

Preliminary Roost Assessment and Bat Emergence Survey

90-91 South Terrace, Littlehampton, West Sussex, BN17 5LJ

JNP Development & Investments Ltd

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Executive summary

Arbtech were commissioned by JNP Development & Investments Ltd to undertake a Preliminary Roost Assessment (PRA) and Bat Emergence and Re-entry Surveys at 90-91 South Terrace, Littlehampton, West Sussex, BN17 5LJ. The surveys were completed on 31st August 2021 (PRA) and 3rd September 2021 (BERS). The aim of the assessment was to consider the value and suitability of the structures for roosting bats and to confirm the presence or likely-absence of a bat roost. When bat roosts are identified this includes providing evidence for species, numbers and levels of activity, to identify any entrance and egress points, and to gain an understanding of the activity of bats using the site in the local landscape. The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds, and the suitability of the site for barn owls.

The development proposals are for the extension extending upwards and renovating into ten 1-bedroom flats. A planning application is being prepared for submission to Arun District Council.

Recommendations

Preliminary Roost Assessment recommendations

Ref	Survey assessment conclusions (with justification)	Recommendations
B1 Bats	This building has a low likelihood of supporting roosting bats. Crevice dwelling bats could roost in gaps under the roof tiles which are lifted and within the hole in the soffit. There are good foraging and commuting resources in close proximity.	One bat emergence survey is required during the active bat season (May – September) to characterise the roosts present. At least two of the surveys should be completed during the optimal survey period mid-May to August inclusive. Sub-optimal: early May and September. This survey will be a dusk survey. Three surveyors are required to provide full coverage of the building.
B1 Birds	No evidence of nesting birds was found during the survey, however birds could use the building on site for nesting. Bird droppings were observed in the hole in the soffit by the main door on the western elevation.	Any building works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building/trees and scrub to be removed should be undertaken immediately prior to clearance. All active nests will need to be retained until the young have fledged.

Bat Emergence Survey recommendations

Ref	Survey conclusions	Recommendations / Mitigation
B1	There is a likely absence of a bat roost in B1. No bats were seen emerging or re-entering the building during the survey.	In the unlikely event that bats are unexpectedly found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.

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1.0 Introduction and Context

1.1 Background

Arbtech were commissioned by JNP Development & Investments Ltd to undertake a Preliminary Roost Assessment (PRA) and Bat Emergence and Re-entry Surveys at 90-91 South Terrace, Littlehampton, West Sussex, BN17 5LJ. The surveys were completed on 31st August 2021 (PRA) and 3rd September 2021 (BERS). The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

No previous reports have been produced for this site by Arbtech or known by others.

1.2 Site Context

The site is located at National Grid Reference TQ 02858 01601 and has an area of approximately 0.1ha. There is one building within the site boundaries. This building, designated as B1, was surveyed as this will be affected by the proposed development.

1.3 Scope of the report

This report provides a description of all features suitable for roosting bats, and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. This report also provides a description of the bat activity observed and recorded during the survey. The aim of the assessment was to characterise any roosts present including species, number of individuals, number and location of roost access points, and to gain an understanding of how bats use the site.

Information is provided regarding any constraints to the proposals as a result of roosting bats, and summarises any mitigation required to achieve planning permission and statutory consent to comply with wildlife legislation.

To achieve the aims of the assessment, the following steps have been taken:

- A desk study has been carried out including a request for information from the local bat group or records centre.
- A field survey has been undertaken, including an external survey and internal inspection where possible.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals.

A survey plan is presented in Appendix 1, proposed plans in Appendix 2 (where available), desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

The development proposals are for the extension extending upwards and renovating into ten 1-bedroom flats. A planning application is being prepared for submission to Arun District Council.

2.0 Methodology

2.1 Desk Study methodology

The desk study included a 2km radius review of statutory and non-statutory designated sites, Biodiversity Action Plan (BAP) Priority Habitats and granted EPSML records for bats held on MAGIC database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

Existing bat records relating to the site and a surrounding 2km radius are required to conform to national guidelines. The data search is confidential information that is not suitable for public release and has been analysed and summarised for presentation in this report.

2.2 Site Survey methodology – Preliminary Roost Assessment

The Preliminary Roost Assessment element of the survey was undertaken by Megan Knapp BSc (Hons) Ecological Surveyor [accredited agent to Natural England bat licence number 2018-33540-CLS-CLS] on 31st August 2021.

