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Tyrer Ecological Consultants Ltd, Formby Business Centre, 42 Duke Street, Formby, L37 4AT

# Inspection and Assessment in Relation to Bats and Birds

February 2020

**119 Cornwall Drive**  
Bury  
Greater Manchester  
BL9 9EX

SD 8127 0974



|                       |                                                              |
|-----------------------|--------------------------------------------------------------|
| <b>Document Title</b> | Inspection & Assessment in Relation to Bats & Breeding Birds |
| <b>Prepared for</b>   | Mr G. Dearden, PPY Design                                    |
| <b>Prepared by</b>    | Tyrer Ecological Consultants Ltd                             |
| <b>Author</b>         | Ms. Katie Swift                                              |
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## Executive Summary

As part of a planning application regarding 119 Cornwall Drive, a derelict residential bungalow, a daytime inspection and assessment in relation to bats and breeding birds was undertaken by Tyrer Ecological Consultants Ltd during February 2020. The survey was commissioned by PPY Design and it is understood that proposals entail the demolition of the existing bungalow followed by the construction of a new dwelling in its place.

A former planning application (reference no. 63866) for the bungalow proposed the creation of front and rear dormers, which was subsequently granted on 18<sup>th</sup> June 2019. Works that have started at the building have meant that the roof has been stripped and extensive internal works have been undertaken at the property (see Appendix I).

**Bats:** Evidence of a former bat roost was identified at the property in the form of historic droppings within the now exposed cavity wall, identified to be those of the Pipistrelle bat. This roost, along with any previously present potential roost features, have however been destroyed prior to this bat survey has been commissioned.

Based on the current condition of 119 Cornwall Drive it has been categorised to possess 'negligible' bat roost suitability, in line with existing Bat Conservation Trust (BCT) guidelines. *Despite the property being designated as pertaining to a 'negligible' categorisation on the absence of viable PRFs, merely as a precautionary measure, supervision by a suitably licenced ecologist is recommended. This is alongside compensatory replacement provision would be implemented within the proposed new dwelling (see sections 8.1-8.2).*

**Breeding Birds:** A number of platforms that favour the breeding habits of a number of bird species exist across the extent of the site due to the now open nature of the bungalow. *It is therefore recommended that demolition works are undertaken outside the nesting season (March-August inclusive), unless it can be conclusively demonstrated by an ecologist that nesting birds are absent.*

|                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Biodiversity Net Gain:</b> A series of biodiversity enhancement measures are recommended within Appendix II which includes enhancement for nesting birds and landscaping.</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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## **1.0 Introduction & Reason for Survey**

- 1.1 As part of a planning application regarding 119 Cornwall Drive, a derelict residential bungalow, a daytime inspection and assessment in relation to bats and breeding birds was undertaken by Tyrer Ecological Consultants Ltd during February 2020. The survey was commissioned by PPY Design and it is understood that proposals entail the demolition of the existing bungalow followed by the construction of a new dwelling in its place (see Figure 1).

A former planning application (reference no. 63866) for the bungalow proposed the creation of front and rear dormers, which was subsequently granted on 18<sup>th</sup> June 2019. Works that have started at the building a number of years ago have meant that the roof has been stripped and extensive internal works have been undertaken at the property (see Appendix I).

- 1.2 As part of the Local Authority's Planning Policies ecological surveys are generally required, particularly where a specially protected species is or may be present and could be affected by the proposals for which the application seeks consent.



**Figure 1:** Location plan

- 1.3 The aim of the inspection was to ascertain if the building and surrounding land are of value to bats and breeding birds; if they were found to be suitable for bats or signs of use was located then more detailed surveys would be recommended i.e. dusk/dawn emergence/re-entry surveys during the main active season of bats which is May – August. If bat/s or their roost/place of rest/shelter is subsequently affected by the work, then a European Protected Species Mitigation Licence would be required to proceed with the development.
- 1.4 The optimum time to investigate buildings for evidence of a bat roost is May – August, however that is not to say they cannot be inspected and assessed outside of that time and frequently the results can be conclusive, which can save time and expense for planning applicants but it should be borne in mind that equally the inspection can be inconclusive.

