

LAND NORTH-WEST OF
SOUTHWATER, HORSHAM

ENVIRONMENTAL STATEMENT,
VOLUME II, APPENDIX 8.7
BAT SURVEY REPORT - REV A

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LAND NORTH WEST OF SOUTHWATER

BAT SURVEY REPORT

Rev A

Prepared for Berkeley Homes (Southern) Ltd

by

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1 INTRODUCTION

1.1 Site location and summary description

- 1.1.1 This report describes a suite of bat surveys carried out within approximately 128ha of land west of Southwater, West Sussex, hereinafter referred to as 'the site'. The site centre is located by National Grid Reference TQ154274. The study was commissioned by Berkeley Homes (Southern) Ltd in phases in June 2021 and May and July 2022.
- 1.1.2 The site is split into a main site and a smaller area. The main site lies on the western edge of the village of Southwater and comprises a series of arable fields, semi-improved grassland fields, and improved grassland fields bordered by hedgerows, treelines, and fence lines. Other habitats present include areas of broadleaved woodland, mixed woodland, and tall ruderal vegetation. In addition, Marlpost Gill flows in a southerly direction through the west of this area and a second stream flows east to west through the north. The main site is bordered to the west by Two Mile Ash road and associated residential properties, beyond which are arable fields; to the north by the A24, industrial units, and agricultural land; to the south by Kirsty's Wood, residential properties and grassland fields; and to the east by Worthing Road, beyond which is the settlement of Southwater.
- 1.1.3 The smaller area of the site measures approximately 1.35ha in size and is located approximately 800m to the north-west of the main site near Christ's Hospital railway station. This area comprises part of a grassland field and is bordered to the north by woodland; to the east by grassland fields; to the west by a public right of way and access road with residential properties and Christ's Hospital station car park beyond; and to the south by residential properties.
- 1.1.4 This report covers the bat surveys of the main site carried out between June 2021 and August 2022. The smaller area to the west has also been subject to bat survey work, the findings of which are included in the *Christ's Hospital: Ecological Appraisal* report (HDA, 2022).
- 1.1.5 The location and boundary of the main site are shown in *Appendix A*. A more detailed description of the habitats present and plans showing the distribution of habitats are given in the *Land at Southwater: Ecological Appraisal* (HDA, 2019) and for the smaller area in the *Christ's Hospital: Ecological Appraisal* (HDA, 2022). A more detailed description of the habitats present is given in the *Ecological Assessment* (HDA, 2022a).

1.2 Legislative context

1.2.1 All UK bat species are protected as 'European Protected Species' (EPS) under the 2019 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations. In relation to an EPS, the 2019 Regulations make it an offence to:

- Deliberately capture, injure or kill any wild animal of an EPS;
- Deliberately disturb wild animals of any such species, in particular any disturbance which is likely to: (i) impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or to hibernate or migrate; (ii) affect significantly the local distribution or abundance of the species to which they belong;
- Damage or destroy a breeding site or resting place of such an animal; and/or
- To (a) be in possession of, or to control; (b) to transport any live or dead animal or any part of an animal; (c) to sell or exchange or (d) offer for sale or exchange any live or dead animal or part of an animal of an EPS.

1.2.2 In addition, all UK bats are protected under the 1981 Wildlife and Countryside Act (as amended). All species are listed on Schedule 5 of the Act and are subject to the provisions of Sections 9.4b and 9.4c, which make it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection; and
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat.

1.2.3 If works are planned that are likely to constitute an offence under the current legislation, an application for a derogation licence should be made to Natural England.

1.2.4 Seven species of bat (Barbastelle, Bechstein's, Noctule, Soprano Pipistrelle, Brown Long-eared, Greater Horseshoe and Lesser Horseshoe) are also identified as Species of Principal Importance under Section 41 of the 2006 Natural Environment and Rural Communities (NERC) Act. Section 40 of the Act, together with planning policy and guidelines, require planning authorities to regard these species as a material consideration in the planning process.

1.3 Development proposals

1.3.1 Development proposals for the main site include an outline planning application for a residential-led development to include demolition of existing buildings and provision of up to 1,500 homes, an employment area, community and leisure facilities including a community hub, provision for nursery, primary and secondary school, gypsy and traveller pitches, landscaping, open space and new road improvements. The smaller area to the west is proposed for provision of new parking facilities for users of the local rail network.

1.3.2 This report focuses on the northern, central, eastern and southern areas of the site associated with the outline planning consent where proposals are being brought forward

by Berkeley Homes (Southern) Ltd. This approximately 116ha area is hereinafter referred to as the 'survey area'. The proposed informal public open space located within predominantly the west of the wider site is generally not included within this assessment as impacts on bats, other than positive results of habitat enhancement works, are not anticipated in these areas. The extent of the area subject to survey is shown on the plans provided in *Appendix A*.

1.4 Scope and purpose of the report

1.4.1 In recognition of the proposed development of the site and its potential to be used by bats, and within the legislative context set out in *Section 1.2*, a suite of bat surveys was subsequently undertaken to confirm use of the site by roosting, foraging and commuting bats, and to determine the need for any licensing or mitigation in relation to bats. Specifically, the aims of the study are:

1. To identify potential bat roosts in structures and trees within the survey area, where potentially affected by the proposed development;
2. To determine the presence/likely absence of bats within potential roosts affected by the proposed works and identify species and numbers;
3. To provide an assessment of the importance of the survey area for foraging and commuting bats;
4. To determine any further survey, mitigation and/or licensing requirements relating to bats; and
5. To provide outline recommendations for any mitigation and/or enhancement required to ensure that the development avoids adverse impacts on bats and, where possible, provides enhancements to support the long-term favourable conservation status of bats in accordance with nature conservation legislation, planning policy and the 2006 NERC Act.

2 METHODOLOGY

2.1 Introduction

2.1.1 The methodology followed in relation to all bat survey work undertaken is consistent with current legislation and good practice guidelines set out by the Bat Conservation Trust (BCT, 2016). The following sections detail the suite of surveys undertaken to inform the proposed development and the results of these surveys are provided in *Section 3*.

2.2 Phase 1 bat scoping survey

2.2.1 A Phase 1 bat scoping survey was undertaken of all buildings and trees within the survey area on the 13th, 14th, 20th and 21st July 2021 by Fiona Muir and Clare Bird MCIEEM and the 6th April 2022 by Nick Chambers of HDA. The buildings and trees within and immediately adjacent to the survey area were assessed for their potential to support

roosting bats and classified according to their potential. The methodology for each has been outlined below.

Phase 1 building survey

2.2.2 All buildings within the survey area were inspected externally from ground level using binoculars and a powerful torch to identify and investigate any potential entry and exit points such as missing roof tiles, loose fascias and lifted lead flashing, and to look for evidence of entry/exit in the form of staining, discolouration and/or scratch marks.

2.2.3 Internally, buildings were searched exhaustively where possible, to look for evidence of current or former occupation by bats. A powerful torch was also used to investigate any accessible cavities, crevices and recesses in each building.

2.2.4 In view of the findings of the internal/external inspections, the potential of the buildings to support roosting bats ('confirmed roost', 'high', 'moderate', 'low' or 'negligible') was assessed in accordance with current best practice guidelines. Assessment of bat roosting potential requires consideration of a number of criteria, including the design and construction of the building or structure, the size and location of potential features and access points, the position of the building or structure, aspect, geographical location, surrounding land use and adjacent landscape linkages.

Phase 1 tree survey

2.2.5 All trees within and adjacent to the survey area were inspected from ground-level with the aid of binoculars and a powerful torch to identify potential features suitable for use by roosting bats. Potential features include splits, cracks and cavities, peeling bark, woodpecker holes, broken branches and a covering of Ivy where this is of a sufficient age to provide a suitable microclimate between the tree and Ivy stem(s).

2.2.6 In accordance with current best practice guidelines (BCT, 2016), trees were placed into one of five categories. Categorisation was based on the nature, size, location and quality of features present in each tree:

- Negligible suitability - Trees with no or negligible features for roosting bats;
- Low suitability - Trees of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential;
- Moderate suitability - Trees with one or more potential roost sites that could be used by bats but are unlikely to support roost types of high conservation status;
- High suitability - Trees 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; or

- Known or confirmed bat roost.

2.3 Phase 2 bat roost surveys

2.3.1 The results of the Phase 1 bat scoping survey of buildings and trees, was used to determine the need for Phase 2 survey work of buildings and trees potentially affected by the emerging development proposals at the time of survey. Phase 2 roost surveys, comprising a series of climbed tree inspections and emergence/re-entry surveys, were conducted to determine presence/probable absence of roosting bats and, where present, identify species and numbers.

Climbed inspections of trees

2.3.2 Where possible, climbed inspections of trees were conducted to investigate all features potentially suitable for use by roosting bats. Inspections were conducted by an experienced licensed bat worker and certified tree climber and an assistant.

2.3.3 Each feature was searched both externally and internally for evidence of current or previous occupation by bats in the form of bats, droppings, staining, feeding signs, and/or remains of bats. A powerful torch and an LED-illuminated fibrescope with high-visibility digital LCD display were used to investigate any cavities, crevices, knot holes, cracked or peeling bark in each tree.

2.3.4 Climbed inspections were conducted by Dan Gordon-Lee and Anthony Owers between the 31st July and 5th August 2022. Full details of climbed inspections are provided, along with the results of these inspections, in *Section 3*.

Emergence/re-entry surveys of buildings and trees

2.3.5 Phase 2 dusk emergence and dawn re-entry surveys of trees (unsuitable for climbing inspections) and buildings were carried out where these had potential to support roosting bats and were potentially affected by the emerging proposals at the time of survey. Emergence/re-entry surveys were conducted to determine presence/probable absence and, where present, identify species and numbers. The level of survey effort conducted was determined with reference to the identified bat roosting potential of the building or tree in accordance with best practice guidelines (BCT, 2016).

2.3.6 Surveyors with electronic bat detectors¹ were positioned around each feature to record bats emerging from or entering potential roost sites. Surveyors were positioned to provide adequate coverage of all potential emergence points. Dusk emergence surveys generally began 15 minutes before sunset, ending approximately 1.5 hours after sunset. Dawn re-entry surveys generally began approximately 1.5 hours before sunrise and

¹ Anabat Walkabout and Anabat Express with 'Analook' recording software.

ended approximately 15 minutes after sunrise. Records were made of any emergences and entries, and incidental records were also made of bat commuting and foraging activity in the vicinity of each surveyor.

2.3.7 In line with current best practise guidelines (BCT, 2016), Phase 2 bat roost surveys were not conducted on trees which were assessed as having low potential to support roosting bats. Further surveys of these low potential trees are not required, at this stage, in support of a planning application. However, in the event that retention of a tree identified as having low potential to support roosting bats is not possible, the appropriate approach to works is given in *Section 5* below.

2.3.8 Details of the dates and times of Phase 2 emergence/re-entry surveys, along with weather conditions and sunset/sunrise times, are provided in *Table 1* below.

Table 1: Timing and conditions of Phase 2 bat roost surveys

Building/ Tree ref	Date / Time	Sunset/ Sunrise	Conditions
B6	15.06.2022 21:02 – 22:47	21:17	20% cloud cover, Beaufort Scale = 0, dry, 18-17°C
	12.07.2022 20:57 – 22:42	21:12	100% cloud cover, Beaufort Scale = 0, dry, 22°C
	15.08.2022 20:08 – 21:53	20:23	10% cloud cover, Beaufort Scale = 0, dry, 22-20°C
B7	23.06.2022 21:11 – 22:56	21:26	10% cloud cover, Beaufort Scale = 1, dry, 19°C
B11	15.06.2022 21:02 – 22:47	21:17	20% cloud cover, Beaufort Scale = 0, dry, 18-17°C
B12	27.05.2022 20:46 – 22:31	21:01	80% cloud cover, Beaufort Scale = 1, dry, 17-14°C
	28.06.2022 21:05 – 22:50	21:20	100% cloud cover, Beaufort Scale = 0, dry, 17-16°C
	26.07.2022 20:42 – 22:27	20:57	100% cloud cover, Beaufort Scale = 0, dry, 20°C
Great House Farm and Oak tree (off-site)	16.06.2022 03:15 – 05:00	04:45	10% cloud cover, Beaufort Scale = 1, dry, 12°C
	18.07.2022 20:52 – 22:37	21:07	0% cloud cover, Beaufort Scale = 0, dry, 29-25°C
	03.08.2022 20:29 – 22:14	20:44	15% cloud cover, Beaufort Scale = 0-14, dry, 23°C
Trees 20 and 95	15.06.2022 21:02 – 22:47	21:17	20% cloud cover, Beaufort Scale = 0, dry, 18-17°C
	12.07.2022 20:57 – 22:42	21:12	100% cloud cover, Beaufort Scale = 0, dry, 22°C
	04.08.2022 04:01 – 05:46	05:31	45% cloud cover, Beaufort Scale = 1-2, dry, 18-17°C
Tree 59	15.06.2022 21:02 – 22:47	21:17	20% cloud cover, Beaufort Scale = 0, dry, 18-17°C
	12.07.2022 20:57 – 22:42	21:12	100% cloud cover, Beaufort Scale = 0, dry, 22°C
Tree 76	16.05.2022 20:31 – 22:16	20:46	20% cloud cover, Beaufort Scale = 1, dry, 16-14°C
	08.06.2022 20:58 – 22:43	21:13	5% cloud cover, Beaufort Scale = 1-2, dry, 14-12°C
Tree 122	24.05.2022 20:44 – 22:27	20:57	2% cloud cover, Beaufort Scale = 1, dry, 12°C

	15.08.2022 20:08 – 21:53	20:23	10% cloud cover, Beaufort Scale = 0, dry, 22-20°C
Tree 127	16.05.2022 20:31 – 22:16	20:46	20% cloud cover, Beaufort Scale = 1, dry, 16-14°C
	23.06.2022 21:11 – 22:56	21:26	10% cloud cover, Beaufort Scale = 1, dry, 19°C
Tree 134	24.05.2022 20:44 – 22:27	20:57	2% cloud cover, Beaufort Scale = 1, dry, 12°C
	23.06.2022 21:11 – 22:56	21:26	10% cloud cover, Beaufort Scale = 1, dry, 19°C
	13.07.2022 03:32 – 05:17	05:02	95% cloud cover, Beaufort Scale = 0, dry, 19-16°C
Tree 184	24.05.2022 20:44 – 22:27	20:57	2% cloud cover, Beaufort Scale = 1, dry, 12°C
	24.06.2022 03:17 – 05:03	04:47	10% cloud cover, Beaufort Scale = 0, dry, 15-14°C
Tree 185	08.06.2022 20:58 – 22:43	21:13	5% cloud cover, Beaufort Scale = 1-2, dry, 14-12°C
	24.06.2022 03:17 – 05:03	04:47	10% cloud cover, Beaufort Scale = 0, dry, 15-14°C
Tree 188	24.05.2022 20:44 – 22:27	20:57	2% cloud cover, Beaufort Scale = 1, dry, 12°C
	13.07.2022 03:32 – 05:17	05:02	95% cloud cover, Beaufort Scale = 0, dry, 19-16°C
	15.08.2022 20:08 – 21:53	20:23	10% cloud cover, Beaufort Scale = 0, dry, 22-20°C
Tree 207	15.06.2022 21:02 – 22:47	21:17	20% cloud cover, Beaufort Scale = 0, dry, 18-17°C
	13.07.2022 03:32 – 05:17	05:02	95% cloud cover, Beaufort Scale = 0, dry, 19-16°C
	04.08.2022 04:01 – 05:46	05:31	45% cloud cover, Beaufort Scale = 1-2, dry, 18-17°C
Tree 216	18.07.2022 20:52 – 22:37	21:07	0% cloud cover, Beaufort Scale = 0, dry, 29-25°C
	01.08.2022 20:33 – 22:18	20:48	100% cloud cover, Beaufort Scale = 1, dry, 22°C
	15.08.2022 20:08 – 21:53	20:23	10% cloud cover, Beaufort Scale = 0, dry, 22-20°C
Trees 265 and 272	08.06.2022 20:58 – 22:43	21:13	5% cloud cover, Beaufort Scale = 1-2, dry, 14-12°C
	29.06.2022 03:20 – 05:05	04:50	80% cloud cover, Beaufort Scale = 0, dry, 14-15°C
Tree 276	27.05.2022 20:46 – 22:31	21:01	80% cloud cover, Beaufort Scale = 1, dry, 17-14°C
	29.06.2022 03:20 – 05:05	04:50	80% cloud cover, Beaufort Scale = 0, dry, 14-15°C
Tree 281	16.06.2022 03:15 – 05:00	04:45	10% cloud cover, Beaufort Scale = 1, dry, 12°C
	03.08.2022 20:29 – 22:14	20:44	15% cloud cover, Beaufort Scale = 0-14, dry, 23°C
Tree 305	08.06.2022 20:58 – 22:43	21:13	5% cloud cover, Beaufort Scale = 1-2, dry, 14-12°C
	29.06.2022 03:20 – 05:05	04:50	80% cloud cover, Beaufort Scale = 0, dry, 14-15°C
Tree 333	09.06.2022 03:18 – 05:03	04:48	5% cloud cover, Beaufort Scale = 0, dry, 9-8°C
	08.07.2022 21:01 – 22:46	21:16	10% cloud cover, Beaufort Scale = 1, dry, 25-22°C

2.4 Phase 2 bat activity survey

Bat activity transects

2.4.1 In order to provide an assessment of the importance of the survey area for foraging and commuting bats, dusk and dawn activity surveys were undertaken between June and October 2021 and April and July 2022. Due to the size of the survey area, the survey area was divided into two transects.

2.4.2 Surveyors carrying hand-held bat detectors walked the transects, with listening stops at regular intervals for periods of up to 5 minutes. Visual observations of bats and bat call registrations were noted, recording time, location, activity and, where known, species. Recordings of foraging and/or commuting activity made using digital devices were subsequently analysed to determine the identity of any unconfirmed species recorded during the surveys. Times and dates of surveys are given in *Table 2* below, along with weather conditions.

Table 2: Details of bat activity surveys

Date	Sunset / Sunrise	Time	Conditions
28.06.2021 (Transects 1 & 2)	21:20	21:20 – 23:20	100% cloud cover, Beaufort Scale = 1-2, drizzle throughout survey, 18-16°C
20.07.2021 (Transects 1 & 2)	21:05	21:05 – 23:05	0% cloud cover, Beaufort Scale = 0, dry, 19°C
09.08.2021 (Transects 1 & 2)	20:35	20:35 – 22:35	20% cloud cover, Beaufort Scale = 0, dry, 15-13°C
15.09.2021 (Transect 1 & 2)	19:17	19:17 – 21:30	0% cloud cover, Beaufort Scale = 0, dry, 19-15°C
06.10.2021 (Transects 1 & 2)	18:27	18:27 – 20:27	Beaufort Scale = 1, dry, 14-12°C
25.04.2022 (Transects 1 & 2)	20:13	20:13 – 22:13	Beaufort Scale = 1-2, dry, 10-7°C
24.06.2022 (Transect 1)	04:47	02:50 – 04:50	10% cloud cover, Beaufort Scale = 0, dry, 14-15°C
08.07.2022 (Transect 2)	21:16	21:05 – 23:16	10% cloud cover, Beaufort Scale = 1, dry, 25-22°C

Automated surveys

2.4.3 Automated surveys were carried out as a supplement to the activity transect surveys and to gain further information on the species and frequency of bat activity within the survey area. A programmable electronic bat detector² was positioned in suitable habitat and left in place on seven occasions for Transects 1 and 2 between June and October 2021 and April and June 2022. The detectors were programmed to record all bat activity. The

² Anabat Express.

results of the automated detector data were input into Ecobat which provides evidence-based interpretation of bat activity data³. Details of the times and dates of automated bat detector deployment are provided in *Table 3* below and the location of each detector deployed is shown in *Appendix D*.

