

BAT AND BARN OWL ASSESSMENT

BARNS AT

TREGOON FARM

GWEEK

HELSTON

CORNWALL

TR12 7AF



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I. ADMINISTRATION DETAILS

| | |
|--|---|
| Property Assessed | Barns at Tregoon Farm Gweek Helston TR12 7AF |
| Grid Reference | SW699270 |
| Name & Address of Contact | David Oates Tregoon Farm Gweek Helston TR12 7AF |
| Tel | 01736 796111 |
| Name & Address for Invoice payment | As above |
| Planning Authority Involved | Cornwall Council West 1 |
| Planning Reference Number | |
| Consultancy Reference Number | CEC 497/3287 |
| Date of assessment request | 31/01/2020 |
| Date of assessment | 11/02/2020 |
| Weather on date of assessment | Clear, dry with a cold wind |
| Surveyor's name & Licence Numbers | Steve Adams 2015-15960-CLS-CLS (CL18 Bat Survey Level 2) |
| Report Reviewed by | Dave Hunter (2017-28109-CLS-CLS) |
| Proposed work: <i>Demolition / Conversion / Restoration</i> | It is proposed to convert one building to form accommodation and demolish several other buildings to redevelop. |
| Report valid until | February 2021 |

2. SUMMARY OF RESULTS & RECOMMENDATIONS

| | |
|------------------------------------|--|
| Evidence of bats found | None |
| Bat survey recommendations | No further surveys required |
| Evidence of barn owls found | Barn Owl present within one barn |
| Evidence of nesting birds | House sparrow, wren and swallow nests within the barns |

3. LEGISLATION

3.1 Bats

All British bats are European protected species (EPS), included on Annex IV(a) of the European Communities Habitats Directive. Annex IV(a) species are protected in this country under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. Additionally, bat species in the UK are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and Schedule 12 of the Countryside Rights of Way Act 2000. In combination, this makes it an offence to:

- Deliberately kill, injure or capture bats;
- Intentionally or recklessly disturb a bat in its roost, or deliberately disturb a group of bats;
- Intentionally or recklessly damage, destroy or obstruct access to a bat roost (a bat roost is interpreted as any structure or place which is used for shelter or protection, regardless of whether bats are present at the time or not);
- Possess or transport a bat or any part of a bat, unless acquired legally; and
- Sell, barter or exchange bats or parts of bats.

The bat ecologist will assess the significance of the bat roost and the scale of impact. Works involving significant disturbance or roost destruction (including changes to the roost) may require an EPS licence before the work can lawfully commence. Works involving minor disturbance may qualify for a Bat Mitigation Class Licence (BMCL). Natural England is the licensing authority in England. Only a suitably licensed and experienced ecologist can act as the named ecologist in the licence application. Our company can provide a quotation for this additional work. The development must take into account the presence of bats and retain access and a suitable roosting site for bats. For further information and advice contact Natural England on 0845 601 4523 (local rate).

3.2 Barn owls and other birds

The nests and eggs of all wild birds are protected against taking, damage and destruction under the Wildlife and Countryside Act 1981. Barn owls (*Tyto alba*) are given greater protection against disturbance while breeding under Schedule 1 of the Act.

3.3 Planning Authority

If further bat surveys are recommended to enable suitable mitigation to be designed, the Local Planning Authority will not be in a position to make a decision on the planning application until the surveys have been completed and appropriate mitigation included within the proposals.

4. ASSESSMENT INFORMATION

4.1 Description of habitat surrounding the buildings

The buildings are located within a rural location within a working farm. The surrounding habitat is dominated by fields being used as cattle and sheep grazed pasture with a good network of hedgerows and trees. These conditions will provide good foraging and navigational features for use by bats and barn owls.

4.2 Assessment methodology

An assessment as to the suitability of the buildings and surrounding habitat for bats and barn owls was made. The buildings were surveyed using a high-powered lamp to illuminate all areas thought suitable for roosting bats and barn owls. This included searching for bats and barn owls *in situ*, droppings, pellets, staining, liming, feathers and feeding remains. A search around the perimeter of the building was then conducted and any gaps and crevices which had the potential for roosting bats checked.

5. BAT ASSESSMENT RESULTS

5.1 Summary of results

| | |
|-------------------------------------|------|
| Number seen at time of visit | None |
| Droppings? | None |
| Any known history of colony? | None |
| Other evidence found | None |

5.2 Detailed bat assessment results and recommendations

This site was surveyed previously for bats and barn owls in August 2018 (cec497/3024) when no evidence of bats was found.

Six buildings were assessed for evidence of use by bats.

Barn 1 is a stone built, two storied barn which is covered with unlined slate. The interior of the building is suitably dark for use by both day and night roosting bats. There are many cracks and cervices within the walls and beneath the ridge of the building which have potential for use by bats. A search of the floor, walls, cracks and crevices considered suitable for use by bats was undertaken. No evidence of use by bats was noted at the time of this assessment.



Figure 1. Barn 1

Barns 2 and 3 are large open structures built with single row concrete blockwork walls which extend approximately 1.5m high and timber boarding which then extends to the roof. One of the barns (3) is covered with corrugated sheets of 'big 6' fibre cement sheeting, while the other barn (2) is partially covered with fibre cement sheeting on one aspect and preformed metal sheeting on the other. The interior of both buildings is open and light, making the structures of low value for day roosting bats but of medium value for use by bats as a night/feeding roost. The floors and walls of the barns were searched for use by roosting bats; no evidence of use by bats was noted at the time of this assessment.



Figure 2. Barns 2 and 3

Barn 4 is a single storied building previously used as a pigsty which is constructed from timber poles and wooden sheet walls. The roof of the building is covered with corrugated metal sheeting. The interior of the building is very open and draughty with very little potential for use bats. The floors and walls of the buildings were searched for evidence of use by night roosting bats or feeding remains left by bats; no evidence of use by bats was noted at the time of this assessment.



Figure 3. Barn 4

Barn 5 is a single storied, single row concrete block-built building which is covered with a fibre cement roof. The interior of the barn is divided into two distinct sections, each are suitably dark for use by both day and

night roosting bats. A search of the floor, walls and any feature considered suitable for use by roosting bats was undertaken; no evidence of use by bats was noted at the time of this assessment.



Figure 4. Barn 5

Barn 6 is an open fronted former grain store, which is built from single row concrete blocks and covered with profiled metal sheeting. The interior of the building is very light and draughty and has little if no potential for use by roosting bats. The floor, walls and roof timbers were searched for use by bats; no evidence was noted.