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for bats and signs of bat activity.

For any surveyed buildings:

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building(s) for potential access/egress points, and for signs of bat use. An internal inspection of the building was also made, including the living areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope, torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

For any surveyed trees:

A visual inspection from ground level using binoculars and where accessible and safe to do so, an internal inspection of potential roosting features using an endoscope, torch and ladders.

2.3 Site Survey methodology – Emergence and Re-entry Surveys

The lead surveyor is Toby Bowman and was assisted by experienced surveyors with several years of bat survey experience. Three surveyors were used to provide sufficient cover of the building during the survey. The designated position of each surveyor during each survey is detailed in the tables in Section 3.9 below, and shown on the plan in Appendix 1.

The surveys involved surveyors positioned around the building ensuring that all elevations and roof sections with suitable roosting features could be clearly observed. Particular attention was paid to the areas of the building identified as providing suitable access points to bat roosts. The location of each surveyor during each survey is shown in Appendix 1. Each surveyor was assigned an area of the building to observe for the duration of the survey. Surveyors used heterodyne and frequency division bat detectors, and Wildlife Acoustics EM3+ and Echo Meter Touch detectors connected to iPads. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7 when required. The Echo Meter Touch includes an auto ID function for bat species, however this is not 100% accurate and further post-survey sound analysis is often required to confirm species that could not be identified by the auto ID software during the survey. Surveyors also used head torches, survey record sheets and pens/pencils for recording all activity observed during the surveys. Each

surveyor was also provided with a hand held radio for communication between surveyors to assist with confirming ambiguous bat activity e.g. a bat emergence or a bat passing over the building.

In accordance with the latest bat survey guidelines (Collins, J. 2016) dusk emergence surveys commenced 15 minutes before sunset and continued for 1½ - 2 hours after sunset – depending upon bat activity and surveyor visibility. Dawn re-entry surveys commenced 2 hours before sunrise and continued until 15 minutes after sunrise.

Surveys were completed during optimal weather conditions i.e. when temperatures were above 10°C, with no rain or strong winds, as these adverse weather conditions can impact upon bat emergence and foraging behaviour.

2.4 Breeding birds and other incidental observations

The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds, and the suitability of the site for barn owls *Tyto alba*.

2.5 Suitability Assessment

All affected survey features on site were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, J. (ed) 2016). The features that dictate the likelihood of roosting bats are summarised in Tables 1 and 2 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 1: Features of a building that are correlated with use by bats

Likelihood of bats being present	Feature of building and its context
Higher	Buildings/structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data).
Lower	A small number of possible roost sites/features, used sporadically by more widespread species. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.

Table 2: Features of a tree that are correlated with use by bats

Likelihood of bats being present	Feature of tree and its context
Higher	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.
Lower	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.

2.6 Limitations

It should be noted that whilst every effort has been made to describe the features on site in the context of their suitability for roosting bats, this does not provide a complete characterisation of the site. These surveys follow best practice guidance to assess the habitat suitability of the building on site and to confirm presence/likely absence of roosting bats. Where present, roosts have been characterised. However, this information is collected at finite dates and times, and provides an indication of the conditions on site only. The use of the building and the site as a whole by bats, at all times cannot be established based on this information.

Specific limitations to the survey were a lack of access within the loft space of B1 due to health and safety reasons (the loft flooring insulation was all chewed up and created breathing issues), there were also no floorboards which proved to be unsafe to walk on. This meant that the southern section of the loft was not fully inspected. There was also no clear view of the eastern elevation due to the close proximity to the neighbouring building.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results are provided below, full details are presented in Appendix 3.

3.2 Designated sites

Details of any statutory and non-statutory designated sites within a 1km radius of the survey site, including their reasons for notification, are provided in the table below.

Table 3: Designated sites within 1km radius of the site

Designated Name	Site	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Statutory Sites			
West beach (LNR)		530m south	
Climping Beach (SSSI)		180m south-west	
Non-statutory Sites			
None known			

3.3 Landscape

A review of the designated sites, aerial photographs (Figure 1), the Magic database and OS maps has been undertaken. Collated together, the site's local bat habitat is described below:

The site is in an urban area of south West Sussex. The landscape is dominated by housing, with the town of Littlehampton extending adjacent to the east. There is a pond and small areas of scattered woodland and treelines, which could be used for foraging and commuting.