Table 3: Details of automated bat detector deployment

Location	Night	Sunset	Sunrise	Night Length (hours)	Temp. Max. / Min. (°C)
A&B	28/06/2021	21:21	04:50	7.5	22/16
	29/06/2021	21:21	04:51	7.5	14/13
	30/06/2021	21:20	04:52	7.5	16/12
	01/07/2021	21:20	04:52	7.5	17/15
	02/07/2021	21:20	04:53	7.6	18/15
C&D	03/07/2021	21:19	04:54	7.6	16/15
	14/07/2021	21:12	05:05	7.9	19/12
	15/07/2021	21:11	05:06	7.9	19/19
	16/07/2021	21:10	05:07	7.9	20/11
	17/07/2021	21:09	05:08	8.0	20/12
E&F	18/07/2021	21:08	05:10	8.0	22/13
	19/07/2021	21:07	05:11	8.1	21/14
	09/08/2021	20:36	05:31	9.1	18/13
	10/08/2021	20:34	05:43	9.2	17/11
	11/08/2021	20:32	05:44	9.2	16/14
G&H	12/08/2021	20:30	05:46	9.3	17/13
	13/08/2021	20:28	05:48	9.3	17/13
	15/09/2021	19:18	06:39	11.4	21/12
	16/09/2021	19:15	06:41	11.4	18/12
	17/09/2021	19:13	06:42	11.5	16/14
I&J	18/09/2021	19:11	06:44	11.5	20/13
	19/09/2021	19:08	06:45	11.6	16/12
	20/09/2021	19:06	06:47	11.7	17/11
	07/10/2021	18:28	07:14	12.8	21/14
	08/10/2021	18:25	07:15	12.8	16/7
K&L	09/10/2021	18:23	07:17	12.9	15/7
	10/10/2021	18:21	07:19	13.0	16/6
	11/10/2021	18:19	07:20	13.0	13/5
	22/04/2022	20:08	05:51	9.7	16/11
	23/04/2022	20:10	05:49	9.7	14/9
M	24/04/2022	20:11	05:47	9.6	13/6
	25/04/2022	20:13	05:45	9.5	12/2
	26/04/2022	20:15	05:43	9.5	12/3
	27/04/2022	20:16	05:41	9.4	9/1
	28/04/2022	20:18	05:39	9.4	11/4
	29/04/2022	20:19	05:38	9.3	10/1
	30/04/2022	20:21	05:36	9.2	11/7
	01/05/2022	20:23	05:34	9.2	11/8
	02/05/2022	20:24	05:32	9.1	12/9
N	09/05/2022	20:36	05:20	8.7	16/13
	10/05/2022	20:37	05:19	8.7	15/10
	11/05/2022	20:39	05:17	8.6	13/14
	12/05/2022	20:40	05:16	8.6	14/8
	13/05/2022	20:42	05:14	8.5	14/6
	14/05/2022	20:43	05:13	8.5	14/13
N	15/05/2022	20:45	05:11	8.4	17/11
	16/06/2022	21:19	04:47	7.5	19/11
	17/06/2022	21:19	04:47	7.5	22/13
	18/06/2022	21:20	04:47	7.5	14/9

³ Based on a 'region' geographical filter and a '+/- 1 month from survey start date' time filter.

Location	Night	Sunset	Sunrise	Night Length (hours)	Temp. Max. / Min. (°C)
	19/06/2022	21:20	04:47	7.5	14/4
	20/06/2022	21:20	04:47	7.5	15/6
	21/06/2022	21:22	04:48	7.4	17/8

2.4.4 The results of the dedicated bat activity transect and automated detector surveys are further supported by additional incidental records of bat activity made during the dusk emergence and dawn re-entry surveys of the trees and buildings within the site. Together, these surveys allow a robust assessment of bat foraging and commuting activity throughout the survey area.

2.5 Limitations of surveys

2.5.1 During the Phase 1 bat survey, it was not possible to carry out internal inspections of a minority of on-site buildings due to access constraints (B6, B7, B16). In such instances a reasonable worst-case-scenario of the potential of these buildings to support roosting bats was made when determining any requirement for Phase 2 dusk and dawn emergence surveys.

2.5.2 The static detector at location 'L' deployed in late April 2022 only recorded for 3 nights, however this is not considered a significant constraint to the overall findings of the activity surveys as: (i) the static surveys are a supplement to the activity transect surveys, which were successfully implemented with no limitations encountered; and (ii) static detector at Location K also deployed in April 2022 recorded for more than the recommended 5 nights.

2.5.3 All other surveys followed best practice guidelines and were conducted at an appropriate time of year, under favourable weather conditions and with an appropriate level of survey effort both in terms of the number of surveyors used and number of survey visits undertaken. Although periods of light drizzle were experienced on one of the bat activity surveys this was not found to have affected levels of bat activity and is not considered a constraint to the findings of the surveys.

2.5.4 The level of survey work carried out within the survey area is therefore considered sufficient to inform an assessment of the likely effects of the proposed development on bats and inform the recommendations provided in *Section 5* of this report with regard to the protection of individual bats during works and the maintenance of the favourable conservation status of the local bat population.

3

RESULTS

3.1 Phase 1 building scoping survey

3.1.1

All buildings identified as having potential to support roosting bats within the survey area are described in *Table 4* below and their locations are given in *Appendix A*. Photograph references relate to the photographs provided in *Appendix C*.

Table 4: Results of Phase 1 bat scoping survey of buildings

Building	Description	Findings	Bat roost potential
B1 (Photo 1)	A single-storey, metal frame shelter with open sides and a pitched corrugated iron roof.	<p>External The exterior roof is generally very well sealed with no gaps for crevice dwelling bats.</p> <p>Internal The building is light due to the lack of walls, is likely to fluctuate in temperature and does not contain suitable roosting features.</p> <p>Evidence of bat activity: None recorded.</p>	Negligible
B2 (Photos 1 & 2)	Four connected single-storey, single skinned sheds with wooden panelling, open sides, windows, and a pitched corrugated iron roof. A single skinned, breeze block extension with a corrugated iron roof is attached to the western elevation.	<p>External The building is likely to fluctuate in temperature due to the lack of walls and the presence of a metal roof.</p> <p>Internal Building open, well-lit and likely to fluctuate in temperature.</p> <p>Evidence of bat activity: None recorded.</p>	Negligible
B3 & B4 (Photos 2 & 3)	Two large, single-storey, single skinned sheds comprising three walls constructed of breeze block bases and open wooden panelling tops and pitched asbestos roofs.	<p>External No suitable features for roosting bats recorded.</p> <p>Internal Building open on one side, well-lit and likely to fluctuate in temperature.</p> <p>Evidence of bat activity: None recorded.</p>	Negligible
B5 (Photo 4)	Bridge going underneath footpath with brick walls and iron girders as ceiling.	<p>External No suitable features for roosting bats recorded.</p> <p>Internal Small cracks within the brickwork which do not appear deep enough for crevice dwelling bats.</p> <p>Evidence of bat activity: None recorded.</p>	Negligible
B6 (Photo 5)	Walnut Cottage A single-storey, brick house with cavity walls and a pitched tiled roof.	<p>External Potential bat roosting features include lifted and missing roof tiles.</p> <p>Internal Internal survey not possible due to access constraints.</p> <p>Evidence of bat activity: None recorded.</p>	Moderate

<p>B7 (Photos 6 & 7)</p>	<p>Bycroft House A single-storey, brick house with cavity walls. One wall is covered with plaster whilst the rest are exposed brick. The roof is a pitched tiled roof with a tiled ridge.</p>	<p>External Potential bat roosting features are limited to lifted lead flashing around the chimney and an occasional lifted tile.</p> <p>Internal Internal survey not possible due to access constraints.</p> <p>Evidence of bat activity: None recorded.</p>	<p>Low</p>
<p>B8 (Photo 8)</p>	<p>A single skinned, single-storey, corrugated metal shelter with two open sides and a pitched, corrugated asbestos roof with no lining.</p>	<p>External No suitable features for roosting bats recorded.</p> <p>Internal No suitable features for roosting bats recorded.</p> <p>Evidence of bat activity: None recorded.</p>	<p>Negligible</p>
<p>B9 (Photos 9 & 10)</p>	<p>Single-storey, single skinned corrugated metal building with two open sides and a sloping corrugated metal roof.</p>	<p>External No suitable features for roosting bats recorded.</p> <p>Internal No suitable features for roosting bats recorded.</p> <p>Evidence of bat activity: None recorded.</p>	<p>Negligible</p>
<p>B10 (Photo 10)</p>	<p>Single-storey, shelter with concrete supports, open sides and a pitched corrugated asbestos roof.</p>	<p>External No suitable features for roosting bats recorded.</p> <p>Internal No suitable features for roosting bats recorded.</p> <p>Evidence of bat activity: None recorded.</p>	<p>Negligible</p>
<p>B11 (Photos 11 & 12)</p>	<p>A single-storey disused milking room, with solid, breeze block walls with a pitched asbestos roof.</p>	<p>External: Potential bat roosting features are limited to gaps between corrugated sheeting on the roof and walls and gaps around the doors.</p> <p>Internal: Ceiling has an inaccessible void above.</p> <p>Evidence of bat activity: None recorded.</p>	<p>Low</p>

<p>B12 (Photos 10, 11 & 13 to 16)</p>	<p>A T-shaped single skinned, brick cow shed. Comprising a two-storey building with a pitched tiled roof lined with roofing felt and brick and waney edge boarding walls. Connected to the building is a large single-storey cattle shed with a pitched tiled roof which is unlined.</p>	<p>External Potential bat roosting features include multiple lifted and missing tiles, open doorways and gaps under rafters and between the waney edge boarding.</p> <p>Internal Access to the second storey of the building was limited due to the unknown condition of the floor. The ceiling between the first and second floors in the two-storey section of the building is boarded above and below the rafters to form a cavity within which occasional holes are present. In addition, the walls are lined with waney edge boarding that have gaps leading to cavity between the internal and external wall. The two-storey section of the building is constructed in a traditional method with mortise and tenon joints present.</p> <p>Evidence of bats recorded. Below one mortise and tenon joint on the ground floor of the two-storey section of the building was staining and approximately 100 bat droppings below.</p>	<p>Confirmed roost</p>
<p>B13 & B14 (Photo 17)</p>	<p>Two single-storey, metal frame shelters with two open sides and pitched corrugated metal roofs.</p>	<p>External No suitable features for roosting bats recorded.</p> <p>Internal No suitable features for roosting bats recorded.</p> <p>Evidence of bat activity: None recorded.</p>	<p>Negligible</p>
<p>B15 (Photos 18 & 19)</p>	<p>A large single-storey barn with a double pitched, corrugated asbestos roof and walls constructed of a single skinned breeze block base above which were wooden slated walls.</p>	<p>External No suitable features for roosting bats recorded.</p> <p>Internal No suitable features for roosting bats recorded.</p> <p>Evidence of bat activity: None recorded.</p>	<p>Negligible</p>
<p>B16 (off-site) (Photos 20 & 21)</p>	<p>Great House Farm Two-storey building with pitched slate tiled roof, brick walls and tiled wall to the northern elevation.</p>	<p>External: Potential bat roosting features include gaps in lifted, cracked and missing tiles and gaps into roof at the gable ends are present on all elevations.</p> <p>Internal: Internal survey not possible due to access constraints.</p> <p>Evidence of bat activity: None recorded.</p>	<p>High</p>

3.2 Phase 1 tree survey

3.2.1 All trees identified as having potential to support roosting bats within the survey area are described in *Table 5* below and their locations are given in *Appendix A*.

Table 5: Results of Phase 1 bat scoping tree survey

Tree ref*	Species	Findings	Bat roost potential
9	Oak	Split branch with limited potential on the northern aspect.	Low
10	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
11	Oak	Branch cavities on western and eastern aspects. Peeling bark on southern aspect.	Moderate
12	Oak	Two split branches with limited roost potential on the eastern and western aspects.	Low
13	Oak	Limited peeling bark on southern aspect. Heavily Ivy-clad in parts. Suitable roost features may have been present that were not visible from ground level.	Low
14	Ash	Woodpecker hole and hollow branch on southern aspect. Branch cavity on eastern aspect.	High
15	Oak	Cracked upwards facing branch with limited suitability. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
16	Oak	Dead branch with an upwards facing crack and a limited trunk cavity on northern aspect.	Low
17	Ash	Limited split in trunk on western aspect.	Low
18	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
19	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
20	Field Maple	Trunk cavity on southern aspect. Branch cavity on western aspect. Trunk is hollow on the western aspect.	Moderate
21	Oak	Limited peeling bark on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
22	Oak	Woodpecker hole on southern aspect. Limited peeling bark on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
23	Oak	Limited branch cavity on eastern aspect. Limited peeling bark on western aspect.	Low
24	Oak	Potential shallow branch cavity at broken branch on southern aspect. Upwards facing branch wound and limited peeling bark on northern aspect.	Low
25	Oak	Limited branch cavity and peeling bark on southern aspect. Limited peeling bark on western aspect. Heavily Ivy-clad and of an age that further suitable roost features be present that were not visible from ground level.	Low
26	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
27	Oak	Two branch cavities on eastern and western aspects. Limited peeling bark on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
28	Dead tree	Peeling bark on branch on eastern aspect.	Low

Tree ref*	Species	Findings	Bat roost potential
29	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
30	Dead Oak	Limited peeling bark on western aspect. Heavily Ivy-clad with some Ivy plating and of an age that further suitable roost features may be present that were not visible from ground level.	Low
31 (off-site)	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
32	Oak	Limited peeling bark on branch on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
33	Oak	Branch cavity on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
34 (off-site)	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
35	Oak	Branch cavity on southern aspect.	Low
36	Oak	Branch cavity on eastern aspect. Limited peeling bark on northern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
37	Oak	Split branch with possible branch cavity below on southern aspect. Split branch facing upwards on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
38	Oak	Upwards facing branch cavity. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
39	Oak	Peeling bark on branch on eastern aspect. Two split branches on southern aspect. Limited branch cavity on western aspect.	Moderate
40	Oak	Heavily Ivy-clad with some Ivy plating and of an age that suitable roost features may be present that were not visible from ground level.	Low
41	Oak	Shallow split branch on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
42	Oak	Two limited branch cavities on southern aspect. Split branch with limited potential on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
43 (off-site)	Ash	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
44 (off-site)	Oak	Split branch with limited potential on southern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
45 (off-site)	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low

Tree ref*	Species	Findings	Bat roost potential
46 (off-site)	Dead	Peeling bark on branch on western aspect. Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
47 (off-site)	Ash	Branch cavities on western, southern and northern aspects.	Moderate
48	Oak	Heavily Ivy-clad with some Ivy plating and of an age that suitable roost features may be present that were not visible from ground level.	Low
49 (off-site)	Oak	Heavily Ivy-clad with some Ivy plating and of an age that suitable roost features may be present that were not visible from ground level.	Low
50	Ash	Small branch cavity below cut branch on western aspect. Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
51 (off-site)	Oak	Limited branch cavity on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
52 (off-site)	Oak	Possible trunk cavity on western aspect. Branch with limited cracking on eastern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
53 (off-site)	Oak	Large trunk cavity at base of trunk. The trunk has a few limited cracks in the trunk. Branch cavity on eastern aspect.	Moderate
54	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
55	Oak	Branch cavity on southern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
56	Ash	Two branch cavities on southern and western aspects. Trunk cavity and split branch on southern aspect.	High
57	Oak	Limited peeling bark and upwards facing branch cavity on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
58	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
59	Oak	Trunk cavity on western elevation. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
60	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
61	Ash	Woodpecker hole and two branch cavities on eastern aspect. Branch and trunk cavity on western aspect.	High
62	Dead Ash	Hollow trunk and peeling bark on eastern aspect.	Low
63	Oak	Branch cavity on eastern aspect. Upwards facing split branch with limited roost potential on southern aspect.	Low
64	Oak	Two trunk cavities on southern and western aspects. Occluded wood on southern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
65	Dead tree	Limited cracks in bark and trunk on southern aspect.	Low

Tree ref*	Species	Findings	Bat roost potential
66	Oak	Split branch on eastern aspect.	Low
67	Oak	Limited branch cavity on eastern aspect.	Low
68	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
69	Oak	Broken branch on southern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
71	Oak	Split branch with occluded wood on western aspect. Branch cavity below a broken branch on eastern aspect.	Low
72	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
73 (off-site)	Oak	Trunk cavity on northern aspect.	Low
74 (off-site)	Oak	Limited branch cavity on eastern aspect. Tree of an age that further suitable roost features may be present that were not visible from ground level.	Low
75 (off-site)	Oak	Bird boxes on the eastern and southern aspect, which have rotted and got holes in the base.	Moderate
76	Ash	Upwards facing trunk cavity on the southern aspect. Shallow split in bark on southern aspect. Upwards facing split branches on the eastern and western aspects.	Moderate
77	Tree	Limited cracks in branches. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
78	Oak	Split branch with limited suitability on north-western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
79	Oak	Split branch and trunk cavity on the eastern aspect. Split branch on the western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
80	Oak	Branch cavities on the northern and southern aspects. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
81	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
82	Ash	Multiple branch cavities on northern, eastern and western aspects. Trunk cavity and a hollow branch on northern aspect.	High
83	Oak	Small branch cavities on southern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
84	Ash	Hollow branches and trunk cavities on southern aspect. Woodpecker holes on western and eastern aspects.	High
85	Oak	Branch cavity with limited potential on northern aspect.	Low
86	Oak	Branch cavities on the southern, western and eastern aspects. Woodpecker hole on western aspect.	Moderate
87	Oak	Branch cavity on southern aspect.	Low
88	Oak	Hollow branch on south-eastern aspect.	Low

Tree ref*	Species	Findings	Bat roost potential
89	Oak	Woodpecker holes on eastern and western aspects. Trunk cavity into hollow trunk on eastern aspect.	High
90	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
91	Oak	Trunk cavity with limited suitability on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
92	Oak	Trunk cavities on western aspect. Hollow branches on all aspects.	High
93	Oak	Trunk cavities on all aspects.	High
94	Oak	Limited peeling bark on western elevation.	Low
95	Dead tree	Two trunk cavities and a woodpecker hole into hollow trunk on southern aspect.	Moderate
96	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
97	Oak	Peeling bark on northern aspect. Branch cavity and split branch on southern aspect.	Moderate
98	Oak	Peeling bark on western aspect.	Low
99	Oak	Woodpecker hole on northern aspect.	Moderate
100	Oak	Split branch on eastern aspect.	Low
101	Ash	Branch cavity into hollow trunk on western aspect.	Moderate
102	Field Maple	Potentially hollow.	Low
103	Dead Oak	Upwards facing split trunk.	Low
104	Holly	Hollow and split trunk facing upwards.	Low
105	Oak	Branch cavity on northern aspect.	Low
106	Oak	Trunk cavity on eastern aspect.	Low
107	Oak	Trunk cavity on northern aspect.	Low
108 (off-site)	Field Maple	Split branch on eastern aspect.	Low
109	Oak	Small trunk and branch cavities on southern and western aspects.	Low
110 (off-site)	Oak	Limited split branch on northern aspect.	Low
111	Sycamore	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
112 (off-site)	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
113	Ash	Branch cavity on eastern aspect. Woodpecker hole on northern aspect.	Moderate
114	Dead Oak	Hollow trunk on southern aspect. Woodpecker hole in branch on northern aspect. Trunk cavity on eastern aspect.	High
115	Oak	Branch cavities on eastern and northern aspects.	Low
116	Oak	Branch cavity on southern aspect.	Low
117	Ash	Trunk cavity at base. Two branch cavities on western aspect.	Moderate
118	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
119	Oak	Branch cavity and of an age that further suitable roost features may be present that were not visible from ground level.	Low
120	Oak	Flaking bark on northern aspect. 2 possible branch cavities and flaking bark on western aspect.	Low

Tree ref*	Species	Findings	Bat roost potential
121	Oak	Branch cavity on southern aspect. Possible branch cavity on eastern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
122	Hawthorn	Trunk cavity leading to hollow trunk on western aspect.	Moderate
123	Oak	Peeling bark on southern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
124	Field Maple	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
125	Oak	Cracked branch on eastern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
126	Ash	Multiple trunk cavities on all aspects.	High
127	Dead	Trunk cavity on western aspect.	Moderate
128	Ash	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
129	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
130	Oak	Branch cavity on northern aspect.	Low
131	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
132	Field Maple	Split trunk with limited suitability and hollow base.	Low
133	Ash	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
134	Dying tree	Hollow tree with trunk cavity on northern aspect.	High
135	Ash	Branch cavity on southern aspect.	Low
136	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
137	Oak	Cracked branch and woodpecker hole on northern aspect. Flaking bark on branch on southern aspect. Snapped branch with deadwood on western aspect.	Moderate
138	Ash	Branch cavities on southern and eastern aspects.	Low
139	Ash	Trunk cavity on northern aspect. Woodpecker holes on western and eastern aspects. Trunk cavity on southern aspect.	High
140	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
141	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
142	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
143	Hazel	Tree has limited peeling bark and a potential cracked branch on northern aspect.	Low
144	Oak	Branch cavity on southern aspect. Trunk cavity on eastern aspect.	Moderate
145	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
146	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
147	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
148	Oak	Multiple woodpecker holes on all aspects.	High

