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Bat Survey Report (preliminary day-time survey):

**Redundant Kay's Soapworks,
Kenyon Street,
Ramsbottom,
BL0 0AE.**

OS grid reference: SD 794 171

Commissioned-by:
John Allen

For
ISM Waste and Recycling

Survey Date: 19/1/18

Report Date: 25/1/18

Table of Contents

1. Summary	page 3
2. Introduction	page 4
3. Bats and the law	page 7
4. Survey and limitations	page 8
5. Findings	page 9
6. Conclusions/Discussion	page 15
7. Recommendations	page 16
8. References	page 16
 Appendix 1 - Angela Graham's Experience	 page 17
Appendix 2 - Criteria used in assessing risk of roosting (in the absence of obvious evidence of roosting)	page 19
Appendix 3 - Recommendations for further survey work when the findings of the preliminary survey were negative	page 21
Appendix 4 - Bat boxes for walls	page 22

Summary.

(This summary should be read in conjunction with the conclusions and recommendations.)

These redundant industrial buildings were surveyed prior to their proposed demolition.

There are no enclosed loft spaces and many elements adjoin, with no access to view much of the exterior. This problem is enhanced by the River Irwell running immediately adjacent to the west of the buildings, with the East Lancs Railway line immediately beyond that.

The site is in an area where the pipistrelle bat is common. There is good feeding habitat immediately available and linking well with feeding habitat further afield. This feeding habitat is likely also to be used by bat species such as the Daubenton's and brown long-eared. The Daubenton's bat in particular favours roosting-sites adjacent to water.

There was no evidence to suggest bats of any species had been inside any of the buildings, but an exhaustive search was not possible. There are sections of slate roof in particular where bats could roost between the slates and roof-lining material. Some of these give immediate access to the river which connects well with woodland further afield. There are also a limited number of places where bats could gain access to the fabric of walls to roost and/or hibernate.

One building is becoming dangerous and part of the roof has fallen-in. I understand this is the subject of a Section 80 emergency demolition order from Bury MBC. The site is expected to come into my client's ownership in the near future and I believe it is hoped to demolish imminently after that. There is a section of external/boundary wall with a few gaps where bats might hibernate and the building has roof-roof-slates that are in a very uneven state in places but still largely close-fitting in others. Although it's not impossible that a bat may hibernate there, I think the level of risk is sufficiently low that, in the circumstances, the demolition can take place without further survey work, even in winter. The bat consultant will need to give a tool-box talk to the contractors however and may need to be present during parts of the work if it is carried-out between the months of November and March inclusive. Bats are especially vulnerable when hibernating.

Some alternative provision for bats should be made by the fixing of bat boxes of a type approved by the bat consultant to the external walls of the adjacent office block, which will be retained.

The work should be covered by a Bat Method Statement.

The remainder of the site will be hard to survey conclusively at dusk or dawn due to the limited access available, but given the number of buildings present with slate roofs, the limited access at the day-time survey to view parts of the exterior and the fact the site is immediately adjacent to high quality bat feeding habitat, some attempt should be made to assess the situation further via bat activity survey work between the months of May and September inclusive. I've assessed the risk of some roosting as at least moderate, therefore to accord with good practice there should be at least two such surveys (dusk emergence/return-to-roost-at-dawn). It is my usual practice to separate them by at least a month as bats often move around between the roosts known to them over the course of the season.

Introduction.

I was asked to assess the importance of these buildings to bats as part of the planning process prior to their demolition. Incidentally I comment on any issues discovered with respect to other protected/invasive species and species of conservation concern.

This is a redundant soap-works on the eastern bank of the River Irwell:

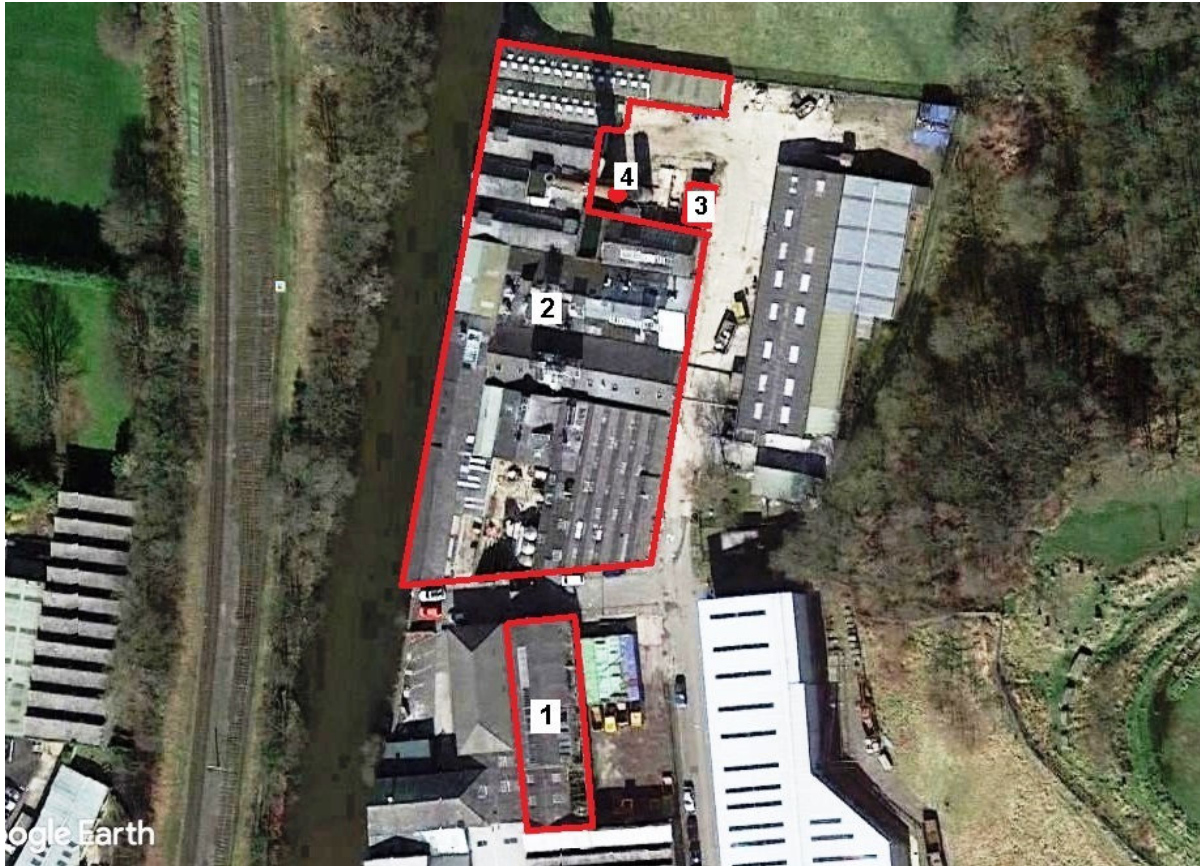


Fig 1. Layout of buildings surveyed, showing position adjacent to River Irwell and close proximity to woodland. Buildings numbered 1 to 3 and chimney numbered 4.

There is an extensive complex of inter-connected structures essentially forming one large building (numbered 2 in Fig. 1 above), a separate smaller building to the south (1), which is in two parts and adjoins an office block to the west which will be retained, a small single-storey building in the north-east of the site (3) and an old mill chimney (4).

Plates 1 and 2 below give an overview of the type of buildings on the site:



Plates 1 and 2: Buildings 1 and 2 as seen from east and buildings 2, 3 and 4 (chimney) as seen from north-east.

The site is in an essentially sub-urban location at the northern end of Ramsbottom:

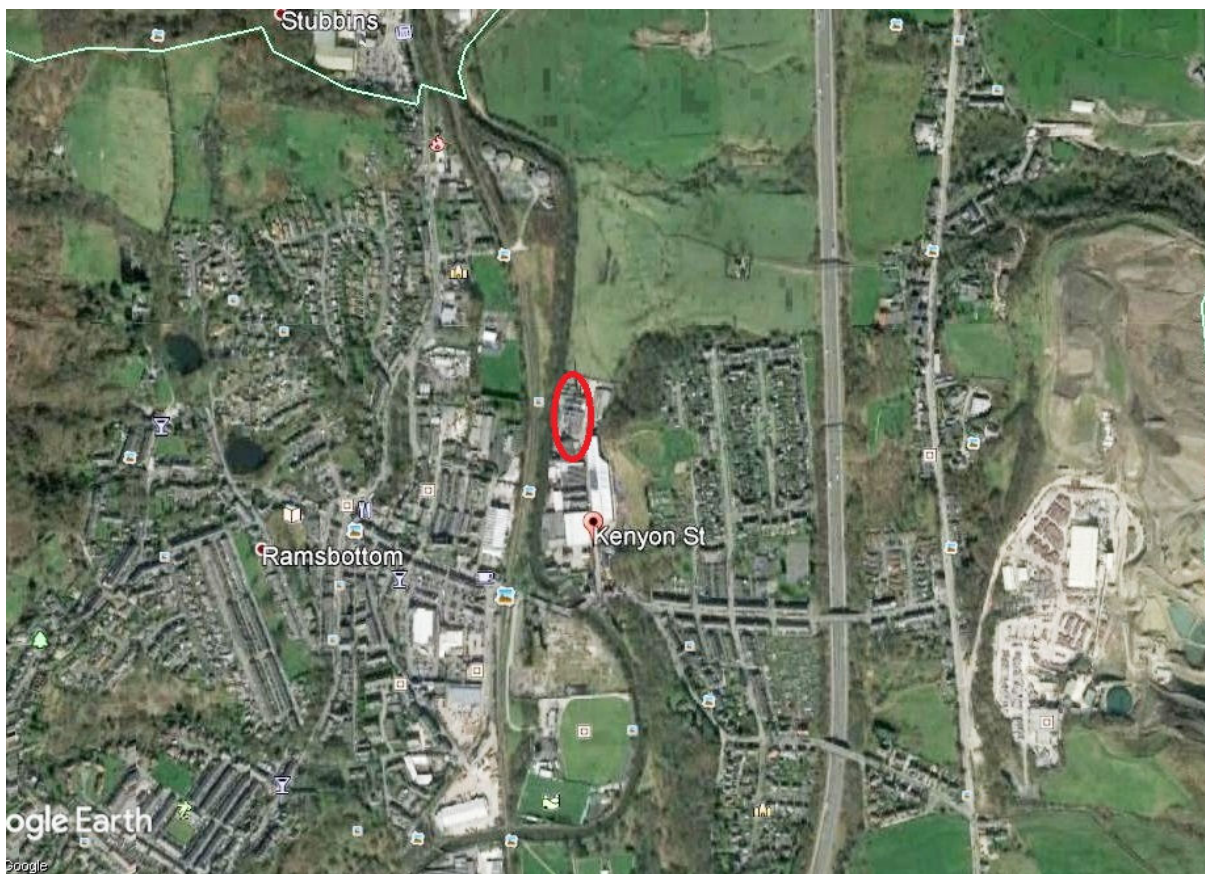


Fig. 2. Location of property indicated by red circle

The mill is immediately adjacent to the River Irwell to the west:



Plate 3. River Irwell as seen looking north past Building 2.

The East Lancashire Railway line is immediately beyond the river. The site is less than 30m from woodland to the east but the river bank is also lined with trees, leading to more woodland about 500m away. The nearest lodge is less than 500m away, with another 100m beyond it.

The pipistrelle bat (2 species but especially *Pipistrellus pipistrellus*) is common and widespread in the area. I have personal knowledge of roosts of this species within 500m, including a maternity colony roost about 250m away.

Roosts of this species can occur in any building that provides suitable roosting crevices, with the risk of bat presence increased by close proximity to good bat feeding habitat and commuting routes; for example tree-lines, hedges, woodland, scrub and water courses and bodies. The bats use different roosts at different times of year, sometimes singly and sometimes in large groups of females with dependent young. They can move frequently and unpredictably between the roost sites known to them. The majority of house-holders with a roost of this species are unaware of it.

In summer females gather together each with their single off-spring in, sometimes large, maternity colony groups. Disturbance can cause the abandonment of babies (pups). In autumn when the young are independent, females visit males to mate. In winter the bats hibernate and rousing from hibernation - a slow process - can result in a depletion of fat reserves that may compromise the bats' ability to survive the winter. Females become pregnant in spring when their food (insects) becomes available again.

Other species recorded by myself within 1.5 kilometres are the Daubenton's (*Myotis daubentonii*): recorded within 1 kilometre but likely to use the river next to the mill for feeding and commuting, brown long-eared (*Plecotus auritus*): an essentially woodland species and the species most likely to leave evidence of roosting within barns and lofts, and noctule (*Nyctalus noctula*): largely dependent on cavities in trees. The whiskered

(*Myotis mystacinus*)/Brandt's (*Myotis brandtii*), which are hard to separate without dna analysis are likely to occur also.

Bats and the Law.

All British bats and their roosts are legally protected under the Wildlife and Countryside Act of 1981 (as amended) and the EC Habitats Directive of 1994 as implemented by the Conservation of Habitats and Species Regulations 2017.

