Tree Bat Roost Survey Report

Land off Shaw Lane, Glossop

Prepared on behalf of
Loxley Homes

Report Reference:	SE0714-06_BAT_I01_REVB_DH
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Full Address of Site:	Land off Shaw Lane, Hadfield, Glossop, Derbyshire, SK13 6DE

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This report is based on survey data gathered in August and September 2016 at this site off Shaw Lane, Glossop, Derbyshire SK13 6DE

1.0 SUMMARY

1.1 The following is the report of survey of a potential a bat roost within a sycamore on land within an application site (proposed residential development) off Shaw Lane, Hadfield. The site covers an area of approximately 0.22 ha.

1.2 The application site is bounded by Shaw Lane to the north, with a small stream and paddock to the south. This land and adjacent fields ('Land off Dinting Road') has already been granted outline planning permission for residential development. In the existing permitted development, this new area is designated as 'open space'.

1.3 A bat activity survey conducted by Solum Environmental of the wider, Loxley Homes Dinting Road site *(Solum Environmental SE714-03 02a Dinting Road, Hadfield – Bat Survey Report 2015)*, found no evidence for bat roosts on site but, in the absence of dedicated survey, could not rule out potential for bat roosts in trees on or immediately adjacent to the site.

1.4 Mr S. Dobie of Loxley Homes commissioned an inspection of the trees in July 2016 in and immediately adjacent to the Shaw Lane site to establish the potential for bat roosts at this location.

1.5 Survey of the trees on 19th of July 2016 (*Solum Environmental SE714-05 01 Shaw Lane, Hadfield – Tree Bat Roost Survey 2016*) revealed that very few of the trees were large enough to provide features suitable for bats, and of these there was only one tree with an apparent feature that held potential for roosting bats.

1.6 Closer inspection showed that there was no evidence of use by bats (urine stains, droppings, signs of regular use); however, the lack of these signs could not rule out infrequent use.

1.7 A single sycamore tree was assessed to have 'MODERATE' bat roost potential requiring further survey effort to determine if it is being used as bat roost. Disturbance to this and the other trees surveyed should be avoided where possible. Felling of those trees with LOW or NEGLIGIBLE roost potential must be carried out following Reasonable Avoidance Measures for roosting bats.

1.8 Dawn and dusk surveys of tree T3 showed no evidence of use by bats; the tree can therefore be dismissed as a bat roost. However, as with trees of LOW or NEGLIGIBLE roost potential, Reasonable Avoidance Measures for roosting bats should be applied in the felling of the tree.

1.9 Shaw Lane has been shown to be a commuting route and foraging area for bats. Any trees removed from Shaw Lane should be replaced with new tree planting to ensure the continuity of commuting and foraging habitat.

2.0 INTRODUCTION

2.1 Background and Commission

2.1.1 Solum Environmental was commissioned in October 2016 by Steven Dobie of Loxley Homes to undertake bat roost surveys of a single tree T3 identified as having low potential to support bat roosts at this site off Shaw Lane, Hadfield, Glossop, Derbyshire SK13 6DE. Survey was commissioned to support a planning application for the construction of approximately ten residential units and associated landscaping within the site boundaries. The survey area and its wider location is presented at ***Plan 1.***

2.2 Proposed Development Works

2.2.1 It is our understanding that the current proposed development will include:

- construction of approximately ten housing units;
- introduction of new access road from Shaw Lane;
- loss of a small number of trees;
- loss of grassland, all herb and bramble scrub; and
- introduction of biodiversity enhancement measures.

2.2.2 An outline site layout plan was provided prior to survey, to inform surveyors of the extent of the proposed development (presented in ***Plan 2***). This plan has been used to prepare the evaluation of biodiversity impacts contained in this report.

2.3 Site Description and Context

2.3.1 The application site is bounded by Shaw Lane to the north, with a small stream and paddock to the south. This land and adjacent fields ('Land off Dinting Road') has already been granted outline planning permission for residential development. In the existing permitted development, this new area is designated as 'open space'.

