



# Purbeck Technical Design Guidance

## Bats and Birds



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## Foreword

Achieving high quality design is a key planning objective. The Council has produced this document to support the District Design Guide Supplementary Planning Document. It provides an overview of traditional building details typical around the District, which together play an important role in providing a distinctive local character. It sets down expectations the Council will have when considering planning applications in which traditional detailing is used, and should also be useful in those cases where planning permissions or consents are not required. The four key aims of this guide are:

- to provide a source of ideas by highlighting the importance of building details;
- to provide guidance where altering traditional buildings;
- to assist in the assessment of planning proposals; and,
- to help deliver a more attractive and sustainable environment in Purbeck.

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## About this design guidance

1. This section explains the purpose of this design guidance, how it is structured, who should use it and how to use it.

### What is design guidance?

2. Design guidance provides an overview of design principles and 'good' practice, and sets down the expectations the Council has when considering planning applications.

This guidance aims to be:

- a source of detailed guidance linked to the District Design Guide;
- a practical source of ideas and suggestions; and
- designed to help you think through issues.

This guidance seeks to:

- raise the standard of design in all types of development;
- raise the standard of applications for planning permissions and consents;
- highlight the importance of bats and birds;
- assist officers in assessment of proposals; and
- facilitate delivery of an attractive and sustainable environment.

### About this design guidance

3. This design guidance is organised into sections that deal with bats and with birds, allowing quick reference to the topic of particular interest using the contents list.

### Who should use this design guidance?

5. This design guidance will be applicable to anyone undertaking works that may affect building or spaces used by bats or birds for roosting, breeding, hibernation or food whether or not these works would require formal consent from the Council (e.g. planning permission). This includes:
  - Home owners
  - Developers
  - Farmers
  - Local businesses and shop owners
  - Agents acting on behalf of any of the above
6. The Council is committed to improving the design of all forms of development, to provide better homes, business premises and public spaces, and to enhance the overall quality

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of the District's built environment. High quality, well designed development benefits the wider community and has a positive influence on the way in which the District is viewed as a place to live, work and visit. In providing this guide, the Council aims to help encourage high quality sustainable development across the District.

7. The Council is able to provide further assistance to prospective applicants for planning permissions and consents through the process of pre-application discussion. Meeting request forms and details of charges are available at [dorsetforyou.com](http://dorsetforyou.com). You are advised however that where dealing with protected species the advice of a professional/licensed ecologist will be essential.

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## Why are bats and birds important?

8. Purbeck is an environmentally rich district within which biodiversity has added importance and value. Various species of bats and birds make heavy use of, or are largely dependant upon buildings for use as breeding, roosting or nesting sites. These species have lived harmoniously alongside humans, sometimes unnoticed, but more often enjoyed, in both town and country for millennia. More recently however there have been large declines in the populations of many previously common species.
9. As well as being a general planning objective, the Local Authority has a legal duty to conserve biodiversity including, in relation to a living organism or type of habitat, restoration or enhancement of a population or habitat.
10. Modern methods of sealed construction, loss of agricultural buildings through conversion and general changes in agricultural practice amongst other factors have had an adverse impact upon bat and bird populations. A more enlightened approach to the design, conversion and refurbishment of buildings can help to reverse this trend.

## Birds

11. A number of bird species have come to depend upon the use of buildings as nesting and roosting places. Principal amongst these are the house sparrow, swift, barn owl, house martin and swallow. Swallows and barn owls are most likely to be affected by the conversion of outbuildings and agricultural structures as both species use spaces within buildings – in the case of the barn owl often due to past human encouragement. With the exception of the house martin, which affixes its nest to external walls, the other species noted above utilise crevices or voids in the structure of buildings for nesting. These are often eliminated in new buildings, or those undergoing refurbishment, by modern methods of sealed construction.

### The law

12. If you are planning to undertake works to existing buildings, conducting landscape works or carrying out new development, it is important to take note of the Wildlife & Countryside Act 1981. This legally protects all birds (with the some exceptions covering designated pest species dealt with under license, and game birds in season), their nests and eggs. It is a criminal offence to intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built. Further protection is provided to the Barn Owl as a 'Schedule 1' species by the CroW Act 2000, making it an offence recklessly disturb birds or their young at, on or near an 'active' nest.
13. It is important that once nest boxes are installed and in use they should not be interfered with except for maintenance outside the breeding season.
14. For further information on the legal aspects of bird protection see *Wild birds and the law England and Wales: A plain guide to bird protection today*. This guide has been produced by the RSPB and can be downloaded from their website [www.rspb.org.uk](http://www.rspb.org.uk).

