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No. 44 Scar Lane, Huddersfield

Bat Assessment

July 2017

Control sheet

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Client: **London Property Investments Ltd**

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1. Introduction

1.1 Rhodes Ecology Ltd were commissioned by London Property Investments Ltd to undertake a bat assessment of No. 44 Scar Lane, Huddersfield.

1.2 The site is situated at NGR SE 11272 15996.

1.3 The assessment was undertaken by Kerry Rhodes BSc (Hons) MCIEEM an ecologist with over sixteen years experience of ecological assessment and the holder of a Natural England Class Licence for bats since 2007. As a full member of the Chartered Institute of Ecology and Environmental Management, Kerry Rhodes undertakes all work under their professional code of conduct and in accordance with published guidance. Such guidance in relation to bat surveys includes Bat Surveys for Professional Ecologists – Good Practice Guidelines, Bat Conservation Trust, 3rd Edition (2016), the Bat Mitigation Guidelines, English Nature (2004) and the Minimum Requirements for Bat Surveys in West Yorkshire (WYE, 2013).

1.4 The proposals include the renovation of the existing property and relevant proposed works will include roofing works and replacement of window and door frames in addition to internal renovation.

1.5 The objectives of the assessment include the following:

- To determine the potential for the building to provide suitable bat habitat;
- To investigate the potential presence of roosting bats within the building;
- If potential bat habitat is identified, to suggest a suitable level of additional activity surveys.
- To identify and assess any impacts that could result from the proposed development on bat habitat;
- To suggest mitigation measures to reduce the potential impacts of the proposed development on any bat species identified.

2. Background Information

Bat Ecology

2.1 A total of seventeen bat species are known to have resident breeding populations in Britain. Bats have been confirmed to roost in a variety of structures including caves, mines, trees, buildings and other built structures. Woodland, pasture, standing water and slow flowing rivers or canals all provide suitable habitat for foraging bats as these habitats can support an abundance of insect life. Generally the main period of foraging activity for most species of bat is during the first two to three hours after sunset and similarly a period of time three hours prior to dawn, when insect activity is at its most intense.

2.2 Bat activity over the course of a year reflects the seasonal climate and the availability of food and tends to adhere to the following yearly pattern (English Nature [now Natural England], 2004).

- **January - March** – Hibernation period; insect prey is scarce and bats will hibernate alone or in small groups, there may be limited activity in periods of mild weather.
- **April - May** - insects become more plentiful as the temperature becomes warmer and bats become active. They may become torpid (cool and inactive) in cooler weather. Females will start to form groups and will roost in several sites.
- **June - July** - females gather in maternity roosts and give birth to young, which are suckled for several weeks (young are independent by July-August). Males roost alone nearby.
- **August - September** – mothers leave the roost before the young. Swarming activity occurs as bats mate and build up fat for the winter.
- **October - December** – Bats search for potential hibernation sites. They become torpid for longer periods and then commence hibernation, subject to temperature reduction and periods of frost.

2.3 Bats seldom stay in the same roost throughout the year. They have different roost requirements at different times of the year. For instance, in summer the females require warm roosts when they are producing young and in winter they require cool roosts in order to conserve their energy. Summer roosts may be occupied between April and October, with peak activity from May to September. The remaining part of the year is a hibernation period. These timings can differ slightly depending on the bat species.

2.4 There are several different types of roost sites used by bats throughout the year; these are described below (BCT, 2007).

- **Spring gathering roost** used by breeding females before moving to a maternity roost;
- **Maternity or nursery roost** where females give birth and raise their offspring;
- **Daytime summer roost** used by breeding and/or non-breeding males;
- **Mating roost** (spring or autumn) occupied by males seeking to attract females for breeding;
- **Night roosts** used by bats for short periods between phases of foraging activity, but rarely or not used during the day;

- **Feeding roost or perch** where bats temporarily hang up to devour an item of prey once it has been caught;
- **Transitional roost** used for short periods in the spring and autumn;
- **Hibernation sites –** where bats remain during the winter months.

2.5 The biggest threats to bats include direct loss of roost structures (such as woodland removal and building conversions), degradation of suitable foraging habitat as a result of modern forestry and farming practices, use of toxic agrochemicals and remedial timber treatment chemicals and disturbance to bat roosts themselves.