2.3.2 A bat activity survey conducted by Solum Environmental of the wider, Loxley Homes Dinting Road site (SE714-03 02a Dinting Road, Hadfield – Bat Survey Report), found no evidence for bat roosts on site but, in the absence of dedicated survey, could not rule out potential for bat roosts in trees on or immediately adjacent to the site.

2.3.3 The application site measures approximately 0.22 ha and comprises predominantly tall herb, introduced shrubs, an overgrown pond, a small stream and a line of trees and scrub bordering Shaw Lane. The application site is bound by Shaw Lane to the north, a footpath and cottages beyond to the east and paddock to the west and south.

2.3.4 The grid reference for the approximate centre of the application site is approximately SK 019950.

2.4 Legislation

2.4.1 All species of bats are European Protected Species and their breeding and resting sites are given a high degree of legal protection under the terms of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended). In addition, all bats are the subject of a UK-wide Biodiversity Action Plan (BAP).

2.4.2 Barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, Noctule *Nyctalys noctula*, Soprano pipistrelle *Pipistrellus pygmaeus*, Brown long-eared *Plecotus auritus*, Greater horseshoe *Rhinolophus ferrumequinum* and Lesser horseshoe *Rhinolophus hipposideros* bats are also listed under Section 41 of the NERC Act.

2.4.3 This combined legislation offers bats, their roost sites and resting places strict protection from intentional or reckless disturbance. It should be noted that, under the legislation, a bat roost is defined as any structure or place which is used by bats to shelter, breed or rest. It is also a strict offence (i.e. regardless of intent or reckless behaviour) to destroy or damage a bat roost.

2.4.4 As bats tend to reuse the same roosts, all roosts are legally protected, whether the bats are present at the time or not. Where bats are present at a proposed development site it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence to derogate from the Regulations issued by the statutory body – in England this statutory body is Natural England. Any licence applications must include a suitable mitigation strategy that ensures that the favourable conservation status of the bat population will be maintained and creates a like-for-like replacement for any roosts lost to development. The licence must include suitable mitigation strategies for:

- replacement of the existing roost on a like-for-like basis
- protection of any bats potentially present at this site during the proposed works

2.4.5 Foraging and commuting routes are not protected under the Regulations, however preserving these key features ensures the maintenance of the favourable conservation status of bat species within a site. Loss of areas of foraging habitat within the site should be mitigated for by provision of suitable landscape design, using insect-attracting plants, and creating sheltered areas within the residential gardens.

