



Biodiversity Enhancement Report

Land at Langstone Technology Park,
Havant, PO9 1SA

March 2021

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1. Introduction

Background

- 1.1 Phlorum Limited was commissioned by PRC Group LTD to compile a Biodiversity Enhancement Plan in relation to the proposed development at Langstone Technology Park, Havant, PO9 1SA, here on referred to as 'The Site'. The site address is Langstone Technology Park, Havant, PO9 1SA.
- 1.2 The National Grid Reference for the centre of the site is SU 71249 05736. The survey area extended over approximately 16 hectares (ha).
- 1.3 Previous ecological reports which have been carried out and should be referred to include:
 -  Preliminary Ecological Appraisal (Ecology Co-op, June 2019);
 -  Bat Emergence Survey Report (Ecology Co-op, June 2019); and
 -  Biodiversity Enhancement Plan (Ecology Co-op, June 2019).

Proposed Development

- 1.4 It is understood that the proposed development involves the demolition of building 1000 and associated works, the erection of new flexible use industrial units and a new parking layout.

Biodiversity Enhancement Report

- 1.5 This document has been compiled in the context of the proposals stated in this introduction and based on information made available by the client at the time. Alterations to the scheme and changes in ecological legislation may necessitate amendments to this document at a later stage.

2. Project Outline

Aims and Objectives

- 2.1 The conservation objectives for the development site are to avoid any negative impacts to protected species within the works area, and to enhance the biodiversity of the site wherever possible, with regard to the site potential and constraints and the nature of the proposed development.

Roles and Responsibilities

- 2.2 Clearly defined and allocated roles and responsibilities for delivering the plan.
- 2.3 During the construction phase the Principle Contractor will appoint and manage the Landscape Contractor who will be responsible for carrying out the habitat management plan and undertaking the necessary habitat creation works outlined in this plan.

Ecological Value and Condition

- 2.4 The ecological value and condition of the site at handover and how this is expected to develop and change over time.
- 2.5 The current ecological value of the site is set out in the Preliminary Ecological Appraisal report produced by Ecology Co-op and dated 2019. In summary the ecological value with the majority of the site consisting of hardstanding and buildings. A small area of grassland was assessed as having a higher ecological value due to the presence of orchids.
- 2.6 The scheme will include new habitats such as planted trees, bird and bat boxes. As a consequence of the creation of these habitats the value of the site will be enhanced, especially during the operational phase of the scheme.

3. Previous Reports

- 3.1 This section provides a review of the previous ecological reports of the site and the recommendations made in these reports.

PEA 2019

- 3.2 The PEA survey was carried out by The Ecology Co-op in June 2019.

- 3.3 The results of the PEA are as follows:

Hardstanding

- 3.4 The majority of the site consists of tarmac parking, access road and footpaths.

Buildings

- 3.5 The site has 11 buildings in use as offices, data centres, a nursery and a gym.

Amenity Grassland

- 3.6 Amenity grassland was present across the site; it was mostly mown with longer areas on the earth mounds to the north and east of the site. The following species were present: meadow grass species (*Poa sp.*), creeping bent (*Agrostis stolonifera*), and perennial rye-grass (*Lolium perenne*).

- 3.7 An area of the amenity grassland to the south of gym has the following species; *Luzula* species, orchid species *Orchidaceae*, oxeye daisy (*Leucanthemum vulgare*), yarrow, ribwort plantain, creeping cinquefoil, creeping buttercup, daisy, common cats ear (*Hypochaeris radicata*), dove's-foot crane's-bill, bristly ox-tongue, common mouse ear, greater plantain, and common ragwort (*Plantago major*).

Mixed Woodland Semi-Natural

- 3.8 Woodland located along the eastern boundary of the site adjacent to the stream contained the following species: elder (*Sambucus nigra*), bramble (*Rubus fruticosus*), blackthorn (*Prunus spinosa*), and beech (*Fagus sylvatica*).

Mixed Woodland – Plantation

- 3.9 To the far west of the site there is a small area of woodland. The following species were recorded; eucalyptus species, leylandii, unidentified cypress species and elder.

Broadleaved Parkland / Scattered Trees

- 3.10 To the east of the site two areas of scattered trees are present. An area to the north consists of regularly planted cherry species. Within the section to the south; maple species (*Acer spp.*), Norway maple (*Acer platanoides*), cherry species (*Prunus sp.*) and holly (*Ilex aquifolium*).