2.6 Bats have been in decline both nationally and internationally during the latter part of the 20th century. It is thought that their physical attributes, reproductive strategies and lifestyles render them particularly vulnerable to environmental change (Cowan, 2003). Bats require a variety of specific habitats in order to meet the basic needs of feeding, breeding and hibernating and are therefore extremely vulnerable to change such as the loss of flightlines through the removal of hedgerows as some species will not cross open areas. However, there is a lack of information on their population dynamics and the relative impact of the factors causing their decline nationally (Cowan, 2003).

Legislation

2.7 All European bat species and their roosts are listed in Annex IV of the EC Directive 92/94/EEC 'The Conservation of Natural Habitats and of Wild Fauna and Flora' as being in need of "strict protection". This is implemented in Britain under the Conservation (Natural Habitats &c.) Regulations (as amended by the Conservation (Natural Habitats &c.) (Amendment) (England and Wales) Regulations 2010. In summary, in the UK, it is an offence to:

- Deliberately capture, injure or kill a bat;
- Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young, hibernate or migrate or significantly affect the local distribution or abundance of the species;
- Damage or destroy a roost (this is an absolute offence);
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.

2.8 British bat species and their roosts are included under Schedule 5 of the Wildlife & Countryside Act, 1981 (as amended) and the whole of Section 9 applies to bat species. In summary, the relevant sections of this legislation make it an offence to:

- Intentionally or recklessly disturb a bat at a roost;
- Intentionally or recklessly obstruct access to a roost.

2.9 Seven of the UK's seventeen breeding species of bat have been identified by the UK Government as needing special conservation help because of their rarity or because their numbers have declined severely in this century (BCT, 2009b).

2.10 In 2007, a new UK Priority List for species of the UK Biodiversity Action Plan (UK BAP) was created and new additions to this list for bats are noctule (*Nyctalus noctula*), brown long eared (*Plecotus auritus*) and soprano pipistrelle. Due to their recent inclusion on the UK Priority List, Species Action Plans for these species have not yet been prepared. Species Action Plans (SAPs) have been, or will be, prepared for the following seven species:

- Greater horseshoe (*Rhinolophus ferrumequinum*)
- Lesser horseshoe (*Rhinolophus hipposideros*).
- Bechstein (*Myotis bechsteini*)
- Barbastelle (*Barbastella barbastellus*).
- Soprano pipistrelle
- Brown long eared
- Noctule

2.11 Of the seven species of bat identified in the UK BAP as needing special conservation assistance, three species; the soprano pipistrelle, brown long eared and noctule, are known to be present in the area and are likely to be recorded within the Survey Area.

2.12 Other bats recorded in the area include whiskered bat (*Myotis mystacinus*), Brandt's bat (*Myotis brandtii*), common pipistrelle, Natterer's bat (*Myotis nattereri*) and Leisler's bat (*Nyctalus leisleri*).

2.13 Licences are issued by Natural England for any actions that may compromise the protection of a European protected species, including bats, under the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended). This includes all developments and engineering schemes, regardless of whether or not they require planning permission.

3. Methodology

Data Search

3.1 The West Yorkshire Bat Group were contacted to provide bat records within a 2km radius of the property.

Habitat Assessment

3.2 The habitat assessment was carried out by Kerry Rhodes BSc (Hons) MCIEEM, a licensed bat ecologist (Natural England Class Licence Level 2). The weather during the first assessment was warm, (21°C), light wind and dry with 100% cloud cover. The weather during the second assessment was 18°C, dry, light wind with 80% cloud cover.

3.3 The property was subjected to a thorough external and internal assessment. This consisted of a methodical search of the interior and exterior space using ladders, a torch, binoculars and an endoscope where necessary. A bat detector was used to pick up the social calls which bats may emit when roosting during the day although as the survey was undertaken outside the summer activity season, it is unlikely that any bat calls would have been noted. Signs or indications that bats are likely to be present include:

- Droppings on or near potential roost sites.
- Scratch and grease marks, which are often left by bats entering and emerging from roosts.
- Obvious cracks and crevices that can be used by bats for shelter.
- The distinctive smell of bat urine which would indicate the presence of a roost.
- The presence of dense spider webs at a potential roost entrance can often indicate the absence of bats.