### Survey, mitigation, enhancement and timing of works

15. You should mitigate the impact of refurbishment or conversion works by designing to allow use of building by species either normally, or potentially resident within it. This will be particularly important in the case of 'barn' or similar conversions of agricultural buildings. A protected species survey, and mitigation and enhancement plan, will normally be required from a qualified ecologist to show how this will be undertaken.
16. You should timetable works to avoid the nesting season. The nesting season differs by species, so it helps to be well informed of which species make use of your site.
17. Making provision for birds through development helps to enhance biodiversity and will be expected within all new build.

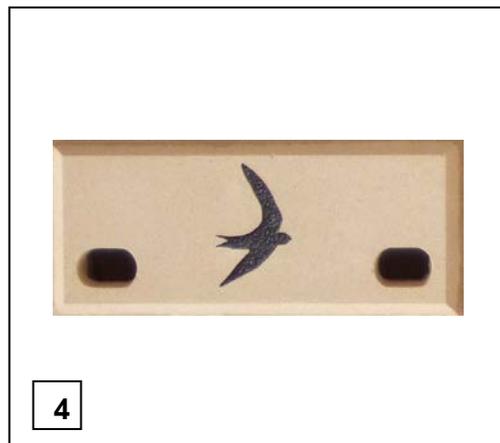
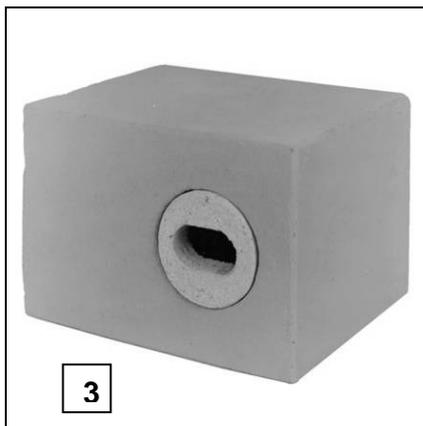
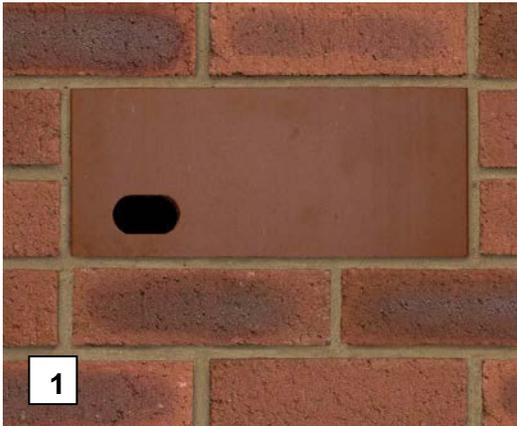
### Accommodating birds

18. Birds may be accommodated by either adapting the structure of a building to allow access to parts otherwise sealed by modern construction, or through the provision of purpose built nesting boxes. Where incorporating the latter as part of a scheme of

enhancement, only boxes of robust or permanent construction – preferably those constructed to be incorporated within the building fabric itself – are likely to be suitable. Some account must be taken of the potential need to maintain, and in the case of wall mounted units, replace boxes after a number of years in use.

## Swifts

17. Swifts naturally nest in large caves and cliffs, but as these are rare in Britain, swifts have come to depend almost exclusively upon man-made sites such as houses. Here they typically nest high up under the eaves, using ventilators and other cavities. Nest sites are at least 5 metres above ground with a clear drop beneath to allow the birds to pick up flight speed upon leaving the nest. Over-wintering in Africa, the birds arrive in early May and depart in early August. Swifts usually nest in colonies and are likely to return to the same nest sites annually. Nestlings will also return to the vicinity where they were reared. Swifts are a noted presence in Swanage where they nest within some of the taller Edwardian properties. Swifts are an RSPB ‘amber list’ species due to heavy falls in population.