Where a development will destroy a bat roost, a Low Impact Class Licence or a European Protected Species Licence (Mitigation Licence) is required before the roost can be interfered with in any way. The former applies in cases where only small numbers of common species of bat are using the building within certain parameters. It usually takes approximately 2 weeks for these licences to be issued, whereas the turn-around time for a full European Protected Species Licence is approximately 7 weeks once the application has been submitted. Any licence issued is a legally binding document.

Licences can only be issued providing planning permission has been granted, where applicable.

Three conditions have to be met in order to obtain a licence, known as the "three tests":

- That the development is necessary for the purpose of "preserving public health or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequence of primary importance for the environment";
- That there is "no satisfactory alternative";
- That the action authorised "will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range".

N.b. The way in which the necessity is assessed includes whether the client has an alternative that it would be reasonable to expect them to adopt.

Necessary mitigation and compensation measures to ensure the favourable conservation status of bats will be maintained, would include appropriate timing and methodology for the work, including details of how the bats will be provided-for in the long term.

Planners are required by the Government to satisfy themselves before granting planning consent that it would be possible for a licence to be obtained if necessary. Accordingly they are obliged to apply the three tests before issuing consent. For this reason enough survey work has to have been undertaken that the planning authority can evaluate whether or not the three tests can be satisfied. To avoid delays in obtaining consent it is in the client's best interest to find out sooner rather than later whether any bat roosting issues need to be addressed.

Natural England, the Government body responsible for administering the law relating to bats, have issued guidelines to planners on how to proceed with respect to bats

Outside the planning system, the onus is on developers/members of the public, to have sufficient investigations undertaken to satisfy themselves (and the authorities in the event of a subsequent investigation), that their actions are unlikely to be in contravention of bat legislation.

N.b. It should always be remembered that bats often roost in places not anticipated by a lay person, such as modern buildings, trees with cavities, and bridges. Some

leave no signs in lofts, as they roost underneath external features such as roof slates, ridges, weather-boarding and cladding.

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 are legally obliged to stop work and seek advice. This should be from an appropriately experienced and licenced bat ecologist.

Additional Relevant Legislation and Policy.

Between 1995 and 2010 certain more vulnerable habitats and species were the subject of National or Local Biodiversity Action Plans. This strategy for the protection of biodiversity has been superseded by UK post-2010 Biodiversity Framework, which is largely now implemented at county level. Internationally The Convention on Biodiversity produced a Strategic Plan for Biodiversity 2011-2020. Further to this the EU Biodiversity Strategy was launched in 2011.

Section 41 of the Natural Environment and Rural Communities Act 2006 lists species "of principal importance for the purpose of conserving biodiversity". The list was up-dated in 2014 and includes the brown long-eared bat (*Plecotus auritus*), noctule (*Nyctalus noctula*) soprano pipistrelle (*Pipistrellus pygmaeus*) and 4 other bat species.

The National Planning Policy Framework of 2012 (1) states that "the planning system should contribute to and enhance the natural and local environment" by a number of means, including "minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks... ."

The Wildlife and Countryside Act of 1981 gives protection to the nests of all wild birds whilst being built or in use, including by newly fledged birds that have not left the immediate vicinity of the nest. The bird nesting season is generally considered to be 1st March to 31st July for most species but can extend a number of weeks either side of this depending on the species concerned and weather conditions in that particular year.

Survey.

I made a daytime visit on **19/1/18** to undertake a preliminary survey of the building, assess its likely importance to bats and advise whether or not a precautionary approach or further survey work is needed.

Having been involved with bat survey work for 30 years and consultancy work for 20years, it is always my objective to carry-out my work in a manner consistent with accepted Good Practice Guidelines (2) and consistent with the code of practice of the CIEEM. I hold Natural England Class Licences CL21, 18 and 16. Amongst other things these cover me to apply for Low Impact Licences for clients and undertake bat survey work. I have a supplementary licence to photograph bats in roosts and a CL29 Barn Owl Class Licence. My credentials are expanded-upon in Appendix 1.

As far as possible, I surveyed the building inside and out with the aid of, 2 million candle-power torch, camera with 6x optical zoom and binoculars (8x42). Surveyor's ladders, step-ladders, head-torch, 10x 50 binoculars, fibrescope (6 and 13mm heads, extendable to 2m), camera with 18x zoom and mirrors were also available if needed.

I was looking for access to potential roosting places and evidence of their use such as droppings, urine spots, staining and scratch marks around entrances, feeding remains and bats - alive or dead. It should be noted that droppings are the sign most frequently found, but they are often deposited in areas that cannot be visualised and they can turn to powder quite quickly. They are usually soon washed and blown away from exposed external surfaces.

