# Preliminary Ecological Appraisal
# for
# Liskeard Cattle Market & Community Centre,
# Liskeard,
# Cornwall

17 September 2019

**Prepared for:**
CORMAC

**Prepared by:**
Cornwall Environmental Consultants (CEC Ltd)
Five Acres
Allet
Truro
TR4 9DJ

CIEEM
REGISTERED PRACTICE 2019-2020

Ref: CEC3388

cornwall environmental consultants ltd
five acres, allet, truro, cornwall, tr4 9dj t: 01872 245510 f: 01872 262071
e: enquiries@cecenvironment.co.uk www.cecenvironment.co.uk

**Document Control**

| Revision | Prepared by | Checked by | Approved by |
|---|---|---|---|
| First Issue | Cathy Shaw BSc(Hons), MSc, ACIEEM | Steve Adams BA(Hons), MSc, MCIEEM, CEnv | Steve Adams BA(Hons), MSc, MCIEEM, CEnv |
| | | | |

**Disclosure**

The information, opinion and advice which we have prepared and provided is true and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct and the British Standard for Biodiversity – Code of Practice for Planning and Development (2013). We confirm that the opinions expressed are our true and professional bona fide opinions.

**ISO Accreditations**

# Contents

# List of Figures

# Summary

## Site and methods

| | |
|---|---|
| **Purpose of report** | To identify the ecological constraints and opportunities associated with the site and proposed development at Liskeard Cattle Market and Liskerrett Community Centre, in south-east Cornwall. |
| **Site assessed** | Liskeard Cattle Market & Liskerrett Community Centre<br>Liskeard<br>Cornwall |
| **Area (ha)** | 1.87ha |
| **Grid reference** | SX 2497 6440 |
| **Planning Authority involved** | Cornwall Council |
| **Survey methods** | Extended Phase 1 Habitat Survey<br>Visual Bat & Nesting Bird Assessment |
| **Surveyor's name** | PEA survey: Cathy Shaw BSc(Hons), MSc, ACIEEM<br>Bat & Bird Building Inspection: Dave Hunter BSc, MCIEEM |
| **Date of assessment** | PEA survey: 23rd August 2019<br>Bat & Bird Building Inspection: August 2019 |
| **Weather on date of assessment** | Clear, fine and dry |
| **Proposed work** | New residential and mixed-use development |

## Results

| | |
|---|---|
| **Designated sites** | Only one non-statutory designated site: A38 BS 65 designated for common spotted-orchid, which is 650m south-west of the site. |
| **Important habitats present** | Scattered broadleaved trees – very mature beech tree |
| **Non-native invasive species present** | Montbretia & cotoneaster |
| **Protected species present** | Nesting birds |
| **Potential for protected species** | Commuting & foraging bats, hibernating & foraging hedgehogs, and roosting bats. |

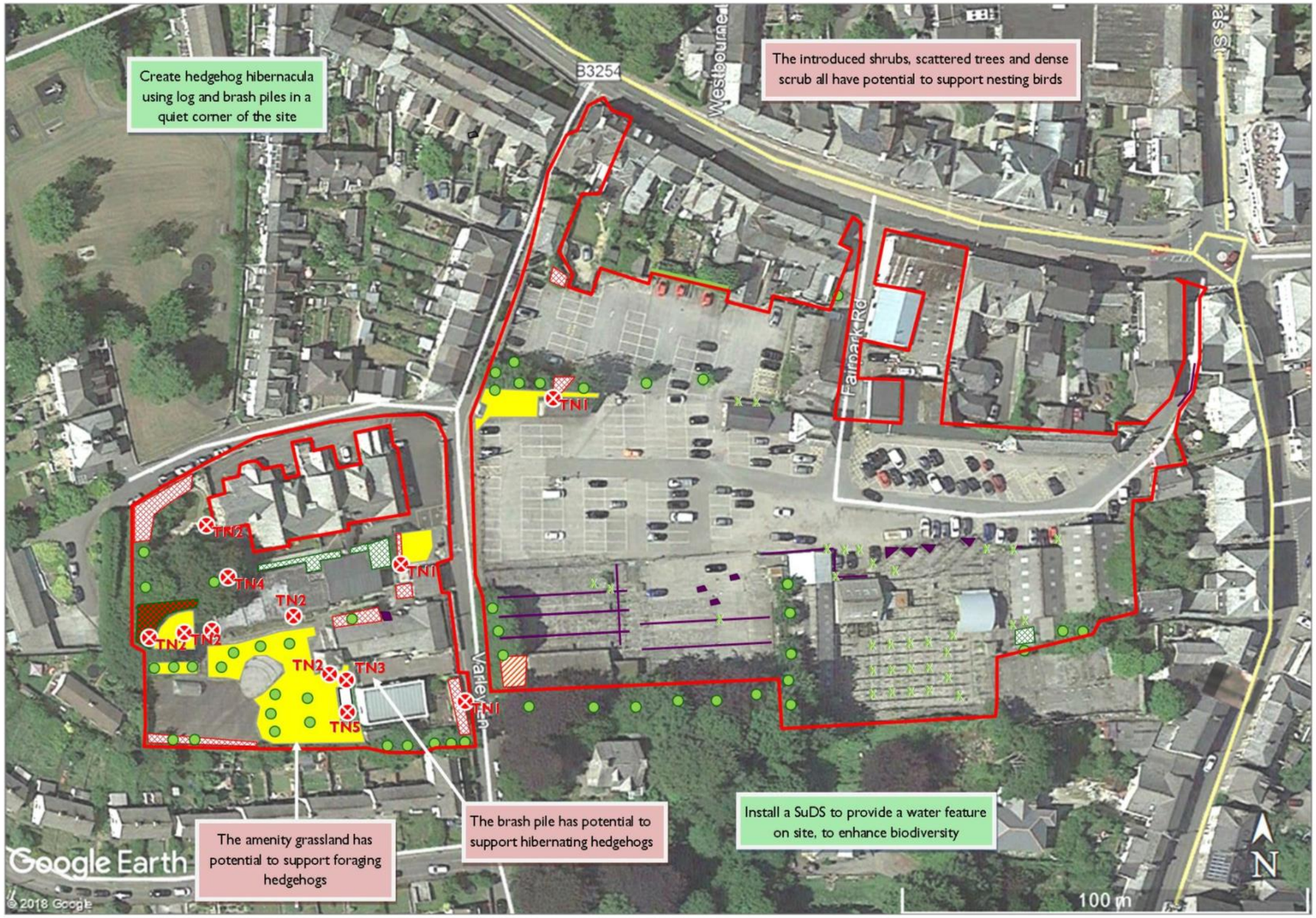
| | |
|---|---|
| **Further survey recommendations** | Bat emergence surveys and /or visual surveys |
| **Mitigation recommendations** | **Roosting bats:** mitigation requirement may be required after bat emergence surveys are completed.<br><br>**Breeding birds:** If the buildings are demolished between March and September, the buildings should be searched for nesting birds. Time vegetation removal outside of the bird nesting season, to negate impacts on nesting birds. If this is not possible and vegetation removal is necessary between March and September then an Ecological Clerk of Works will be required during removal.<br><br>**Non-native invasive species:** Wildlife and Countryside Act, Schedule 9 listed montbretia and cotoneaster have been found on site. Therefore a control strategy for their removal must be adhered to during site clearance.<br><br>**Replacement planting:** Replacement native shrub planting for the loss in trees and introduced shrubs.<br><br>**General site management:** General management of the site to ensure that animals do not become trapped in any excavations or in any materials left around the site. |

Integral bat boxes should be installed in the new buildings, high up on a southern aspect, close to vegetation

Opportunity to create an enhanced Green Infrastructure resources for the town of Liskeard

Maximise retention of all existing trees, especially the mature beech tree (TN4)

An integral bird nest box should be installed in the new buildings close to vegetation




Plant dense native shrubs where possible. These could be fruit trees, to provide an "orchard" for the members of the public

Two species of invasive non-native species are present on site: cotoneaster (**TN1**) & montbretia (**TN2**). A control strategy for their removal must be adhered to

Seed amenity grassland with wildflowers where practicable

A row of two bee bricks should be installed within the external walls of new buildings, c. 1m above ground, close to vegetation, on a southern aspect

**Legend**

The site is predominantly hard-standing and buildings with the following habitats:

- Site boundary
- Dense scrub
- Ephemeral grassland
- Amenity grassland
- Introduced shrubs
- Dense scrub/ introduced shrub mosaic
- Tall ruderal
- Species-poor hedge
- Scattered broadleaved trees
- Scattered scrub
- TN1 Target Note 1: Cotoneaster
- TN2 Target Note 2: Montbretia
- TN3 Target Note 3: Brash pile
- TN4 Target Note 4: Very mature beech tree
- TN5 Target Note 5: Vegetable plot

Green boxes denote ecological opportunities

Red boxes denote ecological constraints

CEC3388-01: Liskeard Cattle Market & Liskerrett Community Centre

**Map 1: Phase 1 Habitat Distribution & Ecological Constraints and Opportunities Plan**

Drawn by: CRS

Date: 27/08/2019

cornwall environmental consultants ltd

# 1. Introduction

## 1.1. Background

Cornwall Environmental Consultants (CEC) Ltd was commissioned by CORMAC in August 2019 to undertake a combined Preliminary Ecological Appraisal and Bat and Nesting Bird Assessment of Liskeard Cattle Market & Liskerrett Community Centre in Liskeard, south-east Cornwall. The location of the site and its boundaries are shown by the red line in Figure 1.


