

Preliminary Bat Roost Assessment

Land off Archway Road, Huyton, Metropolitan Borough of Knowsley, Merseyside

A Report To: Genr8 Developments
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Quality Assurance

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Declaration of Compliance

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of Practice for Planning and Development”. The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Disclaimer

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Validity of Data

The findings of this study are valid for a period of 12 months from the date of survey. If works have not commenced by this date, it may be necessary to undertake an updated survey to allow any changes in the status of bats on site to be assessed, and to inform a review of the conclusions and recommendations made.

Non-Technical Summary

Project Background

In July 2023, Genr8 Developments commissioned Middlemarch to undertake a Preliminary Bat Roost Assessment of the site of a proposed development at Land off Archway Road, Huyton, Metropolitan Borough of Knowsley, Merseyside. This assessment is required to inform a planning application associated with a mixed-use development at the site.

Scope of Survey

A Preliminary Bat Roost Assessment of the buildings and trees was carried out on site in line with the specifications detailed in Bat Mitigation Guidelines) and Bat Surveys for Professional Ecologists: Good Practice Guidelines. The assessment was conducted on 19th July 2023 by Charlotte Richardson MSc, ACIEEM (Senior Ecological Consultant) and Amy Carter MSc (Ecological Project Officer).

Summary of Key Bat Features

Buildings B1, B2 and B3 were all considered to have negligible value for roosting bats, due to a lack of suitable bat roost features. Building B4 was considered to have high bat roost potential, as it contained a number of potential bat roost features which could not be fully inspected. Such features included pipework holes, damaged soffit boarding, gaps behind concrete panelling, gaps around brickwork and weep holes.

Trees T1 and T2 were deemed to have moderate potential for roosting bats due to the presence of features such as twisted branches, knot holes and split limbs. The remaining trees and tree groups on site were considered to have either low or negligible potential for roosting bats. The scattered trees/tree lines, ornamental shrub and hedgerow habitats on site present potential foraging and commuting opportunities for local bat populations. Some of these features also have linkages to other suitable foraging/commuting habitats within the immediately surrounding landscape.

Potential Impacts on Bats

As Building B4 and Trees T1/T2 have high and moderate potential value for roosting bats, respectively, the proposals could cause direct harm/injury and roost loss, should bats be present within these features.

Although some of the trees on site will be lost to facilitate the proposed works, proposals indicate that a large proportion of the existing trees on site will be retained. In addition, new soft landscaping will be created as a part of the works, which will include tree planting and meadow creation. As such, no long-term adverse impacts are anticipated on foraging/commuting bats as a result of the proposed works.

Recommendations

- R1 Building B4:** Both sections of Building B4 have been identified as having high potential to support roosting bats. At least three dusk emergence and/or dawn re-entry surveys be undertaken during the bat emergence/re-entry survey season to determine the presence/absence of roosting bats within the structures.
- R2 Building B1, B2 and B3:** Buildings B1, B2 and B3 were deemed to have negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months.
- R3 Trees T1 and T2:** Trees T1 and T2 have been identified as having moderate potential to support roosting bats. These trees should be retained and incorporated into the proposed development. If this is not possible, further survey work would be required to determine the presence / absence of roosting bats.
- R4 Remaining Trees Onsite:** The remaining trees were considered to have low or negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months.
- R5 Scheme Design:** The proposed development should be designed to minimise effects on bats in accordance with ecological mitigation hierarchy.
- R6 Lighting:** Any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on bat species.

Contents

1. Introduction.....	5
1.1 Project Background	5
1.2 Site Description and Context.....	5
1.3 Documentation Provided	5
2. Methods.....	7
2.1 Desk study	7
2.2 Field Survey	7
2.3 Constraints.....	8
3. Desk Study	9
3.1 Statutory Nature Conservation Sites	9
3.2 Species Records.....	9
4. Survey Results	10
4.1 Building	10
4.2 Trees.....	15
4.3 Site and Surrounding Habitats.....	16
5. Impact Assessment.....	17
5.1 Summary of Proposals	17
5.2 Summary of Key Bat Features	17
5.3 Potential Impacts on Bats.....	17
6. Recommendations	18
7. Drawings.....	21
Appendix 1	23
Relevant Legislation	23
Appendix 2	25
Examples of Potential Roost Features.....	25

1. Introduction

1.1 Project Background

In July 2023, Genr8 Developments commissioned Middlemarch to undertake a Preliminary Bat Roost Assessment of the site of a proposed development at Land off Archway Road, Huyton, Metropolitan Borough of Knowsley, Merseyside. This assessment is required to inform a planning application associated with a mixed-use development at the site.