- 3.11 A line of scattered trees was present along the western boundary of the largest area of parking across the southern portion of the site.

Introduced Shrub

- 3.12 Cotoneaster is used in the north western part of the site as a landscaping feature with smaller areas present around the buildings.

Other Habitat

- 3.13 A herbaceous flower bed, that has been heavily cut back, surrounds the pond.
- 3.14 North of building 1 is a rockery planted with non-native species including bamboo (*Bambusoideae sp*), species and palm species.

Running Water – Oligotrophic

- 3.15 A stream is adjacent to the sites eastern boundary with water running north to south. Most of the banks are earth however the eastern bank has sections reinforced with bricks, concrete and wooden posts.
- 3.16 There is little vegetation with only the following identified: pendulous sedge, meadow sweet (*Filipendula ulmaria*), willow herb species, and yellow iris (*Iris pseudacorus*).

Standing Water - Mesotrophic

- 3.17 A small pond is situated immediately to the east of building 3.

Intact Hedge – Species Poor

- 3.18 Along the northern part of the western boundary there is a line of leylandii with ivy (*Hedera helix*) also being present.
- 3.19 To the west of the site a yew (*Taxus baccata*) runs either side of an access road that leads to a yard.
- 3.20 A beech hedgerow is present in two locations to the north west of the site.

Dry Ditch

- 3.21 A ditch is present to the north of the site with gently sloping banks measuring approximately 2m wide and 2m deep. The following species were identified on the banks; white dead nettle, broadleaved dock, bittercress species, soft rush (*Juncus effusus*), common nettle and forget-me-not species.

- 3.22 Considering the above findings, the recommendations of the PEA were as follows:

-  **Bats:** The site potentially offers low potential for roosting bats. With building one, two, three, four, and seven offering potential. Tree one and two offered high and moderate potential, respectively.
-  **Breeding birds:** All of the woodland, scrub, scattered trees and hedgerows on-site ad potential to support breeding birds. The buildings also had potential to support nesting.
-  **Water Voles:** It is recommended that a visual barrier is created with Heras fencing, to ensure that machinery will not access within 8m of the crest of the bank.
-  **Complimentary planting:** It was recommended that native trees and shrubs are incorporated into the landscaping plans for the site.

Bat Survey Report 2019

3.23 The bat survey report was completed in June 2019. The bat survey report summarises the results from one emergence survey which was undertaken on 18th June 2019.

3.24 The results of the bat survey report are as follows:

-  The survey concentrated on the on-site buildings as the trees were subsequently ruled out for potential to support roosting bats.
-  Overall, there was a low level of bat activity at the site. A total of three bat species were recorded foraging and commuting at the site which comprised of common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and noctule (*Nyctalus noctula*).
-  As no bats were identified leaving building 1000 bats are not thought to be a constraint to works.

Habitat Enhancement/Retention

-  Additional roosting opportunities could be incorporated into the final design to enhance the site for roosting bats post works. These could be provided through the incorporation of bat boxes on trees on the eastern boundary. There are a range of bat boxes available and these can be selected to suit the development and bat species in the locality. Bat boxes should be installed at appropriate locations ideally with south-east or south-west facing aspects at least 3m from ground level. If installed on the building, these should ideally be positioned directly below the eaves. Once installed a bat box should not be disturbed unless this is carried out by a licence bat ecologist. A range of potential bat boxes is given in Appendix B.
-  Additional tree and shrub planting could be incorporated into the landscape proposals to compensate for any removal to facilitate the works. Planting should include a high proportion of native species and be of local provenance where possible. These should be carefully selected to ensure they contain species suitable for the area.

4. Mitigation

Grassland Translocation

- 4.1 The area of grasslands supporting orchids was determined to have higher ecological value and it is recommended that this area is transplanted. An area of 20 – 30m² will be translocated to a new location in full sun or semi-shaded within the site. The recommended location for translocation is shown in Figure 1 in Appendix A.
- 4.2 The process will consist of the following:
-  The proposed translocation site will be turf stripped using a digger to create an area of bare ground.
 -  The turf which is due to be translocated will first be cut to reduce water demand from plants within the sward and then will be stripped to a depth of 15cm using a digger.
 -  The lifted turf and associated soil will be laid in the new location on the bare ground which has been created.
 -  The optimum time for this translocation to take place is between late August and the end of September during mild and wet weather to improve establishment or during early mid-March to early May when the ground contains sufficient moisture to reduce the requirement for watering.
- 4.3 The area of translocated turf will have an on-going management plan involving a reduced cutting regime to allow the wildflower area to develop.
- 4.4 The sward should be cut (with the cuttings being removed and composted) between mid-August and late September every year. If the sward is growing too vigorously cutting in the spring could take place (March / April). This management will allow wildflowers to grow.

