BAT SURVEY
NORTH AVE, SOUTH SHIELDS







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2020
DRAFT

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A. SUMMARY

E3 Ecology Ltd was commissioned by Mr and Mrs Campbell in February 2020 to undertake a daytime bat risk assessment of 7 North Ave, South Shields.

It is proposed to demolish a conservatory and add a two storey extension in its place, with a new conservatory attached.

Consultation with the MAGIC website[1] indicated that there are no protected sites listed for bats within 2km.

Initial site inspection was undertaken on 11 February 2020 and comprised a detailed inspection of the structures on site.

The site is situated in an area dominated by residential houses with mature gardens. Temple Park, providing some moderate foraging habitat for urban bats, lies approximately 470m to the south west, with some commuting routes provided by the gardens. Overall, the habitats present in the local area are of low-moderate suitability for use by foraging/commuting bats.

The building is a two storey semi-detached house. Brickwork is in good condition, both internally and externally and overhanging eaves appeared well sealed. Roof coverings and slates also appeared in good condition. There is a high loft void with a large skylight creating light internal conditions. A small single storey modern extension has a shallow slate roof with no evidence of slipped slates; small areas of mortar were missing along the edge of the slates. The conservatory lacked roosting opportunities. Overall, the building is considered of low to negligible suitability for use by roosting bats.

Thorough internal and external inspection of the building recorded no evidence of bat use.

Evidence of roosting birds was recorded on an overhanging window lintel but no signs of nesting birds were recorded.

Overall, the proposed works are considered to have a low to negligible risk of affecting roosting bats and no further survey work is recommended. It is recommended, as a matter of good practice, that roof slate removal, where required, is undertaken carefully by hand and lighting, post development, is kept low lumen and low level to minimise impacts on any foraging habitat. As enhancement it is recommended that a single bat box is erected either on suitable trees or on the building.

If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.

[1] MAGIC website: www.magic.gov.uk

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B. Introduction

The purpose of this report is:

- To detail the results of the survey work of the buildings and trees on site that has been undertaken for bats.
- To provide recommendations to be incorporated into the design for the site.
- To provide recommendations for further survey work, where required.
- To set out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant effects
- To identify appropriate enhancement measures

The site is located on North Avenue, South Shields at an approximate central grid reference of NZ3767 6466.

B.1 Current Development Information

The planning application is for the demolition of a conservatory and the erection of a two storey extension, with a new conservatory added on to this extension. Development proposals are likely to involve:

- Keying in of new build to existing brickwork
- Removal of a small section of roof and soffit board to tie in the new extension.



Figure 1: Development Proposals (pre & post development)

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C. PLANNING POLICY AND LEGISLATIVE CONTEXT

C.1 NATIONAL PLANNING POLICY

The table below details the key paragraphs from the National Planning Policy Framework (NPPF)[2] relating to the natural environment:

TABLE 1: NATIONAL PLANNING POLICY FRAMEWORK: CONSERVING AND ENHANCING THE NATURAL ENVIRONMENT	
Statement	**Paragraph**
Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.	*170*
Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework[3]; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.	*171*
Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads[4]. The scale and extent of development within these designated areas should be limited. Planning permission should be refused for major development[5] other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of: a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.	*172*
Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 172), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.	*173*
To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological	*174*

[2] National Planning Policy Framework (February 2019), Department for Communities and Local Government,
[3] Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality.
[4] English National Parks and the Broads: UK Government Vision and Circular 2010 provides further guidance and information about their statutory purposes, management and other matters.
[5] For the purposes of paragraphs 172 and 173, whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.

