Office 47, Bury Business Centre, Kay Street, Bury, Lancs, BL9 6BU

Tel - 0161 763 6171, mob - 07710 184142, fax - 0560 1505457

e-mail : bat.consultancy@btconnect.com

Angela Graham
Bat Consultancy
Service

Please note change of contact details above

Bat Survey:

Storm Hand Car Wash,
Hyde Road,
Manchester 12.

For
a-cube architects ltd.,
18 Sparkle Street,
Manchester,
M1 2NA.

18/2/08

specialist in the requirements of bats for roosting and feeding
member of the institute of ecology and environmental management (ieem)
trainer and conservation/scientific licence holder for natural england
b.tech (hons) - environmental science: applied ecology & environmental management

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1. Introduction.

1.1 I was asked to survey this building to satisfy a planning requirement prior to the redevelopment of the site.

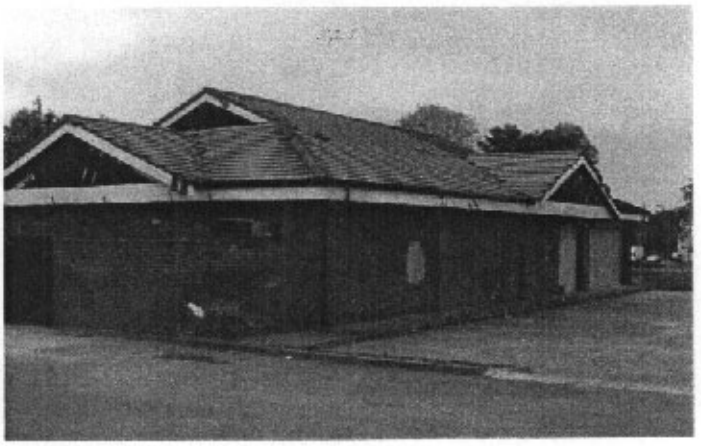
1.2 *Please note that the law relating to bats applies irrespective of any issue the planners may or may not have drawn attention to, therefore to be protected from any risk of potential prosecution the developer should pay close attention to the recommendations made in this report. I strongly advise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

1.3 My objectives were to assess:

- the importance of the building/s to bats
- whether, without appropriate mitigation, the development is likely to affect their favourable conservation status through the destruction of a roost or roosts
- whether or not a licence to disturb bats is needed in order to allow this development to progress within the law
- whether additional survey work needs to be carried-out; in summer for example.

1.4 This is a modern building in an urban area:





1.5 The pipistrelle bat is common and widespread in Manchester and this species can be found in the most urban environments, but it is unlikely that any other species would be found in the immediate vicinity of this buildings.

2. My credentials.

2.1 I have been working in bat conservation for 20 years, as a volunteer with the Greater Manchester and South Lancashire Bat Groups, and Natural England. I represent the bat groups of the north-west region at national meetings of the Bat Conservation Trust.

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 Natural England 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 from 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 Natural England 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".
- In 2007, attending a conference organised by BCT on bat mitigation measures.
- Helping with mist-netting-based research in Slovakia in 2007.
- Continuing to attend courses run by recognised experts to ensure I stay up-to date both with respect to bat conservation 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 Natural England'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 Planning Policy Statement 9 gives planning authorities guidance with respect to Biodiversity, including protected species. Its contents are taken into account in the planning process.

3.9 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 Natural England, 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 14th Feb 2008.

6.2 I inspected the building from the outside for signs that bats were, or had been, present. This involved observing for droppings, 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 made an assessment of whether additional survey work was required at dusk/dawn or at a more appropriate time of year.

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

7. Limitations of the Survey.

7.1 Due to a problem with the roller-shutter doors, there was no access to the building at the time of the survey.

7.2 As a general rule, a bat survey carried-out in winter, when bats are hibernating and relatively inactive, should be considered to be a preliminary survey, as additional survey work outside winter may be required to assess more accurately whether or not a building's potential is made use of by bats.