In addition, Middlemarch has been commissioned to undertake the following assessments:

- Preliminary Ecological Appraisal (Report: RT-MME-161140-01); and
- Preliminary Arboricultural Assessment (Report: RT-MME-161140-03).

To fulfil the above brief to assess the potential for the existing buildings and trees on site to support roosting bats, a Preliminary Bat Roost Assessment was undertaken on 19th July 2023.

All UK bat species are legally protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1.

1.2 Site Description and Context

Table 1.1 provides a brief summary of the site and its surroundings.

Attribute	Description
Location	The site is set in an urban location to the south-east of Archway Road in Huyton, Merseyside.
National Grid Reference	SJ 44159 90826
Site Area (ha)	2.9 ha
Topography	Flat
Land Cover (on site)	The site is dominated by hardstanding car parking areas and associated buildings, with pockets of introduced shrub, amenity grassland and scattered trees.
Land Cover (site surrounds)	The wider landscape is dominated by the built environment. To the north and west, residential properties and associated gardens dominated. To the south-west commercial units and a retirement village with associated car parking was present. To the east, Huyton Village Shopping Centre is present. A railway line is located approximately 70 m south of the survey boundary and beyond this, residential properties and gardens once again continue to dominate the surrounding landscape.

Table 1.1: Summary of Site and Surroundings

1.3 Documentation Provided

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.2.

Document / Drawing Number	Author
Huyton Town Centre / The Village - Commercial District Illustrative Masterplan (December 2021)	Optimised Environments (OPEN)

Table 1.2: Documentation Provided by Client

2. Methods

2.1 Desk study

As part of the Preliminary Ecological Appraisal (Report RT-MME-161140-01) an ecological desk study was undertaken. The consultee for the desk study was Merseyside BioBank.

Middlemarch then assimilated and reviewed the desk study data provided by this organisation. Relevant bat data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

The desk study included a search for statutory nature conservation sites designated for bats within a 10 km radius of the site.

2.2 Field Survey

A Preliminary Bat Roost Assessment of the buildings and trees was carried out on site in line with the specifications detailed in Bat Mitigation Guidelines (English Nature, 2004)¹ and Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)². The assessment was conducted on 19th July 2023 by Charlotte Richardson MSc, ACIEEM (Senior Ecological Consultant) and Amy Carter MSc (Ecological Project Officer). Weather conditions were recorded and are presented in Table 2.1.

Parameter	Condition
Temperature (°C)	18
Cloud (%)	70
Wind (Beaufort)	F3
Precipitation	Nil

Table 2.1: Weather Conditions During Field Survey

A visual assessment was conducted during daylight hours of the buildings and trees to determine the presence of any Potential Roost Features (PRFs), together with a general appraisal of the suitability of the site for foraging and commuting bats. Please refer to Appendix 2 for a list of example PRFs. Any accessible PRFs were inspected using binoculars, a torch and endoscope for evidence of possible bat presence. Buildings were surveyed externally and internally, where access and health and safety allowed.

For reasons of health and safety, the survey was only undertaken in areas accessible from 3.5 m ladders.

Based on the PRF's present, the buildings and trees were assessed using the suitability classes detailed within Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)², as detailed in Table 2.2.

¹ English Nature (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

² Collins, J. (ed). (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Ed.)*. The Bat Conservation Trust, London.

Suitability	Description
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed). A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Negligible	Negligible habitat features on site likely to be used by roosting bats.

Table 2.2: Classification of Buildings and Trees with Bat Potential (Adapted from Collins, 2016)²

2.3 Constraints

No internal access was available to Buildings B1, B2 and B3. Buildings B1 and B3 were both in current use at the time of survey (as a library and a building control office, respectively) and were flat-roofed structures which did not contain loft spaces. As such, the lack of internal access was not considered to be a significant constraint. Building B2 was a small substation unit, but as none of the features identified externally were considered suitable for facilitating access to the interior of the building, the lack of an internal assessment was not considered to be a significant constraint.

