An Ecological Survey and Mitigation Strategy for Orchard Croft, Putley

Aim: To assess the likelihood of the use of the building by Bats & Birds at Orchard Croft, Putley

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Reference: Cross\Bat & Bird's Eco Rep.doc
26th September 2018

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1.0 Introduction

As part of the application for the extension of the existing two storey residential dwelling known as; Orchard Croft, Putley, it is necessary to carry out an ecological survey of the site, to establish whether there are any protected species (Bats or Birds) currently using the building.

2.0 Methodology of Surveys

2.1 Survey of the Buildings

The daytime scoping survey of the building was carried out on the 31st August 2018 by Ros Willder (CEnv, MCIEEM, Licence numbers CLS010473, 12870 and RC121) assisted by Graduate Ecologist Yasmina Ashcroft (MSc) of Willder Ecology; the weather was dry and clear, and the daytime survey began at 18:00 (BST).

A detailed daytime survey was carried out of the exterior and interior of the house and lean-to, and adjacent areas to be affected by the proposed works. The building survey was carried out by a thorough visual inspection, where safe access was possible, using a strong hand-held torch. In addition, a frequency division bat detector was used, where appropriate, as well as an endoscope to enable further detailed examination of any crevices in the walls, roofing materials and window frames.

In addition to the initial daytime scoping survey, a Dusk Bat Emergence Survey was carried out on the 31st August 2018. The Dusk Survey was carried out by Ros Willder (CEnv, MCIEEM, Licence numbers CLS010473, 12870 and RC121) and assisted by Graduate Ecologist Yasmina Ashcroft (MSc) from Willder Ecology. A second Dusk Bat Emergence Survey was carried out on the 21st September 2018. The Dusk Survey was carried out by Ros Willder and assisted by Licensed Bat Surveyor; Dave Smith (BSc, Licence CL137061) from Willder Ecology.

In addition to the Daytime Scoping and Dusk Emergence Surveys, a desktop search was carried out using the MAGIC Map Service from Natural England to identify any designated sites and species records nearby, as well as a pond search, the results of which are discussed in Section Four and included in Appendix Two and Three.

3.0 Results of Surveys

3.1 External Examination of the Building

The two-storey dwelling proposed for extension is of traditional red brick construction, with upper floor exterior walls covered in a white painted render. The roof creates a significant overhang which features exposed timber rafters and painted fascia. The overhang and exposed rafters on three of the four elevations are utilised by nesting House Martins. In total eight nests were observed; two on the Eastern elevation, five to the North and one to the West.

The Eastern elevation of the house is comprised of a double gable frontage with large uPVC double glazed bay windows at ground floor level and uPVC double glazed windows on the first-floor gable. A recessed red brick lean-to adjoins the double gable ends, at ground floor level, and comprises an aluminium framed sliding patio door unit with single glazed timber framed window above. The gables also feature exposed purlins and a painted timber frame facade at the apex (See Figure 1). The clay tiles of the ground floor window bays and recessed lean-to are tight fitting with the lead flashing lying flush with the building. In places the tiles are further sealed with moss reducing the potential for crevice access. As a part of the proposed works, the recessed lean-to will be replaced with the addition of a small timber porch.

The north elevation of the building, to which the only alteration will be the creation of a doorway where there is currently a window, is comprised of bare red brick at ground floor level with painted rendered upper floor exterior (See Figure 2). The North elevation comprises original single glazed timber framed windows with secondary aluminium glazed units fitted at the lower floor windows. The windows are intact and well sealed, as are the exposed rafters and fascia. The clay roof tiles on the North side of the pitch are tight fitting and well sealed with no apparent crevice features.

The North elevation holds the highest number of House Martin nests, it is therefore important that any roof works must maintain the exposed rafters and significant roof overhang that is currently utilised by nesting birds.

Figure 1: Photo to Show the East Elevation of the Dwelling Proposed for Extension – Orchard Croft, Putley

Figure 2: Photo to Show Existing North Elevation of House

The West elevation of the house adjoins a small single storey red brick outbuilding from which extends a timber framed shed to the West and a brick built glazed lean-to link building to the South. The brick outbuilding is flat-sided to the North and East with two small timber framed single glazed windows and a sloping roof on the South and West sides of the structure (See Figure 3). The clay tiles and ridge are in tact and well sealed offering no potential features for crevice dwellers.

Figure 3: Photo to Show West Elevation of Orchard Croft with Adjoining Red Brick Outbuilding

The timber framed shed which adjoins the West elevation of the red brick outbuilding is comprised of timber clad, unlined walls, with an unlined rosemary clay tile roof (See Figure 4 & 5). There is a single glazed window on the North elevation with two doorways, one to each of the East and West gable ends. The doorways are permanently open creating direct flight access into the shed. The shed is used for storage and for the processing or firewood and, as such, is regularly accessed and disturbed.

As a result of the open doorways and glazed window, the interior of the shed is very well naturally lit during the day, there is also electric lighting within the structure. The concrete floor and other surfaces within the shed were checked for signs of bat and bird activity, such as droppings and feeding remains, however, none were found.

Adjoining the West elevation of the main building, and the Southern elevation of the red brick outbuilding, is an existing modern brick-built lean-to which links the main part of the dwelling to an existing flat roof extension to the South. The link building is predominantly glazed and very well naturally lit by a full wall of timber framed single glazed windows to the West and a clear corrugated Perspex roof along the full length (See Figure 6).

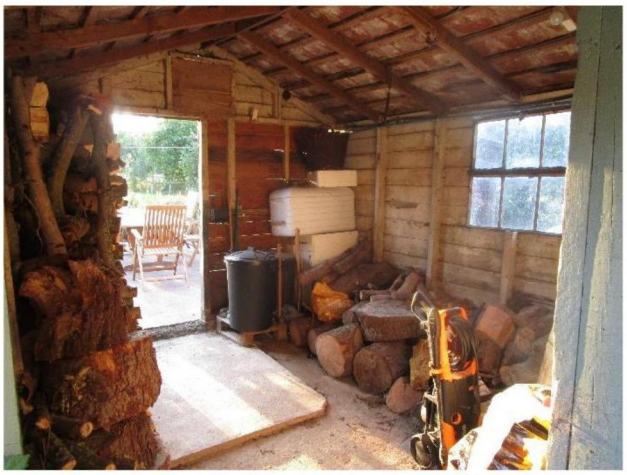



Figure 4 (Left): Photo to Show West Elevation of Timber Framed Shed & Figure 5 (Right): Photo to Show Naturally Well-Lit Interior of Timber Framed Shed

Figure 6: Photo to Show West Elevation of Glazed Link Building Adjoining Main House

The West elevation of the main part of the house, known as; Orchard Croft, Putley, also comprises three timber framed single glazed windows and timber, glazed door at ground floor level and four timber framed single glazed windows at first floor level. All windows are intact and well sealed offering no potential direct flight access into the house or adjoining outbuildings. The exposed rafters are painted and well sealed. The roof tiles are also tight fitting, however, there has been some disintegration of mortar around the ridge tiles creating limited access opportunities for crevice dwelling bats.