*Swift boxes - examples. 1: A swift brick. The brick contains a nesting chamber. 2: A swift box. These come in various forms and may be mounted externally. 3: A swift block. These may be incorporated into a block wall and rendered. 4: A swift block with facing in cast stone.*

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## Design guidelines for swifts

18. You can accommodate swifts within new developments and existing buildings relatively easily through use of a variety of off the shelf nest box products. Products compatible with most of the materials traditionally used for construction within the District are available.
19. You should position nest boxes out of direct sunlight and prevailing winds, at least five metres above ground at some point on or between the north and east elevations of a building. Boxes should be placed away from windows, tight under the eaves, or at the top of a vertical wall. You should ensure that there is a clear drop beneath the box and that the flight path is not obstructed by trees, cables, creepers, aerials or other buildings. The group *Swift Conservation* ([www.swift-conservation.org](http://www.swift-conservation.org)) provides the following guidelines on the number of boxes you should install on any given building:
  - medium to large house: 1 - 4 boxes
  - small block of flats: 4 - 10 boxes
  - large block of flats/other large buildings: 10 - 20 boxes.
20. Boxes are most likely to be used if swifts already have a presence in the vicinity. Playing recorded bird calls during the nesting season can improve chances.
21. An alternative to provision of boxes is to allow access to cavities within a building. You can do this by making holes 35mm x 65mm in soffits (making adjustments insulation as necessary). This may be a suitable 'retrofit' option for existing properties.

## Swallows

22. Swallows normally nest **inside** a building, attaching an open nest cup to a beam or ledge. Agricultural buildings are preferred habitats, particularly those close to livestock where there is easy access to mud and insects. Swallows are indeed most frequently seen in large numbers within rural locations and particularly around traditional farm yards. The bird is present in Britain between April and October, overwintering in Africa. Swallows return to their nest sites and raise 2 – 3 broods annually. Single nests are common but swallows often breed in small colonies of 4 or 5 pairs. Swallows are an RSPB 'amber list' species due to heavy falls in population.



*Example of a prefabricated swallow nest cup.*

### 23. Designing for swallows

As swallows nest inside buildings you will need to give thought to providing nesting facilities when converting or renovating a building to which they have existing access. In these cases you should seek to allow continued access to at least part of the building (e.g. a roof void alongside a gable accessed via a gable end opening). This approach may be usefully combined with provision of accommodation for bats.

24. Prefabricated nest cups can be installed to encourage nesting, and are a particularly useful should supplies of mud (from which nest cups are built) be in short supply locally due to changing patterns of land use, or weather. Nest cups should be secured to a wall or within the roof structure at least seven feet off the ground. Screens can be installed beneath to catch any droppings.
25. Where landscaping within the context of a site where swallows nest, or in conjunction with a development where provision for nesting has been made, you should consider the potential to incorporate a pond with gently sloping margins, or other ready source of wet earth/mud. Ponds will also be beneficial to other forms of wildlife.
26. The construction of new open fronted outbuildings provides potential nesting opportunities. In these cases you should consider installation of nest cups with screening beneath.

### House martins

27. House martins are commonly confused with swallows. They naturally nest on overhanging cliffs and rock ledges, though as such sites are uncommon they largely depend upon man-made features which mimic these habitats; typically external walls sheltered beneath the overhanging eaves of houses. Canopied eaves on the gables of interwar suburban housing are particularly popular.



*House martin. Left: nests below the eaves of a barn at Blackmanston. Addition of gutters to this building may obstruct continued use. Right: example of a prefabricated house martin nest cups which can be mounted under the eaves.*

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28. House martins overwinter in Africa and are present in Britain between April and October. The birds nest in colonies, and frequently return to the same site each year. The nesting period may extend into September with up to three broods raised. House martins are an RSPB 'amber list' species due to heavy falls in population.
  29. **Designing for house martins**  
Providing potential sites for house martins to nest requires careful detailing of the eaves of buildings. The form of eaves itself does not appear to be as important as the availability of space beneath a well sheltered overhang, on or between the north and east elevation.
  30. It is important to consider the impact of installing gutters on an existing building which lacks them, if that building is currently used for nesting by house martins. This situation is most likely to arise where agricultural buildings are being converted or repaired.
  31. You can install artificial nest platforms beneath the eaves of a building. These may serve either as accommodation, or an enticement for nesting nearby. Prefabricated nest cups are particularly useful should supplies of mud be in short supply locally due to changing patterns of land use, or weather. Though designed for house martins, it is not unusual to find nest cups used by house sparrows.
  32. Where landscaping within the context of a site where house martins nest, or in conjunction with a development where provision for nesting has been made, you should consider the potential to incorporate a pond with gently sloping margins, or other ready source of wet earth/mud. Ponds will also be beneficial to other forms of wildlife.