5. Habitat Management Plan

Planted Trees

- 5.1 The paragraphs below include prescriptions for new tree planting included in the design proposals within the footprint of the works. Native species should be used to create new habitat and food sources for birds and invertebrates.
- 5.2 The following native species are recommended:
-  Pedunculate oak (*Quercus robur*);
 -  Rowan (*Sorbus aucuparia*);
 -  Hazel (*Corylus avellane*);
 -  Wild cherry (*Prunus avium*);
 -  Bird cherry (*Prunus padus*);
 -  Hawthorn (*Crataegus monogyna*);
 -  Blackthorn (*Prunus spinosa*);
 -  Dogwood (*Cornus sanguinea*);
 -  Guelder rose (*Viburnum opulus*);
 -  Wayfaring tree (*Viburnum lantana*); and
 -  Spindle (*Eunonymus europaeus*).
- 5.3 All trees to be felled should be replaced in a minimum ratio of 1:1.

Aims

-  To establish areas of new planting;
-  To promote new healthy growth;
-  To increase biodiversity within the site; and
-  To create feeding and sheltering opportunities for wildlife.

Actions

-  Plant all trees in suitable holes in the ground, being aware of the trunk flare.
-  Place the tree at the appropriate height and straighten the tree in the hole;
-  Fill the hole gently, but firmly with soil;
-  Stake the tree if necessary; and
-  Mulch the base of the tree.

Monitoring and Maintenance

-  Water as necessary to secure healthy establishment and to avoid the need for replacement due to dry periods (less than 30mm rainfall at the end of a four week period);
-  Collars in soil at base of tree stems, created by tree movement shall be broken up by fork, avoiding damage to roots. Backfill with topsoil and re-firm;
-  Check all trees for firmness and stability in the ground. Check and adjust tree ties, replacing if necessary;
-  At all times prevent rubbing of ties and adjust to accommodate growth and prevent chafing. Where chafing has occurred, reposition or replace ties to prevent further chafing. Damage to bark to be cut back neatly with a sharp knife; to prevent further damage;
-  Inspect trees regularly for stem wounds, pests and diseases and treat early;
-  Prune dead, dying, crossing, rubbing and damaged branches and encourage new leader as necessary;
-  Check aeration pipes regularly and clear debris as necessary;
-  Replace any failures of plants within the establishment period with immediate effect with the same species and size.
-  Any tree works shall be carried out by a skilled, qualified and approved Arboricultural Contractor in accordance with BS3998: 2010 'Tree Work - Recommendations'. Where possible, and where health and safety constraints permit, and where prior approval of the Project Manager and Ecologist; arisings may be formed into habitat piles within the POS spaces, and standing dead wood maybe left within the woodland to provide additional dead wood habitats to maximise invertebrate biodiversity.
-  Once established, trees should then be pruned annually between September and February inclusive;
-  It is preferable to maintain a dense canopy. Pruning outer branches regularly will promote this;
-  Pruning trees between September and February inclusive is outside the breeding bird season, which is taken to run between March and August, and will therefore avoid disturbance to nesting birds and their young; and
-  It is important to note however that birds can nest outside this period if weather conditions are suitable and due care should be taken when undertaking tree works at any time of the year. If breeding birds or their nests are suspected, or discovered. Then the pruning of trees in the vicinity of the nest must be postponed until young birds have fledged and the nest is no longer in use.

Bat Boxes

Aims

- To provide nesting provision for a range of widespread species including Species of Principle Importance for Conservation (BAP species);
- Five bat boxes are to be installed on the mature and semi-mature trees which are to be retained on the woodland parcel at the eastern boundary of the site (Figure 1 in Appendix A).

Actions

- Bat roosting opportunities could be provided through the incorporation of a bat box that could be installed on the trees in the eastern boundary;
- The bat boxes (2F Schwegler Bat Box, Chavenage Bat Boxes or similar) should be installed at an appropriate location, ideally south-east, south, or south-west facing aspects at least 3m from ground level. Ideally, they need to be exposed to 6-8 hours of direct sunlight, but sheltered from strong winds;
- Further information on bat boxes is given in Appendix B.