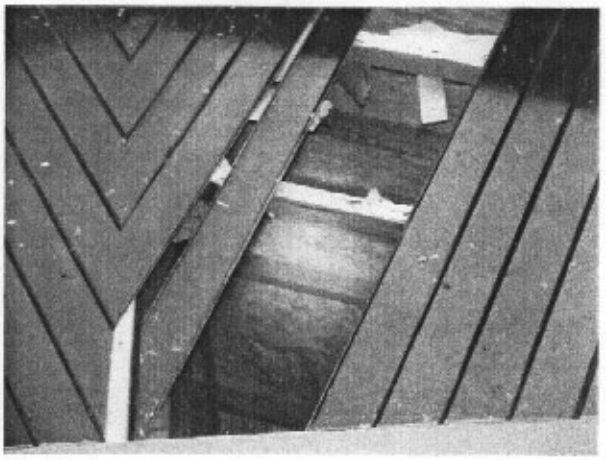
7.3 No dusk or dawn survey work was undertaken as bats are now hibernating and largely inactive.

7.4 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.

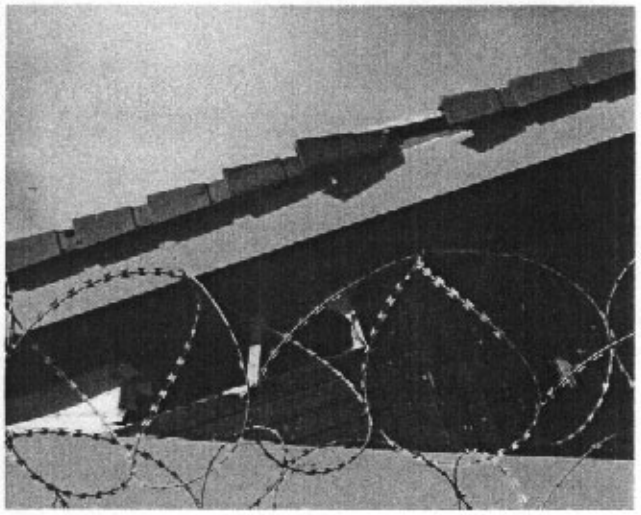
7.5 As bats often roost in crevices in winter, and are particularly hard to locate when hibernating, the report highlights the areas that could be used by bats in winter without their presence necessarily being obvious.

8. Findings.

8.1 This building is in deteriorating condition and through a gap in the wooden fascia on the north-facing elevation, it could be seen that there was no loft present in that area:



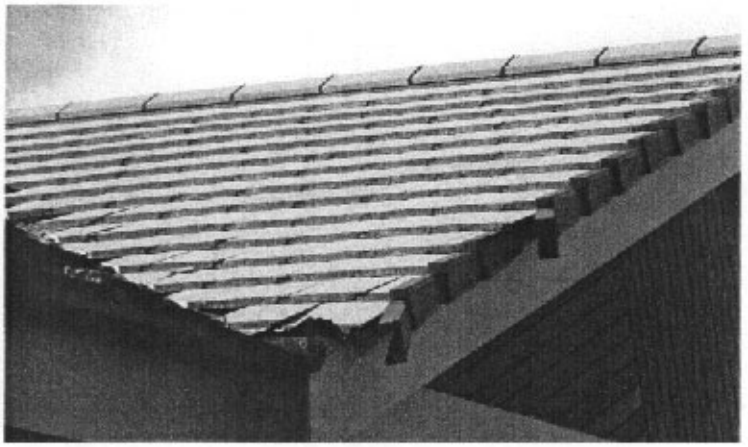
8.2 The east facing elevation is similar and although it seemed the apex of the roof could have been boarded-off, this was obviously at a high level, above which there could be only a very small void:



8.3 Clearly there was no wall behind the cladding in either case to provide a roosting opportunity for bats between two materials.