The West elevation of the house is proposed for a significant two storey double gable extension. In order to accommodate the proposed extension, the roof height over the central part of the existing dwelling will be increased. The new West elevation will then feature extensive glazing on both the lower and upper floors.

The South elevation of the house has a single timber framed window at first floor level with the flat roof extension adjoining the building at ground floor level (Figure 7 & 8). The existing extension is of modern construction and has an unfilled wall cavity. At present a hive of Honey Bees is located in the South-East corner cavity of the extension. The extension has well varnished vertically hung timber cladding to the Eastern and Western elevations. The cladding is tight fitting and very well sealed and offers no potential crevice features. The North elevation of the existing flat roof extension will be extended in order to integrate the building with the main part of the house via a new corridor/hallway.

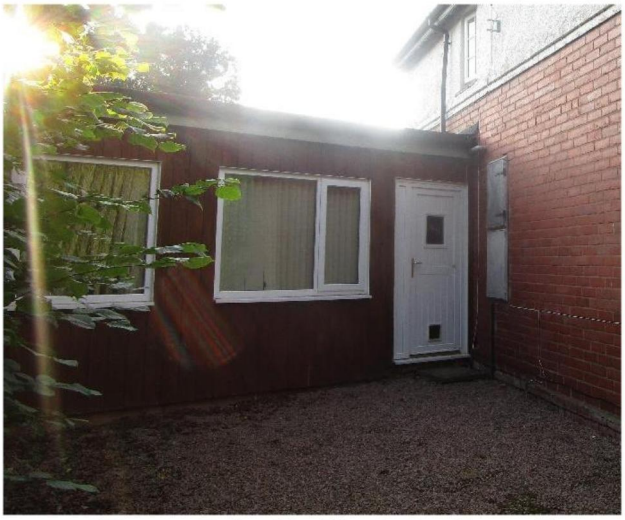


Figure 7 (Left): Photo to Show Eastern Elevation of Flat Roof Extension & Figure 8 (Right): Photo to Show Western Elevation of Flat Roof Extension (To be Retained)

The area to be directly impacted upon by the proposed extension consists of existing buildings which will be removed and is of low conservation value. The proposed works will affect the single-story recessed lean-to on the Eastern elevation, the entire West elevation, the North elevation of the existing flat roof extension, as well as the timber framed shed and red brick outbuilding adjoining the Western elevation.

Other than the un-mortared ridge tiles on the main dwelling, there are no potential key features apparent on the house. The unlined nature of the construction materials of the timber framed shed significantly reduce the likelihood of its use by crevice dwelling bats. Furthermore, the lack of evidence of bat or bird activity within the structures (i.e. shed and lean-to) suggests that its removal will not result in any loss of potential bat or bird roosting or nesting habitat.

3.2 Internal Examination of the Building

The loft space of the house is divided into three parts, the attic above the main part of the dwelling is not subdivided by internal walls, however, the small roof voids above the two gable ends on the Eastern elevation are separate from the central loft area and are inaccessible and could not be surveyed. The central loft area can be accessed by two separate loft hatches and spans the full length of the dwelling (See Figure 9).

The roof is of modern timber framed construction and the clay roofing tiles are lined with timber tongue and groove boarding. The loft has been insulated and partially boarded but there is no electric lighting. The loft area is dusty and very well covered with cobwebs, suggesting no flight activity has taken place within the loft, however, there are low numbers (10+) of scattered bat droppings, whose shape and size are suggestive of crevice dwelling bats, such as Common or Soprano Pipistrelle. No bats were observed in the loft during the daytime scoping survey.

There was no evidence of any bird activity, such as droppings or nesting materials, within the attic space. The interior ground and first floor of the main part of the dwelling known as; Orchard Croft, is all plastered and painted or wall papered with high levels of natural light due to extensive glazing and is currently lived in (See Figure 10).

Figure 9: Photo to Show Large Loft Space Above Original Part of Orchard Croft

Figure 10: Photo to Show Loft Hatch Access to Main Roof Void from First Floor of Dwelling

There is no potential direct flight or crawling access into the ground and first floor from either the exterior or the loft. There are three loft spaces within the roof void, the largest of which runs the length of the original part of the house and two smaller voids which are located above the existing two storey gable ends adjoining the Eastern elevation. The two gable end roof voids are divided from the central loft area with no potential for access between the two.

The loft space above the existing dwelling will be lost, with significant impact to the roof structure by the proposed extension to the Western elevation. The addition of the two-storey extension to the Western elevation will require an increase of the roof height on the central part of the existing house whereby the new West facing gable roofs and East facing gable roofs will be joined, however, it is not deemed that East facing gables will be impacted by the proposed works. The potential features along the ridge will be altered through the course of the development.

3.3 Evening survey results

1st Dusk Emergence Survey

The evening survey was carried out on 31st August 2018, sunset time was 20:00 (BST) with a survey start temperature of 17.7°C and wind speed of 0m/s. Conditions were dry and clear with 10% cloud cover.