Activity Survey

3.4 One dusk emergence survey was undertaken by Paul Redmond and Iain Rouse on the 22nd June 2017. One surveyor assessed the northern elevation of the property and the second the southern elevation.

3.5 The survey began half an hour before sunset and continued until two hours after sunset. The survey was timed to ensure detection of both early and late emerging/returning bat species.

3.6 In order to ensure that bats were active during the assessment; the survey was undertaken in suitable weather conditions with the temperature above 10°C with no heavy rain or high winds.

3.7 All bat activity observed was recorded on standard survey forms. Information recorded included species, numbers of individuals identified, their location and direction of travel and type of activity including foraging, commuting, emerging from/entering a roost or social activities.

3.8 Identification of bats was aided by the use of Duet frequency division bat detectors. Some species may be easily identifiable in the field by audible characteristics, but for confirmation and identification of bat species, recordings were made throughout the survey on an Edirol recorder. Recordings were analysed using sound analysis software (BatSound) in order to identify individual bat calls to species level.

4. Results

Data Search

4.1 The data search results are provided within Appendix A. The search revealed seventeen records of bats within a 2km radius of the site which included roosts, maternity roosts, possible roosts, excluded roosts, injured and grounded bats and bats in flight of at least two species of bat including the common pipistrelle and Natterer's, bat. It should be noted that the species diversity is likely to be greater than suggested due to a number of unspecified species records.

4.2 No records of a known bat roost within 44 Scar Lane or in close proximity to the property were received therefore the proposals are unlikely to impact on a known bat roost.

Site Description

4.3 The property is located in an urban area on the western outskirts of Huddersfield. The surrounding habitat comprises predominantly urban housing with associated street lighting some industrial buildings which may provide roosting opportunities for certain light tolerant species of bat. Additional habitat in the area includes an area of broadleaf woodland which skirts the railway line and the River Colne which lies to the south of the property. This habitat may provide further roosting habitat in addition to foraging and commuting habitat and suitable flightlines to a greater diversity of habitat as the landscape becomes more rural further west of Huddersfield.

External Assessment

4.4 The property in question is a traditional mid terraced house with a pitched roof tiled with slate (Appendix B, Plate 1). The roof appears to be in good condition with no slipped or raised tiles which may provide access into the interior of the roof space. The mortar beneath and between the ridge tiles is intact therefore no further potential external crevice roosting habitat or access into the interior of the roof space is available via the ridge (Plate 2). Access may, however, be gained into the interior of the roof space via a gap beneath the fascia board on the southern elevation of the property which does not lay flush with the wall beneath (Plate 3). However, cobwebs are entirely covering the gap and no evidence of bat activity in the form of droppings or staining was noted on the wall or the floor beneath.

4.5 The walls are built of stone and are intact with no cracks and no mortar degradation (Plate 4). All window and door frames are intact and there is no mortar degradation at the junction between the lintels and walls which often provides external crevice roosting habitat.

4.6 The rear of the property features a detached outhouse with a mono pitch roof (Plate 5). The external walls and the interior of the building (Plate 6) provide no habitat suitable for roosting bats and no evidence of bat activity was noted associated with this building.

4.7 No evidence of breeding birds was noted on the exterior of the building or on or within the detached outhouse.

Internal Assessment

4.8 The property has been uninhabited and unheated for a significant period of time. The roof is partially converted with a dormer window facing the northern elevation of the property.

4.9 The remaining roof void was accessible via a hatch which revealed that the underside of the roof is lined with bitumen and the floor of the loft is insulated (Plate 7 and Plate 8). The crevice between the main beam and the apex of the roof was entirely filled with cobwebs which may show that there had been no recent bat activity in this feature of the roof. There were also no gaps within the beams which may have provided suitable crevice roosting habitat and no evidence of staining or droppings on the insulation beneath.

4.10 No evidence of bat activity in the form of droppings or staining from urine was noted within the interior of the property.

4.11 No evidence of nesting or breeding birds was identified within the interior of the property.

Activity Surveys

4.12 As the property provided suitable roosting habitat beneath the fascia boards and access into the interior of the roof void, one activity survey was undertaken to assess the use of the property by bats. It was considered that this level of survey effort was sufficient and proportionate to the level of habitat potential that the property provided.

