

**613-619 SOUTHCHURCH ROAD,
SOUTHEND**

**PRELIMINARY BAT ROOST
ASSESSMENT**

A Report to: AWW Architects

Report No: RT-MME-155176-04

Date: June 2021



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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development".

Report Version	Date	Completed by:	Checked by:	Approved by:
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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

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client's brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

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

In May 2021, AWW Architects commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment at 613-619 Southchurch Road, Southend. This assessment is required to inform a planning application associated with the demolition of the garages and the construction of two end-of-terrace houses and two mews houses as well as an extension to the commercial premises.

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 25th May 2021.

During the assessment of building 1 (garages) and building 2 (613-619 Southchurch Road) numerous features were recorded around the buildings which could be utilised by bats to gain entry into the buildings and potential roost locations. It was not possible to fully inspect all of the features due to the height at which they were located and as such it was not possible to establish if bats had used these features to enter a roost location at the time of surveying. No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded within the features that could be fully inspected during the survey.

Due to an inability to fully inspect all features identified during the external inspection due to height and the lack of an internal survey due to COVID-19 restrictions, it is not possible to conclude whether the buildings are utilised by roosting bats at this time. Both building 1 and 2 were assessed as having high potential to support roosting bats.

Two semi-mature sycamore trees were identified within the application site. These trees did not have any suitable features for bats to roost within and therefore were assessed as having negligible potential for roosting bats.

Following the results of the Preliminary Bat Roost Assessment, the following recommendations have been made (full recommendations are provided within Chapter 6):

R1 Building 1 (Garages) and Building 2 (613-619 Southchurch Road)

Building 1 (Garages) and Building 2 (613-619 Southchurch Road) have been identified as having high potential to support roosting bats. Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) 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 Sycamore trees

The two sycamore trees within the survey area were considered to have negligible potential for roosting bats. The survey data obtained for the site is valid for 12 months from the survey date.

R3 Lighting: In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018; Gunnell et al, 2012), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species.

R4 Habitat Enhancement

In line with the National Planning Policy Framework, the development should aim to enhance the site for bats. Bat boxes should be installed to provide roosting habitat for species such as pipistrelle.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In May 2021, AWW Architects commissioned Middlemarch Environmental Ltd to undertake a Preliminary Bat Roost Assessment at 613-619 Southchurch Road, Southend. This assessment is required to inform a planning application associated with the demolition of the garages and the construction of two end-of-terrace houses and two mews houses as well as an extension to the commercial premises.

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

- Preliminary Arboricultural Assessment, Report RT-MME-155176-01;
- Arboricultural Impact Assessment, Report RT-MME-155176-02; and,
- Preliminary Ecological Appraisal, Report RT-MME-155176-03.

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 25th May 2021.

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. This section also provides some brief information on the ecology of British bat species.

1.2 SITE DESCRIPTION AND CONTEXT

The site under consideration is an irregularly shaped parcel of land located off Southchurch Road in Southend. It measures approximately 0.15 ha in size and is centred at OS grid reference TQ 89563 85993.

At the time of the survey, the site was dominated by areas of hardstanding utilised as a service road for deliveries, car parking, and access to the properties and garages. A series of 22 single-storey garages with pitched, slate-tiled roofs were located along the northern site boundary, while a two-storey, brick-built building with a pitched, slate-tiled roof dominated the southern section of the site. The rear garden of the two-storey building comprised of regularly mown amenity grassland with two semi-mature scattered sycamore trees, surrounded by wooden panelled fencing.

The wider landscape is dominated by residential and commercial development, with more semi-natural areas including arable fields to the north-east.

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 1.1.

Document Name / Drawing Number	Author
Site Location Plan / 0100	AWW Architects
Existing and Proposed Axonometric / 0400	AWW Architects
Design and Access Statement Southchurch Road	AWW Architects
Existing Site Plan / 0110	AWW Architects
Proposed Site Plan / 0111	AWW Architects

Table 1.1: Documentation Provided by Client

2. METHODOLOGY

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal (Report RT-MME-155176-03) an ecological desk study (which included a search for records of bats) was undertaken within a 1 km radius of the site. The consultees for the desk study were:

- Natural England - *MAGIC* website for statutory conservation sites;
- Essex Wildlife Trust; and,
- Essex Field Club.

Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by these organisations. 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

In line with the specifications detailed in Bat Mitigation Guidelines (English Nature, 2004) and Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), a Preliminary Bat Roost Assessment of the buildings and trees was conducted during daylight hours. A visual assessment was undertaken 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. Table 2.1 provides examples of PRFs. Any accessible PRFs were inspected using binoculars, a torch and endoscope for evidence of possible bat presence. Buildings were surveyed externally.