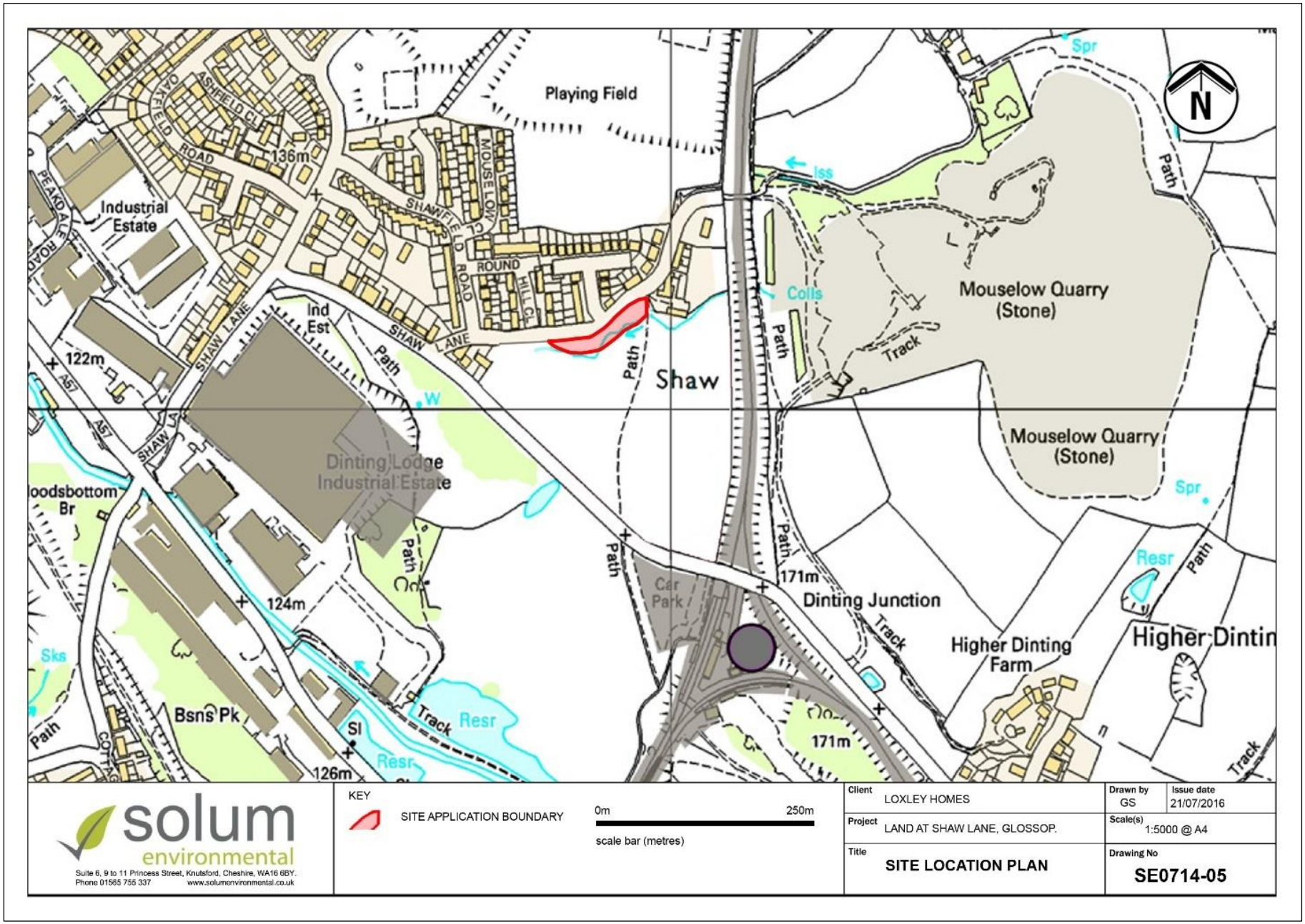
2.4.6 Government planning policy guidance throughout the UK requires local planning authorities to take account of the conservation of protected species when determining planning applications. This makes the presence of a protected species a material consideration when assessing whether a proposed development would be likely to result in harm to the species or its habitat, and subsequently in determining the outcome of the planning application as a whole. The developer is responsible for ensuring that sufficient detailed, optimal-survey data is provided with a planning application to allow local authorities to determine whether bats will be impacted by the proposed application, regardless of whether it is at outline or detailed planning stage.

2.4.7 Best practice in relation to actions affecting bats and trees is set out by the Bat Conservation Trust (BCT) in the following http://www.bats.org.uk/data/files/publications/Bats_Trees.pdf

2.5 Aims of the Survey

2.5.1 Survey aimed to determine whether features recorded within tree T03 accommodate roosting bats.

Plan 1: Application Boundary (delineated by red line)



Plan 2: Outline Layout and Trees Surveyed for Bat-roost Potential; T3 Contains the Potential Bat Roost Feature