4.13 Refer to Table 1 for survey times and Table 2 for survey conditions.

Table 1 Survey Times

Date	Sunset/Sunrise Time	Survey Start Time	Survey End Time
22nd June 2017	21:41	21:10	23:10

Table 2 Survey Conditions

Date	Temp at Start	Temp at End	Precipitation	Wind Speed	Cloud Cover
22nd June 2017	16°C	15°C	None	F2	25%

4.14 Please refer to Table 3 for a summary of results of the emergence surveys.

Table 3 Summary of Results of Emergence Surveys

Surveyor Location	Comments
Northern Elevation Paul Redmond	Significant amount of insect activity. 22:16 – Heard not seen (faint)
Southern Elevation Iain Rouse	Significant amount of insect activity. 21:55 - Common pipistrelle - Heard not seen 21:59 - Common pipistrelle - Flew over the house and across the road 22:02 - Common pipistrelle - Flew over the house and across the road 22:16 - Common pipistrelle - Flew over the house and across the road 22:25 - Common pipistrelle - Foraged over the house and garden 22:35 - Noctule – Heard not seen 22:45 - Common pipistrelle – Heard not seen

Surveyor Location	Comments
	22:58 - Common pipistrelle – Heard not seen

4.15 No bats were seen to emerge from or exhibit roosting behaviour associated with 44 Scar Lane.

5. Conclusion

5.1 The surveys revealed that the roof and the underside of the fascia boards may provide suitable roosting habitat in terms of the availability of crevices, although no evidence of bat activity was noted either in terms of droppings in the interior or on exterior of the property. No bats were seen to emerge from roost sites within the building or outhouse during the activity survey. Therefore, it is considered unlikely that the property supports a bat roost.

5.2 Despite the limited likelihood of the discovery of a bat roost within this property during the proposed works, Table 4 outlines a series of recommendations to further reduce the risk, in addition to advice should bats be encountered during the works.

Table 4 Recommendations relating to conversion works

Action	Method
1. Protection of bat habitat	All development should be undertaken with an awareness of the legislation which protects bats and their places of shelter. All European bat species and their roosts are listed in Annex IV of the EC Directive 92/94/EEC 'The Conservation of Natural Habitats and of Wild Fauna and Flora' as being in need of "strict protection". This is implemented in Britain under the Conservation (Natural Habitats &c.) Regulations (as amended by the Conservation (Natural Habitats &c.) (Amendment) (England and Wales) Regulations 2010. In summary, in the UK, it is an offence to: • Deliberately capture, injure or kill a bat; • Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young, hibernate or migrate or significantly affect the local distribution or abundance of the species; • Damage or destroy a roost (this is an absolute offence); • Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat. British bat species and their roosts are included under Schedule 5 of the Wildlife & Countryside Act, 1981 (as amended). In summary, the relevant sections of this legislation make it an offence to: • Intentionally or recklessly disturb a bat at a roost; • Intentionally or recklessly obstruct access to a roost.
2. Timing of the works	It is not considered necessary to impose timing restrictions on the proposals due to the negligible likelihood of encountering bats. However, in the unlikely event that bats are found to be present,

Action	Method
	refer to 'Unexpected Discovery of Bats' below for further advice.
3. Careful removal of roofing materials	All roofing materials should be removed carefully by hand under caution that bats may be roosting in crevices beneath the tiles. In the unlikely event that bats are found to be present, refer to 'Unexpected Discovery of Bats' below for further advice.
4. Unexpected discovery of bats	In the event that a bat or bats are discovered during the course of the works, all work in the vicinity should stop and **the ecologist should be contacted for advice on how to proceed.** Under no circumstances should a bat be handled by site personnel. All site personnel should be made aware that a bat in torpor may appear cold and lifeless. In the event of a chance discovery of a bat, the ecologist will remove it with gloved hands and either place it in the temporary bat box or take it into care in the event of an injury. The ecologist will then provide advice on how to proceed with the works. NB. In very cool weather or after cold nights, resting bats may be in a torpid state and therefore unable to move / or escape quickly. Contractors should be made aware that bats in torpor can often appear cold and lifeless.
5. Evidence of bats	The evidence of bats which is most likely to be discovered during the course of any building works is that of droppings. The droppings are small, approximately 5 – 10mm long (refer to Plate 1 below) and crumble into a fine powder when crushed unlike mouse droppings which cannot be crumbled. Plate 1 Bat droppings  If bats are discovered during the course of the works, it is likely that they will appear to be huddled behind or within a crevice rather than hanging from the rafters as many people believe. The most likely species to be identified is the Pipistrelle spp. bat as pictured in Plate 2 below. They are tiny bats which are no bigger than an adult's thumb and may appears cold and lifeless if they are in torpor and may take up to half an hour to wake if disturbed.