Figure 5. Barn 6

Although no current evidence of roosting bats was found it cannot be assumed that bats are not present when works commence. Care should therefore be taken during the work as bats could roost unseen deep within crevices in the structures, particularly under the ridge or beneath wall plates. If any bats are discovered during the work, they must not be handled: works must stop immediately, and advice sought from CEC (tel 01872 245510).

Enhancement measures are recommended under NPPF Chapter 11, Cornwall Local Plan Policy 23 and Cornwall Council's "Cornwall Planning for Biodiversity Guide" (2018). The biodiversity guide recommends

that at least one bird/ bat box should be installed per 'unit', with developments of two or more houses needing to house a bee brick in every other unit.

If you wish to promote wildlife, it is possible to provide roosting opportunities for bats within the completed building. Access for bats can be provided into the space beneath the roofing slates by leaving small gaps 15-20mm wide by at least 50mm long in suitable places. Suitable places would include behind soffits, fascias and barge boards or at the gable apex. The access points would need to be next to the walls (to allow bats to land on the wall then crawl up through the access point) and not inadvertently blocked by insulation (see enclosed leaflet for additional information).

If the roof covering is to be underlined, it is recommended that bitumen roofing felt is used. Recent research has shown that the modern breathable membranes can be harmful to bats (bats have been found dead in some roosts after having become entangled in the fibres of the membrane) and the membrane deteriorates over time due to damage from bats. Only type IF bitumen felt is suitable for use in bat roosts; if the product states non-woven, polypropylene or spun-bond it is not suitable.

Alternately bat bricks can be built into the walls of the building. These should be located at least 3m above the ground and away from any external lighting. These are widely available from a number of sources. Locally, Green and Blue in Perranporth make "Bat Blocks" (<https://www.greenandblue.co.uk/products/bat-block>). Other bat bricks are available from websites such as Wildcare (<https://www.wildcare.co.uk/wildlife-nest-boxes/bat-boxes/wall-mounted.html>) or NHBS (<https://www.nhbs.com/equipment>).

6. BARN OWL SURVEY RESULTS

6.1 Summary of results

| | |
|-----------------------------|--|
| Nest found | No |
| Adults found | One adult bird roosting within barn 2. |
| Chicks found | No |
| Eggs found | No |
| Pellets found | 8-10 pellets found in barn 2 |
| Other evidence found | No |

6.2 Detailed barn owl survey results and recommendations

There was a scattering of owl pellets immediately inside the central door to barn 2, while during the August 2018 visit a barn owl had been recorded roosting in this location. The surrounding area also provides suitable foraging habitat, it is therefore suggested that a barn owl box is erected in a suitable location nearby (see enclosed leaflets and the Barn Owl Trust website for further information).

Old swallow (*Hirundo rustica*) nests were recorded in barns 1 and 5 and an old wren's (*Troglodytes troglodytes*) nest in barn 1. During the August 2018 survey nesting house sparrows (*Passer domesticus*) were recorded within barns 1, 2 and 6.

The nests and eggs of all wild birds are protected against taking, damage or destruction under the Wildlife and Countryside Act 1981. To avoid disturbing nesting birds, the works should ideally be carried out between October and February, i.e. outside the breeding season. If this is not possible, measures to exclude birds from the buildings should be implemented before they start nesting; this exclusion must be carried out outside the nesting season. It is recommended that alternative provision is made for nesting birds: this could include access into other buildings within the site, ledges in dark areas, bird bricks built into the walls or the erection of nest boxes.

For information on roosting/nesting requirements for barn owls contact the Barn Owl Trust, Waterleat, Ashburton, Devon TQ13 7HU.

Tel 01364 653026. Web www.barnowltrust.org.uk

For Barn owl planning advice please see: http://www.naturalengland.org.uk/Images/barnowl-rpa_tcm6-12652.pdf

GENERIC ADVICE ONLY – if bats are using your property you must seek advice from a bat ecologist before implementing any of the designs/advice provided below as some access points will not be suitable

Creating access point for bats

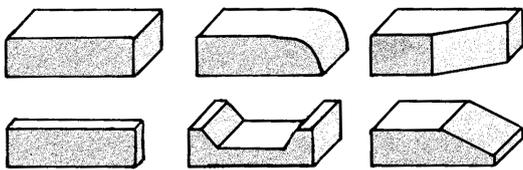
For most species of bat only small holes or slots are needed. A gap of 20mm wide by 50mm long is often adequate (this also prevents birds from getting in). The ideal position is between the soffit and the wall.

Bats can land on a vertical wall and crawl up through the gap to their roost behind the soffit or in the roof – therefore a rough surface is essential for the bats to grip onto.

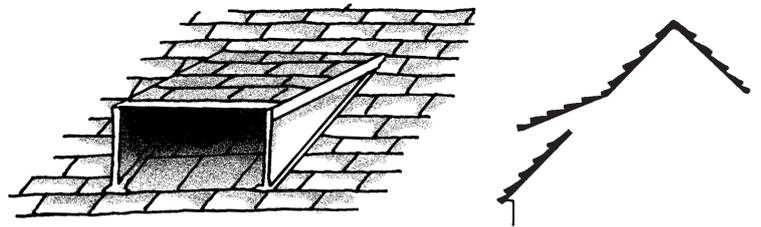
Building regulations specify that roofs must have

adequate ventilation. This is usually provided at the eaves and so access for bats can be easily incorporated at the same time. Other suitable places for access points are at gable ends, under lead flashing or gaps between tiles/slates.

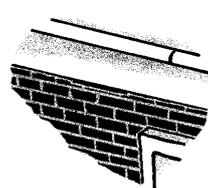
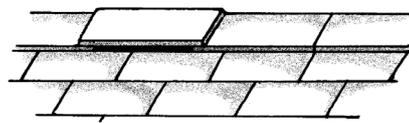
Horseshoe bats have more specialised requirements, preferring to fly directly into their roost. Access openings need to be large enough to allow the bats to fly into the roof.