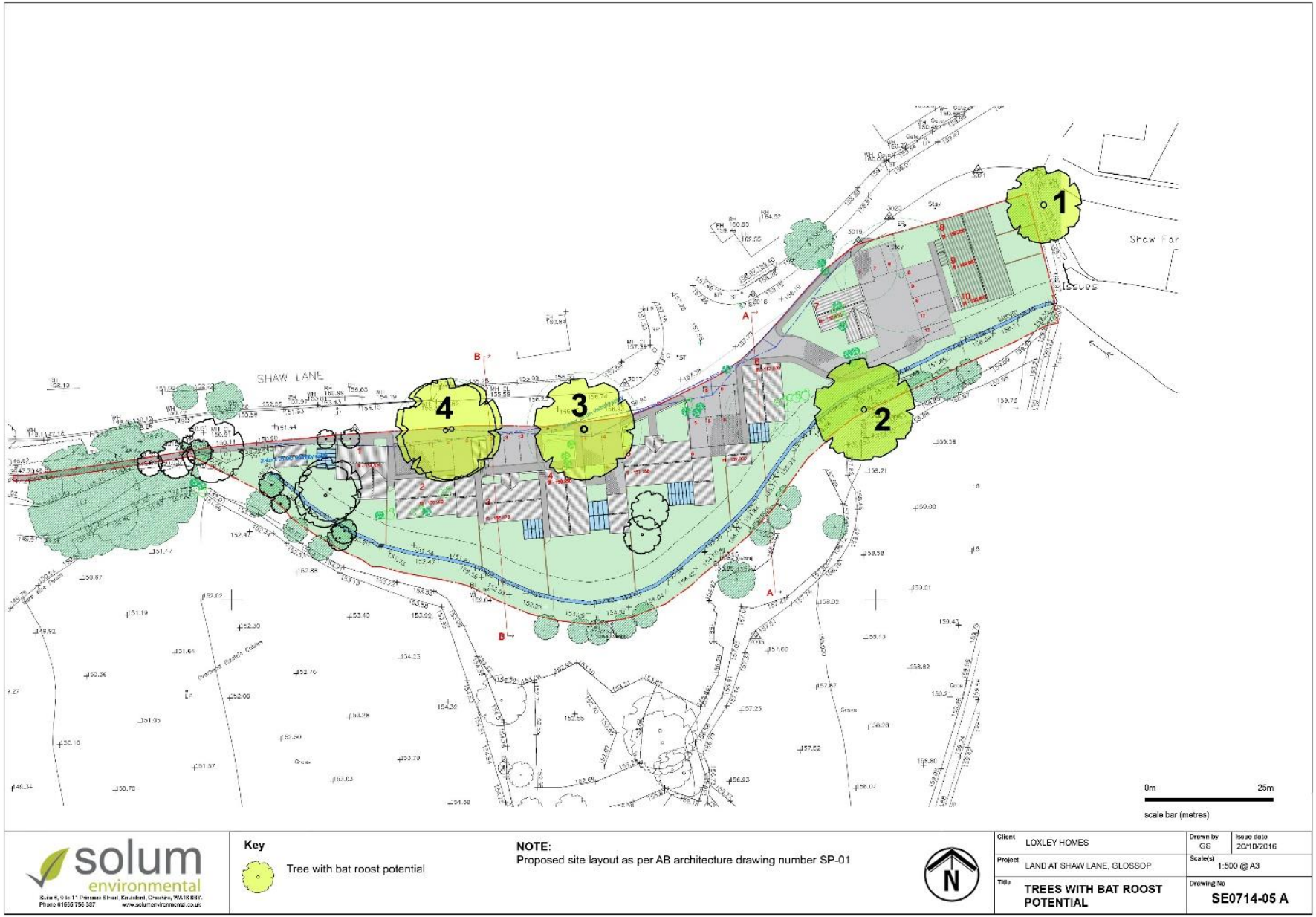
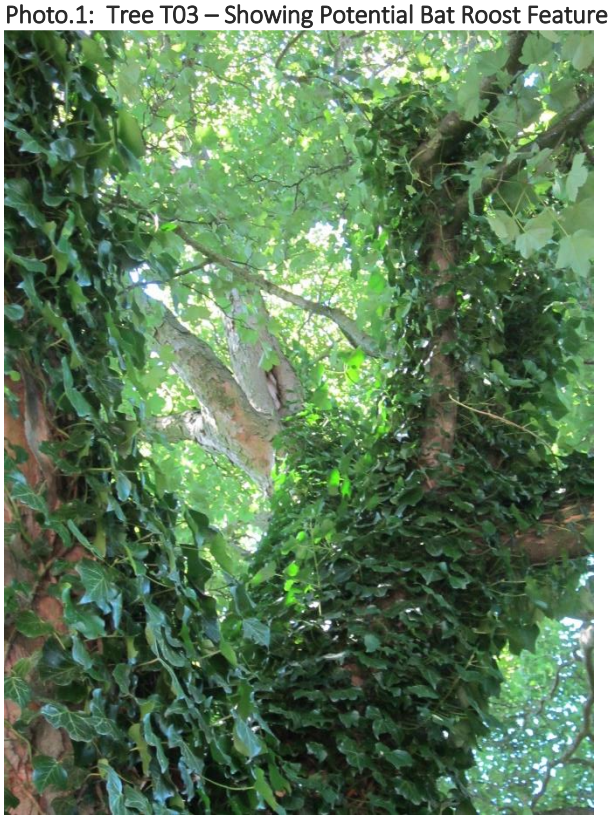