8.4 I cannot be absolutely certain that there is no loft in the central, higher part of the building.

8.5 The roof is in deteriorating condition and some of the dry verge is missing:

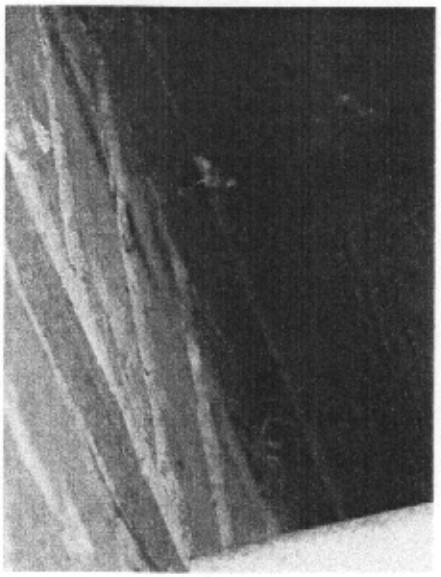


8.6 The west and east-facing elevations (front and back of the building respectively) have some louvred boarding attached to gable apexes but it did not appear that bats could pass between the slats:



8.7 Presumably there is no wall directly behind the louvre to provide a roosting cavity in any case. It appears bats could enter the boxed eaves however.

8.8 Along the sides of the building in a few places there is a gap between the wall and the soffit:



8.9 Via this route, and possibly others, bats will be able to access the cavity wall.
8.10 Along much of the length there is another board above the visible soffit that blocks bat access but in one or two places bats could get in to roost in the blocked eaves.

9. Conclusions.

9.1 It did not appear that there would be any accessible lofts within the building, though there is still an element of uncertainty about the central area.
9.2 In any case, the likelihood of typical loft-dwelling species of bat such as the brown long-eared, occurring regularly in the immediate vicinity of the building, is very low.
9.3 Although bats can clearly enter the building in flight at present, the likelihood of them roosting within the building is low.
9.4 Externally potential roosting places are limited to between tiles and lining material where dry verges are missing, or where tiles are uneven or have exposed edges; plus one or two places where they can enter boxed eaves along the sides of the building and at the upper gable apexes on the front and back elevations.
9.5 This building is an urban area but there are some trees in the area and a lawn to one side of the building:



9.6 There will be pipistrelles in the area, as they have been recorded even in the centre of Manchester, and individuals or small numbers of this species could roost in association with this building at any time of year.

9.7 Use by a maternity colony in summer is not out of the question, but trying to evaluate the level of risk involved is quite difficult. The roof appears to be lined with board, as well as felt, and this is the sort of opportunity the pipistrelle often makes use of. It will also roost in cavity walls when it can access them via soffits and the like.

9.8 There will undoubtedly be other roosting options available in the area, but the pipistrelle often changes roost frequently so some use of this building is quite possible.

9.9 Overall, I would not expect to find bats within the interior of the building, though it should be checked sometime prior to demolition to double check that signs of bats are absent. I do not think the lack of an internal inspection at this time should prevent planning consent being granted.

9.10 Externally there are sufficient roosting options available that it would be wise to avoid planning to demolish during summer. If summer demolition is preferred for other reasons, it should not take place without dusk or dawn survey work within the few days beforehand to double check as far as possible on the absence of bats. The finding of bats would lead to significant delays while a European Protected Species Licence was obtained.

9.11 Ideally the status of the building should be investigated again over the summer anyway, bearing in mind that the absence of bats at one time would not guarantee bats would always be absent.

9.12 Therefore some precautions should be taken at the time of demolition. Mainly this involves removing roof tiles, especially along roof edges and near ridge lines, by hand with care. Boxed eaves should be removed in a similar fashion.

9.13 To ensure this development does not have a negative impact on the favourable conservation status of bats, some attempt should be made to recreate similar new roosting options in association with the new build. Various options exist, the easiest of which would be to provide purpose-made self-contained roost units within walls, and/or cladding over the top part of external walls, especially gable edges. Bat access behind the cladding would need to be possible. Some illustrations of roost units are attached.

10. Recommendations.

10.1 Have the interior of the building inspected by the bat consultant at a later date.

10.2 If the building is still standing in summer, have more survey work carried-out, preferably in June or July, when maternity colonies are well established. (Do not demolish after the end of April without having more survey work carried-out first.)

10.3 If it is imperative to demolish before summer, take precautions as out-lined in 9.12.

10.4 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, even if the bat has flown off, either from myself or from Natural England in Wigan on 01942 820342. Any bat found should not be handled.