## House sparrows

33. The house sparrow commonly lives in small flocks in close association with human settlement. House sparrows nest communally and breed between mid March and early August, raising up to four broods. As the name suggests, house sparrows commonly use buildings for nesting. The species has been placed onto the RSPB 'red list' due to drastic declines in population numbers during recent years.



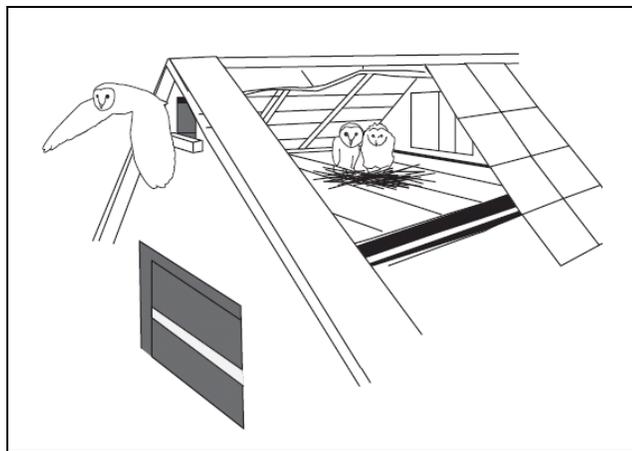
*Example of a house sparrow terrace. These may be built into walls or wall mounted. Terraces are configured to allow a number of pairs to breed together as sparrows live in small colonies. Boxes of this type last many years with limited maintenance though will eventually require replacement.*

#### 34. **Designing for house sparrows**

House sparrow nest boxes are often termed ‘terraces’ due to the provision within them of multiple nesting compartments. Robust models constructed using ‘woodcrete’ or similar are preferable due to longevity. The latter may be incorporated within the structure of a building, or firmly secured to the exterior. You should position boxes at least 2 metres above the ground, beneath the eaves on or between the north and east elevations. Access holes should be 32mm diameter.

### **Barn owls**

35. Barn owls prefer roomy, well sheltered buildings, often favouring traditional agricultural structures such as threshing barns. Nesting was historically encouraged to help control vermin by providing access slots in end gables (see photo below). Nesting places are normally close to open spaces containing areas of rough, tussocky grassland within which voles, mice and shrews are hunted. Barn owls have been placed on the RSPB ‘amber list’ due to large declines in population which have partly arisen from loss of traditional nesting sites through barn conversions.



*Left: a barn owl access slot in the end gable of a traditional barn. Right: barn owls accommodated within a roof space.*

#### 34. **Designing for barn owls**

Various guides which can be viewed online or downloaded have been produced by the Barn Owl Trust ([www.barnowltrust.org.uk](http://www.barnowltrust.org.uk)) and Natural England. As a protected species, specialist advice and input will be required where development proposals affect sites used by barn owls. Encouraging use of a building by barn owls can be achieved by placing a nesting box or platform within part of the roof space accessible from a gable facing between north and east, through an opening of minimum dimension 120 x 250mm. Large nest boxes can be externally mounted, but may be visually obtrusive.

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## Other bird species that use buildings

35. Other bird species also utilise buildings. These include starlings and jackdaws amongst others. The former require boxes with access holes of 45mm diameter at least 2.5 metres above ground; the latter relatively large purpose built nest boxes with holes of 150mm diameter which must be positioned at least 5 metres above the ground. Though a jackdaw box may be visually obtrusive, it may be appropriate to consider use where seeking to discourage nesting in chimney pots – something common around Wareham.

## Birds as part of a landscaping scheme

36. Sensitive landscaping helps to support birds by providing plant species which carry seeds or fruits, and or support insects upon which birds feed. Leaving rough areas of vegetation or constructing a pond all help, whilst use of native trees and shrubs also provides nesting opportunities. A range of specialist bird boxes may be attached to trees observing the same conventions for orientation in positioning as those mounted on buildings. Tree mounted bird boxes should not be considered a substitute for making provision for birds within a building however, given that different species are involved.
37. See the Council's design guidance on landscaping, which covers enhancement of biodiversity.