Two bat surveyors carried out the survey and were positioned on the North-East corner and West elevation of the dwelling with the North, East and West elevations visible. As the Southern elevation will not be impacted upon by the proposed works, it was not directly observed during the survey. A total of three bat detectors were used including; 1x Batbox Duet, 1x Magenta Bat 5 and 1x Echometer 3 (EM3). The following bat activity was recorded:

19:45	SURVEY START
20:17	4x CPIP **Emerged** from SE corner of S Gable End Adj. E house elevation 1x CPIP **Emerged** from SE corner of N Gable End Adj. E house elevation
20:19	1x Silent bat **Emerged** from centre of roof
20:20	1 x SPIP foraging over driveway & 1x CPIP flyby side of house
20:21	1x CPIP foraging in back garden
20:24	2x silent bats foraging over front garden
20:27	1x CPIP flew past side of house
20:29	1x Silent bat flew past rear of house
20:32	1x SPIP foraging faintly not seen
20:33	1x CPIP **Emerged** from South-West corner of roof of house
20:35	1x CPIP & 1x SPIP flyby front garden
20:37	1x CPIP foraging around Oak tree
20:38	1x CPIP foraging in garden
20:41	1x CPIP flyby over driveway
20:43	1x CPIP flyby over driveway
20:49	1x CPIP flyby over garden & 1x Lesser HS foraging in front garden
20:51	1x Lesser flyby over driveway and into back garden
20:54	1x SPIP flyby over driveway
20:59	1x CPIP heard foraging not seen & 1x *Myotis sp.* flyby in back garden
21:00	1x Serotine flyby not seen
21:02	1x CPIP flyby not seen
21:04	1x CPIP foraging over front garden
21:07	1x CPIP flyby not seen
21:08	1x SPIP faint flyby not seen
21:11	1x CPIP foraging over front garden
21:14	1x SPIP foraging faintly not seen
21:15	SURVEY END

The survey end temperature was 11.4°C with a wind speed of 0m/s. Six Common Pipistrelle bats were recorded emerging from the East elevation, West roof pitch and South-East and South-West corners of the house proposed for extension. The silent bat is most likely a *Pipistrellus* species as a result of the timing of the emergence. The areas around the site, including the garden and driveway have low levels of foraging activity.

2nd Dusk Emergence Survey

The dusk survey was carried out on 21st September 2018, sunset time was 19:11 (BST) with a survey start temperature of 15.4°C and wind speed of up to 1.3m/s. Conditions were dry and overcast with approximately 60% cloud cover.

Two bat surveyors were positioned on the East and West elevations of the building. A total of four bat detectors were used including; 2x Batbox Duet and 2x Echometer 3 (EM3). The following bat activity was recorded:

18:55	SURVEY START
19:40	1x SPIP **Emerged** from SE corner of house
19:50	1x CPIP flyby not seen
19:51	1x BLE flyby along roadside hedge
19:55	1x CPIP flyby along roadside hedge
19:57	1x CPIP foraging over front garden
20:00	1x SPIP flyby across front of house
20:02	1x CPIP flyby
20:04	1x SPIP flyby
20:05	1x CPIP foraging front of house
20:17	1x CPIP foraging along roadside hedge
20:19	1x SPIP flyby along hedge
20:20	1x CPIP heard foraging faintly
20:26	1x SPIP flyby along roadside hedge
20:28	1x CPIP foraging over front garden
20:41	SURVEY END

The survey end temperature was 11°C with a wind speed of 0m/s. One Soprano Pipistrelle bat was observed emerging from the building on the South-East corner of the house proposed for extension. Very little foraging was observed around the house and garden.

3.4 Habitat Suitability Index

A pond search using the Multi-Agency Geographical Information for the Countryside Service Map from Natural England, revealed the location of seven ponds within a 500m radius of the proposed development at Orchard Croft, Putley.

Three of the seven ponds are divided from the proposed development site by a road, which is considered a significant physical barrier to Newt dispersal. Of the four remaining ponds, only one is located within what is considered to be, the key 250m dispersal radius, and is located approximately 140m, North-East, of the proposed site. The remaining three are located approximately 400-450m to the North-West, West and South-West, respectively.

The proposed development primarily involves the extension of the existing West elevation of the house. The only loss of habitats to be incurred are existing buildings and an existing area of paved hardstanding, which is surrounded by close mown amenity grassland. The house is surrounded, in the wider landscape, by agricultural land which is predominantly comprised of commercial orchard.

The closest of the four ponds, not divided by a road, is divided from the site by a concrete hardstanding yard and a gravel farm track (See Figure 11). The development will not result in the loss of any Newt habitat, and the likelihood of Newts commuting across the close mown amenity grassland within the site boundary is very low. The likelihood of impact upon potential local Newt populations or upon the pond is considered very low, however, in order to determine the likelihood of any potential impact, a Habitat Suitability Index (Oldham *et al.*,2000) was carried out for closest pond. Details of the pond's characteristics and the result of the Habitat Suitability Index are given below.

Closest Pond - ~140m, NE

Although the MAGIC Map pond search only identified one pond within 140m of the site, upon surveying, two ponds were observed in the same location. The larger of the two ponds is approximately 8m long by 6m wide, is thickly covered with Common Duckweed and is well used by waterfowl. The pond has extensive emergent

vegetation including Common Reed, Rosebay Willowherb, Yellow Flag Iris, Pond Mace, Purple Loosestrife and Bind Weed and is shaded to approximately 70% by adjacent Silver Birch, Alder, Rowan and Field Maple (See Figure 12). There is no indication of any fish within the pond. The HSI score for this pond is 0.56 which equates to a classification of 'Below Average' (See Table 1).

Figure 11: Photo to Show Concrete Yard and Gravel Track Dividing Ponds from Proposed Site

Figure 12: Photo to Show Largest of Two Ponds Located ~140m, NE of Orchard Croft, Putley

Table 1: Table to Show Results of the Habitat Suitability Index for the Largest of Two Ponds Located ~140m, NE of Orchard Croft, Putley

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.05
3	Pond permanence	0.9
4	Water quality	0.67
5	Shade	0.8
6	Water fowl effect	0.67
7	Fish presence	0.67
8	Pond Density	0.95
9	Terrestrial habitat	0.67
10	Macrophyte cover	0.45
HSI Score		**0.56**
Pond suitability		Below Average

Ancillary Pond - ~140m, NE

The smaller of the two ponds is approximately 3m long by 2.5m wide, is covered with Common Duckweed with some evidence of minor use by waterfowl. The emergent vegetation includes Common Reed, Pendulous Sedge, Yellow Flag Iris and is well silted. The pond is shaded to approximately 80% by adjacent trees and hedge (See Figure 13). There is no indication of any fish within the pond. The HSI score for this pond is 0.57 which equates to a classification of 'below average' (See Table 2).