Although an internal inspection was able to be undertaken within the pitched-roofed section of Building B4, only the central walkway along the length of the loft was boarded, with the remainder of the floor covered with insulation. As such, it was not possible to physically reach all areas of the loft space to inspect for evidence of roosting bats.

3. Desk Study

3.1 Statutory Nature Conservation Sites

The site is not located within 10 km of any statutory nature conservation sites designated for the presence of bats.

3.2 Species Records

The data search was carried out in July 2023 by Merseyside BioBank. Records of bat species within a 1 km radius of the survey area provided by the consultee are summarised in Table 3.1. It should be noted that the absence of records should not be taken as confirmation that a species is absent from the search area.

Species	No. of Records	Most Recent Record	Proximity of Nearest Record to Survey Area	Species of Principal Importance?	Legislation / Conservation Status
Common pipistrelle <i>Pipistrellus pipistrellus</i>	21	2022	30 m north-west	-	ECH 4, WCA 5, WCA 6
Noctule <i>Nyctalus noctula</i>	2	2019	30 m north-west	✓	ECH 4, WCA 5, WCA 6
Unidentified bat <i>Vespertilionidae</i> sp.	6	2020	160 m west	#	ECH 2 #, ECH 4, WCA 5, WCA 6
Pipistrelle <i>Pipistrellus</i> sp.	1	2020	690 m south	#	ECH 4, WCA 5, WCA 6
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	3	2019	730 m south	✓	ECH 4, WCA 5, WCA 6
Brown long-eared bat <i>Plecotus auritus</i>	1	2002	*	✓	ECH 4, WCA 5, WCA 6

Key:

ECH 2: Annex II of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest whose conservation requires the designation of Special Areas of Conservation.

ECH 4: Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest in need of strict protection.

WCA 5: Schedule 5 of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds).

WCA 6: Schedule 6 of Wildlife and Countryside Act 1981 (as amended). Animals which may not be killed or taken by certain methods.

Species of Principal Importance: Species of Principal Importance for Nature Conservation in England.

Table 3.1: Bat Species Records Within 1 km of Survey Area

4. Survey Results

4.1 Building

Four buildings were identified within the survey area (B1 – B4). Building B1 was Huyton Library, Building B2 was a small substation in the south-east of the site, Building B3 was the Knowsley Council Building Control (KCBC) structure and Building B4 was the Knowsley Metropolitan Borough Council (KMBC) building. A drawing (C161140-02-01 in Chapter 7) showing the locations of the buildings and trees surveyed, and their respective bat roost values is provided in Chapter 7.

Building B1

External Assessment

Huyton Library building was an irregular-shaped flat-roofed structure with stone block walls, but the northern-most elevation comprised predominantly of metal-framed windows (Plate 4.1). A steel canopy was present to the west which was approximately 1.25 m wide.

Metal edging was noted at the wall tops which was largely in good condition and well-sealed. One small area to the south had a small gap between the wall and the metal fascia, but this was cobwebbed, indicating no recent use by fauna. A security door with a roll-down shutter was present to the east. The north-eastern elevation was rendered, and a section of this had a mural painted on it (Plate 4.2). The render was in good condition and was well-sealed, with no suitable bat roost features identified. A walled entryway was present to the north-east, which was once again rendered. A small amount of lifted lead flashing was noted around the wall-top of this area, but this was did not extend far, and no evidence of bats was identified.



Plate 4.1: Northern Elevation of Building B1.



Plate 4.2: Eastern Elevation of Building B1.

Internal Assessment

No internal access was available to this building, but it was flat-roofed and in current use as a library. In addition, no suitable bat roost features were identified externally which could potentially facilitate access to the building interior.

Roosting Potential

Due to the construction of the building and the lack of suitable bat roost features, this building was deemed to have negligible bat roost potential.

Building B2

External Assessment

Building B2 was a small sub-station unit located in the south-east of the site. It had a flat concrete roof and walls which were of red brick construction (Plate 4.3). The roof and walls were all in good condition and well-sealed. An intact fibreglass door was present to the north-east. Two metal vents were present on the north-western elevation, but the gaps between the slats were too small to facilitate bat access to the building.



Plate 4.3: North-western and North-eastern Elevations of Building B2.

Internal Assessment

As it was an electrical sub-station, no internal access was available to this building.