### Box 1: Birds

1. Take note of the law regarding birds.
2. Incorporate features which support the nesting of birds in the construction of new development.
3. Ensure that boxes are of durable and ideally permanent construction.
4. Boxes should generally be positioned with orientation between north and east.
5. Buildings with unobstructed eaves height of 5 metres or more should incorporate swift boxes where orientation allows.
6. Buildings with eaves height of between 2 and 5 metres may incorporate sparrow boxes where orientation allows.
7. All agricultural conversions should address the need to provide accommodation for swallows and other species which are users of the buildings in question.
8. Sensitive landscaping can be used to help support birds by providing food, nest building material and nesting opportunities. See the Council's design guidance on landscaping.
9. Bird boxes may be positioned in trees, though not as an alternative to making provision in buildings where this would otherwise be possible.

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## Bats

38. There are many species of bat, each of differing character. Bats may roost, hibernate and breed within roof spaces, gaps in the external roof structure, hanging tiles or boarding, wall cavities, spaces below ground and in trees. Bats often move between sites on a seasonal basis.

### The law

39. If you are planning works to existing buildings, undertaking landscaping or carrying out new development it is important to take note that the Wildlife & Countryside Act 1981 (as amended) provides protection for all bats and their roosts. It is a criminal offence to deliberately capture, injure or kill a bat, intentionally or recklessly disturb a bat in its roost, to deliberately disturb a group of bats, to damage or destroy a bat roosting place (even if bats are not occupying the roost at the time), and to intentionally or recklessly obstruct access to a bat roost. A license is required to undertake any of these activities.
40. Once bat boxes have been incorporated within a building it will be important for the property owner to avoid its disturbance.

### Survey, mitigation, enhancement and timing of works

41. You should mitigate the impact of refurbishment or conversion works by designing to allow use of building by species either normally, or potentially resident within it. A protected species survey, and mitigation and enhancement plan, will normally be required from a qualified ecologist to show how this will be undertaken.
42. The '*Dorset Bat Protocol*' covers works to existing buildings affecting roof spaces, and must be adhered to where making a planning application. This may be viewed at [www.dorsetforyou.com](http://www.dorsetforyou.com). A protected species survey will normally be required, and should evidence of bats or a bat roost be found it will be necessary to involve Natural England. A license will normally be required, and the timings of works and specification of any replacement roost agreed where applicable.
43. Making provision for bats as part of development helps to enhance biodiversity, and will normally be expected in new build.

### Accommodating bats

44. You can encourage use of buildings by bats through the adaptation of the building to provide access to roosting and nesting spaces within cavities, or the installation of purpose built boxes. Where incorporating the latter as part of a scheme of enhancement, only boxes of robust or permanent construction free from chemical treatments – preferably those intended to be incorporated within the building fabric itself – are likely to be suitable.
45. You will need to take account of the likely need to renew wall or tree mounted boxes after a number of years in position.

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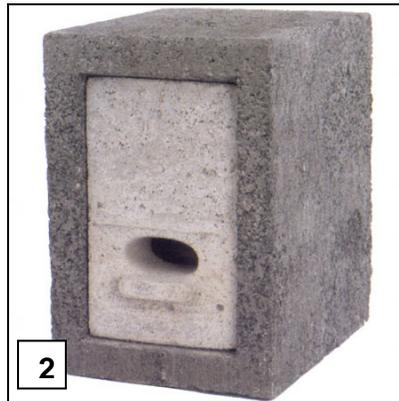
## Bat Species

46. Several species of bat are commonly found within buildings. These include:
47. **Pipistrelle (common,soprano), serotine, Leisler's, Brandt's and whiskered bats**  
These species utilise crevices within the walls and roof (e.g. beneath roof or ridge tiles, in deep cracks, within the eaves). Pipistrelle, serotine and Leisler's bats use buildings during both summer and winter (cavity walls favoured for hibernation), Brandt's and whiskered bats during the summer. Serotine bats are typically found within larger roof voids during the summer (i.e. those spacious enough to allow flying), whilst Brandt's and whiskered bats may sometimes also fly in the roof void. Pipistrelle and Leisler's bats do not normally enter.
48. **Long-eared bats**  
During summer long-eared bats use crevices in the roof during the day and frequently roost in roof voids, preferring those large enough to fly in. They may also use roof voids for hibernation.
49. **Greater and lesser horseshoe bats**  
Rare bats which use roof spaces to which they have flight access during the summer.
50. **Natterer's bats**  
Frequently use crevices in large timbers where available during the summer. Natter's bats are likely to be found in agricultural buildings.
51. Bats typically hibernate between November and March and breed between April and October. During the breeding season a warm roost is preferred.