**Figure 1: Location of site**

The 1.87ha site consists of predominantly urban habitats, with hardstanding and buildings being the dominant habitat. The site is located in the centre of the market town of Liskeard. Surrounding the town, there are mixed-use agricultural fields, with broadleaved woodland valleys beyond these.

Cornwall Council propose to demolish a number of the buildings and build several new residential blocks, a retail areas and a market place. The proposed development is set out on the plans included in *Appendix A* to this report.

This report has been prepared by Cathy Shaw, who has over five years' experience of conducting ecology surveys including Preliminary Ecological Appraisals, such as this. Dave Hunter provided text regarding the bat and nesting bird survey on the buildings and trees, which he undertook. Dave has surveyed bats for many years, and has worked as a consultant bat ecologist for 15 years.

The purpose of this report is:

- To identify key ecological constraints to the proposed development
- To allow the further ecological surveys needed to inform an ecological impact assessment to be identified and appropriately designed
- To allow likely mitigation or compensation measures to be developed

This report is not suitable for submission as part of a planning application, it will need to be up dated once the further surveys have been completed.

# 2. Planning Policy and Legislation

## 2.1. Planning Policy

### *2.1.1. National Planning Policy Framework*

National planning policy is set out in the National Planning Policy Framework (NPPF) (2018). Chapter 15 relates to conserving and enhancing the natural environment.

The most relevant policies relating to planning decisions are summarised below:

- Recognising the wider benefits of natural capital and ecosystem services
- Minimising impacts to and providing net gains in biodiversity
- If significant harm resulting from a development cannot be avoided, adequately mitigated or compensated for, then planning permission should be refused
- Proposed development on land within or outside a SSSI likely to have an adverse effect on a SSSI should not normally be permitted
- Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted
- Planning permission should be refused for development resulting in the loss of deterioration of irreplaceable habitats
- By ensuring that new development is appropriate for its location, and that the potential sensitivity of the site is taken into account, planning decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

### *2.1.2. Cornwall Planning Policy*

The Cornwall Local Plan (2016) sets out policies relating to the natural environment.

Policy 23 relates to all aspects of the natural environment, section 3 of this policy relates specifically to biodiversity and geodiversity. The policy sets out that developments should conserve, protect, and where possible, enhance biodiversity and geodiversity, giving appropriate weight to their level of importance.

Opportunities should be sought within developments, to create networks of wildlife corridors linking County Wildlife Sites and other areas of biodiversity importance, helping to deliver the Cornwall Biodiversity Action Plan's actions.

Proposals should avoid impacts to designated sites, protected species or species/ habitats of principal importance, and any proposals where such impacts cannot be avoided will only be permitted where suitable mitigation/ compensation can be provided, and if the tests of the relevant legislation are met.

Development must avoid the loss of deterioration of ancient woodland and veteran trees, unless the need

for, or benefits of the development clearly outweigh the loss.

The mitigation hierarchy should be applied, such that attempts are first made to avoid impacts, and to enable net gains. Where impacts are unavoidable, they must be adequately and proportionately mitigation. Compensation would be required, as a final resort, if full mitigation cannot be provided.

## 2.2. Legislation

The Wildlife and Countryside Act (HM Government, 1981, as amended) is the main piece of legislation relating to nature conservation in Great Britain. It transposes into British law the Berne , Bonn and RAMSAR Conventions, and the European 'Birds Directive' (CEC, 1979). This legislation covers protection of wildlife (birds, other animals and plants), Sites of Special Scientific Interest (SSSI's) (with some SSSI's also designated as Special Protection Areas, SPA's), National Nature Reserves (NNR's) and RAMSAR sites.

The Conservation of Habitats and Species Regulations (HM Government, 2010) transposes into British law the European 'Habitats Directive' (CEC, 1992), and covers Special Areas of Conservation (SAC's) and European Protected Species (EPS) (see below). It also provides further protection for SPA's and RAMSAR sites.

The Countryside and Rights of Way (CRoW) Act (HM Government, 2000) increases protection for SSSIs and threatened species. It specifies the duty of Local Authorities to further the conservation of listed (UK BAP priority) habitats and species.

The Natural Environment and Rural Communities (NERC) Act (HM Government, 2006) confers a legal duty on every public authority to conserve biodiversity under Section 40(1). Section 41 required the publication of lists of habitats and species of principal importance for the conservation of biodiversity in England. This list contains the habitats and species previously known as UK BAP priorities for conservation, and the terminology of habitats and species of principal importance supercedes the UK BAP terminology. Such features will be referred to as Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs), throughout this report.

The Protection of Badgers Act 1992 provides specific protection for badgers.

# 3. Methodology

## 3.1. Desk Study

The desk study consisted of a search of all existing ecological records within a 1km radius of the site using the information held by the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS). This data search was supplied to CEC on 23rd August 2019.

In addition, the Multi-Agency Geographic Information for the Countryside (MAGIC) mapping tool was reviewed for Natural England European Protected Species licence applications within 1km of the site.

## 3.2. Field Survey

**Extended Phase 1 Habitat Survey**

A walkover site survey was undertaken to identify plant species and map habitats present. Signs of faunal species were also searched for; including tracks, prints, droppings, hairs, feeding remains, nests and burrows.

The survey was carried out by Cathy Shaw on 1st August 2019. The study area included the proposed development site, as shown in Map 1.

The weather conditions at the time of survey were warm and bright sunshine with a moderate breeze.

The survey work was carried out in accordance with the following documents:

- Phase 1 Habitat Classification (JNCC, 2010);
- CIEEM Guidelines for Preliminary Ecological Appraisal (2013); and
- BS42020:2013 Biodiversity – Code of practice for planning and development (BSI, 2013).

**Bat and Nesting Bird Assessment**

An assessment as to the suitability of the buildings and surrounding habitats for bats and nesting birds, including barn owls was made. This was completed by Dave Hunter on 29th August 2019. The buildings were surveyed using a high-powered lamp to illuminate all areas thought suitable for roosting bats and nesting birds. This included searching for birds' nests and bats in situ, droppings, staining and feeding remains. A search around the perimeter of the buildings was then conducted and any gaps and crevices which had the potential for roosting bats checked.

The buildings have been numbered as followed; see Figure 2 and Figure 3.


**Figure 2: Liskeard cattle market building numbers**


**Figure 3: Liskerrett community centre building numbers**

## 3.3. Limitations

The conclusions and recommendations presented within this report are based on the current ecological features identified, and the current red line boundary as shown in Figure 1 and in Map 1. These features

can change over time, particularly if site management/ use changes; as a guide it is recommended that this report is valid until September 2020.

August is a good time of year to undertake vegetation surveys. Whilst some species may not be present at this time of year, many species will be present to ensure that an accurate identification of habitats is made.

Cornwall Council provided keys for the former market office and there was open access into the cattle market buildings. The remaining buildings within the red line boundary could not be accessed. The buildings that couldn't be accessed inside include Buildings 2, 3, 4, 5, 6, 7, 8, 9, 14 and 16. See Figure 2 for the locations of these.

The volunteers on Reception in the Liskerrett Community Centre provided access into all the buildings under their ownership, however there were some areas within the buildings that could not be searched. (Buildings 17 and 20). See Figure 3 for locations of these buildings.

This ecological assessment does not include a search for Tree Preservation Orders (TPO's) or Conservation Area status.

Data from biological records centres or online databases is historical information, and datasets may be incomplete, inaccurate or missing. It is important to note that even where data is held, a lack of records for a defined geographical area does not necessarily mean that the species is absent: the area may simply be under-recorded. Furthermore, not all returned desk study records are listed and discussed in this report, only a summary of important species is provided; if a full list is required, this can be supplied upon request.

# 4. Baseline Ecological Conditions

## 4.1. Site Description

As previously described, this 1.87ha urban site is dominated by hard-standing and buildings; aside from this, there are numerous scattered mature broadleaved trees, introduced shrubs, dense scrub, tall ruderal, scattered scrub, ephemeral grassland and a species-poor hedge. See Figure 4 below, showing the overall character of the site.

**Figure 4: Site overview**

Phase 1 habitat distribution is shown in Map 1. A species list for each habitat is included in *Appendix B* of this report.