Photo.1: Tree T03 – Showing Potential Bat Roost Feature



3.0 SURVEY METHODOLOGY

3.1 Field Survey

3.1.1 All field survey relating to bats followed appropriate methodologies set out in the most recent Bat Conservation Trust (BCT) *"Good Practice Guidelines"* (2016)[2].

3.1.2 Details of survey dates, start/end times and weather conditions are presented below in ***Table 1***.

Table 1: Surveyors, Dates and Weather Conditions

Survey Type (Ref.)	Date / Time	Surveyors	Weather Conditions
Dusk Emergence Survey 1 (R01)	22nd August 2016 20.05 – 21.50 *Sunset: 20.20*	David Hackett (Lead) Joe Gough	16-15°C, 100% cloud cover, no wind, no rain.
Dawn Re-entry Survey 2 (R02)	5th September 2016 04.15 – 06.15 *Sunrise: 05:45*	David Hackett (Lead) Joe Gough	16 - 14°C, 100% cloud cover, 0-5mph W wind; drizzle for approx. 15 min at start of survey and rain from 5.00-5.10, otherwise dry.

3.1.3 The subsequent roost surveys conducted followed best practice guidelines, as set out by the Bat Conservation Trust[1] and Natural England. The dusk surveys began fifteen minutes before and continued for 1.5 hours after sunset. The dawn survey began 1.5 hours before sunrise and continued for half an hour after sunrise: there was still 100% dense cloud cover at dawn, so the survey remained in position until the location became light. Survey was led by an experienced bat ecologist, working with an ecological assistant to ensure all possible sight lines and points of emergence/re-entry could be seen. The location of surveyors during survey is illustrated in ***Plan 3.***

3.1.4 During these surveys, any bats observed or heard were recorded along with their location and direction of flight. Surveyors used Bat Box Duets (with tuneable heterodyne frequency) and an Anabat Walkabout, and any bats observed or heard during survey were recorded along with their location, activity and direction of flight. Bat activity was recorded as three separate categories, specified as:

- Foraging contact – Bat(s) observed and/or recorded (through bat detectors) foraging in one location
- Commuting contact – Bat(s) observed commuting through/within survey area without stopping to feed
- Pass – Bat(s) recorded briefly through detector but not seen

3.2 Survey Constraints

3.2.1 The tree was in full leaf, limiting the extent of visibility. However, the tree is within approximately 4 m of a street light, which aided observation of any bat movement around the tree, and has a clear stem to about 3m, which aided sight of movement within or below the canopy.