Tree ref*	Species	Findings	Bat roost potential
149	Oak	Limited peeling bark. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
150	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
151	Ash	Trunk cavity on south-eastern aspect.	Moderate
152	Field Maple	Trunk cavity on western aspect.	Moderate
153	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
154	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
155	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
156 (off site)	Oak	Branch cavity on eastern aspect that has limited suitability for roosting bats.	Low
157	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
158	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
159	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
160	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
161	Ash	Upwards facing branch cavity with limited suitability on northern aspect.	Low
162	Ash	Ivy plating.	Moderate
163	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
164 (off-site)	Oak	Limited peeling bark on branch on western aspect.	Low
165 (off-site)	Alder	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
166 (off-site)	Alder	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
167 (off-site)	Alder	Woodpecker holes in trunk on all aspects.	Moderate
168 (off-site)	Oak	Trunk cavity on north-eastern aspect. Occluded wood on branch on northern aspect.	Moderate
169 (off-site)	Oak	Split branch on northern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
170	Ash	Heavily Ivy-clad with some Ivy plating and of an age that suitable roost features may be present that were not visible from ground level.	Low
171	Sycamore	Trunk cavity at base on northern aspect.	Low
172	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
173	Sycamore	Small trunk cavity on northern aspect.	Low
174	Birch	Trunk cavity on northern aspect.	Moderate
175	Sycamore	Small trunk cavity on northern aspect.	Low
176	Sycamore	Trunk cavities on northern and western aspects possibly leading to hollow trunk.	Moderate
177	Lime	Of an age that suitable roost features may be present that were not visible from ground level.	Low
178	Sycamore	Extensive peeling bark on branches. Multiple holes in dead trunk.	High

Tree ref*	Species	Findings	Bat roost potential
179	Sycamore	Possible branch cavity on eastern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
180	Lime	Split branch and woodpecker holes on southern aspect.	Moderate
181	Oak	Split branch on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
182	Sycamore	Trunk cavity on northern aspect. Hollow base to tree.	Moderate
183	Oak	Peeling bark and possible branch cavity on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
184	Ash	Branch cavity on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
185	Hawthorn	Trunk cavity on northern aspect.	Moderate
186	Sycamore	Trunk cavities on eastern aspect.	Moderate
187	Horn Beam	Trunk cavity on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
188	Ash	Branch cavity on eastern aspect. Heavily Ivy-clad with some Ivy plating and of an age that suitable roost features may be present that were not visible from ground level.	Moderate
189	Ash	Trunk cavities and woodpecker holes on western aspect.	High
190	London Plane	Trunk cavity on eastern aspect. Branch cavities on southern aspect.	Moderate
191	Dead tree	Lifted bark and cracked branch on southern aspect.	Moderate
192	Oak	Two trunk and two branch cavities on northern aspect. Split branch on southern aspect. Branch cavity and gap between twisted branches on western aspect.	High
193	Oak	Possible trunk cavity on broken branch on eastern aspect. Limited flaking bark on eastern aspect.	Low
194	Pine	Peeling bark on southern aspect.	Low
195	Ash	Trunk cavity on northern aspect.	Moderate
196	Ash	Branch cavity on western aspect. Trunk cavity on northern aspect.	Moderate
197	Pine	Possible trunk cavity at bottom of broken branch on northern aspect.	Low
198	Field Maple	Limited branch cavities on eastern and southern aspects. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
199	Pine	Branch cavity on southern aspect. Possible trunk cavity on eastern aspect.	Low
200	Oak	Cracked branch on southern aspect. Branch and possible trunk cavity on northern aspect.	Moderate
201	Ash	Trunk cavity on western aspect.	Moderate
202	Oak	Small broken branches and branch cavities on southern and eastern aspects.	Low
203	Ash	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
204	Oak	Cracked branches on eastern and southern aspects. Small branch cavities on north-eastern and southern aspects.	Low

Tree ref*	Species	Findings	Bat roost potential
205	Ash	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
206	Oak	Split branch on eastern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
207	Oak	Branch cavities on northern and eastern aspects. Broken branches on northern and western aspects. Heavily Ivy-clad and limited Ivy plating and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
208	Oak	Peeling bark on eastern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
209	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
210	Ash	Trunk cavities and branch cavities on southern, western and eastern aspects.	High
211	Ash	2 trunk cavities on southern aspect. 2 woodpecker holes on western aspect.	High
212	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
213	Oak	Branch cavity, peeling bark and trunk cavity on eastern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
214	Oak	Branch cavity on southern aspect. Heavily Ivy-clad and limited Ivy plating and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
215	Oak	Branch cavity under broken branch on southern aspect. Heavily Ivy-clad and limited Ivy plating and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
216	Oak	Multiple branch cavities on eastern aspect. Three dead branches with peeling bark and a branch cavity on southern aspect.	High
217 (off-site)	Ash	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
218	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
219	Willow	Two trunk cavities on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
220	Oak	Peeling bark on western aspect.	Low
221	Oak	Peeling bark on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
222	Oak	Peeling bark on western aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
223	Oak	4 woodpecker holes on western aspect.	High
224	Oak	Peeling bark and occluded wood on northern aspect.	Low
225	Ash	Trunk cavities on southern and western aspects.	Moderate

Tree ref*	Species	Findings	Bat roost potential
226	Oak	Limited peeling bark on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
227	Oak	9 woodpecker holes on all aspects.	High
228	Oak	Peeling bark on eastern aspect.	Low
229	Oak	2 branch cavities on northern aspect. Peeling bark on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	High
230	Oak	Peeling bark and branch cavity on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
231	Ash	2 small trunk cavities on southern aspect. Small trunk cavity, broken branch and branch cavity on western aspect.	Low
232	Field Maple	Trunk cavity on northern aspect. Heavily Ivy-clad with some Ivy plating and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
233	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
234	Dead	Trunk cavity into potentially hollow trunk.	Moderate
235	Oak	Branch cavity on eastern aspect.	Low
236	Oak	Three small trunk cavities on southern aspect.	Low
237	Hornbeam	Woodpecker holes on northern and eastern aspects.	High
238	Dead tree	Trunk cavity on eastern aspect.	Low
239	Ash	Woodpecker holes on northern and eastern aspects. 2 branch cavities on eastern aspect and one on southern aspect.	High
240	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
241	Oak	Branch cavity and occluded wood on eastern aspect. Heavily Ivy-clad with some Ivy plating and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
242	Oak	Occluded wood on eastern aspect.	Low
243	Oak	Trunk cavity, split branch and split in trunk on eastern aspect.	High
244	Oak	Occluded wood on eastern aspect.	Low
245	Ash	Heavily Ivy-clad that suitable roost features may be present that were not visible from ground level.	Low
246	Hornbeam	Trunk cavity at tree base.	Low
247	Oak	Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
248	Oak	Occluded wood on northern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
249	Ash	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Low
250	Ash	Trunk cavity on southern aspect.	Moderate
251	Oak	Peeling bark on southern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
252	Oak	Peeling bark on southern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
253	Oak	Possible trunk cavity and cracked branch on northern aspect.	Moderate

Tree ref*	Species	Findings	Bat roost potential
254	Oak	Split branch and branch cavity on northern aspect. Branch cavity on western aspect. Broken branch and branch cavity on eastern aspect. 2 branch cavities and a broken branch with peeling bark on southern aspect.	High
255	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
256	Oak	Split branch with peeling bark on northern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
257	Hawthorn	Possible branch cavity with peeling bark on eastern aspect. 2 trunk cavities on northern aspect and split in trunk on western aspect.	Moderate
258	Field Maple	Six cracks in trunk on eastern aspect.	Moderate
259	Field Maple	Two possible trunk cavities on eastern aspect.	Low
260	Oak	Possible branch cavity on dead branch on eastern aspect. Trunk cavity on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
261	Oak	Possible trunk cavity and two dead branches on northern aspect.	Low
262	Oak	Branch cavity and possible gap between two branches on eastern aspect. Crack in branch on southern aspect.	Moderate
263	Oak	Possible crack in branch with deadwood on northern aspect. Dead branch with possible upwards facing cavity on eastern aspect. Peeling bark and branch cavity on eastern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Low
264	Oak	2 branch cavities and a trunk cavity on southern aspect. Possible branch cavity on eastern aspect.	Moderate
265	Dead tree	Peeling bark and occluded wood on western aspect. Branch cavity on southern aspect.	Moderate
266	Dead tree	Limited branch cavity and crack in trunk on northern aspect. Crack in trunk on northern aspect.	Low
267	Ash	Branch cavity in broken branch on northern aspect.	Low
268	Oak	Possible branch cavity on northern aspect.	Low
269	Oak	Occluded wood on northern and southern aspects.	Low
270	Oak	Occluded wood and peeling bark on northern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
271	Hawthorn	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Low
272	Ash	Broken branch and two woodpecker holes on broken/split branches on northern aspect. Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	Moderate
273	Field Maple	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Low
274	Field-Maple	Trunk cavity on northern aspect. Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	Low
275	Hawthorn	Possible gap between two branches on southern aspect. Crack in trunk on eastern aspect.	Low

Tree ref*	Species	Findings	Bat roost potential
276	Ash	Branch cavity on southern aspect. Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	Moderate
277	Ash	Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	Low
278	Ash	Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	Low
279	Oak	Cracked branch on eastern aspect. Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	Low
280	Field Maple	Dead, cracked branch on western aspect.	Low
281	Field Maple	3 small branch cavities and a trunk cavity on northern aspect. Heavily Ivy-clad that further suitable roost features may be present that were not visible from ground level.	Moderate
282	Oak	Branch cavity and upwards facing branch cavity on eastern aspect.	Low
283	Oak	Trunk cavity and branch cavity on eastern aspect.	Low
284	Field Maple	Heavily Ivy-clad with limited plating that suitable roost features may be present that were not visible from ground level.	Low
285	Oak	Broken branch on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
286	Hawthorn	Heavily Ivy-clad with limited plating that suitable roost features may be present that were not visible from ground level.	Low
287	Field Maple	Limited branch cavity on northern aspect. Trunk cavity on western aspect.	Low
288	Hawthorn	Limited branch cavity on eastern aspect. Heavily Ivy-clad that further suitable roost features may be present that were not visible from ground level.	Low
289	Oak	Split branch on western aspect. Trunk cavity and two branch cavities on eastern aspect. Heavily Ivy-clad and of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
290	Ash	Branch cavity on northern aspect. Broken branch on eastern aspect. Heavily Ivy-clad that further suitable roost features may be present that were not visible from ground level.	Moderate
291	Ash	Branch cavity on western aspect.	Moderate
292	Oak	Broken branch on northern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
293	Ash	3 branch cavities and a trunk cavity on western aspect. Broken branch on northern aspect.	Moderate
294	Dead tree	Hollow trunk with trunk cavity on northern aspect.	Moderate
295	Oak	Split branch, trunk cavity, branch cavity and peeling bark on western aspect. Branch cavity on southern aspect. Trunk cavity on eastern aspect. Two branch cavities on northern aspect.	High
296	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
297	Ash	Branch cavity on northern aspect.	Low
298	Oak	Branch cavity on northern aspect.	Low
299	Oak	Trunk cavity below dead branch. Two branch cavities on northern and southern aspects.	Moderate
300	Willow	Branch cavity on northern aspect.	Low
301	Oak	Crack in cut branch on northern aspect	Low

Tree ref*	Species	Findings	Bat roost potential
302	Oak	Branch cavity on southern aspect. Trunk cavity on western aspect. Potential trunk cavity and cracks in dead branch on northern aspect.	High
303	Willow	Trunk cavity and potential trunk cavity on northern aspect. Trunk cavity on southern aspect.	Moderate
304	Willow	Split in trunk on southern aspect.	Low
305	Dead tree	Three trunk cavities on eastern aspect. Heavily Ivy-clad that further suitable roost features may be present that were not visible from ground level.	Moderate
306	Ash	Branch cavity on northern aspect. Heavily Ivy-clad that further suitable roost features may be present that were not visible from ground level.	Low
307	Ash	Branch cavity on northern aspect. Heavily Ivy-clad that further suitable roost features may be present that were not visible from ground level.	Low
308	Oak	Limited peeling bark on northern aspect. Trunk cavity on western aspect. Dead branch with a crack on eastern aspect.	Moderate
309	Oak	Possible branch cavity at dead branch. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
310	Oak	Split branch with occluded wood on northern and western aspects.	Moderate
311	Field Maple	Split branch on western aspect. Peeling bark on northern and southern aspects.	Low
312	Field Maple	Peeling bark on southern aspect. Heavily Ivy-clad that further suitable roost features may be present that were not visible from ground level.	Low
313	Oak	Cracked branch, peeling bark and branch cavity on western elevation. Split branch on southern aspect. Branch cavity on northern aspect.	High
314	Ash	Possible trunk cavities on eastern and western aspects.	Low
315 (off-site)	Dead	Peeling bark and multiple trunk cavities on southern aspect into a potentially hollow trunk. Three branch cavities on northern aspect.	High
316 (off-site)	Hazel	Branch cavity on northern aspect.	Low
317 (off-site)	Willow	Trunk cavity on eastern aspect.	High
318	Ash	Branch cavity and two broken branches with cracks on eastern aspect.	Moderate
319	Ash	Trunk cavity on eastern aspect. 2 trunk cavities on western aspect.	High
320	Oak	Branch cavity and dead branch with split on western aspect. Dead branch with split on eastern aspect.	Low
321	Oak	Branch cavity on western aspect. Cracked branch on eastern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
322	Oak	Trunk cavity on eastern aspect. Peeling bark on northern aspect.	Low
323	Oak	Branch cavity on eastern aspect. Two cracked branches on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
324	Oak	Peeling bark on eastern and western aspects. Of an age that further suitable roost features may be present that were not visible from ground level.	Moderate

Tree ref*	Species	Findings	Bat roost potential
325 (off-site)	Ash	Split branch on western aspect.	Low
326	Ash	Three branch cavities and broken branch on southern aspect. Trunk cavity on northern aspect. Tree has a hollow base.	Moderate
327	Oak	Cracked branch on eastern aspect. 2 split branches with peeling bark on northern aspect.	Low
328	Ash	Trunk cavity on southern aspect.	High
329	Oak	Of an age that suitable roost features may be present that were not visible from ground level.	Low
330 (off-site)	Ash	Heavily Ivy-clad that suitable roost features may be present that were not visible from ground level.	Low
331 (off-site)	Oak	Dead branch with a crack on western aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
332	Oak	Bird box attached to southern aspect. Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	High
333	Oak	Seven branch cavities on all aspects. Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	Moderate
334	Horse Chestnut	Bird box attached to southern aspect. Heavily Ivy-clad and further suitable roost features may be present that were not visible from ground level.	Moderate
335	Oak	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Low
336	Oak	Bird box attached to southern aspect. Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Moderate
337	Ash	Hole at the base of trunk on southern aspect.	Low
338	Ash	Broken branch on northern aspect. Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Moderate
339	Oak	Peeling bark and trunk cavity on southern aspect. Branch cavity on northern aspect.	Moderate
340	Oak	Branch cavity on western aspect.	Low
341	Tree	Trunk cavity on southern aspect.	Low
342	Oak	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Low
343	Oak	Two branch cavities on eastern aspect. Branch cavity on northern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Moderate
344	Oak	Heavily Ivy-clad with limited plating and of an age that suitable roost features may be present that were not visible from ground level.	Low
345	Oak	Branch cavity on eastern aspect. Of an age that further suitable roost features may be present that were not visible from ground level.	Low
346	Willow	Trunk cavity and peeling bark on eastern aspect.	Low
347	Ash	Branch cavity on eastern aspect.	Low
348	Ash	Heavily Ivy-clad with limited plating and suitable roost features may be present that were not visible from ground level.	Low
349 (off-site)	Oak	Large knot hole on south-western aspect. Large cavity into pruning cut on south-eastern aspect. Decaying branches within crown.	High
G1	2x Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low

Tree ref*	Species	Findings	Bat roost potential
G2	3x Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G3 (off-site)	2x Horse Chestnut	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G4	Holly and Hawthorn	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G5 (off-site)	2x Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G6 (off-site)	Ash and Alder	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G7	Oak, Lime and Field Maple	Small trunk cavities. Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G8	Oak and Willow	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G9	Field Maple	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G10	Field Maple, standing deadwood and Ash	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G11	Ash and Field Maple	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G12	Oak	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G13	Oak, Ash and Silver Birch	Heavily Ivy-clad and of an age that suitable roost features may be present that were not visible from ground level.	Low
G14	Oak	Heavily Ivy-clad that suitable roost features may be present that were not visible from ground level.	Low
G15	3x Field Maple	Heavily Ivy-clad and Ivy plating and suitable roost features may be present that were not visible from ground level.	Low
G16	4x Hawthorn	Heavily Ivy-clad and Ivy plating and suitable roost features may be present that were not visible from ground level.	Low
G17	Field Maple and Hawthorn	Heavily Ivy-clad and Ivy plating and suitable roost features may be present that were not visible from ground level.	Low
G18	2x Ash	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Low
G19	Oak, Ash and Silver Birch	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level. 1 Ash has a dead branch over path with flaking bark.	Low
G20	2x Ash	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Low
G21	2x Field Maple	Split trunk.	Low
G22	12x Field Maples	Heavily Ivy-clad and suitable roost features may be present that were not visible from ground level.	Low
W1	Woodland	Courtland Wood supporting trees ranging from 'Negligible' to 'high' bat roosting potential.	Negligible to High

Tree ref*	Species	Findings	Bat roost potential
W2	Woodland	Smith's Copse supporting trees ranging from 'Negligible' to 'moderate' bat roosting potential.	Negligible to Moderate

* Trees 1 to 8 do not exist.

3.2.2 All other trees within and immediately adjacent to the survey area were assessed as having negligible potential to support roosting bats.

3.3 Phase 2 roost surveys

3.3.1 In view of the findings of the Phase 1 bat scoping survey and in accordance with current best practice guidelines (BCT, 2016), trees were subject to climbing inspections to investigate all features potentially suitable for use by roosting bats. Buildings and trees unsafe to climb were subject to emergence/re-entry surveys using an appropriate number of surveyors to ensure comprehensive coverage.

3.3.2 In accordance with best practice guidelines (BCT, 2016), high potential trees and buildings and confirmed roosts were subject to three emergence/re-entry surveys, moderate potential trees and buildings subject to two emergence/re-entry surveys and low potential buildings subject to one emergence/re-entry survey. In accordance with the guidelines low potential trees potentially affected by the proposed development were not subject to Phase 2 roost surveys at this stage however, in the event that retention of a tree identified as having low potential to support roosting bats is not possible, the appropriate approach to works is given in *Section 5* below.

3.3.3 A summary of the results of the Phase 2 roost surveys is provided in *Table 6* below. Trees and buildings that were subject to Phase 2 roost surveys and their revised roost status are mapped in *Appendix A*. Further information on the emergence/re-entry locations within B6, B12 and B16 are shown in *Appendix B* and photographs of the buildings are provided in *Appendix C*.