Roosting Potential

Due to the construction of the building and the lack of suitable bat roost features, this building was deemed to have negligible bat roost potential.

Building B3

External Assessment

Building B3 was the Knowsley Council Building Control (KCBC) structure which was located in the east of the survey area. It was a large single-storey building, with single-skin red brick walls which were in good condition. It had intact wooden and steel-framed doors and metal framed windows. Some of the doors to the south had roller shutters installed above, which did not offer any suitable roosting opportunities. To the south-east and south-west, a steel canopy overhung the eaves (Plate 4.4), and these were up to 2 m in width. The underside of the canopy was supported by steel poles and the canopy itself comprised of metal corrugated sheeting (Plate 4.5). A line of windows was present at the wall tops below the canopy. Some of these were clear, but others had been covered with sticky-backed plastic. Two vents were protruding from the wall on the south-eastern elevation, but these were sealed with mesh. A small amount of lifting was noted around the metal work where the vents adjoined the wall, but these gaps were not substantial enough to support roosting bats.

Towards the north-east corner, metal vents were present within the walls. These had mesh behind, with some small gaps, but as these were predominantly cobwebbed, they were not considered to have been in recent use by fauna.



Plate 4.4: Western Elevation of Building B3.



Plate 4.5: South-east Elevation of Building B3, with Vents in Wall and Overhanging Canopy.

Internal Assessment

No internal access was available to this building, but it was flat-roofed and in current use as an office. In addition, the only gaps identified externally were either cobwebbed, or too small for roosting bats.

Roosting Potential

Due to the construction of the building and the lack of suitable bat roost features, this building was deemed to have negligible bat roost potential.

Building B4

External Assessment

Building B4 was the Knowsley Metropolitan Borough Council (KMBC) building. This was an L-shaped structure which comprised two distinct sections. The southern section (Section 1) was a two-storey building with a pitched-roof covered with green fibreglass panelling. The northern section (Section 2) was flat-roofed high-rise office block (i.e. seven storeys) with a small brick structure on the roof at its northern end. These two sections of building B4 are discussed separately below.

Southern 1

The southern section was a two-storey brick building with a pitched-roof covered with green fibreglass-type panels. The walls were a mix of solid and single-skin brick and the uPVC windows and doors were all intact and largely well-sealed (Plate 4.6). Some gaps were noted to the south, where lead flashing was lifted around the window sills, but these were largely superficial. In addition, gaps were noted in the brickwork around the base of some of the windows on the southern elevation, but these were once again superficial and generally cobwebbed. Damage was noted in the soffit board on the on this elevation (Plate 4.7), and due to the height at which it was located, this could not be fully inspected for roosting bats. On the north-east and south-west elevations, pebbledash panels were noted beneath the first-floor windows. These panels were in good condition and well-sealed.



Plate 4.6: Section 1 of Building B4 in Foreground, with Section 2 to Rear.



Plate 4.7: Damaged Soffit Boarding on Southern Elevation of Section 1 of Building B4.

Section 2

The northern section of Building B4 was a high-rise office block comprising 7-floors and an open roof-top with a brick structure with associated electrical equipment and aerials/masts (Plate 4.8). The building was a cavity walled brick structure, which had concrete panelling on all elevations at the 6th and 7th floors. Gaps were noted beneath these concrete panels to both the north-east and south-west, where mortar appeared to have come away. The building had metal and uPVC framed windows/doors which were in good condition. On the north-eastern elevation, several pipework holes were noted which appeared to extend all the way from the first to the top floor. A small gap was noted where some of the lead flashing was lifted around the north-eastern entrance to the building. On the south-west elevation of the high-rise section, weepholes were identified above the 2nd floor windows and a small amount of missing/damaged mortar was also noted in this area.

The roof area comprised a concrete floor with metal infrastructure and associated cabling/pipework. It was surrounded to all sides by a 1.5 m high concrete wall with railings above. At the north-western end, a single-storey flat-roofed brick structure was present, which had masts and aerials installed on top. Although the majority of the brickwork was intact, gaps in mortar were noted around the door frame to the north-west at a height of 2 m, and loose brickwork/bricks with holes (i.e. airbricks) were identified to the south-west (Plate 4.9). These features were inspected with no evidence of bats identified, however, the cavities associated with these gaps extended beyond the reach of the endoscope.