3.3 Survey Personnel

3.3.1 **David Hackett BSc MLD PhD MCIEEM CEnv** has project managed this project in-house for Solum Environmental. David is a founding Director of Solum, a highly experienced ecologist and project manager with over 20 years' professional experience. David regularly project manages and co-ordinates teams of ecologists conducting surveys for multiple protected species to inform planning applications, Environmental Impact Statements, Natural England and Scottish Natural Heritage licences and conditions discharge. David is a full member of the Chartered Institute of Ecology and Environmental Management, a Chartered Environmentalist and a member of Cheshire Bat Group. He is highly experienced in designing and conducting bat surveys and in preparing bat mitigation packages for licence applications.

3.3.2 **Joe Gough** BSc (Hons) is an Assistant Ecologist at Solum Environmental. He has worked in the ecological sector for two years developing experience in bat survey.

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

4.0 SURVEY RESULTS

4.1 Field Survey

Dusk Emergence Survey 22nd August 2017

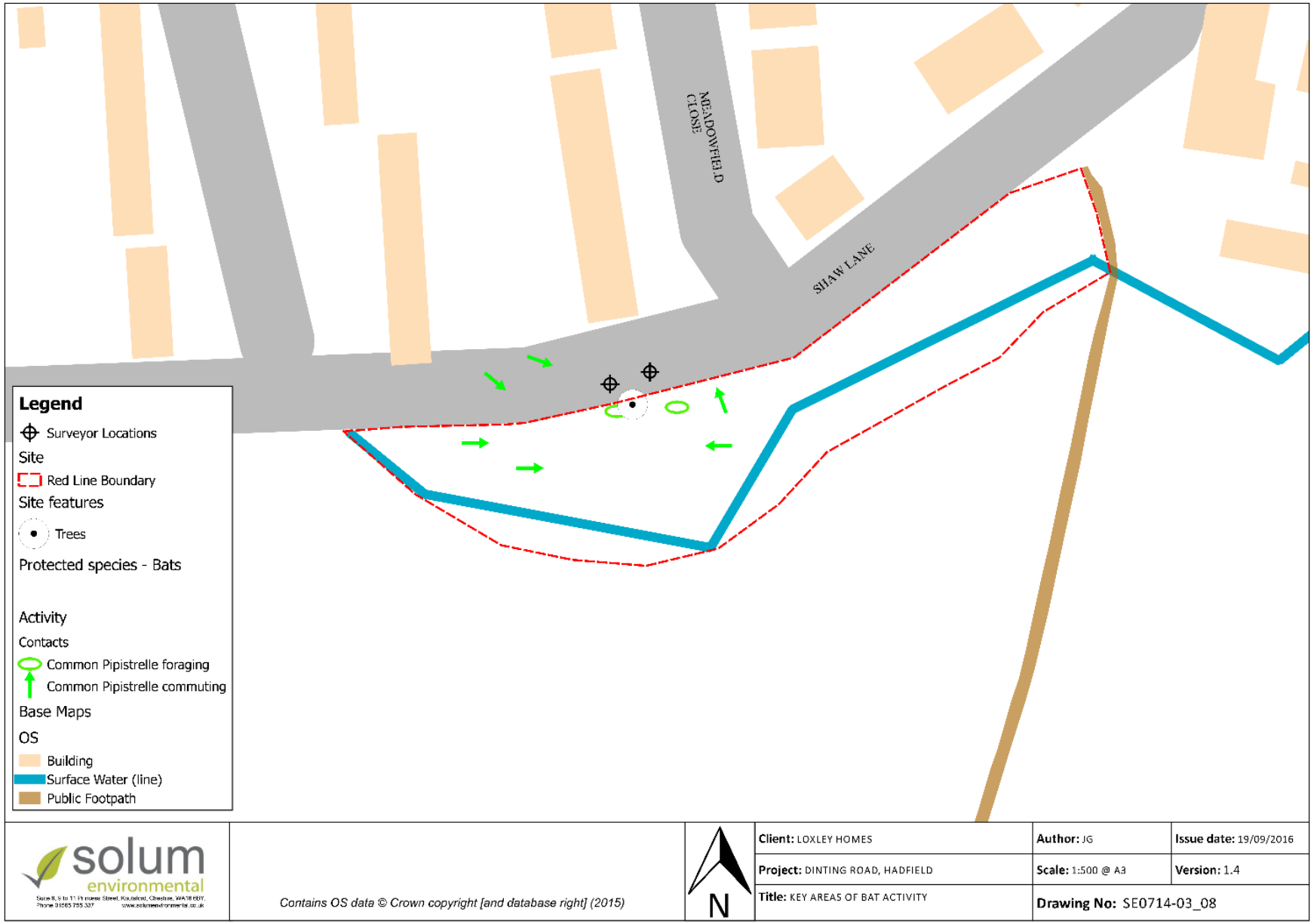
4.1.2 **No bats were observed to emerge from Tree T03.** Very low levels of bat activity were recorded throughout the survey period; individual Common Pipistrelle bats were briefly recorded foraging or commuting along Shaw Lane and in the rear gardens of adjacent housing.