10.5 Seek advice on the best way to provide for bats in the type of new build proposed.

11. Further Reading.

11.1 Bat Conservation Trust. Bats and Lighting in the UK. Version 2. January 2008. BCT.

11.2 Bat Conservation Trust. Bat Surveys: Good Practice Guidelines. 2007. BCT.

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

11.4 Office of the Deputy Prime Minister. Planning Policy Statement 9: Biodiversity and Geological Conservation. 2005. HMSO.
11.5 Office of the Deputy Prime Minister. Government Circular: Geological and Biological Conservation – Statutory obligations and their implications within the planning system. 2005. HMSO.
11.6 Natural England Northumbrian Team. Bat Surveys for Development Proposals in North-east England. March 2004. Not published.
11.7 Edited by Mitchell-Jones, A.J and Mcleish, A.P.. Bibliography in, plus content of, The Bat Workers' Manual. Third Edition. 2004. HMSO JNCC.
11.8 Mitchell-Jones, A. J. Bat Mitigation Guidelines. 2004. Natural England.
11.9 Entwistle, A. C. et al. Habitat Management for Bats. 2001. JNCC.
11.10 Childs, J. Bats and the Law. 2001. The Bat Conservation Trust and the Royal Society for the Protection of Birds.
11.11 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.
11.12 Local Planning Authorities/Greater Manchester Ecology Unit. Biodiversity Action Plans for Bats. Dates vary.
11.13 Wild about the North West – A Biodiversity Audit of North West England. Regional biodiversity Steering Group, 1999.
11.14 Ketchin, M. The Design and Construction of Bat Boxes in Houses. 1996. Scottish Natural Heritage.
11.15 Biodiversity: The UK Steering Group Report. HMSO, 1995.
11.16 Hutson, A.M. Action Plan for the Conservation of Bats in the United Kingdom. 1993.The Bat Conservation Trust.

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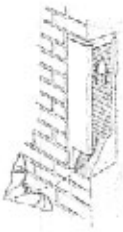
Bat Tube 1FR





Cut

This Tube system meets the characteristic behavioural requirements of the types of bats that inhabit buildings. The design maintains excellent climatic conditions inside the Tube allowing the animals to either hang onto the wooden rear or onto the wood-concrete front. It requires no maintenance because droppings fall on to of the entrance ramp.

Suitable for: *Bat species* that inhabit buildings

Material: SCHWEGLER wood-concrete with integrated wooden panel onto which the bats can cling.

Installation: Can be installed on external walls - either flush or beneath a rendered surface in concrete *and, during renovation* work, under wooden panelling or in building cavities (e.g., slab-type building structures, bridges, etc). If required, it can be painted using standard air-permeable exterior paint. *Birds will not occupy this* box. To allow access into existing cavities in buildings, use the 2FR model below.

Example:



Built into an external wall



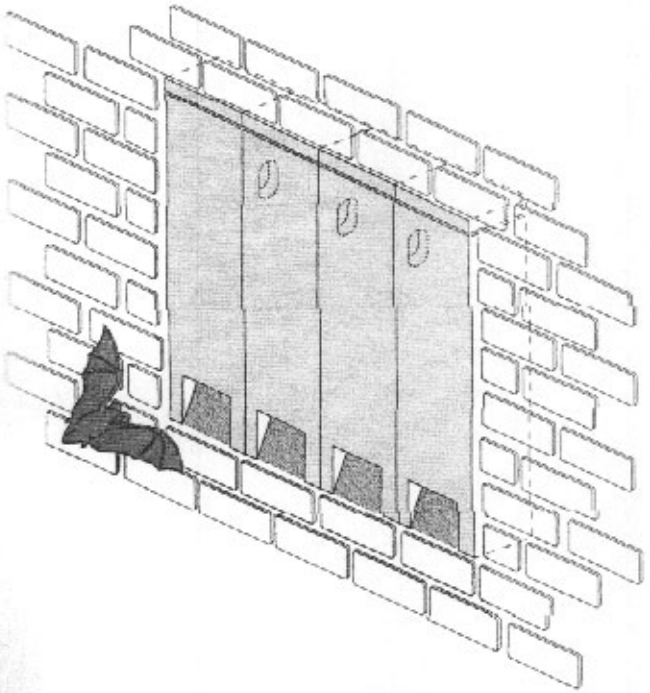
Installation within wall - only entrance is visible