- 1.5 In addition to bats the site was appraised relative to breeding birds.
- 1.6 This report also aims to identify a series of enhancement opportunities for biodiversity in line with national and local planning policy, alongside '*Biodiversity Net Gain: Good practice principles for development*' (CIEEM *et al*, 2019). Recommendations relative to biodiversity enhancement and net gain have been made within section 9.0 and Appendix II.

## **2.0 Legislation & Policy**

- 2.1 All British bats and their \*\*roosts are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations (EU exit) 2019. When dealing with cases where a European Protected Species (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the 2017 Regulations and therefore has a statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.

### **2.2 Use of Buildings by Bats**

- a) Summer breeding roost.
- b) Hibernation.
- c) Transitional or temporary roost.

Roost selection is often closely correlated to suitable foraging habitat within a reasonable commuting distance from the roost and different sites are used depending upon insect densities and abundance, climatic conditions can also affect their ability to successfully forage. All British bats are insectivorous.

\*\* The term roost is generically referred to as a place that bat/s use for the any of the above reasons, however it should be noted that under the Conservation of Habitats & Species Regulations (EU exit) 2019 (Regulation 41) the term roost is not used but refers to "*a breeding site or resting place of such an animal*" and is afforded legal protection. The roost, breeding site or resting place of bats, which ever terminology is used is legally protected whether or not bats are in occupation.

- 2.3 All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected under the Wildlife & Countryside Act 1981 (as amended). Birds listed on Schedule 1 e.g. Barn owls (*Tyto alba*) are afforded a greater level of protection. Where nesting birds are present then work should be timed outside of the nesting season (March – August) so as to avoid disturbance.

### Policy

- 2.4 The National Planning Policy Framework (NPPF) has replaced the existing Planning Policy Guidelines. (PPG's) In relation to wildlife PPG 9 was one of the documents to which Planning Authorities referred to, particularly where a specially protected species is or may be present and will be affected by a development for which a Planning application seeks consent. The aims of the NPPF in relation to species and habitats are that it places a clear responsibility on Local Planning Authorities to conserve and enhance biodiversity and to encourage on the consideration that should be given to Protected Species where they may be affected by development. The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation.

This is supported by a guide to good practice entitled 'Planning for Biodiversity and Geological Conservation: Building in Biodiversity' in which paragraphs 5.34 and 5.35 identify that species such as bats are highly dependant upon built structures for survival and that roosts can be easily incorporated into existing and new developments/conversions to benefit these species.

When determining planning applications, Local Planning Authorities should aim to conserve biodiversity by applying the following principles:

*"If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused."*

- 2.5 Further to mitigating and compensating for the loss of biodiversity, LPAs should also aim to enhance existing biodiversity and provide clear and measurable net gains. Paragraph 174 of the NPPF states the following:

*"To protect and enhance biodiversity and geodiversity, plans should promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."*

- 2.6 Guidance for Local Authorities: Extract from Office of the Deputy Prime Minister: Circular 06/2005

*"It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision."*

- 2.7 Policy EN6 of The Bury Local Plan relates to the conservation of the natural environment, which states the following:

*"The Council will retain, protect and enhance the natural environment of the Borough, particularly in relation to areas of ecological, wildlife and geological importance."*

*The Council is already committed to protecting the natural environment through its Environmental Principles Statement (approved 1991) and the Bury Wildlife Strategy (approved 1993). In implementing this policy the Council will consult the Greater Manchester Ecology Unit. The Unit will give advice on development proposals and planning applications and also on the comments the Council receives from local ecology groups."*

### **3.0 Protected Species in Greater Manchester**

- 3.1 Up to nine bat species have been recorded in Greater Manchester, many of which use built structures and trees for roosting. A variety of building types and features are utilised by bat species at different times of year ranging from occupied residential dwellings to disused barns and bridges. The most frequently encountered species is the common pipistrelle bat (*Pipistrellus pipistrellus*); its abundant status in Greater Manchester is mirrored throughout the UK.
- 3.2 The number of breeding Barn owls (*Tyto alba*) within rural parts of Greater Manchester is moderately high across areas of countryside where suitable environs exist; they are constantly under threat from loss of habitat and nesting opportunities.