## 4.2. Designated Sites

### *4.2.1. Statutory Designated Sites*

There are no statutory designated sites within 1km of the proposed development site. Therefore there will be no impacts on such sites as a result of the proposed development.

### *4.2.2. Non-statutory Designated Sites*

The desk study returned only one non-statutory designated site with the search area: a Cornwall Roadside Verge Inventory (CRVI) Biological Site. This site has been designated for its presence of common spotted-orchid, which is a rare species in Cornwall; it is located c. 650m south-west of the site.

## 4.3. Habitats

The habitats, aside from the hard-standing and small patch of common nettle dominated tall ruderal, are

discussed below. The buildings and their potential to support roosting bats and nesting birds are discussed in Sections 4.4.2 and 4.4.5.

### *4.3.1. Scattered Broadleaved Trees*

There are numerous broadleaved trees scattered throughout the Cattle Market and Community Centre; this includes mature trees such as TN4 shown in Figure 5, which is a beech tree with a diameter of c. 1.5m. Sycamore is the most common species present, other species include: ash, sessile oak, field maple, beech, cultivated apple, alder, hazel, copper beech, holly, cultivated cherry, pear and grey willow. It is not known which trees will be retained and which will be removed at the time of writing.

**Figure 5: Scattered broadleaved trees**

### *4.3.2. Scrub*

Scattered scrub is present in several locations on site; often in areas of ephemeral grassland that have grown through areas of hard standing, as shown in Figure 6 below. There are also three areas of dense scrub across the site (see locations in Map 1). Species present here are dominated by buddleja, with bramble, grey willow, pheasant berry, hawthorn, rose and the invasive non-native montbretia.

**Figure 6: Dense & scattered scrub**

It is assumed that most if not all of this common and widespread habitat will be lost to facilitate the new development. Therefore see Section 5.2.2 for suitable mitigation measures.

### *4.3.3. Introduced Shrub*

There are several areas of introduced shrubs on site, which have been planted up as garden borders as shown in Figure 7 below. In addition to this, there is also a species-poor hedge planted behind one of the properties on the northern border of the Cattle Market site.

Species present here include: hedge bindweed, Russian vine, pheasant berry, dogwood, leylandii, eleagnus species, euonymous, fuchsia, cherry laurel, rosemary, rose, berberis, elephant-leaved saxifrage, New Zealand cabbage palm, foxglove, escallonia, euphorbia, fig, treasureflower, tree mallow, lithodora, oleander, penstemon, New Zealand flax, pieris, castor oil plant, raspberry, common comfrey and great mullein. In addition, both Schedule 9-listed non-native invasive montbretia and cotoneaster are present.

**Figure 7: Introduced shrub**

It is assumed that some of this habitat will be lost to the new development. As a result, suitable mitigation measures for the partial loss of this habitat will need to be adopted. See Section 5.2.2.

### *4.3.4. Amenity Grassland*

There are several areas of amenity grassland across the site. These vary in species composition and structure, as shown in Figure 8 below. Species present include those which are commonly associated with this habitat in an urban location: Yorkshire fog, common bent-grass, sweet vernal grass, cock's-foot, broad-leaved dock, common knotgrass, common cat's ear, perennial rye-grass, ribwort plantain, dandelion, white clover, daisy and greater plantain. Again, it is not known how much of this common habitat will be lost to the new development of the site. Possible mitigation measures for the loss of some of this habitat have been suggested in Section 5.2.2.

**Figure 8: Amenity grassland**

### *4.3.5. Ephemeral Grassland*

Ephemeral grassland is present in several areas across the site. This has arisen due to a lack of weed management of the areas of hardstanding. Species present in this common and widespread habitat include: dandelion, common nettle, marsh willowherb, common bent-grass, procumbent pearlwort, common knotgrass, stonecrop, thyme-leaved speedwell, broad-leaved dock, common cat's ear, white clover, bramble, false oat-grass, red valerian, ragwort, Yorkshire fog, perennial rye-grass, daisy, greater plantain, grey willow, creeping buttercup, lesser stitchwort and moss species.

**Figure 9: Ephemeral grassland**

It is assumed that most of this common habitat has been lost to the development. No mitigation for its

loss has been suggested is this will readily recolonise any area which lacks in management.

## 4.4. Species

### *4.4.1. Flora*

**Vascular Plants**

A total of 74 vascular plant species were recorded during the August 2019 site visit, all of which were common and widespread species, typical of the habitats found on site. No vascular plant species of conservation importance were recorded during the survey and the habitats on site are considered to be unlikely to support any.

The ERCCIS desk study revealed numerous species of conservation value including goldenrod, bastard balm, groundsel and heath speedwell. Despite the occurrence of these in the wider area, these species were not found on site.

**Non-native Invasive Plants**

Three-cornered garlic, montbretia, variegated yellow archangel, rhododendron, Canadian waterweed and Himalayan cotoneaster were all recorded within 1km of the site, as found in the desk study. These species are all scheduled weeds under Schedule 9 of the Wildlife and Countryside Act 1981 making it an offence to 'cause it to spread'.

Both cotoneaster and montbretia was identified on site and these are non-native invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981. Being on the list makes it an offence to 'cause [the non-native invasive species] to spread'. Therefore these species must be removed following a specific control strategy as specified in Section 5.2.4.

**Lower Plants**

A specialised survey for non-vascular plants, bryophytes and lichens, was outside the scope of this study, and none were recorded incidentally during the walkover survey, or returned in the desk study. Furthermore, the habitats found within the survey area are not those which are considered to support notable species. Therefore, lower plant species will not be considered further within this report.

### *4.4.2. Bats*

The ERCCIS desk study revealed six records for bats: common pipistrelle, lesser horseshoe bat and "bats" all within 1km of the site. The locations of these records have been kept confidential (as is standard practice), other than that they are within 1km of the site. A search for granted European protected species license applications on MAGIC revealed one application granted in 2014 for a brown long-eared, lesser horseshoe and common pipistrelle roost, located c. 400m south of the site. All UK bat species and their roosts are legally protected under the Conservation Regulations 2017 (HM Government, 2017).

A bat and nesting bird building assessment was completed by a licensed bat ecologist, which assessed the potential of the building to support roosting bats. See locations of the buildings in Figure 2 and summary

of the building assessments for at Liskeard Cattle Market below:

- *Building* 1 is the former market office and is single storey with timber walls and a pitched roof of timber covered with roofing felt which has been covered again with fibre cement slates. There is a false ceiling and enclosed roof void. No evidence of bats was found, however the batten space beneath the slates could not be searched.
- *Building 2* is a café and is single storey with a pitched roof of fibre cement slates. This building could not be accessed.
- *Building 3* is a St John Ambulance Station and is two-storey with a hipped roof of slate. This building could not be accessed.
- *Building 4* is single storey with a pitched roof of corrugated fibre cement sheets. This building could not be accessed.
- *Building 5* is a terrace of storage sheds and is single storey with a sloping roof of fibre cement sheets covered with metal sheets. This building could not be accessed.
- *Building 6* is a terrace of small shops and is single storey with pitched and hipped roofs of fibre cement sheets. This building could not be accessed.
- *Building 7* is a small shop and is single storey with a sloping roof of corrugated fibre cement sheets. This building could not be accessed.
- *Building 8* is a single storey shed and is single storey with walls of single row concrete block and a pitched roof of corrugated fibre cement sheets. A small area at the north end of the building was accessed, however locked doors prevented access into the rest of the building.
- *Building 9* is similar to Building 8 but is open along the north and west sides. This building could not be accessed but the interior could be seen from the Heras fencing. No evidence of bats was found.
- *Building 10* is a cattle ring and has a domed roof of galvanised steel and no walls. No evidence of bats was found.
- *Building 11* is single storey with walls of single row concrete block and a pitched roof of corrugated fibre cement sheets. No evidence of bats was found.
- *Building 12* is single storey with walls of single row concrete block and a pitched roof of corrugated fibre cement sheets. No evidence of bats was found.
- *Building 13* is single storey with walls of single row concrete block and a pitched roof of corrugated iron and galvanised steel. No evidence of bats was found.
- *Building 14* is a single storey shed with walls of single row concrete block and a pitched roof of

corrugated iron and fibre cement sheets. This building could not be accessed.

- *Building 15* is a shed with two walls of single row concrete block (open along the north and east sides) and a pitched roof of corrugated fibre cement sheets. No evidence of bats was found.
- *Building 16* is owned by Western Power and is single storey with walls of single row concrete block and a sloping roof of natural slate. This building could not be accessed.

See Figures 10 to 25 below.