I also take into consideration the surrounding habitat and the range of bat species it appears likely to support, along with the quality of the habitat linkages with the wider area.

There are limitations to undertaking a bat survey in winter, when bats are hibernating and largely inactive. Droppings from the summer may no longer be evident.

Findings.

Building 1.

This is a brick building with a slate roof, part of which has already collapsed:



Plate 3. Eastern elevation of Building 1 showing uneven and missing slates.



Plate 4. Interior of Building 1, looking south.
Note debris from collapsed section of roof on floor.

On the areas of external roof that could be inspected, most of the slates were quite close-fitting, while others were too uneven to be at high risk of use by bats.

There is a wall remaining from a previously demolished building immediately to the east of the building. Much of this couldn't be seen well due to the presence of containers and skips, but it contained some gaps where a bat might shelter, probably on a casual basis:



I understand this building is the subject of a Section 80 emergency demolition order so the client is keen to demolish it as soon as possible.

The office block immediately adjacent to Building 1, to the west of it, will come into the client's ownership with the rest of the site, but will be retained.

Building 2.

This is a very complex building, essentially made up of numerous inter-connected smaller - but still large - buildings, with many sub-divisions. The buildings are two-storey in height. Some have a ground and first floor and some are completely open inside. No lofts or cellars were found.

In places it could be seen that slate roofs were lined with breathable membrane:



In others there were sarking boards present:



Some areas had plasterboard ceilings lining the original lathwork:



Many areas had traditional "northern-light" roofs:



The slates on at least some of these were in poor condition:



Onn building was completely lacking a roof and there were some potential bat access gaps into the walls:



The north-eastern-most of the inter-connected buildings had a crack in the internal brickwork and there was easy access for bats to find this potential roosting place over the top of the main door:



Overall, inside the buildings it didn't seem particularly likely that bats might roost on a regular basis though it would be hard to say with certainty that no opportunistic bat/s wouldn't choose to hibernate there, especially in one of the darker areas with high humidity.

The layout meant that many of the roofs could not be seen from outside the building, especially as the complex was immediately adjacent to the river.

It was not possible to view the buildings from the far side of the river because there was no obvious, easy access to the railway line.

Slates where seen provided a significant number of access places for bats to roost beneath them:



There were some gaps in ridge mortar-work too.

Building 3.

This is a small, brick building with a flat, corrugated roof:



There was a large gap between the fascia and the wall on the southern side but apparently minimal roosting potential overall.

Building 4. Chimney

There was no access to view the interior, or much of the exterior at lower level, but it appeared to lack obvious bat roosting potential.

I understand this is proposed for demolition at a later date than the rest of the site.

Conclusions/Discussion.

Appendix 2 gives an outline of the criteria used in assessing the level of risk of use by bats.

Building 1 is in the worst condition and apparently needs to be demolished as soon as possible. I understand a section 80 emergency demolition order is already in place and the client wishes to demolish the building as soon as it comes into their ownership.

There is some roosting potential available under roof slates, especially where the roof is in particularly poor condition. These opportunities on the whole are unlikely to give bats the stable, draught-free conditions they generally prefer. The same applies with respect to gaps into walls, which are generally quite shallow.

If the building were not in need of urgent demolition I would recommend demolishing outside winter when bats are not hibernating. The colder the weather the more deeply torpid bats will be, the longer it takes for them to rouse to be able to escape danger and more likely it is that they will use up sufficient fat reserves in rousing that they may not survive the winter. To accord with good practice I would also recommend a bat activity survey in the warmer months on a precautionary basis prior to demolition.

However, as the likelihood of a bat or bats being present at any given time in the winter is probably minimal, I think it would be acceptable to demolish it between the months of November and March inclusive, so long as a Bat Method Statement is written to cover the work. The bat consultant will need to provide a tool-box talk and may need to be present during part of the demolition. In addition compensatory provision should be made for bats.

As the adjacent building will remain bat boxes, of a type approved by the bat consultant can be attached to it. Schwegler "woodcrete" boxes are the more durable and the boxes of choice. See Appendix 4.

Building 3 is low risk for roosting by bats and the chimney seems unlikely to provide potential roosting places, but should be looked at more closely when access is available.

Access to inspect the exterior of parts of Building 1 was not available. However it could be seen that the slate roofs alone provide significant bat roosting potential. As the side of the building facing the river could not be seen, it's hard to evaluate accurately how much risk there is of roosting by a maternity colony of bats in this area, or by a locally less common bat species such as the Daubenton's.