Table 6: Results of Phase 2 bat roost surveys

Building/ tree	Phase 2 survey type	Date	Results	Updated roost status
B6	Emergence/ re-entry survey	15.06.2022 Dusk	Probable emergence of 1 x Common Pipistrelle from under tile on roof (Ref: B6-1). Probable emergence of 1 x silent bat from under tile on roof (Ref: B6-2).	Probable roost Probable day roost supporting two Common Pipistrelle bats (the silent bat is also likely to be a Common Pipistrelle in view of timing of emergence, character of the bat recorded and the location at which it was seen to emerge).
	Emergence/ re-entry survey	12.07.2022 Dusk	No emergences/re-entries.	
	Emergence/ re-entry survey	15.08.2022 Dusk	No emergences/re-entries.	
B7	Emergence/ re-entry survey	23.06.2022 Dusk	No emergences/re-entries.	Low
B11	Emergence/ re-entry survey	15.06.2022 Dusk	No emergences/re-entries.	Low
B12	Emergence/ re-entry survey	27.05.2022 Dusk	Emergence of 1 x Common Pipistrelle from open window on south-western elevation of building (Ref: B12-1). Possible emergence of 2 x Common Pipistrelle from inside the barn (two bats recorded foraging internally – roost location unknown). Possible emergence of 1 x Soprano Pipistrelle from northern elevation of building (Ref: B12-2).	Confirmed roost Day roosts supporting up to six Common Pipistrelle bats, one Soprano Pipistrelle and possibly one <i>Myotis</i> sp. bat (call indicative of Brandt's bat).
	Emergence/ re-entry survey	28.06.2022 Dusk	Emergence of 1 x Common Pipistrelle from open window on south-western elevation of building (Ref: B12-1). Emergence of 2 x Common Pipistrelle from open doorway on eastern elevation of building (Ref: B12-3). Possible emergence of 3 x Common Pipistrelle from open doorway on eastern elevation of building (Ref: B12-3). Bats foraging within barn and multiple emergences and re-entries recorded.	
	Emergence/ re-entry survey	26.07.2022 Dusk	Emergence (and re-entry) of 2 x Common Pipistrelle from open doorway on eastern elevation of building (Ref: B12-3). Possible emergence of 1 x <i>Myotis</i> sp. bat (call indicative of Brandt's bat) from open doorway on eastern elevation of building (Ref: B12-3).	

B16 (off-site)	Emergence/ re-entry survey	16.06.2022 Dawn	No emergences/re-entries.	Confirmed roost Day roosts supporting two Common Pipistrelle bats.
	Emergence/ re-entry survey	18.07.2022 Dusk	No emergences/re-entries.	
	Emergence/ re-entry survey	03.08.2022 Dusk	Emergence of 2 x Common Pipistrelle from area of roof tiles on northern elevation of building (Ref: B16-1).	
Tree 2 (Off-site)	Climbing inspection	31st July-5th August 2022	(i) Branch scar at 5m in southern crown - central crack open and exposed with no roost potential. Small gap between bark and branchwood too narrow for roost use. (ii) Branch stub at 3.5m on southern side of main stem - no bark to upper side. Remaining bark well attached without gaps. Cracks and fissures to heartwood run right through branch and are largely open and exposed; some smaller enclosed sections sub-optimal and heavily cobwebbed but with some limited roost potential. (iii) Branch cavity on lower north-eastern limb - shallow, open and unsuitable for roost use. (iv) Main stem cavity at 1m on eastern side of stem - extends upwards to left side for c. 10cm, narrowing to a point and heavily occupied by woodlice. Some limited roost potential.	Low
Tree 11	Climbing inspection	31st July-5th August 2022	(i) North-facing branch cavity in mid crown at 9m – some small niches between heartwood fissures and bark with moderate roost potential. (ii) East-facing branch cavity at 8m above snapped and hanging limb - no suitable crevices between occlusion wood and heartwood. (iii) Hanging limb below – all features upward-facing and unsuitable. (iv) North-facing branch stub with a single longitudinal dusty crevice along the upper side - moderate potential. (v) Low branch stub at 4.5m on north-western side - two small associated pockets with moderate potential.	Moderate
Tree 14	Climbing inspection	31st July-5th August 2022	(i) Small east-facing knot hole 1m out from branch union of southern branch at 9m - blind and unsuitable. (ii) Hollow branch on southern side of tree at 7m below branch union with three entrance holes – lower hole shallow and unsuitable. Two upper holes join together to form a single rounded, open cavity with low roost potential. (iii) Prominent woodpecker hole at 4m on southern side of main stem - opens into large, dry chamber extending upwards 30cm to a roof with two small niches at the back forming a good potential roosting site.	Moderate
Tree 20	Emergence/ re-entry survey	15.06.2022 Dusk	No emergences/re-entries.	Probable roost Probable day roost supporting two Common Pipistrelle bats.
	Emergence/ re-entry survey	12.07.2022 Dusk	Probable emergence of 2 x Common Pipistrelle from hole in tree trunk.	
	Emergence/ re-entry survey	04.08.2022 Dawn	No emergences/re-entries.	

Tree 22	Climbing inspection	31st July-5th August 2022	<p>(i) South-east facing woodpecker hole at 9m on underside of southern limb in central crown - clean opening, extends 5cm upwards to rough ceiling and downwards 18cm to passerine nest with unhatched egg - moderate potential.</p> <p>(ii) North-east facing branch cavity at same height in eastern mid crown - blind and unsuitable for roost use.</p> <p>(iii) 70cm long branch cavity on upper side of western limb in central crown at 8m (not visible from ground level) - narrow entrance channel enters wider chamber within heartwood 8cm diameter and 70cm deep - high roost potential.</p> <p>(iv) Branch stubs and dead branches on all aspects in mid-lower crown all blind, shallow or otherwise unsuitable for roost use.</p>	High
Tree 27	Climbing inspection	31st July-5th August 2022	<p>(i) Branch scars to east and west fully occluded and with no suitable roost crevices or niches.</p> <p>(ii) No roost potential associated with areas of peeling bark.</p> <p>(iii) No other roost features associated with the tree.</p>	Negligible
Tree 37	Climbing inspection	31st July-5th August 2022	<p>(i) Diagonal branch scar at base of upward-pointing dead limb over field on southern aspect at 6m - bark all fully occluded with no voids. Small heartwood crack in feature open and exposed to weather so unsuitable for roost use. Bark fissure midway along same dead branch - small niches with low roost potential.</p> <p>(ii) Split branch stub above minor limb at 5m on eastern aspect above hedge line - all associated cracks and fissures upward-facing and exposed with no roost potential.</p> <p>(iii) No other potential roost features present in tree or associated with Ivy covering.</p>	Low
Tree 39	Climbing inspection	31st July-5th August 2022	<p>(i) Branch scar to left side of southern central crown at 8m - all associated fissures upward-facing and unsuitable for roost use.</p> <p>(ii) Second branch scar in lower southern crown at 6m over field - all open and exposed except for a small (5mm) shallow fissure on the underside, 30cm back from the branch end - currently too small for use.</p> <p>(iii) Dead limb with peeling bark and decay in lower east crown - blind and unsuitable.</p> <p>(iv) Small cavity above minor branch stub at 3.5m height midway along lowest western limb - extends inwards 10cm in simple small dry cavity with some moderate roost potential.</p>	Moderate

Tree 53	Climbing inspection	31st July-5th August 2022	<p>(i) East-facing pruning wound stub over hedge line at 4.5m - extends horizontally into dead heartwood for 30cm with a clean heartwood roof and a soil base. Heavily cobwebbed - moderate potential.</p> <p>(ii) Large area of missing and peeling bark on main northern branch between 4-8m - multiple complex and very high value features between heartwood and separated bark on all sides. Main north-facing access by occlusion wood leads into 2m high chamber with characteristic staining and scent of bat use. Not possible to exhaustively inspect but very high potential.</p> <p>(iii) Cavity at 4m on northern side between heartwood and bark at base of above feature - extends inwards and upwards in another complex chamber with very high roost potential.</p> <p>(iv) Similar cavity on eastern side of same branch wound feature - small access point opens into dry and complex cavity - very high potential.</p> <p>(v) Occluded main stem cavity at 2.5m on south-west - extends horizontally 10cm, 1cm wide, cobwebbed - low/moderate potential.</p>	<p>Probable roost</p> <p>Features with characteristic staining and scent of bats, which were not possible to exhaustively inspect.</p>
Tree 56	Climbing inspection	31st July-5th August 2022	<p>(i) Small knot hole on main stem facing western at 6m - extends horizontally only, for 10cm dusty and cobwebbed with low roost potential.</p> <p>(ii) Two holes on underside of south-eastern broken limb in lower crown - shallow and/or blind with negligible roost potential.</p> <p>(iii) Knot hole in south-west limb, facing south over footpath – blind and unsuitable at present.</p> <p>(iv) Main stem cavity at 2.5m on northern side of tree - extends 25cm horizontally into stem, and diagonally upwards for 15cm. Clean and dry with high roost potential.</p>	High
Tree 59	Emergence/re-entry survey	15.06.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/re-entry survey	12.07.2022 Dusk	No emergences/re-entries.	
Tree 61	Climbing inspection	31st July-5th August 2022	<p>(i) Woodpecker holes in dead upper central leader - link together in wide central chamber with moderate potential, though partially open to the top.</p> <p>(ii) Rot pocket at base of dead central leader on north-western side - shallow and upward facing - unsuitable at present.</p> <p>(iii) South-facing branch cavity on southern limb over hedge line - broad cavity extending into branch 10cm, with moderate potential.</p> <p>(iv) East-facing pocket at main branch union in upper crown - blind and upward facing - unsuitable. (v) Western branch holes blind and unsuitable.</p> <p>(vi) Cavity at base of branch on eastern side of stem at 2.5m - extends diagonally downwards then up into main stem from a dusty floor - moderate potential.</p>	Moderate

Tree 64	Climbing inspection	31st July-5th August 2022	(i) Woodpecker hole entrance at 2m height on southern aspect - opens out into a wide, deep and extensive cavity, extending 90cm upwards into main stem - very high roost potential and clear flightlines in. (ii) Bark cavity below first feature - small niche created in upper section by flaking bark - low roost potential. (iii) Flaking bark at 1.5m on western stem distant from heartwood beneath, offering limited shelter and protection for roosting bats. Access heavily vegetated - very low roost potential.	High
Tree 70	Climbing inspection	31st July-5th August 2022	(i) Three woodpecker hole features towards base of dead upper section all shallow or blind with limited roost potential. Uppermost features above this appear unsuitable but unsafe to access and survey in detail. (ii) Two woodpecker holes on eastern aspect at mid height above branch stub - both shallow and extending horizontally only, for 10-15cm into stem - low potential. (iii) Third hole on eastern aspect of main stem, just below branch stub - as above. (iv) Two woodpecker holes incorporated into stem wound feature below (iii) - uppermost hole slightly larger interior, extending upwards 5cm with moderate potential; lower hole - extends inwards and downwards 20cm to nesting material - moderate roost potential. (v) Recently formed branch stub on north-eastern elevation - central crack forming small chamber but open and exposed and currently unsuitable for roost use.	Moderate
Tree 76	Emergence/re-entry survey	16.05.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/re-entry survey	08.06.2022 Dusk	No emergences/re-entries.	
Tree 82	Climbing inspection	31st July-5th August 2022	(i) Uppermost feature facing north-east at branch junction in upper crown - tightly occluded and otherwise open with no roost potential. (ii) Rot pocket on underside of western branch at 4.5m extends inwards 50cm in good dry cavity with good access and location - high roost potential. (iii) Rot pocket on north-west of main stem where northern branch attaches - flat platform extending inwards then upwards into small stem cavity - moderate potential. (iv) All other features unsuitable at present.	High

Tree 84	Climbing inspection	31st July-5th August 2022	<p>(i) Uppermost woodpecker holes not surveyed due to safety.</p> <p>(ii) Woodpecker hole at 7m below bracket fungus on southern side of stem - extends downwards 40cm, heavily cobwebbed and with low roost potential.</p> <p>(iii) Small cavity just below this - good sized cavity with niches behind reaction wood to both sides - moderate potential.</p> <p>(iv) North-facing knot hole on north side of tree extends 8cm inwards with moderate roost potential. (v) Large void on large south-facing branch stub at 4m - extends 1m inside, with small crevice features to top side - high roost potential.</p> <p>(vi) Branch stub facing north-west extends downwards to nesting material but with moderate roost potential.</p> <p>(vii) north-western facing woodpecker hole very dusty but with moderate roost potential.</p>	High
Tree 86	Climbing inspection	31st July-5th August 2022	<p>(i) Branch stub at 15m facing south-west - 15cm dry cavity with moderate roost potential.</p> <p>(ii) Branch scar and knot hole joined feature at 8m height, facing south-west, extending 30cm with nesting material in base but high roost potential.</p> <p>(iii) Dead limb at 8m on northern side of tree - small 8cm cavity to base and longitudinal fissure forming void at base of branch - high potential.</p> <p>(iv) Large major branch stub at 7m on western side of tree, pointing south - large void extending 75cm into branch with active pigeon nest in base - high roost potential.</p> <p>(v) Dead limb facing south with small high potential void at base.</p> <p>(vi) Two woodpecker holes on underside of branch on south-eastern side of tree both blind and unsuitable at present.</p> <p>(vii) Branch stub with splintering on eastern side in lower crown - mostly open and exposed but with 2 small voids at the base of the feature with low roost potential. Other features all unsuitable at present.</p>	High
Tree 92	Climbing inspection	31st July-5th August 2022	<p>(i) Features in upper crown associated with the base of dead branches etc. generally all well occluded with no suitable roost potential.</p> <p>(ii) Multiple features including fissures, cavities and niches between dead heartwood with very high roost potential.</p> <p>(iii) Two knot holes on large northern limb with multiple potential roost features.</p> <p>(iv) Large low branch stub and cavity on south-east of lower main stem generally open and exposed with limited roost potential.</p> <p>(v) Woodpecker holes generally open or shallow with no or low roost potential.</p>	High
Tree 93	Climbing inspection	31st July-5th August 2022	<p>(i) Multiple small niches throughout upper crown associated with the base of dead branches, fissures on branch stubs and rot pockets within dead limbs - high roost potential.</p> <p>(ii) Large branch stubs on north-western and south-eastern aspects in lower crown at 6m with associated roost features.</p> <p>(iii) Prominent clean round cavity on south-west of main stem at 3m above hedge line - extends inwards and upwards forming another high value roost feature.</p> <p>(iv) Woodpecker holes all currently shallow or blind and unsuitable.</p>	High

Tree 95	Emergence/ re-entry survey	15.06.2022 Dusk	No emergences/re-entries.	Confirmed roost Day roost supporting one Common Pipistrelle bat.
	Emergence/ re-entry survey	12.07.2022 Dusk	Emergence of 1 x Common Pipistrelle from hole in tree trunk.	
	Emergence/ re-entry survey	04.08.2022 Dawn	No emergences/re-entries.	
Tree 97	Climbing inspection	31st July-5th August 2022	Oak immediately to southern side of field gate entrance by dairy. (i) Branch collar knot hole on northern aspect at 10m - shallow and unsuitable at present but may develop over time. (ii) Cracked and peeling bark on northern aspect over field access contains no potential roost features. (iii) Decay pocket in western limb at 5m facing north towards gate - extends inwards and downwards for 15cm towards main stem - heavily cobwebbed but potentially suitable for roost use and in a good location.	Moderate
Tree 99	Climbing inspection	31st July-5th August 2022	(i) North-facing woodpecker hole at 4m on Oak in centre of tree belt - does not extend upwards from entrance hole but extends 15cm inwards and downwards to a dry but dusty and cobwebbed base. Suitable roost feature.	Moderate
Tree 117	Climbing inspection	31st July-5th August 2022	(i) Basal cavity extensive and complex though heavily cobwebbed and frassy, extending >1m upwards on north-western side - could not be exhaustively inspected but no evidence of use. (ii) East-facing knot hole at 8m on southerly branch 1m from main stem - descends towards main stem for 18cm - dry and dusty with moderate potential. (iii) West-facing knot features on southern stem blind and unsuitable for roost use. (iv) Large west-facing stem cavity at mid height on northern stem - unsuitable for bats but with nesting pigeon in base. (v) Small knot hole on lowest eastern limb extends 15cm into branch with moderate roost potential. (vi) Features on lowest southern limb at 3m - exposed and unsuitable.	Moderate
Tree 122	Emergence/ re-entry survey	24.05.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/ re-entry survey	15.08.2022 Dusk	No emergences/re-entries.	
Tree 127	Emergence/ re-entry survey	16.05.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/ re-entry survey	23.06.2022 Dusk	No emergences/re-entries.	
Tree 134	Emergence/ re-entry survey	24.05.2022 Dusk	No emergences/re-entries.	High

	Emergence/ re-entry survey	23.06.2022 Dusk	No emergences/re-entries.	
	Emergence/ re-entry survey	13.07.2022 Dawn	No emergences/re-entries.	
Tree 137	Climbing inspection	31st July-5th August 2022	(i) Uppermost north-facing woodpecker hole in central crown extends both upwards and downwards in a clean, dry cavity for 20cm with high roost potential but no bats present. (ii) Lower two woodpecker holes on same limb below this blind and unsuitable. (iii) Dead branch stub in central crown on southern side - some cracks and fissures but upward-facing and exposed with negligible roost potential. (iv) Base of broken limb on western side of lower crown – also open and exposed as above. (v) Two lower dead limbs on northern and southern side of tree with no suitable roost features.	High
Tree 139	Climbing inspection	31st July-5th August 2022	(i) Woodpecker hole on western aspect shallow and unsuitable for roost use. (ii) North-facing vertical stem cavity 1m below this - wide, open cavity with limited shelter and protection - evidence of nesting birds - low potential. (iii) Similar adjacent cavity facing south-west - shallow and unsuitable for roost use. (iv) East-facing knot hole on main stem just above (ii) - very shallow and currently unsuitable.	Low
Tree 144	Climbing inspection	31st July-5th August 2022	Oak at southern end of tree line next to field gate. (i) Upward-facing branch cavity in upper central crown not visible from the ground - currently open and unsuitable but with potential to develop in future. (ii) East-facing branch scar adjoining main stem in upper-mid crown - narrow and shallow 2cm crevice between woundwood and heartwood along upper edge - low potential. (iii) Small occluded knot hole on southern limb at mid height above pruning wound - blind and unsuitable. (iv) Branch cavity on underside of lower southern limb at 5m - extends back along branch for 35cm to a dry base with a small number of slugs and woodlice - moderate potential. (v) Stem cavity behind small branches on eastern side of main stem at 3.5m - too open and exposed for roost use.	Moderate
Tree 184	Emergence/ re-entry survey	24.05.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/ re-entry survey	24.06.2022 Dawn	No emergences/re-entries.	
Tree 185	Emergence/ re-entry survey	08.06.2022 Dusk	No emergences/re-entries.	Moderate

	Emergence/ re-entry survey	24.06.2022 Dawn	No emergences/re-entries.	
Tree 188	Emergence/ re-entry survey	24.05.2022 Dusk	No emergences/re-entries.	Probable roost Probable day roost for two Common Pipistrelle and one Soprano Pipistrelle.
	Emergence/ re-entry survey	13.07.2022 Dawn	Probable re-entry of 2 x Common Pipistrelle and 1 x Soprano Pipistrelle into hole in tree trunk.	
	Emergence/ re-entry survey	15.08.2022 Dusk	No emergences/re-entries.	
Tree 190	Climbing inspection	31st July-5th August 2022	(i) Main stem cavity on eastern aspect at 6m - small golf ball sized hole with low roost potential. (ii) Branch cavities on southern limbs all blind and unsuitable.	Low
Tree 191	Climbing inspection	31st July-5th August 2022	(i) Multiple longitudinal fissures on stem and main branches - all narrow and shallow but with some limited potential for single summer-roosting bats. No evidence of use. (ii) Two knot holes on lower western limb blind and currently unsuitable for roost use.	Low
Tree 192	Climbing inspection	31st July-5th August 2022	(i) Obvious branch cavity on side of limb in northern crown - excellent dry feature extending 7cm upwards and 30cm downwards to branch junction - clean and uncobwebbed with nesting material in the base but good roost potential. (ii) Second cavity on underside of same branch 2m to north-east - more open and exposed with no suitable small niches - low roost potential. (iii) Knot hole on main branch 2m below previous features – extends 5cm upwards and 20cm downwards into dry cavity with good roost potential. (iv) Dead branch stub facing north on same branch open and exposed with no roost potential. (v) Small knot hole on underside of northern limb blind and unsuitable. (vi) Upward-pointing branch stub at mid height in central crown - no suitable roost features on stub but a good small cavity at base on western side, heavily cobwebbed but with moderate roost potential. (vii) Branch stub features in lower western crown - all shallow, open or exposed and with limited or no roost potential. (viii) Small branch cavity on underside of lower western limb over ditch - blind and unsuitable. (ix) Large branch cavity facing south on lower south-eastern limb - excellent feature, clean, dry and cobweb-free, extending 10cm upwards and 20cm downwards with very high roost potential. (x) Two small knot hole features at 3.5m on south-east side of main stem - currently shallow and with low roost potential but likely to develop in future. (xi) Decay cavity and knot hole on elbow of western limb at 4m over ditch - both features connect together, extending horizontally towards stem for 40cm in a clean, dry cavity with high roost potential. (xii) Broken lowest limb on western side near base - some good small fissures and crevices to lower end and near stem union - moderate potential.	High

Tree 195	Climbing inspection	31st July-5th August 2022	(i) Single small east-facing cavity feature on southern stem of twin-stemmed Ash at 5.5m - shallow and flat-bottomed with no upwards extension - low roost potential.	Low
Tree 196	Climbing inspection	31st July-5th August 2022	(i) South-western facing branch cavity to base of small lower branch at 3.5m - blind and unsuitable for roost use. (ii) Large occluded fissure on northern side of main stem at 4m height - lower sections open and unsuitable; good niche to left side of upper section behind occlusion wood with high roost potential; interior cavity extends upwards 30cm and opens out to form a good void suitable for multiple bats - high potential.	High
Tree 200	Climbing inspection	31st July-5th August 2022	Tall Oak above dense Holly shrubs in centre of woodland belt. (i) Large main stem fissure with well-developed woundwood on northern aspect at 18m - some small niches behind cracked heartwood on lower half of feature, no cavity to upper apex of feature - moderate potential. (ii) Branch stub with splintered ends - linear fissures all upward-facing and exposed with no roost potential. (iii) Small knot feature to base of this branch - blind and unsuitable. (iv) Dead branches on northern side of lower crown - some linear cracks, all upward-facing and exposed with no roost potential. No other roost features.	Moderate
Tree 201	Climbing inspection	31st July-5th August 2022	Twin-stemmed Ash on south-western edge of woodland strip. (i) Large woodpecker hole on western side of western stem at 5m - extends 20cm into stem horizontally, and slightly upwards to a clean roof with slugs to the top, extends downwards only 5cm to a dry floor with nest material. Moderate roost potential but no evidence. (ii) Branch scars and smaller woodpecker excavations above all blind and unsuitable for roost use.	Moderate
Tree 207	Emergence/re-entry survey	15.06.2022 Dusk	Emergence of 2 x Common Pipistrelle from branch.	Confirmed roost Day roost supporting up to two Common Pipistrelle bats.
	Emergence/re-entry survey	13.07.2022 Dawn	Possible re-entry of 1 x Common Pipistrelle into branch.	
	Emergence/re-entry survey	04.08.2022 Dawn	No emergences/re-entries.	