**Figure 10: Building 1**

**Figure 11: Building 2**


**Figure 12: Building 3**

**Figure 13: Building 4**

**Figure 14: Building 5**

**Figure 15: Building 6**


**Figure 16: Building 7**

**Figure 17: Building 8**

**Figure 18: Building 9**

**Figure 19: Building 10**

**Figure 20: Building 11**

**Figure 21: Building 12**

**Figure 22: Building 13**

**Figure 23: Building 14**

**Figure 24: Building 15**

**Figure 25: Building 16**

See locations of the buildings of the Community Centre in Figure 3 and summary of the building assessments at Liskerrett Community Centre (Figures 26 to 31) below:

- *Building 17* is a single storey garage with walls of concrete block and a sloping roof of corrugated fibre cement sheets. This building could not be accessed.
- *Building 18* is a hall and workshops, and is single storey with a flat roof at the western end and a pitched roof covered with roofing felt at the eastern end. There is a false ceiling beneath the pitched roof with an enclosed roof void c. 1m in height but no loft hatch therefore this area could not be accessed. No evidence of bats was found within the areas that could be accessed.
- *Building 19* is a single storey dance school with a pitched roof of corrugated fibre cement sheets and vaulted ceilings. There is a water tower at the western end. No evidence of bats was found but the batten space between the roof and vaulted ceilings could not be searched.
- *Building 20* is single storey with a sloping roof, assumed to be either metal or concrete (the top of the building could not be seen from the ground). This building could not be accessed.


**Figure 26: Building 17**

**Figure 27: Building 18**

**Figure 28: Building 19**

**Figure 29: Building 20**

**Figure 30: Building 21**

**Figure 31: Long-eared bat droppings in Building 21**

- *Building 21* is the community centre and is single storey with a lower ground floor at the western end. It has stone walls and pitched and hipped roofs of natural slate underlined with bitumen felt. There are false ceilings and enclosed roof voids: the original ceilings are still in place and newer ceilings have been installed beneath, creating upper voids c. 3m in height with voids beneath c. 2m in height. The roof spaces at the eastern end were accessed and searched, however the voids at the western end could not be accessed. Long-eared *Plecotus sp.* bat droppings were found

scattered throughout the roof voids that were accessed with accumulations of c. 200 droppings in various places.

- *Building 22* fronts onto Dean Street and is block built with a shallow dual pitch roof. This building could not be accessed.

Whilst there are mature trees on site, no potential roost features were identified.

An assessment of the site's potential to support commuting and foraging bats was also made during the survey. The site is well lit in places, with some darker areas, with limited vegetation across the site, although there is more vegetation at the community centre. The potential for the site to support commuting bats is limited due to its lighting on and around the boundaries of the site. The extent of foraging opportunities is also limited due to lighting and lack of vegetation across the site; most activity will be at the western extent of the site, which has the most foliage.

Only common and widespread habitats of low/negligible value to foraging and commuting bats will be lost to the development, so the site has potential to be enhanced for these species post-development.

See below for a summary of the recommendations arising from the building assessments:

**No further surveys are recommended for Buildings 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 20.** These buildings were assessed as offering negligible potential for roosting bats and no further surveys will be required. Some of these buildings could be accessed and no evidence of bats was found; for the buildings that could not be accessed they were assessed as offering negligible potential due to their construction, the absence of external gaps where bats could gain access and the surrounding habitat.

Although no current evidence of roosting bats was found in the buildings that were accessed it cannot be assumed that bats are not present when works commence. Therefore, suitable mitigation must be adopted as described in Section 5.2.1.

**One emergence survey** is recommended for **Buildings 1, 2, 3, 4, 6, 19 and 22 but see below.** These buildings were assessed as offering some, albeit low, potential for roosting bats therefore further surveys will be required if the proposed work will impact on these buildings (e.g. demolition or works to the roofs and ceilings).

Evidence of bats was found within **Building 21** therefore further surveys will be required if the proposed work will impact on this building. **Two emergence surveys and a week of remote monitoring** during the active bat season (May to September) are recommended for Building 21; the majority of these surveys should be completed during the optimal survey season (May to August).

### *4.4.3. Badgers & Hedgehogs*

The desk study revealed four records for badger and thirteen records of hedgehog within the 1km search radius of the site (the locations of these records have been kept confidential as is standard practice). Although widespread and common in Cornwall, badgers and their setts are legally protected under the

Protection of Badgers Act 1992 (HM Government, 1992). Hedgehogs are UK SPI and Cornwall BAP Priority species.

During the site visit an assessment was made of the habitats' potential to support these species on site. No badger setts or evidence of badger activity, such as snuffle holes, mammal pathways, latrines or hairs were recorded on-site. No evidence of hedgehog was found on site either.

Whilst the vegetation was searched for signs of badger, none were found. There is a potential for the more secretive hedgehog to be present. Hedgehogs preferred habitats are parks and gardens in which to forage, therefore it is likely that these animals are present. Consequently, there is a likelihood that hedgehog could be impacted by the construction of the development. Therefore general mitigation measures have been suggested for this species in Section 5.2.5.

#### *4.4.4. Other Mammals*

Otter, harvest mouse, brown hare and dormouse are assumed highly likely to be absent from site. Whilst these species were returned in the desk study, otter, harvest mouse and brown hare were recorded in 1883 and otter is the most recently recorded in 1992. The required habitats for these species are absent from site, and not within connecting habitats, due to a lack of watercourse, arable fields and Cornish hedges. Therefore, these protected species are not considered further in this assessment.

#### *4.4.5. Birds*

The desk study revealed many records of bird species of conservation value that have been recorded within 1km of the site. The records of most relevance to the habitats present on site are songbirds including house sparrow, black redstart and dunnock, which are SPI and RSPB red list species. All birds are legally protected whilst nesting under the Wildlife & Countryside Act 1981, as amended. In addition, barn owl, kingfisher and fieldfare were also returned in the desk study; these are Schedule 1 species. Most, if not all of the Schedule 1 species recorded within the desk study are considered highly unlikely to be present on site, due to the lack of suitable nesting, roosting and foraging habitat.

The building assessment revealed that no barn owls or evidence of this species' presence was found in the property. No sign of nesting birds was recorded within the buildings at the time of the survey.

Incidental sightings of birds including swallows, house sparrows and blackbirds were recorded during the survey. This is not a comprehensive list as a targeted bird survey was not carried out, and merely provides an indication of the conspicuous species present on the day of the survey.

The areas of amenity grassland are relatively small and are considered as being unsuitable for ground-nesting birds. Therefore potential nesting habitat is limited to the trees, shrubs and scrub.

It would be reasonable to assume that a range of these more common and widespread songbird species could nest within the site, including some of conservation concern, such as house sparrow. Whilst it is not known how much vegetation will be lost, suitable mitigation measures must be adopted to negate the

impact on breeding birds. See Section 5.2.3 for details.

### *4.4.6. Reptiles and Amphibians*

The ERCCIS desk study revealed 11 records of common frogs and five records common toads. A number of reptiles were also returned in the desk study: four slow worms, two common lizards, two grass snakes and one adder.

All reptiles and amphibians are partially protected under the Wildlife and Countryside Act 1981 (as amended); Cornwall is considered a UK stronghold for adder. Slow-worm, grass snake, adder and common lizard are listed as priority species for conservation on the UK BAP (BRIG, 2007). Adder and grass snake have been identified as priority species for conservation within the county BAP (CBI, 1997, 1998). Common toad is a UK and Cornwall BAP Priority species, and several actions have been put forward by the JNCC to further its conservation in the UK

Reptiles require a mixture of dry sheltered sites such as hedgerows/ woodland for shelter/ hibernation, open areas such as grassland for basking, and in the case of grass snake standing water in which to hunt. The site is largely unsuitable for most reptiles, although the small area of undermanaged amenity grassland, has potential to support them. Despite this, the grassland is not considered to support reptiles as the site is in a very urban setting and isolated by hard-standing, with regularly managed grass.

All British amphibian species require standing water to reproduce; there are no ponds on site. The nearest pond is located c. 280m west of the site, as shown by online OS mapping. It is unknown whether any nearby properties contain ponds. Any ponds may have potential to support common and widespread breeding amphibians. Due to the lack of suitable habitat there is a low likelihood that amphibians will be on site. Therefore these species are not considered further in this assessment.

### *4.4.7. Invertebrates*

The desk study revealed numerous records for invertebrates of conservation importance including: garden tiger, wall butterfly, ghost moth, buff ermine and dusky thorn. These species are all listed as a priority species for conservation under the SPI. Red admiral and painted lady butterflies were recorded on site, drawn to the buddleja. The wall butterfly, ghost moth, buff ermine and dusky have potential to be on site due to their preferred habitats of open grassland, urban gardens and ash trees being present. Despite this, none of these species were recorded on site. Therefore it is unlikely that the site supports notable invertebrates.

# 5. Ecological Constraints and Opportunities, including mitigation requirements

## 5.1. Ecological Constraints

### *5.1.1. Roosting Bats*

The visual assessment revealed that Buildings 1, 2, 3, 4, 6, 19 and 22 have low potential to support roosting bats. Long-eared bat droppings were positively identified in Building 21. Therefore further surveys are required to these buildings if they are proposed for demolition. All bats and their roosts are European Protected Species and therefore legally protected under the Conservation Regulations 2017.