Priority habitats within 1km of the site are listed in the table below.

Table 4: Priority Habitat Inventory within 1km (Magic.gov.uk):

Habitat	Closest distance from site
Deciduous Woodland	~580m west
National Forest Inventory	~580m west
Good quality semi-improved grassland	~230m west
Traditional Orchards	~430m north-east

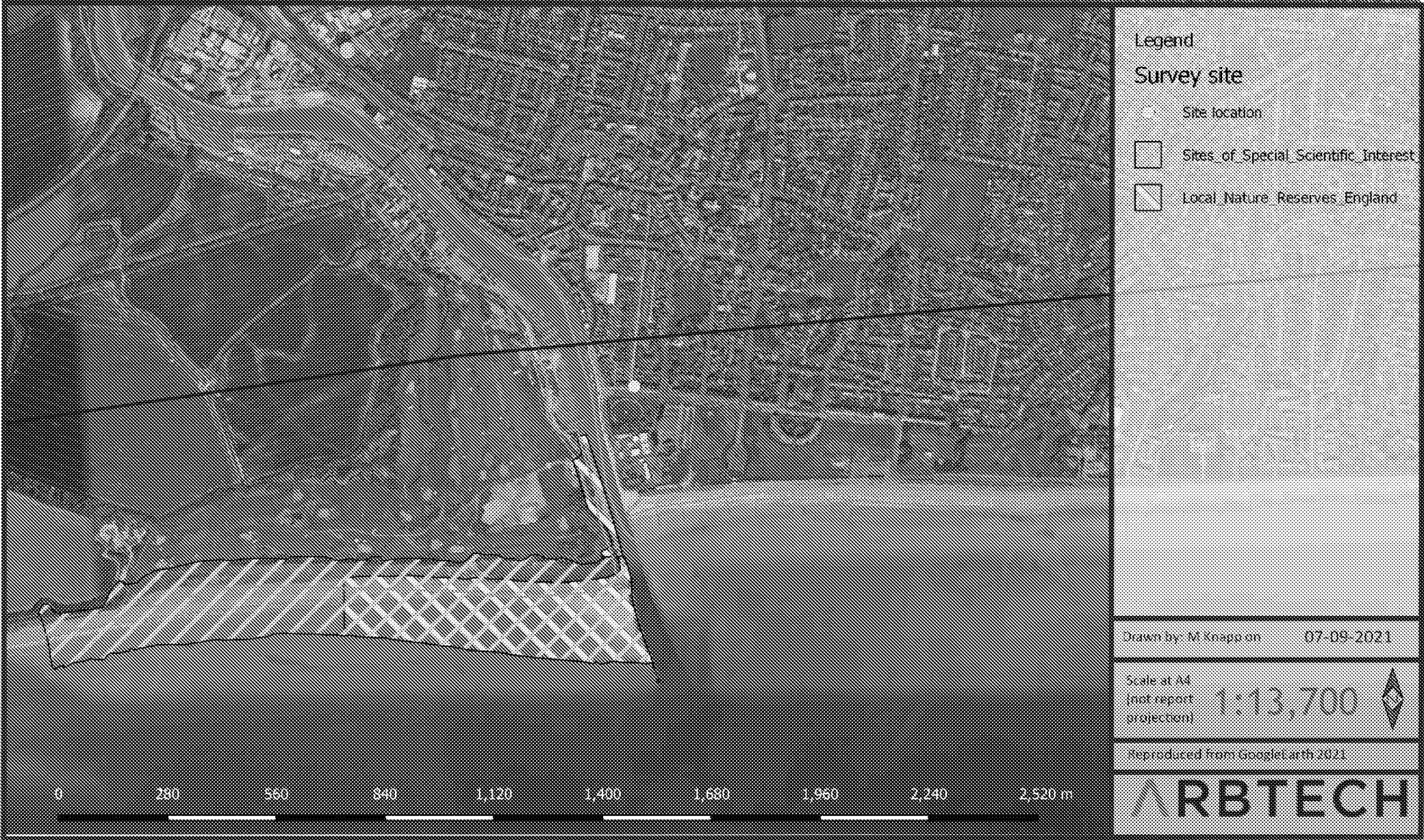


Figure 1: Aerial photo of site, showing landscape structure

3.4 Historical records

Sussex Biodiversity Records Centre will need to be commissioned to provide bat records within a 2km radius of the site.