Dawn Re-entry Survey 5th September 2016

4.1.2 **No bats were observed entering Tree T03.** As in the previous visit, very low levels of bat activity were noted (only 2 contacts) and Common Pipistrelle was the only species recorded. The activity, heard but not seen, was distant and confined, it was believed to be foraging within the rear gardens of the adjacent housing.

4.1.3 The results of these bat surveys are illustrated at ***Plan 3***.

Plan 3. Bat Survey Activity (22nd August 2016)



5.0 EVALUATION AND ASSESSMENT

5.1 No evidence of roosting bats was identified during the preliminary roost assessment of the site and the subsequent roost surveys failed to identify any bats roosting within the Tree T03, the only tree on site originally assessed as having features suitable for roosting bats and assigned a status of MODERATE potential for bat roosting; the group as a whole was initially identified as having LOW potential. The surveys were completed during suitable weather conditions by a sufficient number of surveyors during optimal season and it is therefore considered near certain that bats are currently absent from Tree T03.

5.2 Tree T03 was the only structure assessed as providing any MODERATE roosting potential on-site. This has been downgraded on the evidence of survey to LOW. Consequently, on the basis of the most recent survey evidence, it is considered near certain that the proposed re-development at this site would have no adverse impact on roosting bats.

5.3 Although there was no evidence of bats using the feature identified within tree T03, the status of LOW potential has been assigned as the feature observed retains potential for future use.

5.4 The data gathered during the roost surveys suggests that this site is infrequently used as a foraging and commuting resource by common and widespread species. The habitats identified to support foraging and commuting at the site (i.e. lines of trees and hedgerows/shrubs and scrub) would be retained in the re-developed site or effectively replaced in the proposed landscape scheme; thus avoiding any potentially adverse impact on commuting/foraging bats.

5.5 No further survey, licensing or mitigation is recommended but the recommendations made in the Preliminary Ecological Appraisal for the site must be implemented to ensure that impacts on biodiversity are minimised.

5.6 This assessment is based on data gathered in 2016 and should not be relied upon beyond the end of the 2018 activity season (i.e. September 2018) – should the re-development be delayed until after this time, repeat bat surveys would need to be conducted to re-assess impacts on bats.