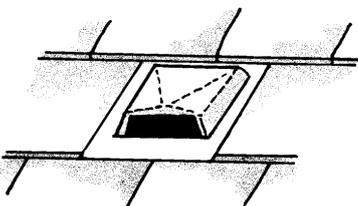
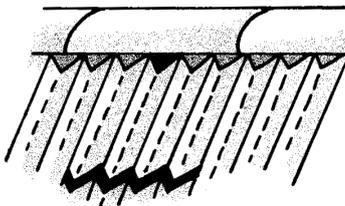
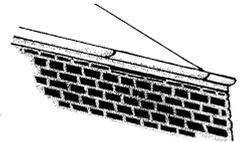
Walling bricks for creating bat access points - a standard brick is shown top left



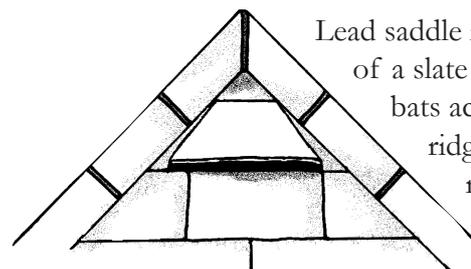
Dormer entrance particularly suitable for bats



Access slits in soffits



Ridge ventilators can be adapted as bat access points - it may be necessary to remove internal mesh or plastic moulding



Lead saddle in place of a slate to allow bats access to ridge or roof void



Access for greater and lesser horseshoes



Access for pipistrelle - see gap in wood



Access for greater and lesser horseshoes

This leaflet provides information on how and where to place Barn Owl nestboxes, including advice on trees, buildings and safety.

Good Barn Owl habitat

Nestboxes are best placed close to areas of good habitat. Food supply and therefore habitat is one of the main factors governing Barn Owl numbers. The best habitat for Barn Owls is rough grassland supporting a high Field Vole population. Damp, tussocky grassland in fallow or lightly grazed pasture is ideal. Ditch sides, hedge banks, young tree plantations, forest rides and (unfortunately) roadside verges and railway embankments are often good hunting grounds. Some areas are good at certain times of year, such as hay meadows in summer.

The creation of new woodlands is beneficial to Barn Owls in the short term due to the rough grass which develops between the new plantings. However, some benefit is lost as the trees grow. The Barn Owl is not a woodland bird, so don't put your box in a wood.

Where do Barn Owls roost and breed?

Barn Owls will use both isolated buildings and barns in busy yards. The ideal building will have access high above the ground, a level place for egg-laying and afford good shelter. Most modern barns are suitable for Barn Owls once a nestbox has been installed. Surprisingly, many traditional barns are far from ideal and can also be improved by the installation of a good nestbox.

Tree hollows are also used by Barn Owls. Boxes can be placed in trees, but outdoor boxes are more likely to be used by other species than those in buildings. Barn Owls look for holes not boxes - when making an entry into a building or positioning a nestbox in a tree, make sure the hole is visible to any passing owl.

Privacy

Barn Owls like to roost out of sight of humans and are much less inclined to be flushed from a building if they have a box to hide in (it is amazing how much "disturbance" Barn Owls will tolerate at sites with a suitable nestbox). Almost any tall rural building can become an ideal roosting and nesting site when a nestbox is provided.

PLEASE NOTE that it is illegal to disturb wild Barn Owls whilst they are breeding. It is not even permitted for the provider of the nestbox or the site owner to look in a nest unless they have a current nest inspection licence (see *Safeguarding Wild Sites* leaflet no 28).

Positioning an indoor nestbox

1. Fix it up as high as possible; however, remember that fully enclosed modern barns with little ventilation can become very hot in fine weather - in this type of building the box should be placed below the apex but at least 3 metres above ground level. Bear in mind that you also need to place the box to allow removal of the lid.
2. Position the box so that an owl coming into the building using the most likely entrance will see the entrance hole and have an easy flight path to it.
3. If possible, position the box so that emerging nestlings can walk on beams or other flat surfaces.
4. Consider your own safety (for which you are responsible). Try to position the box where it can be easily and safely inspected at a later date.
5. The box must stay totally dry if it is to last for years.
6. It is generally best to avoid placing boxes within 1km (½ mile) of a motorway, dual-carriageway or other modern A road with rough grass verges (due to the high risk of road mortality).
7. Avoid buildings subject to irregular loud disturbance, for example sheds used for night-time lambing in January/February are less favoured. Bales stores, covered yards, silage stores are normally OK.
8. For hygiene reasons avoid buildings used for grain storage.

There is no need to line the nestbox. The eggs are normally laid on a layer of the birds' own pellet debris which is a wonderfully absorbent material - much better than anything people can provide!

Permanent access into the building for the owls is obviously essential. If there is no hole you can create one using the following guidelines:

1. Make the entrance hole about 12cm (5") wide x 25cm (10") high (minimum 4" x 6").
2. The hole should be at least 3 metres (10 feet) up and as visible as possible to any passing owl rather than screened by trees or other buildings.
3. When making access into an attic of an occupied dwelling or barn undergoing conversion please refer to *Barn Conversions* (leaflet no. 22) or our publication *Barn Owls and Rural Planning Applications*
4. In the case of an occupied house, converted barn or busy farmyard, the entrance hole into the building should, if possible, be situated on the side of the building with the least disturbance, with direct access to an open area of good habitat. Avoid facing the entrance hole into the prevailing wind.

Positioning an outdoor nestbox

1. Carefully select the best tree. A large, old and isolated tree near an area of good habitat is ideal. Choose a tree that has little or no foliage in the lower part so that the box entrance is very likely to be noticed by any passing owl (rather than screened by foliage).
2. Try to avoid facing the box west or southwest (avoiding the prevailing wind and rain).
3. Place the box so as to deter interference by inquisitive passers-by. A height of 4.5-7 metres (14'-24') may be achieved depending on the tree.
4. Ensure that, when erected, the box is slightly lower at the front. This will help prevent rain water running or splashing in through the entrance hole.
5. It is preferable for the nestbox to be within the body of a rough-barked tree so that any nestlings that fall down have a better chance of being able to climb up and get back inside. Bear in mind that the box may need to be inspected or cleaned out in future so position the box so that this can be done safely.
6. Avoid placing boxes within 1km (½ mile) of a motorway, dual-carriageway or other modern A road.
7. Tanalised 50mm x 50mm (2" x 2") timber and galvanised nails can be used to secure the box. If you don't wish to nail into the tree you can try lashing timber onto the tree using rot-proof cord and nailing the box to that. Alternatively, you can drill holes and use nylon bolts or use ratchet straps.

What are the chances of my box being used?

This depends upon what is limiting the species in your area. If there is an ample food supply but a shortage of suitable roosting and breeding sites then your box could be occupied very quickly. Conversely, if there are plenty of potential sites but a severe shortage of food then your box may never be used. Providing that habitat in your area is reasonably good or there is potential for improvement in the future it is always worth erecting a box. If you own land, think about creating Barn Owl habitat yourself. Habitat in any area may well improve in years to come as public demand leads to more wildlife-friendly food production.

Clearing out the box

As the box fills up with nest debris, its effective depth is reduced. So it gradually becomes less safe for emerging young. After four or five broods of young have been produced (normally after about four years) the nest debris should be removed. Boxes used by Jackdaws will fill rapidly with sticks and should be cleared out every year. When clearing out nest debris it is advisable to wear gloves and a dust mask. It's usually best to clear out nestboxes in November, December or January (but please try to avoid flushing birds out during severe weather conditions). Under the Wildlife and Countryside Act 1981, it is an offence to disturb breeding Barn Owls.