Tree 210	Climbing inspection	31st July-5th August 2022	<p>(i) Branch cavity at 8m on underside of branch on western side of crown - small entrance to dry, enclosed small niche 8cm deep with good potential for use by individual bats.</p> <p>(ii) Large branch scar facing east on main southern branch - open, exposed and unsuitable for roost use.</p> <p>(iii) Long branch scar on upper side of lower eastern limb over hedge line - open and exposed with a very small niche at the eastern end - low potential.</p> <p>(iv) Large branch boss below this - open, exposed and unsuitable.</p> <p>(v) Two adjacent branch end cavities on southern limb over field - both extend inwards c. 10cm, narrowing to a point at the rear - low roost potential.</p> <p>(vi) Large cavity at 2.5m on western side of main stem, behind hedge vegetation - extensive dry cavity extending 45cm upwards into main stem - excellent feature but hidden in dense hedgerow vegetation, so sub-optimal.</p>	Moderate
Tree 211	Climbing inspection	31st July-5th August 2022	<p>(i) Two woodpecker holes facing west in upper western crown and upward-facing knot holes in upper central crown all unsafe to safely access and survey - emergence survey recommended (1 person required).</p> <p>(ii) Prominent south-western facing cavity around occluded stem at 5m - opens out initially into a small chamber, then extends horizontally 35cm into a narrow cavity with woodlice - moderate potential.</p>	Moderate
Tree 213	Climbing inspection	31st July-5th August 2022	<p>(i) Small knot hole on upper eastern limb over field - blind and unsuitable for roost use.</p> <p>(ii) Upper of two small cavities at 2.5m on east of main stem - extends inwards 10cm but largely open and exposed with low roost potential.</p> <p>(iii) Lower of two, facing south-east - very shallow and open - low roost potential.</p> <p>(iv) No roost potential associated with peeling bark within crown and branches.</p>	Low
Tree 216	Emergence/re-entry survey	18.07.2022 Dusk	No emergences/re-entries.	<p>Confirmed roost</p> <p>Day roost supporting two Common Pipistrelle, one Soprano Pipistrelle and one silent bat (the silent bat is also likely to be a Common or Soprano Pipistrelle in view of timing of emergence, character of the bat recorded and the location at which it was seen to emerge).</p> <p>In addition, the tree may support a possible day roost for an individual <i>Myotis</i> sp. bat (call indicative of Bechstein's bat).</p>
	Emergence/re-entry survey	01.08.2022 Dusk	Emergence of 2 x Common Pipistrelle from Ivy covered area at top of tree.	
	Emergence/re-entry survey	15.08.2022 Dusk	<p>Emergence of 1 x Soprano Pipistrelle and 1 x silent bat from hole in branch on eastern aspect of tree.</p> <p>Emergence of 2 x Common Pipistrelle from Ivy covered area at top of tree.</p> <p>Possible emergence of 1 x <i>Myotis</i> sp. bat (call indicative of Bechstein's bat) from Ivy covered area of tree trunk at 2m on the southern aspect.</p>	

Tree 217	Emergence/ re-entry survey	01.08.2022 Dusk (incidental recording during survey of Tree 216)	Probable emergence of 1 x Common Pipistrelle from tree.	Probable roost Day roost supporting one Common Pipistrelle bat.
Tree 253	Climbing inspection	31st July-5th August 2022	(i) Area of missing bark at base of eastern limb on northern aspect at 4m - open recess to upper side with no suitable roosting niches - negligible roost potential. (ii) No stem cavities observed. (iii) No other potentially suitable roost features.	Negligible
Tree 254	Climbing inspection	31st July-5th August 2022	(i) Deadwood and peeling bark in extreme upper crown all too open and exposed for roost use. (ii) Large and prominent branch tear on underside of north-eastern limb in upper crown - multiple high quality cavities and crevices with very high roost potential and some smell and staining. Could not be exhaustively searched due to complexity - likely roost use. (iii) Large horizontal west-facing cavity on end of western limb in mid crown - 50cm deep, wide and open with abundant nest material. Some limited potential for roost use to the rear, but generally too open and without small crevices. (iv) Longitudinal fissures on deadwood on south-western side of crown all too shallow for roost use. (v) Branch cavity below small stub on eastern side of crown at mid- height - extends 20cm diagonally down, very dirty and dusty with low potential.	Probable roost Features with some staining and scent of bats, which were not possible to exhaustively inspect.
Tree 265	Emergence/ re-entry survey	08.06.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/ re-entry survey	29.06.2022 Dawn	No emergences/re-entries.	
Tree 272	Emergence/ re-entry survey	08.06.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/ re-entry survey	29.06.2022 Dawn	No emergences/re-entries.	
Tree 276	Emergence/ re-entry survey	27.05.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/ re-entry survey	29.06.2022 Dawn	No emergences/re-entries.	
Tree 281	Emergence/ re-entry survey	16.06.2022 Dawn	No emergences/re-entries.	Moderate

<p>Tree 289</p>	<p>Climbing inspection</p>	<p>31st July-5th August 2022</p>	<p>(i) Large partially-occluded pruning wound on southern aspect of main stem at 2.5m - several narrow crevices extending into small dusty pockets within heartwood - heavily cobwebbed and dusty with no evidence of use but potentially suitable - low roost potential.</p> <p>(ii) East-facing branch scar high in central crown - excellent dry cavity extending upwards from top of feature - high potential.</p> <p>(iii) East-facing cavity on bulbous branch 3m below this - blind and unsuitable.</p> <p>(iv) East-facing prominent cavity on vertical stem 3m below (iii) extends inwards and upwards for 10cm with a textured roof forming a moderate-value feature.</p> <p>(v) Branch-cavity over shed roof on south-eastern limb at 10m - high value feature.</p> <p>(vi) Cavity at elbow of lower south-eastern limb 2m above shed roof - wide cavity but sheltered to base and with moderate roost potential.</p> <p>(vii) South-eastern branch tear and shattered stub in lower crown at 5.5m - complex and high-value feature with multiple cavities and crevices - high potential.</p> <p>(viii) Occluded wavy branch with decayed underside on south-western elevation at mid-height - open and unsuitable.</p> <p>(ix) South-western branch stub at 5m - mostly upward-facing but with two nice features on the underside - one extending up to 10cm into interior and a second at the base behind occluded bark - both moderate potential.</p>	<p>High</p>
<p>Tree 295</p>	<p>Climbing inspection</p>	<p>31st July-5th August 2022</p>	<p>(i) Prominent hole at 3m on southern side of main stem - opens out into wide, clean and dry chamber 35cm deep and 20cm high with nesting material on the flat base - good roost potential.</p> <p>(ii) Similar feature on eastern side of main stem at 3.5m – small crevices extend 7cm into stem – currently very limited potential.</p> <p>(iii) Large east-facing branch scar in central leader at mid-height of tree - hole at upper end extends only 3cm with low potential. Small crack midway down feature on right side - nesting material but too open for roost use.</p> <p>(iv) Branch stub below this - no roost features.</p> <p>(v) Upward trending limb on south-west of crown with long branch scar on upper side - only very minor niches with low roost potential.</p> <p>(vi) Central stem scar on western side of vertical leader in mid crown - fully occluded around top of feature and only a small and exposed void to the base in the heartwood of dead branch - negligible potential.</p> <p>(vii) Very minor branch stub and occlusion wood on western aspect of main stem at 4m - narrow entrance leads to a small dry cavity with good roost potential.</p> <p>(viii) Decayed branch stub and occlusion wood on northern side of lower crown facing east at 5m over gate - negligible potential.</p> <p>(ix) Large well-occluded branch cavity facing north on eastern limb at 5.5m - no cavities to sides of feature but a heavily cobwebbed and dusty void extends 70cm up along branch with moderate roost potential.</p>	<p>High</p>

Tree 302	Climbing inspection	31st July-5th August 2022	<p>(i) Pair of knot holes on south-eastern limb 70cm apart at 5m over path - outermost hole blind and unsuitable; inner hole - small opening leads to 5cm wide and 15cm deep, clean void with good roost potential.</p> <p>(ii) Small upward-facing feature on broad southern limb over hedgerow - unsuitable.</p> <p>(iii) Low dead limb with peeling bark over hedge in outer northern crown - small niches on all sides between separated bark and heartwood - good summer roost potential</p> <p>(iv) Small cavity at branch collar on main stem facing south-west at 5m - currently shallow, open and unsuitable but may develop.</p> <p>(v) Prominent main stem cavity at 4m on western aspect - opens into a deep chamber, heavily cobwebbed and with nest material to base but well-suited to roost use.</p>	High
Tree 305	Emergence/re-entry survey	08.06.2022 Dusk	No emergences/re-entries.	Moderate
	Emergence/re-entry survey	29.06.2022 Dawn	No emergences/re-entries.	
Tree 321	Climbing inspection	31st July-5th August 2022	<p>(i) Two adjacent woodpecker holes on north-western aspect of western limb in mid-crown at 12m - lower hole blind; upper hole clean and dry with two additional crevice features to upper rear of hole - high roost potential.</p> <p>(ii) North-western facing branch cavity on same limb at 11m - shallow and currently unsuitable.</p> <p>(iii) Wide branch cavity on northern limb, facing north at 11m in outer crown – generally open and unsuitable but with a wide cavity to the left (eastern) end with low potential.</p> <p>(iv) East-facing branch scar and dead branch stub feature on outer edge of eastern limb at 8m - small associated crevices too open and exposed for roost use.</p> <p>(v) North-east facing similar feature lower down same limb just above branch union - open hollow with no protection behind stub and no crevices suitable for roost use.</p>	High
Tree 323	Climbing inspection	31st July-5th August 2022	<p>(i) Branch cavity at 14m on eastern side of central crown at base of small upward branch - extends inwards from opening for 18cm in clean, dry cavity with slightly enlarged chamber at base - moderate roost potential.</p> <p>(ii) No other suitable roost features associated with dead branches, branch stubs or areas of occlusion wood.</p>	Moderate
Tree 324	Climbing inspection	31st July-5th August 2022	<p>(i) Branch cavity facing west on outer western branch at 6m - extends horizontally down branch for 15cm in small dry dusty cavity with moderate roost potential.</p> <p>(ii) Small partially-occluded pruning wound near base of lowest eastern limb on south aspect at 5m - 2cm wide entrance hole extends horizontally for 15cm in a dusty dry cavity with moderate roost potential.</p> <p>(iii) No other suitable roost features on tree.</p>	Moderate

Tree 332	Climbing inspection	31st July-5th August 2022	(i) Small cut branch stub at 6m on southern limb over grass verge - blind and unsuitable. (ii) Larger cut branch stub at 5m on south-eastern lower limb over grass verge - bark fully occluded with no cavities and only a narrow heartwood fissure too small for roost use. (iii) Small knot hole 1m below second feature on same limb - extends 15cm inwards and upwards, with an enlarged cavity within - good clean feature with high roost potential.	High
Tree 333	Emergence/re-entry survey	09.06.2022 Dawn	No emergences/re-entries.	Moderate
	Emergence/re-entry survey	08.07.2022 Dusk	No emergences/re-entries.	
Tree 338	Climbing inspection	31st July-5th August 2022	Tree did not contain any potential roost features.	Negligible
Tree 339	Climbing inspection	31st July-5th August 2022	(i) Areas of peeling bark on south-western limb in lower crown too exposed for roost use. (ii) Stem cavity at 1.5m on southern side - extends upwards for 16cm in a clean, dry cavity to a roof with many woodlice - good feature with moderate roost potential. (iii) Small branch wound facing north-west on northern side of tree in central crown - blind and upward-facing - unsuitable for roost use.	Moderate
Tree 343	Climbing inspection	31st July-5th August 2022	(i) Small branch cavity on south-eastern lower limb facing east at 4m over field - small cavity below heartwood to lower right side extends inwards 10cm in a small pocket of moderate potential. (ii) Base of small branch stub on branch to south of main stem at 4.5m - small 5cm deep slot to right side of stub with low potential. (iii) Large broken limb end on south-western branch at 6m over field - all features open, exposed and unsuitable for roost use. (iv) No suitable roost features on northern side of crown.	Moderate
Tree 349 (off-site)	Emergence/re-entry survey	16.06.2022 Dawn	No emergences/re-entries.	Probable roost Probable day roost supporting one Common Pipistrelle bat.
	Emergence/re-entry survey	18.07.2022 Dusk	Probable emergence of 1 x Common Pipistrelle from hole in tree trunk.	
	Emergence/re-entry survey	03.08.2022 Dusk	No emergences/re-entries.	

3.4 Bat activity

3.4.1 Details of the date and time of bat activity transect surveys, along with weather conditions and sunset/sunrise times, are provided in *Table 2*. The areas covered during each survey visit included all boundaries, hedgerows, stream corridors and woodland copses within each transect area.

3.4.2 A visual summary of bat foraging and commuting activity recorded during the surveys has been provided in *Appendix D*. In total, seven species/species groups were recorded during the transect surveys: Common Pipistrelle, Soprano Pipistrelle, Noctule, Brown Long-eared bat, *Myotis* sp. bat, Serotine and Leisler's bat. A summary of each species recorded, their activity and an estimation of numbers using the survey area during any one survey is provided in *Table 7* below.

Table 7: Summary of bat activity during transect surveys

Species	Activity summary	Approx. number recorded*
Common Pipistrelle	<p>Common Pipistrelle was the most frequently recorded species during the activity surveys. The majority of Common Pipistrelle activity was associated with the Downs Link crossing east-west through the south of the site and the woodland belts in the north of the site. Common Pipistrelle were also recorded on a regular basis using areas of woodland and treelines and hedgerows bordering fields in the remainder of the survey area.</p> <p>It is expected that up to 9 Common Pipistrelle bats could have been using the survey area at any one time for foraging and commuting.</p>	9
Soprano Pipistrelle	<p>Soprano Pipistrelle was the second most recorded species during the activity surveys. The majority of Soprano Pipistrelle activity was associated with the Downs Link crossing east-west through the south of the survey area. Soprano Pipistrelle was also recorded on an occasional basis using areas of woodland and treelines and hedgerows bordering fields in the remainder of the survey area.</p> <p>It is likely that the survey area was used by up to 2 Soprano Pipistrelle bats at any one time during the survey.</p>	2
Noctule	<p>Noctule were recorded on an occasional basis during the activity surveys. The majority of Noctule activity was associated with a mature treeline bordering a dairy in the north of the survey area. Noctule was also recorded on an occasional basis using areas of woodland and treelines and hedgerows bordering fields in the remainder of the survey area.</p> <p>It is likely that the survey area was used by up to 1 Noctule at any one time during the survey and that the survey area forms part of a much larger foraging range for individuals of this species.</p>	1
<i>Myotis</i> sp. bat	<p><i>Myotis</i> sp. bats were recorded on eight occasions during the transect survey, associated with woodland, hedgerows and treelines in the survey area.</p> <p>It is likely that the survey area was used by up to 1 <i>Myotis</i> sp. bat at any one time during the survey and that the survey area forms part of a much larger foraging range for individuals of this species group.</p>	1

Species	Activity summary	Approx. number recorded*
Brown Long-eared bat	<p>Brown Long-eared bats were recorded on four occasions during the transect survey, associated with woodland, hedgerows and treelines in the south of the survey area.</p> <p>It is likely that the survey area was used by up to 1 Brown Long-eared bat at any one time during the survey as part of a much larger foraging range for individuals of this species. It should be noted however that Brown Long-eared bat calls are very quiet which means that they are less easily recorded by bat detectors. It is therefore possible that higher numbers of Brown Long-eared bats may have been using the survey area than were recorded.</p>	1
Serotine	<p>Serotine bats were recorded on two occasions during the transect survey, associated with a hedgerow in the north of the survey area and the Downs Link crossing east-west through the south of the site.</p> <p>It is likely that the survey area was used by up to 1 Serotine bat at any one time during the survey as part of a much larger foraging range for individuals of this species.</p>	1
Leisler's bat	<p>Leisler's bat was recorded on one occasion during the transect survey, associated with the Downs Link crossing east-west through the south of the site.</p> <p>It is likely that the survey area was used by up to 1 Leisler's bat at any one time during the survey as part of a much larger foraging range for individuals of this species.</p>	1

* This is an approximation of the number of bats of any one species estimated to have been using the survey area during any one visit.

- 3.4.3 The majority of activity recorded within and adjacent to the site during the transect surveys related to Common Pipistrelle bats, with up to 9 Common Pipistrelle bats considered to be using the survey area at any one time. The majority of Common Pipistrelle activity was associated with the Downs Link crossing north-south through the south of the site and the woodland belts in the north of the site. Common Pipistrelle were also recorded on a regular basis using areas of woodland and treelines and hedgerows bordering fields in the remainder of the survey area.
- 3.4.4 Soprano Pipistrelle was the second most frequently recorded species during the transect surveys, with up to 2 Soprano Pipistrelle bats considered to be using the survey area at any one time. The majority of Soprano Pipistrelle activity was associated with the Downs Link crossing north-south through the south of the survey area. Soprano Pipistrelle was also recorded on an occasional basis using areas of woodland and treelines and hedgerows bordering fields in the remainder of the survey area.
- 3.4.5 Noctule, *Myotis* sp. bat, Brown Long-eared bats, Serotine and Leisler's bat were also recorded on an occasional or individual basis. Activity relating to these species consisted of brief passes by single bats foraging or commuting along woodland, hedgerows and treelines within the survey area.

3.5 Phase 2 automated activity surveys

3.5.1 The dates during which the automated detector was deployed, along with sunset/sunrise times and temperatures are provided in *Table 3*. The locations in which the automated bat detector was placed during each deployment are shown on the plan in *Appendix D*.

3.5.2 Automated detectors were placed in 14 separate locations to give an indication of the species using different areas of the survey area and relative levels of activity throughout the night. A summary of bat activity recorded during the automated surveys in each location is provided below in *Table 8*. In total, nine species or species groups were recorded during the automated surveys; Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Noctule, Leisler's, Serotine, Brown Long-eared bat, Barbastelle and *Myotis* sp. bats.