Plate 4.8: North-east Elevation of Section 2 of Building B4.



Plate 4.9: Gaps in Brickwork on South-west Side of Rooftop Brick Structure.

Internal Assessment

Section 1

The ground and first floors of Section 1 comprised office spaces which were in current use at the time of survey. Section 1 connected internally to Section 2 and as such, was of similar construction. A single loft space was present within this section which spanned the entire length of the pitched-roofed building. From floor to apex, the loft space was approximately 1.25 m in height and the 1 m wide central walkway comprised wooden boarding (Plate 4.10). No other boarding was present within the loft space, so the floor insulation could be clearly seen. The roof was supported by relatively new wooden purlins and rafters and the ridge area comprised two parallel wooden boards which had a small gap in between. Strip lighting was present along the entire length of the loft space and as such, it was well lit. Brick walls were present at the north-east and south-western gable ends which were generally in good condition. A small gap was present to the south-west where one of the rafters connected to the wall. Visibility of the north-eastern wall was slightly obscured, as a large steel vent appeared to connect to it.

No evidence of bats (i.e. droppings, feeding remains etc.) was identified along the length of the central boardwalk, although the lack of floorboarding elsewhere meant that not all areas of the loft could be physically inspected.

Section 2

An internal assessment was undertaken within the high-rise office block, in order to facilitate access to the roof area. Each floor comprised open-plan office spaces and adjoining meeting rooms. Each individual floor had suspended ceiling tiles in place with light units fitted within them (Plate 4.11). No loft space was present and all of the office areas were in good condition and well-sealed, as a result of the building being in current use. The brick roof structure connected internally to the main high-rise block and as such, had the same internal composition as the remainder of the building.

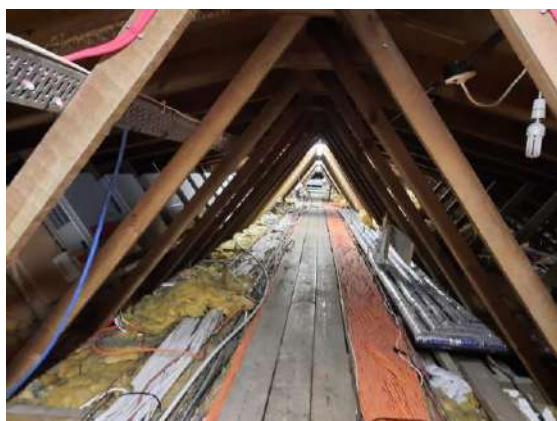


Plate 4.10: Loft Space within Section 1 (Building B4).



Plate 4.11: Open-plan Office Space on First Floor of Section 2 (Building B4).

Roosting Potential

A number of potential bat roost features were identified externally, including: pipework holes, damaged soffit boarding, gaps behind concrete panelling, gaps around brickwork and weep holes. Due to the height and/or aspect at which some of these features were located, it was not possible to fully inspect them for roosting bats. As such, Building B4 has been classified as having high bat roost potential.

4.2 Trees

Trees with Moderate Potential to Support Roosting Bats

The trees considered to have potential for use by roosting bats are described in Table 4.1.

Tree No.	Species	Description	BCT Suitability Class
T1	English oak <i>Quercus robur</i>	This oak tree was present towards the western corner of the site, within an area of amenity grassland. It had several twisted branches with a small number of small knotholes. Split limbs were also noted to the north at approximately 6 m high and to the south at approximately 9 m.	Moderate
T2	Beech <i>Fagus sylvatica</i>	This beech was located to the west of Tree T1, and it had some peeling bark. A broken limb was noted to the west at approximately 9 m high and some downwards facing knotholes were identified approximately 5 m high on the west side.	Moderate

Table 4.1: Summary of Trees with High/Moderate Suitability for Bats Within the Survey Area



Plate 4.12: Tree T1.

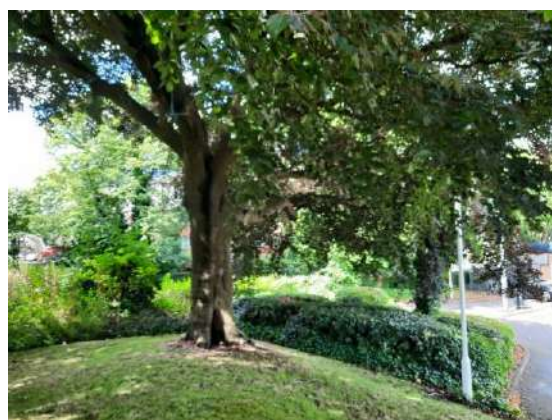


Plate 4.13: Tree T2.

