

BIODIVERSITY IN THE BUILT ENVIRONMENT

Good Practice Guide 1

Preservation of existing nesting sites and provision of artificial nesting sites September 2019



Cherwell District Council wants to improve the management of habitats and species as part of new build and the refurbishment of existing buildings

This guidance note aims to draw together the most useful information and reference detailed advice

The key message for planners, builders and developers is preserve existing nest sites wherever you can and also create new nest sites. It is easy and cheap and need not interfere with insulation requirements and low carbon construction

This Good Practice Guide is not a replacement for guidance by an experienced ecologist

Acknowledgements

Front cover photographs

Top left: Schwegler Swift Bricks installed in the upper walls of a care home in new Barnet, North London; photo © Edward Mayer

Top right: Nest places for Swifts created in the cornice of a house in Dulwich, South London; photo © George Mavrias

Bottom left: House Martin clinging to an artificial nest it will later breed in; photo © Joey van Tonder

Bottom right: Nest bricks for bats (Schwegler bat tubes), Oxford Circus, London; photo credit Edward Mayer

Document text

Thanks to Edward Mayer from Swift Conservation and Chris Mason, co-ordinator of the Cherwell Swift Conservation Project, for their contribution, support and guidance

COMMUNITY NATURE PLAN

Cherwell District Council's (CDC's) vision is to work with partners to protect and enhance Cherwell's natural environment not only because of its intrinsic value but also because of the services it provides, its enhancement of people's health and wellbeing and its contribution to economic prosperity.

Our **Community Nature Plan (CNP)** sets out how we will fulfil our duty under the Natural Environment and Rural Communities (NERC) Act 2006 and meet the Act's biodiversity legislation and policy requirements; how the Council complies with its obligations relating to important wildlife sites, habitats and species under European and national legislation as well as the National Planning Policy Framework (NPPF); and demonstrates the importance of the natural environment, specifically its green spaces and wildlife, to community health and wellbeing and a thriving economy.

The CNP aims to secure improved management of habitats and species as part of new build and the refurbishment of existing buildings.¹ To help achieve this we aim to provide good practice guidance notes on biodiversity and the built environment for developers and planners, and anyone who can influence new build and refurbishment of existing housing stock. This is the first of these guidance notes.

The Council is setting an example of securing improved management of buildings for habitats and species – examples of meeting this aim include swift nest bricks installed in Spiceball Sports Centre in 2009 (left below) and the community sports hall of the Hill, Banbury in 2019 (right below)



WHAT'S THE PROBLEM?

Bats and several species of bird (ie swifts and house martins) are dependent on our buildings for breeding sites but the capacity for our buildings to provide such sites is quickly disappearing across the UK, contributing to a very significant decline in their populations.

A key factor is modern building design where the need for low or zero carbon construction has led to new building techniques, materials and designs which create airtight barriers. As a result, species that traditionally use our buildings are unable to find resting, nesting or roosting sites. **Positive, proactive steps need to be taken.**

¹ Government guidance and policy background is provided in Appendix 1

Loss of nest sites also occurs when buildings and their roofs are repaired or altered. For example, swifts return year after year, not just to the same building, but the same small gap or space in the same building. This might be a gap under the eaves, soffit or bargeboard, or a space at the end of guttering or a gap under the tiles or in the pointing. Once filled in, it can result in a pair of Swifts failing to breed that year, as they are very reluctant to move to alternative sites even if they are available.



Adult Swift in flight; photo © David Moreton

WHAT CAN YOU DO?

New development: building-reliant species of birds and bats can continue to thrive in low and zero carbon buildings but only if biodiversity needs are considered early on in the design process so that measures can be incorporated into buildings at little extra expense. The optimum method is to incorporate nesting and roosting opportunities for birds and bats into the structure of the building or roof space, thereby recreating natural cavities found in older properties. This can be done by using pre-cast “bricks”.

Existing buildings: It is vital to survey for building-reliant species of birds and bats before any maintenance work is carried out. Many opportunities are provided by roofing works and repairs, both for the installation of internal nest “bricks” within the fabric of the building and the provision of external nest boxes.

HOW YOU CAN DO IT

There are many different types and models of species-adapted nest box and “brick” readily available on the market. Nest bricks designed specifically for Swifts have the advantage that they will be used not only by Swifts but also by House Sparrows, Starlings, Blue Tits and Great Tits. These nest bricks are inconspicuous, simple to install and do not require ongoing maintenance. Boxes should be approximately 5 metres or more above ground level and ideally will be sited close to the eaves or bargeboards. In larger buildings optimal height will depend on the design of the building and the surrounding area.

