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“Providing Common-sense Solutions for Sustainable Development”

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Former Burton Day Centre

Bat and Bird Daytime Scoping Survey Report

December 2017



Bat and Bird Daytime Scoping Survey

Bat and Bird Daytime Scoping Survey

At

Former Burton Day Centre,
Waverley Lane,
Burton-on-Trent,
Staffordshire,
DE14 2HF

For

Mr. Anthony Rice
(Urban Designs - Architect)

On behalf of

Mr. Shaun FitzpatrickCruise
(Fitzpatrick Cruise Ltd.)

Bat and Bird Daytime Scoping Survey

0. Executive Summary

0.1 Report rationale

This report has been prepared at the request of Mr. Anthony Rice (Urban Designs - Architect) on behalf of Fitzpatrick Cruise (Proprietor). This report is in relation to the identification and location of protected bat and bird species at the former Burton Day Centre, Waverley Lane, Burton-on-Trent, Staffordshire, DE14 2HF (OS Grid Reference: SK 23495 23306). One roost/scoping survey was undertaken on the 18th December 2017 by Evolution Ecology Ltd.

0.2 Background

Under the current proposals, the buildings will be demolished to enable residential dwellings to be developed on the parcel of land.

0.3 Ecological Impact AssessmentBat presence/absence

There appears to be a negligible impact on local colonies of these species as bat absence was confirmed through the daytime inspections of the building. The proposed redevelopment of the building is not likely to alter any of the nearby foraging habitats.

Roost ecology of species onsite

Based upon the evidence gathered during the survey efforts, there is no bat roost located at 'Burton Day Centre,' Burton-on-Trent.

Ecological value of building units

The ecological value of the building for bats has been deemed as 'low.' This is due to the daytime inspections of the structure confirming the absence of bat roosts within the building. With regards to birds, the buildings have been deemed as having 'high' potential due to the identification of two woodpigeon (*Columba palumbus*) nests (one in the building and one in a Hawthorn Tree).

0.4 Recommendations

Please see section '5 – Recommendations' for an outline of the proposed recommendations for the works at 'Burton Day Centre,' Burton-on-Trent.

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1 INTRODUCTION

This report has been prepared at the request of Mr. Anthony Rice (Urban Designs - Architect) on behalf of Shaun FitzpatrickCruise (Fitzpatrick Cruise Ltd.). The report is in relation to the identification and location of protected bat and bird species at the former Burton Day Centre, Waverley Lane, Burton-on-Trent, Staffordshire, DE14 2HF (OS Grid Reference: SK 23495 23306). One roost/scoping survey was undertaken on the 18th December 2017 by Evolution Ecology Ltd.

1.1 Site description

The site is situated in the town of Burton-on-Trent, Staffordshire, with Burton-on-Trent train station being situated approximately 666m to the east. The dominant habitat on the site is a building (the surveyed structures measuring approximately 1092m²), with sections of hard standing ground, scattered trees and grassland also present. Within the wider landscape, there are further residential/commercial buildings (with their associated gardens/land), water-bodies (with particular reference to Shobnall Marina and the Trent and Mersey canal), amenity grassland (Shobnall Leisure Complex) and scattered trees. Therefore, the site itself contains potential roosting, commuting and foraging potential to any local bat and bird populations, which might be in the area.

Figure 1: An aerial map showing the site location (blue outline) and the surveyed building (red outline) at the Burton Day Centre, Burton-on-Trent, in relation to some of the local landscape.



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1.2 **Proposed works**

Under the current proposals, the building will be demolished to enable residential dwellings to be developed on the parcel of land.

1.3 **Aims of survey**

The actions of the surveyors on site and during the production of the report were conducted in accordance with Bat Conservation Trust (BCT) guidelines (3rd edition). The aim of the survey was to undertake an appraisal of the building/s and surrounding area to establish the following:

1.3.1 Survey protocol considered any protected bat species onsite

Bats

- To establish the probability of bats and their roost sites being present at the proposed redevelopment site.
- To assess the roost status.
- To assess suitable food resources and habitat requirements.
- If a roost site is found, to provide an impact assessment.

1.3.2 Survey protocol also considered any protected bird species onsite:

Barn Owls

- To establish if barn owls were using the site.
- To locate nest sites, if present.
- To assess what types of activities were shown within the site of interest.
- To assess suitable food resources and habitat requirements.
- To provide an impact assessment, if barn owls are present.

Birds

- To establish if birds were using the site.
- To locate nest sites, if present.
- To assess what types of activities were shown within the site of interest.
- To assess suitable food resources and habitat requirements.
- To provide an impact assessment, if nests are found.

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1.3.3 The information was subsequently used in conjunction with the knowledge of the proposed works at the site to determine:

- What impacts the works are likely to have on any protected species found at the site.
- The need for any Natural England development licence application to be made in respect of activities concerning protected species.
- Recommendations for any mitigation measures that would be required.

1.3.4 Animals frequently move around and change the places they use for shelter. Therefore, this report is generally considered to be **valid for 2 years** from the date that the survey was carried out. This figure may be different for some species or habitats, but this should be confirmed by a professional ecologist. If you have ecological data that is considered 'out-of-date', you may require an updated 'walkover survey' in certain circumstances.

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2 SURVEY METHODOLOGY

2.1 Summary of survey methods

The objective of this report is to provide an ecological evaluation of the site in relation to its suitability for bat and bird utilization. The survey considered the potential for roosting bats and gathered any anecdotal evidence (i.e. bats, bat droppings, feeding remains, urine stains and grease marks) that may support their presence within the building unit(s).

2.1.1 Walkover survey

A walkover survey of the site and a visual inspection of the building and any trees were undertaken, to determine the availability of the required resources for the protected species in the immediate area. This would allow us to determine:

- Presence or absence of bats onsite (i.e. roosting).
- Evidence and/or potential of bat roosts onsite (i.e. summer roosts).
- Whether additional surveys are required.

2.1.2 External Inspection of the Building Elevations

The building on the site were inspected both externally and internally for signs of bat activity. Notes were made on the following in accordance with the guidelines published by the BCT for the scoping and surveying of building/s and built structures:

The objective of this survey was to locate suitable ingress and egress points that protected species (bats) could use to fly into the building/s and also to identify any areas within the building/s in which these species may be able to roost and/or nest. The survey method used to inspect the external walls and roof of the buildings was a visual assessment with the use of binoculars, torch, endoscope and ladders in full daylight.

This allowed us to determine the following information:

- Type and age of buildings.
- Type of construction.
- Presence of potential roost features (e.g. missing roof tiles, raised tiles, roof voids).
- Presence of suitable entry and exit points (e.g. broken windows, missing windows and doors/ridges and the apex of the buildings).

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- Amount and location of evidence of bats such as the presence of live or dead bats, droppings, grease marks, urine stains and/or characteristic smell of bats.

2.1.3 Internal Inspection of the Building Elevations and Rooms

The object of this survey was to locate and focus on areas which provide appropriate environmental conditions for bats. To do this, we must:

- Look for warm dark areas, joints, crevices, beams and cavities for possible bat roost sites and nest sites.
- Locate roost sites.
- Listen for bats.
- Examine floors, walls and structural elements for droppings, corpses, skeletons and dead insects.

2.1.4 Building Rating

In the absence of any evidence, structures have been assigned a rating of suitability from negligible to high potential for supporting bats. The rating is based on the location of the structure in the surrounding landscape, the number, and type of features suitable for use by bats and the surveyor's experience. For example; a structure with a high level of regular disturbance with few opportunities for access by bats, that is in a highly urbanised area with few or no mature trees, parkland, woodland or wetland would generally equate to having negligible potential. Conversely, a pre 20th century or early 20th-century building with many features suitable for use by bats close to good foraging habitat would have high potential.

2.1.5 Roost Categories

Any structures with evidence of bats will be further evaluated to assess which of the following roost categories may be present on the site (if any):

- **Maternity or Nursery Roost** – used by breeding bats, where pups are born and raised to independence (anecdotal evidence may support this prospect).
- **Hibernation Site** – where bats may be found during the winter (this is assessed within the context of this report).
- **Daytime Summer Roost** – used by males and/or non-breeding females.

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- **Night Roost** – where bats rest between feeding bouts during the night but are rarely present during the day.
- **Feeding Roost** – where bats temporarily hang up to eat an item of prey.
- **Transitional (or Swarming) Site** – where bats may be present during the spring or autumn (this cannot be assessed within the context of this report).

2.1.6 Bat Detector Survey (Dusk/Dawn surveys)

If required, the object of this survey is to detect active bats leaving possible roost sites identified in the external and internal surveys. This is achieved by:

- Being at the site 30 minutes before sunset and 90 minutes before sunrise.
- Listening for social calls at potential roost sites.
- Standing at different transect points around the buildings, using the bat detector to hear the bats plus trying to see the first bats emerge.
- Standing at different transect points at foraging areas.
- Carrying out this survey up to two hours after the first bats emerge and 15 minutes after sunrise. This will cover the emergence and returning period to the roost site, for some bat species.

2.1.7 Evidence will be used to determine whether a European Protected Species (EPS) licence will be required to ensure legal compliance during development. This will also include identifying which mitigation measures [if any] would be most appropriate.

2.2 Pre-survey data search

2.2.1 Staffordshire Ecological Record (SER) were commissioned by Evolution Ecology Ltd, in order to establish whether any bat and bird species have been recorded within a 2km radius of the proposed redevelopment area.

2.2.2 A desktop study of the area using online resources was undertaken independently to corroborate the current overview of the site and its importance in the landscape. Websites used for this study include www.magic.gov.uk, www.naturalengland.org.uk, Google Earth and www.ordinancesurvey.co.uk.

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2.3 Surveyors Information

2.3.1 The survey was undertaken by licensed bat ecologist/s and members of the Institute of Ecology & Environmental Management (CIEEM):

Mr. Paul Keeling BSc (Hons) MCIEEM Ecologist, Natural England Bat Survey Licence Number: 2015-11546-CLS-CLS Bat Survey Level 2.

Mr. Richard Millington BSc (Hons) ACIEEM, Assistant Ecologist, Natural England Bat Survey Licence Number: 2016-26861-CLS-CLS Bat Survey Level 2.

2.4 Field surveys

2.4.1 Habitat Surveys

To the knowledge of Evolution Ecology Ltd, no previous habitat surveys have been undertaken on the proposed redevelopment site.

2.4.2 Roost Surveys - weather conditions and timing

The buildings were externally and internally inspected for the presence of bats and birds with the use of binoculars, torches, an endoscope and ladders in full daylight.

Table 1: Scoping Survey, Environmental Variables

Environmental variables	Scoping Survey of the Building – 18 th December 2017
Temp Start	3°C
Temp Finish	4°C
Humidity Start	85%
Humidity Finish	85%
Cloud Cover Start	100%
Cloud Cover Finish	100%
Wind Speed Average	Low
Precipitation	Fog in the air

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2.4.3 Roost and Activity Surveys

The roost/scoping and soft demolition surveys were undertaken on the 18th December 2017 (please see table 1 for the environmental variables from these surveys). During the survey, the types of equipment used included an endoscope, torches, extendable mirror, ladders and a temperature logger.

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3 RESULTS

3.1 Pre-survey data search

Staffordshire Ecological Record (SER) were commissioned to carry out an ecological data search of all protected bat and bird species within a 2km radius of 'Burton Day Centre,' Burton-on-Trent. The searches uncovered records of numerous protected species within the vicinity of the site.

Table 4 shows all UK BAP and non-BAP bat species, some of which have been recorded within a 5km search radius of 'Burton Day Centre,' Burton-on-Trent. Those highlighted in bold were identified within the 2km search radius.

Table 4: The bats identified on the 2km ecological data search provided by SER.

<u>UK BAP</u>	<u>Common name</u>	<u>Latin binomial</u>	<u>County records within 2km</u>
<input checked="" type="checkbox"/>	Barbastelle	<i>Barbastella barbastellus</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Bechstein's	<i>Myotis bechsteinii</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Brown Long-eared	<i>Plecotus auritus</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Noctule	<i>Nyctalus noctula</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Greater Horseshoe	<i>Rhinolophus ferrumeguinum</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Lesser Horseshoe	<i>Rhinolophus hipposideros</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Alcathoe	<i>Myotis alcathoe</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Brandt's/Whiskered	<i>Myotis brandtii/mystacinus</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Common pipistrelle	<i>Pipistrellus pipistrellus</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Daubenton's	<i>Myotis daubentonii</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Grey Long-eared	<i>Plecotus austriacus</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Leisler's	<i>Nyctalus leisleri</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Natterer's	<i>Myotis nattereri</i>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	Serotine	<i>Eptesicus serotinus</i>	<input checked="" type="checkbox"/>

With regards to birds, a number of protected species have been identified within the 2km search radius. All UK birds can be split into three categories of conservation importance (red, amber and green – please see [RSPB](#) for more information). Table 5 shows the species revealed by the ecological data search provided by SER.

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Table 5: All red and yellow listed bird species identified on the 2km ecological data search provided by SER.

<u>Common Name</u>	<u>Latin binomial</u>	<u>Conservation Importance</u>
Barnacle goose	<i>Branta leucopsis</i>	Amber
Black-headed gull	<i>Chroicocephalus ridibundus</i>	Amber
Bullfinch	<i>Pyrrhula pyrrhula</i>	Amber
Common gull	<i>Larus canus</i>	Amber
Common kingfisher	<i>Alcedo atthis</i>	Amber
Common tern	<i>Sterna hirundo</i>	Amber
Dunnock	<i>Prunella modularis</i>	Amber
Gadwall	<i>Anas strepera</i>	Amber
Goldeneye	<i>Bucephala clangula</i>	Amber
Greater black-backed gull	<i>Larus marinus</i>	Amber
Green sandpiper	<i>Tringa ochropus</i>	Amber
Greylag goose	<i>Anser anser</i>	Amber
House martin	<i>Delichon urbicum</i>	Amber
Lapland bunting	<i>Calcarius lapponicus</i>	Amber
Lesser black-backed gull	<i>Larus fuscus</i>	Amber
Mallard	<i>Anas platyrhynchos</i>	Amber
Meadow pipit	<i>Anthus pratensis</i>	Amber
Mute swan	<i>Cygnus olor</i>	Amber
Osprey	<i>Pandion haliaetus</i>	Amber
Oystercatcher	<i>Haematopus ostralegus</i>	Amber
Pink-footed Goose	<i>Anser brachyrhynchus</i>	Amber
Redstart	<i>Phoenicurus phoenicurus</i>	Amber
Reed bunting	<i>Emberiza schoeniclus</i>	Amber
Shelduck	<i>Tadorna tadorna</i>	Amber
Shoveler	<i>Anas clypeata</i>	Amber
Snipe	<i>Gallinago gallinago</i>	Amber
Stock dove	<i>Columba oenas</i>	Amber
Swift	<i>Apus apus</i>	Amber
Tawny owl	<i>Strix aluco</i>	Amber
Teal	<i>Anas crecca</i>	Amber
Wigeon	<i>Anas penelope</i>	Amber
Willow warbler	<i>Phylloscopus trochilus</i>	Amber
Yellow-legged gull	<i>Larus michahellis</i>	Amber
Black-tailed godwit	<i>Limosa limosa</i>	Red
Black redstart	<i>Phoenicurus ochruros</i>	Red
Cuckoo	<i>Cuculus canorus</i>	Red
Curlew	<i>Numenius arquata</i>	Red
Fieldfare	<i>Turdus pilaris</i>	Red
Grasshopper warbler	<i>Locustella naevia</i>	Red
Grey partridge	<i>Perdix perdix</i>	Red

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Grey wagtail	<i>Motacilla cinerea</i>	Red
Hawfinch	<i>Coccothraustes coccothraustes</i>	Red
Herring gull	<i>Larus argentatus</i>	Red
House sparrow	<i>Passer domesticus</i>	Red
Lapwing	<i>Vanellus vanellus</i>	Red
Lesser Redpoll	<i>Carduelis cabaret</i>	Red
Lesser spotted woodpecker	<i>Dendrocopos minor</i>	Red
Linnet	<i>Carduelis cannabina</i>	Red
Marsh tit	<i>Poecile palustris</i>	Red
Merlin	<i>Falco columbarius</i>	Red
Mistle thrush	<i>Turdus viscivorus</i>	Red
Pochard	<i>Aythya ferina</i>	Red
Redwing	<i>Turdus iliacus</i>	Red
Ringed plover	<i>Charadrius hiaticula</i>	Red
Ring ouzel	<i>Turdus torquatus</i>	Red
Skylark	<i>Alauda arvensis</i>	Red
Song thrush	<i>Turdus philomelos</i>	Red
Spotted flycatcher	<i>Muscicapa striata</i>	Red
Starling	<i>Sturnus vulgaris</i>	Red
Tree sparrow	<i>Passer montanus</i>	Red
Whimbrel	<i>Numenius phaeopus</i>	Red
Willow tit	<i>Poecile montanus</i>	Red
Woodcock	<i>Scolopax rusticola</i>	Red
Yellowhammer	<i>Emberiza citrinella</i>	Red
Yellow wagtail	<i>Motacilla flava</i>	Red

A map showing the locations of the records obtained through the ecological data search can be found in Appendix B.

3.1.1 **Designated sites**

Statutory Nature Conservation Designations

Due to the nature of the site and the proposed re-development, it was deemed that the proposed works will not affect any statutory nature conservation designations.

Non-statutory Nature Conservation Designations

Due to the nature of the site and the proposed re-development, it was deemed that the proposed works will not affect any non-statutory nature conservation designations.

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3.2 Field surveys**3.2.1 Habitat description**

Burton Day Centre is situated in the Staffordshire town of Burton-upon-Trent and is primarily within an urban area.

The site itself consists of hard standing ground, scattered trees, grassland, and a building (with the building measuring approximately 1092m²). Further afield, there are further residential/commercial buildings (with their associated gardens/land), water-bodies (with particular reference to Shobnall Marina and the Trent and Mersey canal), amenity grassland (Shobnall Leisure Complex) and scattered trees. Therefore, the habitats that are present in and around the site contains elements that are considered to be critical in both bat and bird life cycles.

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3.2.2 Bat roost and bird nest (including barn owl) survey

Table 6: Access/roosting/nesting features for bats and birds to gain entry and roost/nest - identified externally during the scoping survey.

External Features	Yes	No
Clay Tiles		<input checked="" type="checkbox"/>
Concrete Tiles	<input checked="" type="checkbox"/>	
Corrugated Steel roof	<input checked="" type="checkbox"/>	
Pitch roof	<input checked="" type="checkbox"/>	
Shed roof		<input checked="" type="checkbox"/>
Flat roof	<input checked="" type="checkbox"/>	
Solid walls		<input checked="" type="checkbox"/>
Cavity walls	<input checked="" type="checkbox"/>	
Missing/open doors		<input checked="" type="checkbox"/>
Missing/open windows		<input checked="" type="checkbox"/>
Gaps around the fascia/eaves	<input checked="" type="checkbox"/>	
Cracks/crevices on walls		<input checked="" type="checkbox"/>
Missing mortar (brickwork)	<input checked="" type="checkbox"/>	
Gaps under ridge tiles		<input checked="" type="checkbox"/>
Air/ridge vents		<input checked="" type="checkbox"/>
Active birds' nests	<input checked="" type="checkbox"/>	
<p>Notes: The majority of the brickwork, roofing material and fascia/soffit boards were in good condition. Despite this, there were some areas which contained bat roosting potential. These were highlighted as hotspot areas 1,2 & 3 (see section 3.2.4 for more information on these). In addition to this, evidence of bird nesting on the northern elevation was present where whitewash was visible. These were thought to be of woodpigeon (<i>Columba palumbus</i>) due to the presence of a deceased chick.</p>		

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Table 7: Features identified internally during the scoping survey.

Internal Features	Yes	No
Felted roof		<input checked="" type="checkbox"/>
Torching present		<input checked="" type="checkbox"/>
Timber beams	<input checked="" type="checkbox"/>	
Steel beams	<input checked="" type="checkbox"/>	
Corrugated Steel roof	<input checked="" type="checkbox"/>	
Living/dwelling rooms		<input checked="" type="checkbox"/>
Educational rooms		<input checked="" type="checkbox"/>
Storage rooms		<input checked="" type="checkbox"/>
Agricultural (inc. domestic livestock)		<input checked="" type="checkbox"/>
Derelict building	<input checked="" type="checkbox"/>	
Moth/Butterfly remains		<input checked="" type="checkbox"/>
Mouse droppings		<input checked="" type="checkbox"/>
Cobwebs	<input checked="" type="checkbox"/>	
Bat droppings		<input checked="" type="checkbox"/>
Birds' nests		<input checked="" type="checkbox"/>
Cracks/crevices in walls		<input checked="" type="checkbox"/>
Skylights/Windows in the roof	<input checked="" type="checkbox"/>	
<p>Notes: The building was sealed well and did not allow access internally for bats or birds. The whole area where they could enter (one small section, on the corrugated steel sheet roof), no nests were visual internally. However, it is anticipated that one nest was present due to the identification of one deceased woodpigeon (<i>Columba palumbus</i>) chick. It is thought that this specimen tried to fledge and got trapped and couldn't escape, from an internal room.</p>		

3.2.3 Summary from the external and internal inspections

Due to the amount of potential ingress/egress points and suitable roosting features, the building was deemed as having '**low**' potential for bats to roost and '**moderate**' potential for birds to nest.

The requirement for bat activity surveys was negated through a soft demolition inspection of the structures.

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Table 8: Features of buildings and built structure classification, which may indicate the potential for bats. The full guidance can be found in the Bat Conservation Trust Good Practice Survey Guidelines.

Likelihood of bats being present	Feature of the building or built structure and its location
Higher	<p>Pre-20th century or early 20th century construction². Agricultural buildings of traditional brick, stone or timber construction. Large and complicated roof void with unobstructed flying spaces. Large (>20 cm) roof timbers with mortice joints, cracks and holes. Entrances for bats to fly through. Poorly maintained fabric providing ready access points for bats into roofs, walls, bridges, but at the same time not too draughty and cool. Roof warmed by the sun, in particular south facing roofs. Weatherboarding and/or hanging tiles with gaps. Low level of disturbance by humans. Bridge structures, follies, aqueducts and viaducts over water and/or wet ground. For rarer species, buildings or built structures in the core area of their distribution. Buildings and built structures in proximity to each other providing a variety of roosting opportunities throughout the year. Buildings or built structures close to good foraging habitat, in particular mature trees, parkland, woodland or wetland, especially in a rural setting</p>
Lower	<p>Modern, well-maintained buildings² or built structures that provide few opportunities for access by bats. Small, cluttered roof space. Buildings and built structures comprised primarily of prefabricated steel and sheet materials. Cool, shaded, light or draughty roof voids. Roof voids with a dense cover of cobwebs and no sections of clean ridge board. High level of regular disturbance. Highly urbanised location with few or no mature trees, parkland, woodland or wetland. High levels of external lighting.</p>

Table 9: Low/Moderate/High potential building(s) survey recommendations. The full guidance can be found in the Bat Conservation Trust Good Practice Survey Guidelines. These guidelines are what all local authorities abide by.

Bat Conservation Trust		
<p>Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).</p>		
Low roost suitability	Moderate roost suitability	High roost suitability
<p>One survey visit. One dusk emergence or dawn re-entry survey^a (structures). No further surveys required (trees).</p>	<p>Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.^b</p>	<p>Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.^b</p>
<p>^a Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.</p> <p>^b Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.</p>		

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3.2.4 Visual Inspection

Three hotspot areas were identified during the scoping survey, where bats could roost. These were inspected by Mr. Paul Keeling to have a closer look at these areas to see if they were in use by bats or had been in the recent past.

Hotspot Area 1, was situated on the northern and western elevation of the boiler room section of the building. The soffit board had a gap and was inspected by the ecologist. During this inspection, an accumulation of cobwebs was present, indicating that no bats or birds have been using this feature for roosting or nesting.

Figures 2 & 3: Photographs of 'hotspot area 1' that was inspected in further detail.



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Hotspot Area 2, was situated on the southern elevation of the building, where gaps were present around the fascia/soffit box. During this inspection the gaps were found to either be an insufficient size, or an accumulation of cobwebs were present, indicating that bats and birds had not been using this feature for roosting or nesting.

Figures 4, 5 & 6: Photographs of 'hotspot area 2' that were inspected in further detail.



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Hotspot Area 3, consisted of a section of the fascia board that had become missing on the eastern elevation. This feature was thought to be very exposed to the weather elements and once again contained an accumulation of cobwebs, indicating that bats and birds had not been using this feature for roosting or nesting.

Figures 7, 8 & 9: Photographs of 'hotspot area 3' that were inspected in further detail



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3.2.5 Activity surveys

No Activity Surveys were conducted due to the daytime scoping inspection and soft demolition search being undertaken in December 2017, which lies outside of the optimal survey season for bats (May to September). The requirement for activity surveys was negated through a close visual inspection of the hotspot areas.

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4 IMPACT ASSESSMENT

4.1 Constraints on survey information

The roost/scoping survey was undertaken outside of the optimal survey period (May – September) for detecting bat activity. There were no constraints with regards to obtaining any survey information and Evolution Ecology Ltd, therefore, feels confident that this survey report produces an accurate representation of the buildings potential onsite for bats.

4.2 Constraints on equipment used

No constraints were present with regards to the equipment used during the survey (i.e. endoscope, ladders and high-powered binoculars).

4.3 Potential impacts of the re-development

Based upon the current planning proposal, whereby:

- Under the current proposals, the buildings will be demolished to enable the construction of residential dwellings to be developed on the parcel of land.
 - The potential impacts have been identified as follows:

4.3.1 Designated sites

The presence of any designated sites nearby is not applicable to the proposed project, as the demolition and redevelopment works are to be conducted within the development site boundary. This, therefore, means that any building works would be of no detriment to the surrounding landscape.

4.3.2 Roosts**Short-term impacts: Disturbance**

[Negligible]

Due to the absence of bat roosts within the structure inspected at Burton Day Centre, Burton-upon-Trent, there will be 'negligible' short-term impacts for disturbance, with no species-specific mitigation measures required.

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Long-term impacts: Roost modification [Negligible]

Same as 'Short-term impacts: Disturbance.'

Long-term impacts: Roost loss [Negligible]

Same as 'Short-term impacts: Disturbance.'

4.3.3 Foraging and commuting habitat

It is considered that the redevelopment of the site would have a negligible effect on potential foraging and commuting habitat. The site offers some foraging habitat due to the vegetation around the site, with particular reference to the trees (the trees do not offer bat roosting features because the trees were immature/mature, therefore, they are lacking rot holes/cracks etc, for roosting bats). In addition to this, the surrounding habitats provide all of the necessary foraging/roosting value that bats require and during the re-development, this will remain the status quo.

4.4 Legislation and Policy Guidance

Biodiversity 2020: sets out to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

National Planning Policy Framework, Section 11: The recently published framework in 2012, replaces the previous Planning Policy Statement 9. Section 11: Conserving and enhancing the natural environment, reaffirms the government's commitment to maintaining green belt protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife, aims to improve the quality of the natural environment and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.

Article 10 of the EC Habitats Directive: The published article requires government to develop features such as 'stepping stones' on the landscape, such as clusters of ponds, tracts of rough grassland or scrubland and vegetated railway line embankments.

Wildlife and Countryside Act 1981: All species of bat are fully protected under the Wildlife and Countryside Act 1981, the European Conservation (Natural Habitats etc.) Regulations 1994, and the Countryside and Rights

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of Way Act 2000. This legislation makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

Most resident nesting birds are protected under the Wildlife and Countryside Act 1981, which protects birds, nests, eggs and nestlings. Some rarer species, such as barn owls are afforded extra protection.

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5 RECOMMENDATIONS

From the information obtained during the roost and visual inspection, it can be established that no bat roost is present within the former Burton Day Centre, Burton-upon-Trent. It was deemed that no further action is necessary as the building is of low potential with a combination of felt and steel roofing. If this building was of tile construction, then site supervision during the demolition would have been recommended and/or dusk/dawn bat activity surveys (May – September), but this was not deemed necessary for this project.

With regards to birds, evidence of nesting woodpigeon was apparent (one nest in the building and one nest in a Hawthorn Tree). As all bird nests are protected by law, any works will have to be delayed until outside of the birds breeding season (breeding season, March to August, inclusive).

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6 SUMMARY

6.1 Bat presence/absence

There appears to be a negligible impact on local colonies of these species as bat absence was confirmed through the daytime inspections of the building. The proposed redevelopment of the site is not likely to alter any of the nearby foraging habitats.

6.2 Roost ecology of species onsite

Based upon the evidence gathered during the survey efforts, there is no bat roost located at 'Burton Day Centre,' Burton-on-Trent.

6.3 Ecological value of building units

The ecological value of the building for bats has been deemed as 'low.' This is due to the daytime inspections of the structure confirming the absence of bat roosts within the building. With regards to birds, the building/site have been deemed as having 'high' potential due to the identification of two woodpigeon (*Columba palumbus*) nests.

6.4 Recommendations

Please see section '5 – Recommendations' for an outline of the proposed recommendations for the works at 'Burton Day Centre,' Burton-on-Trent.

Bat and Bird Daytime Scoping Survey

7 REFERENCES

- Bat Conservation Trust (2016). *Bat Surveys – Good Practice Guidelines*. 3rd Edition. Bat Conservation Trust: London.
- Berthinussen, A. & Altringham, J.D. (2012). The effect of a major road on bat diversity. *Journal of Applied Ecology* 49: p.p. 82–89.
- Biodiversity Action Reporting System (2010). *Biodiversity Action in Staffordshire*. BARS. [Online]. Available at: http://ukbap-reporting.org.uk/plans/map_county.asp [accessed on 20th October 2010].
- BSBI (2008). *BSBI 2007 List*. [Online]. Available at: <http://www.bsbi.org.uk/html/database.html> [accessed on 6TH January 2013].
- The Conservation of Habitats and Species Regulations 2010*. SI 2010/490.
- The Conservation (Natural Habitats, &c.) (Amendment) Regulations 2007*. SI 2007/1843, London: HMSO.
- Countryside and Rights of Way Act 2000* (c.37). London: HMSO.
- Dietz, C., von Helversen, O. & Nill, D. (2009) Bats of Britain, Europe and Northwest Africa. London: A. C. Black
- Hutson, A.M., Spitzenberger, F., Aulagnier, S., Coroiu, I., Karataş, A., Juste, J., Paunovic, M., Palmeirim, J. & Benda, P. (2008) *Pipistrellus pipistrellus*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.1
- RSPB (2002). The Population Status of Birds in the UK 2002-2007
- Rydell J & Racey, P A (1993). Street lamps and the feeding ecology of insectivorous bats. Recent Advances in Bat Biology, *Zool Soc Lond Symposium abstracts*.
- UK Biodiversity Action Plan (2007). *UK List of Priority Species*. Joint Nature Conservation Committee. [Online]. Available at: <http://www.ukbap.org.uk/NewPriorityList.aspx> [accessed on 20th October 2010].
- Wildlife and Countryside Act 1981 (and amendments)* (c.69). London: HMSO.

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8 APPENDICES

Appendix A: Site Plans

Appendix B: Eco Data Map

Appendix C: Bats and Artificial Light

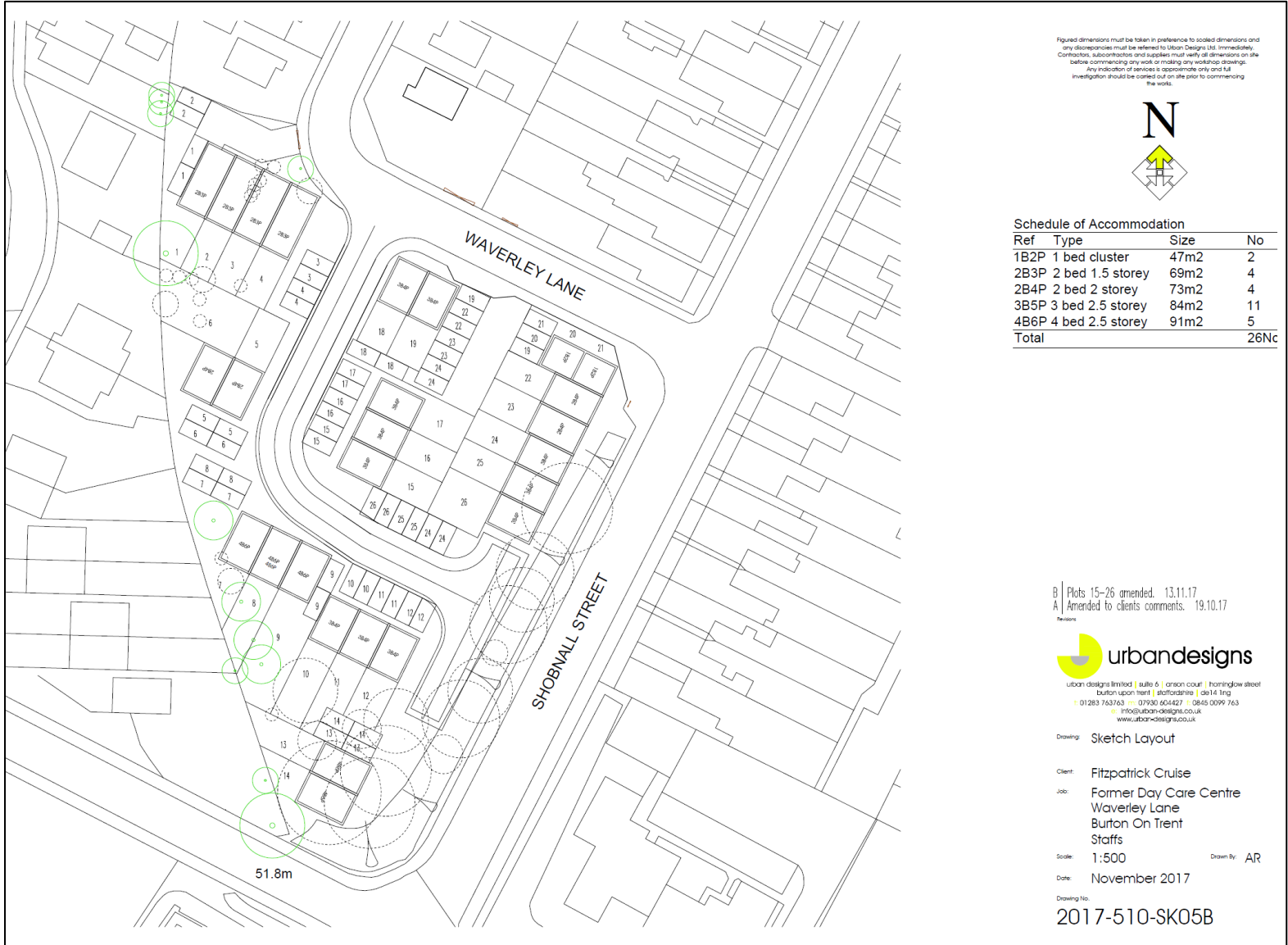
Appendix D: Additional Photographic Records

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Appendix A: Site plans for 'Burton Day Centre,' Burton-on-Trent.

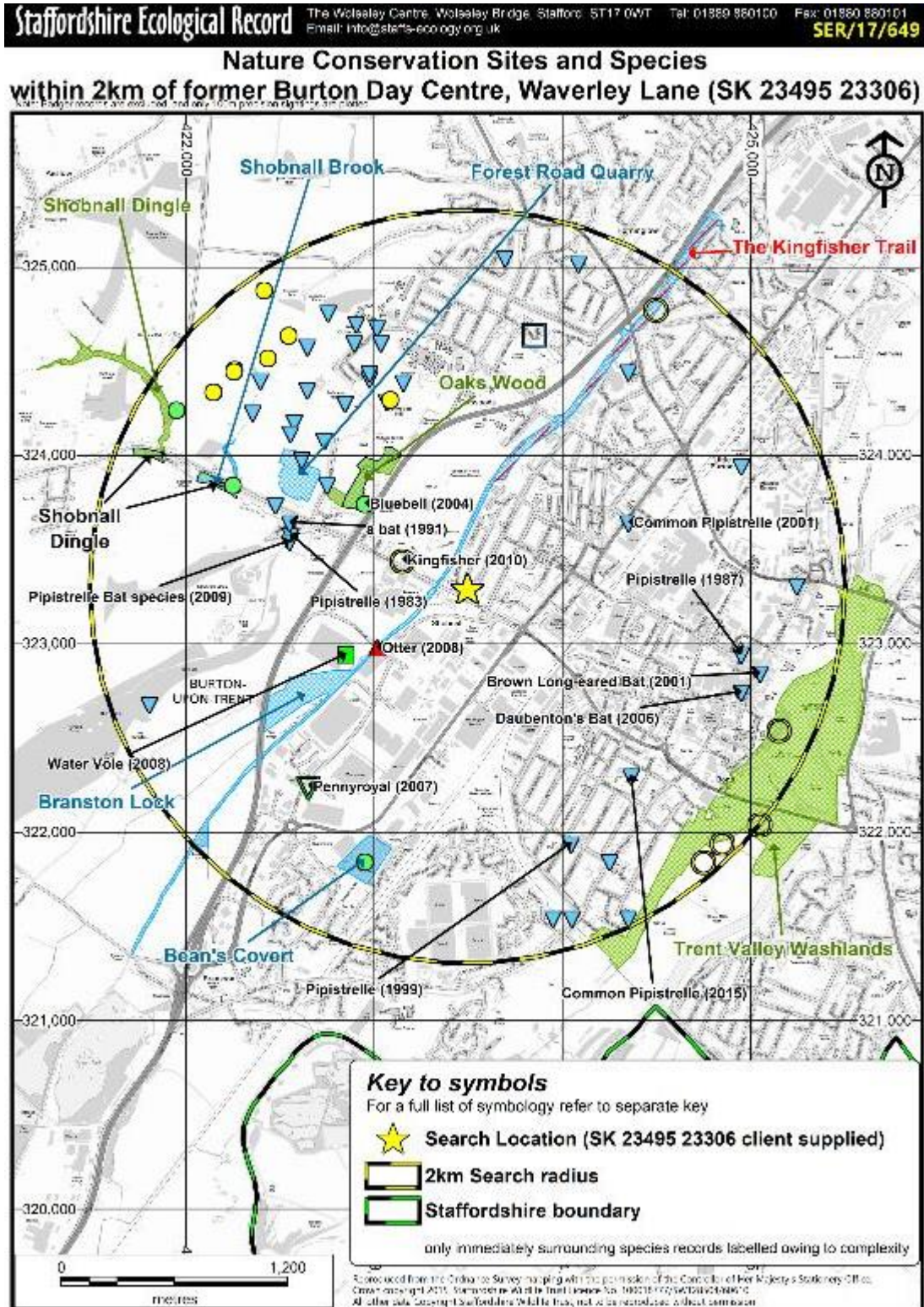
These plans are for illustration purposes only. For clearer images, please contact Mr Anthony Rice (Urban Designs – Architect) on:

Anthony.Rice@urban-designs.co.uk



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Appendix B: The eco data maps, provided by Staffordshire Ecological Record (SER).



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Appendix C: Bat and Artificial Lights

Artificial lighting is known to affect bat roosting and foraging behaviour with lighting shown to result in a range of impacts including roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux. In contrast slow-flying bats, including myotis bats (*Myotis* spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012). Current recommendations for all bat species specifies that no bat roost should be directly illuminated (BCT 2014).

Mitigation and lighting design Bat friendly lighting plans should firstly look to avoid lighting where possible and minimise lighting impacts by adopting the following measures:

- Lighting curfews or use of PIR sensors. Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of the overall time.
- Consider no lighting solutions where possible. Options such as white lining, good signage and LED cats eyes, should be considered as preferable, especially within Zones 1 and 2. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.
- Use only high-pressure sodium or warm white LED lamps where possible. High-pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).
- Minimise the spread of light. The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.
- Consider the height of lighting column. While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide uplighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce uplighting. Column height should be carefully considered to balance task and mitigation measures.
- Avoid reflective surfaces below lights. The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

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Appendix D: Additional Photographic Records

Plate 1: An image showing the western flat roof section of the building. This shows the eastern elevation of this part of the structure.



Plate 2: A photograph of the northern elevation of the structure. (Hotspot Area 1, is indicated by the red circle)



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Plate 3: An image showing the northern and eastern elevations on the structure.



Plate 4: An image of the southern elevation of the building (Hotspot Area 2, is indicated by the red circle)



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Plate 5: Another image of the southern elevation of the building to be demolished.



Plate 6: An image showing some of the whitewash (bird droppings) on the walls of the building where a woodpigeon (*Columba palumbus*) nest is located.



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Plate 7: A photograph showing the internal corrugated steel roof.



Plate 8: An image showing the deceased woodpigeon (*Columba palumbus*) chick in the building.



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Plate 9: An image showing the east elevation of the building (Hotspot Area 3, is indicated by the red circle)



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The Bat-Year

The Bat-Year



January Hibernating; using up fat reserves.



February Still hibernating; few fat reserves left.



March Some activity; occasional bat seen feeding.



April Awake and feeding at night.



May Females looking for nursery sites.

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June Young born, usually only one.



July Young still suckling.



August Young start catching insects; females leave nursery to find males.



September Mating season begins; start building fat reserves for hibernation.



October Search for suitable hibernation site.



November Hibernation begins although still some activity in warm weather.



December Hibernating.

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9 LIMITING CONDITIONS/DISCLAIMERS (Unless stated otherwise)

9.1 The Service

9.2 Evolution Ecology agrees to supply ecological consulting services of a preliminary nature or a more thorough service as advised or as commissioned.

10 Fees

10.1 The client(s) will settle the agreed fee in full, within 30 days of receiving the invoice. Reports will remain the property of Evolution Ecology until full payment has been received. No liability is accepted for the contents of a report that is not paid in full. Any queries should be notified to Evolution Ecology within 7 days of the invoice date.

10.2 If the client(s) fails to pay within the time specified in 2.1 then Evolution Ecology shall charge the client(s) interest on the outstanding fee, both before and after any judgment, at the rate of 4% per annum above the HSBC Bank base rate, until payment is made in full (A part of a month being treated as a full month for the purposes of calculating interest).

10.3 In the event that it is necessary to recover any outstanding fees from the client(s), the client(s) will fully reimburse any costs and expenses incurred during the recovery period, including court costs. Evolution Ecology reserves the right to make a charge for every letter sent and telephone/fax call made, in connection with the recovery.

11 The Report

11.1 If any part of the report is lost, or altered without the written consent of Evolution Ecology, then the entire report becomes invalid.

11.2 The general format of reports is a certified product and cannot be shown, copied or distributed to third parties without the permission of Evolution Ecology. No liability is accepted for the contents of the report, other than to that of the client(s).

11.3 The report will purport not to express any opinion or comment as to the condition or structural integrity of any building and no reliance should be made on any such comments.

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12.1 Insurance Cover

12.2 All work carried out by Evolution Ecology is covered by a £1,000,000 professional indemnity insurance.

13.1 Quality of Craftsmanship

13.2 When appointing an Ecologist, please use only suitably qualified and experienced companies (The Local Authority and the Institute of Ecology and Environmental Managers may be able to provide a select list of such companies)

13.3 Evolution Ecology will not accept liability for any works undertaken by any other companies, or contractors.