6.0 RECOMMENDATIONS

R1 *The survey has shown that no tree within the site has greater than LOW potential for a roost to be present. Tree work could, therefore, proceed with care. As a precaution, and where possible, any tree works should be conducted between September/October, to avoid maternity and hibernation seasons when bats are most vulnerable to disturbance. Where trees are to be felled, soft felling should be employed, where tree limbs are cut and left grounded over night to allow any bats to make their own way out.*

R2 *If, in the unlikely event any bats or new evidence are discovered prior to work or whilst work is in progress, work should be paused immediately and a licensed bat ecologist consulted for guidance.*

R3 Shaw Lane has been shown to be a commuting route and foraging area for bats. The landscape proposal for the proposed new development should therefore avoid significant gaps (10 m or more) between tree canopies, tall shrubs, fencing, buildings etc to ensure connectivity of the landscape for commuting bats.

R4 Any trees removed from Shaw Lane should be replaced with new tree planting. This can be effected by planting to the south of the stream within the application site, to enhance the foraging value of this habitat.

7.0 REFERENCES AND BIBLIOGRAPHY

BS42020 (2013) *Biodiversity. Code of practice for planning and development.*

COLLINS, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*. Bat Conservation Trust, London

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SOLUM ENVIRONMENTAL LTD. (2015) *Land off Dinting Road, Hadfield – Preliminary Ecological Appraisal (Ref:* SE0714-03/I/01a/JD*)*

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The Conservation and Habitats Regulations 2010, as amended. HMSO London

UK BAP www.ukbap.org.uk

WATERS,D. & WARREN, R. (2003) *Bats.* The Mammal Society, London

Wildlife and Countryside Act 1981, as amended. HMSO, London.

APPENDIX

APPENDIX 1: BCT Guidance on Bat-friendly Lighting

Extract from: Bat Conservation Trust: Artificial lighting and wildlife Interim Guidance: Recommendations to help minimise the impact artificial lighting, June 2014

Principles and design considerations

Do not

- ***provide excessive lighting.*** Use only the minimum amount of light needed for the task.
- ***directly illuminate bat roosts*** or important areas for nesting birds

Avoid

- ***installing lighting in ecologically sensitive areas*** such as: near ponds, lakes, rivers, areas of high conservation value; sites supporting particularly light-sensitive species of conservation significance (e.g. glow worms, rare moths, slow-flying bats) and habitat used by protected species.
- ***using reflective surfaces under lights.***

Do

- ***consider employing a competent lighting designer*** who will apply the principals of providing the right light, in the right place, at the right time and controlled by the right system.
- ***minimise the spread of light*** to at, or near horizontal and ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required.
- ***consider the height of lighting columns***. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light spill or require more columns. Column height should be carefully considered to balance task and mitigation measures.
- ***consider no lighting solutions where possible*** such as white lining, good signage and LED cats eyes. These options can also be effective. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- ***use temporary close-boarded fencing until vegetation matures***, to shield sensitive areas from lighting.
- ***limit the times that lights are on to provide some dark periods***. The task being lit often varies, for example roads are less used after 23.00hrs and car parks are empty. A lighting designer can vary the lighting levels as the use of the area changes reducing lighting levels or perhaps even switching installations off after certain times. This use of adaptive lighting can tailor the installation to suit human health and safety as well as wildlife needs.

Technological specifications

Research from the Netherlands has shown that spectral composition does impact biodiversity.

- ***Use narrow spectrum light sources*** to lower the range of species affected by lighting.
- ***Use light sources that emit minimal ultra-violet light***
- ***Lights should peak higher than 550 nm***
- ***Avoid white and blue wavelengths of the light spectrum*** to reduce insect attraction and where white light sources are required in order to manage the blue short wave length content they should be of a warm / neutral colour temperature <4,200 kelvin.

Further guidance on the spectral composition of artificial lighting will be made available following the publication of research from the Netherlands.

Further reading:

- A review of the impact of artificial light on invertebrates. Buglife. 2011
- Royal Commission on Environmental Pollution. 2009. Artificial light in the environment. London, HMSO
- The Ecological Consequences of Artificial Night Lighting" edited by Longcore and Rich
- Shedding Light: A survey of local authority approaches to lighting in England. CPRE 2014