Figure 13: Photo to Show Smaller of Two Ponds Located ~140m, NE of Orchard Croft, Putley

Table 2: Table to Show Results of the Habitat Suitability Index for the Largest of Two Ponds Located ~140m, NE of Orchard Croft, Putley

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.05
3	Pond permanence	0.9
4	Water quality	0.67
5	Shade	0.6
6	Water fowl effect	0.67
7	Fish presence	0.67
8	Pond Density	0.95
9	Terrestrial habitat	0.67
10	Macrophyte cover	0.7
HSI Score		**0.57**
Pond suitability		Below Average

4.0 Assessment of the Impact of the Proposed Works

4.1 Existing Building and Surrounding Land

A maximum of seven bats were observed emerging from the main house; Orchard Croft, Putley, and comprised five Common Pipistrelle, one Soprano Pipistrelle and one silent (probable Pipistrelle bat). The key features and/or roost access points include; the South West corner of the roof, the Southern side of the most Northerly gable of the East elevation, the centre ridge point, and the South-West corner of the roof (See Appendix Five). The results of the two emergence surveys, confirm that the proposed site is **Day Roost** for a maximum of **Six Common Pipistrelle and One Soprano Pipistrelle.**

Due to the confirmed nature of the house proposed for extension; Orchard Croft, Putley, as a Day Roost for low numbers of common species of bat (i.e. 6 Common Pipistrelle and 1 Soprano Pipistrelle) all works required for the proposed extension must be carried out under licence. Due to the low conservation significance of the roost, the proposed demolition could be carried out under the Bat Low Impact Class (BLIC) licensing system.

A sufficient number of Bat Activity Surveys have been carried out in order to acquire a BLIC licence for the proposed works at Orchard Croft, Putley. No works shall be carried out to the house until a BLIC licence, including appropriate mitigation strategy, has been applied for and granted. Only once an appropriate licence has been attained, shall the works for the extension of the house commence.

The building is currently in use by up to eight pairs of nesting House Martins. As such ideally the works to the house should be completed outside of the House Martin nesting season End of April to End of August/September, in order to ensure continued ecological functionality. Internal works or works which do not affect the northern elevation of the roof may continue beyond the end of April provided that this does not cause disturbance to the nesting birds. As mitigation for the loss of one nest on the West elevation, two artificial double house martin nests shall be installed on the North side of the new West-facing gable (See Appendix Four).

The habitats around the building are limited predominantly to paved and gravel hardstanding and close mown amenity grassland which are of low value for conservation. The buildings proposed for removal are suboptimal for use as a bat roost due to the high natural light levels and unlined construction materials and are of low conservation value. The buildings proposed for removal (timber shed & lean too) contain no evidence of bat or bird activity. Due to the scale of the proposed works and nature of the surrounding land, the likelihood of the development impacting upon surrounding habitats is negligible.

4.2 Desktop Study

A desktop study was carried out to determine the presence of any priority or protected habitats or species in the local area and the potential for impact upon them by the proposed development. The MAGIC Map Service from Natural England was used to carry out a designated site search within a 2km radius of the proposed works to Orchard Croft, Putley. The search revealed that the proposed site is within 0.9km of Mains Wood Site of Special Scientific Interest (SSSI – to the North-West).

Although the proposed site is not within any conservation designation, it is within the Impact Risk Zone (IRZ) for the sites named above. The IRZ relates to all planning applications with particular pertinence to any proposals which may be a source of pollution or damage such as Pig and/or Poultry Units, Aviation Proposals, Waste Treatment and/or Disposal, Resource Extraction and Large Infrastructure Projects. The proposed works to Orchard Croft, Putley, relate to the removal of an existing single storey building and addition of two storey extension to the main dwelling. The proposed extension will impact predominantly upon an area of existing building footprint and paved hardstanding.

As the proposed works are limited in extent and scale, i.e. limited to an existing building and an area of hardstanding, and are a significant distance from the designated sites, the potential impacts upon them by the proposal, are negligible.

The desktop study identified a number of priority habitats and species within a 2km radius of the proposed development, the habitats of which include; Traditional Orchard, Woodpasture and Parkland (0.6km, South-West) and Deciduous Woodland. Of the Deciduous Woodland identified within the 2km search radius, thirteen sites are designated as Ancient Semi-Natural Woodland, the closest of which is Mains Wood, 0.8km to the North-West.

The desktop search identified a number of priority Grassland Assemblage birds within 2km of the proposed development; Curlew, Lapwing, Yellow Wagtail and Tree Sparrow. Records of historic granted European Protected Species (EPS) Licences were also returned within the search and included Common and Soprano Pipistrelle Bats, Brown Long-eared, Lesser Horseshoe and Whiskered Bats.

None of the above priority habitats and priority or protected species were identified within the development boundary, nor will any of the above habitats and species be affected by the proposal, with the exception of the confirmed Day Roost for a maximum of eight bats.

A pond search to a radius of 500m from the proposed development revealed that there are two standing bodies of water within 250m (145m, North-East and 225m, South-East), one of which is divided from the site by a road, and a further five within 500m. As the proposed works are limited to the footprint of an existing building and an area of paved hardstanding, which is surrounded by close-mown amenity grassland, the likelihood of the use of the area within the development boundary or impact upon Newts, is negligible.

5.0 Conclusion and Mitigation strategy

5.1 Conclusion

The proposed works are for the removal of existing single storey outbuildings and two storey extension to the West elevation of the existing house; Orchard Croft, Putley, and are limited in extent and scale. The works relate, predominantly, to the existing footprint of the buildings to be removed and an area of paved hardstanding and are of negligible conservation value. As the main house is already lived in, including exterior electric lighting, the proposed works will create no additional secondary impacts, such as light and noise pollution, on the surrounding habitats, other than those which are already in effect due to the residential nature of the proposed site.

Due to the extent and scale of the proposed works i.e. extending an existing dwelling, the potential effects on the designated sites in the wider area will be negligible.

As the house is a confirmed bat roost, no works will be carried out on the building until the appropriate licence is attained. The works will then be carried out as per the licence with appropriate mitigation in place for the loss of a bat roost of low conservation significance.

The existing roost features to be retained are on the South-East corner of the roof and Southern side of the most Northerly gable adjoining the East elevation. The roost features to be impacted upon the proposed works are the centre ridge and South-West corner of the roof. In addition, one existing House Martin nest will be lost.

Although two of the four existing roost features/access points will be retained through the course of the development, they may potentially be impacted upon by the proximity of the works. New integral roost features will be incorporated into the proposed extension in order to mitigate for the features lost on the West elevation. As compensation for the loss of bat roosting habitat, an Integral Eco Bat Box will be incorporated into the proposed (most Northerly) West facing gable end at the roof apex. Two clay bat access tiles will also be incorporated into the new roof on the West side of the pitch to provide access into the tile-membrane

cavity, thereby creating further potential roost features. The new roof of the proposed extension to the main house will be lined with Type 1F Bitumen Roofing felt. Modern Breathable Roofing Membrane (BRM) will not be used within the roof as it has been proven to be fatal to crevice-dwelling bats, causing death by entrapment.