Monitoring and Maintenance

- Bat boxes should only be inspected by a licenced bat person.

Bird Boxes

Aims

- To provide nesting provision for a range of widespread species including Species of Principle Importance for Conservation (BAP species);
- Roosting opportunities for swifts (*Apus apus*) and house sparrows (*Passer domesticus*) are to be provided by the provision of bird boxes in the design proposals. Swifts are specifically targeted as data returned by Hampshire Biological Information Centre (HBIC) showed records of swifts in the area.

Actions

- Install bird boxes immediately following the construction phase of the development;
- The 1SP Sparrow Terrace is recommended for house sparrows with two being installed on the development. Six new WoodStone swift boxes are to be installed on the existing building on the site positioned a minimum of 5 meters above the ground. All bird boxes need to be installed with clear unobstructed access to the entrance. Locations are shown in Figure 1 in Appendix A;

- 🌱 Bird Boxes should be located out of prevailing wind, rain, and strong sunlight, ideally with a clear flight path to the entrance. Ideally, they should be installed two to five metres from the ground facing north or north-east;
- 🌱 Further information on bird boxes is given in Appendix B.

Monitoring and Maintenance

- 🌱 Once installed the boxes should be inspected annually outside the nesting bird season: between September and February for evidence of nesting birds (evidence may include presence of an old nest and eggs, feathers and/or bird droppings);
- 🌱 If old bird nests are found, these should be removed and where possible, the nest box cleaned with warm water; and
- 🌱 Where external boxes have not been used, the possibility of re-siting them to more suitable areas should be explored and advice should be sought from a suitably qualified ecologist.

6. Landscape Plan

- 6.1 The landscape plan incorporating habitat features for the site is provided in Appendix A.
- 6.2 The management of the plan will be reviewed annually by the Principle Contractor and/or Occupier; however it is intended the plan will achieve its objectives in the first five years. The review is to ensure the objectives are being met. The Occupier will appoint an Ecologist and/or Landscape Management Contractor to assess changes in site conditions and identify where changes to management prescriptions may need to be made.
- 6.3 If there is significant habitat loss then the Ecologist will liaise with the Landscape Architect and Landscape Contractor to amend the Landscape and Habitat Management Plan as necessary.

Appendix A

Landscape Plan

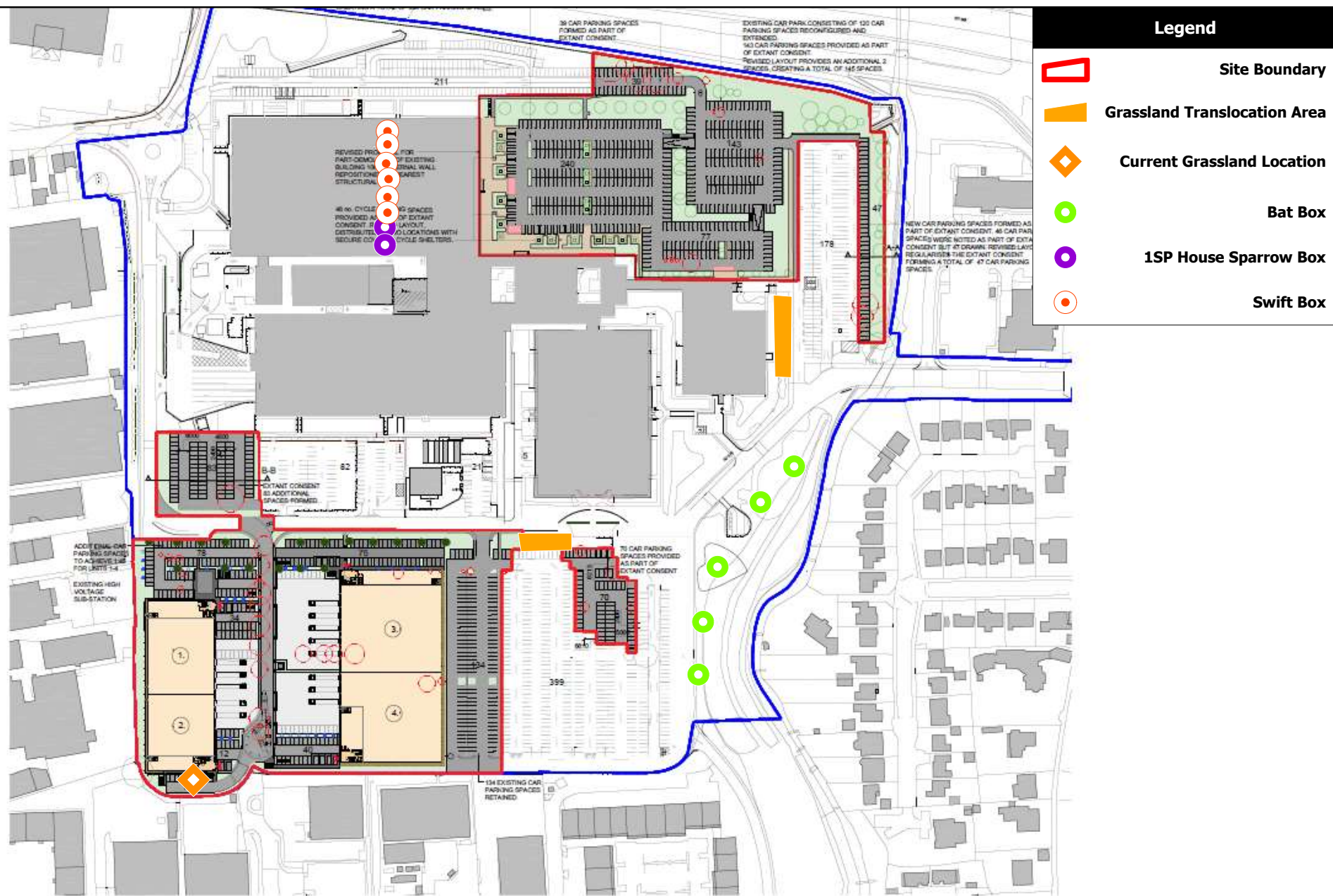


Figure 1: Biodiversity Enhancement Map

Drawn by: KR
On the: 31/03/2021
Not to Scale
Ref: 10538



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Appendix B

Bat and Bird Boxes

Bird and Bat Box Designs

Bird Boxes

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	Schwegler Nest Box 1B Hole-fronted 26mm entrance hole	16 x 16 x 23	Multi-purpose, including: blue-, marsh-, coal and crested tit and possibly wren. All other species are prevented from using the nest box due to the smaller entrance hole.	Suitable walls or semi-mature/mature trees and shrubs; attached to a tree trunk or hung from branches. Ideal points include discrete areas away from predators, such as against walls, plant and metal supports.
	Schwegler Bird House 32mm entrance hole	15 x 21 x 33	Multi-purpose, including: great-, blue-, marsh- and coal tit, redstart, nuthatch, pied flycatcher and sparrows.	Fixed to a semi-mature/mature tree trunk, wall or fence using the hanging bracket on the back. Between 1.5 m and 3 m high, and should be sited higher if your area has a particularly high cat population.

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	Schwegler Sparrow Terrace 1SP	20 x 43 x 24.5	House sparrow. It may also occasionally attract tits, redstarts and spotted flycatchers.	In an elevated position such as on post/platform within dense shrub/tree planting or on top of lighting columns. Alternatively, they could be attached to the side of a building. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of houses in built-up areas, and on industrial and agricultural buildings such as barns, sheds and factories. Due to its weight (15kg), it is not suitable for fences or garden sheds. Ideally place the terrace two metres or more above the ground. Either install on the surface of the wall using the plugs and screws provided, or install directly into the wall. Cleaning is not necessary. The front panel can be removed by turning the screw hook.
	WoodStone Swift Nest Box	26.5 x 38 x 24.5	Swift.	This box should be installed at least 5m above the ground, ensuring that there is unobstructed access for birds entering and leaving. If possible, boxes should be sited under the shelter of eaves or overhanging roofs.

Bat Boxes

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	2F Schwegler Bat Box (General Purpose) with or without Double Front Panel	16 x 16 x 33	Without panel: Particularly successful with brown long-eared bat. Also used by noctule. With panel: Ideal for crevice-dwelling species: pipistrelles, Myotis species (particularly Daubenton's), Leisler's and serotine.	On trees or buildings and at a height of 3 to 6m. In open sunny positions and in groups of 3 to 5 facing different directions. Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.
	Chavenage Bat Box	10 x 18 x 38	Small crevice-dwelling bats e.g. pipistrelles.	On trees in gardens or woodland and also on house walls. 2.5 - 5m high on a building, mature tree or vegetation line (trees/tall hedge) or on a feeding/flight route in partial daytime sun. Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.



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