Dimensions: height 47.5 x width 20 x depth 12.5 cm
Entrance: width 15 x height 2 cm



Order no. 00 750/6

Bat Tube 2FR



This maintenance-free concept enables Bat Tubes to be built into the masonry of a wall. A number of Tubes can be placed next to one another in modular form to create much larger spaces with transverse connecting holes. Each Tube has three different types of internal partition. One of the special features is an optional passage through the rear panel: this enables existing cavities occupied by bats in the walls or structure of a building to be retained, providing an unobtrusive solution when conversion, renovation or insulation work is being carried out on older buildings. The animals can crawl from one Tube to another and through the rear into the existing cavities.

Siting:
Listed buildings, industrial buildings, bridges and buildings of slab-type construction. Several tubes should can be installed together - we recommend *connecting at* least 3 units together.

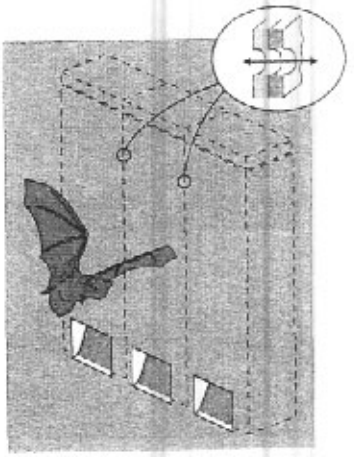
Suitable for:
Bat species that inhabit buildings

Material:
SCHWEGLER wood-concrete with integrated internal partitions

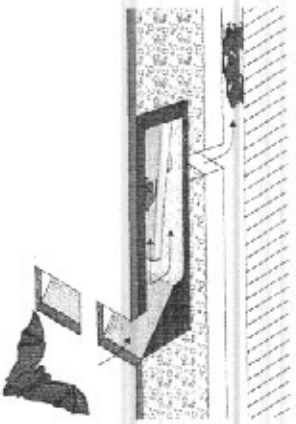
Dimensions:
height 47 x width 20 x depth 12.5 cm

Entrance: width 15 x height 2 cm

Order no. 00 755/1



Example: 3 Tubes



Example: installation within a wall with only the entrance visible

Bats

Bat Access Panel 1FE



This is a maintenance-free access panel for installing on or in the surface of exterior walls. The open rear enables bats to continue to use existing nesting sites in walls. Bats prefer to remain in familiar nesting places and their survival can be supported by retaining their sites within walls.
The 1FE is especially suitable for use during conversions, renovations or insulation work on older types of buildings and historic buildings.

Positioning: Its depth of just 8 cm allows easy integration into insulation or masonry. If necessary it can also be attached to the underlying structure using screws and plugs and two eyes.

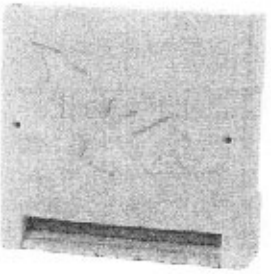
Install at least 3 m above the ground, ensuring unobstructed access for bats. Installation of multiple units is recommended.

Suitable for: bat species that inhabit buildings.

Material: SCHWEGLER wood-concrete

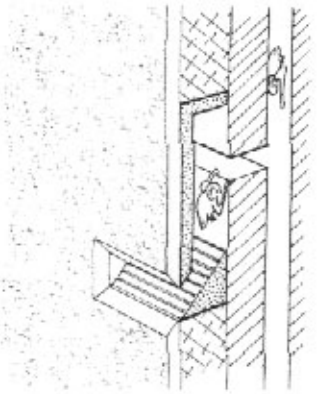
Dimensions: height 30 x width 30 x depth 8 cm