Safety

Before you erect your nestbox take time to consider the hazards you might face and what steps you could take

to minimise them. Hazards might include an injury at a remote location, falling from a ladder, masonry falling from unsound buildings, injury from heavy lifting, dropping a nestbox onto another person or poor positioning of a box causing additional hazards for others using the building or monitoring the box later.

The following are examples of precautions you should take to reduce the risk of accident:

1. If possible take a companion. However if erecting your nestbox at an isolated site on your own, let someone know where you are going and when you expect to be back before you set off. Carry a mobile phone if you have one.
2. Time spent in preparation is seldom wasted. Never carry a box up into position until all necessary preparatory work is complete. Double-check your measuring to confirm that the box will fit.
3. Ensure that your ladder is secure before climbing it. If possible tie it off at the bottom and always tie the top before ascending with your nestbox.
4. Avoid over-reaching - never attempt to carry out any task up a ladder if you cannot reach comfortably.
5. When planning how to position, support and fix a nestbox, try to create a situation where the box can rest in position without being held. This will allow you to have both hands free to fix it safely.
6. When carrying a nestbox up a ladder, ensure that it is kept low relative to your body (ideally not above waist height). This will keep your centre of gravity down. Try to keep the box in front of both you and the ladder so that it pulls you towards the ladder - never hold a nestbox behind or above you.
7. You are responsible for your own safety - assess the risks and be careful.

For information on pole-boxes, please refer to our leaflet '*Pole-box Design. An outdoor Barn Owl nestbox suitable for erection on a large pole*' (leaflet no. 50).

Please let us know when your box is occupied.

Good luck!

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The Trust provides a wide range of free leaflets on Barn Owl related matters. For details of these and further information about the Trust and its work, please write including a large SAE to:

Barn Owl Trust
Waterleat
Ashburton
Devon
TQ13 7HU

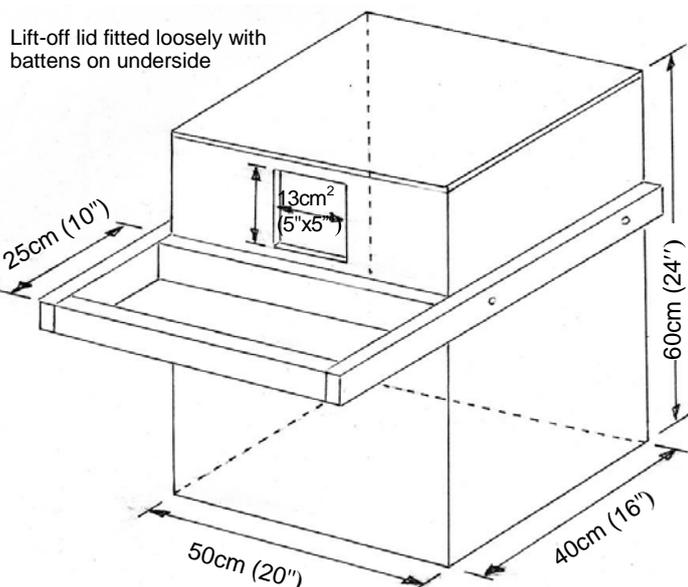
Tel: 01364 653026
Email: info@barnowltrust.org.uk
Web: www.barnowltrust.org.uk

This leaflet describes how to make and erect a Barn Owl nestbox suitable for a barn or other building. It includes plans, dimensions, materials and safety advice.

Background

Nestboxes can be of great benefit, especially in areas where there is plenty of food available but a shortage of suitable nesting or roosting sites. When you are considering an area for nestboxes remember that the Barn Owl is not a woodland species but a bird of open country, most of which is farmland. For further information see *Habitat Management* (leaflet no. 1).

Many old barns and almost all modern farm buildings are far from ideal for Barn Owls as they lack suitable cavities for the birds to nest in. Barn Owls like to roost out of sight of humans and are much less inclined to be flushed from a building if they have a box to hide in. In fact, it is amazing how much disturbance Barn Owls will tolerate at sites with a suitable nestbox. Almost any tall rural building can become an ideal roosting and nesting site when a nestbox is provided.



Indoor nestboxes can be constructed from 9mm ($\frac{3}{8}$ ") softwood shuttering ply with 50mm x 25mm (2" x 1") batten along all the edges on the inside. Please avoid using hardwood ply unless it is stamped 'FSC Approved'.

As a cheaper alternative, a tea-chest can be simply adapted by cutting an entrance hole, fixing on an exercise platform and adding a removable lid. In this

case, do ensure the foil lining and any sharp nails or strips of metal which may injure the owls are removed.

The platform on the front gives more air space for the young owls to exercise their wings before their first flight. The removable lid is essential as the box will need to be cleared out occasionally.

The internal depth of the box is important as it reduces the chances of a nestling Barn Owl falling from the box and dying as a result of neglect or predation. Therefore it is important that the box depth is maintained by clearing out the box once it has more than about 3 inches of nest debris. If Jackdaws use the box it must be cleaned out every year (wear gloves and a dust mask). Boxes only used by breeding Barn Owls will need clearing out every two or three years, ideally in November or December.

NOTE that it is illegal to disturb wild Barn Owls whilst they are breeding. It is not even permitted for the provider of the nestbox or the site owner to inspect the nest unless they have a current licence to do so. Please see *Safeguarding Wild Sites* (leaflet no. 28).

When siting your indoor nestbox, remember:

1. Fix it as high up as possible. However, remember that fully enclosed modern barns with little ventilation can become very hot in fine weather - in this type of building the box should be placed below the apex but at least 3 metres (10ft) above ground level. Bear in mind that you also need to place the box to allow removal of the lid.
2. Position the box so that an owl entering the building through the most likely opening will see the entrance hole and have an easy flight path to it.
3. If possible, position box so that emerging nestlings can walk onto beams or other flat surfaces.
4. Consider your own safety (for which you are responsible). Try to position the box where it can be easily and safely inspected at a later date.
5. The box must be in a completely dry position if it is to last many years.
6. Avoid placing boxes within 1km (half a mile) of a motorway, dual-carriageway, or other modern road.
7. Avoid buildings subject to irregular loud disturbance, for example sheds used for night-time lambing in January/February. Bale stores, covered yards and silage stores are normally okay.

There is no need to line the nestbox. The eggs are usually laid on top of the birds' own pellet debris which is a wonderfully absorbent material - much better than anything you might provide!