In order to provide continued ecological function of the house for nesting House Martins, the main roof works that could potentially disturb the nests shall be timed outside of the main House Martin nesting season (End of April to End of August/September). If for any reason this cannot be done, then the birds will have to be temporarily excluded from the elevation being worked on before nesting begins (beginning of April) and a safe distance working area established from other bird nesting areas. If this is required, then regular checks will be made by the ecologist throughout the season to ensure no harm or disturbance occurs to nesting birds. To mitigate for any potential loss of nesting bird habitat two artificial double house martin nests shall be installed on the North side of the new West-facing gable of the proposed extension.

In conclusion, the proposed extension works will not commence the appropriate BLIC licence has been attained. The works will not impact on any potential wildlife habitats in the local and wider area as they are small in extent and scale and will impact predominantly on the footprint of existing buildings. Due to the nature of the proposed works there will be no impact on any of the identified priority habitats or designated site within a 2km radius, see Section 4.2 and Appendix Two for details.

The proposed extension of the existing dwelling and removal of existing single storey buildings at; Orchard Croft, Putley, will result in the loss of two bat roost features and the temporary disturbance of two further features for a maximum of seven Pipistrellus sp. and considered of low conservation significance; a **Day Roost** for a maximum of **Six Common Pipistrelle and One Soprano Pipistrelle** These works will be carried out under licence and appropriate mitigation put in place to provide adequate replacement roosting opportunities, in addition to retaining two of the original roost features, for crevice dwelling bats.

If all works are carried out as per the above recommendations then an overall biodiversity enhancement will be achieved for the site, post-works. The mitigation strategy required for a BLIC licence, which will be attained prior to commencement of demolition works, is detailed in Section 5.2.

5.2 Bat Mitigation Strategy

Timing of Works

Under the BLIC licensing system, it is unnecessary to time works to bat roosts of low conservation significance outside of their time of use. Furthermore, two of the existing roost features (East elevation) will be retained and unaltered. However, to reduce potential impacts to bats (and birds) it is recommended that the works to the main roof are carried out outside of the main summer activity times May to September.

Careful Work Practices

All works to the dwelling at Orchard Croft, Putley, should proceed in a careful and controlled manner, under the direct supervision of Ros Willder, of Willder Ecology, who will act as clerk of works for the proposal. Contractors should be subject to a Tool Box Talk prior to the commencement of works and should be briefed with regard to the fact that individual bats can often exploit very small crevices as roost sites (such as gaps between tiles) and that bats can move between roost sites on a regular basis.

Any removal of existing materials, such as roofing materials, will be carried out by hand with all removed materials checked for bats prior to disposal. If any bats are found during works which are not covered by the appropriate licence, then all works must stop immediately, and Natural England consulted.

Compensation and Enhancements for Bats

The disturbance to the Day Roost, for up to seven *Pipistrellus sp.* bats, will be compensated for by the installation of one Integral Eco Bat Box into the proposed (most Northerly) West facing gable end at the roof apex of the proposed two storey extension at Orchard Croft. As a further enhancement, Type 1F Bitumen

roofing felt will be utilised throughout the new roof and cladding in addition to two Bat access tiles.

This will provide additional potential roosting opportunities for crevice dwelling bats and by providing a more suitable, thermally stable, roosting place may promote an increase in the use of the site by bats.

To mitigate for the loss of House Martin nesting habitat two artificial double house martin nests shall be installed on the North side of the new West-facing gable of the proposed two storey extension at Orchard Croft, in addition to the timing of the works (see Appendix Four).

Lighting

No additional external lighting should be used, in order to ensure uptake of the new features. If external lighting is needed for reasons of health and safety, it should be no brighter than 2 Lux and directed towards the ground, using a hood or baffles.

To minimise the impact on bats, the use of low-pressure sodium lamps or warm white spectrum should be adopted in preference to mercury or metal halide lamps which have a UV element that can affect the distribution of insects and attract bats to the area, affecting their natural behaviour (Bat Conservation Trust 2018).

References

Bat Conservation Trust (2018) *BATS AND ARTIFICAL LIGHTING IN THE UK. Bats and the Built Environment Series* (Guidance note 08/18).

APPENDIX ONE LEGAL STATUS OF BATS & BIRDS

LEGAL PROTECTION OF BATS

The Wildlife and Countryside Act 1981 (WCA) transposes into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (commonly referred to as the 'Bern Convention'. The 1981 Act has been amended several times, most recently by the Countryside and Rights of Way [Crow] Act 2000, which added 'or recklessly' to S 9 (4)(a) and (b).

All species of bats are listed on Schedule 5 of the 1981 Act, and are therefore subject to the provisions of section 9, which make it an offence to:

- Intentionally kill, injure or take a bat
- Possess or control any live or dead specimen or anything derived from a bat
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a bat
- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for that purpose

The Conservation of Habitats and Species Regulations 2017 which consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law and came into force on 30th November 2017.

All bats are listed in Schedule 4 of the Directive and some are also listed on the Schedule 2. The latter Annex relates to the designation of Special Areas of Conservation (SACs) and covers Greater and Lesser Horseshoe Bats, Barbastelle and Bechstein's Bat.

Inclusion on Schedule 4 ('European protected species) means that member states are required to put in place a system of strict

protection as outlined in Article 12; this is done through inclusion on Schedule 2 of the Regulations. Regulation 53 makes it an offence to;

- Deliberately capture or kill a bat
- Deliberately disturb a bat
- Damage or destroy a breeding site or resting place of a bat
- Keep, transport, sell or exchange, or offer for sale or exchange a live or dead bat or any part of a bat

LEGAL PROTECTION OF BIRDS

The Wildlife and Countryside Act 1981 is the main instrument for the protection of wild birds in the law of England, Wales and Scotland.

It protects all wild birds of whatever species (certain exceptions apply within the act).

Barn Owls are listed on Schedule 1 which gives them special protection.

The act makes it an offence "if any person intentionally-

- Kills, injures or takes (handle) any wild bird;
- Takes, damages or destroys the nest of any bird while that nest is in use or being built; (barn owls do not 'build' a nest but may make a nest scrape) or
- Takes or destroys an egg of any wild bird"

It is also an offence "if any persons have in his possession or control-

- any live or dead wild bird or any part of, or anything derived from, such a bird; or
- An egg of a wild bird or any part of such an egg" (s 1 (2)).

LEGAL PROTECTION OF AMPHIBIANS AND REPTILES

Reptiles are protected from killing and injury (two species are fully protected, this includes, but is not confined to:

Disturbance and deliberate destruction of their habitat) under **The Wildlife and Countryside Act 1981** (as amended).