Due to the current Covid-19 restrictions, where properties are occupied or it is considered unsafe to do so, an internal inspection will not be completed. Therefore, as the property was occupied at the time of the survey an internal inspection was not conducted.

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 survey area was assessed using the suitability classes detailed within Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), as detailed in Table 2.2. Trees with features present that are suitable to support roosting bats (high and moderate suitability) are discussed more fully in the report.

A summary of the trees within the survey area without suitable features to support roosting bats (low and negligible suitability) is provided within the report. Due to their negligible potential to support roosting bats, the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) recommend no further survey work is required for these tree classes.

Example of Potential Roost Features
<p>Buildings</p> <p><u>Externally</u></p> <ul style="list-style-type: none"> • 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. <p><u>Internally</u></p> <ul style="list-style-type: none"> • 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. <p>Trees</p> <ul style="list-style-type: none"> • 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.

Table 2.1: Potential Roost Features (Adapted from Collins 2016 and BSI 2015)

Suitability	Description
High	<p>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.</p> <p>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.</p>
Moderate	<p>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).</p> <p>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).</p>
Low	<p>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).</p> <p>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.</p>
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)

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 May 2021 by Essex Wildlife Trust and Essex Field Club. Records of bat species within a 1 km radius of the survey area provided by the consultees 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 Study Area	Species of Principal Importance?	Legislation / Conservation Status
Mammals – bats					
Common pipistrelle <i>Pipistrellus pipistrellus</i>	2	2015	360 m south	-	ECH 4, WCA 5, WCA 6
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	2	2011	360 m south	✓	ECH 4, WCA 5, WCA 6
Key:					
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 INTRODUCTION

The Preliminary Bat Roost Assessment was conducted on 25th May 2021 by Sophie Moy (Senior Ecological Consultant, Class Licence number: 2018-33168-CLS-CLS). Drawing C155176-04-01, illustrating the layout of the buildings on site and the result of the survey is provided in Chapter 7.

Weather conditions were recorded and are presented in Table 4.1.

Parameter	Conditions
Temperature (°C)	12
Cloud Cover (%)	100
Precipitation	Light rain
Wind Speed (Beaufort)	F1

Table 4.1: Weather Conditions During the Preliminary Bat Roost Assessment

4.2 CONSTRAINTS

Building 1 was a series of 22 garages, it is understood these are rented out independently. Internal access was not provided to these garages therefore an external inspection only was completed at the time of the survey. Due to the current Covid-19 restrictions, where properties are occupied or it is considered unsafe to do so, an internal inspection will not be completed. Therefore, as building 2 was occupied at the time of the survey an internal inspection was not conducted.

4.3 SURVEY RESULTS – BUILDINGS

4.3.1 Building 1 (Garages)

External Assessment

Building 1 consisted of 22 single storey brick-built garages with a pitched slate tiled roof (Plate 4.1, 4.2 and 4.3). The garages were in use at the time of the survey for storage. It is understood the garages were individually rented. The majority of the garages were in relatively poor condition at the time of the survey. However, the roof of the garages located at the western edge had recently been replacement and these were tightly sealed and in good condition as shown in Plate 4.3.



Plate 4.1: Southern Elevation



Plate 4.2: Eastern Elevation



Plate 4.3: Western Elevation

A survey of the roof of the building was conducted from ground level. Across many of the garage roofs there were multiple missing, slipped and lifted roof tiles as shown in Plates 4.4, 4.5, 4.6 and 4.7. The missing, slipped and lifted slate roof tiles created gaps which provide potential access into the internal areas of the building as well as providing suitable crevices for roosting bats.



Plate 4.4: Missing and Slipped Roof Tiles



Plate 4.5: Missing and Lifted Roof Tiles



Plate 4.6: Lifted Roof Tile



Plate 4.7: Lifted Roof Tiles

In addition to the gaps and crevices created under the roof tiles there were also multiple areas across the roofs of the garages where there were gaps underneath the ridge tiles as shown in Plates 4.8, 4.9 and 4.10. These gaps under the ridge tiles provide potential access into the internal areas of the building as well as

providing suitable crevices for roosting bats. Gaps were also noted along the edge of the roofs as shown in Plate 4.11.