### *5.1.2. Vegetation Loss*

The amenity grassland, introduced shrubs, scrub and trees are expected to be lost to the development. These will offer habitats for a range of different species including invertebrates, and species which prey upon them including bats and birds.

### *5.1.3. Nesting Birds*

The introduced shrubs, trees and dense scrub on site all offer suitable nesting opportunities for breeding birds. The active nests and eggs of all wild birds are protected against taking, damage or destruction under the Wildlife and Countryside Act 1981.

### *5.1.4. Non-native Invasive Species*

Both montbretia and cotoneaster sp. was identified on site. It is illegal to allow these species to spread off site, as according to Wildlife & Countryside Act Schedule 9.

### *5.1.5. Hedgehogs*

There is potential that low numbers of hedgehogs are present on site and could be harmed during the construction phase of the development. Hedgehogs are SPI and Cornwall BAP species.

## 5.2. Impact Avoidance and Mitigation

### *5.2.1. Roosting Bats*

As buildings 4, 19 and 22 are proposed for demolition, further surveys are recommended to ascertain how bats are using these two buildings. see Section 5.3. The findings of these surveys will recommend site and species-specific mitigation measures. The development must take into account the presence of bats and retain access and suitable roosting site/s for bats. An European Protected Species (EPS) licence or a Bat Mitigation Class Licence (BMCL) may be required from Natural England before the planned work can lawfully commence.

If plans for the site change and any of Buildings 1, 2, 3, or 6 are to be demolished, then further surveys will

be required for these buildings.

In addition, although no current evidence of roosting bats was found in Buildings 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 and 20 that were accessed, it cannot be assumed that bats are not present when works commence. Care should therefore be taken during the work. If any bats are discovered during the work they should not be handled; works to that area should stop immediately and further advice sought from CEC (tel: 01872 245510).

N.B. Bats are highly mobile animals and, as a result, bat surveys are generally considered valid for a period of 12 months: If the works do not commence within 12 months, a further inspection survey of the buildings will be required to ensure the survey information is maintained as current and up-to-date.

### *5.2.2. Vegetation Loss*

As a result of a loss in trees, introduced shrubs and amenity grassland, new plants should be planted in suitable areas on site. These should be native trees and shrubs such as crab apple, hawthorn, hazel and blackthorn. In addition, new native pollinator plants should also be planted in amenity areas to attract invertebrates which will in turn attract other species which prey upon them.

If amenity grassland is to be partially removed, and amenity grassland is proposed, an enhanced seed mix should be sown. These could be planted with either Emorsgate Seeds EL1 or EN1 which would be considered as suitable. Details regarding the management of these seed mix can be found at https://wildseed.co.uk/mixtures/view/56 and https://wildseed.co.uk/mixtures/view/61, respectively. Once established, management should comprise mowing from late June, and cut again after 4-8 weeks.

### *5.2.3. Nesting Birds*

Any vegetation and building removal should be timed to avoid the main breeding bird season between March and September and therefore be undertaken between October and February. If it is not possible to undertake this outside of the bird nesting season, an ecologist will need to undertake a nesting bird check prior to removal/ demolition. If an active birds nest is discovered it will be necessary to stop work immediately and create an exclusion zone in which no works are undertaken until the birds have fledged naturally. Further advice must be sought from Cornwall Environmental Consultants (tel 01872 245510) or Natural England (tel: 01872 245045) if an active nest is identified if an ecologist is not present.

In addition to new shrub planting as discussed in Section 5.2.1, bird nest boxes will be installed due to the loss of nesting opportunities for breeding birds. Therefore, bird boxes should be installed in every other building 'unit' between northern and eastern aspects, avoiding direct sunlight, at least 2m above ground level. This follows guidance as described in Planning for Biodiversity Guide, Cornwall Council, Cornwall Council (2018), as described in Section 5.4.

### *5.2.4. Non-native Invasive Species*

It is illegal to cause these species to spread to another location, therefore as these plants are highly likely

to be disturbed at any of its locations (Target Notes 1 & 2), it will be necessary to remove them and dispose of it appropriately. It is recommended that these non-native invasive plants are hand-dug and taken to a commercial composting facility, or to landfill. The receptor of this waste should be informed that it contains montbretia and/ or cotoneaster. It is important that all underground corms of this plant are removed.

#### *5.2.5. Hedgehogs*

The site has the potential to support individual transient mammals such as hedgehogs, therefore any trenches should be covered overnight to prevent wildlife such as hedgehog and badger falling in and failing to escape. If this is not possible then a strategically-placed wooden plank would provide a means of escape for these species.

Contractors must ensure that no harm should come to wildlife by maintaining the site efficiently by clearing away any material such as wire that animals can become entangled and preventing access to any toxic substances that may be used.

### 5.3. Further Surveys – Bat Emergence

**Buildings 4, 19 and 22**

These buildings were either not accessible or were assessed as offering some, albeit low, potential for roosting bats therefore further surveys will be required if the proposed work will impact on these buildings (e.g. demolition or works to the roofs and ceilings). One emergence survey at dusk is recommended, during the optimal survey season (May to August). However, this may be reduced; if a representative from Cornwall Council can provide access into Building 4 and 22 it may be possible to undertake a visual inspection and downgrade this assessment to negligible potential, therefore negating the requirement for an emergence survey. However it should be noted that a survey may still be required if access is provided but some areas that are suitable for roosting bats cannot be searched (e.g. the batten space beneath the roof coverings).

### 5.4. Ecological Enhancement Opportunities

Enhancement measures are recommended under NPPF Chapter 11, Cornwall Local Plan Policy 23 (see Section 2.1.2) and Cornwall Planning for Biodiversity Guide (2018). This guidance recommends that one bird/ bat box must be installed in every residential 'unit'. This is in addition to any boxes that have been recommended as mitigation. Examples of suitable boxes are shown in Appendix C. See below for the positioning of these boxes:

- Bat boxes should be installed on south, south-east and south-westerly aspects, to face the sun, at least 2m above ground level. Every other unit should have a new bat box.
- A bee bricks should be installed on southern aspects of each building, at least 1m above ground level with no upward height limit, close to areas of vegetation but not shaded by vegetation.

- The ERCCIS desk study reveal records for swifts, therefore swift bricks could be installed, these should be at least 3m above the ground but ideally 5m above the ground and on north facing aspects of the buildings.

Any landscaped borders within the new garden could be planted with a range of good pollinator species. Examples of suitable species can be found in the RHS 'Perfect for Pollinators' plant list.

Wildflowers could be established adjacent to the boundaries of the new development to enhance the site by increasing the prey invertebrate diversity on site that will attract species such as birds and bats. This would increase floral diversity in the site as well as providing foraging habitat for a range of species including bat, bird and invertebrate species.

Consider the installation of a sustainable drainage (SuDS) feature on site to provide an aquatic resource for a range of species, from foraging and breeding amphibians to foraging birds and bats, as well as on an onsite functional drainage system.

Hedgehog hibernacula in the form of brash piles could be installed on site, in an area of scrub/ shrub vegetation that would not be disturbed by members of the public. This will help to encourage hedgehogs to hibernate on site, in an area that has suitable habitat, and is more likely to have an increased potential once private gardens have established.

Consider creating a 'wildlife corridor' on site to connect the woodland to the immediate south of the site, to Thorpe Park, adjacent to the northern boundary of the Liskerrett Community Centre. This can be in the form of planted borders of RHS 'Perfect for Pollinators' plants, wildflowers and native trees and orchard trees.

# 6. Conclusions

The purpose of this report is to identify key ecological constraints and mitigation requirements to inform the site design and planning application for the proposed redevelopment of Liskeard Cattle Market & Liskerrett Community Centre in Liskeard, Cornwall.

Under current proposals a number of the buildings will be demolished and replaced with a mix of residential, community buildings and retail.

The potential for breeding birds, roosting bats and transient hedgehogs was identified on site. It is considered that once further bat surveys have been completed, suitable mitigation can be incorporated into the development, to minimise any impacts to acceptable levels. A commitment to deliver these recommended measures will be secured through planning conditions, and an EPSL or BMCL for demolition of the bat roost, if applicable.

If the mitigation and enhancement measures are successfully implemented and maintained in the long term, once wildflowers and native shrubs have established and new hibernation/ nest/ roost provision is used, the residual impact of the proposed new development is considered likely to be minimal.

# 7. References

Bat Conservation Trust (2018). Bats and the Built environment Series: Bats and Artificial Lighting in the UK. Available at: https://www.bats.org.uk/news/ 2018/09/new-guidance-on-bats-and-lighting [accessed 4th September 2019].

CIEEM [Chartered Institute of Ecology and Environmental Management] (2017). Guidelines for Preliminary Ecological Appraisal (Second Edition, December 2017). Available at: https://www.cieem.net/guidance-on-preliminary-ecological-appraisal-gpea- [accessed 4th September 2019].

CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland (Second Edition, January 2016). Available at: https://www.cieem.net/ecia-guidelines-terrestrial- [accessed 4th September 2019].

CIEEM (2017). Guidelines for Preliminary Ecological Appraisal, CIEEM, Winchester. Available at: http://www.cieem.net/guidance-on-preliminary-ecological-appraisal-gpea- [accessed 4th September 2019].

Eaton M. A., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. & Gregory, R. (2015) Birds of Conservation Concern 4: The population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds December 2015.

EN [English Nature; now Natural England] (2006). The Dormouse Conservation Handbook. Second Edition. English Nature, Peterborough.

EN [English Nature; now Natural England] (2004). Reptiles: Guidelines for Developers. English Nature, Peterborough.

Gent, A.H. & Gibson, S.D. (1998). Herpetofauna Worker's Maual. JNCC, Peterborough.

HM Government (2017). The Conservation of Habitats and Species Regulations 2010. HMSO, London.

HM Government (2006). The Natural Environment and Rural Communities Act 2006. HMSO, London.

HM Government (2000). The Countryside and Rights of Way Act 2000. HMSO, London.

HM Government (1992). Protection of Badgers Act 1992. HMSO, London.

HM Government (1981, as amended) The Wildlife and Countryside Act 1981 (as amended). HMSO, London.

HM Government (1981) The Wildlife and Countryside Act 1981. HMSO, London.

JNCC [Joint Nature Conservation Committee] (2011a) UK BAP Priority Species and Habitats. Available at: http://jncc.defra.gov.uk/page-5705 [accessed 4th September 2019].

JNCC (2010) Handbook for Phase 1 Habitat Survey - A Technique for Environmental Audit. ISBN 0 86139 636 7.

Poland, J. & Clement, E. (2009) The Vegetative Key to the British Flora. Poland & BSBIO, Southampton.

# 8. List of Appendices

A. Phase 1 Habitat Survey Vascular Plant List

B. Site Proposals

C. Recommended Bat, Bird and Bee Bricks

# A. Site Proposals

# ILLUSTRATIVE MASTERPLAN

Thorn Park

Dean Street

Barras Street

Fairpark Road

GP Extension

Junction Improvements

Market Approach

Resi

Resi

Resi

Resi

Resi

Resi

Resi

Liskerrett Green

Varley Lane

Community Green

Market Place

Family Hub & Community Centre

Steel & Glass Canopy Structure

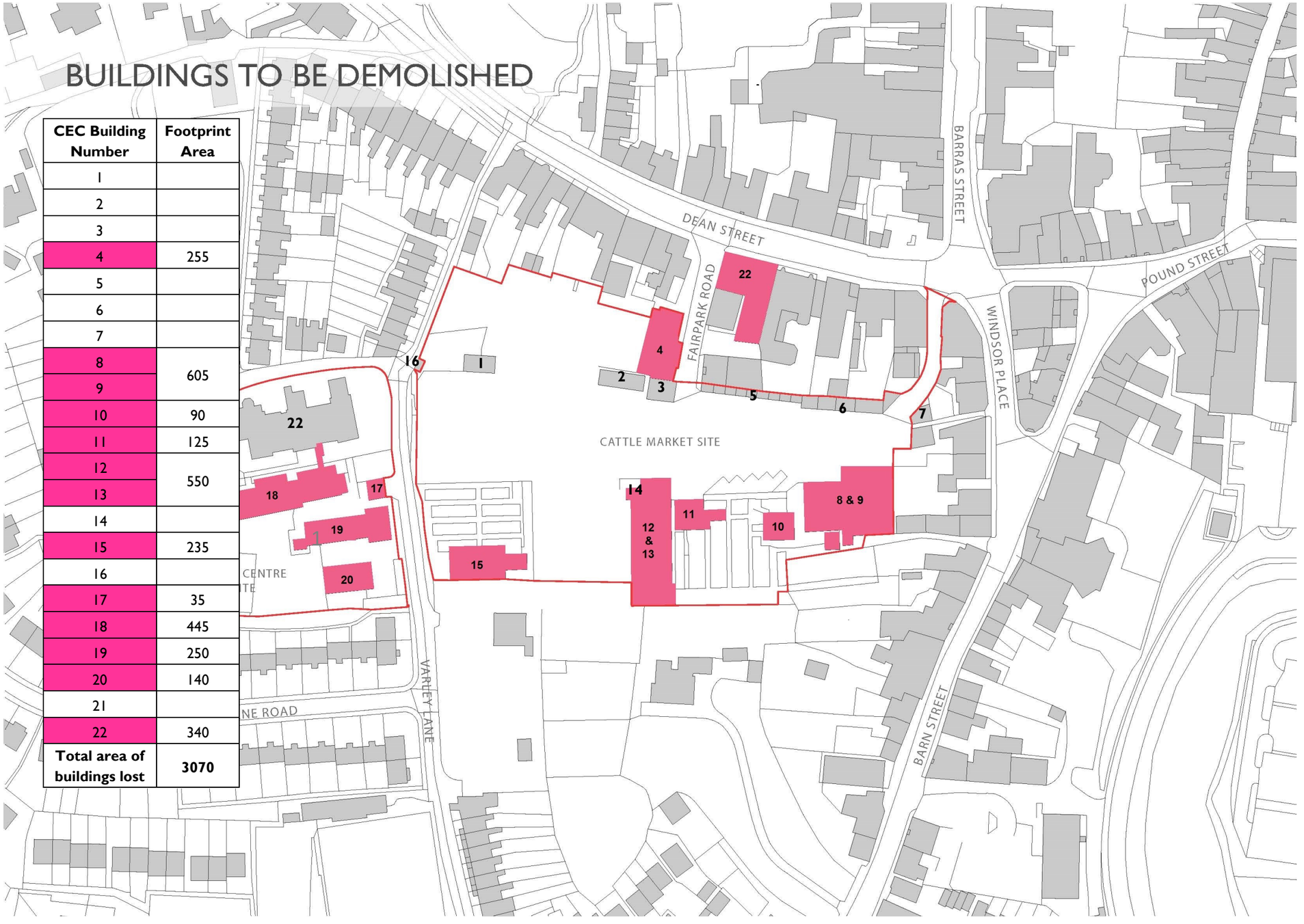
Work Shed & Farm Shop

Service yard

Barn Street

# BUILDINGS TO BE DEMOLISHED

| CEC Building Number | Footprint Area |
|---|---|
| 1 | |
| 2 | |
| 3 | |
| 4 | 255 |
| 5 | |
| 6 | |
| 7 | |
| 8 | 605 |
| 9 | |
| 10 | 90 |
| 11 | 125 |
| 12 | 550 |
| 13 | |
| 14 | |
| 15 | 235 |
| 16 | |
| 17 | 35 |
| 18 | 445 |
| 19 | 250 |
| 20 | 140 |
| 21 | |
| 22 | 340 |
| **Total area of buildings lost** | **3070** |




**Legend**

Background mapping used has been supplied by Inner Circle Consulting in September 2019. The numbers of the buildings have been amended to correspond to the numbers used by the CEC Bat Ecologist who surveyed the buildings in 2019.

Buildings to be demolished are highlighted in **pink**.

CEC3388 Liskeard Cattle Market

**Map showing the buildings to be demolished using the CEC building numbers**

Drawn by: CRS

Date: 10/06/2020

cornwall environmental consultants ltd

# B. Phase 1 Habitat Survey Vascular Plant List

DAFOR is a nominative scale where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare. L = Locally.