The Conservation (Natural habitats &c.) regulations 1994 (the habitats Regulations were recently updated by **The Conservation of Habitats and Species regulations 2017**

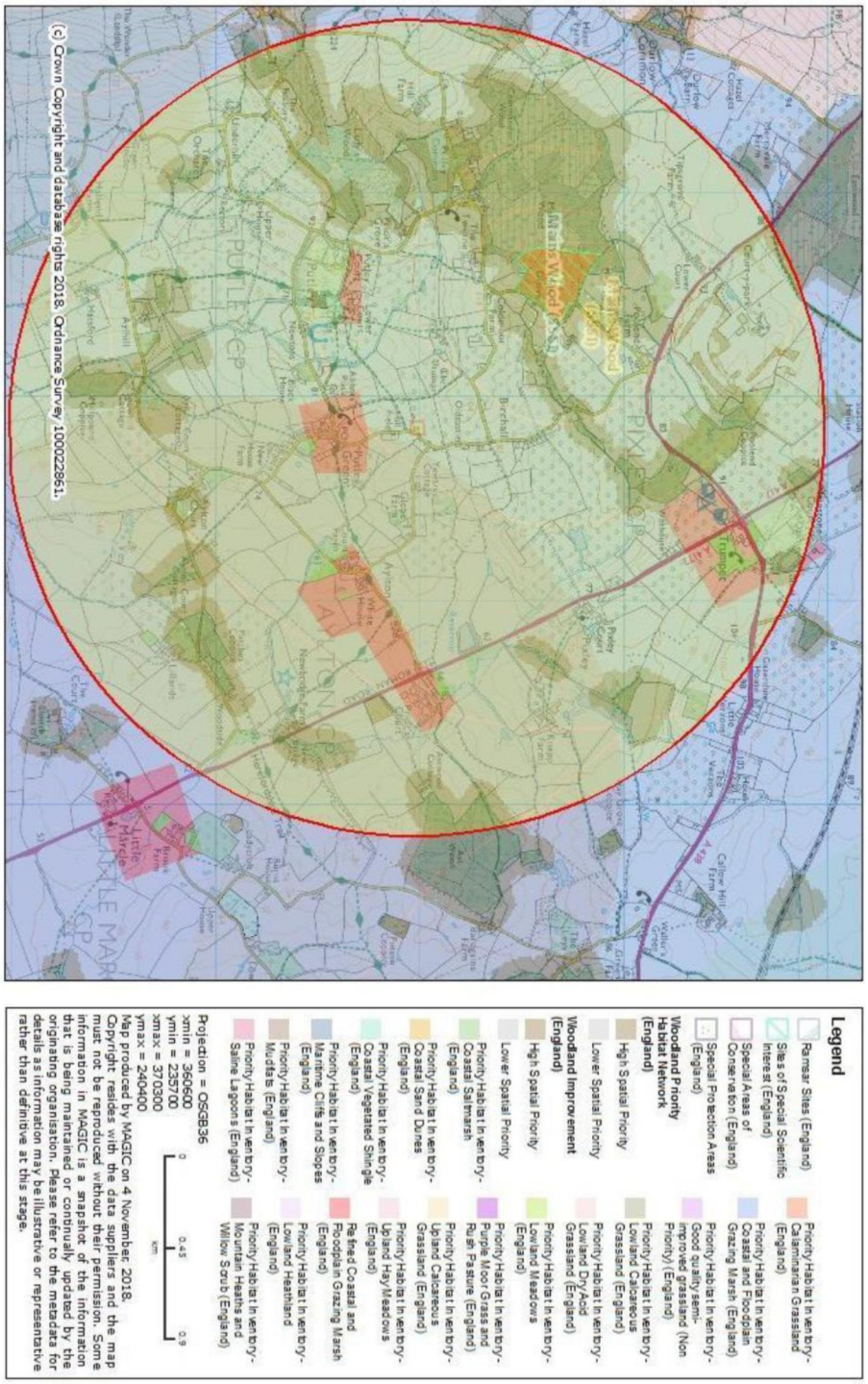
Amphibians such as Great crested newts are fully protected, including protection against:

- Deliberate disturbance
- Deliberately killing or capturing
- Deliberately taking or destroying eggs
- Deliberately damaging or destroying breeding sites and places of shelter.