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Table 1: National Planning Policy Framework: Conserving and Enhancing the Natural Environment	
Statement	**Paragraph**
networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity[6]; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation[7]; and b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.	
When determining planning applications, local planning authorities should apply the following principles: a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons[8] and a suitable compensation strategy exists; and d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.	*175*
The following should be given the same protection as habitats sites: a) potential Special Protection Areas and possible Special Areas of Conservation; b) listed or proposed Ramsar sites[9]; and c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.	*176*
The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.	*177*

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

Planning Practice Guidance[10] states:

- Planning authorities need to consider the potential impacts of development on protected and priority species, and the scope to avoid or mitigate any impacts when considering site allocations or planning applications. (para. 016)
- Information on biodiversity and geodiversity impacts and opportunities needs to inform all stages of development (including site selection and design, pre-application

[6] Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.
[7] Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.
[8] For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.
[9] Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site.
[10] Planning Practice Guidance: Natural Environment (www.planningguidance.communities.gov) Updated July 2019

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consultation and the application itself). An ecological survey will be necessary in advance of a planning application if the type and location of development could have a significant impact on biodiversity and existing information is lacking or inadequate. (para. 018)

- Even where an Environmental Impact Assessment is not needed, it might still be appropriate to undertake an ecological survey, for example, where protected species may be present or where biodiverse habitats may be lost. (para. 018)
- As with other supporting information, local planning authorities should require ecological surveys only where clearly justified. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity. (para. 018)
- The National Planning Policy Framework encourages net gains for biodiversity to be sought through planning policies and decisions. Biodiversity net gain delivers measurable improvements for biodiversity by creating or enhancing habitats in association with development. Biodiversity net gain can be achieved on-site, off-site or through a combination of on-site and off-site measures. (para. 022)

C.2 RELEVANT LEGISLATION

Within England all bat species are specially protected under the Conservation of Habitats and Species) Regulations 2017 (as amended).

As a result there is a requirement to consult with Natural England before undertaking any works that may disturb bats or their roost, and under the Conservation of Habitats and Species Regulations it is illegal to.

- Deliberately kill, injure or capture bats.
- Deliberately obstruct access to a bat roost.
- Damage or destroy a bat roost.
- Deliberately disturb bats; in particular any disturbance which is likely to impair their ability:

  (i) to survive, to breed or reproduce, or to rear or nurture their young; or

  (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

  (iii) to affect significantly the local distribution or abundance of the species to which they belong.

Under the Wildlife and Countryside Act (1981) the above offence of disturbing bats includes low level disturbance and as such under this act it is also an offence to:

- Intentionally or recklessly disturb at bat while it is occupying a roost.
- Intentionally or recklessly obstruct access to a roost.

Under the above legal protection, only the offences under the Conservation of Habitats and Species Regulations 2017 (as amended) are strict liability offences; the remaining offences, under the Wildlife and Countryside Act (1981), are offences only where they are carried out "intentionally or recklessly".

Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of disturbing bats is extended to cover reckless damage or disturbance.

The Hedgerow Regulations 1997 provide for the conservation of important hedgerows and their constituent trees. The presence of a protected species such as bats is a relevant consideration

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when assessing whether a hedgerow is important and may influence a local planning authority's decision on whether to approve removal of such hedges.

C.3 Wildlife Site Policy and Legislation

Details of the legislation surrounding protected sites are provided in the appendices.

C.4 Priority Species

Although not afforded any legal protection, national priority species (species of principal importance, as listed in Section 41 of the NERC Act (2006)), and local and regional priority species, as detailed within the relevant biodiversity action plans, are material considerations in the planning process and as such have been assessed accordingly within this report.

The following bat species are listed as national priority species: Barbastelle bat, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat and lesser horseshoe bat. 'Bats' as a species group is also listed on the relevant local biodiversity action plan for this site.

D. Methodology

D.1 Scope of Study

The scope of the study, in terms of the survey area and the desk study area, is based on professional judgement. The scope has been determined based on the site's characteristics, the nature of the surrounding area, the development proposed at the time of reporting and the likely associated zone of influence.

For this site the survey area comprised the green line boundary as defined within the figure below, with, in addition, a 50m buffer around the periphery appraised where access was available. The survey area included all potential roost sites within and adjacent to the survey area, which may be affected by the proposed development.