Developments of buildings adjacent to open spaces and/or water bodies could also consider incorporating nest cups under the eaves for House Martins and in open sided buildings for Swallows. Fouling may be an issue so care must be taken where they are sited (e.g. avoid installing over windows or doors) and a gable end location may be most suitable. However, such 'external' nest site provision is not an alternative to integral nest site provision, as these external boxes, retro-fitted to the outside of buildings or nest boxes placed on trees, are less long-lasting than integral 'Swift bricks' and are also vulnerable to removal by householders and, in that case, are unlikely to be replaced. Incorporating nest boxes into the fabric of the building ensures the longevity and safety of the box and minimises maintenance and visual impact.

It is important to include appropriate foraging habitats for birds and bats within any landscape design. Artificial lighting, including floodlighting, should avoid spill onto buildings that may support bat roosts or nesting birds.

The information and advice promoted in this guide is primarily intended for swifts but it is relevant for other species such as house sparrows, starlings and crevice roosting bats.

Essential sources of information are the Swift Conservation and Bat Conservation Trust websites, specifically <https://swift-conservation.org/> and <https://www.bats.org.uk/our-work/buildings-planning-and-development>

Swift Conservation has detailed information about fitting appropriate nest places for Swifts in both new development and existing buildings. Go to <http://www.swift-conservation.org/Nestboxes&Attraction.htm#Built%20in>

Local advice is also available from the Council and the Cherwell Swifts Conservation Project. Further information is available here - www.cherwell.gov.uk/communitynatureplan

WHAT SPECIES AND HOW MANY IS ENOUGH?

What Species?

Appendix 2 lists actions that should, wherever possible, be taken to incorporate boxes into the built fabric to conserve and enhance key species that rely on nesting opportunities within buildings.

How Many is Enough?

For new development, good practice is the provision of at least the equivalent to one built-in nest box/brick per residential unit and more for large or multi-storey buildings (such as commercial, industrial and public structures). These integral boxes/bricks will be used by a range of building-reliant bird species, such as swifts and house martins, and will also create spaces for crevice-roosting bat species. Integration into the fabric of buildings ensures retention for the lifetime of the development.

Appropriate configurations of provisions would depend on the species or group of species targeted. Aspect, elevation and immediate surroundings will also influence where bricks and roosting opportunities are best sited to encourage use. There is never going to be a "one size fits all" answer to this question and the advice of an ecologist, who has carried out a survey of the area and knows which species it is appropriate to make provision for, is crucial.

Appendix 1

Relevant Guidance and Policy

The National Planning Policy Framework (updated February 2019), Section 15 (conserving and enhancing the natural environment) para 174 states
'To protect and enhance biodiversity and geodiversity, plans should:
(b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

Para 175 states

'When determining planning applications, local planning authorities should apply the following principles:

(d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity

Updated **Planning Practice Guidance (PPG) on the Natural Environment** (July 2019) details how biodiversity net gain should be delivered. It was launched with the following commentary -

"Building the new homes this country needs must not come at the detriment of our natural heritage. It is right that as we deliver houses for people, we must also provide homes for wildlife too – whether that's for hedgehogs, frogs, newts or birds. The public have told us that protecting wildlife is important to them – so my message to house builders is to harness this support and get building in a way that protects the environment for the next generation" (James Brokenshire MP)

The Cherwell Local Plan 2011 – 2031 (Part 1) Policy ESD 10 (Protection and Enhancement of Biodiversity and the Natural Environment) encourages the inclusion of features such as bird and bat boxes in new development.

Policy ESD 15 (The Character of the Built and Historic Environment) encourages the incorporation of biodiversity enhancement features where possible.

Appendix 2²

Provision for Artificial Nest Sites in New Development

Species	Actions	Notes
Common Swift	<ul style="list-style-type: none"> • Install internal (swift) boxes at soffits/eaves level 	<ul style="list-style-type: none"> • Any suitable buildings, proximity of existing colony reinforces need for new nest sites • At least five metres above ground level with unimpeded access • For bricks incorporated within the structure of the building any aspect is acceptable but they should not be placed in the immediate vicinity of windows • Nest sites should be reasonably close as Swifts usually nest in colonies • Broadcasting recorded calls throughout the breeding season will increase likelihood of occupation. See www.swift-conservation.org.
House Sparrow	<ul style="list-style-type: none"> • Install internal boxes at soffits/eaves level 	<ul style="list-style-type: none"> • Suitable buildings within close foraging range of open spaces & green infrastructure • At least two metres above ground level with somewhere to perch in the immediate vicinity • Needs to be shaded. Easterly aspect is best, avoid southerly elevations • Sparrows prefer nesting in loose groups (10-20 pairs) and boxes can be adjacent to each other ideally in groups of six or more.
Starling	<ul style="list-style-type: none"> • Install internal boxes at soffits/eaves level 	<ul style="list-style-type: none"> • Suitable buildings within close foraging range of open spaces & green infrastructure • At least three metres above ground level with somewhere to perch in the immediate vicinity. Needs to be shaded, easterly aspect is best, avoid southerly aspect • Ideally install a group of nests each >1.5m apart. • Starlings can be noisy so their nests are best sited where they won't be a nuisance.

