Trust and the Royal Society for the Protection of Birds.

11.9 Action for Biodiversity in North West England. Andre R Farrar. The Government Office for the North West, the North West Regional Assembly and the North West Biodiversity Forum, 2000.

11.10 Local Planning Authorities/Greater Manchester Ecology Unit. Biodiversity Action Plans for Bats. Dates vary.

11.11 Wild about the North West – A Biodiversity Audit of North West England. Regional biodiversity Steering Group, 1999.

11.12 Ketchin, M. The Design and Construction of Bat Boxes in Houses. 1996. Scottish Natural Heritage.

11.13 Biodiversity: The UK Steering Group Report. HMSO, 1995.

11.14 Hutson, A.M. Action Plan for the Conservation of Bats in the United Kingdom. 1993.The Bat Conservation Trust.

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