Weight: 7.8 kgs

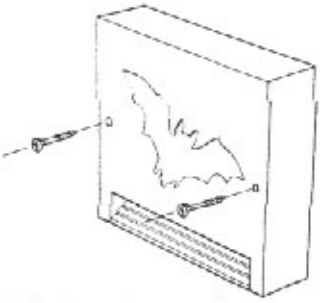


Bat Access Panel 1FE

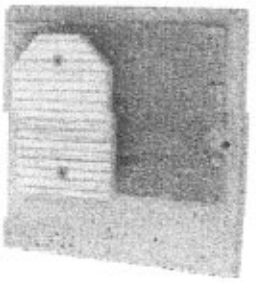
Order no. 00 747/6



Installation within wall

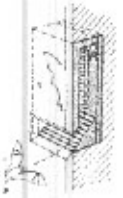


Optional mounting on wall with screws



Optional Back Plate

Optional Back Plate for 1FE
If access to an existing nesting site is not required, the 1FE can be fitted with an optional Back Plate, which includes an attached wooden panel to create a cavity wall inside the box. The roughened surfaces of the Plate, and the inside of the 1FE itself, are very attractive to bats. Installation of the complete box is easy. For example, it can be screwed to a wall or fixed within insulation.



Material:
SCHWEGLER wood-concrete with wooden panel (designed for longterm use).

External dimensions of 1FE with Back Plate:
height 30 x width 30 x depth 10 cm

Weight: 2,2 kg (Back Plate)
Total weight of 1FE and Back Plate: 10 kg

Back Plate for 1FE

Order no. 00 748/3

Bat Detectors

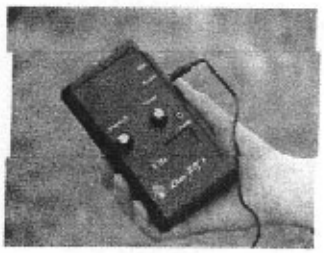


Mini-3 Bat Detector

This detector has an improved microphone giving up to 3 timesincrease in sensitivity, and a louder, clearer audio output.

Features include:
- single-handed operation.
- large, accurate tuning dial
- broad tuning range for all animal ultrasound
- long battery life (up to 200 hours)
- twist-on directional horn to enhance sensitivity
- rugged weatherproof carrying case containing headphones and batteries

Order no. 00 138/2



Professional Bat Detectors
Ask for our special free catalogue. Also available via e-mail. This includes additional items such as:
Special sweep detectors (bridge box)
Software package for analysing bat sounds, for identifying grasshoppers
Complete bio-acoustic systems and many other features.

Bat Box Suppliers

Please note that prices are correct at time of printing, but are liable to change.

The Belfry Bat Box. A bottom opening cylindrical bat box. Durable, completely closed at the top and sides. Suitable for masonry structures such as the underside of bridges Price £27.00
Peter Smith, Environmental Consultant. 1 Bettws Cottage, Bettws, Abergavenny NP7 7LG
Tel: 01873 890598

Wooden Box, includes a pack of evening primrose seeds to attract night flying insects. Price £18.99
Peoples Trust for Endangered Species. 15 Cloisters House, 8 Battersea Park Road, London SW8 4BG **Tel:** 020 7498 4533

Substantial wooden box which can be scorched (at an additional cost) for an enhanced appearence. Price £7.50 Also hibernation boxes. Price £36.50
'Twitchers' Wildbird Supplies and Country Services, 32 Monckton Avenue, Oulton Broad, Lowestoft, NR32 3EG **Tel/Fax:** 01502 5111944

Woodcrete box. 'breathable' woodcrete. £17.95 Also books, tapes, detectors and mealworms.
C.J. Wildbird Foods Ltd. The Rea, Upton Magna, Shrewsbury, SY4 4UB **Tel:** 01743 70954

Schwegler 'woodcrete' boxes, hibernation boxes and standard wooden boxes (various sizes for different species), with siting information, from £23.95 - £99.95, or send for information on detectors, night vision, books etc.
Alana Ecology Ltd. The Old School, Church Street, Bishop's, Castle, Shropshire SY9 5AE
E-mail: infor@alana-eco.net Web: http://www.alana-eco.net
Tel: 01588 630173

Schwegler 'woodcrete' boxes – full range
Jacobi Jayne & Co Hawthorne Cottage, Maypole Hoath, Canterbury, Kent CT3 4LW
E-mail enquiries@jacobijayne.com Web: www.wildbirdnews.com
Tel: 01227 860388 Fax: 01227 860521

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