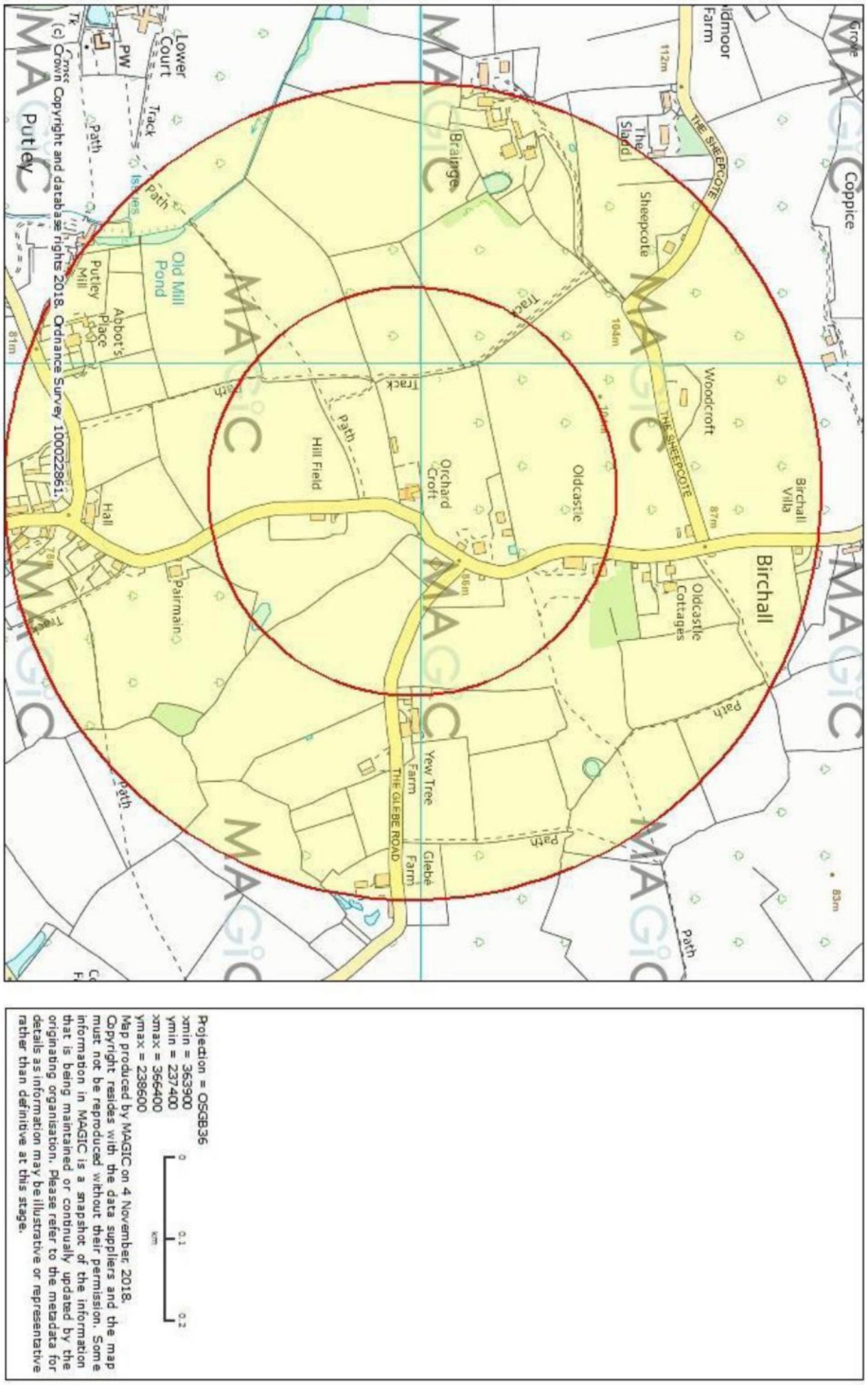
<u>Licensing from Natural England</u>

A Licence simply permits an action that is otherwise unlawful. A licence should be applied for if, on the basis of survey information and specialist knowledge, it is considered that the proposed activity is reasonably likely to result in an offence (killing, breeding site destruction, etc. – see above). No licence is required if, on balance, the proposed activity is unlikely to result in an offence (this is from the great crested newt mitigation guidelines).

APPENDIX TWO DESIGNATED SITE SEARCH



APPENDIX THREE PONDS SEARCH



APPENDIX FOUR MITIGATION AND ENHANCEMENTS FOR BATS AND BIRDS

House Martin Nests

View Images

- Provide much needed nesting space for house martins
- WoodStone and exterior grade plywood construction

CJ Wildlife

Specification | Write a review

Double entrance

Availability: In stock

NHBS Price: **£21.95** inc VAT $29/€25 approx

Add to

About this product

House Martins build nests constructed from mud under the eaves of buildings often in colonies averaging five nests. Unfortunately, changes to house construction and roof design mean that suitable nest sites have dramatically declined. Providing an artificial nest provides a great alternative and House Martins will readily use artificial nests and encourage other birds to nest nearby. These House Martin Nests have been specially designed to appeal to House Martins and are constructed from exterior grade plywood and WoodStone, a mixture of FSC wood fibres and concrete. The backing to the nests is exterior grade plywood, making them lightweight and easy to fit, but hard-wearing. These nests should be sited underneath the eaves on exterior walls of your house or outbuildings, at a minimum height of 2m above the ground.

The House Martin Nests are available in single units, with either a right-hand or left-hand entrance or as a double unit with two nests side by side.

* Single Nests - dimensions (H) 115 x (W) 200 x (D) 160mm, weight: 900g
* Double Nests - dimensions (H) 115 x (W) 380 x (D) 160mm, weight 1.8kg

Bat Access Tile Set

View Images

Specification | Write a review

Red Antique

Availability: **Usually dispatched within 3 days** Details

NHBS Price: **£49.99** inc VAT $65/€56 approx

Add to

About this product

There will be an additional shipping charge of £25 for Bat Access Tiles in addition to the normal shipping charges. This is to cover pallet shipping to minimise the risk of breakages.

The Bat Access Tile set provides purpose made access points within your roof tiles or ridge tiles. Available in five traditional roof tile colours, or in Natural Clay (without sand face), the Bat Access Tile Set presents a bat optimized entrance to the under-felt, or to the loft when the under-felt is opened. Each set comprises three roof tiles. The top `tunnel' tile offers the bat an 18mm high x 165mm long (approx.) tunnel to an entrance hole in the undertiles. This allows the bat to crawl into the roost area. The two tiles beneath the `tunnel' tile have small cutaway sections to facilitate access for the bat. An advantage of the tiles large double camber is that it provides the maximum amount of natural air flow under the tiles. The carefully designed access, along with this air flow between the tiles and the under-felt, aims to provide conditions where the bats are protected from any extremes of heat.

Different species of bats prefer differing places to roost. The two most usually found species in the UK are Pipistrelle and Brown Long-Eared. Pipistrelle bats prefer confined spaces such as under tiles on the roof and hanging. The Brown Long-Eared prefer roof timbers and ridges inside lofts.

The bat access tile set includes three tiles available in five traditional roof tile colours, as well as Natural Clay; Red Antique, Dark Antique, Medium Antique, Sussex Red and Sussex Brown. See the Images tab for illustrations and the Specifications tab for more information.

Integrated Eco Bat Box

Specification | Write a review

Cavity Box - Red

Availability: **Usually dispatched within 2-3 weeks** Details

NHBS Price: **£64.99** inc VAT $84 / €74 approx

Add to

View Images

About this product

Designed to be built into a new build or renovation, these bat boxes will provide a permanent roost space for a range of species. Sized to replace six standard UK bricks, they can be built directly into the masonry where they will be held in place by the surrounding mortar. No additional fixings are required and, once in position, the boxes are self cleaning. Any bat droppings will fall out of the opening at the base.