Table 8: Summary of bat activity recorded by the automated detector

Location	Activity summary
A	<p>The automated detector at Location A recorded bat activity associated with a hedgerow and treeline bordering grassland fields on the western boundary in the central part of the survey area.</p> <p>A total of 1396 bat passes were recorded over 5 nights; an average of 279 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location A (95.5% of the bat recordings). Common Pipistrelle was considered to have 2 nights of low/moderate activity levels and 3 nights of low activity levels.</p> <p>Occasional passes by Soprano Pipistrelle, <i>Myotis</i> sp. bat, Noctule, Brown Long-eared bat and Leisler's bats were also recorded (2.8%, 0.6%, 0.6%, 0.4% and 0.1% of passes, respectively). Soprano Pipistrelle, <i>Myotis</i> sp. bat, Noctule, Brown Long-eared bat and Leisler's bats were considered to have 5, 3, 2, 4 and 2 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Common Pipistrelle had a median percentile of 15 and all other species had median percentiles of 1).</p>
B	<p>The automated detector at Location B recorded bat activity along the southern margin of Courtland Wood in the south-east of the survey area.</p> <p>A total of 219 bat passes were recorded over 6 nights; an average of 37 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location B (69.4% of the bat recordings). Soprano Pipistrelle was the second most regularly recorded species at Location B (21.9% of bat recordings). Common Pipistrelle and Soprano Pipistrelle were considered to have 5 and 6 nights of low activity levels, respectively.</p> <p>Occasional passes by <i>Myotis</i> sp. bat and Brown Long-eared bat were also recorded (8.2% and 0.5% of passes respectively). <i>Myotis</i> sp. bat and Brown Long-eared bat were considered to have 5 and 1 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Soprano Pipistrelle and <i>Myotis</i> sp. bat had median percentiles of 2 and Common Pipistrelle and Brown Long-eared bat had median percentiles of 0).</p>

Location	Activity summary
C	<p>The automated detector at Location C recorded bat activity along the southern margin of woodland along the northern site boundary.</p> <p>A total of 312 bat passes were recorded over 5 nights; an average of 62 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location C (42.0% of the bat recordings). Noctule was the second most frequently recorded species at Location C (19.2% of the bat recordings). Common Pipistrelle was considered to have 5 nights of low activity levels. Noctule was considered to have 1 night of low/moderate activity levels and 3 nights of low activity levels.</p> <p>Occasional passes by Soprano Pipistrelle, Brown Long-eared bat, <i>Myotis</i> sp. bat, Leisler's bat, Barbastelle and Serotine were also recorded (18.9%, 11.5%, 6.4%, 1.0%, 0.6% and 0.3% of passes, respectively). Soprano Pipistrelle, Brown Long-eared bat, <i>Myotis</i> sp. bat, Leisler's bat and Barbastelle were considered to have 5, 5, 4, 2 and 2 nights of low activity levels, respectively. Serotine was considered to have 1 night of low/moderate activity levels.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Common Pipistrelle, Noctule, Soprano Pipistrelle, Brown Long-eared bat, <i>Myotis</i> sp. bat, Leisler's bat, Barbastelle and Serotine had median percentiles of 0, 2, 2, 15, 5, 2, 5 and 30, respectively).</p>
D	<p>The automated detector at Location D recorded bat activity along a hedgerow in the centre of the site.</p> <p>A total of 383 bat passes were recorded over 5 nights; an average of 76.6 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location D (81.2% of the bat recordings). Common Pipistrelle was considered to have 5 nights of low activity levels.</p> <p>Occasional passes by Brown Long-eared bat, Noctule, Soprano Pipistrelle, <i>Myotis</i> sp. bat, Leisler's bat and Barbastelle were also recorded (5.7%, 5.2%, 4.4%, 2.1%, 1.0% and 0.3% of passes, respectively). Brown Long-eared bat was considered to have 2 nights of low/moderate activity levels and 1 night of low activity levels. Noctule, Soprano Pipistrelle, <i>Myotis</i> sp. bat, Leisler's bat and Barbastelle were considered to have 5, 4, 4, 3 and 1 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Common Pipistrelle, Brown Long-eared bat, Noctule, Soprano Pipistrelle, <i>Myotis</i> sp. bat, Leisler's bat and Barbastelle had median percentiles of 2, 20, 0, 1, 1, 1 and 5, respectively).</p>

Location	Activity summary
E	<p>The automated detector at Location E recorded bat activity along a woodland belt in the north of the site.</p> <p>A total of 6858 bat passes were recorded over 5 nights; an average of 1371 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location E (90.0% of the bat recordings). Soprano Pipistrelle was the second most frequently recorded species at Location E (9.1% of the bat recordings). Common Pipistrelle was considered to have 5 nights of moderate/high activity levels. Soprano Pipistrelle was considered to have 4 nights of moderate activity levels and 1 night of low/moderate activity levels.</p> <p>Occasional passes by <i>Myotis</i> sp. bat, Brown Long-eared bat, Barbastelle, Noctule, Serotine and Nathusius' Pipistrelle were also recorded (0.5%, 0.3%, 0.1%, 0.0%, 0.0% and 0.0% of passes, respectively). Serotine and Nathusius' Pipistrelle were both considered to have 1 night of low/moderate activity levels. <i>Myotis</i> sp. bat, Brown Long-eared bat, Barbastelle and Noctule were considered to have 5, 4, 2 and 2 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, the highest activity levels relative to individual species were for Common Pipistrelle (median percentile of 70), with <i>Myotis</i> sp. bat, Brown Long-eared bat, Barbastelle, Noctule, Serotine and Nathusius' Pipistrelle all having lower than average activity levels for the region (median percentiles of 5, 11, 10, 0, 30 and 38, respectively).</p>
F	<p>The automated detector at Location F recorded bat activity along a hedgerow in the west of the site.</p> <p>A total of 3248 bat passes were recorded over 5 nights; an average of 650 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location F (89.7% of the bat recordings). Common Pipistrelle was considered to have 3 nights of moderate activity levels and 2 nights of low/moderate activity levels.</p> <p>Occasional passes by <i>Myotis</i> sp. bat, Soprano Pipistrelle, Brown Long-eared bat, Barbastelle, Noctule and Leisler's bat were also recorded (6.3%, 3.4%, 0.5%, 0.1%, 0.0% and 0.0% of passes, respectively). <i>Myotis</i> sp. bat was considered to have 2 nights of moderate activity levels and 3 nights of low activity levels. Soprano Pipistrelle, Brown Long-eared bat, Barbastelle, Noctule and Leisler's bat were considered to have 5, 5, 2, 1 and 1 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Common Pipistrelle, <i>Myotis</i> sp. bat, Soprano Pipistrelle, Brown Long-eared bat, Barbastelle, Noctule and Leisler's bat had median percentiles of 44, 18, 7, 8, 5, 0 and 1, respectively).</p>

Location	Activity summary
G	<p>The automated detector at Location G recorded bat activity along a woodland belt associated with a stream corridor in the north-east of the site.</p> <p>A total of 5047 bat passes were recorded over 5 nights; an average of 1009 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location G (77.0% of the bat recordings). <i>Myotis</i> sp. bat was the second most frequently recorded species group at Location G (20.7% of the bat recordings). Common Pipistrelle and <i>Myotis</i> sp. bat were both considered to have 2 nights of moderate/high activity levels and 3 nights of moderate activity levels.</p> <p>Occasional passes by Soprano Pipistrelle, Brown Long-eared bat and Barbastelle were also recorded (2.1%, 0.1% and 0.0% of passes respectively). Soprano Pipistrelle, Brown Long-eared bat and Barbastelle were considered to have 5, 3 and 2 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, the highest activity levels relative to individual species were for <i>Myotis</i> sp. bat (median percentile of 59), with Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared bat and Barbastelle all having lower than average activity levels for the region (median percentiles of 41, 8, 5 and 5, respectively).</p>
H	<p>The automated detector at Location H recorded bat activity along the edge of Smith's Copse in the east of the site.</p> <p>A total of 2755 bat passes were recorded over 5 nights; an average of 551 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location H (66.9% of the bat recordings). Soprano Pipistrelle was the second most frequently recorded species at Location H (23.7% of the bat recordings). Common Pipistrelle was considered to have 1 night of moderate activity levels, 3 nights of moderate/low activity levels and 1 night of low activity levels. Soprano Pipistrelle was considered to have 2 nights of moderate activity levels and 3 nights of moderate/low activity levels.</p> <p>Occasional passes by <i>Myotis</i> sp. bat, Barbastelle, Brown Long-eared bat, Noctule and Leisler's bat were also recorded (5.3%, 2.9%, 0.8%, 0.3% and 0.1% of passes, respectively). <i>Myotis</i> sp. bat was considered to have 1 night of moderate activity levels and 4 nights of moderate/low activity levels. Barbastelle was considered to have 1 night of exceptional activity levels, 1 night of high activity levels, 1 night of high/moderate activity levels and 1 night of moderate/low activity levels. Brown Long-eared bat, Noctule and Leisler's bat were considered to have 5, 3 and 1 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, the highest activity levels relative to individual species were for Barbastelle (median percentile of 78), with Common Pipistrelle, Soprano Pipistrelle, <i>Myotis</i> sp. bat, Brown Long-eared bat, Noctule and Leisler's bat all having lower than average activity levels for the region (median percentiles of 25, 35, 32, 8, 1 and 3, respectively).</p>

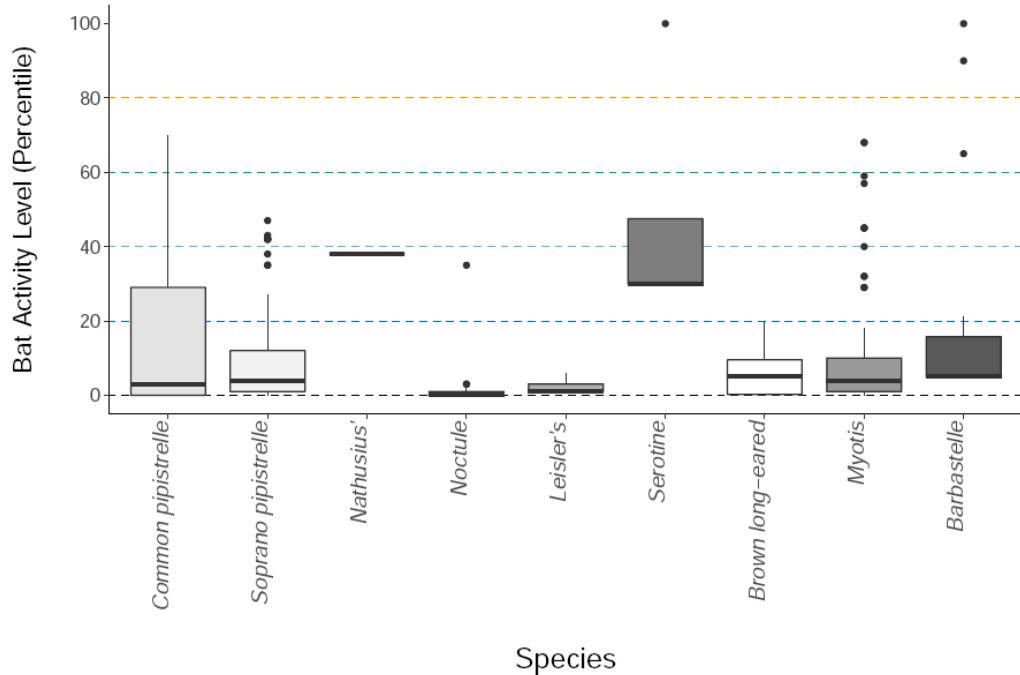
Location	Activity summary
I	<p>The automated detector at Location I recorded bat activity on the edge of the dairy in the north of the site.</p> <p>A total of 561 bat passes were recorded over 5 nights; an average of 112 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location I (87.0% of the bat recordings). Common Pipistrelle was considered to have 1 night of low/moderate activity level and 4 nights of low activity levels.</p> <p>Occasional passes by Soprano Pipistrelle, <i>Myotis</i> sp. bat and Brown Long-eared bat were also recorded (8.6%, 3.9% and 0.5% of passes, respectively). Soprano Pipistrelle, <i>Myotis</i> sp. bat and Brown Long-eared bat were considered to have 5, 5 and 2 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Common Pipistrelle, Soprano Pipistrelle, <i>Myotis</i> sp. bat and Brown Long-eared bat had median percentiles of 0, 1, 1 and 1, respectively).</p>
J	<p>The automated detector at Location J recorded bat activity on the Downs Link in the south of the site.</p> <p>A total of 324 bat passes were recorded over 5 nights; an average of 65 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location J (59.9% of the bat recordings). Soprano Pipistrelle was the second most frequently recorded species at Location J (24.1% of the bat recordings). Common Pipistrelle and Soprano Pipistrelle were both considered to have 5 nights of low activity levels.</p> <p>Occasional passes by <i>Myotis</i> sp. bat, Serotine, Brown Long-eared bat, Barbastelle, Noctule and Nathusius' Pipistrelle bat were also recorded (7.4%, 3.1%, 3.1%, 1.9%, 0.3% and 0.3% of passes, respectively). Serotine was considered to have 1 night of exceptional activity levels and 1 night of low/moderate activity levels. Nathusius' Pipistrelle was considered to have 1 night of low/moderate activity levels. <i>Myotis</i> sp. bat, Brown Long-eared bat, Barbastelle and Noctule were considered to have 4, 4, 3 and 1 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, the highest activity levels relative to individual species were for Serotine (median percentile of 65), with Common Pipistrelle, Soprano Pipistrelle, <i>Myotis</i> sp. bat, Brown Long-eared bat, Barbastelle, Noctule and Nathusius' Pipistrelle bat all having lower than average activity levels for the region (median percentiles of 0, 1, 4, 3, 9, 0 and 38, respectively).</p>
K	<p>The automated detector at Location K recorded bat activity along a woodland belt and associated stream in the north-west of the site.</p> <p>A total of 166 bat passes were recorded over 8 nights; an average of 21 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location K (70.5% of the bat recordings). Common Pipistrelle was considered to have 7 nights of low activity levels.</p> <p>Occasional passes by Soprano Pipistrelle, <i>Myotis</i> sp. bat, Noctule, Brown Long-eared bat and Leisler's bat were also recorded (14.5%, 7.8%, 4.2%, 2.4% and 0.6% of passes respectively). Soprano Pipistrelle, <i>Myotis</i> sp. bat, Noctule, Brown Long-eared bat and Leisler's bat were considered to have 8, 5, 3, 2 and 1 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Common Pipistrelle, Soprano Pipistrelle, <i>Myotis</i> sp. bat, Noctule, Brown Long-eared bat and Leisler's bat had median percentiles of 0, 0, 1, 0, 3 and 1, respectively).</p>

Location	Activity summary
L	<p>The automated detector at Location L recorded bat activity along a hedgerow in the east of the site.</p> <p>A total of 34 bat passes were recorded over 3 nights; an average of 11 bat recordings per night.</p> <p>Occasional passes by Common Pipistrelle and Soprano Pipistrelle were recorded (88.2% and 11.8% of passes, respectively). Common Pipistrelle and Soprano Pipistrelle were considered to have 3 and 2 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Common Pipistrelle and Soprano Pipistrelle both had median percentiles of 0).</p>
M	<p>The automated detector at Location M recorded bat activity along a woodland belt (Two Mile Ash Gill) in the south-west of the site.</p> <p>A total of 838 bat passes were recorded over 7 nights; an average of 120 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species at Location M (61.7% of the bat recordings). Soprano Pipistrelle was the second most frequently recorded species at Location M (32.6% of the bat recordings). Common Pipistrelle was considered to have 7 nights of low activity levels. Soprano Pipistrelle was considered to have 2 nights on moderate/low activity levels and 5 nights of low activity levels.</p> <p>Occasional passes by <i>Myotis</i> sp. bat, Brown Long-eared bat, Noctule and Leisler's bat were also recorded (3.9%, 0.8%, 0.5% and 0.5% of passes, respectively). <i>Myotis</i> sp. bat, Brown Long-eared bat, Noctule and Leisler's bat were considered to have 7, 5, 3 and 1 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Common Pipistrelle, Soprano Pipistrelle, <i>Myotis</i> sp. bat, Brown Long-eared bat, Noctule and Leisler's bat had median percentiles of 3, 18, 4, 0, 0 and 6, respectively).</p>
N	<p>The automated detector at Location N recorded bat activity along a hedgerow in the south of the site.</p> <p>A total of 299 bat passes were recorded over 6 nights; an average of 50 bat recordings per night.</p> <p>Soprano Pipistrelle was the most frequently recorded species at Location N (88.3% of the bat recordings). Soprano Pipistrelle was considered to have 4 nights on moderate/low activity levels and 2 nights of low activity levels.</p> <p>Occasional passes by Common Pipistrelle, <i>Myotis</i> sp. bat, Brown Long-eared bat, Noctule and Leisler's bat were also recorded (8.0%, 1.3%, 1.3%, 0.7% and 0.3% of passes, respectively). Common Pipistrelle, <i>Myotis</i> sp. bat, Brown Long-eared bat, Noctule and Leisler's bat were considered to have 6, 3, 3, 2 and 1 nights of low activity levels, respectively.</p> <p>A review of the median percentiles for the Southwater site indicates that in comparison to other sites in the region, all species recorded had lower than average activity levels for the region (Soprano Pipistrelle, Common Pipistrelle, <i>Myotis</i> sp. bat, Brown Long-eared bat, Noctule and Leisler's bat had median percentiles of 21, 0, 0, 0, 0 and 1, respectively).</p>

3.5.3 The greatest number of bat recordings was recorded at Location E and the highest diversity of bat species was recorded at Locations C, E and J. The lowest number of bat recordings per night and lowest diversity of bat species was recorded at Location L. Across the site, Common Pipistrelle was the most frequently recorded species (80.7% of the total number of passes recorded). Soprano

Pipistrelle and *Myotis* sp. bat were also recorded on an occasional basis (total number of passes of recorded 10.5% and 7.0% respectively). In comparison to other sites in the region, all species had lower than average activity levels for the region. The highest median percentile for the Southwater site was for Nathusius' Pipistrelle followed by Serotine, Barbastelle, Brown Long-eared bat, Soprano Pipistrelle, *Myotis* sp. bat, Common Pipistrelle, Leisler and Noctule (median percentiles of 38, 30, 5, 5, 4, 4, 31, 1 and 0, respectively).

Figure 1: Activity level (percentile) of bats recorded across each night of the bat survey for the whole site (Ecobat, 2022).



3.5.4 Bat passes within the species-specific emergence time ranges (Russ, 2012) were reviewed to indicate the proximity of a roost to the site. The data indicates the presence of Common Pipistrelle, Soprano Pipistrelle and *Myotis* sp. bat roosts in proximity to the static detectors (Common Pipistrelle roosts in proximity to static locations A, B, E, F, G, H, I, K and M; Soprano Pipistrelle in proximity to static locations A, B, E, G, H, K, M and N; and *Myotis* sp. bat roosts in proximity to static locations G, H, J and M).

4 SUMMARY AND IMPACT ASSESSMENT

4.1 Bat roosting habitat

4.1.1 Confirmed and possible bat roosts were recorded within B6, B12, B16 and Trees 20, 53, 95, 188, 207, 216, 217, 254 and 349. In summary:

- **B6:** A probable roost for two Common Pipistrelle. The roost associated with this building is likely to be a low-status non-breeding roost for two Common Pipistrelle used on an occasional/transitory basis.
- **B12:** A confirmed roost for six Common Pipistrelle and one Soprano Pipistrelle. In addition a probable roost for one *Myotis* sp. bat (call indicative of Brandt's bat). The roosts associated with this building are likely to be low-status non-breeding

roosts for six Common Pipistrelle, one Soprano Pipistrelle and one Brandt's bat used on an occasional/transitory basis.