A search of the Magic database for granted European Protected Species Mitigation Licences (EPSMLs) for bats for bats within a 2km radius of the site has been completed. Displaced bats from recently destroyed bat roosts >2km away from the survey site will find alternative roosting sites either within the mitigation measures implemented as part of the Licence, or will relocate to other known roost sites in close proximity to the Licenced site. The EPSML records show that two bat roosts have been destroyed within 2km involving common pipistrelle, soprano pipistrelle and brown long-eared bats. Displaced bats from these roosts could find suitable roosting habitat on site.

Table 5: Granted EPSMLs (bats) within 2km of the site

Case reference of granted application	Approx. distance from site	Bat Species Effected	Licence Start Date:	Licence End Date:	Impacts allowed by licence
EPSM2009-946	570m north east	C-PIP,S-PIP, BLE	04/06/2010	31/12/2011	Destruction of a breeding site and resting place
2017-28001-EPS-MIT	1970m north	C-PIP	01/04/2017	30/04/2018	Destruction of a resting place

3.5 Field Survey Results – Preliminary Roost Assessment

There is one building on site which was surveyed, this is designated as B1 and illustrated in the map in Appendix 1. The weather conditions recorded at the time of the survey are shown in the table below.

Table 7: Weather conditions during the survey

Date: 31/08/2021	
Temperature	18°C
Relative Humidity	70%
Cloud Cover	70%
Wind	9mph
Rain	None

3.6 Site Feature descriptions and photos

B1 Exterior

B1 is a detached double-storey brick-built building with a crossed hipped roof clad in clay roof tiles. The roof tiles are a poor to moderate condition with some raised tiles and missing tiles on all elevations, which crevice dwelling bats could roost under.

There is a flat roof section located on the northern elevation of the building. The flat roof is bitumen felt lined and is in a very good condition with no gaps in which bats could roost.

The doors and windows are UPVC and wooden framed and are in good condition with no suitable bat roost sites.

There are timber soffits around the building which are generally in good condition, however, there is one section of the soffit by the main doors on the western elevation that has a huge hole present. There are two chimneys located on the north-eastern elevation of the roof of the building. The condition of the brick work, tiles and lead flashing was not visible from the ground but are assumed to be intact due to the moderate condition of the main parts of the roof.

B1 Interior

There is one loft space within the main roof void of B1 in an 'L' shape. The roof structure is built from modern timber beams including the ridge beam. The roof is lined with wooden boards which are in a very good condition with no gaps or missing panels. The floor of the loft space is lined with mineral wool insulation and there are timber boards in places. There are cobwebs around the ridge beam and roof to floor cobwebs which could indicate a lack of internal flying activity from void dwelling bats, such as brown long-eared bats.

There were some places where daylight enters the loft space. There is evidence of mouse and rat activity including mouse droppings.

There were stored items within the loft, but a week prior to the survey, the loft was cleared out.

There were no signs internally of bats.

3.7 Preliminary Roost Assessment Recommendations

This Preliminary Roost Assessment Survey identified the following survey requirements for the site in line with best practice:

Table 8: Recommended surveys

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations
B1 Bats	This building has a low likelihood of supporting roosting bats. Crevice dwelling bats could roost in gaps under the roof tiles which are lifted and within the hole in the soffit. There are good foraging and commuting resources in close proximity.	As the proposals include the reconstruction of this building, any roost present could be destroyed. This could result in death or injury of bats.	One bat emergence survey is required during the active bat season (May – September) to characterise the roosts present. At least two of the surveys should be completed during the optimal survey period mid-May to August inclusive. Sub-optimal: early May and September. This survey will be a dusk survey. Three surveyors are required to provide full coverage of the building.
B1 Birds	No evidence of nesting birds was found during the survey, however birds could use the building on site for nesting. Bird droppings were observed in the hole in the soffit by the main door on the western elevation.	Active nests could be destroyed during building works.	Any building works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building/trees and scrub to be removed should be undertaken immediately prior to clearance. All active nests will need to be retained until the young have fledged.

3.8 Field Survey Results – Bat Emergence and Re-entry Surveys

One building on site was surveyed as this was assessed to provide suitable roosting habitat for bats and evidence of a bat roost was located during the Preliminary Roost Assessment. This building is designated as B1 and illustrated in the map in Appendix 1.

The results of the survey are provided in the table below.