| Latin Name | Common Name | Scattered broadleaved trees | Scrub | Introduced shrub | Amenity grassland | Ephemeral grassland | Tall Ruderal |
|---|---|---|---|---|---|---|---|
| *Acer campestre* | Field maple | O | | | | | |
| *Acer pseudoplatanus* | Sycamore | A | | | | | |
| *Agrostis capillaris* | Common bent-grass | | | | F | LA-O | |
| *Alnus glutinosa* | Alder | R | | | | | |
| *Anthoxanthum odoratum* | Sweet vernal grass | | | | F | | |
| *Arrhenatherum elatius* | False oat-grass | | | | | O | |
| *Bellis perennis* | Daisy | | | | R | R | |
| *Berberis* | Berberis | | | R | | | |
| *Bergenia cordifolia* | Elephant-leaved saxifrage | | | R | | | |
| *Bryophyte spp.* | Mosses | | | | | F | |
| *Buddleja davidii* | Buddleja | | D | | | | |
| *Calystegia sepium* | Hedge bindweed | | | LA-O | | | |
| *Centranthus ruber* | Red valerian | | | | | O | |
| *Cordyline sp.* | New Zealand cabbage palm | | | R | | | |
| *Cornus sanguinea* | Dogwood | | | O | | | |
| *Corylus avellana* | Hazel | R | | | | | |
| *Cotoneaster microphyllus* | Cotoneaster sp. | | | D-R | | | |
| *Crataegus monogyna* | Hawthorn | | R | | | | |
| *Crocosmia x crocosmiiflora* | Montbretia | | LD-R | LD-R | | | |
| *Cupressus leylandii* | Leylandii | | | O | | | |
| *Dactylis glomerata* | Cock's-foot | | | | F | | |
| *Digitalis purpurea* | Foxglove | | | R | | | |
| *Dryopteris filix-mas* | Common male fern | | | | | | R |
| *Eleagnus species* | Eleagnus species | | | O | | | |
| *Epilobium palustre* | Marsh willowherb | | | | | LA-F | |
| *Escallonia sp.* | Escallonia | | | R | | | |
| *Euonymus sp.* | Euonymous | | | O | | | |
| *Euphorbia sp.* | Euphorbia | | | r | | | |
| *Fagus sylvatica* | Beech | O | | | | | |
| *Fagus sylvatica Purpurea group* | Copper beech | R | | | | | |
| *Fallopia aubertii* | Russian vine | | | LD-R | | | |
| *Ficus carica* | Fig | | | R | | | |
| *Fraxinus excelsior* | Ash | F | | | | | |
| *Fuchsia magellanica* | Fuchsia | | | O | | | |
| *Gazania rigens* | Treasureflower | | | R | | | |
| *Geranium robertianum* | Herb-robert | | | | | | R |
| *Hedera helix* | Ivy | | | | | | R |
| *Holcus lanatus* | Yorkshire fog | | | | A | R | |
| *Hypochaeris radicata* | Common cat's ear | | | | O | O | |
| *Ilex aquifolium* | Holly | R | | | | | |
| *Lavatera arborea* | Tree mallow | | | R | | | |
| *Leycesteria formosa* | Pheasant berry | | O | O | | | |

| Latin Name | Common Name | Scattered broadleaved trees | Scrub | Introduced shrub | Amenity grassland | Ephemeral grassland | Tall Ruderal |
|---|---|---|---|---|---|---|---|
| *Lithodora diffusa* | Lithodora | | | R | | | |
| *Lolium perenne* | Perennial rye-grass | | | | O | R | |
| *Malus domestica agg.* | Cultivated apple | O | | | | | |
| *Nerium oleadner* | Oleander | | | R | | | |
| *Penstemon sp.* | Penstemon | | | R | | | |
| *Phormium sp.* | New Zealand flax | | | R | | | |
| *Pieris sp.* | Pieris | | | R | | | |
| *Plantago lanceolata* | Ribwort plantain | | | | O | | |
| *Plantago major* | Greater plantain | | | | R | R | |
| *Polygonum arenastrum* | Common knotgrass | | | | LA-R | LA-R | |
| *Prunus laurocerasus* | Cherry laurel | | | O | | | |
| *Prunus sp.* | Cultivated cherry | R | | | | | |
| *Pyrus sp.* | Pear | R | | | | | |
| *Quercus petraea* | Sessile oak | F | | | | | |
| *Ranunculus repens* | Creeping buttercup | | | | | R | |
| *Ricinus communis* | Castor oil plant | | | R | | | |
| *Rosa sp.* | Rose | | R | R | | | |
| *Rosmarinus officinalis* | Rosemary | | | O | | | |
| *Rubus fruticosus agg.* | Blackberry/bramble | | A | | | O | |
| *Rubus idaeus* | Raspberry | | | R | | | |
| *Rumex obtusifolius* | Broad-leaved dock | | | | LA-F | O | |
| *Sagina procumbens* | Procumbent pearlwort | | | | | LA-O | |
| *Salix cinerea* | Grey willow | R | O | | | R | |
| *Sedum sp.* | Stonecrop | | | | | LA-R | |
| *Senecio jacobaea* | Ragwort | | | | | O | |
| *Stellaria graminea* | Lesser stitchwort | | | | | R | |
| *Symphytum officinale* | Common comfrey | | | R | | | |
| *Taraxacum officinale agg.* | Dandelion | | | | O | F | R |
| *Trifolium repens* | White clover | | | | O | O | |
| *Urtica dioica* | Common nettle | | | | | F | D |
| *Verbascum thapsus* | Great mullein | | | R | | | |
| *Veronica serpyllifolia* | Thyme-leaved speedwell | | | | | LA-R | |

# C. Recommended Bat, Bird and Bee Bricks

# Examples of integrated bat boxes within external walls of buildings

*Seek advice from a specialist bat worker for installation and placement of all boxes*

Cornwall Environmental Consultants Ltd

## Schwegler Bat Access Panel 1FE

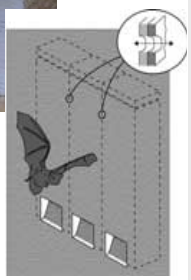
- Suitable for all crevice-dwelling bat species found in the UK.
- Maintenance-free and designed to exclude light and draughts.
- **Material:** Schwegler wood-concrete (weather-resistant, air-permeable, rot-proof and long-lasting).
- **Dimensions:** height 30cm x width 30cm x depth 8cm.
- Installed within or onto external walls: built into masonry and installed flush to rendering, and integrated within insulated cavity walls; or be mounted externally using a **Back Plate** to create an enclosed box.
- The panel has an **open rear**, allowing for installation within an external wall with a hole provided through to a wall cavity. This creates a much larger and warmer space deep within the wall, suitable for use during the spring and summer.
- Can be painted with air-permeable paints.

Bat Access Panel 1FE

Optional Back Plate for 1FE

## Schwegler Bat Tube 2FR

Schwegler 2FR



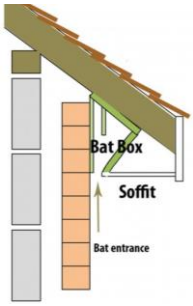
Three tubes placed next to each other with connecting holes

- Suitable for all crevice-dwelling bat species found in the UK.
- Maintenance-free and designed to exclude light and draughts.
- **Material:** Schwegler wood-concrete.
- **Dimensions:** height 47cm x width 20cm x depth 12.5cm.
- At least **three tubes** should be installed together to provide a larger space for roosting bats. There are **capped holes** on the side panels that can be knocked through to create connecting holes between each unit.
- There is a capped hole on the rear panel, which can be knocked through with a hole provided through to a wall cavity, creating a much larger and warmer space deep within the wall, suitable for use during the spring and summer.

## Wildcare Soffit Bat Box

- Utilises the wasted space **above the soffit** on a standard roof structure.
- The entrance is formed by cutting away a 20mm slot in the back of the soffit board against the external wall, and a specially designed plate is then screwed through into the bat box to secure it and to make it a tidy finish.
- The box is designed to exclude light and draughts.
- **Material:** 12-18mm FSC hardwood exterior plywood.
- **Dimensions:** height 14-25cm x width 33cm (entrance slot: 20mm).

Soffit Bat Box




## Bat Conservation Trust & EcoSurv Habibat Bat Boxes

Habibat 2S

Habibat 003

Habibat 001

- A range of products suitable for all crevice-dwelling bat species found in the UK.
- Maintenance-free.
- **Material:** Insulating concrete.
- **Dimensions:** Range of sizes from height 22.5 x width 21.5cm x depth 10.2cm. (Habibat 2S), to height 44cm x width 21.5cm x depth 10.2cm (Habibat 003).

## Schwegler Summer & Winter Batbox 1WI

- Designed for **hibernation** of bats in winter as well as for roosting during summer.
- Flush-mounted and often rendered over so only the entrance remains visible.
- Maintenance-free and designed to exclude light and draughts.
- **Material:** Schwegler wood-concrete.
- **Dimensions:** height 55cm x width 35cm x depth 9.5cm.

Schwegler 1WI

Bat Box B

Bat Box C

## Ibstock Enclosed Bat Box B and C

- Designed with pipistrelle bats in mind, with several roosting zones
- Maintenance-free.
- **Material:** Available in all brick types.
- **Dimensions:** height 21.5-29cm x width 21.5cm.

# Examples of bee bricks

*Seek advice from a specialist ecologist for precise installation and placement of all bricks*

- There are 224 native solitary bees in the UK.
- Our native solitary bees have experienced a massive population decline since 1990.
- Solitary bees are completely safe to have around children and pets, as they are not aggressive, have no queen or honey to protect.
- The houses all contain cavities, where solitary bees lay their eggs; the bees then seal the entrances with mud or chewed vegetation, depending on species, and the offspring emerge the following spring to repeat the cycle.
- **Materials:** These bee houses are constructed from cast concrete, using up to 70% waste materials from the Cornish china clay industry.
- **Positioning:** These should be installed in a sunny spot, south facing, with no plants in front of the holes. Placed at least 1m from the ground with no upward limit.