#### 4.0 Survey Methods

##### 4.1 BCT Survey Good Practice Survey Guidelines state:-

*“The guidance should be interpreted and adapted on a case-by-case basis, according to the expert judgement of those involved. There is no substitute for knowledge and experience in survey planning, methodology and interpretation of findings, and these guidelines are intended to support these. Where examples are given they are descriptive rather than prescriptive.”*

- 4.2 The daytime survey was conducted on the 12<sup>th</sup> of February 2020 in dry conditions with a light wind and temperature of 8 degrees Celsius. The bungalow to be demolished at 119 Cornwall Drive was inspected for potential places that may be of value to bats and to determine if evidence of use was present. Loft spaces are absent, due to extensive internal and external works having gone on at the property; all interior aspects were inspected from open areas only using a high powered torch as the roof has been removed, alongside numerous interior supporting walls. The exterior elevations of the building were fully investigated from ground floor level with the aid of high-powered torch and binoculars, where required for places that are frequently used by bats as roosts or as access into roost chambers.

No trees exist within the confines of the survey area.

- 4.3 The survey was conducted at a time when bats are within their main hibernation period and outside their active season (May-August inclusive) by the following surveyor:

**Table 1:** Surveyor credentials

| Name                  | Description                                                                      |
|-----------------------|----------------------------------------------------------------------------------|
| Katie Swift BSc. MSc. | Experienced ecologist, long standing Natural England Class 1 & 2 Licence holder. |

- 4.4 The criteria for roost assessment is based upon the Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' (2016) (see Figure 2).

| Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitability                                                                                                                                                                                                      | Description<br>Roosting habitats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Commuting and foraging habitats                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Negligible                                                                                                                                                                                                       | Negligible habitat features on site likely to be used by roosting bats.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Negligible habitat features on site likely to be used by commuting or foraging bats.                                                                                                                                                                                                                                                                                                                                                                                               |
| Low                                                                                                                                                                                                              | A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions <sup>a</sup> and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation <sup>b</sup> ).<br><br>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. <sup>c</sup> | Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.<br><br>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.                                                                                                          |
| Moderate                                                                                                                                                                                                         | A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions <sup>a</sup> and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).                                                                                                                                                                   | Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.<br><br>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.                                                                                                                                                                                    |
| High                                                                                                                                                                                                             | A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions <sup>a</sup> and surrounding habitat.                                                                                                                                                                                                                                                                                                  | Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.<br><br>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.<br><br>Site is close to and connected to known roosts. |

<sup>a</sup> For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

<sup>b</sup> Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

<sup>c</sup> This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

**Figure 2: BCT guidelines extract**

- 4.5 Whilst a data search of localised bat records from the relevant Local Records Centre (LRC) was not sourced, a sufficient level of information on which to establish the potential use of the site by bats could be gathered from the daytime site visit. The UK Guidelines for Assessing and Using Biodiversity Data (CIEEM, 2016) state: *“where the development site is limited to a single building or is otherwise very small and comprises structures of low potential value for bats, data searches may be of limited value in terms of the information they can provide”*.

Furthermore, taking into consideration the nature of the immediate habitat bat species that are likely to be present can be anticipated.