- **B16 (off-site):** A confirmed roost for two Common Pipistrelles. The roost associated with this building is likely to be a low-status non-breeding roost for two Common Pipistrelle used on an occasional/transitory basis.
- **Tree 20:** A probable roost for two Common Pipistrelles. The roost associated with this tree is likely to be a low-status non-breeding roost for two Common Pipistrelle used on an occasional/transitory basis.
- **Tree 53:** A probable roost for unidentified bat species, with features containing characteristic staining and scent of bats which could not be exhaustively inspected.
- **Tree 95:** A confirmed roost for a single Common Pipistrelle. The roost associated with this tree is likely to be a low-status non-breeding roost for one Common Pipistrelle used on an occasional/transitory basis.
- **Tree 188:** A probable roost for two Common Pipistrelles and one Soprano Pipistrelle. The roosts associated with this tree are likely to be low-status non-breeding roosts for two Common Pipistrelles and one Soprano Pipistrelle used on an occasional/transitory basis.
- **Tree 207:** A confirmed roost for two Common Pipistrelles. The roost associated with this tree is likely to be a low-status non-breeding roost for two Common Pipistrelle used on an occasional/transitory basis.
- **Tree 216:** A confirmed roost for two Common Pipistrelle, one Soprano Pipistrelle and one silent bat. The silent bat is also likely to be Common or Soprano Pipistrelle in view of timing of emergence, character of the bat recorded and the location at which it was seen to emerge. In addition a probable roost for one *Myotis* sp. bat (call indicative of Bechstein's bat). The roosts associated with this tree are likely to be low-status non-breeding roosts for two Common Pipistrelle, one Soprano Pipistrelle, one *Pipistrellus* sp. bat and one Bechstein's bat used on an occasional/transitory basis.
- **Tree 217:** A probable roost for a single Common Pipistrelle. The roost associated with this tree is likely to be a low-status non-breeding roost for one Common Pipistrelle used on an occasional/transitory basis.
- **Tree 254:** A probable roost for unidentified bat species, with features containing characteristic staining and scent of bats which could not be exhaustively inspected.
- **Tree 349:** A probable roost for a single Common Pipistrelle. The roost associated with this tree is likely to be a low-status non-breeding roost for one Common Pipistrelle used on an occasional/transitory basis.

- 4.1.2 The survey results therefore indicate that:
- B12 supports a confirmed occasional/transitory roost for low numbers of Common Pipistrelle and an individual Soprano Pipistrelle. In addition, B12 supports a probable occasional/transitory roost for an individual Brandt's bat;
 - Tree 216 supports a confirmed occasional/transitory roost for low numbers of Common Pipistrelle and Soprano Pipistrelle. In addition, Tree 216 supports a probable occasional/transitory roost for an individual Bechstein's bat;
 - Tree 188 supports probable occasional/transitory roosts for two Common Pipistrelle bats and an individual Soprano Pipistrelle;
 - B6, B16 and Trees 20 and 207 support confirmed/probable occasional/transitory roosts for two Common Pipistrelle bats;
 - Trees 95, 217 and 349 support confirmed/probable occasional/transitory roosts for individual Common Pipistrelle bats; and
 - Trees 53 and 254 support probable bat roosts for unidentified bat species.

4.1.3 The low numbers of bats recorded roosting within the buildings and trees indicates that these are small low-status non-breeding roosts which may be used by male or non-breeding female bats.

4.1.4 Notwithstanding the low status of the bat roosts recorded, in the event that planning permission is granted for development of the site, it is recommended that B6, B12, B16 and Trees 20, 53, 95, 188, 207, 216, 217, 254 and 349 should, if possible, be retained. It is understood that it may be possible to retain B16 and Trees 20, 53, 188, 207, 216, 217, 254 and 349, however B6, B12 and Tree 95⁴ are expected to be demolished, refurbished and felled respectively. If it is not possible to retain the identified roosts associated with these buildings and trees proposals have the potential to conflict with the nature conservation legislation afforded to bats (set out in *Section 1.2*). Works to the above buildings and trees with potential to affect roosting bats should therefore be carried out under a full European Protected Species Mitigation (EPSM) licence⁵. The licence application would need to be supported by a detailed method statement setting out measures by which individual bats would be protected during construction works and opportunities for roosting bats would be maintained thereby ensuring the continued favourable conservation status of the local bat population. Suitable measures by which this can be achieved are provided in *Section 5* below.

⁴ T113 in Arboricultural Impact Assessment (HDA, 2022).

⁵ The 'Low Impact Licence' approach only covers small numbers of roost sites which is not the case in this instance.

4.2 Bat foraging habitat

4.2.1 At least nine species of bat were recorded using the survey area for foraging and commuting, with varying levels of activity throughout the surveys. The plan in *Appendix D* provides an overview of bat activity recorded during the transect surveys.

4.2.2 The majority of activity recorded during the transect surveys related to Common Pipistrelle bats, with up to 9 Common Pipistrelle bats considered to be using the survey area at any one time. The majority of Common Pipistrelle activity was associated with the Downs Link crossing east-west through the south of the site and the woodland belts in the north of the site. Common Pipistrelle were also recorded on a regular basis using areas of woodland and treelines and hedgerows bordering fields in the remainder of the survey area.

4.2.3 Soprano Pipistrelle was the second most frequently recorded species during the transect surveys, with up to 2 Soprano Pipistrelle bats considered to be using the survey area at any one time. The majority of Soprano Pipistrelle activity was associated with the Downs Link crossing north-south through the south of the survey area. Noctule, *Myotis* sp. bat, Brown Long-eared bats, Serotine and Leisler's bat were also recorded from similar habitats on a less frequent basis suggesting the survey area supports only individuals of these species/ species groups and/ or forms only a small part of a much wider foraging territory for individuals of these species/ species groups. In addition, Barbastelle and Nathusius' Pipistrelle bat were recorded using the survey area during the automated detector surveys.

4.2.4 Despite the number of species recorded and the overall number of bats expected to have been present within the survey area at any one time, overall the level of bat activity recorded was generally considered to be low to moderate, relative to the size of the site, and similar foraging and commuting opportunities are relatively widespread in the wider area. As a whole the survey area is therefore considered to be of no more than low district interest for foraging bats.

4.2.5 Notwithstanding this, in addition to implementing measures to mitigate any negative effects on roosting bats, in accordance with nature conservation legislation, development proposals should also seek to maintain and enhance opportunities for foraging and commuting bats within the site and its surrounds in accordance with planning policy and the 2006 NERC Act. These measures are further discussed in *Section 5* below.

5 RECOMMENDATIONS

5.1 This section identifies measures to be implemented during development of the site in order to avoid, mitigate and compensate potential impacts on bats, and to maintain the

favourable conservation status of the local bat population. In addition, recommendations for enhancement of the site for roosting and foraging bats are included in accordance with 2021 NPPF and the 2006 NERC Act.

5.2 Roosting bats

5.2.1 Current knowledge suggests that proposed development of the site will result in the loss of, or damage or disturbance to the roost sites identified in B6, B12⁶ and Tree 95. A European Protected Species (EPS) licence would therefore need to be obtained from Natural England prior to the commencement of any works affecting the buildings/trees containing bat roosts. The licence would need to be accompanied by a detailed method statement describing how the favourable conservation status of bats at the site will be maintained, including information on how loss of roost sites will be compensated and timing of works to minimise impacts on bats. Mitigation would centre on:

- Creation of appropriately designed and sited new roosting opportunities for bats, proportionate to those being lost; and
- Implementation of works affecting roost sites at a time of year when bats are least susceptible to disturbance/likely to be present, employing sensitive working practices.

5.2.2 Measures by which this can be achieved are given below. These should be implemented unless otherwise agreed with the local planning authority or Natural England.

5.2.3 The low numbers of bats recorded roosting within the buildings and tree indicates that these are all small low-status non-breeding roosts which may be used by male or non-breeding female bats.

Replacement of roost sites

5.2.4 A strategy for mitigating the loss of the existing roost sites resulting from the proposed development works is described below. This should be reviewed at an appropriate stage in light of detailed design and/or the findings of further surveys, if appropriate.

Short-term roost replacement and enhancement: tree-mounted bat boxes

5.2.5 The bat roosts identified above will be lost as a result of the demolition/refurbishment/felling of B6, B12 and Tree 95 and it will not be possible to retain the identified bat roosts during development works. However, Common Pipistrelle, Soprano Pipistrelle and Brandt's bat are known to roost in both trees and bat boxes (University of Bristol, 2010; Dietz *et al*, 2011), with records of bat boxes having been used for successful Common and Soprano Pipistrelle breeding. It would therefore be possible

⁶ For the purpose of this report it is assumed that the existing roost in B12 would be impacted by the proposed refurbishment of this building.

to provide suitable replacement opportunities during the construction phase prior to new roosting opportunities being created within the new buildings.

- 5.2.6 To provide replacement opportunities for bats associated with the identified roost sites prior to construction commencing, bat boxes should be installed on suitable retained trees within the site in the vicinity of the existing roosts to be lost. Initial replacement roost mitigation for each of the roosts to be lost should comprise (or similar):
- 4x Greenwood Ecohabitat Two Crevice Bat Box;
 - 2x Greenwood Ecohabitat Small Hollow Bat Box; and
 - 2x Vincent Pro Bat Box.

- 5.2.7 The bat boxes identified above should be located on retained trees within areas away from the proposed construction works affecting each building or tree. The precise positions of the boxes should be determined through consultation with an appropriately qualified and experienced bat ecologist, but will need to integrate the location of suitable retained trees and habitat connections with avoidance of areas with highest potential future lightspill. To provide the opportunity for bats to find and utilise new roost sites prior to development, bat boxes should be put in place at an appropriate stage in advance of works commencing.

Long-term roost replacement and enhancement: crevices

- 5.2.8 The bat boxes described above should be retained on completion of development in order to mitigate for the loss of bat roosting opportunities during the site demolition works. Measures to ensure the long-term availability of roost sites within the site are described below.

- 5.2.9 Of the bats confirmed or possibly roosting in the buildings/tree to be affected, Common Pipistrelle, Soprano Pipistrelle and Brandt's bat are considered to be primarily crevice or hole-dwelling bats. To provide replacement and maintain opportunities for these bat species within the completed development, and deliver enhancements to the long-term roosting potential of the site, a number of features suitable for crevice dwelling bats should be incorporated into the new or refurbished buildings.

- 5.2.10 The following features should be incorporated into the new or refurbished buildings to provide long-term replacement roost sites for crevice dwelling bats. Features to be installed to mitigate for loss of roost sites for crevice dwelling species across B6, B12 and Tree 95 should comprise:
- A minimum of six dedicated features such as Schwegler 1FR Bat Tubes or 'Habibat' type boxes incorporated into south- to west-facing elevations.

- A minimum of three 20mm x 100mm gaps under wooden cladding incorporated into south- to west-facing elevations (or retention/creation of mortise and tenon crevice features associated with B12).
- A selection of other opportunities for crevice dwelling bats (a minimum of four) should be provided in a variety of locations. These may include a selection of:
 - Provision of 20mm x 100mm gaps beneath roof and ridge tiles to allow access by bats to the underfelt below. Alternatively dedicated bat access tiles could be installed to perform a similar function; and
 - Provision of 20mm x 200mm gaps along soffit boards providing access to the soffit box (installing soffit bat boxes if desired) or the internal roof space where appropriate.

5.2.11 Where any features such as crevices for roosting bats are provided in association with the buildings, bitumastic (traditional) roofing felt should be used to avoid entanglement of bats.

5.2.12 All replacement roost sites should be located away from areas most affected by construction and operational phase noise and lighting. The precise position of replacement roost sites should be determined through consultation with an appropriately qualified and experienced ecologist at the detailed design stage, but would in any case need to integrate the location of suitable retained trees and habitat connections with avoidance of areas subject to significant levels of light spill.

Enhancement of roosting opportunities

5.2.13 The proposed development would provide opportunity to enhance the value of the site for roosting bats in the long-term in accordance with the 2021 NPPF and the 2006 NERC Act through the provision of additional opportunities for roosting bats to those described above. The detailed design and location of such features would be determined at an appropriate stage prior to construction, but in addition to the mitigation measures described above, consideration should be given to inclusion of additional roosting opportunities including:

- Erection of additional bat boxes on mature trees across the site; and/or
- Creation of additional bat roosting opportunities on new buildings within the site e.g. through the use of bat bricks within the external walls of buildings, raised tiles, gaps in wooden cladding, accessible roof voids etc. (suitable opportunities are described in *Section 5.2.10* above).

5.2.14 By providing a variety of roosting opportunities in different locations and orientations within the new and refurbished buildings and retained trees across the site, a range of

roost spaces with varied microclimates will be provided that will offer long-term roosting opportunities for bats throughout the year.

Approach and timing of works

- 5.2.15 Works affecting confirmed roost sites should ideally be carried out at a time of year when bats are least likely to be present. Little is known about the hibernation habits of Pipistrelles and Brandt's bat generally hibernate in caves and mines. In view of the difficulties in ruling out use of the roosts by small numbers of hibernating *Pipistrellus* sp. bats, works to buildings/trees during the winter hibernation months (November-March) should be avoided, since any bats present during this period may be in torpor and would be particularly sensitive to disturbance. Although the findings of the surveys suggest that only non-breeding bat roosts are present at the site, given that a degree of uncertainty always exists in relation to the exact status of a summer roost, best practice is to also avoid the peak breeding period (June to August) when young bats, unable to fly, may be present.
- 5.2.16 In the event that building stripping or demolition/refurbishment/tree felling is required outside of the timeframe described above then works to B6, B12 and Tree 95 potentially affecting roosting bats should be either: (i) preceded by an updated survey to confirm the continued absence of a breeding roost (for demolition works between June and August); or (ii) be carried out during periods of mild weather when bats are active with minimum night time temperatures exceeding 7°C for five consecutive nights (for demolition works between November and February).
- 5.2.17 As identified above, bat boxes on retained trees should be provided in advance of loss of any roost in order to provide alternative roost sites prior to works commencing.
- 5.2.18 All demolition or refurbishment works involving the removal of features from B6 and B12 with the potential to conceal roosting bats should be overseen by a licensed bat worker under an Ecological Watching Brief. Potential features on these buildings include roof tiles, gaps in brickwork, mortice and tenon joints and waney edge boarding. Suitable features should be inspected prior to demolition/stripping and a cautious approach should be employed, particularly in the vicinity of the known roosts, with key features removed by hand where appropriate.
- 5.2.19 Unless further survey indicates that no bats are present at the time of felling (See *Section 5.2.22* below) then Tree 95 should be soft felled under the supervision of a licensed bat worker under an Ecological Watching Brief. Soft felling involves progressive removal of the trees, using ropes to gently lower sections of trees potentially supporting roosting bats

to the ground for inspection by a suitably qualified ecologist. Where appropriate, features should be left on the ground overnight before clearing to allow any bats present to escape.

- 5.2.20 Should any bat be encountered during works to B6, B12 or Tree 95, it would be moved by the licensed bat worker to one of the pre-installed bat boxes described in *Section 5.2.6*.

Other trees

- 5.2.21 In addition to Tree 95 (discussed above), the Phase 2 surveys have identified the presence of small, low-status bat roosts in Trees 20, 53, 188, 207, 216, 217, 254 and 349. Emerging development proposals for the site indicate that Trees 20, 53, 188, 207, 216, 217, 254 and 349 will be retained.

Works to trees

- 5.2.22 Due to the presence of opportunities for roosting bats within a number of other trees across the site and the highly mobile nature of bats, an approach to works affecting trees lost to development or affected by future maintenance works (e.g. for health and safety) is set out below. This involves either further survey prior to works commencing to confirm continued absence of roosting bats or through a sensitive approach to works.

- 5.2.23 In the event that retention of a tree identified as providing opportunities for roosting bats is not possible, due to the transitory nature with which bats may use roost sites in trees, it is recommended that felling works should be carried out in accordance with the following procedure, including where the 2022 Phase 2 surveys have not identified a roost as being present:

1. In the event that future pruning or felling works for reasons of health and safety are required to trees with confirmed/probable roosts (Trees 20, 53, 188, 207, 216, 217, 254 and 349) such works have the potential to disturb or destroy any roosts present. If it is not possible to retain the roost site associated with the tree, a European Protected Species (EPS) licence would need to be obtained from Natural England prior to the commencement of any works affecting the roost sites associated with these trees.
2. Other trees suitable for climbing inspections should first be climbed by a licensed bat worker to inspect potential roost sites for bats. In the event that no bats are encountered during an exhaustive search then any features should be 'soft stopped' to prevent re-occupation prior to felling. In the event that a bat is encountered, where the tree is already covered under an EPS licence, this should be moved to the bat boxes installed prior to felling works commencing. If a bat roost is encountered during survey of a tree not covered under an EPS licence, then felling/works to this tree should be delayed until an EPS licence has been

sought and obtained from Natural England. Where bat roosts are present within any tree subject to felling, the tree should be 'soft felled' in accordance with the methodology described under point 5 below.

3. Trees with 'high' potential, for which an exhaustive climbed inspection is not possible or practical should be subject to three emergence/re-entry surveys following BCT best practice guidelines to confirm the absence of roosting bats prior to any works affecting the tree commencing.
4. Trees with 'moderate' potential, for which an exhaustive climbed inspection is not possible or practical should be subject to two emergence/re-entry surveys following BCT best practice guidelines to confirm the absence of roosting bats prior to any works affecting the tree commencing.
5. 'Low' potential trees that are unsuitable for climbing inspections and/or have not been subject to an emergence survey immediately in advance of works should be 'soft felled' under the supervision of a suitably qualified ecologist. Soft felling involves progressive removal of the tree, using ropes to gently lower sections of tree potentially supporting roosting bats to the ground for inspection by a suitably qualified ecologist. Where appropriate, features should be left on the ground overnight before clearing to allow any bats present to escape.

5.2.24 In the event that a roosting bat is discovered during any of the above works to a tree not covered under an EPS licence, trimming/felling works must cease and Natural England contacted to agree an appropriate course of action. A licence may need to be applied for, and approved, before works can continue.

Maintenance of roosting opportunities

5.2.25 The integrity of retained roosting opportunities within and adjacent to the site should be conserved through the maintenance of connections to commuting and foraging habitat and sensitive use of lighting throughout the construction and operational phases (see *Section 5.3* below). In addition, trees not supporting roosting bats at the time of survey have potential to support bats in the future and therefore these trees should be retained and their ability to support roosting bats maintained, where possible to do so. Where significant loss of future roosting opportunities arises, this should be offset through alternative roost provision elsewhere within the site.

Further survey

5.2.26 Bats may occupy roost sites on a seasonal or temporary basis and old roost sites may be abandoned and new roosts occupied within relatively short periods of time. Where appropriate, bat survey work, including emergence/re-entry surveys and/or climbing inspections of buildings and trees with potential to support roosting bats affected by the proposed development should be updated in advance of development commencing. The

guidance of a suitably qualified ecologist should be sought to determine if and when surveys should be updated with regard to the development programme. This would ensure that up-to-date information is available to inform the extent of any mitigation and licensing requirements relating to bats.

5.3 Foraging and commuting bats

5.3.1 The site is considered as a whole to be of no more than low district importance for foraging bats. The site is expected to comprise a significant proportion of foraging habitat for low numbers of Common Pipistrelle bats and provides foraging habitat for low numbers of at least eight other species/species groups on a more occasional or infrequent basis.

5.3.2 A number of the bat species identified (Barbastelle, Soprano Pipistrelle, Noctule and Brown Long-eared bats) are listed as Species of Principal Importance under Section 41 of the 2006 NERC Act and therefore the effects of development on foraging and commuting habitat are a material consideration in the planning process.

5.3.3 The emerging development proposals (Illustrative Masterplan, PRP 2022) show the retention of the majority of the woodland habitats within the site and the hedgerows and treelines bordering and crossing the site. In addition, a large area of public open space is proposed in the west of the site, which will provide a mosaic of habitats of interest to bats including new areas of meadow grassland, scrub and tree planting and creation of aquatic habitats. The development of the site will however result in the loss of limited areas of foraging habitat within the development areas where buildings and hardstanding takes the place of areas currently dominated by grassland fields of limited value for foraging bats. Although it is expected that the proposed gardens and areas of open space within the development areas will provide new opportunities for foraging bats as these mature, in order to maximise future opportunities for foraging and commuting bats within areas of informal open space, it is recommended that the following measures are included in the landscape strategy for these areas of the site:

- Linear features such as hedgerows and treelines should be retained wherever possible and enhanced through infilling of gaps or provision of complementary scrub and tree planting. Where loss is unavoidable, for example at road or footpath access points, loss should be minimised and compensatory habitat provided at an appropriate location elsewhere.
- Where possible, new linear features such as hedgerows and treelines should be created to improve connectivity between areas of suitable roosting and foraging habitat within the site and the wider area.
- Landscape proposals within areas of open space across the site should seek to include high quality habitat for foraging bats. This might include shrub planting,

creation of areas of rough and meadow grassland, orchard, woodland and marginal vegetation and/or use of native species-rich hedgerows and treelines along boundaries.