The desk study included an assessment of land-use in the surrounding area and a data search covering a 2km buffer zone (see below for further detail).

The level of survey effort employed at the site has taken account of the recommendations within the Bat Conservation Trust Good Practice Survey Guidelines[11].

The figures below illustrate firstly the site boundary and secondly, to provide context, the broad habitats present on site and within an approximate 500m buffer zone.

[11] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

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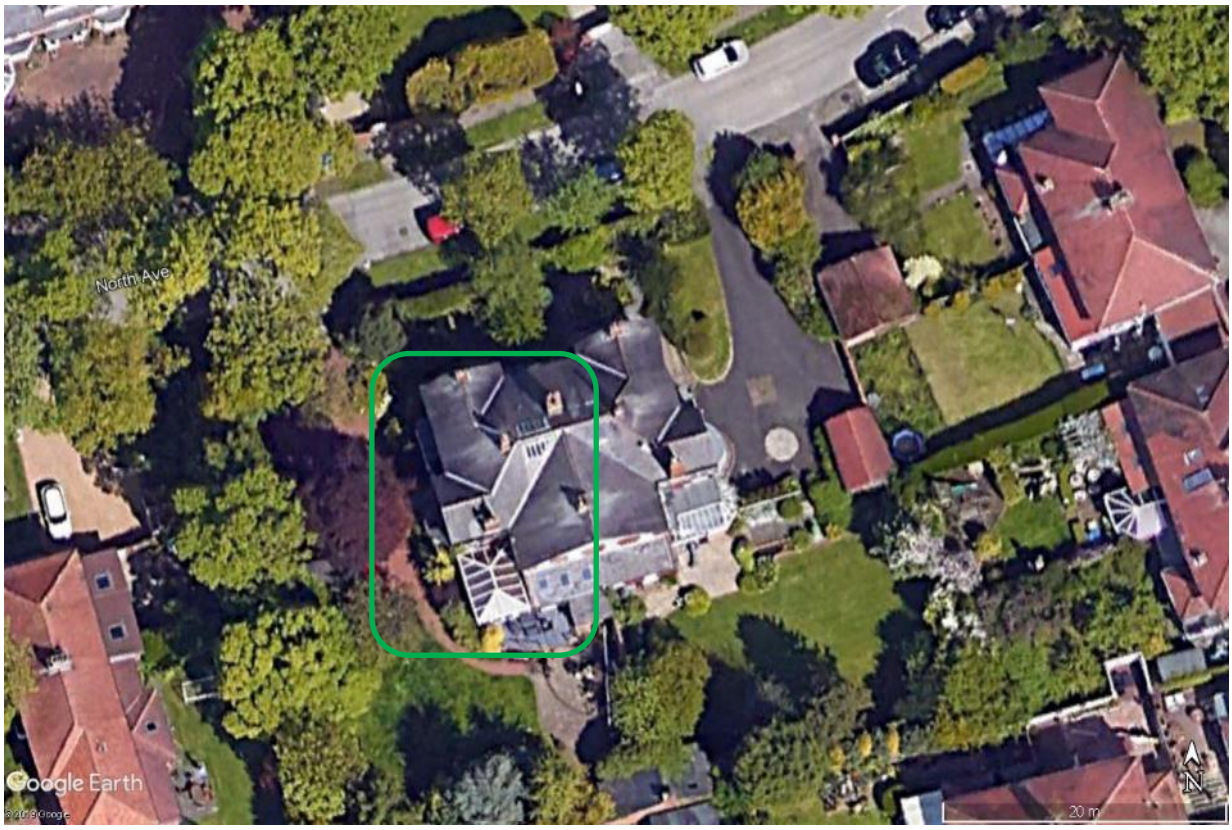


Figure 2: Site Boundary
(Reproduced under licence from Google Earth Pro.)