Plate 4.8: Gap Underneath the Ridge Tile



Plate 4.9: Gap Underneath the Ridge Tile



Plate 4.10: Gap Underneath the Ridge Tile



Plate 4.11 Gap Underneath the Cement

The majority of the brick walls were in relatively good condition. However, there was a single gap within the brick wall noted where the mortar was missing as shown in Plate 4.12. This gap was fully inspected at the time of the survey and no evidence of roosting bats was noted. Other gaps within the brickwork were noted surrounding the edge of the door frames where there was missing mortar as shown in Plates 4.13 and 4.14. Again, these gaps could be fully inspected at the time of the survey and no evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded.



Plate 4.12 Gap Within the Brick Wall



Plate 4.13 Gap Between the Wall and the Garage Door

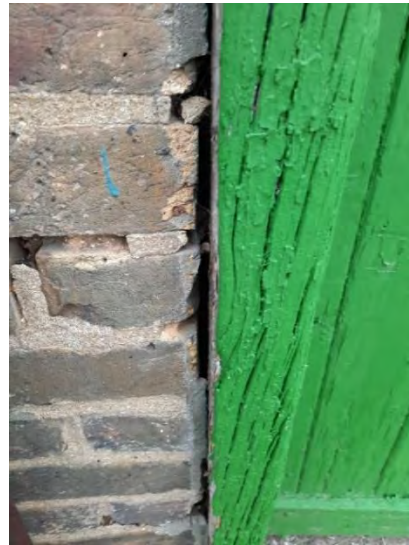


Plate 4.14 Gap Between the Wall and the Garage Door

Further access points into the internal areas of the building were noted. Many of the garage doors did not close completely and therefore were not tightly sealed. The gaps between the doors and the door frames provide a gap which bat could use to enter the internal areas of the building (Plate 4.15 and 4.16). In addition, one of the garage doors had a lifted wooden panel which also provide a potential crevice for roosting bats as shown in Plate 4.17.



Plate 4.15: Gap Where the Garage Door is Ajar



Plate 4.16: Gap Where the Garage Door is Ajar



Plate 4.17: Broken Garage Door Panel

A number of features were recorded around the building which could be utilised by bats to gain entry into the building and potential roost locations. These features include:

- Gaps under missing, slipped and lifted roof tiles;
- Gaps underneath the ridge tiles;
- Gaps underneath the cement at the edge of the roof;
- Gaps within the brick wall;
- Gaps between the brick wall and the door frame; and,
- Gaps between the garage doors.

It was not possible to fully inspect all of the features due to the height at which they were located and as such it was not possible to establish if bats had used these features to enter a roost location at the time of surveying. No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded within the features that could be fully inspected during the survey.

4.3.2 Building 2 (613-619 Southchurch Road)

External Assessment

Building 2 (613-619 Southchurch Road) was a two-storey brick-built terrace with a pitched slate tiled roof as shown in Plate 4.18, 4.19 and 4.20. The ground floor of the building was in use for commercial purposes and the first floor was in use as a residential flats. The building was in relatively good condition at the time of the survey.



Plate 4.18: Southern Elevation



Plate 4.19: Northern Elevation



Plate 4.20: Northern Elevation

A survey of the roof of the building was conducted from ground level. Across the pitched roof there were multiple gaps noted which could provide potential access into the internal areas of the building as well as providing suitable crevices for roosting bats. These gaps were identified underneath the ridge tiles (Plate 4.21) as well as underneath lifted lead flashing as shown in Plate 4.21 and 4.22. Gaps within the roof were also identified where roof tiles have been damaged (Plate 4.23) or have slipped as shown in Plate 4.24 and 4.25.



Plate 4.21: Gap Under Ridge and Lifted Lead Flashing



Plate 4.22: Lifted Lead Flashing and Gap Under a Tile



Plate 4.23: Damaged Tile and Gaps Under Tiles



Plate 4.24: Slipped Roof Tiles



Plate 4.25: Slipped Roof Tile

Within the brickwork of the building gaps were identified where the mortar was missing within the brickwork over a window (Plate 4.26) which provides a potential crevice for roosting bats. Access points into the internal areas of the building were also notes around pipes (Plate 4.27) and where external vents have been broken (Plate 4.28) as well as gaps within the door (Plate 4.29).



Plate 4.26: Gap within the Brickwork Above the Window



Plate 4.27: Gap Around the Pipe



Plate 4.28: Gap in the External Wall



Plate 4.29 Gaps Within the Door

A number of features were recorded around the building which could be utilised by bats to gain entry into the building and potential roost locations. These features include:

- Gaps underneath the ridge tiles;
- Gaps underneath lifted lead flashing;
- Gaps created from damaged and slipped roof tiles;
- Gaps within the brick wall; and,
- Gaps within the door.

It was not possible to fully inspect all of the features due to the height at which they were located and as such it was not possible to establish if bats had used these features to enter a roost location at the time of surveying. No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded within the features that could be fully inspected during the survey.