- 4.6 The results, conclusions and recommendations are based on multiple factors including:
- Practical experience of surveyor
  - Knowledge of bat/bird species relevant to the site location and geographical range
  - Nature of the immediate and surrounding habitat in relation to foraging/hunting opportunities
  - Condition of the building
  - Presence/absence of a loft space
  - Presence/absence of roost/nesting potential
  - Value of roost/nesting potential – if present

- 4.7 An assessment of the building and site in general in relation to breeding birds was conducted in tandem with the investigation for bats, when birds are outside of their breeding season (March-August inclusive). Both interior and exterior elevations of the structure were inspected for historic signs of birds that show a high dependency upon built structures, many of which are in a state of decline. These might include the following species for example:

- **Starling (*Sturnus vulgaris*):** Birds of Conservation Concern (BoCC) red status
- **House sparrow (*Passer domesticus*):** BoCC red status
- **House martin (*Delichon urbica*):** BoCC amber status
- **Swift (*Apus apus*):** BoCC amber status

- 4.8 Additional to the site's capacity to support common species of bird for breeding purposes, the area was also subject to an assessment for the site's ability to support particularly notable assemblages of bird. This includes specially protected species such as Barn owl (*Tyto alba*), protected under Schedule 1 of the Wildlife & Countryside Act (1981) (as amended).

## **5.0 Limitations**

- 5.1 Whilst a full walkover of the interior aspects of the building was not possible, due to health and safety precaution taken by the surveyor, a full view of interior aspects of the property was attainable and this did not pose a significant limitation to the investigation.
- 5.2 It is considered that, on balance, there are no significant constraints associated with the inspection and assessment of the survey area that would otherwise hinder the attainment of ecological data.

## **6.0 Desk Study Results**

- 6.1 The proposed development site is located on the south easterly peripherals of Bury in a predominantly residential area surrounded by similar structures featuring semi mature gardens featuring shrub and semi mature trees. Notwithstanding the urbanised location, the site is just over 100 metres from the River Roch to the east, with associated riparian habitat and associated Roch Valley Greenway broad leaved tree corridor.
- 6.2 To the north south and west of the site land use is typically urbanised, however several features exist within this landscape which are of value to bats, the closest of which being the broadleaved trees associated with Bury Cemetery which lies 310 metres south west of the site. Just over 1.5 kilometres in this direction is the River Irwell and associated habitat. To the east however, the landscape is far less urbanised with numerous features further to the River Roch such as several areas of open mosaic habitat and woodland belts throughout the predominantly rural landscape.

These previously identified habitats that occur in proximity to the survey area can be considered as being of ecological value for many of the species for which the survey was undertaken (i.e. bats and breeding birds), subject to them being present in the locality. Where good quality habitat is present close to buildings then the percentage use of those buildings, by bats/birds increases given that roost/nest opportunities are available and vice versa however more urbanised locations are increasingly utilised.



**Figure 3:** Approximate position of the study site within the contiguous landscape (Google earth 2019)

6.3 An online search of Magic Maps revealed the presence of three granted EPSML licences within a 2 kilometre radius of the site, the closest of which lies to the east and is for the destruction of a Common Pipistrelle bat day roost and dated from 2012. The remaining two licences are both cited east of the study site and for the destruction of Common Pipistrelle bat roosts; the first a day roost dated from 2015 with the furthest for a breeding roost dated from 2013.

6.4 The application site lies outside of the impact zone for any statutorily designated site.

## **7.0 Field Study Results**

### **Bats**

7.1 The appraised building is a typical residential bungalow standing on a relatively small plot to the corner of Cornwall Drive, a residential street comprising of similar properties of with similar dimensions. The building is of redbrick construction with a cavity wall and is of approximate dimensions 11 metres long by 6 metres wide; the roof has now been stripped.

7.2 119 Cornwall Drive has been previously subjected to significant works and left in a semi derelict condition. It is the understanding of Tyrer Ecological Consultants Ltd that these works were undertaken over 6 years ago. On the day of the survey the condition of the building indicates that it is accurate information. Under previous ownership the roof has been removed, as have all interior walls and ceilings, in addition to this the north facing

elevation is entirely absent from floor to ceiling leaving this structural element absent and the entire interior open to the elements.

- 7.3 Internal inspection found a conclusive absence of any loft spaces or voids, which were destroyed during historic internal works. It is evident heavy disturbance has taken place as the three remaining structural walls appear in extremely poor condition. Due to the scale of works, the full interior was open, fully illuminated and therefore devoid of suitability for the typical breeding / roosting requirements of loft-dwelling bats such as the brown long-eared bat (*Plecotus auritus*), although some of the surrounding environs favour this species' foraging and commuting habits. This is a species that prefers unrestrictive, darkened and open loft spaces with consistent thermal qualities which are conclusively absent at 119 Cornwall Drive. No evidence of any loft-dwelling bat species was identified upon appraisal.
- 7.4 In several areas internally, collapse has left the cavity wall entirely exposed to the elements and accessible. It was possible, due to the openness of the cavity wall, for some of the remaining insulation to be removed and inspected; although notably damp and degraded, within some of this insulation, historic bat droppings were identified (see Figure 4 for position of droppings). Ten droppings were identified to be those attributed to the Pipistrelle bat (*Pipistrellus* sp.). It is possible more droppings have been present within the cavity and lost to the elements historically.



**Figure 4:** Exposed cavity walls and destroyed roost location denoted with ☆

- 7.5 Underfelt was identified in poor condition as the roof itself has been removed. Underlining, where present, may improve the probability of occupancy by crevice-dwelling species of bat, whereby bats are able to roost between roofing material and underfelt. This improved suitability however, is provided external access exists; the absence of roofing material in this instance means that the roof is less productive for bats.

**NB:** The breeding roosts of Pipistrelle bats are proportionally higher in occupied residential dwellings where the warm, dry conditions favour the requirements of a maternity colony, but other structures are also used, especially for hibernation or by male bats which do not need the same conditions as a maternity colony.

- 7.6 External assessment of the property found an absence of viable Potential Roost Features (PRFs) to all elevations. The removal of the roof and associated features along with the partial demolition has left an absence of PRF's across the structure; whilst some gaps exist, these are full exposed to the elements and do not constitute viable roosting opportunities.

### **Breeding Birds**

- 7.7 A number of platforms that favour the nesting habits of various bird species exist across the site; primarily to the open interior where beams and other potential nesting platforms are accessible, the presence of nesting birds within the application boundary within the nesting period (March-August inclusive) is thus considered to be likely.
- 7.8 No areas considered to be suitable for the breeding habits of any Schedule 1 WCA-listed species were identified on site and no evidence of such species was located across the full extent of the survey area.

## **8.0 Conclusions & Recommendations**

- 8.1 119 Cornwall Drive in its current condition has been concluded to pertain to a negligible bat roost suitability categorisation relative to current BCT guidelines (see Figure 6 below). The categorisation of 119 Cornwall Drive is determined by the scale of internal work, removal of the roof and the entire north elevation. This has rendered all features incapable of providing any shelter, a critical requirement for a roost.

| Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement. |                                                                         |                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Suitability                                                                                                                                                                                                      | Description<br>Roosting habitats                                        | Commuting and foraging habitats                                                      |
| Negligible                                                                                                                                                                                                       | Negligible habitat features on site likely to be used by roosting bats. | Negligible habitat features on site likely to be used by commuting or foraging bats. |

**Figure 6:** BCT extract

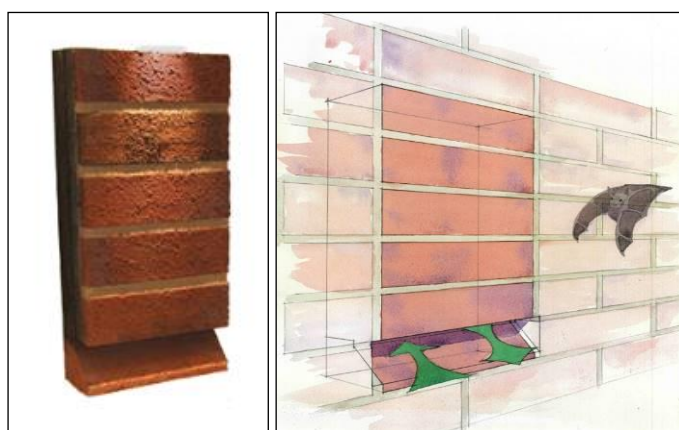
Based upon this categorisation, there are no recommendations for dusk/dawn emergence or/ dawn re-entry surveys. The historical presence of a destroyed bat roost was confirmed, it is not ascertainable due to the time-lapse and change of ownership when this roost was destroyed and by whom. No further information can be attained regarding the roost type species or number of bats previously using the roost.

- 8.2 The destruction of a roost is a criminal offence; all British bats and their roosts are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2017 (as amended). Nonetheless, due to the time-lapse and change of ownership, it is not possible to ascertain with whom the responsibility lies for the destruction of the bat roost

and ultimately responsible for the loss of a roost. Due to the condition of the building and scale of the destruction, it is also not possible to proportionately mitigate for its loss.

It is therefore recommended merely as a precautionary measure that a suitably licensed, experienced ecologist attends site prior to the demolition to inspect the cavity walls further as a precautionary measure and to inform the best provision to compensate for the already confirmed destruction of the roost.

Compensatory provision for bats is recommended to be incorporated within the development proposals, the specifications for which are to be finalised on completion of the works as detailed above. Based upon the survey however, an indicative suggestion is for an integrated bat box within the gable elevation is recommended below (Figure 7).



**Figure 7:** Indicative integrated bat box compensation

- 8.3 A variety of nesting platforms exist within the fabric of the structure that remains, mainly present due to the condition of the building. Therefore, it is recommended that demolition operations are undertaken outside the nesting bird season (March-August inclusive) unless it may be conclusively demonstrated by an ecologist that nesting birds are absent.

Point 3.24 of the British Standards Publication 42020:2013 defines a professional ecologist as *“a person who has, through relevant education, training or experience, gained recognised qualifications and expertise in the field of ecology and environmental management.”*

- 8.4 To improve opportunities for nesting birds on site post development, enhancement for nesting birds is recommended to be incorporated into the new development as per Appendix II.
- 8.5 Biodiversity enhancement relative to landscaping is also recommended within Appendix II.

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**Appendix I: Site Photographs**



**Plate 1-** Front elevation (south facing) of 119 Cornwall Drive



**Plate 2-** Side (west facing) elevation of 119 Cornwall Drive



**Plate 3-** Open (north facing) elevation of 119 Cornwall Drive



**Plate 4-** Droppings within the exposed cavity wall at 119 Cornwall Drive



**Plate 5-** Interior of 119 Cornwall Drive



**Plate 6-** Interior of 119 Cornwall Drive



**Plate 7-** Cavity at 119 Cornwall Drive

## Appendix II: Biodiversity Enhancement

### Enhancement

#### Landscaping

A series of trees, woody shrubs, climbers, herbaceous plants and ferns have been given within the table below which are suitable for incorporation into the scheme proposed at 119 Cornwall Drive; the list of plants given below are readily commercially available.

**Table 2:** Appropriate woody species for the land at 119 Cornwall Drive

|                                | Common Name           | Scientific Name                  | Planting Preference                                 |
|--------------------------------|-----------------------|----------------------------------|-----------------------------------------------------|
| <b>Ferns</b>                   | Male Fern             | <i>Dryopteris filix-mas</i>      | Semi-shade or shaded                                |
|                                | Soft Shield-fern      | <i>Polystichum setiferum</i>     | Semi-shade or shaded                                |
|                                | Maidenhair Fern       | <i>Adiantum capillus-veneris</i> | Suitable for rockeries / walled gardens             |
|                                | Royal Fern            | <i>Osmunda regalis</i>           | Full sun in moist-damp areas                        |
| <b>Herbaceous plants</b>       | Bloody Crane's-bill   | <i>Geranium sanguineum</i>       | Dry soils - suitable for rockeries                  |
|                                | Columbine             | <i>Aquilegia vulgaris</i>        | Semi-shade or open areas                            |
|                                | English Bluebell      | <i>Hyacinthoides non-scripta</i> | Moist soils in semi-shade or open areas             |
|                                | Giant Bellflower      | <i>Campanula latifolia</i>       | Semi-shade or open areas                            |
|                                | Greater Knapweed      | <i>Centaurea scabiosa</i>        | Dry-moist soils. Suitable for borders               |
|                                | Greater Woodrush      | <i>Luzula sylvatica</i>          | Moist soils in semi-shade or open areas             |
|                                | Meadow Crane's-bill   | <i>Geranium pratense</i>         | Humid-moist soils. Suitable for borders             |
|                                | Musk Mallow           | <i>Malva moschata</i>            | Dry-moist soils. Suitable for borders and rockeries |
|                                | Sea Campion           | <i>Silene uniflora</i>           | Dry soils - suitable for rockeries                  |
|                                | Stinking Hellebore    | <i>Helleborus foetidus</i>       | Semi-shade or open areas                            |
| <b>Aquatic/marginal plants</b> | Common Water-crowfoot | <i>Ranunculus aquatilis</i>      | Ponds                                               |
|                                | Marsh Marigold        | <i>Caltha palustris</i>          | Marginal vegetation                                 |
|                                | Ragged Robin          | <i>Silene flos-cucculi</i>       | Marginal vegetation                                 |
|                                | Water Mint            | <i>Mentha aquatica</i>           | Marginal vegetation                                 |
|                                | Water-violet          | <i>Hottonia palustris</i>        | Ponds                                               |
|                                | White Water-lily      | <i>Nymphaea alba</i>             | Ponds                                               |
| <b>Climbers</b>                | Honeysuckle           | <i>Lonicera periclymenum</i>     | Dry-moist soils                                     |
|                                | Hops                  | <i>Humulus lupulus</i>           | Dry-moist soils                                     |
|                                | Ivy                   | <i>Hedera helix</i>              | Dry-moist soils                                     |
|                                | Sweet-briar           | <i>Rosa rubiginosa</i>           | Dry-moist soils                                     |
| <b>Woody Shrubs</b>            | Dogwood               | <i>Cornus sanguinea</i>          | -                                                   |
|                                | Guelder Rose          | <i>Viburnum opulus</i>           | -                                                   |
|                                | Hawthorn              | <i>Crataegus monogyna</i>        | -                                                   |
|                                | Hazel                 | <i>Corylus avellana</i>          | -                                                   |
|                                | Holly                 | <i>Ilex aquifolium</i>           | -                                                   |
| <b>Trees</b>                   | Alder Buckthorn       | <i>Frangula alnus</i>            | -                                                   |
|                                | Osier                 | <i>Salix viminalis</i>           | -                                                   |
|                                | Pedunculate Oak       | <i>Quercus robur</i>             | -                                                   |
|                                | Purple Willow         | <i>Salix purpurea</i>            | -                                                   |
|                                | Rowan                 | <i>Sorbus aucuparia</i>          | -                                                   |
|                                | Silver Birch          | <i>Betula pendula</i>            | -                                                   |
|                                | Wild Cherry           | <i>Prunus avium</i>              | -                                                   |
|                                | Wych Elm              | <i>Ulmus glabra</i>              | -                                                   |

### Nesting Birds

The 'Sparrow Terrace' has been designed to help redress the balance of falling house sparrow numbers. The current UK population is half what it was in 1980 and this is thought to be due to habitat destruction and lack of suitable nesting spaces. Sparrows are social birds and like to nest in company, therefore, this terrace provides ideal nesting opportunities for three families.

The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall.

<http://www.nhbs.com/title/174850/1sp-schwegler-sparrow-terrace>