Trees with Low or Negligible Potential to Support Roosting Bats

A large number of trees were identified within the survey boundary, the majority of which were young or semi-mature with a small number of more mature specimens noted. The low potential trees on site comprised sycamore *Acer pseudoplatanus* (T3), white poplar *Populus alba* (T4), hornbeam *Carpinus betulus* (T5), turkey oak *Quercus cerris* (T6), European lime *Tilia × europaea* (T7), silver birch *Betula pendula* (T8) and Lombardy poplar *Populus nigra 'italica'* (Tree Group 1). Tree Group 2 comprised a mix of European lime, sycamore, whitebeam *Sorbus aria* and Lombardy poplar. Trees T3 - T8 and Tree Groups G1 and G2 (see Drawing C161140-02-01 in Chapter 7) were identified as having low value for roosting bats, due to the presence of a small number of low value potential roost features. Such features included upward facing knotholes, ridges in bark and superficial bark damage.

The remaining trees on site were in good condition and as such, were considered to have negligible bat roost potential.

4.3 Site and Surrounding Habitats

The scattered trees/tree lines, ornamental shrub and hedgerow habitats on site present potential foraging and commuting opportunities for local bat populations. The linear hedgerow/tree features along the northern and western boundaries of the site in particular provide potential linkages to other suitable habitat within the immediately surrounding landscape.

Habitats within 1 km of the site suitable for roosting, commuting and foraging include:

- Residential houses and associated gardens;
- Running water;
- Pockets of woodland;
- Churches, schools and associated grounds;
- Golf courses with associated open grassland habitats; and,
- Railway lines with vegetated banks.

5. Impact Assessment

5.1 Summary of Proposals

Under the current proposals, the site will be subject to a mixed-use development. This will involve the potential demolition of Buildings B2, B3 and B4, the removal of some of the trees and existing vegetation and the development of new structures comprising several office blocks, a hotel and residential units. Soft landscaping will also be incorporated into the scheme.

5.2 Summary of Key Bat Features

Roosting Bats

Buildings B1, B2 and B3 were all considered to have negligible value for roosting bats, due to a lack of suitable bat roost features.

Building B4 was considered to have high bat roost potential, as it contained a number of potential bat roost features which could not be fully inspected. Such features included pipework holes, damaged soffit boarding, gaps behind concrete panelling, gaps around brickwork and weep holes.

Trees T1 and T2 were deemed to have moderate potential for roosting bats due to the presence of features such as twisted branches, knot holes and split limbs. The remaining trees and tree groups on site were considered to have either low or negligible potential for roosting bats.

The remaining trees were of low or negligible potential to support roosting bats.

Commuting and Foraging Bats

The scattered trees/tree lines, ornamental shrub and hedgerow habitats on site present potential foraging and commuting opportunities for local bat populations. Some of these features also have linkages to other suitable foraging/commuting habitats within the immediately surrounding landscape.

5.3 Potential Impacts on Bats

As Building B4 and Trees T1/T2 have high and moderate potential value for roosting bats, respectively, the proposals could cause direct harm/injury and roost loss, should bats be present within these features. As Building B4 and Trees T1 and T2 are proposed to be removed to facilitate the works, roosting bats are a material consideration, and a recommendation regarding further work has been made in Chapter 6.

Although some of the trees on site will be lost to facilitate the proposed works, the Commercial District Illustrative Masterplan produced by Optimised Environments (OPEN) indicates that a large proportion of the existing trees on site will be retained and incorporated into the proposals. In addition, new soft landscaping will be created as a part of the works, which will include tree planting and meadow creation. The creation of these habitats will provide potential foraging opportunities for a variety of invertebrate species, which may in turn, serve as a potential prey resource for local bat populations. As such, no long-term adverse impacts are anticipated on foraging/commuting bats as a result of the proposed works, particularly if appropriate lighting is adopted. A recommendation regarding this is made in Chapter 6.