4.4 SURVEY RESULTS – TREES

4.4.1 Trees with Low or Negligible Potential to Support Roosting Bats

Two semi-mature sycamore trees were identified within the application site (Plate 4.30 and 4.31). These trees did not have any suitable features for bats to roost within and therefore were assessed as having negligible potential for roosting bats.



Plate 4:30 Sycamore Tree



Plate 4.31 Sycamore Tree

4.5 SITE AND SURROUNDING HABITATS

The site offers limited foraging habitat but has connectivity to some suitable habitat within the wider landscape including adjacent residential gardens. These gardens contained mature trees and were relatively well connected to Southchurch Hall gardens and a railway line to the south with vegetated banks. Building 1 and 2 on site may provide shelter for roosting bats, as features suitable for roosting bats were noted.

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

- Residential houses and associated gardens;
- Standing waterbodies;
- Churches, schools, hospitals and associated grounds; and,
- Railway lines with vegetated banks.

Southchurch Hall gardens is located approximately 450 m south-west of the site. Southchurch Park is located 800 m south of the site. There is a railway line running in an east – west direction located approximately 200 m south of the site. These provide suitable foraging and commuting habitat for bats within the wider landscape.

5. DISCUSSION AND CONCLUSIONS

5.1 SUMMARY OF PROPOSALS

It is understood that the proposed development will involve the demolition of the 22 garages along the northern boundary and the construction of two end-of-terrace houses and two mews houses, as well as an extension to the existing commercial premises to the south.

5.2 ASSESSMENT OF BUILDINGS

During the assessment of building 1 (garages) numerous features were recorded around the building which could be utilised by bats to gain entry into the building and potential roost locations. These features include:

- Gaps under missing, slipped and lifted roof tiles;
- Gaps underneath the ridge tiles;
- Gaps underneath the cement at the edge of the roof;
- Gaps within the brick wall;
- Gaps between the brick wall and the door frame; and,
- Gaps between the garage doors.

It was not possible to fully inspect all of the features due to the height at which they were located and as such it was not possible to establish if bats had used these features to enter a roost location at the time of surveying. No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded within the features that could be fully inspected during the survey.

During the assessment of building 2 (613-619 Southchurch Road) numerous features were recorded around the building which could be utilised by bats to gain entry into the building and potential roost locations. These features include:

- Gaps underneath the ridge tiles;
- Gaps underneath lifted lead flashing;
- Gaps created from damaged and slipped roof tiles;
- Gaps within the brick wall; and,
- Gaps within the door.

It was not possible to fully inspect all of the features due to the height at which they were located and as such it was not possible to establish if bats had used these features to enter a roost location at the time of surveying. No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded within the features that could be fully inspected during the survey.

Due to an inability to fully inspect all features identified during the external inspection due to height and the lack of an internal survey due to COVID-19 restrictions, it is not possible to conclude whether the buildings are utilised by roosting bats at this time. Both building 1 and 2 were assessed as having high potential to support roosting bats.

5.3 ASSESSMENT OF TREES

Two semi-mature sycamore trees were identified within the application site. These trees did not have any suitable features for bats to roost within and therefore were assessed as having negligible potential for roosting bats.

5.4 POTENTIAL IMPACTS ON BATS

The proposed development works will involve demolition of building 1 and an extension to building 2 which has the potential directly impact upon bats. Both of these buildings provide suitable roosting features for bats. Should bats be found to be using the potential features within the building 1 or 2 on site for roosting, there is potential for direct harm, injury and disturbance. A recommendation for further survey work has therefore been made in Chapter 6.

If the development is to increase lighting, either during the construction or operational phase of the development, then there is potential for impacting foraging bats within the area resulting from the fragmentation of suitable habitat for bats. Any lighting left on overnight, or close to dawn and dusk, could have an impact on bats roosting and/or using the site to commute or forage. Recommendations have been made in Chapter 6.

The proposed redevelopment of the site has the potential to enhance the site for bats. Planting native trees and planting of species which attract night flying insects is encouraged as this will be of value to foraging bats. Furthermore, affixing bat boxes to and/or incorporating bat boxes into the new houses will create roosting opportunities. A recommendation regarding enhancements has been in Chapter 6.

6. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd'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 1 (Garages) and Building 2 (613-619 Southchurch Road)**

Building 1 (Garages) and Building 2 (613-619 Southchurch Road) have been identified as having high potential to support roosting bats. Bat Surveys: Good Practice Guidelines published by the Bat Conservation Trust (Collins, 2016) 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 **Sycamore trees**

The two sycamore trees within the survey area were considered to have 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.