Table 9: Survey results

Date		03/09/21
Start and End Times		19:30 – 21:15 Sunset: 19:42
Weather Conditions		Start: Temp: 19°C Relative Humidity: 74% Cloud Cover: 5% Wind: 2 (out of 8) Rain: None End: Temp: 17°C Relative Humidity: 78% Cloud Cover: 0% Wind: 1 (out of 8) Rain: None
Surveyor (position) As shown in Appendix 1		Toby Bowman - five years' experience of conducting these types of surveys (Position 1 – observing the northern and western roof elevation of B1) James Wheeler - Seven years' experience of conducting these type of surveys (Position 2 – observing the southern and eastern roof elevation of B1) Jane Plenderleith – One years' experience of conducting these types of surveys (position 3 – observing the western and southern roof elevation of B1 and T1)
Building Reference	Surveyor Position	Notes/observations:
B1	1	The first bat activity observed was a commuting pass by a noctule <i>Nyctalus noctula</i> at 20:08 which was not seen. Throughout the survey foraging and commuting activity by common pipistrelles <i>Pipistrellus pipistrellus</i> , soprano pipistrelles <i>Pipistrellus pygmaeus</i> and noctules were observed passing the northern elevation of B1. Activity took place from 20:08 until 21:08.
B1	2	The first bat activity observed was a commuting pass by a common pipistrelle at 20:18 which was seen flying from the gap between B1 and the neighbouring building on the eastern elevation. Throughout the survey foraging and commuting activity by common pipistrelles and noctules were observed, with many being heard but not seen. The several bats that were seen, were seen passing from the north-east of B1 towards the south. Activity took place from 20:18 until 21:08.
B1	3	The first bat activity observed was a commuting pass by a common pipistrelle at 20:18 which was not seen. Throughout the survey foraging and commuting activity by common pipistrelles, soprano pipistrelles and noctules were observed, with many being heard but not seen. The one bat that were seen, were seen passing from the north-east of B1 towards the south. Activity took place from 20:18 until 21:08.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

When bat roosts are present, the bat surveys undertaken at a site facilitate the characterisation of the roost type. This allows for appropriate mitigation and compensation to be designed to inform a European Protected Species Mitigation Licence (EPSML) application to Natural England.

The definitions of bat roost types are provided below, taken from the *Bat Mitigation Guidelines* (English Nature, 2004) and the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

Day roost: a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.

Night roost: a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.

Feeding roost: a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.

Transitional / occasional roost: used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.

Swarming site: where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites

Mating sites: sites where mating takes place from later summer and can continue through winter.

Maternity roost: where female bats give birth and raise their young to independence.

Hibernation roost: where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. Sites where hibernating bats have been confirmed by appropriate survey effort should be classed as 'hibernation confirmed'.

Satellite roost: an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Other: roost types are interchangeable and not always easy to classify according to the nuances of certain species.

The surveys undertaken to date in and around B1 provide sufficient information to inform a planning application. A European Protected Species Mitigation Licence (EPSML) **will not be required** to enable the proposed works to be lawfully undertaken. Appropriate justification for this assessment is provided in Section 3 of this report.

4.2 Evaluation

Taking the desk based assessment and site survey results into account, the following value for roosting bats has been placed on each site survey feature.