6. Recommendations

All recommendations provided in this section are based on Middlemarch's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

- R1 Building B4:** Both sections of Building B4 have been identified as having high potential to support roosting bats. Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016)² recommends that for structures with high bat roosting potential at least three dusk emergence and/or dawn re-entry surveys be undertaken during the bat emergence/re-entry survey season to determine the presence/absence of roosting bats within the structures. The bat emergence/re-entry survey season extends from May to September. At least two of the surveys should be undertaken during the peak season for emergence/re-entry surveys between May and August and one of the three surveys should be a dawn re-entry survey. If a roost is discovered during these surveys, a Natural England licence application may be required.
- R2 Building B1, B2 and B3:** Buildings B1, B2 and B3 were deemed to have negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date. If development works to the surveyed buildings have not commenced within this timeframe it will be essential to update the survey effort to establish if suitable features have developed and if bats have colonised the buildings in the interim. In the unlikely event that a bat is found during demolition works all works must immediately cease and a suitably qualified ecologist should be contacted.
- R3 Trees T1 and T2:** Trees T1 and T2 have been identified as having moderate potential to support roosting bats. These trees should be retained and incorporated into the proposed development. If this is not possible, further survey work would be required to determine the presence / absence of roosting bats. There are two possible survey options available to the client: the trees can be subject to dusk emergence and dawn re-entry surveys or the trees can be subject to a Preliminary Roost Feature Inspection Survey using tree climbing equipment to access features that were inaccessible during this survey; both options are detailed further below. If a roost is discovered during these surveys, a Natural England licence application may be required.

Option 1: Dusk Emergence and Dawn Re-Entry Surveys

Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016)² recommends that for trees with moderate bat roosting potential two separate survey visits (consisting of one dusk emergence and a separate dawn re-entry survey) be undertaken during the bat emergence/re-entry survey season, to determine the presence/absence of roosting bats within the trees. The bat emergence/re-entry survey season extends from May to September. At least one of the surveys should be undertaken during the peak season for emergence/re-entry surveys between May and August. Should this survey confirm the presence of roosting bats, it will be necessary to undertake additional surveys in order to inform a Natural England licence application. In addition, should the survey identify the presence of significant levels of bat activity at the site, it may be necessary to undertake further survey visits to comprehensively assess the value of the site to bats.

Option 2: Preliminary Roost Feature Inspection Survey

Where safe to do so, trees will be climbed utilising tree climbing equipment. Any PRF will be internally searched using a torch and endoscope. If the feature on further inspection is found to be unsuitable for bats, then the status of the tree will be downgraded to low or negligible bat potential. If a roost is identified, if PRF extend beyond the reach of an endoscope, or if the PRF shows any signs of use by fauna, dusk emergence and dawn re-entry surveys will be required (as detailed in Option 1). If any trees are considered unsafe to climb, or cannot be fully inspected for safety reasons, then they should be subject to dusk emergence and dawn re-entry surveys, as detailed in Option 1.

- R4 Remaining Trees Onsite:** The remaining trees on site were considered to have low or negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date. If proposed site works have not commenced within this timeframe it will be essential to update the survey effort to establish if the trees have developed features that could be used by roosting bats in the interim. In the unlikely event that a bat is found during works to the trees all works must immediately cease and a suitably qualified ecologist should be contacted.
- R5 Scheme Design:** The proposed development should be designed to minimise effects on bats in accordance with ecological mitigation hierarchy as set out in the National Planning Policy Framework (NPPF), and the National Planning Practice Guidance (NPPG): The ecological mitigation hierarchy requires all development schemes to apply to following principles:
- *Avoidance and Mitigation* – the proposed development should seek to avoid/minimise losses of features with bat potential, in the first instance and incorporate these features in the landscaping layout of the scheme accordingly. Similarly, protection measures for retained features and surrounding habitats should be considered to prevent incidental damage or disturbance during the construction phases. These measures will help to reduce the likelihood of impacting bats and minimise losses of suitable bat roosts and habitat. Where significant harm cannot be wholly or partially avoided, adverse impacts should be minimised by design or through the use of effective mitigation measures such as minimising light spill.
 - *Compensation* – where unavoidable losses occur and mitigation cannot be provided, compensation for significant residual harm will be required as a last resort or planning permission could be refused. Where there is a significant effect on a bat roost, a compensation strategy sufficient to obtain a development licence from Natural England may also be required.
- R6 Lighting:** In accordance with best practice guidance relating to lighting and biodiversity (Miles *et al*, 2018³; Gunnell *et al*, 2012⁴), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species. Examples of good practice include:

³ Miles, J., Ferguson, J., Smith, N. and Fox, H. (2018) *Bats and artificial lighting in the UK. Bats and the Built Environment Series*. Bat Conservation Trust and Institution of Lighting Professionals.