Permanent access into the building for the owls is obviously essential. If there is no existing access for owls you can create access using the following guidelines:

- 1 Make the entrance hole about 12cm (5") wide x 25cm (10") high (minimum 4" x 4").
- 2 Make the hole as high up the wall as possible, ideally at least 3 metres (10') above ground level.
- 3 Position the hole so that it is likely to be noticed by a passing bird. Don't face it towards a close tree or other tall building which will obscure it.
- 4 When making access into an attic of an occupied dwelling or barn undergoing conversion please refer to *Barn Conversions* (leaflet no. 22) or the Barn Owl Trust publication *Barn Owls and Rural Planning Applications*.
- 5 In the case of an occupied house, converted barn or busy farmyard, the entrance hole into the building should, if possible, be situated on the side with the least disturbance, with direct access to an open area of good habitat.

Safety

Before you erect your nestbox take time to consider the hazards you might face and what steps you could take to minimise the risks. Hazards might include an injury at a remote location; falling from a ladder; masonry falling from unsound buildings; injury from heavy lifting; dropping a nestbox onto another person; and poor positioning of a box resulting in additional hazards for others using the building or monitoring the box at a later date. The following are examples of precautions you should take to reduce the risks:

- 1 Ideally take a companion. If erecting your nestbox at an isolated site on your own, let someone know where you are going and when you expect to be back before you set off. Carry a mobile phone if you have one.
- 2 Time spent in reconnaissance and preparation is seldom wasted. Never carry a box up into position until all preparatory work is complete. Double-check your measuring to confirm that the box will fit.

- 3 Ensure that your ladder is secure before climbing it. If possible tie it off at the top and bottom before climbing up with the nestbox.
- 4 Avoid over-reaching - never attempt to carry out any task up a ladder if you cannot reach comfortably.
- 5 When planning how to position, support and fix a nestbox, try to create a situation where the box can rest in position without being held. This will allow you to have both hands free to fix it safely.
- 6 When carrying a nestbox up a ladder, ensure that it is kept low relative to your body (ideally not above waist height). This will keep your centre of gravity down. Try to keep the box in front of both you and the ladder so that it pulls you towards the ladder - never hold a nestbox behind or above you.
- 7 You are responsible for your own safety - assess all the risks and be careful.

Please let us know when your box is occupied.

Good luck!

Alternatively, deep indoor nestboxes can usually be purchased from our online shop: www.barnowltrust.org.uk/product_list.html?cat=2

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This leaflet describes how to make and erect a Barn Owl nestbox suitable for siting on a tree. This box design can also be used on the outside wall of a building, but this is not recommended unless there is no other option available. The information includes plans, dimensions, materials and safety advice.

Suitability of the area

The Barn Owl is not a woodland bird. It hunts mainly by flying over areas of rough grassland, ditches, hedgerows, young tree plantations etc. that support a high population of small mammals. In areas with an abundance of food but a shortage of suitable sites, nestboxes can be of great benefit. They should always be placed in areas with some good Barn Owl habitat or they are unlikely to be used. For further information, see *Habitat Management* (leaflet no.1).

Most nestboxes for Barn Owls are erected within buildings; see *Nestboxes for use in Barns and other Buildings* (leaflet no.3). However, where a suitable location for an indoor box is not available, outdoor nestboxes are often the next-best option.

Construction

The basic box should be built using rot-resistant or Tanalith E treated sheet material. The Barn Owl Trust uses 9 or 12mm tanalised ($\frac{3}{8}$ "- $\frac{1}{2}$ "") softwood ply, 25 x 50mm (2" x 1") tanalised batten and 30mm ($1\frac{1}{4}$ "") rust resistant screws. Please avoid using hardwood ply, unless it is stamped "FSC Approved". You may use any type of preservative on the box where tanalised ply is not available, but always follow the product instructions and always ensure the box is completely dry before erection. The dimensions are given as a guide, variations of + or - 10% are quite acceptable.

The front of the box should have an access panel to enable nest debris to be cleared out periodically. Under the Wildlife and Countryside Act 1981, it is an offence to disturb breeding Barn Owls so nestboxes should only be cleaned out between November and January. The top of the box should be covered with heavy duty roofing felt and a waterproof sealant in all the wood joints to increase weather protection (such as *Ever-Build Weather-Mate*). If you need proof that this is necessary, try leaving your nestbox under a sprinkler for a few hours. Large drainage holes (20mm - $\frac{3}{4}$ " - diameter) are also drilled in the floor of the box. The front, back and sides **MUST** overhang the floor of the box.

Selecting a suitable tree

Having found a suitable area and gained the landowner's consent, you should carefully select the most suitable tree. Do not rush this. The success of your nestbox will depend partly on the size, shape and position of the tree and position of the box once erected.

An isolated tree near an area of good habitat is ideal. Whenever possible, choose a tree with rough bark to enable owlets to climb back up to the box should they fall out. A tree on the outside of a copse is acceptable but avoid trees within woodland. Avoid siting your box within 1km ($\frac{1}{2}$ mile) of a dual-carriageway, motorway or similar modern road. If possible, choose a deciduous tree or a Scots Pine. Often there is no choice, but do have a good look around. Time spent in reconnaissance is seldom wasted.

The ideal tree is old and very big. Pick a tree where the box will be visible below the crown (twigs/leaves) of the tree so that Barn Owls can see it and can fly in and out from various directions without having to negotiate small branches in the dark. Old Oak trees, dead trees and Scots Pines are particularly accommodating in this respect.

If ivy is growing on the tree, it will probably obscure the entrance hole to the box within a few years. Anything that makes the hole less visible will reduce the chances of the box being used.

Advantages of this design

The main advantage of the box described in this leaflet is that it's fairly difficult for the young to get out. This reduces the chances of them falling from the box before they can fly and dying as a result of neglect or predation.

Another advantage of this style of box over some other designs, is that it provides an exercise area outside the box for the young and the flat roof allows the young to hop from the tray to the roof and then to the tree to exercise, and the reverse if they fall and need to climb back up. Many nestbox designs are impossible for the young to get back into unless they are already able to fly.

Siting the nestbox

Having found an area of good habitat and a suitable tree for your box, again take your time in deciding where in the tree you are going to put it. Several factors need to be considered. The box must face open ground so that the entrance hole is obvious to a passing owl. Do not hide it behind the tree - if the hole cannot be seen the box is unlikely to be used. Try to avoid facing the entrance into the prevailing wind and rain. Generally this means avoiding the west or south-west. South-east is generally a good direction. If you have no option but to face the entrance to the west/south-west, try to find another tree!