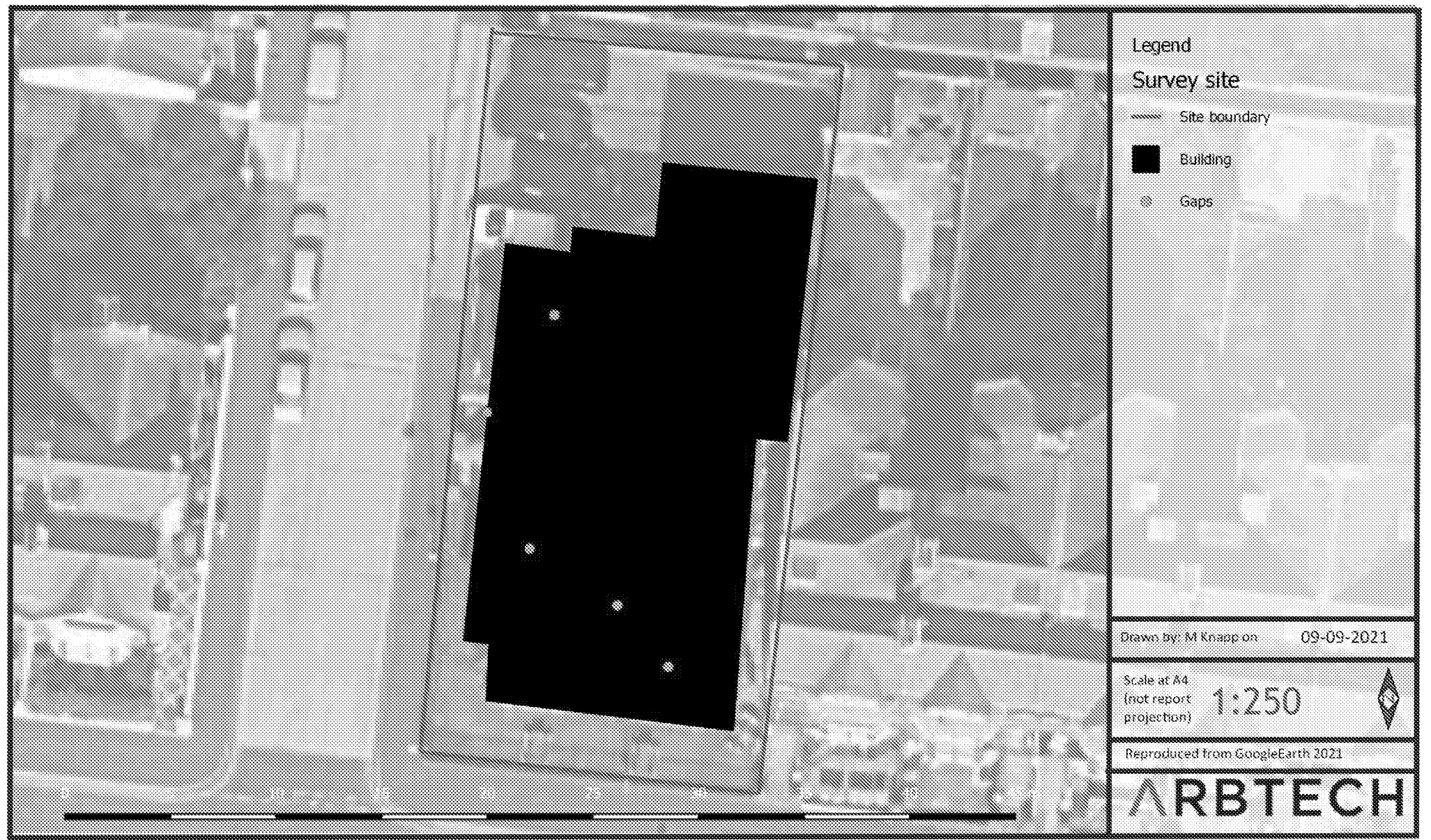
Table 12: Evaluation of buildings on site

Ref	Survey conclusions	Foreseen impacts	Recommendations / Mitigation	Enhancements The Local Planning Authority has a duty to ask for enhancements under the NPPF (July 2018)
B1	There is a likely absence of a bat roost in B1. No bats were seen emerging or re-entering the building during the survey.	No bat roost confirmed in B1. Bats are very unlikely to be roosting within B1 and as such, there are not anticipated to be any impacts on bats as a result of the proposed works.	In the unlikely event that bats are unexpectedly found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.	The developed site can be enhanced for the bat species observed to be foraging and commuting across the site during the survey by installing of a minimum of two woodcrete bat boxes on mature trees around the site boundaries or retained buildings e.g. Woodcrete Bat Box Harlech Woodstone Bat Box Bat boxes should be positioned 3-5m above ground level facing south or south-westerly with a clear flight path to and from the entrance. Bat boxes should also be positioned away from any artificial light sources.