- Maintenance of standing deadwood and decaying trees/branches where safe to do so in order to maintain and encourage future natural opportunities for roosting bats.
- Creation of new wetland habitats including reedbeds, ponds and drains either as stand-alone features or as part of the surface water drainage strategy. These habitats are capable of supporting large numbers of invertebrates, providing a valuable foraging resource for bats.
- Formal planting schemes in residential areas should seek to include pollen and nectar-rich species in order to encourage invertebrate prey for bats.
- Securing the long-term integrity of high-quality habitats through inclusion within a long-term management strategy.

5.3.4 The site is currently subject to limited light spill, which is restricted to that from off-site residential areas bordering the site. The integrity of retained and new foraging and commuting habitat, both within the proposed development areas and its surrounds, should be conserved through the sensitive use of lighting throughout the construction and operational phases of the proposed development, including with regard to the proposed sports pitch provision to the south of the Downs Link. In accordance with the Bat Conservation Trust and Institute of Lighting Professionals guidance (BCT and ILP, 2018) this could be achieved through employment of a selection of the following measures in the vicinity of retained/newly created areas of suitable foraging habitat and in the vicinity of trees and buildings providing opportunities for roosting bats:

- Use of only the minimum amount of light required for safety and amenity, and minimise upward reflected light.
- Avoidance of bare bulbs or upward-pointing lights. The spread of light should be kept near to or below the horizontal.
- Use of narrow spectrum bulbs (between 4000 and 2700k) and/or low UV emitting bulb types.
- Avoidance of light-spill into adjacent areas through luminaire design or with accessories, such as hoods, cowls, louvres and shields to direct the light.
- Minimisation of the height of lighting columns.
- For pedestrian lighting, use of low level lighting that is as directional as possible and below 3 lux at ground level.
- Where necessary, use of embedded road lights to illuminate roadways and light only high-risk stretches of roads such as crossings and merges.

- Limiting the times that lights are on to provide some dark periods for wildlife through use of timers and/or use automatic dimmers to reduce lighting outside times of peak use.

5.3.5 It is recommended that all detailed external lighting proposals are reviewed at appropriate design stages by a suitably qualified ecologist, including with regard to the proposed sports pitch provision to the south of the Downs Link. This could be secured via a condition of planning consent.

6 CONCLUSION

6.1 Bat survey work carried out at the site has identified individual/low numbers of Common Pipistrelle, Soprano Pipistrelle, Brandt's bat and Bechstein's bat species within B6, B12 and B16 and Trees 20, 53, 95, 188, 207, 216, 217, 254 and 349. The emerging proposals indicate that the bat roosts associated with B6, B12 and Tree 95 will be lost to the proposed development. The emerging proposals indicate however that it should be possible to retain the roosts associated with B16 and Trees 20, 53, 188, 207, 216, 217, 254 and 349.

6.2 Although the roosts to be affected by the proposed development works are considered in combination to be of no more than high local value, the proposed works must give due regard to the legal protection afforded to all bats, which protects both individual bats and the conservation status of populations.

6.3 Measures to ensure the protection of individual bats during construction works and maintenance of opportunities for roosting bats in the long-term, including provision of a range of new bat roosting opportunities and suitable timing of activities, is described in *Section 5* of this report. The measures described should form the basis of a detailed Method Statement which would accompany an application to Natural England for a licence to permit development works affecting bats.

6.4 Measures are also described for the maintenance and enhancement of current opportunities provided by the site for foraging and commuting bats. These include sensitive lighting design and planting and habitat creation works. The development areas are currently dominated by grassland and arable fields of limited value for foraging bats and it is considered that implementation of these measures within areas of greenspace across the site could maintain and enhance the value of the site in the long-term for this group.

6.5 Subject to the implementation of the measures described in *Section 5*, it is considered that the favourable conservation status of the local bat population would be maintained

and, through long-term provision of higher quality roosting and foraging habitats, potentially enhanced. This would ensure compliance with the nature conservation objectives of the 2019 Conservation of Habitats and Species (amendment) (EU Exit) Regulations, the 2006 NERC Act and the guidance underpinning the 2021 National Planning Policy Framework.

7

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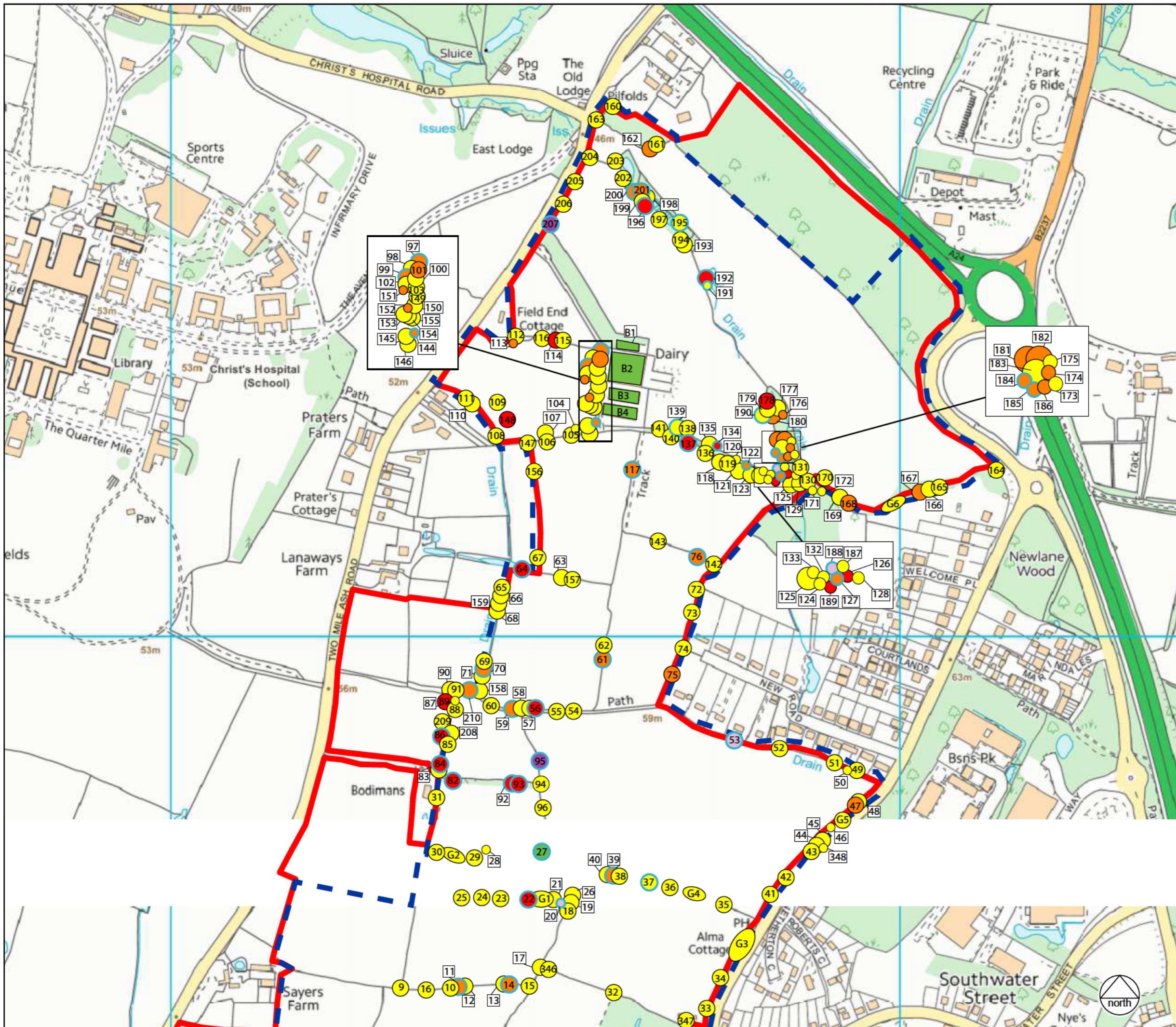
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APPENDIX A

Bat Roost Survey Summary Plans



KEY

- Site boundary
- Survey area boundary
- Tree/building subject to Phase 2 roost survey

BUILDINGS *

- Confirmed bat roost
- High bat roost potential
- Moderate bat roost potential
- Low bat roost potential
- Negligible bat roost potential

TREES *

- Confirmed bat roost
- Probable bat roost
- High bat roost potential
- Moderate bat roost potential
- Low bat roost potential
- Negligible bat roost potential

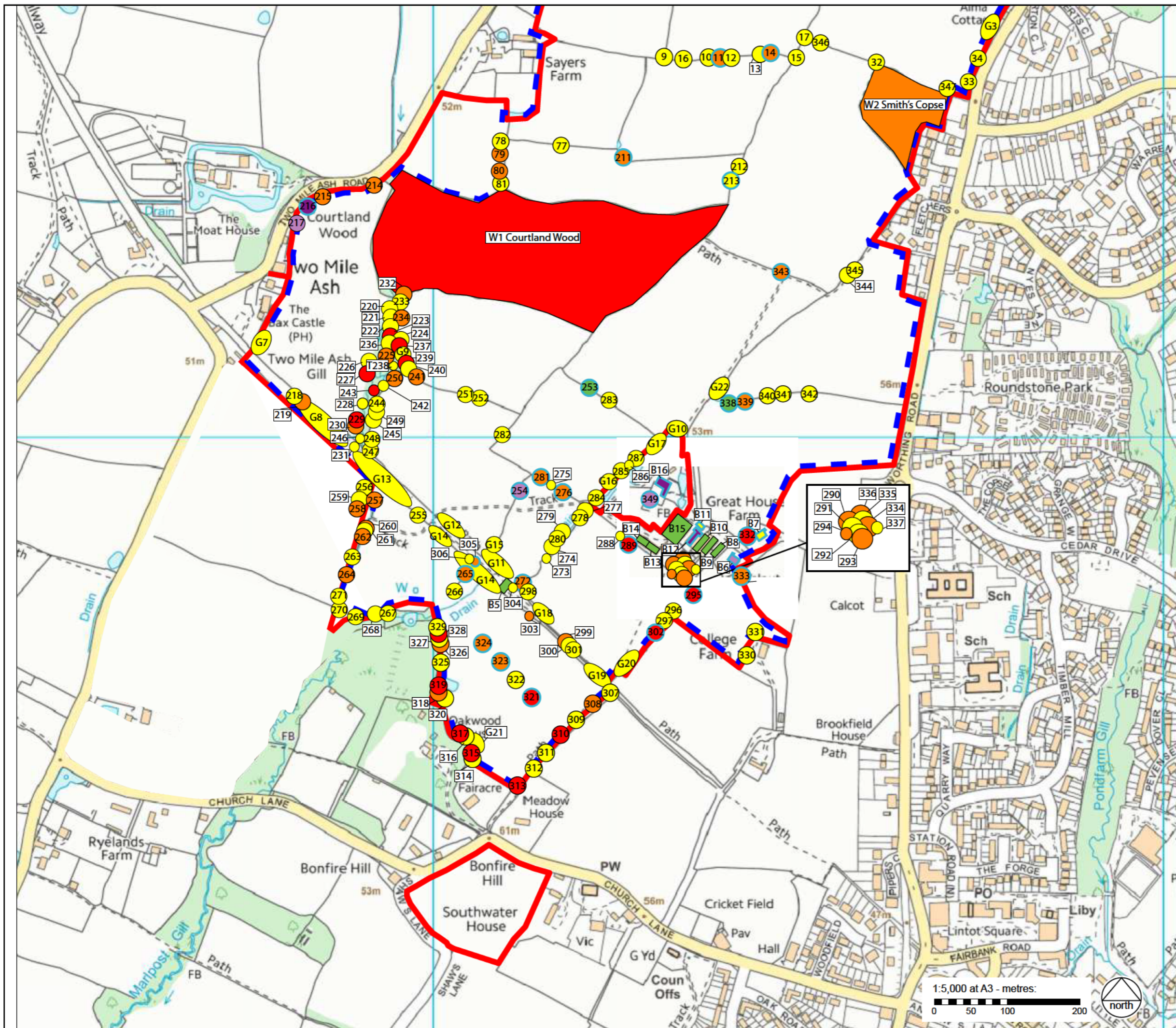
* Roosting categories relate to roost potential in accordance with the BCT 2016 guidelines. All other trees within the survey area are regarded as having 'negligible' potential to support roosting bats.

The bat roosting potential of groups (G) and woodlands (W) shown on the plan correspond with the highest potential feature recorded within each group/ woodland.

CLIENT:
Berkeley Homes (Southern) Ltd
PROJECT:
Land North West of Southwater
TITLE:
Bat Roost Survey Summary Plan - Northern Area
SCALE AT A3: 1:5000 DATE: September 2022
2090.78 / 12

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KEY

- Site boundary
- Survey area boundary
- Tree/building subject to Phase 2 roost survey

BUILDINGS *

- Confirmed bat roost
- High bat roost potential
- Moderate bat roost potential
- Low bat roost potential
- Negligible bat roost potential

TREES *

- Confirmed bat roost
- Probable bat roost
- High bat roost potential
- Moderate bat roost potential
- Low bat roost potential
- Negligible bat roost potential

* Roosting categories relate to roost potential in accordance with the BCT 2016 guidelines. All other trees within the survey area are regarded as having 'negligible' potential to support roosting bats.

The bat roosting potential of groups (G) and woodlands (W) shown on the plan correspond with the highest potential feature recorded within each group/ woodland.

CLIENT:
Berkeley Homes (Southern) Ltd

PROJECT:
Land North West of Southwater

TITLE:
Bat Roost Survey Summary Plan - Southern Area

SCALE AT A3: 1:5000 DATE: September 2022

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APPENDIX B

Bat Roost Survey Summary Plans – B6, B12 and B16



KEY

- Site boundary
- Tree/building subject to Phase 2 roost survey

BUILDINGS

- Confirmed bat roost
- Low bat roost potential
- Negligible bat roost potential

TREES

- Confirmed bat roost
- High bat roost potential
- Moderate bat roost potential
- Low bat roost potential

EMERGENCE/RE-ENTRY SURVEY RESULTS

- Common Pipistrelle / silent bat (silent bat also likely Common Pipistrelle)
- Soprano Pipistrelle
- Brandt's bat
- B6-2 Emergence/re-entry location reference number

CLIENT:
Berkeley Homes (Southern) Ltd

PROJECT:
Land North West of Southwater

TITLE:
Bat Roost Survey Summary Plan - B6, B12 and B16

SCALE AT A3: DATE:
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APPENDIX C

Photographs of Buildings



Photo 1: Northern and western elevations of B2, with southern elevation of B1 in left-side of photo.



Photo 2: Western elevation of B2 in forefront, with western elevations of B3 and B4 in rear of photo.



Photo 3: Southern elevation of B3 and northern elevation of B4.



Photo 4: Southern elevation of B5.



Photo 5: Northern and western elevations of B6.



Photo 6: Northern and eastern elevations of B7.



Photo 7: Western elevation of B7.



Photo 8: Northern and eastern elevations of B8.



Photo 9: Southern and eastern elevations of B9.



Photo 10: Northern elevation of B10, with eastern elevation of B12 in right side of photo and western elevation of B9 in left side of photo.



Photo 11: Eastern elevation of B11 in forefront, with northern and eastern elevations of B12 in rear of photo.



Photo 12: Northern elevation of B11.



Photo 13: Western and southern elevations of B12.



Photo 14: Western elevation of B12.



Photo 15: Internal view of central section of B12.



Photo 15: Internal view of northern section of B12 (with bat droppings below this mortise and tenon joint – see Photo 16).



Photo 16: Bat droppings on floor below this mortise and tenon joint.



Photo 17: Northern elevation of B13 and B14.



Photo 18: Southern elevation of eastern section of B15.



Photo 19: Southern elevation of western section of B15.



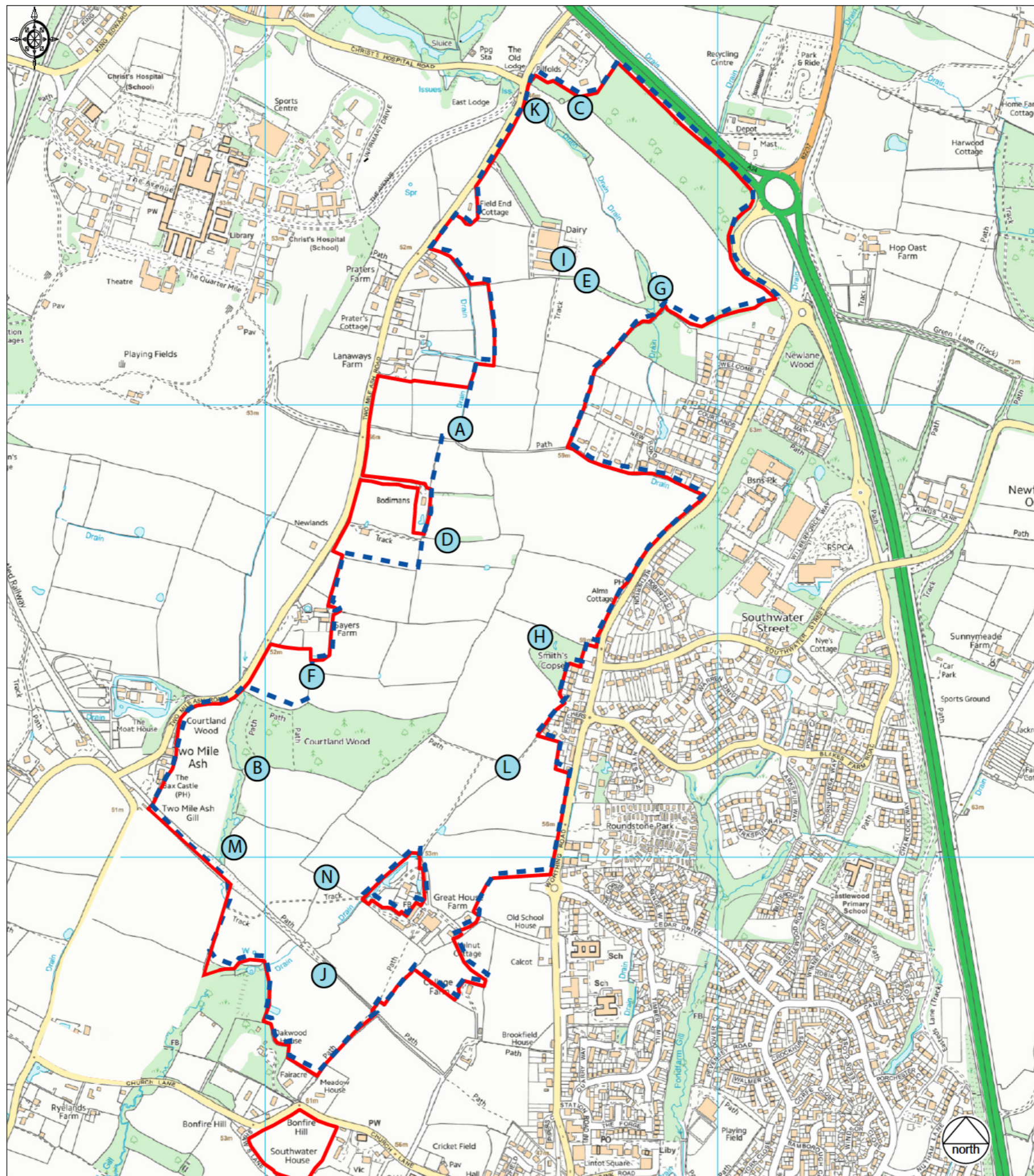
Photo 20: Eastern elevation of B16.



Photo 21: Northern elevation of B16.

APPENDIX D

Bat Activity Survey Summary Plan



KEY

- Site boundary
- Survey area boundary
- Automated detector

Bat foraging and commuting activity

Common Pipistrelle

- Single bat pass
- Occasional bat pass / foraging
- Moderate foraging activity

Soprano Pipistrelle

- Single bat pass
- Occasional bat pass / foraging

Noctule

- Single bat pass
- Occasional bat pass / foraging

Brown Long-eared bat

- Single bat pass

Myotis sp. bat

- Single bat pass

Serotine

- Single bat pass

Leisler's bat

- Single bat pass

CLIENT:
Berkeley Home (Southern) Ltd

PROJECT:
Land North West of Southwater

TITLE:
Bat Activity Survey Summary Plan

SCALE AT A3: DATE:
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