² Replicated from the Exeter Residential Design Guide Supplementary Planning Document (2010).

<p>Barn Swallow</p>	<ul style="list-style-type: none"> • Create purpose built ledges, inside buildings where they will be secure from predation by cats, rates, etc. • Install pre-formed nest cups to encourage establishment. 	<ul style="list-style-type: none"> • Open sided buildings, e.g. carports, porches & bin and cycle stores, etc. within close proximity to green infrastructure, valley parks and other open space • Swallows will need access to their principal nesting material which is mud collected from puddles and the edges of standing water or slow flowing streams • Avoid situations where droppings might become a nuisance.
<p>House Martin</p>	<ul style="list-style-type: none"> • Install pre-cast nest cups to encourage establishment. 	<ul style="list-style-type: none"> • Buildings with wide soffits/eaves in close proximity to, green infrastructure, the valley parks and other open space • At least five metres of clear space above ground level. Adequate shelter from sun and prevailing weather, avoid South elevations • House martins breed in close knit groups and provided there is an adequate supply of mud from the edges of standing water or slow flowing streams will build clusters of nests • Fixing over doors and windows is best avoided.
<p>Garden birds (such as robin, wren, thrush, blackbird and finches and tits)</p>	<ul style="list-style-type: none"> • Install appropriate nest boxes. 	<ul style="list-style-type: none"> • Where there is access to adequate public and private open space including gardens • Sheltered from direct sunlight and the prevailing weather.
<p>Tawny Owls, Barn Owls and Kestrels</p>	<ul style="list-style-type: none"> • Install appropriate nest boxes 	<ul style="list-style-type: none"> • The interface between town and country • Direct access to suitable hunting grounds • The site must be at low risk of disturbance • Seek specialist advice on site suitability.
<p>Crevice-dwelling bats* (such as Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Brandt's and Whiskered Bat)</p>	<ul style="list-style-type: none"> • Leave or create spaces in the wall or behind the cladding • Install ready-made bat boxes into the walls or under the eaves • Create sandwich boards of as least 3 layers with a 1 inch gap to place inside 	<ul style="list-style-type: none"> • Crevice dwelling bats can crawl into the smallest spaces although areas of about 1 sqm would be useful for summer nursery roosts • The height of entry can be from 2-7m above ground level • Generally the summer nursery roosts will have a southerly or westerly aspect for solar heating. Male roosts and winter hibernation roosts have a northerly aspect

<p>* These bats may not be visible in existing buildings</p>	<p>the roof void, against the battens.</p>	<ul style="list-style-type: none"> • Materials for the roosts should be rough (for grip), non-toxic or corrosive, with no risk of entanglement • The access should not be lit by artificial lighting • Maintain or enhance linear features in the landscape such as tree-liners and hedgerows that the bats can use for cover and flight paths.
Species	Actions	Notes
<p>Roof-void dwelling bats (such as Noctule, Serotine, Leisler's, Daubenton's, Greater Mouse-eared, Barbastelle and Bechstein's) *These bats may be visible on roof timbers in existing buildings</p>	<ul style="list-style-type: none"> • Leave timber joists and/or beams exposed • Install access points such as spaces under the eaves or specially-made holes in the roof tiles. 	<ul style="list-style-type: none"> • The height of entry should be from 2-7m above ground level • Generally the summer nursery roosts will have a southerly or westerly aspect for solar heating. Male roosts and winter hibernation roosts have a northerly aspect. • Materials for the roosts should be rough (for grip), non corrosive, with no risk of entanglement • The access should not be lit by artificial lighting • Maintain or enhance linear features in the landscape such as tree-lines and hedgerows that the bats can use for cover and flight paths.
<p>Bats need flight space (such as Natterer's and Brown and Grey Long-eared)</p>	<ul style="list-style-type: none"> • Keep roof space untrussed to allow light 	<ul style="list-style-type: none"> • The height of entry should be over 2m above ground level • Roosting/nesting dimensions of untrussed roof space should be 2-2.8m (h) x 5m (w) 5m (l) • Maintain or enhance linear features in the landscape such as tree-lines and hedgerows that bats can use for cover and flight paths.

² Replicated from the Exeter Residential Design Guide Supplementary Planning Document (2010).