5.0 Bibliography

- British Trust for Ornithology (2016) www.bto.org/about-birds/rnbw/putting-up-a-nest-box
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2019) accessed on 07/09/2021.
- Magic database (2019) <http://www.magic.gov.uk/MagicMap.aspx> accessed on 07/09/2021.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1a: Survey Plan – Preliminary Roost Assessment



Appendix 1b: Survey Plan – Bat Emergence and Activity Surveys

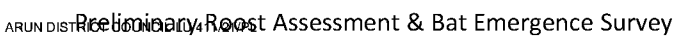


Appendix 2: Proposed Site Plan



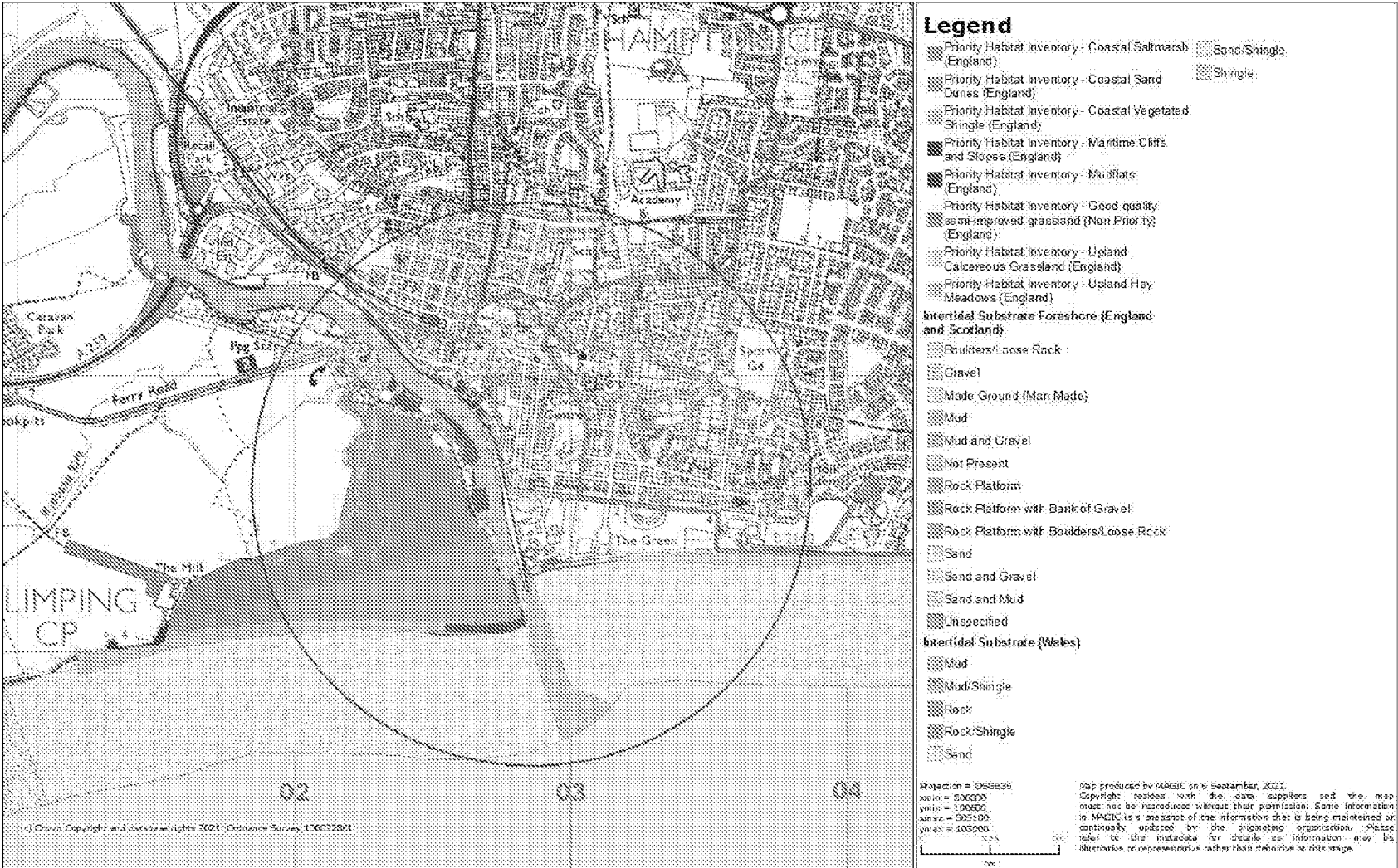
Full historical records can be provided on request.