⁴ Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity*. Bat Conservation Trust.

- Avoiding the installation of new lighting in proximity to key ecological features, such as hedgerows and tree lines.
- Using modern LED fittings rather than metal halide or sodium fittings, as modern LEDs emit negligible UV radiation.
- The use of directional lighting to reduce light spill, e.g. by installing bespoke fittings or using hoods or shields. For example, downlighting can be used to illuminate features such as footpaths whilst reducing the horizontal and vertical spill of light.
- Where the use of bollard lighting is proposed, columns should be designed to reduce horizontal light spill.
- Implementing controls to ensure lighting is only active when needed, e.g. the use of timers or motion sensors.
- Use of floor surface materials with low reflective quality. This will ensure that bats using the site and surrounding area are not affected by reflected illumination.
- For internal lights, recessed light fittings cause significantly less glare than pendant type fittings. The use of low-glare glass may also be appropriate where internal lighting has the potential to influence sensitive ecological receptors.

7. Drawings

Drawing C161140-02-01 – Preliminary Bat Roost Assessment



C161140-02-01

Legend

Site boundary

Damaged soffit boarding

Gaps in brickwork

Gaps behind corrugated concrete panelling

Missing brickwork

Pipework holes

Weep holes

Tree with moderate bat roosting potential

Tree with low bat roosting potential

Tree group with low bat roosting potential

Building with high bat roosting potential

Building with negligible bat roosting potential

Brick roof structure

Project

Land off Archway Road, Huyton

Drawing

Preliminary Roost Assessment

Client

Genr8 Developments

Drawing Number

C161140-02-01

Revision

00

Scale @ A3

1:1,000

Date

September 2023

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Appendix 1

Relevant Legislation

Bats and the places they use for shelter or protection (i.e. roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, *or obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The reader should refer to the original legislation for the definitive interpretation.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*. Species of Principal Importance for Nature Conservation in England are material considerations in the planning process. The list of species is derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006.

Appendix 2

Examples of Potential Roost Features

External Features

- access through window panes, doors and walls;
- behind peeling paintwork or lifted rendering;
- behind hanging tiles;
- weatherboarding;
- eaves;
- soffit boxes;
- fascias;
- lead flashing;
- gaps under felt (even including those of flat roofs);
- under tiles/slates;
- existing bat and bird boxes; and
- any gaps in brickwork or stonework permitting access into access to cavity- or rubble-filled walls.

Internal Features

- behind wooden panelling;
- in lintels above doors and windows;
- behind window shutters and curtains;
- behind pictures, posters, furniture, peeling paintwork;
- peeling wallpaper, lifted plaster and boarded-up windows;
- inside cupboards and in chimneys accessible from fireplaces.
- within attic voids:
- the top of gable end or dividing walls;
- the top of chimney breasts;
- ridge and hip beams and other roof beams;
- mortise and tenon joints;
- all beams (free-hanging bats);
- the junction of roof timbers, especially where ridge and hip beams meet;
- behind purlins;
- between tiles and the roof lining; and
- under flat felt roofs.

Potential Roost Features (Adapted from Collins, 2016)²

Trees

- Bat, bird and dormouse boxes on trees;
- Cankers (caused by localized bark death) in which cavities have developed;
- Compression forks with included bark, forming potential cavities;
- Cracks/splits in stems or branches (both vertical and horizontal);
- Crossing stems or branches with suitable space between for roosting;
- Ivy stems with diameters in excess of 50 mm with suitable roosting space behind (or where a roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk);
- Man-made holes (e.g. cavities that have developed from flush cuts);
- Natural holes (e.g. knot holes) arising from naturally shed branches, or cavities created by branches tearing out from parent stems;
- Other hollows or cavities, including rot holes and butt rots;
- Partially detached or loose, platy bark;
- Woodpecker holes; or,
- Other features that offer a place of shelter.

Potential Roost Features (Adapted from Collins, 2016)²