Figure 3: Site and Setting
(Reproduced under licence from Google Earth Pro.)

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D.2 DESK STUDY

Initially, the site was assessed from aerial photographs and 1:25,000 Ordnance Survey maps. Following this, a data search was submitted to the local bat group in February 2020, requesting data relating to bats.

D.3 PRELIMINARY FIELD STUDY METHODOLOGY

D.3.1 PRELIMINARY ASSESSMENT

The potential suitability of the habitats within the survey area in relation to commuting and foraging bats was classified as negligible, low, moderate or high, based on guidelines provided by the Bat Conservation Trust[12] and detailed within the table below.

TABLE 2: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF HABITAT FEATURES WITHIN THE LANDSCAPE.
(TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TABLE 4.1 BAT SURVEY GUIDELINES)

Suitability	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland tree lined watercourses and grazed parkland. Site is close to and connected to known roosts.

D.3.2 DAYTIME BAT RISK ASSESSMENT (STRUCTURES)

A daytime assessment was made of all structures affected by the proposed development, in order to evaluate their potential for supporting bat roosts, and, where present, to record signs of use by bats.

Structures were inspected both externally and internally where access was available. Binoculars and extendable ladders were used to assist with the inspection for droppings and other field signs.

Where present, soffits, purlins and ridge boards were searched thoroughly, together with the walls and floor under potential roost sites and any mortise joints, particularly in the gable walls. Wherever practicable, roof spaces and attic areas were surveyed for signs of droppings, which persist all year in dry conditions, food debris, entry points and bats themselves. Where bats were present the survey was adapted to avoid disturbance, with identification being

[12] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

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confirmed either by recording bats at emergence and analysing the calls or through undertaking DNA analysis of droppings.

Externally, the building was examined for potential roost access points indicated by clean crevices, urine marks, polished wood or stonework and droppings. Particular attention was given to sheltered areas under the eaves of buildings, window ledges and towards the tops of windows where droppings are less likely to have been washed off.

Structures were categorised as having negligible, low, moderate or high suitability to be used by roosting bats, based on guidelines provided by the Bat Conservation Trust[13] and detailed within the table below.

TABLE 3: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF ROOSTING HABITAT FEATURES (STRUCTURES)
(TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TABLE 4.1 BAT SURVEY GUIDELINES)

Suitability	Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
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 by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
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).
High	A structure with one or more potential roost site 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.

Note that comments on the state of the structures within the site relate solely to their potential use by bats and must not be taken as a professional assessment of the structural integrity or safety of the structures. For example, descriptions of walls and roofs being in 'good' or 'poor condition' relate to likely provision of roost sites for bats, potential access routes to roost sites, and likely persistence of field signs such as droppings and feeding remains, which will not persist in exposed conditions. Maternity roosts are less likely to be present in cool, exposed, damp and draughty locations which may develop in a building in poor condition.

D.3.3 PRELIMINARY SURVEY - EQUIPMENT

- Clulite CB2 high powered torch.
- Opticron 8 x 32 binoculars
- Digital camera
- Extendable ladders

D.3.4 PRELIMINARY SURVEY – DATES & ENVIRONMENTAL CONDITIONS

TABLE 4: DAYTIME SURVEY CONDITIONS

DATE	TEMPERATURE	CLOUD COVER	PRECIPITATION	WIND CONDITIONS
11.2.20	4ºC	Clear	Dry	F3

D.4 PERSONNEL

The table below details the personnel who undertook the survey work.

[13] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

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TABLE 5: PERSONNEL			
Name	**Position**	**Professional Qualifications**	**Natural England Survey Licence Numbers**
Mary Martin	Director	BSc MCIEEM	2015-12822-CLS-CLS

Further details of experience and qualifications are available at www.e3ecology.co.uk.