Designated sites



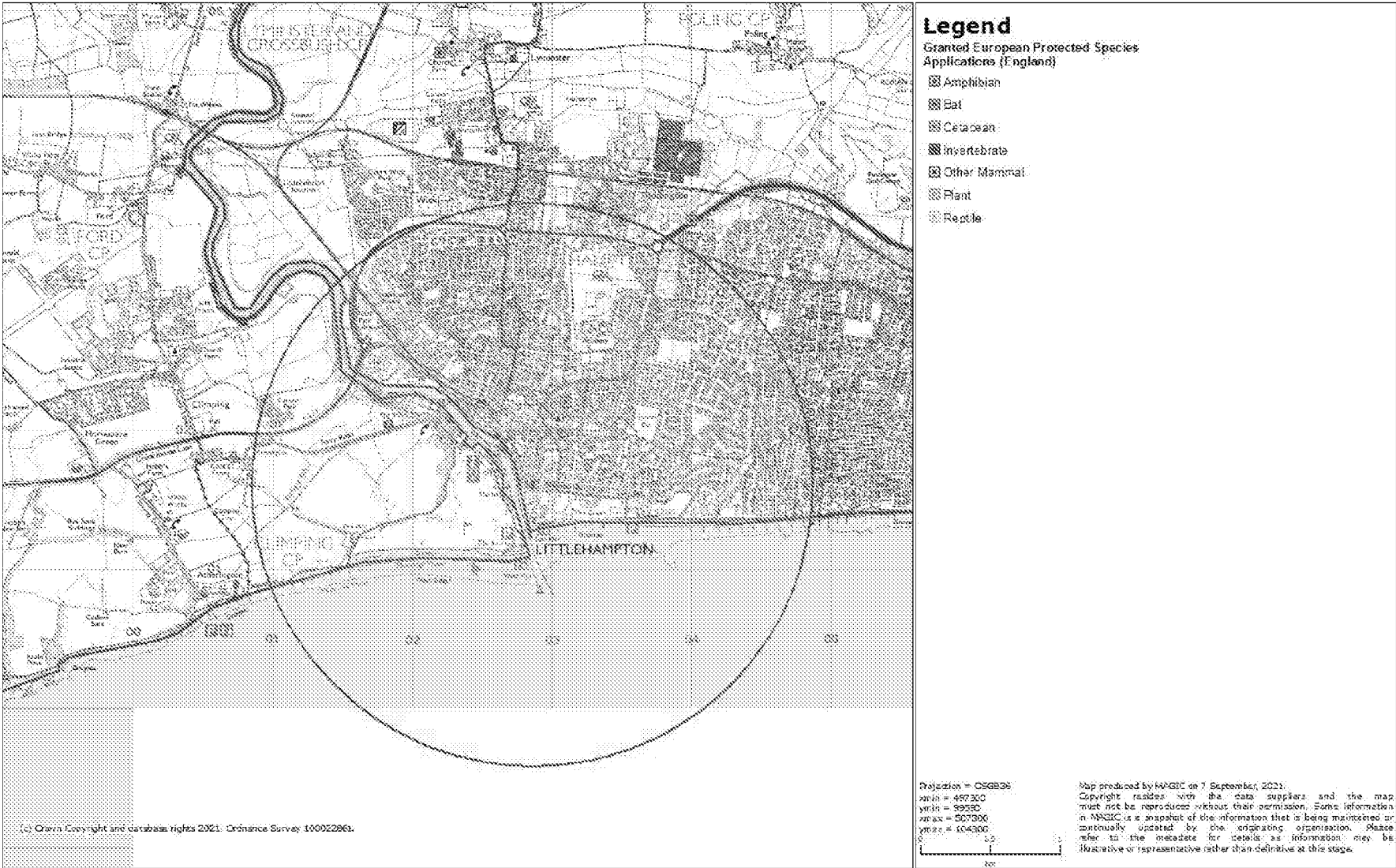
MAGiC

Habitats



MAGC

EPSLs



Appendix 4: Legislation and Planning Policy related to bats

LEGAL PROTECTION

All species of bat are fully protected under ***The Conservation of Habitats and Species Regulations 2017*** through their inclusion on Schedule 2.

Regulation 43: Protection of certain wild animals - offences

(1) A person is guilty of an offence if they:

- (a) Deliberately captures, injures or kills any wild animal of a European protected species,
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal,

(2) For the purposes of paragraph (1) (b), disturbance of animals includes in particular any disturbance which is likely—

- (a) 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
- (b) To affect significantly the local distribution or abundance of the species to which they belong.

Bats are also protected under the ***Wildlife and Countryside Act 1981 (as amended)*** through their inclusion on ***Schedule 5***. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework 2017

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored. The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law.

Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

1. ***include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;***
2. scientific and educational purposes,
3. ringing or marking
4. conserving wild animals

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.