## Design guidelines for buildings

52. Guidelines covering the positioning of boxes differ from those applicable to birds given the need for accommodation throughout the year, and the tendency of bats to move between sites.
53. You can allow bats free access to cavities within a building by providing a gap or slit 15mm to 20mm wide x 50mm long in the soffit of the eaves (if allowing access to the eaves), gable (if allowing access to part of the roof space) or external wall (if allowing access to the cavity). You should consider the impact this will have upon insulation and detail accordingly.
54. Where converting an agricultural building it may be appropriate to seal off part of the roof space for use by bats, providing suitable means of access.
55. For new build it is desirable to utilise a prefabricated box or tile incorporated into the building fabric itself, rather than hanging boxes from it.
56. Boxes should generally be positioned about 5 metres of the ground, though some species may use those in lower positions.

57. For summer use, boxes should generally face south-east to south-west, allowing the sun to fall the box for part of the day. Cooler orientations may only be used by bats for hibernation, and for these situations insulated boxes are produced. Where possible it is ideal to place multiple boxes with different orientations, allowing bats to move between them with variations in temperature and seasonal preference.
58. During summer bats are most likely to utilise sites which allow direct access to food resources, such as private gardens and open countryside. Where otherwise appropriate, you should select elevations which face onto such spaces.
59. You should take account of the fact that bats will avoid points that are close to or partially illuminated by external lighting, or those subject to frequent disturbance.



*Examples of bat roost and access products that may be incorporated into buildings during construction, or retro-fitted. 1. A box for brick buildings disguised through the attachment of brick slips of relevant colour to the face. 2. A bat box contained within a block which may be incorporated within a block work wall and rendered. 3. A 'woodcrete' bat box for external mounting. 4. Bat tiles for use with plain clay tiles. These allow a bat to crawl into the space between roof covering and lining. For slate roofs a lead 'bat slate' may be considered. 5. A box faced with cast stone.*

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## Bats as part of a landscaping scheme

60. Sensitive landscaping can assist in the support of bats by providing plant species and features which in turn support the insects upon which bats feed. Use of native trees and shrubs, leaving rough areas of vegetation, or constructing a pond will help. All these measures are also likely to be of broader biodiversity value helping birds, small mammals and invertebrates amongst other species.
61. Bat boxes can be attached to trees. This should only be considered a substitute for making more permanent provision for bats within a building where the height, form, orientation or other details preclude use.
62. Timber used for bat boxes should be untreated and rough sawn. Boxes of 'woodcrete' construction are more durable than timber.
63. Bat boxes should normally be positioned about 5 metres off the ground, though some species do use boxes at lower levels. Boxes should be fixed using headless or domed nails not fully hammered home (in order to allow the tree to push the box off without splitting). Iron nails can be used on trees with no commercial value, copper nails on conifers, though aluminium alloy nails are less likely to damage saws and chipping machinery. Alternatively boxes may be strapped to the tree.
64. See the Council's design guidance on landscaping, which covers enhancement of biodiversity.

### Box 2: Bats

1. Take note of the law regarding bats and observe the Dorset Bat Protocol.
2. Consult a professional ecologist where bats would or may be affected by any works.
3. Incorporate features which support roosting, hibernation and breeding of bats in the construction of new development, and refurbishment or conversion of existing buildings.
4. Ensure that bat boxes are of durable and ideally permanent construction.
5. Position boxes 5 metres high with orientation between south east and south west, preferably facing onto open green spaces.
6. Ensure boxes are undisturbed, uncluttered and away from lights.
7. Sensitive landscaping can help to support bats by encouraging insect life.
8. Bat boxes may be positioned in trees though not as an alternative to making provision within buildings where this would otherwise be possible.

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## Sources of further help and advice

The following documents provide useful sources of help:

*Barn Owls on Site. A Guide for Developers and Planners.* The Barn Owl Trust 1995.

*Bats in Traditional Buildings.* English Heritage, 2009.

*Biodiversity by Design: a guide for sustainable communities.* Town and Country Planning Association (TCPA), 2004.

*Biodiversity for Low and Zero Carbon Buildings: a technical guide for new build.* Williams, C, 2010.

*Wild birds and the law England and Wales: A plain guide to bird protection today.* RSPB, 2010.

*Working with Wildlife: Guidance for the Construction Industry.* Construction Industry Research and Information Association (CIRIA), 2011.