D.5 ASSESSMENT METHODOLOGY

The relative value of the ecological receptors (habitats, species and designated sites) was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore generally considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for Ecological Impact Assessment produced by the Chartered Institute of Ecology and Environmental Management[14], is a complex and subjective process and requires the application of professional judgement.

When assessing the value of species and habitats, relevant documents and legislation are considered including the lists of species and habitat of principal importance annexed to the NERC Act (2006) and those provided within relevant local Biodiversity Action Plans. Data provided through consultation is also considered. These data sources can provide context at a local, regional and national scale.

The table below provides examples of receptors of value at different geographical scales.

TABLE 6: ECOLOGICAL RECEPTOR VALUATION	
Level of Value	**Examples**
International	An internationally designated site or candidate site.
	A site meeting criteria for international designation.
	The site is of functional importance* to a species population with internationally important numbers (i.e. >1% of the biogeographic population)
National	A nationally designated site.
	The site is of functional importance* to a species population with nationally important numbers (i.e. >1% of the national population)
Regional	The site is of functional importance* to a species population with regionally important numbers (i.e. >1% of the regional population)
County	A Local Wildlife Site (LWS) or equivalent, designated at a County level
	The site is of functional importance* to a species population of county value (i.e. >1% of the county population)
District	A Local Wildlife Site (LWS) or equivalent, designated at a District level
	The site is of functional importance* to a species population of district value (i.e. >1% of the district population)
Parish	A species population considered to appreciably enrich the nature conservation resource within the context of the parish.
	Local Nature Reserves
Local	A species population that contributes to local biodiversity but are not exceptional in the context of the parish.
Low	Habitats that are unexceptional and common to the local area.
** Functional importance defined as 'a feature which, based on professional judgement, is of importance to the day to day functioning of the population, the loss of which would have a detectable adverse effect on that population',*	

14 Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

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E. Results

E.1 Desktop Study

E.1.1 Pre-existing Information

Ordnance Survey Mapping and Aerial Photography

The most recent aerial photograph of the site (Section D, 2018) indicates that habitats on site are dominated by the house and garden. Historic imagery suggests that there may have been some changes to the conservatory/extension layout over the years, but otherwise the site remains largely unchanged since 2001.

MAGIC Website[15]

There are no internationally and nationally statutorily designated sites for bats within 2km.

E.1.2 Consultation

Local Bat Group

The bat group has been consulted and a response is awaited; it is not considered that this is likely to impact on the conclusions of this report.

E.2 Daytime Risk Assessment

E.2.1 Habitats

Foraging Habitats

The garden provides a small area of foraging habitat, with other gardens locally providing a similar resource. In the wider area, Temple Park, approximately 470m to the south west, will provide some moderate foraging habitat for urban bat species.



Commuting Routes

The gardens will provide some commuting routes to the wider habitat.

Sheltered Flight Areas

The garden will provide a small area of habitat moderately sheltered from wind.

[15] MAGIC Website: www.magic.gov.uk

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ALTERNATIVE ROOST LOCATIONS

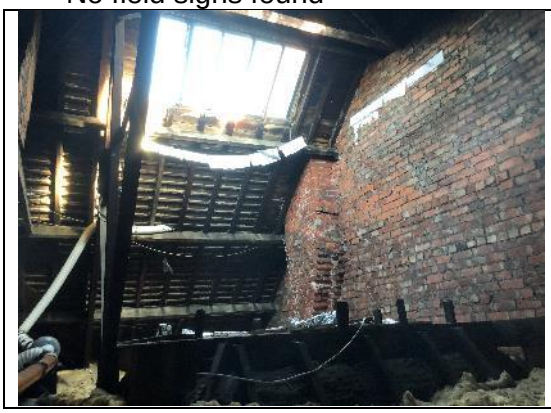
There are numerous alternative roost locations, including houses closer to the better habitat of Temple Park.



E.2.2 BUILDINGS

The following text provides building descriptions. Where recorded, field signs that confirm bat use are in bold.