There is a pedestrian tunnel underneath the railway line that would allow a view of the building from slightly downstream, but I was unable to find access to this at the time of the day-time survey. However, historically I surveyed the tunnel for another client so presumably access is still possible, perhaps via a footpath on the far side of the railway. If this can be located it would be worthwhile attempting to view the building from the far side of the river.

Currently I consider the building to have a moderate to high risk of some roosting by bats. Good Practice Guidelines suggest moderate-risk buildings have two bat activity surveys (emergence at dusk or to return-to-roost at dawn) when the findings of the initial survey were negative. High risk buildings should have three. See Appendix 3.

As bats tend to move around between the roosts known to them, I usually separate surveys by at least a month. As mating roosts of pipistrelle bats can only be discovered at the latter end of the season, it is recommended that one survey be done in August or September.

There may be scope for a phased approach, allowing some areas that have been relatively easy to assess and found to not apparently contain roosts to be demolished in advance of others, to allow a better assessment of the remaining buildings to be made.

Recommendations.

These recommendations should be read in conjunction with the conclusions above.

Have a Bat Method Statement written to cover the imminent demolition of Building 1.

Have the Building 2 inspected from beyond the river if possible.

Have a bat emergence survey undertaken in favourable weather conditions in May or June. See Appendix 2: suggested action for high risk structures. At least one, possibly two more surveys will be needed.

The recommendations will be up-dated after each survey.

References.

1. Department for Communities and Local Government (2012). National Planning Policy Framework.
2. Ed. by Collins, J. (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines - Third Edition. Bat Conservation Trust.

Appendix 1 - Angela Graham's Experience.

- I hold Natural England Class Licences CL21 - Registered Consultant 163 - CL18 and CL16. CL21 covers me to apply for Low Impact Class Licences for clients - a more stream-lined system for quickly obtaining a licence from Natural England when a roost of a small number of common bat species will be impacted-upon by the development. CL18 covers me for survey/consultancy/scientific work. CL16 allows me to do voluntary work with house-holders at domestic properties in certain circumstances, on behalf of Natural England, and to train new volunteers. I have a supplementary licence to use flash photography in bat roosts (2014/SC1/0160), possess up to 10 live/dead bat specimens (20123429). I have a CL29 licence to disturb barn owls.
- I'm a member of The Chartered Institute of Ecology and Environmental Management.
- I undertake my work in accordance with the principles outlined in the Bat Conservation Trust's "Good Practice Guidelines".
- I have been involved in bat conservation for 30 years, initially as a member of the South Lancashire Bat Group from its inception in 1987 and as a volunteer with the Nature Conservancy Council (NCC) - first licenced in 1989. Later, and for many years, I was Co-ordinator/Chair and Trainer for the South Lancashire Bat Group. I trained the people who currently run the group, one of whom is a Trustee for the Bat Conservation Trust. I was a founder member of the Greater Manchester Bat Group in 2002 and ran the group for 4 years.
- Over the last 23 years I have done increasing numbers of bat surveys on a consultancy basis, firstly part-time, then full time from December 2003.
- My experience at applying-for European Protected Species Licences with respect to bats spans approximately 20 years.
- From 2003 to 2008 I represented the bat groups of the north-west region at national bat worker meetings, hosted by the Bat Conservation Trust.
- I regularly communicate with the Ecologists who advise local authority planners, especially the Greater Manchester Ecology Unit and West Yorkshire Ecology raising concerns about practice and protocols.

Other experience includes:

- Attending bat-worker conferences every year since 1988 (mainly England, some in Wales) plus additional symposia on specific topics such as mitigation and woodland bats.
- Helping with winter surveys of underground hibernation sites in Clwyd and north Lancashire..
- 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 until around 2005.
- Helping local authorities and the Greater Manchester Ecology Unit formulate their Biodiversity Action Plans for bats.
- Administering the bat casework for English Nature (now Natural England) in the South Lancashire and Greater Manchester areas over 1998-2000.
- Assisting with research involving mist netting, harp trapping and radio-tracking.

- Continuing to attend courses run by recognised experts to ensure I stay up-to date both with respect to bat survey-work and conservation, and issues such as health and safety.
- Re-passing the Construction Site (CITB) Operatives test in June 2017 and last updating my confined spaces training in 2006.
- Contributing to the Bat Conservation Trust's survey standards guidelines.