R3 Lighting: In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018; Gunnell et al, 2012), 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:

- Avoiding the installation of new lighting in proximity to key ecological features, such as the northern site boundary which abuts residential gardens with mature trees.
- 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.

R4 **Habitat Enhancement**

In line with the National Planning Policy Framework, the development should aim to enhance the site for bats. Bat boxes should be installed to provide roosting habitat for species such as pipistrelle. In general, bats seek warm places and for this reason boxes should be located where they will receive full/partial sun, although installing boxes in a variety of orientations will provide a range of climatic conditions. Position boxes at least 4 m above ground to prevent disturbance from people and/or predators. The planting of species which attract night flying insects is encouraged as this will be of value to foraging bats, for example: evening primrose *Oenothera biennis*, goldenrod *Solidago virgaurea*, honeysuckle *Lonicera periclymenum* and fleabane *Pulicaria dysenterica*.

7. DRAWINGS

Drawing C155176-04-01 – Preliminary Bat Roost Assessment



C155176-04-01

Legend

- - - Site boundary
- Building
- / / / High bat roosting potential
- Tree with negligible bat roosting potential



Project
613-619 Southchurch Road, Southend

Drawing
Preliminary Roost Assessment

Client
AWW Architects

Drawing Number C155176-04-01	Revision 00
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Scale @ A4 1:500	Date June 2021
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Approved By SM	Drawn By VO
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REFERENCES AND BIBLIOGRAPHY

- Altringham, J (2003). *British Bats*. New Naturalist. HarperCollins.
- BSI. (2015). BS8596:2015 *Surveying for bats in trees and woodland*. British Standard Institution, London.
- Collins, J. (ed). (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.
- English Nature (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
- Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and urban design for bats and biodiversity*. Bat Conservation Trust.
- Joint Nature Conservation Committee (2012). *UK Post-2010 Biodiversity Framework*. Available: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf
- Jones, K and Walsh, A (2006). *A Guide to British Bats*. The Mammal Society, London.
- Middlemarch Environmental Ltd (2021). *Preliminary Arboricultural Assessment: 613-619 Southchurch Road, Southend*. RT-MME-155176-01.
- Middlemarch Environmental Ltd (2021). *Arboricultural Impact Assessment: 613-619 Southchurch Road, Southend*. RT-MME-155176-02.
- Middlemarch Environmental Ltd (2021). *Preliminary Ecological Appraisal: 613-619 Southchurch Road, Southend*. RT-MME-155176-03.
- 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.
- Ministry of Housing, Communities and Local Government (2019) *National Planning Policy Framework*. Available: <https://www.gov.uk/government/collections/revised-national-planning-policy-framework>
- Mitchell-Jones, A.J. & McLeish, A.P. (2004). *The Bat Workers' Manual (3rd Ed.)*. JNCC, Peterborough.
- The Conservation of Habitats and Species Regulations 2017.

APPENDIX 1

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 Environment and Rural Communities (NERC) Act 2006.

ECOLOGY

At present, 18 species of bats are known to live within the United Kingdom, of which 17 species are confirmed as breeding. All UK bat species are classed as insectivorous, feeding on a variety of invertebrates including midges, mosquitoes, lacewings, moths, beetles and small spiders.

Bats will roost within a variety of different roosting locations, included houses, farm buildings, churches, bridges, walls, trees, culverts, caves and tunnels. At different times of the year the bats roosting requirements alter and they can have different roosting locations for maternity roosts, mating roosts and hibernation roosts. Certain bat species will also change roosts throughout the bat activity season with the bat colony using the site to roost for a few days, abandoning the roost and then returning a few days or weeks later. This change can be for a variety of reasons including climatic conditions and prey availability. Bats are known live for several years and if the climatic conditions are unfavourable at a particular roost, they may abandon it for a number of years, before returning when conditions change. Due to the matriarchal nature of bat colonies, the locations of these roosts can be passed down through the generations.

Bats usually start to come out of hibernation in March and early April (weather dependent), when they start to forage and replenish the body weight lost during the hibernation period. The female bats then start to congregate together in maternity roosts prior to giving birth and a single baby is born in June or July. The female then works hard to feed her young so that they can become independent and of a sufficient weight to survive the winter before the weather gets too cold and invertebrate activity reduces. Males generally live solitary lives, or in small groups with other males, although in some species the males can be found living with the females all year. The mating season begins in the autumn. During the winter bats hibernate in safe locations which provide relatively constant conditions, although they may venture outside to forage on warmer winter nights.