Barn Owls have used hollows entered from the top of the trunk down to ground level, so from the owl's point of view height may not be very important. However, an important consideration is that the nestbox is safe from interference by man. If a ladder is required in order to

reach the box this will help deter the inquisitive passer-by. A height in the region of 4.5-7 metres (14'-24') may be achieved depending on the tree concerned. It is a good idea to ensure that, when erected, the box is slightly lower at the front. This will help prevent rain water splashing in through the entrance hole.

Although young Barn Owls do not start to fly until eight weeks old, they begin to walk at only three weeks. There is often an age difference of two weeks between the oldest and the youngest owlet. As the oldest ones become more and more mobile they emerge from the nestbox to stretch, flap their wings and attempt short flights within the tree. It is at this stage that an owlet is most likely to fall to the ground. The chances of this can be reduced by positioning the box so that the owlet can jump easily from the tray or roof of the box into nearby branches. Position the box so that it can be inspected safely.

Erecting the box

An outdoor box is quite heavy to lift single-handed and using ladders is potentially dangerous. The most important thing when erecting the box is your own safety (for which you are responsible). Please do not work alone and consider using two ladders. Tanalised 50mm x 50mm (2"x 2") timber and galvanised nails can be used to secure the box; often this is the only practical option. Alternatively you can drill holes and use nylon bolts, or use ratchet straps.

A piece of tanalised timber 50mm x 50mm x 750mm (2" x 2" x 30") should be attached to the trunk of the tree, making sure that it is level and **VERY** secure. This should have 'hooks' made out of 25mm x 50mm (1"x 2") tanalised timber attached to each end. These should be approximately 75mm (3") long and the top 25mm (1") will protrude above the top of the ends of the 50mm x 50mm timber (see diagram). The purpose of this is to enable the box to be placed so that it is held in place by the hooks, allowing the person erecting the box to have both hands free whilst attaching it.

A second piece of 50mm x 50mm tanalised timber should be attached **firmly** to the back of the box approximately 200mm (8") from the top (see diagram). Screw from the inside of the box through to the timber. This joint will take all the weight of the box so it needs to be very secure. The piece that is attached to the box will rest on the piece that is attached to the tree. Holes should be drilled to enable the two pieces to be nailed or screwed together when the box is in position. Bear in mind that it will be difficult to get at some parts of the timber to hammer or screw once the box is in position so drill the holes close to each end.

Clearing out your Nestbox

The internal depth of the box is important as it reduces the chances of a nestling Barn owl falling from the box and dying as a result of neglect or predation. Therefore it is important that the box depth is maintained by clearing out the box once it has more than about 3 inches of nest debris. If Jackdaws use the box it must be cleaned out every year (wear gloves and a dust mask). Boxes only used by breeding Barn Owls will need clearing out every two or three years.

Safety

Before you erect your nestbox take time to consider the

hazards you might face and what steps you could take to minimise the risks. Hazards might include an injury at a remote location, falling from a ladder, injury from heavy lifting, dropping a nestbox onto another person or poor positioning of a box resulting in additional hazards for anyone monitoring the box at a later date. The following are examples of precautions you should take to reduce the risks:

- 1 Ideally take a companion. If erecting your nestbox at an isolated site alone, let someone know where you are going and when you expect to be back before you set off. Carry a mobile phone if you have one.
- 2 Time spent in reconnaissance and preparation is seldom wasted. Never carry a box up into position until all preparatory work is complete. Double-check your measuring to confirm that the box will fit.
- 3 Ensure that your ladder is secure before climbing it. If possible tie it off at the top and bottom before climbing up with a nestbox.
- 4 Avoid over-reaching - never attempt to carry out any task up a ladder if you cannot reach comfortably.
- 5 When planning how to position, support and fix a nestbox, try to create a situation where the box can rest in position without being held. This will allow you to have both hands free to fix it safely.
- 6 When carrying a nestbox up a ladder, ensure that it is kept low relative to your body (ideally not above waist height). This will keep your centre of gravity down. Try to keep the box in front of both you and the ladder so that it pulls you towards the ladder - never hold a nestbox behind or above you.
- 7 You are responsible for your own safety - assess all the risks and be careful.

Nestboxes on poles

In areas with plenty of good habitat but no suitable trees or buildings it is possible to provide boxes on poles. It is illegal (and dangerous) to erect a box on an operational telegraph/electricity pole without the express permission of the pole owner. Erecting your own pole is a lot of work and can be expensive. With this type of project the boxes used are normally much bigger and of an entirely different design incorporating two separate cavities in one box. For detailed information see *Pole-box Design* (leaflet number 50).