Other ecological experience includes:

- Bird watching for fun since 1982 with a general interest in wildlife, ecology and conservation for a similar period.
- Attending short courses and field training with respect to grasses, flowering plants, British mammals including water voles, reptiles and amphibians, non-native invasive plant species, Extended Phase 1 Habitat Surveying, National Vegetation Classification, Environmental Impact Assessment and use of GIS.
- Taking part in British Trust for Ornithology breeding bird and associated butterfly surveys annually.
- A year-long sandwich placement assisting with badger research, including radio-tracking.
- Short periods of voluntary work with the Lancashire Wildlife Trust and Royal Society for Protection of Birds.

Appendix 2 - Personally-devised criteria used in assessing risk of roosting (in the absence of obvious evidence at the preliminary survey).

Risk of roosting	Definition	Suggested Action
Nil	Whole of structure/tree can be seen well enough to be sure there are no roosting opportunities.	No need to consider bats further unless development is delayed and potential roosting places might develop in time.
Minimal/ negligible	All or most of structure/tree can be seen well enough to suggest there are few, if any, places suitable for roosting and the location does not provide easy access to potential feeding grounds.	Although roosting is thought to be unlikely and therefore the development is unlikely to impact on the favourable conservation status of bats, a precautionary approach should be taken in relevant areas at the time of the work. Further survey work needed only if development delayed.
Low	Whole of structure/tree can be seen well enough to know there are no more than a few openings that could be used by an individual bat or two and/or these provide access to the sorts of features that are likely to be suboptimal due to materials and/or conditions within (eg unstable temperature); and/or the location provides limited access to potential feeding grounds.	Although regular roosting is thought to be relatively unlikely and the development is unlikely to impact on the favourable conservation status of bats, a single survey at dusk or dawn in favourable weather conditions would be appropriate to accord with good practice. This would reduce the extent to which the judgement is based on speculation. If the findings were ambiguous e.g. possible bat emergence and/or considerable bat activity around the building, the survey would need repeating.
Moderate/ medium	A small number of openings are present in an area of reasonable habitat, and at least some seem likely to provide access to good conditions for roosting bats, and/or a loft/hay-loft is present that appears to have good qualities for roosting but there were limitations to access or no evidence of bats was found at the time. Cellars may be assessed as potentially being suitable for hibernation in winter,	Further work is needed to better assess the abundance of bat activity in the vicinity and whether or not bats seem to make use of the roosting potential available. To accord with good practice a dusk emergence survey and a dawn return-to-roost survey will be necessary. A second inspection of the interior may also be necessary - if the survey was undertaken in winter for example. As the absence of bats on two occasions wouldn't guarantee absence at other

	but the conditions and/or location aren't optimal.	times, possibly including winter, some precautions would be needed at the time of the work and some roosting potential should be retained/re-created. In the case of cellars and equivalent, inspection in winter is necessary. Some work, for example pointing old stone walls, should be avoided in winter.
High	There is at least one feature that is typical of those favoured by bats for regular roosting and it/they provide access to abundant insect food on-site and/or via good links with the wider natural environment. The feature/s could be suitable for use by a maternity colony, either as a main or satellite roost, or by a territorial male in autumn in the case of pipistrelles, or by individuals or small numbers of bats at any time of year, including winter when hibernating.	The extent to which bats of different species make use of the potential available needs to be investigated by carrying-out at least 3 surveys at dusk and/or dawn spaced over the months of May to September inclusive, possibly extending into April or October if weather conditions are favourable. (Air temperature above 8°C and not more than light rain and/or gentle breeze. I generally plan to do surveys only when the forecast is for 10°C or above.) Maternity colonies have largely disbanded by September, but territorial male pipistrelles may be missed without a survey in September and a lot of smaller roosts are discovered at this time of year. As bats could hibernate unseen in winter and/or roost at other times not covered by the survey work, appropriate precautions would be needed at the time of the work along with maintenance of appropriate potential roosting places.
High - hibernation only	Cave-like places with stable conditions and high humidity, such as cellars can be used for hibernation in winter.	High-risk potential hibernation sites need at least 3 inspections spaced over the winter months as bats will move between sites depending on the weather conditions.

Appendix 3 - Recommendations for further survey work when the findings of the preliminary survey were negative.

Bat Conservation Trust

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^b

^a Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in the category.

^b Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

Taken from "Bat Surveys for Professional Ecologists: Good Practice Guidelines", 3rd Edition (2)

Table 7.1 Recommended timings for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
May to August (structures) No further surveys required (trees)	May to September ^a with at least one of surveys between May and August ^b	May to September ^a with at least two of surveys between May and August ^b

September surveys are both weather- and location-dependent. Conditions may become more unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season.

Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more, unless there are specific ecological reasons for the surveys to be closer together (for example, a more accurate count of a maternity colony is required but it is likely that the colony will soon disperse). If there is potential for a maternity colony then consideration should be given to detectability. A survey on 31 August followed by a mid-September survey is unlikely to pick up a maternity colony. An ecologist should use their professional judgement to design the most appropriate survey regime.

Taken from "Bat Surveys for Professional Ecologists: Good Practice Guidelines", 3rd Edition (2)

Appendix 4 – bat boxes for walls

Summer & Winter Bat Roost 1WQ for installation on external walls / surfaces



Installation: For easy installation, the 1WQ is detachable into two parts. First the base is screwed to the wall. After that, the front-cover with the bat-silhouette is attached, covering the mounting screws. The 1WQ can be easily attached to most types

of external brick, timber or concrete walls. It will also attract bats if it is placed inside a roof space or inside historic buildings. When it is fixed to timber we recommend that the gaps between the wall and the box are sealed with silicone to prevent moisture being trapped.

Interior design: the interior has a variety of different surfaces at various heights, from which the bats can hang. Along with certain climatic advantages this arrangement enables the individual species to find a suitable roost.

Exterior design: the top of the two-piece box is clearly marked with a silhouette of a

bat. Below this is the specially designed entrance area offering a good foothold. The wide arc forming the entrance is intended to facilitate access, especially by inexperienced young animals. Paint, repainting in a different colour: the 1WQ is supplied with a weather-resistant coat of light grey paint. If necessary it can be repainted to match the background, using standard, air-permeable exterior wall paint. In such cases it is essential to only use air-permeable concrete paint to ensure that the box can properly fulfil its function.

Material: weather-resistant,

air-permeable lightweight concrete with an innovative shape to ensure many decades of effective nature conservation. Any metal parts that the animals could come into contact with are made of a rustproof material. Fixing material included.

Maintenance: self-cleaning and therefore maintenance-free.

Dimensions:
Height: 58 cm
Width: 38 cm
Depth: 12 cm

Weight: 22,0 kg

Order no 00 765/0

Schwegler 1FQ Bat Box

The latest model from Schwegler is an attractive box designed specifically to be fitted on the external wall of a house, barn or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside as well as a roughened front panel to enable the bats to land securely. Access into the box is via a step-like recess.

This durable box is easy to attach to most walls, requires no maintenance or cleaning and will last for decades.

Dimensions 56.5cm h x 35cm w x 8.5cm d. Please note that this box is designed to be fitted to a wall. As it weighs 15kg it is unsuitable for fences or sheds.

B02092 £64.95



Inside the 1FQ box

Rough pieces of wood incorporated into the back of the box are good insulators and are used by the bats as perches. The internal layout offers three different areas with varying degrees of brightness and temperature.





Schwegler 1FF bat box (Bat box 65 from Envisage Wildcare)



Schwegler 1FFH (Bat box 67 from Envisage Wildcare)

Bat Box Suppliers

Schwegler woodcrete:

NHBS: 01803 865913

http://www.nhbs.com/bat_boxes_eqcat_421.html

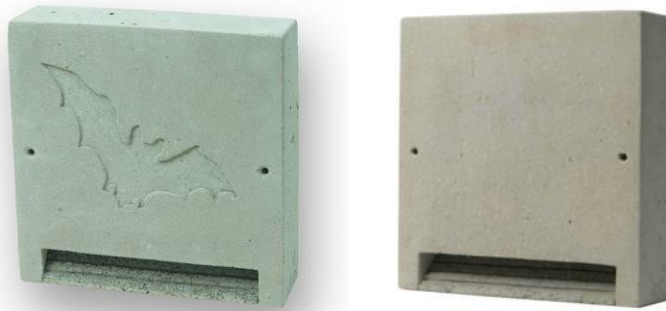
Envisage Wildcare. 01793 724848:

[http://www.wildcareshop.com/Products_Results.php?pageNum_WADAProducts=0&totalRows_WADAProducts=25&Search=1&ProductCategoryID\[\]=5](http://www.wildcareshop.com/Products_Results.php?pageNum_WADAProducts=0&totalRows_WADAProducts=25&Search=1&ProductCategoryID[]=5)

Nature Counters. 07917 340114

<http://www.naturecounters.com/catalog/index.php?cPath=36>

Jacobi Jayne: <http://www.livingwithbirds.com/nest-boxes-by-species/bats/>



Schwegler 1FE
Can be screwed to exterior of wall.

Schwegler 1FE can be embedded in the wall with the addition of a back panel:

