

HGC PROPERTY SERVICES LTD

15 Nile Street, Emsworth, Hampshire

- Preliminary Bat Roost Assessment

Approved By: Joe Jackson

Signed:

Position: Principal

Date: 16th January 2013

January 2013 – Planning Issue

LLD517.NileStreetEmsworth.PreliminaryBatRoostAssessmentReport.Rev00.16.01.13



Landscape Architecture



Environmental Design



Landscape Planning

Lizard Landscape Design

Lizard Landscape Design



CONTENTS

	PAGE
SUMMARY	01
1.0 INTRODUCTION	02
2.0 SCOPE OF SURVEY	03
3.0 METHODOLOGY	04
4.0 RESULTS	04
5.0 EVALUATION	10
6.0 ECOLOGICAL ENHANCEMENTS – BATS	11
8.0 REFERENCES	12

APPENDICES

Appendix No. 1 – Preliminary Roost Assessment – Site Photographs

SUMMARY

HGC Property Service Limited has commissioned Lizard Landscape Design to undertake a Preliminary Bat Roost Assessment of the land and buildings at 15 Nile Street, Emsworth, Hampshire (*Grid Reference: SU748057 – hereafter referred to as 'the site'*). A Preliminary Bat Roost Assessment was undertaken on site on the 10th January 2012 to appraise the potential for roosting bats within the site and the surrounding area. All accessible parts of the interior and exterior of the building and all suitable trees within the vicinity of the site were assessed for their potential for roosting bats.

The survey data and analysis contained within this report was undertaken and prepared by Mark Vivian (*Natural England Bat Survey Licence Holder; MSc BSc; IEEM; Ecologist; Lizard Landscape Design*). The development proposals include the demolition of the existing premises and the construction of 2 no. 3 bedroomed semi-detached residential properties. The potential for detriment is therefore potentially relatively high.

The Preliminary Bat Roost Assessment has designated the site as possessing '*negligible*' bat roost potential. The key factors that deter from the bat roost potential exhibited on site are the heavily urbanised surrounding landscape that is dominated by hard standing surfaces and the orientation of the building on a north to south aspect and alignment. These combine to offer a somewhat impoverished foraging resource for bats of a generalist lifestyle (*such as common pipistrelle bats*) and open habitats only (*such as noctule bats*). In addition the thermal regime within the building is suggested to be sub-optimal for these species of bats.

The assertions are augmented by site survey data and findings, as no direct evidence of bats such as droppings and urine stains was recorded within the fabric of the building and the conditions are not suggested to have inhibited the observation of this evidence. As such '*likely absence*' has been determined for roosting bats on site. No further bat survey work will be required as part of these development proposals as no additional constraints are predicted.

1.0 INTRODUCTION

1.1 HGC Property Service Limited has commissioned Lizard Landscape Design to undertake a Preliminary Bat Roost Assessment of the land and buildings at 15 Nile Street, Emsworth, Hampshire (*Grid Reference: SU748057 – hereafter referred to as 'the site'*).

1.2 A Preliminary Bat Roost Assessment was undertaken on site on the 10th January 2012 to appraise the potential for roosting bats within the site and the surrounding area. The survey data and analysis contained within this report was undertaken and prepared by Mark Vivian (*Natural England Bat Survey Licence Holder; MSc BSc; IEEM; Ecologist; Lizard Landscape Design*).

Site Information

1.3 The proposed development area is approximately 0.10 hectares; approximately 3.0 metres above sea-level and within private ownership. No existing public rights of way exist across the site and permission has been sought to access the site.

1.4 The site area includes an existing, currently disused, two-storey Victorian building that was previously used as a factory that manufactured rubber and plastic, furniture fittings, canvas seats, upholstery and soft furnishings. The structure has a footprint that is roughly square-shaped with gable ends on the southern and northern elevations. There are substantial west-facing and east-facing aspects of the roof and 2 no. discreet loft voids. The aspect of the loft spaces mean ambient temperatures will be somewhat diminished.

Surrounding Landscape

1.5 The site is located in a central location within the urban centre of Emsworth on a peninsula that extends south into Chichester Harbour. The immediate surroundings are heavily urbanised with minimal trees lining the surrounding streets and a relatively small amount of 'green' space comprised of gardens and public open space. The harbour area found approximately 35.00 metres to the west of the site has been developed with hard standing surfaces up to the water's edge with minimal bushes and shrubs located here.

Wider Landscape

- 1.6 The wider landscape (*up to 3.00 kilometres*) is comprised of the urban centre of Emsworth to the west; arable farmland to the north and east; and the mudflats and open water of Chichester Harbour to the south. There are 2 no. saline lagoons found within 400.00 metres of the site directly to the east and west respectively. The mudflats of Chichester Harbour are recognised with statutory designations that include Special Site of Scientific Interest (SSSI); Special Area of Conservation (SAC); Special Protection Area (SPA); RAMSAR site and Area of Outstanding Natural Beauty (AONB). The peninsula on which the site is found is also included within the area designated as an AONB. There are no sizeable patches of woodland located within 3.00 kilometres of the site area.

Development Proposals

- 1.7 The development proposals include the demolition of the existing premises and the construction of 2 no. 3 bedroomed semi-detached residential properties. The potential for detriment is therefore potentially relatively high.

2.0 SCOPE OF THE SURVEY

- 2.1 This report establishes the likelihood of bats roosting within the development footprint and suggests where constraints may occur.
- 2.2 The aim of the Preliminary Bat Roost Assessment survey was;
- *to identify the potential for roosting Bats;*
 - *to identify areas where future detailed survey effort could be required and should be focused;*
 - *to establish whether other habitat features for different Bat species groups exist to warrant further investigation.*

3.0 METHODOLOGY

- 3.1 A Preliminary Bat Roost Assessment was conducted on the 10th January 2013 by an experienced bat worker (*Mr Mark Vivian; Natural England Survey Licence Holder and Licensed Bat Handler; BSc MSc; IEEM; Ecologist - Lizard Landscape Design*). All accessible parts of the interior and exterior of the building and all suitable trees within the vicinity of the site area were assessed for their potential for roosting bats. A ladder, torch, endoscope and camera were used to accurately document the features referred to in this report.
- 3.2 Each level of the property was systematically searched for direct indicators of bats such as bat droppings, urine stains, and dead bats in addition to assessing the potential points of ingress / egress for bats into the building, in relation to the preferential roost positions of the bat species thought most likely to utilise the site.
- 3.3 Crevice-dwelling bats may use gaps between roof tiles in addition to the space between the roof tiles and roof lining. Wall cavities and accessible loft spaces may also be exploited by certain species of bat. Bats may use any crack or hole (*such as Woodpecker holes*), splits or flaking bark and ivy growing over tree trunks (*JNCC, 1999*). Bats will also use different roosts at different times of the year. The results are summarised and recommendations for further investigation are made in the following sections.

4.0 RESULTS

4.1 Background information

Local Biodiversity Action Plans – Bats

- 4.1.1 Species Action Plans (SAPs) that may be relevant within Hampshire include those for bats such as pipistrelle (*Pipistrellus sp.*); serotine (*Eptesicus serotinus*); barbastelle (*Barbastella barbastellus*); bechstein's (*Myotis bechsteinii*) and greater horseshoe bats (*Rhinolophus ferrumequinum*) (*Hants 2012*).

- 4.1.2 Based on the results of the field visit these Biodiversity Action Plans should be used as a primary reference when assessing Favourable Conservation Status. For information a brief summary of these bat species in the local context has been provided.
- 4.1.3 There are 150 known pipistrelle bat roosts within Hampshire with strongholds appearing to be the Avon Valley, Test Valley, and the New Forest. Pipistrelle's principle roosting sites are buildings with trees used to a lesser extent. Pipistrelles are the most common bats in Britain with 3 no. separate species known to breed here; common pipistrelle (*P. pipistrellus*); soprano pipistrelle (*P. pygmaeus*); and nathusius' pipistrelle bats (*Pipistrelle P. nathusii*).
- 4.1.4 Estimates from 1978 to 1993 suggest a population decline of 70% for common pipistrelle and soprano pipistrelle with a current amalgamated population estimate for the 2 no. species being 2,000,000. Pipistrelles are highly social and nomadic animals requiring a large number of suitable roosts to maintain each colony. These factors in combination with the site location and the landscape characteristics highlight the potential for conflict with pipistrelle bats on site.
- 4.1.5 Little is known about serotine bat population dynamics within Hampshire because the records that exist for this species are not sufficiently detailed or systematic enough to draw significant conclusions. Only 5 no. active maternity colonies were found during surveys of 2002 / 2003 from 76 old records. Serotine bats use maternity sites faithfully however will usually have numerous sites. They are a crevice-dwelling bat forming colonies of around 20 - 30 no. individuals in features such as cavity walls. Serotine bats are widespread but not common in southern England. The relatively impoverished local foraging resource negates much of the potential for serotine bats to roost on site; found mostly in undisturbed buildings, within areas such as lofts and cavity walls.

- 4.1.6 There is only one known barbastelle bat maternity roost recorded in Hampshire located near Mottisfort on the River Test; most records come from the New Forest. Barbastelle are primarily woodland species and are considered rare in the UK. This species primarily roosts in hollow and storm damaged trees although will also use old buildings. Little is known about the foraging habits of barbastelle bats however studies in Sussex show that they will forage up to 20.0 kilometres away navigating along hedgerows and water courses. The relative lack of woodland within the locality suggests this species is unlikely to be a constraint to the proposed residential development.
- 4.1.7 In Hampshire there are only 12 no. records for bechstein's bat with the first record dating from 1837 and the most recent dating from 1996 (*maternity colony*). As with the barbastelle the majority of the records come from the New Forest Natural Area. Bechstein's bats are usually associated with mature trees in and around broad-leaved woodland. This species is considered to be very rare in Britain (*and across its range*) with populations centres, amongst other places, in Hampshire and Surrey (*Hants 2012*). It is suggested that the population hub of Hampshire is in the New Forest and therefore this species is not expected to cause issue within the following analysis.
- 4.1.8 The greater horseshoe bat has a known roost site located in Ringwood however the geographical limitations of this species render the likelihood of this species conflicting with the site as being '*negligible*'.

UK Biodiversity Action Plan – Species

- 4.1.9 Species that have been highlighted as UK Priority Biodiversity Action Plan (*UKBAP*) species, but not specifically within Hampshire, that are relevant to the site include brown long-eared (*Plecotus auritus*) and noctule bats (*Nyctalus noctula*).
- 4.1.10 Brown long-eared bats are the third most common species of bat in Britain. This species prefers roost sites with open space such as large lofts and churches in which to fly before exiting to feed. This species would feed in and around deciduous woodland and therefore the likelihood of this bat species roosting on the site is somewhat diminished.

- 4.1.11 The noctule bat is a large, widespread bat that would forage in open areas and predominantly (*although not exclusively*) roost in trees. Woodpecker holes with a clear flight path are a preferential bat roost location. The surrounding landscape and the site context suggest that this bat species may forage around the mudflats of Chichester Harbour however it is believed that the likelihood of them roosting on the site is '*negligible*'.

Local Biodiversity Action Plan - Habitats

- 4.1.12 There are no LBAP habitats on site that would be removed or detrimentally impinged upon in the long-term as part of the development proposals.

4.2 Field Survey – Preliminary Bat Roost Assessment

Preliminary Bat Roost Assessment - Overview

- 4.2.1 No direct evidence of bats was found during the Preliminary Bat Roost Assessment site survey. Areas that would typically retain evidence of bats such as within the roof space above the existing offices on the first floor were noticeably clean (*Refer to Photographs No. 12, 13, and 14 – Appendix No. 1*). Likely absence of roosting bats has been designated to the site.
- 4.2.2 The potential for roosting bats on site has been designated as being '*negligible*'. This is primarily because the surrounding habitat is suggested to provide a poor bat foraging resource for all species of British bat. In this context therefore the potential places in which a bat could roost assume reduced prominence. Other factors such as the orientation of the building will also reduce the likelihood of bat roosts being found on site as ambient temperatures in favoured roosting spaces will be reduced.

Ground Floor

(Refer to Photograph No.s 01, 02, 03, 04, and 05 - Appendix No. 1)

- 4.2.3 The main chamber of the ground floor which is found to the eastern sector of the building has 3 no. windows that allow a relatively high amount of light to penetrate which shall deter bats. There are no visible bat access points that could be exploited by bats and minimal crevices / cavities within the space that would be viable as a bat roost.

- 4.2.4 The main chamber of the ground floor was previously used as a workshop / factory and is open-plan being supported by 4 no. structural pillars. There are numerous power points spaced evenly for manufacturing purposes. There are also industrial-sized fans that are suggestive of the past industry. It is suggested that the past use will have create a relatively large amount of noise that will have further reduced the likelihood of bats roosting historically within the fabric of the building.
- 4.2.5 There is a small chamber to the east that is suggested to have been a cloakroom because of the presence of coat pegs and changing facilities. There are two further areas on the ground floor; a toilet and space underneath the stairs to the first floor. Collectively these areas comprise 'nil' bat roost potential as there are no suitable cavities / crevices and no suitable bat access points found internally.

First Floor

(Refer to Photographs No.s 06, 07, 08, 09, 10, 11, 12, 13 and 14 - Appendix No. 1)

- 4.2.6 The kitchen / dining room, utility room, and offices that comprise the first floor also collectively comprise 'nil' bat roost potential. The dining room and kitchen are relatively dark small rooms; however no suitable bat roosting space was located within, in addition to any potential for bats to access the building. The utility rooms and office spaces are very light and open that will further reduce the potential for roosting bats.
- 4.2.7 Suitable bat access may be available to the office space that comprises the majority of the first floor supplied from the loft space above. It is in fact believed that bats do not access this area as no bat droppings or urine stains were recorded on top of the office compartments within the roof space above *(Refer to Photographs No. 12, 13, and 14; Appendix No. 1 – Site Photographs)*.

Loft Space (Refer to Photograph No. 15 - Appendix No. 1)

- 4.2.8 There is no roofing membrane in situ and the slate tiles lie directly above the rafters. This will reduce the potential for crevice dwelling bats such as common pipistrelle bats as the space between the roof tile and membrane is a favoured roost site for this species. Pipistrelle bats are furthermore the most common bat in urban scenarios.
- 4.2.9 There are areas that could not be viewed directly between the diagonal walls of the first floor and the eaves on the exterior. These areas are however suggested to be sub-optimal for roosting bats as they will not trap heat being open to the main loft void and oriented on a north to south axis.
- 4.2.10 In a habitat that was more amenable for bat foraging this loft space may have warranted a higher designation however it is believed that what is currently offered is '*negligible*' in terms of bat roost potential.

Building Exterior

- 4.2.11 There are various points on the eastern and western elevations that may offer suitable bat access points into the main building. In light of what is on offer inside, and what has been recorded internally during the site survey, it is believed that these also offer '*negligible*' bat roost potential.

Other consideration

- 4.2.12 The building is oriented on a north-south axis meaning there are west-facing and east-facing aspects to the roof. The most amenable set-up for roosting bats is the reverse of this situation where there is a large south-facing aspect to the roof that will receive the maximum amounts of latent heat from the sun is considered to be optimal.
- 4.2.13 Furthermore the surrounding habitat is suggested to provide an inferior bat foraging resource. The combination of all the factors discussed here means that it is not believed that bats will find suitable shelter on site or foraging resources within the locality. The motivation for bats to use the site as a bat roost therefore is much diminished.

5.0 EVALUATION

- 5.1 The Preliminary Bat Roost Assessment has designated the site as possessing '*negligible*' bat roost potential. The surrounding landscape is dominated by hard standing surfaces with few features such as mature trees to provide value in terms of foraging potential for bats. There are saline lagoons either side of the peninsula on which the site is located, however hard standing habitat has been developed up to the water's edge and little structural diversity is exhibited in the 'green' space that remains. This habitat uniformity and predominance of urban / developed land will drastically affect the invertebrate prey resource within the locality of the site. In turn, this is suggested to detrimentally affect the abundance of bats automatically reducing the likelihood of bats roosting on the site.
- 5.2 Furthermore, the landscape is urban in character and relatively open with no woodland. Of the 17 no. bat species known to breed in the UK this factor will reduce the number of species of concern to around four being common pipistrelle, soprano pipistrelle, noctule and serotine bats. All bat species are dependent upon insect prey availability for survival and the lack of foraging habitat discussed in the previous paragraph are suggested to manifest for these species.
- 5.3 The orientation of the building also reduces the bat roost potential in effect. The loft spaces are oriented on a north to south aspect and alignment resulting in a large east-facing and a large west-facing aspect. The ideal scenario is a large south-facing aspect as this will receive the largest amount of latent heat from the sun. Bats have diverse thermal requirements however warmth is an almost ubiquitous requirement. The current set-up will not maximise the range of thermal microclimates available to bats which further reduces the likelihood of bats roosting on the site.
- 5.4 The bat roost potential of the ground floor and first floor has been designated as being '*nil*' and does not need to be analysed further. The bat roost potential of the loft space however will be analysed briefly below for clarity.

- 5.5 There is no roofing membrane underneath the slate roofing tiles that will reduce the amount of suitable space for crevice-dwelling bats. Certain species such as brown long-eared and natterer's bat will not be discouraged by this as they are also known to be void-dwelling species. The habitat around the site will however discourage them from utilising the site for roosting purposes. There is also a large gap in the base of the loft that is directly above the ceiling of the offices on the first floor. The presence of bats within the void would have been revealed by droppings and urine stains on top of this ceiling, which were absent during the site survey.
- 5.6 The lack of direct evidence of bats found during the survey and the somewhat amenable conditions for their preservation on site (*where the roof void above the office areas would not have been recently cleared*) augments the assertions made previously regarding '*negligible*' bat roost potential. As such '*likely absence*' has been determined for roosting bats on site. No further bat survey work will be required as part of these development proposals as no additional constraints are predicted.

6.0 ECOLOGICAL ENHANCEMENTS

Bats

- 6.1 British Bats are nocturnal and insectivorous therefore any habitat enhancement should consider the potential to increase the populations of night-flying insects within the area.
- 6.2 This would involve increasing the amount of native, fragrant, night-blooming plants within landscape areas. It is also best to vary the structure of the flowers present. Flowers with long, narrow petal tubes such as evening primrose would attract moths. Flowers with short florets such as those of the daisy and carrot families would attract many species of flies, a staple of British bats. Pale flowers are most easily seen in low light conditions and therefore attract Insects at dusk.

6.3 Good examples to include are:

- *Corncockle (Agrostemma githago);*
- *Cornflower (Centaurea cyanus);*
- *Corn Marigold (Glebionis segetum);*
- *Corn Poppy (Papaver rhoeas);*
- *Knapweeds (Centaurea spp.);*
- *Mallow (Malvus sylvestris);*
- *Ox-eye Daisy (Leucanthemum vulgare);*
- *Evening Primrose (Oenothera biennis);*
- *Red Campion (Silene dioica);*
- *White Campion (Silene latifolia);*
- *Scabious (Scabiosa spp.);*
- *St John's Wort (Hypericum perforatum).*

6.4 Bat boxes for crevice dwelling bats such as common pipistrelle bat could be installed under the eaves of the proposed new residential dwellings to enhance the potential for roosting bats within the site area.

7.0 REFERENCES

Mitchell-Jones and McLeish (2004) Bat Workers Manual – 3rd Edition.
JNCC;

BCT 2012 – Bat Survey Guidelines 2012;

www.magic.gov.uk.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 1 - Ground floor - Photograph taken from the main access door looking northward. The room is relatively light, with no access points for bats, minimal suitable crevices / cavities for bats, and 'Nil' Bat Roost Potential.



Photograph No. 2 - Ground floor - Photograph taken from the northern wall looking eastward. the room is relatively light, with no access points for bats, minimal suitable crevices / cavities for bats, and 'Nil' Bat Roost Potential.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 3 - Room found to the western edge of the ground floor. Dark but with no bat access and no suitable crevices / cavities, and 'Nil' Bat Roost Potential.



Photograph No. 4 - Secondary access point to Nile Street. The area is dark but in keeping with the rest of the ground floor has no viable roost space for bats and no access, and 'Nil' bat Roost Potential.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 5 - Toilet on the ground floor, which is too light for bats, with 'Nil' Bat Roost Potential.



Photograph No. 6 - Kitchen / dining area on the first floor, with no bat access and no viable bat roost space, and 'Nil' Bat Roost Potential.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 7 - Utility room on the first floor, which is too light and not viable roosting space for bats, with 'Nil' Bat Roost Potential.



Photograph No. 8 - Office spaces on the first floor, with 'Nil' Bat Roost Potential.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 9 - Office spaces on the first floor, with 'Nil' Bat Roost Potential.



Photograph No. 10 - Office spaces on the first floor, with 'Nil' Bat Roost Potential.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 11 - Office spaces on the first floor, with 'Nil' Bat Roost Potential.



Photograph No. 12 - Roof space above the offices on the first floor. This area is conspicuously clean and free of any evidence of bat occupation. There is good access to the main loft void and is unlikely to have been cleaned.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 13 - Southern area of roof space above offices on first floor. The area is clean and free of any evidence of bat occupation. There is good access to the main loft void and is unlikely to have been cleaned.



Photograph No. 14 - Northern area of roof space to offices on the first floor. This area is clean and free of any evidence of bat occupation. There is good access to the main loft void and is unlikely to have been cleaned.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 15 - Missing panels exposing roof void. It can be seen that there is no roof membrane that will reduce the potential for viable bat roost space within the loft void, and equates to 'Negligible' Bat Roost Potential.



Photograph No. 16 - Potential bat access point around the roof eaves on the eastern elevation. In the local context equates to 'Negligible' Bat Roost Potential.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 17 - Habitat found c. 35.00 metres west of the site. Hard standing habitat up to the edge of the water. Remaining habitat fairly uniform. Poor quality bat foraging habitat.



Photograph No. 18 - Habitat found c. 35.00 metres west of the site. Hard standing habitat up to the edge of the water. Remaining habitat fairly uniform. Poor quality bat foraging habitat.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 19 - Western elevation of the existing building. Tiles are tight-fitting slate with minimal potential access points exist under the eaves. In the local context this equates to 'Negligible' Bat Roost Potential.



Photograph No. 20 - Minimal potential bat access points under the eaves on the western elevation.

APPENDIX NO. 1 - SITE PHOTOGRAPHS



Photograph No. 21 - Minimal potential bat access points under the eaves on the western elevation.



Photograph No. 22 - Tight-fitting slate tiles over all visible areas of the roof, with minimal bats access points, and 'Negligible' Bat Roost Potential.