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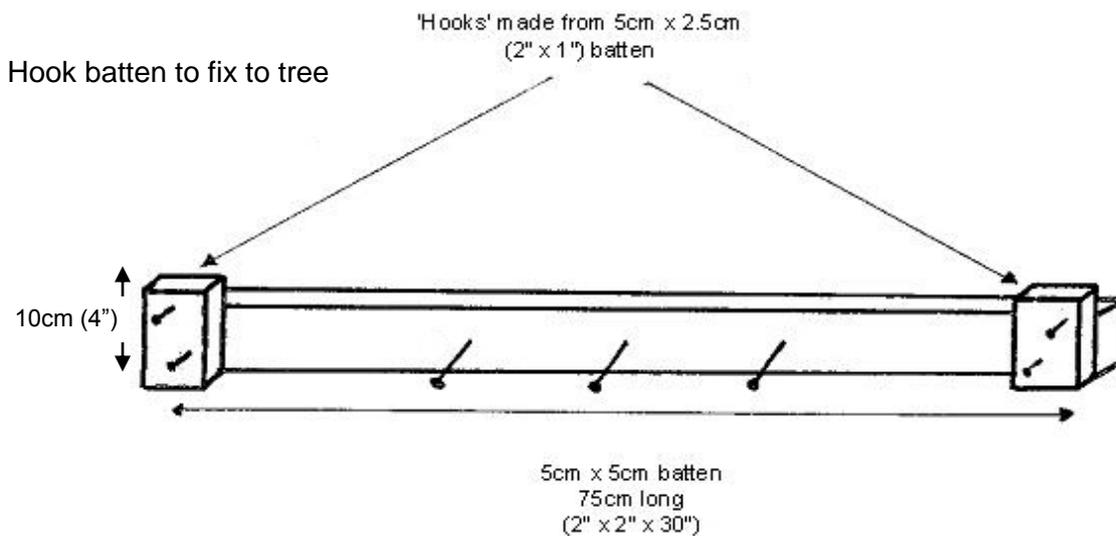
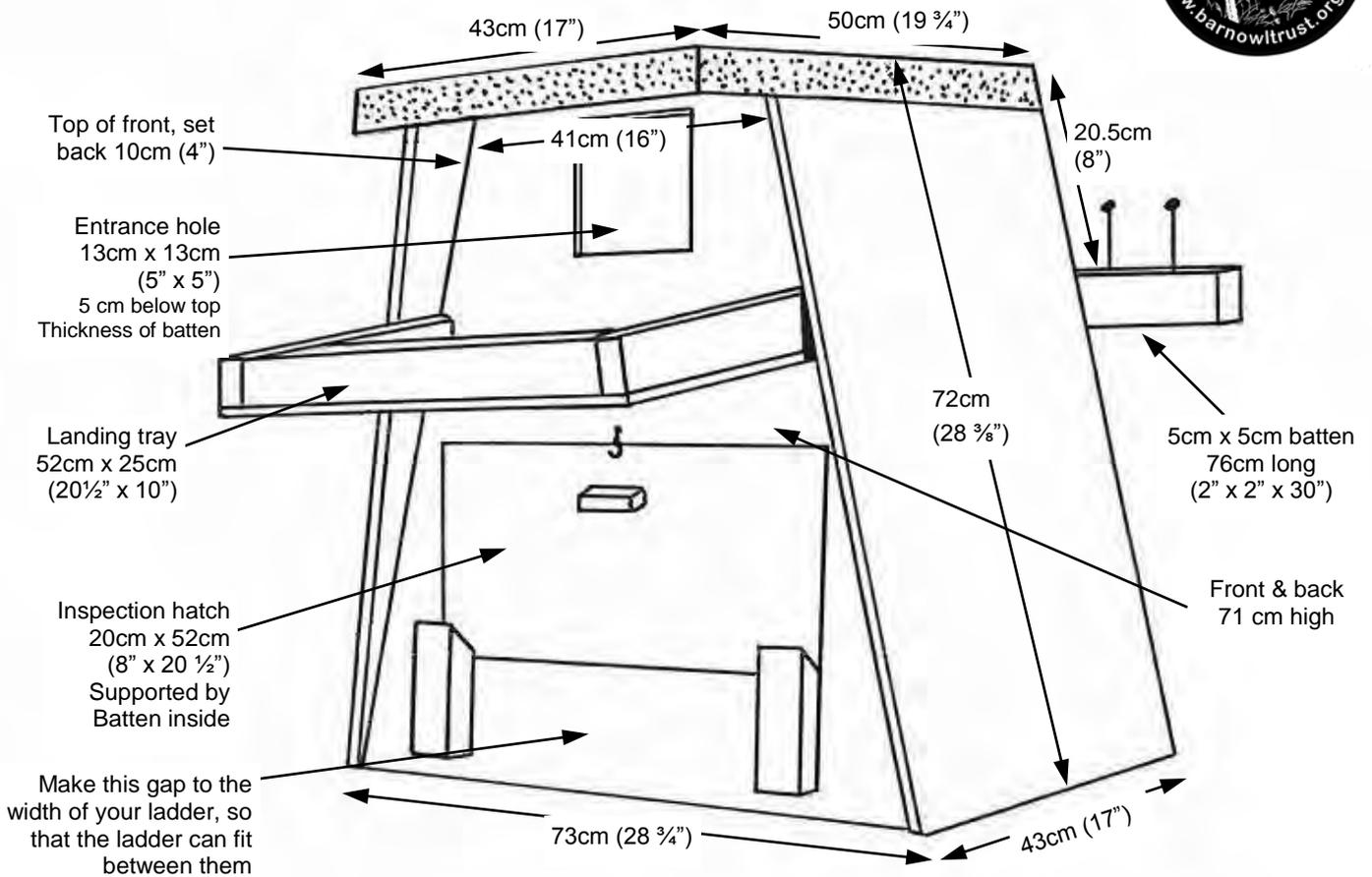
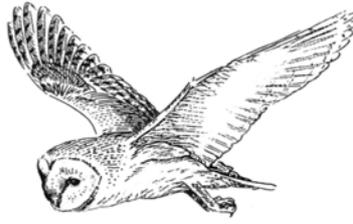
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Detailed slideshows depicting box construction and erection can be viewed on our web site:
www.barnowltrust.org.uk



Alternatively, outdoor nestboxes can usually be purchased from our online shop:
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Please let us know when your box is occupied.

Good luck!



This leaflet describes the effects of barn conversions on Barn Owls and how to minimise them. It also gives information on making provision for Barn Owls in barn conversions or other dwellings. A quick-reference guide to Barn Owls and planning is included.

The effects of barn conversions

Barn conversions and the loss of old farm buildings through decay and demolition have drastically reduced the number of potential Barn Owl roosting and nesting sites. Most barns undergoing conversion have long since lost their resident owls but occasionally occupied sites are converted. The Barn Owl Trust *Barn Conversion Research Project* (1990-1995) studied the effects of conversions on local Barn Owl distribution and status.

Although conversions may not be a major cause of Barn Owl decline nationally, the effect locally can be devastating. We strongly recommend that anyone with more than a passing interest in this subject should obtain a copy of the Trust's publication *Barn Owls and Rural Planning Applications*, which is freely downloadable from http://www.naturalengland.org.uk/Images/barnowl-rpa_tcm6-12652.pdf

The loss of breeding sites can be very damaging to local Barn Owl populations, particularly in areas where few alternative sites exist. Even where alternative roosting and breeding sites are available, the loss of sites used by the owls can have a disproportionate effect. In addition to the owls abandoning the site undergoing conversion, there is a strong tendency for them to abandon other roosting sites and leave the area altogether.

In the long term, there is little point in trying to curb the practice of barn conversions, since redundant farm buildings are usually left to decay and eventually collapse. It is feasible to incorporate provision for Barn Owls into a conversion and take steps to minimise the effects on resident birds. Where a proposed development threatens an occupied Barn Owl site there are generally three major considerations: a) alternative provision before development, b) timing to avoid the nesting season, c) long-term provision within the development itself.

Legal protection

Under the Wildlife and Countryside Act 1981 the Barn Owl is afforded special legal protection at all times, but the sites which Barn Owls use are not. However, as a Schedule One species, Barn Owls have additional protection against wilful or reckless disturbance whilst nesting. It is therefore illegal to undertake any building work (or other activity) which could cause disturbance to breeding Barn Owls at or near the nest site. In such cases you should contact the local representative of Natural England, the Countryside Council for Wales or Scottish Natural Heritage, who will give advice.

The birds are legally protected against disturbance from the time a scrape is made in the nest debris (shortly before egg laying) until the time the last dependant young stops returning to the nest (about three weeks after first flight). The vast majority of nesting cycles commence after early March and finish by late August.