## Bee Brick

- The bee brick provides a stylish nesting site for red mason bees and leafcutter bees, amongst others, and makes a real design statement in any garden, allotment or within the external walls of building.
- Available in a range of colours.
- **Measurements**: 215 x 105 x 65mm; 2.9kg.

## The Bees Block

- Designed for fixing to be used within the construction of walls, or alternatively it can be installed in a garden.
- **Measurements**: 215 x 215 x 102.5mm (half the size of a breeze block); 7kg.

## Large Bee Block & Small Bee Block

- A freestanding bee nest which can be placed in your garden or which can also be built into walls to provide additional habitat for solitary bees.
- Available in two sizes and in a range of colours.
- **Measurements: Large:** 105 x 105 x 105mm; 2.8kg & **Small:** 65 x 70 x 105mm; 1.1kg.

## Bee Post

- A freestanding architectural bee tower, perfect for use in urban landscapes and redevelopment, or to make a strong style statement in any garden.
- These can be either natural concrete or charcoal, in colour
- **Measurements:** 2.3m x 120mm x 120mm

## BeePot Concrete Planter & Bee House

- The Beepot is a stylish concrete planter combining a safe nesting site for solitary bees with a space for perfect pollinator planting, meaning a food source for the bees is never far away.
- **Measurements:** 225 x 150 x 152mm; 8kg.

# Examples of wall-mounted & integral bird boxes

*Seek advice from a specialist ecologist for installation and placement of all boxes*

Cornwall Environmental Consultants Ltd

## Schwegler 1SP House Sparrow Terrace

- Integral design ideal for external walls of buildings, at least 4m above ground.
- Can also be attached externally.
- Also attracts tit species, redstarts and flycatchers.
- **Materials:** Schwegler wood-concrete.
- **Dimensions:** height 24.5cm x width 43cm x depth 20cm (15kg).

## CJ Wildlife WoodStone Swift nest box

- Designed for fixing to an external wall of a building.
- If possible, boxes should be sited under the shelter of eaves or overhanging roofs.
- **Materials:** FSC certified Woodstone (mixture of concrete and wood fibres).
- **Dimensions:** height 24.5cm x width 38cm x depth 26.5cm (5.4kg).

## Schwegler 1MR Avianex

- Designed to be placed on house and garage walls and balconies.
- For small birds, with a 3.2cm diameter nesting hole.
- **Material:** Schwegler wood-concrete with galvanised steel hanger.
- **Dimensions:** height 27cm x width 19cm x depth 23cm (5.2kg).

## Schwegler 24 brick box

- Integral design, suitable for installation within external walls, at least 2m above ground.
- Suitable for: redstart, nuthatch, sparrows and all tit species.
- Can also be rendered over to only leave the hole visible.
- **Material:** Schwegler wood-concrete.
- **Dimensions:** height 19cm x width 18cm x depth 18cm (7.3kg).

## Schwegler 1HE brick box

- Integral design, suitable for installation within external walls, at least 2m above ground.
- Suitable for black redstart, pied wagtail, flycatchers and house and tree sparrows.
- **Material:** Schwegler wood-concrete, with a galvanised bracket.
- **Dimensions:** height 15cm x length 28cm x depth 15cm.

## CJ Wildlife House Martin nests (left, right and double entrances)

Left single

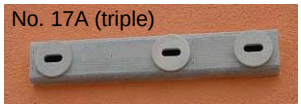
Double

- Suitable for installation on walls, between 2m and 3m above ground.
- Supplied with a fixing bracket.
- **Material:** FSC certified Woodstone and plywood back plate.
- **Dimensions: Single:** h 16cm x w 20cm x d 11cm; **Double:** h 16.5cm x w 38cm x d 12cm.

## Schwegler Swift boxes (17, 17A, 17B)

No. 17 (single)

No. 17B (enlarged)



No. 17A (triple)

- Suitable for installation on trees, between 5m and 7m above ground.
- Available in a range of sizes.
- **Material:** Schwegler wood-concrete and galvanised fixing bracket.
- **Dimensions: 17:** h 15cm x l 34cm x d 15cm; and **17A:** h 15cm x l 98cm x d 15cm.

## RSPB Swallow nest

- Suitable for installation in outbuildings and garages.
- Supplied with a bracket.
- **Material:** FSC certified timber and high-fired terracotta nest cup.
- **Dimensions:** height 12cm x width 21cm.

# Swift Boxes

The SCHWEGLER Swift Boxes provide a suitable long-term nesting site for the common swift (*Apus apus*). The swift is migratory throughout its range and overwinters in Africa, arriving in the UK during late spring to breed, and departing during summer. The swifts are the most aerial of the birds and feed on flying insects, and come to land only to breed. A decline in natural nesting sites have resulted in a dependency upon buildings. It is important to retain existing nesting sites as swifts pair for life, and meet up in spring each year at the same nest site. Swifts nest in buildings of all kinds including within cities, and nest under the eaves of barns, old houses and churches where they are able to drop into the air from the nest entrance. The modernisation of many buildings has resulted in declines of these nesting sites. **Installation:** Ideally at a height above 5m under the shelter of the eaves. Ensure that the entrance and drop area remains unobstructed. Several units should be placed together to allow the potential for swift colonies to form. They can be built into the masonry of an external wall and can be painted with air-permeable paints.

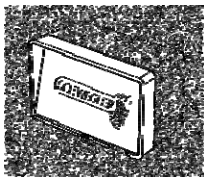
Swift Box No. 16 and No. 16S can be built into masonry and rendered walls on buildings of all kinds, including the construction of new-builds, and integrated with insulated cavity walls in the construction of modern homes. This creates a warmer and more suitable site for nesting swifts. The rear of the boxes can be incorporated within masonry and rendering, or surface installed using the optional Fixing Bracket onto walls of varied construction, including render, stone, brick and timber. If surface installed, the gap between the wall and the box should be sealed with a non-toxic waterproof sealant to prevent moisture being trapped. **Material:** SCHWEGLER wood-concrete (weather-resistant, air-permeable, rot-proof and long-lasting) with metal fixtures. **Cleaning and inspection:** The entire front of the box can be easily swung open. Cleaning is not essential if occupied by swifts, which tend to nest in a dark corner away from the entrance. The nests of all wild birds are protected under the Wildlife and Countryside Act 1981 (HM Government) and nest boxes must not be disturbed whilst occupied or during the breeding season (March - September inclusive). **Dimensions:** External: height 24 cm x width 43 cm x depth 22 cm. Brood chamber: height 17cm x width 36 cm x depth 16 cm. They are for use with the **Nest-Mould for Swifts**, which enhances the nesting site potential for swifts and encourages them to nest.

## Swift Box No. 16

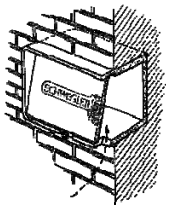
Swift Box No. 16

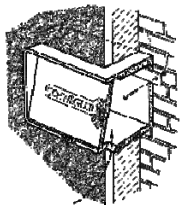
Can be installed within an external wall to a maximum depth of 17 cm in order to prevent the underneath entrance hole being blocked.

Installation examples:



Built into an external wall

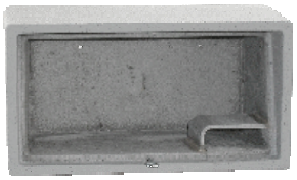




Installed with the Fixing Bracket to a cavity wall

## Swift Box No. 16S with integrated barrier to exclude starlings

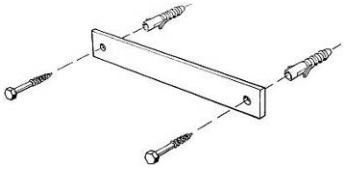
Swift Box No. 16 S



Inside of the box to show the starling barrier

The Swift Box No. 16S can be fully built into masonry and installed flush to match rendering. **Integrated barrier to exclude starlings:** the intention of this barrier is to reduce unwanted occupancy by the European starling (*Sturnus vulgaris*), and has proved successful in swift monitoring projects. They can be sited in conjunction with bespoke starling nest boxes in order to aid the conservation of both species. The starling has long legs and a large body length and is unable to access the barrier and brood chamber behind, whereas the smaller swift can easily gain access. However, these barriers should not be installed in existing nest boxes or sites as swifts returning to nest can enter their nest at high speeds, and may injure themselves as they are not aware of these changes.

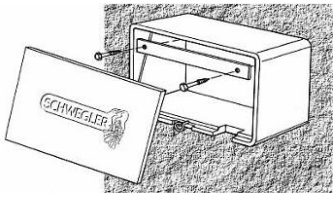
## Optional Fixing Bracket for Swift Box No. 16 and No. 16S



Optional Fixing Bracket

Used when fixing the Swift Boxes No. 16 and No. 16S onto an external wall. **Material:** Galvanised steel bracket and screws with plastic wall-plugs.

**Dimensions:** height 2.5 cm x width 30 cm x thickness 3 mm



Installation of Swift Box No. 16 onto an external wall using the Fixing Bracket