- Two storey semi-detached dwelling
- Brick construction with rendered upper gable, no gaps noted
- Roof overhang with timber soffit, tightly sealed
- Slates all appear in good condition where visible
- Ridge tiles a mix of pantile and lead, all tightly sealed where visible
- Double glazed windows, no gaps noted
- Modern single storey extension to the south east corner has a shallow pitched slate roof, in good condition with the exception of one missing slate but this did not appear to provide any access below slates; skylights present, no loft void; boxed eaves and fascia well sealed; occasional areas of missing mortar along edge of roof under slates.
- Conservatory has glazed roof and ¾ height brick wall base.
- Loft ~4m high in centre, with large skylight to provide borrowed light to landing below, creating light internal conditions.
- Roof is unlined, insulation in thin, brick walls are well sealed; draughty. A small number of missing bricks between this loft and adjacent dwelling's void. The adjacent void could not be inspected, but has skylights; it will not be affected by proposals, even indirectly.
- No field signs found





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E.3 Overview of Site Suitability

Table 7: Overview of Site Suitability for Bats				
	Habitats and Setting[16]			
	Negligible	Low	Moderate	High
Habitats and cover within 200m	City Centre	Open, exposed arable, amenity grass or pasture	Hedges and trees linking site to foraging habitat	Excellent cover with mature trees and/or good hedges
Habitats within 1km	City Centre	Little tree cover, few hedges, arable dominated	Semi-natural or urban park habitats e.g. trees, hedgerows	Good network of woods, wetland and hedges
Alternative roosts within 1km	City centre	Numerous alternative roost sites of a similar nature	A number of similar buildings in the local area	Few alternative buildings and site of good quality for roosts
Setting	Inner city	Urban with little green space	Built development with green-space, trees	Rural Lowland with woodland and trees.
Distance to water/ marsh	>1km	500m-1000m	200m-500m	<200m
Distance to woodland/ scrub	>1km	500m-1000m	200m-500m	<200m
Distance to species-rich	>1km	500m-1000m	200m-500m	<200m

[16] Building and habitat risk assessment technique audited in a research project with York University which compared the risk assessment scoring with the results of detailed field assessment for over 100 sites. Statistically significant associations were found between habitat setting and building features and the presence of absence of different bat species. For example habitat connections and nearby woodland were significant for brown long-eared bats and the presence of species-rich grassland is important for many species.

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Table 7: Overview of Site Suitability for Bats				
Grassland				
Commuting routes	Isolated by development, major roads, large scale agriculture	No potential flyways linking site to wider countryside	Some potential commuting routes to and from site	Site is well connected to surrounding area with multiple flyways
Buildings[2]				
	Negligible	**Low**	**Moderate**	**High**
Age (approx.)	Modern	Post 1940's	1900-1940	Pre 20th C
Building/ complex type	Industrial complex of modern design	Single, small building	Several buildings, large old single structure	Traditional farm buildings, country house, hospital
Building - storeys	N/A	Single storey	Multiple storeys	Multiple storeys with large roof voids
Stone/brick work	No detectable crevices	Well pointed	Some cracks and crevices	Poor condition, many crevices, thick walls
Framework – timbers/steel	Modern metal frame with sheet cladding	Timber purlins, sheet asbestos	Timbers kingpost or similar	Large timbers traditional joints
Roof void	Fully sealed or flat roof	Small, cluttered void	Medium, relatively open	Large, open, interconnected
Roof covering	Modern sheet materials and tightly sealed	Good condition or very open not weatherproof modern sheet materials	Some potential access routes, slates, tiles	Uneven with gaps, not too open, stone slates
Additional features	Very well maintained and tightly sealed	Very limited features with potential access	Some features with potential access	Hanging tiles, cladding, barge boards, soffits with access gaps
External lighting	Extensive security lights covering much of the site	Widespread areas above 2 lux at night	Intermittent lights of low intensity	Minimal
Building use	Very noisy, dusty	Regular use	Intermittent use	Disused

Although the building has some moderate suitability features, these are to do with its structure, and potential roosting opportunities are very limited. It lies within a setting of low to moderate suitability for urban bats.