Action	Method
	Plate 2 Pipistrelle bats 
6. Protection of breeding birds	All wild birds, their nests and eggs are protected by the Wildlife and Countryside Act, 1981 (as amended) against damage or disturbance. All development should be undertaken with an awareness of the legislation which protects birds during the breeding season, which for most species is from March to August inclusive.
7. Site contractors	All site contractors must be made aware of the potential risk of encountering bats and breeding birds and the procedure to be followed should bats or breeding birds be identified during the works.
8. Vegetation removal	The removal of vegetation should be carried out outside of the bird breeding season (i.e. all clearance works should be conducted between 1st September and 31st January). If clearance is expected to take place outside this period, a pre-clearance check should be undertaken by a suitably experienced ecologist immediately before the onset of works to establish if any nesting birds are present. If nests are identified, an exclusion zone should be implemented around the nest where no works can be conducted until it is no longer in use. It may be possible to continue works in other areas following advice from the ecologist.

Appendix A – Data Search Results

Grid Ref	Location Name	Date	Common Name	Abundance	Record Type
SE108156	Birch Park	01/01/1985	Natterer's Bat	1 Count of Adult	Field record
SE1015917459	Kirklees, 70 Lamb Hall Road, Longwood, Huddersfield HD3 3TG	27/10/2000	Pipistrelle Bat species		Roost
SE104172	Lamb Hall Road	05/07/1999	Common Pipistrelle	21-50 Count of Adult	Roost (maternity)
SE0958015074	8 Oak Drive	01/06/2001	Common Pipistrelle	uknown Count of Adult	Roost (possible)
SE120176	Acre Mills, Huddersfield, West Yorkshire	01/08/2012	Common Pipistrelle		Roost (excluded)
SE1254116297	5 South Street, Paddock, Huddersfield, HD1, Kirklees	07/06/2004	Pipistrelle Bat species	45 Count of Adult	Roost
SE1120615322	67 Warneford Road, Cowlersley, Huddersfield	10/07/2006	Pipistrelle Bat species		Roost (excluded)
SE1185917097	Reinwood Junior School, Oakes, Huddersfield	07/09/2006	Pipistrelle Bat species	1 Count of Adult	Casualty
SE12501498	21 Welfield Bank, Crosland Moor, Huddersfield	29/08/2007	Pipistrelle Bat species	1 Count of Adult	Injured
SE0959115118	101 Lowestwood La, Golcar	02/04/1997	Vesper Bat species	Not Recorded Range	Roost (possible)
SE1163017910	39 Kirkwood Dr, Lindley, HD3 3WH	17/07/1997	Vesper Bat species		Roost (possible)
SE108165	Broomfield House, Broomroyd, Milnsbridge, Huddersfield	03/12/1998	Vesper Bat species		Roost (possible)
SE1037015800	British Legion, Golcar	20/08/2002	Vesper Bat species	Abundance not record Count	Roost (maternity)
SE1164817846	15 Kirkwood Green, Lindley, Kirklees	08/01/2003	Vesper Bat species	1 Count of Adult	Roost
SE1244916896	3 Rose Avenue, Marsh, Huddersfield, Kirklees	10/07/2004	Vesper Bat species	5 Count of Adult	Roost (possible)
SE10681661	42 Leymoor Road, Longwood, Huddersfield, Kirklees	30/06/2005	Vesper Bat species	1 Count of Juvenile	Grounded
SE1015917458	70 Lamb Hall Road, Longwood, Huddersfield	12/08/2007	Vesper Bat species		Roost (excluded)

Appendix B – Site Photographs

Plate 1



Plate 2



Plate 3



Plate 4



Plate 5



Plate 6



Plate 7



Plate 8