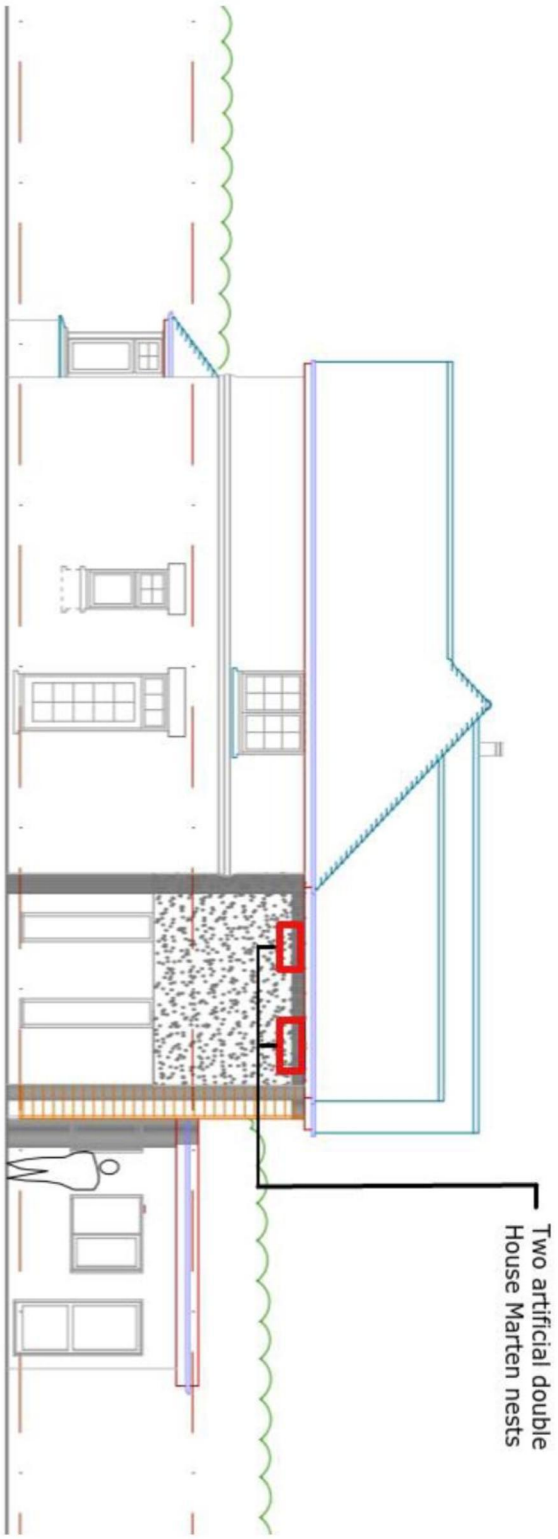
The box has an external shell of UV stabilised recycled plastic which provides a weatherproof and long lasting finish. Inside of this is a wooden box made from FSC certified orientated strand board which provides a warm and comfortable roost for the bats. The box can be purchased with either a cavity or crevice design. The cavity box has a single internal space which is 60mm wide whilst the crevice box has two internal chambers which are each 20mm wide. Both boxes have rough walls and roof which are ideal for bats to hang from. Choose from either a red or green finish.

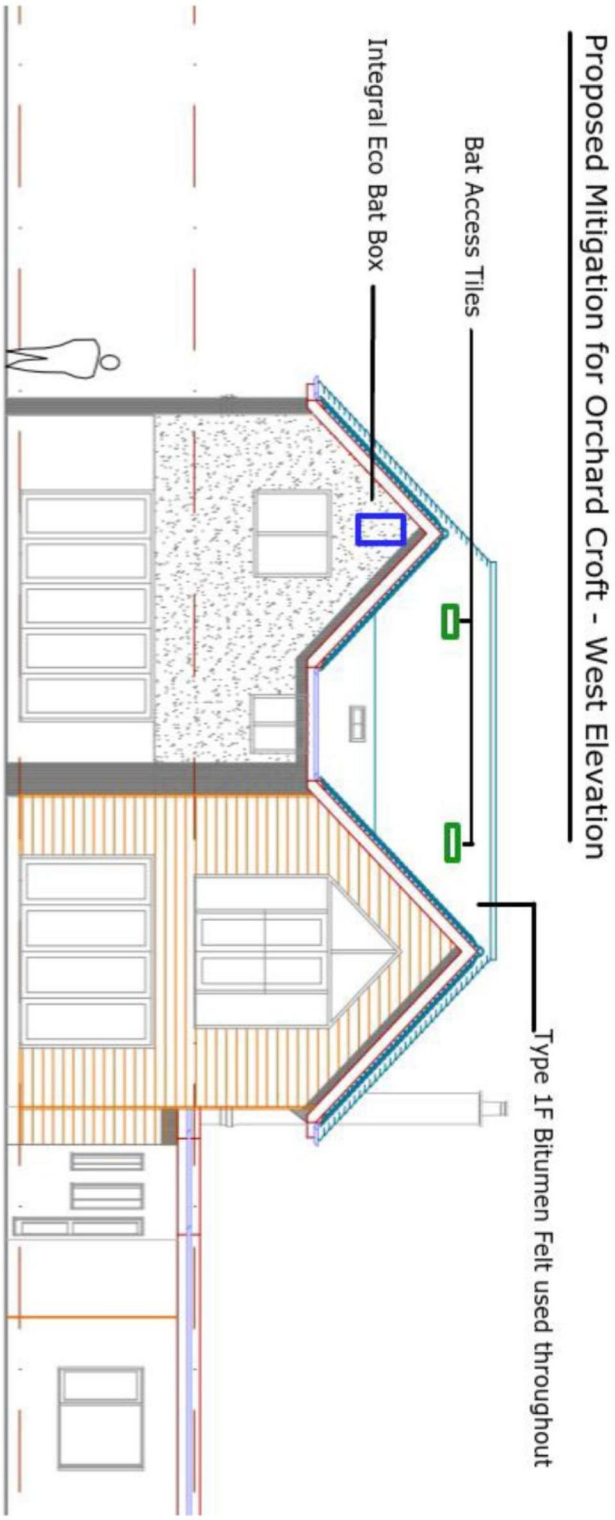
Boxes should be sited as high as possible in a sheltered position. If possible, more than one box should be put up on different sides of the building: this will provide the bats with a range of positions and temperatures to choose from.

Specification

* Materials: Recycled LDPE plastic outer with internal FSC OSB roost chamber
* Construction: Outer panels welded, internal chamber formed from stapled panels
* Finish: Black carcass with red or green front panels
* Dimensions: 44cm H x 21.5cm W x 11.1cm D
* Entrance: 17mm wide
* Internal (Cavity): Open roost chamber, 60mm wide
* Internal (Crevice): Two crevices, 22mm wide
* Weight: 3kg
* Access: No access once fitted, self cleaning, droppings fall out of entrance slot
* Fixing: Held in brickwork by mortar/sealant

Proposed Mitigation for Orchard Croft - North Elevation




Proposed Mitigation for Orchard Croft - West Elevation
Integral Eco Bat Box
Bat Access Tiles
Type 1F Bitumen Felt used throughout

APPENDIX FIVE BAT ACTIVITY PLAN