E.4 Additional Species Groups

There was evidence of roosting birds using an overhanging window lintel but no evidence of nesting birds.

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F. SITE ASSESSMENT

F.1 ASSESSMENT OF SURVEY FINDINGS

The area of building to be affected is considered of low to negligible suitability for roosting bats.

F.2 POPULATION SIZE CLASS ASSESSMENT

Bats are considered most likely to be absent from the area of building to be affected, although there is a very low residual risk that an individual bat may use the sub-optimal roosting opportunity associated with the small single storey extension.

F.3 LIMITATIONS AND CONSTRAINTS

Survey was completed in winter, when external field signs may not be present.

Assessment of the bat use of the site at other times of year and the potential impacts of the proposed development is based on professional judgement. This is an approach supported by the Bat Conservation Trust Good Practice Guidelines[17] where it is stated that 'If a site has very little or no potential for bats, this should be explained in the preliminary ecological appraisal and no further surveys should be proposed'.

G. IMPACT ASSESSMENT

G.1 DIRECT DEVELOPMENT IMPACTS

- Very low residual risk of individual bats being found and harmed during works.

G.2 LONG TERM DIRECT IMPACTS

- Increased lighting impacting on a small area of potential bat foraging habitat

G.3 INDIRECT IMPACTS ON LOCAL POPULATIONS

- None anticipated

H. RECOMMENDATIONS

H.1 FURTHER SURVEY

For this site, no activity surveys are considered necessary as the area of building to be affected is considered of low to negligible suitability. The BCT guidelines state that if a structure is classified as having low suitability for bats an ecologist should make a professional judgement on how to proceed based on all of the evidence available. For this site, the only potential area of access identified is a small area of missing mortar under the slates of the small modern single storey extension, otherwise the area of building to be affected is very well

[17] Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust

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sealed. It is considered a suitable approach for works to proceed under precautionary working methods.

H.2 AVOIDANCE AND MITIGATION STRATEGY

H.2.1 SITE DESIGN

- External lighting that may reduce bat use of foraging habitat will be avoided. High intensity security lights will be avoided as far as practical, and any lighting in the garden will be low level (2m) and low lumen. Light spillage to areas potentially used by foraging or commuting bats (particularly the site boundaries at this site) should be less than 2 lux. Where security lights are required, these will be of minimum practicable brightness, be set on a short timer and will be motion sensitive only to larger objects.

H.2.2 TIMING OF WORKS

- No timing restrictions are considered necessary.

H.2.3 WORKING METHODS AND BEST PRACTICE

- As a precaution, where required slates and fascia/soffit boards will be removed carefully by hand, being aware that there is a very low residual risk that individual bats may be present beneath slates or in any cavities.
- If bats are found during works, works will stop in that area and the ecological consultant will be contacted immediately. If it is necessary to move the bats for their safety, this will be undertaken by a licensed bat handler.

The following measures should be included as general good working practice:

- Timber treatments that are toxic to mammals will be avoided. If required, timber treatment will be carried out in the spring or autumn. Both pre-treated timbers and timber treatments will use chemicals classed as safe for use where bats may be present (see http://www.jncc.gov.uk/pdf/batwork_manualpt4.pdf).

H.3 COMPENSATION STRATEGY

With the implementation of the above mitigation strategy it is not anticipated that there will be any significant adverse residual effects from the proposed development. As such, a compensation strategy is not required.

H.4 MONITORING

Given the nature of the proposed mitigation and/or compensation strategies, no monitoring is proposed.

H.5 ADDITIONAL ENHANCEMENT RECOMMENDATIONS

The following additional enhancement measures are recommended in order to further enhance the site for biodiversity:

- A single bat box erected either on trees or on the house.

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