Action

Where a barn is due to be converted, it is useful to discover if Barn Owls are using the building - and whether it is a breeding site. See *Survey Techniques* (leaflet no. 8) if you don't have a copy of the Trust's booklet. If the site is a known Barn Owl breeding site then any search between March and September should only be carried out by the holder of a nest inspection licence (contact the relevant country agency - Natural England, Countryside Council for Wales or Scottish Natural Heritage for details). If there is evidence of Barn Owls using the site always ensure that the local authority planning office knows. Barn conversions are never refused because of Barn Owls. In fact, it can be argued that the presence of Barn Owls is a reason for development (with provision) as it can help secure the long term future of the site for the species.

Alternative provision

It is likely that resident Barn Owls will also be using other buildings (or possibly hollow trees) in the area, usually within 1km (½ mile). If another occupied site is identified it may be possible to increase its suitability for the birds by erecting nestboxes - see *Nestboxes for use in barns & other buildings* (leaflet no. 3). Where no evidence of occupation is found in other buildings,

erect a nestbox in the building closest to the development site.

If possible choose the tallest building with good Barn Owl access. Where no other buildings exist it may be possible to erect a tree nestbox close to the conversion site - see *Nestboxes for use on Trees* (leaflet no. 2) and *Pole-box Design* (leaflet no. 50). The more alternative sites which can be provided the better.

Timing

Barn Owls are generally shy birds and the unexpected can be very disturbing. However, individual birds do vary - some will tolerate a surprising amount of disturbance whilst others may disappear from the entire area when alterations begin. Ideally work should be carried out on occupied Barn Owl sites between September and February. ALWAYS ENSURE THAT A SUITABLE NEST-PLACE IS CONTINUOUSLY AVAILABLE ON-SITE. Nesting places should never be affected until alternative provision has been made and the alternative should remain until after permanent provision has been provided. If an owl hole is to be included in the converted barn, this should be provided as quickly as possible after the work begins. Where breeding sites are converted, the work should ideally commence in September (provided that breeding has stopped) and any planned provision incorporated and completed by the end of the following January. This will allow time for the owls to re-occupy the site and hopefully to breed during the year. As mentioned above, Barn Owls have been recorded as breeding in every month, although the usual breeding season is March to August.

Provision within the development

This is extremely worthwhile - some traditional breeding sites are in lofts of occupied houses. There are converted barns where the new owners share their dwelling very happily with breeding Barn Owls.

If the conversion includes the creation of a loft it may be feasible to allow the birds access to the whole area, in which case an indoor nestbox can be provided. However, there may be a modest cost if the water tank and pipes need extra lagging and any loft insulation should be covered over with boarding. A simpler option is to allow access directly into a nesting box or boarded off section at one end of the loft (see Fig. 2 on next page).

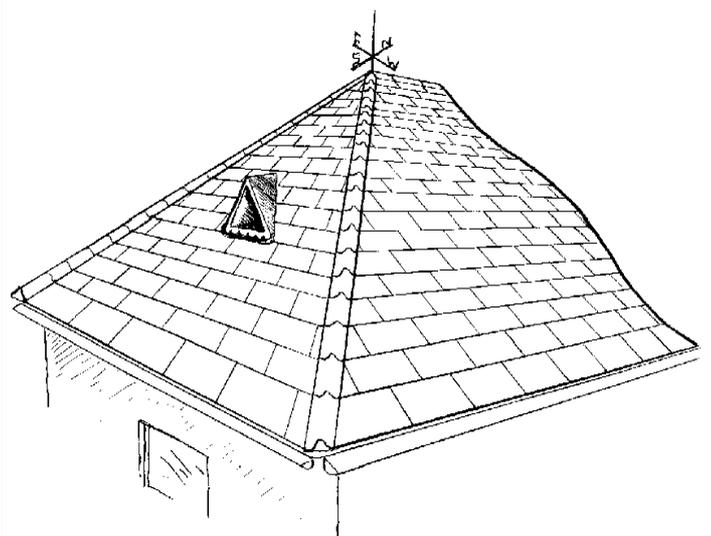
Design Details

- Entrance hole (width x height): minimum size 100mm x 200mm, optimum size 130mm x 250mm, maximum size 200mm x 300mm.
- Floor area of nest chamber: absolute minimum 0.16m². Good size range 0.2 to 0.4m².
- Depth from bottom of entrance hole to nest must be not less than 460mm.
- Wherever possible there should be an exercise/landing platform below the entrance hole with generous raised edge suitable for Barn Owls to grip easily.
- A removable inspection panel (normally indoors) allowing human access for easy clearing out of nest debris is essential.

The internal depth is important as it reduces the chances of a nestling Barn Owl falling and dying as a result of neglect or predation. It is therefore important that the nest area is cleared out once it has more than about 3 inches of debris. If Jackdaws use it, then it must be cleaned out every year. If only used by breeding Barn Owls, it will need clearing out every two or three years. This should only be done in the late autumn or winter to avoid disturbing breeding birds and contravening the Wildlife & Countryside Act 1981. It is not necessary to provide any nesting material.

In a building with a hipped roof the hole may be located just below the eaves or through the roof itself (see Fig. 1 below). A similar hole can be created during thatching.

Fig. 1: Example of an owl entrance hole



through a hipped roof

Planning for Barn Owls

A quick reference guide

- Barn Owls are mainly white and stand about 25cm (10") tall with a wingspan of about 85cm (33"). They don't hoot and they don't normally live in woodland (that's the Tawny Owl).
- Most Barn Owls live in large buildings in the countryside such as barns, ruins and old houses. They hunt mainly over long grass at dusk and dawn.
- Barn Owls used to be common but now they are rare, mainly because of the loss of old buildings, hollow trees and places to find food.
- Barn conversions can be good for Barn Owls! Planning permission is never refused because of Barn Owls.
- Barn Owls don't need to live away from people. There are sites where Barn Owls breed successfully in converted barns, in new houses and busy farmyards.
- Making provision for Barn Owls is simple and inexpensive - all they need is a small hole high above the ground leading into a nest area about the size of a tea chest.
- Experience shows that having Barn Owls living in a dwelling does not cause any nuisance so long as provision is properly made for them.
- Because they are rare, Barn Owls do have special legal protection. This is not usually a problem for developers unless the birds are nesting, in which case some of the work may need to be re-

scheduled.

- Resident Barn Owls can give your building an extra selling point!
- The Barn Owl Trust can help your development to go ahead in an owl-friendly way.
- Free information leaflets, free telephone advice and a guide book for planners and developers are all available from the Barn Owl Trust.

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Fig 2
 Example of provision for Barn Owls within a small loft area of a converted barn or other dwelling

